

Los Osos Groundwater Basin Update

Central Coast RWQCB
November, 19, 2015

Presented by :

Los Osos Community Services District

Golden State Water Company

SLO County

S&T Mutual Water Company

Presentation Outline

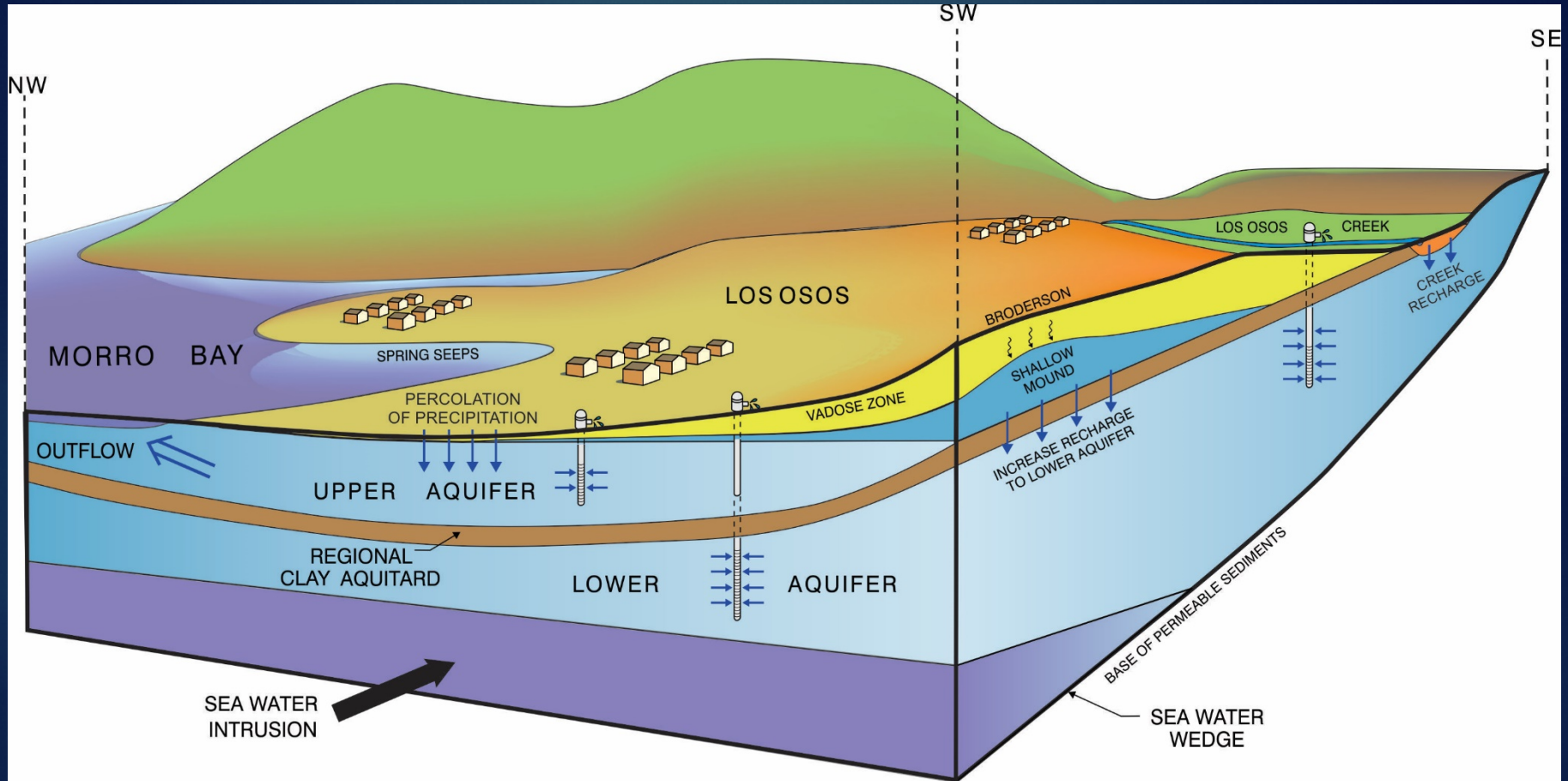
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- Introduction
- Basin Plan
- Stipulated Judgment
- Basin Management Committee
- Funding

Basin Plan Development

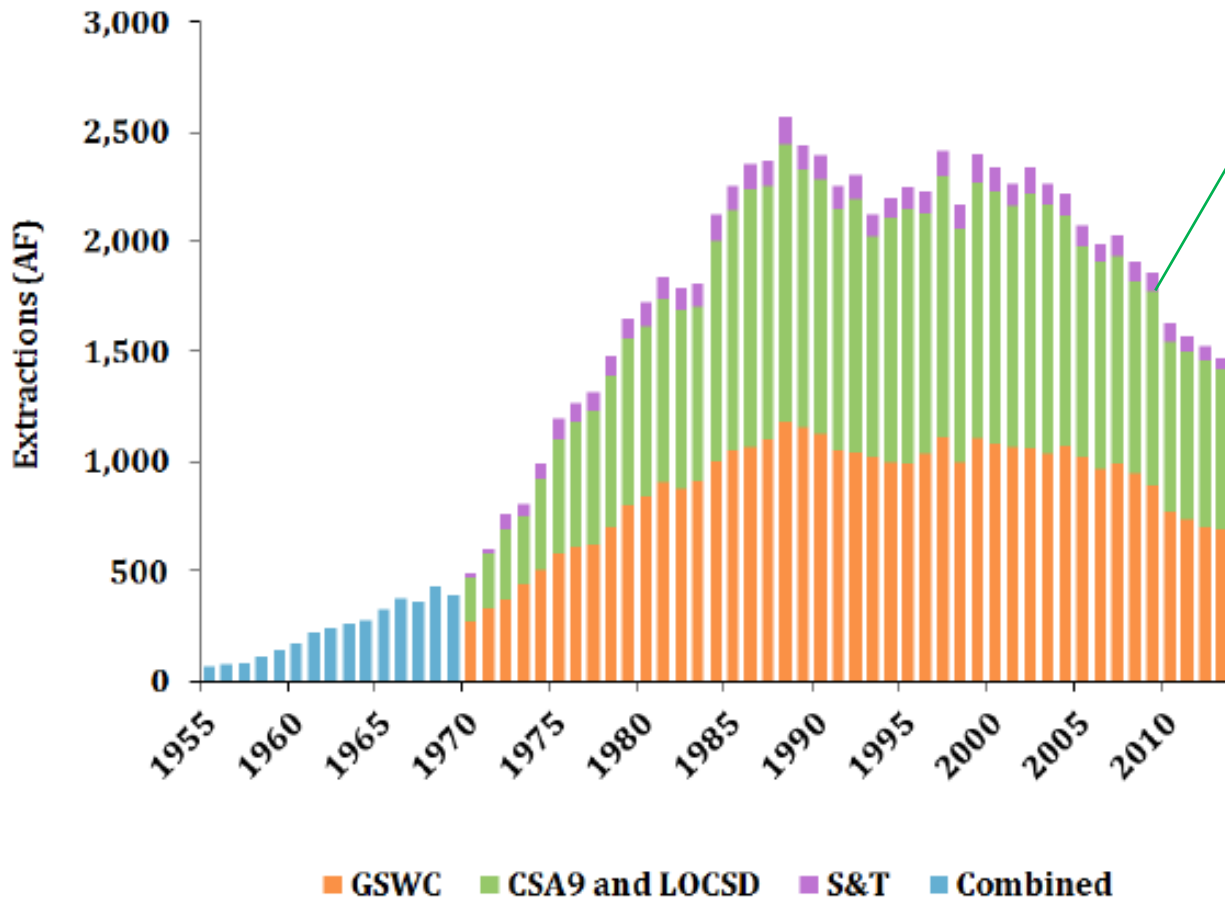
- August 2013 -Public Draft of Basin Plan issued
- January 2015 – Final Public Draft of Basin Plan Issued
- October 2015 – Stipulation and Basin Plan approved by the Court

Conceptual Model of Basin



Historical Groundwater Production by Purveyors (1955-2013)

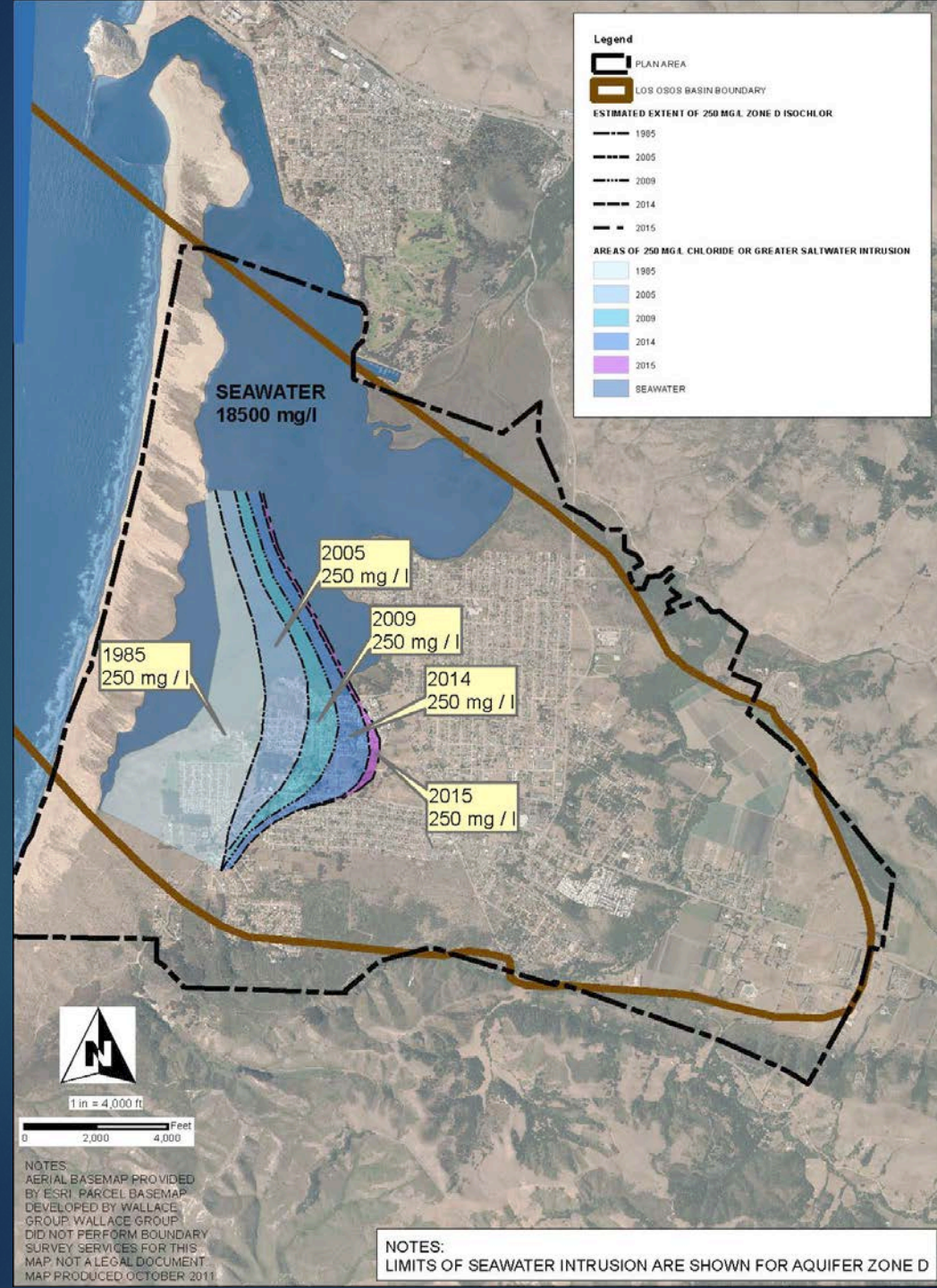
Figure 11. Historical Groundwater Production by Purveyors (1955-2013)



40% Decline since mid '80s

2013 = 1470 AF
2014 = 1246 AF

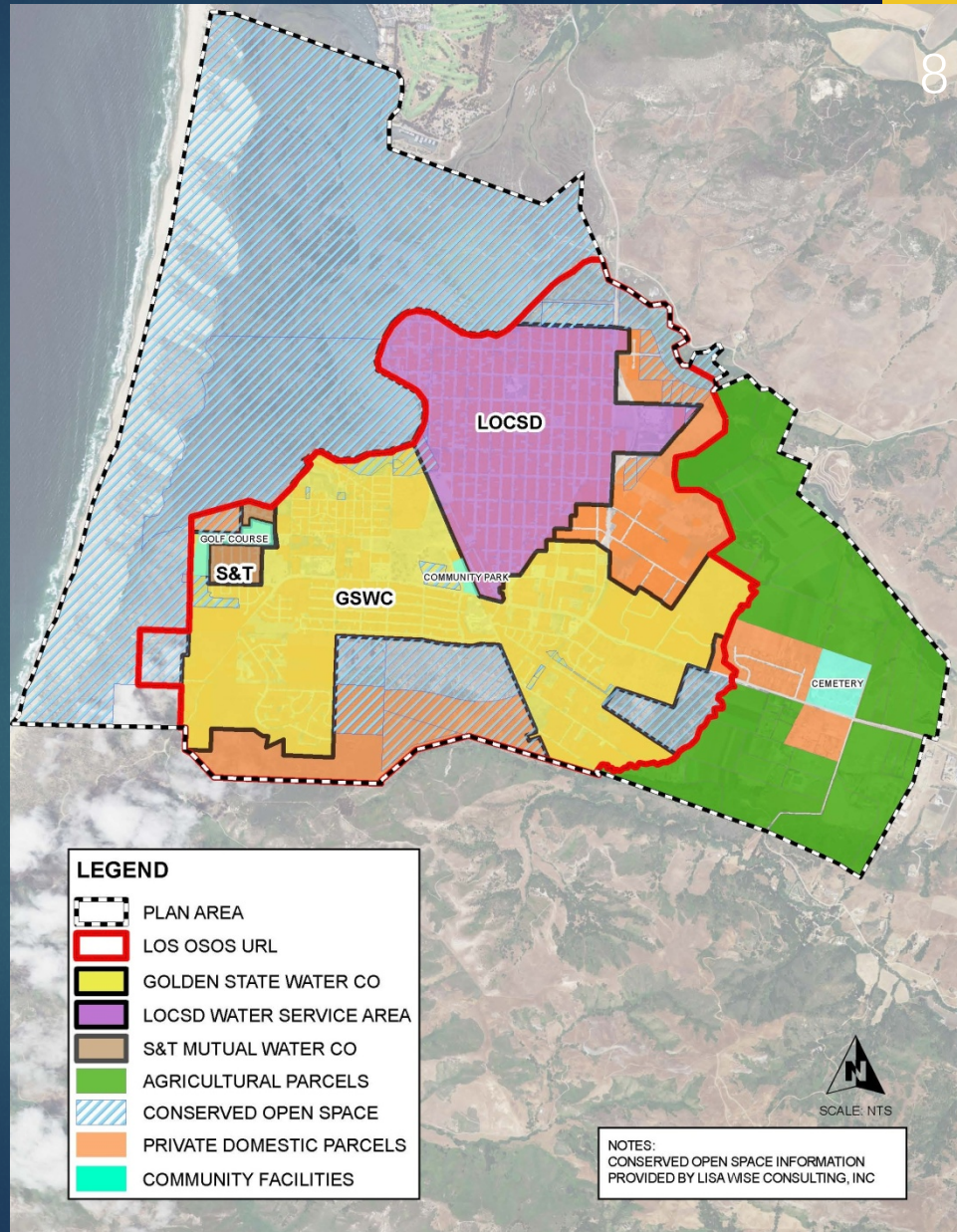
Seawater Intrusion in the Lower Aquifer



Immediate Goals

- Halt or to the extent possible, reverse seawater intrusion in the Basin
- Provide sustainable water supplies
- Promote water conservation

Water Basin Use Areas



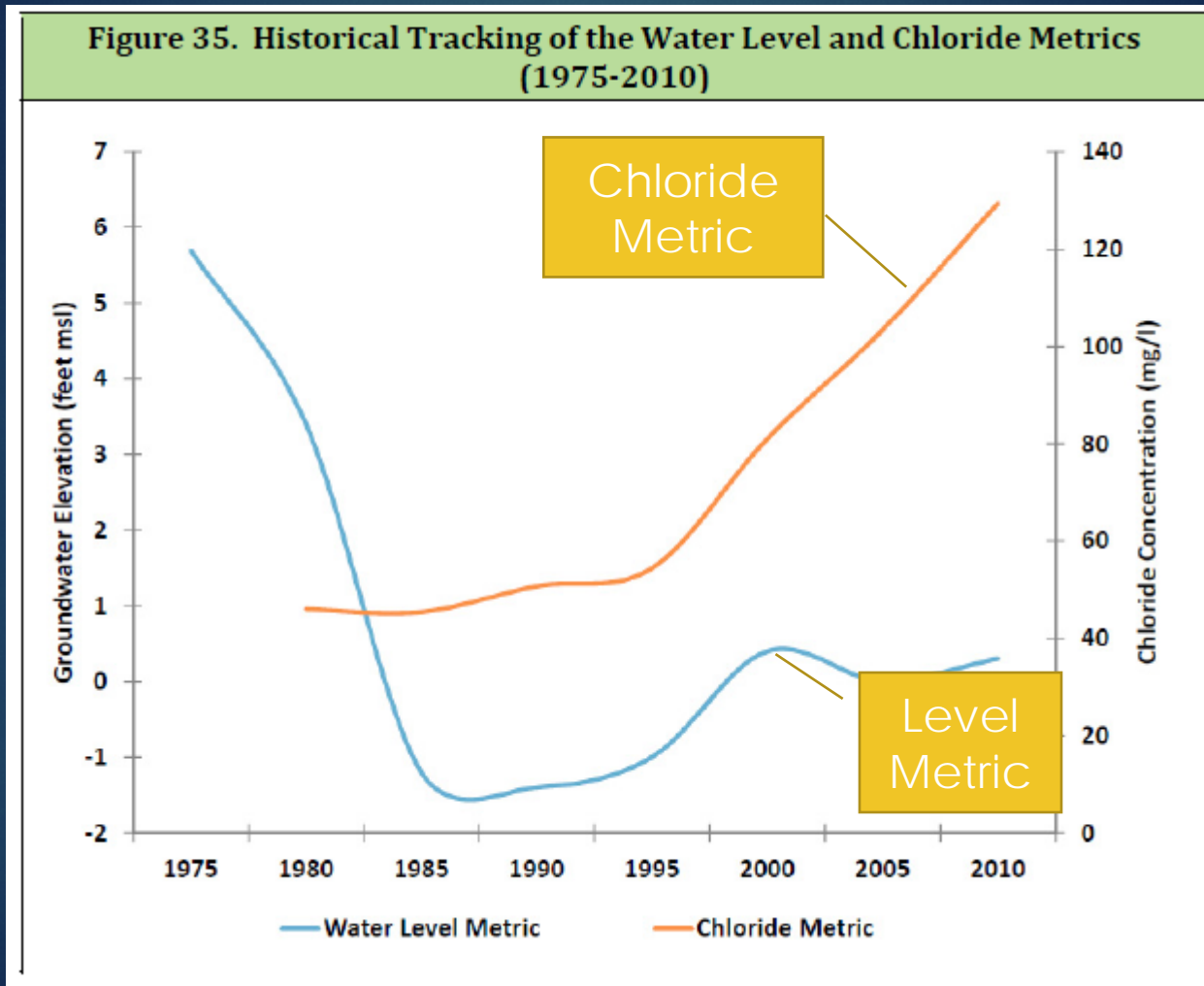
Groundwater Monitoring Program

- 73 Wells
- Groundwater Levels
- Groundwater Quality
 - Chloride
 - Nitrate
- Production metering
 - Voluntary (current)
 - Mandatory (preferred)

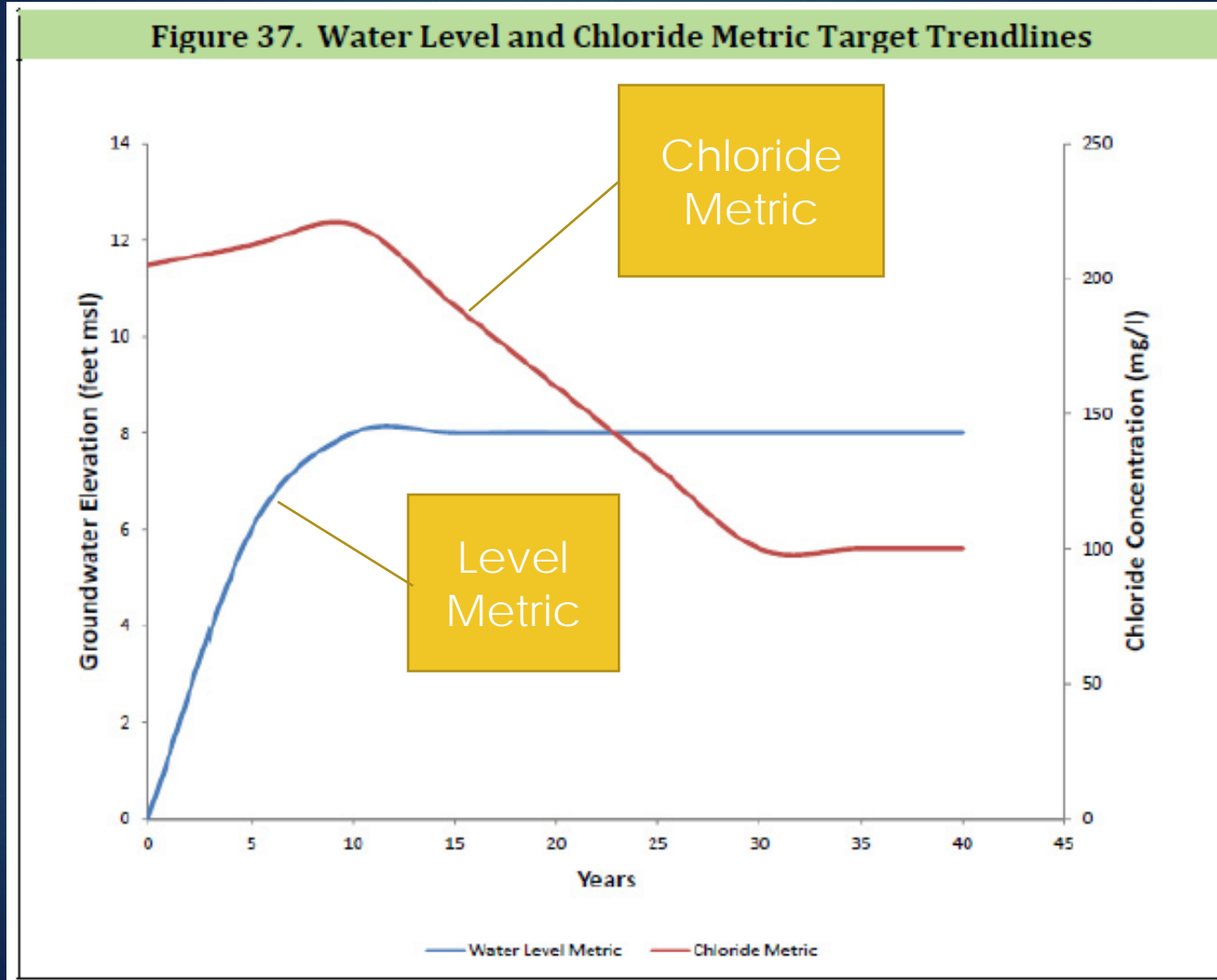
Basin Monitoring & Metrics

- Estimated and metered: Groundwater production
- Calculated: Basin Yield Metric and Basin Development Metric
- Measured: Water Level Metric, Nitrate Metric, Chloride Metric
- Other monitoring
- Annual reports

Historical Tracking of Water Level and Chloride Metrics



Water Level and Chloride Metric Target Trendlines



Urban Water Use Efficiency

- Current Conservation Program
- Conservation Program outside Sewer Service Area
- Goals for Urban Water Use
 - Current population (14,600) 1,450 AFY
 - Buildout population (19,850) 2,100 AFY

Water Reinvestment Program

- Urban areas - schools & park
- Sea Pines Golf Course
- Los Osos Cemetery
- Percolation at Broderson and Bayridge
- Agricultural reuse

Basin Infrastructure Programs

The goal: maximize sustainable yield

- Program A: Upper aquifer / already planned
- Program B: Upper aquifer
- Program C: Lower aquifer, west of Los Osos Creek
- Program D: Lower aquifer, east of Los Osos Creek

Table 34. Basin Infrastructure Program A Improvements

| Improvement | Capital Cost | Parties Involved |
|--------------------------------|---------------------|-------------------------|
| Water Systems Interconnection | \$100,000 | LOCSD/GSWC |
| Upper Aquifer Well | \$600,000 | LOCSD |
| South Bay Well Nitrate Removal | \$640,000 | LOCSD |
| Palisades Well Modifications | \$15,000 | LOCSD |
| Blending Project | \$1,110,000 | GSWC |
| Water Meters | \$370,000 | S&T |
| Total | \$2,835,000 | Purveyors |

GSWC Rosina Nitrate Treatment Blending Project under expansion to add a 200 gpm ion exchange package plant (\$950K)

Table 36. Basin Infrastructure Program B Improvements

| Improvement | Capital Cost | Parties Involved |
|------------------------------------|---------------------|-------------------------|
| LOCSD Wells | \$2,700,000 | LOCSD |
| GSWC Wells | \$3,200,000 | GSWC |
| Community Nitrate Removal Facility | \$11,350,000 | LOCSD/GSWC |
| Total | \$17,250,000 | Purveyors |

Includes 30 years of operation and maintenance, including brine disposal at \$9.3M

Table 37. Basin Infrastructure Program C Improvements

| Improvement | Capital Cost | Parties Involved |
|-----------------------------------|---------------------|-------------------------|
| Expansion Well No. 1 | \$1,400,000 | GSWC |
| Expansion Well No. 2 | \$2,000,000 | GSWC |
| Expansion Well No. 3 | \$1,600,000 | LOCSD |
| Los Osos Valley Road Main Upgrade | \$1,500,000 | GSWC |
| S&T/GSWC Interconnection | \$40,000 | S&T/GSWC |
| Total | \$6,540,000 | Purveyors |

Expansion Well 2 in progress – GSWC Los Olivos Well 5 (\$1.6M)

Table 38. Basin Infrastructure Program D Improvements

| Improvement | Capital Cost | Parties Involved |
|----------------------|---------------------|-------------------------|
| Expansion Well No. 4 | \$1,100,000 | LOCSD/GSWC |
| Expansion Well No. 5 | \$1,875,000 | LOCSD/GSWC |
| Expansion Well No. 6 | \$1,225,000 | LOCSD/GSWC |
| | | |
| Total | \$4,200,000 | Purveyors |

Recommended Programs

- Immediate Implementation
 - Groundwater Monitoring (\$650K)
 - Urban Water Use Efficiency (\$5.5M)
 - Program A (\$3.7M)
 - Program C (\$6.5M)
- Future implementation for additional development
 - Program B (\$17.3M)
 - Either D (\$4.2M) or Agriculture Reinvestment (\$2.1M)

Accomplishments Program A projects

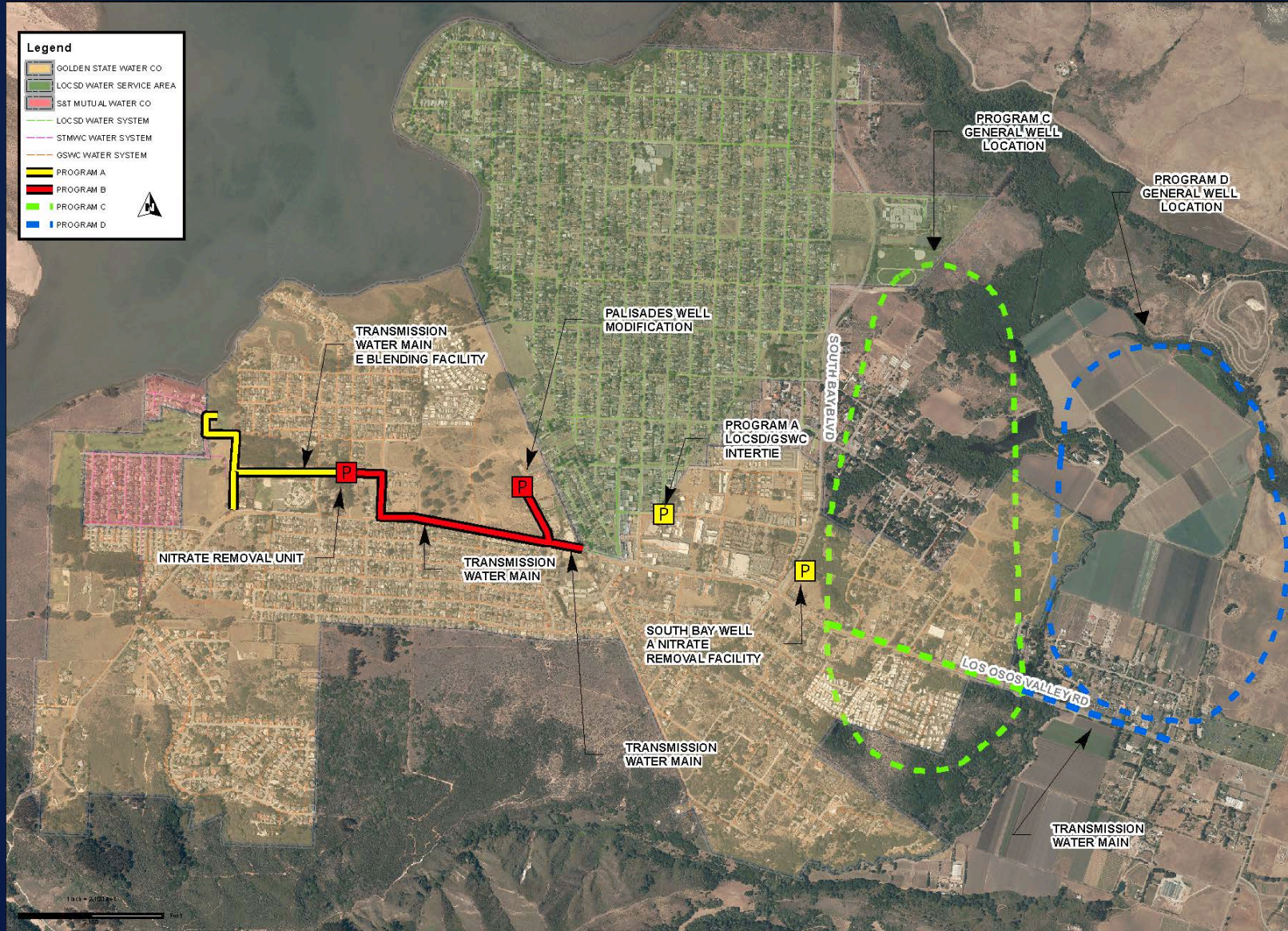
- South Bay Nitrate Removal (completed)
- Palisades Well Modifications (completed)
- Blending Project (completed)
- Water Meters – installation of meters on all S&T connections (completed)
- Water Systems Interconnection between LOCSD and GSWC (funded and designed – construction expected by the end of 2015)

Accomplishments

Program A and C projects in progress

- Upper Aquifer Well – (LOCSD adopted mitigated negative declaration in May 2015 and is pursuing a coastal development permit)
- Rosina Nitrate Removal (Ion Exchange plant addition to GSWC's Skyline Well – designed and funded)
- Expansion Well 2 (Lower Aquifer D well at GSWC Los Olivos Plant – designed and soon out to bid for construction)

Basin Infrastructure Program Facilities



Additional Work after Initial Public Release

- Peer Review of Basin Plan by Gus Yates, a former USGS expert
 - Additional information provided
 - Refinements incorporated into the Plan
- Evaluation of Recycled Water Recharge Through Los Osos Creek
 - Dry season recharge may increase Basin yield under certain conditions

Additional Work after Initial Public Release (Continued)

- October 2014 and April 2015 monitoring events

Superior Court Approval

- Superior Court approved Stipulated Judgment on 10/14/15
 - Stipulated Judgment incorporates Basin Plan

Stipulated Judgment

- Goal: Basin Restoration
- Physical Solution: Basin Plan
- Responsible Parties: Basin Management Committee
- Financing Plan
- Court Continuing Jurisdiction

Basin Restoration

- Basin Plan Implementation
- Demand Control: Purveyor Responsibility
 - Water Entitlement Pools (2008-2013 usage)
 - Purveyor Pool (50 gpcd indoor)
 - Agricultural Pool
 - Community Pool
 - Private Domestic Pool

Basin Management Committee

- LOCSD, GSWC, County and S&T
- Joint Powers Authority may be established
- Implement Basin Plan and Stipulated Judgment
 - Monitoring and data collection
 - Annual Report
- Subject to Brown Act
- Initial Meeting December 2015
 - Rules
 - Funding alternatives

Basin Management Committee

- Adaptive Management Programs
 - Maintain flexibility to adapt to changing conditions in the Basin
 - Option to use future technological advances
 - Annual reports to assess hydrologic balance
 - Use reports to consider modifications

Equitable Cost Allocation

- All water-using properties - pay fair share cost of achieving sustainable Basin under current conditions
- Properties with potential future development - pay for cost of achieving and maintaining a sustainable Basin in light of future water demand associated with developments

Questions?