
San Francisco Bay Area/Central Coast:
•Sonoma
•Santa Clara
•Santa Cruz

San Francisco Bay Area
2035 ?

US & California Policy Landscape

Federal:

- US/China climate accord and action on drought
- State and local partnerships on resilient communities

California

- AB 32: California Global Warming Solutions Act
- SB 375: Sustainable Communities/Climate Protection Act (land use & GHG emissions)
- CA Water Bond: $7.5 billion water supply/water quality infrastructure & ecosystem conservation
- Climate adaptation legislation

Local

- Assertive climate action, land use and conservation policies
- Local funding measures: climate and conservation
- California land use decisions are local (3 votes on Tuesday)

RESOURCE CONSERVATION DISTRICT OF SANTA CRUZ COUNTY

SONOMA COUNTY AGRICULTURAL PRESERVATION AND OPEN SPACE DISTRICT

OPEN SPACE AUTHORITY SANTA CLARA VALLEY

Alnus Ecological

HEALTHY LANDS & HEALTHY ECONOMIES

DEMONSTRATING THE ECONOMIC VALUE OF NATURAL AREAS AND WORKING LANDSCAPES

EARTH ECONOMICS

Coastal Conservancy

GORDON AND BETTY MOORE FOUNDATION

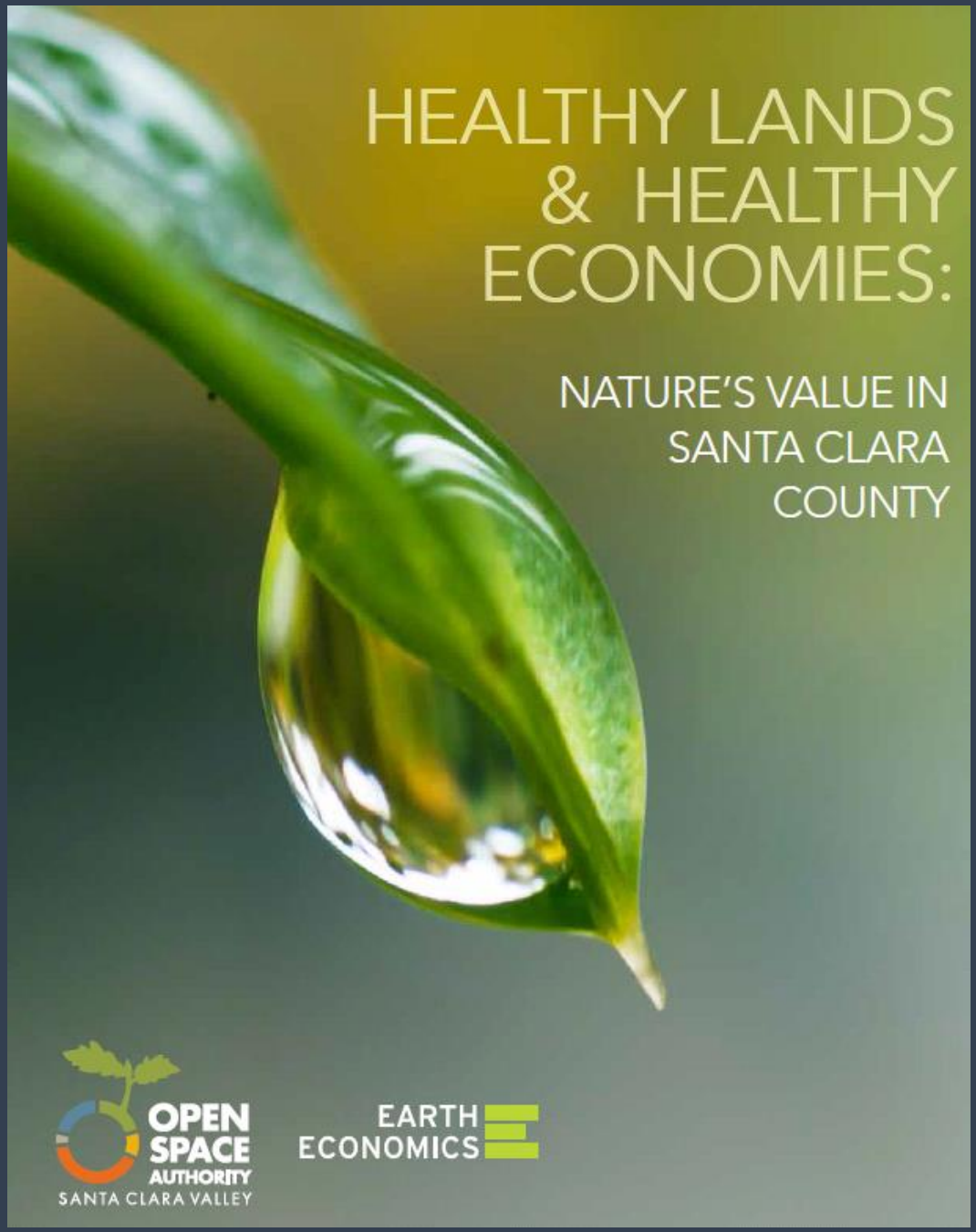
S. D. BECHTEL, JR. FOUNDATION STEPHEN BECHTEL FUND

Objectives/Desired Outcomes

1. Increase the pace and scale of conservation
2. Secure new sources of funding
3. Engage new partners and raise awareness
4. Support integrated planning and protection
5. Develop replicable tools and models for use across the region and state

Screening Level Reports:

- Santa Clara County
- Santa Cruz County
- Sonoma County

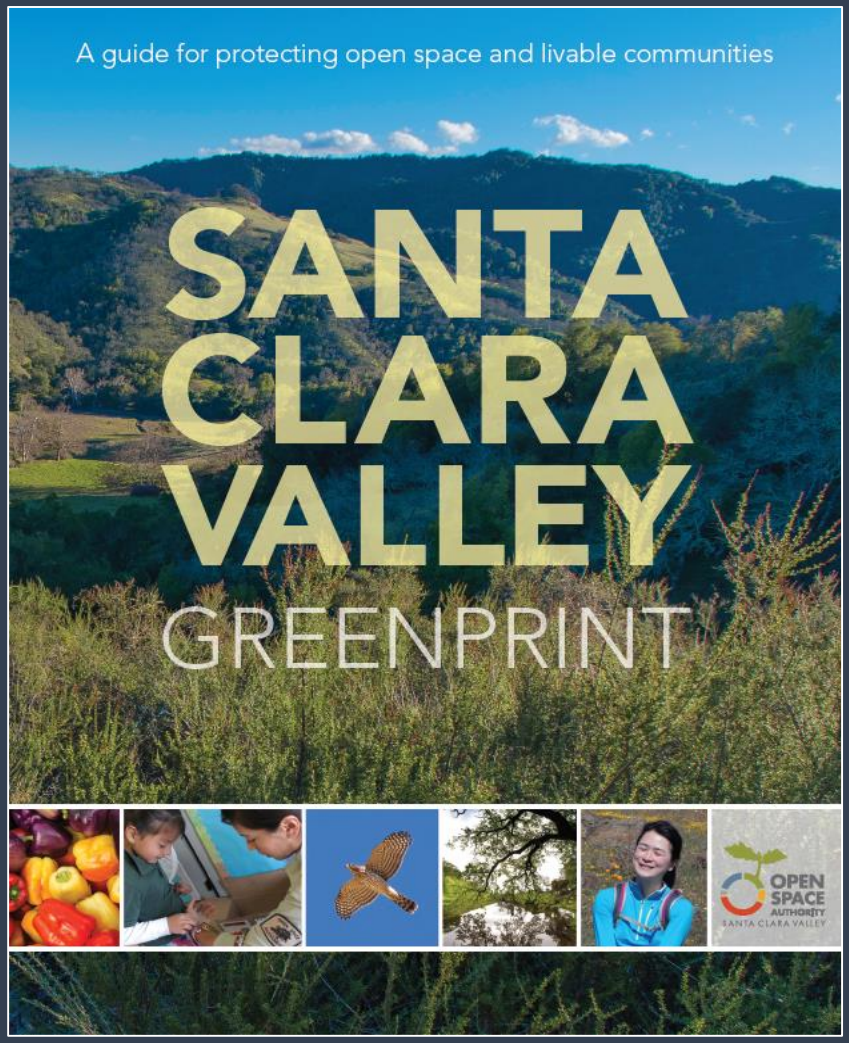


Value of Three County Natural Capital
(benefits transfer)

	Area (Acres)	Total Annual Ecosystem Service Flows ($billion)		Net Present Value, Countywide 100 Yr @ 3.5% ($billion)		Net Present Value, Countywide 100 Yr @ 0% ($billion)	
		Low	High	Low	High	Low	High
Santa Clara	**835,166**	**1.6**	**3.9**	**45**	**107**	**162**	**386**
Santa Cruz	**286,107**	**0.8**	**2.2**	**22**	**60**	**81**	**219**
Sonoma	**1,016,757**	**2.2**	**6.8**	**60**	**188**	**217**	**677**

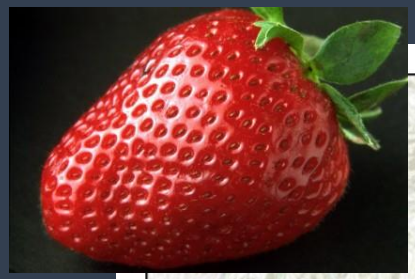
Source: Earth Economics, 2014

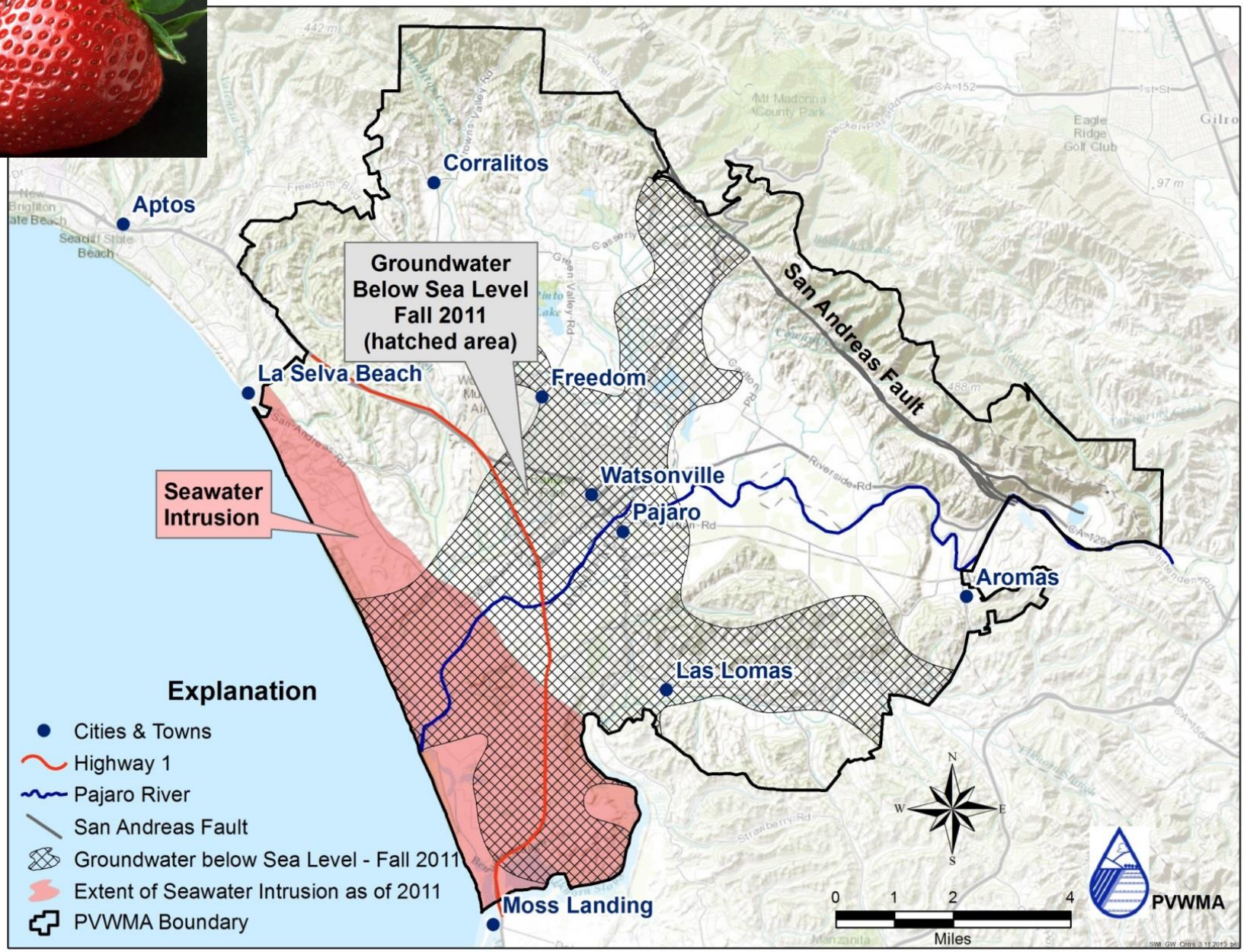
Local and Regional Conservation Applications of Ecosystem Services



OPEN SPACE AUTHORITY
SANTA CLARA VALLEY

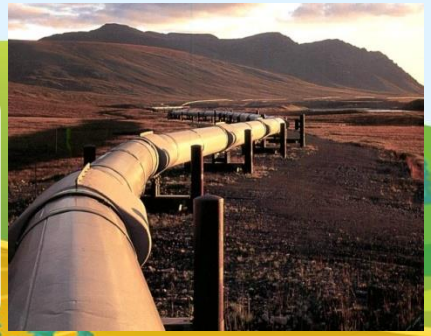
Santa Clara: Multi-scenario analysis of investments in Silicon Valley's Upper Watershed Services

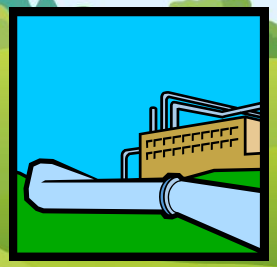



Corralitos
Aptos
Groundwater Below Sea Level Fall 2011 (hatched area)
La Selva Beach
Freedom
San Andreas Fault
Seawater Intrusion
Watsonville
Pajaro
Aromas
Las Lomas
Moss Landing
Explanation
Cities & Towns
Highway 1
Pajaro River
San Andreas Fault
Groundwater below Sea Level - Fall 2011
Extent of Seawater Intrusion as of 2011
PVWMA Boundary
N
W
E
S
0
1
2
4
Miles
PVWMA

Import Pipeline

$1,037/AF





Water Recycling Plant

$1,500/AF

Desal Plant

$3,400/AF

CONSERVATION (Management + Green Infrastructure)

$200/AF

5000 AF/yr

Table 4-1 Ranking of Screened Projects

	Project or Program	Estimated Yield, AFY	Planning Level C Estimate, $/af
D-6	Increased Recycled Water Deliveries	1,250	1
D-7	Conservation	5,000	$200[2]
S-22	Harkins Slough Recharge Facilities Upgrades	1,000	400
R-6	Increased Recycled Water Storage at Treatment Plant	750	700
S-2	Watsonville Slough with Recharge Basins	1,200	800
S-3	College Lake with Inland Pipeline to CDS	2,400	1,000
S-1	Murphy Crossing with Recharge Basins	500	1,400
I-1	CDS expansion	*	*
R-11	Winter Recycled Water Deep Aquifer ASR	3,200	1,500
S-11	River Conveyance of Water for Recharge at Murphy Crossing	2,000	1,500
G-3	San Benito County Groundwater Demineralization at Watsonville WWTP	3,000	2,500
S-4	Expanded College Lake, Pinto Lake, Corralitos Creek, Watsonville Slough, and Aquifer Storage and Recovery	2,000	2,900
SEA-1	Seawater Desalination	7,500	3,400
S-5	Bolsa de San Cayetano with Pajaro River Diversion	3,500	3,500

Key:
Green = Could be implemented within the first 10 years of the BMP (by 2025)
Orange = Could be implemented after 2025
Bold = Seven projects included in BMP portfolio
Not bold = Seven projects potentially added in the future if needed

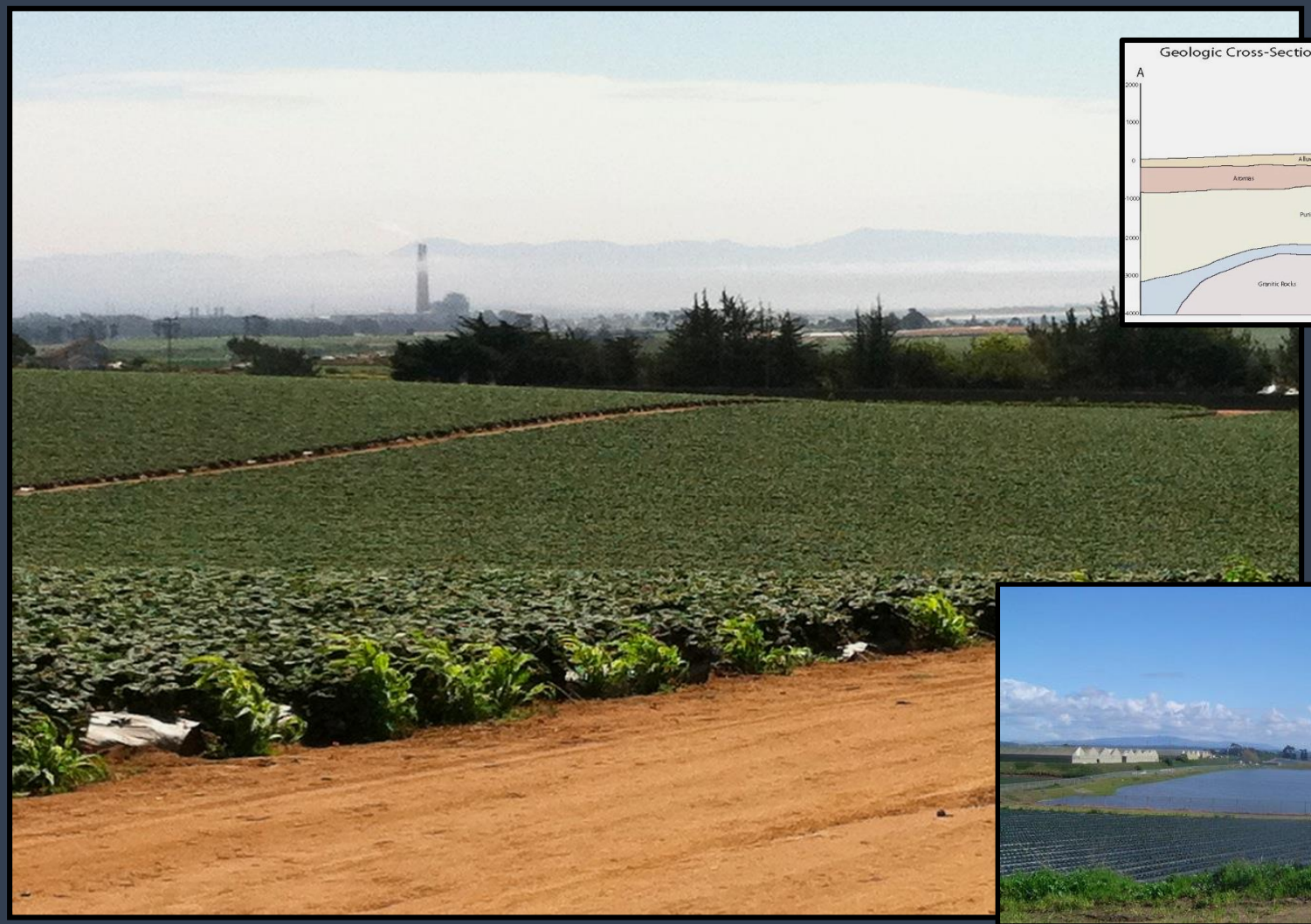
Footnotes:
1. No cost is associated with increased recycled water deliveries.
2. Cost does not include 3- to 5-year program cost of approximately $250,000-300,000 annually.
3. The estimated capital cost of CDS expansion is $13 million. Since the project conveys water from other projects, it does not have a yield.

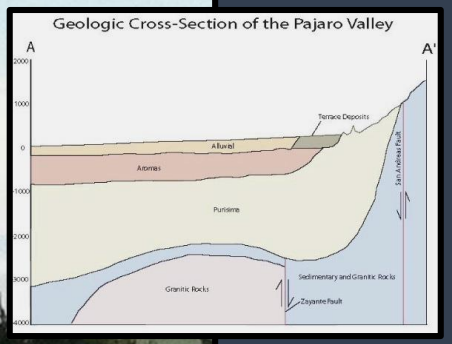
10 other alternatives in Basin Management Plan

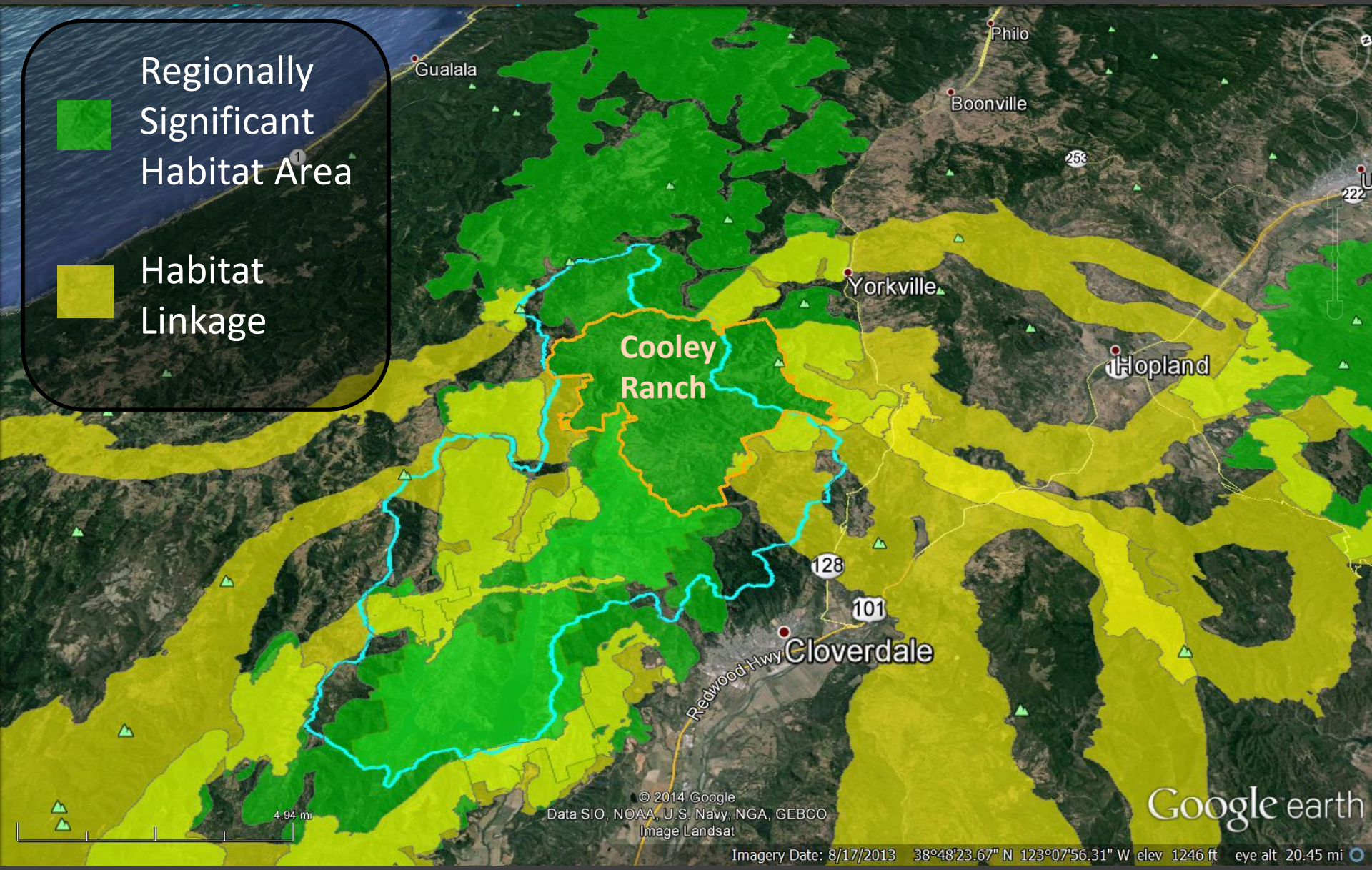
Avg $1,781/AF

Santa Cruz:
Managed Aquifer Recharge (MAR)

Addressing Groundwater Overdraft in the Pajaro Valley






Regionally Significant Habitat Area
Habitat Linkage
Gualala
Philo
Boonville
253
222
Yorkville
Cooley Ranch
Hopland
128
101
Cloverdale
Redwood Hwy
4.94 mi
© 2014 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
Google earth
Imagery Date: 8/17/2013 38°48'23.67" N 123°07'56.31" W elev 1246 ft eye alt 20.45 mi

Multiple Benefits of Conservation: Key Themes & Geographies

flooding

ag viability

riparian corridors

urban open space

coastal resiliency

Implications:
Multiple Benefits of Conservation

- beyond a project: long term focus/new way of doing business
- decision support: applied science/credible data (ongoing)
- integration of "siloed" data, sectors & interest groups:
  - economic + biophysical; built + natural capital data
  - water agencies, public health, farm bureau, economic development, transportation agencies
- test bed for state and federal policy objectives
- messaging & reporting:
  - performance and ROI to community/decision makers
  - Integrated multiple benefits of conservation
- investments in human and social capital:
  - capacity building/collaborative learning
  - social change detection

Individual Mental Model: Conservation

beauty

Community/Cultural Mental Model: Integrated Multiple Benefits

- recreation
- stopping sprawl
- rural/cultural heritage
- habitats & biodiversity
- beauty
- PLUS:
- myriad ecosystem services
- cost effective
- gift that keeps on giving
- complements/supports built infrastructure