

The City of San Diego's Perspectives on Reasonable Assurance Analysis

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Agenda

- The bottom line: It's worth it!
- City of San Diego background & drivers
- City's RAA experience
- RAA's use in subsequent efforts:
 - Asset management
 - Implementation projects
 - Watershed master planning
- Lessons learned

City of San Diego's Drivers

- Regulatory Drivers:
 - New Storm Water Permit requiring outcome-based plans
 - Bacteria TMDL
 - Dissolved Metals TMDLs
 - Sediment TMDL
- Need to strengthen linkage between budget and levels of service
- Need to know what, where and when to implement
- Need to communicate funding and schedule needs

City of San Diego's RAA Background

Use of RAA in the City of San Diego:

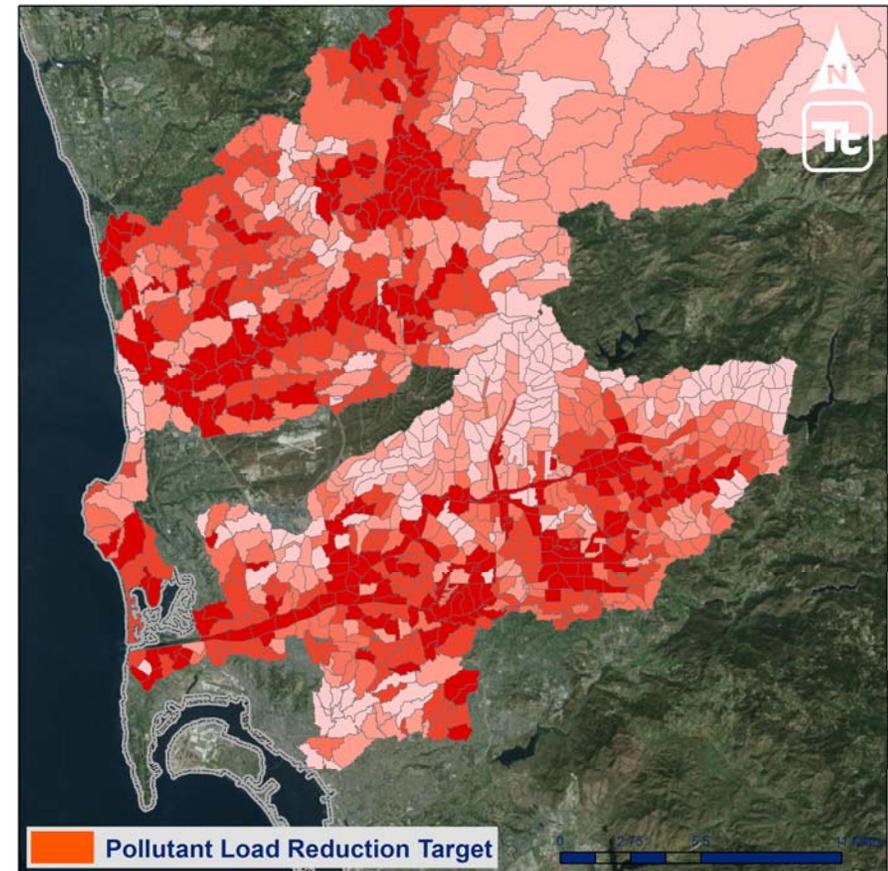
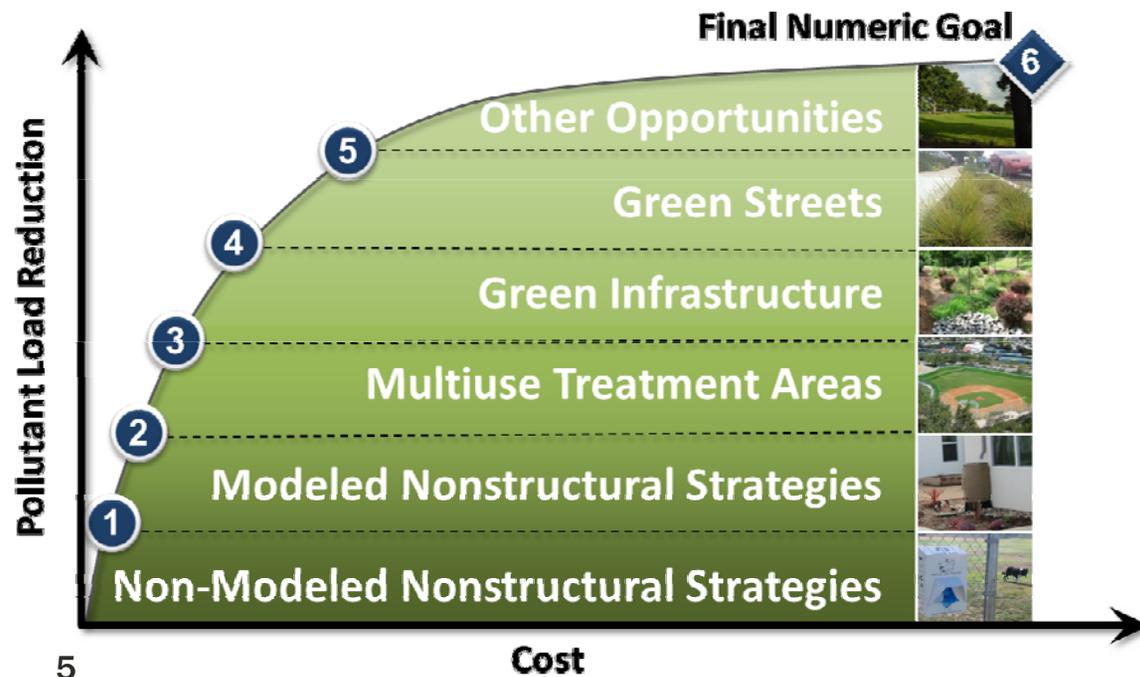
- 2011-12 TMDL compliance plans (CLRPs)
- 2013-15 Water Quality Improvement Plans (WQIPs)

Technical Approach:

- Watershed model as baseline
- BMP selection optimized using City's pilot study data
- Accounted for non-structural activities
- Detailed timelines and cost estimates

Outcomes of the RAA

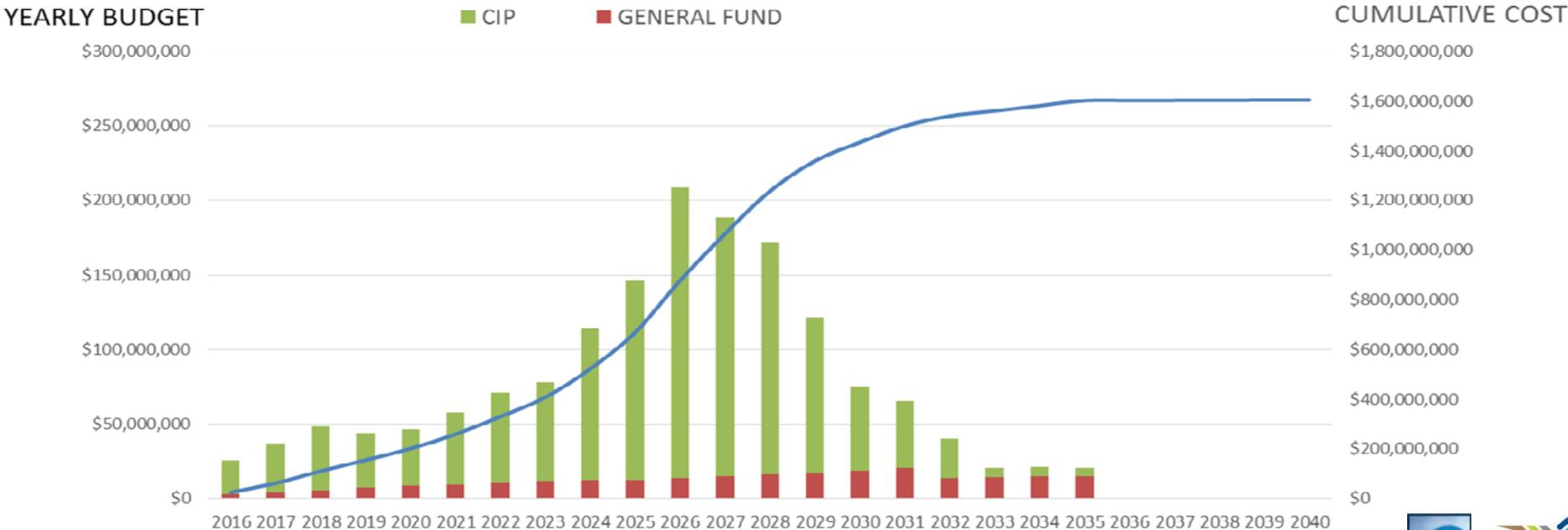
- Calibrated to compliance
- Results summarized at the subwatershed-level
- 80+ defined BMP assumptions
- Macro-level scheduling



Outcomes of the RAA

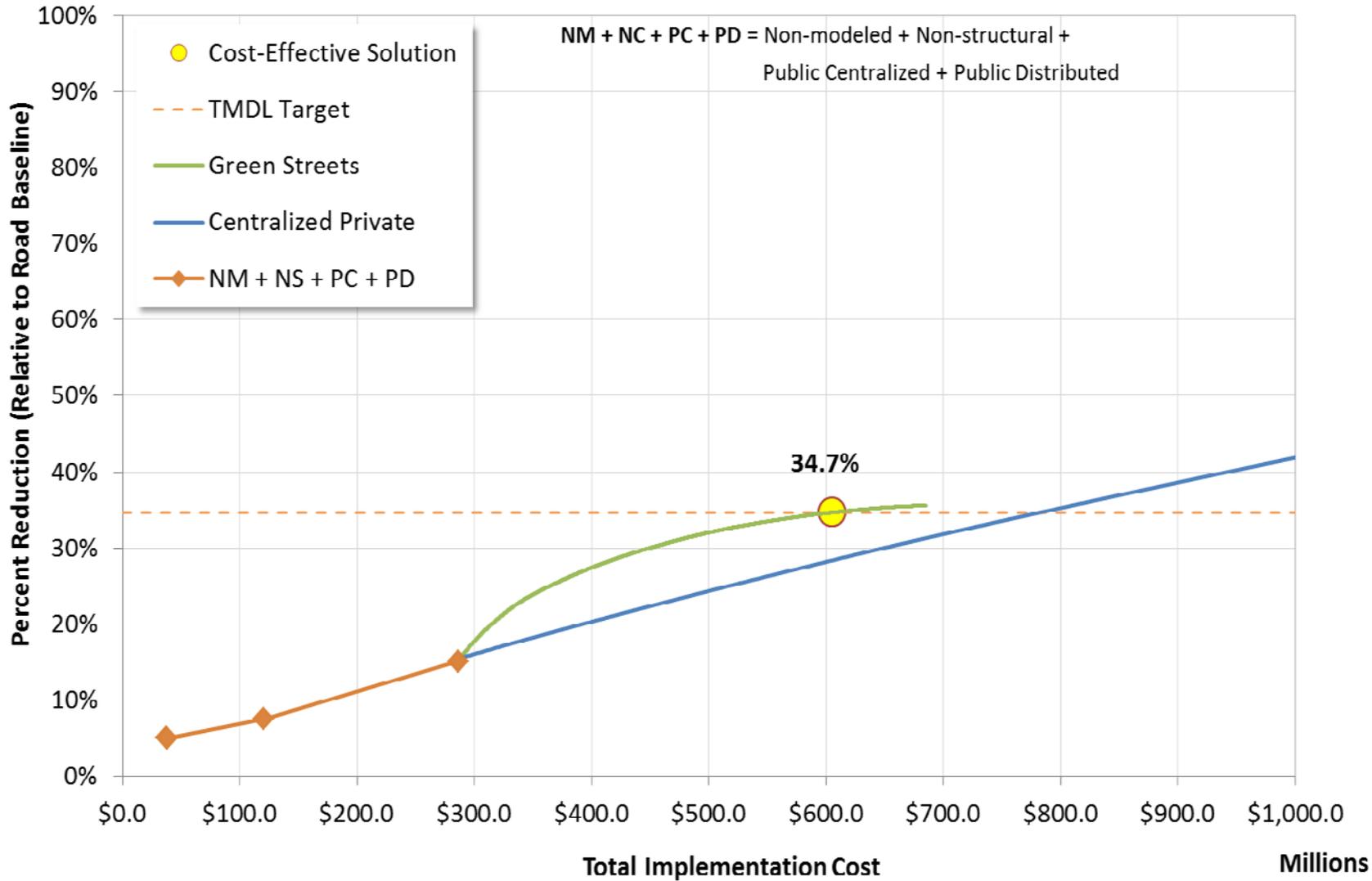
Macro-level cost estimates:

- Unit costs by activity type
- Phased planning, design, construction costs



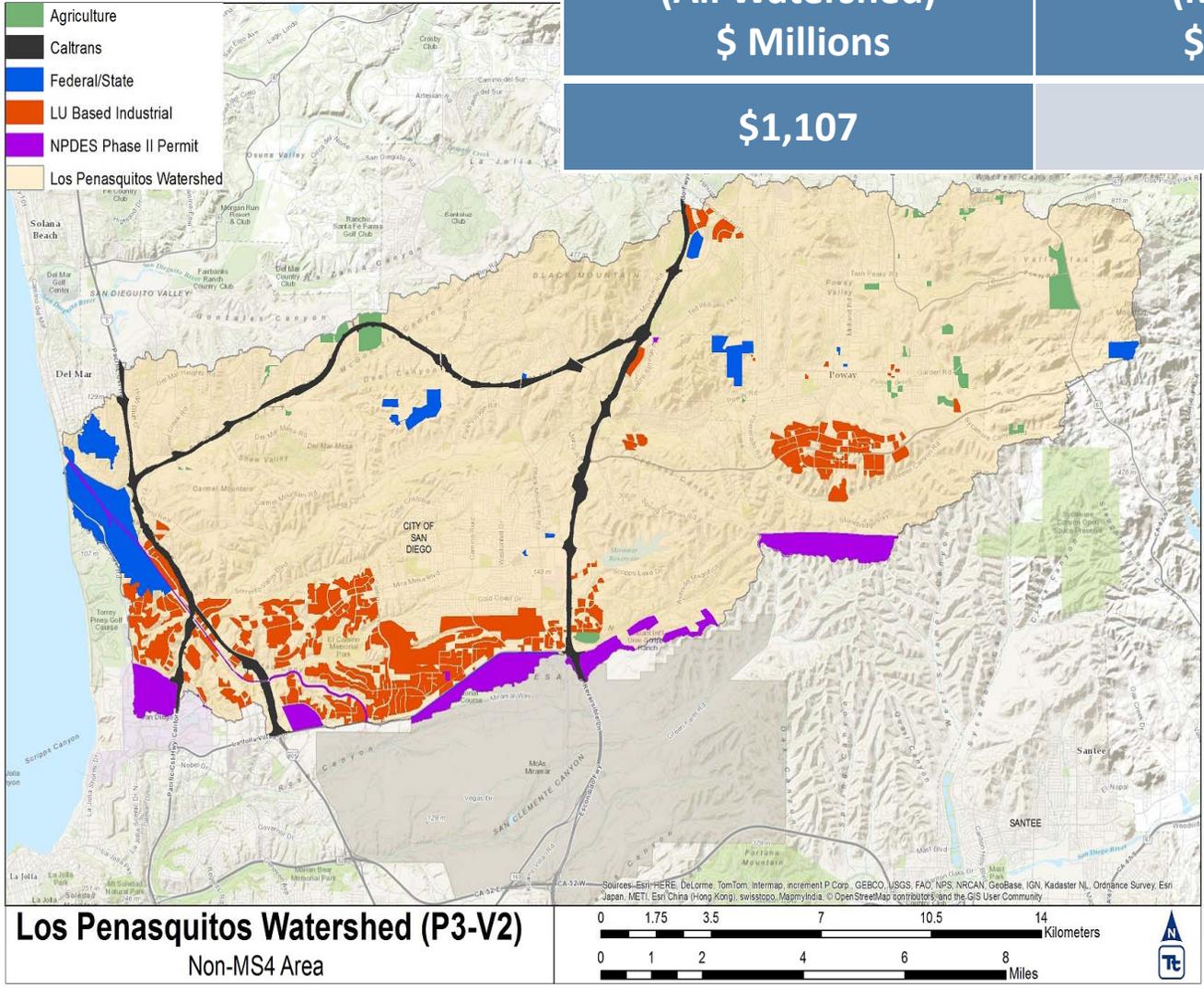
Outcomes of the RAA

San Diego River: Fecal Coliform



Outcomes of the RAA

	Primary Scenario (All Watershed) \$ Millions	Alternative Scenario (MS4 Only) \$ Millions	Cost Savings \$ Millions
	\$1,107	\$743	\$364 (33%)



- Analyzed loading and costs to treat “Non-MS4” areas
- Basis for policy recommendations in WQIPs

How Can it be Used?



RAA



Compliance
Plan

- 
- Compliance assurance
 - Long Range Planning
 - Budget requests
 - Initial info for Implementation

How Else Can it be Used?



RAA

Asset
Management

- Integrate flood & compliance costs
- Additional prioritization

Watershed
Master
Planning

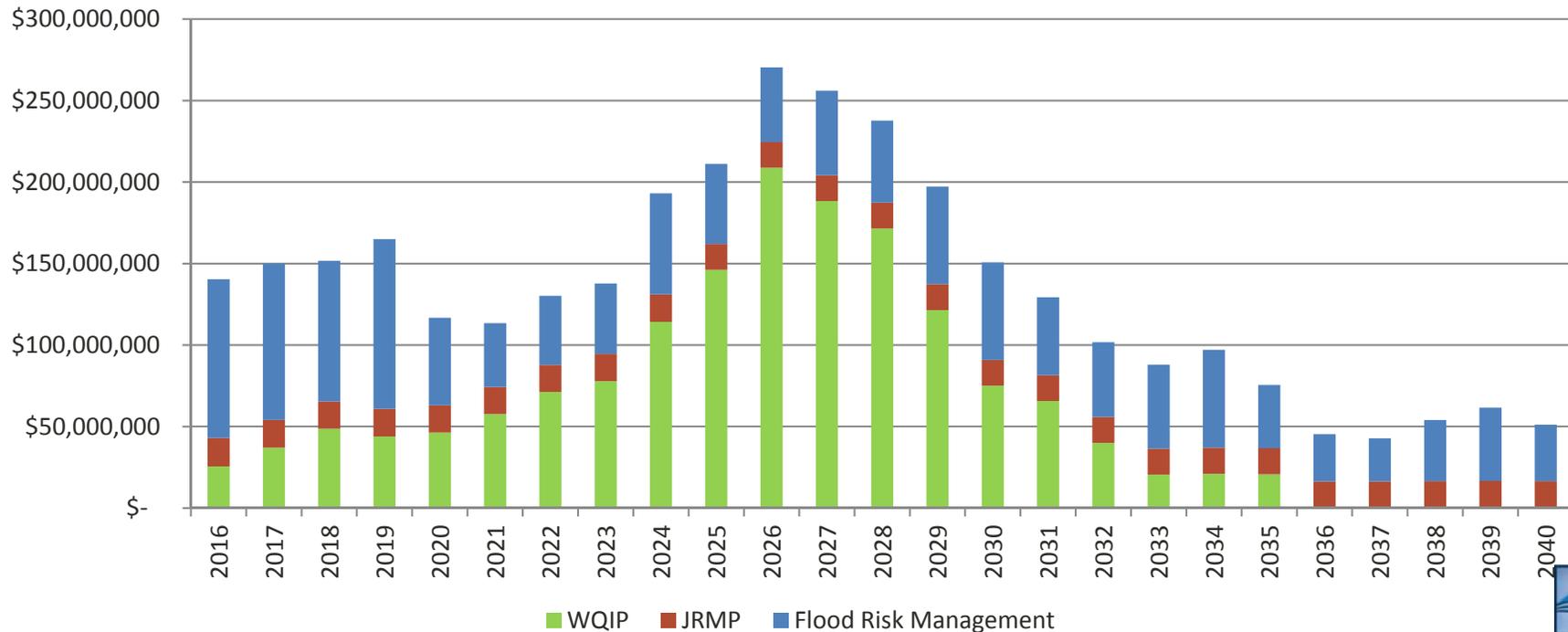
- Project integration
- Locating BMPs
- Site-level detail

Regulations
Development

- TMDL Schedules
- Other?

RAA Data Used in Asset Management

- Watershed Asset Management Plan in 2013
- BMP type, cost, schedule info added directly into asset database
- RAA data used in risk-based prioritization of flood control and water quality needs

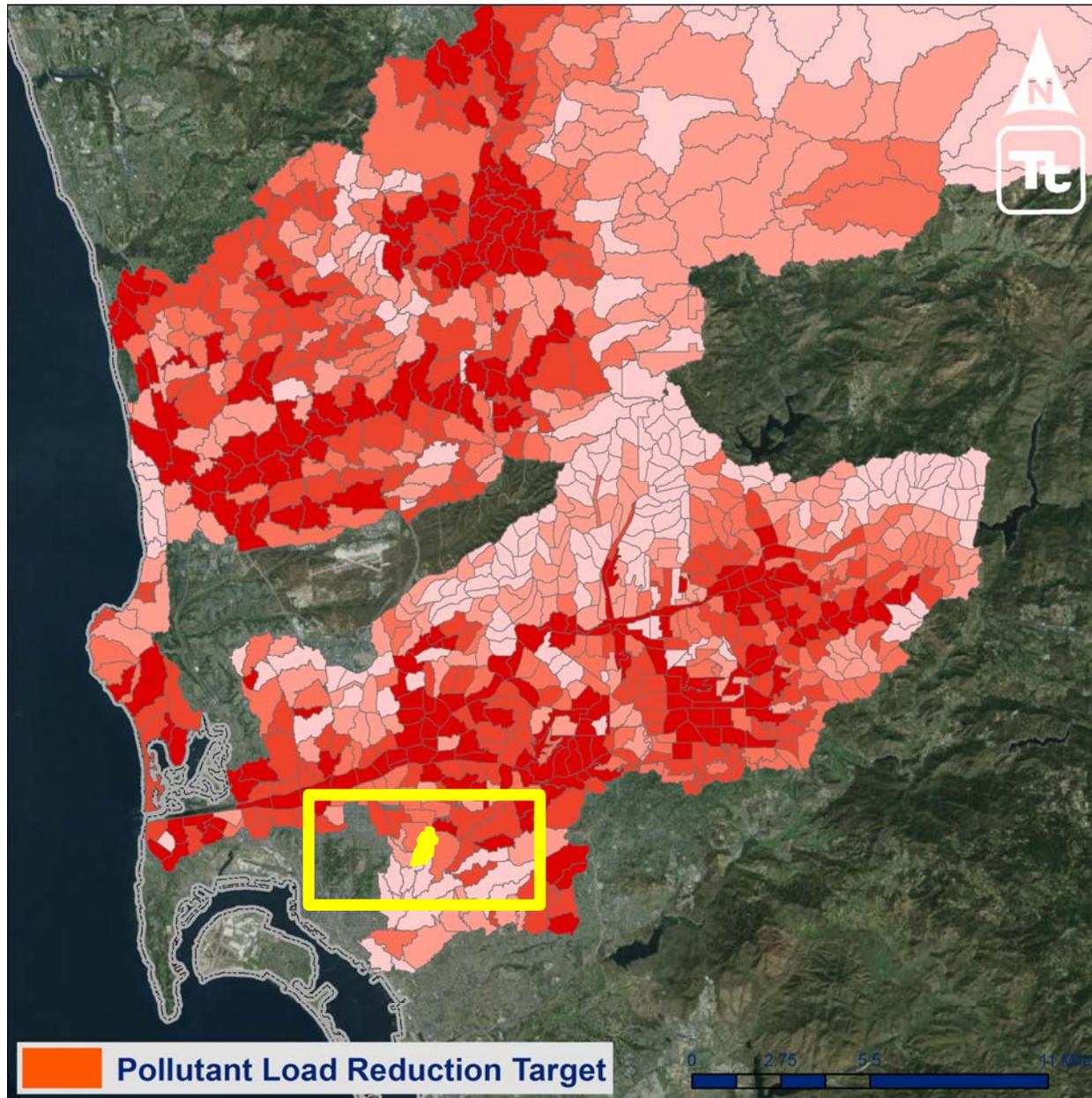


The Role of a Watershed Master Plan

- Purpose: Transition Long-Range compliance plans to implementation
- Specific, street-level projects and schedules
- RAA data needed to set targets in each sub-watershed



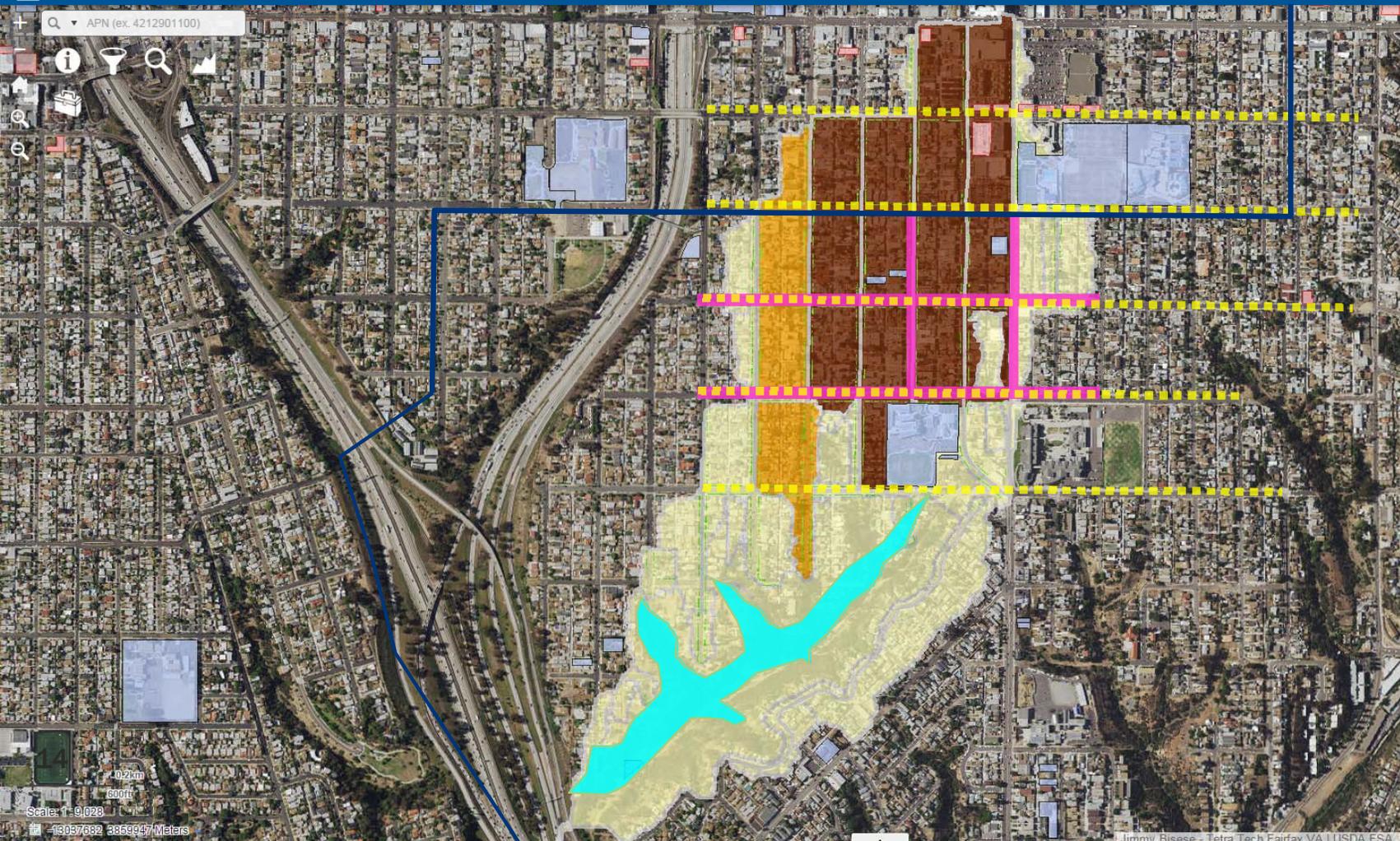
What Does a Watershed Master Plan Look Like?



What Does a Watershed Master Plan Look Like?

Rank	Project	WQ Efficiency (lb/\$)	WQ Effectiveness (lb/yr)	Private Parcel Incentive Program	Integrated Water Rating	Trash Capture Rating	Coordination Rating
1	MUTA-1						
2	NS-1						
3	GS-1						
4	GS-2						
5	PR-1						

 San Diego Project Prioritization Mapping Tool (WAB v0.2)



Layer List

- GREEN STREET
- LID AND REGIONAL
- NONSTRUCTURAL
- WATER QUALITY RATING
- PRIVATE PARCELS
- CHANNEL REHAB
- ROAD CIP
- REGIONAL SEWER

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- Determine how you will use the RAA at outset
 - Compliance
 - Asset Management
 - Detailed CIP planning... Watershed Master Plan
- Involve watershed Copermitttees
- Quantification vs. Optimization
 - RAA excels at quantifying activities
 - Need pilot project (efficiency) data to optimize

- Consider reporting costs in plans
- Consider analyzing & reporting costs of:
 - “Non-MS4” areas
 - Regulatory modifications
- RAA (and asset management) can help justify schedules in TMDLs