5th International Conference on Natural Channel Systems

Erosion and Sediment Control: Can we see the forest for the trees?

Niagara Falls, Ontario
September 26-27, 2016
Agenda

1. Background
2. Example Projects
3. Suggestions
4. Summary
5. Questions
1 Background
Background

- Doing stream restoration for 20 years
- Concerns about Erosion and Sediment Control
- Prompted this paper
- Intended to stimulate thinking and discussion
2 Example Projects
Example 1: Moose Jaw

- Prairie Floods
- Infrastructure (Roads, Bridges, Paths)
- Bank Stabilization of about 200 m
Example 1: Moose Jaw

- Permit Conditions: Turbidity Curtain
Example 1: Moose Jaw

- Downstream Dam
- No winter flow
Moose Jaw

- Money was wasted installing and maintaining a silt curtain.
Example 2: Oshawa Creek

- Conlin Road Widening
- Relocation of Creek
- Salmon and trout
Example 2: Oshawa Creek

- Benthics are slow to recover
- The plan called for transferring a half a bucket bed material (cobble) along with benthics into a riffle to help jump-start the benthic community
- Turned down at the last minute by the regulator
Oshawa Creek Downstream

- Eroding bank of 30 m X 3 m
- If eroding at 0.5 m / year
- 70 tonnes of sand/silt
Example 2: Oshawa Creek

• A strategy to improve the ecological uplift of an important stream was thwarted to keep 100 kg of clean cobble out of the stream (it was already in the stream)
• But, a single downstream eroding bank is contributing 70 tonnes to the stream
• Not sure if the correct decision was made
2 Suggestions
Suggestions

• Regulators
• Designers
• Contractors
• Owners
Regulators

- DFO often easier to work with than delegated authority
- Sediment already in the river vs. new sediment
- Habitat banking (lower cost for E&SC)
- Fish windows (guideline)
- Cost (15% of project cost is E&SC)
  - The lower the cost the more streams we can fix
Designers

- Training (Newbury, TU, Rosgen)
- Conferences (North America, Europe)
- Think about the Erosion and Sediment Control Plan (design and inspection)
- Silt Fence
- Go fishing
- Be open to ideas from contractors
Designers

- New approaches (e.g., sod mats)
Designers

- New approaches/new structures (e.g. wood toe protection)
Designers

• 3D designs (reduce earthwork)
Contractors

- Training (courses, conferences)
- Speak up (add value, adapt)
- In-water vs. Isolation
Contractors

• Right Equipment (e.g., thumb, wrist)
Contractors

• Right Equipment (GPS-guided equipment)
Contractors

• Speed of construction
Owners

• Good designer
• Good contractor (prequalify)
• Design-build
• Timing
Summary
Summary

• Focus on the forest
• Spend money on the right things
• Canadians pay the bills
• Be a professional
• Use some judgement
• Moose Jaw and Oshawa Creek would have gone better
Questions?

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