SOUTH FLORIDA WATER MANAGEMENT DISTRICT

"Know the Flow"

Module 3
Tertiary Stormwater Management System

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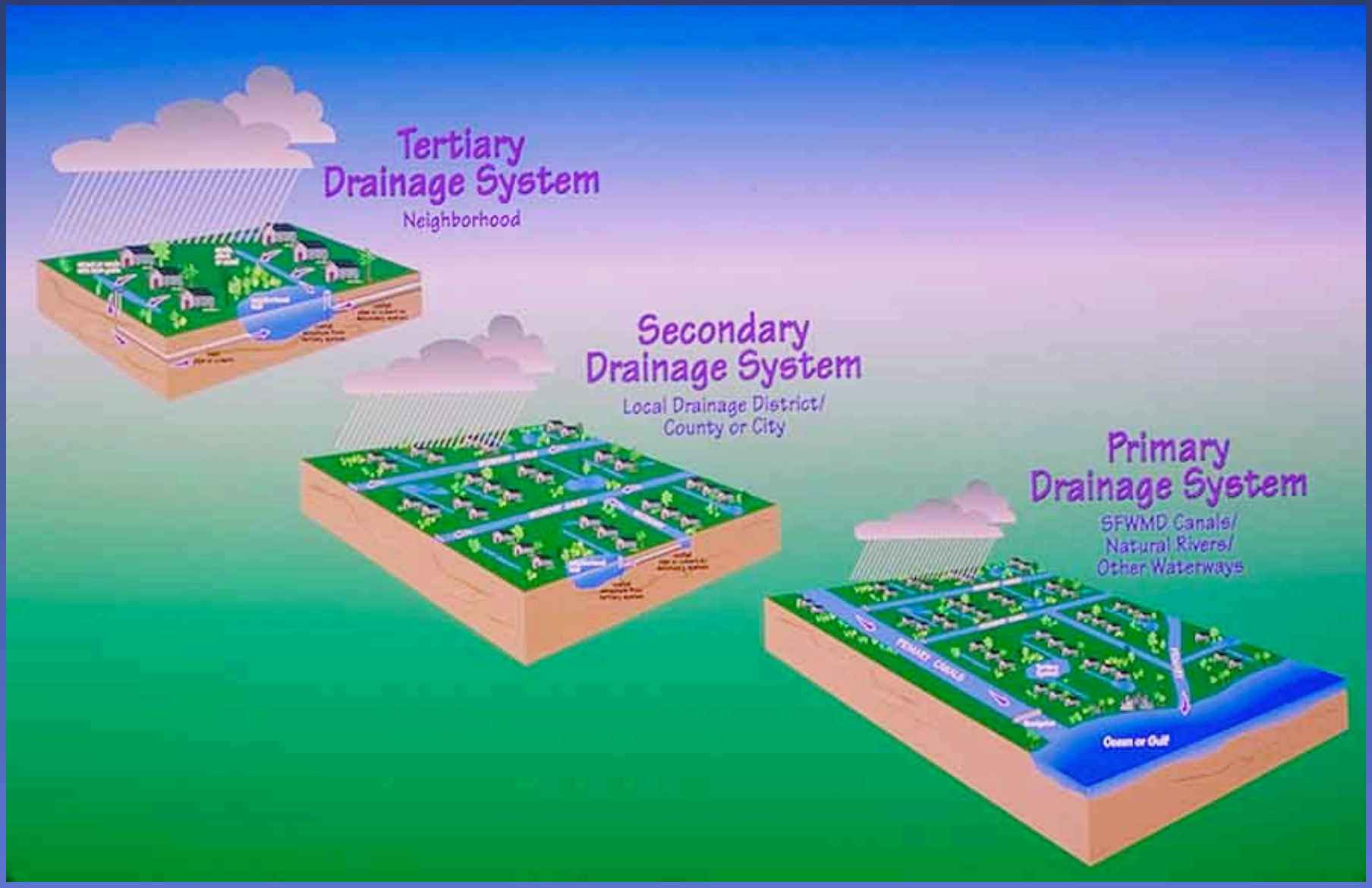

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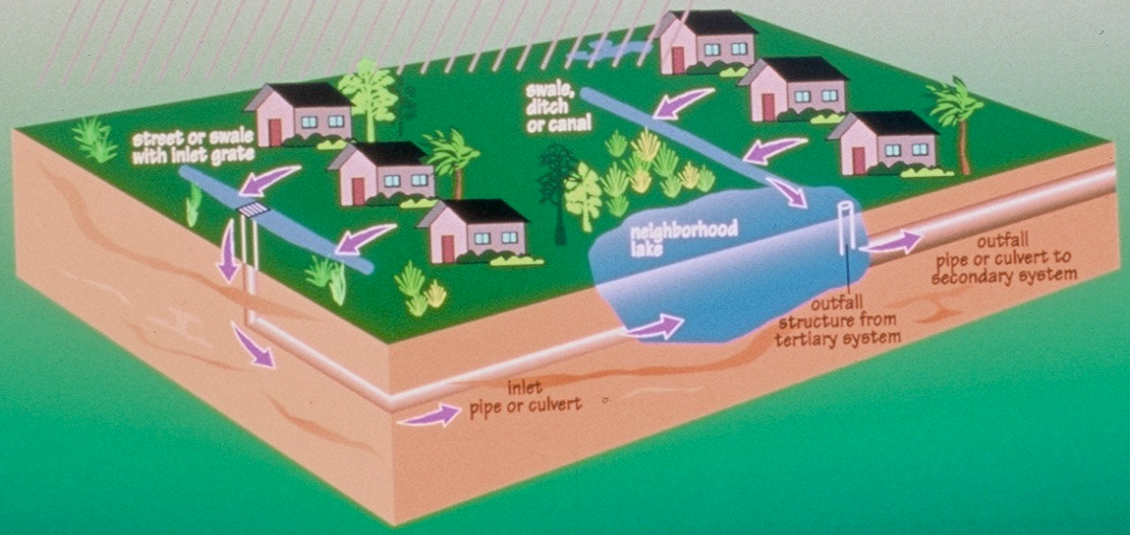
Tertiary Drainage System

Neighborhood



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A tertiary stormwater management system is the beginning of the regional system.

- Residential neighborhood
- Commercial / industrial
- Retail Centers
- Institutional Schools / Churches

What does my tertiary "neighborhood" stormwater management system do?

- Water Quality Treatment
- Flood Protection
- Water Conservation
- Environmental Protection

Why does a tertiary system have to provide water quality treatment?

The source of many water quality concerns is in the neighborhood.

- Nutrients (nitrogen & phosphorous from fertilizers)
- Sediment (sand and soil)
- Heavy metals (copper, lead, zinc)
- Petroleum (oils and greases)
- Coliform bacteria

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How does a tertiary system provide Water Quality ?

Water Quality - First Flush

- Studies in Florida have determined that the first 1” of runoff generally carries 90% of the pollution.
- Most rain storms (60% to 90%) are 1” or less

Water Quality Treatment

- Systems are designed to treat by detention or retention of runoff
- Retention—system with no discharge
- Detention—system has controlled discharge
- Treat at least 1” of runoff

Why does the tertiary system have to provide flood protection?

- Protect property
- Protect Public Health
- Protect the down stream system and/or natural environment

Stormwater runoff volumes are dependent on:

- Rainfall—total and intensity
- Water Table
- Amount of Impervious Area

Typical Level of Flood Protection:

- Roads – Water level below road crown
  - 4” to 6.5” rainfall in 24 hours 10 year storm
  - Minimum of 2’ above lake control elevation
- House – Water level below finished floor
  - 10” to 16” rainfall in 72 hours 100 year storm
  - typically at least 18” above road (local regulations)

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What effect does the tertiary system have on water conservation?

- Provide ground water recharge
- Maintain water levels in well fields
- Water source for irrigation
- Help prevent salt water intrusion

What effect does tertiary systems have on the environment?

- Many of our wetlands are incorporated into tertiary water management systems.
- Most of our tertiary systems ultimately discharge to the St Lucie or Indian River and ultimately the Ocean.

Physical components of a tertiary system include:

- Swales
- Inlets & pipes
- Ditches
- Dry retention/detention areas
- Wet retention/detention areas (lakes)
- Outfall structure
- Perimeter berm

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Familiarize yourself with your water management system.

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- Get a copy of the SFWMD permit
- Get “as built” plans
- Look at components of system

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Understand how your system works and what your maintenance responsibilities are

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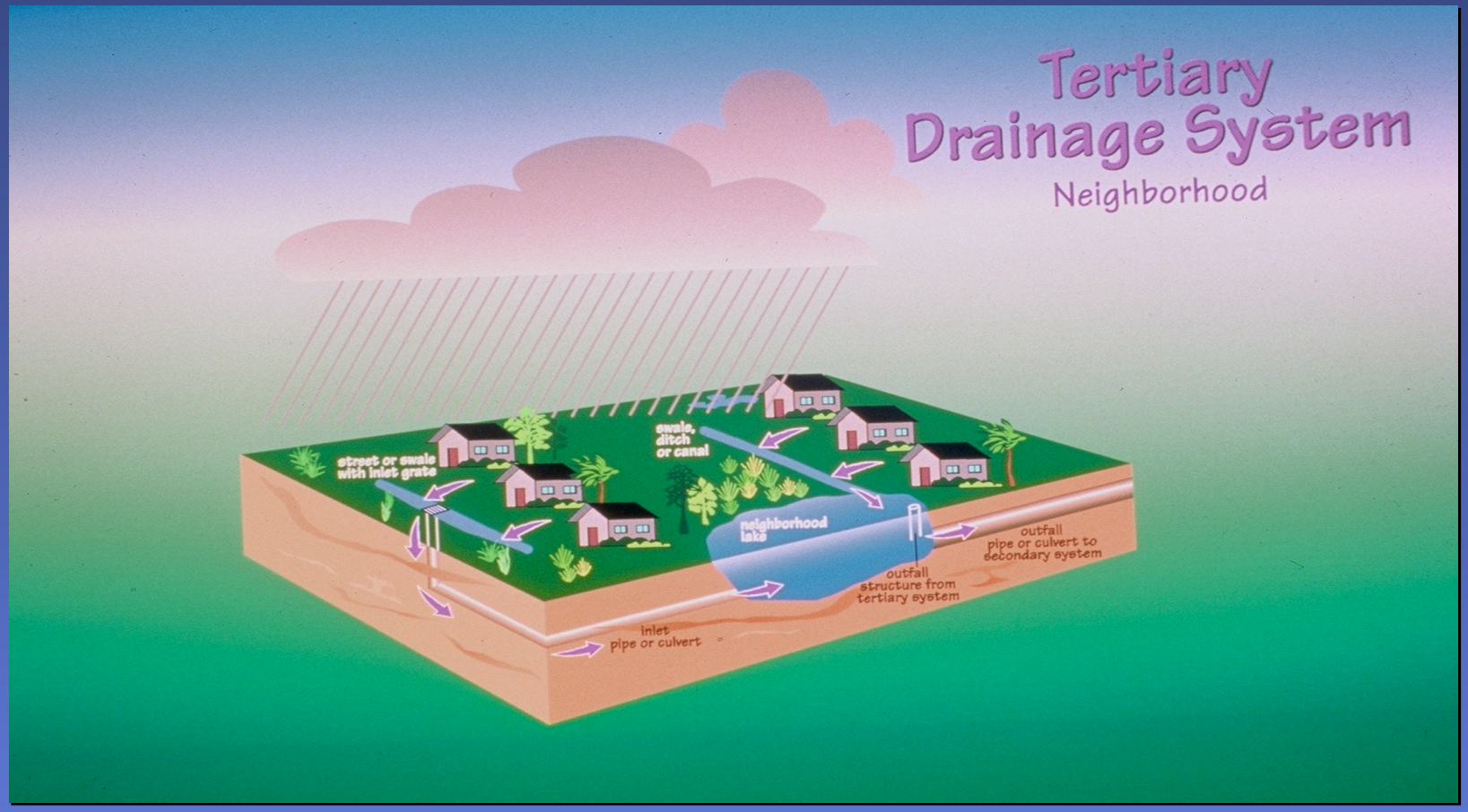
Questions?



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