

City of High Point

*Municipal Office Building
211 S. Hamilton Street
High Point, NC 27260*



Meeting Agenda

Thursday, April 29, 2021

4:00 PM

3rd Floor Conference Room

Finance Committee

Britt Moore, Mayor Pro Tem, Chair

Committee Members:

Michael Holmes

Monica Peters

Victor Jones

Jay Wagner, Mayor (Alternate)

As part of the city of High Point's on-going COVID-19 mitigation efforts, in-person attendance was not allowed at this meeting. Instead, the meeting was live-streamed and the public was provided a link to listen to the meeting.
www.HighPointNC.gov/VirtualPublicMeeting.

FINANCE COMMITTEE - Mayor Pro Tem Britt W. Moore, Chair

CALL TO ORDER

PRESENTATION OF ITEMS

[2021-159](#)

Contract - Tetra Tech - Expansion of the Eastside WWTP

City Council is requested to award a contract to Tetra Tech in the amount of \$199,791.00 to provide professional monitoring and modeling services as part of the planning for the expansion of the Eastside wastewater treatment plant (WWTP).

Attachments: [1. Tetra Tech-EXPANSION OF EASTSIDE WWTP NPDES Support Services](#)

[2021-160](#)

Contract - Brushy Mountain Builders - Eastside WWTP, PTF Effluent Control Gates

City Council is requested to award a contract to Brushy Mountain Builders in the amount of \$299,000 for replacement of existing primary sluice gates at the Eastside Wastewater Treat Plant and to replace with stop logs that will allow the ability to control flow coming from the primary treatment facility (PTF).

Attachments: [2. EASTSIDE WWTP PTF EFFLUENT CONTROL GATES-Brushy Mountain Bu](#)

[2021-161](#)

Contract - PO Increase - Waste Management - Biosolids Disposal

City Council is requested to approve an increase with Waste Management in the amount of \$88,250. for the additional cost of biosolids disposal while the incinerator is off-line due to routine maintenance.

Attachments: [3. DISPOSAL OF BIOSOLIDS WASTE MANAGEMENT Increase PO](#)

[2021-162](#)

Contract - Fairfield Substation Equipment - Siemens Industry, Inc. - Siemans Energy - Electrical Power Products, Inc.

City council is requested to award (3) three contracts to purchase equipment to upgrade the existing Fairfield substation and increase the electric system's capacity.

Schedule I - Metalclad Switchgear Siemens Industry, Inc.
\$264,517.00

Schedule II - Circuit Breakers Siemans Energy \$353,200.00

Schedule III - Relay & Control Panels Electrical Power Products, Inc.
\$55,448.00

Attachments: [4. FAIRFIELD SUBSTATION UPGRADE](#)

[2021-163](#)

Ordinance - Budget Amendment - DRIVE High Point Foundation Grant

City Council is requested to approve a budget amendment to appropriate grant revenue in the amount of \$18,250. received from the DRIVE High Point Foundation for the exhibit rental fee and related costs for installing and promoting the exhibit at the High Point Museum.

Attachments: [5. HIGH POINT MUSEUM - Destination Development Grant - Budget Ordinance](#)

[2021-165](#)

Resolution - Inducement Resolution for Wendover Heights

City Council is requested to adopt a resolution giving preliminary approval to issuance of multifamily housing revenue bonds estimated not to exceed \$20,000,000 to finance the acquisition, construction and equipping of Wendover Heights and that the appropriate City official and/or employee be authorized to execute all necessary documents.

Attachments: [7. INDUCEMENT RESOLUTION - Wendover Heights](#)

[2021-164](#)

*Hold Item for Full Council Consideration - Contract - Samet - City Lake Park Phase I

City Council is requested to approve an early construction package with Samet Corporation (CMAR) in the amount of \$6,376,513 to allow renovations to begin immediately with the City Lake Park Phase 1 Renovation project located at 602 W. Main St, Jamestown, NC.

NOTE: No Discussion of this item in Finance Committee.

Attachments: [6. P&R CITY LAKE PARK](#) [Samet](#)

ADJOURNMENT

CITY OF HIGH POINT

AGENDA ITEM



**NOTE: In depth discussion will take place
at the Manager's Briefing on Monday, May 3, 2021**

Title: Early Construction Package
City Lake Park Phase 1 Renovations

From: Greg Ferguson, Assistant City Manager
Lee Tillery, Parks and Recreation Director

Meeting Date: May 3, 2021

Advertising Date: February 12, 2021

Public Hearing: N/A

Advertised By: Budget - Purchasing

Attachments: Samet Corporation – Attachment A-1 – Exhibit A Amendment
Itemized Statement of the Component GMP

PURPOSE:

Approve an early construction package with Samet Corporation (CMAR) to allow renovations to begin immediately at City Lake Park located at 602 W. Main Street, Jamestown, NC.

BACKGROUND:

High Point City Council approved Samet Corporation, Greenboro, NC as the Construction Manager at Risk (CMAR) for the City Lake Park Phase 1 Renovation project at the April 5, 2021 meeting. In order for renovations to begin immediately and us to stay on schedule for a Memorial Day 2022 opening, an early construction agreement in the amount of, not to exceed \$6,376,513, needs to be approved by City Council. Formal bids for the project will be received in May 2021 and placed on a future agenda for final approval.

BUDGET IMPACT:

Funding is available from the 2019 G.O. bond authorization.

RECOMMENDATION / ACTION REQUESTED:

Staff recommends City Council approve an early construction package with Samet Corporation (CMAR) in the amount of \$6,376,513 to allow renovations to begin immediately with the City Lake Park Phase 1 Renovation project located at 602 W. Main St, Jamestown, NC.

ATTACHMENT A-1



EXHIBIT A - AMENDMENT

Itemized Statement of the Component GMP

High Point City Lake Park: Phase I - 02A Demolition, 05A Structural & Misc. Steel, 13A Canopies, and 32A Site Preparation, Utilities, & Asphalt Paving Packages

City of High Point	4/26/2021
City Lake Park Renovation	Itemized GMP
Samet Project No.: 21-054	

ESTIMATED CONSTRUCTION COST

DIRECT COST	AMOUNT
General Conditions & General Requirements	
Staffing	\$1,011,157
General Requirements	\$136,400

Construction Allowances:	Trade Package Award Status	Company	
CA 01 02A - Demolition	Estimated	NA	\$504,873
CA 02 05A - Structural & Misc. Steel	Estimated	NA	\$603,820
CA03 13A - Canopies	Estimated	NA	\$725,000
CA 04 32A - Site Preparation, Utilities, & Asphalt Paving	Estimated	NA	\$2,019,479

Quantitative Allowances:

Site Development - Quantitative Allowances	\$313,120
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Subcontractor Bonding Program	1.40% of	\$5,872,435	\$82,214
Owner Contingency	5.00% of	\$5,954,649	\$297,732
Construction Contingency	3.00% of	\$5,954,649	\$178,639

TOTAL "COST OF THE WORK"	\$	5,872,435
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OTHER "COST OF THE WORK"

Insurance	0.63% of	\$ 6,376,513	\$40,172
Builder's Risk Insurance	0.18% of	\$ 6,376,513	\$11,478
Permit Fees (By Owner)		\$ -	\$0
Project Closeout & Post Construction Services	0.20% of	\$ 6,376,513	\$12,753
Performance & Payment Bond	0.75% of	\$ 6,376,513	\$47,824

TOTAL OTHER "COST OF THE WORK"	\$	112,227
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TOTAL FEE	4.50% of	\$ 6,984,662	\$ 269,310
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TOTAL - ESTIMATED GMP PHASE I - "COMPONENT GMP":	\$	6,253,971
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PRECONSTRUCTION SERVICES	\$	122,542
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COMBINED TOTAL "COMPONENT GMP" & PRECONSTRUCTION SERVICES AMOUNT:	\$	6,376,513
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Note: Above "GMP Component" Estimate Summary does not include any of the cost items depicted in the ASSUMPTIONS & CLARIFICATIONS

CITY OF HIGH POINT

AGENDA ITEM



Title: CPM Application Licenses

From: Eric Xavier, Assistant Director of IT Services

Meeting Date: January 19, 2021

Public Hearing: No

**Advertising Date /
Advertised By:**

Attachments: Accela_Software_35-Seats__HPFD

PURPOSE:

The City's civic planning management (CPM) application, Accela Civic Platform, is used by numerous City departments to facilitate and manage their civic planning, inspections, permitting & licensing activities. Because the City's Fire Department performs a role in the building inspections workflow, their inspectors need to join the others within the same CPM application.

BACKGROUND:

The Department of IT Services is recommending the City of High Point enter into a five (5) year license agreement with Accela, Inc. to afford the Fire Department access to the City's CPM application, *Civic Platform* by Accela. The OE publisher of the current application used by the Fire Department for management of building inspections has been purchased by another company, and there is no plan to continue development of the product. The Fire Department requires 35 licenses ("seats") to join the others in the CPM application.

BUDGET IMPACT:

The City of High Point will use funds in the FY2020/21, FY2021/22, FY2022/23, FY2023/24, and FY2024/25 budgets throughout a five (5) year license agreement with Accela, Inc. The term begins on February 01, 2021 and ends on June 30, 2025. Licenses are billed annually; the total cost of the agreement is \$233,615.32.

The budgetary impact over the agreement term is as follows:

FY2020/21	\$20,597.50
FY2021/22	\$50,917.02
FY2022/23	\$52,444.53
FY2023/24	\$54,017.87
FY2024/25	\$55,638.40

RECOMMENDATION / ACTION REQUESTED:

The Department of IT Services recommends approval of the contract and that the appropriate City official and/or employee be authorized to execute all necessary documents.



**FORMAL BID RECOMMENDATION
REQUEST FOR COUNCIL APPROVAL**

DEPARTMENT:

COUNCIL AGENDA DATE:

BID NO.: CONTRACT NO.: DATE OPENED:

DESCRIPTION:

PURPOSE:

COMMENTS:

RECOMMEND AWARD TO: AMOUNT:

JUSTIFICATION:

ACCOUNTING UNIT	ACCOUNT	ACTIVITY	CATEGORY	BUDGETED AMOUNT
TOTAL BUDGETED AMOUNT				

DEPARTMENT HEAD: DATE:

The Purchasing Division concurs with recommendation submitted by the and recommends award to the lowest responsible, responsive bidder in the amount of \$.

PURCHASING MANAGER: DATE:

Approved for Submission to Council
FINANCIAL SERVICES DIRECTOR: DATE:

CITY MANAGER: DATE:



2633 Camino Ramon, Suite 500
San Ramon, CA, 94583

Proposed by : Matthew Jones
Contact Phone : (704) 589-6764
Contact Email : mjones@accela.com
Quote ID : Q-21552
Valid Through : 2/1/2021
Currency : USD

Order Form

Address Information

Bill To:

High Point, NC - City of
211 S Hamilton street, PO Box 230
High Point, North Carolina 27261-0203
United States

Ship To:

High Point, NC - City of
211 South Hamilton Street
High Point, North Carolina 27260
United States

Billing Name : Steve Lingerfelt
Billing Phone : 336-883-3286
Billing Email : steve.lingerfelt@highpointnc.gov

Services(coterm)	Year	Start Date	End Date	Term(Mths)	Price (annual)	Qty	Net Total
Fire Extended	Year 1	2/1/2021	6/30/2021	5	\$1,412.40	35	\$20,597.50
TOTAL:							\$20,597.50

Services	Year	Start Date	End Date	Term(Mths)	Price	Qty	Net Total
Fire Extended	Year 2	7/1/2021	6/30/2022	12	\$1,454.77	35	\$50,917.02
TOTAL:							\$50,917.02

Services	Year	Start Date	End Date	Term(Mths)	Price	Qty	Net Total
Fire Extended	Year 3	7/1/2022	6/30/2023	12	\$1,498.42	35	\$52,444.53
TOTAL:							\$52,444.53



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Valid Through : 2/1/2021
Currency : USD

Services	Year	Start Date	End Date	Term(Mths)	Price	Qty	Net Total
Fire Extended	Year 4	7/1/2023	6/30/2024	12	\$1,543.37	35	\$54,017.87
TOTAL:							\$54,017.87

Services	Year	Start Date	End Date	Term(Mths)	Price	Qty	Net Total
Fire Extended	Year 5	7/1/2024	6/30/2025	12	\$1,589.67	35	\$55,638.40
TOTAL:							\$55,638.40

Period	Net Total
Year 1	\$ 20,597.50
Year 2	\$ 50,917.02
Year 3	\$ 52,444.53
Year 4	\$ 54,017.87
Year 5	\$ 55,638.40
Total	\$ 233,615.32



2633 Camino Ramon, Suite 500
San Ramon, CA, 94583

Proposed by : Matthew Jones
Contact Phone : (704) 589-6764
Contact Email : mjones@accela.com
Quote ID : Q-21552
Valid Through : 2/1/2021
Currency : USD

Additional Terms :

1. No additional or conflicting terms or conditions stated in Customer's order documentation, including purchase orders, will be incorporated into or form any part of this Order Form or the governing agreement, and all such terms or conditions will be null.
2. This Order Form is governed by the applicable Accela terms found at www.accela.com/terms, unless Customer has an effective master agreement executed by Accela for such services as referenced in this Order Form, in which case such master agreement will govern.
3. All Software Licenses, Maintenance, and Subscription purchases are non-cancelable and non-refundable.
4. If Customer has a prior agreement with Accela, and this purchase is co-terming with that prior agreement, if the start date on this Order Form is before the actual delivery date of the purchase, Accela may pro-rate this purchase so that it can co-term with the prior agreement.
5. If this Order Form is executed and/or returned to Accela by Customer after the Order State Date above, Accela may adjust the Order Start Date and Order End Date without increasing the total price based on the date Accela activates the products and provided that the total term length does not change.

Signatures	
Accela	Customer
Signature:	Signature:
Print Name:	Print Name:
Title:	Title:
Date:	Date:

RESOLUTION GIVING PRELIMINARY APPROVAL TO ISSUANCE OF
MULTIFAMILY HOUSING REVENUE BONDS TO FINANCE THE
ACQUISITION, CONSTRUCTION AND EQUIPPING OF WENDOVER
HEIGHTS

WHEREAS, the City Council (the "City Council") of the City of High Point, North Carolina (the "City") met in High Point, North Carolina at 5:30pm on the 3rd day of May, 2021; and

WHEREAS, pursuant to Section 160D-1311(b) of the General Statutes of North Carolina, the City is granted the power to exercise directly the powers of a housing authority organized pursuant to the North Carolina Housing Authorities Law, Article 1 of Chapter 157 of the General Statutes of North Carolina, as amended (the "Act"); and

WHEREAS, the Act in N.C.G.S. §§ 157-9 and 157-37 gives the City, acting as a housing authority, the power "to provide for the construction, reconstruction, improvement, alteration or repair of any housing project" and "to borrow money upon its bonds, notes, debentures or other evidences of indebtedness and to secure the same by pledges of its revenues"; and

WHEREAS, Wynnefield Forward, LLC, a North Carolina limited liability company, or an affiliated or related entity (the "Company"), intends to provide affordable housing in the City; and

WHEREAS, the Company has requested that the City assist it in financing the acquisition, construction and equipping of a 216-unit multifamily residential rental development to be known as Wendover Heights and located at 5000 W. Wendover Avenue in the City (the "Development"); and

WHEREAS, the Company has described to the City the benefits of the Development to the City and the State of North Carolina and has requested the City to agree to issue its multifamily housing revenue bonds in such amounts as may be necessary to finance the costs of acquiring, constructing and equipping the Development; and

WHEREAS, the City is of the opinion that the Development is a facility that can be financed under the Act and that the financing of the same will be in furtherance of the purposes of the Act;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF HIGH POINT:

1. It is hereby found and determined that the Development will involve the acquisition, construction and equipping of a multifamily housing facility, and that therefore, pursuant to the terms and subject to the conditions hereinafter stated and the Act, the City agrees to assist the Company in every reasonable way to issue bonds to finance the acquisition, construction and equipping of the Development, and, in particular, to undertake the issuance of the City's multifamily housing revenue bonds (the "Bonds") in an amount now estimated not to exceed Twenty Million Dollars (\$20,000,000) to provide all or part of the cost of the Development.

2. The City intends that the adoption of this resolution be considered as "official action" toward the issuance of the Bonds within the meaning of the regulations issued by the Internal Revenue Service pursuant to Section 1.150-2 of the Treasury Regulations issued under the Internal Revenue Code of 1986, as amended (the "Code").

3. The Bonds shall be issued in such series and amounts and upon such terms and conditions as are mutually agreed upon between the City and the Company. The City and the Company shall enter into

a “financing agreement” pursuant to the Act for a term and upon payments sufficient to pay the principal of, premium if any, and interest on the Bonds and to pay all of the expenses of the City in connection with the Bonds and the Development. The Bonds will be issued pursuant to an indenture or security agreement between the City and a trustee (the “Trustee”) or the bondholder which will set forth the form and terms of the Bonds and will assign to the Trustee for the benefit of the holders of the Bonds, or directly to the bondholder, the City’s rights to payments under the financing agreement, except the City’s right to payment of fees and expenses and indemnification. The Bonds shall not be deemed to constitute a debt or a pledge of the faith and credit of the State of North Carolina or any political subdivision or agency thereof, including the City, but shall be payable solely from the revenues and other funds provided under the proposed agreements with the Company.

4. The City hereby authorizes the Company to proceed, upon the prior advice, consent and approval of bond counsel and the City’s counsel, to obtain approvals in connection with the issuance and sale of the Bonds and to obtain an allocation of a sufficient amount of the State of North Carolina’s “private activity bond limit”, as required by Section 146 of the Code and as defined in Section 146 of the Code, for the Bonds.

5. It having been represented to the City that it is desirable to proceed with the acquisition, construction and equipping of the Development, the City agrees that the Company may proceed with plans for such acquisition, construction and equipping, enter into contracts for the same, and take such other steps as it may deem appropriate in connection therewith, provided that nothing herein shall be deemed to authorize the Company to obligate the City without its written consent in each instance to the payment of any monies or the performance of any act in connection with the Development and no such consent shall be implied from the City’s adoption of this resolution. The City agrees that the Company may be reimbursed from the proceeds of the Bonds, if and when issued, for all qualifying costs so incurred as permitted by Treasury Regulations Section 1.150-2.

6. All obligations hereunder of the City are subject to the further agreement of the City and the Company to terms for the issuance, sale and delivery of the Bonds and the execution of a financing agreement, indenture or security agreement and other documents and agreements necessary or desirable for the issuance of the Bonds. The City has not authorized and does not authorize the expenditure of any funds or monies of the City from any source other than the proceeds of the Bonds. All costs and expenses in connection with the financing and the acquisition, construction and equipping of the Development, including the reasonable fees and expenses of the City’s counsel, bond counsel and the agent or underwriter for the sale of the Bonds, shall be paid from the proceeds of the Bonds or by the Company, but if for any reason the Bonds are not issued, all such expenses shall be paid by the Company and the City shall have no responsibility therefor. It is understood and agreed by the City and the Company that nothing contained in this resolution shall be construed or interpreted to create any personal liability of the officers or council members from time to time of the City.

7. The officers of the City are hereby authorized and directed to take all actions in furtherance of the resolution and the issuance of the Bonds.

8. The City hereby approves McGuireWoods LLP, Raleigh, North Carolina, to act as bond counsel for the Bonds.

9. This resolution shall take effect immediately.

Mayor Pro Tem Britt Moore moved the passage of the foregoing resolution and Council member Michael Holmes seconded the motion, and the resolution was passed by the following vote:

Ayes: Mayor Jay W. Wagner, Mayor Pro Tem Britt W. Moore, and Council Members: Tyrone E. Johnson, Cyril Jefferson, Christopher Williams, Wesley Hudson, Victor Jones, and Michael A. Holmes

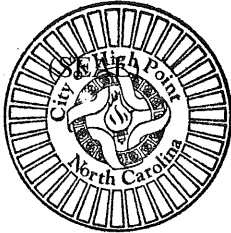
Nays: None

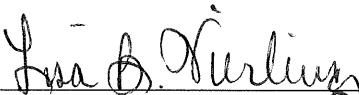
Not voting: **Absent**-Council Member Monica Peters

* * * * *

I, Lisa B. Vierling, City Clerk for the City of High Point, North Carolina, DO HEREBY CERTIFY that the foregoing is a true and complete copy of so much of the proceedings of the City Council for the City of High Point, North Carolina, at a regular meeting duly called and held on May 3, 2021, as it relates in any way to the resolution hereinabove set forth, and that such proceedings are recorded in the minutes of the City Council.

WITNESS my hand and the seal of the City Council of the City of High Point, North Carolina, this 3rd day of May, 2021.





Lisa B. Vierling, City Clerk
City of High Point, North Carolina

CITY OF HIGH POINT

AGENDA ITEM



Title: Eastside WWTP, PTF Effluent Control Gates

From: Terry Houk – Public Services Director
Derrick Boone – Public Services Asst. Director
Nawfal Shujaa – Public Services Projects Engineer

Meeting Date: May 3, 2021

Public Hearing: N/A

Advertising Date: March 26, 2021
Advertised By: Purchasing

Attachments: Attachment A – Bid Tabulation and Award Recommendation
Attachment B – Hydrogate Stop Log Brochure

PURPOSE:

The Public Services Department has budgeted to demolish the existing primary sluice gates at the Eastside Wastewater Treatment Plant and to replace with stop logs that will allow the ability to control flow coming from the primary treatment facility (PTF).

BACKGROUND:

The existing primary sluice gates were installed in a previous upgrade and are no longer functional due to the deterioration of the stems, stem guides and stem brackets for the gates. The scope of the project will be to demolish the existing gates and to install frame guides for the installation of stainless steel stop logs. The stop logs will be stored on site and installed as needed to control flow.

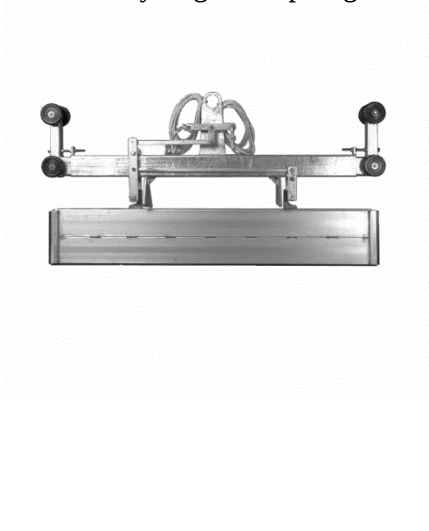
BUDGET IMPACT:

Funds for this project are available in the FY 2020-2021 budget.

RECOMMENDATION / ACTION REQUESTED:

The Public Services Department recommends approval and asks for City Council to award the contract to Brushy Mountain Builders, in the amount of \$299,000.

Picture of Hydrogate Stop Log with Lifter



Location of proposed stop logs at PTF upstream of the primary clarifies



April 22, 2021

Re: City of High Point, NC
Eastside WWTP
PTF Effluent Flow Control
Bid No. 12-042221
DMP Project No. 210017 (BF)

Mr. Derrick Boone, Assistant Director
Public Services Department
City of High Point
PO Box 230
High Point, NC 27261

Dear Derrick:

Informal bids were received by the Purchasing Department on April 22, 2021 for the above referenced project. A total of two (2) bids were submitted and read, as summarized below.

Bidder	Total Base Bid
Brushy Mountain Builders, Inc. Lenoir, NC	\$ 299,000.00
J.S. Haren Company Athens, TN	\$ 437,000.00

A detailed tabulation of all bids received is attached.

Bids were advertised by the Purchasing Department and at least six (6) general contractors ordered plans. The low level of interest in this project, and bid price difference, may be attributed to the complex scope of the project and area contractor's current workload/resource availability.

Brushy Mountain Builders is currently licensed by the NC Contractor's Board (Unlimited; Building, PU(Water Lines & Sewer Lines), PU(Water Purification & Sewage Disposal). They have performed several similar projects in North Carolina and are capable of performing the work called for in this project.

It is our recommendation that the City Council award the contract to Brushy Mountain Builders, Inc. for the Base Bid amount of \$ 299,000.00.

Please feel free to contact me if you have questions or require additional information.

Sincerely,

DAVIS • MARTIN • POWELL & ASSOCIATES



Ben Palmer, PE

c: Nawfal Shujaa (enc) - email
File (enc)

P:\2021\210017\Doc\210017 Award Recommendation.docx

T: 336-886-4821 • F: 336-886-4458 • License: F-0245

6415 Old Plank Road, High Point, NC 27265 • www.dmp-inc.com

BID TABULATION

		Brushy Mountain Builders, Inc. 3390 Gaither Walker Circle Lenoir, NC 28645	J.S. Haren Compnay 1175 Highway 11 N Athens, TN 37303
ITEM	DESCRIPTION	LUMP SUM AMOUNT	LUMP SUM AMOUNT
PART A - BASE BID			
1	Lump Sum Base Bid		
	All work complete but not including the base bid items listed below.	\$284,000.00	\$427,000.00
2	Stop Log Lifting Device		
	Furnish mobile gantry crane, including hoist, trolley, stop log lifter and necessary appurtenances	\$10,000.00	\$6,500.00
3	Storage Rack		
	Furnish mobile storage rack(s) and necessary appurtenances for storage of the supplied stop logs	\$5,000.00	\$3,500.00
Total Bid Amount		\$299,000.00	\$437,000.00
4	Base Bid Equipment & Material Manufacturers		
	SECTION EQUIPMENT/MATERIALS	MANUFACTURER	MANUFACTURER
	40 05 25 Stop Logs	HydroGate	Waterman

THIS IS TO CERTIFY THAT THIS TABULATION IS CORRECT AND A TRUE AND ACCURATE COPY OF THE BIDS SUBMITTED. THIS
 APRIL, 2021.

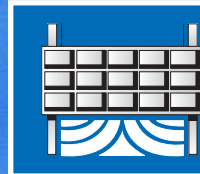
DAVIS • MARTIN • POWELL & ASSOCIATES

By: _____

Benjamin A. Palmer, PE



Stop Logs



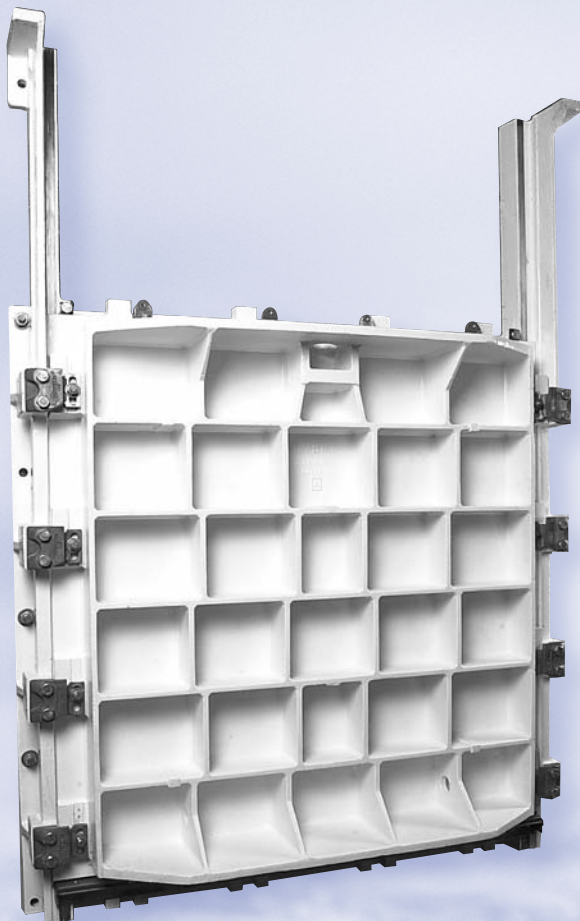
**Hydro
Gate**



Pioneers in Gate Design

Hydro Gate 

3888 E. 45th Ave.
#120
Denver, CO 80216



With more than 100 years of experience in gate design, Hydro Gate has built a long-standing reputation of providing superior quality water control gates for a variety of industries. Our manufacturing expertise revolves around making big, heavy-duty gates that are 100% custom-built to match specific applications.

Commitment to You... Our Customer

At Hydro Gate, customer satisfaction is our top priority. Bring your special requirements to our engineers who have years of experience in gate design. Our dedicated customer service staff is accustomed to custom requests, because that is what we do best. From your first contact through final delivery, our team of engineers and service experts are here to make sure you have the right gates to suit your needs.

Your Source for Water Control Gates

No matter what type of gates your project demands, chances are excellent Hydro Gate has the right gates for your specific application. Our product offering is vast and can suit applications for a wide variety of industries. Choose from cast iron slide or flap gates, fabricated slide or flap gates, rectangular butterfly gates, stop logs, wall thimbles, lifts and accessories.

Industries We Serve

Whether you need gates for flood control, wastewater treatment, environmental water treatment, irrigation, dam projects or hydroelectric plants, we can help. From standard configurations to custom designs, Hydro Gate offers a wide variety of water control gates as well as a full complement of actuators to meet your specific application.

Service Well Beyond Shipment

Our services extend beyond manufacturing. Hydro Gate's experienced field service technicians can help you with repair and refurbishment projects. If you have existing, yet serviceable gates, we can perform a retrofit that will extend their life and durability.

Focus on Quality

Hydro Gates expansive 90,000 square foot manufacturing facility utilizes precision equipment that allows us to merge time-tested gate design with cutting edge technology. We offer large scale manufacturing capabilities with the ability to produce cast iron gates up to 14' x 16' in size, and fabricated gates up to and over 20' in width or height.



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Channel Mounting3

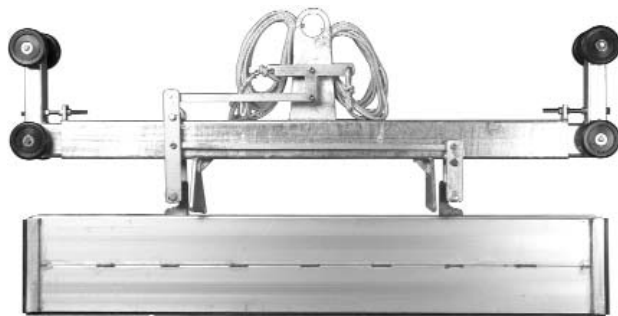
Specifications4

Bulk Head Gates:

Description5

Features.....5

Stop Logs



Aluminum Stop Log with Lifting Beam

Description

Stop logs are used for level control in open channels. Logs are beams inserted in grooves cast in a channel wall. Aluminum is now the material of choice for stop log and slot construction. Typical nominal height of a stop log is in 6 inch increments, i.e., the log can be 6, 12, 18 inches in height, etc. Hydro Gate aluminum stop logs have rubber lip type seals one each side (end) to seal at the wall and across the bottom to seal at the sill or with the next log. The preferred sill is an embedded metal sill. Aluminum is a strong lightweight material allowing some logs to be “manhandled”. The typical aluminum stop log is equipped with lifting lugs for use with a stop-lifting beam. The beam is a self-engaging log handling device for underwater retrieval and manual lanyard release of the log. The lifting beam is wheel guided by the stop log slot. An overhead crane, davit crane, or mobile crane is needed to lift and install/remove most stop logs.

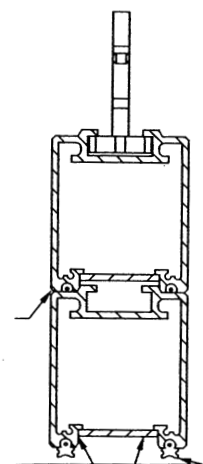
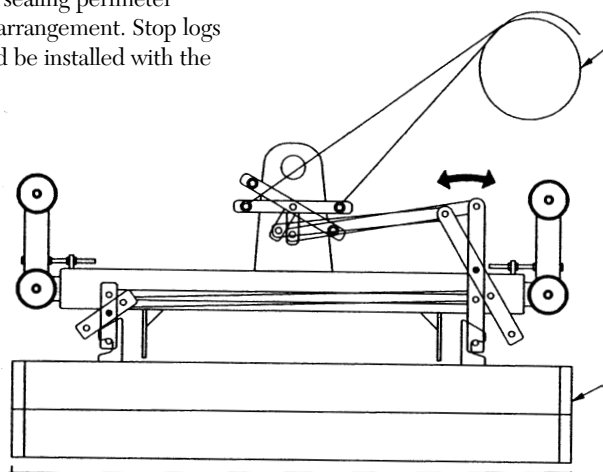
Stop logs cannot be installed in high flowing water. They can be removed against low flowing water and against very low heads (some over flow). Stop logs can be stacked and used for equipment isolation, however, there may be considerable leakage due to the greater amount of sealing perimeter compared to a single bulk head type arrangement. Stop logs are directional sealing. The log should be installed with the rubber seal downstream.

Aluminum Stop Logs – Product Features

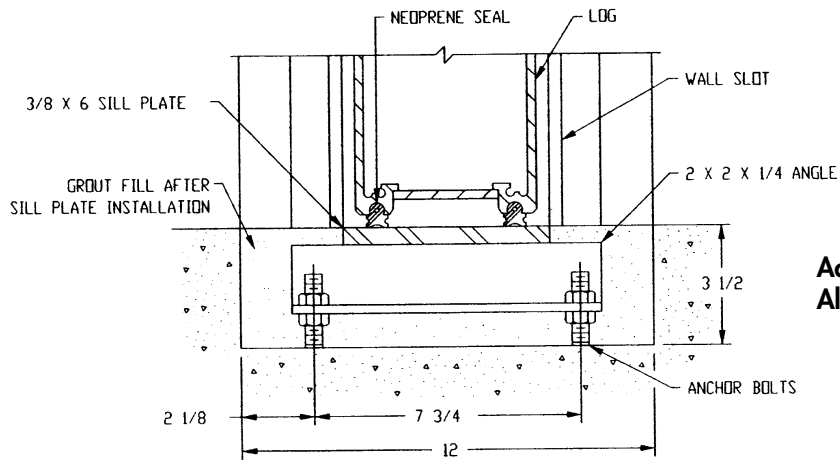
- Stackable: Log heights in 6” increments
- Practical widths up to 16 feet
- Alum slots, embedded or side wall surface mounted
- Flush bottom resilient seat
- Soft neoprene seals for practical water tightness (pumpable leakage)
- Directional pressure sealing. Bi-directional design is available to control flow in either direction.
- UHMW polyethylene wear and guide bars
- Slot guided lift beam, lanyard line release/gravity engage with lanyard assist
- Lift rods or hand rings for small lightweight logs
- Open channel service: equipment isolation, water level regulation, interchangeable locations (same width required)
- Insert and remove at zero or balanced head

Other materials of construction are available using similar design concepts with steel (painted or galvanized) or stainless steel.

Aluminum Stop Logs & Lifting Beam

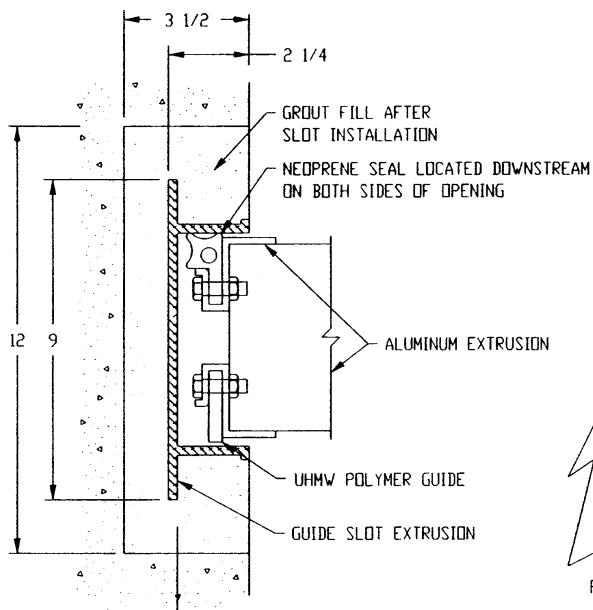
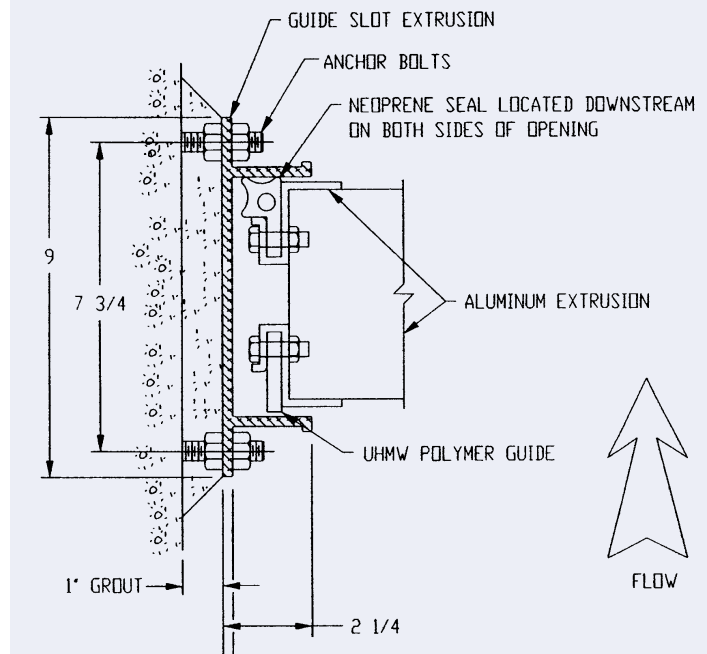


Stop Log Channel Mounting



**Adjustable embedded sill,
Alum stop log shown**

**Alum stop log, side wall
surface mounted slot**



**Alum stop log,
embedded slot**

Aluminum Stop Logs

Typical Specifications

Manufacturer

Hydro Gate or approved equal.

General

Aluminum stop logs including lifting beams shall be of the size and mounting type shown on the drawings and specified herein. Log and lifting beam design shall be such that the flexural stresses do not exceed 1/5 of ultimate strength or 1/3 of yield strength. Design flexural stress of aluminum shall not exceed 8,400 psi.

Materials of Construction

Stop Log and Slot Extrusions
Aluminum (6061-T6)

Lifting Beam

ASTM A36 Hot Dip Galvanized per ASTM A444

Seals

Neoprene D2000 grade 1BE625

Guide Bars

Ultra-High Molecular Weight (UHMW) Polyethylene

Hooks & Fasteners

Stainless steel, ASTM A276, Type 304

Guide Wheels

Phenolic or polyolefin

Stop Log Panels

Stop log panels shall be of height shown on the drawings and in height increments of 6 in. Panels made of two or more extrusions shall be securely welded together to form a unit and joints shall be made watertight with neoprene seals or seal welding. Each panel shall have two stainless steel hooks to engage the lifting beam. Panel surface shall be mill finish. Adequate drainage shall be provided for each log. Stop log panels shall be furnished with UHMW guide bars to eliminate metal-to-metal contact with slots during insertion and removal.

Seals

Seals shall be permanently attached to sides and bottom of each panel. Seal shall be formed all around the waterway channel and between each stop log panel.

Sill

Sill constructed from stainless steel plate shall be provided. It shall be adjustable-mounted to provide flat level seal surface prior to grouting. Finish will be mill finish. Alternatively, flat level concrete invert surface may be provided. Flatness shall be within 1/8 in. in 10 ft of length.

Slots

Slots shall be one-piece extrusion suitable for embedment or mounting on channel wall surfaces. Surface shall be mill finish.

Lifting Beam

Lifting beam shall be gravity-engage and lanyard-release type suitable for inserting, retrieving and handling stop log panels. The beam shall be furnished with non-metallic wheels to guide the beam in the stop log slot. The lifting beam may, at the manufacturer's option, be adjustable in widths to accommodate several widths of stop log openings. Beam shall be complete with large center lifting eye and polyethylene, lanyard-release rope.

Bulk Head Gates

Description

Bulk head gates are fabricated from steel or stainless steel. They are designed to be placed in slots or grooved channel walls and are lifted and lowered with overhead or mobile cranes. The gate has lifting lugs for handling. The slots or grooves are lined or fabricated from steel or stainless steel for ease of insertion and good fit with rubber seals on the bulkhead gate. The sill surface may be formed by flat and level concrete invert or with an embedded sill plate.

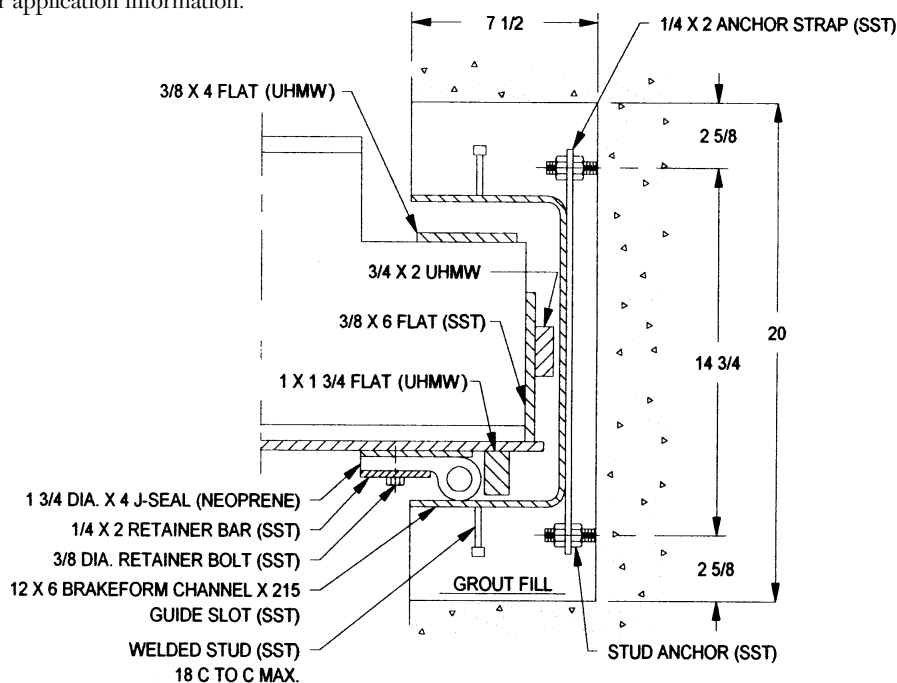
Bulk head gates are used for equipment isolation such as pumps, screens and service gates. When equipped with a lintel seal, the gate can seal off heads greater than the gate height. Rubber seals around the perimeter of the gate control leakage effectively and are hydrostatically energized. Bulk head gates seal in one direction.

Bulk head gates can be used in multiple locations (slots) and can be removed completely for storage. They cannot be inserted when significant flows or heads are present since the only closing force is gravity. Removal against high differential heads is not practical or possible. A small fill or balancing gate or valve can be installed on the bulk head gate to facilitate head balancing and gate removal.

Variations in mounting such as surface (face) mounting are possible. Bulk heads may also be stacked like stop logs. Specialized lifting beams can be designed for retrieval of under water bulk heads. Contact Hydro Gate Engineering/Sales Department for other application information.

Product Features

- Steel, stainless steel, or aluminum
- Large sizes and high heads: Contract Hydro Gate Engineering Department for information
- Embedded or face mounted guide slots
- Flush bottom, resilient seat
- Open channel or aperture design. Lintel (breast wall) seal for full perimeter sealing.
- Directional pressure sealing.
- Rubber seals: Neoprene or EDPM
- UHMW polyethylene wear and guide blocks
- Tight leakage control: near zero in most seating conditions. Pressure engaged sealing.
- Insert and remove at zero or balanced head. Head balancing gates or valves are available.



Fabricated stainless steel bulk head, embedded slot

***Our mission is to be
the leading water
control gate
manufacturer in
the world,
through continuous
development of
an organization
which promotes
extraordinary customer
service, superior
engineering, quality
products and
on-time delivery.***

Hydro Gate

***Your Source for Water
Control Gates***



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303-287-8531 (fax)
www.hydrogate.com**

CITY OF HIGH POINT

AGENDA ITEM



Title: Fairfield Substation Equipment
Bid # 14-041521

From: Garey S. Edwards, PE; Electric Utilities Director
Tyler R. Berrier, PE; Assistant Director

Meeting Date: May 3, 2021

Public Hearing: N/A

Advertised By: Purchasing Division

Attachment A: Southeastern Engineers Bid Recommendation

Attachments: Attachment B: Bid Tabulation

PURPOSE:

Purchasing this equipment will allow the City to upgrade existing Fairfield substation and increase the electric system's capacity. Currently the substation transformer at Fairfield is our oldest unit.

BACKGROUND:

The Substation Circuit Switchers, 121 kV Breakers and Relay/Control Panels are to be used at our Fairfield Substation for the substation upgrade. The city has previously purchased substation transformers for this substation, and they are already on site.

BUDGET IMPACT:

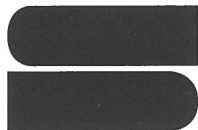
Funds are included in the 2020-21 budget to cover this project.

RECOMMENDATION / ACTION REQUESTED:

Award to the following three (3) companies:

Schedule I –	Metalclad Switchgear	Siemens Industry, Inc.	\$264,517.00
Schedule II –	Circuit Breakers	Siemens Energy	\$353,200.00
Schedule III –	Relay & Control Panels	Electrical Power Products, Inc.	\$55,448.00





Southeastern Consulting Engineers, Inc.

April 22, 2021

Mr. Garey Edwards, PE
City of High Point
P.O. Box 230
High Point, North Carolina 27261

Ref.: Substation Equipment Bid Recommendation
Bid # 14-041521

Dear Garey:

The City received sealed proposals on April 15, 2021, from seven suppliers solicited for providing substation equipment that will be installed at the City's substations. Each bid was reviewed for compliance with the technical specifications and purchase price. Based on the preceding factors the following vendors submitted the lowest responsive and compliant bid:

Schedule I –Metalclad Switchgear

Siemens Industry
7000 Siemens Road
Wendell, NC 27591
Bid #: SF211778085
Delivery: 20 weeks

Description	Quantity	Unit Price	Total Price
Metalclad Switchgear Fairfield Substation	1	\$264,517.00	\$264,517.00

Schedule II – 121 kV Circuit Breakers

Siemens Energy
444 Highway 49 South
Richland, MS 39218
Bid# 21097EM-T-1
Delivery: 18-24 weeks

Description	Quantity	Unit Price	Total Price
SPS2S-123-40-3000-3PST	8	\$44,150	\$353,200

Schedule III – Relay Panels

Electrical Power Products, Inc.
4240 Army Post Road
Des Moines, Iowa 50321
Quote # 31105
Delivery 14 Weeks

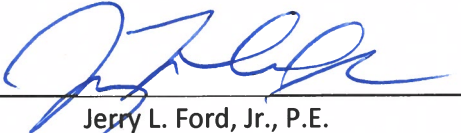
Description	Quantity	Unit Price	Total Price
Relay Panel	1	\$33,197.00	\$33,197.00
SEL-3530	1	\$6,668.00	\$6,668.00
SEL-311C	1	\$5,299.00	\$5,299.00
SEL-487B	1	\$8,616.00	\$8,616.00
SEL-2505	2	\$834.00	\$1,668.00
Total Sch. III			\$55,448.00

The total cost for the three recommended schedules is \$673,165.00. We recommend that the City accept the proposals and issue a purchase order to the above Vendors. If you have any questions, please do not hesitate to contact us.

Very truly yours,

SOUTHEASTERN CONSULTING ENGINEERS, INC.

By



Jerry L. Ford, Jr., P.E.
Senior Design Engineer

JLF/lc

cc: Mr. Tyler Berrier, PE
Mr. Philip Hiatt, PE

BID TABULATION

Fairfield Substation Upgrade

Bid No. #14-041521

City of High Point

High Point, North Carolina

Date: April 15, 2021

Time: 10:00 AM, EST

<u>Schedule I - Bidder</u>				
Metalclad Switchgear				
- Fairfield Substation				
Delivery:	Siemens Industry, Inc.		Electro Technical Industries, Inc.	
	\$ 264,517.00		\$ 316,000.00	\$ 326,864.00
	20 Weeks		18 Weeks	28-32 Weeks
Manufacturer:	Siemens		ABB	AZZ
Additional Items and Alternates				
1 Day Additional Installation/Commis.				
(3 Days included in base Price)	\$ 2,616.00		\$ 4,800.00	\$ 2,822.00
<u>Schedule II - Bidder</u>				
121 KV Circuit Breakers (8)	Siemens Energy, Inc.		Electro Technical Industries, Inc.	
Breaker Commissioning (8)	\$ 353,200.00		\$ 496,000.00	\$
	\$ 19,200.00		\$ 64,000.00	\$
Total, Schedule II	\$ 372,400.00		\$ 560,000.00	\$
Manufacturer:			Siemens	
Delivery:		18-22 Weeks	18 Weeks	
<u>Schedule III - Bidder</u>				
Relay Panel (1)	EP2		Electro Technical Industries, Inc.	
Additional Relays	\$ 33,197.00		\$ 58,424.00	\$ 41,902.00
SEL-3530 #DKHF (1)				
SEL0311C11HR3E54X1 (1)	\$ 6,668.00		\$ 8,004.00	\$ 9,421.00
SEL0487B1X6X52XB0XE37PXXXX	\$ 5,299.00		\$ 6,360.00	\$ 7,398.00
SEL-25005424XX (2)	\$ 8,616.00		\$ 10,344.00	\$ 11,610.00
	\$ 1,668.00		\$ 2,500.00	\$ 2,314.00
Total, Schedule III	\$ 55,448.00		\$ 85,632.00	\$ 72,645.00
Manufacturer:			ETI	AZZ
Delivery:		14 Weeks	18 Weeks	30-32 Weeks



**FORMAL BID RECOMMENDATION
REQUEST FOR COUNCIL APPROVAL**

DEPARTMENT:

COUNCIL AGENDA DATE:

BID NO.: CONTRACT NO.: DATE OPENED:

DESCRIPTION:

PURPOSE:

COMMENTS:

RECOMMEND AWARD TO: AMOUNT:

JUSTIFICATION:

ACCOUNTING UNIT	ACCOUNT	ACTIVITY	CATEGORY	BUDGETED AMOUNT
TOTAL BUDGETED AMOUNT				

DEPARTMENT HEAD: DATE:

The Purchasing Division concurs with recommendation submitted by the and recommends award to the lowest responsible, responsive bidder in the amount of \$.

PURCHASING MANAGER: DATE:

Approved for Submission to Council
FINANCIAL SERVICES DIRECTOR: DATE:

CITY MANAGER: DATE:

CITY OF HIGH POINT

AGENDA ITEM



Title: Inducement Resolution for Wendover Heights

From: Michael E. McNair, Director

Public Hearing: No

Meeting Date: May 3, 2021

Advertising Date: N/A

Advertised By: N/A

Attachments:

Site Plan
Resolution

PURPOSE:

One of the projects proposed in the 2021-22 Annual Action Plan involves the use of multifamily housing revenue bonds. The developer, Wynnefield Forward, LLC, has requested that the City assist it in financing the acquisition, construction and equipping of a multifamily residential rental development to be known as Wendover Heights and located at 5000 W. Wendover Avenue. The City is asked to assist the developer by preliminarily approving the issuance of the bonds subject to approval by the North Carolina Housing Finance Agency (NCHFA). If the development receives a bond allocation from the NCHFA, a public hearing known as a TEFRA (Tax Equity and Fiscal Responsibility Act of 1982) will be required later (tentatively August 2021). The developer has applied for a bond allocation in an amount now estimated not to exceed Twenty Million Dollars (\$20,000,000) to provide all or part of the cost of the Development. There will be no obligation, financial or otherwise, placed upon the City Council of High Point to issue the bonds.

BACKGROUND:

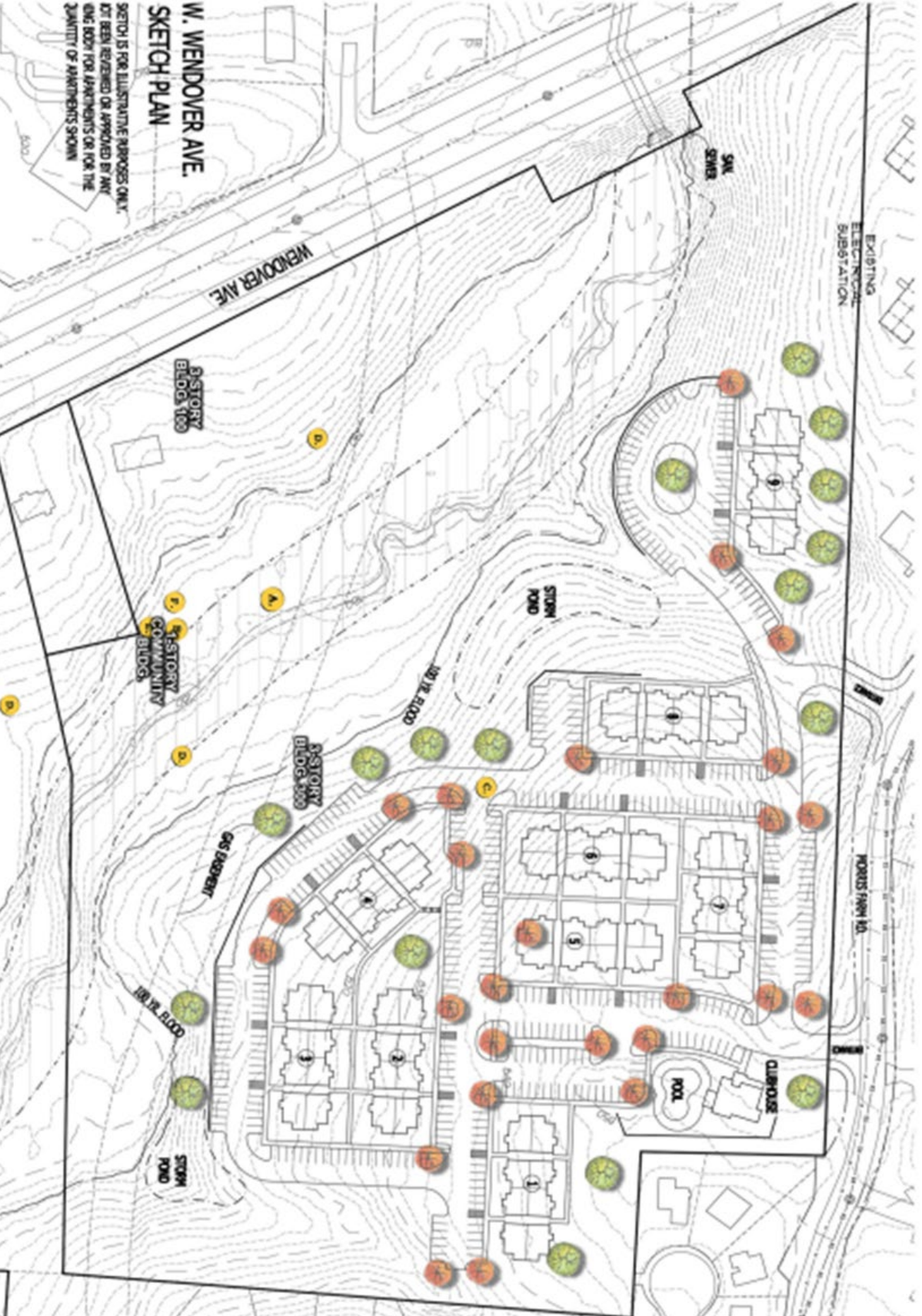
Under N.C.G.S. 160D-1311(b), cities are authorized to exercise the powers of a housing authority, including acting as the Issuer of tax-exempt multifamily housing bonds. The proceeds will be loaned to Wynnefield Forward, LLC.

BUDGET IMPACT:

There is no budget impact.

RECOMMENDATION / ACTION REQUESTED:

The Community Development and Housing Department recommends approval of the resolution giving preliminary approval to issuance of multifamily housing revenue bonds to finance the acquisition, construction and equipping of Wendover Heights and that the appropriate City official and/or employee be authorized to execute all necessary documents.



W. WENDOVER AVE.
SKETCH PLAN

SKETCH IS FOR ILLUSTRATIVE PURPOSES ONLY.
NOT BEEN REVIEWED OR APPROVED BY ANY
ONE BODY FOR APARTMENTS OR FOR THE
QUANTITY OF APARTMENTS SHOWN

RESOLUTION GIVING PRELIMINARY APPROVAL TO ISSUANCE OF
MULTIFAMILY HOUSING REVENUE BONDS TO FINANCE THE
ACQUISITION, CONSTRUCTION AND EQUIPPING OF WENDOVER
HEIGHTS

WHEREAS, the City Council (the “City Council”) of the City of High Point, North Carolina (the “City”) met in High Point, North Carolina at 5:30pm on the 3rd day of May, 2021; and

WHEREAS, pursuant to Section 160D-1311(b) of the General Statutes of North Carolina, the City is granted the power to exercise directly the powers of a housing authority organized pursuant to the North Carolina Housing Authorities Law, Article 1 of Chapter 157 of the General Statutes of North Carolina, as amended (the “Act”); and

WHEREAS, the Act in N.C.G.S. §§ 157-9 and 157-37 gives the City, acting as a housing authority, the power “to provide for the construction, reconstruction, improvement, alteration or repair of any housing project” and “to borrow money upon its bonds, notes, debentures or other evidences of indebtedness and to secure the same by pledges of its revenues”; and

WHEREAS, Wynnefield Forward, LLC, a North Carolina limited liability company, or an affiliated or related entity (the “Company”), intends to provide affordable housing in the City; and

WHEREAS, the Company has requested that the City assist it in financing the acquisition, construction and equipping of a 216-unit multifamily residential rental development to be known as Wendover Heights and located at 5000 W. Wendover Avenue in the City (the “Development”); and

WHEREAS, the Company has described to the City the benefits of the Development to the City and the State of North Carolina and has requested the City to agree to issue its multifamily housing revenue bonds in such amounts as may be necessary to finance the costs of acquiring, constructing and equipping the Development; and

WHEREAS, the City is of the opinion that the Development is a facility that can be financed under the Act and that the financing of the same will be in furtherance of the purposes of the Act;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF HIGH POINT:

1. It is hereby found and determined that the Development will involve the acquisition, construction and equipping of a multifamily housing facility, and that therefore, pursuant to the terms and subject to the conditions hereinafter stated and the Act, the City agrees to assist the Company in every reasonable way to issue bonds to finance the acquisition, construction and equipping of the Development, and, in particular, to undertake the issuance of the City’s multifamily housing revenue bonds (the “Bonds”) in an amount now estimated not to exceed Twenty Million Dollars (\$20,000,000) to provide all or part of the cost of the Development.

2. The City intends that the adoption of this resolution be considered as “official action” toward the issuance of the Bonds within the meaning of the regulations issued by the Internal Revenue Service pursuant to Section 1.150-2 of the Treasury Regulations issued under the Internal Revenue Code of 1986, as amended (the “Code”).

3. The Bonds shall be issued in such series and amounts and upon such terms and conditions as are mutually agreed upon between the City and the Company. The City and the Company shall enter into

a “financing agreement” pursuant to the Act for a term and upon payments sufficient to pay the principal of, premium if any, and interest on the Bonds and to pay all of the expenses of the City in connection with the Bonds and the Development. The Bonds will be issued pursuant to an indenture or security agreement between the City and a trustee (the “Trustee”) or the bondholder which will set forth the form and terms of the Bonds and will assign to the Trustee for the benefit of the holders of the Bonds, or directly to the bondholder, the City’s rights to payments under the financing agreement, except the City’s right to payment of fees and expenses and indemnification. The Bonds shall not be deemed to constitute a debt or a pledge of the faith and credit of the State of North Carolina or any political subdivision or agency thereof, including the City, but shall be payable solely from the revenues and other funds provided under the proposed agreements with the Company.

4. The City hereby authorizes the Company to proceed, upon the prior advice, consent and approval of bond counsel and the City’s counsel, to obtain approvals in connection with the issuance and sale of the Bonds and to obtain an allocation of a sufficient amount of the State of North Carolina’s “private activity bond limit”, as required by Section 146 of the Code and as defined in Section 146 of the Code, for the Bonds.

5. It having been represented to the City that it is desirable to proceed with the acquisition, construction and equipping of the Development, the City agrees that the Company may proceed with plans for such acquisition, construction and equipping, enter into contracts for the same, and take such other steps as it may deem appropriate in connection therewith, provided that nothing herein shall be deemed to authorize the Company to obligate the City without its written consent in each instance to the payment of any monies or the performance of any act in connection with the Development and no such consent shall be implied from the City’s adoption of this resolution. The City agrees that the Company may be reimbursed from the proceeds of the Bonds, if and when issued, for all qualifying costs so incurred as permitted by Treasury Regulations Section 1.150-2.

6. All obligations hereunder of the City are subject to the further agreement of the City and the Company to terms for the issuance, sale and delivery of the Bonds and the execution of a financing agreement, indenture or security agreement and other documents and agreements necessary or desirable for the issuance of the Bonds. The City has not authorized and does not authorize the expenditure of any funds or monies of the City from any source other than the proceeds of the Bonds. All costs and expenses in connection with the financing and the acquisition, construction and equipping of the Development, including the reasonable fees and expenses of the City’s counsel, bond counsel and the agent or underwriter for the sale of the Bonds, shall be paid from the proceeds of the Bonds or by the Company, but if for any reason the Bonds are not issued, all such expenses shall be paid by the Company and the City shall have no responsibility therefor. It is understood and agreed by the City and the Company that nothing contained in this resolution shall be construed or interpreted to create any personal liability of the officers or council members from time to time of the City.

7. The officers of the City are hereby authorized and directed to take all actions in furtherance of the resolution and the issuance of the Bonds.

8. The City hereby approves McGuireWoods LLP, Raleigh, North Carolina, to act as bond counsel for the Bonds.

9. This resolution shall take effect immediately.

Council member _____ moved the passage of the foregoing resolution and Council member _____ seconded the motion, and the resolution was passed by the following vote:

Ayes: _____

Nays: _____

Not voting: _____

* * * * *

I, Lisa B. Vierling, City Clerk for the City of High Point, North Carolina, DO HEREBY CERTIFY that the foregoing is a true and complete copy of so much of the proceedings of the City Council for the City of High Point, North Carolina, at a regular meeting duly called and held on May 3, 2021, as it relates in any way to the resolution hereinabove set forth, and that such proceedings are recorded in the minutes of the City Council.

WITNESS my hand and the seal of the City Council of the City of High Point, North Carolina, this _____ day of May, 2021.

(SEAL)

Lisa B. Vierling, City Clerk
City of High Point, North Carolina



**FORMAL BID RECOMMENDATION
REQUEST FOR COUNCIL APPROVAL**

DEPARTMENT:

COUNCIL AGENDA DATE:

BID NO.: CONTRACT NO.: DATE OPENED:

DESCRIPTION:

PURPOSE:

COMMENTS:

RECOMMEND AWARD TO: AMOUNT:

JUSTIFICATION:

ACCOUNTING UNIT	ACCOUNT	ACTIVITY	CATEGORY	BUDGETED AMOUNT
TOTAL BUDGETED AMOUNT				

DEPARTMENT HEAD: DATE:

The Purchasing Division concurs with recommendation submitted by the and recommends award to the lowest responsible, responsive bidder in the amount of \$.

PURCHASING MANAGER: DATE:

Approved for Submission to Council
FINANCIAL SERVICES DIRECTOR: DATE:

CITY MANAGER: DATE:

CITY OF HIGH POINT

AGENDA ITEM



**Title: Biosolids Disposal
Waste Management**

From: Terry Houk – Public Services Director
Derrick Boone – Assistant Public Services Director

Meeting Date: May 3, 2021

Public Hearing: N/A

Advertising Date: N/A
Advertised By: N/A

Attachments: N/A

PURPOSE:

To increase the amount of PO# 103343 with Waste Management from \$60,000 to \$148,520 to cover the additional cost of biosolids disposal while the incinerator is offline due to routine maintenance.

BACKGROUND:

The City of High Point disposes bio-solids from the wastewater system via incineration. The incinerator has been offline for the last month for routine maintenance. The requested increase of \$88,520 on PO #103343 is due to the additional cost of landfill disposal while the incinerator has been offline for maintenance. EPA requires that the incinerator be emissions stack tested once a year. Results of the test determine operating parameters we need to follow to comply until tested again. This process takes one month minimum and during this time we process and dispose of solids to an approved disposal site. This time during the restart the main burner failed to ignite, and parts have been ordered to repair the control system. If repairs fix the burner, it will take a minimum of two (2) weeks to bring the incinerator online to begin processing solids.

BUDGET IMPACT:

Funds are available in the FY 2020-2021 budget.

RECOMMENDATION / ACTION REQUESTED:

Public Services is recommending that Council approve the request for the increase of blanket PO# 103343 with Waste Management to the amount of \$148,520.

CITY OF HIGH POINT

AGENDA ITEM



Title: Public Hearing for Fitesa

From: Interim Director Sandy Dunbeck and
Vice President Marshall Yandle,
High Point Economic Development

Meeting Date: January 19, 2021

Public hearing: yes

Advertising Date: January 8, 2021

Attachments: Legal Notice

Advertised by: High Point Economic
Development

PURPOSE:

The High Point City Council is asked to consider a request from Fitesa to authorize performance-based incentives for a project at 200 S West Point Avenue in the amount of \$342,720.

PROJECT & BACKGROUND:

Fitesa is a leader in the nonwoven fabrics industry, specializing in providing innovative fabrics for the hygiene, medical and industrial markets. The West Point Avenue building is adjacent to the City of High Point's Small-Scale Manufacturing Area and is located in the Southwest High Point Opportunity Zone area.

- Fitesa proposes to invest \$18,000,000 in building improvements, machinery and equipment and create 22 new full-time positions in High Point. The company currently owns other manufacturing operations and is evaluating expanding in High Point or one of the other company locations.
- The High Point Economic Development staff recommends that High Point City Council consider authorizing cash grant performance-based incentives of \$342,720.

BUDGET IMPACT:

The source of those monies would be the City's Economic Development Incentive Fund, which is funded by general and electric revenues.

RECOMMENDATION / ACTION REQUESTED:

The High Point Economic Development staff recommends that City Council:

- authorize performance-based incentives for the Fitesa project of up to \$342,720.
- authorize the City Manager to execute a performance agreement with the company containing benchmarks for the company to achieve and a schedule for the payment of such financial incentives.

Pursuant to N.C. General Statute 158-7.1, notice is hereby given that a public hearing will be held on Tuesday, January 19, 2021 at 5:30 pm in the Council Chambers, in the Municipal Building, 211 S. Hamilton St., High Point, NC. The purpose of the hearing is to receive public input on a prospective funding request for local incentives. A company proposes to expand at 200 South West Point Ave #102, High Point, NC, invest \$18,000,000 in building improvements, machinery and equipment and create 22 full-time jobs. The High Point City

Council will consider incentives of \$342,720 for the project. The High Point source of funding is the Economic Development Incentive Fund which is funded by general and electric revenues.

In order to maintain the health, safety, and well-being of our residents, staff, and the City Council, this meeting will be conducted electronically. As part of the city of High Point's COVID-19 mitigation efforts, in-person attendance will not be allowed at this meeting. Instead, the meeting will be live-streamed. Once the City Council is in session on January 19, 2021 at 5:30 p.m., please visit www.HighPoint-NC.gov/VirtualPublicMeeting to listen to the meeting. Public comments can be submitted by:

- Calling 336-883-3522 and leaving a message, or by
- Emailing written comments to publiccomment@highpoint-nc.gov, or by
- Dropping written comments

off in the City of High Point's utility payment drop-boxes located in the Green Drive and the Commerce Avenue parking on both sides of the Municipal Building located at 211 S. Hamilton Street.

- Please identify the topic/public hearing.

In accordance with recently adopted legislation regarding public hearings at remote meetings, after the public hearing is held, the required 24-hour waiting period will be open before a vote can be taken on this matter. During that time, the public can submit any additional comments on the subject matter for the public hearing.

Please note that the deadline for submitting comments for public hearings will be 24 hours after the public hearing is held by the City Council.

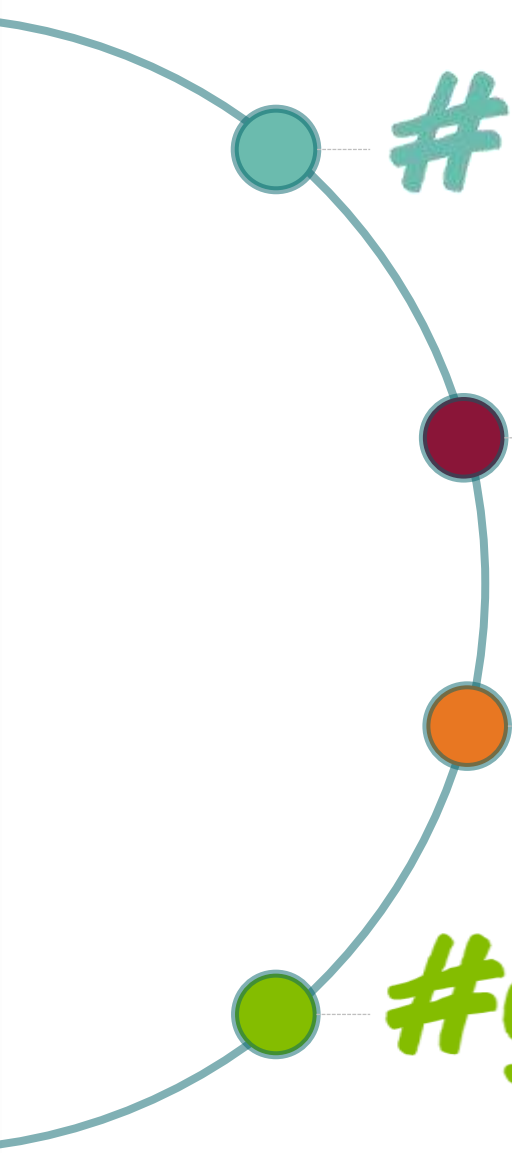
Questions? Please contact the City Clerk's Office at 336-883-3536 or 336-883-3690.

Jan. 8, 2021



Fitesa

fitesa



#leader

One of the world's largest nonwovens manufacturer (Nonwovens Industry)
Brazilian company with the largest international footprint (Fundação Dom Cabral)

#global

23 plants in 13 countries

Brazil (4), China, Germany, Hungary, India, Italy (3), Mexico, Netherlands, Peru, Sweden, Thailand (2), UAE, USA (5). Sales office in Japan. Corporate Office in Brazil.

#innovative

5 Innovation Centers

4 pilot lines

China, Germany, Italy and United States

#green

One of the largest sustainable portfolios in the nonwovens industry

Winners of the IDEA 2019 Roll Goods Achievement Award for our 100% BioBase PLA Soft



Fitesa is owned by Évora
(a Brazilian private organization)

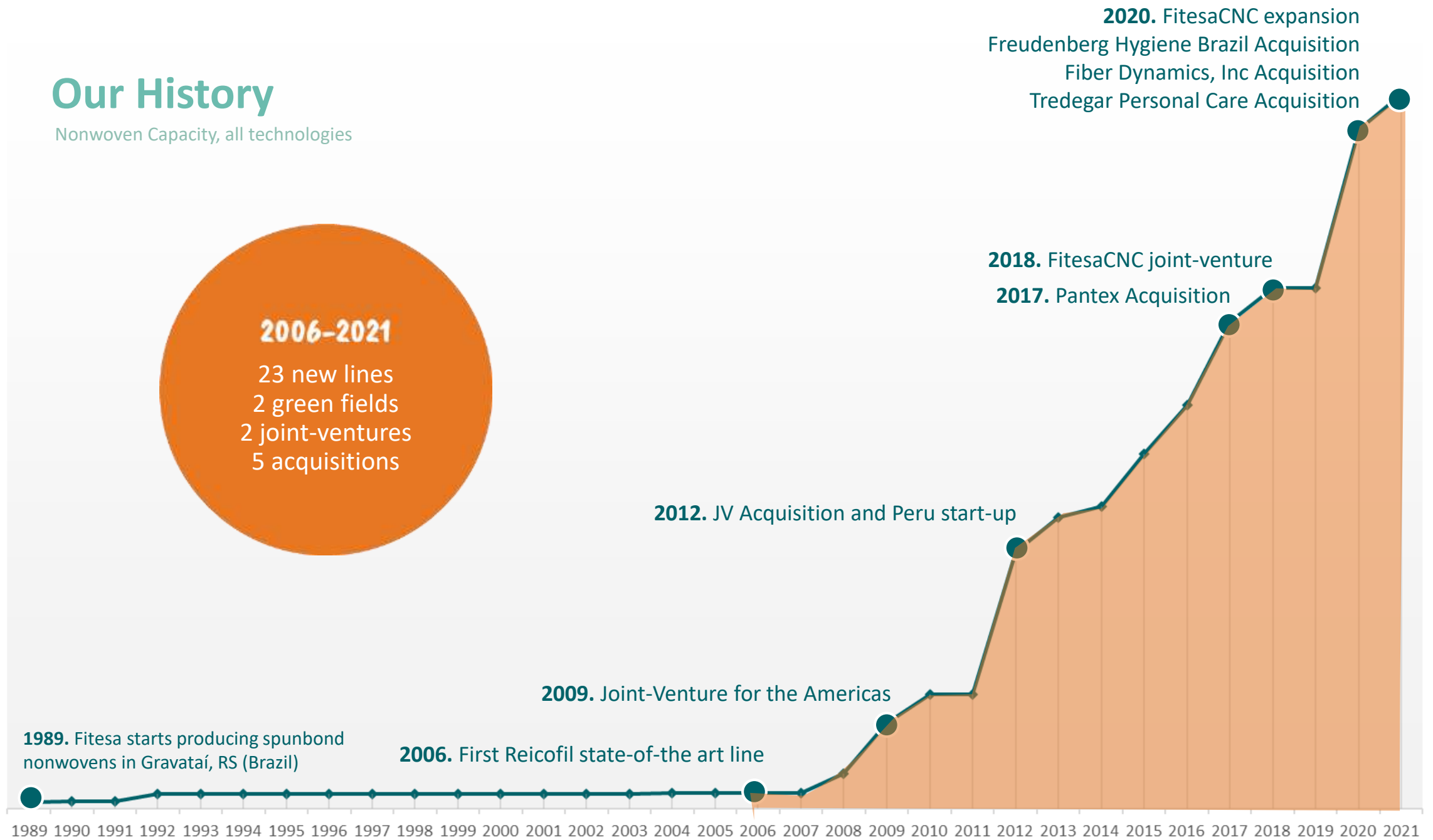
Fitesa

Crown Embalagens

America Tampas

Our History

Nonwoven Capacity, all technologies



Our Identity

Values	Management Practices
Trust	Meritocracy
Simplicity and Frugality	Empowerment and Responsible Autonomy
Respect for Individuals	Teamwork
Transparency	Employee Development
Honesty and Integrity	Always do More and Better with Less

Vision and Mission

Vision	Mission
To be the preferred choice for the supply of nonwoven solutions to the global hygiene and healthcare industries.	Fitesa develops nonwoven solutions for the hygiene and healthcare industries. We manufacture and sell our products across the globe and build our business on the aligned values of the company and our employees. We are constantly seeking new ways to evolve and grow in dynamic and responsible ways.

Expansion project

- The project will be the installation of 2 machines for providing specialty fabrics to the Health Care industry.
 - \$18 million dollar investment
 - Creation of 22 additional jobs with wage rate of \$15-\$19 per hour depending on experience

#workeasier

#lifebetter

Obrigado

Thank you

Grazie

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谢谢

Gracias

Tack

Dankeschön

Köszönöm

Dank je

धन्यवाद

شكرا لكم

有難うございました

fitesa



**FORMAL BID RECOMMENDATION
REQUEST FOR COUNCIL APPROVAL**

DEPARTMENT:

COUNCIL AGENDA DATE:

BID NO.: CONTRACT NO.: DATE OPENED:

DESCRIPTION:

PURPOSE:

COMMENTS:

RECOMMEND AWARD TO: AMOUNT:

JUSTIFICATION:

ACCOUNTING UNIT	ACCOUNT	ACTIVITY	CATEGORY	BUDGETED AMOUNT
TOTAL BUDGETED AMOUNT				

DEPARTMENT HEAD: DATE:

The Purchasing Division concurs with recommendation submitted by the and recommends award to the lowest responsible, responsive bidder in the amount of \$.

PURCHASING MANAGER: DATE:

Approved for Submission to Council
FINANCIAL SERVICES DIRECTOR: DATE:

CITY MANAGER: DATE:

CITY OF HIGH POINT

AGENDA ITEM



Title: Destination Development Grant for High Point Museum - Budget Ordinance

From: Stephen M. Hawryluk
Budget and Performance Manager

Meeting Date: May 3, 2021

Public Hearing: No

Advertising Date / N/A

Advertised By: -

Attachments: Budget Ordinance

PURPOSE:

To appropriate \$18,250 in grant revenue received from the DRIVE High Point Foundation.

BACKGROUND:

The High Point Museum has been awarded a Destination Development Grant in the amount of \$18,250 from the DRIVE High Point Foundation. The Museum plans to host a traveling exhibit from the Grammy Museum about John Coltrane September 1 - December 5, 2021, with the opening coinciding with the 10th Anniversary of the John Coltrane International Jazz and Blues Festival in High Point. The grant requires a 50% (\$18,250) match from the City, which will be spent in the new fiscal year.

The proposed amendment appropriates these grant funds for the exhibit rental fee and related costs for installing and promoting the exhibit at the High Point Museum.

BUDGET IMPACT:

There is a local match of \$18,250, which will be included in the FY 2021-22 budget.

RECOMMENDATION / ACTIONS REQUESTED:

The Financial Services Department recommends and asks the City Council to approve the budget amendment.

“AN ORDINANCE AMENDING THE 2020-2021 BUDGET ORDINANCE
OF THE CITY OF HIGH POINT, NORTH CAROLINA
TO APPROPRIATE A DESTINATION DEVELOPMENT GRANT FOR THE HIGH POINT MUSEUM

Be it ordained by the City Council of the City of High Point, North Carolina, as follows:

Section 1. The City of High Point has received \$18,250 from the DRIVE High Point Foundation and will use the revenue for the exhibit rental fee and related costs for installing and promoting a traveling exhibit from the Grammy Museum about John Coltrane at the High Point Museum.

Section 2. The 2020-2021 Budget Ordinance of the City of High Point should be amended as follows:

(A) That the following Library revenues be amended as follows:

Donations and Contributions	\$18,250
-----------------------------	----------

(B) That the following Library expenditures be amended as follows:

Designated Donation Expense	\$18,250
-----------------------------	----------

Section 3. That all ordinances, or parts of ordinances in conflict with this ordinance are hereby repealed to the extent of such conflict.

Section 4. That this ordinance shall be effective from and after its passage."

Adopted by High Point City Council, this the 3rd day of May 2021

Mayor, Jay W. Wagner

ATTEST

Lisa B. Vierling,
City Clerk

"AN ORDINANCE AMENDING THE 2020-2021 BUDGET ORDINANCE
OF THE CITY OF HIGH POINT, NORTH CAROLINA
TO APPROPRIATE A DESTINATION DEVELOPMENT GRANT FOR THE HIGH POINT MUSEUM

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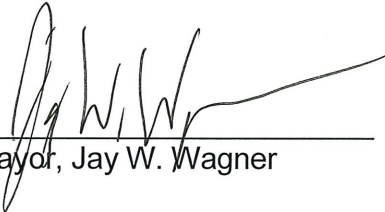
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Designated Donation Expense	\$18,250
-----------------------------	----------

Section 3. That all ordinances, or parts of ordinances in conflict with this ordinance are hereby repealed to the extent of such conflict.

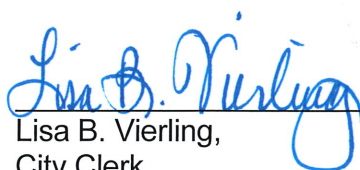
Section 4. That this ordinance shall be effective from and after its passage."

Adopted by High Point City Council, this the 3rd day of May 2021

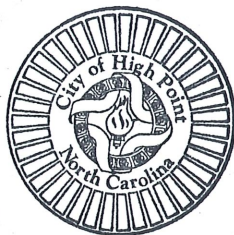


Mayor, Jay W. Wagner

ATTEST



Lisa B. Vierling,
City Clerk



CITY OF HIGH POINT

AGENDA ITEM



Title: NPDES Permitting Support for Future Expansion of the Eastside WWTP
Tetra Tech

From: Terry Houk – Public Services Director
Derrick Boone – Public Services Asst. Director

Meeting Date: May 3, 2021

Public Hearing: N/A

Advertising Date: N/A

Advertised By: N/A

Attachments: Attachment A – Scope of Services for NPDES Permitting Support for the City of High Point Eastside WWTP (NPDES No. NC0024210)

PURPOSE:

To contract with Tetra Tech to provide monitoring and modeling services as part of the planning for the expansion of the Eastside wastewater treatment plant (WWTP) (NC0024210)

BACKGROUND:

The Public Services Department is currently evaluating a future expansion of the Eastside wastewater treatment plant. Tetra Tech will oversee monitoring and perform the necessary technical analyses to evaluate the planned expansion's impact on Randleman Lake such that the NCDENR-Division of Water Resources will have the necessary information to issue speculative limits to guide the facility expansion planning. Tetra Tech will perform the following tasks under the DWR approved monitoring plan: (See attached executive summary).

BUDGET IMPACT:

Funds for this are available in the adopted budget.

RECOMMENDATION / ACTION REQUESTED:

The Public Services Department recommends approval and asks for the Council to award the professional engineering services to Tetra Tech in the amount of \$199,791.

Scope for NPDES Permitting Support for the City of High Point Eastside WWTP (NPDES No. NC0024210)

Phase 2 – Monitoring and Modeling

April 21, 2021

TO BE PERFORMED FOR

City of High Point

Public Services
211 S Hamilton Street
High Point, NC 27260

BY

**Tetra Tech
Engineering P.C.**

1 Park Drive, Suite 200
P.O. Box 14409
RTP, NC 27709

P +1-919-485-2058
F +1-919-485-8280
tetrattech.com

EXECUTIVE SUMMARY

Under this project scope, Tetra Tech will support NPDES wasteload allocation development for the City of High Point and its facility planning engineering consultant, Hazen, for the planned expansion of the City's Eastside Wastewater Treatment Plant (WWTP). The Eastside WWTP discharges to the Deep River arm of Randleman Lake, a water supply for the region that is managed by the Piedmont Triad Regional Water Authority (PTRWA). In order for the City to be permitted for the expansion, it must demonstrate to the satisfaction of the North Carolina Division of Water Resources (DWR, NPDES permitting authority in NC) that water quality standards for the lake can be met with the expanded Eastside discharge. Tetra Tech will oversee monitoring and perform the necessary technical analyses to evaluate the planned expansion's impact on Randleman Lake such that DWR will have the necessary information to issue speculative limits to guide the facility expansion planning.

Tetra Tech, City staff, and Hazen representatives met with DWR to review Tetra Tech's Monitoring and Modeling Plan (Tetra Tech, 3/2/2021) on April 7, 2021. DWR approved of the Plan which will involve the following components:

- Task 1. Monitoring: to support model setup, calibration, and corroboration
- Task 2. QUAL2K model development and application to support speculative limits development for oxygen-demanding waste parameters (QUAL2K is a receiving water model, developed collaboratively between academia and the U.S. EPA, that has been tested and applied extensively in simulating fate and transport of oxygen-demanding substances including those in municipal wastewater treatment facility discharges)
- Task 3. CORMIX model development and application to develop mixing zones for the effluent as the basis for establishing toxic pollutant and whole effluent toxicity limits and requirements (CORMIX was developed collaboratively between academia, U.S. EPA, and MixZon Inc. and is a recommended tool for predicting how discharges mix with receiving waters in order to estimate dilution for development of effluent limits for toxic substances including those in the Eastside facility effluent)
- Task 4. BATHTUB model development and application to support evaluation of the expanded discharge volume impact on trophic levels of Randleman Lake (BATHTUB was developed by the U.S. Army Corps of Engineers and is a well-accepted tool by U.S. EPA and others for predicting eutrophication response of reservoirs to inputs of nutrients from point and nonpoint sources)
- Task 5. Facilitation of interaction with DWR to address technical concerns regarding the modeling and speculative limits request
- Task 6. Contract and project management to ensure that the project is completed on time and on budget with successful results for the City

To meet the City's timeline for the Eastside facility expansion planning and permitting, it is imperative that this project begin immediately after Council approval and contract execution. The monitoring required must be performed between May and October of this year or the project risks losing a year of time until monitoring can be completed the following year.

The cost to the City for conducting this project will be \$199,791 with anticipated completion by March 2022 assuming weather conditions are appropriate for sampling this summer and timely response from DWR in its review of the modeling results and issuance of speculative limits.

BACKGROUND

The purpose of the scope is to support City of High Point in planning for the expansion of its Eastside wastewater treatment plant (WWTP) (NC0024210) which discharges to a Deep River tributary arm of Randleman Lake within the Cape Fear River Basin. The facility is currently permitted to discharge 26 million gallons per day (MGD) and the City is seeking to expand the discharge to 32 MGD. The North Carolina Division of Water Resources (DWR) has indicated that such an expansion will require an environmental assessment including speculative limits to be subject to public review and comment. DWR has indicated that a wasteload allocation (WLA) modeling analysis should be performed by the City and coordinated with agency staff.

Under Phase 1 of the project, Tetra Tech met with representatives of the City, Hazen as the City's facility engineering consultant, and DWR to scope out study needs. Based upon study objectives and data review, Tetra Tech prepared a Monitoring and Modeling Plan that was approved April 7, 2021 during a coordination call to resolve any DWR questions and concerns regarding the Plan.

This scope of work is for Phase 2 of the project to implement the Monitoring and Modeling Plan. Tasks are separated out for field monitoring, QUAL2K modeling, CORMIX modeling, BATHTUB modeling, coordination with DWR, and project management.

2.0 SCOPE OF WORK

TASK 1: MONITORING

Tetra Tech will conduct monitoring to support model setup, calibration and corroboration. Initial field efforts will focus on reconnaissance to finalize sampling stations, flow monitoring sites, and to help plan to avoid any potential pitfalls (e.g., stream accessibility) when conducting the primary sampling events. Data collection for QUAL2K model calibration and corroboration will be performed during two separate trips. The goal will be to obtain information at or near critical conditions but different enough between the two sampling events to corroborate the model with one set that was calibrated with the other data set. The subtasks to plan and complete this work are outlined below.

1.1. CONDUCT RECONNAISSANCE AND LOGISTICS PLANNING

Logistically, Tetra Tech will need to coordinate with Meritech LLC, PTRWA, the City of High Point, and the NC DWR Winston Salem Regional Office. Tetra Tech will make arrangements for all sample collection and laboratory support services including field equipment rental. Reconnaissance will be performed on the lake to confirm station locations, constraints, and check the time for boat travel between stations and for the entire run. Lake depth measures will be taken at primary stations at the channel center point, and halfway between the center and each bank to corroborate bathymetry data or support adjustments of channel depth estimates for model development. Additionally, Tetra Tech will work with Meritech to test the feasibility of attaching a data sonde for continuous monitoring to a Hwy 62 bridge piling on the lake causeway.

Tetra Tech will also locate physical access points for measuring flow in the primary tributaries entering the Deep River arm and Hickory Creek arm of Randleman Lake. Currently, it is anticipated that this will include measurements in Richland Creek, Deep River, Reddicks Creek, and Hickory Creek. Arrangements will be made for rental of a flow meter with sufficient sensitivity to accurately measure very low velocities and a YSI meter to obtain physical information with the flow measurements.

Tetra Tech will also work out logistics for tracking conditions at appropriate precipitation and flow monitoring stations that will be used to make determinations of adequate conditions for sampling (i.e., steady-state, limited to

no significant precipitation). A tracking protocol and go/no-go criteria will be set up to decrease risk of having to re-sample due to unacceptable receiving stream conditions.

1.2. PREPARE HEALTH AND SAFETY PLAN (HASP)

Based on the Monitoring Plan and additional knowledge obtained by the reconnaissance, Tetra Tech will develop a Health and Safety Plan (HASP) to ensure that the field team is aware of risks it will face, takes appropriate precautionary safety measures, has a communication plan to ensure others know where the team will be, and knowledge of closest urgent care and hospital facilities in case of an emergency. Tetra Tech's Health and Safety Officer will review the HASP and provide feedback before it is employed in the field.

1.3. PERFORM FLOW MEASUREMENTS

Tetra Tech personnel will make flow measurements at the Randleman Lake tributary locations defined during the reconnaissance. Field records will be maintained, quality-assured, and relayed to the modeling team for use in model calibration and corroboration.

1.4. CONDUCT WATER QUALITY SAMPLING

Water quality sampling will be conducted on two separate days approximately one or two months apart to provide appropriate datasets for conducting QUAL2K model calibration and corroboration. The two sampling events will be targeted to be performed sometime between June 1 and October 31, 2021. On each sampling day, two sets of sample runs will be performed, one in the morning, and one in the afternoon.

Sampling will be dependent on weather and flow conditions. Precipitation and flow will be monitored online at nearby gages to ensure that there is no appreciable precipitation seven days prior to sampling and longer if gages indicate that runoff has not receded to approximately baseflow (steady state) levels. Field sampling teams and laboratory services will be on-call for these periods and sampling go/no-go decisions will be made approximately 24 hours prior to scheduled deployment. City of High Point and PTRWA project contacts will be notified of sampling "go" decisions to be aware that the sampling teams will be on the lake during these two sampling days and to get appropriate access to boat launches as needed.

The sampling team will conduct sampling using a boat crew of at least two passengers: a driver and a field person. The field person(s) will be responsible for collecting, documenting, and storing the background samples.

Sampling techniques will be conducted using approved methodologies endorsed by NCDEQ for surface waters. Detection limits and quantification levels need to be appropriate for the applicable North Carolina surface water quality standards. The associated Standard Operating Procedures (SOPs) are to be followed. Samples must be collected with new, verified, and certified-clean equipment. Filtering and/or acid preservation using clean hands and equipment will be conducted onsite as required by the analytical method.

One or more waterproof field logbooks must be maintained for recording data collection activities performed during the study. The general principle of information recording is that all entries be sufficient to reconstruct the site investigation without reliance on memory. All field measurements from samples collected will be recorded. Wherever a sample is collected, at a minimum, the following will be recorded:

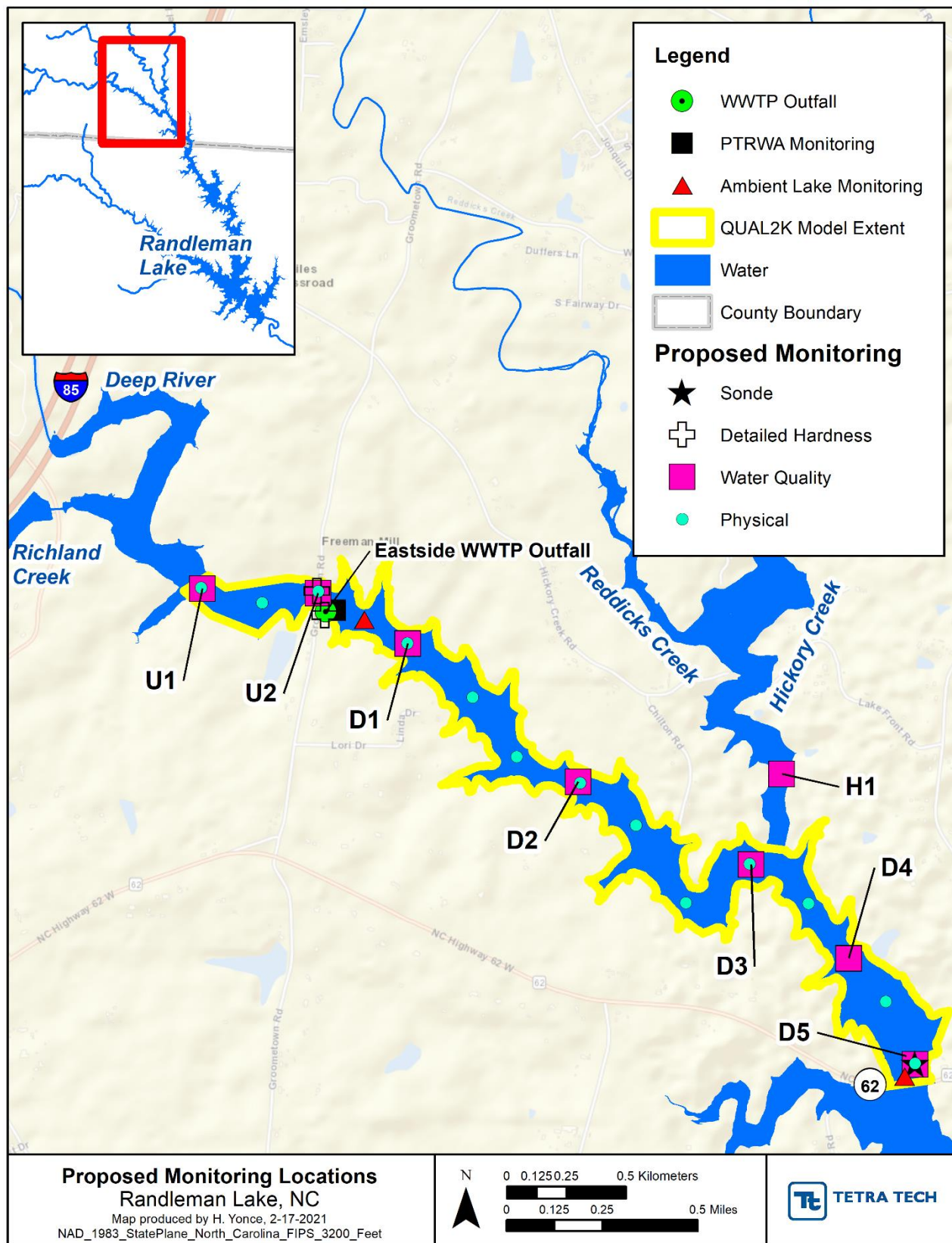
- Sample collection location (i.e., coordinates)
- Field observations (e.g., weather conditions, treefalls)
- Date and time
- Sampling challenges or quality assurance issues
- Sample depth
- Sampling team member names

To ensure consistency, a standardized form will be developed by the monitoring team prior to the sampling effort and applied throughout the project duration. Each section of the form will be completed with an ink pen. Any information not applicable to a certain site will be flagged as “NA”. Additionally, digital photographs documenting the sampling locations (i.e., showing the orientation to the surrounding area and nearby objects) should be taken and included in the documentation. Each photograph documentation in the logbook should include the assigned photograph number, field date, and subject.

Physical parameters (water temperature, pH, DO, conductivity, and Secchi depth) will be measured in the field using a sonde and Secchi disk every 1000 feet throughout the QUAL2K modeling extent. These measurements will be conducted at one-meter vertical intervals for the entire depth of the water column at each primary sampling location (see table and map below). For physical parameter measurement at the 1000 foot intervals between primary stations, physical parameters will be measured at ½ Secchi depth, 1 foot off of the bottom, and halfway between the bottom and surface. Additionally, a sonde will be deployed at Highway 62 to measure continuous physical parameters at that location, approximately one foot below the water surface for the duration of each sampling event.

Proposed primary sampling locations (upstream & downstream relative to Eastide Outfall)

Site ID	Site Description
U1	1500 feet upstream of SR1129, downstream of junction of Richland Creek and Deep River
U2	SR1129 crossing (Groometown Road)
D1	1500 feet downstream of SR1129
D2	Midpoint between D1 and D3
D3	7000 feet downstream of D1, upstream of junction with Hickory Creek
H1	Hickory Creek, 1000 feet upstream of junction with Deep River
D4	Midpoint between Hickory Creek junction and Highway 62 crossing
D5	Highway 62 crossing



Proposed monitoring locations near the Eastside WWTP discharge

Grab sampling of water quality constituents at the eight identified primary sampling locations will be conducted twice per day (morning and afternoon). Each water quality sample will be collected as a composite sample between the water surface and twice the Secchi depth for the given location. Additionally, the monitoring and lab team will coordinate with the City Eastside WWTP Superintendent to collect two effluent samples (one AM and one PM to coincide with the lake sampling) on the two primary sampling event days.

Parameters that will be collected for laboratory analysis are:

- BOD, 5 day
- CBOD, 5 day
- BOD, 20 day
- CBOD, 20 day
- Total Dissolved Solids
- Ammonia, Nitrogen
- TKN
- Nitrate/Nitrite, Nitrogen
- Phosphorus, total
- Ortho-Phosphate
- Dissolved Ortho
- Hardness, total
- TOC
- Turbidity
- Chlorophyll-a

Proposed Deliverables (schedule)

1. Lake reconnaissance (target within 30 days of NTP)
2. Stream reconnaissance for flow measurement stations (target within 30 days of NTP)
3. Updates to the monitoring plan based on reconnaissance and logistics planning (within 15 days of both lake and stream reconnaissance)
4. Primary lake water quality sampling day 1 (weather & flow dependent; target June)
5. Primary lake water quality sampling day 2 (weather & flow dependent; target between end of July and early September)
6. Lab analytical results (included with final report documentation)

TASK 2: QUAL2K MODELING

The second objective listed in the modeling plan is for Tetra Tech to “Simulate impacts of the expanded discharge on near-field DO dynamics and kinetics of the receiving waterbody to support development of speculative limits for biochemical oxygen demand (BOD) and ammonia nitrogen.” This objective will be addressed with the application of the QUAL2K receiving water model that will be developed under Task 2. QUAL2K was developed by staff from the Civil and Environmental Engineering Department at Tuft’s University and the Washington State Department of Ecology, with collaborative engagement with the U.S. EPA.

QUAL2K has been applied extensively in simulating fate and transport of oxygen-demanding substances. This model is frequently used to simulate both existing and speculative conditions in receiving waters to support NPDES permitting decisions related to speculative limits. The QUAL2K model can simulate point source input based on a breadth of hydraulic and water quality parameters (flow rate, nitrogen and phosphorus species, dissolved oxygen concentration, BOD loading, etc.). The model will be setup based on existing conditions in the near-field around the Eastside WWTP outfall, calibrated and corroborated based on additional sampling that will be conducted in 2021, and applied under critical low flow warm summer conditions to ensure speculative permit limits result in simulation of Randleman Lake maintaining attainment of all key water quality criteria applicable.

The QUAL2K model simulates a single steadystate 24-hour period and predicts effluent impacts on a diel time scale. The latest release is QUAL2K v12b1, which will be applied in the near-field DO dynamics and kinetics study for High Point's Eastside WWTP.

Tetra Tech will develop a QUAL2K model to simulate the impact of modified permit limits on the upper portion of the Deep River arm of Randleman Lake. The QUAL2K model will be developed in accordance with the DWR approved modeling plan for the Eastside WWTP.

2.1. QUAL2K DATA COMPILATION & PRE-PROCESSING

QUAL2K requires information about receiving water hydraulic geometry, meteorological forcing data, and flow and water quality associated with point sources and boundary conditions (headwaters, tributaries, diffuse flows). With the additional field data that will be collected in 2021 documented in the DEQ-approved Monitoring and Modeling Plan, there will be sufficient data available to construct, calibrate, and corroborate a robust QUAL2K model. The existing available data for Randleman Lake, its tributaries, and the Eastside WWTP outfall can be found in Table 1 of the modeling plan, much of which will be employed for the QUAL2K model of the upper portion of the Deep River arm. Data compilation and pre-processing will involve analyzing and organizing all existing data, new data from multiple field sampling events, and data from multiple sources and types. For example, daily Discharge Monitoring Reports (DMRs) will be used to characterize effluent properties, while other data such as monthly grab sample data for chl-a will be processed for model calibration, hydraulic channel measurements will be converted into a format to inform the model (e.g. rating curve or Manning's formulae), sub-hourly sonde data will be processed for either model input and/or calibration, and hourly meteorological data will be processed for input. To the extent possible, inputs or calibration data processing that are applicable to the CORMIX and/or BATHTUB models, will be processed simultaneously to improve efficiencies.

As data are being compiled and processed for the QUAL2K model, the modeler(s) will maintain a quality assurance spreadsheet that documents data sources, processing procedures, assumptions made, and data file records. Quality assurance of the data used in the QUAL2K model will be conducted by a senior technical advisor. Issues found will be addressed prior to model set-up and analyses.

2.2. PERFORM QUAL2K MODEL SETUP

As described in the modeling plan, the spatial domain of the QUAL2K model application will include the upper portion of the Deep River arm of Randleman Lake, from approximately Groometown Rd (SR 1129) to NC-62. Data processed under Section 2.1 will be entered into the model using the QUAL2K Excel-based interface for simulation. Inputs are organized by separate sheets/tabs in Excel: QUAL2K (file details, calculation time step, simulation date), Headwater (flow and water chemistry of Deep River and Richland Creek headwaters), Reach (reach-specific inputs such as length, slope, hydraulics), meteorology tabs for hourly inputs (Air Temperature, Dew Point Temperature, Wind Speed, Cloud Cover, Shade), Rates (systemwide or reach-specific water chemistry kinetics and thermal properties (Rates, Reach Rates, Light and Heat), and inflows or outflows associated with groundwater exchanges, non-point sources, tributaries, and outfalls (Diffuse Sources, Point Sources). The QUAL2K model will be set-up to evaluate fate and transport of oxygen-demanding substances in the vicinity of the Eastside outfall based on four anticipated model setup conditions: calibration and corroboration periods based on one existing conditions captured during two unique field sampling trips undertaken in 2021, and simulated facility expansion under critical conditions for summer and winter low-flow periods (see Section 2.4). Many model inputs associated with water chemistry kinetics for example are anticipated to be maintained between calibration and corroboration model setups, however boundary conditions and meteorology forcing parameters will vary based on observations associated with the two different field sampling excursions.

Following model setup, the QUAL2K model will be checked for reasonableness prior to conducting sensitivity tests and application scenarios. During model set-up the quality assurance spreadsheet will be updated by the modeler(s) and reviewed by a senior technical advisor.

2.3. CONDUCT QUAL2K MODEL CALIBRATION & CORROBORATION

The QUAL2K model setup for the upper portion of the Deep River arm of Randleman Lake will be calibrated and corroborated based on two unique datasets observed and sampled in 2021. Observed data processed under Section 2.1 will be entered into the model using the QUAL2K Excel-based interface to compare to simulated output. Calibration and/or corroboration observation data are organized by separate sheets/tabs in Excel based on data type and can be located anywhere spatially within the model extent: Hydraulics Data (e.g. flow, depth, velocity), Diel Data (hourly water chemistry data typically from sondes), and minimum, maximum, and average values for water chemistry typically available from grab samples (Temperature Data, WQ Data, WQ Data Min, WQ Data Max),

The QUAL2K model will be calibrated to one field-sampled dataset which involves iterative tweaking of relevant model rates and parameterized within reasonable ranges to achieve the best fit of simulated output relative to observation. QUAL2K model calibration may be presented as relative error when comparing simulated output to observed data related to hydraulics, temperature, and key water quality parameters (e.g. dissolved oxygen, nutrients). Maintaining key calibrated model rates and parameterization, the QUAL2K model is corroborated by running the model under different conditions, and comparing simulated results to the uniquely different field sampling trip observations. Similarly, model corroboration may be presented as a relative error calculation as calculated between simulated output and observed data related to hydraulics, temperature, and key water quality parameters.

During model calibration and corroboration, the quality assurance spreadsheet will be updated by the modeler(s) and reviewed by a senior technical advisor.

2.4. PERFORM QUAL2K SENSITIVITY ANALYSIS & SCENARIO APPLICATION

Following development, calibration, and corroboration of the QUAL2K model, the model will be applied to conduct a fate and transport analysis for the near-field conditions of Randleman Lake by simulating waterbody response to speculative permit limits from the Eastside WWTP discharge, particularly related to nutrient and DO concentrations. These constituents are regularly monitored in Randleman Lake because of its water supply status, and there are numeric water quality criteria specified in regulation for these parameters that must be met (or at least not worsened if not currently met due to sources other than the WWTP) when the expanded discharge is in place. The calibrated and corroborated QUAL2K model will be used to simulate the fate and transport of oxygen-demanding substances in Randleman Lake under seasonal critical low flow (i.e., summer and winter 7Q10) and elevated temperature conditions. Results will be presented for both existing permit limits and proposed speculative limits. If existing water quality standards are not exceeded during critical conditions for the speculative limits, it can be assumed that water quality standards will also be met under more typical conditions.

For the QUAL2K model of the Deep River arm of Randleman Lake, critical conditions will be simulated during late summer when air temperatures are high, and water levels are low in the lake. The waterbody will be modeled with headwaters and tributaries simulated at the lowest 7-day average flow that occurs on average once every 10 years (7Q10) based on estimates provided by the U.S. Geological Survey in collaboration NCDWR. Results from the model application will be subject to review by a senior technical advisor, and provided in the modeling report.

The most critical model inputs/parameters for QUAL2K tend to include reaeration formula selection, channel slope, and boundary flow and DO conditions. Analyses will be conducted to examine model sensitivity relative to a number of critical inputs/parameters. Sensitivity tests will involve proportionally adjusting the value (e.g., by $\pm$

20% or in the case of temperature ± 2 degrees) and quantifying the impacts on the ultimate end-point, which in this case is related to dissolved oxygen kinetics. Results from the sensitivity tests will be subject to review by a senior technical advisor, presented in the modeling report.

2.5. DOCUMENT QUAL2K MODELING RESULTS

Tetra Tech will develop a Fate and Transport Modeling Report for Hazen & Sawyer and High Point that summarizes the QUAL2K modeling work and details the speculative limits proposed for the Eastside WWTP NPDES discharge. The report will discuss the QUAL2K modeling software, summarize data used in the modeling analyses, describe model development, calibration, and corroboration, and include a summary of the scenarios completed and results. The draft report will be reviewed for quality and accuracy by a senior technical advisor at Tetra Tech then it will be provided to Hazen & Sawyer and High Point for review. The draft report will then be updated to address any comments prior to submittal to DWR.

Proposed Deliverables (schedule)

1. Draft QUAL2K Modeling Report for Hazen and City staff review (approximately 60 days from receipt of all field monitoring results including long-term BOD samples)
2. Revised QUAL2K Modeling Report for inclusion with consolidated Modeling Report that will be submitted to DWR under (within 7 - 10 days from receipt of all review comments)
3. QUAL2K modeling files for submittal to DWR (at time of submittal for Consolidated Report)

TASK 3: CORMIX MODELING

The first objective listed in the modeling plan includes “Simulate mixing and quantify the dilution ratio for the expanded effluent discharge in the receiving waterbody to support development of acute and chronic permit limits for metals and other analytes, as well as whole effluent toxicity testing requirements.” This objective will be addressed with an application of the Cornell Mixing Zone Expert System (CORMIX) model that will be developed under Task 3. CORMIX was collaboratively developed by the U.S. EPA, U.S. Bureau of Reclamation, Cornell University, Oregon Graduate Institute (OGI), University of Karlsruhe, Portland State University, and MixZon Inc., the latter of which manages and distributes CORMIX software.

CORMIX is a recommended tool for predicting dilution of discharges to receiving waters to support permit decisions and development of effluent requirements. The CORMIX model can simulate single and multi-port diffusers and surface discharges under steady-state ambient conditions or under tidal conditions; the former of which is applicable to the Eastside WWTP that discharges to an arm of Randleman Lake. CORMIX has the capability to predict the characteristics of the geometry and dilution of the initial mixing zone to ensure compliance with the water quality regulatory constraints. The program can also be used to study and predict the response of the plumes from the effluent discharges at larger distances. CORMIX has been extensively verified by the developers, has undergone extensive peer review, and is often applied for dilution analyses. The latest release is CORMIX v11.0, which will be applied in the mixing zone study for High Point’s Eastside WWTP.

Tetra Tech will develop a hydrodynamic CORMIX model to simulate mixing and dilution of the facility’s effluent within the receiving water body. The CORMIX model will be developed in accordance with the DWR approved modeling plan for the Eastside WWTP.

3.1. CORMIX DATA COMPILATION & PRE-PROCESSING

CORMIX requires information about the receiving channel geometry, ambient conditions in the receiving waterbody, outfall design, and effluent properties. Sufficient data are available to construct a CORMIX dilution analysis model for the Eastside WWTP; additional information about sources of available data that may inform the development of the CORMIX model can be found in Table 1 of the modeling plan. For example, Discharge

Monitoring Reports (DMRs) will be used to characterize the effluent properties. Some data (e.g., ambient conditions) used in the CORMIX model will also be applicable to the QUAL2K and/or BATHTUB models, thus, will be processed simultaneously to the extent feasible to improve efficiencies. Applicable information from the monitoring effort will be applied (e.g., ambient water temperature). Information on the outfall design and discharge will need to be (or has been) provided by High Point for the CORMIX model, including outfall location, port diameter, port deflection/angle, port depth, effluent flow/velocity, and effluent density.

As data are being compiled and processed for the CORMIX model, the modeler(s) will maintain a quality assurance spreadsheet the documents data sources, processing procedures, assumptions made, and data file records. Quality assurance of the data used in the CORMIX model will be conducted by a senior technical advisor. Issues found will be addressed prior to model set-up and the analyses.

3.2. PERFORM CORMIX MODEL SETUP

As described in the modeling plan, the spatial domain of the CORMIX model application will include the mixing zone in the vicinity of the WWTP outfall that captures the lateral and vertical mixing of the effluent plume. Data processed under Section 3.1 will be entered into the model using the CORMIX Graphical User Interface (GUI) for simulation. Information includes effluent flow rate (or velocity), effluent temperature (or density), depth and channel geometry information, roughness (Manning's n), wind, ambient velocity (or flow), ambient temperature (or density), port design (i.e., angle, diameter, etc.), and information about the mixing zone. The CORMIX model will be set-up to evaluate mixing and dilution for the facility expansion to 32 MGD at the current primary outfall location on Randleman Lake under critical conditions being applied in the QUAL2K model (e.g., 7Q10 streamflow). Following model set-up the CORMIX model will be checked for reasonableness prior to conducting sensitivity tests and dilution scenarios.

During model set-up the quality assurance spreadsheet will be updated by the modeler(s) and reviewed by a senior technical advisor.

3.3. PERFORM CORMIX SENSITIVITY ANALYSIS & SCENARIO

Following development of the CORMIX model, the model will be applied to simulate mixing and dilution of the effluent in the Deep River arm of Randleman Lake. The concept of dilution is used to quantify the degree of mixing and the transport of the effluent discharge in the system. The dilution of the effluent discharge can be determined by the following equation:

$$D = \frac{C_e}{C}$$

where, D is the dilution ratio,

C_e is the concentration of the effluent, and

C is the instream concentration.

For this assessment, a conservative tracer with a concentration of C_e will be introduced into the discharge. Background levels of the conservative tracer will be set to zero. The mixing model will then be used to simulate the geometry of the plume and distribution of the tracer in the system such that a quasi-steady state is achieved.

Instream concentrations along the plume centerline will be used to evaluate dilution ratios at multiple distances with respect to the outfall location. The effluent flow rate will be equivalent to the expanded design flow rate, which provides the dilution ratios for the expected highest discharge from the facility. Results will be proved in the modeling report.

The most critical model inputs/parameters for CORMIX tend to include ambient flow/velocity, ambient temperature/density, effluent flow/velocity, and effluent temperature/density. Sensitivity tests that involve proportionally adjusting the value (e.g., by $\pm 20\%$ or in the case of temperature ± 2 degrees) and quantifying the impacts on the ultimate end-point, which in this case is the dilution ratio. Results from the sensitivity tests will be presented in the modeling report.

Dilution ratio calculations and results from the sensitivity tests will be documented in the quality assurance spreadsheet by the modeler(s) and reviewed by a senior technical advisor.

3.4. DOCUMENTATION OF CORMIX MODELING RESULTS

Tetra Tech will develop a Mixing Zone Analysis Report for Hazen & Sawyer and High Point that summarizes the CORMIX modeling work and generates near- and far-field dilution ratios for the Eastside WWTP NPDES discharge. The report will discuss the CORMIX modeling software, summarize data used in the modeling analyses, describe model development, and include a summary of the scenarios completed and dilution results. The draft report will be reviewed for quality and accuracy by a senior technical advisor at Tetra Tech then it will be provided to Hazen & Sawyer and High Point for review. The draft report will then be updated to address any comments prior to submittal to DWR.

Proposed Deliverables (schedule)

1. Draft CORMIX Modeling Report for Hazen and City staff review (approximately 90 days from receipt of all field monitoring results)
2. Revised CORMIX Modeling Report for inclusion with consolidated Modeling Report that will be submitted to DWR under (within 7 - 10 days from receipt of all review comments)
3. CORMIX modeling files for submittal to DWR (at time of submittal for Consolidated Report)

TASK 4: BATHTUB MODELING

Tetra Tech will use the BATHTUB model (currently distributed at <https://www.walker.net/bathtub/>) to estimate eutrophication response within Randleman Lake with and without the proposed expansion. BATHTUB is a well-accepted tool for predicting growing season average chlorophyll a concentration in reservoirs that has been used in many EPA-approved nutrient TMDLs. It is a simplified tool, but that level of simplicity is appropriate to the amount and type of data that are available. BATHTUB will not provide detailed time series of chlorophyll a concentration, but can be used to predict the frequency of algal blooms above a target threshold such as 40 $\mu\text{g/L}$. Using BATHTUB to represent the reservoir as a series of linked segments will enable estimation of nutrient response at multiple locations within the lake consistent with available monitoring data. As incremental flow from the Eastside expansion is not expected to have a large impact on the phosphorus balance in the reservoir, use of BATHTUB rather than a detailed linked hydrodynamic and water quality model combination such as EFDC/WASP or CE-QUAL-W2, which would require a substantial investment and a year or more to develop and calibrate, is an appropriate and cost-effective choice.

4.1. BATHTUB DATA COMPILATION & PRE-PROCESSING

Information requirements and processing for BATHTUB are relatively simple. BATHTUB requires as input information on lake morphometry and seasonal or annual flows and nutrient loads from tributaries and point sources. Other inputs include information on stratification depth and estimates of non-algal turbidity (for which the BATHTUB manual provides estimation methods). Bathymetric coverages are already available. Tributary inputs and loads can be estimated from flow gaging and monitoring data (with proration to ungaged areas) using tools

such as FLUX or LOADEST. All data used to develop inputs will be reviewed for accuracy and usability as part of Tetra Tech's QA protocols.

4.2. PERFORM BATHTUB MODEL SETUP

BATHTUB can be set up in segmented form with multiple linked model areas. We will set up the Randleman model with segments that correspond to the four main monitoring stations from the Eastside discharge to the dam. Versions of the model will be set up separately for a range of available years to capture the natural variability of loading and nutrient response conditions. Initial values of model sedimentation and kinetic parameters as well as selection of options for representation of nutrient sedimentation and algal growth will be specified in accordance with the BATHTUB documentation. Final model setup will be checked by an experienced senior reviewer.

4.3. CONDUCT BATHTUB MODEL CALIBRATION & CORROBORATION

BATHTUB is calibrated by adjusting factors on the representation of net sedimentation loss for nitrogen and phosphorus species and algal growth. The intent of the calibration is to reproduce the growing season average concentrations of N, P, and chlorophyll *a*, while also approximating the within-year range. The BATHTUB guidance contains recommended acceptable ranges for adjusting these factors. If calibration cannot be achieved by adjustments within these ranges, alternative sedimentation formulations contained within BATHTUB will be evaluated.

Calibration is sequential, beginning with nutrients and proceeding to algae, and beginning in the upstream segment and proceeding downstream. We will initially calibrate to two different years (one wet and one dry). We will then seek corroboration of the model parameters through application to years other than those used to calibrate the model.

All steps in the calibration process will be documented in written form and checked by a senior reviewer.

4.4. PERFORM BATHTUB SENSITIVITY ANALYSIS & SCENARIO APPLICATION

As part of the calibration we will document model prediction sensitivity to parameter choices. We will also use the model to evaluate sensitivity to year-to-year variability in hydrology and use this to identify a critical year condition. For example, the algal response may be greatest for a year with high spring flows followed by a dry summer. An appropriate critical condition year will then be selected based on the historical gaging record.

We will then run scenarios with and without the proposed expansion of the Eastside discharge. We assume that the expansion will result in increased flow, but will most likely hold the line on nutrient loads. However, we will also conduct sensitivity analyses to examine the effects of $\pm 10\%$ changes in the load limits. As with the calibration, all steps in the scenario analysis process will be documented in written form and checked by a senior reviewer.

4.5. DOCUMENT BATHTUB MODELING RESULTS

Setup, calibration, corroboration, sensitivity analysis, and scenarios conducted with the BATHTUB model will be documented in a brief memorandum suitable for inclusion as a chapter in the consolidated modeling report. After internal review by Hazen and City staff, the report will be submitted to DWR for review. A revised version incorporating requested changes will be developed within 10 working days of receipt of comments.

Proposed Deliverables (schedule)

1. Draft BATHTUB Modeling Report for Hazen and City staff review (to be performed simultaneously with QUAL2K modeling schedule; may also be influenced by timing of the HSPF modeling for the Integrated Watershed Assessment Framework project)
2. Revised BATHTUB Modeling Report for inclusion with consolidated Modeling Report that will be submitted to DWR under (within 7 - 10 days from receipt of all review comments)
3. BATHTUB modeling files for submittal to DWR (at time of submittal for Consolidated Report)

TASK 5. FACILITATE DEQ COORDINATION

Upon completion of the modeling and draft modeling report, staff from DWR have requested a debriefing meeting to walk them through the model development steps and results. Tetra Tech will make arrangements for, prepare for, and facilitate this coordination meeting to kick off the review process.

It is anticipated that a second meeting with DWR will be conducted to go over the agency's comments on the models and draft modeling report. Tetra Tech will make arrangements for, prepare for, and facilitate this coordination meeting to identify any additional modeling and reporting requirements for obtaining DWR approval of the model as the basis for speculative limits for an expanded Eastside WWTP discharge.

Proposed Deliverables (schedule)

1. Facilitated Model Review Kickoff Meeting with DWR (TBD)
2. Facilitated Meeting to go over DWR comments and concerns (TBD)
3. Miscellaneous email and phone correspondence with DWR staff to set up meetings and prior to or in follow up to the meetings to address interim questions or clarify direction.

TASK 6. PROVIDE CONTRACT & PROJECT MANAGEMENT/COORDINATION

Tetra Tech will coordinate with the City of High Point to manage this contract and plan work under its provisions. This includes corresponding with City staff, planning work, estimating level of effort, tracking accounting, preparing work summaries to accompany billing invoices.

Proposed Deliverables (schedule)

1. Contract documents (as requested by City)
2. Work planning conference call and meeting summaries (via email within 1-5 days following calls/meetings as needed)
3. Invoices and progress reports (monthly or as invoiced)

3.0 CONTRACT AMOUNT

Phase 2 work will be performed for a total contract value of \$199,791 with an estimated LOE of 958 hrs. The monitoring task involves extensive logistics planning, time in the field, equipment expense, and laboratory analysis accounting for approximately 47 percent of the total project cost. The remainder of the cost is for development and application of the three models (QUAL2K, BATHTUB, and CORMIX) and for interacting with DWR and the City to obtain speculative limits for the planned expansion of the Eastside discharge.

4.0 SCHEDULE

Estimated project schedule is as follows:

Task Description	Deliverable or Progress Goal	Projected Completion Date
Task 1.1 Conduct Reconnaissance and Logistics Planning	Lake Reconnaissance Stream Reconnaissance Updates to the Monitoring Plan	Target 30 days from NTP Target 30 days from NTP Within 15 days of completion of reconnaissance
Task 1.2 Prepare Health & Safety Plan	HASP	5 – 10 days prior to reconnaissance
Task 1.3 Perform Flow Measurements	Field notes processed for Model Report	Within 10 days of each primary sampling run
Task 1.4 Conduct Water Quality Sampling	Primary sampling event 1 Primary sampling event 2	Target June (weather dependent) Target end of July and before mid September (weather dependent)
Task 2 QUAL2K Modeling Report & Files	Draft for Hazen & City staff review Revised Draft for inclusion with consolidated Modeling Report QUAL2K modeling files	Within 60 days from receipt of all field monitoring results including long-term BOD samples Within 7-10 days of receipt of all review comments At time of submittal for Consolidated Report
Task 3 CORMIX Modeling Report & Files	Draft for Hazen & City staff review Revised Draft for inclusion with consolidated Modeling Report CORMIX modeling files	(Timing dependent on progress of QUAL2K and BATHTUB modeling because of limited terms for CORMIX license) Within 7-10 days of receipt of all review comments At time of submittal for Consolidated Report
Task 4 BATHTUB Modeling Report & Files	Draft for Hazen & City staff review Revised Draft for inclusion with consolidated Modeling Report BATHTUB modeling files	Simultaneously with QUAL2K modeling Within 7-10 days of receipt of all review comments At time of submittal for Consolidated Report
Task 5 Facilitate DEQ Coordination	Facilitated Model Review Kickoff Meeting with DWR	Timing depends on DEQ schedules

	Facilitated Meeting to go over DWR comments and concerns	Timing depends on DEQ schedules (target 30 days after model review kickoff meeting)
Task 6 Provide Contract & Project Management/Coordination	Contract documents Meeting Summaries Invoices w/ Progress Reports	As requested by City As needed to document key decisions Monthly

The overall period of performance for this work will be through March, 2022 unless there are delays outside of the City and project team's control such as extended wet weather conditions or delays in review and response from DWR.