June 4, 2014

Coachella Valley Salt and Nutrient Management Plan Stakeholder Meeting No.1

DESERT WATER

WATER DISTRICT

Indio Water Authority
Your Water. Our Responsibility.

CITY OF COACHELLA
INCORPORATED 1946

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Agenda

- Introductions
- Review agenda and format
- Presentation (45 minutes)
- Stakeholder input and questions (30 minutes)

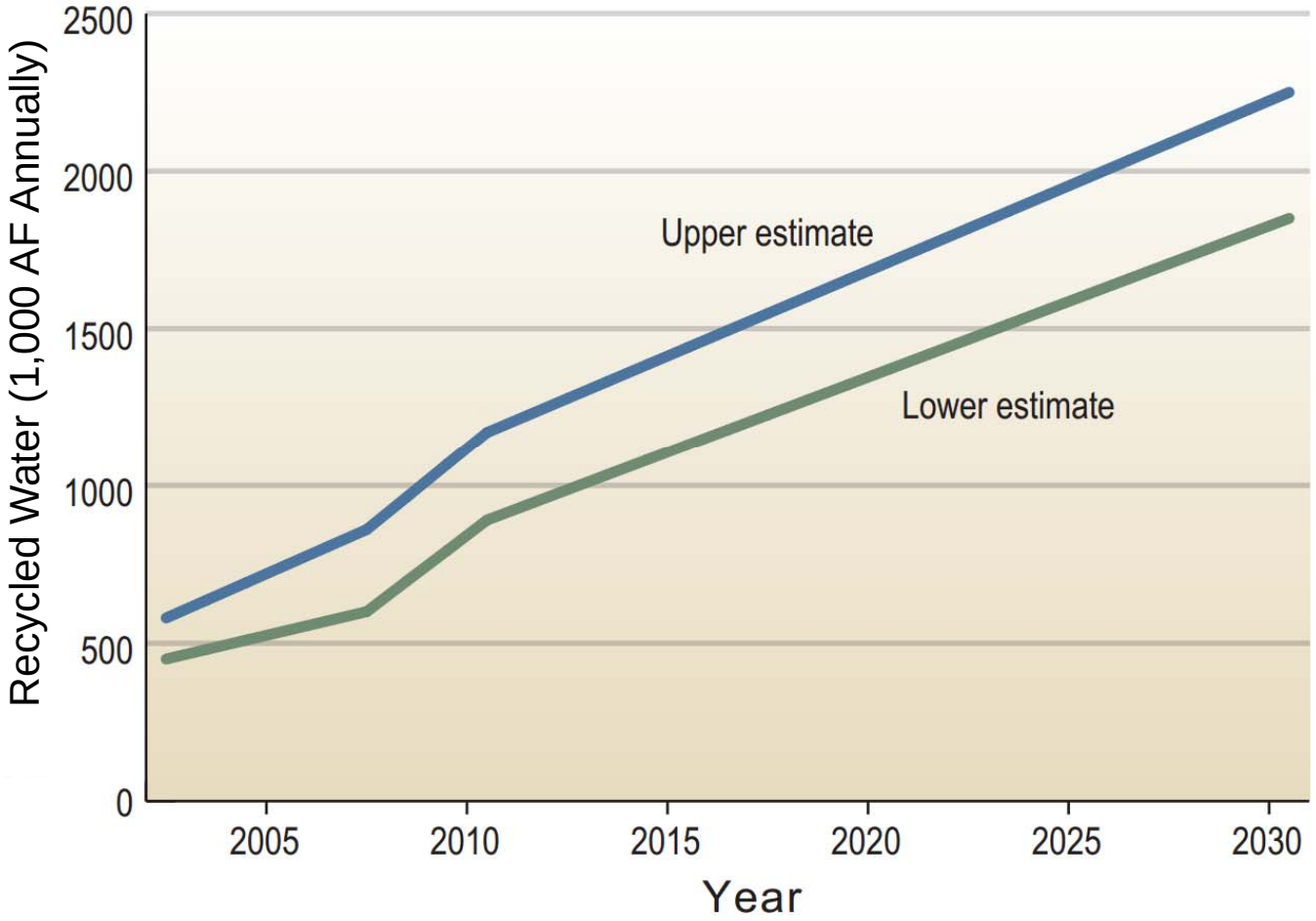
Today's Purpose

- Introduce Coachella Valley stakeholders to the Salt and Nutrient planning process
  - Why is the plan needed?
  - What will the plan look like?
  - How will the work be completed?
  - How does it affect you?
  - How you can contribute?

Why a Salt and Nutrient Management Plan?

- Supplies are limited
  - Growth, conversion of land
  - Drought
  - Elimination of overdraft
  - Environmental constraints
  - Climate change uncertainty
- State policy encourages increased recycled water and stormwater use
  - Promotes sustainable local water supply
  - Additional supply to offset freshwater supply
  - Drought resistant
  - Highly reliable

Projected Statewide Recycled Water Use

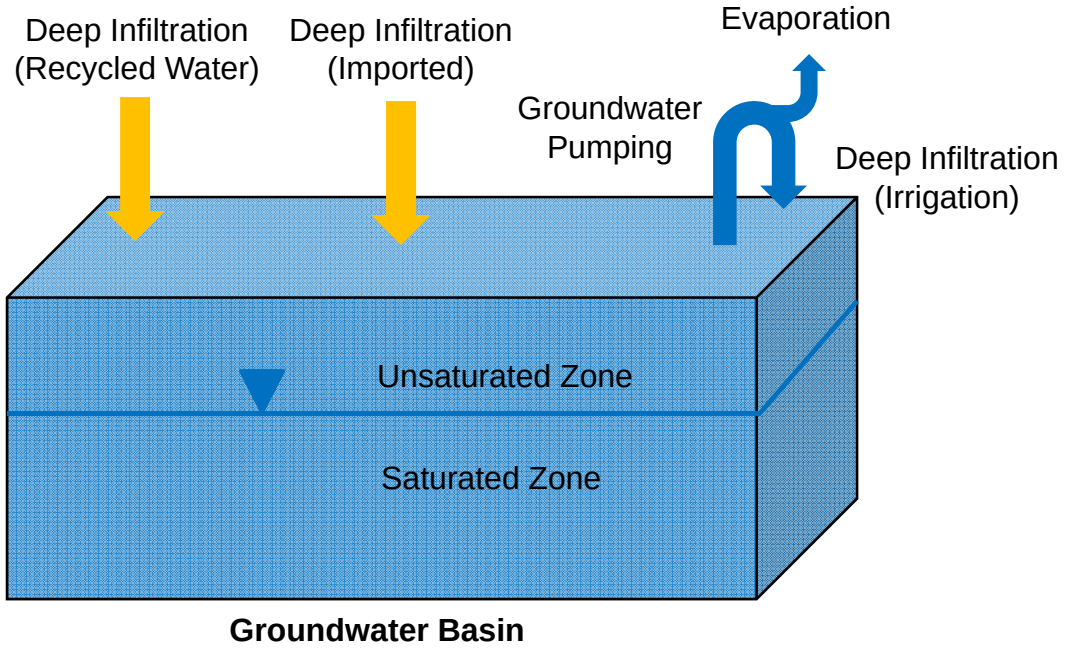


Source: DWR, CA Water Plan, 2009

Basis of Recycled Water Policy

- Potential quality concerns associated with recycled water use
  - Microbiological
  - Salinity
  - Heavy metals
  - Organic and inorganic substances (personal care products, household chemical, fertilizers, etc.)
- Protection of beneficial uses
- Streamlined recycled water permitting
- State Water Resources Control Board adopted Recycled Water Policy – 2009

Simple Salt Accumulation Model



- Each term has a volume, TDS, and N

- If mass (volume multiplied by concentration) leaving the basin is less than that entering, accumulation occurs

Recycled Water Policy Requires SNMPs

- Goal:
  - *Facilitate basin-wide management of salts and nutrients from all sources in a manner that optimizes recycled water use while ensuring protection of groundwater supply and beneficial uses, agricultural beneficial uses, and human health.*
- Stakeholder involvement is important to a successful SNMP
  - Policy encourages SNMPs to reflect local goal

Purpose of the Coachella Valley SNMP

- Document current groundwater quality
- Develop groundwater quality management goals
- Identify potential projects and practices to protect groundwater quality
- Develop a comprehensive monitoring strategy
- Help to ensure a sustainable water supply

Constituents of Concern

- Salts
  - Chloride
  - Sulfate
  - **Total dissolved solids (TDS)**
- Nutrients
  - Ammonia and Organic Nitrogen (TKN)
  - Nitrite (NO_2)
  - **Nitrate (NO_3)**
- Other
  - Arsenic
  - Fluoride
  - Chromium VI

What Will the Plan Look Like?

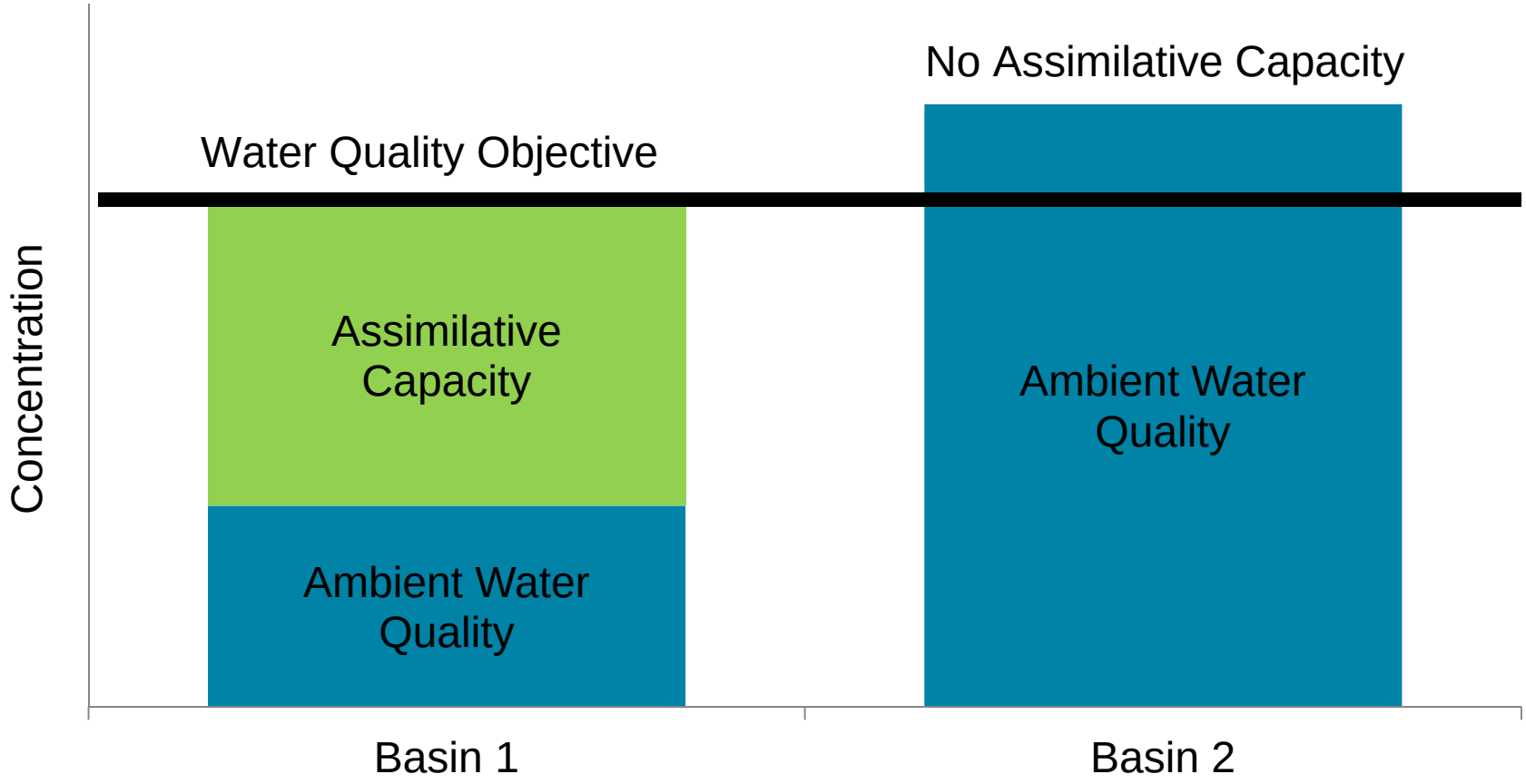
- Characterization of the Valley groundwater basins
- Current (or ambient) groundwater water quality relative to salt and nutrients
  - Total dissolved solids
  - Nitrate
- Sources and sinks for salts and nutrients
  - Trends
  - Tools to evaluate strategies
- Determine assimilative capacity
- Management goals
- Implementation strategy
- Monitoring plan

Definitions

Ambient Water Quality – *The representative concentration of a water quality constituent within a groundwater basin or management zone*

Assimilative Capacity – *the ability of a water body to receive waste waters without deleterious effects and without negative impact to beneficial uses*

Example of Assimilative Capacity

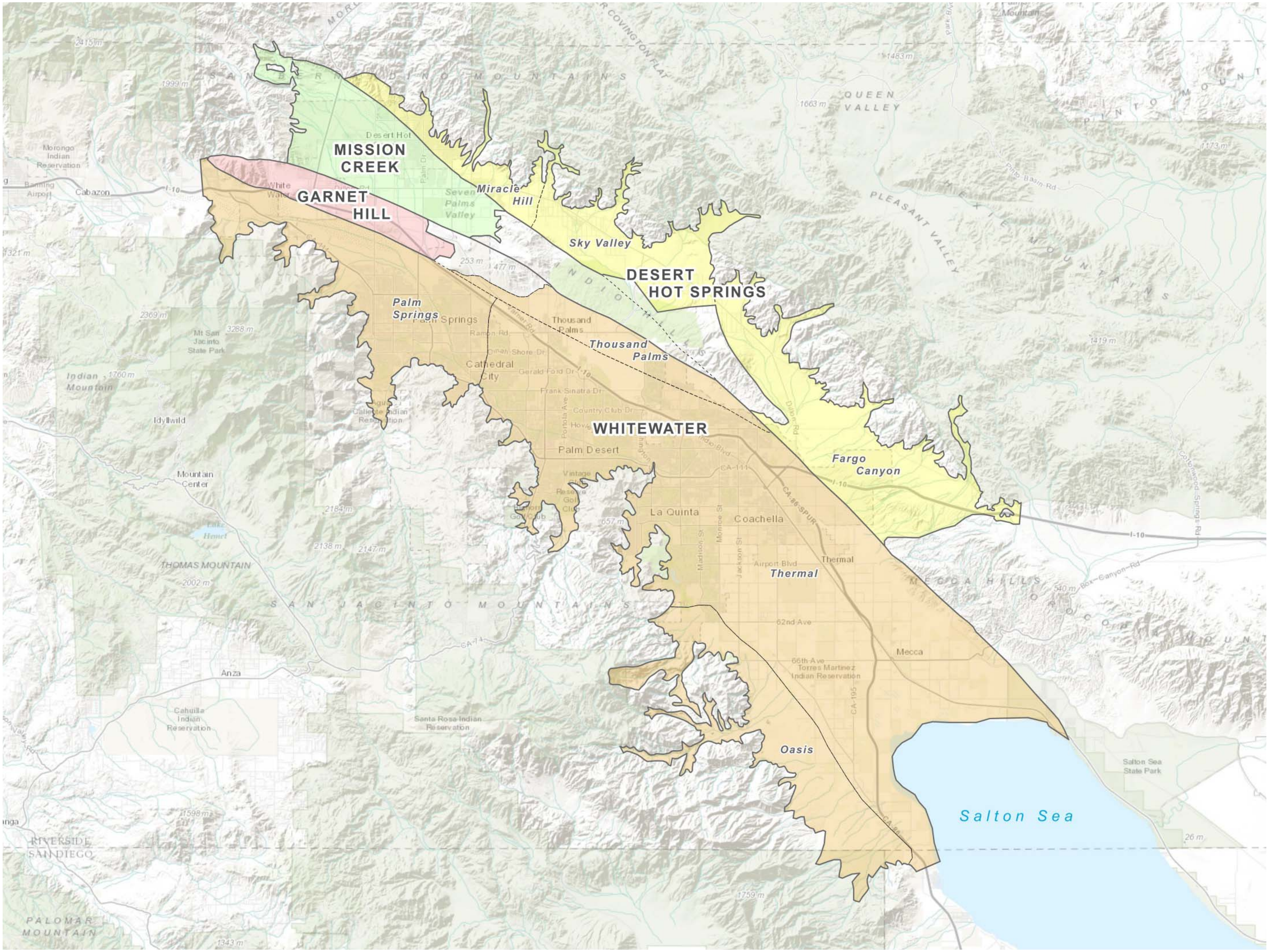


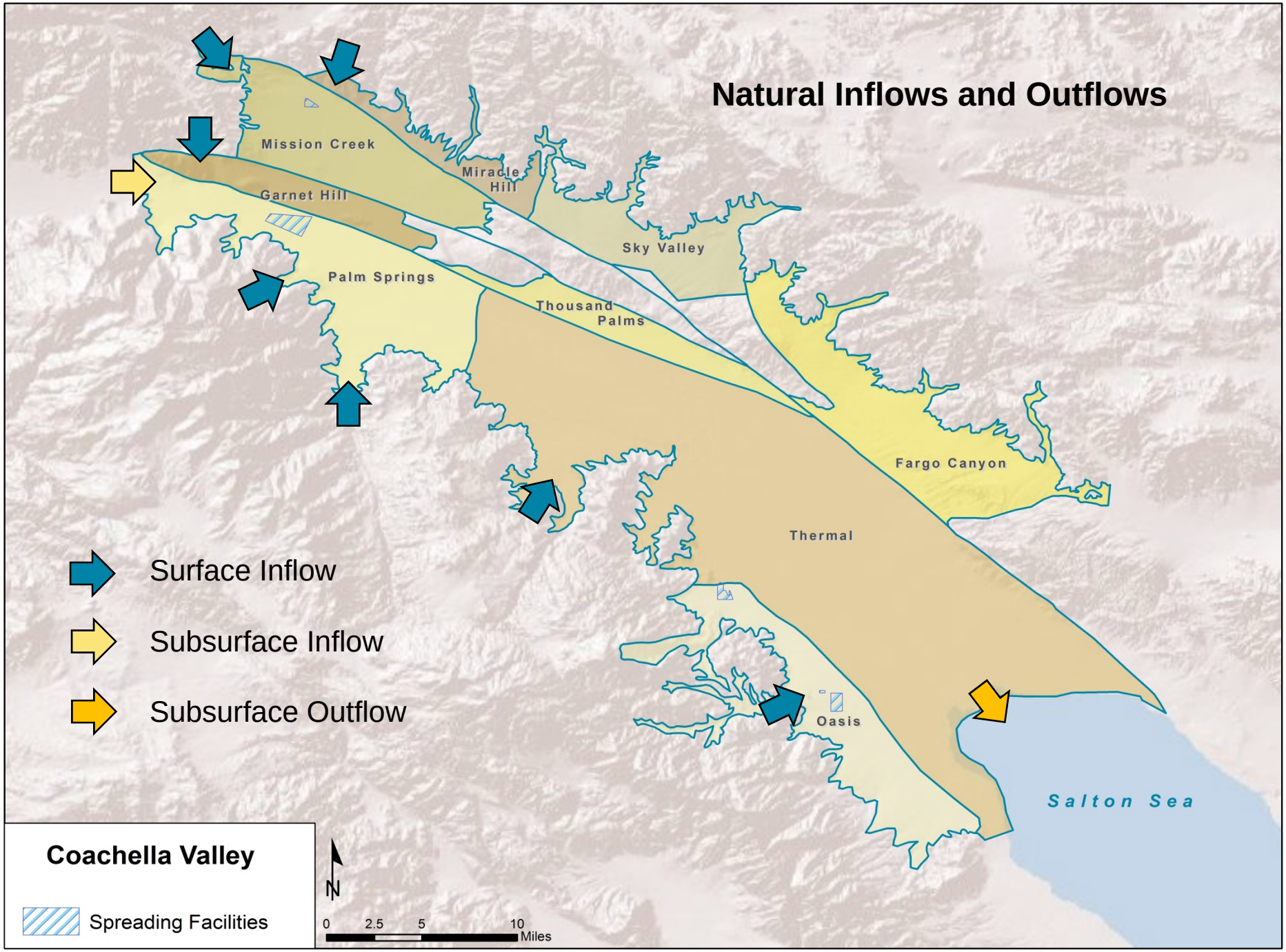
Progress to Date

- Initial data collection
- Identifying data gaps
- Evaluating data to determine analytical methods
- Characterizing basins and groundwater quality
- Calculating ambient water quality
- Identifying salt and nutrient sources and sinks

Schedule

- Development of SNMP in progress
  - TM 1 – Basin Characterization and Methods (July)
  - TM 2 – Ambient Water Quality (August)
  - TM 3 – Management Strategies and Monitoring (November)
  - Compilation: SNMP
- SNMP scheduled to be finalized by January 2015
- Submission of SNMP to Colorado River Regional Water Quality Control Board

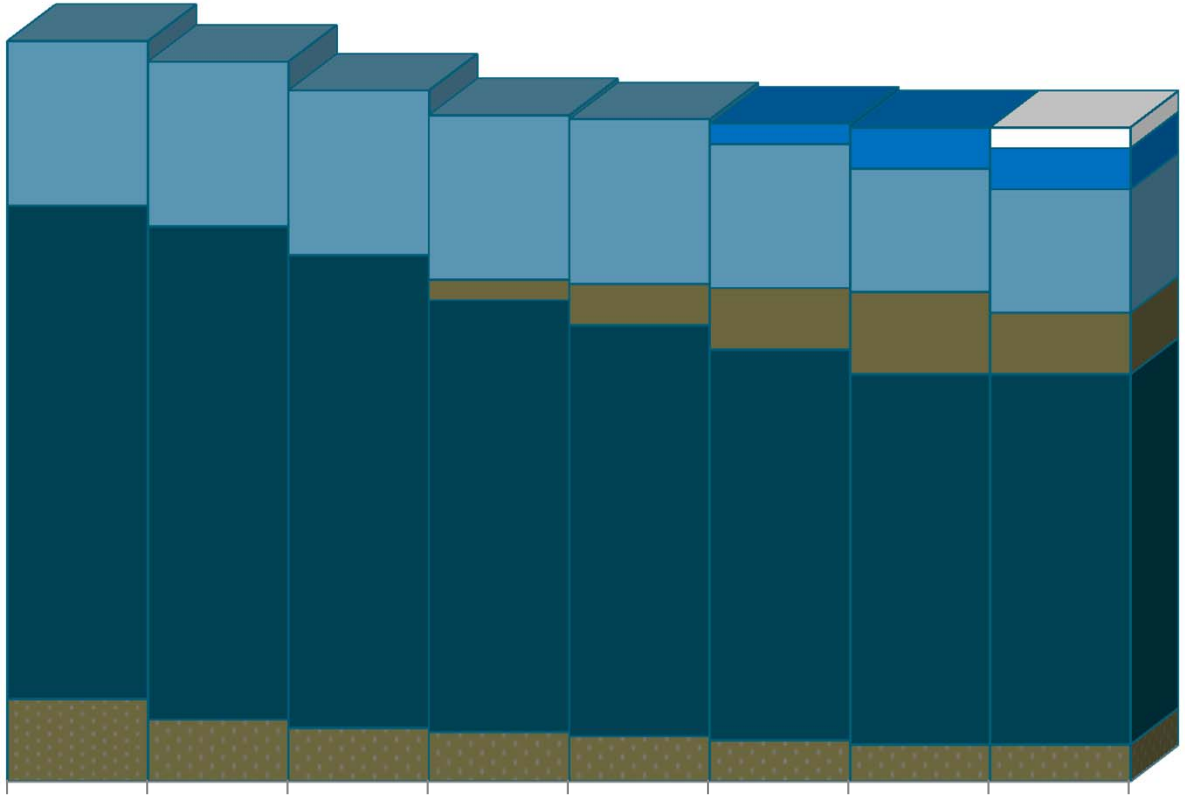

MISSION
CREEK
GARNET
HILL
DESERT
HOT SPRINGS
WHITEWATER
Miracle
Hill
Sky Valley
Seven
Palms
Valley
Palm
Springs
Thousand
Palms
Fargo
Canyon
Thermal
Oasis
Salton Sea
Desert Hot
Palm Springs
Cathedral
City
Palm Desert
La Quinta
Coachella
Thermal
Mecca
Cabazon
Idyllwild
Mountain
Center
Anza
QUEEN
VALLEY
PLEASANT VALLEY
SAN JACINTO MOUNTAINS
THOMAS MOUNTAIN
PALOMAR
MOUNTAIN
Indian
Mountain
Morongo
Indian
Reservation
Cahuilla
Indian
Reservation
Santa Rosa Indian
Reservation
Torres Martinez
Indian Reservation
Mt San
Jacinto
State Park
Salton Sea
State Park
RIVERSIDE
SAN DIEGO
I-10


Natural Inflows and Outflows
Mission Creek
Garnet Hill
Miracle Hill
Sky Valley
Palm Springs
Thousand Palms
Fargo Canyon
Thermal
Oasis
Salton Sea
Surface Inflow
Subsurface Inflow
Subsurface Outflow
Coachella Valley
Spreading Facilities
N
0 2.5 5 10
Miles

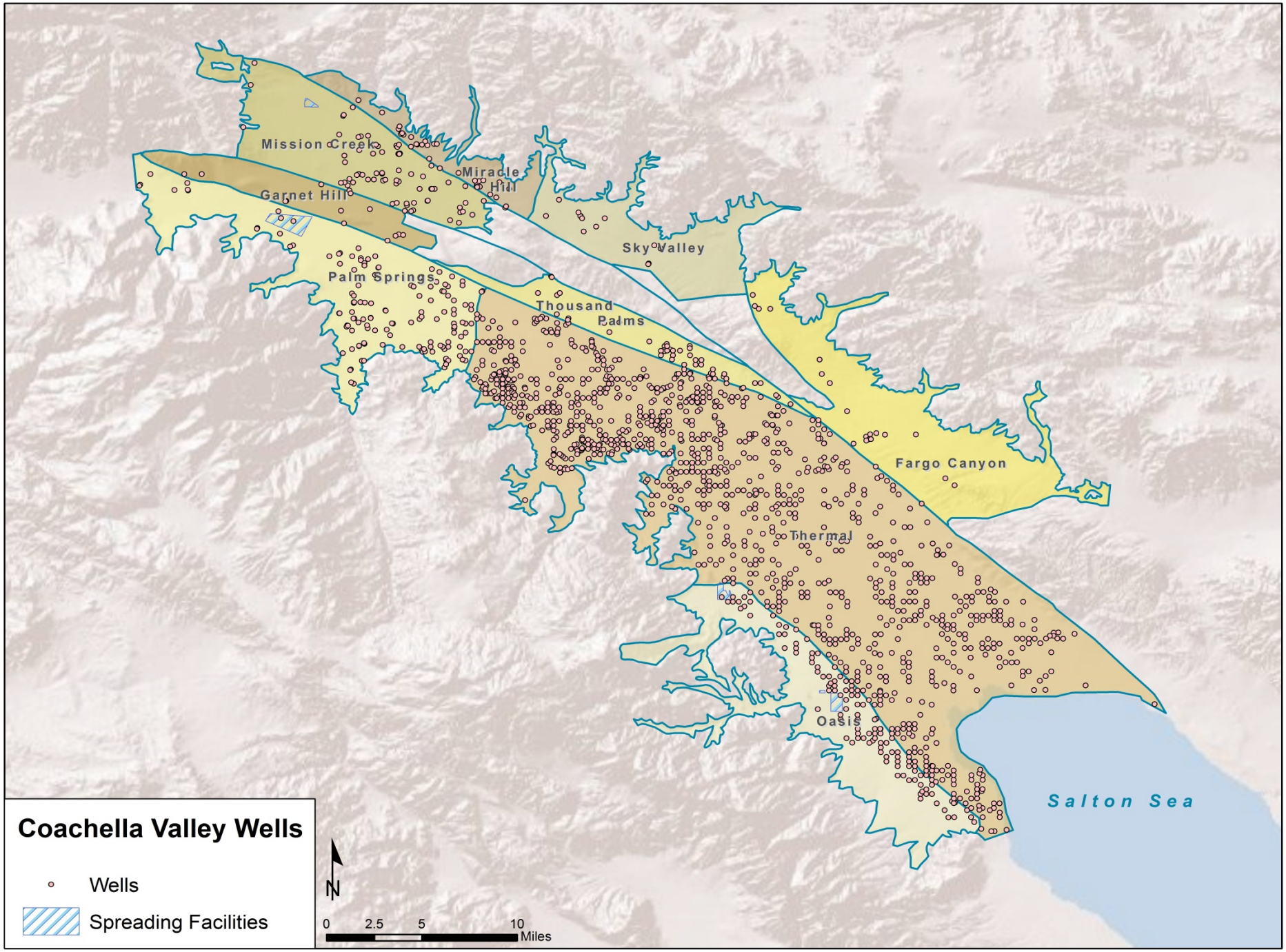
Conceptual Cross-Section

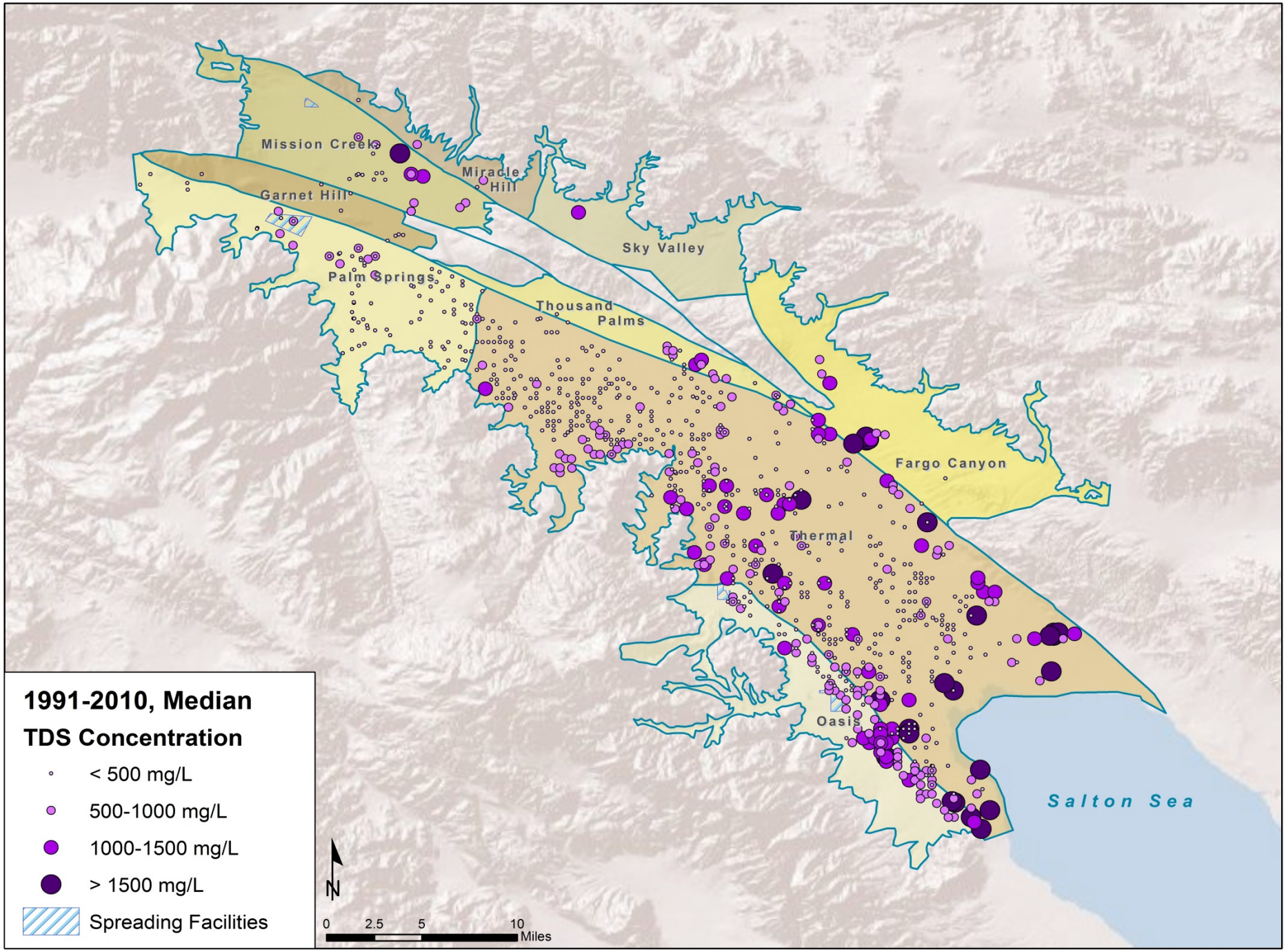
Upper Valley

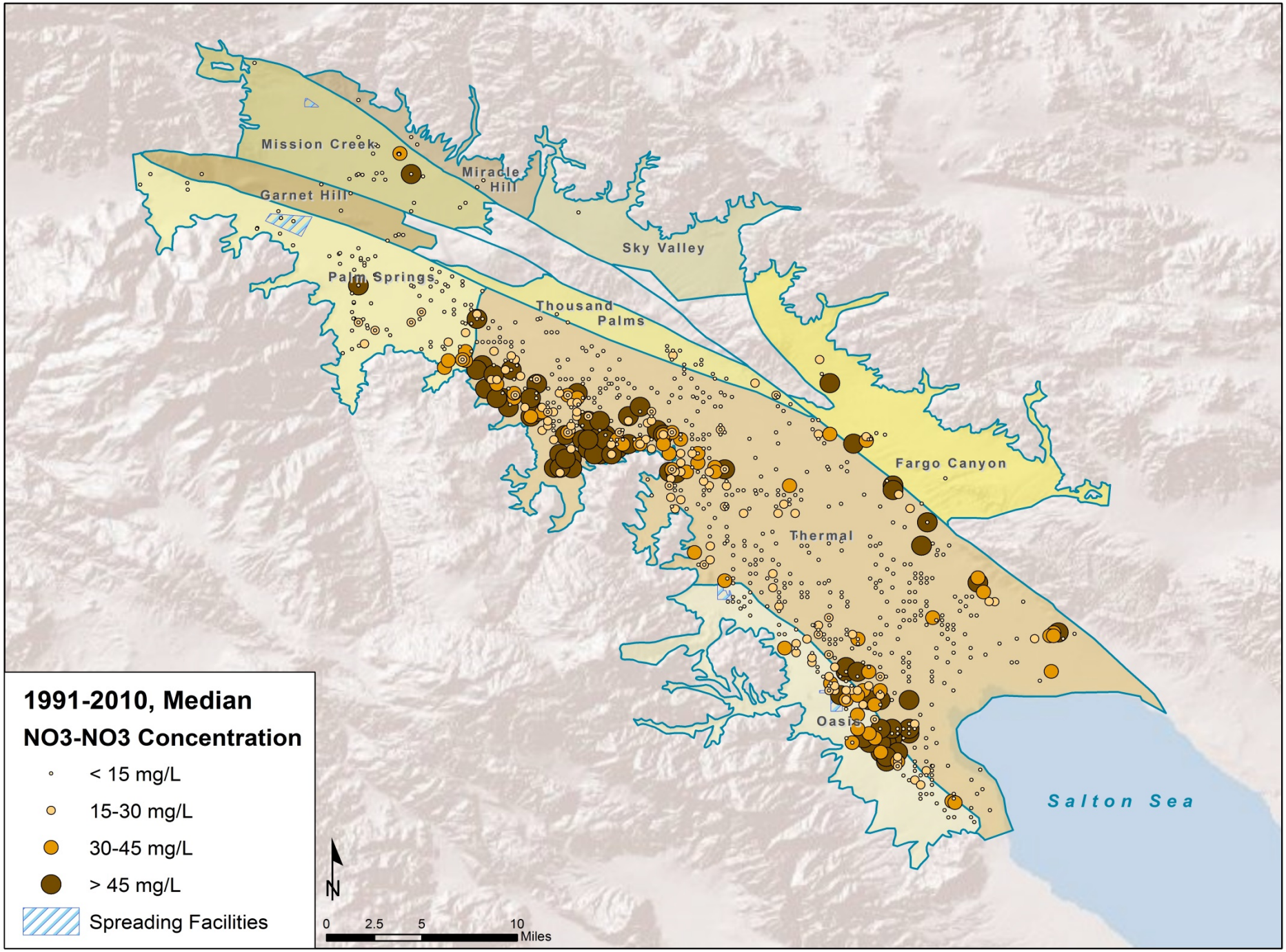
Lower Valley



Conceptual Cross-Section


Mission Creek
Miracle Hill
Garnet Hill
Sky Valley
Palm Springs
Thousand Palms
Fargo Canyon
Thermal
Oasis
Salton Sea
Coachella Valley Wells
Wells
Spreading Facilities
N
0 2.5 5 10
Miles


Mission Creek
Miracle Hill
Garnet Hill
Sky Valley
Palm Springs
Thousand Palms
Fargo Canyon
Thermal
Oasis
Salton Sea
1991-2010, Median
TDS Concentration
< 500 mg/L
500-1000 mg/L
1000-1500 mg/L
> 1500 mg/L
Spreading Facilities
N
0 2.5 5 10
Miles


Mission Creek
Miracle Hill
Garnet Hill
Sky Valley
Palm Springs
Thousand Palms
Fargo Canyon
Thermal
Oasis
Salton Sea
1991-2010, Median
NO3-NO3 Concentration
< 15 mg/L
15-30 mg/L
30-45 mg/L
> 45 mg/L
Spreading Facilities
N
0 2.5 5 10
Miles

Ambient Water Quality Methods

- Objective: quantify current ambient water quality for a subarea or management zone
- Methods
  - Volume-weighted
    - Requires high density water quality records and aquifer characteristics
  - Statistical summary
    - Based on data available

Relationship to Stakeholders

- SNMP result: potential Basin Plan amendment
- Waste discharge requirements may change
- Potential cost of water
- Implementation of groundwater quality protection strategies
- Support recycled water use in the Coachella Valley

Stakeholder Input and Questions

- Data collection
  - Groundwater quality data
  - Groundwater level data
  - Groundwater pumping records
  - Surface water discharge data
    - Quantity and quality
- Planned projects/changes in practices
- Management objectives
- Strategies

Questions?

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