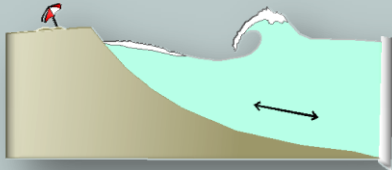
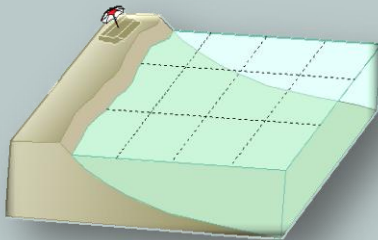


PROJECT PROFILE

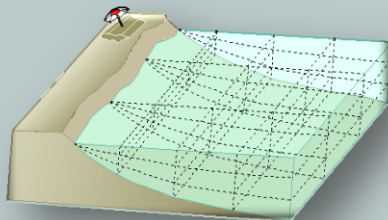
REVIEW OF PREDICTIVE EROSION MODELS FOR THE UPPER GREAT LAKES INTERNATIONAL JOINT COMMISSION



Graphical representation of a 1-dimensional model



Graphical representation of a 2-dimensional horizontal model



Graphical representation of a 3-dimensional model

Geomorphic Solutions was retained by the International Joint Commission as part of the International Upper Great Lakes Study to review models that could potentially be employed to estimate erosion on cohesive and sandy shorelines. This study was conducted to support the assessment of alternative water level scenarios as a result of regulating the outflow of Lake Superior.

An extensive review of long term evolution models for cohesive and sandy shorelines and a brief examination of several event based coastal profile and coastal area models were completed. Five models (3 for cohesive shorelines and 2 for sandy shorelines) were selected for in-depth review. The uses and applications of each model were summarized, along with a detailed description of model function and an assessment of uncertainties and sensitivities associated with inputs, outputs, and assumptions. The report also assesses the feasibility of model application and makes recommendations on how to apply the models to determine the effects of different water level scenarios on shoreline evolution and how to incorporate the models over large lengths of shoreline.

OBJECTIVES:

Review, evaluate and recommend suitable models for predicting shoreline erosion on cohesive and sandy shorelines in the Upper Great Lakes

COMPONENTS:

- Conduct a literature review of cohesive and sandy shoreline erosion models
- Evaluate model, application, feasibility and uncertainty
- Discuss model uncertainties and provide recommendations for appropriate model selection

KEY PERSONNEL:

Dr. Paul Villard, Dr. Jeff Doucette, Ms. Suzanne St. Onge,
Ms. Heather Miles

DATE OF WORK:

Completed April 2009

VALUE OF WORK:

\$32 000

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