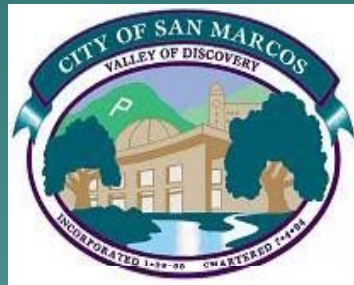



Upper San Marcos Creek Watershed Nutrient Management Plan




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
- 
- A stylized silhouette of a mountain range in shades of teal, located in the bottom right corner of the slide.

Overview


- ◆ Located in Carlsbad Watershed Management Area
 - ◆ Submitted with Carlsbad WURMP Annual Report to SDRWQCB as Appendix C
 - ◆ Focus on Nutrients Only
- 
- A stylized silhouette of a mountain range in shades of teal, located in the bottom right corner of the slide.

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.

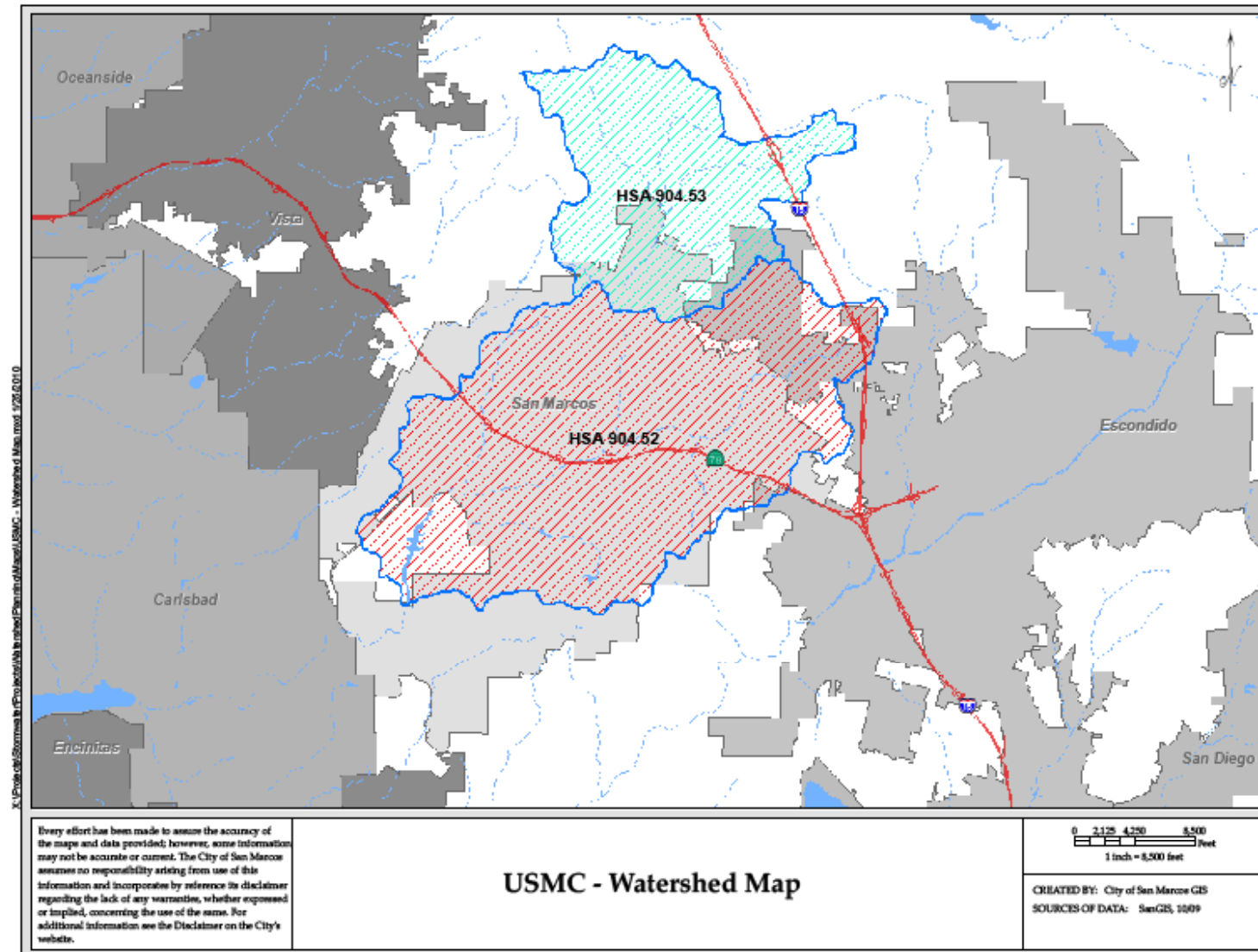
Objectives:

1. Establish Baseline Data
 2. Identify Primary Nutrient Sources –
Year one - "Focus on Worst First"
 3. Abatement through available BMPs
 4. Monitoring
- 
- A stylized, dark teal silhouette of a mountain range is positioned in the bottom right corner of the slide, partially overlapping the text of the fourth objective.

Overview Cont.

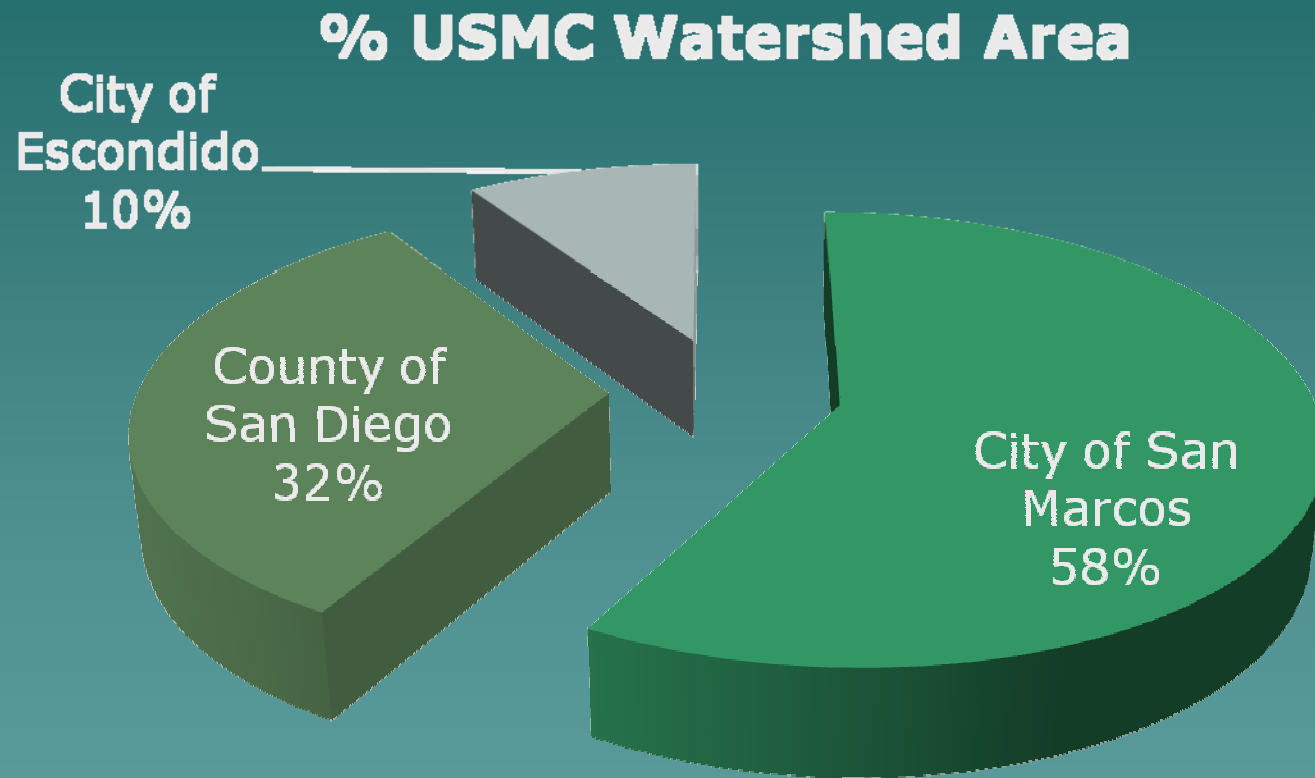
- ◆ City of San Marcos Watershed Implementation Plan
 - City of San Marcos Jurisdiction Only
 - Ensures City General Plan Update and City Policies Consistent with Water Quality Objectives in USMC
 - City Master WQTR Template to Implement Project Consistency for Nutrient Reduction

USMC Watershed Map



Agency Land Area Distribution

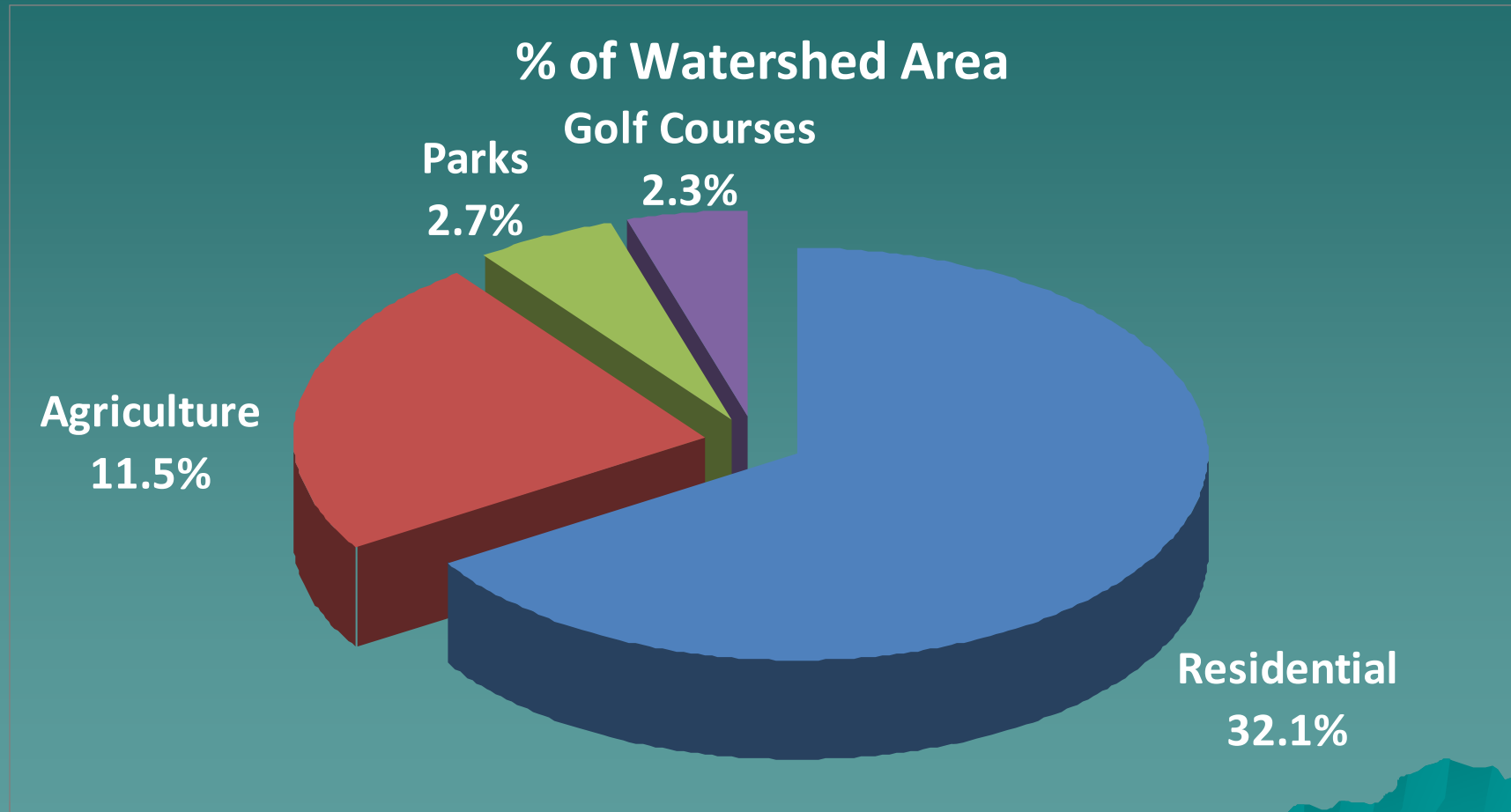
Total Area 29 square miles



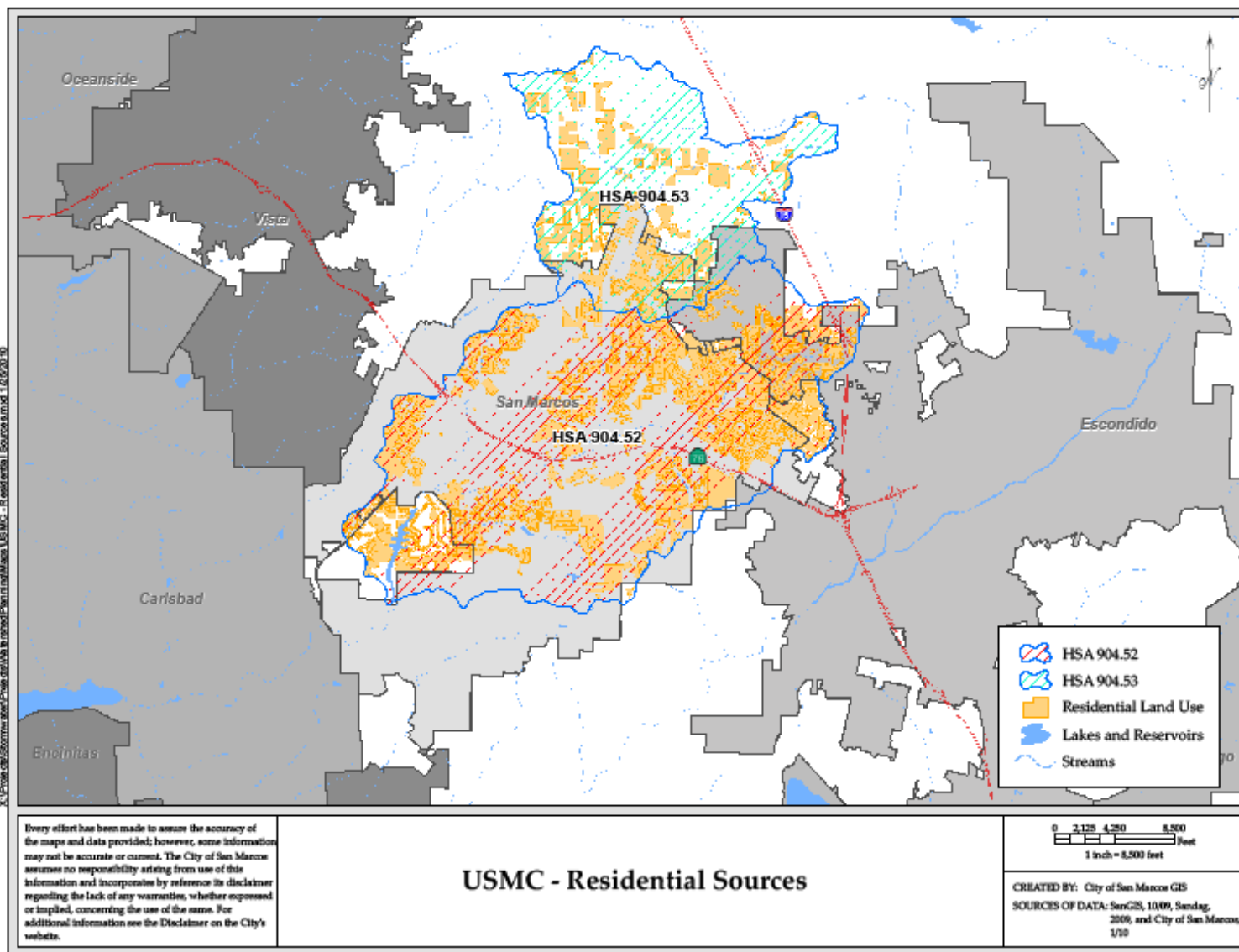
Priority Nutrient Sources in USMC

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

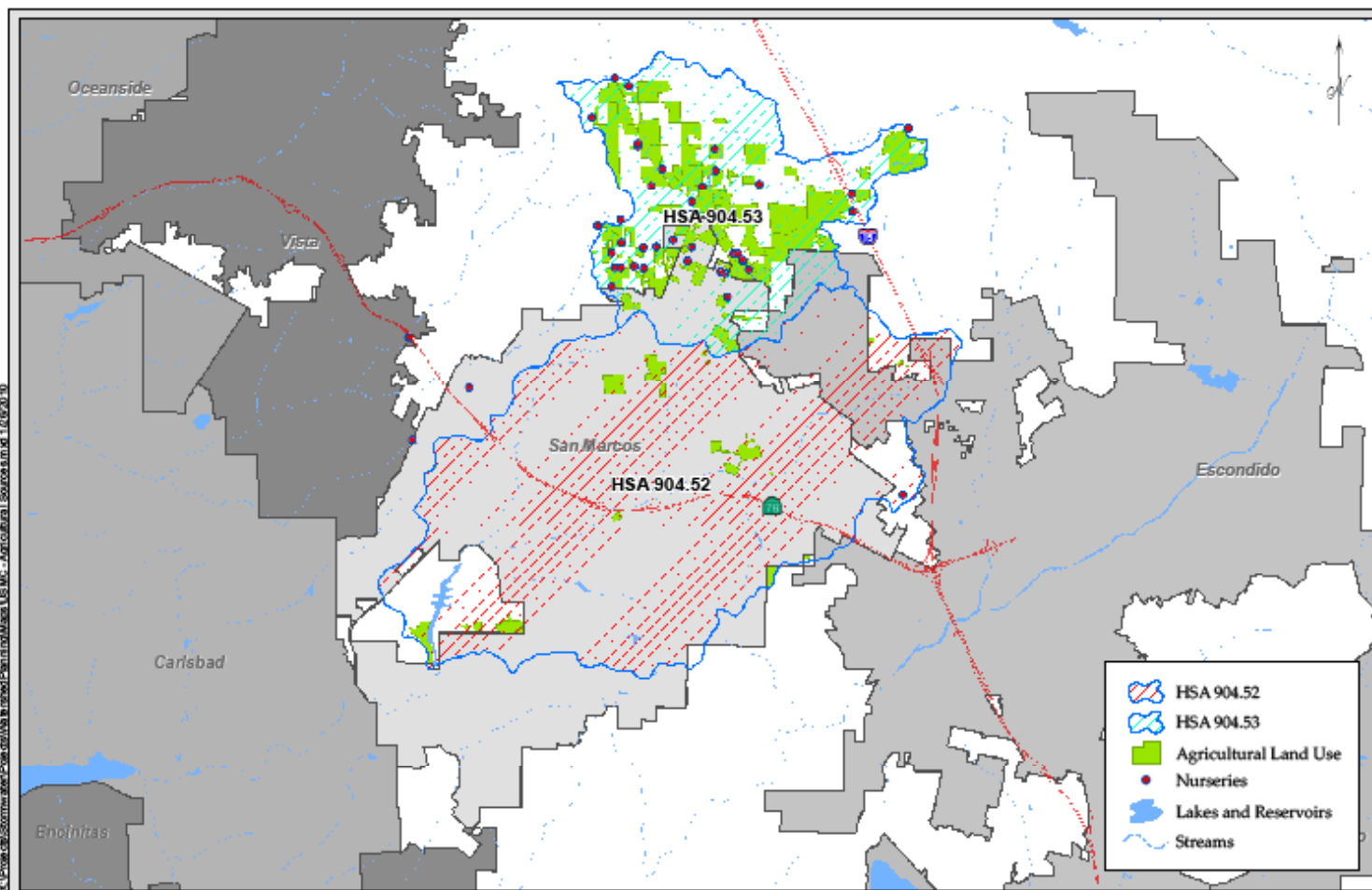
Priority Nutrient Sources in USMC



Residential Land Use Map



Agriculture Land Use Map



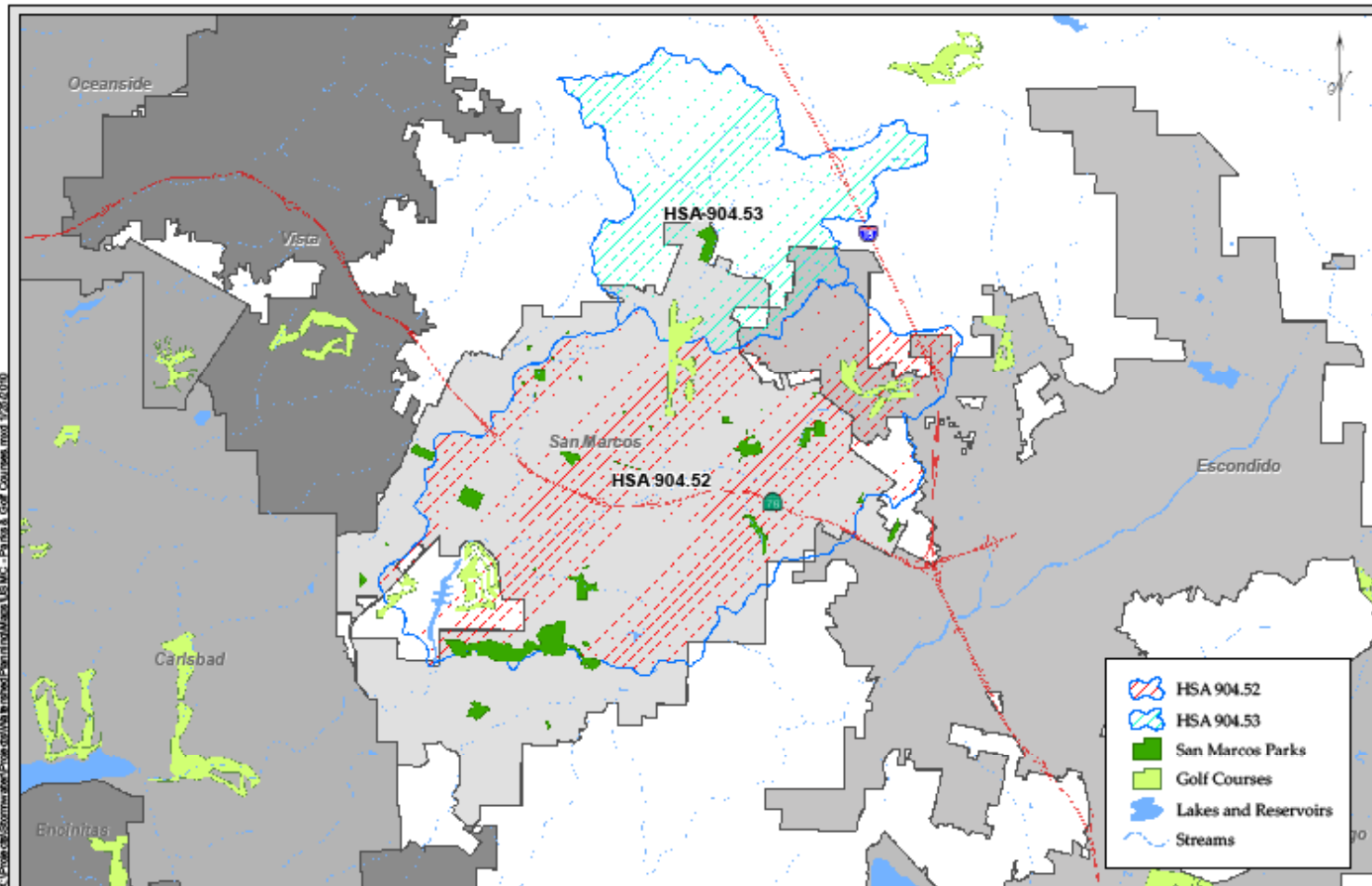
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USMC - Agricultural Sources

0 2,125 4,250 8,500
Feet
1 inch = 8,500 feet

CREATED BY: City of San Marcos GIS
SOURCES OF DATA: SanGIS, 10/09, Sandag,
2008, and City of San Marcos,
1/10

Parks & Golf Courses Land Use Map



X:\Projects\Stormwater\San Marcos\San Marcos Parks & Golf Courses.mxd 1/10/09

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USMC - Parks & Golf Courses

0 2,125 4,250 8,500
Feet
1 inch = 8,500 feet

CREATED BY: City of San Marcos GIS
SOURCES OF DATA: SanGIS, 10/09 and City of San Marcos, 1/10

USMC Implementation Plan

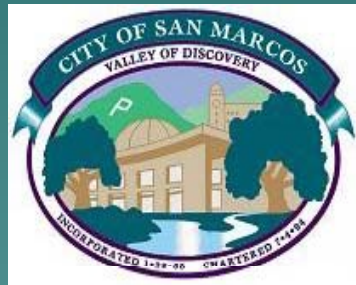
Agency Collaboration on:

- ◆ Irrigation Reduction
 - ◆ HOA Template Water Quality Management Plan
 - ◆ Focused Outreach to Landscape Contractors
- 
- A stylized, layered mountain range graphic in shades of teal and blue, located in the bottom right corner of the slide.

USMC Implementation Plan Cont.

- ◆ Baseline Agriculture Business Assessment
 - ◆ Baseline Park Assessment
 - ◆ Annual Golf Course Inspections and Focused Outreach
 - ◆ Enhanced Monitoring
- 
- A stylized, layered mountain range graphic in shades of teal and blue, located in the bottom right corner of the slide.

Upper San Marcos Creek Water Quality Monitoring



February 10, 2010
SDRWQCB Update

San Marcos Creek MLS

Legend

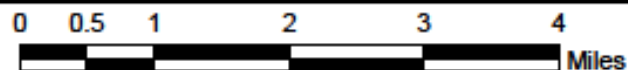
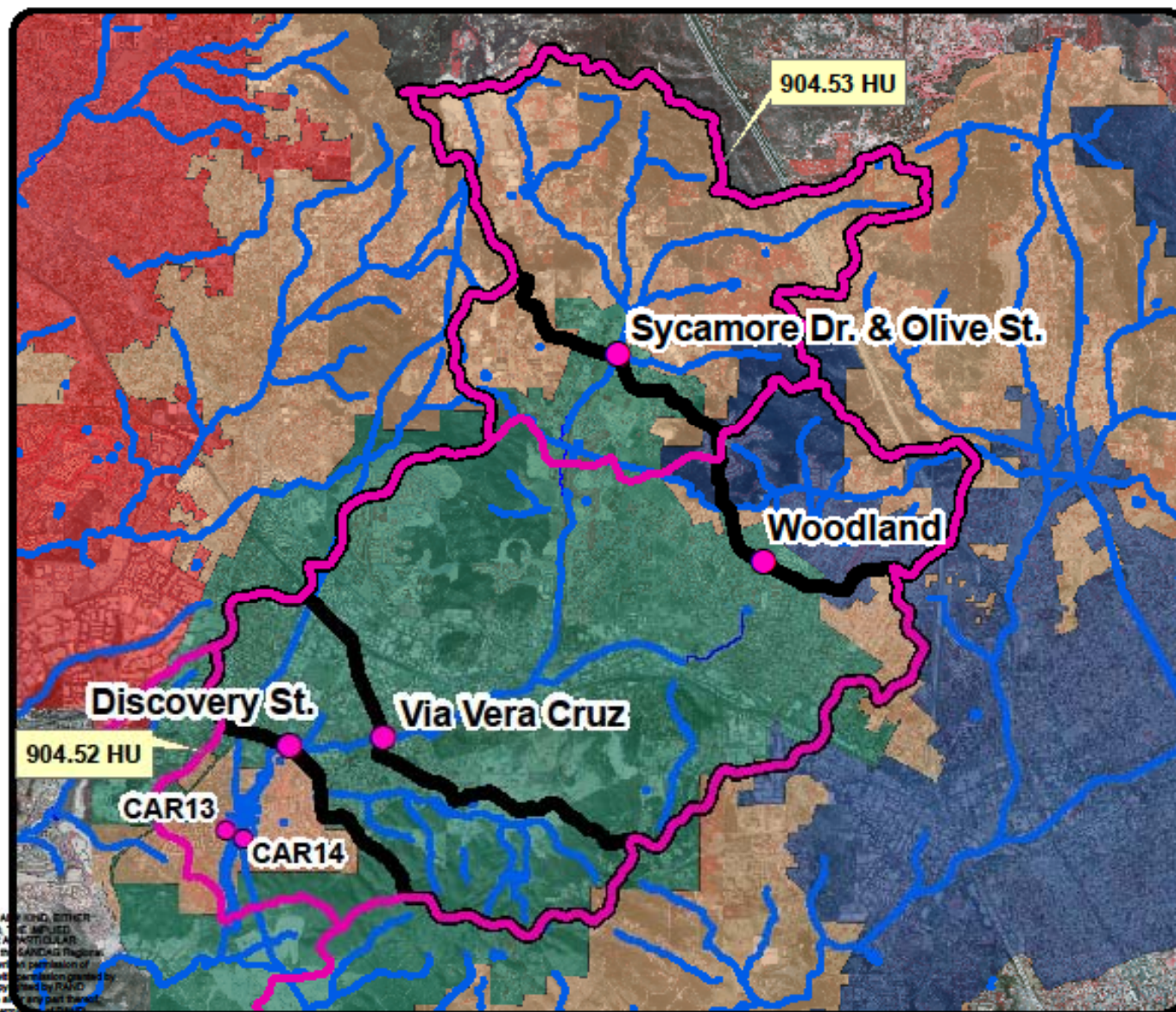
- Sample Sites
 - Creeks / Streams
 - San Marcos HUs
 - MLS Drainage
 - Water Bodies
- Jurisdiction**
- | NAME | Color |
|-------------|-----------|
| ESCONDIDO | Dark Blue |
| S.D. COUNTY | Tan |
| SAN MARCOS | Green |
| VISTA | Red |



SanGIS
Sustainable Geographic Information Systems

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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



Scale: 1:3,336

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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.
- 
- A stylized, dark teal silhouette of a mountain range is positioned in the bottom right corner of the slide, partially overlapping the text area.

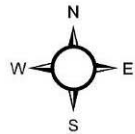
Results of Lake Sweeps

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

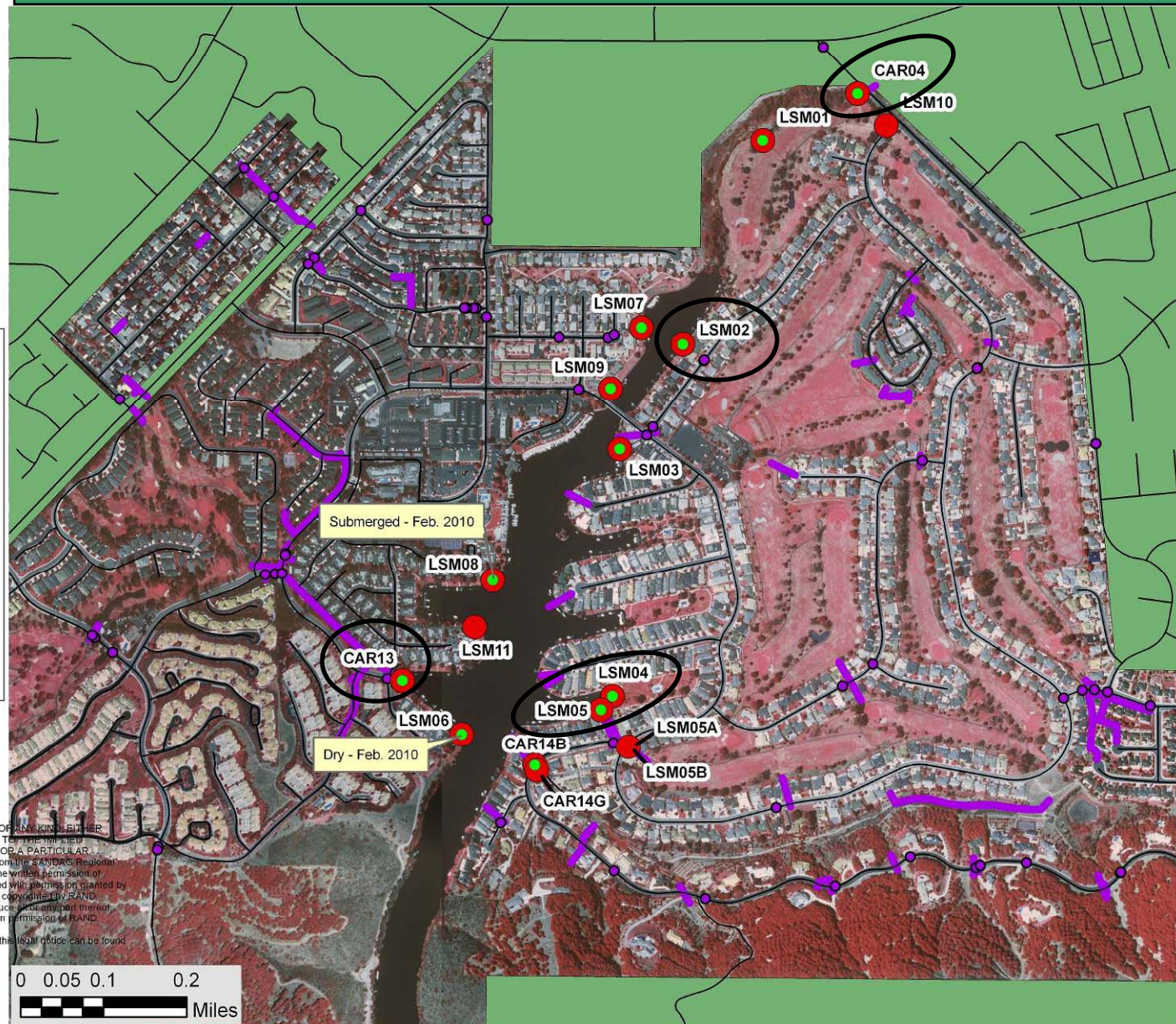
— Roads

Jurisdictions


- S.D. COUNTY
- SAN MARCOS



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Upper San Marcos Creek Nutrient Management Plan

- ◆ Iterative Plan
 - ◆ Effective and Cost-Efficient Strategies
 - ◆ Progressive Problem Diagnosis and Resolution
 - ◆ Stakeholder Participation
 - ◆ Sustainable Solutions
- 
- A stylized, layered mountain range graphic in shades of teal and blue, located in the bottom right corner of the slide.