

**EXHIBIT B-5.IV**

**Municipal Activities Program**



**Program Management: Integrated Pest Management, Pesticide, and Fertilizer Guidelines**

**Program Management  
Integrated Pest Management,  
Fertilizer and Pesticide Guidelines**

**Module B-5.IV**



**Audience: Stormwater Managers  
and Field Personnel**

**Time: 1 hour**





**Program Management  
Integrated Pest Management,  
Fertilizer and Pesticide  
Guidelines**

Name  
Affiliation  
Location  
Date



**Introduction**



*Introduction*

**Water Resources are  
Crucial to Orange County**

Water provides recreation for Orange County residents.



It attracts tourists, boosting the local economy.



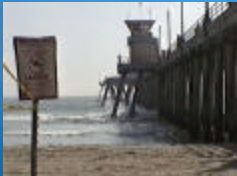


It is home to many types of wildlife.

*Introduction*

**Potential Impacts**

- Urban runoff and stormwater pollution can impact the ocean, beaches and creeks, harming wildlife and impairing peoples' ability to enjoy the water.



*Introduction*

**Sources of Pollution**


- Homes
- Businesses
- Construction sites
- Municipal facilities



Introduction

## Path of Pollutants

- Potential pollutants may run off driveways, streets and gutters into stormdrains.
- The stormdrains lead to creeks and rivers, where pollutants can flow untreated into the ocean.




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Introduction

## It's Everyone's Responsibility

- Urban runoff and stormwater pollution is not just a coastal issue-it starts in all regions of the community and affects water quality from the mountains to the ocean.



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Introduction

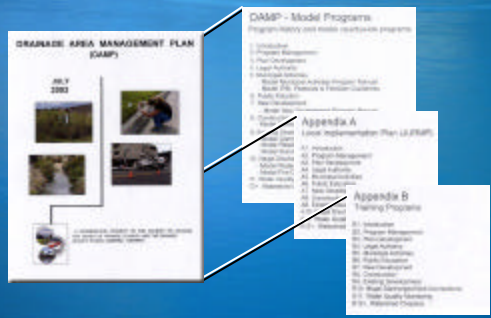
## It's Your Responsibility

- Everyone must help to reduce urban runoff and stormwater pollution.
- This training will help explain what you can do while administering guidelines to help implement the Orange County Stormwater Program.

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Introduction

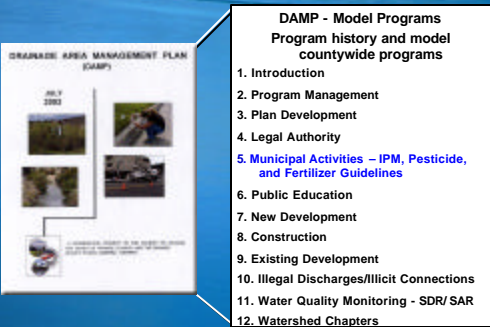
## OC Stormwater Program



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Introduction

## Program Elements




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Introduction

## Regional Board Boundaries within Orange County

Region	Watershed	Identifier
Region 8 Santa Ana	CoyoteCreek	A
	Carbon Canyon	B
	Westminster	C
	Talbert	D
	Santa Ana River	E
	San DiegoCreek	F
	Newport Bay	G
	Los Trancos / Muddy Creek	H
Region 9 San Diego	Laguna Canyon	I
	Aliso Creek	J
	Salt Creek	K
	San JuanCreek	L
	Prima Deshecha & SegundaDeshecha	M



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*Introduction*

## Training Outline

- Introduction
- Integrated Pest Management Guidelines  
-Break-
- Pesticide Management Guidelines
- Fertilizer Management Guidelines

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*Introduction*

## Training Modules

Program Management	Integrated Pest Management
Pesticide Management	Fertilizer Management

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*Introduction*

## Training Goal

Increase your understanding of the potential water quality impacts of pesticide and fertilizer use on municipal landscapes.

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*Introduction*

## Overall Approach

Pollution Prevention

Source Control

Treatment

Cleaner Water

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*Introduction*

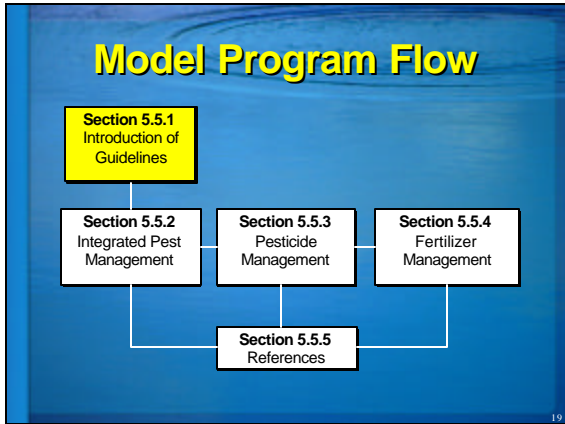
## Key Term

- Integrated Pest Management
  - a strategy to prevent and suppress pest problems with minimum adverse impacts on human health, the environment, and nontarget organisms.

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## Introduction of Guidelines

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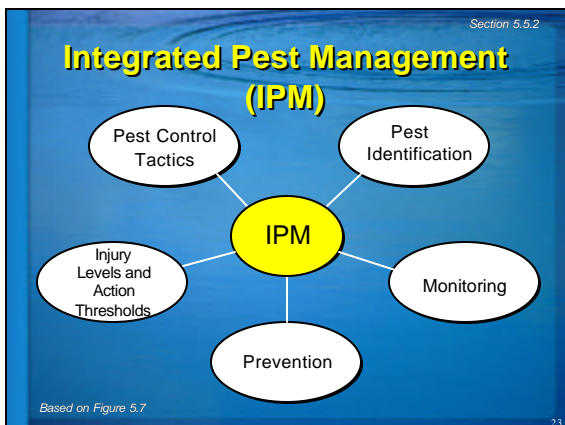
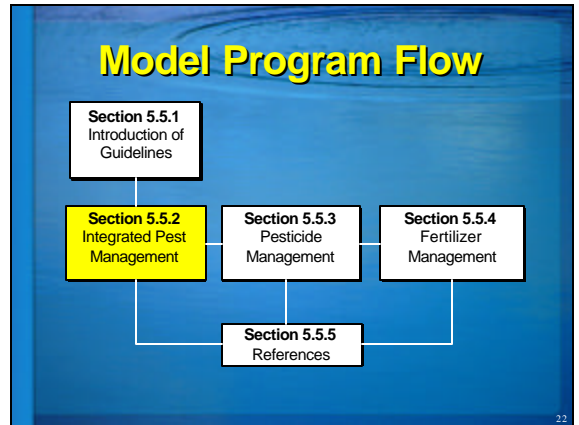
## Program Introduction

Section 5.5.1

- Adoption of Integrated Pest Management Programs.
- Reduce adverse impacts of pesticides and fertilizers on water quality.
- *Landscape Model Maintenance Procedures (Municipal Activities Program Manual).*

## Questions?

PROJECT  
REDUCED  
PREVENTION



## Integrated Pest Management Prevention

Section 5.5.2

Prevent weeds by mulching.

Avoid planting susceptible plant species.

Section 5.5.2

## Integrated Pest Management

### Monitoring

Yellow Sticky Card



Dislodge Adult Invertebrates by Branch Beating



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Section 5.5.2

## Integrated Pest Management

### Pest Identification



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Section 5.5.2

## Integrated Pest Management

### Action Thresholds



Heavy Infestation



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Section 5.5.2

## Integrated Pest Management

### Pest Control Tactics






Spot Spraying of Pesticides



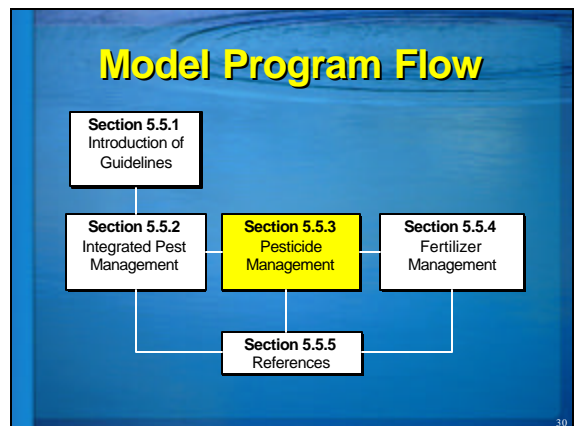
Biocontrol - Parasitic Wasp

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## Questions?



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Section 5.5.3

## Pesticides

- Stress the use of pesticides within the context of an active IPM program.
- Review pesticide label and MSDS information.
- Provide tools to assist in the selection of the appropriate pesticide for the given situation.





Figure 5.10.

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Section 5.5.3

## Pesticides

### Selection of Appropriate Pesticides




<http://www.pw.ucr.edu/>

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Section 5.5.3 and 5.5.4

## Pesticides

- Highlight methods and procedures specifically designed to reduce the occurrence of pesticides in urban runoff and stormwater.
- Review procedures for handling accidental spills.
- Application, storage, and handling of pesticides.



Aquatic Pesticide Applications  
Section 5.5.3.10

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Section 5.5.3

## Pesticides

### Mitigation of Accidental Spills

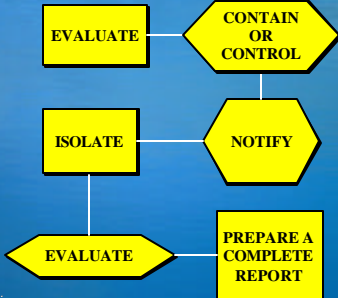




Figure 5.11.

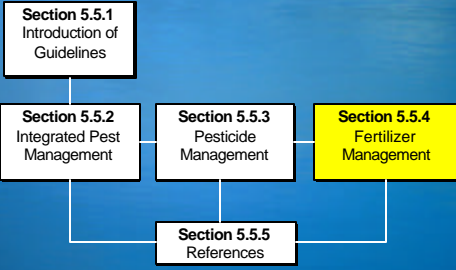
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## Questions?

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## Model Program Flow



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Section 5.5.5

## Fertilizers



- Promotes plant growth.
  - Plants protect soil from erosion and provide habitat.
  - Enhance landscape aesthetics.
- Main source of nitrogen and phosphorus in waterbodies.
- Excessive N and/or P in waterbodies results in eutrophication.

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Section 5.5.5

## Fertilizers

### Types of Fertilizers

- Inorganic and synthetic
  - Examples: Ammonium sulfate, IBDU, Calcium Nitrate
- Organic
  - Examples: Animal manures, blood and bone meal, fish emulsion.



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Section 5.5.5


## Fertilizers



- Application Methods
- Timing of Applications
  - Growth stage of plant.
  - Weather patterns.
- Soil and Plant Nutrient Assessment
  - Monitoring tools available.
  - Interpretation of results.
- Storage Facilities



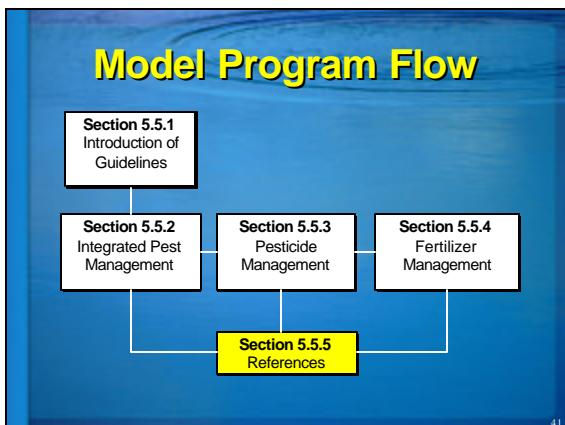
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## Questions?



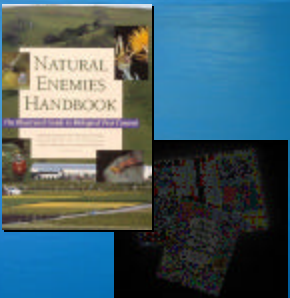
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Section 5.5.6 and 5.5.7

## References


- UC ANR Publications
- University Web Sites
- Local, State, and Federal Resources
- Glossary




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Conclusion



PROJECT  
Pollution  
PREVENTION



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Conclusion

## Conclusion

- A properly implemented IPM Program reduces pesticide inputs thereby minimizing the potential risk of polluting waterbodies.
- Close attention to the proper use and handling of pesticides and fertilizers reduces the impacts of these substances on waterbodies.

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Conclusion

## Remember

- Everyone benefits from clean water, and everyone has a responsibility to protect it by reducing urban runoff and stormwater pollution.



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Conclusion

## Resources

For more information:  
Visit [www.ocwatersheds.com](http://www.ocwatersheds.com)  
or  
Call the Orange County Stormwater Program at 714-567-6363.

PROJECT  
Pollution  
PREVENTION




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Conclusion

## Thank You!

Thank you for attending and learning how you can help!

PROJECT  
Pollution  
PREVENTION



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Conclusion

## Handouts

- Meeting Agenda
- Hard copy of presentation
- List of References
- Contact list

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