

# Shoreline Protection Interface Design

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# Presentation Overview

- **System Structures**
  - User Interface
- **Application Flow**
- **User v/s Imported Data**
- **Prototype Demonstration**
- **Next Steps**

# System Structures

## ■ Components

### – Database

- Microsoft Access 2000 Database

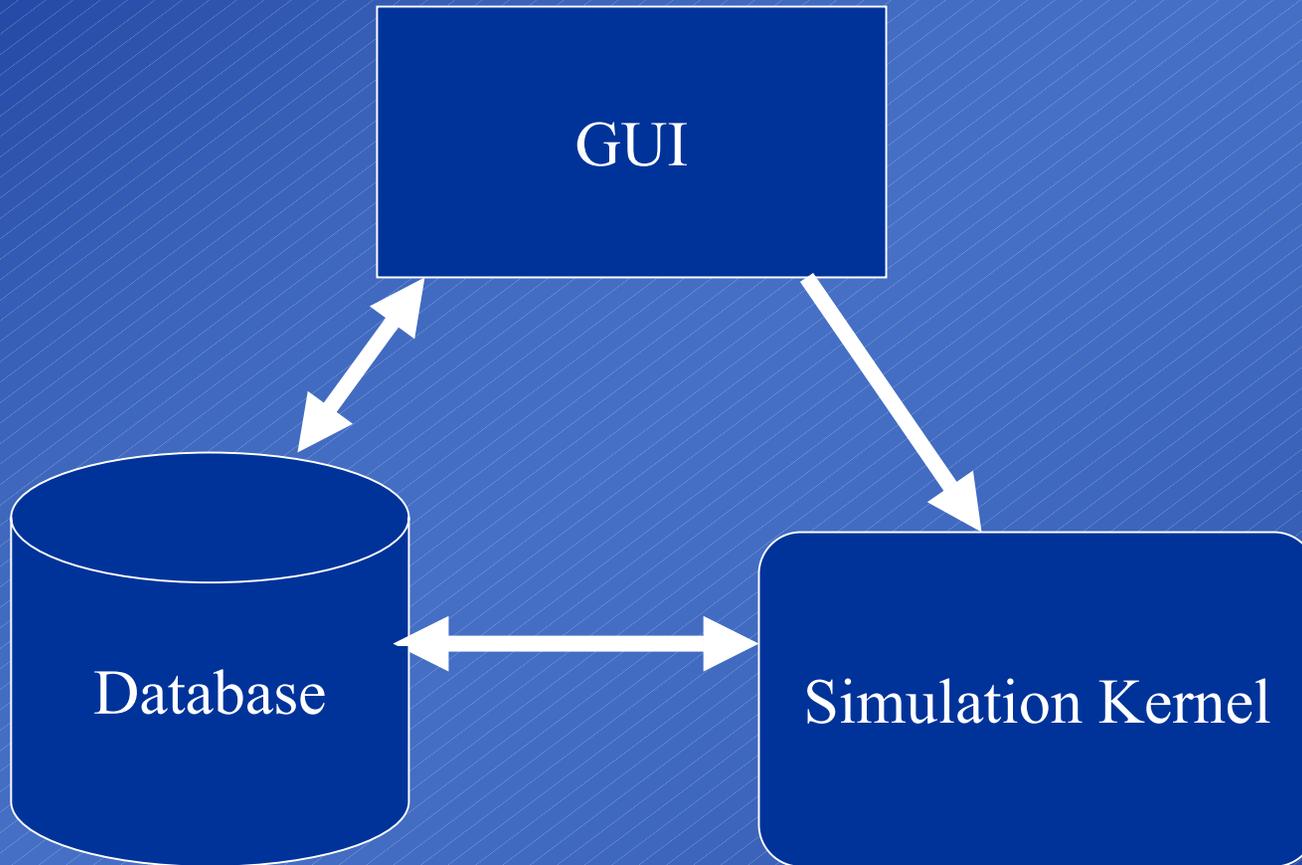
### – Simulation Kernel

- C++ EXE

### – User Interface

- Microsoft VB.NET

# System Structures



# User Interface

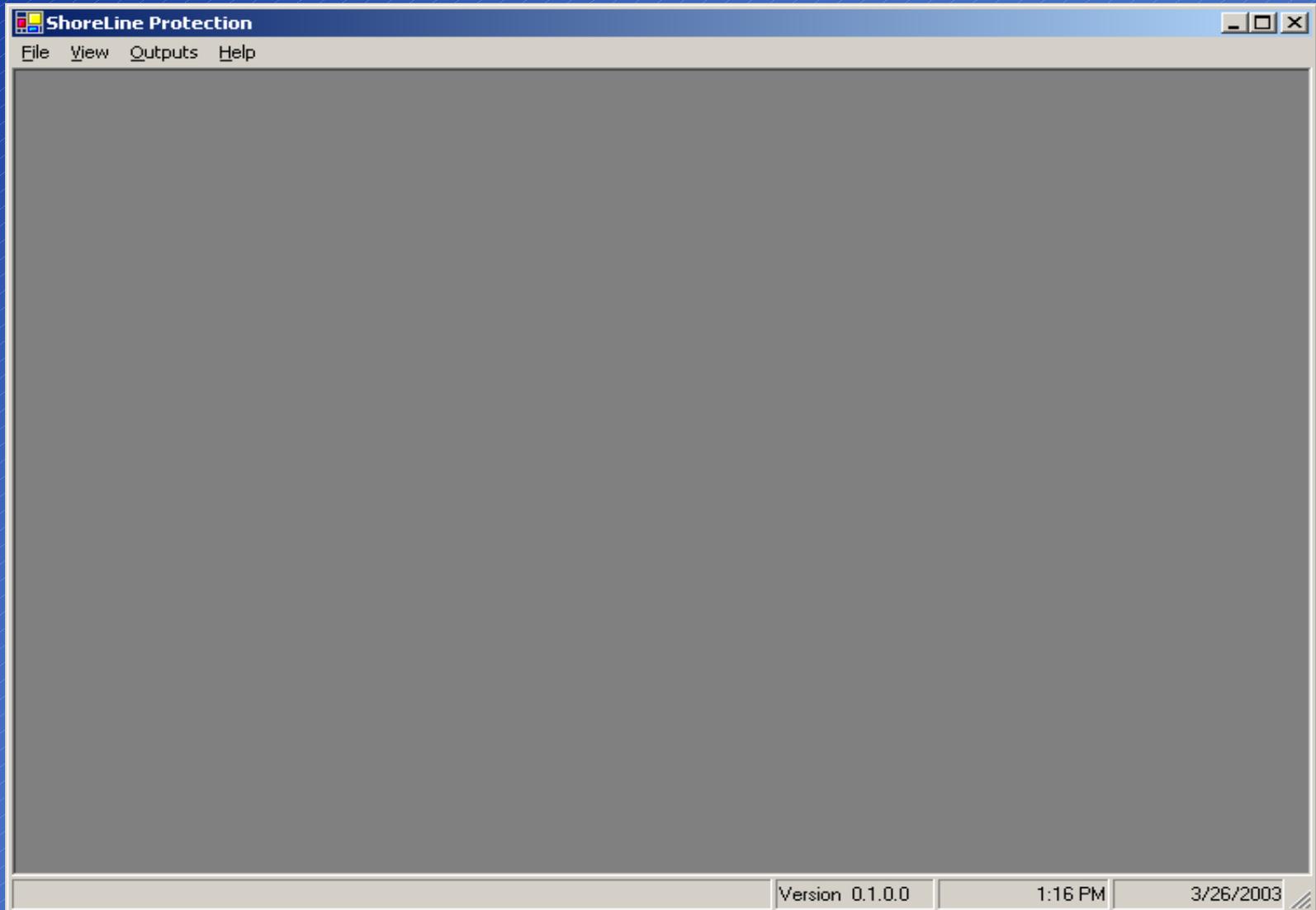
- Application Window
- **Single Data Entry Form**
  - Treeview pane
  - Graphics pane
  - Data Entry pane
- Graphs
- Report
- Run Simulation

# User Interface Look and Feel

## ■ Application Window

- Menu system for navigation
- Status bar to display key information
- Many forms may be opened within the window
  - One primary data entry form
  - Multiple reports and graphs can be opened
  - Forms are sizeable and can be maximized
- Sizeable and maximizable

# Application Window



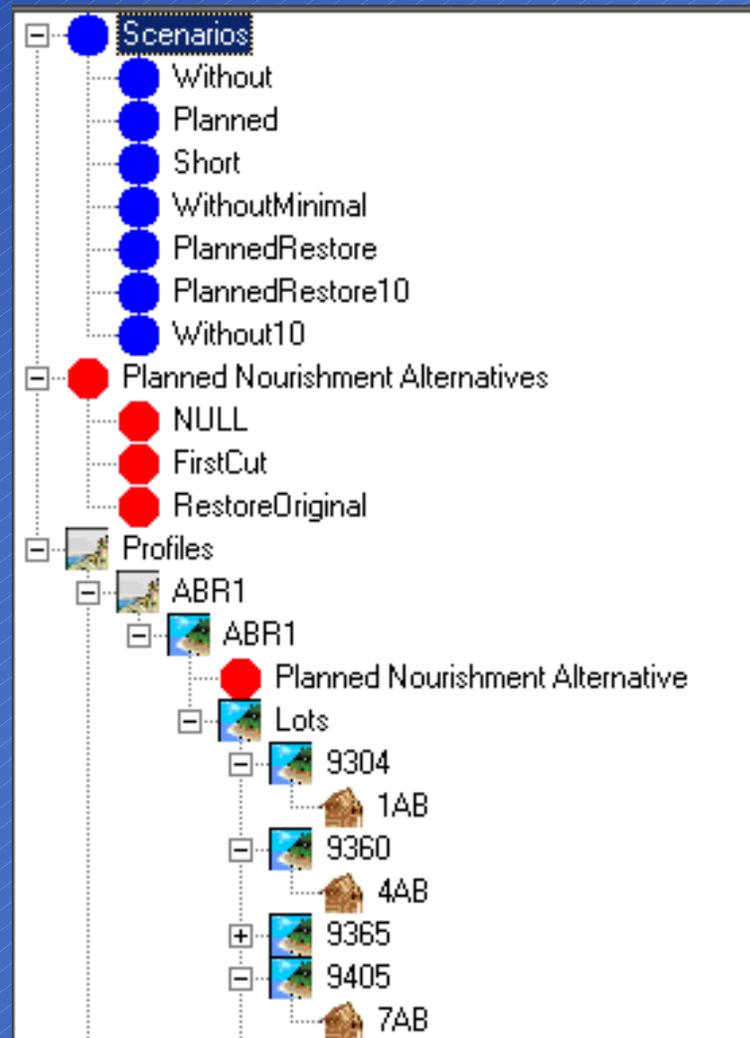
# User Interface Look and Feel

- **Explorer – data entry form**
  - **3 pane approach to data navigation and data entry**
    - **Treeview pane - to navigating hierarchical data**
    - **Graphical pane – Give Graphical representation of Reach, Profile, Lots, Damage Elements...**
    - **Data Entry pane - to quickly enter and update information**
    - **Each pane is sizeable by the user**
    - **All panes will display the same data element**
      - **Selecting a data item in one pane displays it in the other panes**

# Explorer Form – Treeview Pane

- **Windows Explorer look and feel**
  - Root level nodes with child nodes
  - Can be expanded to include numerous data organizations
- **Hierarchical breakdown of input data**
  - Scenarios
  - Planned Nourishment Alternatives
  - Profiles
    - Reaches
      - Lots
    - Damage Elements
  - Storms

# Explorer Form – Treeview Pane



# Explorer Form – Treeview Pane

## ■ Usability

- Uses a consistent organization structure
- Can expand and collapse folders and items
  - Click the plus and minus
  - Double-clicking a node
- Selecting an item in the Treeview pane
  - Displays the corresponding data in the Data Entry pane

# Explorer Form – Data Entry Pane

- **Consists of 1 data grid**
  - All data for a particular element (Profile, Reach, Scenario,...) are displayed in the Data Entry pane
  - Choosing a particular item in the TreeView pane selects the corresponding row in the data grid

# Explorer Form – Data Entry Pane

Scenario										
Selected	Name	Description	Start Year	Start Month	Base Year	Iterations	Duration	Interest	Seed	Event Output Level
▶ <input type="checkbox"/>	Without	WithoutProject	2001	February	2007	2	50	0	1701	1
<input checked="" type="checkbox"/>	Planned	WithProject	2001	January	2007	2	50	0	1701	1
<input type="checkbox"/>	Short	WithoutProject Sh	2001	January	2007	1	5	0	1701	0
<input type="checkbox"/>	WithoutMinimal	WithoutProject, all	2001	January	2007	2	50	0	1701	0
<input type="checkbox"/>	PlannedRestore	WithProject restor	2001	January	2007	2	50	0	1701	1
<input type="checkbox"/>	PlannedRestore10	WithProject restor	2001	January	2007	10	50	0	1701	0
<input type="checkbox"/>	Without10	WithoutProject 10	2001	January	2007	2	50	0	1701	0

◀

Add ... Scenario

# Explorer Form – Data Entry Pane

## ■ Usability

- Will use drop down lists rather than ID's to enter data
- Will auto populate data when available and appropriate
- Regulate the addition and deletion of data
- Can utilize color as visual que
  - Locked and un-editable fields

# Explorer Form – Data Entry Pane

- Viewable v/s editable data
  - Viewable
    - Storm Responses
    - Erosion Profiles
    - Flooding Profiles
    - Storms
  - Editable
    - Scenarios
    - Planned Nourishment Alternatives
    - Profiles
    - Reaches
    - Lots
    - Damage Elements

# Explorer Form

ShoreLine Protection - [Explorer]

File View Outputs Simulation Help

Scenarios

- Without
- Planned
- Short
- WithoutMinimal
- PlannedRestore
- PlannedRestore10
- Without10

Planned Nourishment Alternatives

- NULL
- FirstCut
- RestoreOriginal

Profiles

- ABR1
  - ABR1
    - Planned Nourishment Altern
  - Lots
- ABR2
  - ABR2
    - Planned Nourishment Altern
  - Lots
    - 10649
      - 71AB
    - 10657
    - 10673
      - 73AB
    - 10682
      - 74AB
    - 10695
    - 10710

Under Construction

Scenario									
Selected	Name	Description	Start Year	Start Month	Base Year	Iterations	Duration	Interest	S
<input type="checkbox"/>	Without	WithoutProject	2001	February	2007	2	50	0	1701
<input checked="" type="checkbox"/>	Planned	WithProject	2001	January	2007	2	50	0	1701
<input type="checkbox"/>	Short	WithoutProject Sh	2001	January	2007	1	5	0	1701
<input type="checkbox"/>	WithoutMinimal	WithoutProject, all	2001	January	2007	2	50	0	1701
<input type="checkbox"/>	PlannedRestore	WithProject restor	2001	January	2007	2	50	0	1701
<input type="checkbox"/>	PlannedRestore10	WithProject restor	2001	January	2007	10	50	0	1701
<input type="checkbox"/>	Without10	WithoutProject 10	2001	January	2007	2	50	0	1701

Add ... Scenario

# User v/s Imported Data

## ■ Imported

- Storm Responses
  - SBeach Files

## ■ User Entered

- Can develop standardized templates to allow for importing
- Profiles
- Reaches
- Lots
- Damage Elements
- Storms

# Prototype Demonstration

# Next Steps

## ■ Phase II GUI

- Graphics pane

- Additional Treeview functionality

  - Ex. Ability to drag lot from one reach to another

  - Ability to re-order items

## ■ Reports / Graphs

## ■ Post-processing animation

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