Town of Olive
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Request for Proposals
Engineering Designs for
Upper Boiceville Road Bridge---Boiceville
DeSilva Road Bridge---Boiceville
Burgher Road Culvert ---West Shokan

The Town of Olive (the Town) completed a Local Flood Analysis (LFA) in August 2017. The LFA can be found at http://town.olive.ny.us/homepage-news-category/final-local-flood-analysis/

LFA Section 4.4, pages 73-78 are specific to the Upper Boiceville Road Bridge mitigation area
LFA Section 4.5, pages 79-84 are specific to the DeSilva Road Bridge mitigation area
LFA Section 5.4, pages 109-113 are specific to Burgher Road Bridge at Drybrook mitigation area

I. Scope of Work, Timeline, and Deliverables

Background and Summary:

In 2015, the Town of Olive hired the consulting firm Woidt Engineering & Consulting, PC ("Woidt") to conduct a Local Flood Analysis (LFA) for the hamlets of Boiceville and West Shokan. The analysis was undertaken to identify flood mitigation solutions that result in a reduction of flood elevation or extent within the study area, and that are feasible and cost-effective. During that analysis, two locations of interest were identified by the community as flood hazard areas in Boiceville--"Upper Boiceville Road Mitigation Area" and the "DeSilva Road Mitigation Area". In West Shokan an area of interest also identified is the Burgher Road crossing over the Dry Brook identified as the "Dry Brook Mitigation Area"

Upper Boiceville Road & DeSilva Road Bridges--

Specifically, there is a community concern that the Upper Boiceville Road, a town road that crosses a perennial stream can be overtopped during a flood event. This condition would make the road impassable and could damage the crossing; requiring the road to be closed for a long period until it is repaired or replaced. This is a community concern because Upper Boiceville Road is the auxiliary north to south traffic corridor if State Route 28 is impassable due to an emergency such as a traffic accident or flooding near the State Route 28 and Route 28A intersection. If the Upper Boiceville Road crossing is closed, it could cause lengthy detours and added travel time for emergency response vehicles, commerce and daily commuters.

The unnamed tributary is an un-gaged stream, which means there is no available discharge data to complete a flood discharge frequency analysis. The drainage area of the unnamed tributary is 2.01 square miles. Woidt developed flood discharges using the unit hydrograph method detailed in a LFA report and ran a HEC-RAS model for six discharges (2, 10, 25, 50, 100 and 500-year return interval

storms). The results showed that the Upper Boiceville Road bridge is overtopped starting at the 50-year return interval assuming unobstructed flow. In addition, site observations found that the upstream bridge abutments were failing due to material failure and scour along the abutment toe or both.

Also, in Boiceville the DeSilva Road Mitigation Area contains one area of interest. There are two crossings of an unnamed stream underneath DeSilva Road and State Route 28. The area is located downstream of the Upper Boiceville Road crossing and is located approximately 0.5 mile southeast of the Boiceville market. DeSilva Road is a town road connecting Upper Boiceville Road to the east and State Route 28 to the west. The drainage area upstream of DeSilva Road is essentially the same drainage area for Upper Boiceville Road so the discharges from Upper Boiceville Road were used for DeSilva Road.

Burgher Road Culvert in Dry Brook Mitigation Area

There is one flooding hazard located in the Dry Brook mitigation area located at the Burgher Road crossing over the Dry Brook. The culvert there was a public flooding hazard because there is concern that it is frequently inundated isolating seven homes to the north of the crossing.

The duplicate FEMA HEC-RAS model for Dry Brook did not need correction. The model was run under existing conditions to understand the frequency Burgher Road was inundated. The existing crossing is a corrugated metal arch culvert with a 7.7 ft. rise and 12.2 ft. span. The lowest elevation along the road profile is 672.7 and is underwater during the 25-year flood and is presumably not damaged severely enough that the crossing would need to be closed. The road, however, is submerged during the 50-year flood event by 1.3' of water with channel velocities of 5.2 ft./sec.

The Town will hire a consulting firm to design and engineer a solution through 100% design for these three crossings. The analysis will explore concepts to pass a range of flows, including the 50-year and 100-year flood event, before initiation of the detailed design phase. In addition, a goal of this project is to maintain geomorphic function and sediment transport directly upstream and downstream of the culvert. The projects should maintain or improve fish passage.

Deliverables:

Task 1 – Field Investigation and Conceptual Plan

See attached *Design Submittal Content Table* and *Proposed Design Submission Standards* for details of Conceptual Plan design milestones. Deliverables will include:

1.1 Review existing survey files for bridges and cross-sections. Determine the need to acquire additional survey to run HEC-RAS and develop a cost proposal and justification for funder review.

1.2 Conduct a site visit including the consultant, Town, Ashokan Watershed Stream Management Program (AWSMP) and NYC Department of Environmental Protection (DEP) design staff to inspect the site and discuss project needs and approaches.

1.3 Field investigation to support evaluation of existing and proposed conditions for ability to convey a variety of flow conditions and sediment.

1.4 Inspect the project area, including key cross sections, channel profile, headcuts and streambank failures and conduct a general reconnaissance field view of the waterway, the adjacent upland, and the road.

1.5 Geomorphic survey through project area to determine whether vertical or lateral channel instability is contributing to bridge abutment failure.

1.6 Characterize bed material throughout the study reach in order to assess sediment competence and capacity of existing to proposed conditions (use Wolman pebble count at riffle cross-section if site conditions suitable).

1.7 Conduct hydrologic and hydraulic analysis. Hydraulic modeling should include the entire reach so that impacts of replacing the culvert on geomorphic function and sediment transport are properly assessed in addition to water flow through the structure. AWSMP and the Town of Olive will seek to obtain and share an existing conditions hydraulic model developed by the Town of Olive during Local Flood Analysis in Boiceville for use in this project.

1.8 Project feasibility report including components identified in the *Design Submittal Content Table* and *Proposed Design Submission Standards*:

- Introduction, site location, description, problem statement, and prioritized objectives
- Discussion of potential alternatives, benefits and limitations
- Site photographs, aerial photographs, relevant remote mapping
- Assessment and data requirements
- Engineering and construction cost estimates
- Permitting requirements
- Project timeline

1.9 Conceptual Plan including sketch plan(s) depicting various alternatives for treatment.

1.10 Joint review with AWSMP of the feasibility report and conceptual plan(s).

<u>Task 2 – Detailed Design</u>

See attached *Design Submittal Content Table* and *Proposed Design Submission Standards* for details of 30%, 60%, 90% and Final Design milestones. Throughout the process, the consultant will solicit Town of Olive feedback. Deliverables will include:

30% Design:

2.1 Assessment & Design Report that builds upon the Conceptual Plan and a set of project drawings.

2.2 Joint review with AWSMP of the completed assessments, calculations, and design before progressing to the 60% design. .

60% Design:

2.3 Design report (building on the 30% design report), design drawings, and bid documents and specifications.

2.4 Joint review with AWSMP of design report, design drawings, permit package and associated documentation, and draft bid documents before progressing to the 90% design.

2.5 Review meeting with NYSDEC and submission of project permits.

90% Design:

2.6 Final design report, final design drawings, final bid documents and specifications, final calculations, and final detailed engineer construction cost estimate.

2.7 Joint review with AWSMP of the design report, design drawings, permit package and associated documentation, and final bid documents before progressing to 100% design.

100% Design:

2.8 Resolution and incorporation of all comments submitted during previous design review.

2.9 Signed documents and final detailed engineer estimate.

2.10 Final approved project permits.

Timeline:

The design project for these three projects will be completed in 2018.

Provided Information:

- FEMA effective or best available HEC-RAS model
- Technical memorandum describing LFA analysis, mitigation alternatives, initial feasibility analysis and recommendations in electronic format
- Inundation mapping (GeoRas depth grids)

II. Proposal Submission & Content

The proposal must be organized in sections containing the following information:

- **Description of Company**: Provide the address of the main office(s) (for legal purposes) and the address of the office(s) that will manage the project.
- **Insurance**: The Town will require proof of liability insurance, workers compensation and disability insurance, and professional liability, as needed. And, if selected, the contract must provide proof that the Town of Olive, Cornell Cooperative of Ulster County and the NYC DEP has been added as additional insured. Minimum insurance requirements are at: http://ashokanstreams.org/projects-funding/smip-project-insurance-requirements-2/
- **Personnel:** Submittals must identify a proposed project manager, who would be responsible for the day-to-day management of project tasks and would be the primary point of contact with your company.
- **Project Cost:** The applicant shall state full cost of undertaking the proposed services. Include a detailed itemized cost statement showing estimated costs associated with each task and

total calendar time associated with each task. Include detail showing total personnel costs associated with each task and other fees that are anticipated, such as travel, printing and materials costs, etc.

- **RFP Submittal:** Please submit three (3) copies and one (1) electronic copy of the proposal to Town of Olive, PO Box 180, West Shokan, NY 12494 and olivesupervisor@hvc.rr.com. Proposals must be received no later than 1 p.m. on Wednesday, February 28, 2018 at the Town Clerk's Office, 45 Watson Hollow Road, West Shokan, NY 12494.

III. Selection Process

The Town of Olive will use Ashokan Watershed Stream Management Program (AWSMP) grant funds to hire a qualified engineer or engineers to develop three (3) separate designs for the three (3) mitigation areas. All proposals received by the Town will be reviewed to determine whether they are responsive to the requirements of this RFP. The Town reserves the right to accept any or all of the proposals and also reserves the right to reject any and all proposals submitted in response to this RFP. The Town will review proposals for technical merit and proposed cost. The proposal may be awarded on best value.

Equal Opportunity/ Affirmative Action Employer

All qualified professionals will receive consideration without regard to race, color, religion, creed, sex, age, or national origin.

- **NYCDEP Stream Management Program Design Submittal Content Table** is attached.