

# C.T. MALE ASSOCIATES

Engineering, Surveying, Architecture & Landscape Architecture, P.C.

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August 28, 2012

Mr. Kevin Hayes  
Washington County  
Municipal Center, Building B  
383 Broadway  
Fort Edward, NY 12828

Re: *Proposal for Surveying and Engineering Services*  
*Washington County Capital – Hurricane Irene Flood Mitigation (ESD Project # X916)*  
*White Creek, Town of Salem, Washington County, New York*  
*CTM Project No.: 00.0011*

Dear Mr. Hayes,

As a follow-up to the meeting that we had at the County offices on July 31, 2012, we have prepared this proposal to provide professional surveying and engineering services related to White Creek stream corridor projects.

Empire State Development, in their letter dated July 13, 2012, stated that the above-referenced project has been awarded funding through the Hurricane Irene-Tropical Storm Lee Flood Mitigation Grant Program. Our original Project Work Plan, dated April 9, 2012 identified twelve distinct project work areas. The funding that was awarded covers ten of the work areas. The funding also includes engineering and surveying for the ten project work areas. The projects are summarized below, with fees for engineering and surveying.

## *Surveying Services*

For each of the ten project areas, C.T. Male will perform a field survey. The field surveys will encompass the proposed work areas and will include all topographic and planimetric features. Property boundary surveys are not included in the fee estimates below.

The fees included in this proposal are for C.T. Male to perform the field survey. We can provide a fee estimate from a registered Women-Owned Business Enterprise, if necessary.

## *Engineering Services*

C.T. Male will prepare construction plans for each of the ten project areas. The plans will be stamped by a professional engineer licensed in New York State. The plans will identify the staging and work areas necessary to complete the projects.



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## *Summary of Project Areas*

This section includes a summary of the ten approved project work areas. The work area number is based upon the Project Work Plan.

**1.1 Archibald Street Bridge:** This project includes removal of the Archibald Street bridge girders and deck, removal and re-installation of guide rails and re-arrangement of rocks in the stream bed near the bridge abutments. The abutments are wide enough such that they do not have to be removed.

**1.3 Downstream RR Bridge and Adjacent Farm Access Bridge:** This project involves installing two rock vanes upstream from the two bridges.

**3.1 Flood Control Berm:** This project involves installing a 1,200 foot long by 24 foot wide by 4 foot high flood control berm along the east side of Route 153 to the north side of residential properties that front on Blind Buck Road.

**3.2 Flood Control Channel:** This project involves installation of a depressed grass-lined channel near Blind Buck Road, and lowering Blind Buck Road near the bridge crossing over the White Creek. This would increase flood flow capacity in that area.

**4.2 Protect Embankment at Inlet of Beattie Hollow Bridge:** This project involves stabilizing erosion around abutments at Beattie Bridge. This will be accomplished by placing large diameter rock in the cavity between the bridge inlet and Route 153.

**4.3 Remove Former Bridge Abutment Across from Braymer Lane:** This project involves removal of the old bridge abutment located across from Braymer Lane, and construction of a small berm atop the right stream bank (near Route 153).

**4.4 Construct Meander Upstream of Gravel Deposits:** This project involves construction of a meander upstream of the gravel deposits located between Braymer Lane and McKeighan Lane. This meander once existed based upon historical aerial photography. This meander will be re-established leaving the main stream flow untouched. The meander will be connected to the main stream channel so that the stream channel can be diverted into the meander.

**4.5 Remove Gravel Deposits:** This project involves removal of the gravel deposits from either side of the low flow channel located between Braymer Lane and McKeighan Lane. Approximately 1,550 cubic feet of gravel are estimated to be removed. Soil from construction of the meander (Item 4.4) will be used in conjunction with plantings to recreate vegetative cover in the gravel deposit area.

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**4.6 Improvements between the Chambers Road Bridge and Rail Road Bridge:** This project involves three items:

- o North of Chambers Road Bridge - remove large rocks on the west stream bank, approximately 40 linear feet. Relocate to railroad bridge to prevent scour.
- o Replace existing large stones with smaller stone filling to approximately 5 feet in height that would protect the stream bank, but would allow flow to breach the main stream channel and continue into the floodplain on the south side of the railroad bed.
- o Form a relief channel above the stone filling approximately 20 feet wide by 50 feet long.

**4.7 Supplement Flow Capacity of Chambers Road Bridge:** This project involves constructing a box culvert through the embankment approaching the south side of the Chambers Road Bridge. The new culvert would be designed to connect with the new relief channel constructed as part of Item 4.6.

### *Surveying and Engineering Fees*

The fees for surveying and engineering services for each of the ten project areas are outlined below.

Project areas 4.2 and 4.3 include minor work that can be performed without engineering plans. The survey and engineering fees for project area 4.6 is included in area 4.7.

<b>Project Area</b>	<b>Survey Fee</b>	<b>Engineering Fee</b>	<b>Total</b>
1.1	\$2,000	\$7,500	\$9,500
1.3	\$2,500	\$2,500	\$5,000
3.1	\$3,000	\$5,000	\$8,000
3.2	\$3,000	\$7,500	\$10,500
4.2	\$0	\$0	\$0
4.3	\$0	\$0	\$0
4.4	\$3,500	\$8,000	\$11,500
4.5	\$3,500	\$5,000	\$8,500
4.6	\$0	\$0	\$0
4.7	\$2,500	\$6,500	\$9,000
<b>Total</b>	<b>\$20,000</b>	<b>\$42,000</b>	<b>\$62,000</b>

### *Allowance for Environmental Permitting Assistance*

It is our understanding that the Washington County Soil and Water Conservation District will work to obtain the DEC environmental permits necessary for the projects. The environmental permits include Article 15 (stream disturbance) from NYSDEC and wetland disturbance permits

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from the Army Corps of Engineers. C.T. Male will assist with obtaining the ACOE environmental permit coverages, as necessary. An allowance of up to \$5,000 is included to cover this work.

### *Allowance for Construction Consultation.*

It is our understanding that the Washington County Soil and Water Conservation District will be performing construction site inspections. An allowance is included for consultation with the District and/or the equipment operator during construction if any issues arise that require clarification. An allowance of up to \$2,500 is included to cover this work.

**The total estimated fee for C.T. Male's survey and engineering services, including allowances is \$69,500.**

As Project Manager, I will be responsible for project deliverables and will communicate directly with you.

We propose to invoice for our services on a lump sum basis for each project work area. Reimbursable expenses are included in the quoted lump sum fees.

Please call me at your earliest convenience should you have questions after reviewing this proposal letter. If the scope of services and lump sum fees are acceptable, please return a letter of acceptance as our authorization to proceed.

We look forward to working with you on this project and thank you for giving C.T. Male the opportunity to submit this proposal.

Sincerely,

C.T. MALE ASSOCIATES



T. James Houston, P.E.  
Senior Civil Engineer

C: Seth Pitts (Town of Salem)  
Ann Dunigan (Village of Salem)  
Joseph Driscoll (SWCD)