

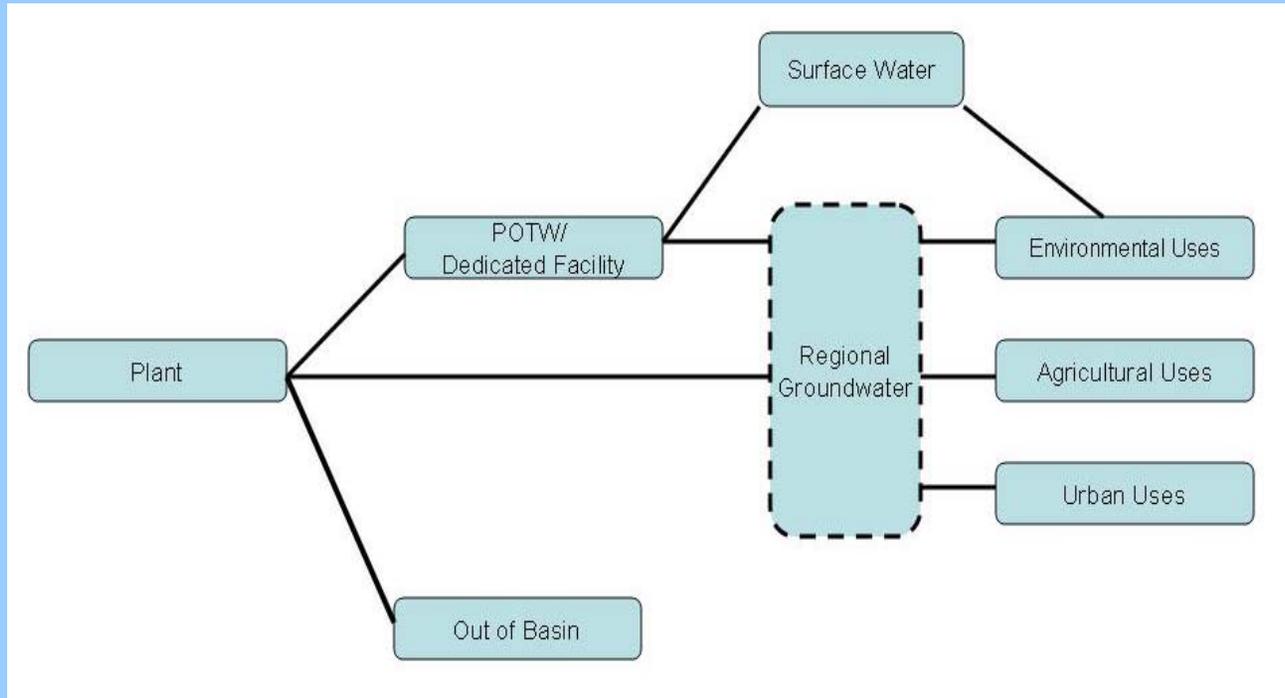
Hilmar SEP Study Goals

- Develop information related to alternatives for managing saline wastewater from the food processing industry
 - No identification of a preferred alternative
- Information includes
 - Approach to measuring economic impacts of water quality regulation
 - Application to a “representative area”
 - Data sets and models relating to wastewater streams, water use, land use and the like

Approach

- Alternatives considered
 - Land application
 - In-plant abatement
 - POTW
 - Dedicated facility
 - Out of basin
 - Deep well injection
 - Brine line

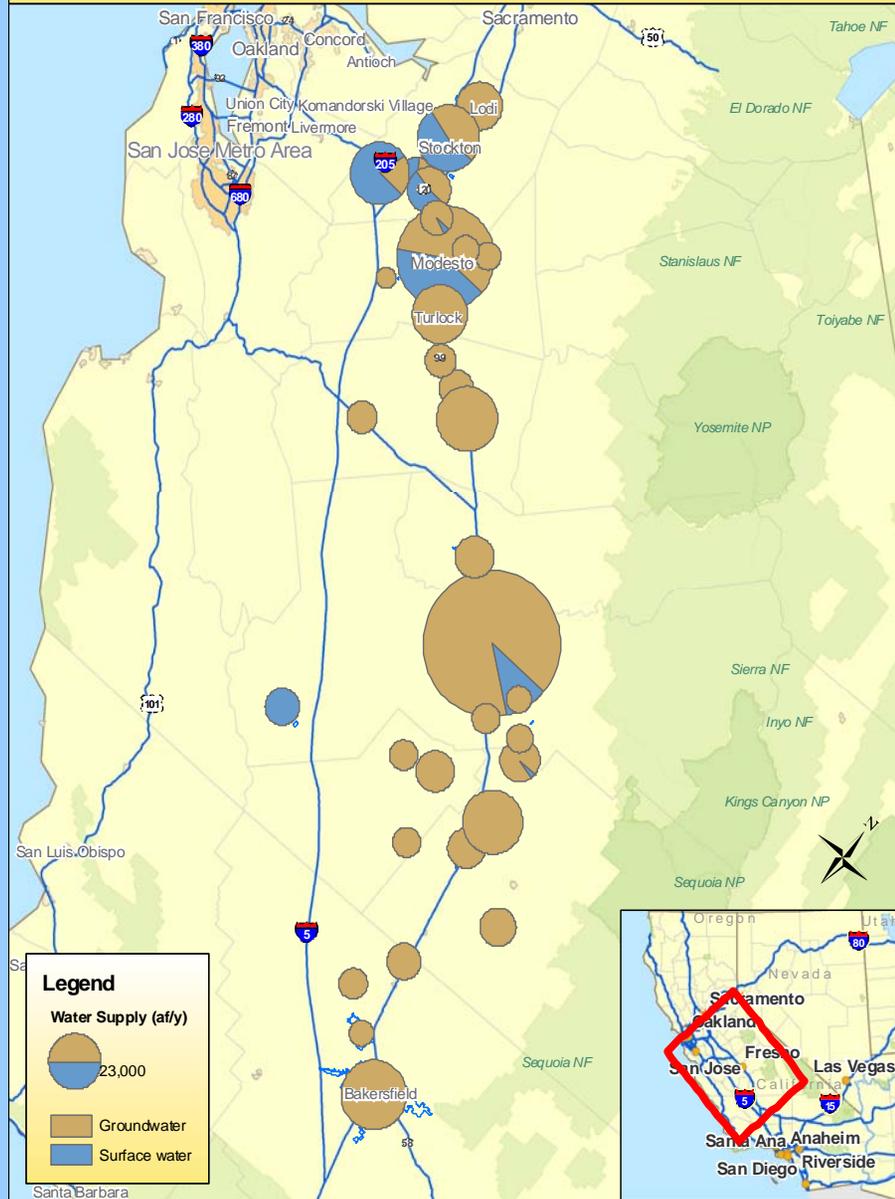
Approach



Approach

- For each alternative, measure
 - Capital costs
 - Operating costs
 - Local change in groundwater quality over time
 - Economic value of water quality changes
 - Residential and commercial
 - Agricultural
 - Based on actual and forecasted water demands

2005 Water Mix



Legend

Water Supply (af/y)

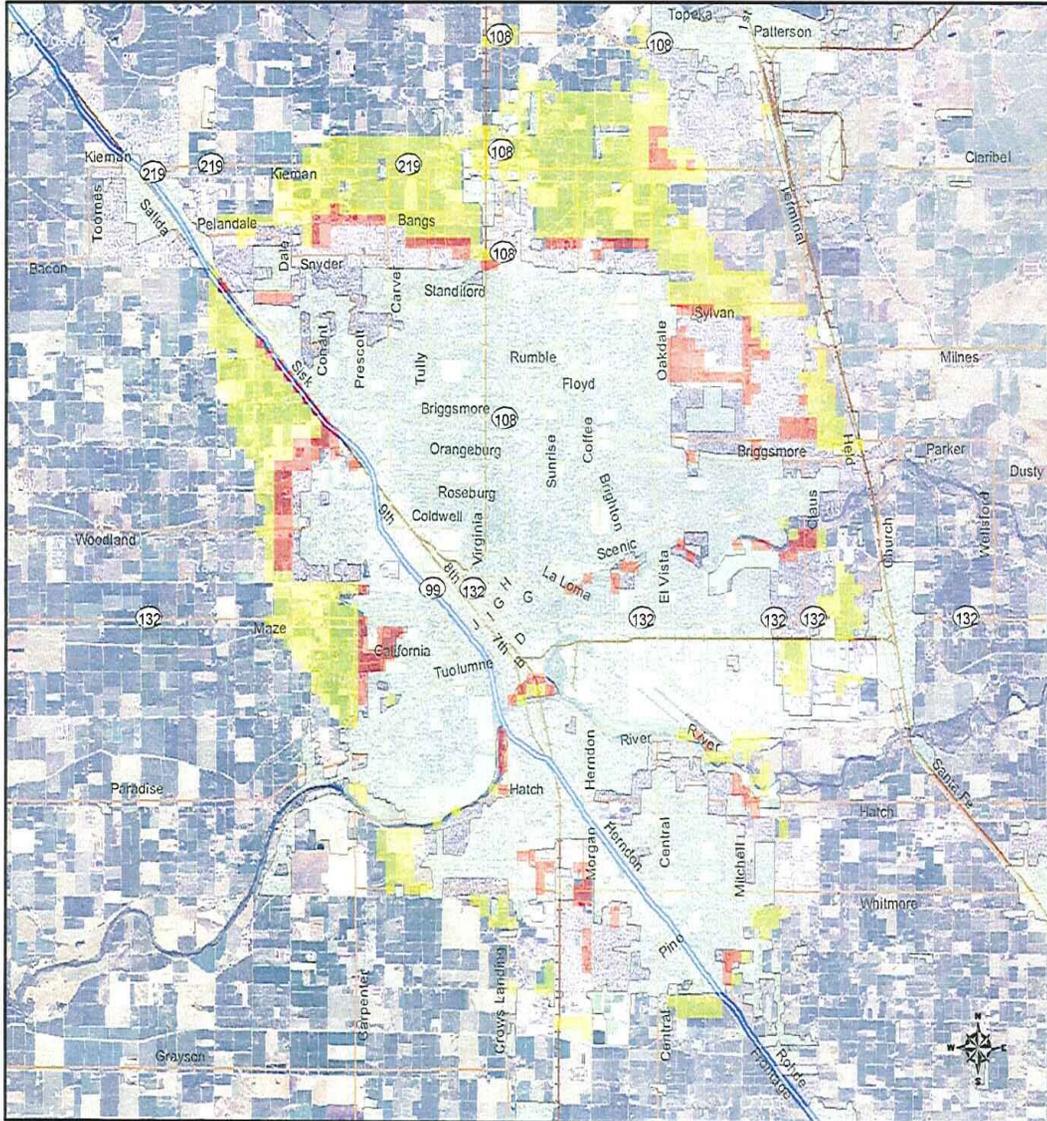
23,000

Groundwater

Surface water



Modesto Build-Out



Legend

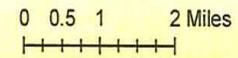
Likelihood of Urbanization

- Medium
- High
- 1984 Urban Footprint

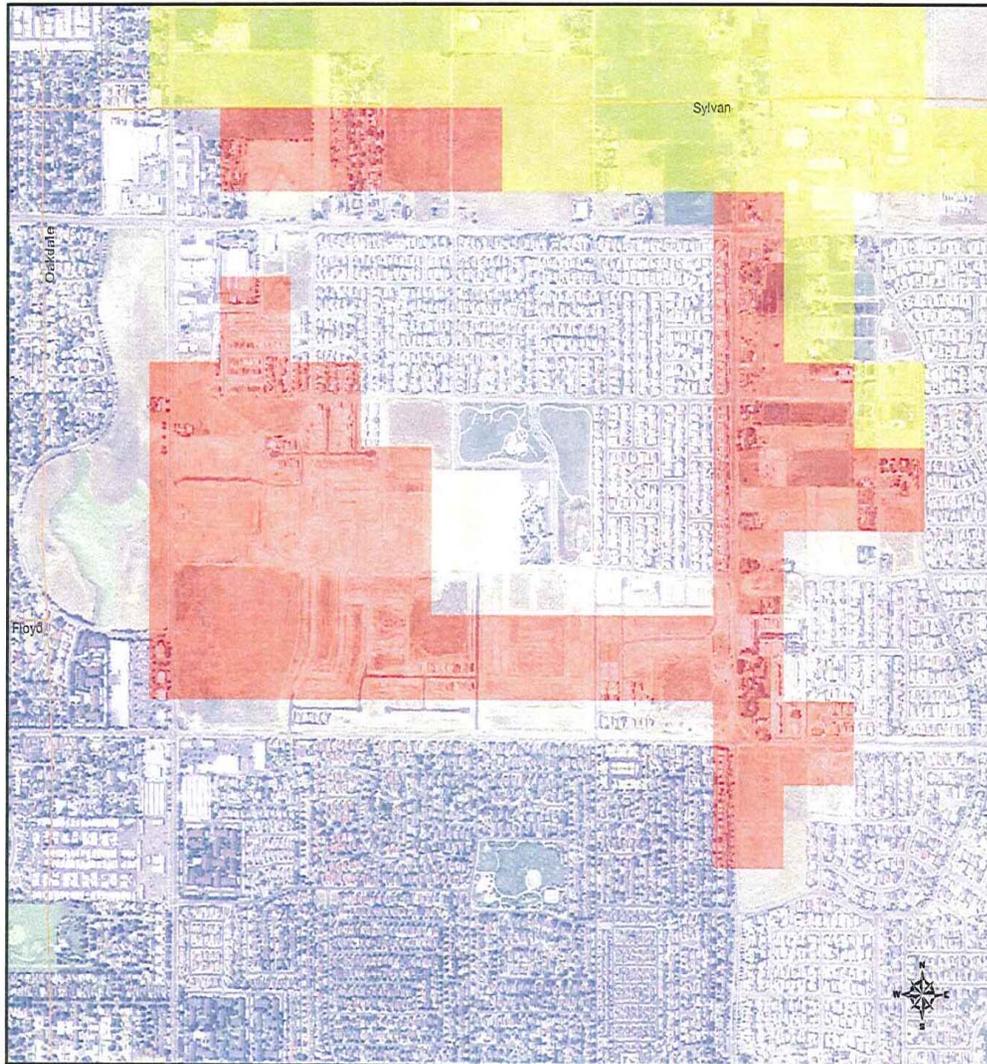
Notes:

Aerial Imagery Source:
National Agriculture Imagery
Program, USDA

Capture Year: 2005



Modesto: High Development Pressure



Legend

Likelihood of Urbanization

- Medium
- High

Notes:

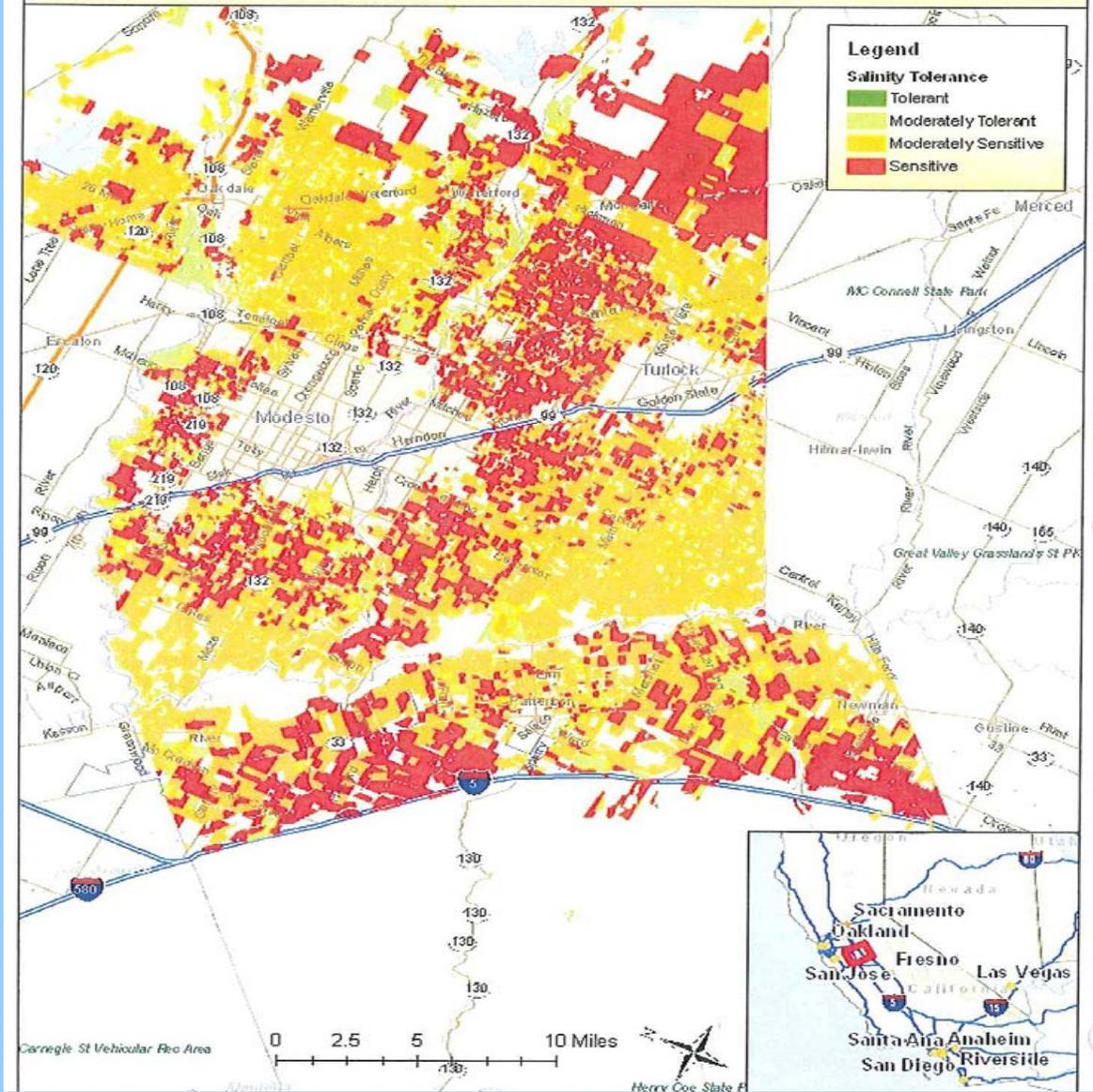
Aerial Imagery Source:
National Agriculture Imagery
Program, USDA

Capture Year: 2005

0 412.5 825 1,650 Feet
|-----|-----|-----|-----|-----|



Salinity Tolerance (2004)



Findings

- Land application in the representative area results in little economic damage
 - Roughly \$400,000 per year for all food processing facilities in RA combined
 - Small areas of elevated salinity
 - Concentrations well above recommended levels
 - Mostly directly under land application sites
 - Pollution without an externality

Comparison of Costs for Salinity Removal Options

