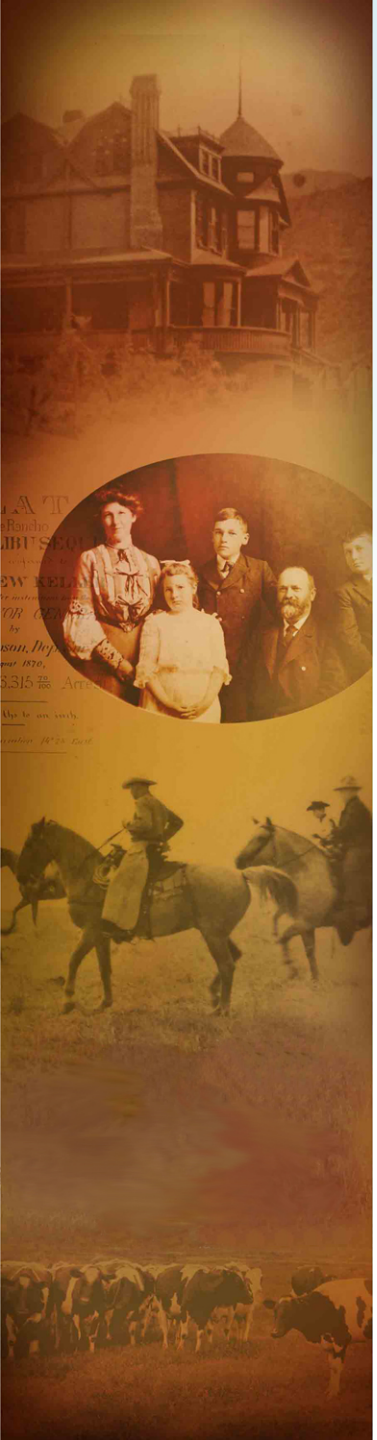
Stakeholder Meeting

Civic Center Wastewater Treatment Facility Salt and Nutrient Management Plan (SNMP) – Groundwater Management Plan (GWMP)

December 11, 2013

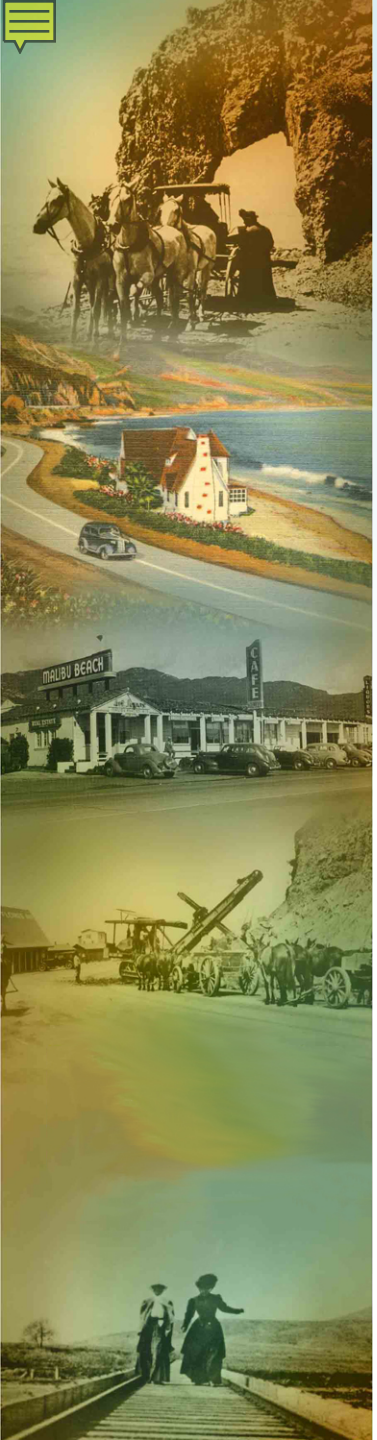


Meeting Agenda

I. Introduction and Participant Roles
II. SNMP & GWMP Drivers and Requirements
III. Plan Development Process
IV. Goal Development
V. Technical Analyses
VI. Next Steps

Introductions

- Craig George – City of Malibu
- Steve Clary and Leslie Dumas – RMC Water and Environment

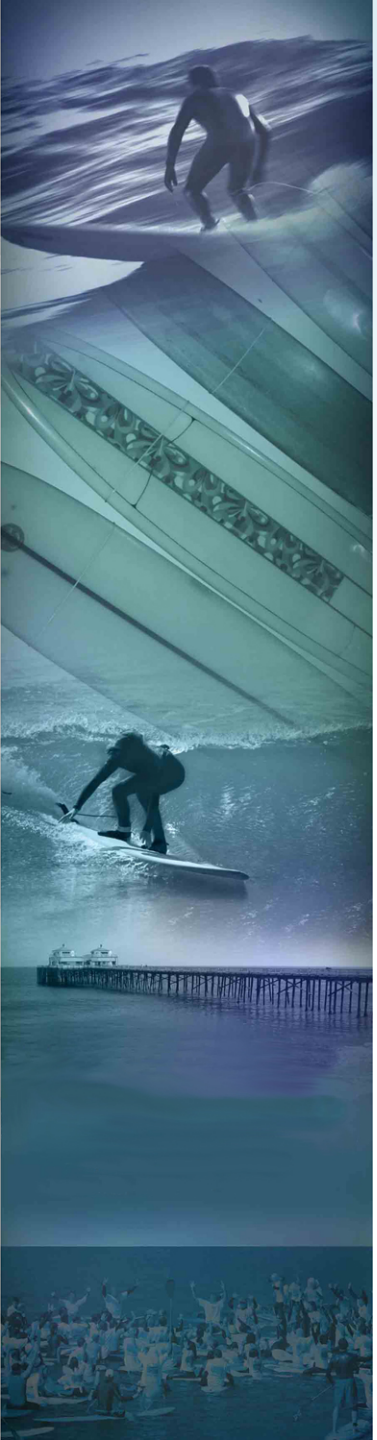


California's Recycled Water Policy

- Adopted by State Water Resources Control Board (SWRCB) in May 2009
- Requires development of SNMPs
- Provides for statewide regulatory consistency
- Goals are to promote recycled water use while protecting groundwater basins
- Stakeholder-driven development

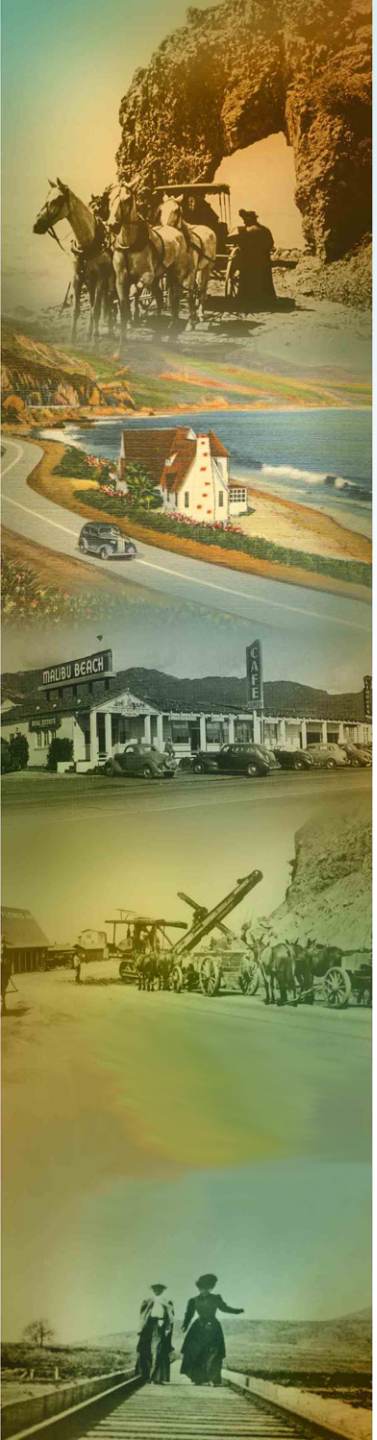
Salt & Nutrient Management Plan is a Regulatory Document

- Characterizes various sources of salts & nutrients
- Helps understand effects of salts and nutrient loading within the basin
- Used to proactively manage the basin in coordination with the Basin Plan
- RWQCB required to adopt SNMP into Basin Plan

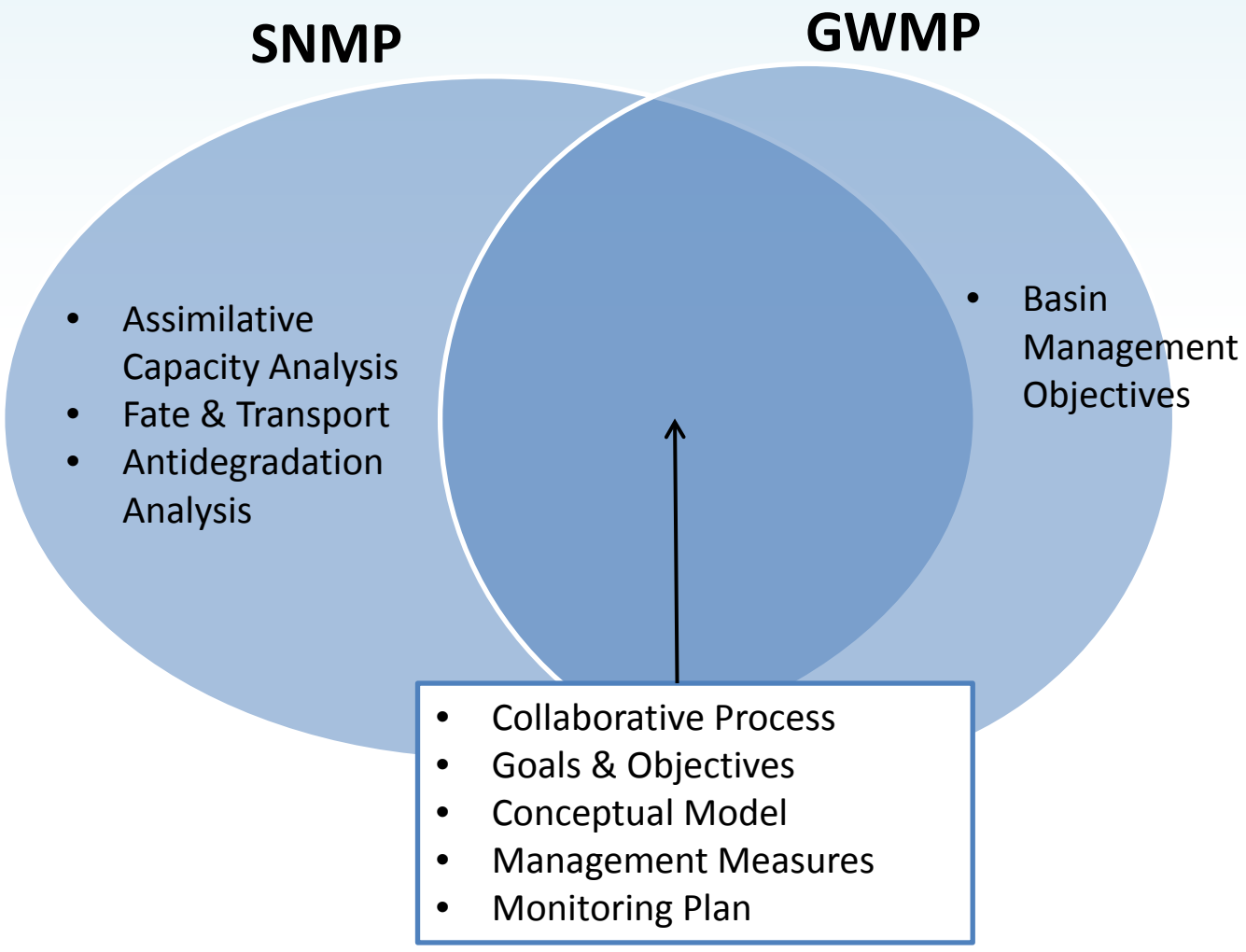


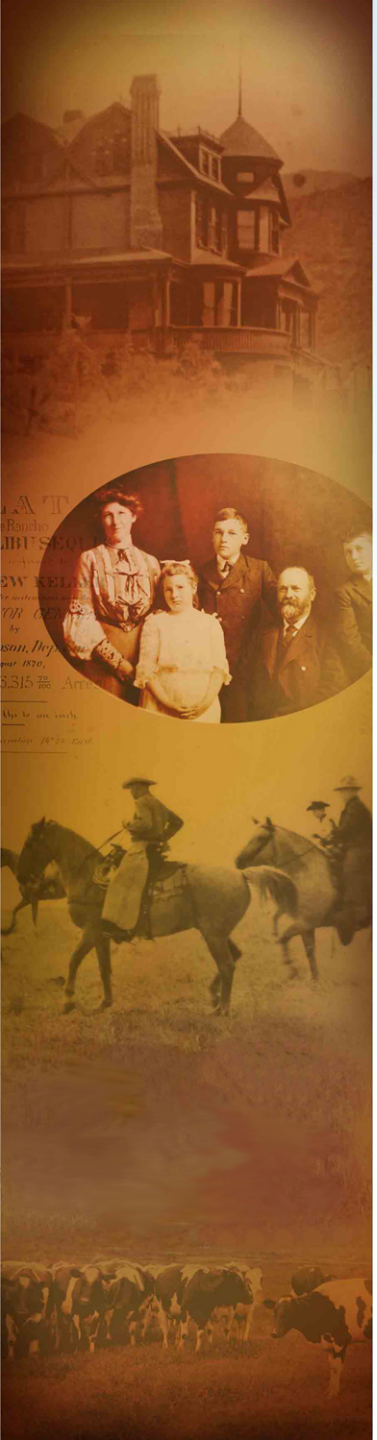
A Groundwater Management Plan is a Voluntary Effort

- Required for state funding
- Voluntary development under AB 3030 and SB 1938
- Identifies:
  - groundwater conditions
  - basin management goals & objectives
  - monitoring objectives
- Used to proactively manage the basin



There is Significant Overlap between SNMP and GWMP



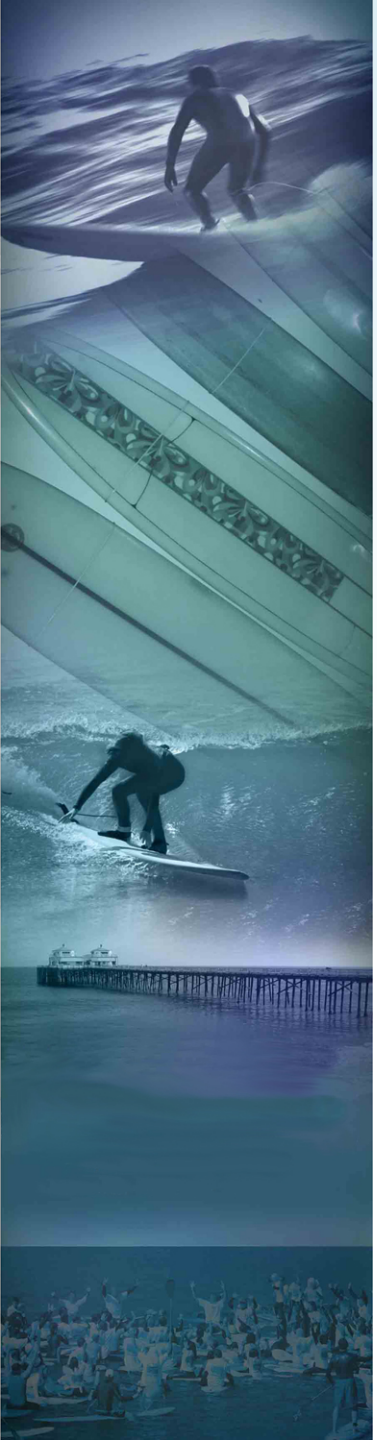


Salt & Nutrient Management Plan Required Elements

- Goals and objectives for water recycling and stormwater recharge
- Salt and nutrient source characterization
- Assimilative capacity analysis
- Anti-degradation analysis
- Basin management strategies
- Groundwater monitoring plan

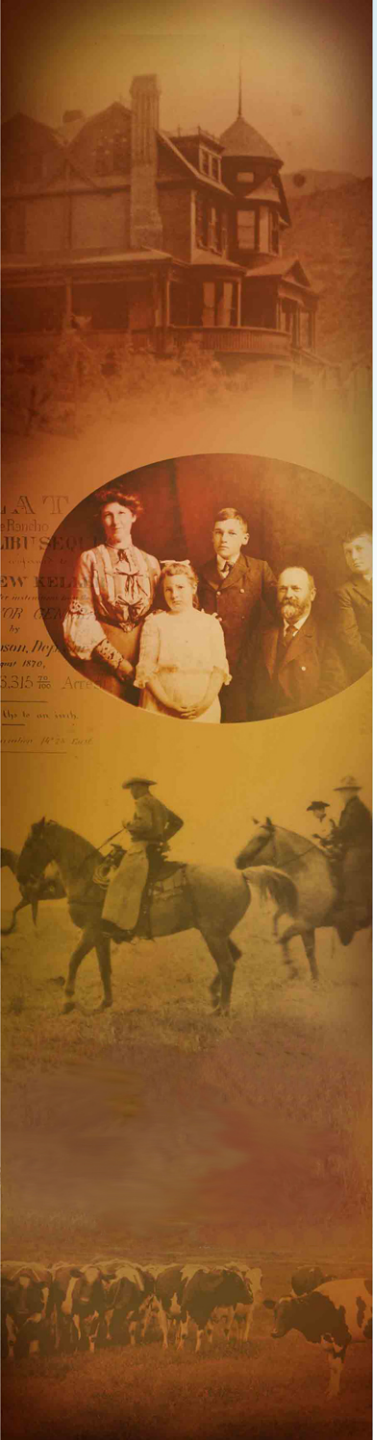
Groundwater Management Plan Mandatory Components, Water Code §10750 et seq.

- Public and agency involvement
- Map of groundwater basin
- Basin management objectives (BMOs)
- Monitoring program and protocols

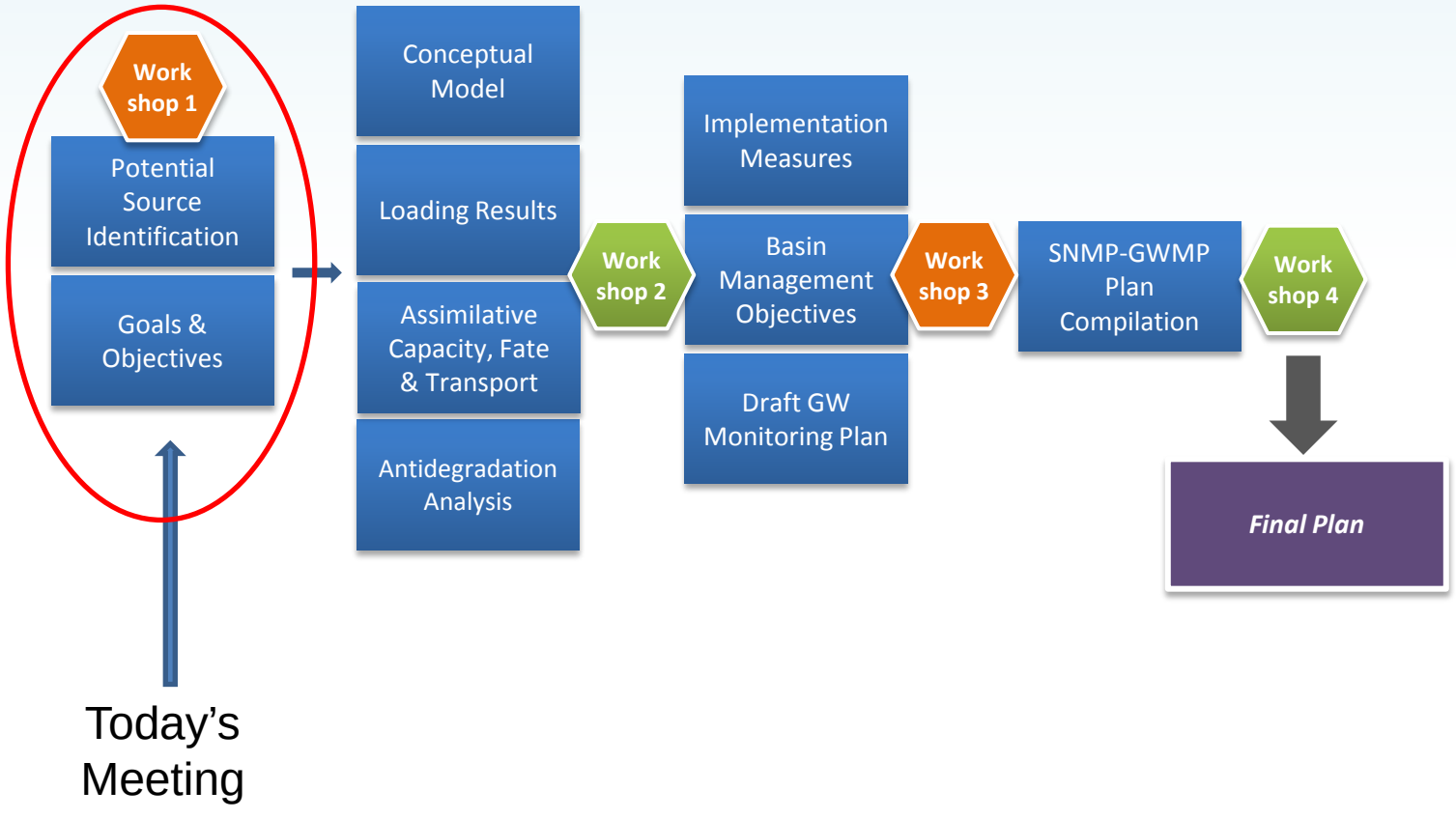


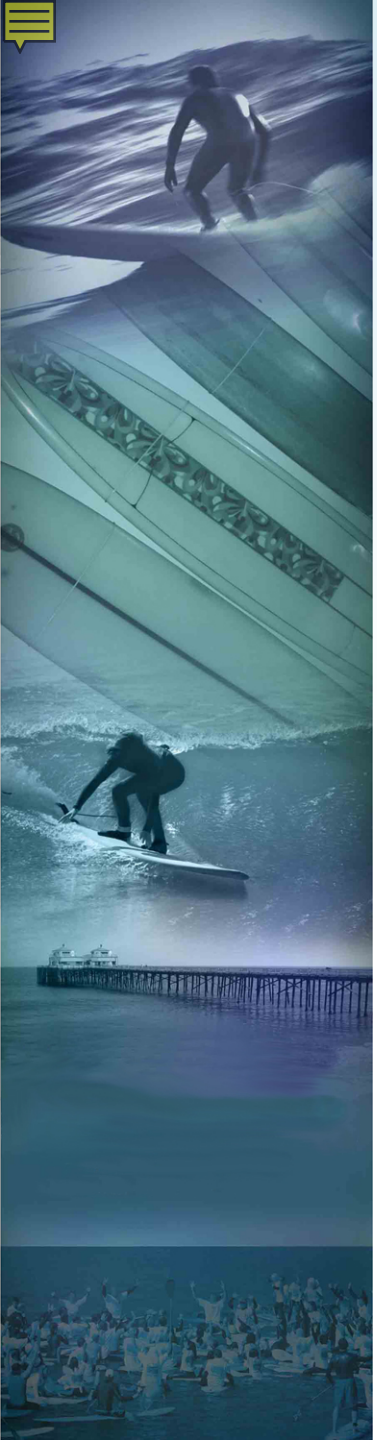
Groundwater Management Plan Voluntary Components, Water Code §10750 et seq.

- Control of saline intrusion
- Wellhead protection areas and recharge areas
- Mitigation of overdraft
- Groundwater replenishment
- Monitoring of groundwater levels and storage
- Implementation of groundwater programs
- Develop relationships with state and federal agencies
- Land use plan review



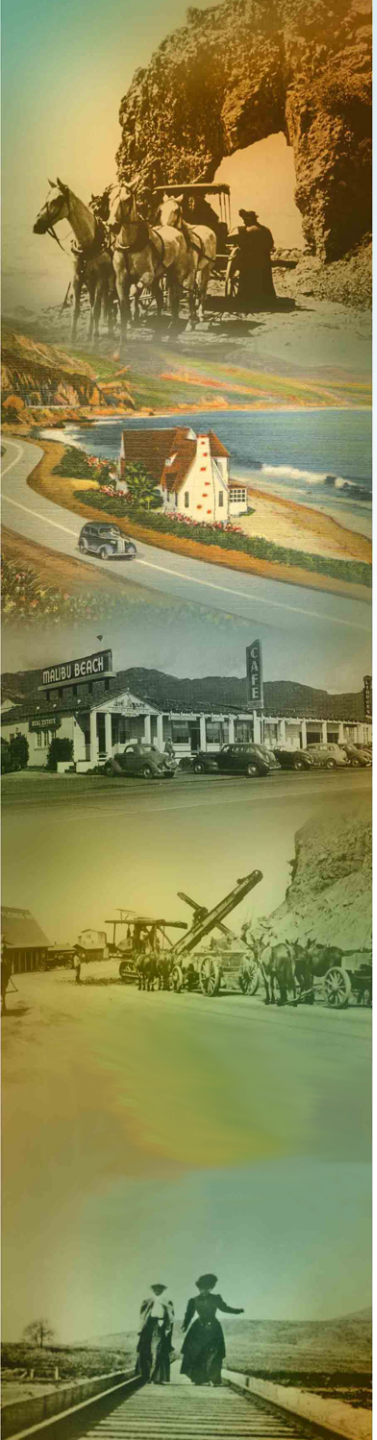
SNMP-GWMP Joint Plan Proposed Approach





Proposed Basin Management Goals Requiring Your Input

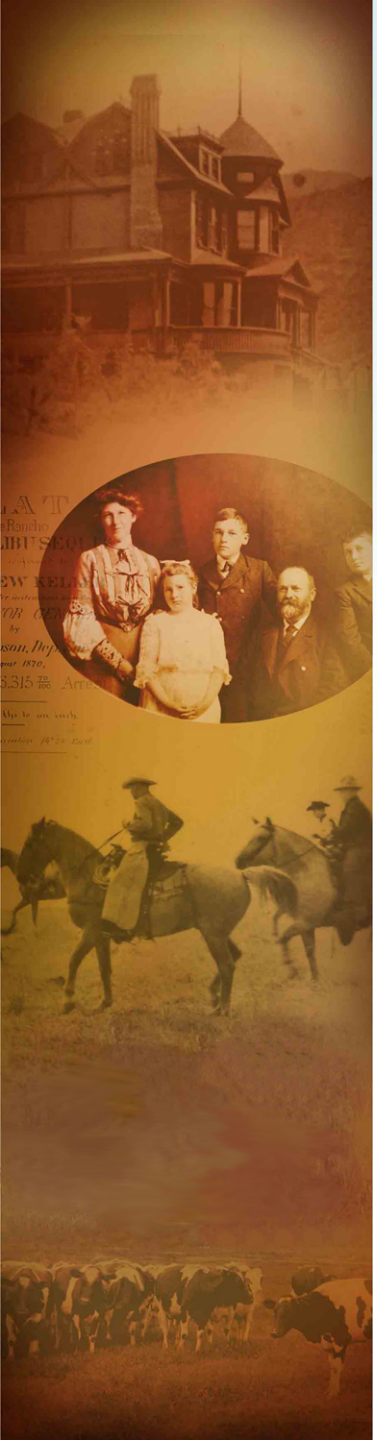
- Avoid groundwater overdraft and associated undesirable affects
- Protect surface water resources
- Minimize impacts on local water supply
- Minimize impacts on groundwater quality



Proposed Quantitative Water Recycling Goals

	Current RW Use in GW Basin	Future RW Use in GW Basin (2035)
Water District 29 – (2010 UWMP)	0 AFY	0 AFY
City of Malibu (Irrigation)	0 AFY	140 AFY
City of Malibu (Recharge)	30 AFY	428 AFY

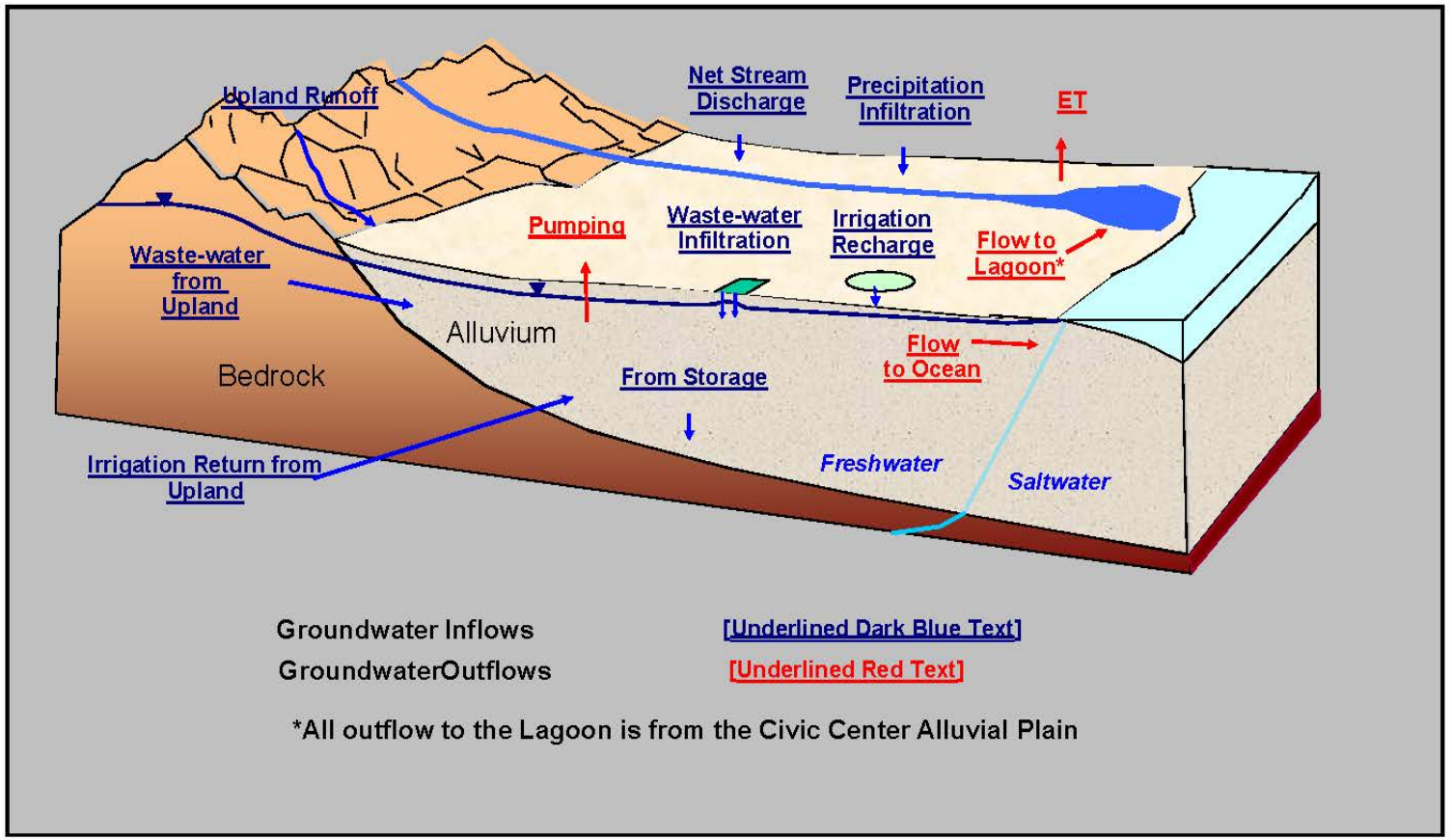
Based on UWMP and existing planning studies



Proposed Stormwater Recharge/Use Goals for Your Input

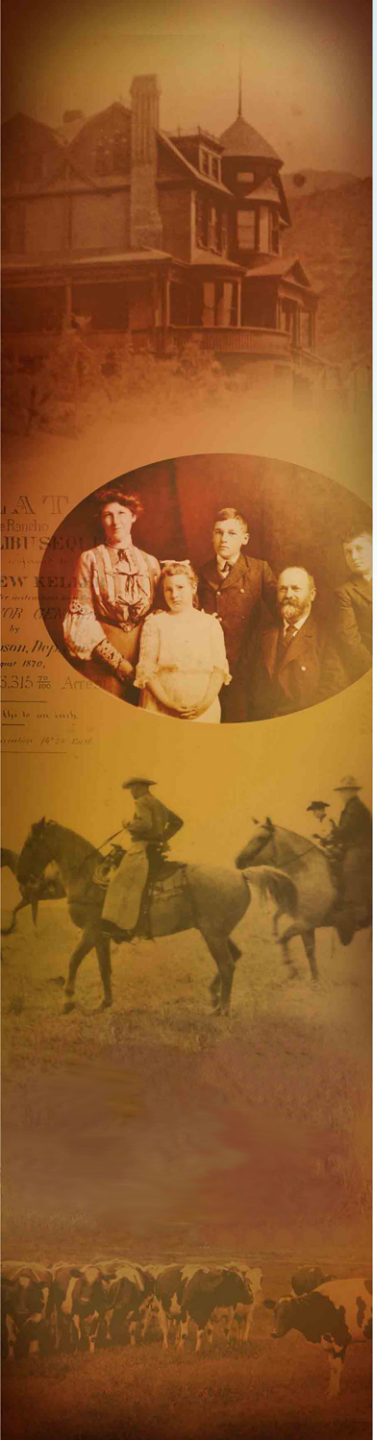
- Low Impact Development (LID) requirements
- Land area set-aside for recharge zones
- Drainage management areas
- Bioretention required in new development

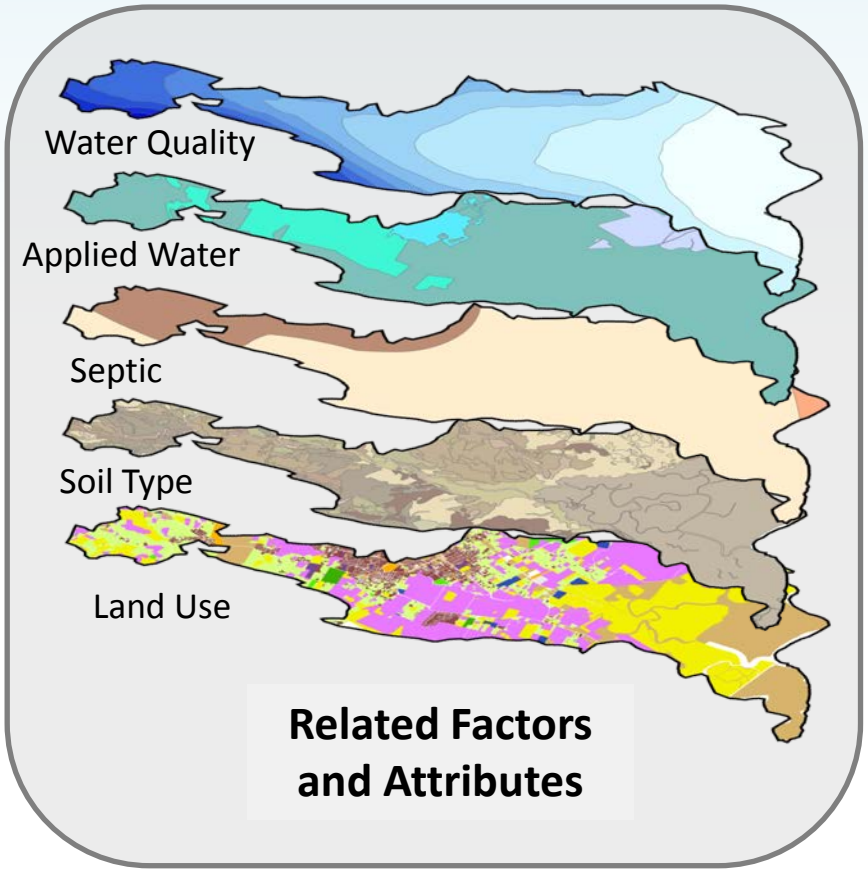
Source Characterization – Conceptual Model

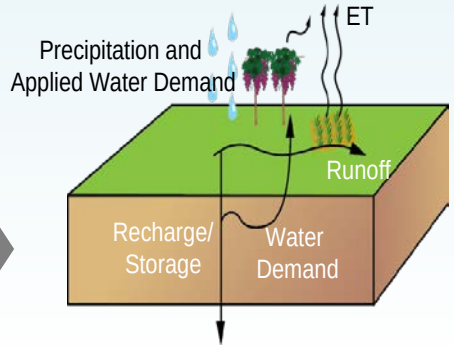


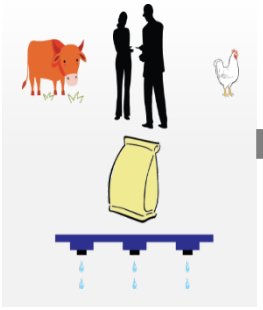
Source: Malibu16_PEST

Basin Characteristics Are Analyzed to Yield Load Estimates







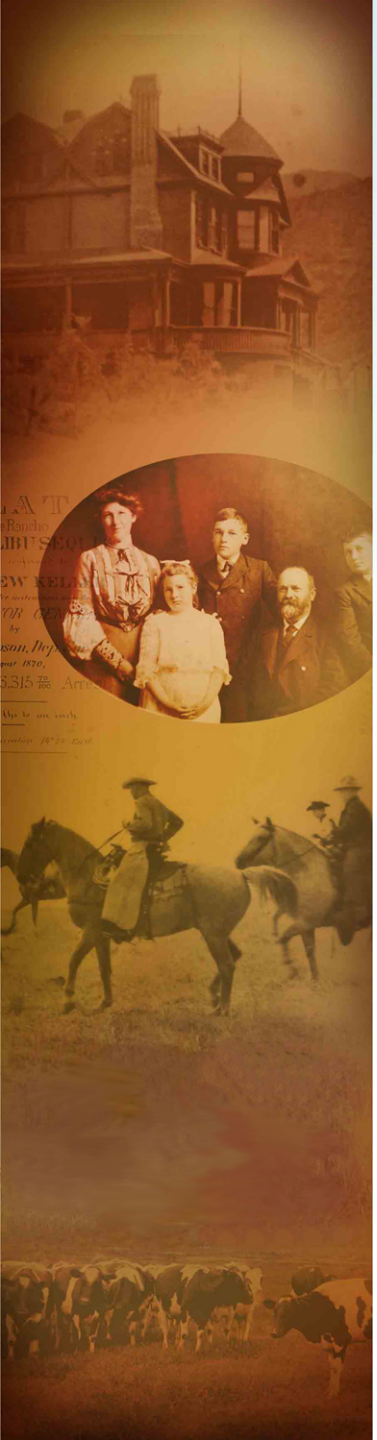


Salt Load

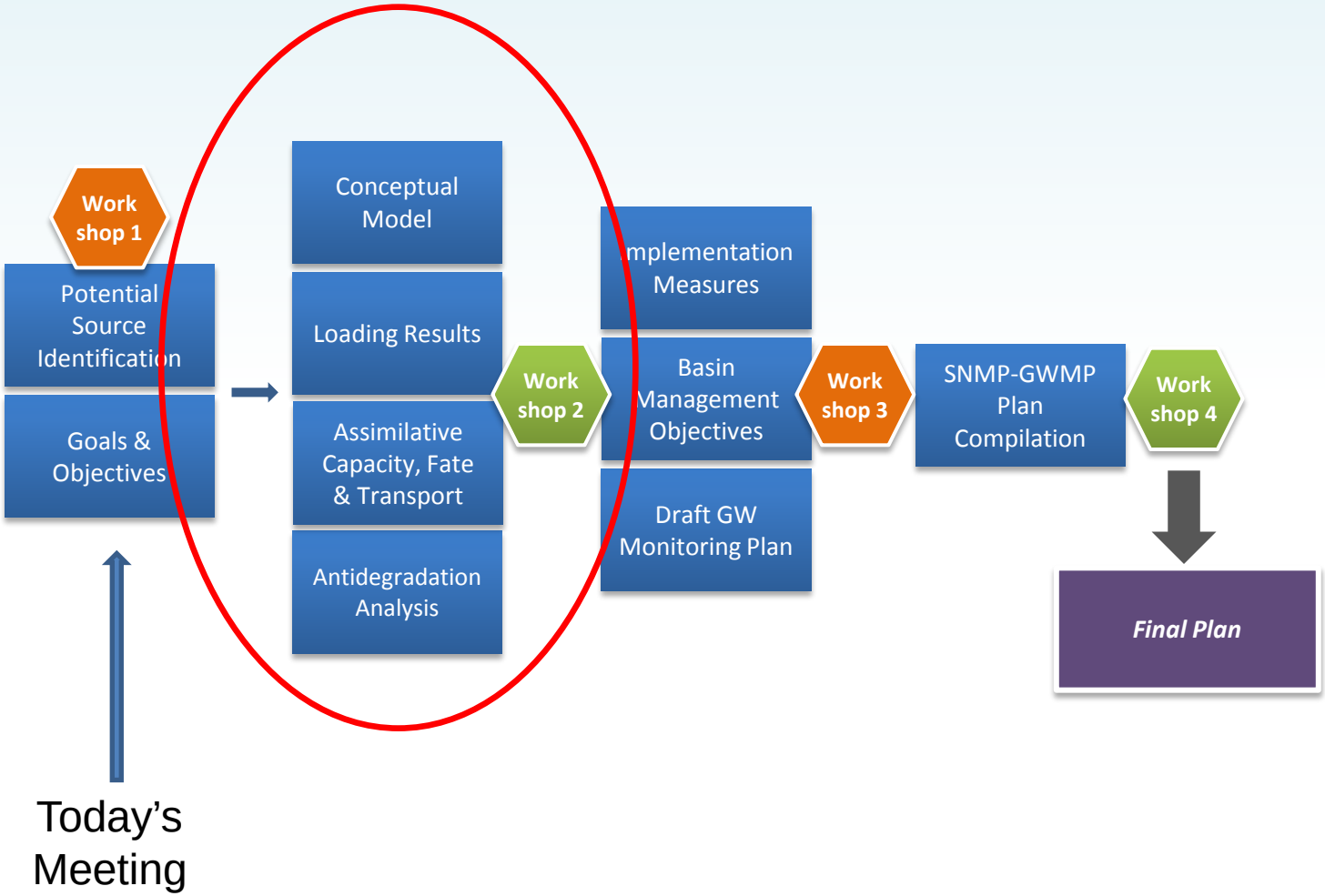
Nutrient Load

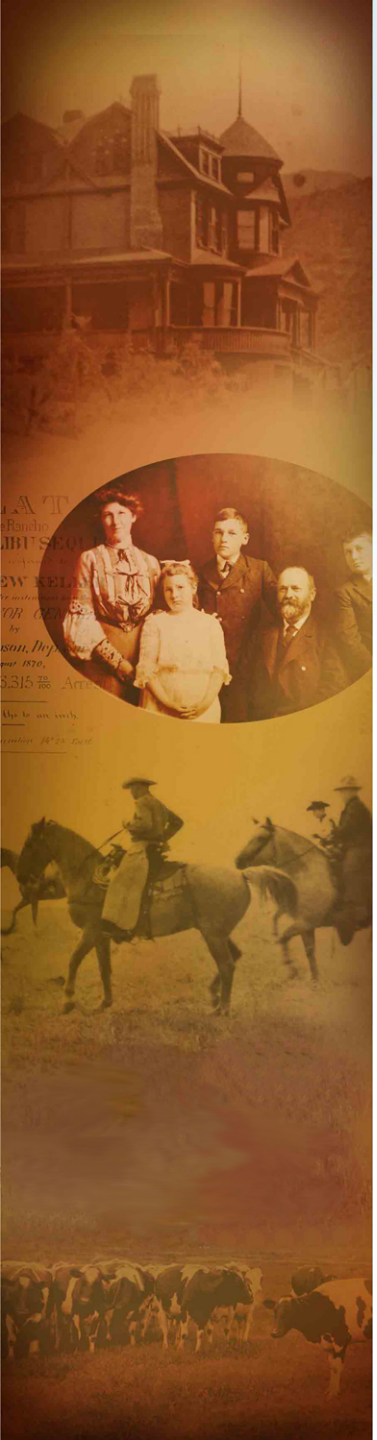
Loading Analysis will Focus on TDS and Nitrate (as N)

- Properly represent salts and nutrients entering basin
- Commonly used as indicator constituents in other SNMPs
- CECs addressed qualitatively



SNMP-GWMP Joint Plan Proposed Approach





Questions?

Stakeholder Meeting

Civic Center Wastewater Treatment Facility Salt and Nutrient Management Plan (SNMP) – Groundwater Management Plan (GWMP)

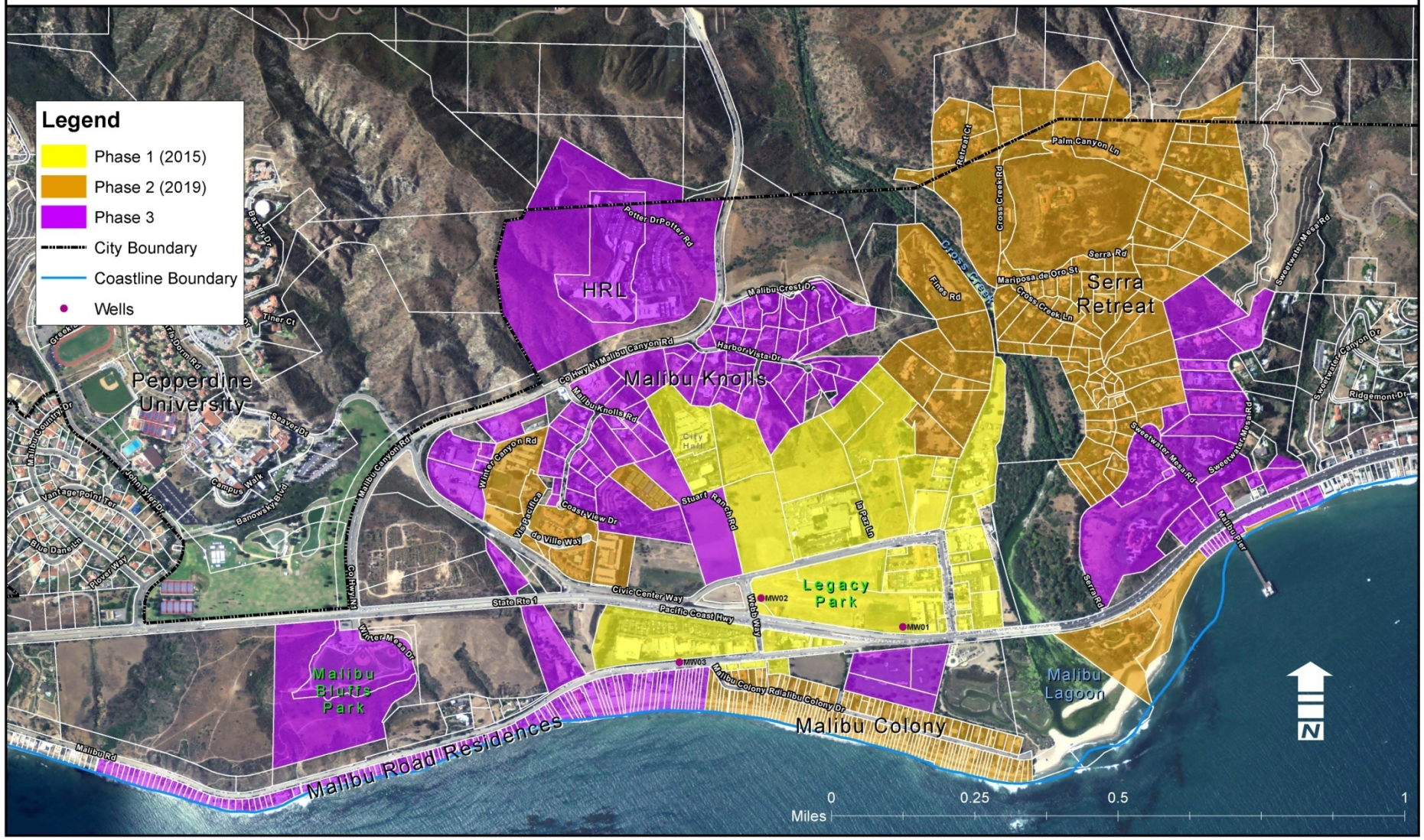
December 11, 2013

CITY OF MALIBU

PRELIMINARY PHASE I WASTEWATER TREATMENT PLANT ASSESSMENT ANALYSIS

DECEMBER 11, 2013

Civic Center Wastewater Treatment Facility Phases



Estimated Phase I Wastewater Treatment Plant One-Time Capital Costs[1,2]

Facility Component	Gross Costs	Oversizing Adjustment	Net Assessable Costs
Treatment Plant	$13,900,000		$13,900,000
Treatment Plant Land	$1,000,000		$1,000,000
Collection/Distribution System	$7,200,000	($600,000)	$6,600,000
Recycled Water Injection System	$800,000		$800,000
Design			
Advanced by City	$2,000,000		$2,000,000
Funded by CFD 2012-1	$6,076,551		$6,076,551
CM/Engineering Services	$3,800,000		$3,800,000
Total	**$34,776,551**	**($600,000)**	**$34,176,551**

[1] Includes construction contingency of 20% and an allowance for inflation through 2014.
[2] Excludes connection to the wastewater treatment system, disposition of existing wastewater treatment system.

Estimated Phase I Wastewater Treatment Plant Operation & Maintenance Costs

Facility Component	Annual Costs
Treatment Plant	$672,000
Collection/Distribution System	$216,000
Recycled Water Injection System	$24,000
Total	**$912,000**

Estimated Phase I Assessment District Bonded Indebtedness

Bond Component	Bond Principal	Percent of Total
Treatment Plant	$14,900,000	36.2530%
Collection/Distribution System	$7,400,000	18.0049%
Design/CM/Engineering Services	$11,876,551	28.8967%
Bond Reserve[3]	$3,347,540	8.1449%
Capitalized Interest[4]	$2,877,000	7.0000%
Bond Issuance Costs	$634,919	1.5448%
Assessment District Formation	$63,990	0.1557%
Total	**$41,100,000**	**100.0000%**

[3] Applied to final year of Phase I Assessment District debt service.
[4] Applied to first year of Phase I Assessment District debt service until assessments can be enrolled on property tax bills.

Assessment Methodology

- Treatment Plant Costs
  - Allocated based on estimated BOD (biochemical oxygen demand) load
- Collection and Distribution Systems Costs
  - Allocated based on estimated wastewater flow

BOD Load Assumptions

- Formula
  - BOD Concentration x Flow x 8.345/1,000,000
- BOD Concentration
  - Non-Residential
    - 80%/20% Retail/Restaurant: 435 milligrams/litre
    - 100% Retail: 313 milligrams/litre

Wastewater Flow Assumptions Non-Residential

• Floor Area Ratio (Ratio of building square footage to parcel square footage)	0.15 (Or actual or submitted plans if greater)
• Restaurant/Retail Ratio	Retail: 80% Restaurant: 20% (Or actual or submitted plans if more restaurant)
• Gallons Per Day Per Building Square Foot	Retail: 0.020 Restaurant: 0.675 Average: 0.150

Hypothetical Assessment Calculation for a Phase I Non-Residential Parcel Step 1 – Load and Flow Calculations

Estimated System Total	1 Acre Non-Residential Parcel
BOD Load: 600 Pounds / Day	BOD Load • 3.5578 Pounds / Day (435 x 980.1 x 8.345 / 1,000,000) • 0.5930% of Total (3.5578 / 600)
Flow: 195,000 Gallons / Day	Flow: • 980.1 Gallons / Day (43,560 x 0.15 x 0.15) • 0.5026% of Total (980.1 / 195,000)

Hypothetical Assessment Calculation for a Phase I Non-Residential Parcel Step 2 – Assessment Apportionment

Component	Total	Parcel Assessment [6,7]	% of Subtotal	% of Total
Treatment Plant	$14,900,000	$88,357.00		0.5930%
Collection/Distribution System	$7,400,000	$37,192.40		0.5026%
Subtotal Construction	$22,300,000	$125,549.40	0.5630%	
Design/CM/Engineering Services	$11,876,551	$66,864.98		0.5630%
Bond Reserve	$3,347,540	$18,846.65		0.5630%
Capitalized Interest	$2,877,000	$16,197.51		0.5630%
Bond Issuance Costs	$634,919	$3,574.59		0.5630%
Assessment District Formation	$63,990	$360.26		0.5630%
Total	**$41,100,000**	**$231,393.39**		**0.5630%**

[6] Excludes connection to the wastewater treatment system, disposition of existing wastewater treatment system.
[7] Excludes annual Phase I assessment district administrative costs.

Payment of Assessments

- Phase I assessments may be paid in cash 30 days following establishment of the Phase I assessment district[8]

- If not paid in cash, Phase I assessments will be financed by the issuance of bonds
  - 30 year term
  - Interest subject to market conditions (currently 7.00%)

[8] Assessments paid in cash will be less bond reserve , capitalized interest, and bond issuance costs.

Residential BOD Load Assumptions

- Formula
  - BOD Concentration x Flow x 8.345/1,000,000
- BOD Concentration
  - Residential: 313 milligrams/litre

Wastewater Flow Assumptions Residential

Phase I Residential • Gallons Per Day Per Home	712[5]

[5] Based on EIR prepared for Phase I residential development submittal.

Hypothetical Assessment Calculation for a Phase I Residential Home
Step 1 – Load and Flow Calculations

Estimated System Total	Phase I Residential Home
BOD Load: 600 Pounds / Day	BOD Load • 1.8600 Pounds / Day (313 x 712 x 8.345 / 1,000,000) • 0.3100% of Total (1.8600 / 600)
Flow: 195,000 Gallons / Day	Flow: • 712 Gallons / Day • 0.3651% of Total (712 / 195,000)

Hypothetical Assessment Calculation for a Phase I Residential Home
Step 2 – Assessment Apportionment

Component	Total	Parcel Assessment [6,7]	% of Subtotal	% of Total
Treatment Plant	$14,900,000	$46,190.00		0.3100%
Collection/Distribution System	$7,400,000	$27,017.40		0.3651%
Subtotal Construction	$22,300,000	$73,207.40	0.3283%	
Design/CM/Engineering Services	$11,876,551	$38,990.72		0.3283%
Bond Reserve	$3,347,540	$10,989.97		0.3283%
Capitalized Interest	$2,877,000	$9,445.19		0.3283%
Bond Issuance Costs	$634,919	$2,084.44		0.3283%
Assessment District Formation	$63,990	$209.78		0.3283%
Total	**$41,100,000**	**$134,927.50**		**0.3283%**

[6] Excludes connection to the wastewater treatment system, disposition of existing wastewater treatment system.
[7] Excludes annual Phase I assessment district administrative costs.