

PROFESSIONAL SERVICES AGREEMENT BETWEEN
NTH Consultants, Ltd
AND THE CITY OF ANN ARBOR
FOR Barton Dam Right Embankment Remediation Project

This agreement ("Agreement") is between the City of Ann Arbor, a Michigan municipal corporation, having its offices at 301 E. Huron St. Ann Arbor, Michigan 48104 ("City"), and NTH Consultants, Ltd. ("Contractor"), a(n) Michigan Corporation, with its address at 41780 Six Mile Rd., Suite 200, Northville, MI 48168.
(State where organized) (Partnership, Sole Proprietorship, or Corporation)
City and Contractor are referred to collectively herein as the "Parties." The Parties agree as follows:

I. DEFINITIONS

Administering Service Area/Unit means Water Treatment Services Unit.

Contract Administrator means Senior Utilities Engineer, acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

Deliverables means all Plans, Specifications, Reports, Recommendations, and other materials developed for and delivered to City by Contractor under this Agreement.

Project means Barton Dam Right Embankment Remediation.
Project name

II. DURATION

Contractor shall commence performance on _____, 20__ ("Commencement Date"). This Agreement shall remain in effect until satisfactory completion of the Services specified below unless terminated as provided for in Article XI. The terms and conditions of this Agreement shall apply to the earlier of the Effective Date or Commencement Date.

III. SERVICES

- A. The Contractor agrees to provide Professional Engineering Services
Type of service
("Services") in connection with the Project as described in Exhibit A. The City retains the right to make changes to the quantities of service within the general scope of the Agreement at any time by a written order. If the changes add to or deduct from the extent of the services, the compensation shall be adjusted accordingly. All such changes shall be executed under the conditions of the original Agreement.

- B. Quality of Services under this Agreement shall be of the level of quality performed by persons regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.
- C. The Contractor shall perform its Services for the Project in compliance with all statutory, regulatory, and contractual requirements now or hereafter in effect as may be applicable to the rights and obligations set forth in the Agreement. The Contractor shall also comply with and be subject to the City of Ann Arbor policies applicable to independent contractors.
- D. The Contractor may rely upon the accuracy of reports and surveys provided to it by the City (if any) except when defects should have been apparent to a reasonably competent professional or when it has actual notice of any defects in the reports and surveys.

IV. INDEPENDENT CONTRACTOR

The Parties agree that at all times and for all purposes under the terms of this Agreement each Party's relationship to any other Party shall be that of an independent contractor. Each Party will be solely responsible for the acts of its own employees, agents, and servants. No liability, right, or benefit arising out of any employer/employee relationship, either express or implied, shall arise or accrue to any Party as a result of this Agreement.

Contractor does not have any authority to execute any contract or agreement on behalf of the City, and is not granted any authority to assume or create any obligation or liability on the City's behalf, or to bind the City in any way.

V. COMPENSATION OF CONTRACTOR

- A. The Contractor shall be paid in the manner set forth in Exhibit B. Payment shall be made monthly, unless another payment term is specified in Exhibit B, following receipt of invoices submitted by the Contractor, and approved by the Contract Administrator.
- B. The Contractor will be compensated for Services performed in addition to the Services described in Article III, only when the scope of and compensation for those additional Services have received prior written approval of the Contract Administrator.
- C. The Contractor shall keep complete records of work performed (e.g. tasks performed, hours allocated, etc.) so that the City may verify invoices submitted by the Contractor. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

VI. INSURANCE/INDEMNIFICATION

- A. The Contractor shall procure and maintain from the Effective Date or Commencement Date of this Agreement (whichever is earlier) through the conclusion of this Agreement, such insurance policies, including those set forth in Exhibit C, as will protect itself and the City from all claims for bodily injuries, death or property damage that may arise under this Agreement; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor, or anyone employed by them directly or indirectly. Prior to commencement of work under this Agreement, Contractor shall provide to the City documentation satisfactory to the City, through City-approved means (currently myCOI), demonstrating it has obtained the policies and endorsements required by Exhibit C. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).
- B. Any insurance provider of Contractor shall be authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.

C. ~~To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses, including attorney's fees, resulting or alleged to result, from any acts or omissions by Contractor or its employees and agents occurring in the performance of or breach in this Agreement, except to the extent that any suit, claim, judgment or expense are finally judicially determined to have resulted from the City's negligence or willful misconduct or its failure to comply with any of its material obligations set forth in this Agreement.~~

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VII. COMPLIANCE REQUIREMENTS

- A. Nondiscrimination. The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of the Ann Arbor City Code and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless City from and against damages, losses, costs and expenses (including reasonable attorneys' and experts' fees, interest and court costs) to the extent such damages result from the negligent act, error or omission of the Contractor, its employees, subconsultants or anyone for whose actions the Contractor is legally responsible.

DS
DRJ

- B. Living Wage. If the Contractor is a “covered employer” as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Agreement a “living wage,” as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

VIII. WARRANTIES BY THE CONTRACTOR

- A. The Contractor warrants that the quality of its Services under this Agreement shall conform to the level of quality performed by persons regularly rendering this type of service.
- B. The Contractor warrants that it has all the skills, experience, and professional licenses (if applicable) necessary to perform the Services pursuant to this Agreement.
- C. The Contractor warrants that it has available, or will engage, at its own expense, sufficient trained employees to provide the Services pursuant to this Agreement.
- D. The Contractor warrants that it has no personal or financial interest in the Project other than the fee it is to receive under this Agreement. The Contractor further certifies that it shall not acquire any such interest, direct or indirect, which would conflict in any manner with the performance of the Services it is to provide pursuant to this Agreement. Further Contractor agrees and certifies that it does not and will not employ or engage any person with a personal or financial interest in this Agreement.
- E. The Contractor warrants that it is not, and shall not become overdue or in default to the City for any contract, debt, or any other obligation to the City including real and personal property taxes. Further Contractor agrees that the City shall have the right to set off any such debt against compensation awarded for Services under this Agreement.
- F. The Contractor warrants that its proposal for services was made in good faith, it arrived at the costs of its proposal independently, without consultation, communication or agreement, for the purpose of restricting completion as to any matter relating to such fees with any competitor for these Services; and no attempt has been made or shall be made by the Contractor to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition.

- G. The person signing this Agreement on behalf of Contractor represents and warrants that she/he has express authority to sign this Agreement for Contractor and agrees to hold the City harmless for any costs or consequences of the absence of actual authority to sign.

IX. OBLIGATIONS OF THE CITY

- A. The City agrees to give the Contractor access to the Project area and other City-owned properties as required to perform the necessary Services under this Agreement.
- B. The City shall notify the Contractor of any defects in the Services of which the Contract Administrator has actual notice.

X. ASSIGNMENT

- A. The Contractor shall not subcontract or assign any portion of any right or obligation under this Agreement without prior written consent from the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under the Agreement unless specifically released from the requirement, in writing, by the City.
- B. The Contractor shall retain the right to pledge payment(s) due and payable under this Agreement to third parties.

XI. TERMINATION OF AGREEMENT

- A. If either party is in breach of this Agreement for a period of fifteen (15) days following receipt of notice from the non-breaching party with respect to a breach, the non-breaching party may pursue any remedies available to it against the breaching party under applicable law, including but not limited to, the right to terminate this Agreement without further notice. The waiver of any breach by any party to this Agreement shall not waive any subsequent breach by any party.
- B. The City may terminate this Agreement, on at least thirty (30) days advance notice, for any reason, including convenience, without incurring any penalty, expense or liability to Contractor, except the obligation to pay for Services actually performed under the Agreement before the termination date.
- C. Contractor acknowledges that, if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds for this Project. If funds to enable the City to effect continued payment under this Agreement are not appropriated or otherwise made available, the City shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to Contractor. The Contract Administrator shall give Contractor

written notice of such non-appropriation within thirty (30) days after it receives notice of such non-appropriation.

- D. The provisions of Articles VI and VIII shall survive the expiration or earlier termination of this Agreement for any reason. The expiration or termination of this Agreement, for any reason, shall not release either party from any obligation or liability to the other party, including any payment obligation that has already accrued and Contractor's obligation to deliver all Deliverables due as of the date of termination of the Agreement.

XII. REMEDIES

- A. This Agreement does not, and is not intended to, impair, divest, delegate or contravene any constitutional, statutory and/or other legal right, privilege, power, obligation, duty or immunity of the Parties.
- B. All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either party of any right or remedy does not preclude the exercise of any other rights or remedies that may now or subsequently be available at law, in equity, by statute, in any agreement between the parties or otherwise.
- C. Absent a written waiver, no act, failure, or delay by a Party to pursue or enforce any rights or remedies under this Agreement shall constitute a waiver of those rights with regard to any existing or subsequent breach of this Agreement. No waiver of any term, condition, or provision of this Agreement, whether by conduct or otherwise, in one or more instances, shall be deemed or construed as a continuing waiver of any term, condition, or provision of this Agreement. No waiver by either Party shall subsequently effect its right to require strict performance of this Agreement.

XIII. NOTICE

All notices and submissions required under this Agreement shall be delivered to the respective party in the manner described herein to the address stated below or such other address as either party may designate by prior written notice to the other. Notices given under this Agreement shall be in writing and shall be personally delivered, sent by next day express delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; (2) the next business day when notice is sent next day express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

If Notice is sent to the CONTRACTOR, it shall be addressed and sent to:

NTH Consultants, Ltd.

41780 Six Mile Rd. Suite 200
Northville, Michigan 48168

If Notice is sent to the CITY, it shall be addressed and sent to:

City of Ann Arbor
Mr. Craig Hupy
(insert name of Administering Service Area Administrator)

301 E. Huron St.
Ann Arbor, Michigan 48104

With a copy to: The City of Ann Arbor
ATTN: Office of the City Attorney
301 East Huron Street, 3rd Floor
Ann Arbor, Michigan 48104

XIV. CHOICE OF LAW AND FORUM

This Agreement will be governed and controlled in all respects by the laws of the State of Michigan, including interpretation, enforceability, validity and construction, excepting the principles of conflicts of law. The parties submit to the jurisdiction and venue of the Circuit Court for Washtenaw County, State of Michigan, or, if original jurisdiction can be established, the United States District Court for the Eastern District of Michigan, Southern Division, with respect to any action arising, directly or indirectly, out of this Agreement or the performance or breach of this Agreement. The parties stipulate that the venues referenced in this Agreement are convenient and waive any claim of non-convenience.

XV. OWNERSHIP OF DOCUMENTS

Upon completion or termination of this Agreement, all documents (i.e., Deliverables) prepared by or obtained by the Contractor as provided under the terms of this Agreement shall be delivered to and become the property of the City. Original basic survey notes, sketches, charts, drawings, partially completed drawings, computations, quantities and other data shall remain in the possession of the Contractor as instruments of service unless specifically incorporated in a deliverable, but shall be made available, upon request, to the City without restriction or limitation on their use. The City acknowledges that the documents are prepared only for the Project. Prior to completion of the contracted Services the City shall have a recognized proprietary interest in the work product of the Contractor.

XVI. CONFLICTS OF INTEREST OR REPRESENTATION

Contractor certifies it has no financial interest in the Services to be provided under this Agreement other than the compensation specified herein. Contractor further certifies that it presently has no personal or financial interest, and shall not acquire any such interest, direct or indirect, which would conflict in any manner with its performance of the Services under this Agreement.

Contractor agrees to advise the City if Contractor has been or is retained to handle any matter in which its representation is adverse to the City. The City's prospective consent to the Contractor's representation of a client in matters adverse to the City, as identified above, will not apply in any instance where, as the result of Contractor's representation, the Contractor has obtained sensitive, proprietary or otherwise confidential information of a non-public nature that, if known to another client of the Contractor, could be used in any such other matter by the other client to the material disadvantage of the City. Each matter will be reviewed on a case by case basis.

XVII. SEVERABILITY OF PROVISIONS

Whenever possible, each provision of this Agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this Agreement or the application of any provision to any party or circumstance will be prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this Agreement or the application of the provision to other parties and circumstances.

XVIII. EXTENT OF AGREEMENT

This Agreement, together Exhibits A, B, and C, constitutes the entire understanding between the City and the Contractor with respect to the subject matter of the Agreement and it supersedes, unless otherwise incorporated by reference herein, all prior representations, negotiations, agreements or understandings whether written or oral. Neither party has relied on any prior representations, of any kind or nature, in entering into this Agreement. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Agreement, regardless of the other party's failure to object to such form. This Agreement shall be binding on and shall inure to the benefit of the parties to this Agreement and their permitted successors and permitted assigns and nothing in this Agreement, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Agreement. This Agreement may only be altered, amended or modified by written amendment signed by the Contractor and the City. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement.

XIX. ELECTRONIC TRANSACTION

The parties agree that signatures on this Agreement may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this Agreement. This Agreement may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

XX. EFFECTIVE DATE

This Agreement will become effective when all parties have signed it. The Effective Date of this Agreement will be the date this Agreement is signed by the last party to sign it.

[REMAINDER OF PAGE LEFT BLANK; SIGNATURE PAGE FOLLOWS]

FOR CONTRACTOR

DocuSigned by:
David R. Lutz
By _____
2BF41F8D8F4740B...
David R. Lutz, P.E.
Its Vice President
Date: _____

FOR THE CITY OF ANN ARBOR

By *Christopher Taylor* 01/26/2022
CHRISTOPHER TAYLOR, MAYOR

By *Jacqueline Beaudry* 01/26/2022
JACQUELINE BEAUDRY, CITY CLERK

Date: _____

Approved as to substance

Craig Hupy 01/14/2022
CRAIG HUPY, PUBLIC SERVICES AREA ADMINISTRATOR

Milton Dohoney Jr 01/20/2022
MILTON DOHONEY JR., INTERIM CITY ADMINISTRATOR

Approved as to form and content

Stephen K. Postema 01/20/2022
STEPHEN POSTEMA, CITY ATTORNEY

**EXHIBIT A
SCOPE OF SERVICES**

(Insert/Attach Scope of Work & Deliverables Schedule)

Barton Dam Right Embankment Remediation
RFP No. 21-21

Exhibit A
Scope of Services

The specific scope of services the NTH team will provide for the field exploration, engineering analysis, design, public engagement, bidding assistance, and ongoing field services during the design period are outlined below. The headings below correspond to the proposed cost tabulation sheet.

A. Analysis and Preliminary Design

1. Data Collection and Field Exploration

- Document collection and review – As background for our engineering analysis and subsequent design, NTH will request data and information from the City on the following items.
 - Data from piezometric measurements obtained since September 2019 from piezometers in the vicinity of TD-39, TD-40, and the reverse filter. To complete seepage analysis in the vicinity of the pond, information from the two piezometers installed in the right embankment near the spillway, at one time designated as Piezometers UR and LR, since the beginning of 2018 would also be needed.
 - Flow data for the collection ditch, if available.
 - Information on when the pond was drained by the City, including notes on observed conditions and any memoranda, letters, or information provided to FERC.
 - Information on the design of the gabion earth retention system at the underpass, if available.
 - Foundation plans for the railroad bridge abutment and wing walls, if available.
- Data gap analysis – Review the available data to establish what additional information would be needed and evaluate if any revision and additional exploration is appropriate.
- Condition assessments of the gabion wall along the pathway by the underpass to the concrete wingwall at the bottom of the spillway right retaining wall.

- Geotechnical exploration for filter design and collector ditch realignment.
 - NTH will perform several relatively shallow hand auger borings to obtain samples of the near-surface soils that would need to be retained by the graded filter blanket drain.
 - Laboratory testing to evaluate the grain size distribution of the soil samples.
- Geotechnical exploration for other project design features.
 - One test boring to a depth of approximately 20 feet on each side of the railroad bridge near the ends of the underpass concrete slab.
 - One test boring to a depth of approximately 50 feet located close to the south side of the pond.
 - Borings will be backfilled with grout in accordance with state and local requirements. Excess soil cuttings and fluids will be mixed with the grout backfill and placed in the borehole or placed at an appropriate location within the project limits.
- Estimation of flow through the existing culvert between the pond and the tailwater based on flow depth and geometry measurements.
- Obtain video recording of the condition of the interior of Toe Drain 23. Video recording will be made from the discharge at the end of the drain pipe, going upstream as far as accessible with the video camera. The recording will include audio notes and on-screen display of the distance travelled from entry at the discharge point of the drain.

2. Evaluation and Initial Design

- Evaluation of alternative concepts for remediation of the right embankment – This task will include a workshop with NTH and DLZ dam staff as well as the City’s staff.
- Identification of risks and preliminary costs for the currently selected approach as well as new alternates
- Seepage and stability analysis at TD-40 and at the small pond.
- Analysis of flow in the collector ditch to establish ditch cross section requirements along with evaluating constraints on the proposed vertical and horizontal alignment of the ditch.
- Evaluation of existing gabions and an assessment of the necessity for shoreline system improvements.

- Evaluating concepts for the machine accessible path – The path may be analyzed as an unpaved road and likely will require geogrid subgrade reinforcement, raising of grades, and/or including surface stabilization, such as aggregate-filled geocells.
- Develop concepts for the stairway reconstruction/reconfiguration, vent shaft service platform, and guard rail improvements.
- Developing concepts for landscape design as part of restoration following construction, pathway realignment, and usage of the park space obtained from filling the pond.

3. Environmental Assessment

- NTH will perform a wetland assessment and if necessary, a wetland boundary delineation in the area specified in the RFP. Our wetland assessment will include an on-site investigation to determine the existence of wetlands within the project area and identify wetland areas that in our professional opinion fall under the jurisdiction of the Michigan Department of Environment, Great Lakes, and Energy (EGLE). Methodology used to perform a wetland assessment follows guidelines of the 1987 Army Corps of Engineers Wetland Delineation Manual and applicable regional supplement, statutory criteria of the Michigan Natural Resources and Environmental Protection Act (PA 451, of 1994, Part 303 -Wetlands) and Section 404 of the Clean Water Act. If wetland is discovered during the assessment, NTH will delineate wetland boundaries with flagging. The flagging is bright pink with the words “wetland delineation” shown on each flag.
- NTH will query the Federal List of Threatened/Endangered Species and the Michigan Natural Features Inventory. Our focus will be Washtenaw County, and review of listed species that could exist or inhabit similar habitat found along the right embankment for Barton Dam.
- Mussel survey
 - NTH’s subconsultant, ASTI, will perform a visual survey of the river in the vicinity of expected work that may be required for this project, generally from the wingwall at the downstream end of the spillway retaining wall to approximately halfway between the underpass and the pedestrian bridge immediately downstream of the railroad bridge. The survey will extend from the shoreline outward to the EGLE-required limit, not expected to exceed 10 meters from the shoreline.
 - If water depth within the survey area exceeds 3 feet, the survey will be conducted using divers; however, if the water depth throughout the survey area is less than 3 feet, the use of divers may not be necessary. The approach used will be

established shortly before the survey is conducted, when river depth conditions are known. The survey is expected to be completed in one day.

- If protected species are found during the survey, they will be relocated outside the potential work area. Further, if protected species are found during the survey, monitoring will be performed. The monitoring will consist of a single event performed within one year of the date of the survey.

B. Basis of Design Report

Upon completion of the proposed field investigation and data collection efforts, NTH will prepare a basis of design report that will use the recommendations from the previous study at the site as well as the newly collected data to present our preliminary analysis and findings associated with the proposed stabilizing berm for submission to FERC. The results of the initial Probable Failure Mode Analysis meeting with FERC will be included in the basis of design report.

- Itemize advantages and disadvantages of alternate approaches for dam stabilization.
- Conduct a workshop with City of Ann Arbor Water Treatment Plant engineering staff to discuss various alternatives.
- Rank alternates for Basis of Design (BOD) discussion and select a preferred alternate following the aforementioned workshop with the City.
- Prepare and submit a basis of design report with analysis, ranking chart, and recommended project design concept. The BOD report will include a probable cost opinion for the recommended concept.

C. Detailed Design

NTH will perform the following engineering analysis and design services to prepare appropriate construction contract documents.

- Dam Safety Design and Analysis
 - For earthen embankments, dam safety design and analysis typically includes evaluating slope stability, seepage conditions, vegetation, overtopping and scour areas, bank erosion, foundation and pipe penetrations, improper grading or slope modification, and burrowing animal activity.
 - We will prepare a Temporary Construction Emergency Action Plan (TCEAP) for the protection of workers and the public. The TCEAP will include contact information for the involved parties including emergency services, site plan with emergency escape route, general requirements, escape plan, requirements for

- safety devices, requirements for observations and monitoring, and posting requirements.
- The NTH Team will prepare a Quality Control Inspection Program (QCIP) for the remediation construction activities. The QCIP will include general project information including site layout, project organization and responsibilities, inspection and field practices, documentation and training requirements, identification of material testing requirements, and schedule.
 - Construction Plans and Specifications
 - The NTH Team routinely prepares contract plans and specification packages in accordance with federal and state regulations, standards, and requirements. Our experience includes developing plans, specifications, and construction contract documents and providing engineering support during construction. By incorporating constructability reviews into the design schedule, our team proactively identifies possible issues and potential design modifications needed to develop a constructable set of plans and specifications.
 - Senior engineers will perform independent design checks of the plans and specifications prior to their submittal to the City. These design checks encourage a detailed, structured, and independent review of the design elements. The process also ensures the design elements are fully reviewed at a high level of design detail and constructability. We will also prepare a conceptual construction schedule and will submit the schedule with each design update stage.
 - Our team members have previously worked for, or with, construction contractors. Many of our dam safety projects require not only design, but shop drawing review, construction inspection, specification interpretation, modification preparation, as-built drawings, O&M manuals, and engineering-during-construction services.
 - We will update the construction drawings as necessary to reflect adjustments to the design made in conjunction with the development of addenda during the bidding process.
 - Maintain project files for eventual delivery to City. (deliverables, design calculations, significant correspondence, permits, field reports & photos)
 - Bid documents sealed by Michigan PE (engineer of record)
 - Construction Cost Estimating Process
 - In preparing construction cost estimates, the NTH Team calculates quantity take-offs from the design documents.

- We will estimate major cost items in detail using labor and equipment crews, production rates, and supplier and subcontractor quotes, as applicable. At times, we may use unit prices and other local historical data for smaller cost items, if appropriate. When quotes are obtained, we contact multiple sources, if more than one source is available. Our cost estimates are developed at price levels, which are current at the time of estimate preparation.
- Detailed costs will be developed for the major features of the project such as remediation of the right embankment to improve seepage control, removal of the existing reverse filters and ballast blankets, and repairing and improving the existing underpass at the railroad bridge. Costs will also be developed for improving permanent access along the toe of the right embankment, filling and eliminating the small pond, replacing the existing stairway along the spillway right abutment wall, improving the service deck around the vent shaft opening, providing pedestrian traffic control, and restoring the site when work is complete. The cost estimate will also contain costs for construction field office overhead and mobilization and demobilization costs based on site-specific conditions. A construction cost estimate will be submitted at BOD report and 90% design submission stages.
- We understand the importance of determining a reasonable total project cost schedule. The total project schedule provides the City with the ability to escalate the cost estimate from the current price level to the proposed mid-point of construction for budgeting purposes. We also utilize the construction schedule, which is part of the total project schedule, to establish field office overhead costs.
- Our team will also prepare a cost engineering narrative to document the assumptions and define the parameters upon which the cost estimate was prepared. We will prepare narratives for each major work item which explain how the team envisions the construction work to be accomplished. The narrative will describe the project requirements in sufficient detail to give a clear understanding of the scope of work including special problems that may be encountered, site conditions affecting the work, reasons for selection of certain types of equipment, assumptions made for mobilization and demobilization of equipment, and the reasons for contingencies. Our narrative will also discuss the time frame likely to be required to complete the construction and document the calculations and rationale for crew composition and production rates for the major cost items.

D. Survey

- Detailed topographic survey – The survey services will include the entire right embankment area past the illegal crossing, including the pond, from the railroad right-of-way to the impoundment. The limits of the survey also include the underpass and tailwater areas.

Barton Dam Right Embankment Remediation – RFP 21-21
Exhibit A – Scope of Services

- As NTH’s subconsultant, DLZ will perform a topographic survey of the area shown on the image below, which is approximately 20 acres. Topographic Mapping will be developed and meet the requirements as outlined in the City’s RFP #21-21, “Barton Dam – Right Embankment Remediation,” with the following clarification on accuracy. Vertical and horizontal measurements will be reported to the nearest 0.01 foot. Positional accuracies will generally be under 0.1 foot and follow industry standards for topographic mapping.



- Survey Control will utilize the vertical datum referenced in the 2018 Bathymetric & Movement Monitoring Survey (SME, 08-03-2018). Horizontal Datum will reference the Michigan State Plane Coordinate System, South Zone (2113), 2011 Adjustment Year, International feet. Due to an expected start date of November and the possibilities of winter conditions, DLZ proposes to collect the required topographic information with GPS and Robotic Total Stations.
- Mapping will generally extend to the edge of dam waters or edge of the Huron River and to the westerly rail of the adjacent railway. The NTH Team will obtain an access permit to survey on Amtrak / MDOT railroad right-of-way before surveying is done in that area. Visible man-made features will be mapped at the time of the topographic survey. In addition, utility information will be denoted on the mapping, utility structures will be opened, and inverts and pipe size will be obtained, when possible. Trees four (4) inches diameter or larger will be mapped and vegetation limits will be outlined. Upon completion of the flagging for wetland delineation, any wetland areas will be captured during the topographic survey and mapped as well. Sufficient ground and surface shots will be recorded

to support 1-foot contour mapping and property boundaries will be mapped around the project limits.

- Cross sections of the pond located at the easterly toe of the existing dam will be obtained by wading the pond to obtain ground elevations. The pond is not anticipated to be deep due to its proximity to the toe of slope. The anticipated size and depth of the pond do not warrant the mobilization costs to use DLZ's bathymetric technologies.

E. Public Engagement

NTH staff will work with the City of Ann Arbor to engage the public in the project throughout the design period. This will include the use of the City's Public Engagement Tool Kit. The following entities are anticipated to be engaged during this process.

- City of Ann Arbor
 - The NTH Team will coordinate with the City of Ann Arbor on the erosion control requirements for the project and coordinate with the City throughout the permit application review process. We anticipate initiating and attending pre-application review meetings, attending field evaluations performed by EGLE to confirm wetland delineation boundaries, attending public hearings on permit applications, if necessary, preparing and submitting supplemental information requested by EGLE, and negotiating permit condition and mitigation requirements.
- City of Ann Arbor Parks
 - We will coordinate with their staff to gain input on stair and trail modifications or changes to canoe portages. We will also notify them of any temporary changes that are required to their parking areas during construction.
- HRWC
 - Our team will coordinate with the Huron River Watershed Council (HRWC) regarding trail modifications or effects on canoe portages, and with any wetland modifications and mitigation strategies, if necessary.
- Ann Arbor Township Residents
 - Our team will work with the City to develop a public engagement plan for the Ann Arbor Township residents and other stakeholders, if appropriate.

NTH will prepare a project presentation for incorporation into the City's Public Engagement Toolkit. The plan will identify stakeholders and list potential impacts to the public. We have a Public Relations / Marketing in-house professional who can assist with facilitating at least two

public meetings to provide an overview of the project and coordinate with the City on providing updates on the project to the stakeholders through social media and the City’s webpage.

F. Agency Coordination and Permitting

The NTH Team has worked extensively with FERC, MDOT, EGLE, and MDNR to obtain permits for various projects throughout Michigan. We have also coordinated with the City of Ann Arbor on prior several projects including Barton Dam, and with the National Passenger Railroad Corporation (Amtrak) on numerous projects in Michigan.

In conjunction with the development of design concepts, we will coordinate with permitting agencies so that project plans are satisfactory and that the required permits can be obtained. We proactively meet with regulatory agency personnel at the beginning of the permitting assessment process to introduce the project and solicit early input in the design process.

- FERC and DHAC
 - We will provide FERC with our initial plans to repair the embankment and remediate the toe drain (TD-23) and coordinate with them during the design phase to make sure their comments are incorporated into the final plans. To help “bring them along” in the process, rather than waiting until the end to communicate and secure approval, we will suggest a series of meetings at strategic points in the design process. If lowering the pool is required during construction, we will contact DHAC and provide the information required to obtain their approval. The NTH Team will prepare and conduct an initial Probable Failure Mode Analysis (PFMA) meeting with FERC regarding the proposed regrading/stabilization berm solution. The BOD report will incorporate the results of the initial PFMA meeting. A follow up PFMA meeting will be held after the 60% design documents are completed.
- Amtrak and Railroads in General
 - DLZ will coordinate with Amtrak and MDOT to receive the training before beginning the survey, if required. They will also coordinate the need for flag control. We know the process for obtaining permission to work on railroad property can be extensive and time consuming which is reflected in our project schedule. We will coordinate with Amtrak and MDOT Rail on the modifications to the access path that crosses under the railroad bridge, for the temporary crossing at the upstream (west) end of the embankment, and for any modifications to the site that impact drainage on or around the railroad. For design elements that are on railroad property we will comply with Amtrak’s standards and specifications. In addition, we will coordinate the review and approval of details that require railroad coordination. This activity will include determining railroad fees, if any, to be paid by the contractor at the time of construction.

- MDOT and WCRC
 - The NTH Team will coordinate with the Michigan Department of Transportation (MDOT) and the Washtenaw County Road Commission (WCRC) for the duration of the project regarding any survey work required on railroad property and the plan for a temporary railroad crossing during construction. If required, we will prepare and submit a Diagnostic Study Team Review request and obtain a permit for construction work in the railroad right-of-way.
- EGLE and MDNR
 - We are familiar with the regulations related to the various field investigations required prior to submittal of permit applications, including wetland delineations, threatened and endangered species habitat surveys, and verification of the ordinary high-water mark on inland lakes and streams. The NTH Team has extensive training, expertise, and experience performing these evaluations consistent with current protocols and requirements. Our services will include the preparation of a presentation for the necessary public hearing, participation in the hearing, and the development of responses for any public hearing comments.

G. Preliminary Development Strategy for Wetlands Mitigation

- Wetland delineation of the area between the collector ditch and the railroad along the dam's right embankment, and other disturbed areas, will be performed according to the requirements and protocols contained within the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and the appropriate Regional Supplement to the delineation manual. Our wetland delineation report will be prepared to include the necessary information to allow EGLE to utilize the data to confirm the wetlands delineation area while conducting their field reviews during the permit application review process.
- We will identify and catalogue any existing endangered species within the project area and provide the findings in a written report to the Michigan Department of Natural Resources (MDNR) and U.S. Fish and Wildlife Service, as appropriate, during the environmental clearance process.
- We complete the relevant portions of the Natural Resources Environmental Protection Act (NREPA), Act 451 of 1994, as amended permit application and submit the supplemental information required to allow EGLE to evaluate the proposed impacts to regulated resources. Our experience includes compliance with NREPA Parts 31 (Water Resources Protection), 301 (Inland Lakes & Streams), and 303 (Wetlands Protection). If required, NTH will also prepare a power point presentation for the project for use by EGLE in a public hearing. Following the public hearing, we will work with the City and EGLE to respond to any questions that develop.

- The preliminary strategy will be provided to the City as a one- or two-page summary of suggestions / recommendations.

H. Bid Assistance

The NTH team will provide procurement assistance services necessary to assist the Owner during bidding and Contract award of the Bid Package, and will consist of the following tasks:

- Produce construction bid documents to furnish to interested contractors.
- Attend the project pre-bid meeting.
- Administer and respond to Contractor questions and requests for information during the bid period and provide a response to such questions in the form of addenda.
- Issue addenda as necessary to answer questions, provide clarifications and additional information, provide transcripts of the pre-bid meeting, and any other necessary information.
- Tabulate and evaluate bids. Provide analysis to the Owner relative to acceptability of each bid, including any contained irregularities. Discuss with low bidder to ask questions and resolve irregularities.
- Provide final recommendations for award.

I. Allowance for Permit Fees

This item includes allowances for permit fees that may be required throughout the data collection, design and permitting process and will only be utilized as necessary and with the approval of City of Ann Arbor staff.

J. Supplemental Mitigation / Risk Reduction Services

As requested, NTH has included as Task 10 in our workplan costs associated with providing supplemental mitigation design and risk reduction services to the City throughout the design period for any issues that develop during this period that require mitigation to maintain stability of the dam. These services will include:

- Preparation of typical repair details and material lists for City of Ann Arbor contract forces to implement as required.
- Monthly site visits by an experienced NTH staff member as well as up to 5 additional visits by senior staff as requested by City staff.
- As requested, meeting with the City staff to discuss any issues and / or potential solutions associated with seepage or other issues.

Barton Dam Right Embankment Remediation – RFP 21-21
Exhibit A – Scope of Services

- Preparation of documentation for FERC for any remedial measures implemented.
- On a monthly basis, review piezometer data and alert City staff any anomalous or concerning piezometric data.

EXHIBIT B COMPENSATION

General

Contractor shall be paid for those Services performed pursuant to this Agreement inclusive of all reimbursable expenses (if applicable), in accordance with the terms and conditions herein. The Compensation Schedule below/attached states nature and amount of compensation the Contractor may charge the City:

(insert/Attach Negotiated Fee Arrangement)



Barton Dam Right Embankment Remediation

Barton Dam Right Embankment Remediation - City of Ann Arbor RFP #21-21

	Summary of Proposed Fees
A. Analysis and Preliminary Design <i>(Sum of Tasks 1, 2, and 3, less Subtasks 1.1 and 3.3; see Detail)</i>	<u>\$ 172,227.80</u>
B. Basis of Design Report <i>(Task 4; see Detail)</i>	<u>\$ 66,030.00</u>
C. Detailed Design <i>(Task 8; see Detail)</i>	<u>\$ 133,945.00</u>
D. Survey <i>(Subtask 1.1; see Detail)</i>	<u>\$ 30,532.50</u>
E. Public Engagement <i>(Task 5; see Detail)</i>	<u>\$ 55,070.00</u>
F. Permitting (excluding fees, which are covered by Allowance) <i>(Task 6; see Detail)</i>	<u>\$ 30,480.00</u>
G. Preliminary Development Strategy for Wetlands Mitigation <i>(Subtask 3.3; see Detail)</i>	<u>\$ 6,120.00</u>
H. Bid Assistance <i>(Task 9; see Detail)</i>	<u>\$ 11,530.00</u>
I. Allowance for Permit Fees (per RFP Addendum 3) <i>(Task 7; see Detail)</i>	<u>\$ 20,000.00</u>
J. Supplemental Mitigation / Risk Reduction Services <i>(Task 10; see Detail)</i>	<u>\$ 63,470.00</u>
Total Project	<u>\$ 589,405.30</u>

**EXHIBIT C
INSURANCE REQUIREMENTS**

From the earlier of the Effective Date or the Commencement Date of this Agreement, and continuing without interruption during the term of this Agreement, Contractor shall have, at a minimum, the following insurance, including all endorsements necessary for Contractor to have or provide the required coverage.

A. The Contractor shall have insurance that meets the following minimum requirements:

1. Professional Liability Insurance or Errors and Omissions Insurance protecting the Contractor and its employees in an amount not less than \$1,000,000.

2. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident
Bodily Injury by Disease - \$500,000 each employee
Bodily Injury by Disease - \$500,000 each policy limit

3. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. Further, the following minimum limits of liability are required:

\$1,000,000	Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined
\$2,000,000	Per Project General Aggregate
\$1,000,000	Personal and Advertising Injury

4. Motor Vehicle Liability Insurance equivalent to, as a minimum, Insurance Services Office form CA 00 01 10 13 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

5. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.

- B. Insurance required under A.3 and A.4 above shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City for any insurance listed herein.
- C. Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and unqualified 30-day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number(s); name of insurance company; name(s), email address(es), and address(es) of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions, which may be approved by the City in its sole discretion; (c) that the policy conforms to the requirements specified. Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. If any of the above coverages expire by their terms during the term of this Agreement, the Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.