

# Pesticides, Irrigation, Stormwater, Creeks

## *What's the Connection?*

Pest Management That Makes Sense Workshop

November 18, 2011

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# Workshop Sponsors

- UCCE Cooperative Extension
- University of California IPM
- Marin County Stormwater Pollution Prevention Program
- Cagwin & Dorward Landscape Contractors
- Linda J. Novy & Associates Sustainable Landscape Management



# Agenda

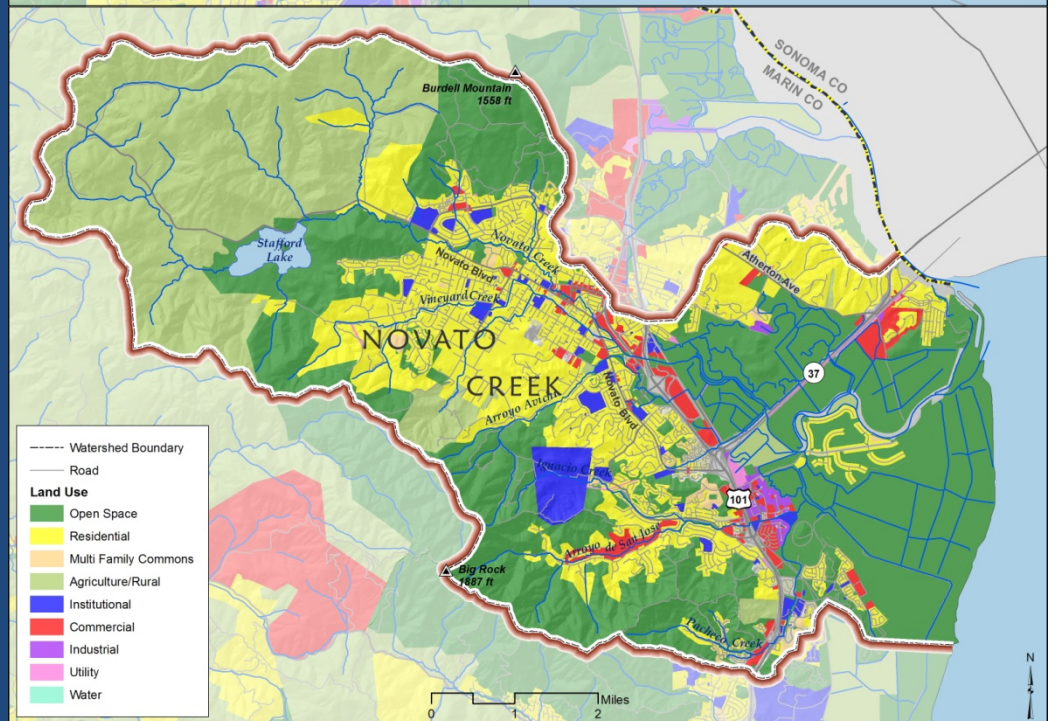
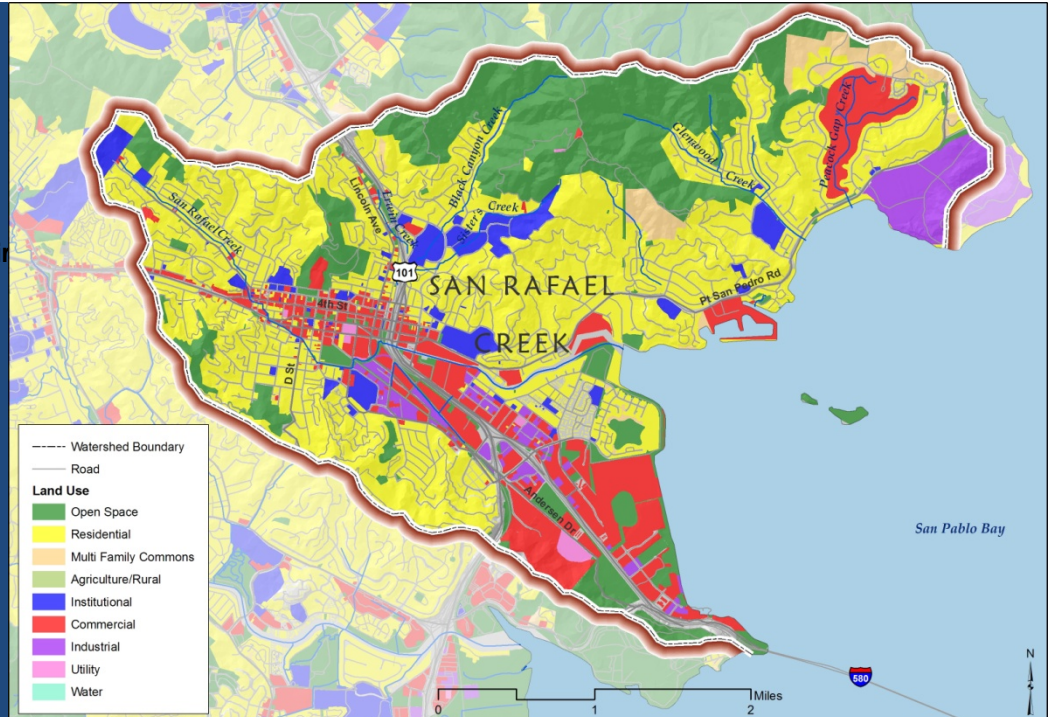
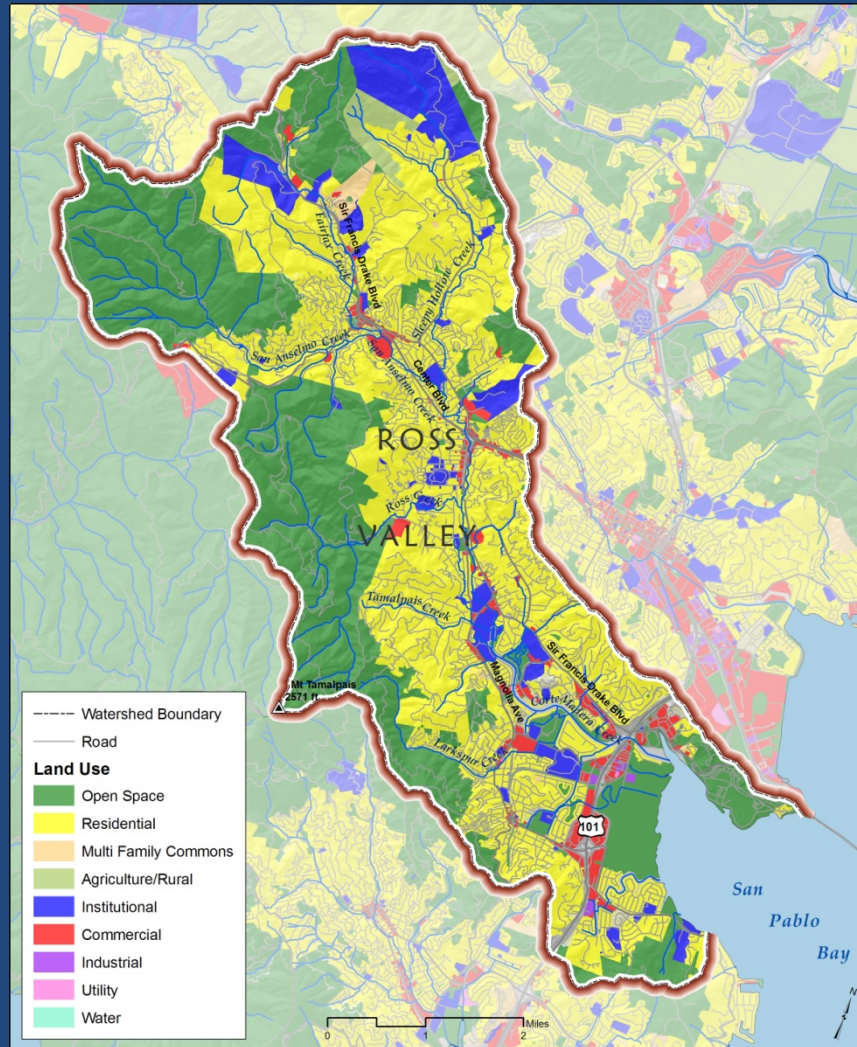
- What is MCSTOPPP
- Marin's watersheds
- Review of what we know about stormwater and irrigation water
- Pesticides & fertilizers in urban runoff
- Solutions we'll explore today!



# MCSTOPPP



- Joint effort of Marin's cities, towns and unincorporated areas
- Program's goals
  - Prevent stormwater pollution
  - Protect water quality in creeks and wetlands
  - Comply with State and Federal regulations
  - Preserve beneficial uses of local waterways



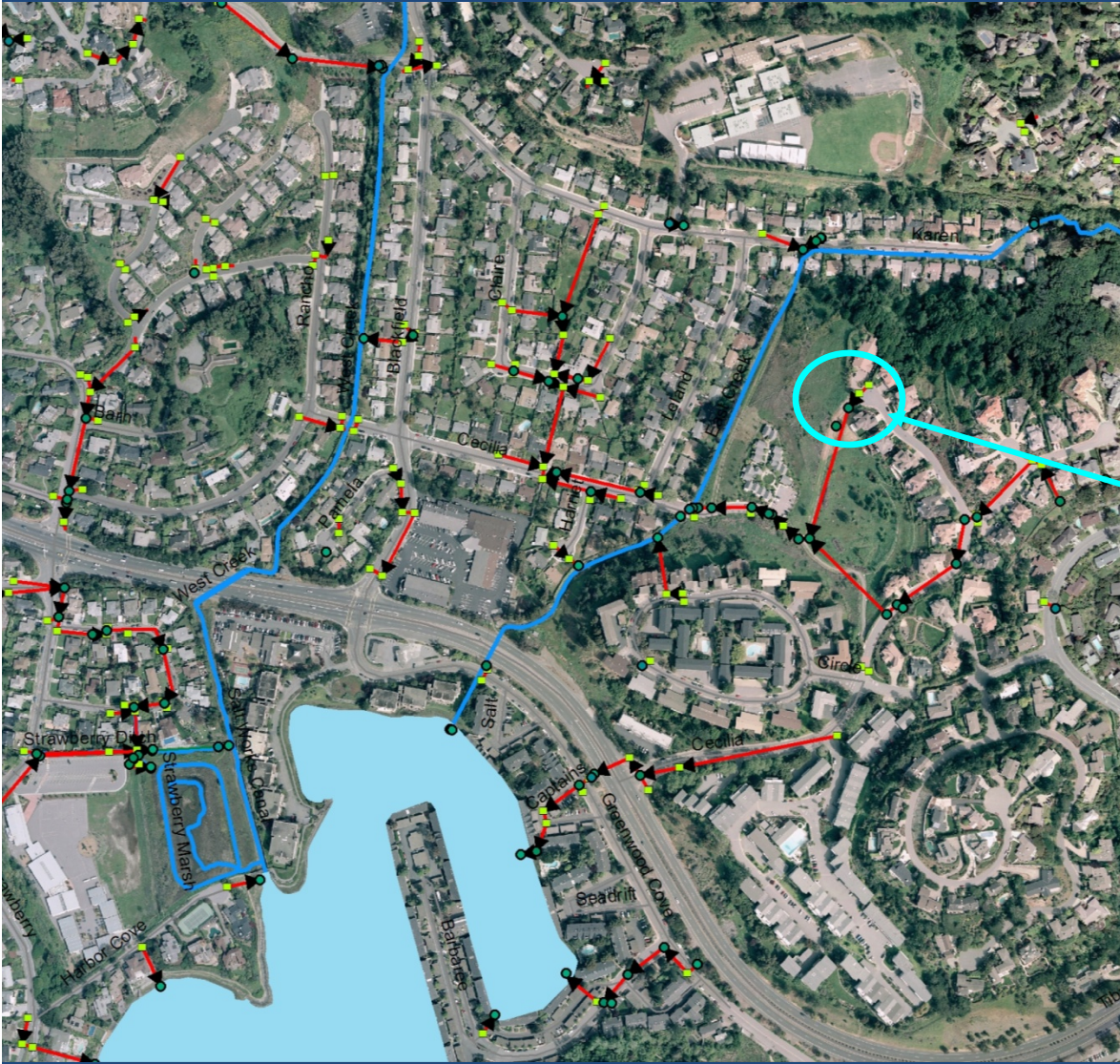
# Stormwater and Irrigation Water Flow



# Into Storm drains...



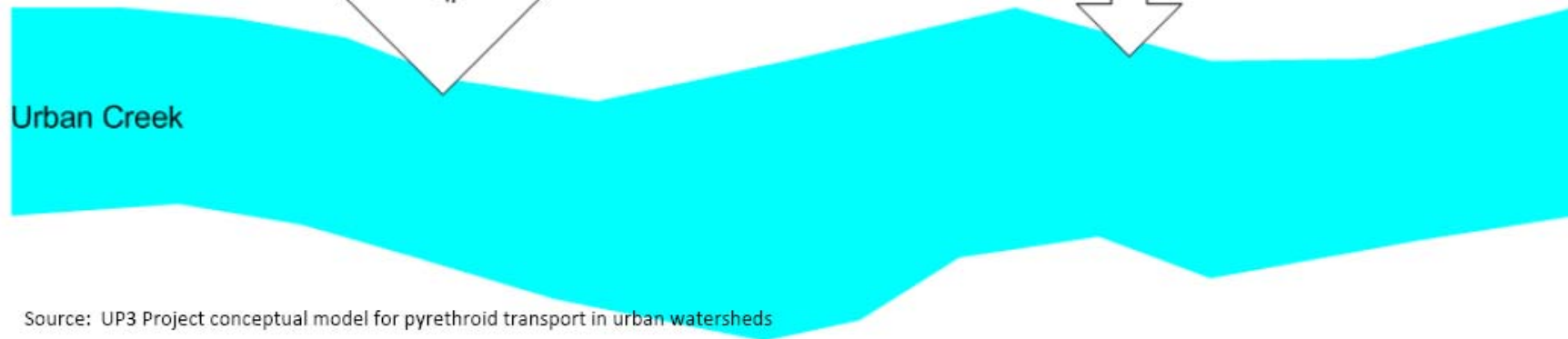
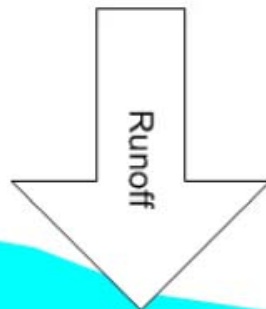
# Storm drain network conveys stormwater...



# Into Creeks, Bays, and the Ocean



## Box 2: Watershed - Transport to Creeks



### Sources:

- (a) Pesticide on impervious surfaces
- (b) Pesticide on lawns/grass
- (c) Pesticide on other pervious surfaces
- (d) Pesticide dumped in storm drain

### Outcomes:

- (1) Washed to storm drain/creek
- (2) Remains on land
- (3) Degrades prior to transport (degradates may need consideration)
- (4) Evaporates into air
- (5) Taken up by organisms

# Fertilizers

- Ingredients found in storm drain water samples (rain events and over-watering)
- Source of nitrogen and phosphorus in urban runoff
- Excess algae and water plants, eutrophication, low dissolved oxygen

Study supported by CA Water Boards, UCCE, UCIPM, UC Master Gardener, UC.

# Pesticides

- 60% pesticides purchased by consumers – control ants
- Garden & landscape care
- Structural pest control
- Pesticides can kill non-target wildlife, fish, & invertebrates



Image source: UC IPM Online: <http://www.ipm.ucdavis.edu/WATER/U/index.htm>

# Bifenthrin Urban Runoff Example

- High washoff rates from impervious surfaces
- Storm events dominate loads of Bifenthrin
  - Flows higher
  - Intensity increases washoff
- Dry weather (non-stormwater) runoff shown to be toxic in some studies



# Solutions to be explored today!

- Professional collaboration – protect your fiscal and your watershed interests (Linda Novy)
- Energy conservation - grow sustainable gardens (Bob Perry)
- Landscape soils – attain well structured soil (Toby O'Geen)
- Cultural landscape practices – understanding may improve pest, weed & disease management (Steven Swain)
- Education – communication can save money and the environment (Dave Phelps)

# Thanks for attending – Enjoy!



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