Watershed Management Plans

A Shared Vision and Considered Strategies

PUBLIC MEETING NUMBER ONE

November 29, 2007 ❖ 6:30- 8:30 PM

Collier County Government Center
Rooms 609 and 610

AGENDA

- INITIAL EXHIBITS EXAMINATION
- WELCOME AND INITIAL REMARKS
- WATERSHED MANAGEMENT OVERVIEW
- WATERSHED PRIORITIES
- EXHIBITS EXAMINATION AND STAFF QUESTIONS/DISCUSSION
- PUBLIC COMMENT PERIOD
- MEETING WRAP-UP

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Welcome, Orientation and Introductions

William Lorenz
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- Meeting Objectives
- Comprehensive Plan Requirements
- Public Involvement
- Project Team
- Key Staff Introductions

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Meeting Objectives

- **Share Information**
  - Comprehensive Plan Requirements
  - Public Involvement Process
  - Timing
- **Secure Public Input**
  - Watershed Management Issues and Concerns
  - Watershed Priorities
- **Project Team**
  - County Staff Roles
  - Use of Consultants

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Watershed Management Plans

Growth Management Plan

CCME Amendments 2006

Objective 2.1

By January 2008, the County shall complete the prioritization and begin the process of preparing Watershed Management Plans…

Policy 2.1.1:

These Plans will evaluate activities in the watersheds that drain into the estuaries in order to evaluate cumulative impacts on the estuarine system as well as impacts within the watersheds themselves.

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Growth Management Plan

Policy 2.1.2:

The Plans will provide for various tasks such as monitoring land-disturbing activities in the watersheds, collecting canal flow and water quality data, stormwater quality data, and assessing habitat changes.

Policy 2.1.3:

The Plans will also evaluate structural and non-structural controls for restoring historical hydroperiods in impacted watersheds where possible and for reducing the impacts of canal and stormwater discharges to estuaries.

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Policy 2.1.4:

All Watershed Management Plans shall address the following concepts:

- Appropriate wetlands and uplands serving as a buffer to wetlands are conserved;
- Drainage systems do not degrade wetland and estuary ecosystems;
- Surface water that potentially could recharge ground water is not unduly drained away;
- When feasible the extent and effects of salt-water intrusion are lessened;
- The timing and flow of fresh water into the estuaries from the watershed shall, as a minimum, not degrade estuarine resource value;
- The needs of the watershed's natural resources and human populations are balanced;

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Policy 2.1.4:

All Watershed Management Plans shall address the following concepts (*continued*):

g. The effects on natural flood plains, stream channels, native vegetative communities and natural protective barriers which are involved in the accommodation of flood waters;

h. Non-structural rather than structural methods of surface water management should be considered first in any proposed new works;

i. Wetland and estuarine habitat functions are conserved and/or enhanced; and

j. Wetland and estuarine ecosystems will be conserved and/or enhanced using a variety of innovative tools, including landowner incentives, public acquisition, conservation easements, and/or transferable development rights.

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Growth Management Plan

Policy 2.1.5:

Upon establishment of the various Watershed Management Plans for Collier County, all environmental data collection, environmental management and environmental planning activities conducted by Collier County shall be conducted using a basin-by-basin approach.

Policy 2.1.6:

Until the completion and adoption of individual watershed management plans, promote water management permitting on a basin by basin approach.

Policy 2.1.7:

Collier County shall take the lead and promote inter-governmental coordination between the County and other governmental agencies involved with watershed planning

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Watershed Management Plans

Land Development Regulations

- **Stormwater Rules for Platting and Site Development**
  - ***General Rules***
    - SFWMD Criteria Adopted by County Ordinance
    - Must Evaluate of Receiving Infrastructure Capacity
    - Cities provide additional Overlay Requirements as Deemed Appropriate
  - ***Flooding Rules***
    - 25 Year Minimum Elevation on Roadway Crowns and Perimeter Containment Berms
    - 100 Year Minimum Elevations on Building Pads
    - Floodplain Mitigation

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Watershed Management Plans

Land Development Regulations

- **Stormwater Rules for Platting and Site Development**
  - ***Water Quality Criteria***
    - Treat 150% of First Inch Detention or 2.5 times percent impervious whichever is greater.
    - Pre vs. Post Peak Discharge or more Limiting Discharge Rates Pursuant to Receiving Water (Canals) Capacity
    - Reasonable Assurance of 80-90% Pollutant Removal
    - Urban Pollution Prevention Plan as Part of Property Owner Association Documents

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Watershed Management Plans

Land Development Regulations

- **Stormwater Rules for Single Family**
  - Limited Regulations of Single Family Residences in Prior Platted Areas
  - Lot Drainage Plans to Insure Proper Lot Drainage
- **Preservation Rules**
  - ***Jurisdictional Wetlands*** - Preserve and Avoid Adverse Impacts, Minimize Impacts, Restoration and Mitigation (State Regulations)
  - ***Non-Jurisdictional Areas***
    - Avoid Impacts Based on Ecological Values and Wildlife Utilization
    - Preserve 25% of the Natural vegetation

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Watershed Management Plans
Land Development Regulations

- **Additional Beneficial Regulations**
  - Required Native Vegetation Preservation
  - Required Open Space
  - Specialized Golf Course Stormwater Management and Water Quality Treatment Regulations (RFMUD)
  - Littoral Zone Planting Guidelines
- **Other Incentives**
  - RLSA (Stewardship Credits)
  - RFMUD Transferable Development Rights
  - Off-Site Mitigation/Restoration
  - Conservation Collier

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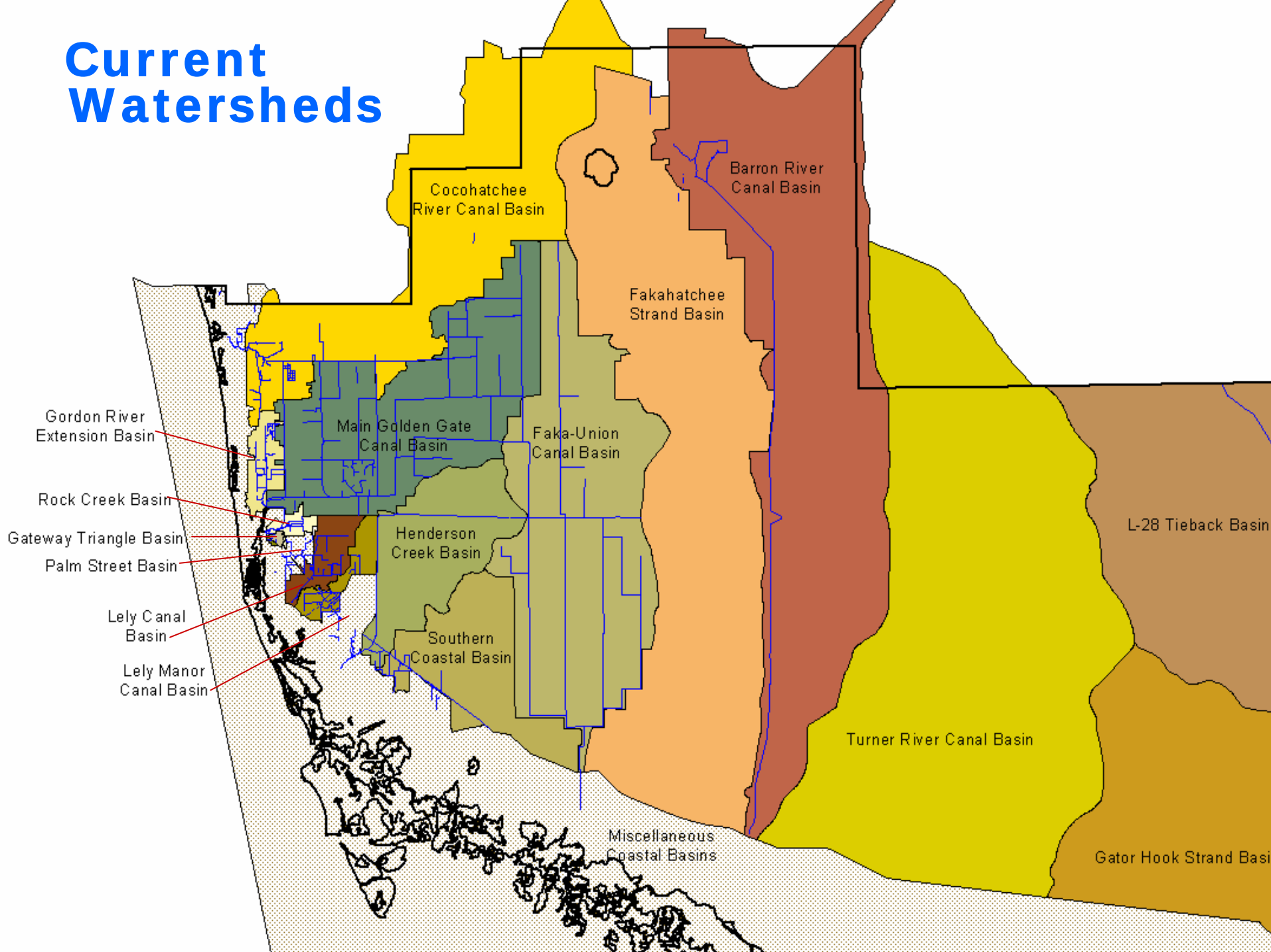
Current Watersheds



Watershed Priorities

- Early Studies
  - **Big Cypress Basin**
    (Multiple Studies)
  - **Stormwater Master Plan**
    (Collier County – 1989)
- Current Studies
  - **Picayune Strand Restoration Project**
    (SFWMD - 2005)
  - **Belle Meade Area Stormwater Management Master Plan**
    (SFWMD – 2006)
  - **Floodplain Management Plan & FEMA Floodplain Mapping**
    (Collier County – 2006/2008)
- Pending Studies
  - **Golden Gate Estates ROMA**
    (Collier Soil & Water Conservation)
  - **Southwest Feasibility Study**
    (USCOE & SFWMD)

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Watershed Priorities

Prioritization Factors

- Growth Potential
- Wetlands
- Listed Species
- Water Quality
- Restoration Potential

Priority	WATERSHED
1	Golden Gate Naples Bay
2	Rookery Bay
3	Cocohatchee Corkscrew
4	Okaloacochee-SR29
5	Faka Union
6	Fakahatchee
7	Marco Island
8	Naples
9	Ten Thousand Islands
10	Marco Beach
11	BCNP
12	Gulf
13	South Naples Beach
14	Cocohatchee Beach
15	Naples Beach

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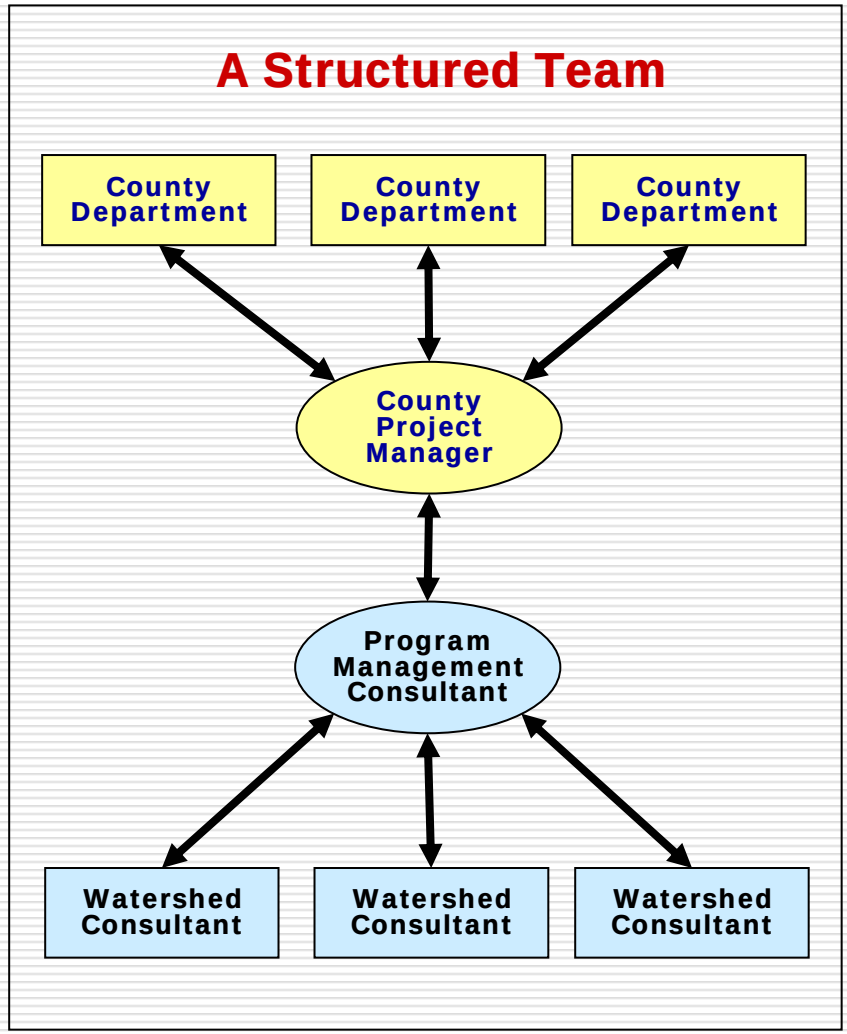
Watershed Management Plans
Project Team

- **County Staff**
  - Management and Coordination
    - End Results and Deliverables
    - Approval of Alternatives
    - Set Schedules
    - Internal County Coordination
  - Final Products Acceptance
- **Watershed Consultants**
  - Extension of Staff
  - Modeling Services
  - Internal Coordination
  - Model Integration
  - Alternatives Analysis
  - QA/QC Processes



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Watershed Management Plans
Project Team

- County Project Manager
  - **Mac Hatcher**
    - Senior Environmental Specialist
    - 20-Year County Employee
- URS Program Director
  - **Stephen R. Lienhart, PE**
    - Principal Water Resources Management Engineer
    - 30+ Years of Florida Experience
    - Prepared Collier County's First Stormwater Plan
- URS Project Manager
  - **Tom Christ, PE**
    - Senior Water Resources Engineer
    - 20+ Years of Florida Experience

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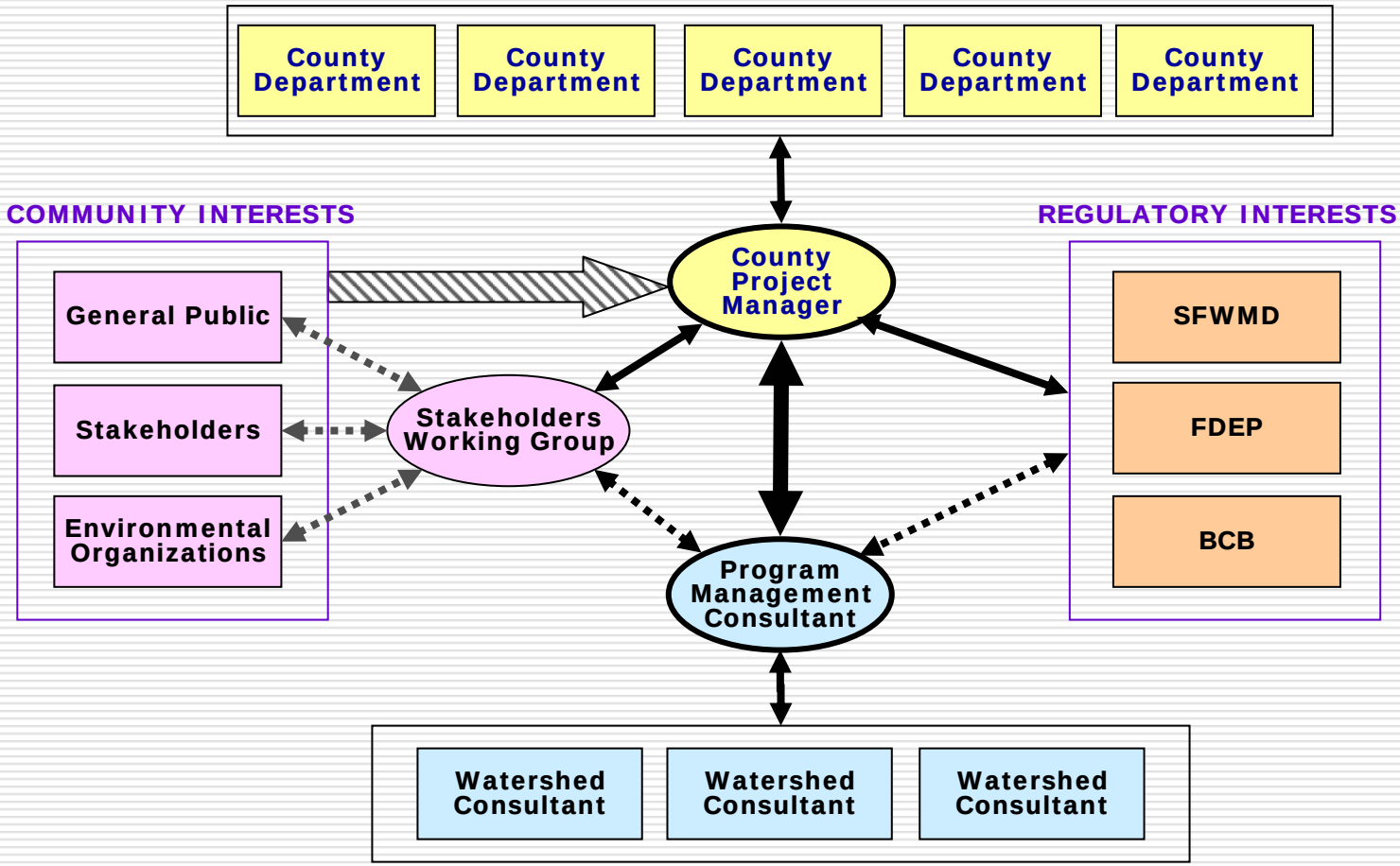
Watershed Management Plans
Public Involvement Process



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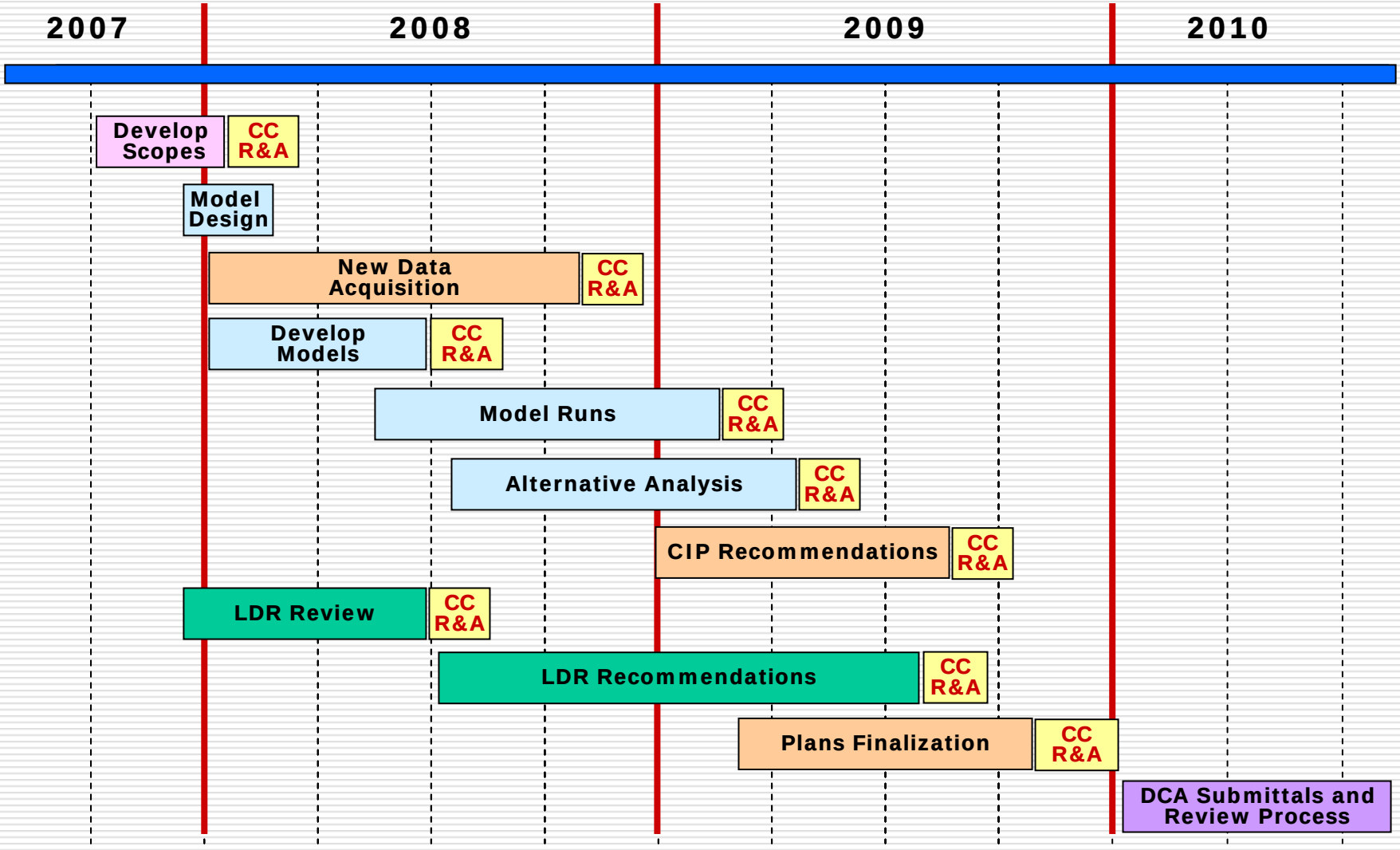
Initial Working Schedule



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Watershed Management Plans
Overview

Steve Lienhart
URS Corporation

- **Watershed Management Process**
- **Technical Assessments**
- **Management Strategies**

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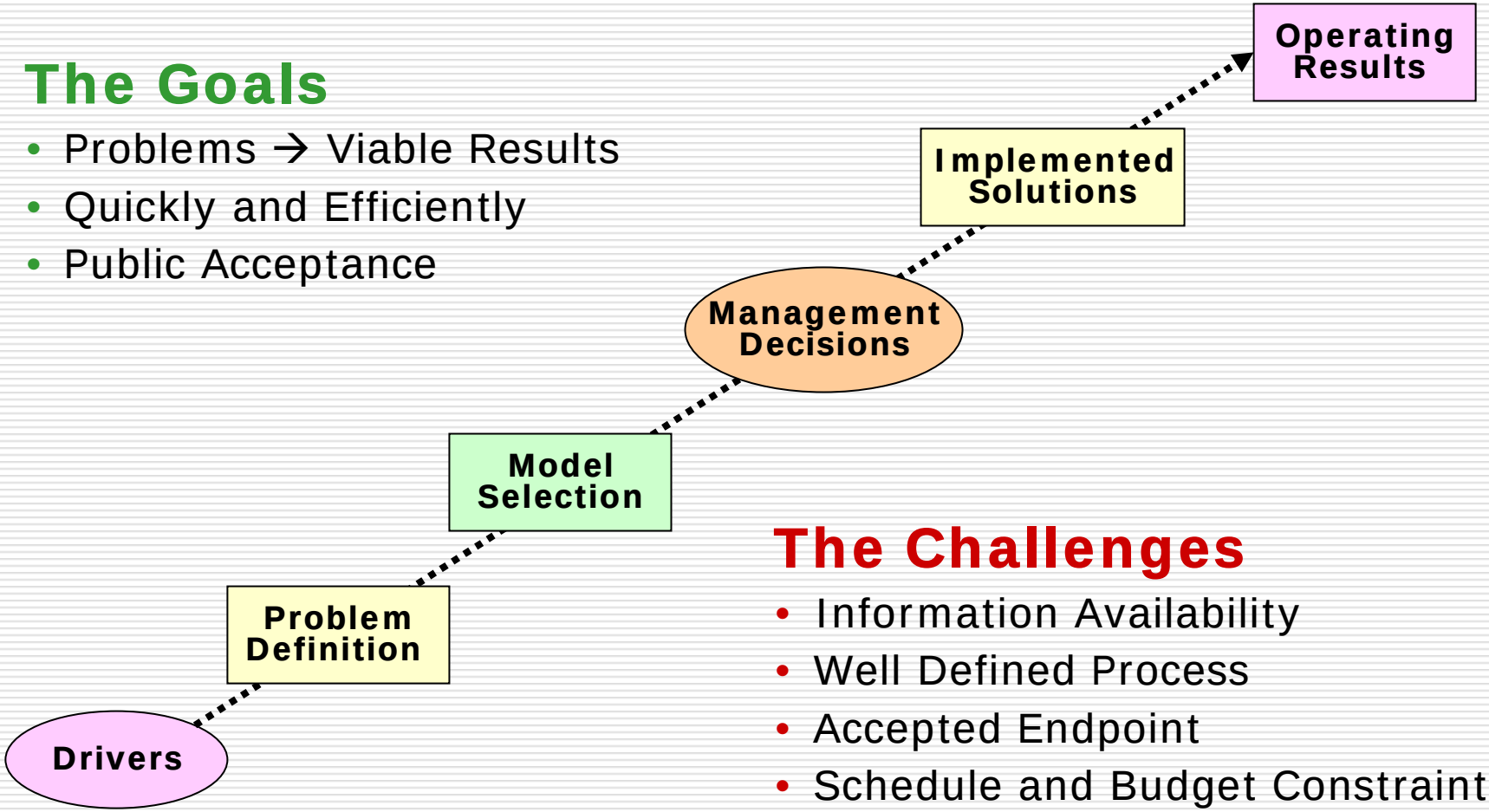
Watershed Management Plans
Process

The Goals

- Problems → Viable Results
- Quickly and Efficiently
- Public Acceptance



The Challenges

- Information Availability
- Well Defined Process
- Accepted Endpoint
- Schedule and Budget Constraints
- Public Involvement/Acceptance

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Watershed Management Plans
Pending New Requirements

- **Total Maximum Daily Loads (TMDLs)**
  - Defines Assimilative Capacity for Specific Pollutants
  - Establishes Annual Pollutant Load Reductions in County Waters
  - Incorporated into the County's Stormwater MS4 Permit
- **Basin Management Action Plans (BMAPs)**
  - Establishes Fair Allocation of Reductions to Stakeholders
  - Identifies the County's Proposed Management Actions
  - Incorporated into the County's Stormwater MS4 Permit
  - Enforced through the County's Stormwater MS4 Permit
- **Uniform State Stormwater Rule**
  - Not Exceed the Predevelopment Peak Flow Rate
  - Not Exceed the Predevelopment Discharge Volume
  - Not Exceed the Predevelopment Pollutant Loads

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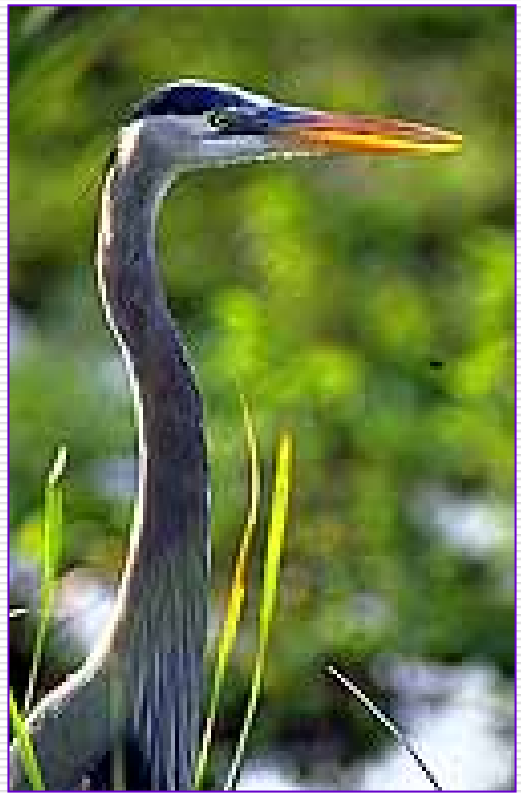
Watershed Management Plans
Technical Assessments

- **Surface Water**
  - Seasonal Water Levels and Flows
  - Hydroperiod Variations
- **Groundwater**
  - Seasonal Water Levels
  - Recharge Rates
- **Water Quality**
  - Pollutant Loads and Concentrations
  - Impairments
- **Natural Systems**
  - Habitat Characteristics and Trends
  - Key Indicator Species Characteristics and Trends
- **Inter-Relationships**



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Watershed Management Plans
Which Questions To Answers?

Potential Issues

- **Water Quality**
  - Monitoring Station Locations
  - Ambient Water Quality Data
  - Event Mean Concentrations for Specific Land Uses
  - Seasonal and Annual Ambient Water Quality Trends
  - Annual Pollutant Loadings and Pollutant Transport
  - Discharges to Estuaries and Natural Systems
  - Location of BMPs, Treatment Rates and Their Service Areas
- **Stormwater Management**
  - Surface Water Levels
  - Canal Levels and Flows
  - Location of Outfalls
  - Water Control Structure Locations and Operating Rules
  - Delineation of Floodplains
  - Flows to/from Wetlands
  - Estuarine Interactions
- **Natural Systems**
  - Wetland Levels and Hydroperiod Fluctuations
  - Buffers and Encroachments
  - Conveyance and Storage Volume Impacts

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Watershed Management Plans
Which Questions To Answers?

Potential Issues

- **Transportation Planning**
  - Corridor Impacts on Wetlands
  - Seasonal Water Levels
  - Location and Service Area of Proposed CIP Projects
- **Water Supply**
  - High Pollutant Recharge Areas
  - Impacts of Stormwater Management on Wellfields
  - Wellfield Impacts on Wetlands
  - Over-drainage Induced Saltwater Intrusion Areas
- **Development Review**
  - 100-Year Floodplain
  - Compensating Storage Volume Requirements
  - Adequacy of Proposed BMPs relative to Pollutant Discharges
  - Location of Established Wetland Protection Buffers
- **Regulatory Compliance**
  - New, Recently Approved High Risk Stormwater Discharges
  - Estimated Seasonal and Annual Pollutant Loads Discharged to Waters of the United States

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Watershed Management Plans
Which Questions To Answers?

Potential Issues

- **Comprehensive Planning**
  - Identification and mapping of the Limits of Natural Wetlands, Floways and Sloughs
  - Assessment of the Cumulative Development Impacts on Natural Wetlands, Floways and Sloughs
  - Assessment of Potential Policy Impacts on Environmental Systems
  - Identification of Zoning and Land Use Policies on Threatened and Protected Species
- **Wastewater**
  - Impacts of Effluent Disposal Practices on Groundwaters
  - Estimation of Realistic Seasonal Effluent Needs
  - Pump Station Overflow Impacts on Water Quality
  - TMDL Allocation Impacts on WW Effluent Discharges to Receiving Water Bodies
- **Parks and Recreation**
  - Effects of Park Management Practices on Habitats
  - Balance of Natural and Anthropogenic Impacts in Parks

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Watershed Management Plans

Management Strategies

- Regulations
  - Prohibitions
  - Land Use
  - Land Development
  - Water Management
- Capital Investments
  - Best Management Practices
  - Projects to Attenuate
  - Projects to Restore
- Annual O&M Practices
  - Expand the Current Program
  - Increase the Current Frequency

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Watershed Management Plans

Some Basic Management Concepts

1. **Restore the Watershed's Original Hydrology**
2. **Preserve Remaining Natural System Elements**
   (Rivers, Creeks, Ponds, Uplands and Wetlands)
3. **Focus on a Limited Number of Indicator Species**
4. **Mitigate for Historic Development Problems**
5. **Minimize Problems Caused by New Development**
6. **Manage Water Resources for Multiple Objectives**
   (Flooding, Water Supply, Water Quality and Natural Systems)
7. **Balance Equity, Responsibility and Liability Issues**
   (New Development vs. Redevelopment vs. Older Development)
8. **Appreciate Land Use Differences**
   (Natural vs. Agricultural vs. Urban Lands)

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Watershed Management Plans
Assessment Process

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Exhibits and Discussions

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- **Exhibit Stations and Staffing**
- **Questions and Answers**
- **Comment Cards**
- **Public Comments**

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Exhibit Stations

1. **Residence Location Map**
   Self Service
2. **Comprehensive Plan Requirements**
   William Lorenz
3. **Existing Watersheds**
   Tom Christ
4. **Priority Watersheds**
   Mac Hatcher
5. **Indicator Species and Habitats**
   Lilian Flank-Maggi
6. **Initial Watershed Management Concepts**
   Steve Lienhart

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Guidelines

- Dots and More Dots
  - Blue Dots
  - Green Dots
  - Red Dots
- Questions and Answers
- Comment Cards
  - We Want Your Ideas
  - We Value Your Input
  - Yes, You Can Be Anonymous!
- Speaker Registration to Make Public Comments This Evening
  - Registered Speakers Only
  - 3-Minute Limit

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Public Comment Period

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THE RULES

- Registered Speakers Only
- 3-Minute Limit

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Meeting Wrap-Up

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- **Housekeeping Items**
- **Afterthoughts**
- **Additional Public Outreach Activities**

Housekeeping Items

- Sign-In Sheet
- Comment Cards
- E-Mail Addresses
- Formal Position Paper

  Mail to: **Mac Hatcher**
  Environmental Services Department
  2800 North Horseshoe Drive
  Naples, Florida 34104

- Afterthoughts via E-Mail

  E-Mail to: **Mac Hatcher**
  MacHatcher@colliergov.net

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Additional Outreach Activities

- Technical Working Group
  - Consensus Rules
  - Designated Stakeholders Representatives
  - Periodic Meetings to Secure Stakeholder Input
  - Formal, Non-Binding Recommendations

→Stakeholder Representative Designations

E-Mail to: **Mac Hatcher**
MacHatcher@colliergov.net

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Additional Outreach Activities

- Future Public Workshops
  - **Scheduled for Key Points in the Process**
  - **Workshop Focus and Tentative Dates**
    - Workshop No. 2
      MODEL(S) SELECTION AND DEVELOPMENT
      April 2008
    - Workshop No. 3
      ALTERNATE FUTURE SCENARIOS TO BE MODELED AND ASSESSED
      September 2008
    - Workshop No. 4
      EVALUATION OF ALTERNATE FUTURE SCENARIOS TO BE MODELED AND RECOMMENDATIONS
      March 2009

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Website

- Site is “In Development”
- Initial Content
  - Status Report on the Program
  - Meeting and Workshop Announcements
  - Links to Individual Watershed Pages
  - Links to Related Watershed Information
  - Public Meeting Summaries and Presentations
- We’ll Send You the URL You Give Us Your E-Mail Address!

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Thank You for Attending This Evening

- **We Appreciate Your Input**
- **Contact Us at Any Time**
- **We Hope to See You at the Next Public Workshop**
- **Have a Safe Trip Home**

Watershed Management

A Shared Vision and Considered Strategies

PUBLIC MEETING NUMBER ONE

November 29, 2007

Last Thoughts

- Comprehensive Watershed Models are Complex and Needy
  - Right Model with Adequate Data
  - A Comprehensive Work Plan
  - A Good Team of Consultants
  - An Experienced Program Director
- Use of the BCB Model
  - Incorporates Significant Local Knowledge
  - Provides Start-Up and Schedule Benefits
- Successful Watershed Models Require
  - Well Defined Vision – Up Front
  - True County-Consultant Collaboration
  - Adequate Model Development Time
  - Focused Interactions with Stakeholders

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Management Strategies

- Basic Watershed Management Concepts

1) Restore Original Hydrology

- **Watershed and Basin Boundaries**
- **Peak Flow Rates**
- **Water Quantity**
  - Runoff Volume from Developed Lands
  - Groundwater Recharge Volume
- **Water Quality**
  - Nutrient Concentrations
  - Bacteria
  - Dissolved Oxygen
- **Timing of Flows**

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Management Strategies

- Basic Watershed Management Concepts

  2) Preserve Remaining Natural Rivers, Creeks, Ponds and Wetlands

  - **Permit No Additional Losses**
  - **Prohibit Filling**
  - **Establish Buffer Zones**
  - **Maintain Connectivity**
    - Land Acquisition
    - Capital Projects for Controls

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Watershed Management Plans

Schedule Considerations

- **Data and Mapping**
  - Suitability of Existing Data
  - Acquisition of New Data
- **Model Selection**
  - End Uses and Questions To Be Answered
  - Required Precision of the Answers
  - Required Areal Coverage
- **Model Development**
  - Available Development Time
  - Model Testing and Documentation
  - Staff Training Requirements

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Watershed Management Plans
How Long Will It Take?

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