



**Environmental
Hydraulics
Group**

**Coastal & River
- Environment**

**Project: Erosion Protection Works for Branch
3 of Harmony Creek**

1991-322

Location: East Whitby, Ontario

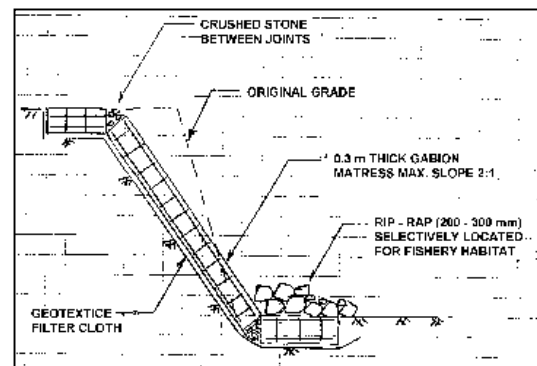
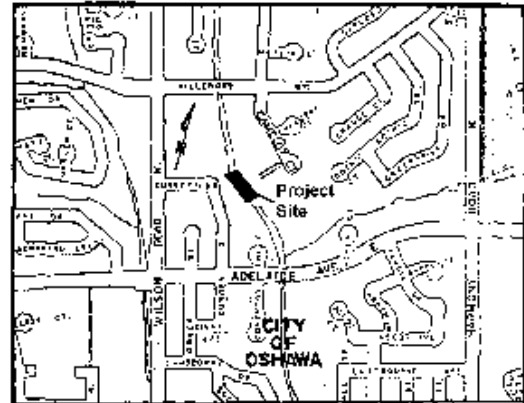
Client: City of Oshawa

Completed: June 1991

Description: EHG provided hydraulic analysis and erosion protection designs for Branch 3 of Harmony Creek in the City of Oshawa. The objective was to fulfill flood storage requirements and to verify that the proposed channel erosion protection measures would not impact the existing regime.

Findings: EHG identified a 60 m long channel section as requiring erosion protection. This was endorsed by the Conservation Authority, the City and the Ministry of Natural Resources. EHG demonstrated that gabion mat and rip-rap provided sufficient erosion protection considering that:

- i) Significant flow increases could be expected once the watershed reached its ultimate development condition. This required a number of flood and erosion controls.
- ii) The location of the proposed erosion protection works was identified as a "Medium Priority" site.
- iii) Erosion protection would be limited mainly to the banks, with rip-rap selectively located within the low flow channel to preserve pools and riffles (fish habitat).
- iv) Erosion protection works would require some regrading of the existing channel. Sediment control during the construction phase was key, including installation of a silt fence at the foot of the bank works as well as a rip-rap stone check dam.



Benefits to the Client: EHG's hydraulic designs helped the City to maintain the existing channel while encouraging fish habitat rationally and economically.

Value Added: Environmental viability and channel stability were both enhanced by preserving natural features and restoring the channel to a more natural state.

