

Structural Assessment Report On Bagdad Retaining Wall

EXECUTIVE SUMMARY:

Description of services performed and purpose of report:

Chastain-Skillman, Inc (CSI) was engaged through Lamp\Herbert Consultants (LHC) to perform a non-invasive structural engineering analysis of the existing composite retaining wall at the proposed Bagdad Mill site park. The services performed by CSI in preparing this evaluation included:

- ♦ meetings with stakeholders to review existing conditions and intended use of the site;
- ♦ perform a site assessment of existing conditions of the retaining wall to identify structural, safety and environmental issues in regards to the wall and planned use of the site;
- ♦ review of available plans, surveys, and aerials to assist in the evaluation; and
- ♦ prepare an assessment report on the findings, discussion of alternatives to repair/replace the existing wall and budgetary cost estimates for the various alternatives proposed.

It is the professional opinion of Chastain-Skillman, Inc.'s structural engineer that the composite retaining wall located along Blackwater River and Pond Creek sides of the subject site cannot be certified as structurally sound due to the construction techniques or lack thereof employed by the previous occupant and the lack of any plans or design information being made available to the Engineer. While the wall appears stable at this time, there are too many intangibles and unknown factors that could effect its long term stability such as undermining from storm surges, washouts from the landward side of the wall and stability of the existing wall constructed in the 1980's upon which the subject wall was placed. There are also some remains from the original lumber mill retaining wall that underlies portions of the newer structure.

Four options were considered by the Engineer in regards to correcting the existing condition. These were as follows:

<u>Option</u>	<u>Description</u>	<u>Costs</u>
1.	Leave retaining wall in its existing state	\$ 15,000 ⁽¹⁾
2.	Removal of existing wall and re-grading of site	120,000
3.	Install tie-back system	220,000
4.	New steel sheet pile wall	1,300,000 ⁽²⁾

(1) It is recommended that a restraint structure or barrier be placed between planned park activities and existing retaining walls such as fencing or railing.

(2) This is the only method that can be structurally certified.