
TRICAR LTD

Design & Construction Services

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Mr. Karl C. Wetherholt, PE
Gahanna City Engineer
Gahanna Municipal Building
200 South Hamilton Road
Gahanna, Ohio 43230

Date: May 3, 2000

Re: Creekside Floodwall
Analysis Proposal

Dear Mr. Wetherholt:

TriCar Ltd is pleased to submit this proposal in response to your request to perform an analysis relating to 1) the evaluation of floodway elevations and 2) the investigation of floodwall / floodway protection options for the Creekside area of Olde Gahanna. This proposal has been prepared to provide the City with a document that will present options towards protecting existing and future structures within the Creekside re-development area. The limits of the study area will extend along Big Walnut Creek between the confluence of Big Walnut Creek and Rocky Fork Creek and a point approximately 1,500 feet north of the SR 62 bridge. This investigation will consist of the following main elements:

- Task 1 TriCar will prepare a HEC-2 hydraulic model of the study area and will use this model to re-define and accurately establish the current 100-year flood elevations throughout the study area.
- Task 2 TriCar will review the existing stormwater conveyance systems within the study limits to determine which stormwater conveyance systems might be impacted by a floodwall.
- Task 3 TriCar will develop, evaluate and present options to protecting the Creekside area from 100-year floodwaters and will develop alternative Creekside trailway routes and configurations along the east bank of the Mill Race. TriCar will incorporate each option into the hydrologic model to determine the 'post-construction' 100-year flood elevations and the extents of the 100-year flood limits.
- Task 4 TriCar will prepare the necessary applications to modify FEMA floodplain maps to reflect the proposed improvements.
- Task 5 TriCar will verify the need for Ohio EPA 401 and Corps of Engineers 404 permits, NPDES, PTI, NOI and other relevant permits.

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The efforts for each task above are described as follows:

Task 1 Establish the limits of the topographic mapping required for the HEC-2 hydraulic model. Prepare a base map for the HEC-2 study, obtaining topographic mapping from Geo-One, Inc and the Franklin County Auditor. Meet with the City of Columbus Division of Water to obtain the information necessary to understand the frequency and extent of the discharges from Hoover Dam into Big Walnut Creek. Establish how flows and unscheduled releases affect the determination of 100-year flood elevations in the study area. Re-evaluate 100-year flood flows for Big Walnut Creek. Revise the 100-year flow rates used in the existing flood insurance study if justified.

Provide Big Walnut Creek cross section surveys at 200' minimum spacing (50' spacing along the length of the island) and establish control points no further apart than 300 feet to finalize the topographic information needed to develop a HEC-2 hydraulic model of the study area. Add all existing man-made and natural features within the study area to the hydrologic model. Run the HEC-2 model to establish the 100-year flood elevations throughout the study area. Overlay the 100-year flood limits onto a plan view showing all existing structures within the study area. On the plan view, include all existing easements and indicate both public and private property.

Task 2 Review the pertinent stormwater system reports and construction plans for those stormwater systems that currently lie below the 100-year flood elevations. The City will provide report and plan set copies to TriCar. For each such stormwater conveyance system, determine the up-gradient limits of the 100-year flood in each conveyance system. Show all stormwater conveyance systems on the plan view developed under Task 1 along with all other existing underground utility systems.

Task 3 Establish options to protect both existing and proposed structures and the stormwater conveyance systems within the study area from the 100-year flood flows. Options to include floodwall protection, installation of fills, pumping of stormwater flows and floodway modifications. Prepare preliminary cost estimates of each viable option. Prepare a submittal presenting the options and their associated costs for consideration by public officials. Attend a minimum of five meetings with City officials and council members to present the developed options and answer questions regarding the options. Assist with establishing the ranking of the options in terms of their desirability.

Prepare preliminary plan / profile views of the preferred option and incorporate the options into the HEC-2 model to determine the impacts of each option on the 100-year flood elevations. In the event any options adversely impact the 100-year flood elevations, TriCar will determine if mitigation modifications can be made to each option.

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- Task 4 Prepare the necessary Conditional Letter of Map Revision (CLOMR) application to modify the FEMA floodplain maps to reflect the proposed improvements. Meet with City officials to explain application and submit application to FEMA for approval. Respond to FEMA comments as necessary.
- Task 5 Verify the need for Ohio EPA 401 Water Quality Certifications, US Army Corps of Engineers 404 permits, NPDES permits, PTI applications, NOI and other pertinent permits.

The costs associated with the above scope of services are summarized in the following table.

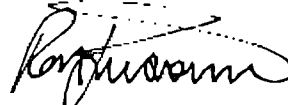
TASK NUMBER	ENGINEER HOURS @ \$70.00	AUTOCAD HOURS @ \$40.00	SUBCONTRACT COST HARTMAN ENGINEERING	SUBCONTRACT COST TERRA SURVEYING	SUBCONTRACT COST GEO-ONE AERIAL SURVEY	DIRECT EXPENSE	TOTAL TASK COST ESTIMATE
1	48 = \$ 3,220	20 = \$ 800	\$ 5,852	\$ 6,600	\$ 2,750	\$ 100	
2	40 = \$ 2,800	24 = \$ 960	\$ 306				
3	136 = \$ 9,520	16 = \$ 640	\$ 9,240			\$ 100	
4	16 = \$ 1,120	8 = \$ 320	\$ 3,080				
5	16 = \$ 1,120		\$ 1,232				
TOTALS	254 = \$ 17,780	68 = \$ 2,720	\$ 19,712	\$ 6,600	\$ 2,750	\$ 200	\$ 49,762

As always, we greatly appreciate this opportunity to be of service to the City of Gahanna. Following receipt of a Notice to Proceed, it is estimated that approximately 150 days will be required to complete the tasks outlined above.

Final construction plans will be prepared after receipt of a Conditional Letter of Map Revision (CLOMR) from FEMA. A separate proposal to perform this work will be provided subsequent to the receipt of the CLOMR,

If you have any questions, comments or desire additional information, please contact us at your earliest convenience.

Sincerely,
 TRICAR LTD



Ronald T. Trivisonno, PE