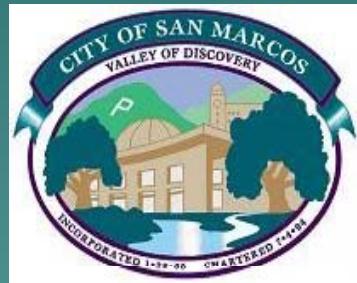


Upper San Marcos Creek Watershed Nutrient Management Plan



February 10, 2010
SDRWQCB Update
FY 2009-10 WURMP Submittal

Presenters

- ◆ Erica Ryan, City of San Marcos
Stormwater Program Manager
- ◆ Todd Snyder, County of San Diego
DPW Watershed Planning Manager
- ◆ Cheryl Filar, City of Escondido
Environmental Programs Manager

Overview

- ◆ Located in Carlsbad Watershed Management Area
- ◆ Submitted with Carlsbad WURMP Annual Report to SDRWQCB as Appendix C
- ◆ Focus on Nutrients Only

Overview Cont.

- ◆ Municipal Stormwater Copermittees:
 - City of San Marcos
 - County of San Diego
 - City of Escondido
- ◆ City of San Marcos is USMC Nutrient Management Plan Lead

Overview Cont.

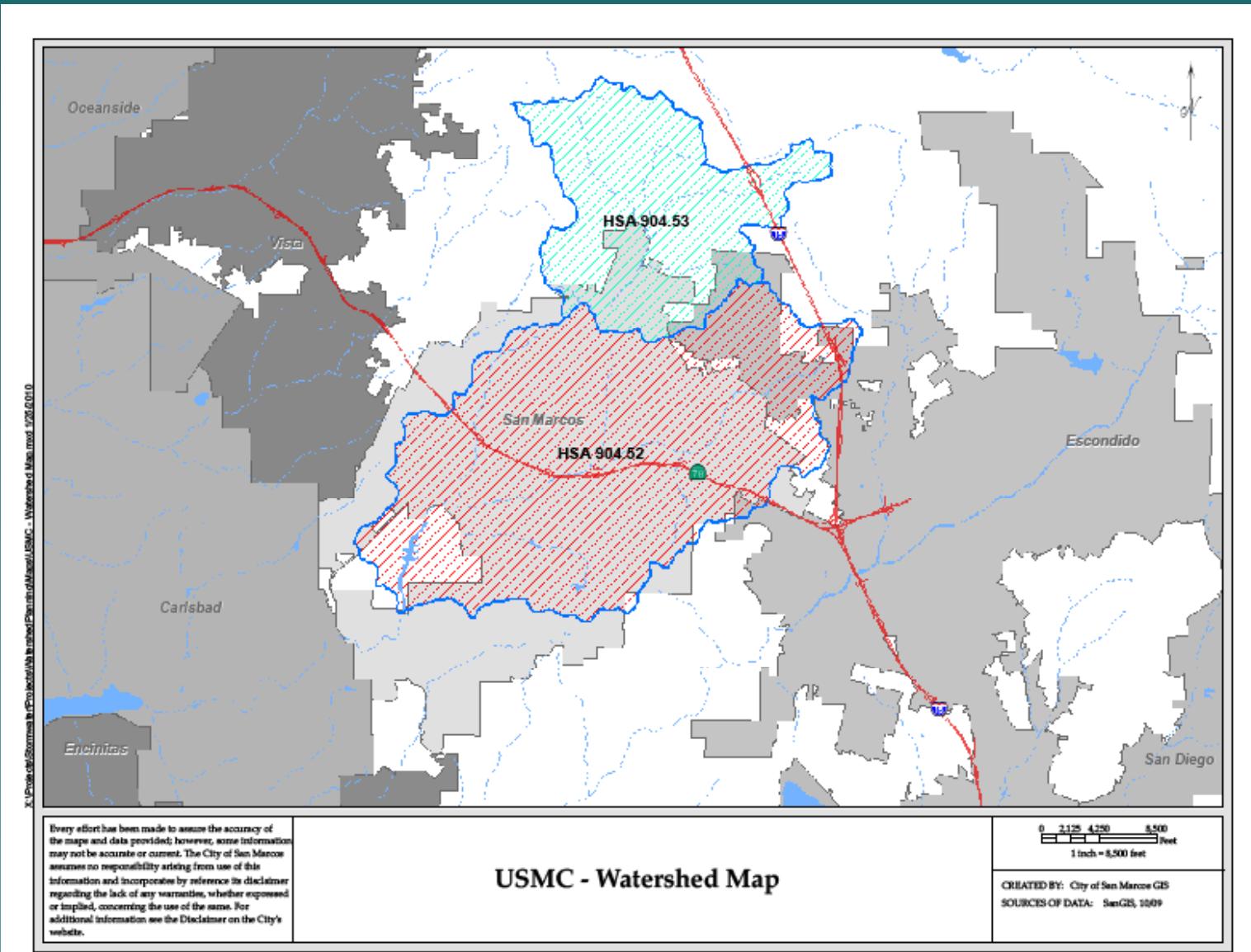
Objectives:

1. Establish Baseline Data
2. Identify Primary Nutrient Sources –
Year one - "Focus on Worst First"
3. Abatement through available BMPs
4. Monitoring

Overview Cont.

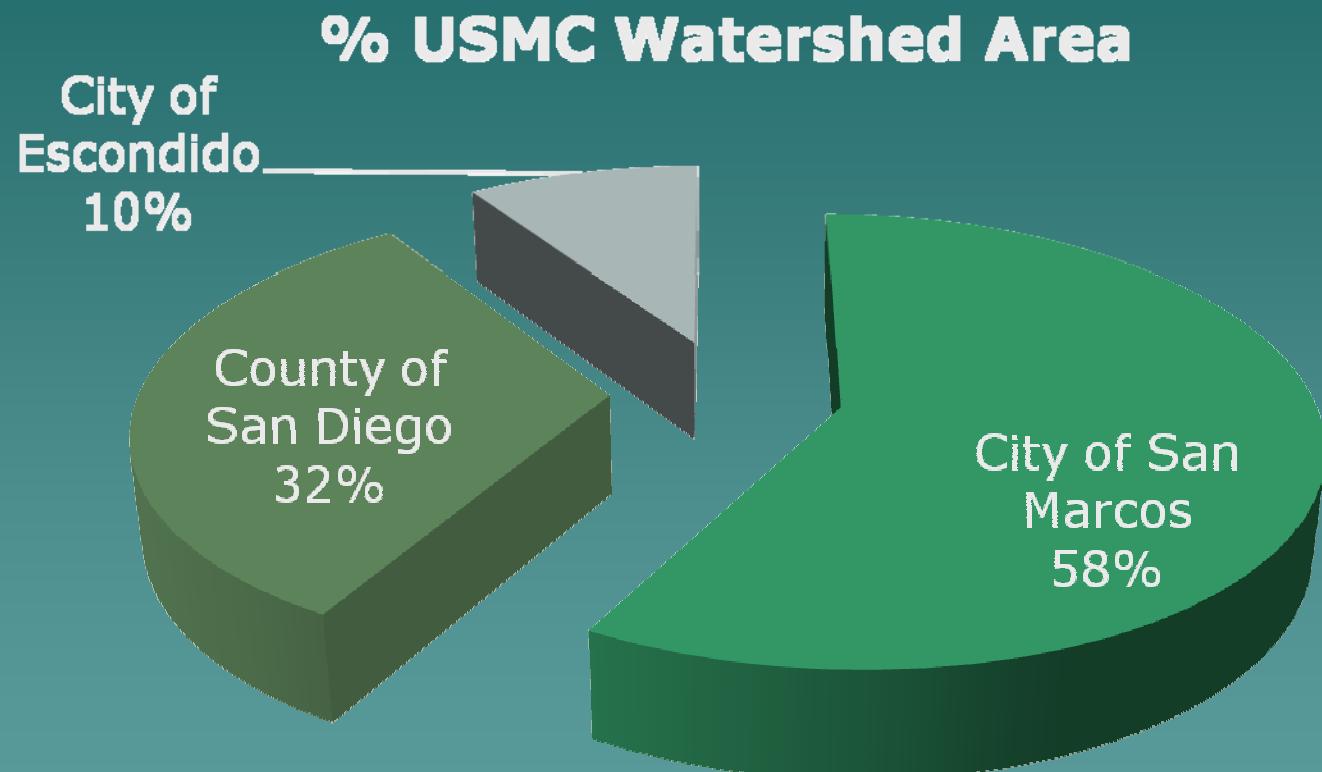
- ◆ City of San Marcos Watershed Implementation Plan
 - City of San Marcos Jurisdiction Only
 - Ensures City General Plan Update and City Policies Consistent with Water Quality Objectives in USMC
 - City Master WQTR Template to Implement Project Consistency for Nutrient Reduction

USMC Watershed Map



Agency Land Area Distribution

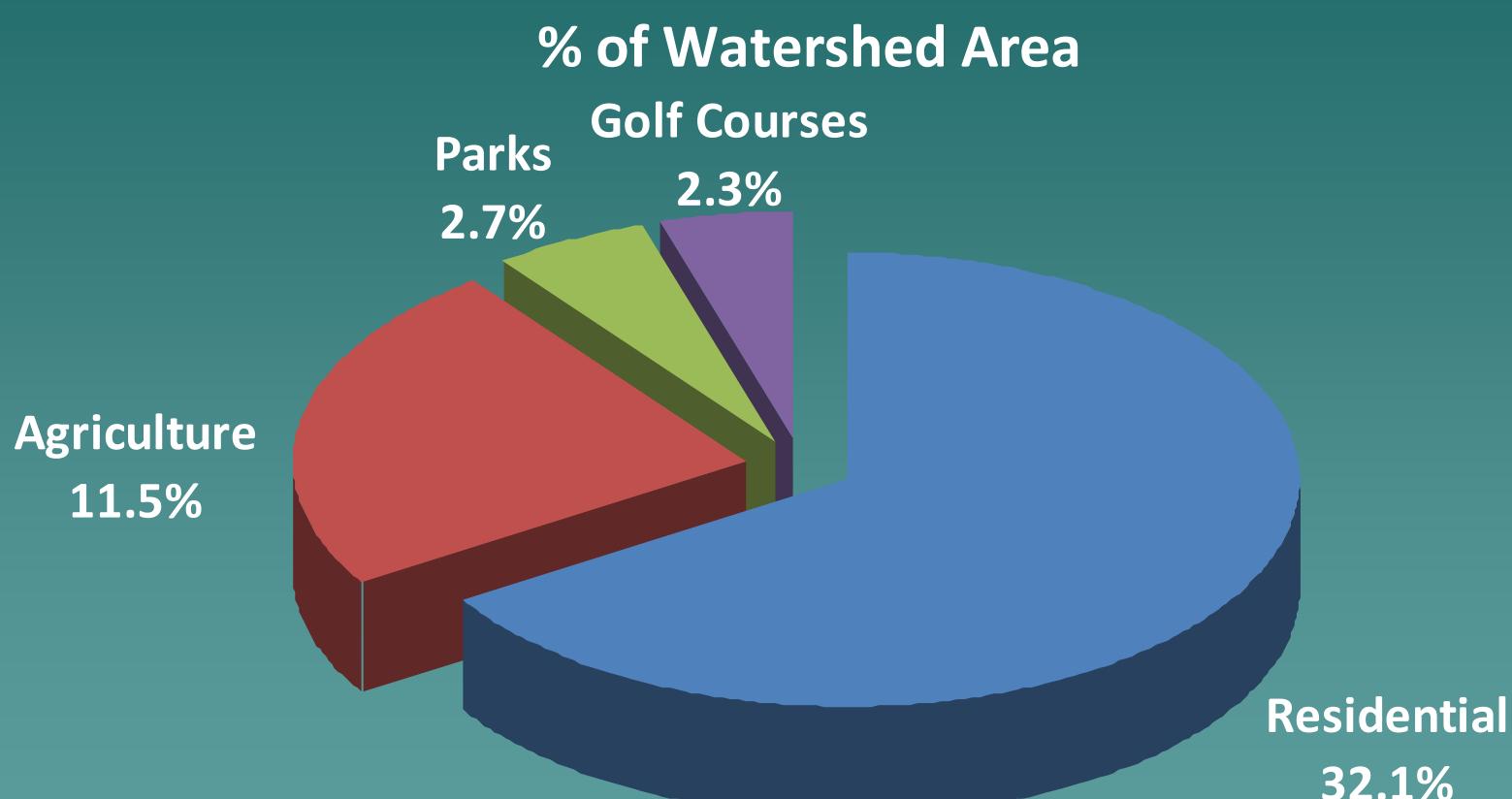
Total Area 29 square miles



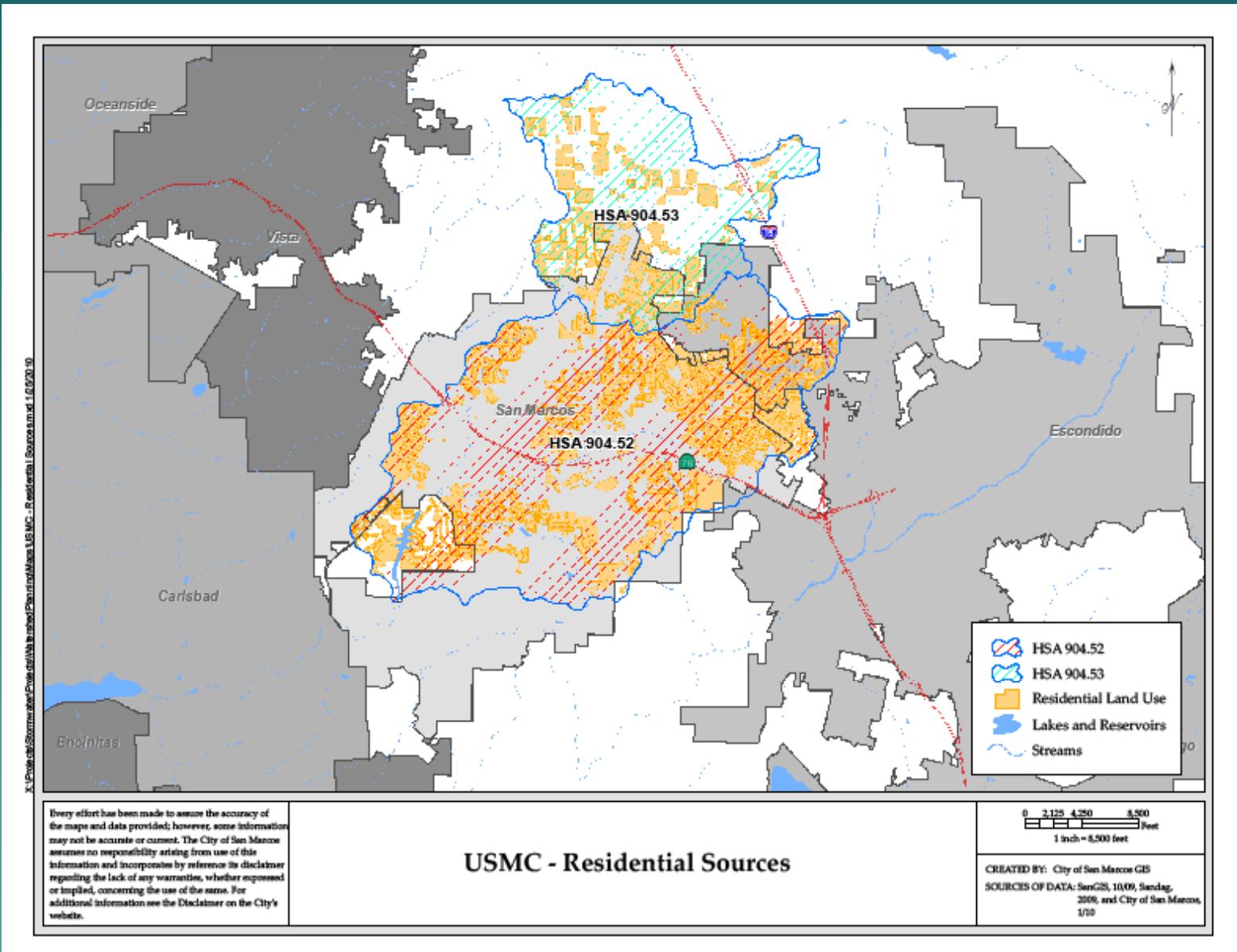
Priority Nutrient Sources in USMC

- ◆ Top Four Sources are Approximately 48% of USMC Watershed
 - Residential Land Use and Activities
 - Agriculture/Nurseries
 - Parks
 - Golf Courses

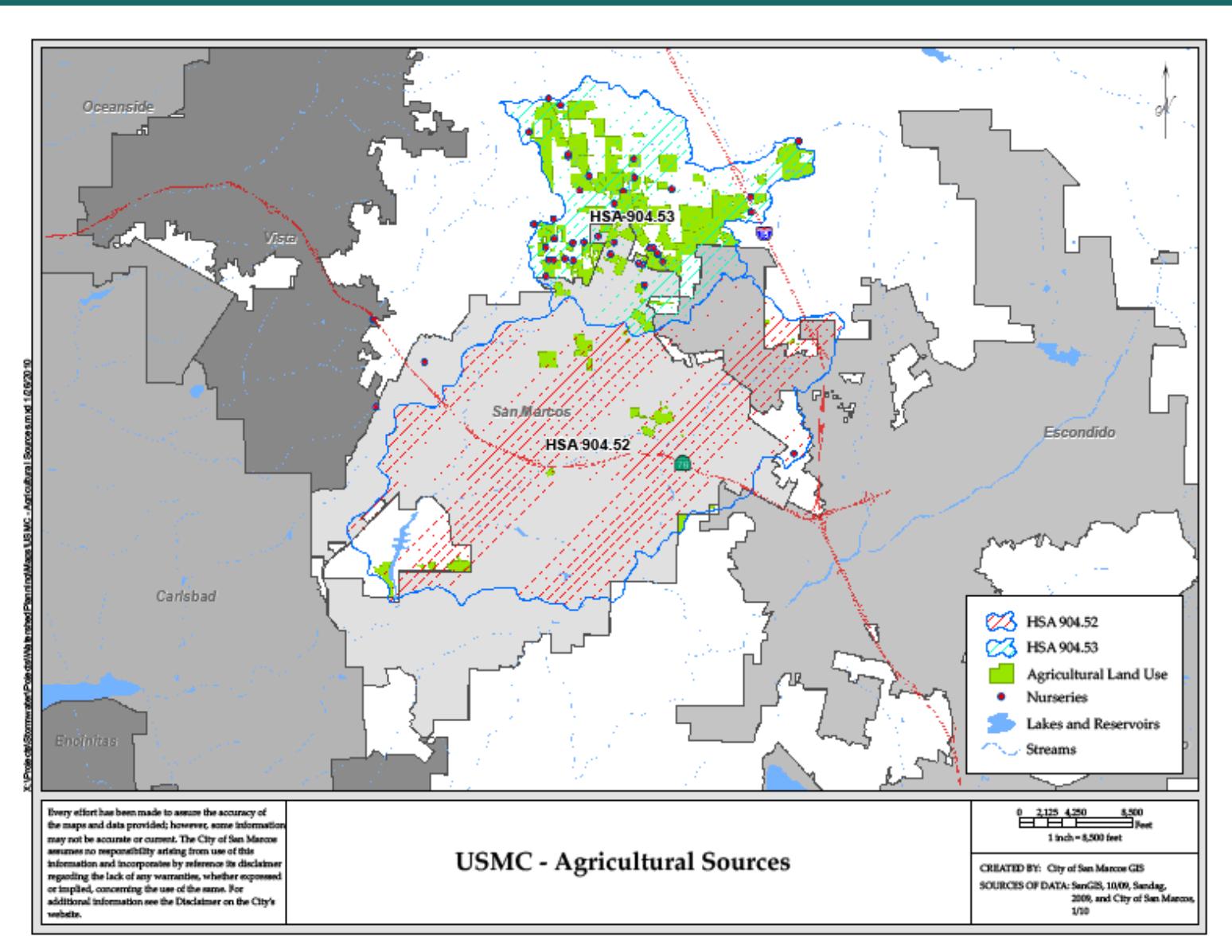
Priority Nutrient Sources in USMC



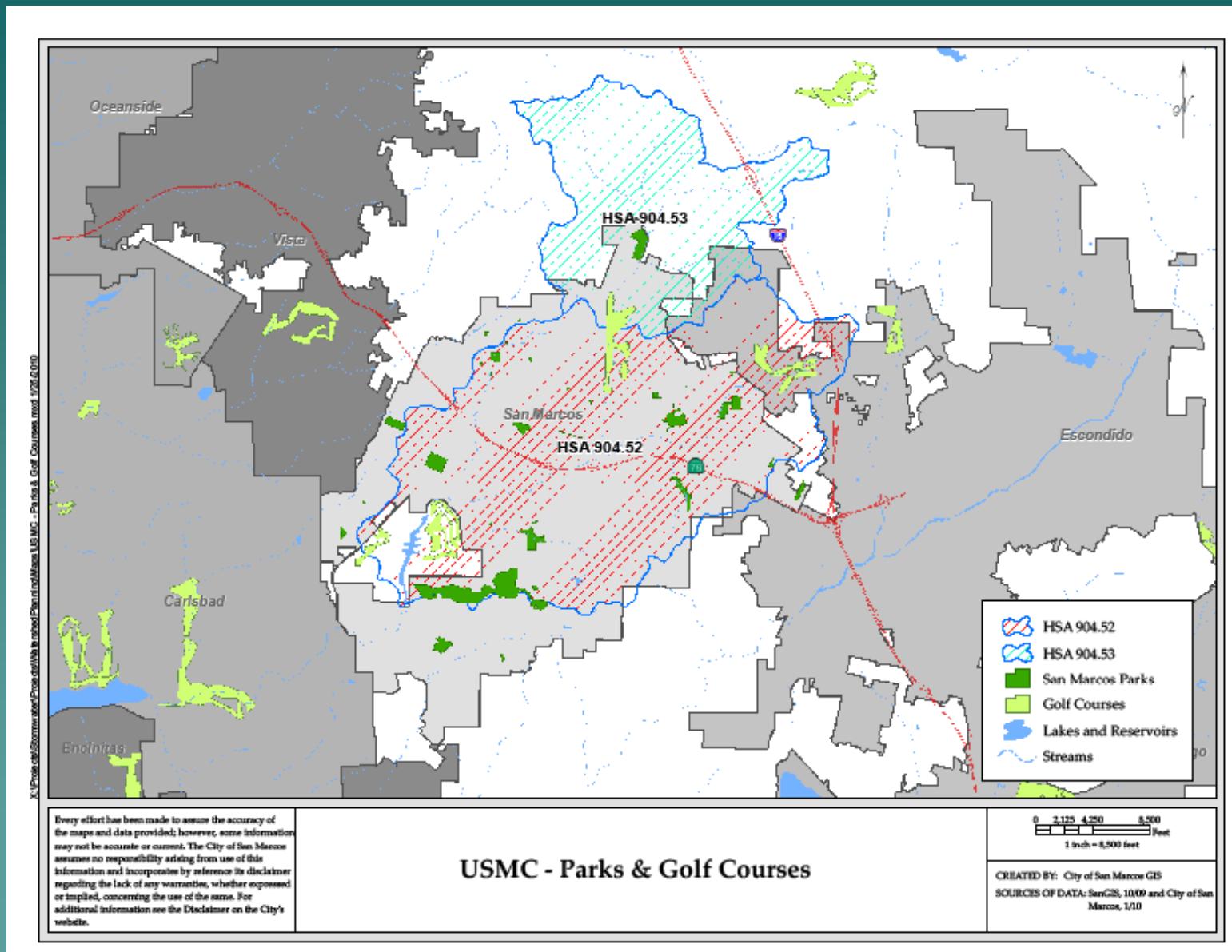
Residential Land Use Map



Agriculture Land Use Map



Parks & Golf Courses Land Use Map



USMC Implementation Plan

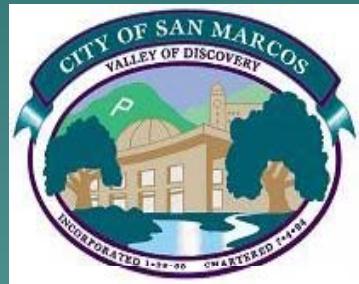
Agency Collaboration on:

- ◆ Irrigation Reduction
- ◆ HOA Template Water Quality Management Plan
- ◆ Focused Outreach to Landscape Contractors

USMC Implementation Plan Cont.

- ◆ Baseline Agriculture Business Assessment
- ◆ Baseline Park Assessment
- ◆ Annual Golf Course Inspections and Focused Outreach
- ◆ Enhanced Monitoring

Upper San Marcos Creek Water Quality Monitoring



February 10, 2010
SDRWQCB Update

San Marcos Creek MLS

Legend

- Sample Sites
- Creeks / Streams
- San Marcos HUs
- MLS Drainage
- Water Bodies

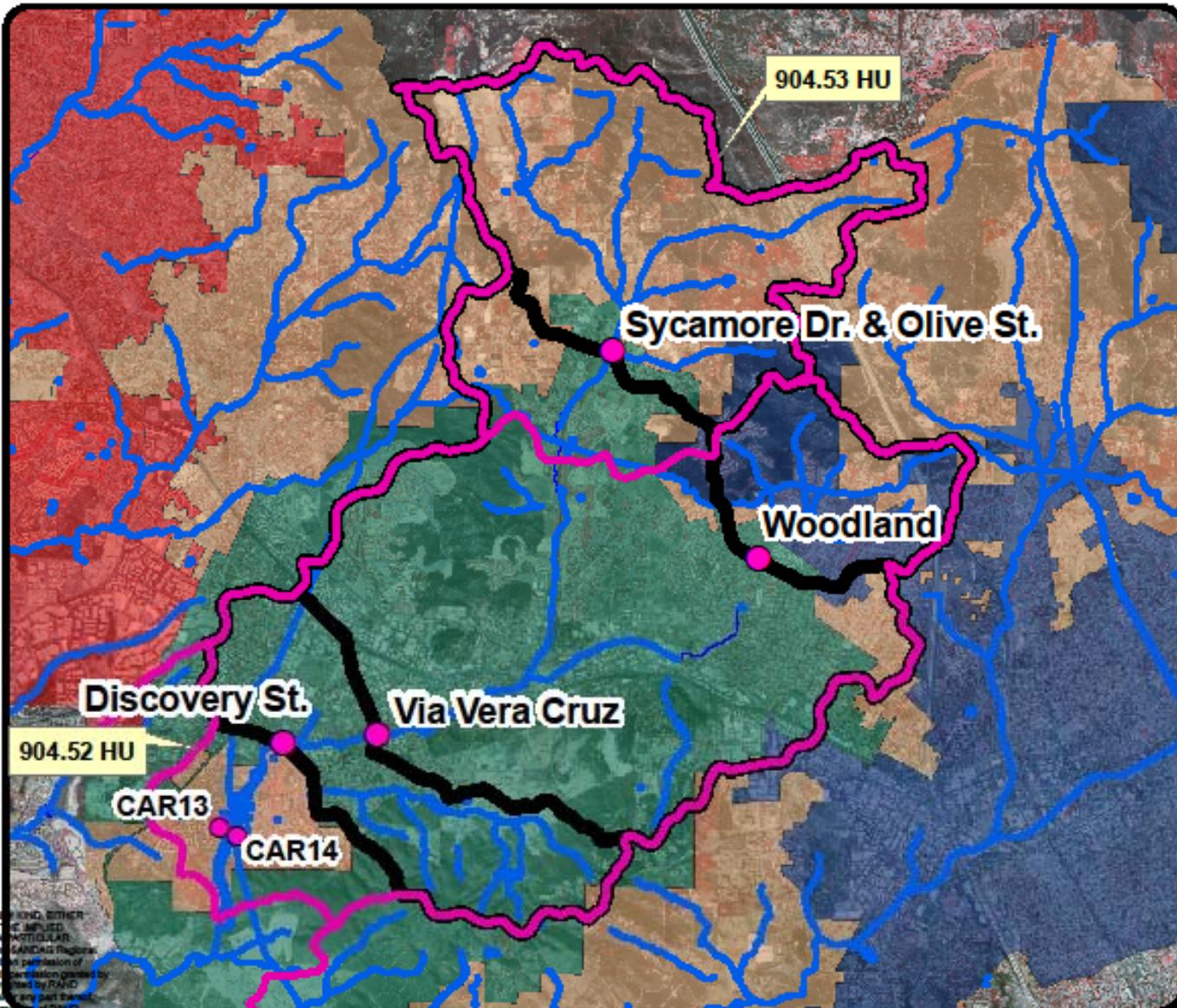
Jurisdiction

NAME
ESCONDIDO
S.D. COUNTY
SAN MARCOS
VISTA



SanGIS
A Human-Data Connection

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County of San Diego



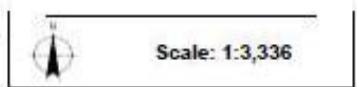
Lake San Marcos
Storm Drain Inventory & Sampling

Storm Drain Inventory



Legend

- CNTYBDRY
- Culverts
- Streets
- Toll Highway
- Highways
- Freeways
- County MS4 Outfall
- County MS4 Drainage System/Easement
- Mapped on County MS4 Layer, but Rejected by County
- Mapped on County MS4 Layer, but Ownership Unclear
- Private Outfall
- County Maintained Road
- CAR14 County Maintained Monitoring Site



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Map center: 33° 7' 7.18" N, 117° 12' 29.98" W

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DPW
GIS

Lake Storm Drains

- ◆ Approximately 20 large outfalls drain directly into the Lake



Lake Storm Drains

- ◆ Numerous small yard and patio drains



Storm Drain Sampling

- ◆ County performed comprehensive sweeps of lake storm drains in July 2009 and February 2010.
- ◆ All accessible storm drains were inspected.
- ◆ Flowing drains were sampled for nutrients and suspended sediments.

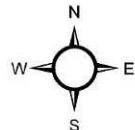
Results of Lake Sweeps

Date	Flowing	Dry	Total
July 2009	12	40	52
Feb 2010*	13	15**	28

* 20+ smaller pipes observed in July 2009 were submerged during the February 2010 visit.

** Including one pipe that was sampled in 2009, but submerged in Feb. 2010.

FLOWING DRAINS & HOT SPOTS



Legend

- Sampled July 2009
- Sampled Feb. 2010
- Sampled July & Feb.
- MS4 Features
- Roads

Jurisdictions

- S.D. COUNTY
- SAN MARCOS

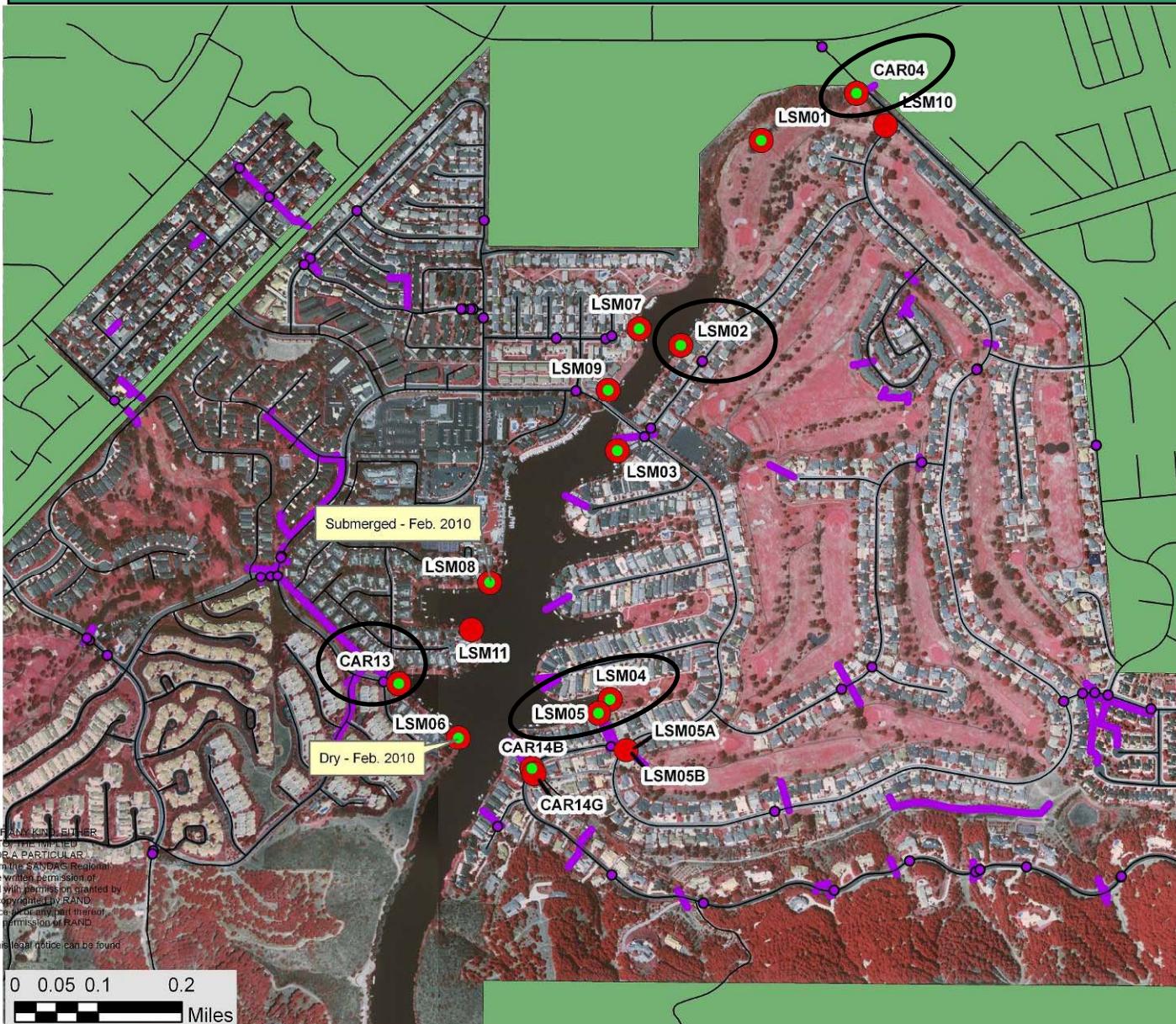


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0 0.05 0.1 0.2
Miles



Upper San Marcos Creek Nutrient Management Plan

- ◆ Iterative Plan
- ◆ Effective and Cost-Efficient Strategies
- ◆ Progressive Problem Diagnosis and Resolution
- ◆ Stakeholder Participation
- ◆ Sustainable Solutions