

## Scope of Services

Based on our understanding of the project we have provided a detailed proposed scope of services that outlines the anticipated tasks necessary to complete the project. The scope items below are a basis for discussion and will be reviewed and finalized with the Village upon selection.

- 1. Project Management & QA/QC** – Our project manager, Erin Pande, will be the main point of contact with the Village and MWRD to streamline the communication process. Erin will also track project schedule, project budget, communication with utilities and permit agencies, and communication with our subconsultant to ensure that the entire design process will run smoothly and without significant setbacks. For each deliverable produced for this project and during intermittent internal completion phases, Erin and senior level engineer staff will perform peer reviews of the engineering. Comments will be addressed and followed up for supplemental review. Additionally, other QA/QC tasks will be performed according to ERA's QA/QC procedures.
- 2. Progress Meetings and Coordination** – ERA will meet and coordinate with Village staff, MWRD staff, regulatory agencies, homeowners, homeowners' associations, and other project stakeholders throughout the project duration to review progress, gather data and discuss relevant issues. This proposal assumes the following meetings:
  - a. One (1) kickoff meeting with Village and MWRD staff to discuss the project, collect and review existing information, discuss the project schedule, and establish a working relationship with all parties.
  - b. Monthly progress meetings (6 total) to discuss the project and review the work completed to date. It is anticipated that the meetings will occur in conjunction with deliverable submittals.
  - c. Meetings with MWRD (2 total) to discuss stabilization options and preferences after the site reconnaissance and at the 60% plan level.
  - d. Meetings with private owners (5 total) to discuss any project concerns and discuss required easements.
  - e. Coordination via phone and email will occur between ERA, the Village, MWRD, and various other project stakeholders.
- 3. Data Gathering/Review** – Acquire and review relevant background data from various sources including the following items:
  - a. The 2014 Baker Plan, specifications, and permit documents;
  - b. The 2020 Tinley Creek Streambank Stabilization Memo by CBBEL;
  - c. Previous stormwater studies within and adjacent to the project;
  - d. As built record drawings from other projects;
  - e. Storm, sanitary, and water atlases;
  - f. Private utility atlases (electric, telephone, cable);
  - g. 2-foot contour mapping from Cook County.

- 4. Wetland Delineation** – A previous wetland delineation was prepared by Huff & Huff, Inc. in 2012. The wetland delineation has since expired and will be required to be updated. Additionally, segments of the creek that were not originally included in the project will need to be reviewed for wetland conditions. A wetland delineation will be performed to identify the limits of the regulatory wetlands and Waters of the U.S. within the scope of the project. Methods used for delineating wetland will be in accordance with the U.S. Army Corps of Engineers (Corps) Wetlands Delineation Manual dated 1987 (USACE, 1987) and Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region dated September (USACE, 2008). Wetlands will be staked by pin flag and/or marking tape labeled “wetland delineation”.
- 5. Topographic Survey** – ERA will work with our subconsultant American Surveying & Engineering (a Minority Business Enterprise firm), to perform the topographic survey. As it is anticipated that field conditions have changed significantly since the Baker plan was prepared, this task includes a full topographic survey of Tinley Creek including the previous project areas. Previous features that were surveyed that have not significantly changed may not be resurveyed. The survey will consist of establishing control on the project site. The survey will include cross sections of the stream on 100-foot intervals with additional survey measurements to capture stream geometry as needed. The latitudinal limits will be from 50 feet from top of bank to 50 feet from top of bank. The typical cross section will consist of survey measurements taken at the latitudinal limit, any contour changes between that measurement and the top of bank, the top of bank, the toe of slope, the thalweg, and apparent center of creek. Planimetric features encountered in the project limits will be located. At structures and roads present in the project limits, the downstream and upstream openings and footprints of the structures will be surveyed. The ponds that are present at the southern end of the project are not included in this survey.
- 6. Base Plan Preparation** - Survey and geospatial data will be downloaded and combined with other acquired data including previous electronic files of existing conditions from the Baker plans to produce the base plan. The base plan will show topography, property boundaries, stream cross section locations, stream geometry, structures, utilities, centerline with stationing, and wetland boundaries. The stationing will be prepared to match the original Baker plan stationing.
- 7. Field Reconnaissance** - ERA will perform a field reconnaissance of the project areas to review and mark up the existing conditions survey, review and mark up the 2014 Baker plan and the 2020 CBBEL memo, and development new streambank stabilization concepts for the segments added as part of this project. ERA will walk and evaluate the stream segments and immediate adjacent overbank areas. ERA will classify, describe and document (including photographs) erosional areas and GPS the location of significant erosion or other items of concern. Bank erosion, head cuts, riffles, pools, large woody debris, encroachments, etc. will be recorded. ERA will utilize our handheld GPS unit (Promark 120 which gets sub-meter accuracy) to perform the assessment. The collector can take photos, video, voice recordings, ground shots, etc. This data will be in state/plane coordinates and can be imported into the base plan and will be made available to the Village for their GIS staff. ERA will also take three (3) photos per property of the streambank for documentation of streambank conditions and current improvements. ERA will organize and present these photos to the Village for future use.

- 8. Concept Plan Development (30%)** – This task includes the preparation of preliminary stabilization options and plans which will include either confirmations of the Baker plan stabilization or recommendations for alternate stabilization methods. The plan will also include stabilization methods for the stream segments not originally included in the scope. Sample details for each stabilization method will be included in the concept plans. This conceptual plan will be utilized to review the options with MWRD in the context of MWRD guidance documents. The Village and MWRD will review the concept plan and ERA will continue into the Preliminary Plans, Specifications, and Cost Estimate task upon approval or modification of the recommended stabilization practices.
- 9. Hydrologic/Hydraulic Stream Modeling** – ERA will prepare a hydraulic analysis of the existing and proposed improvements using the existing regulatory HEC-2 model (or a previously-prepared model for the project, if available) and HEC-RAS modeling program for one-dimensional steady flow hydraulics. The hydraulic analysis in HEC-RAS will be used to evaluate the final design for compliance with floodplain and floodway regulations and for review of the stabilization practices proposed. The results of the analysis will be submitted for permit to the Illinois Department of Natural Resources, Office of Water Resources. A CLOMR/LOMR is not anticipated or included in this task, and the regulatory model will not be submitted to FEMA. FEQ modeling is also not anticipated or included in this task.
- ERA will create (or update, if available) a hydraulic model for Tinley Creek using the HEC-RAS model and 100-foot interval cross-sections aligning with the existing conditions survey. The hydraulic structures will be added to the model based on the site survey as well. The information from the HEC-2 data file will be used to establish surface water elevations for each station.
  - ERA will create a final proposed HEC-RAS model which will incorporate the proposed river restoration cross-sectional changes, project cut/fills, and vegetation management improvements.
  - The permitting documentation will be compiled and prepared for submittal to IDNR. This task includes one revision and one resubmittal after receiving regulatory comments.
- 10. Preliminary Plans, Specifications and Cost Estimate (60%)** – This task includes the preparation and submittal of preliminary plans, technical specifications, and cost estimates for the proposed improvements. It is anticipated that preliminary plans will include the following sheets:
- Cover Sheet with a Site Location Map
  - General Notes, Legend, and Schedule of Quantities
  - Overall Existing Conditions Plan
  - Detailed Existing Conditions (Base Plan) and Demolition Plans
  - Overall Layout Site Plan & Profile
  - Detailed Geometric Layout Site Plan & Profile
  - Grading & Erosion Control and Sedimentation Control Plan
  - Traffic Control Plan
  - Planting/Seeding Plan
  - Detailed Grading Sections
  - Typical Cross Sections
  - Construction Details
  - Structural Plans
  - Structural Details

This task also includes preparation and submittal of a 60% Engineer's Opinion of Probable Construction Cost based upon the quantity of materials to construct the project. ERA will assist in Value Engineering of

the project if the project is anticipated to exceed the previously prepared budget. The costs will be split based on the funding source for each segment of the stream. It is anticipated that these drawings will be used to apply for the required permits.

- 11. Preliminary Property Exhibits** – In conjunction with the 60% plans, specifications, and estimate, ERA will prepare specific exhibits for each property along the streambank stabilization project. This may include as many as fifty-two (52) exhibits for the entire project area. The exhibits will be simplified and expanded views of each property clearly showing the proposed stabilization practices for that property. Photos showing existing erosion areas and samples of the streambank stabilization proposed for the property will be provided for each property as well. ERA will also identify properties for which the stabilization is not critical for the overall condition of the stream and will provide this exhibit to the Village for use during easement discussions.
- 12. Preliminary Easement Exhibit Preparation** – In conjunction with the 60% plans, specifications, and estimate, ERA will perform boundary survey for all the parcels for which easements are anticipated to be required. ERA will prepare one easement exhibit and easement legal descriptions for each of the impacted parcels along the channel within the project limits. It is estimated that up to 52 parcels may be impacted and require easement exhibits and easement legal descriptions. The easement exhibits and easement legal descriptions will be prepared for review by the Village of Orland Park.
- 13. Operations & Maintenance Plan** – In conjunction with the 60% plans, specifications, and estimate, ERA will prepare and operations and maintenance plan for the streambank stabilization improvements. The plan will include specific details based on stabilization, including schedule for inspections, maintenance schedule, maintenance activities required, and estimated costs on a per-year basis.
- 14. Public Meeting** – ERA will participate in a public meeting (1 meeting) to review the project with stakeholders and adjacent residents. The public meeting will include presentation of the overall project plan to date, presentation of specific streambank stabilization options proposed at each site, and a question-and-answer discussion with homeowners. ERA will assist with preparation of the presentation, contact of all project stakeholders, attendance at the meeting, and comment reviews and responses.
- 15. Permit Assistance** – ERA will assist in the preparation and submittal of permit applications to the applicable regulatory authorities. The following permits are anticipated:
  - a. US Army Corps of Engineers – Update to previous Regional Permits received and applications for new stream segments.
  - b. IEPA – 401 Water Quality Certification & Notice of Intent (if necessary)
  - c. IDNR – Threatened and endangered species – Update to previous Regional Permits received and applications for new stream segments.
  - d. IDNR – Office of Water Resources - Update to previous permits received and applications for new stream segments.
  - e. Illinois Historic Preservation Agency (IHPA) – Update to previous signoffs received and submittals for new stream segments.
  - f. USFWS Section – Section 7 – Update to previous signoffs received and review for new stream segments.
  - g. Will/South Cook Soil and Water Conservation District – Soil Erosion Control (required for USACE permit)

- h. MWRD – WMO Permit (self-permit)
- i. Village of Orland Park – Site grading and general construction (self-permit)

ERA will provide the Village project manager applications for review and approval prior to submitting to the regulatory agencies. The following tasks are anticipated to acquire the above reference permits:

- a. *Coordination* – We will coordinate with various agencies regarding project regulatory requirements.
- b. *Wetland Delineation Report* – we will preparation a written wetland delineation report containing:
  - i. Army Corps of Engineers (USACE) data forms;
  - ii. Documentation of verification of threatened and endangered species consultation with appropriate federal and state agencies;
  - iii. Aerial map exhibit of site showing approximate locations of data sampling points and wetland boundaries;
  - iv. Floristic Quality Assessment to be completed during the growing season;
  - v. Identification of off-site wetlands within 100' of the property;
  - vi. Copy of soil map; and
  - vii. Site photos as necessary to describe wetland and other regulated areas.
- c. *Joint Application* – ERA will prepare an addendum joint permit application form and supporting documentation necessary for submittal to the USACE, IDNR and IEPA.
- d. *Will/South Cook Soil and Water Conservation District* – It is likely that the USACE will delegate review of sediment erosion control provisions to SWCD. ERA will prepare an Erosion and Sediment Control Plan Review Application and supporting documentation necessary for submittal to SWCD.
- e. *Watershed Management Permit* – ERA will prepare a Permit Application and supporting documentation necessary for submittal to Village or Orland Park and MWRD (if necessary).

**16. Final Plans, Specifications and Cost Estimate (90%)** – Following the progress meeting, Value Engineering any of the project elements, and receipt of comments from regulatory agencies, adjacent property owners, the Village, and MWRD, we will revise the drawings, specifications, and estimates accordingly for the proposed improvements. The plans will be signed and sealed by an Illinois registered Professional Engineer. The plans will be used for resubmittal of permit documents. ERA will also provide an anticipated schedule for construction of the proposed improvements for planning by the Village.

**17. Final Property Exhibits** – In conjunction with the 90% plans, specifications, and estimate, ERA will update the specific property exhibits. The exhibits and any updated details will clarify or highlight any revisions to each property based on the reviews after the 60% plan submittals.

**18. Final Easement Exhibit Preparation** – In conjunction with the 90% plans, specifications, and estimate, ERA will update the easement exhibits and easement legal descriptions for use in conjunction with easement agreement documents to be prepared separately by the Village of Orland Park.

**19. Construction Documents (100%)** – Following receipt of final comments from regulatory agencies, the Village, and MWRD, we will revise the drawings, specifications, and estimates accordingly to be utilized for project bidding. The plans will be signed and sealed by an Illinois registered Professional Engineer. ERA will assist the Village in generation of a scope of services for a construction observation contract for the stabilization work.

**20. Bidding Assistance** – ERA will provide final contract documents in electronic format for distribution and use by the Village. ERA will respond to Village and bidder questions and Requests for Information, as required during the bid phase. We will also review bid information and provide the Village and MWRD with recommendations for contract award.