

# CERP-Model Management System (MMS)

## Interagency Modeling Center

GIS  
Geographic  
Information  
Systems

Queries | Drilldown

Query By:

Project  Model  Area

Select Project

Select Project

AS - Biscayne Bay Coastal Wetlands  
AS - D-111 Spreader Canal

Report



Presented by Heather Kostura,  
USACE Contractor

7/29/2008



# Presentation Outline

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GIS  
Geograph  
Informat  
Systems

Query

Query E

Proj

Selec

Select

AS - Blec

AS - C-1

- Background of MMS
- Goal of MMS
- MMS Architecture
- QAQC Process
- Functionality of MMS Interface
  - Interface components
  - Search functionality

CERP-MMS

Comprehensive Everglades Restoration Plan  
Model Management System



# Background

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GIS  
Geographic  
Information  
Systems

Queries

Query By

Project

Select

Select Pr

A3 - Black

A3 - D-111

- Previous lack of cohesive and optimal data management
- “For the modeling process to be the most effective a consistent data management process must be developed and implemented” stated in Draft SFWMD Strategic Modeling Plan (Plato, June 2003).
- IMC initiated the development of CERP-MMS



# Goals of the MMS

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- Archive models developed for CERP projects
  - Interface is capable of categorizing models as CERP or Non-CERP
- Provide user friendly access to that data and its documentation
- Save time on data collection
- Reduce redundancy

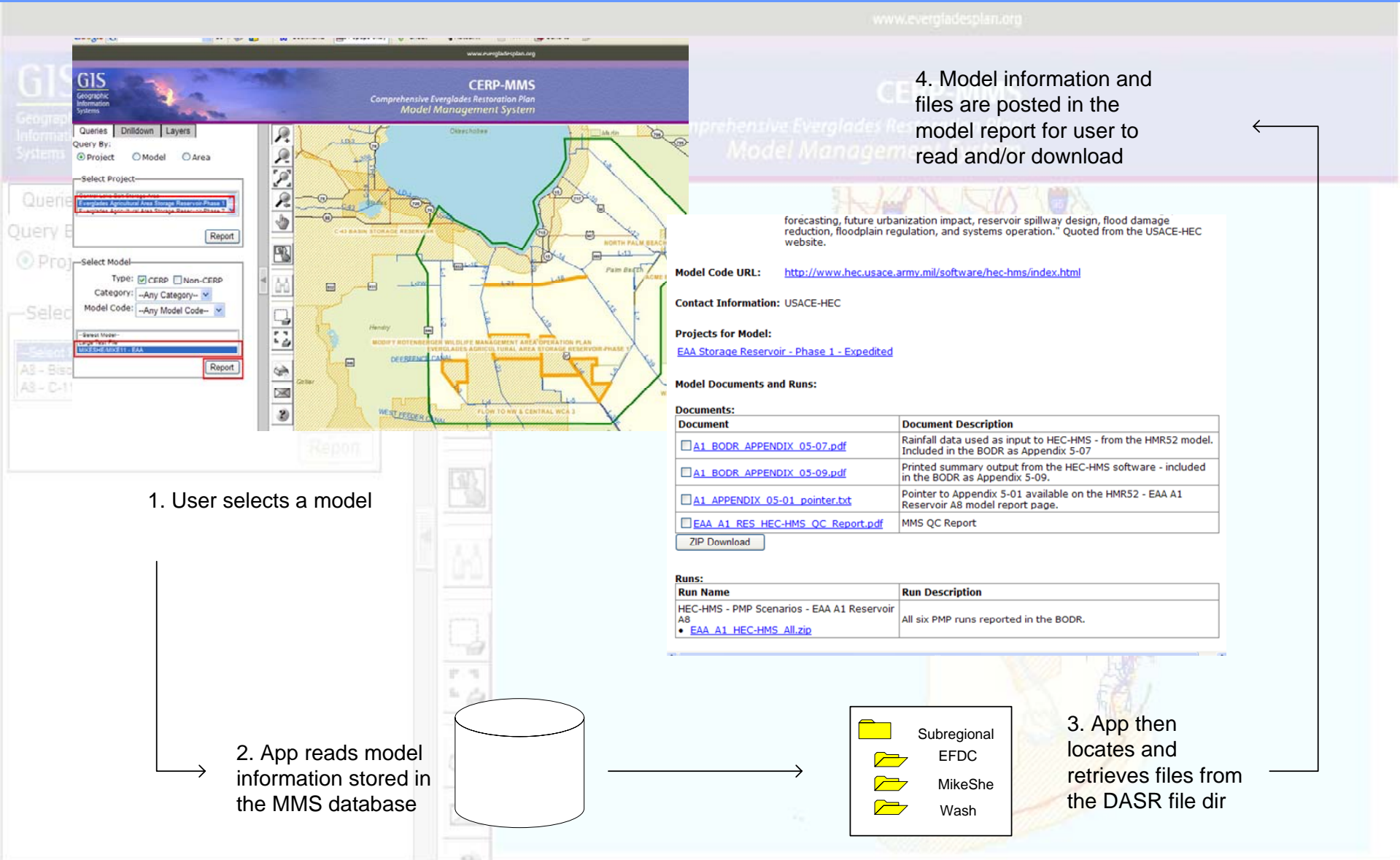


# Data Archiving and QAQC Process

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- Collect data
- Run model
- Produce model file summary sheets and QC Report
- Load info to MMS database and update model boundary
- Internal review of to verify QC procedures and MMS updates

# MMS Architecture



# Application Overview

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GIS  
Geographic  
Information  
Systems

Queries

Query By:

Project

Select P

Select Proj

A3 - Biscayn  
A3 - D-111 S

- Different searches – spatial and menu driven
- Drill down to desired model
- Retrieve model report
- Access to model documents, applications, input/output data.





# Accessing CERP MMS

## CERPZone.org Home Page

CERPZone.org  
the extranet for the Comprehensive Everglades Restoration Plan

Michele Maierhofer [\[edit profile\]](#) Tuesday, July 15, 2008 [LOGOUT](#)

Home  
Help/Training  
Send Us Feedback  
Tasks  
Weekly Worksheet  
My Profile  
Teams:  
Geographic Information Systems  
Information and Data Management  
Information Technology  
Interagency Modeling Center  
All Team Rooms

**Welcome to CERPZone.org**

**CERP Calendar**  
View the CERP calendar for a list of all events - both public and internal.

**CERP Directory**  
Search the CERP directory or view full directory list by agency.

**Project Contact Directory**  
Contact Information for Project Managers and Team Rooms.

**CERPZone News**  
Archive of past CERPZone News newsletters.

**Business Applications**

**CITIF | HELP**  
CERP Information Technology Initiation Form

**DASR Application | HELP**  
Data Access, Storage, and Retrieval for CERP Project, GIS, and IMC Data DASR User Manual

**Documentum Access | HELP**  
CESA/SFWMD Network Access:  
[To CERPZone North database](#)  
[To CERPZone South database](#)  
Internet Access:  
[To CERPZone North database](#)  
[To CERPZone South database](#)

**EdCat Application | HELP**  
Run EDEN Water surface tools from CITRIX

**GIS Applications | HELP**

**CERP GIS Services Overview**  
What the CERP GIS Team can do for you

**CERP GIS Access Point**  
Access to CERP GIS data and software

**CERP GIS Request Form**  
GIS services request

**CERP GIS Data Catalog**  
Catalog of available GIS data

**CERP MMS Application**  
Locate CERP projects and related models

**EDEN Applications**  
Run EDEN Water surface tools from CITRIX

www.evergladesplan.org

## CERP-MMS Index Page

CERP - MMS - Microsoft Internet Explorer provided by SFWMD

<http://gis.evergladesplan.org/aspapps/MMSWeb/index.html>

**CERP-MMS**  
Comprehensive Everglades Restoration Plan  
Model Management System

**CERP Model Management System**

CERP-MMS integrates information from CERP modeling projects and model simulation data. CERP-MMS is built on ArcIMS (ESRI's GIS-Web based application software) technology and allows users to easily navigate, browse, and query a variety of modeling information through an interactive map launched within the web browser.

Using selection criteria, the user can find information regarding CERP Projects and related models. Once the desired model is identified, the user can download model code, input data, or view simulation results through the application interface.

**Launch CERP-MMS Application**  
Mapping Application to view models with associated projects.

**CERP GIS Data Catalog**  
Access GIS data layers through the data catalog.

Please contact the content manager if you have questions or feedback:  
Yanling Zhao, [yzhao@sfwmd.gov](mailto:yzhao@sfwmd.gov)

Images provided by [www.fernsuaflanta.com](http://www.fernsuaflanta.com)

CERP-MMS - Microsoft Internet Explorer provided by SFWMD

**GIS**  
Geographic Information Systems

**CERP-MMS**  
Comprehensive Everglades Restoration Plan  
Model Management System

Queries | Drilldown | Layers

Query By:  
 Project  Model  Area

Select Project

Select Model

TYPE:  CERP  Non-CERP

Category: --Any Category--

Model Code: --Any Model Code--

Report

## Main Application Page



# MMS Interface Layout

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**GIS**  
Geographic Information Systems

**CERP-MMS**  
Comprehensive Everglades Restoration Plan  
Model Management System

**Activity Tabs**

Queries | Drilldown | Layers

Query By:  
 Project  Model  Area

Select Project

--Select Project--  
A8 - Biscayne Bay Coastal Wetlands  
A8 - C-111 Spreader Canal

Report

Select Model

Type:  CERP  Non-CERP  
Category: --Any Category--  
Model Code: --Any Model Code--

--Select Model--  
CHAN - C-111 A8  
MODRET - C-111 A8

Report

**Activity Panel**

**Map Toolbar**

**Interactive Map**

The screenshot displays the MMS interface layout. At the top, there is a header with the URL 'www.evergladesplan.org' and the title 'CERP-MMS Comprehensive Everglades Restoration Plan Model Management System'. Below the header, the 'GIS Geographic Information Systems' logo is on the left. The main interface is divided into several sections. On the left, there are 'Activity Tabs' labeled 'Queries', 'Drilldown', and 'Layers'. Below these tabs is the 'Activity Panel', which contains a 'Query By:' section with radio buttons for 'Project', 'Model', and 'Area'. The 'Project' radio button is selected. Underneath, there is a 'Select Project' dropdown menu with options like '--Select Project--', 'A8 - Biscayne Bay Coastal Wetlands', and 'A8 - C-111 Spreader Canal'. A 'Report' button is located below the dropdown. The 'Select Model' section includes a 'Type:' section with 'CERP' (checked) and 'Non-CERP' (unchecked) options, a 'Category:' dropdown set to '--Any Category--', and a 'Model Code:' dropdown set to '--Any Model Code--'. Below these are two more model selection dropdowns: '--Select Model--', 'CHAN - C-111 A8', and 'MODRET - C-111 A8'. A 'Report' button is also present at the bottom of this section. In the center, there is a 'Map Toolbar' containing various icons for map navigation and interaction. On the right, there is an 'Interactive Map' showing a map of the Everglades region with various colored overlays and labels for roads and waterways.

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**GIS**  
Geographic Information Systems

**CERP-MMS**  
Comprehensive Everglades Restoration Plan  
Model Management System

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**Southwest Florida Feasibility Study**

**Project Description:** The Southwest Florida Feasibility Study is being conducted by the U.S. Army Corps of Engineers and the South Florida Water Management District. The study area includes all of Lee County, most of Collier and Hendry Counties, and portions of Charlotte, Glades, and Monroe Counties. It encompasses approximately 4,300 square miles and includes two major drainage basins. The northern boundary corresponds to the drainage divide of the Caloosahatchee River, which is also the jurisdictional boundary between the South Florida and Southwest Florida Water Management Districts in Charlotte County. The eastern boundary delineates the divide between the Big Cypress Swamp and the Everglades system.

**Project URL:** <http://www.evergladesplan.org/pm/studies/swfl.cfm>

**Project Contact Information:**  
USACE: TIPHANIE JINKS  
Email: [Tiphannie\\_C.Jinks@sai02.usace.army.mil](mailto:Tiphannie_C.Jinks@sai02.usace.army.mil)  
SFWMD: JANET STARNES  
Email: [jstarnes@sfwmd.gov](mailto:jstarnes@sfwmd.gov)

**Models for Project:**  
[MIKE SHE/MIKE 11 - Big Cypress CWMP](#)  
[MIKE SHE/MIKE 11 - Estero Bay CWMP](#)  
[MIKE SHE/MIKE 11 - Lower Caloosahatchee CWMP](#)  
[MIKE SHE/MIKE 11 - SWFFS Regional](#)  
[MIKE SHE/MIKE 11 - Upper Caloosahatchee CWMP](#)

**MIKE SHE/MIKE 11 - Lower Caloosahatchee CWMP**

**Model Description:** The Tidal Caloosahatchee Basin Integrated Surface Groundwater Model (ISGM) covers the saline water part of the Caloosahatchee River basin downstream of the Franklin Lock (S-79). It is an integrated model that includes a suite of model components capable of simulating flow on the overland plane, flow in river/canals, flow in the unsaturated and saturated zone, evapotranspiration losses to the atmosphere and an extension to describe the irrigation water use and its distribution.

**Model Code:** MIKE SHE/MIKE 11  
MIKE SHE is a deterministic, distributed hydrological code, which integrates the terrestrial portion of the hydrological cycle. The software has been applied on a large range of scenarios with different spatial and temporal scales. The water movement (WM) module is the main MIKE SHE module, which can model interception, actual evapotranspiration, overland flow (two dimensional, diffusion wave), channel flow (one dimensional, diffusion wave), flow in the saturated zone (two or three dimensional, Boussinesq equation), flow in the unsaturated zone (one dimensional, Richards equation) and exchange between aquifers and rivers. MIKE SHE applied on a catchment scale implies the assumption that smaller scale equations are valid also at the larger scale; thus, it performs an upscaling operation using effective parameters.  
  
MIKE 11 is a 1-dimensional river modeling package that simulates surface water systems. A MIKE 11 surface water model can be run as a standalone model, or coupled with a MIKE SHE simulation to give a more complete representation of the water budget.

**Model Code URL:** <http://www.dhisoftware.com/>

**Contact Information:** DHI, Inc.

**Projects for Model:**  
[Southwest Florida Feasibility Study](#)

**Model Documents and Runs:**

**Documents:**

Document	Document Description
<input type="checkbox"/> <a href="#">Tidal_Caloosahatchee_Model_Report.doc</a>	Tidal Caloosahatchee Basin (TCRB) Model Report
<input type="checkbox"/> <a href="#">Tidal_Caloosahatchee_Model_Report_Appendix.doc</a>	TCRB Model Report Figures and Tables
<input type="button" value="ZIP Download"/>	

**Runs:**

Run Name	Run Description
CWMP Tidal C43 Basin Model Calibration/Validation • <a href="#">TidalC43_MikeShe.zip</a>	Calibration and Validation of the sub-regional MIKESHE/MIKE11 model for Tidal C43 Basin as part of the Caloosahatchee Water Management Project

**GIS**  
Geographic Information Systems

Queries | Drilldown | Layers

Query By:  
 Project  
 Model  
 Area

Select Project

- Southwest Florida Feasibility Study
- Strazzulla Wetlands
- WCA 2B Flows To Everglades National Park

Select Model

Type:  CERP    Non-CERP

Category: --Any Category--

Model Code: --Any Model Code--

- MIKE SHE/MIKE 11 - Lower Caloosahatchee CWMP
- MIKE SHE/MIKE 11 - SWFFS Regional
- MIKE SHE/MIKE 11 - Upper Caloosahatchee CWMP

Queries | Drilldown | Layers

Query By:

Project    Model    Area

Select Project

- Select Project-
- AS - Biscayne Bay Coastal Wetlands
- AS - C-111 Spreader Canal

Report

**Search by Project**





# Select a Project

www.evergladesplan.org

GIS  
Geographic  
Information  
System

1. Select a Query By option

CERP-MMS  
Comprehensive Everglades Restoration Plan  
Model Management System

Query By:  
 Project  Model  Area

Interactive Map will update to related Project Boundary

2. Scroll to and click on a project

Select Project:

Broward County Secondary Canal System  
C-111 Spreader Canal  
C-111 Basin Storage Reservoir - Part 1

Report

3. Click the report button

Select Model:

Type:  CERP  Non-CERP

Category: --Any Category--

Model Code: --Any Model Code--

--Select Model--  
MODBRANCH - Cal and Ver - C-111 Spreader Canal

Report

RESTORATION OF PINELAND & HARDWOOD HAMMOCKS IN C-111 BASIN

BISCAYNE BAY COASTAL WETLANDS

C111 SPREADER CANAL

FLORIDA BAY FLORIDA KEYS FEASIBILITY STUDY

935

# Project Report Page

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GIS  
Geographic Information Systems

Queries | Drilldown | Layers

Query By:  
 Project  Model  Area

Select Project:

*Project Description*

*Project URL*

*Project Contact Information*

*Links to Model Report*

CERP-MMS  
www.evergladesplan.org

GIS  
Geographic Information Systems

CERP-MMS  
Comprehensive Everglades Restoration Plan  
Model Management System

Southwest Florida Feasibility Study

**Project Description:** The Southwest Florida Feasibility Study is being conducted by the U.S. Army Corps of Engineers and the South Florida Water Management District. The study area includes all of Lee County, most of Collier and Hendry Counties, and portions of Charlotte, Glades, and Monroe Counties. It encompasses approximately 4,300 square miles and includes two major drainage basins. The northern boundary corresponds to the drainage divide of the Caloosahatchee River, which is also the jurisdictional boundary between the South Florida and Southwest Florida Water Management Districts in Charlotte County. The eastern boundary delineates the divide between the Big Cypress Swamp and the Everglades system.

**Project URL:** <http://www.evergladesplan.org/pm/studies/swfl.cfm>

**Project Contact Information:**  
USACE: TIPHANIE JINKS  
Email: [Tiphania.C.Jinks@sai02.usace.army.mil](mailto:Tiphania.C.Jinks@sai02.usace.army.mil)  
SFWMD: JANET STARNES  
Email: [jstarne@sfwmd.gov](mailto:jstarne@sfwmd.gov)

**Models for Project:**  
[MIKE SHE/MIKE 11 - Big Cypress CWMP](#)  
[MIKE SHE/MIKE 11 - Estero Bay CWMP](#)  
[MIKE SHE/MIKE 11 - Lower Caloosathatchee CWMP](#)  
[MIKE SHE/MIKE 11 - SWFFS Regional](#)  
[MIKE SHE/MIKE 11 - Upper Caloosahatchee CWMP](#)



# Search by Project - Choose a Model

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**GIS**  
Geographic Information Systems

**CERP-MMS**  
Comprehensive Everglades Restoration Plan  
Model Management System

Queries | Drilldown | Layers

Query By:  
 Project  Model  Area

Select Project

Broward County Secondary Canal System  
C-111 Spreader Canal  
C-43 Basin Storage Reservoir - Part 1

Report

Select Model

Type:  CERP  Non-CERP  
Category: --Any Category--  
Model Code: --Any Model Code--

--Select Model--  
MODBRANCH - Cal and Ver - C-111 Spreader Canal

Report

Interactive Map will update to related Model Boundary

4. Scroll to and click on a model

5. Click the report button

The screenshot displays the CERP-MMS GIS interface. On the left, there are search filters for 'Project' and 'Model'. The 'Project' filter is set to 'C-111 Spreader Canal'. The 'Model' filter is set to 'MODBRANCH - Cal and Ver - C-111 Spreader Canal'. A red circle highlights the 'Report' button next to the selected model. A red arrow points from this button to the map. The map shows a network of canals and reservoirs, with a green boundary highlighting the model's extent. A red box around the map contains the text 'Interactive Map will update to related Model Boundary'. Another red box around the map contains the text '4. Scroll to and click on a model'. A third red box around the 'Report' button contains the text '5. Click the report button'.

# Model Report Page

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GIS  
Geographic  
Information  
System

**Model Description**

## MIKE SHE/MIKE 11 - Lower Caloosahatchee CWMP

**Model Description:** The Tidal Caloosahatchee Basin Integrated Surface Groundwater Model (ISGM) covers the saline water part of the Caloosahatchee River basin downstream of the Franklin Lock (S-79). It is an integrated model that includes a suite of model components capable of simulating flow on the overland plane, flow in river/canals, flow in the unsaturated and saturated zone, evapotranspiration losses to the atmosphere and an extension to describe the irrigation water use and its distribution.

Queries Drilldown Layers

**Model Code, Developer  
URL and Contact  
Information**

**Model Code:** MIKE SHE/MIKE 11  
MIKE SHE is a deterministic, distributed hydrological code, which integrates the terrestrial portion of the hydrological cycle. The software has been applied on a large range of scenarios with different spatial and temporal scales. The water movement (WM) module is the main MIKE SHE module, which can model interception, actual evapotranspiration, overland flow (two dimensional, diffusion wave), channel flow (one dimensional, diffusion wave), flow in the saturated zone (two or three dimensional, Boussinesq equation), flow in the unsaturated zone (one dimensional, Richards equation) and exchange between aquifers and rivers. MIKE SHE applied on a catchment scale implies the assumption that smaller scale equations are valid also at the larger scale; thus, it performs an upscaling operation using effective parameters.

MIKE 11 is a 1-dimensional river modeling package that simulates surface water systems. A MIKE 11 surface water model can be run as a standalone model, or coupled with a MIKE SHE simulation to give a more complete representation of the water budget.

Select Project

--Select Project--

A3 - Biscayne Bay Coastal Wetlands

A3 - D-111 Spreader Canal

Report

**Model Code URL:** <http://www.dhisoftware.com/>

**Contact Information:** DHI, Inc.

**Projects for Model**

**Projects for Model:**  
[Southwest Florida Feasibility Study](#)

**Model Documentation**

### Model Documents and Runs:

Document	Document Description
<input type="checkbox"/> <a href="#">Tidal Caloosahatchee Model Report.doc</a>	Tidal Caloosahatchee Basin (TCRB) Model Report
<input type="checkbox"/> <a href="#">Tidal Caloosahatchee Model Report Appendix.doc</a>	TCRB Model Report Figures and Tables

**Model Runs and  
Run Files**

Run Name	Run Description
CWMP Tidal C43 Basin Model Calibration/Validation • <a href="#">TidalC43 MikeShe.zip</a>	Calibration and Validation of the sub-regional MIKESHE/MIKE11 model for Tidal C43 Basin as part of the Caloosahatchee Water Management Project



Queries | Drilldown | Layers

Query By:

Project    Model    Area

Select Project

- Select Project-
- AS - Biscayne Bay Coastal Wetlands
- AS - C-111 Spreader Canal

Report

**Search by Model**



# Select a Model

The screenshot shows the CERP-MMS GIS interface. The top navigation bar includes 'GIS Geographic Information Systems' and 'CERP-MMS Comprehensive Everglades Restoration Plan Model Management System'. The 'Query By' section has three radio buttons: 'Project', 'Model' (selected), and 'Area'. Below this, the 'Select Model' section includes a 'Type' dropdown with 'CERP' checked and 'Non-CERP' unchecked, a 'Category' dropdown set to 'Any Category', and a 'Model Code' dropdown set to 'SMS with FESWMS r3'. A list of model codes is visible below, including 'FESWMS - BBCW A8' and 'FESWMS - Compartment C Build-out'. A 'Report' button is at the bottom right of the selection panel. On the right, a map of Florida shows major highways and water bodies. A red box highlights the 'Model' radio button and the 'Model Code' dropdown. Another red box highlights the 'SMS with FESWMS r3' option in the dropdown list. A third red box highlights the map area.

1. Select a Query By option

2. Scroll to and click on a Model Code

Interactive Map will **NOT** update because no new project or model was selected

# Search by Model - Choose a Model

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GIS  
Geographic Information Systems

CERP-MMS  
Comprehensive Everglades Restoration Plan  
Model Management System

Queries | Drilldown | Layers

Query By:  
 Project  Model  Area

Select Model

Type:  CERP  Non-CERP

Category: --Any Category--

Model Code: SMS with FESWMS r3

FESWMS - Compartment C Build-out  
FESWMS - Cutler Final Design  
FESWMS - STA 2 Cell 4 Expansion

Report

Select Project

--Select Project--  
A8 - Biscayne Bay Coastal Wetlands

Report

Enter Manscale:

3. Scroll to and click on a model

Interactive Map will update to related Model Boundary

Queries | Drilldown | Layers

Query By:

Project    Model    Area

Select Project

- Select Project-
- AS - Biscayne Bay Coastal Wetlands
- AS - C-111 Spreader Canal

Report

Search by Area





# Select an Area

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**GIS**  
Geographic  
Information  
Systems

1. Select a Query By option

**CERP-MMS**  
Comprehensive Everglades Restoration Plan  
Model Management System

Queries | Drilldown | Layers

Query By:

Project  Model  Area

Search By Area

Search For:  Projects  Models

Search By:  Current Map Area

Circle

Rectangle

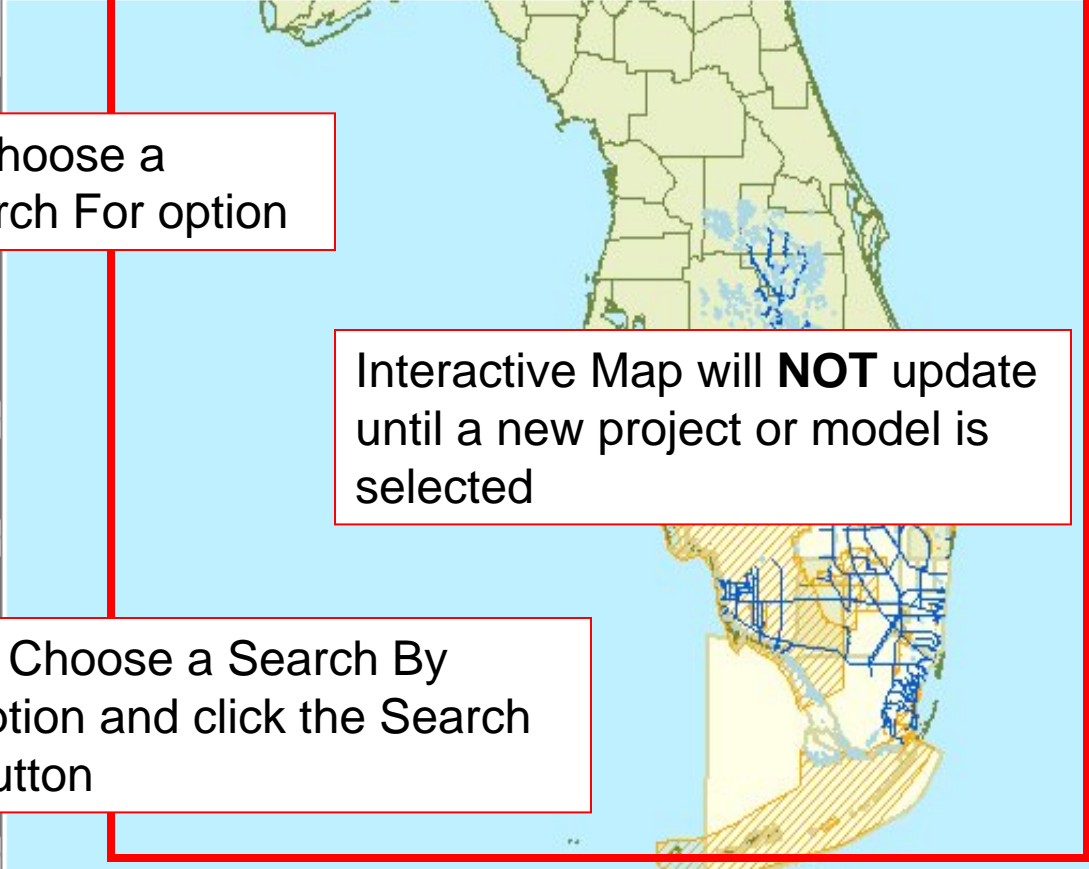
Free Shape

Search

2. Choose a Search For option

Interactive Map will **NOT** update until a new project or model is selected

3. Choose a Search By option and click the Search Button



# Search by Area – Draw a Shape

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GIS

Geographic  
Information  
Systems

CERP-MMS

Comprehensive Everglades Restoration Plan  
Model Management System

Queries | Drilldown | Layers

Query By:  
 Project  Model  Area

Search By Area

Search For:  Projects  Models

Type:  CERP  Non-CERP

Category: --Any Category--

Model Code: --Any Model Code--

Search By:  
 Current Map Area  
 Circle  
 Rectangle  
 Free Shape

Search

Select Model

- DMSTA - BBCW BODR
- EFDC-hydro - FBFK Feasibility Study
- FESWMS - BBCW BODR

Report

Interactive Map will update to selected Model Boundary

4. Scroll to and click on a model

Queries | Drilldown | Layers

Query By:

Project  Model  Area

Select Project

--Select Project--  
AS - Biscayne Bay Coastal Wetlands  
AS - C-111 Spreader Canal

Report

Questions?

