EXHIBIT A
PROFESSIONAL ENGINEERING SERVICES
for the
CITY OF HENDERSONVILLE
WWTF 6.0 MGD EXPANSION AND IMPROVEMENTS PROJECT

I. PROJECT UNDERSTANDING AND PURPOSE

The following presents the scope of work to provide professional engineering services for the City of Hendersonville Wastewater Treatment Facility (WWTF) 6.0 MGD Expansion and Improvements Project. McKim & Creed, Inc. will provide the following major services for this Project:

- Funding Assistance
- Flood Mitigation Analysis
- Condition Assessment of Existing Facilities
- Engineering Alternatives Analysis
- Preparation of a Basis of Design Report
- Preliminary Design
- Final Design
- Permitting Assistance
- Prequalification of Bidders Assistance
- Sole Source Equipment Procurement Assistance
- Formal Bidding & Award Services
- Construction Administration
- Construction Observation
- Post-Construction Services

The scope of services described herein is based on providing design, permitting, and construction phase services for expansion of and improvements to the City of Hendersonville WWTF to expand the facility from its currently permitted capacity of 4.8 million gallons per day (MGD) to a permitted capacity of 6.0 MGD. The City of Hendersonville's current NPDES Permit No. NC0025534 includes effluent limitations and monitoring requirements for the design flow of 6.0 MGD which will come into effect upon the issuance of an Authorization to Construct permit from the North Carolina Department of Environmental Quality (NCDEQ) Division of Water Resources (DWR) and submission of the Engineer's Certification for expansion of the facility to 6.0 MGD. The expansion of and improvements to the Hendersonville WWTF are required to ensure

continued successful operation of the WWTF in compliance with the NPDES permit per the findings and recommendations of the *Wastewater Treatment Facility Master Plan* dated 6/24/2022, prepared by McKim & Creed.

The design of the expansion and improvements to the WWTF will provide for treatment of municipal grade, domestic strength wastewater, of which final influent parameters will be determined during the preliminary design phase of the Project. The expansion and improvements will be designed to adhere to the current parameters of the existing NPDES Permit No. NC0025534 for the 6.0 MGD design flow tier included in the permit.

Major components of the project are anticipated to include:

- New influent screening facility upstream of influent pumping
- New submersible influent pump station
- New influent flow metering
- New vortex grit removal system
- New flow equalization facilities including a day tank and a wet weather tank
- Replacement of the three (3) existing 250 HP multi-stage centrifugal blowers with new blowers and new dissolved oxygen control system for increased energy efficiency and process control
- Repairs to the existing Blower Building and air headers
- Replacement of existing return activated sludge (RAS) pump No. 2 due to age/condition
- Replacement of both existing waste activated sludge (WAS) pumps due to age/condition
- Replacement of Tertiary Filter No. 2 with new AquaDiamond filter matching Tertiary Filter No. 1, sized for the 6.0 MGD design flow
- Concrete repairs to the Tertiary Filter structure
- New canopy structure over the Tertiary Filter structure including lighting, lightning protection, and electric driven bridge crane to protect filter equipment from algae growth and improve ease of maintenance
- New mixing equipment in the first two diffuser zones of the Aeration Basins to establish an anoxic/aerobic swing zone in each basin
- Rehabilitation or replacement of flow isolation to each secondary clarifier
- New density current baffles in each secondary clarifier
- Concrete repairs and coatings in the effluent launders of each secondary clarifier
- Dewatering Building lightning protection system

The services required to assist the City will generally include funding assistance, preliminary evaluations, surveying, subsurface utility engineering, geotechnical investigations, final design,

permitting, bidder prequalification assistance, sole source equipment procurement assistance, bidding and award assistance, construction administration, construction observation, and post-construction services. The project is composed of the following phases and tasks:

PHASE 1: PRELIMINARY, DESIGN, AND BID SERVICES

1. Funding Assistance
2. Preliminary Engineering
3. Final Design
4. Permitting
5. Bidder Prequalification Assistance
6. Bidding and Award Phase
7. Unallocated Project Budget (Phase 1)

PHASE 2: CONSTRUCTION SERVICES

8. Construction Phase Services
9. Post-Construction Phase Services
10. Unallocated Project Budget (Phase 2)

This scope of services is to provide Phase 1 professional engineering services only. Phase 2 services are to be provided as a future amendment to this contract. Phase 2 services are estimated and are subject to change depending on project requirements at the time of amendment execution.

II. SCOPE OF SERVICES

PHASE 1 DESIGN AND BID SERVICES

TASK 1: FUNDING ASSISTANCE

McKim & Creed will assist the City in preparing and submitting letters of interest and funding applications through the NCDEQ Division of Water Infrastructure (DWI) and the NCDPS Non-Disaster Grants program for FEMA BRIC and/or HMGP funding.. The City will provide financial and other supporting information as required by the funding applications. Additional assistance with other funding options may be provided as additional services if requested by the City. The scope of services for the NCDEQ DWI and FEMA BRIC/HMGP program funding applications are detailed further below.

1.1 NCDEQ DWI Funding Application

It is assumed that McKim & Creed will assist the City in preparing and submitting a funding application to NCDEQ DWI during the Fall 2024 funding round, the Spring 2025 funding round, and the Fall 2025 funding round. NCDEQ DWI may automatically reconsider the project for funding in subsequent funding rounds using the previously prepared funding application packages without modification. Additional assistance with additional funding round applications may be provided as additional services if requested by the City. Each funding application will consist of the completed application forms and priority rating system forms, engineering calculations, opinions of probable project costs, anticipated schedules, and permit requirements.

1.2 FEMA BRIC/HMGP Letter of Interest and Funding Application

McKim & Creed will assist the City in applying for funding through the FEMA BRIC program as a sub-applicant to the North Carolina Department of Public Safety (NCDPS), Division of Emergency Management. Services provided under this task will follow the FEMA BRIC funding guidance published by the NCDPS (https://www.ncdps.gov/our-organization/emergency-management/hazard-mitigation/non-disaster-grants) and will consist of the following steps:

1. McKim & Creed will assist the City in preparing and submitting the Letter of Interest (LOI) and all associated attachments. The LOI will be submitted to NCDPS for screening and sub-applicant selection.
2. If the project is selected by NCDPS based on review of the LOI, and the City receives an Invitation to Apply, McKim & Creed will assist the City in preparing and submitting a complete sub-application package. The sub-application package will be submitted in accordance with NCDPS and FEMA requirements and will be submitted to the FEMA GO grant management system.

TASK 2: PRELIMINARY ENGINEERING

2.1 Design Survey Services

McKim & Creed will provide design survey services as described below. Survey work will be performed to the Standards of Practice for Land Surveying in North Carolina. Horizontal survey control will be referenced to NC Grid NAD 83 or otherwise specified. Vertical control will be referenced to NAVD88 or otherwise specified. The scope of survey shall include:

1. Set horizontal and vertical control at the WWTF.
2. Topographic survey of existing grade throughout the existing WWTF property to the general extents shown in Figure 1 below, excluding the following areas where topographic survey information has been previously collected. Topographic survey shall include collection of the centerline location of the intermittent stream located southeast of the existing influent pump station, north of Balfour Road, from the eastern WWTF access driveway to the Duke Energy transmission line right of way.

   Areas previously surveyed, to be excluded from topographic survey collection:

   a. Surrounding the existing Covered Storage Shelter and in the immediate vicinity to the east.

3. Boundary survey of the existing WWTF property to establish the location of existing WWTF property lines adjoining Balfour Road. This information will be utilized to ensure that all new treatment structures to be constructed are in compliance with the setback requirements per 15A NCAC 02T .0506(b).

Figure 1 – General Topographic Survey Extents

4. Collection of horizontal and vertical location of existing utilities located by SUE services throughout the WWTF, including inverts of gravity utilities, including the following:

   a. Gravity Sanitary Sewer:

      i. Existing 42" Mud Creek Outfall, Manhole 1 to Manhole 6. Note, manhole numbering from *City of Hendersonville Wastewater Facilities Mud Creek Outfall* "Reference Drawing" Sheet 2 prepared by Willis Engineers, dated 1999.

      ii. Existing 10" SS on east side of WWTF site from Mud Creek Outfall Manhole 2 to Town Center Manhole 1 at northeast corner of WWTF fenceline. Note, Town Center Manhole numbering from *The Town Center* "As-Built" Sheet UT1 prepared by Thomas R. Wilson, PE.

iii. WWTF In-plant SS: MH 1 through MH 9, MH 12, DI 1 (at existing Screening and Grit Removal), CB 1 (at Influent Pump Station). Note, manhole numbering from *City of Hendersonville Wastewater Facilities* "Reference Drawings" Sheet G-10 prepared by Willis Engineers, dated 1999-2000.

b. Storm Drain:

i. FES 1, FES 2, CB 2 through CB 16, DI 2, DI 3, and the existing storm drain system located on the old plant site downstream of DI 3 to its discharge location. Note, structure numbering from *City of Hendersonville Wastewater Facilities* "Reference Drawings" Sheets G-12 and G-13 prepared by Willis Engineers, dated 1999-2000.

c. Potable Water:

i. Existing 6" water main along the north side of Balfour Road within the extents of the WWTF property
ii. Existing 6" water main crossing Balfour Road to the south to serve the Biosolids Facilities from the connection with the 6" water main on the north Side of Balfour Road to the Biosolids Facilities.
iii. Existing 6" and 2" water lines within the WWTF site from the connections to the 6" water main along Balfour Road to each of the two water meters on site at the Administration Building and Utility Building.

d. Plant Water (Non-Potable Water):

i. All existing Plant Water lines on site.

e. Power:

i. Ductbank "I" from the existing switchgear to the Influent Pump Station
ii. Ductbanks "A" and "AQ" from the existing switchgear to PHH3
iii. Ductbank "B" from the existing switchgear to the Blower Building
iv. Ductbank from Blower Building to Screening and Grit Collection
v. Note, facility numbering from *City of Hendersonville Wastewater Facilities* "Reference Drawings" Sheets E-1 and E-2 prepared by Willis Engineers, dated 1999-2000.

f. Communications:

i. CHH1 to CHH4

ii. CHH4 to Influent Pump Station (CTCI)
iii. CHH1 to CHH2
iv. CHH2 to Blower Building (CTCB)
v. CHH2 to CHH3
vi. CHH3 to Administration Building (CTCA)
vii. Note, facility numbering from *City of Hendersonville Wastewater Facilities* "Reference Drawings" Sheets E-1, E-3, and E-46 prepared by Willis Engineers, dated 1999-2000.

g. Other

i. Gas, telecommunications, and other utilities on site as marked by SUE.

5. Perform 3D laser scanning of the existing Blower Building and the existing Influent Pump Station to collect existing dimensional data for the existing structures and document as-built conditions for the purposes of design. McKim & Creed will utilize the 3D scans of the existing structures to develop base drawings with sufficient accuracy to allow completion of engineered design drawings for the specific infrastructure designs described by this agreement. The scope of 3D scanning shall include:

a. All interior and exterior areas of the Blower Building to 5-feet outside the building footprint.
b. All blower discharge piping from underneath the Blower Building canopy to the Aeration Basins.
c. All interior and exterior areas of the Influent Pump Station to 5-feet outside the building footprint, excluding the interior of the existing wet well.
d. Deliverables in Autodesk Revit format.

2.2 Design Subsurface Utility Engineering (SUE) Services

McKim & Creed will coordinate with our SUE subconsultant Stewart to provide SUE services as described below:

1. Provide SUE Level B and A services to determine horizontal and vertical locations of existing utilities throughout the existing WWTF. Utilities expected to be located those described in Section 2.1 above.
2. SUE Level A services is based on providing up to ten (10) test holes to locate critical underground infrastructure at the existing WWTF site for integration of the new facility design with the existing infrastructure. It is assumed that all Level A test holes will be completed in one (1) trip with a duration of up to three (3) days.

3. The subsurface utilities will be identified with inverted spray paint and flagging using the following color code:

    a. Red = Electric
    b. Blue = Water
    c. Purple = Non-Potable Water
    d. Orange = Telecommunications
    e. Yellow = Natural Gas
    f. Green = Sanitary Sewer
    g. White = Unknown utility

4. SUE services will be performed in accordance with the standards as set forth by the American Society of Civil Engineers in publication CI/ASCE 38-02 – Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data.
5. Horizontal and vertical locations of located utilities will be incorporated into the design drawings.

2.3 Geotechnical Investigations

McKim & Creed will coordinate with our geotechnical subconsultant, S&ME, to provide a limited geotechnical investigation of the subgrade conditions to provide data needed to design structural foundations. The geotechnical investigations will include:

1. Explore subsurface conditions by performing soil test borings:

    a. Two (2) soil test borings in the area south of the existing Influent Pump Station to depths of 50 feet, including rock coring if rock is encountered.
    b. Two (2) soil test borings in the area south of existing Aeration Basin No. 1 between the Aeration Basin and site drive to depths of 40 feet.
    c. Two (2) soil test borings in the area north of the existing Covered Storage Area, south of Balfour Road to depths of 60 feet, including rock coring if rock is encountered.
    d. Two (2) soil test borings south of the existing Biosolids Facilities to depths of 25 feet, including rock coring if rock is encountered.

2. Laboratory testing will be performed to verify soil classification and obtain soil strength parameters for construction and structure foundation design recommendations.
3. A findings report will be prepared which will include the following:

    a. Site and exploration location plan
    b. Soil test boring logs and generalized subsurface profiles

c. Recommendations for foundation bearing for the structures and equipment
d. Recommendations for site preparation and construction of structural compacted fills
e. Recommendations for control of groundwater or drainage systems if necessary

2.4 Exploratory Excavation

McKim & Creed will coordinate with the City to identify areas for requested exploratory excavation to confirm the presence of abandoned structure foundations on the "old plant site" that may impact the construction of the proposed improvements. Exploratory excavation is assumed to be performed by the City at the locations requested by McKim & Creed. Exploratory excavation is expected to be limited to test pits no larger than 5 feet wide, 5 feet long, and 5 feet deep, each, to confirm the presence of abandoned structures below grade. Existing utilities will be located per item 2.2 above prior to any requested excavation. McKim & Creed will coordinate exploratory excavation with our geotechnical subconsultant, S&ME, to allow witnessing of the excavations to view and document subsurface geotechnical conditions. Exploratory excavations will be scheduled prior to geotechnical soil borings as described in item 2.3 above to avoid potential impacts with abandoned structure foundations. McKim & Creed makes no warranties or guarantees, express or implied, that all existing below grade utilities will be located, and McKim & Creed shall not be held liable for any damages resulting from exploratory excavation performed by the City.

2.5 Flood Mitigation Analysis

McKim & Creed will perform a flood mitigation analysis for the WWTF site to evaluate potential relocation of existing infrastructure onsite, elevation of existing infrastructure, or other improvements to the WWTF to improve its resiliency against flood damage. Recent flooding caused by Hurricane Helene resulted in the loss of operation of the City's WWTF for an extended period. Recurring flooding poses a significant threat to the WWTF's ability to maintain operations and protect water quality downstream. The intention of this analysis is to identify potential improvements that will help the WWTF continue to function during severe storms, protecting the health and safety of residents and preventing contamination of local creeks and streams. McKim & Creed will evaluate the following potential hazard mitigation improvements under this task:

1. Relocation, elevation, or protection of the WWTF's main electrical power distribution equipment including the utility transformer, switchboards, switchgear, and emergency generator.
2. Relocation, elevation, or protection of critical electrical and controls equipment within the existing Administration Building, Influent Pump Station, Blower Building, Recycle Pump Station, and Utility Building.

3. Replacement of existing mechanical equipment and instrumentation within the Recycle Pump Station with equipment rated for submersion.
4. Construction of flood walls and/or removable flood barriers, or installation of flood doors to protect the existing Administration Building basement and Recycle Pump Station dry pit.

McKim & Creed will identify and evaluate alternatives for the potential improvements listed above. A workshop meeting will be held with the City to review the potential alternatives identified and select basis of design alternatives for the development of detailed designs. Preliminary layouts, descriptions, and cost estimates will be prepared for each alternative. Class 4 AACE engineer's opinion of probable construction costs will be prepared for each alternative. McKim & Creed will prepare a separate Flood Mitigation Preliminary Engineering Report to document the findings of the alternatives analysis and provide recommendations. A review workshop meeting will be held with the City to review the Flood Mitigation Preliminary Engineering Report and receive comments. The Flood Mitigation Preliminary Engineering Report will be finalized after the review workshop and receipt of City review comments.

It is assumed that the detailed design of any flood hazard mitigation improvements is not included in this scope of work and may be provided by McKim & Creed through the Unallocated Project Budget task with the City's written approval, or through the execution of an amendment to this Agreement.

2.6 Basis of Design Report

McKim & Creed will prepare a Basis of Design Report which will include the following tasks:

1. Develop Design Influent Loading Criteria: Review the results of the special sampling campaign performed by the City and compare the results to the historical influent monitoring data to establish design influent loading criteria and updated influent load peaking factors.
2. Determine Design Peak Hour Flows: Review and update the City's wastewater collection system model to include the latest flow projections, collection system improvements, and future planned improvements. This task is assumed to include the following:

    a. The City's existing collection system model prepared in Innovyze InfoSewer will be converted for use and further development in Innovyze InfoWorks ICM.
    b. McKim & Creed will update the City's collection system model to include improvements made to the collection system since the last model update, and include future planned improvements to the collection system through the planning horizon of 2045. It is assumed that the City will provide McKim & Creed with information related to any recently

completed improvements since the last model update along with additional future planned improvements to the collection system through 2045.

c. McKim & Creed will update the model to include the latest future flow projections through the planning horizon of 2045, which were previously developed by McKim & Creed as a part of the WWTF Biosolids Thermal Dryer project.

d. Using recent rainfall data and corresponding flow monitoring data at the WWTF provided by the City, McKim & Creed will validate the calibration of the model's wet weather parameters to characterize how well model simulated flows match actual flows observed in the system. The intent of this task is to confirm that the model continues to provide a reasonably accurate wet weather response for the establishment of design parameters for the WWTF expansion. If this validation step determines that the model simulated flows significantly deviate from observed flows, it is assumed that existing wet weather parameters may be adjusted to better represent current conditions at the WWTF. Note these adjustments will not evaluate upstream meters and the resulting parameters should not be used for modeling of the overall collection system. Alternatively, additional services may be provided by McKim & Creed to recalibrate the model through the execution of an amendment to this Agreement that may consider upstream flow meters to update model parameters for discrete sewer basins.

e. The updated collection system model will be utilized to establish design storm response hydrographs at the WWTF for the 2-year and 10-year design storms at current, 6.0 MGD design, and 2045 conditions. The results from the updated model for the 2-year and 10-year storm events at current and future conditions will be reviewed with the City. The design storm condition and design peak hourly flow rate will be established for unit process sizing and hydraulic design. It is assumed that the current design storms established in the model will continue to be used for this task.

f. The findings of this task will be summarized in the Basis of Design Report.

3. Condition Assessment of Existing Structures and Equipment: Conduct a condition assessment of the existing Influent Pump Station, Screening and Grit Removal, Aeration Basins, Blower Building, Secondary Clarifiers, and Tertiary Filter No. 2 to update and expand upon the condition assessments included in the WWTF Master Plan. The scope of the condition assessments will include:

a. Review of existing structures' cast-in-place reinforced concrete slabs, walls, vertical and horizontal structural members, supporting beams, CMU walls, fascia, and other exposed structural components to identify repairs or modifications needed to ensure extended service life of the existing facilities intended to remain. The scope of this review is limited to visual or observable issues and does not include non-destructive testing or concrete coring.

b. Review of existing power distribution equipment to identify potential reuse of existing power distribution feeders, duct banks, and equipment, and identify modifications and improvements needed to power the new equipment and systems required for the project. Emphasis will be placed on the following:

    i. Review of the power distribution to the existing Influent Pump Station to identify opportunities for retrofitting to serve the new Influent Screening and Influent Pump Station facilities.

    ii. Review of the power distribution to the existing Blower Building and blower equipment to ensure power distribution feeders and equipment is adequately sized for the replacement of the existing blowers. The Blower Building will also be reviewed to identify potential mounting locations for new variable frequency drives that may be required to be mounted separately from the new blowers. Note, some blower technologies that will be considered for replacement of the existing blowers include variable frequency drives mounted within the blower enclosures.

c. Review of existing controls and SCADA communication systems to identify modifications necessary to accommodate new equipment, including review of the WWTF's existing fiber optic (FO) network, controls termination cabinets, instrumentation, and other associated SCADA equipment and hardware.

4. Headworks Replacement Alternatives Evaluation: Perform an evaluation of alternatives for replacement and expansion of the headworks processes including equipment alternatives and site layout alternatives. This scope of work assumes that the existing headworks will be replaced with new influent screening upstream of influent pumping including screenings washing and compaction, a new submersible influent pump station, new vortex grit removal equipment including grit washing and dewatering, an in-line diurnal flow equalization tank, and an off-line wet weather flow equalization tank. McKim & Creed will evaluate preliminary design concepts to replace the existing headworks for the increased design capacity. The preliminary design concepts will be reviewed with the City

to determine the basis of design equipment and site layout selections. The scope of the alternatives evaluation will include:

a. Comparison of location alternatives for the proposed influent screening, influent pump station, grit removal, and flow equalization facilities. Siting alternatives will be developed to identify the location that presents minimal impacts to existing utilities and structures, provides space for future expansion, and minimizes constructability issues. It is assumed that a maximum of three (3) siting alternatives will be developed for comparison. Preliminary site layouts will be reviewed with the City for selection of the basis of design site layout.
b. Review of potential opportunities for retrofitting of the existing influent pump station structure to house new screening equipment, electrical gear, or other beneficial reuse to limit construction cost.
c. Comparison of multi-rake mechanical bar screen equipment alternatives for influent screening.
d. Comparison of equipment alternatives for grit removal including mechanically induced vortex grit removal equipment and stacked tray grit removal equipment.
e. Comparison of flow equalization tank construction methods including circular prestressed concrete tanks, cast-in-place reinforced concrete tanks, and a common-wall compartmentalized cast-in-place reinforced concrete tank.

5. Blower Building Improvements: Perform an evaluation of alternatives for replacement of the existing multi-stage centrifugal blowers with new blowers capable of meeting the design criteria for the 6.0 MGD design capacity, improved energy efficiency, improved turndown, and improved process control. Alternatives to be reviewed will include hybrid blowers, high speed turbo blowers, integrally geared turbo blowers, and pairings of multiple blower technologies as applicable. The comparison of improvement alternatives will consider the net present value of equipment life cycle capital and O&M costs, constructability, system performance and energy efficiency, equipment turndown, required building improvements, and required air header improvements.
6. Aeration Basin Swing Zone Improvements: A new swing zone is assumed to be established in the initial diffuser zones of each aeration basin to allow continued operation with anoxic conditions at the head of each basin with sufficient mixing energy to ensure thorough mixing. McKim & Creed will evaluate design parameters for mixing requirements and determine preliminary design concepts to install mixing equipment to establish dedicated swing zones for improved operational control.

7. Mixed Liquor Distribution Box Improvements: McKim & Creed will evaluate and develop preliminary design concepts for the rehabilitation or replacement of the existing Mixed Liquor Distribution Box to provide adequate isolation of flow to each secondary clarifier. This scope of work assumes that a new Mixed Liquor Distribution Box will be required. Alternatives for rehabilitation or replacement will be developed and presented to the City for selection of the basis of design improvements.
8. Secondary Clarifier Improvements: Prepare recommendations for concrete crack and surface repairs to the existing secondary clarifier effluent launders, installation of protective coatings to the secondary clarifier effluent launders to protect against corrosion and algal growth, and installation of density current baffles in each secondary clarifier to improve clarifier performance. This scope of work assumes that the existing secondary clarifier effluent launders will require concrete repairs consisting of limited repairs to existing reinforcing, installation of epoxy modified repair mortars to rebuild effluent launders to original lines and grade, and installation of a 100% solids high-build epoxy coating within the effluent launders. This scope of work also assumes that new modular FRP density current baffles will be installed within each secondary clarifier.
9. Tertiary Filter No. 2 Replacement: Coordinate with Aqua-Aerobic Systems, Inc. to request design information and budgetary estimate for replacement of Tertiary Filter No. 2 with a new AquaDiamond cloth media filtration system matching the existing AquaDiamond Tertiary Filter No. 1. Identify sizing of a new pre-engineered metal building canopy to be constructed over the existing Tertiary Filter structure to protect the tertiary filters from algal growth. This scope of work assumes that the new PEMB canopy over the filters will include an electric driven bridge crane, weather resistant low bay lighting fixtures, and a lightning protection system to ensure ease of filter equipment maintenance.
10. Process/Equipment Alternative Site Visits: McKim & Creed will coordinate and attend site visits to other wastewater treatment facilities throughout NC, SC, VA, TN, and/or GA with the City to observe and evaluate process and equipment installations at other facilities that may be considered for the WWTF 6.0 MGD Expansion and Improvements project. It is assumed that up to three (3) separate site visits will be conducted with the City, each consisting of a single day trip including no more than 500 travel miles per trip.
11. Conduct Process/Equipment Selection Workshops: Meet with the City to review the findings of the alternatives analyses, discuss, and receive owner input on the unit process and equipment selections. It is assumed that two (2) separate process/equipment selection workshops will be attended prior to the submittal of the draft Basis of Design Report.
12. Process Design Computations: Develop process design computations for unit treatment processes.

13. Select and Size Auxiliary Equipment: Develop preliminary electrical and SCADA systems.
14. Basis of Design Report Preparation and Submittal: Prepare the Basis of Design Report including the information, findings, and recommendations developed from the tasks described above. The Basis of Design Report will be prepared in accordance with NCDEQ DWI Clean Water State Revolving Funds (CWSRF) guidelines and requirements for the preparation of an Engineering Report/Environmental Information Document (ER/EID), if applicable subject to project funding requirements. The Basis of Design Report meeting ER/EID requirements will be submitted to NCDEQ DWI for review and comments, if applicable. Comments received from NCDEQ DWI will be incorporated and a final Basis of Design Report will be prepared and submitted.

    a. The project is assumed to qualify for a Categorical Exclusion by Review (CER) as the basis of the Environmental Information Document, as the current facility NPDES permit includes compliance requirements for the planned design flow tier of 6.0 MGD. If an EA is required, it will be prepared as additional services and the EA will be used as the EID.

2.7 30% Preliminary Design

McKim & Creed will develop the 30% Preliminary Design, which will consist of the following tasks:

1. Process Flow Diagram: Prepare a system schematic and flow diagram for the proposed WWTF Expansion and Improvements
2. Site Plan: Prepare a preliminary site plan showing the location of major treatment units, structures, and yard piping on the site.
3. Electrical: Prepare preliminary sizing, one-line diagrams and/or schematics for electrical design of the proposed equipment.
4. Preliminary Engineer's Opinion of Probable Construction Cost: Prepare a preliminary construction cost opinion using the various preliminary design documents to improve the accuracy of the initial, conceptual construction cost opinion.
5. Submit Preliminary Design Documents for Review: Compile and submit the Basis of Design Report, 30% design drawings, and cost opinion to the City for review and approval as part of the 30% stage of design completion. Technical specifications are not included as part of the 30% preliminary design submittals.
6. Conduct Workshop Meeting to Review 30% Submittal with City: Meet with the City staff to review, discuss, and receive owner input on the 30% preliminary design submittals.
7. Revise & Address City Comments on 30% Submittal: Revise the appropriate preliminary design documents (as necessary within the original scope of the

Project) to address the City's 30% design review comments. The Basis of Design Report will be finalized and included as part of the Authorization to Construct (ATC) application package to be submitted at final design.

2.8 Summary of Preliminary Engineering Project Meetings:

1. Project Kickoff Meeting: One (1) virtual workshop with City staff to review the project scope, schedule, critical drivers, and primary objectives.
2. Process/Equipment Selection Workshops: Two (2) virtual workshops with City staff to review process/equipment alternatives to obtain concurrence on basis of design equipment selections and process layouts. Process/equipment alternatives to be reviewed include influent screening equipment alternatives, grit removal equipment alternatives, blower technologies and sizing alternatives, aeration basin swing zone improvements, mixed liquor distribution box improvements, and secondary clarifier improvements. The basis of design selections made during these workshops will be used to identify detailed design criteria, equipment sizing requirements, and site layout requirements.
3. Preliminary Evaluations Review Workshop: One (1) in-person workshop with City staff to review the following:

    a. Review findings of the flood mitigation analysis and identify improvements to be incorporated into the final design task.
    b. Review findings of wet weather modeling, receive feedback from City staff, establish the design storm hydrographs for EQ tank sizing, and establish the design peak hour flow rate for preliminary treatment equipment sizing.
    c. Review preliminary site layouts to establish the basis of design site layout. The basis of design site layout will be established based on the comments and feedback received from the City during this workshop.

4. Process/Equipment Alternatives Site Visits: Three (3) in person site visits as described in section 2.6.10 above.
5. Preliminary Design Review Workshop: One (1) in-person workshop to receive comments from City staff on the PER and 30% preliminary design submittal.

TASK 3: FINAL DESIGN

Upon receiving authorization from the City, McKim & Creed will proceed with the Final Design Phase, including the following efforts:

3.1 60%, 90%, Final - Issued for Review, and Issued For Bids

1. Prepare 60%, 90%, Final – Issued for Review, and final Issued For Bids design drawings and construction documents based on a single prime construction contract. The final design documents will generally include the following:

    a. General
        i. Cover
        ii. Sheet Index
        iii. Legends and Abbreviations
        iv. Piping Schedule
        v. Process Flow Diagram
        vi. Hydraulic Profile
    b. Civil
        i. Overall Site Layouts and Existing Conditions
        ii. Erosion & Sedimentation Control Plans, Phasing, and Details
        iii. Grading & Drainage
        iv. Yard Piping Key Sheet and Zone Plans
        v. Yard Piping Plans & Profiles
        vi. Details
    c. Building
        i. Code Data Summary
        ii. Plans and Elevations
    d. Structural
        i. General Notes, Design Loads, Design Criteria, and Legends
        ii. Plans, Sections, and Details
        iii. Demolition/Decommissioning Plans, Sections and Details
    e. Process Mechanical
        i. Plans, Sections, and Details
        ii. Demolition/Decommissioning Plans, Sections, and Details
    f. HVAC
        i. Schedules, Plans, and Details
    g. Electrical
        i. General Notes, Legends, Abbreviations, and Symbols
        ii. Diagrams and Schedules
        iii. Power and Grounding Plans
        iv. Site Lighting Plans
        v. Building Power, Grounding, and Lightning Protection Plans
        vi. Details
    h. Instrumentation & Controls
        i. General Notes, Symbols, and Abbreviations
        ii. Network Architecture
        iii. Process & Instrumentation Diagrams
        iv. Security Plans and Details

2. 60%, 90%, Final Design – Issued for Review – Not for Construction, and Issued For Bid Design Submittals: Prepare and submit design drawings and construction documents at completion stages for review by the City at 60%, 90%, Final Design – IFR – NFC (permit submittal), and final Issued For Bid design stages.
3. Workshop Review Meetings: McKim & Creed will conduct formal workshop review meetings with the City's staff at the 60% and 90% design stages to provide status updates, review project submittal documents, and receive City comments on project submittal documents.
4. Prepare Opinions of Probable Cost: Updated opinions of probable cost will be prepared for the project to be submitted at the 60%, 90%, Final Design – IFR – NFC, and final Issued for Bid design submittal stages.
5. Prepare Technical Specifications: Technical specifications will be prepared for the construction contract. The documents shall include a comprehensive table of contents followed by technical specifications to be included in the Construction Documents.
6. Bidding & Contract Documents: Prepare appropriate bid and contract documents for the construction contract based on current City of Hendersonville standards and requirements.
7. Final Design – Issued for Review – Not for Construction Submittal: McKim & Creed will prepare and submit signed and sealed Final Design – IFR – NFC documents to permitting agencies based upon City review comments from the 90% design submission. These submittal documents will also be submitted to NCDEQ DWI as the "Bid and Design Package" per project funding requirements, if applicable.
8. Issued For Bid Submittal: Upon completion of the 90% submittal and responses to the City's comments and concerns on the 90% submittal, and following the project permitting process, McKim & Creed will finalize contract documents for procurement. This task will include the following:

    a. Incorporate permit approval conditions in contract documents
    b. Prepare the final Engineer's Opinion of Probable Construction Cost
    c. Prepare recommended schedule for bidding and construction
    d. Submit final Issued For Bid contract documents to the City

3.2 Quality Assurance and Quality Control

The Consultant will include an in-house quality assurance/quality control (QA/QC-Value Engineering Review) review with staff members not involved in the project. The QA/QC review will be entirely separate from the normal in-house reviews conducted by the project team and the City's staff. The QA/QC review will be conducted after the 30%, 60%, and 90% design submittals and its findings presented to the design team along with comments from the City's 30%, 60%,

and 90% design review. Prior to bid, a final QA/QC will be conducted for the Contract Documents.

TASK 4: PERMITTING

The Consultant will assist the City with submitting all permit applications required for the project. The Consultant will prepare the applications and following execution by the City of Hendersonville, will submit the applications to the appropriate agency for approval. The Consultant will address comments from the agencies and assist the City with negotiations concerning permitting issues that may arise. The cost of all application fees will be paid for by the Consultant and will be reimbursed by the City. The permits required for this project are anticipated to include the following:

4.1 NPDES Authorization to Construct

The NPDES Authorization to Construct (ATC) permit will be applied for prior to advertisement for bids. The Final Design – IFR – NFC documents will be submitted to NCDEQ Division of Water Resources NPDES permitting unit for review and approval along with the permit application and all associated documentation required. The current permit application fee is $1,000.

4.2 NPDES Minor Permit Modification

A minor modification to the current NPDES permit will be required to modify the WWTF description prior to the completion of the expansion and improvements to reflect the new facilities. McKim & Creed will assist the City in requesting the minor permit modification prior to the completion of construction. There is currently no application fee for a minor permit modification.

4.3 Erosion & Sedimentation Control Plan

It is expected that site disturbance required for the construction of the WWTF 6.0 MGD Expansion and Improvements project will exceed one (1) acre of land area, therefore an erosion and sedimentation control plan must be prepared and submitted to the NCDEQ Asheville Regional Office Division of Energy, Mineral, and Land Resources for review and approval. McKim & Creed will prepare the erosion and sedimentation control plan, perform all calculations, assist the City in the preparation of the Financial Responsibility & Ownership Form, and submit all required documentation to NCDEQ through the NCDEQ AccessDEQ portal. McKim & Creed will also assist the City in submitting an electronic Notice of Intent (e-NOI) form to receive a Certificate of Coverage under the NCG01 permit. It is assumed that the City will pay the fees associated with the e-NOI and Annual Permit Fees.

4.4 NCDOT Encroachment Agreement

McKim & Creed will assist the City in preparing and submitting an encroachment agreement application, including detailed encroachment drawings and supporting documentation per NCDOT requirements, for utilities crossing Balfour Road (SR 1508). The design of the WWTF 6.0 MGD Expansion and Improvements project is expected to require multiple utilities crossing Balfour Road including raw sewage to and/or from new headworks and flow equalization facilities, potable water, non-potable water, and communications. It is assumed that one encroachment agreement application will be submitted to include all proposed utilities crossing Balfour Road required for the project.

4.5 City of Hendersonville Floodplain Development Permit

It is expected that a portion of the new facilities required to be constructed as part of the WWTF 6.0 MGD Expansion and Improvements project may be located and require fill within the Zone AE Special Flood Hazard Area (SFHA) per FEMA FIRM Panel 9660. Per the City of Hendersonville Flood Damage Prevention Ordinance, a Floodplain Development Permit is required for any development activities located within the SFHAs. McKim & Creed will prepare the application package for the Floodplain Development Permit and submit the application package to the City Floodplain Administrator for review and approval. It is assumed that no fill or new structures will be placed within areas designated as floodways, therefore it is assumed an engineering study is not required to determine effects of the proposed project on the flood-carrying capacity of the watercourse(s) and the effects to properties located both upstream and downstream. The current permit application fee is $300.

4.6 City of Hendersonville Post-Construction Stormwater Permit

It is expected that a post-construction stormwater permit will be required for the project since greater than one (1) acre of site disturbance is expected. McKim & Creed will prepare and submit a Post-Construction Stormwater Management Plan per the requirements of the City of Hendersonville Stormwater Ordinance and the NCDEQ Stormwater Design Manual. During design, McKim & Creed will consult with the City Stormwater Administrator to review a concept plan for the post-construction stormwater management system to be utilized in the project. It is assumed that the concept meeting with the City Stormwater Administrator will be held virtually. McKim & Creed will prepare the materials required for the concept plan and consultation meeting as described in the City Stormwater Ordinance. Information obtained from the consultation meeting will be utilized to finalize detailed design and prepare the permit application package. The current permit application fee is $500.

TASK 5: BIDDER PREQUALIFICATION ASSISTANCE

The Consultant will assist the City in conducting a prequalification process for potential bidders to develop a list of qualified general contractors for the project. The prequalification process will adhere to the City's standard processes. Specific tasks include the following:

1. Assist in the preparation of an Invitation to Prequalify for Bidding advertisement for the project.
2. Provide recommendations to the City to determine criteria for projects to be considered similar in size and nature to the WWTF 6.0 MGD Expansion and Improvements Project.
3. Review the list of prequalification requirements with City staff and incorporate suggested revisions to the list that may be beneficial to the project.
4. Place formal advertisement of the prequalification package in the agreed upon advertisement media. McKim & Creed will pay for all fees associated with advertisement of the prequalification package, which will be reimbursed by the City.
5. Issue electronic prequalification documents to prospective bidders via the City's QuestCDN on-line advertisement and bidding service.
6. Schedule and conduct a virtual pre-submittal meeting, receive questions from prospective attendees, prepare and distribute minutes.
7. Respond to prospective bidder inquiries and prepare Addenda as required.
8. Receive prospective bidder submittals on specified and appropriate closing date.
9. Review prospective bidder documentation and request clarifications to determine if prospective bidder has met the requirements of the prequalification solicitation.
10. Review the list of proposed prequalified bidders with the City and make any final edits and revisions to the list of prequalified bidders. McKim & Creed will work jointly with City staff to assist in developing the prequalified bidders list; however, the City shall be responsible for the final determination of which bidders will be deemed as prequalified. Additional assistance or responses to protests from prospective contractors is not included in this scope of work and is considered an additional service. If required, additional services will be provided utilizing the Unallocated Project Budget phase upon written authorization from the City, or through the execution of an amendment to this Agreement.
11. Notify all prospective bidders of the final approved list of pre-qualified bidders.

TASK 6: SOLE SOURCE EQUIPMENT PROCUREMENT ASSISTANCE

It is assumed that the tertiary filter equipment for the replacement of Tertiary Filter No. 2 will consist of an AquaDiamond cloth media filtration system manufactured by Aqua-Aerobic Systems, Inc. to match the existing AquaDiamond Tertiary Filter No. 1. The Consultant will assist the City in the sole source procurement of the AquaDiamond tertiary filter equipment by performing the following:

6.1 Sole Source Justification Letter

The Consultant will prepare a sole source justification letter documenting the justification for non-competitive procurement per NC G.S 143-129, including the final signed and sealed Basis of Design Report and other supporting documentation as required to document the applicability of

the exemption listed in NC G.S. 143-129(e)(6)(iii), for purchases where standardization or compatibility is the overriding consideration.

6.2 City Council Agenda Item Preparation

The Consultant will assist the City in preparing the City Council Agenda Item for approval of the sole source procurement as follows:

1. The Consultant will request a firm price proposal from the Aqua-Aerobic Systems, Inc. manufacturer's representative based on the final design documents.
2. The Consultant will coordinate with the City and the manufacturer's representative to establish agreed upon purchase contract terms and conditions.

It is assumed that no other process equipment, systems, or materials will require sole source procurement. If other process equipment, systems, or materials are determined to require sole source procurement these services will be provided as additional services using the Unallocated Project Budget with prior written approval from the City, or through the execution of an amendment to this Agreement.

TASK 7: BIDDING AND AWARD PHASE

The bid documents will consist of the plans (drawings) and specifications for the WWTF 6.0 MGD Expansion and Improvements Project. The bid documents will be used by contractors to prepare bids for the work detailed on the plans and described in the specifications. The bid documents will include specifications and contractual requirements associated with pre-purchased equipment as applicable. Other tasks to be performed by the Consultant will include preparation of a final opinion of probable construction cost.

Our scope of work for Bid Phase services is premised on our understanding that McKim & Creed will be responsible for managing the bids and contracting process for one (1) single prime construction contract.

Bidding and Award Phase tasks performed by the Consultant will include:

1. Provide necessary information to the City for the preparation of the project bid advertisement.
2. Issue electronic bid documents to plan rooms and the City's QuestCDN on-line advertisement and bidding service.
3. Conduct the pre-bid conference and prepare and issue minutes.
4. Assist in answering bidders' questions concerning elements designed by McKim & Creed and prepare technical information as necessary for inclusion in addenda if required.
5. Prepare addenda as appropriate to interpret, clarify, or further define the Contract Documents. Addenda will be issued by McKim & Creed upon the City's approval.
   a. It is assumed that up to three (3) addenda will be prepared and issued.

6. Consult with and advise the City to determine the acceptability of substitute materials and equipment proposed by bidders when substitution prior to the award of contracts is allowed by the contract documents.
7. Attend and/or conduct the bid opening.
8. Review bid packages and prepare the certified bid tabulations.
9. Provide written letter of recommendation of award to the City.
10. Assist the City in the contract award process.
11. Compile and submit the Project Bid Information package to NCDEQ DWI per project funding requirements, if applicable.
12. Prepare and issue conformed documents to incorporate addenda issued during the bidding process into the contract documents to be used by the contractor for construction.
13. Provide for three (3) sets of conformed documents for execution for the City, Engineer, and Contractor.

The Bidding and Award Phase will conclude upon the City's issuance of a notice of award to the selected construction contractor. If a re-bid is required, this effort shall be considered additional services. If required, additional services will be provided utilizing the Unallocated Project Budget phase upon written authorization from the City, or through the execution of an amendment to this Agreement.

TASK 8: UNALLOCATED PROJECT BUDGET (PHASE 1)

Task 8 is included as a contingency for unforeseen conditions or changes in the scope of work. McKim & Creed will not utilize or expend effort on Task 8 without prior written authorization from the City of Hendersonville. The City may request McKim & Creed to perform the following services upon written request if deemed necessary. The following list of services is not an all inclusive list of services that may be performed under this task.

8.1 EPA WIFIA Letter of Interest and Funding Application

If requested by the City, McKim & Creed will assist the City in applying for funding through the EPA WIFIA program. If requested, services provided under this task will follow the EPA WIFIA Program Handbook (https://www.epa.gov/wifia/wifia-program-handbook) and will consist of the following steps:

1. McKim & Creed will assist the City in preparing and submitting the Letter of Interest (LOI) and all associated attachments. It is assumed that the LOI will be submitted after the EPA publishes the Notice of Funding Availability (NOFA) in Fiscal Year 2024, which is expected to be released in September 2024.
2. If the project is selected by the EPA based on the WIFIA program's review of the LOI, and the City receives an Invitation to Apply, McKim & Creed will assist the

City in preparing and submitting a complete application package, including the following:

a. Key applicant and loan information
b. Applicant background information
c. Financing plan
d. Federal requirements compliance documentation
e. Contact information
f. Certifications
g. Application and Credit Processing Fees

    i. The application fee for the EPA WIFIA program is $25,000 for projects serving communities of fewer than 25,000 people, and $100,000 for all other applicants. The application fee can be financed by the WIFIA loan as eligible project costs. It is assumed that the City will pay the application fee directly to the EPA WIFIA program.
    ii. The Credit Processing Fee is payable upon the execution of the loan agreement and the WIFIA program estimates these costs at between $100,000 to $300,000 per applicant, a portion of which may be waived at the discretion of the WIFIA program. The Credit Processing Fee can be financed by the WIFIA loan as eligible project costs. It is assumed that the City will pay the Credit Processing Fee directly to the EPA WIFIA program.

8.2 Detailed Design of Flood Mitigation Improvements

If requested by the City, McKim & Creed will prepare detailed design documentation for the basis of design flood mitigation improvements identified in Task 2, Section 2.5 – Flood Mitigation Analysis. Detailed design information for the basis of design flood mitigation improvements will be incorporated into the final design documents to be prepared under Task 3 for the construction of all improvements herein under one (1) single prime construction contract. Flood mitigation improvements to be designed under this task may include elevation, relocation, or hardening/protection of existing critical infrastructure, or replacement of existing infrastructure and/or equipment to improve resiliency against recurring flood damage.

PHASE 2 CONSTRUCTION SERVICES

TASK 9: CONSTRUCTION PHASE SERVICES

9.1 Construction Administration

Our scope of work for Construction Administration services assumes one (1) single prime construction contract over an agreed upon construction contract period. The construction period will be based on an agreed upon duration to reach substantial completion and an additional two (2) months to reach final completion. If the contract duration extends beyond the agreed upon construction period, or is delayed, McKim & Creed shall be entitled to adjustment of the scope and fee associated with this task. If required, additional services associated with construction administration will be provided utilizing the Unallocated Project Budget phase upon written authorization from the City.

Our construction administration services will include:

1. Conduct the pre-construction meeting on-site at the WWTF and issue meeting minutes.
2. Schedule and hold regular monthly construction progress meetings with the City and contractor. These meetings are assumed to be held on-site at the WWTF, or virtually via Microsoft Teams. Prepare and distribute construction meeting minutes to document discussions and responsibilities.
3. Receive, log, track and perform shop drawing reviews. Compare shop drawings to the plans and technical specifications, note deficiencies or compliance issues, and issue comments to the contractor within 15 business days of receipt.
4. Receive, log, track, & respond to contractor's written requests for information or clarification of the contract documents.
5. Provide clarification of requirements as indicated on the construction plans and specifications if/when questions arise during construction.
6. Receive, log, track, & respond to notifications from contractor of changes to work conditions and requests for change orders. McKim & Creed will review the contractor’s requests for change orders to ensure they are complete, all supporting documentation has been provided, all calculations are correct, and the proposed changes in contract times and contract price are reasonable. McKim & Creed’s review and decision for each request for change order will be documented in a written letter with all supporting documentation addressed to the City. All approved change order requests will be coordinated with the funding agency for funding eligibility determination and approval in compliance with funding agency change order requirements.
7. Review materials testing for conformance to the specifications. This scope of work assumes that the City will provide for third party construction materials testing services as required by the Contract Documents.

8. Receive, log, track, & review contractor's monthly applications for payment and make recommendations for payment.
9. Conduct site visits with City staff as often as necessary to review project status, and confirm/certify that work is progressing in accordance with the approved construction documents.
10. Coordinating with NCDEQ during construction to facilitate site inspections, answer questions, and coordinate permit compliance requirements with the Contractor.
11. Attend system startup and commissioning and provide technical guidance and assistance to the City in support of the startup and commissioning process. This task includes coordination with the City, the Contractor, and equipment manufacturers to provide operator training on new equipment.
12. Schedule and conduct the substantial completion evaluation. Prepare the Engineer's Substantial Completion Certification and substantial completion punch list and submit to the City for concurrence, and work with the Contractor to ensure outstanding work is completed.
13. Schedule and conduct the final completion evaluation. Prepare the final completion punch list and submit to the City for concurrence, and work with the Contractor to ensure work is fully complete.
14. After the Contractor has satisfactorily completed the final punch list, submitted all test results, as-built redlined drawings, O&M manuals, final application for payment, consent of surety to final payment, and release of waivers and claims, McKim & Creed will prepare the final adjusting change order and final recommendation for payment. Once the final adjusting change order is fully executed, McKim & Creed will issue the final recommendation for payment establishing the final completion of the construction contract.

9.2 Construction Observation

McKim & Creed will provide a Resident Project Representative (RPR) who is well-qualified and experienced in constructing municipal water and wastewater treatment facilities. The scope of work assumes an average of 40 hours per week for the agreed upon construction period. If the contract duration extends beyond the agreed upon construction period or is delayed, McKim & Creed shall be entitled to adjustment of the scope and fee associated with this task. If required, additional services associated with construction observation will be provided utilizing the Unallocated Project Budget phase upon written authorization from the City. McKim & Creed will provide the following services:

1. Preparation of daily reports for each day construction observation services are provided.
2. Maintain a photographic record during construction to document aspects of the construction process.

3. Document field conditions and maintain a record of the weather, Contractor's personnel on-site, Contractor's equipment on-site, and the specific work task(s) completed since the last site visit.
4. The RPR will immediately call the contractor's attention to work that is being completed that does not comply with the approved plans and specifications. Should the contractor fail to remedy the situation, then the RPR will immediately contact the Engineer.
5. The RPR shall confirm that Contractor as-built documents are continuously being kept up-to-date and being completed to the minimum standards of care.
6. The RPR shall review the Contractor's monthly pay requests to confirm that quantities are accurate and that lump sum percentages are representative of the current progress of lump sum work.
7. The RPR shall participate in monthly construction meetings and will assist the Engineer in responding to technical questions.
8. The RPR will participate in the substantial completion and final completion evaluations.

9.3 Special Inspections & Construction Materials Testing

McKim & Creed will provide for Special Inspections as will be required by the Henderson County Inspection Department. Construction materials testing will be performed in conformance with the Contract Documents and in general accordance with the applicable ASTM, AASHTO, and/or other industry standards, unless noted otherwise. Special Inspections will be performed in general accordance with Chapter 17 of the 2018 North Carolina Building Code. These services will include the following major Project components.

1. Soils
2. Cast-in-place concrete
3. Structural steel
4. Structural masonry

Reporting & Meetings:

1. Daily Reports: Daily Reports of the observations and tests performed will be distributed electronically to the City after review.
2. Interim Reports/Test Results: Compressive strength test reports and other laboratory results will be issued in electronic format via email, as applicable.
3. Pre-Installation Meetings: Attend pre-installation meetings which will be held for various scopes of work (concrete, steel, etc.) where requested and/or required.

TASK 10: POST-CONSTRUCTION SERVICES

Upon authorization from the OWNER, the ENGINEER shall perform the following post-construction services:

1. Record Drawings

   Our effort for Record Drawing preparation services is premised on the understanding that the contractor will be responsible for continuously maintaining the red-lined "as-built" markups on the approved construction drawings. McKim & Creed will utilize the red-lined markups provided by the contractor, along with "as-built" survey information provided by the contractor in conformance with the requirements of the construction contract and permit requirements, to prepare the final Record Drawings. Record Drawings will be submitted to the City upon completion. After City review and approval, digital copies (AutoCAD and PDF format) of the Record Drawings will be delivered to the City.

2. Permit Closeout Assistance

   McKim & Creed will assist the City in completing permit closeout requirements including submitting final as-built elevation certifications and record drawings to permitting agencies to satisfy permit requirements for project closeout. This effort is expected to include:

   a. Submittal of as-built information to the City of Hendersonville Floodplain Administrator per the requirements of the Floodplain Development Permit.
   b. Submittal of as-built information to the City of Hendersonville Stormwater Administrator per the requirements of the Post-Construction Stormwater Management Permit.
   c. Assist the City in coordinating a final site inspection with the NCDEQ Asheville Regional Office for the closeout of the Erosion and Sedimentation Control Plan. Upon receipt of NCDEQ's final inspection report and approval of permit closeout, McKim & Creed will assist the City in submitting the electronic Notice of Termination (e-NOT) form and Notice of Termination Certification.

3. Funding Agency Project Closeout Assistance

   McKim & Creed will assist the City in compiling and submittal the required project closeout documentation to the funding agency or agencies as required prior to final reimbursement to the City by the funding agency or agencies for project related costs. This will include compiling and submitting the following documentation to the City and/or funding agency or agencies:

a. Record drawings
b. O&M manuals
c. Test reports
d. Daily reports from the RPR
e. Approved shop drawings and submittals
f. Warranty information (both from contractor and manufacturers of equipment)
g. Release of Liens & Consent of Surety to Final Payment from Contractor
h. Spare parts inventory and list
i. Documentation of training sessions completed
j. Release/approval from NCDOT
k. Contact NCDEQ Asheville Regional Office to inform them of facility startup
l. Davis-Bacon certified payrolls, complete (if applicable)
m. AIS manufacturers' certifications, complete (if applicable)
n. Final adjusting change order
o. Funding agency's or agencies' project closeout checklist
p. Owner's Certification of Completion Form
q. Engineer's Certification of Completion Form
r. Fiscal Sustainability Plan (if applicable)

4. Warranty Period Assistance

McKim & Creed will assist the City with operational and warranty assistance on a time and materials basis as may be needed. Generally, the services will be as follows:

a. Provide for a mid-year warranty inspection with the City and the contractor to develop a warranty punch list and then review the completed work of the contractor to verify items have been corrected.
b. Provide for final warranty inspection with the City and the contractor at 11 months after substantial certification to develop a warranty punch list and then review the completed work of the contractor to verify items have been corrected.
c. Provide process support assistance and associated administrative support to assist with operational questions and optimization of the plant process.

TASK 11: UNALLOCATED PROJECT BUDGET (PHASE 2)

Task 11 is included as a contingency for unforeseen conditions or changes in the scope of work. McKim & Creed will not utilize or expend effort on Task 11 without prior written authorization from the City of Hendersonville.

III. COMPENSATION

McKim & Creed will perform the services outlined in this Exhibit A as indicated below. Services will be billed monthly on a percentage-completed basis.

Item	Fee	Fee Type
PHASE 1 – Design and Bid Services		
Task 1: Funding Assistance	$82,250.00	Fixed Fee
Task 2: Preliminary Engineering	$709,650.00	Fixed Fee
Task 3: Final Design	$1,222,200.00	Fixed Fee
Task 4: Permitting	$86,000.00	Fixed Fee
Task 5: Bidder Prequalification Assistance	$17,600.00	Fixed Fee
Task 6: Sole Source Equipment Procurement Assistance	$5,700.00	Fixed Fee
Task 7: Bidding and Award Phase	$92,700.00	Fixed Fee
Task 8: Unallocated Project Budget (Phase 1)	$150,000.00	Allowance
Total Estimated Fee (PHASE 1 ONLY)	$2,366,100.00	
PHASE 2 – Construction Services		
Task 9: Construction Phase Services	TBD	
Task 10: Post-Construction Services	TBD	
Task 11: Unallocated Project Budget (Phase 2)	TBD	
Total Estimated Fee (PHASE 2 ONLY)	**TBD**	

TBD = To be determined and provided for in a future amendment for Phase 2 services

IV. ANTICIPATED PROJECT SCHEDULE

The following is the estimated schedule for the scope outlined above:

Task	Anticipated Start Date	Anticipated Completion Date	Approximate Duration	Remarks
PHASE 1				
Notice to Proceed	March 2025	N/A	N/A	
BODR and 30% Design Submittal	March 2025	June 2025	3 months	BODR and 30% Design Concurrent
City Review and 30% Review Workshop	June 2025	July 2025	15 days	
60% Design Submittal	July 2025	October 2025	3 months	Submit preliminary plans to post-construction stormwater and floodplain development for preliminary review
City Review and 60% Review Workshop	October 2025	October 2025	15 days	
90% Design Submittal/Submit Permit Applications	October 2025	January 2026	3 months	
City Review and 90% Review Workshop	January 2026	February 2026	15 days	
Final Design – Issued for Review Submittal	February 2026	March 2026	1 month	Submit ATC, DWI Bid & Design Package, E&SC, Post-Construction Stormwater, and Floodplain Development Permits
Receive Permits	March 2026	May 2026	2 months	Expected approval timeline, subject to change
Bid Documents Submittal	May 2026	May 2026	1 month	Advertise for bids upon submittal
Advertise/Open Bids	May 2026	July 2026	2 months	
Evaluate Bids, Issue Notice of Award, and Contract Execution	July 2026	October 2026	3 months	Resolution of Tentative Award, DWI Bid Information Submittal, Authority to Award, Notice of Award, and Contract Execution
PHASE 2				
Construction NTP	TBD	TBD	TBD	

Construction Substantially Complete/Equipment Start-up	TBD	TBD	TBD	
Construction Final Completion	TBD	TBD	2 months	
Record Drawings Submittal	TBD	TBD	2 months	
Warranty Period Complete	TBD	TBD	1 year	1 year from Substantial Completion

Note: The schedule provided is approximate and may vary depending on City review, regulatory approval, equipment and material lead times, and unforeseen conditions.

V. ADDITIONAL SERVICES

If authorized in writing by the City, McKim & Creed shall furnish or obtain from others Additional Services of the types listed below. If required, additional services will be provided utilizing the Unallocated Project Budget phase upon written authorization from the City or through the execution of an amendment to this Agreement.

1. Expert witness or technical support concerning property surveying or engineering matters for which the Engineer has no direct liability.
2. Assistance with protests by prospective bidders associated with the City's prequalification process.
3. Easement mapping or easement surveys.
4. Providing for additional soil borings or geotechnical analyses beyond the identified scope of work.
5. Providing for detailed investigations and/or surveys for archeological sites, protected/threatened/endangered species of shellfish, fish, wildlife, and natural vegetation.
6. Providing for determining, evaluating, and assistance with contaminated soils for the project area.
7. Providing assistance for wetland mitigation.
8. Providing for assistance with easement acquisitions.
9. Preparing for, coordinating with, participating in and responding to structured independent review processes for construction management, cost estimating, value engineering and constructability reviews requested by the City and performing or furnishing services required to revise studies, reports, drawings, specifications, or other bidding documents as a result of such review processes.
10. Providing for any re-designs requested by the City after final design drawings have been approved.

11. Boundary or easement surveys for the wastewater treatment facility site.
12. Construction survey and staking.
13. Preparing for multi-prime contracts and bidding.
14. Development of design or bid documents to comply with alternate funding agencies or other funding mechanisms.
15. Engineer-led operator training on equipment, processes, or other miscellaneous training related to the existing or proposed facilities.
16. Assistance in connection with Bid protest, re-bidding, or renegotiating contracts for construction, materials, equipment, or services.
17. Preparing to serve or serving as a consultant or witness for the City in any litigation, arbitration or other dispute resolution process related to the project.
18. Other services performed or furnished by McKim & Creed not otherwise provided for in this Agreement. These services are to be identified as additional services for City approval prior to McKim & Creed performing the service.

VI. OWNER'S RESPONSIBILITIES

The following items shall be the responsibility of the City:

1. Provide McKim & Creed with all criteria and full information as to the City's requirements for the project, including design objectives and constraints, space, capacity and performance requirements, flexibility and expandability, and any budgetary limitations; and furnish copies of all design and construction standards which the City will require to be included in the Drawings and Specifications; and furnish copies of the City's standard forms, conditions and related documents for McKim & Creed to include in the Bidding Documents, when applicable.
2. The timely provision of all available information, data, reports, records, and maps to which the City has access and which are needed by McKim & Creed for the performance of the services provided herein.
3. Providing assistance and cooperation for McKim & Creed in obtaining any other needed material which the City does not have in its possession.
4. Making available the services of the City as may be necessary to obtain information as needed to perform the work program set forth in the Scope of Services.
5. The designation of a single representative who will be authorized to make necessary decisions required on behalf of the City and will serve to provide the necessary direction and coordination for the project.

6. Advise McKim & Creed of the identity and scope of services of any independent consultants employed by the City to perform or furnish services in regard to the project, including, but not limited to, cost estimating, project peer review, value engineering and constructability review.
7. Attend the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job-related meetings and Substantial Completion, final payment, and warranty reviews.

VII. MISCELLANEOUS PROVISIONS

1. Opinion of Probable Construction Costs: Engineer's opinions of probable construction costs are based on assumed labor costs and approximate quantities of material and equipment, and therefore is of a conditional character. The Engineer cannot and does not guarantee the cost of work to be performed by others since market or bidding conditions can change at any time and changes in the scope or quality of the project may affect estimates. The City waives and releases McKim & Creed from any loss, liability, or claim arising out of or in any way related to the Engineer's opinion of probable construction costs.
2. Fixed fee tasks are predicated on the Project proceeding in accordance with the indicated schedule. Should delays or suspension of activity in excess of ninety (90) days occur, the remaining fee balances will be subject to an equitable adjustment equivalent to the increase in the ENR Construction Cost Index over the period corresponding to the suspension of activity.

END OF EXHIBIT A