Local Transportation Revenues: Bay Area Experience

It has been nearly three decades since Santa Clara County voters passed Measure A, a local half-cent sales tax dedicated to transportation. This vote, which took place in 1984, ushered in a new era. Today, eight counties in the region have a sales tax dedicated to transportation purposes, including every Bay Area county except Solano County, which twice has failed to meet the two-thirds vote requirement.

In 2012, State Transportation Improvement Program funds for the Bay Area were $100 million, while revenue from the region's sales tax measures was five times larger and totaled $530 million.

Noah Berger

nation's population, yet contribute 75 percent of the nation's wealth, as measured by gross domestic product. They also endure 97 percent of the nation's traffic congestion and carry 97 percent of public transit passenger miles. Yet, rather than investing a larger share of federal transportation funds in the areas where the vast majority of the population lives and works, MAP 21 actually shifts some funds away from such areas.

Grow State Transportation Funding

MTC/ABAG will urge the Bay Area's state legislative delegation to create a new, permanent revenue source for transportation to better maintain and increase the efficiency of the existing network, and to invest in high-performing network improvements that further the goals and performance metrics of Plan Bay Area. One such source is the state's new Cap and Trade permitting system, where the revenue raised is directly linked to greenhouse gas emission reductions.

Previous generations of Californians stepped up to build a network of highways that were the envy of the world and that made possible the Bay Area's phenomenal economic growth and prosperity. But our transportation infrastructure has matured and deteriorated in recent decades due to the simple fact that the user-based mechanisms designed to build it and keep it in good repair — state and federal gas taxes — have not kept pace with inflation and have eroded in value by some 40 percent in the past two decades.

Any new state funds should be constitutionally dedicated to transportation so as to avoid the diversion of funds that plagued transportation over the last decade. Consistent with Plan Bay Area's "fix it first" policy, MTC and ABAG will advocate that the majority of revenues from any new statewide transportation fund source be focused on preservation of the existing state highway, local street and road, and public transit network.

Appendices

Supplementary Reports, Additional Resources and Maps

Noah Berger

Appendix 1

Supplementary Reports and Additional Resources

The Plan Bay Area materials listed below can be found at:
http://onebayarea.org/regional-initiatives/plan-bay-area/final-plan-bay-area/final-supplementary-reports.html

Economic Impact Analysis for Future Regional Plans

Environmental Impact Report

Equity Analysis Report: Including Title VI, Environmental Justice and Equity Analysis for Plan Bay Area

Financial Assumptions

Forecast of Jobs, Population and Housing

Glossary

Government-to-Government Consultation with Native American Tribes

Local Street and Road Needs and Revenue Assessment

Online Project Database and Transportation Project List

Performance Assessment Report

Priority Development Area Development Feasibility and Readiness Assessment

Public Outreach and Participation Program (Volumes 1–4)

Regional Housing Need Plan for the San Francisco Bay Area: 2014–2022

State Highway Needs and Revenue Assessment

Summary of Predicted Land Use Responses

Summary of Predicted Traveler Responses

Transit Operating and Capital Needs and Revenue Assessment

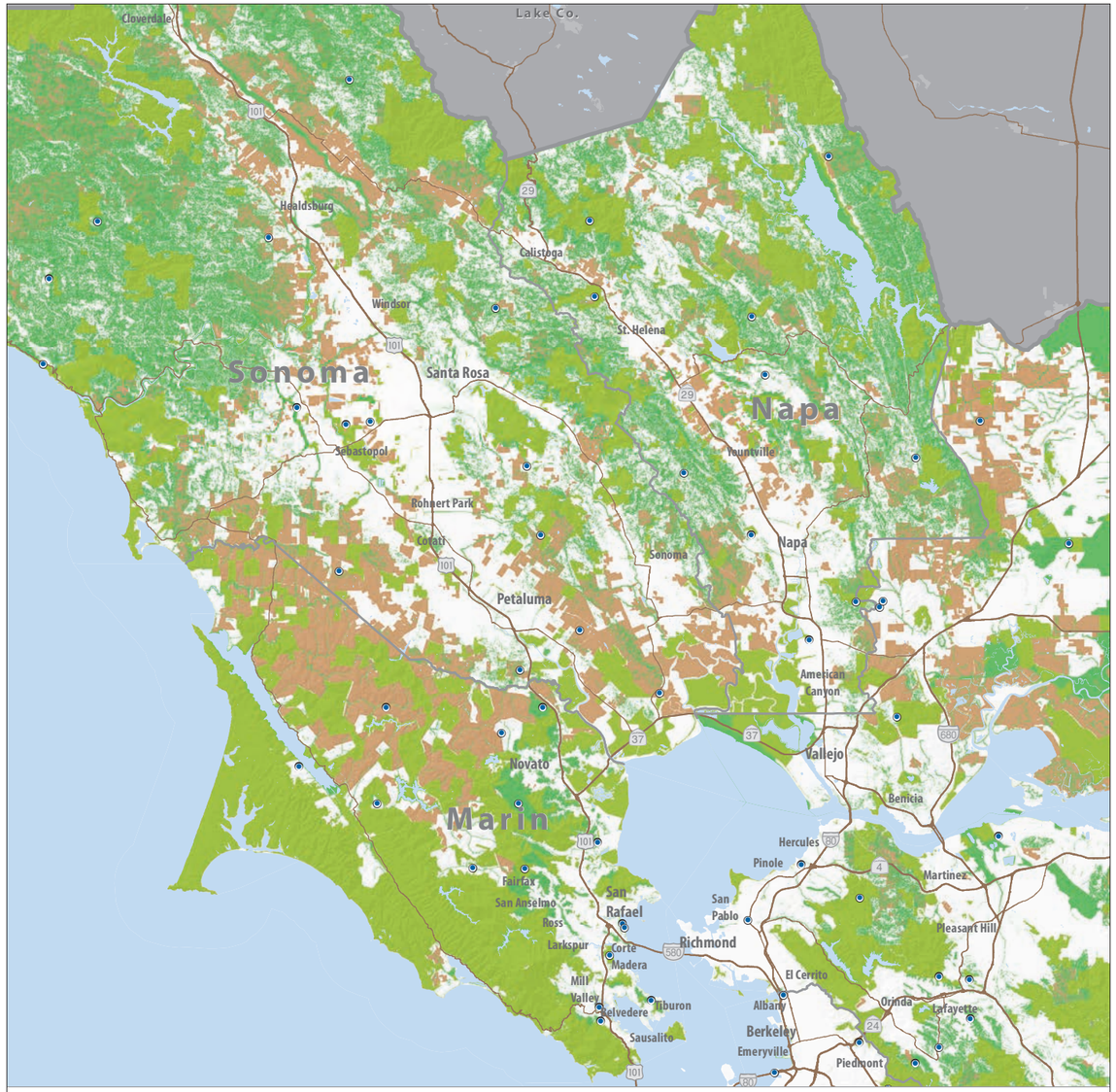
Transportation Air Quality Conformity Analysis for Plan Bay Area and the 2013 Transportation Improvement Program

Appendix 2
Maps

Appendix 2 includes a set of 18 detailed maps of the region showing key resource lands, job and housing growth (2010–2040), and total future housing and job intensities for 2040. For each topic, three close-up maps of different parts of the Bay Area region are included. See page 153 for legend information.

Map		Page
Open Space and Williamson Act Lands: 2013		
14	North Bay/West: Open Space and Williamson Act Lands	135
15	Northeast and Central Bay: Open Space and Williamson Act Lands	136
16	South and West Bay: Open Space and Williamson Act Lands	137
Resource Lands: 2013		
17	North Bay/West: Resource Lands	138
18	Northeast and Central Bay: Resource Lands	139
19	South and West Bay: Resource Lands	140
Job Growth: 2010–2040		
20	North Bay/West: Change in Jobs per Acre — 2010–2040	141
21	Northeast and Central Bay: Change in Jobs per Acre — 2010–2040	142
22	South and West Bay: Change in Jobs per Acre — 2010–2040	143
Household Growth: 2010–2040		
23	North Bay/West: Change in Households per Acre — 2010–2040	144
24	Northeast and Central Bay: Change in Households per Acre — 2010–2040	145
25	South and West Bay: Change in Households per Acre — 2010–2040	146
Jobs per Acre in 2040		
26	North Bay/West: Jobs per Acre in 2040	147
27	Northeast and Central Bay: Jobs per Acre in 2040	148
28	South and West Bay: Jobs per Acre in 2040	149
Households per Acre in 2040		
29	North Bay/West: Households per Acre in 2040	150
30	Northeast and Central Bay: Households per Acre in 2040	151
31	South and West Bay: Households per Acre in 2040	152
Legend Information for Plan Bay Area Maps		153

MAP 14 **North Bay/West: Open Space and Williamson Act Lands**



Open Space and Williamson Act Lands

- **Publicly Owned Parks and Open Space**
- **Priority Conservation Areas**
- **Williamson Act Lands**
  Some Williamson Act contracts are set to expire and be decommissioned during the plan period.
- **Riparian Corridors, Hillside Areas, Greenbelt Reserves and Floodplains**
- **Not Categorized**
  Includes land that may be designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes. Also may include areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence. This category may also include undeveloped lands classified as Farmland, Critical Habitat and Grazing Lands. See "Resource Lands" map for the location of these areas.

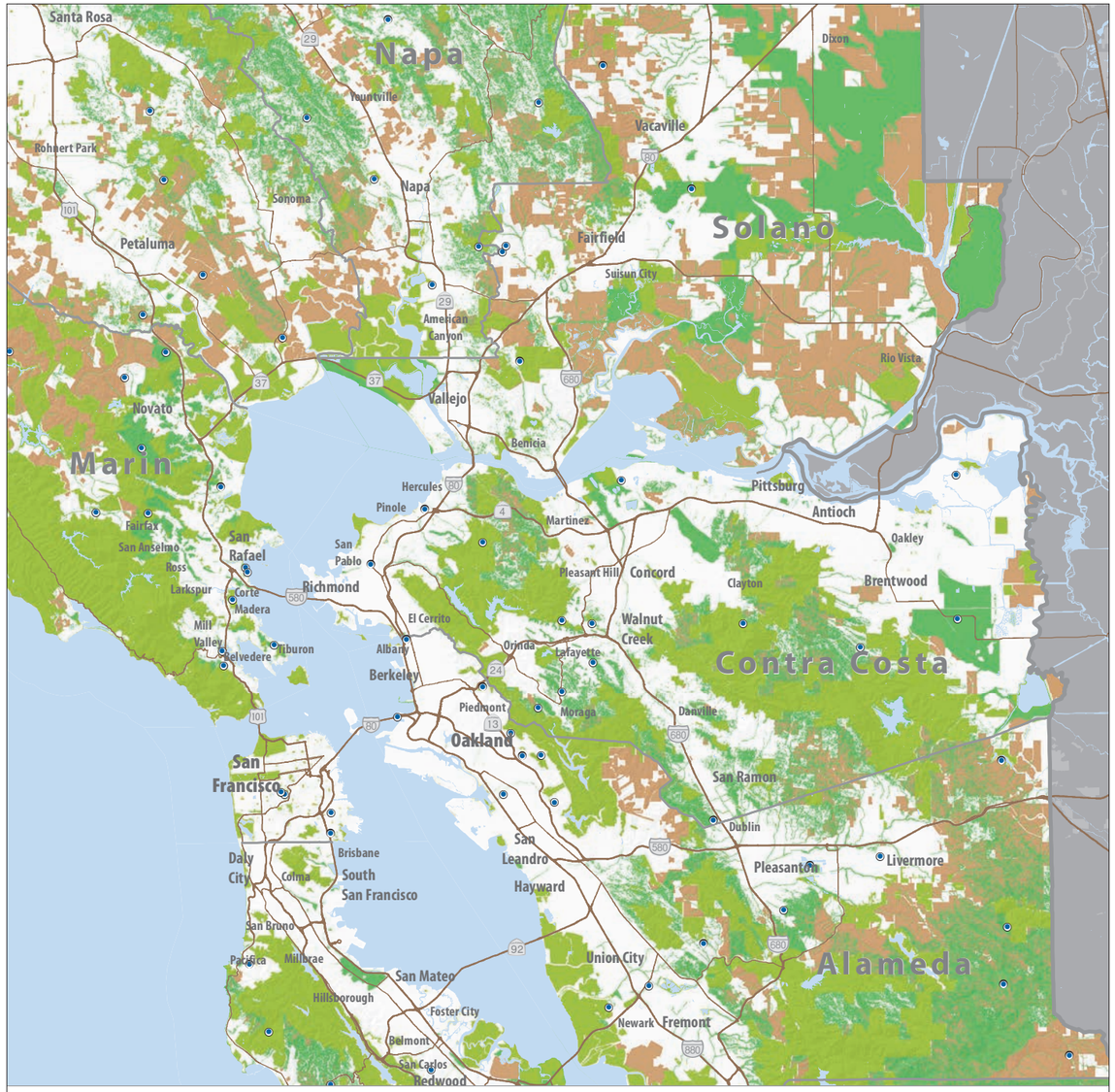
0 5 10 15 Miles

0 5 10 15 Kilometers

	POPULATION
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.
See page 153 for legend information.

MAP 15 Northeast and Central Bay: Open Space and Williamson Act Lands



Open Space and Williamson Act Lands

Publicly Owned Parks and Open Space

Priority Conservation Areas

Williamson Act Lands

Some Williamson Act contracts are set to expire and be decommissioned during the plan period.

Riparian Corridors, Hillside Areas, Greenbelt Reserves and Floodplains

0 5 10 15 Miles

0 5 10 15 Kilometers

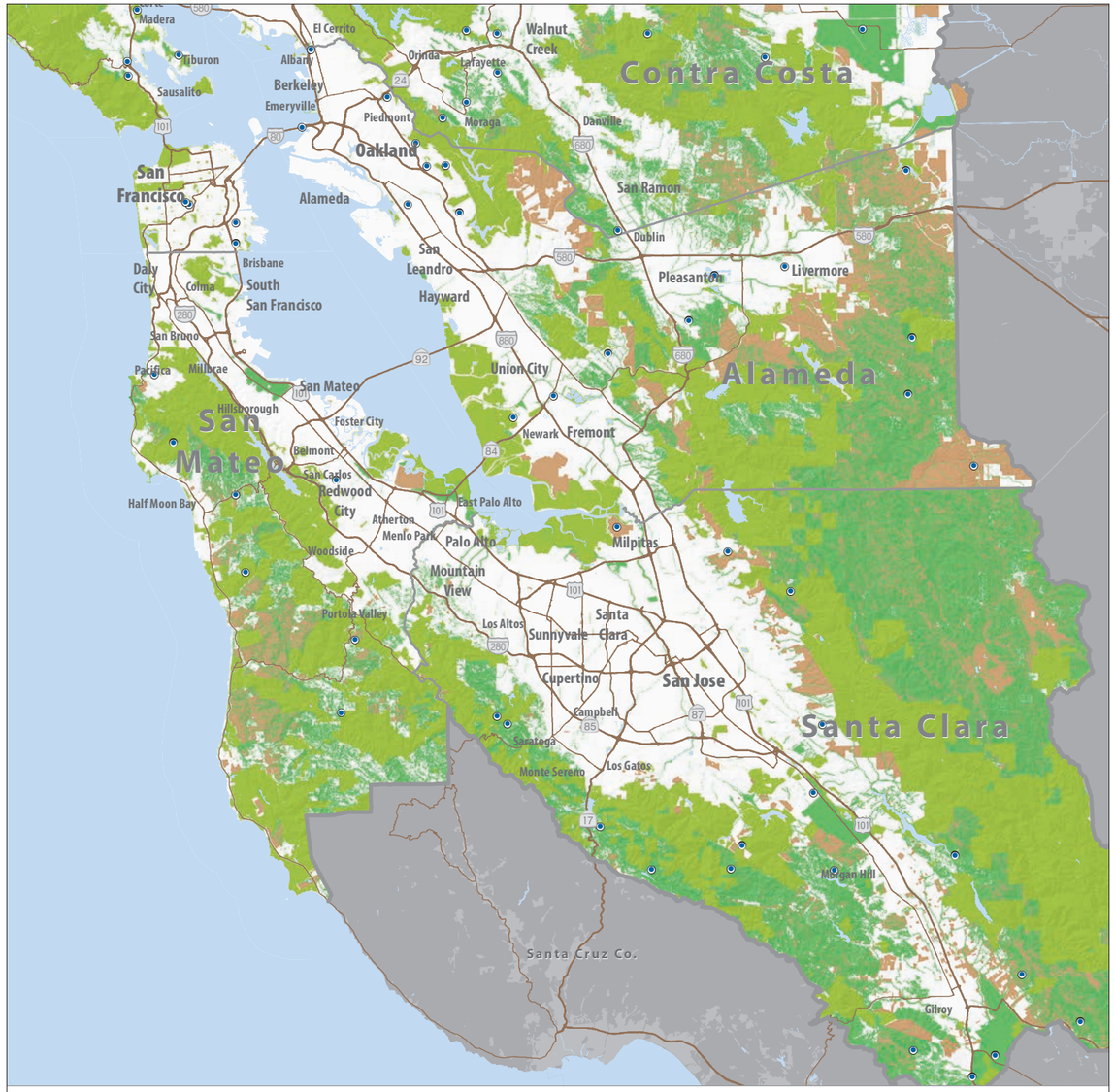
	POPULATION
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

Not Categorized

Includes land that may be designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes. Also may include areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence. This category may also include undeveloped lands classified as Farmland, Critical Habitat and Grazing Lands. See "Resource Lands" map for the location of these areas.

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.
See page 153 for legend information.

MAP 16 South and West Bay: Open Space and Williamson Act Lands



Open Space and Williamson Act Lands

Publicly Owned Parks and Open Space

Priority Conservation Areas

Williamson Act Lands

Some Williamson Act contracts are set to expire and be decommissioned during the plan period.

Riparian Corridors, Hillside Areas, Greenbelt Reserves and Floodplains

0 5 10 15 Miles

0 5 10 15 Kilometers

	POPULATION
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

Not Categorized

Includes land that may be designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes. Also may include areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence. This category may also include undeveloped lands classified as Farmland, Critical Habitat and Grazing Lands. See "Resource Lands" map for the location of these areas.

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.
See page 153 for legend information.

MAP 17 North Bay/West: Resource Lands

Resource Lands

Farmland | Critical Habitat | Grazing Lands | Not Categorized

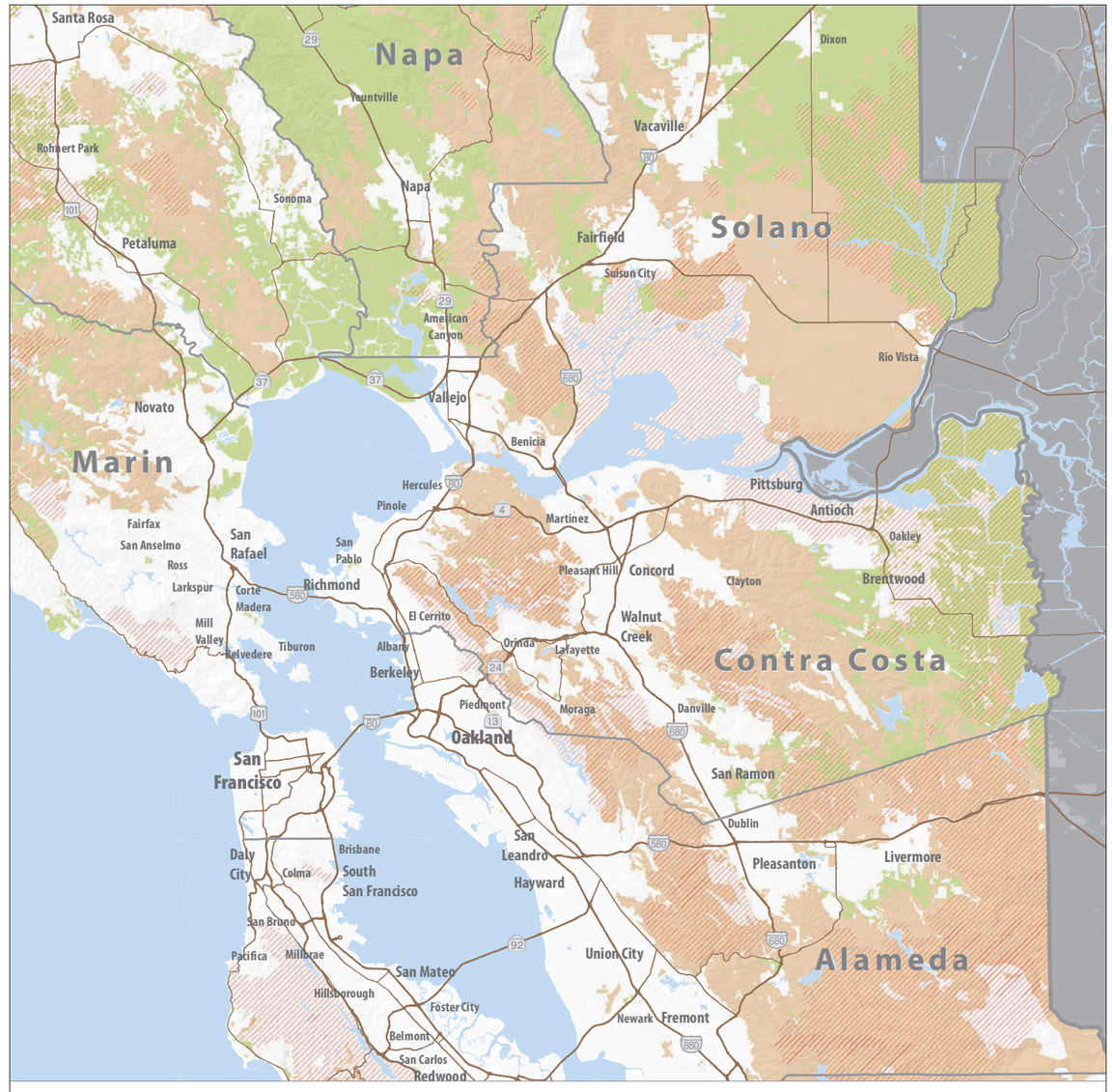
Includes land that may be designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes. Also may include areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas, and Spheres of Influence. These areas may also include Open Space/Parks, Riparian Corridors, Hillside Areas, Greenbelt Reserves, Floodplains and Williamson Act Lands. See "Open Space and Williamson Act Lands" map for the location of these areas.

POPULATION
Oakland > 350,000
Novato 50,000 - 350,000
Pacifica < 50,000

0 5 10 15 Miles
0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.
See page 153 for legend information.

MAP 18 Northeast and Central Bay: Resource Lands



Resource Lands

Farmland | Critical Habitat | Grazing Lands | Not Categorized

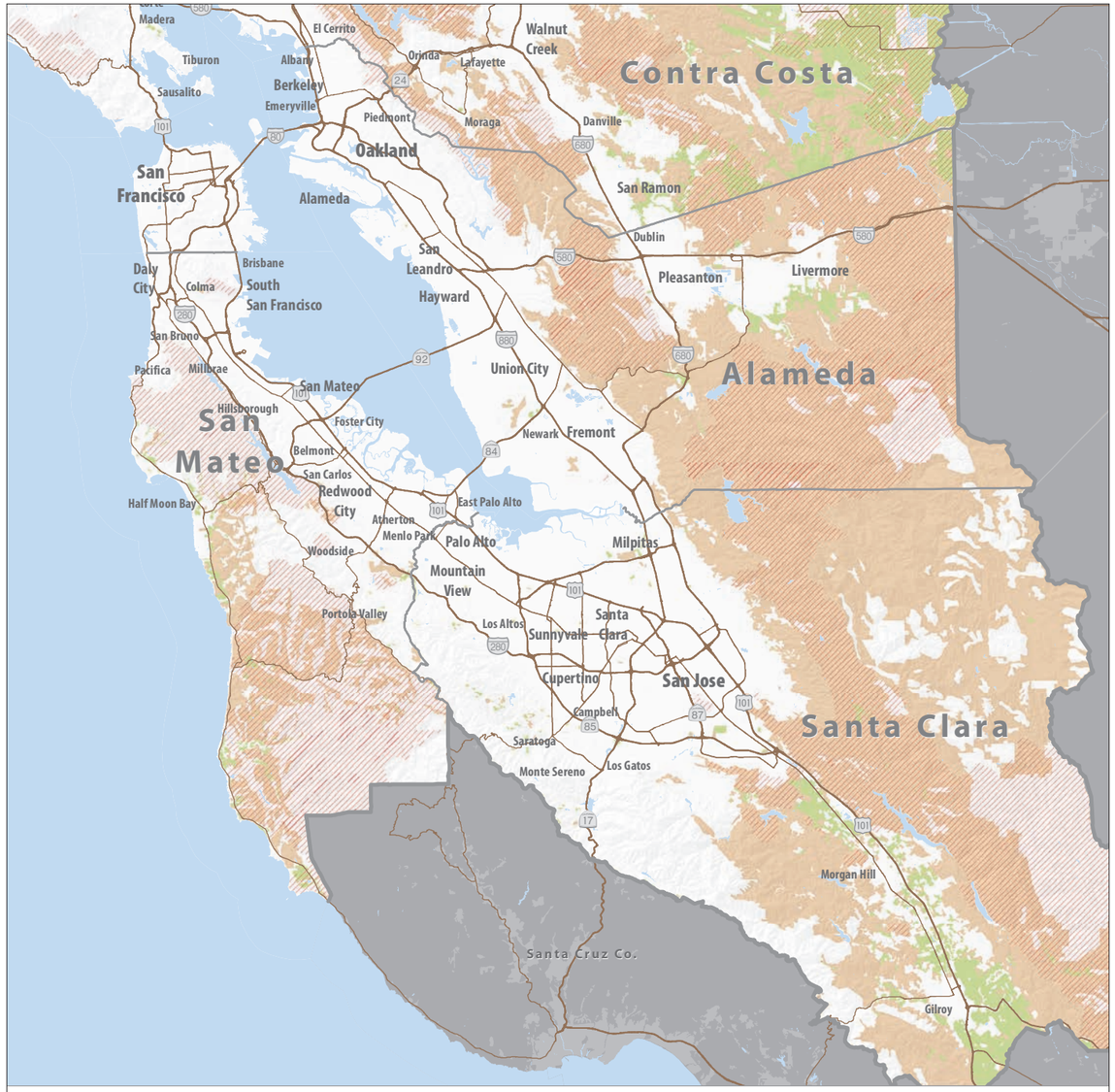
Includes land that may be designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes. Also may include areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas, and Spheres of Influence. These areas may also include Open Space/Parks, Riparian Corridors, Hillside Areas, Greenbelt Reserves, Floodplains and Williamson Act Lands. See "Open Space and Williamson Act Lands" map for the location of these areas.

POPULATION
Oakland > 350,000
Novato 50,000 - 350,000
Pacifica < 50,000

0 5 10 15 Miles
0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.
See page 153 for legend information.

MAP 19 South and West Bay: Resource Lands



Resource Lands

Farmland **Critical Habitat** **Grazing Lands**

Not Categorized

Includes land that may be designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes. Also may include areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas, and Spheres of Influence. These areas may also include Open Space/Parks, Riparian Corridors, Hillside Areas, Greenbelt Reserves, Floodplains and Williamson Act Lands. See "Open Space and Williamson Act Lands" map for the location of these areas.

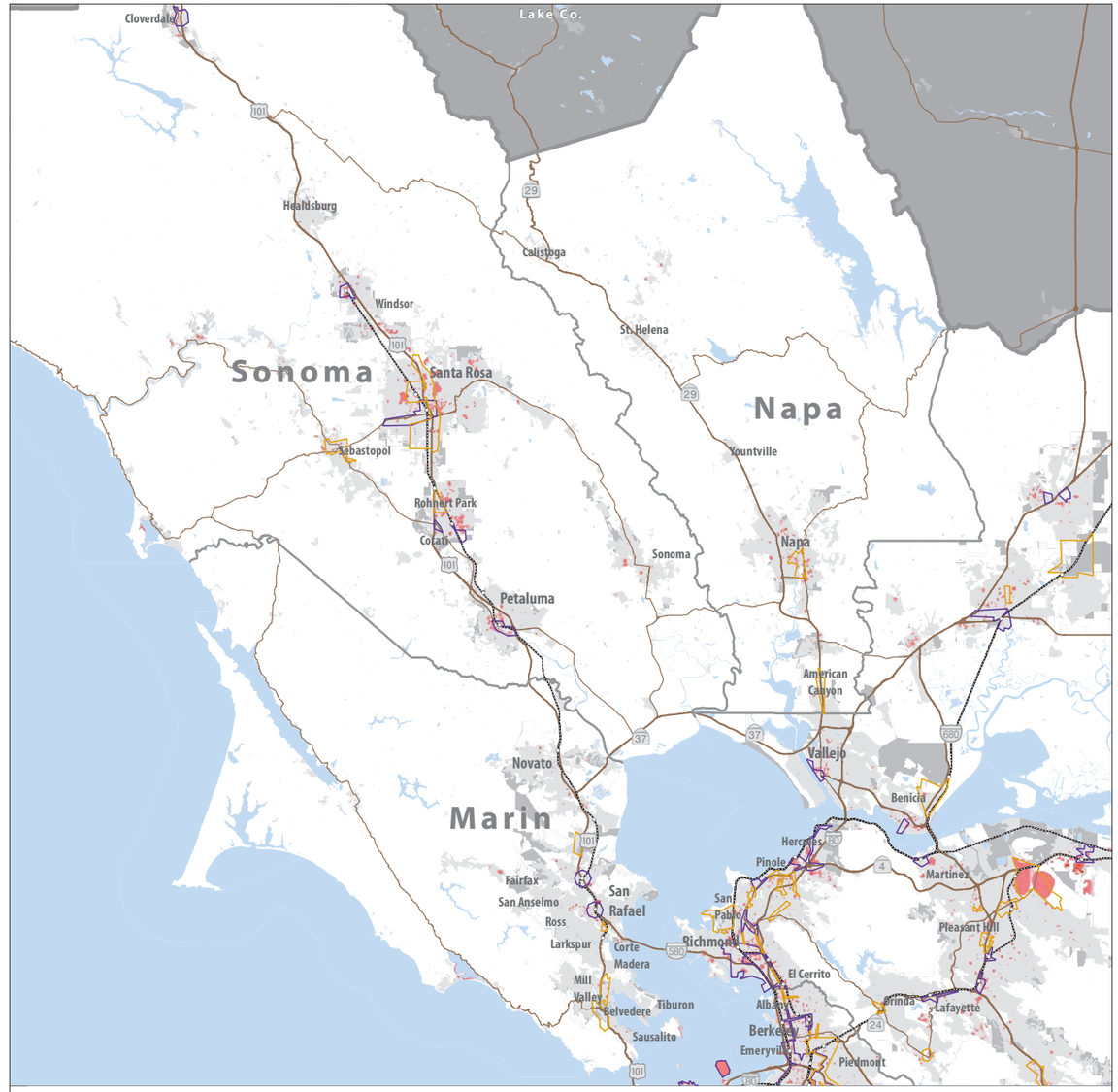
Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.
See page 153 for legend information.

POPULATION	
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

MAP 20 North Bay/West: Change in Jobs per Acre — 2010–2040



Change in Jobs per Acre, 2010 - 2040

Very Low	1 - 50	Med. High	5,000 - 10,000
Low	50 - 1,000	High	10,000 - 20,000
Medium	1,000 - 5,000	Very High	Greater than 20,000

Priority Development Areas

Planned

A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.

Potential

A Potential PDA requires more local planning, review and action before it can become a Planned PDA.

Rail Lines

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

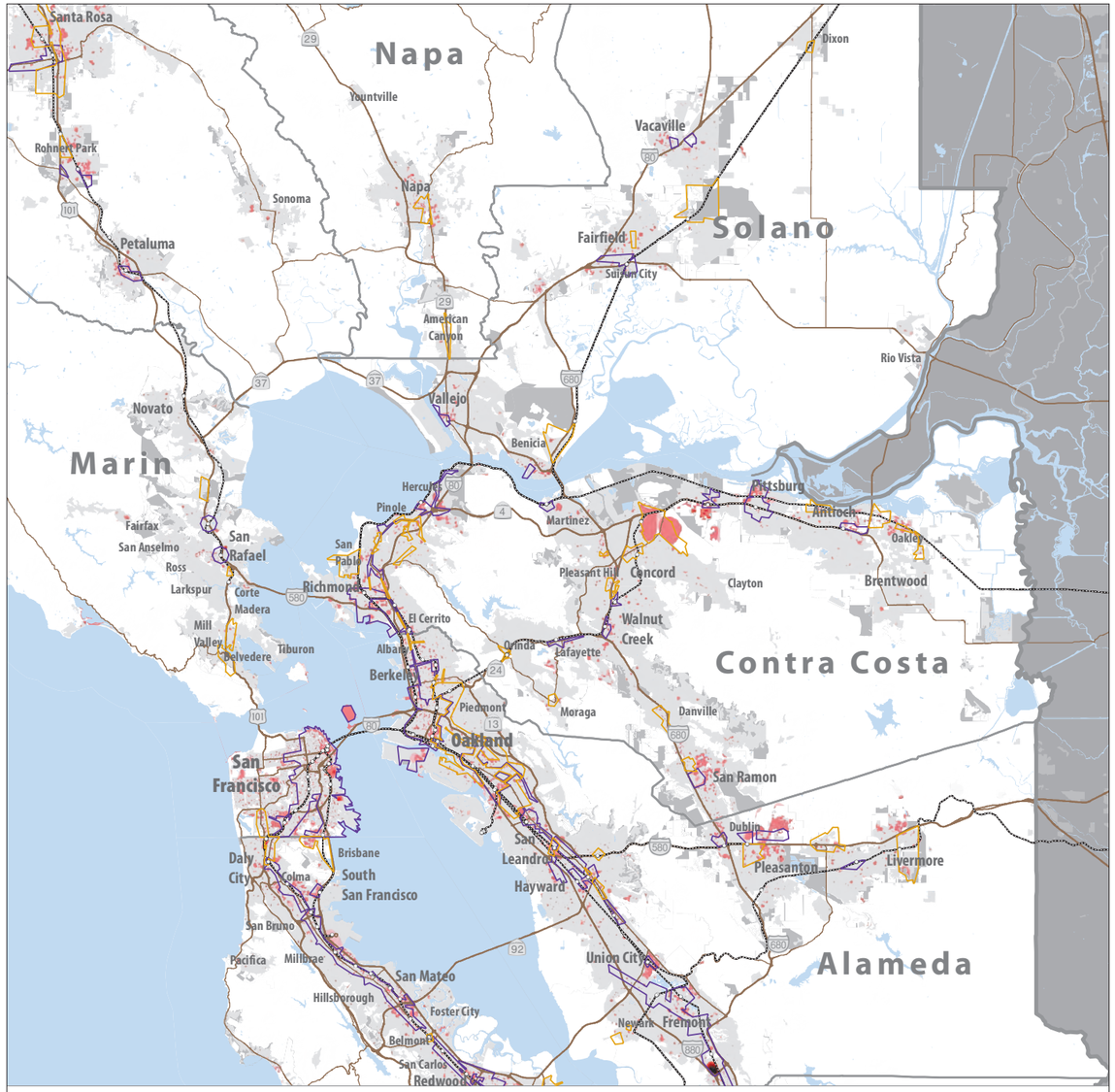
Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

POPULATION	
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

MAP 21 **Northeast and Central Bay: Change in Jobs per Acre — 2010–2040**



Change in Jobs per Acre, 2010 - 2040

Very Low	1 - 50	Med. High	5,000 - 10,000
Low	50 - 1,000	High	10,000 - 20,000
Medium	1,000 - 5,000	Very High	Greater than 20,000

Priority Development Areas

Planned

A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.

Potential

A Potential PDA requires more local planning, review and action before it can become a Planned PDA.

Rail Lines

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

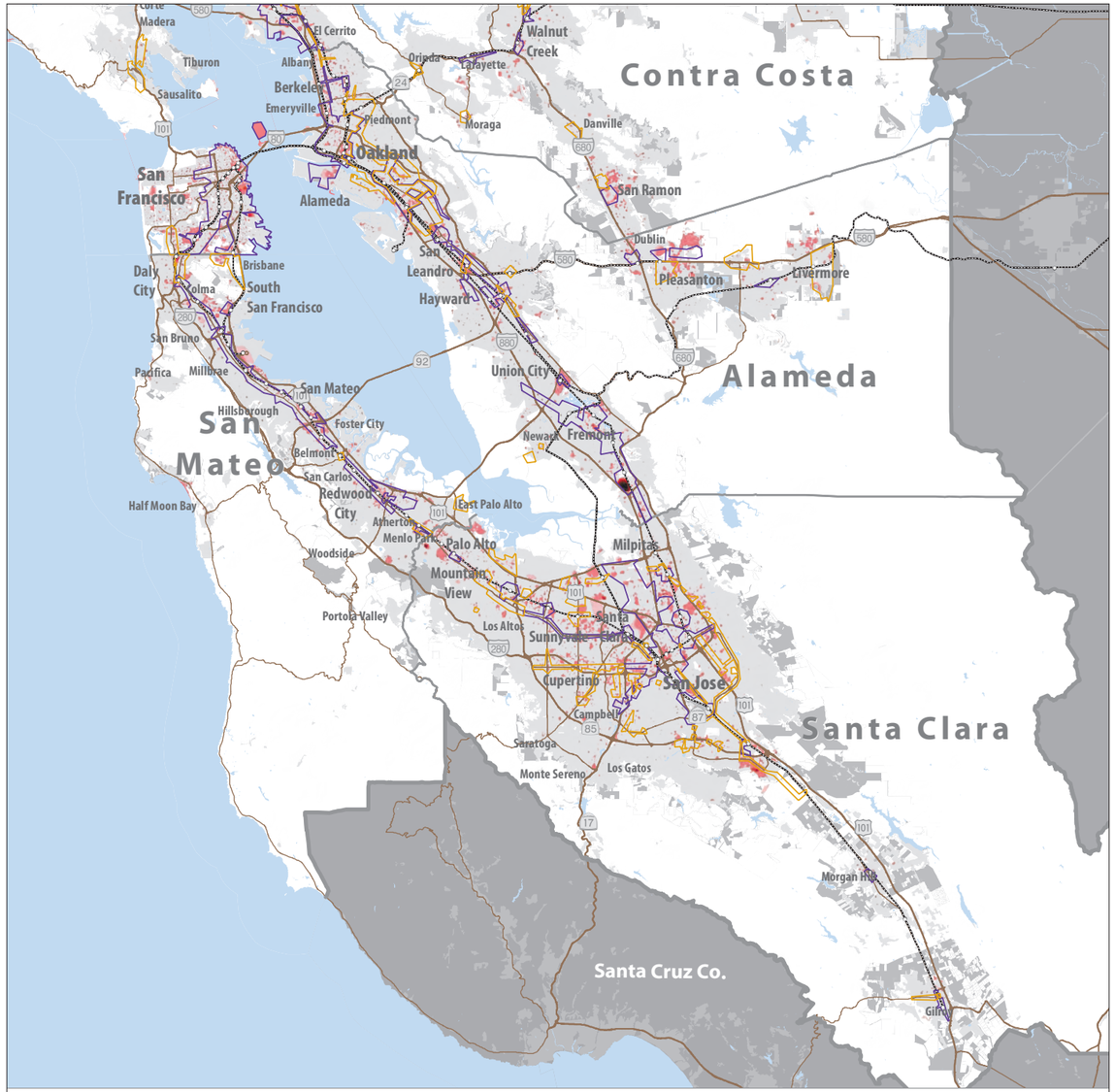
POPULATION	
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 22 **South and West Bay: Change in Jobs per Acre — 2010–2040**



Change in Jobs per Acre, 2010 - 2040

Very Low	1 - 50	Med. High	5,000 - 10,000
Low	50 - 1,000	High	10,000 - 20,000
Medium	1,000 - 5,000	Very High	Greater than 20,000

Priority Development Areas

Planned

A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.

Potential

A Potential PDA requires more local planning, review and action before it can become a Planned PDA.

Rail Lines

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

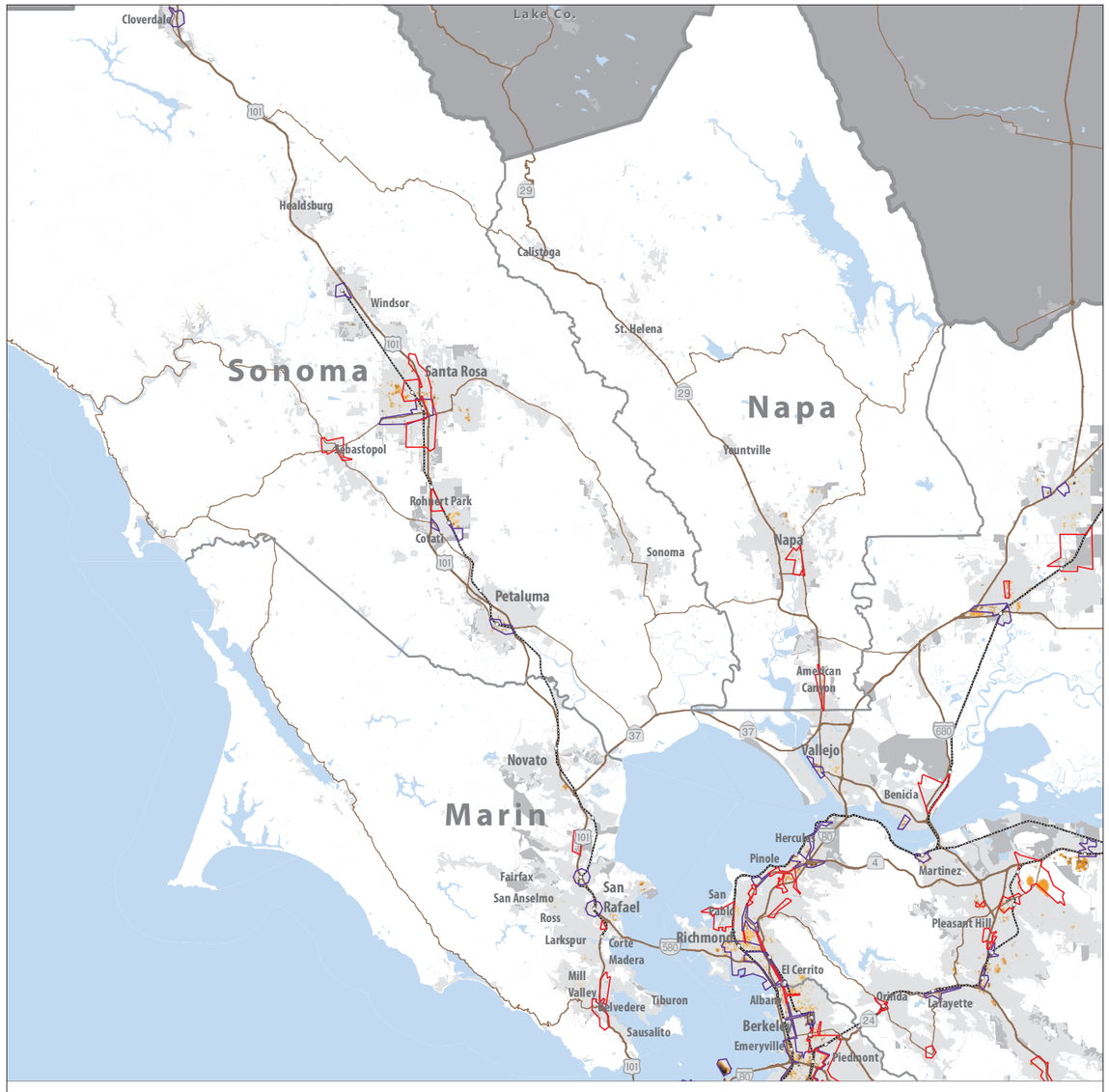
POPULATION	
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 23 North Bay/West: Change in Households per Acre — 2010–2040



Change in Households per Acre, 2010 - 2040

Very Low	1 - 8	Med. High	30 - 60
Low	8 - 10	High	60 - 85
Medium	10 - 30	Very High	Greater than 85

Priority Development Areas

Planned

A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.

Potential

A Potential PDA requires more local planning, review and action before it can become a Planned PDA.

Rail Lines

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

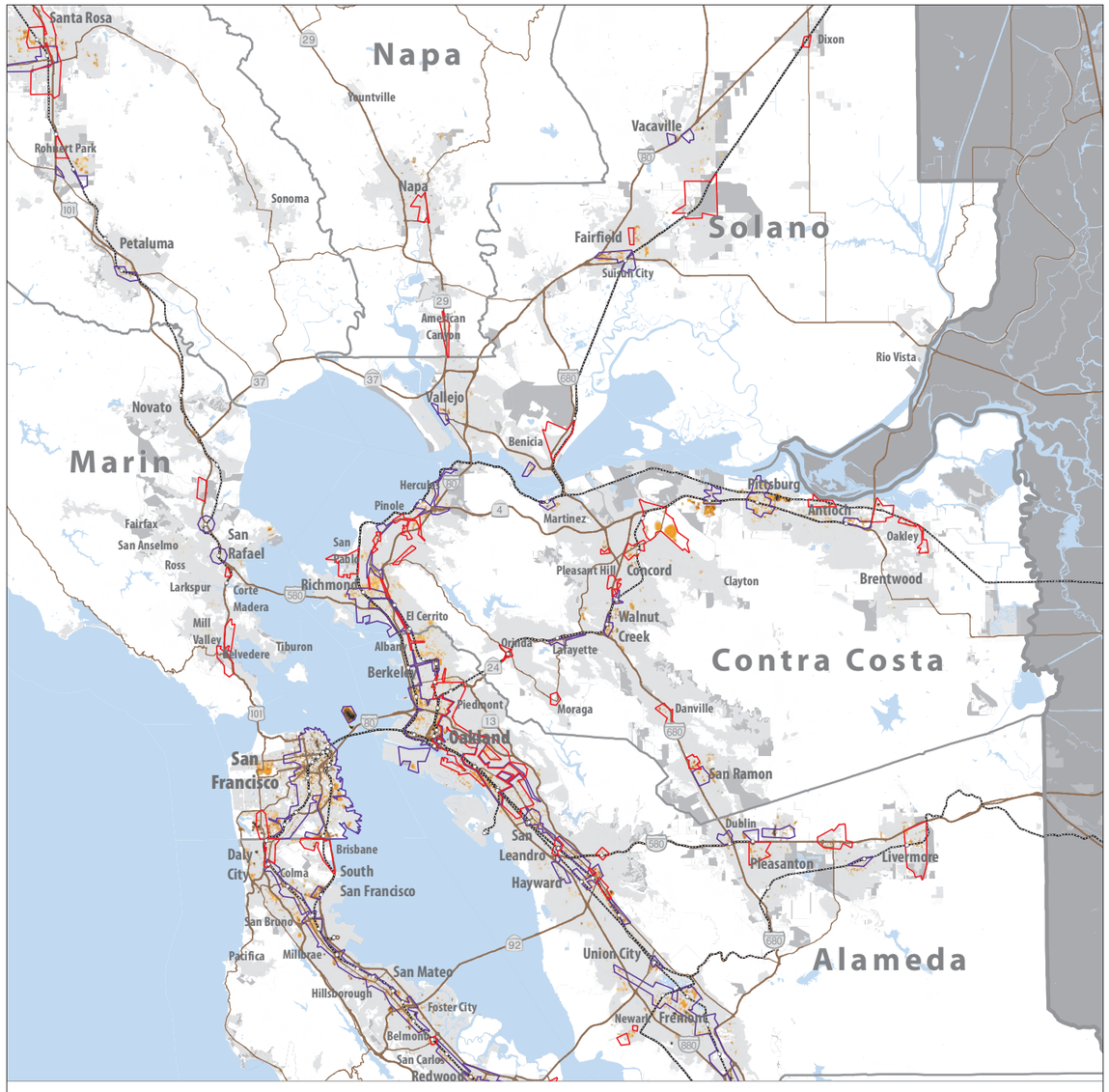
	POPULATION
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 24 Northeast and Central Bay: Change in Households per Acre — 2010–2040



Change in Households per Acre, 2010 - 2040

Very Low	1 - 8	Med. High	30 - 60
Low	8 - 10	High	60 - 85
Medium	10 - 30	Very High	Greater than 85

Priority Development Areas

Planned

A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.

Potential

A Potential PDA requires more local planning, review and action before it can become a Planned PDA.

Rail Lines

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

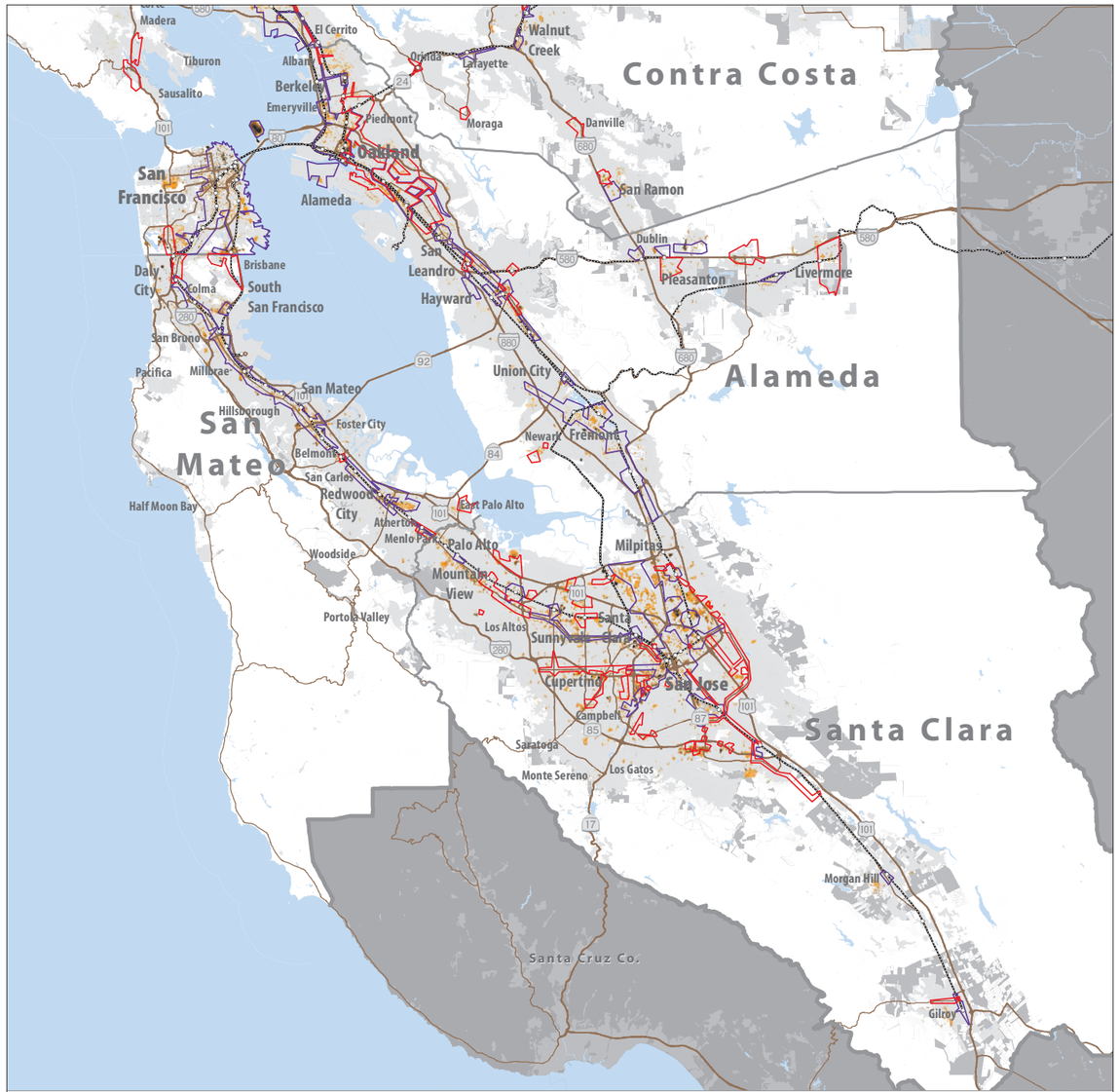
	POPULATION
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 25 South and West Bay: Change in Households per Acre — 2010–2040



Change in Households per Acre, 2010 - 2040

Very Low	1 - 8	Med. High	30 - 60
Low	8 - 10	High	60 - 85
Medium	10 - 30	Very High	Greater than 85

Priority Development Areas

- **Planned**
  A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.
- **Potential**
  A Potential PDA requires more local planning, review and action before it can become a Planned PDA.
- **Rail Lines**

- **Urbanized Areas**
- **Urban Boundary Zones**

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

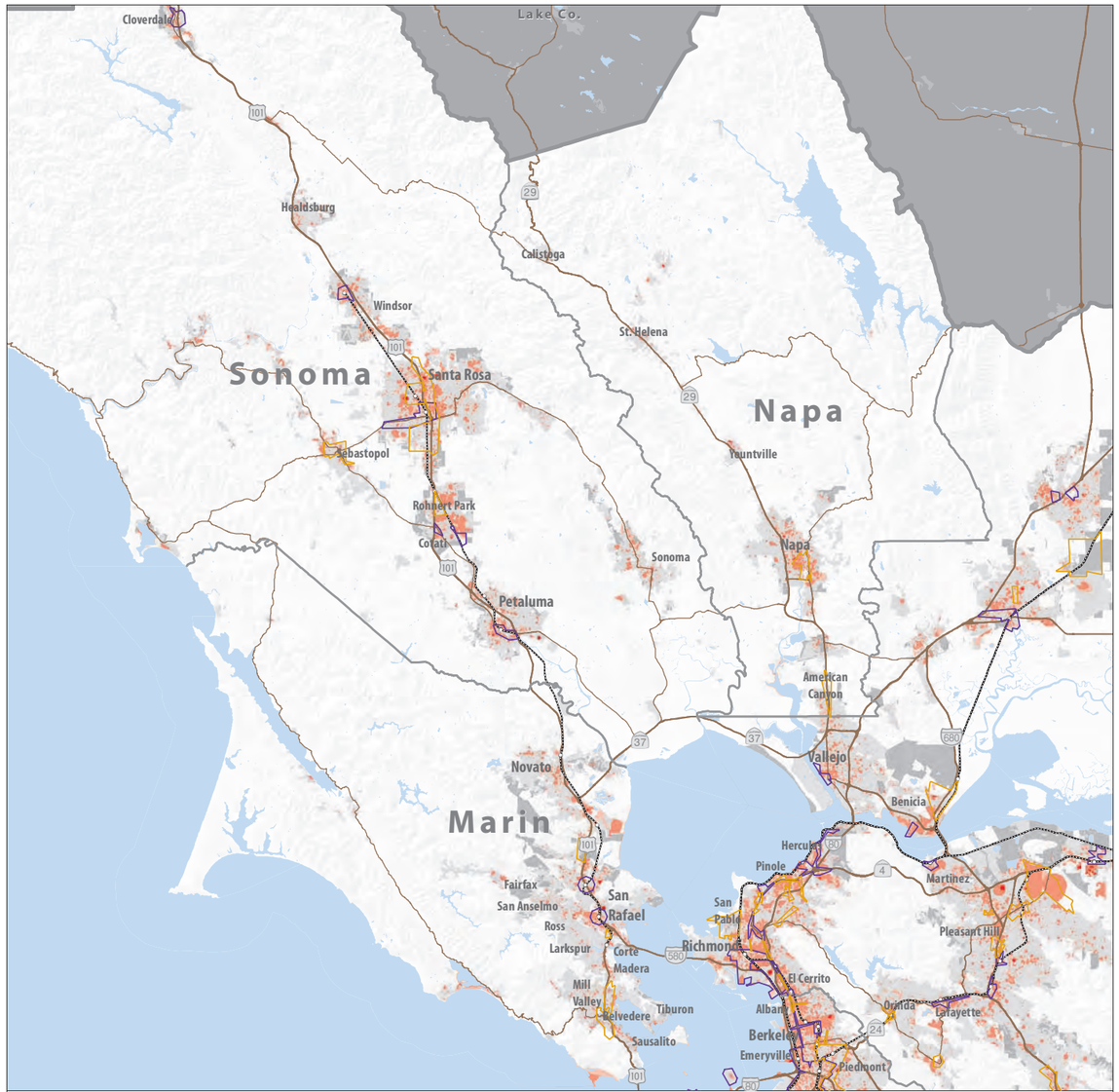
POPULATION	
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 26 North Bay/West: Jobs per Acre in 2040



Jobs per Acre in 2040

Very Low		Med. High	
Low		High	
Medium		Very High	

Priority Development Areas

- **Planned**
  A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.
- **Potential**
  A Potential PDA requires more local planning, review and action before it can become a Planned PDA.
- **Rail Lines**

- **Urbanized Areas**
- **Urban Boundary Zones**

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

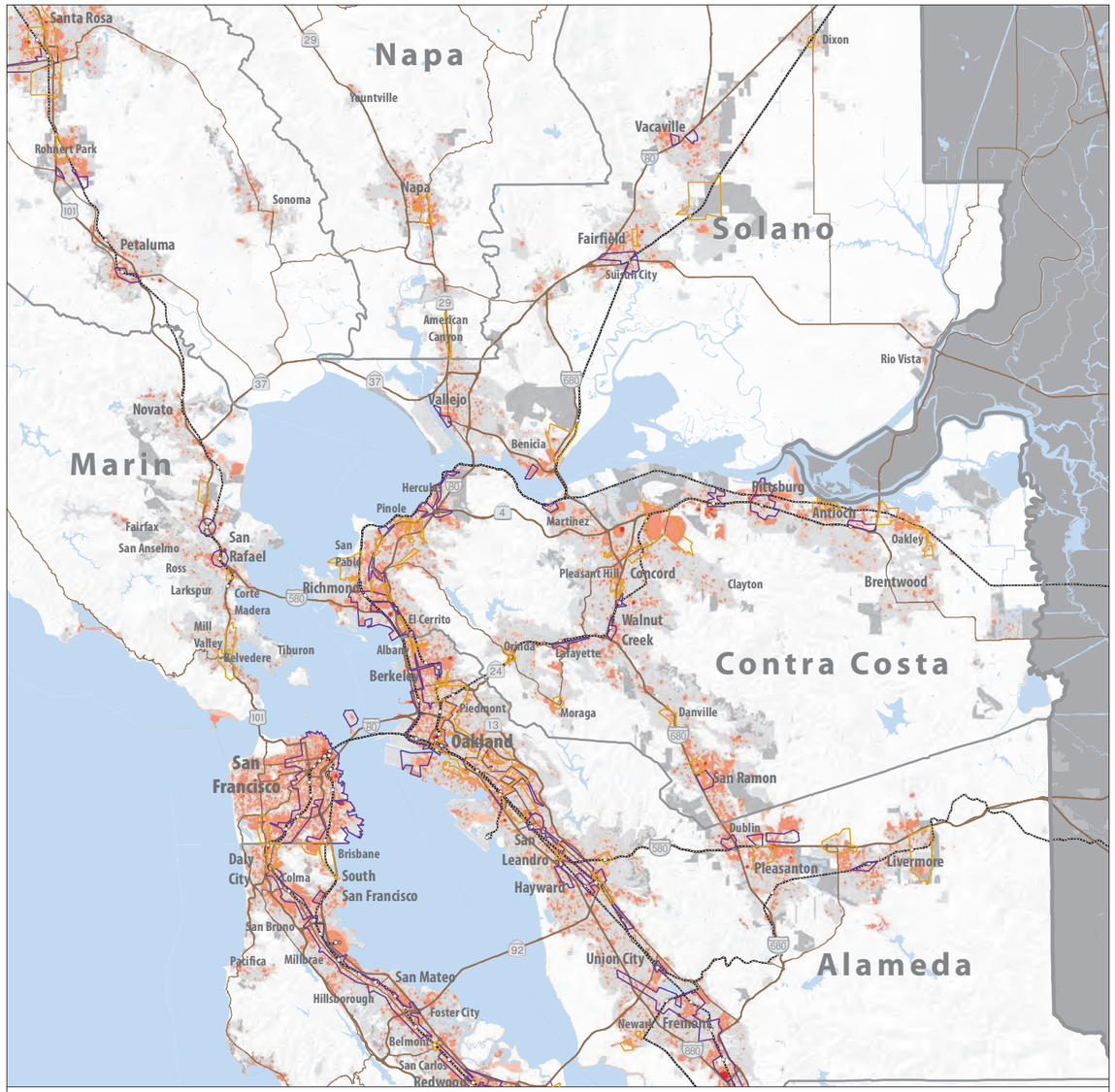
POPULATION	
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 27 Northeast and Central Bay: Jobs per Acre in 2040



Jobs per Acre in 2040

Very Low | Low | Medium | High | Med. High | Very High

Priority Development Areas

- **Planned**
  A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.
- **Potential**
  A Potential PDA requires more local planning, review and action before it can become a Planned PDA.
- **Rail Lines**

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

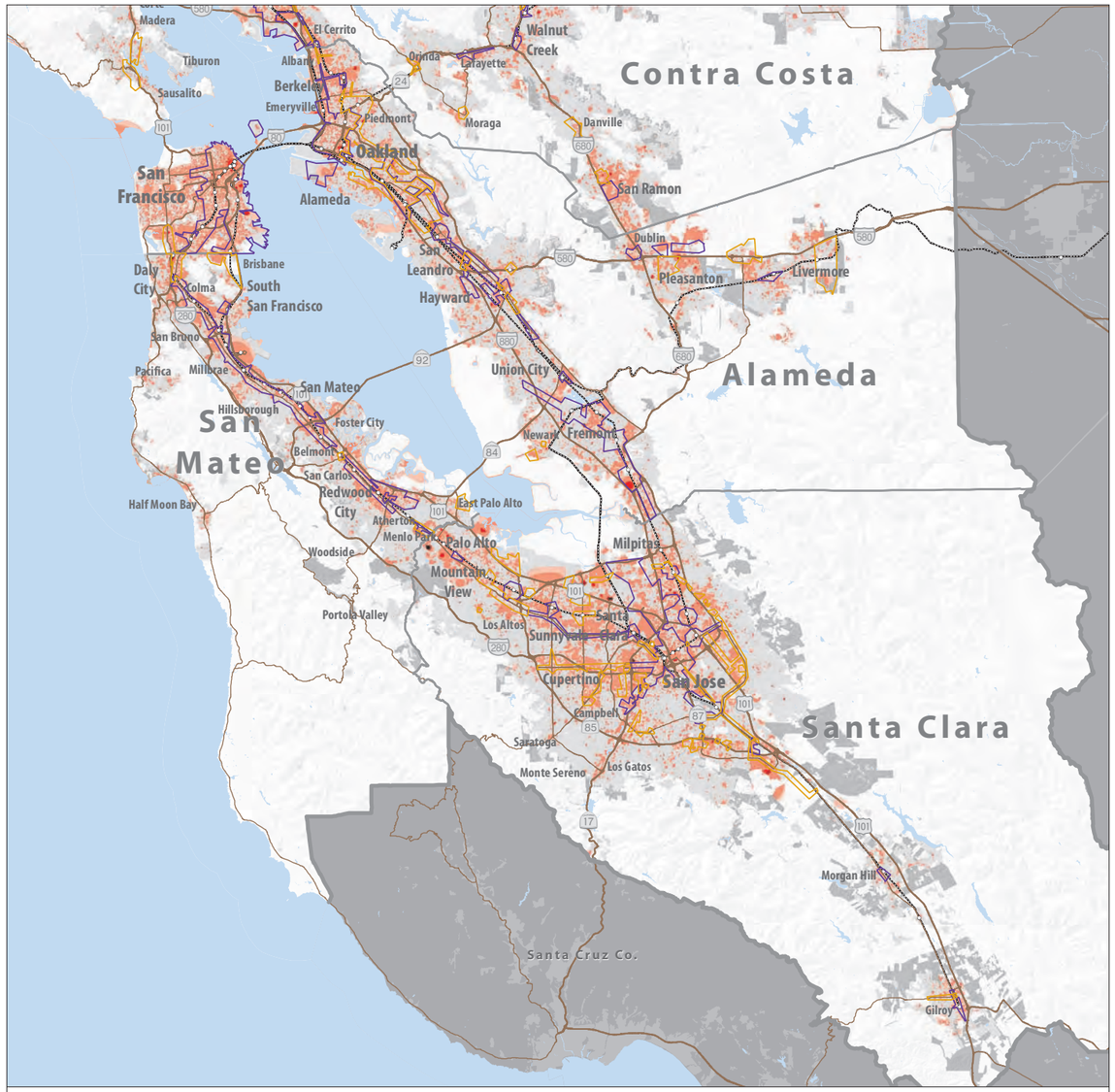
POPULATION	
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 28 South and West Bay: Jobs per Acre in 2040



Jobs per Acre in 2040

Very Low | Low | Medium | High | Med. High | Very High

Priority Development Areas

- **Planned**
  A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.
- **Potential**
  A Potential PDA requires more local planning, review and action before it can become a Planned PDA.
- **Rail Lines**

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

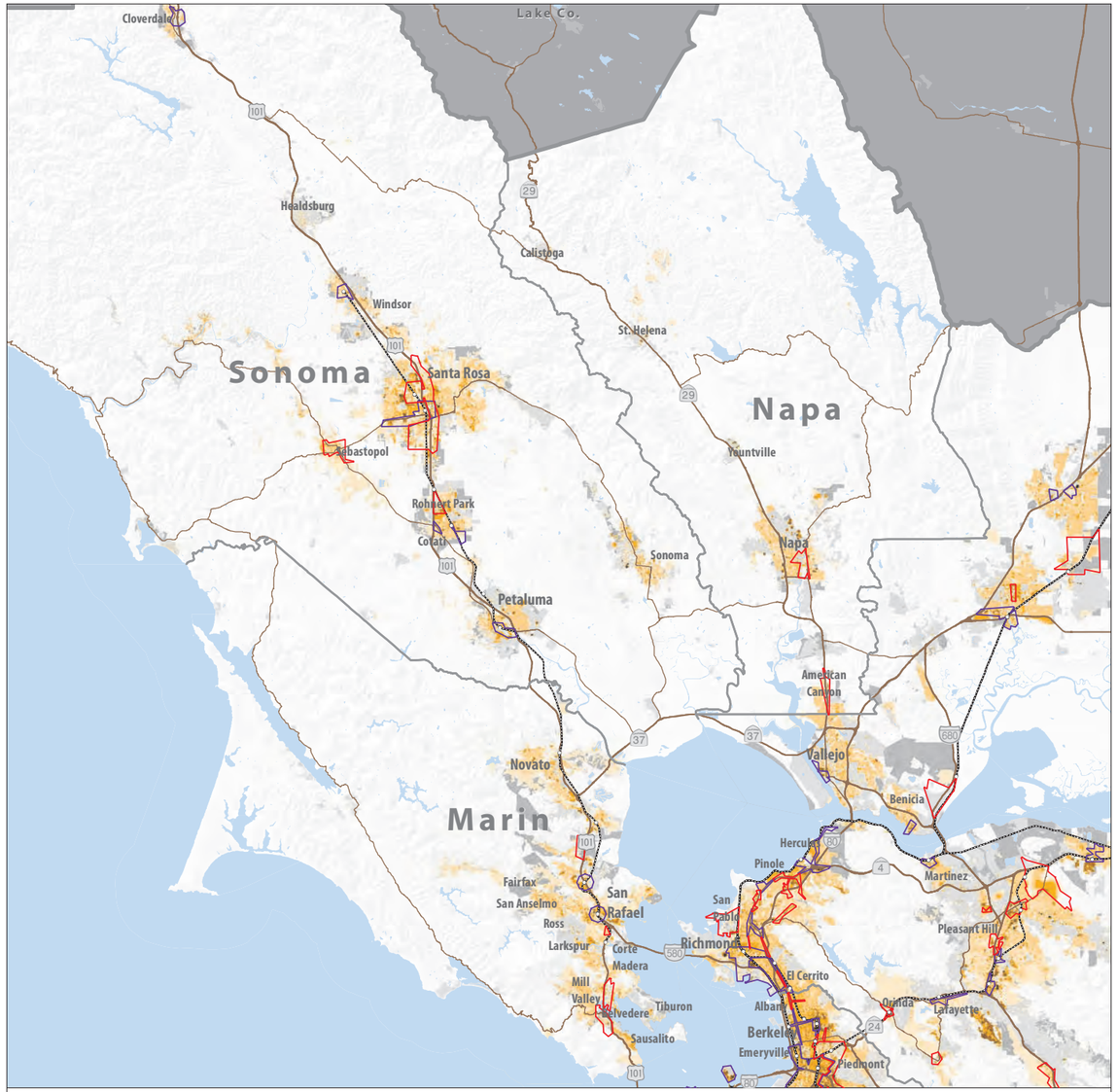
POPULATION	
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 29 North Bay/West: Households per Acre in 2040



Households per Acre in 2040

Priority Development Areas

- Planned
  A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.
- Potential
  A Potential PDA requires more local planning, review and action before it can become a Planned PDA.
- Rail Lines

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

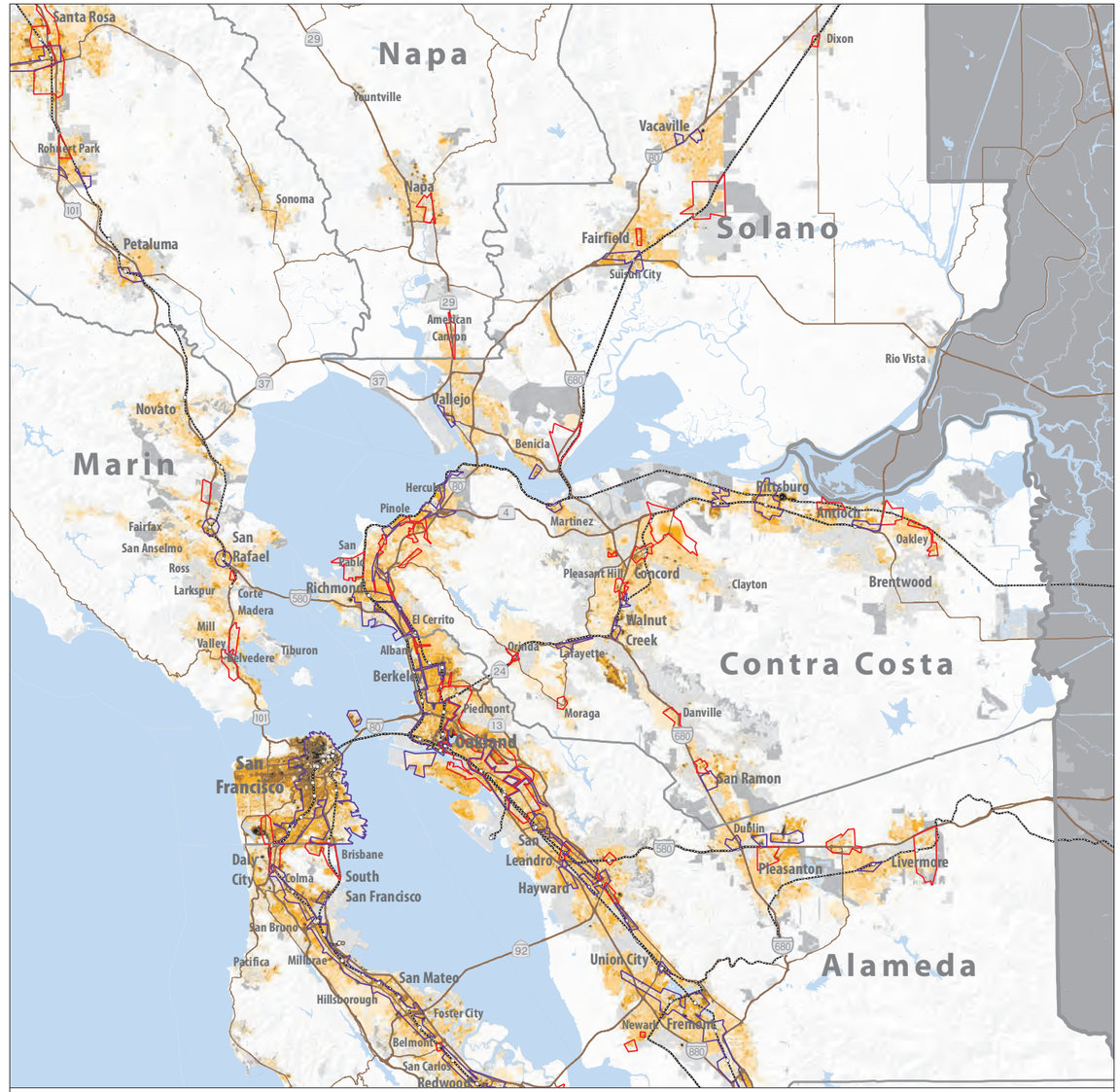
	POPULATION
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 30 Northeast and Central Bay: Households per Acre in 2040



Households per Acre in 2040

Priority Development Areas

- Planned
  A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.
- Potential
  A Potential PDA requires more local planning, review and action before it can become a Planned PDA.
- Rail Lines

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

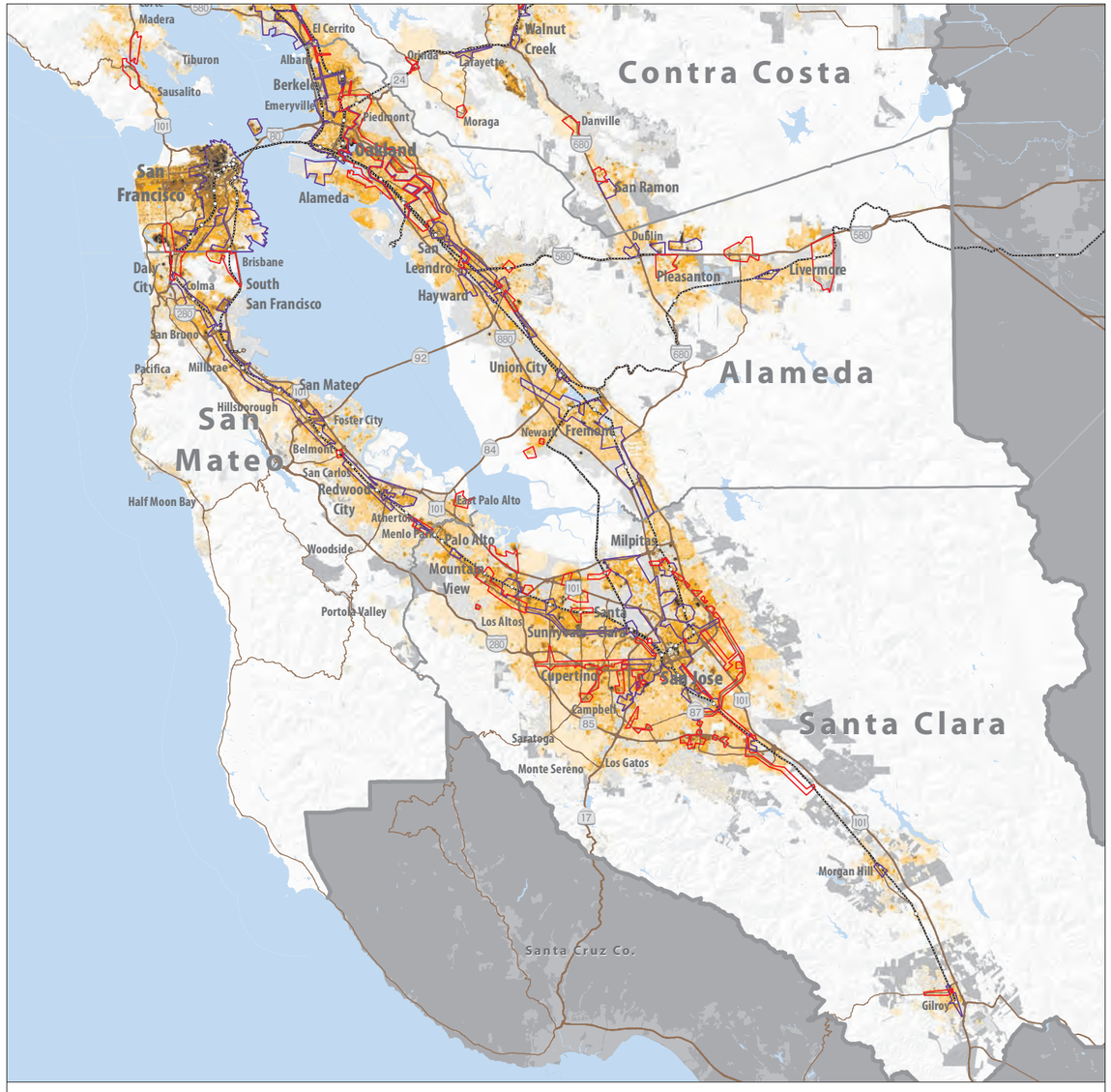
	POPULATION
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

0 5 10 15 Kilometers

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

MAP 31 **South and West Bay: Households per Acre in 2040**



Households per Acre in 2040

Priority Development Areas

Planned

A Planned PDA has a formally adopted plan, as determined by a local jurisdiction.

Potential

A Potential PDA requires more local planning, review and action before it can become a Planned PDA.

Rail Lines

Urbanized Areas

Urban Boundary Zones

Urbanized Areas: Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.

Urban Boundary Zones: Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence.

	POPULATION
Oakland	> 350,000
Novato	50,000 - 350,000
Pacifica	< 50,000

0 5 10 15 Miles

Kilometers 0 5 10 15

Map is for general information. For more information on local zoning or designations for a particular site or parcel, please contact your city or county.

Legend Information for Plan Bay Area Maps

Data	Description
Critical Habitat **Source:** National Marine Fisheries Service; U.S. Fish and Wildlife Service; California Department of Fish and Wildlife; California Natural Diversity Database.	Includes lands designated as habitat for protected, sensitive or special-status species as defined by local, state or federal agencies, or protected by the federal Endangered Species Act, the California Endangered Species Act or the Native Plant Protection Act.
Farmland **Source:** Farmland Mapping and Monitoring Program, 2010.	Includes voter-approved, agriculturally zoned land that is identified as important for protection from urban development, and land outside all existing city spheres of influence or city limits as of January 2010 that is one of the following Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) classifications: • Prime Farmland • Unique Farmland • Farmland of Statewide Importance
Floodplains **Source:** U.S. Federal Emergency Management Agency; data compiled by Greenbelt Alliance staff in February 2012.	Floodplain areas identified as important for protection within a city's general plan. Based upon general plans and 100-year storm flood level from the U.S. Federal Emergency Management Agency.
Grazing Lands **Source:** Farmland Mapping and Monitoring Program, 2010.	Defined by the FMMP in 2010, this category includes land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension and other groups interested in the extent of grazing activities.
Greenbelt Reserves **Source:** Based upon Local Jurisdiction General Plan maps. Data compiled by Greenbelt Alliance staff in March 2012.	Large open space reserves that are set aside permanently or temporarily by a single jurisdiction or several jurisdictions.
Hillside Areas **Source:** Based upon local jurisdiction General Plan maps. Data compiled by Greenbelt Alliance staff in March 2012.	Hillside areas identified as important for protection or conservation based on city and county general plans. Policies mapped include areas identified based up the slope of a hill, the area above a certain elevation, and the area within a certain vertical or horizontal distance from a ridge line.

Continues on following page

Legend Information for Plan Bay Area Maps *(Continued)*

Data	Description
Priority Conservation Areas **Source:** Association of Bay Area Governments, 2013.	These areas include lands of regional significance that have broad community support and an urgent need for protection. These areas provide important agricultural, natural resource, historical, scenic, cultural, recreational, and/or ecological values and ecosystem functions.
Publicly Owned Parks and Open Space **Source:** Data is derived from the Bay Area Protected Areas Database, Bay Area Open Space Council, 2012; California State Park Boundaries, 2012; The Conservation Lands Network, 2012.	These areas include publicly owned lands that are accessible to the public.
Riparian Corridors **Source:** Based upon local jurisdiction General Plan maps. Data compiled by Greenbelt Alliance staff in November 2011.	A policy that limits or prohibits new construction within a certain distance from rivers and streams to avoid the adverse impacts of urban development, such as pollution runoff, erosion and habitat degradation.
Urban Boundary Zones **Source:** Based upon local jurisdiction General Plan maps. Data compiled by ABAG Planning staff, March 2012.	Includes areas within Urban Growth Boundaries/ Urban Limit Lines, Urban Service Areas and Spheres of Influence. For more information, see the supplementary report, *Summary of Predicted Land Use Responses*.
Urbanized Areas **Source:** Farmland Mapping and Monitoring Program, 2010.	Includes land designated as Urban and Built-up as defined by the Farmland Mapping and Monitoring Program in 2010. These lands include areas occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
Williamson Act Lands **Source:** Williamson Act Program, California Department of Conservation, 2006.	The California Land Conservation Act of 1965 — commonly referred to as the Williamson Act — enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. Some Williamson Act contracts are set to expire and be decommissioned during the plan period.

Metropolitan Transportation Commission

Management Staff

Steve Heminger
Executive Director

Ann Flemer
Deputy Executive Director, Policy

Andrew B. Fremier
Deputy Executive Director, Operations

Adrienne D. Weil
General Counsel

Brian Mayhew
Chief Financial Officer

Ken Kirkey
Director, Planning

Alix Bockelman
Director, Programming and Allocations

Randy Rentschler
Director, Legislation and Public Affairs

Association of Bay Area Governments

Management Staff

Ezra Rapport
Executive Director

Bradford Paul
Deputy Executive Director

Kenneth K. Moy
Legal Counsel

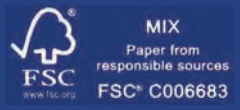
Miriam Chion
Planning and Research Director

To order additional copies of **Plan Bay Area**, contact the MTC-ABAG Library:

library@mtc.ca.gov EMAIL
510.817.5932 FAX
510.817.5836 PHONE

Plan Bay Area also is posted online at: onebayarea.org

This report is printed on recycled paper.



Association
of Bay Area
Governments

P.O. Box 2050
Oakland, California 94604

101 Eighth Street
Oakland, California 94607

510.464.7900 PHONE
info@abag.ca.gov EMAIL
www.abag.ca.gov WEB

METROPOLITAN
TRANSPORTATION
COMMISSION

Joseph P. Bort MetroCenter
101 Eighth Street
Oakland, California 94607

510.817.5700 PHONE
510.817.5769 TDD/TTY
510.817.5848 FAX
info@mtc.ca.gov EMAIL
www.mtc.ca.gov WEB

EXHIBIT 18

Agenda Item 5a

TO: Joint MTC Planning Committee with the ABAG Administrative Committee

DATE: September 2, 2016

FR: MTC Deputy Executive Director, Policy / ABAG Executive Director

RE: Plan Bay Area 2040 Draft Preferred Land Use Scenario

Overview

The *Draft Preferred Scenario* represents a regional pattern of household and employment growth by the year 2040. Together with the corresponding transportation investment strategy, it forms the core of Plan Bay Area 2040 (PBA 2040). Staff has evaluated the *Draft Preferred Scenario* and transportation investment strategy against a set of regionally adopted performance targets to measure how well the *Draft Preferred Scenario* addresses regional goals including climate protection, transportation system effectiveness, economic vitality, and equitable access.

The PBA 2040 *Draft Preferred Scenario* largely reflects the foundation established in *Plan Bay Area* by:

- Focusing development toward Priority Development Areas (PDAs) — neighborhoods served by public transit identified by local jurisdictions as being appropriate for smart, compact development.
- Preserving Priority Conservation Areas (PCAs) by confining growth to established communities, and protecting the Bay Area's legacy of vast and varied open spaces.

The *Draft Preferred Scenario* largely follows the regional growth pattern of *Plan Bay Area*. The *Draft Preferred Scenario* focuses 75 percent of new households and 52 percent of new jobs into PDAs, and distributes all remaining growth within the region's planned urban growth boundaries/limit lines. Similar to *Plan Bay Area*, the *Draft Preferred Scenario* concentrates household growth in the cities of San Jose, San Francisco and Oakland, and along the east and west bayside corridors. In terms of employment, the *Draft Preferred Scenario* anticipates a modest shift from the growth pattern adopted in Plan Bay Area and incorporates substantial employment growth that has occurred since 2010. Since 2010, a significant amount of job growth has occurred in bayside communities (46 percent) and in the cities of San Jose, San Francisco and Oakland (37 percent) — areas comprising the preponderance of the region's commercial space. The *Draft Preferred Scenario* job growth pattern echoes the current trend to continue over the plan horizon and encompasses a more rigorous analysis of potential employment growth by location. Table 1 summarizes the *Draft Preferred Scenario's* regional growth pattern, compared to *Plan Bay Area*.

Table 1: Percent of Regional Household and Job Growth, 2010-2040

Subarea	Plan Bay Area Households	Draft PBA 2040 Preferred Scenario Households	Plan Bay Area Jobs	Draft PBA 2040 Preferred Scenario Jobs
Big 3 Cities[1]	42%	43%	38%	40%
Bayside[2]	34%	33%	37%	46%
Inland, Coastal, Delta[3]	24%	24%	25%	14%

[1] Big 3 Cities (the region's three largest cities – San Jose, San Francisco, and Oakland)

[2] Bayside (generally communities directly adjacent to San Francisco Bay – e.g., Hayward, San Mateo, and Richmond)

[3] Inland, Coastal, and Delta (generally communities just outside of Bayside – e.g., Walnut Creek, Dublin, Santa Rosa, Antioch, Brentwood, Dixon)

Background

The Bay Area economy has exploded over the past four years, attracting thousands of new people and jobs. As a result, ABAG adopted a revised regional growth forecast in February 2016. This forecast estimates an additional 1.3 million jobs and 2.4 million people, and therefore the need for approximately 820,000 housing units between 2010 and 2040. This represents an increase of 15 percent in employment and a 25 percent increase in households, relative to Plan Bay Area.

In May 2016, MTC and ABAG released three alternative land use and transportation scenarios illustrating the effects that different housing, land use and transportation strategies would have on the regionally adopted performance targets. The three scenarios represent a progression of plausible regional futures, from more intense housing and employment growth in the urban core ("Big Cities Scenario"); to more evenly apportioned development among PDAs in medium-sized cities with access to rail services ("Connected Neighborhoods Scenario"); to a more dispersed development pattern, with relatively more growth occurring outside of PDAs ("Main Streets Scenario").

Staff presented key takeaways from the scenario evaluation in May 2016. First, a more focused land use pattern better positions the region to achieve its greenhouse gas emission target. Second, despite the inclusion of a range of aggressive strategies to subsidize affordable housing, regional affordability and equity challenges are expected to worsen by 2040. Lastly, financial constraints lead to challenges in attaining the transportation targets, particularly travel mode shift and maintenance of the region's transportation system.

The release of the scenarios initiated a public process in May and June 2016 to garner input from the public, stakeholders, community groups and local officials, via public open houses in each county, an online comment forum, and an online interactive questionnaire (the "Build a Better Bay Area" website). By July 2016, MTC and ABAG had received comments from more than 1,100 Bay Area residents, as well as direct feedback from local jurisdictions. Many of these letters were shared at the July meeting of the Joint MTC Planning Committee with the ABAG Administrative Committee. Letters received subsequent to the July meeting are included in **Attachment B.**

Approach to Draft Preferred Land Use Scenario

To address the challenges of planning for an increasingly complex region, MTC and ABAG have continued to evolve technical methods for creating regional scenarios. UrbanSim incorporates current zoning for 2 million individual land parcels across the Bay Area, as well as available information about current regional and local economic and real estate market trends.

UrbanSim builds upon the methodology used by the Agencies in the prior Plan. The prior methodology combined a land use allocation process based on observed historic growth patterns with jurisdictional expectations described in local plans. This time, UrbanSim also incorporates zoning tools, the most recent PDA assessment, and household, business, and developer choice models. The agencies ran the model hundreds of times, testing the effects that different regional strategies could have on affecting the distribution of housing and employment growth. The output was measured against a set of growth targets put together by ABAG regional planners working with planners from local jurisdictions. Overall, the growth allocation results of the UrbanSim model align fairly closely with these growth targets at a summary level as well as for most localities, though, there are substantial differences for some individual localities. The extent of the differences between local plans and the UrbanSim output is a discussion for the agencies, regional stakeholders, and individual jurisdictions. UrbanSim is an ambitious project which compiles a large amount of data at a very detailed geographic resolution. The detailed level of UrbanSim output is used for the analysis of performance measures and for the environmental analysis.

The *Draft Preferred Scenario* accommodates 100 percent of the needed housing units, and offers a rationale that these units can be built given future market conditions and existing or expected policies to support focused growth at the local, regional or state level.

The *Draft Preferred Scenario* does not mandate any changes to local zoning rules, general plans, or processes for reviewing projects, nor is it an enforceable direct or indirect cap on development locations or targets in the region. As is the case across California, the Bay Area's cities, towns, and counties maintain control of all decisions to adopt plans and permit or deny development projects. PBA 2040 does not establish new state-mandated Regional Housing Needs Allocation (RHNA) numbers for each jurisdiction. RHNA operates on an eight-year cycle, with the next iteration not due until the 2021 Regional Transportation Plan / Sustainable Community Strategy (the next update of Plan Bay Area). Because RHNA numbers are not at stake this cycle, MTC and ABAG are characterizing this update to the region's long-range plan as limited and focused.

Distribution of Households and Employment

The complete distribution of 2040 household and employment forecasts is included in Attachment A, organized by local jurisdiction, and split into PDA and jurisdiction totals. These numbers stem from ABAG's economic forecasts and reflect empirical input from the regional land use model combined with expert reviews, extensive public input, and most importantly, dialogue with local officials.

Tables 2 and 3 below summarize the distribution of 2040 employment and household forecasts within three regional geographies:

- Big 3 Cities (the region's three largest cities – San Jose, San Francisco, and Oakland)
- Bayside (generally cities directly adjacent to San Francisco Bay – e.g., Hayward, San Mateo, San Rafael and Richmond)
- Inland, Coastal, and Delta (generally cities just outside of Bayside – e.g., Walnut Creek, Dublin, Santa Rosa, Antioch, Brentwood, Dixon)

Table 2: 2040 Household Forecast (000s)

Column	*A*	*B*	*C*	*D*	*E*	*F*
Subarea	**2010 House-holds**	**Share of 2010 Households**	**2040 House-holds**	**Share of 2040 Households**	**Growth in Households from 2010**	**Share of Regional Growth**
Total	2,607		3,427		820	
Big 3 Cities	802	31%	1,151	34%	349	43%
Bayside	1,030	39%	1,304	38%	275	33%
Inland, Coastal, Delta	775	30%	971	28%	196	24%
in PDA	559	21%	1,172	34%	613	75%
outside PDA	2,048	79%	2,255	66%	207	25%

Table 3: 2040 Employment Forecast (000s)

Column	*A*	*B*	*C*	*D*	*E*	*F*
Subarea	**2010 Jobs**	**Share of 2010 Jobs**	**2040 Jobs**	**Share of 2040 Jobs**	**Growth in Jobs from 2010**	**Share of Regional Growth**
Total	3,422		4,699		1,276	
Big 3 Cities	1,144	33%	1,648	35%	504	40%
Bayside	1,405	41%	1,997	43%	591	46%
Inland, Coastal, Delta	873	26%	1,054	22%	181	14%
in PDA	1,433	42%	2,094	45%	661	52%
outside PDA	1,989	58%	2,605	55%	616	48%

Overall, the regional pattern of households and employment in 2040 largely reflects the existing pattern observed in 2010. We see a slightly higher concentration of growth into the cities of San Jose, San Francisco and Oakland, and bayside communities by 2040. For example, those same areas will represent 72 percent of the region's households and 78 percent of the region's jobs in 2040, a two percent and four percent shift, respectively, from 2010. On the other hand, household and employment *growth* between 2010 and 2040 shows some modest differences. For example, the cities of San Jose, San Francisco and Oakland are forecasted to see much of the region's household growth (43 percent), while bayside communities are forecasted to see much of the region's job growth (46 percent). Finally, the concentrations of housing and jobs in PDAs are forecast to increase, with 75 percent of household and 52 percent of job growth in PDAs.

The 2015 PDA Assessment emphasized that in their current form, many PDAs may not be able to accommodate forecasted growth and require additional policy interventions to increase their development potential. As a result, staff assumed a range of regional policy and investment strategies in the draft preferred land use scenario to increase development potential in PDA's, and influence the overall regional pattern. These strategies are described below.

- Current urban growth boundaries/limit lines are kept in place.
- Inclusionary zoning is applied to all cities with PDAs, meaning that these jurisdictions are assumed to allow below-market-rate or subsidized multi-family housing developments.
- All for-profit housing developments are assumed to make at least 10 percent of the units available to low-income residents, in perpetuity (via deed restrictions).
- In some cases, PDAs were assigned higher densities than what those cities currently allow.
- The cost of building in PDAs and/or Transit Priority Areas (TPAs) is assumed to be reduced by the easing of residential parking minimums and streamlining environmental clearance
- Subsidies are assumed to stimulate housing and commercial development within PDAs.

These measures are not prescriptive, and there are many potential public policy options that could help the region attain its adopted targets. Staff suggests considering these strategies as illustrations of what it would take to keep the Bay Area and economically vibrant and sustainable region through the year 2040.

Environmental Assessment

A programmatic Environmental Impact Report (EIR) will be prepared for PBA 2040, with the adoption of the preferred scenario as the basis for the California Environmental Quality Act (CEQA) "project." This environmental assessment fulfills the requirements of the CEQA and is designed to inform decision-makers, responsible and trustee agencies, and Bay Area residents of the range of potential environmental impacts that could result from implementation of the proposed Plan. This EIR will also analyze a range of reasonable alternatives to the proposed project that could feasibly attain most of PBA 2040's basic project objectives and would avoid or substantially lessen any of the significant environmental impacts.

Next Steps

In September, staff will hold county workshops with Planning Directors to discuss the Draft Preferred Scenario results. Staff requests comments on the Draft Preferred Scenario by October 14. Later this year, staff will recommend approval of a Final Preferred Scenario. The *Draft Preferred Scenario* will be subject to environmental review and other analyses throughout the remainder of 2016 and into 2017. PBA 2040 is slated for final adoption in summer 2017.

Alix A. Bockelman Ezra Rapport

Attachments

AB:mm:an
J:\PROJECT\2017 RTP_SCS\RAWG\2016\09_RAWG_Sept 2016\2_PBA2040 Preferred Scenario_memo_v5.docx

Attachment A: Distribution of 2040 Household and Employment Forecasts

Plan Bay Area 2040 *Draft Preferred Scenario*

County	Jurisdiction	Summary Level	Households 2010	Household Forecast 2040	Employment 2010	Employment Forecast 2040
Alameda	Alameda	**Total**	**30,100**	**41,700**	**29,200**	**39,600**
		PDA	1,850	6,000	6,900	15,200
	Albany	**Total**	**7,350**	**7,850**	**4,400**	**5,600**
		PDA	300	550	2,100	2,450
	Berkeley	**Total**	**46,500**	**55,700**	**90,300**	**139,400**
		PDA	6,700	13,300	28,500	42,000
	Dublin	**Total**	**14,900**	**23,300**	**18,100**	**31,400**
		PDA	3,100	8,500	5,000	14,000
	Emeryville	**Total**	**5,600**	**14,300**	**15,850**	**20,550**
		PDA	2,400	10,500	13,500	16,850
	Fremont	**Total**	**70,000**	**89,900**	**86,200**	**114,500**
		PDA	23,000	41,200	38,200	46,000
	Hayward	**Total**	**45,100**	**53,200**	**60,900**	**92,400**
		PDA	4,350	8,600	7,600	10,300
	Livermore	**Total**	**28,600**	**30,900**	**42,600**	**48,800**
		PDA	850	2,100	23,800	27,750
	Newark	**Total**	**12,900**	**15,450**	**17,300**	**25,600**
		PDA	200	2,150	200	450
	Oakland	**Total**	**157,200**	**235,000**	**179,100**	**257,500**
		PDA	115,500	190,500	158,200	229,400
	Piedmont	**Total**	**3,800**	**3,850**	**1,800**	**1,750**
	Pleasanton	**Total**	**24,700**	**34,600**	**60,100**	**69,900**
		PDA	1,300	8,000	12,500	19,600
	San Leandro	**Total**	**30,800**	**38,500**	**49,700**	**66,800**
		PDA	4,700	11,700	9,750	11,000
	Union City	**Total**	**20,300**	**24,200**	**21,000**	**30,700**
		PDA	500	3,450	250	250
	Alameda County Unincorporated	**Total**	**50,000**	**56,300**	**28,850**	**33,700**
		PDA	10,450	12,850	6,850	8,850
	County Total	**Total**	**548,000**	**724,700**	**705,500**	**978,300**
		PDA	175,100	319,300	313,400	444,000

County	Jurisdiction	Summary Level	Households 2010	Household Forecast 2040	Employment 2010	Employment Forecast 2040
Contra Costa	Antioch	**Total**	**32,400**	**41,900**	**20,200**	**25,400**
		PDA	1,400	5,200	2,050	2,300
	Brentwood	**Total**	**16,800**	**29,700**	**11,600**	**12,150**
	Clayton	Total	3,950	4,050	2,000	2,100
	Concord	**Total**	**45,000**	**66,000**	**54,200**	**95,200**
		PDA	4,000	22,200	10,200	41,400
	Danville	**Total**	**15,300**	**16,550**	**11,800**	**12,450**
		PDA	1,350	2,000	6,300	6,600
	El Cerrito	**Total**	**10,300**	**11,950**	**5,300**	**5,750**
		PDA	750	2,000	3,800	4,550
	Hercules	**Total**	**8,300**	**10,600**	**4,850**	**6,050**
		PDA	900	2,650	1,150	1,500
	Lafayette	**Total**	**9,200**	**10,750**	**9,050**	**9,650**
		PDA	1,700	2,700	6,650	7,250
	Martinez	**Total**	**14,250**	**15,450**	**20,800**	**26,200**
		PDA	700	850	6,800	9,650
	Moraga	**Total**	**5,600**	**5,750**	**4,500**	**5,800**
		PDA	30	40	1,400	1,650
	Oakley	**Total**	**10,600**	**16,700**	**3,350**	**6,050**
		PDA	800	6,400	1,550	4,050
	Orinda	**Total**	**6,500**	**7,050**	**4,850**	**5,150**
		PDA	250	550	2,650	2,800
	Pinole	**Total**	**6,550**	**7,300**	**6,850**	**9,000**
		PDA	350	950	5,250	6,950
	Pittsburg	**Total**	**19,400**	**27,400**	**11,800**	**16,400**
		PDA	5,150	8,900	4,600	6,100
	Pleasant Hill	**Total**	**13,500**	**14,000**	**16,300**	**19,600**
		PDA	850	950	5,750	7,100
	Richmond	**Total**	**36,700**	**56,500**	**30,800**	**63,500**
		PDA	8,600	22,300	13,400	37,000
	San Pablo	**Total**	**8,950**	**9,600**	**7,400**	**10,000**
		PDA	2,000	2,350	4,850	6,700
	San Ramon	**Total**	**24,400**	**31,100**	**47,900**	**46,100**
		PDA	200	5,800	25,650	22,400
	Walnut Creek	**Total**	**30,400**	**38,200**	**51,050**	**54,550**
		PDA	4,950	9,550	27,400	29,500
	Contra Costa County Unincorporated	**Total**	**57,800**	**70,700**	**0**	**0**
		PDA	4,400	16,100	0	0
	County Total	**Total**	**375,900**	**491,200**	**360,200**	**472,700**
		PDA	38,300	111,500	138,200	209,400

County	Jurisdiction	Summary Level	Households 2010	Household Forecast 2040	Employment 2010	Employment Forecast 2040
Marin	Belvedere	**Total**	**900**	**1,000**	**300**	**300**
	Corte Madera	**Total**	**3,900**	**4,350**	**6,650**	**7,450**
	Fairfax	**Total**	**3,400**	**3,550**	**1,550**	**1,700**
	Larkspur	**Total**	**5,850**	**6,300**	**7,450**	**8,800**
	Mill Valley	**Total**	**5,900**	**8,150**	**6,000**	**6,600**
	Novato	**Total**	**20,150**	**21,350**	**26,400**	**29,500**
	Ross	**Total**	**800**	**900**	**350**	**400**
	San Anselmo	**Total**	**5,200**	**5,450**	**3,300**	**3,650**
	San Rafael	**Total**	**22,550**	**25,950**	**43,300**	**49,100**
		PDA	1,650	2,750	9,000	10,100
	Sausalito	**Total**	**4,150**	**4,500**	**5,200**	**5,800**
	Tiburon	**Total**	**3,600**	**3,850**	**2,850**	**2,900**
	Marin County Unincorporated	**Total**	**27,450**	**30,600**	**17,500**	**21,350**
		PDA	1,500	2,050	650	750
	County Total	**Total**	**103,900**	**115,900**	**120,800**	**137,600**
		PDA	3,150	4,800	9,650	10,850
Napa	American Canyon	**Total**	**5,400**	**7,000**	**5,450**	**8,150**
		PDA	400	1,500	1,350	1,700
	Calistoga	**Total**	**2,050**	**2,400**	**2,200**	**2,650**
	Napa	**Total**	**28,100**	**30,250**	**34,000**	**36,500**
		PDA	350	1,200	5,300	6,300
	St. Helena	**Total**	**2,400**	**3,000**	**5,700**	**5,650**
	Yountville	**Total**	**1,100**	**1,200**	**2,750**	**2,750**
	Napa County Unincorporated	**Total**	**10,200**	**11,850**	**20,550**	**23,250**
	County Total	**Total**	**49,200**	**55,700**	**70,700**	**79,000**
		PDA	800	2,700	6,600	8,050
San Francisco	San Francisco	**Total**	**347,100**	**475,500**	**576,900**	**887,800**
		PDA	184,000	302,300	473,800	765,000

County	Jurisdiction	Summary Level	Households 2010	Household Forecast 2040	Employment 2010	Employment Forecast 2040
San Mateo	Atherton	**Total**	**2,350**	**2,500**	**2,150**	**2,300**
	Belmont	**Total**	**8,800**	**9,600**	**7,900**	**10,000**
		PDA	2,500	2,850	3,500	4,450
	Brisbane	**Total**	**1,800**	**6,300**	**5,200**	**17,600**
		PDA	0	4,400	0	10,900
	Burlingame	**Total**	**12,250**	**13,800**	**28,000**	**38,300**
		PDA	6,950	8,300	11,500	15,700
	Colma	**Total**	**850**	**1,250**	**3,950**	**4,900**
		PDA	700	1,050	1,450	1,950
	Daly City	**Total**	**30,700**	**37,000**	**18,400**	**23,150**
		PDA	8,500	13,500	4,650	5,800
	East Palo Alto	**Total**	**6,950**	**9,950**	**5,100**	**7,000**
		PDA	800	2,200	950	1,750
	Foster City	**Total**	**11,900**	**14,250**	**15,800**	**21,800**
	Half Moon Bay	**Total**	**4,200**	**4,700**	**4,900**	**5,200**
	Hillsborough	**Total**	**3,750**	**3,950**	**2,100**	**2,300**
	Menlo Park	**Total**	**12,300**	**17,800**	**34,600**	**45,000**
		PDA	200	1,050	6,200	7,950
	Millbrae	**Total**	**7,950**	**11,000**	**5,900**	**12,900**
		PDA	600	3,350	2,800	9,100
	Pacifica	**Total**	**13,900**	**14,300**	**5,950**	**7,300**
	Portola Valley	**Total**	**1,700**	**1,750**	**2,700**	**3,000**
	Redwood City	**Total**	**27,800**	**36,000**	**59,200**	**85,000**
		PDA	600	6,700	20,700	27,600
	San Bruno	**Total**	**14,600**	**18,300**	**12,900**	**15,350**
		PDA	3,700	6,750	9,300	11,300
	San Carlos	**Total**	**13,200**	**13,700**	**16,300**	**21,700**
		PDA	50	100	1,200	1,650
	San Mateo	**Total**	**37,900**	**49,200**	**51,000**	**67,600**
		PDA	11,200	19,200	25,300	34,000
	South San Francisco	**Total**	**20,450**	**23,450**	**38,800**	**55,400**
		PDA	5,300	7,650	8,250	11,350
	Woodside	**Total**	**2,050**	**2,500**	**1,950**	**2,150**
	San Mateo County Unincorporated	**Total**	**21,400**	**24,500**	**20,600**	**27,500**
		PDA	2,400	2,950	3,200	4,100
	County Total	**Total**	**256,900**	**315,800**	**343,300**	**475,300**
		PDA	43,500	80,100	99,000	147,600

County	Jurisdiction	Summary Level	Households 2010	Household Forecast 2040	Employment 2010	Employment Forecast 2040
Santa Clara	Campbell	**Total**	**16,550**	**18,950**	**25,200**	**31,800**
		PDA	600	1,650	5,250	6,950
	Cupertino	**Total**	**20,900**	**24,450**	**26,800**	**53,100**
		PDA	2,250	4,900	9,800	13,950
	Gilroy	**Total**	**14,000**	**19,600**	**17,850**	**20,800**
		PDA	1,400	3,350	4,500	5,300
	Los Altos	**Total**	**10,500**	**12,000**	**14,050**	**16,750**
		PDA	0	200	2,200	2,650
	Los Altos Hills	**Total**	**2,850**	**3,050**	**1,550**	**1,750**
	Los Gatos	**Total**	**11,900**	**12,400**	**19,000**	**21,250**
	Milpitas	**Total**	**19,000**	**30,800**	**42,000**	**56,400**
		PDA	800	8,800	5,700	9,900
	Monte Sereno	**Total**	**1,250**	**1,350**	**550**	**550**
	Morgan Hill	**Total**	**12,550**	**15,500**	**19,250**	**20,700**
		PDA	250	900	1,550	1,400
	Mountain View	**Total**	**31,800**	**58,500**	**48,500**	**69,600**
		PDA	5,800	29,300	25,200	39,000
	Palo Alto	**Total**	**26,550**	**29,150**	**102,000**	**123,200**
		PDA	500	950	3,850	4,800
	San Jose	**Total**	**297,700**	**440,600**	**387,700**	**502,600**
		PDA	67,200	201,700	229,200	299,400
	Santa Clara	**Total**	**42,100**	**54,900**	**102,900**	**189,100**
		PDA	300	6,200	10,200	13,100
	Saratoga	**Total**	**10,650**	**11,000**	**8,750**	**9,500**
	Sunnyvale	**Total**	**52,600**	**80,700**	**65,800**	**116,000**
		PDA	6,200	32,000	21,900	29,000
	Santa Clara County Unincorporated	**Total**	**26,100**	**33,600**	**29,500**	**36,500**
	County Total	**Total**	**597,100**	**846,600**	**911,500**	**1,269,700**
		PDA	85,300	289,800	319,200	425,500

County	Jurisdiction	Summary Level	Households 2010	Household Forecast 2040	Employment 2010	Employment Forecast 2040
Solano	Benicia	**Total**	**10,700**	**11,800**	**12,900**	**18,600**
		PDA	600	900	2,050	2,050
	Dixon	**Total**	**5,850**	**6,950**	**4,850**	**6,100**
		PDA	450	550	300	350
	Fairfield	**Total**	**34,200**	**38,700**	**43,100**	**51,600**
		PDA	2,300	5,000	6,450	7,100
	Rio Vista	**Total**	**3,700**	**10,400**	**2,350**	**2,450**
	Suisun City	**Total**	**9,000**	**9,650**	**2,500**	**3,000**
		PDA	1,100	1,550	1,100	1,300
	Vacaville	**Total**	**31,000**	**33,050**	**29,300**	**35,000**
		PDA	850	2,250	4,900	4,950
	Vallejo	**Total**	**40,950**	**45,050**	**30,900**	**35,300**
		PDA	400	1,150	2,600	3,050
	Solano County Unincorporated	**Total**	**6,900**	**14,700**	**4,250**	**4,400**
	County Total	**Total**	**142,300**	**170,300**	**130,200**	**156,500**
		PDA	5,700	11,400	17,350	18,800
Sonoma	Cloverdale	**Total**	**3,250**	**5,250**	**1,750**	**1,600**
		PDA	800	2,850	550	500
	Cotati	**Total**	**3,050**	**3,550**	**2,700**	**3,000**
		PDA	350	700	700	700
	Healdsburg	**Total**	**4,400**	**4,700**	**8,400**	**9,900**
	Petaluma	**Total**	**21,800**	**27,100**	**30,000**	**35,700**
		PDA	500	4,450	3,500	4,050
	Rohnert Park	**Total**	**15,000**	**21,100**	**12,050**	**13,350**
		PDA	1,300	5,300	4,250	4,900
	Santa Rosa	**Total**	**63,800**	**78,800**	**76,400**	**91,700**
		PDA	16,800	30,300	41,100	48,600
	Sebastopol	**Total**	**3,300**	**5,000**	**5,000**	**5,050**
		PDA	2,050	3,750	4,650	4,650
	Sonoma	**Total**	**4,900**	**6,250**	**7,150**	**8,050**
	Windsor	**Total**	**9,050**	**10,550**	**7,600**	**9,200**
		PDA	1,100	2,300	900	1,200
	Sonoma County Unincorporated	**Total**	**58,300**	**68,600**	**51,700**	**63,900**
	County Total	**Total**	**186,800**	**231,000**	**202,700**	**241,400**
		PDA	23,000	49,700	55,800	64,600
Regional Total		**Total**	**2,607,000**	**3,427,000**	**3,422,000**	**4,698,000**
		PDA	559,000	1,172,000	1,433,000	2,094,000

Attachment B

THE TOWN OF
SAN ANSELMO

525 San Anselmo Avenue, San Anselmo, CA 94960-2682
www.townofsananselmo.org
(415) 258-4600 | Fax (415) 459-2477

July 20, 2016

Miriam Chion
Director of Planning and Research
Association of Bay Area Governments
Bay Area Metro Center
375 Beale Street, Suite 800
San Francisco, CA 94105-2066

Ken Kirkey
Director of Planning
Metropolitan Transportation Commission
Bay Area Metro Center
375 Beale Street, Suite 800
San Francisco, CA 94105-2066

RE: Plan Bay Area 2040 Alternative Scenario Housing and Job Projections

Dear Ms. Chion and Mr. Kirkey:

The Town of San Anselmo has reviewed, and we wish to provide comments on, the household and jobs projections for the three alternative scenarios for Plan Bay Area 2040. We understand that your staff is now working on Draft Preferred Scenario projections. We again request that the assumptions and predictions in future projections be simply and fully explained to Bay Area residents, who do not have access to UrbanSim and the data ABAG/MTC is using for projections.

The Town has made the following requests for more detailed information to which, so far, we have received no direct response:

- December 29, 2015, staff emailed Miriam Chion to request specifics on Town projections and invited a representative of ABAG to explain them at a Town Council meeting (which ABAG did for San Rafael and Novato). No one responded to the email.

- January 5, 2016, in a response to a request for comments on the projections, staff emailed Christy Leffall, Regional Planner for ABAG, and again indicated that the Town has inadequate information to comment. Ms. Leffall referred staff to Hing Wong, the ABAG county planner.

- February 4, 2016, staff emailed Hing Wong to request the information, including "citations to data sources and information on how the numbers are generated." Mr. Wong promptly forwarded the

request to Aksel K Olsen, Regional Analyst for ABAG. Staff asked Mr. Olsen for the information on the projections. Mr. Olsen indicated he would respond "within the next day or so" but never responded.

- February 8, 2016, Mr. Wong provided the town with information on regional projections and methodology, but not information to explain how the projections were assigned to the Town.

- July 2016, Marin County Planning Directors requested ABAG and MTC to provide assistance in understanding the modeling. Only Novato has received an explanation.

In order to intelligently respond to your request for comment, we need adequate, accurate information. Otherwise, the request for comment is more akin to a public relations posture rather than one that respects the requests of local government for what we need. We reiterate our request and ask that you please substantively respond at your earliest convenience.

The numbers that MTC/ABAG envisions for San Anselmo exceed what we expect for household and job growth under any regional development scenario, based on available land, site constraints (flooding and hillside topography), historic development, historic employment patterns, and existing land use policies and regulations. The Town is "built out." There are fewer than 100 vacant single-family lots available for development and few vacant commercial parcels. The Town does not expect significant future commercial development, which would primarily involve redevelopment of existing sites. Our housing element encourages development of housing in commercial areas and the Town has zoned commercial areas in order to meet its current share of the Regional Housing Needs Allocations for various income levels. In order to generate the 700 jobs projected for San Anselmo, the Town would need to construct approximately 200,000 to 240,000 square feet of office/retail/service space. This level of development is without factual basis and is not realistic.

The Town's population has remained stable for the last 45 years. The school district, Town government and grocery stores are likely the largest employers in Town. These employers will not be expanding significantly over the next 25 years, as we do not expect our population to change significantly, even with full build out under our General Plan.

The Town currently suffers from increasingly profound traffic congestion on our major arterial roads. We are certain that household and job growth predicted within and west of our community will result in the exacerbation of the already intolerable congestion if it is not accompanied by transportation investments to relieve congestion. Therefore, we support a modified preferred scenario that accounts for funding transportation improvements where existing traffic is an issue, or where any housing growth is planned.

We look forward to commenting on the Draft Preferred Scenario and request that ABAG/MTC make an effort to explain the modeling assumptions and predictions for the Town of San Anselmo.

Sincerely,

Ford Greene
Mayor

Rec'd 8/10

MILL VALLEY

August 1, 2016

Miriam Chion
Director of Planning & Research
Association of Bay Area Governments
Bay Area Metro Center
375 Beale Street, Suite 800
San Francisco, CA 94105-2066

Ken Kirkey
Director of Planning
Metropolitan Transportation Commission
375 Beale Street, Suite 800
San Francisco, CA 94105-2066

RE: Plan Bay Area –2040 Projections and Scenarios

Dear Ms. Chion and Mr. Kirkey,

This letter is in regard to the draft 2040 Projections and Scenarios developed as part of the Plan Bay Area Update.

The City of Mill Valley has reviewed the projections data and attended the June 4, 2016 Open House in Corte Madera, and would like to submit the following comments for your review and consideration:

Projections:

- **Plan Bay Area 2013 projections for 2040.** At the Open House, MTC staff discussed the prior forecasts, and acknowledged that projections contained in Plan Bay Area 2013 have been the most accurate. With that in mind, and the fact that forecasting tends to run on the conservative side, staff suggests starting with the 2040 Assumptions generated in Plan Bay Area 2013 as a benchmark for projections used in this Update.

- **Plan Bay Area 2040 Methodology.** Please provide detailed information explaining how the projections were assigned to each jurisdiction within Marin County. In general, the household and job numbers that are presented in the draft projections and scenarios exceed the growth that expected in Mill Valley due to available undeveloped land; site constraints (flooding and hillside topography); historic employment patters; and land use

policies and regulations. The City has not, and continues to expect to see relatively slow development, which mainly consist of renovation and remodeling of existing homes. The City has not seen, and does not anticipate a significant change in the type of commercial development, nor do the City's land use regulations support intensification or expansion of commercial areas.

- **Mill Valley Household Growth Forecast: Base Year vs. No Project.** There seems to be some sort of disconnect as Mill Valley's household growth is disproportionate to any other jurisdiction in terms of the no project scenario. Please explain why.

- **Mill Valley Jobs Forecast.** The City of Mill Valley has four commercial areas, all of which are built-out. The largest commercial uses generated in Mill Valley are for food establishments, professional services and general office space. Renovations to the commercial areas in Mill Valley has resulted in changes of use but have not resulted in a change the total square footage of the City's commercial area, which equals approximately 4.5 million square feet. Mixed use buildings are also conditionally permitted in commercial areas, which should also be incorporated into assumptions as new commercial square footage cannot be assumed for all building square footages. While some additional employment may be gained through the change of use of commercial space and the large number of persons that work from home in Mill Valley, it is unreasonable to assume the City can accommodate 1,000+ jobs within the next 24 years. Staff is therefore requesting that the jobs projection be reviewed based on the above information.

- **Mill Valley Households Forecast.** The City of Mill Valleys' residential area is mainly built out, with small infill opportunities suitable for small-scale development. This is reflected through recent past census data:
    - 591 additional households from 1980 – 2000
    - Between 2000 and 2010 Mill Valley had a REDUCTION of 63 households

  While there are more households living per unit, it is unrealistic to think that Mill Valley will add as many households as it did in the 1980-1990 time period, and as recent historic trends illustrate, there is slow to no new household growth in Mill Valley.

Scenarios:

- **Assumptions.** In Open House materials distributed, the evaluation of scenarios included policy assumptions that should be further discussed. Assumptions and statements discussed in in the materials included the following policy items:
    - inclusionary housing;
    - commercial linkage fees;
    - business subsidies/transit subsidies;
    - second units;
    - tenant protections/displacement;
    - green infrastructure; and
    - open space/preservation funding.

First, MTC/ABAG should confirm with local jurisdictions that they support and are interested in implementing such policies at the local level. This would help to validate/support various scenarios. Second, MTC/AGAG, as part of the implementation of the Plan, should provide technical support to local jurisdictions that would streamline the implementation of such policies by providing best practices; model ordinances; technical studies and/or nexus studies. Local jurisdictions could then craft their own policy based on the tools provided—allowing jurisdictions to maintain local control while being provided additional tools to move important land use policy considerations forward on a regional level. This is especially important, given the limited amount of funding and staff time that small local jurisdictions have to implement these large scale policies, as well as the large cost in conducting the required research and, in some cases, legal nexus, for developing such policies. Once these steps have been made, then MTC/ABAG would be in a better suited to credit each scenario with such assumptions.

- **Projections vs Department of Finance.** The Projections data assumes that some land use restrictions would be eliminated to allow for new units. The Department of Finance does not include such an assumption. Please provide additional information as to why this assumption has been added, and how it impacts the projections.

Sincerely,

John McCauley, Mayor
City of Mill Valley

Cc: Jim McCann, City Manager
Mill Valley City Council

From: Save Marinwood
To: info@planbayarea.org
Subject: Comments on Plan Bay Area 2040. Even the Soviet Union had only a five year plan.
Date: Thursday, July 07, 2016 3:38:40 PM

Dear Commissioners of ABAG, MTC and other administrators of Plan Bay Area 2040:

Ever since hearing about the massive social planning experiment, One Bay Area and the inclusion of Marinwood-Lucas Valley as a Priority Development Area in 2012, our community has been following the developments of your social project. Save Marinwood represents a 6000 people in unincorporated Marin (North San Rafael).

The latest Plan Bay Area 2040 is very similarly flawed as the first Plan Bay Area as it relies on unsubstantiated data, environmental fallacies and complete fabrication of population and economic growth statistics. Even the old Soviet Union was never so bold to predict beyond a five year horizon.

I suppose with your new multi-million dollar headquarters, exclusive clique of political insiders and billions of dollars to spend on transportation, housing and "social equity", life must look pretty sweet. The voters, still largely ignorant of your coup over local government, seem to be agreeing to your plans and just approved some tax increases. They will wake up one day.

But life is much more than daily meetings filled with political rhetoric and empty promises. The REAL people who pay the bills with money earned in careers and businesses outside the government will discover your mischief. We work hard for our families to create the quality life we value and a suburban/rural lifestyle you despise. We will be deciding your future and not the other way around.

The June 23rd vote for Brexit is a harbinger of things to come for Plan Bay Area. As people wake up and learn the power and taxes you have illegitimately stolen from the voters, your house of cards will tumble. I have no doubt we "little people" will gather the political strength to push you out of power.

We endorse the attached letter of Sustainable Tam Almonte in its entirety. We urge you to take the points seriously.

Very sincerely yours,

Stephen Nestel
Save Marinwood
San Rafael, CA 94903
www.savemarinwood.org

Letter from Sustainable TamAlmonte to ABAG & MT...

From: LJ pfeifer
To:
Cc:
Subject: Public Comment: PBA 2017 Update Friday,
Date: July 08, 2016 12:15:32 AM

Friday July 8, 2016

To: ABAG & MTC - info@planbayarea.org

Re: Comments on Plan Bay Area Update 2017

From: Linda Pfeifer, Sausalito City Councilmember,
420 Litho Street Sausalito, CA 94965

Dear ABAG and MTC,

I am concerned to see the new job and household growth projections for Sausalito in the Plan Bay Area Update 2017. I had thought the lessons-learned from the first Plan Bay Area (PBA I) might be applied to these new 2017 projections to yield more realistic numbers based on historical data, economic realities, and trends.

For example, Sausalito's population has rarely wavered far from 7,300, give or take a couple hundred, and in a recent census our population decreased. Yet the PBA 2017 update adds an additional 300 households for the 2017-2040 projection, *regardless of scenario.* The baseline year is 4,200 and grows to 4,500.

I find it hard to reconcile these projections, especially in light of PBA 2013's projections of 23% job growth in Sausalito, now widely acknowledged as flawed. But now Plan Bay Area 2017 sets job growth projections in Sausalito at 900 in the Big City scenario and 1,000 in the Main Street and Connected Neighborhoods scenarios. Even during the economic boom times prior to 2008, Sausalito did not experience such high job growth.

While the Big City scenario seems to yield the least impact overall in Marin, to me the entire analysis is flawed. No scenario in PBA 2017 yields job or household growth projections for our small town that could be justified under the most robust economic conditions. In addition, Sausalito has hard borders with Richardson Bay and The Golden Gate National Recreation Area headlands, so it's hard to understand how our small town might expand without environmental consequence, even if half the percentage of these projected figures were plausible.

I urge MTC and ABAG to start this analysis over again and apply the lessons learned from the first Plan Bay Area. The public's confidence was shaken during the first PBA. This time around, it's important to get the process right. Thank you for your consideration.

Kind Regards,

Linda Pfeifer

Sausalito City Councilmember

~~~~~~~~~~~~~~~~~~

Linda Pfeifer ~
~~~~~~~~~~~~~~~~~~

From: John Kearns
To:
Cc:
Subject: RE: PBA 2040 Alternative Scenarios
Date: Thursday, July 14, 2016 5:41:15 PM

To Whom this May Concern;

We have taken the time to review the alternative scenarios and consistent with the Cities of Fairfield and Vacaville, we would not support the "Big Cities" scenario. We would also like consideration of important regional projects such Jepson Parkway and 680/80/12 as it appears they are missing from some of the scenarios. We look forward to reviewing and commenting on the documents through the next stage of the process.

John Kearns
Associate Planner
City of Suisun City
(707) 421-7335
jkearns@suisun.com

From: Lynn Keller
To: info@planbayarea.org
Subject: Comments on Plan Bay Area 2017
Date: Friday, July 15, 2016 4:01:13 PM

To: ABAG and MTC - info@playbayarea.org

From: Lynn Keller, 33 Monte Mar, Sausalito, CA 94965

Dear MTC and ABAG:

I am alarmed to see the inflated projections for job growth and housing growth for Plan Bay Area 2017 for Sausalito
We are a small town. We have Richardson Bay on the East, and GGNRA on the West. Our southern border is also up against GGNRA.
Our northern boundary is also geographically constrained.

Even during boom times Sausalito hasn't had exponential job growth like the job growth you're projecting. In the Big City scenario you expect Sausalito to have 900 more jobs? We are a small neighborhood town of artists and crafts people. Why are you trying to make Sausalito which a jewel of the Bay Area into a Silicon Valley type town?

And why are you planning to over build Sausalito with 300 new residences?

The original assumptions of PBA are overly inflated, and therefore the new projections are also inflated and alarming. It's my opinion you need to start over and get the base assumptions right before these aggressive housing and job assumptions are laid onto a small geographically constrained town.

Sausalito can't fit that many jobs or that many people. We have about 7,000 residents. I've lived in Sausalito for 25 years and our population hasn't grown in that time by more than a few people.

Sausalito is a jewel that people travel the world over to come and spend a day or week to relax and enjoy the views, the birds, the little shops and restaurants. Please, please don't ruin it with these overly aggressive and frankly, unrealistic and unfounded projections for job and housing growth. Please - if you are planning for the future I urge you to start over, get this right, and help us residents have confidence in the plan.

Thank you,
Lynn Keller
33 Monte Mar
Sausalito, CA 94965

From: susan k
To: info@planbayarea.org
Subject: Sausalito
Date: Tuesday, July 19, 2016 5:51:05 PM

To whom it may concern,

I'm upset that we are again having to write letters because of false data projections by Plan Bay Area. Your projections for Sausalito in the past have been grossly exaggerated and these exaggerations are reiterated in the latest projections. The historical trends do not support your numbers and Sausalito is a geographically constrained area which physically cannot expand. I am against Plan Bay Area philosophically as I believe communities are unique entities and I am against the corporatization of America. Plan Bay Area smells of conspiracy with big business and development. I hope at some point these data projections and the project as a whole will be taken to the higher courts as unconstitutional and those involved in the falsification of data will be held accountable.

Susan Samols
Sausalito, CA

EXHIBIT 19

As shown in the table below, the San Joaquin Valley Air Basin has among the worst air quality in the state, far worse than the Bay Area. Displacing growth from Plan Bay Area's priority development areas to the San Joaquin Valley would further impair air quality in this region as a result of increased total vehicle miles travelled, and would expose a greater number of people to the adverse health effects associated with poor air quality.

Air Basins	2015			
	Ozone		PM2.5	PM10
	Days exceeding state 1-hour standard	Days exceeding state 8-hour standard	Annual average concentration (µg/m³)	Annual average concentration (µg/m³)
San Joaquin Valley	24	74	17.8	44.1
South Coast	52	86	16.0	43.4
Salton Sea	3	51	6.5	46.5
South Central Coast	1	14	11.1	36.2
Sacramento Valley	4	19	12.3	24.9
San Diego	2	31	10.2	34.4
South Central Coast	1	14	11.1	36.2
San Francisco Bay Area	4	7	10.7	21.9
Great Basin Valleys	0	5	*	20.3
Lake County	1	0	3.7	9.0
Lake Tahoe	0	0	8.9	*
Mohave Desert	26	82	6.4	18.7
Mountain Counties	4	30	8.7	16.5
North Central Coast	0	0	6.2	*
North Coast	0	0	8.0	17.3
Northeast Plateau	0	0	*	12.9
PM10 statistics may include data that are related to an exceptional value.				

* There was insufficient (or no) data available to determine a value.

Source: California Air Resources Board Select 8 Summary, accessed March 9, 2017.

EXHIBIT 20

AGREEMENT RELATING TO TRANSFER OF WATER

This agreement is made this 20th day of December, 1990, by and between the Modesto Irrigation District (the "District"), a California irrigation district, and the City and County of San Francisco (the "City"), a municipal corporation, acting through its Public Utilities Commission.

RECITALS

A. The City desires to augment its water supply from the effective date of this agreement through March 15, 1991, in order to meet the needs of its customers in the event that the current drought continues.

B. The District owns and operates certain wells located on the western side of its irrigation service territory. Those wells historically have been operated only during the irrigation season (approximately March through October) for drainage purposes, in order to maintain water levels below the root zone of permanent tree and vine crops, and in part for other incidental purposes.

C. The District is willing to pump water from certain of those wells during the non-irrigation season for the purpose of making such water available to the City to augment the City's water supply, on the terms and conditions set forth herein.

Now, therefore, it is mutually agreed as follows:

1. This agreement shall commence on the date it is made as set forth above and shall terminate on March 15, 1991.

2. During the term of this agreement the District shall utilize its best efforts to make available to the City up to 20,000 acre feet of pumped drainage water, as measured at the locations set forth in Paragraph 3. Such water will be pumped from certain of those wells described in Exhibit "A", attached hereto and incorporated herein by this reference. Subject to paragraph 6(b) of this agreement, water to be supplied under this agreement shall be pumped and delivered in accordance with written schedules to be provided by the City.

3. Water shall be deemed delivered by the District to the City at the District's recording stations designated in Exhibit "B", attached hereto and incorporated herein by this reference. It shall be the sole responsibility of the City to provide for transportation of such water from the point of delivery to the City's facilities. The City agrees that the District shall have no responsibility with regard to such water once the water has passed such recording stations; provided, however, the City shall have no such responsibility as concerns water that is not pumped and delivered in accordance with said schedules.

4. The City shall pay to the District the sum of $45.00 per acre foot of water delivered at the points set forth in Paragraph 3 of this agreement. Within ten days after the end of each month, the District shall submit to the City a

statement setting forth the quantities of water delivered at each recording station, the rates therefor, and the total amount due for that month. The City shall pay the District the amount set forth in the statement within thirty days of the date of the statement.

5. The District shall maintain records of flows at the points described in Paragraph 3, and such records shall be available to the City for inspection and copying at the City's request. On reasonable notice to the District, the City shall be entitled to check the accuracy of the District's recording stations. If any errors are found, an adjustment shall be made in the next monthly statement.

6. (a) The District reserves the right to reduce or discontinue any or all deliveries of water to the City pursuant to this agreement if, in the sole opinion of the District:

(1) the facilities to be utilized for the pumping and transportation of water under this agreement are required by the District to meet other requirements of the District;

(2) continued pumping of groundwater from the wells designated in Exhibit "A," or any of them, will, or is likely to, adversely affect the aquifer from which the water is being pumped or groundwater supply of adjacent or nearby groundwater users;

(3) the quality of the water obtained from the wells designated in Exhibit "A" is such that continued pumping is no longer feasible, or that continued extraction of groundwater jeopardizes the long-term quality of the groundwater resource.

(4) action detrimental to the District arising from this agreement is taken or threatened by any governmental authority with jurisdiction.

(b) The District shall promptly discontinue deliveries of water to the City under this agreement at any time and from time to time as requested in writing by the City.

7. Except for compliance with the California Environmental Quality Act ("CEQA") and any permitting requirements of any governmental authority for discharges of water into the San Joaquin River and/or any of its tributaries as contemplated by this agreement, the City shall be responsible for obtaining and complying with all governmental authorizations, approvals, and permits necessary to accomplish the water transfer envisioned by this agreement, and compliance with any applicable mitigation measures, and the City shall bear all costs associated therewith. The District shall give its reasonable cooperation to the City regarding any arrangement the City has to make with the California Department of Water Resources and the United States Bureau of Reclamation to enable the City to receive the benefits it has bargained to receive under this agreement.

8. The District makes no representation or warranty with regard to the quality or quantity of water that may be available from the wells described in Exhibit "A", or the District's ability to deliver all or any portion of the 20,000 acre feet of water stated as the goal of the parties to this agreement.

9. (a) The City agrees to protect, defend, indemnify and hold harmless the District, its officers, agents, servants, employees and consultants from and against any and all losses, claims, liens, demands and causes of action of every kind and character arising out of, directly or indirectly, or in any way connected with the pumping and delivery of water contemplated by this agreement.

(b) In the event that the District knew or should have known of the condition described in paragraph 6(a)(2) of this agreement and despite that continues pumping under this agreement, the provisions of paragraph 9(a) of this agreement shall not apply.

10. The parties agree that the pumping and delivery of water pursuant to or in connection with this agreement shall not constitute evidence in any adversary action or proceeding of any matter or claim which would be adverse to either of the parties.

11. This agreement supersedes any or all other agreements either oral or in writing, between the parties with respect to the transfer of water during the term of this

agreement and contains all the covenants and agreements of the parties with respect thereto. Both parties acknowledge that no representations, inducements, promises, or agreements, orally or otherwise, have been made by either party, or anyone acting on behalf of either party, which are not embodied herein, and that no other agreement, statement, or promise not contained in this agreement shall be valid or binding. Any modification of this agreement will be effective only if it is in writing and signed by the party to be charged.

12. This agreement does not, nor is it intended to, affect, alter or impair in any manner the rights of the respective parties hereto in or to the waters or the use of waters of the Tuolumne River or its watershed acquired or existing under the laws of the State of California. The City and the District agree to recognize and abide by the provisions of the Raker Act and the so-called Fourth Agreement among the City, the District and Turlock Irrigation District.

13. Each term and each provision of this agreement performable by the City shall be construed to be both a covenant and a condition.

14. This agreement shall be governed by and construed in accordance with the laws of the State of California.

15. If in the District's judgment the compliance with CEQA required in connection with this agreement cannot be accomplished before February 1, 1991, the District shall promptly so notify the City in writing, and either the District

or the City shall thereupon have the right to terminate this agreement by giving written notice of termination to the other.

16. Except for the obligation of a party to make payments as required by this agreement, neither party shall be considered to be in default in the performance of any of its obligations under this agreement when a failure of performance is due to an uncontrollable force. The term "uncontrollable force" shall mean any cause beyond the control of the party affected, including, but not restricted to, failure of or threat of failure of facilities, flood, earthquake, tornado, storm, fire, lightning, epidemic, war, riot, civil disturbance or disobedience, labor dispute, labor or material shortage, sabotage, restraint by court order or public authority, and action or nonaction by, or inability to obtain the necessary authorizations, approvals, and permits from any governmental agency or authority, which by exercise of due diligence such party could not reasonably have been expected to avoid and which by exercise of due diligence it has been unable to overcome. Nothing contained herein shall be construed to require a party (a) to settle any strike or labor dispute in which it may be involved or (b) to agree to any terms or conditions of obtaining authorizations, approvals, or permits which that party deems unreasonable or unreasonably burdensome. In the event a party is rendered unable to fulfill any of its obligations under this agreement by reason of an uncontrollable force, such party shall give prompt written notice of such fact to the other party.

17. All references in this agreement to "parties" are to the District and the City, and all references in this agreement to "party" are to either the District or the City as the context may require.

18. Time is of the essence for this agreement.

MODESTO IRRIGATION DISTRICT

By _____
Joseph B. Marcotte, Jr.
Chief Executive Officer

PUBLIC UTILITIES COMMISSION OF THE CITY AND COUNTY OF SAN FRANCISCO

By _____
Thomas J. Elzey, General Manager
Public Utilities Commission

Authorized by Public Utilities Commission

Resolution No. 90-0436

Adopted: December 11, 1990

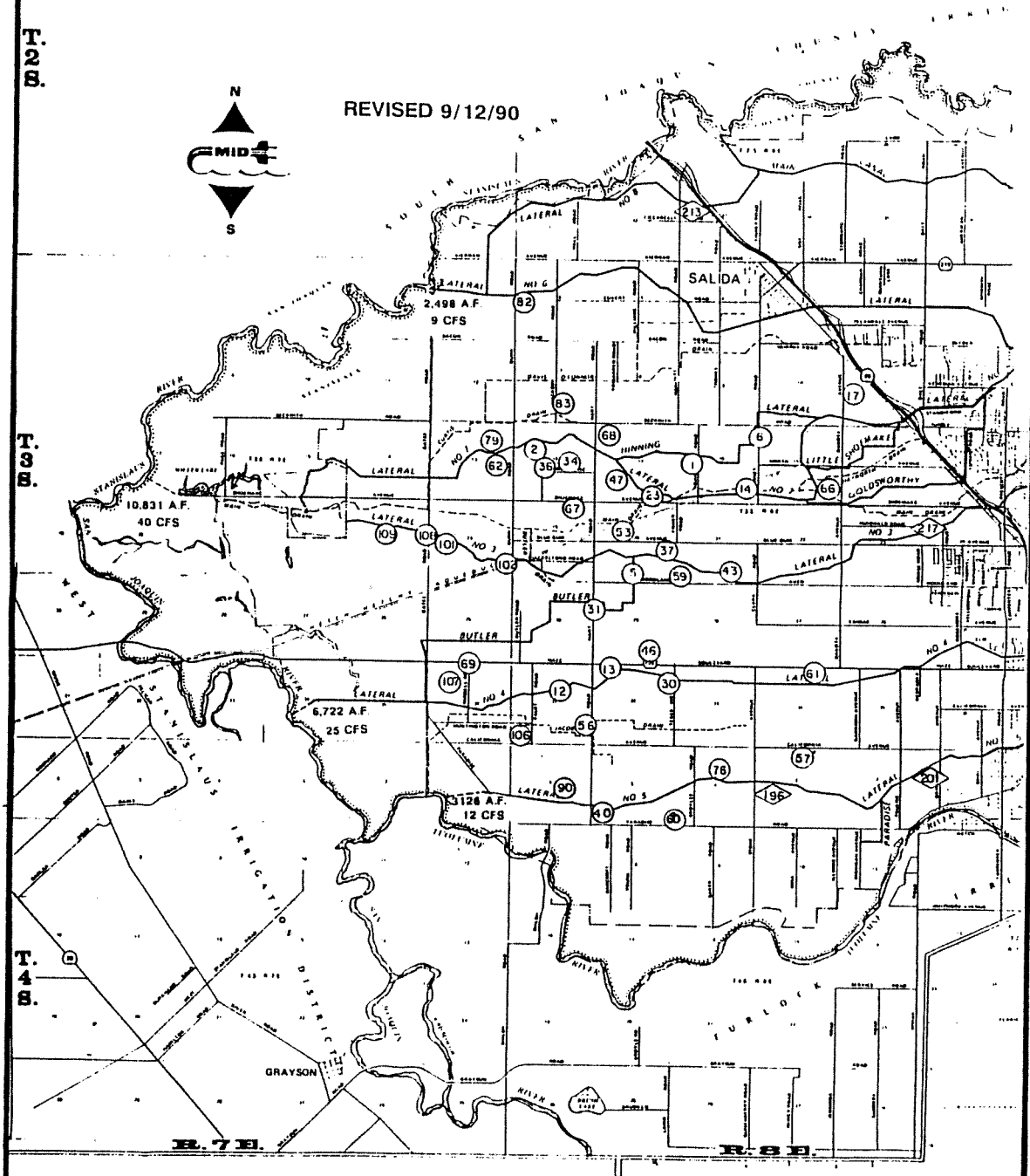
Attest:

_____
Romaine A. Boldridge, Secretary

APPROVED AS TO FORM:
LOUISE H. RENNE
City Attorney

By _____
George E. Krueger
Utilities General Counsel

PRELIMINARY HETCH HETCHY PUMPED DRAINAGE WATER STUDY



MAP OF THE

MODESTO IRRIGATION DISTRICT

STANISLAUS COUNTY, CALIFORNIA

IRRIGATION DISTRICT BOUNDARY

ELECTRIC SERVICE BOUNDARY

CANALS AND LATERALS

DRAINS

SCALE IN MILES

EXHIBIT "A"

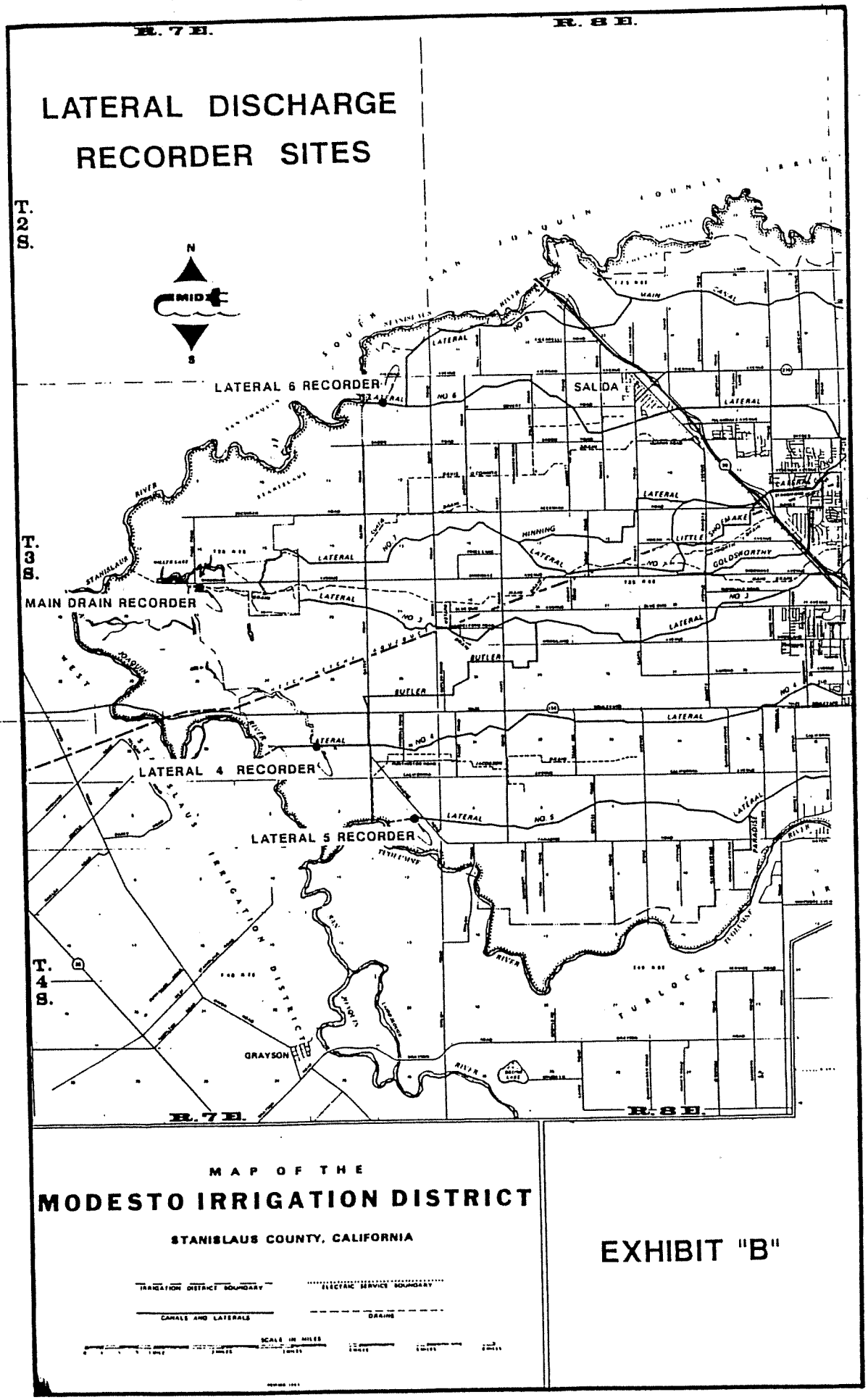

R. 7 E.
R. 8 E.
LATERAL DISCHARGE
RECORDER SITES
T. 2 S.
T. 3 S.
T. 4 S.
N
S
MID
LATERAL 6 RECORDER
SALIDA
MAIN DRAIN RECORDER
LATERAL 4 RECORDER
LATERAL 5 RECORDER
GRAYSON
MAIN CANAL
LATERAL NO. 6
LATERAL NO. 5
LATERAL NO. 4
LATERAL NO. 3
LATERAL NO. 2
LATERAL NO. 1
MINNING
LITTLE
GOLDSWORTHY
BUTLER
WEST
PARADISE
TURLOCK
IRRIGATION DISTRICT
R. 7 E.
R. 8 E.
MAP OF THE
MODESTO IRRIGATION DISTRICT
STANISLAUS COUNTY, CALIFORNIA
IRRIGATION DISTRICT BOUNDARY
ELECTRIC SERVICE BOUNDARY
CANALS AND LATERALS
DRAINS
SCALE IN MILES
EXHIBIT "B"

EXHIBIT 21

As California Drought Deepens, Those With Water Can Sell at a High Price

By Dan Brekke (https://ww2.kqed.org/news/author/danbrekke/) (http://twitter.com/danbrekke)
JULY 2, 2014

By Garance Burke (http://www.twitter.com/garanceburke)
Associated Press

(http://ww2.kqed.org/news/wp-content/uploads/sites/10/2014/01/FolsomLake1.jpg)

Folsom Lake, east of Sacramento, pictured in January as it reached its winter low. (Dan Brekke/KQED)

Throughout California's desperately dry Central Valley, those with water to spare are cashing in.

As a third drought year forces farmers to fallow fields and lay off workers, two water districts and a pair of landowners in the heart of the state's farmland stand to make millions of dollars by pumping their groundwater and selling it.

Nearly 40 others also are seeking to sell surplus water this year, according to state and federal records.

Economists say it's been decades since the water market has been this hot. In the last five years alone, the price has grown tenfold to as much as $2,200 an acre-foot. That's about 326,000 gallons of water, typically described as enough to supply two average California households for a year.

Unlike the previous drought in 2009, the state has been hands-off, letting the market set the price even though severe shortages prompted a statewide drought emergency declaration this year.


KQED Science: As Water Prices Soar, Some Profit From California's Drought (http://blogs.kqed.org/science/audio/some-california-farmers-fallow-fields-others-sell-water-for-big-profits/)
(http://blogs.kqed.org/science/audio/some-california-farmers-fallow-fields-others-sell-water-for-big-profits/)

(KQED's The California Report Drought Drives Groundwater Drilling Frenzy (http://www.californiareport.org/archive/R20140

Some water economists have called for more state regulation to keep aquifers from being depleted and ensure the market is not subject to manipulation such as that seen in the energy crisis of summer 2001, when the state was besieged by rolling blackouts.

"If you have a really scarce natural resource that the state's economy depends on, it would be nice to have it run efficiently and transparently," said Richard Howitt, professor emeritus at UC Davis.

In California, the sellers include some who hold claims on water that date back a century, private firms that are extracting groundwater and landowners who stored water when it was plentiful in underground storage facilities called water banks.

"This year the market is unbelievable," said Thomas Greci, general manager of the Madera Irrigation District, which recently made nearly $7 million from selling about 3,200 acre-feet. "And this is a way to pay our bills."

All of the Madera's district's water went to farms. The city of Santa Barbara, which has its own water shortages, was outbid.

'This year the market is unbelievable. And this is a way to pay our bills.'

— Thomas Greci,
Madera Irrigation District

The prices are so high in some rural pockets that water auctions have become a spectacle.

One agricultural water district amid the almond orchards and oil fields northwest of Bakersfield announced earlier this year it would sell off extra water it acquired through a more than century-old right to use flows from the Kern River.

Local TV crews and journalists flocked to the district's office in February to watch as manager Maurice Etchechury opened dozens of bids enclosed in sealed envelopes.

"Now everyone's mad at me, saying I increased the price of water. I didn't do it, the weather did it," said Etchechury, who manages the Buena Vista Water Storage District, which netted about $13.5 million from the auction of 12,000 acre-feet of water.

The severity of this year's drought means that the amount of water shipped from Northern California to the San Joaquin Valley and Southern California has been severely limited.

During the last drought, the state Department of Water Resources (DWR) ran a drought water bank, which helped broker deals between those who were short of water and those who had plenty. But several environmental groups sued, alleging the state failed to comply with the California Environmental Quality Act in approving the sales, and won.

This year, the state is standing aside, saying buyers and sellers have not asked for the state's help. "We think that buyers and sellers can negotiate their own deals better than the state," said Nancy Quan, a supervising engineer with the department.

The DWR, the U.S. Bureau of Reclamation and the State Water Resources Control Board have tracked at least 38 separate sales this year, but the agencies are not aware of all sales, nor do they keep track of the price of water sold, officials said.

The maximum volume that could change hands through the 38 transactions is 730,323 acre-feet, which is about 25 percent of what the State Water Project has delivered to farms and cities in an average year in the last decade.

That figure still doesn't include the many private water sales that do not require any use of government-run pipes or canals, including several chronicled by the AP. It's not clear, however, how much of this water will be sold via auctions.

Some of those in the best position to sell water this year have been able to store their excess supplies in underground banks, a tool widely embraced in the West for making water supplies reliable and marketable. The area surrounding Bakersfield is home to some of the country's largest water banks.

The drought is so severe that aggressive pumping of the banked supplies may cause some wells to run dry by year's end, said Eric Averett, general manager of the Rosedale-Rio Bravo Water Storage District (http://www.wakc.com/index.php/whos-who?pid=2&sid=90:Rosedale-Rio-Bravo-Water-Storage-District), located next to several of the state's biggest water banks.

Farther north in the long, flat Central Valley, others are drilling new wells to sell off groundwater.

Earlier this month, Stanislaus County's Del Puerto Water District approved a project (http://www.mercedsunstar.com/2014/06/05/3684236/water-district-approves-merced.html) to buy up to 26,000 acre-feet of groundwater pumped by two landowners in neighboring Merced County.

Since the district is getting no water from the federal government this year, the extra water will let farmers keep their trees alive, said Anthea Hansen, general manager of the arid Del Puerto Water District.

Hansen estimated growers would ultimately pay $775 to $980 an acre-foot — a total of roughly $20 million to $25.5 million.

"We have to try to keep them alive," Hansen said. "It's too much loss in the investment and the local economy to not try."

EXPLORE: ENVIRONMENT (HTTPS://WW2.KQED.ORG/NEWS/CATEGORY/ENVIRONMENT/), NEWS (HTTPS://WW2.KQED.ORG/NEWS/CATEGORY/NEWS/), DROUGHT (HTTPS://WW2.KQED.ORG/NEWS/TAG/DROUGHT/), GROUNDWATER (HTTPS://WW2.KQED.ORG/NEWS/TAG/GROUNDWATER/), WATER (HTTPS://WW2.KQED.ORG/NEWS/TAG/WATER-2/)

(https://ww2.kqed.org/news/2014/07/02/california-drought-water-sales/?share=facebook&nb=1)

(https://ww2.kqed.org/news/2014/07/02/california-drought-water-sales/?share=twitter&nb=1)

(https://ww2.kqed.org/news/2014/07/02/california-drought-water-sales/?share=pinterest&nb=1)

(https://ww2.kqed.org/news/2014/07/02/california-drought-water-sales/?share=google-plus-1&nb=1)

(https://ww2.kqed.org/news/2014/07/02/california-drought-water-sales/?share=tumblr&nb=1)

(https://ww2.kqed.org/news/2014/07/02/california-drought-water-sales/?share=email&nb=1)

1 Comment (https://ww2.kqed.org/news/2014/07/02/california-drought-water-sales/#disqus_thread)

Related

KQED Science: As Water Prices Soar, Some Profit From California's Drought
(http://blogs.kqed.org/science/2014/03/27/california-farmers-fallow-fields-sell-water-for-big-profits/)

Amid Drought, State Water Rights System Delivers a Rich Supply to a Few
(http://ww2.kqed.org/news/2014/03/27/drought-california-system-of-water-rights)

Cattle Ranchers Lock Horns With Almond Investors
(http://ww2.kqed.org/news/2014/03/27/drought-ranchers-lock-horns-with-almond-investors)

Key California Water Project Announces Drastic Cuts as Drought Deepens
(http://www.kqed.org/news/2014/03/27/key-california-water-project-announces-drastic-cuts-as-drought-deepens)

Central Valley's Sinking Land Threatens Vital Canals
(http://www.kqed.org/news/2014/03/27/central-valleys-sinking-land-threatens-vital-canals)

New Drought Aid Package From Governor, Legislative Leaders
(http://www.kqed.org/news/2014/04/01/new-drought-aid-package-from-governor-legislative-leaders-offers-bill/)

AUTHOR

DAN BREKKE

Dan Brekke is a blogger, reporter and editor for KQED News, responsible for online breaking news coverage of topics ranging from California water issues to the Bay Area's transportation challenges. In a newsroom career that began in Chicago in 1972, Dan has worked as a city and foreign/national editor for *The San Francisco Examiner,* editor at Wired News, deputy editor at *Wired* magazine, managing editor at TechTV as well as for several Web startups.

Since joining KQED in 2007, Dan has reported, edited and produced both radio and online features and breaking news pieces. He has shared in two Society of Professional Journalists Norcal Excellence in Journalism awards — for his 2012 reporting on a KQED Science series on water and power in California, and in 2014, for KQED's comprehensive reporting on the south Napa earthquake.

In addition to his 44 years of on-the-job education, Dan is a lifelong student of history and is still pursuing an undergraduate degree.

Email Dan at: dbrekke@kqed.org (mailto: dbrekke@kqed.org)

Twitter: twitter.com/danbrekke (https://twitter.com/danbrekke)
Facebook: www.facebook.com/danbrekke (https://www.facebook.com/danbrekke)
LinkedIn: www.linkedin.com/in/danbrekke (https://www.linkedin.com/in/danbrekke)

VIEW ALL POSTS BY THIS AUTHOR (https://ww2.kqed.org/news/author/danbrekke/)

ABOUT KQED

About (http://www.kqed.org/abou
Jobs (http://www.kqed.org/about
Internships (http://www.kqed.org/about/internships/)
Donate to KQED (https://www.kqed.org/donate/)
Website help (http://www.kqed.org/about/help/index.jsp)

FOLLOW KQED NEWS

EXHIBIT 22

M I N U T E S

BOARD OF DIRECTORS

PLACER COUNTY WATER AGENCY

Thursday, July 21, 2016

2:00 p.m. Regular Meeting

Board Members Present: Chairman MIKE LEE, GRAY ALLEN, JOSHUA ALPINE, Vice-Chair ROBERT DUGAN, and PRIMO SANTINI

Board Members Absent: None

Agency Personnel Present Who Spoke: EINAR MAISCH, General Manager; SCOTT MORRIS, General Counsel; CHERI SPRUNCK, Agency Secretary/Clerk to the Board; RYAN CLINE, Power Scheduling Manager; ANDY FECKO, Director of Resource Development; DAN KELLY, Staff Counsel; JAY L'ESTRANGE, Director of Power Generation Services; JOSEPH PARKER, Director of Financial Services; TOM REEVES, Director of Field Services; JEREMY SHEPARD, Engineering Services Manager

A. CALL TO ORDER

1. Roll Call

Chairman Lee called the regular meeting of the Placer County Water Agency Board of Directors to order at 2:01 p.m. in the American River Room, Placer County Water Agency Business Center, 144 Ferguson Road, Auburn, California.

2. Pledge of Allegiance

Director of Field Services led the Pledge of Allegiance.

3. Announcements, introductions, and recognitions

a. Adopt Resolution 16-25 Honoring Thomas L. Reeves, Director of Field Services.

The General Manager reported on Mr. Reeve's 34 year employment history with the Agency, noting he did a fantastic job. He always put the customers first.

Chair Lee read a resolution honoring Mr. Reeves and presented it to him.

Mr. Reeves said he was the lucky one because he couldn't have done anything without everyone else to help him along the way. He noted the last 2½ years have been some of the toughest on all of us, but they have been some of the most fun in his career.

Motion by Director Dugan adopting **Resolution 16-25 Honoring Thomas L. Reeves, Director of Field Services**; motion seconded by Director Alpine and adopted by unanimous roll call vote of Director's present.

The General Manager introduced Dan Kelly, new staff counsel.

B. PUBLIC COMMENT:

No member of the public commented.

C. REPORTS BY DEPARTMENT HEADS

No reports received.

D. AGENDA CHANGES AND REVIEW

There were no changes.

E. CONSENT CALENDAR:

Action:

1. Adopt salary range 38.0 of the Water Systems Bargaining Unit salary schedule for the Customer Services Supervisor job classification.

2. Approve budget amendment in the amount of $30,000 from the Bowman Electrical Upgrade Project to a new project for the Colfax Water Treatment Plant Generator Pad Project, to construct a generator pad with associated appurtenances.

3. Authorize out-of-state travel and related expenses for the Hydro Electrical Engineer and Hydro Plant Electrician to attend the Basler DECS-2100 Generator Excitation System Training, in Highland, Illinois, August 2 - 4, 2016.

4. Adopt **Resolution 16-26 in Support of the Appointment of the General Manager to the Cosumnes, American, Bear, Yuba Joint Powers Authority Board of Directors.**

Information, Receive and File:

5. Treasurer's Investment Report for month ended June 30, 2016.

6. Check Register 16-14 expenses disbursed.

7. Budget Transfer between Debt Service Interest Expense and active Individual Water System Projects to record Capitalized Interest.

8. Board of Directors' expenses for the month of June 2016.

Motion by Director Santini approving Consent Calendar items 1, 2, 3, and 4; motion seconded by Director Alpine and adopted by unanimous roll call vote of Directors present.

F. AGREEMENTS AND CONTRACTS:

Action:

1. Approve water service applications as follows:
   a. Facilities Agreement (FA) 2622 Amendment No. 1, Sunset at Stanford Ranch Subdivision, Rocklin, 0.5 equivalent dwelling units (EDUs);
   b. FA 2632, Bella Tuscany, Auburn, 10 EDUs.

2. Approve Amendment No. Two to Engineering Services Contract with Peterson Brustad, Inc. for the Alta Water Treatment Plant Phase II Project, in an amount not to exceed $9,898, increasing the total contract amount from $271,377 to $281,275.

3. Approve the following for the Ralston and Hell Hole Rockfall Barrier Protection Project, Contract No. 2015-05, with Access Limited Construction, Inc.:
   a. Contract Change Order No. Seven in the reduced amount of $6,050, revising the contract total from $1,015,700 to $1,009,650;
   b. Authorize the Clerk to the Board to file a Notice of Completion.

4. Approve the following for the Middle Fork Surge Access Road Reconstruction Project, Contract No. 2015-07, with Lorang Brothers Construction, Inc.:
   a. Contract Change Order No. Three in the reduced amount of $2,434.09, revising the contract total from $447,814.35 to $445,380.26;
   b. Authorize the Clerk to the Board to file a Notice of Completion.

5. Consider the following for the Mount Vernon Road Intertie Project, to construct a pipeline and emergency intertie between PCWA and Nevada Irrigation District:
   a. Approve a budget amendment in the amount of $500,000 from the Water Division Renewal and Replacement Projects Reserve Account to the Mt. Vernon Intertie Project, increasing the project budget from $753,290 to $1,253,290;
   b. Award Construction Contract No. 2016-04 to Civil Engineering Construction, Inc. in the amount of $887,340.

6. For the reoperation of surplus Middle Fork American River Project (MFP) consider the following:

a. Adopt **Resolution No. 16-27 Authorizing the Reoperation of Surplus MFP Water to U.S. Bureau of Reclamation in 2016** declaring a surplus of water available for sale;

b. Approve 2016 Reservoir Reoperation Agreement authorizing the reoperation of up to 20,000 acre feet of surplus MFP water for delivery to U.S. Department of the Interior - Bureau of Reclamation at Folsom Reservoir in 2016;

c. Declare project exempt from CEQA and authorize Clerk to the Board to file the Notice of Exemption.

7. Award Procurement Contract #P-16-02 to Keyinfo for the purchase of an IBM Power 8 platform to replace the i5 series platform which will no longer be supported by IBM using California Multiple Awards Schedule contract# 3-16-70-0032H and General Services Administration contract# GS-35F-110DA pricing in an amount not to exceed $116,000.

8. Authorize General Manager to enter into 2016 Consent to Groundwater Substitution Transfer Agreement between Sacramento Suburban Water District and Placer County Water Agency.

Information, Receive and File:

9. Progress Pay Estimate and Non-Discretionary Contract Change Order Summary for the period, May 28, 2016, through June 13, 2016.

Items 6 and 8 were pulled for discussion.

Motion by Director Dugan approving Agreement and Contract items 1, 2, 3, 4, 5, and 7; motion seconded by Director Santini and adopted by unanimous vote of Directors present.

Director of Resource Development gave a chronology of the water transfer market this year. Due to several dry years there was quite a bit of deficient in storage south of the Delta. In December, parties south of the Delta approached the Agency for water to refill their reservoirs. As hydrology improved, the ability to move water in the transfer season from north to south became limited because of limited pump capacity in the south Delta and the interested buyers left the market. This year we have plenty of surplus water available. We were approached to provide additional Delta outflow this summer to benefit species. The proposed contract is one of three steps to move water. There will be a refill agreement with the U.S. Bureau of Reclamation; they have to clear us of our refill obligations we incurred in the prior three years of transfers.

Staff Counsel explained there are two sets of pumps in the Delta – the federal is Jones, and state's is the Bank's facility. The state has a greater ability to pump water out of the Delta. The state and

federal projects have a joint point of diversion where they share pumping capacity. This year we had decent precipitation and the state increased its contractor's allocation up to 45 percent which maxed out Banks pumping capacity. That left Jones pumping plant, which is pumping from a single unit. The federal contractors that received 5% share were under the impression that San Luis Reservoir would be full. But it is expected to hit zero this weekend, so there is no federal water in San Luis Reservoir after this weekend. Contract deliveries to some of the Central Valley Project (CVP) contractors south of Delta will cease this weekend. A lot of San Joaquin Valley CVP contractors purchased about $20 million in water last year, but it is being held in Shasta because of Sacramento River temperature issues. The CVP is saying there is too much risk in transferring water, so if we are going to sell it, they are going to pay a very small amount.

Legal Counsel said there are restrictions on the pumping because of smelt. Westlands Water District has filed suit over this issue last weekend.

Staff Counsel reported on the case regarding the state's entry onto properties to do environmental studies. The state, as part of its investigation for the water fix, sought entry orders into hundreds of properties in the Delta to conduct environmental studies as part of its pre-condemnations activities to see where it wanted to build the project and what mitigation it would have to do. Many of the landowners fought the state and claimed the entries were so intrusive they constituted an actual taking for which the Department of Water Resources (DWR) would have to institute an imminent domain proceedings and pay just compensation. The trial court issued the entry order for DWR to go ahead and do studies with some limitations. The landowners appealed and won. The appellate court said it was a take and would have to institute an imminent domain proceeding to compensate landowners. Today the Supreme Court overturned the appellate court's decision. The court rewrote the pre-condemnation statutes to provide more protection for landowners.

Board inquiry and staff response followed.

Motion by Director Allen approving Agreement and Contract item 6; motion seconded by Director Santini and adopted by unanimous roll call vote of Directors present.

Regarding item F.8. Director of Resource Development reported on the PCWA/Sacramento Suburban Water District (SSWD) water supply contract arrangement. When Folsom inflow is above a certain level, PCWA is allowed to sell to SSWD. If SSWD wants to remarket or resell PCWA water, they have to pay the Agency 95% of the sale price that they receive—unless they get consent from PCWA to modify the agreement. The purpose of the water sale is assist the groundwater basin. SSWD is going to switch to groundwater this year and use some of the 300,000 acre feet they have banked previously to get them through. Because SSWD is in our place of use, we don't transfer the water to them, so there is no refill arrangement associated with that water. That is water that PCWA was going to put into Folsom. He explained the provisions of the Consent to Groundwater Substitution Transfer Agreement.

Motion by Director Dugan approving Agreement and Contract items 8; motion seconded by Director Alpine and adopted by unanimous vote of Directors present.

G. POWER:

1. For the Hell Hole Dam Core Raise Project to meet California Department of Safety of Dams and Federal Energy Regulatory Commission requirements for Probable Maximum Flood loading:
   a. Open the noticed public hearing on the proposed Mitigated Negative Declaration (MND);
   b. If no comments are received that warrant continuation of the hearing, close the hearing and consider adopting Resolution 16-__ approving the MND and Mitigation Monitoring Plan and authorizing staff to file a Notice of Determination**.**

The Engineering Services Manager introduced Janelle Nolan, Environmental Consultant Manager with Cardno Entrix.

Ms. Nolan provided an overview of the proposed project and the CEQA process. The California Department of Water Resources, Division of Dam Safety, requested PCWA evaluate the Hell Hole Dam to see if it met probable maximum flood requirements. PCWA determined a maximum flood would overtop the dam core. PCWA prepared the environmental evaluation. She showed a map of the area. An initial study, mitigated negative declaration was prepared and distributed. Three comment letters were received from 1) Central Valley Water Quality Control Board, which is the standard letter that we must obtain appropriate permits; 2) Shingle Springs Rancheria asked for any records search on cultural or tribal resources completed as part of the project and field study results; 3) United Auburn Indian Community of the Auburn Rancheria requested participation in cultural resource surveys and results of data searches and field surveys completed and notified if anything is found during project implementation. PCWA is gathering the documents to provide to the tribes. The project is planned to be implemented in summer and fall 2017.

Director of Power Generation Services further reported on details of the project.

At 2:51 p.m. the Chair opened the hearing for public comment. There being no public comment, Director Santini made a motion to close the hearing at 2:51 p.m.; motion seconded by Director Alpine and adopted by unanimous vote of Directors present.

Motion by Director Allen adopting **Resolution 16-28 approving the Mitigated Negative Declaration and Mitigation Monitoring Plan, and authorizing staff to file a Notice of Determination**; motion seconded by Director Alpine and adopted by unanimous roll call vote of Directors present.

2. Approve the 2016 financial modifications to the 2013 Collection Agreements with the U.S. Forest Service.

Director of Resource Development explained the purpose of each collection agreement. The Agency has recreation facilities in the Tahoe and Eldorado National Forests watersheds. The Forest Service runs the facilities on the Agency's behalf. The first agreement is the funding mechanism to pay them to staff those recreation facilities for the Agency and to provide all the janitorial services. Our payments are offset by unspent funds from prior years and the charges they assess on visitors. The second agreement is part of our FERC license arrangement because we are responsible for upkeep/maintenance of facilities. The third agreement is payment to the Forest Service for environmental work, clearances, and oversight of projects for Agency use of Forest Service roads and facilities.

Motion by Director Santini approving the 2016 financial modifications to the 2013 Collection Agreements with the U.S. Forest Service; motion seconded by Director Dugan and adopted by unanimous vote of Directors present.

3. Review of 2016 energy market conditions and hydrology.

The Power Scheduling Manager gave a PowerPoint presentation reporting on the Middle Fork Project's energy sales. Accumulative precipitation in June was 73 inches/107 percent of average. Staff anticipates generating 975,000 MW hours. Last year staff projected $41.4 million in revenues. Above normal precipitation coupled with significantly lower energy prices should lead to roughly $42.6 million in total MFP revenue, or 3% above the 2016 forecast. The Agency gets paid based on the number of hours it runs and natural gas prices. Natural gas prices hit an all-time low of $1.73 in May.

H. REPORTS BY DIRECTORS:

Director Dugan reported the Regional Water Authority Executive Director review went out to the Board. He asked for collective wisdom from the PCWA Board members to be included in the report.

Director Santini reported he and Director Lee attended the July 12 Lincoln/PCWA Committee meeting. They received a review of groundwater legislation. There was discussion about the Groundwater Sustainable Authority and groundwater sustainable plan. The City's concern was about the organizational structure that protects their use of groundwater water (10% of their total use) and making sure whatever plan we come up with encapsulates authority over agriculture use in the County. The main thing to keep in mind is that it is an iterative process. There are deadlines at end of 2017 for the agency formation and the 2022 for plan. They talked about expansion of the Ophir plant—giving Lincoln information they need to make a decision to buy capacity or whether they choose to address their water supply needs with their own separate plant with Nevada Irrigation District.

He attended a Middle Fork Project Finance Authority meeting this morning and heard a hydrology report and six year budget comparison. Revenue will be up by 3 percent and expenses down by $3 to $4 million.

I. REPORTS BY LEGAL COUNSEL:

No reports received.

J. REPORTS BY GENERAL MANAGER:

The General Manager thanked Director Santini for recognizing that life is an intricate process and we do the best we can day by day.

K. CLOSED SESSION

With all members present, as heretofore designated, the meeting adjourned to closed session at 3:08 p.m. to consider the following:

1. **Conference with Legal Counsel - Existing Litigation** - Pursuant to subdivision (a), Section 54956.9 of the Government Code.
   Name of case: Bat Electric, Inc. v. Orenco Hydropower, Inc., et al.
   Shasta County Superior Court Case No. Superior Court 185128

N. REPORT FROM CLOSED SESSION

The Board returned from closed session at 3:49 p.m. It was noted there was nothing to report.

O. ADJOURNMENT:

At 3:49 p.m. Director Dugan made a motion to adjourn; motion seconded by Director Santini and adopted by unanimous vote of Directors present.

ATTEST:

/s/ Cheri Sprunck

_____
Cheri Sprunck, Clerk to the Board
Placer County Water Agency

EXHIBIT 23

M I N U T E S

BOARD OF DIRECTORS
PLACER COUNTY WATER AGENCY

Thursday, June 18, 2009
2:00 p.m., Regular Meeting

Board Members Present: CHAIRMAN GRAY ALLEN, ALEX FERREIRA, LOWELL JARVIS, MICHAEL LEE, and BEN MAVY
Board Members Absent: None
Agency Personnel Present Who Spoke: DAVID BRENINGER, General Manager; ED TIEDEMANN, General Counsel, CHERI SPRUNCK, Agency Secretary/Clerk to the Board; JOHN KINGSBURY, Director of Customer Services; JOSEPH PARKER, Director of Financial Services; BRENT SMITH, Deputy Director of Technical Services

A. CALL TO ORDER

1. Roll Call

Chairman Allen called the regular meeting of the Placer County Water Agency Board of Directors to order at 2:00 p.m. in the American River Room, Placer County Water Agency Business Center, 144 Ferguson Road, Auburn, California.

2. Pledge of Allegiance: Led by Brent Smith

Director Jarvis arrived at 2:01 p.m.

3. Introductions & Presentations

General Manager introduced Auburn Journal Publisher Tony Hazarian.

Mr. Harzarian thanked the Board for their support of the Fire and Water Brochure. (Handout provided)

B. PUBLIC COMMENT: No member of the public commented.

C. REPORTS BY DEPARTMENT HEADS

No reports received.

D. AGENDA CHANGES AND REVIEW

A PowerPoint presentation was given under G.3.c. regarding the status of Renewal and Replacement projects.

E. CONSENT CALENDAR:

1. Approve and file:
   a. May 21, 2009, minutes
   b. Check Register 09-11 expenses disbursed
   c. Budget transfers, as recommended by the Director of Financial Services. ***See attached and other non-routine budget transfers that may be included as part of specific items that follow.***
   d. Board of Directors' expenses for previous months
   e. General Manager's expense reimbursement claim summary
2. Approve the following late employee claim pursuant to Chapter 3, Article 1, Section 3003, of the Agency's Personnel and Administration Manual:
   - David Jarman's expenses dating back to March 2009 in the amount of $219.20.
3. Approve Water Education Foundation 2009/2010 sponsorship in the amount of $2,500.
4. Approve Regional Water Authority's annual dues in the amount of $34,365.
5. Approve out-of-state travel request for the Resource Planning Administrator, Hydro Engineer, and Associate Engineer to attend the Waterpower XVI Conference July 27 - 30, 2009, in Spokane, Washington.
6. Approve **Resolution 09-22 authorizing the Grant of an Easement to Pacific Gas & Electric Company** for the Foresthill Substation.

Motion by Director Ferreira approving Consent Calendar items 1, 2, 3, 4, 5, and 6; motion seconded by Director Lee and adopted by unanimous roll call vote of directors present.

F. AGREEMENTS AND CONTRACTS:

Award:

1. Approve Sacramento Water Forum agreement relevant to the Water Conservation Element Update.
2. Approve Agency's portion of the 2009/2010 Water Forum Cost Share Agreement in an amount not to exceed $20,560.
3. Approve agreement with Liebert, Cassidy, Whitmore for the Gold Country Employment Relations Consortium for 2009-2010 in the amount of $3,165.
4. Approve a Consulting Services Contract with Charpier Engineering for Red Ravine Siphon Project and Colfax Distribution Box and Header Pipe Project, in an amount not to exceed $116,000.
5. Approve a Consulting Services Contract with Steve Yaeger, Consulting Engineer for Antelope Canal Encasement and Clover Valley Desilting projects, in an amount not to exceed $69,000.

Existing:

6. Approve Amendment No. One to the Materials Testing Contract with Youngdahl Consulting Group, Inc. for the Auburn WTP Raw Water Pipeline Project, Contract #2008-09, in an amount not to exceed $10,335.25.

7. Approve the following with Herback General Engineering for the Middle Fiddler Green Siphon Replacement Phase II project, Contract #2009-02:
   a. Progress Pay Estimate No. One in the amount of $71,558.18.
   b. Receive for filing Non-Discretionary Contract Change Order No. One in the increased amount of $11,596 approved by the Director of Technical Services pursuant to authority previously granted by the Board of Directors.
8. Approve the following with Doug Veerkamp General Engineering, Inc. for the Auburn Water Treatment Plant Raw Water Pipeline project, Contract #2008-09:
   a. Receive for filing Non-Discretionary Contract Change Order No. Three in the decreased amount of $17,903, approved by the Director of Technical Services pursuant to authority previously granted by the Board of Directors.
   b. Progress Pay Estimate No. Five in the amount of $438,843.15
9. Approve Progress Pay Estimate No. One with Delta Excavating, Inc. for the Secret Town Pipeline Phase II Improvements, Contract #2009-01 in the amount of $71,550.

Items F1 and F2 were pulled for discussion. Director Mavy expressed concern with the Water Forum Agreement putting fish before people. He also expressed concern over the Best Management Practices. He suggested a cost benefit analysis be done. Director of Customer Services responded to Board inquiries. Discussion followed.

Motion by Director Jarvis approving Agreement and Contract items 3, 4, 5, 6, 7, 8, and 9; motion seconded by Director Ferreira and adopted by unanimous vote of directors present.

Motion by Director Jarvis approving Agreement and Contract items 1 and 2; motion seconded by Director Lee and adopted by unanimous vote of Directors present.

G. WATER AVAILABILITY AND WATER SUPPLY

1. Zone 1 treated water service; take action as appropriate:
   - Single Connections (In fill): Two applications for a total of 1.3 acre-feet or 2.0 equivalent dwelling units

Deputy Director of Technical Services reported on the applications for single connections.

Motion by Director Lee approving the applications for single connections in the total amount of 1.3 acre-feet; motion seconded by Director Ferreira and adopted by unanimous vote of Directors present.

2. Requests for response from Agency on water availability; take action as appropriate.
   a. SB 221 (tentative map)
   b. SB 610 (environmental process)
   c. All other requests or information

No reports received.

3. Reports and response on water resource policy, planning and management issues and interests; take action as appropriate:
   a. Water rights and contracts
   b. Land use and water policy
   c. Water supply, service, and infrastructure system
   d. Water use efficiency and conservation
      - Approve U.S. Bureau of Reclamation Water Efficiency Matching Grant in the amount of $24,875.
   e. American River Pump Station Project
   f. Sacramento River Diversion Project
      - Status report on Sacramento River Water Reliability Study.
   g. Regional water matters
   h. Delta and State water matters

Under item G.3.c. Deputy Director of Technical Services gave a PowerPoint presentation updating the Board on four key renewal and replacement projects. The reported included information about the $2.1 million Auburn Raw Water Pipeline Project on upper Lincoln Way in north Auburn, a $400,000 replacement of the Middle Fiddler Green Siphon near Ophir, a $340,000 improvement to the Auburn Water Quality building, and the $1.9 million second phase of the Secret Town Pipeline Project above Colfax.

Under item G.3.d. Director of Customer Services reported about the U.S. Bureau of Reclamation's matching grant for high-efficient toilets and washing machine rebates.

Motion by Director Ferreira to enter into a $24,875 U.S. Bureau of Reclamation Water Efficiency Matching Grant; motion seconded by Director Jarvis and adopted by unanimous vote of Directors present.

Under item G.3.f. Director of Strategic Affairs reported in 2001 Congress authorized and directed the Bureau of Reclamation to prepare a feasibility study on a potential diversion of existing water supply entitlements from the Sacramento River to service the Agency and other regional water supply needs. One objective was to modify the allowable place of use for the Agency's Central Valley Project (CVP) contract water supply because the Agency does not have access to infrastructure that would enable it to divert water from Folsom Reservoir to deliver to its Zone 1 service area. The Bureau has agreed to expand the CVP place of use to include Agency Middle Fork Project water rights place of use. The Agency will be able to use its CVP supply to meet its water supply commitments to San Juan and the City of Roseville. A NEPA document is required before the change can be implemented.

The regional planning study is affected by uncertainties over future operation of the Central Valley Project and State Water Project. Also, a slower rate of growth in Placer County has reduced the urgency for additional water supplies.

The Board directed staff to suspend work on the Sacramento River Water Reliability Study (SRWRS) project pending resolution of Operational Criteria and Plan/Delta issues between the CVP, State Water Project, Fish & Wildlife Service and National Marine Fisheries Service, and until there are signs of recovery in the local economy, and that available SRWRS budgeted funds be used to pursue approval of a change in the Agency's CVP place of use.

H. MIDDLE FORK AMERICAN RIVER PROJECT, (FERC PROJECT 2079), RELICENSING PROGRAM

1. Report on relicensing process, schedule, and activities; take action as appropriate.

2. Report on financial matters and services; take action as appropriate.

No reports received.

I. GENERAL ITEMS

1. Report of fiscal status.

Regarding the Water System, the Director of Financial Services reported plant flows have been down and continue to be down because of the wet May. The flows are down 14% but billings are only down 2.3% from last year. The accounts receivables balance is staying steady and the Agency is getting revenues because Collections is tracking year-to-day levelly with where billings are. He reported the Agency's current balances. On a weekly basis water bills and cash receipts are being monitored and he noted on the amounts. Other revenues include Renewal and Replacement projects, which are on budget. Expenses of departments are on or under budget.

Regarding Agency-Wide he reported on types of revenues and noted in-county water sales are 68% of budget and the Agency is ahead of budget. The property tax revenue will be levied July 1. Department expenses are on budget.

2. Report on request for assistance from Lake Tahoe area water purveyors.

Deputy Director of Technical Services showed maps of publicly and privately owned water districts in the North and West shore of Lake Tahoe. The districts are trying to determine, with fire departments, how to best improve facilities to protect structures and the area from fire. There are many undersized facilities for many districts in the area.

Tahoe City Public Utility District and North Tahoe Public Utility District asked the Agency to assist as a neutral party and to manage the project, help facilitate on a regional level, manage the consolidated master plan for public and private water systems and assist with applying for FEMA's Hazard Mitigation program.

Motion by Director Ferreira authorizing staff to provide project management assistance in developing a regional master plan for water systems for the north and west short of Lake Tahoe and assist in submitting a FEMA Hazard Mitigation Grant; motion seconded by Director Lee and adopted by unanimous vote of Directors present.

3. Report on State and Federal legislation.

No report received.

J. REPORTS BY DIRECTORS:

Director Jarvis attended the Mountain Counties Water Resources Association & Association of California Water Agencies Region 3 meeting. About 80 people attended representing various water districts. John Woodling, Regional Water Authority Executive Director, gave a report about water use misconceptions and water conservation. Victoria Whitney, Chief, Division of Water Rights, State Water Resources Control Board, spoke about water rights priorities: drought and conservation, Term 91, water quality certifications, and Delta pumping restrictions—how they affect water rights. About 60 of the attendees went on a tour of the Agency's American River Pump Station.

He also attended KMT&G's 50-year anniversary celebration. At the event he spoke to Stan Kronick about a curtailment letter received from Victoria Whitney and the State Water Resources Control Board.

Director Mavy attended a Dutch Flat Mutual Water Company board meeting. They have issues similar to all small water districts, such as keeping up with state mandates. They are looking for help and will be calling Agency staff for advice.

Director Lee reported he, Director Ferreira and two of the Agency's staff went on the Placer County Ag Tour. They visited Fowler's Nursery and learned about wholesale tree growing. The tour also stopped at the Forester cattle ranch/hay farm. Both are important agriculture projects that bring revenue to Placer County.

Director Ferreira reported the Placer County Ag Tour visited the DeWitt Farmer's Market where the Cattlewomen's Association hosted lunch.

Chair Allen attended the Sacramento Metropolitan Chamber's Legislative Day and talked to legislators about issues related to the Bay-Delta and the Governor's proposed 20 percent conservation by the year 2020. He expressed concern about one legislative committee consultant who said that anyone who diverts water anywhere upstream from the Delta is a beneficiary of the Delta and, therefore, must pay and sacrifice, just like those who receive water from the Delta.

K. REPORTS BY LEGAL COUNSEL

Legal Counsel reported staff is working diligently on the San Diego County Water Authority water transfer. He reported on responses filed to the protests of such transfer.

L. REPORTS BY GENERAL MANAGER

General Manager spoke about Dutch Flat Mutual Water District sending one of their Board members in the past to the Agency's Board meeting.

He noted relations with PG&E are good regarding the water transfer and the agreement with PG&E regarding same is signed. The challenge is how the water can be exported.

He reported he will send a letter to PG&E regarding the Agency's Water Supply Contract which is up for renewal in 2013.

Meeting date options for East Slope Board meeting were discussed.

M. CLOSED SESSION AND REPORT

With all members present, as heretofore designated, the meeting adjourned to closed session at 3:30 p.m. to consider the following:

Conference with legal counsel – anticipated litigation
Significant exposure to litigation pursuant to Subdivision (b) of Section 54956.9 of the Government Code
Number of Potential Cases: One

The Board returned at 3:40 p.m. No reportable action taken.

N. ADJOURNMENT

The Chair adjourned the meeting at 3:41 p.m.

ATTEST:

_____
Cheri Sprunck, Clerk to the Board
Placer County Water Agency

EXHIBIT 24

WATER & POWER
Serving Central California since 1887

Modesto Irrigation District
The Power to Grow

August 6, 2014

State Water Resources Control Board
Division of Water Rights
Attn: Mark Gowdy
P.O. Box 2000
Sacramento, CA 95812

Dear Mr. Gowdy,

In a letter dated May 6, 2014 to the San Francisco Public Utilities Commission ("SFPUC"), the Division of Water Rights outlined certain "key assumptions" that State Water Resources Control Board ("State Water Board") staff will use in its impact analysis for the revised Draft Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the Bay-Delta: San Joaquin River Flows and Southern Delta Water Quality ("SED"), to evaluate impacts to the City and County of San Francisco ("CCSF") that may result from the proposed Tuolumne River flow alternatives. The Modesto Irrigation District and the Turlock Irrigation District ("Districts") support the comment letter from the San Francisco Public Utilities Commission ("SFPUC") dated July 29, 2014, and wish to add the following additional comments.

In the May 6, 2014 letter, the State Water Board staff ("staff") makes a number of erroneous assumptions regarding how CCSF will fulfill its obligations to its customers in the Hetch Hetchy Regional Water System ("RWS") and to the Districts under the Raker Act and the Fourth Agreement as a result of new instream flow requirements on the Tuolumne River.

Staff proposes that socioeconomic impacts to CCSF from increased instream flow requirements will be limited because CCSF will be able to purchase sufficient water from the Districts to avoid water shortages and consequent reductions in water deliveries throughout the RWS service territory. Additionally, the letter explains that staff will use two divergent interpretations of CCSF's responsibility under Article 8(b) of the Fourth Agreement to estimate the volume of water that CCSF would need to purchase from the Districts to avoid reductions in water deliveries.

Regarding the purchase of water from the Districts, while it is theoretically possible to do so, such a scenario is neither reasonable nor feasible. Any sale of District water is and will be subject to a broad variety of unpredictable forces and independent decision makers unique to each District and the Districts as Tuolumne River partners. Neither the SWB nor the Districts can reasonably depend on whether or to what extent a water sale of unknown and unprecedented scope to CCSF would survive such an unpredictable gauntlet. The Phase 1 SED will be legally insufficient if the State Water Board fails to review the impacts born of the most likely scenario to its imposition of the

Lower San Joaquin River instream flow proposal, namely that CCSF and its customers will experience critical water shortages in the RWS.

First and foremost, there is a broad variety of customers to which the Districts' water is already pledged, and any potential sale would necessarily have to be subject to those needs. The Districts' duty to serve its existing customers' varying demands is the paramount use of District water, if not the very purpose of the Districts' locally-financed water distribution and storage system.

Next, and as this most recent drought has highlighted, it is hydrological reality that in certain dry years water will not be available to sell to CCSF, willingly or as otherwise contemplated by the State Water Board. Therefore, the State Water Board should and must incorporate into its Phase 1 SED analysis the relevant socioeconomic impacts from water shortages and consequent reductions in water deliveries to RWS outlined in CCSF's Comment Letter to the Phase 1 SED dated March 29, 2013.

Additionally, each District is governed by a locally elected Board of Directors. Each Director has a duty to govern and direct District activities in his or her best judgment, and all District goals and activities are subject to the Board of Directors' ability to reach agreement. Adding yet another layer of complexity, each Director and the District itself are subject to the will of the electorate. CCSF's comment letter dated July 29, 2014 aptly cites to two (of several) newspaper articles reflecting the District-electorate's currently negative tone towards the sale of District water to CCSF. While public displeasure with District action does and should not always control District decision-making, the Districts denied the then-proposed water transfers to CCSF due to concerns with evolving circumstances like customer demand and the infrastructure-related logistics of transfer. The State Water Board must recognize the (at least) two recent instances where a proposed transfer of water to CCSF was not feasible due to independent decisions and actions by the public officials and the relevant electorates within each District. In so doing, the State Water Board must then incorporate the reasonably foreseeable impacts of water shortage to RWS, as more fully described in CCSF's above referenced Comment Letter dated March 29, 2013, due to the reasonable likelihood that CCSF will not be able to purchase water from the Districts as proposed in the State Water Board letter to the SFPUC dated May 6, 2014.

Once again, the State Water Board has failed to consult with responsible agencies. The San Joaquin Tributary Authority ("SJTA") pointed out in its March 29, 2013, comments on the SED that neither the Board nor the staff consulted with the SJTA members (which include the Districts and CCSF) concerning the extent or content of environmental review. Prior to the release of the SED, neither the Districts nor CCSF were consulted about the Fourth Agreement and how operations on the Tuolumne River comply with the Raker Act despite numerous opportunities to do so. Rather, staff used a report from NRDC as the source of their information.

Quite unfortunately, more than one year later, staff has once again embarked on a course without consulting with the Districts or with CCSF, the entities with the most knowledge and expertise.

As you know, the SED must consider a reasonable range of alternatives which could feasibly attain the basic objectives of the project. (Pub. Resources Code § 15126(d); Friends of the Eel River v. Sonoma County Water Agency (2003) 108 Cal.App.4th 859, 873.) It is well established that environmental review is not required to analyze every conceivable alternative; however, the SED is

required to analyze a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. (Preservation Action Council v. City of San Jose (2006) 141 Cal.App. 4th 1336.)

It is not reasonable to assume that the Districts have water available to sell to CCSF to meet the SED's desired flow objectives. As was pointed out in the SJTA's March 29, 2013 comments on the SED, any additional flow requirements will have significant water supply, economic, and groundwater impacts to the Districts and the customers they serve. It is pure speculation to assume that CCSF will be able to purchase water from the Districts in order to meet a share of the SED's desired flow objective. There have been no discussions, much less agreements, between the Districts and CCSF regarding the purchase of water to meet some "share" of Tuolumne River instream flow as envisioned in the SED and no such discussions have been planned.

Furthermore, assuming that such an arrangement between the Districts and CCSF were feasible, the agreement would require full environmental analysis and review under CEQA. The revised SED must analyze the environmental effects of any alternative it proposes and identify the mitigation measures.

Finally, such an analysis is unnecessary as the water users most affected by the SED's proposed flow alternatives have already provided the State Water Board with an estimate of the potential economic impacts. (See the comments submitted to the State Water Board by CCSF at the March 21, 3013 hearing on the adequacy of the draft SED and the March 29, 2013 comment letter from the Bay Area Water Supply and Conservation Agency.)

It bears repeating that the Districts, with their several decades of information and expertise surrounding the Tuolumne River and its operations, welcome the opportunity to be consulted concerning the extent or content of the environmental review of Phase 1.

Sincerely,

Roger VanHoy, General Manager
Modesto Irrigation District
PO Box 4060
Modesto, CA 95352
roger.vanhoy@mid.org

Casey Hashimoto, General Manager
Turlock Irrigation District
PO Box 949
Turlock CA 95381
cjhashimoto@tid.org

cc: Barbara Evoy, State Water Resources Control Board

EXHIBIT 25

Breaking News Alerts

September 18, 2012 2:13 PM

Modesto Irrigation District kills proposed water sale

The board of the Modesto Irrigation District voted 5-0 this afternoon to stop its proposed water sale to San Francisco after the parties deadlocked on contract revisions sought by the MID.

By John Holland - jholland@modbee.com

A closed-session vote Tuesday brought a sudden end to the Modesto Irrigation District's controversial plan to sell water to San Francisco.

The district board voted 5-0 to cease negotiations with the city, after the parties deadlocked on contract revisions sought by the MID.

With that, a debate that has roiled the Modesto area for nearly a year — pitting people worried about water shortages against others who saw a windfall for the MID — appears to be over.

"I'm very pleased with it," said board member Larry Byrd, an opponent from the start. "This is what needed to be done to save our community, and we did it."

The contract involved 2,240 acre-feet of Tuolumne River water per year, about 1 percent of the MID's average annual deliveries to farmers and the treatment plant serving Modesto-area domestic users. San Francisco would have taken it into its Hetch Hetchy Water and Power System, upstream on the river.

The plan included a study of a potential sale of an additional 25,000 acre-feet — water that would have been freed up by conservation projects on MID canals.

The city agreed to a starting price of $700 per acre-foot in the first sale, about 70 times what MID farmers pay. The cost would have been spread among about 2.6 million Hetch Hetchy customers in four Bay Area counties.

Two proposed revisions to the sale contract were unacceptable, said Steven Ritchie, assistant general manager for the water enterprise at the San Francisco Public Utilities Commission.

One would have allowed the MID to reduce the sale volume during dry years in proportion to the cuts for farmers and domestic users in the district, he said.

"Since we would be paying a premium price, we felt that we really do need this water all the time," he said.

The other revision would have granted the MID the right to end the sale for any reason, Ritchie said. "For us, that really put this water at risk."

Modesto officials have said the sale would have violated the 2005 agreement under which the district will supply water to an expanded treatment plant. The MID board postponed four votes on the sale since May so those issues could be discussed.

"It looks like in my mind that they were trying to get San Francisco to address some of our concerns," Modesto Mayor Garrad Marsh said, "and they were not willing to do that."

The vote was welcome news to the Tuolumne River Trust, which argued that the sale would reduce flows below Hetch Hetchy Reservoir.

"We feel the water is best used locally in the river to improve the health of the salmon population," said Patrick Koepele, the group's deputy executive director. "San Francisco can meet its water needs through water conservation and water use efficiency."

In a letter to the MID dated Tuesday, SFPUC General Manager Ed Harrington said the sales would "maintain MID's existing supplies and result in no harm to resources in the lower Tuolumne River."

He added that San Francisco officials "remain open to further discussions."

MID board Chairman Tom Van Groningen said "anything is possible" in the future, but for now, the sales are off the table.

The income from the sales could have paid for an estimated $115 million in upgrades to the MID system. They include the small reservoirs that would free up the water for sale, along with connections between canals and replacement of the nearly century-old flume that carries the main canal over Dry Creek.

The income also could have covered the MID's estimated $25 million cost for a new federal hydropower license for Don Pedro Reservoir on the Tuolumne.

Tuesday's vote was a turnaround from the 4-1 vote in January to have the district complete negotiations on the first sale. Van Groningen and directors Nick Blom, Glen Wild and Paul Warda favored the move.

"I said all along I didn't care if we sold water or not," Wild said Tuesday. "I was concerned about paying the bills."

Van Groningen said he would like to form an advisory committee representing various interests to explore other ways to pay for canal system improvements. "We will have to direct our energy toward whatever it is we can do for a 21st century water delivery system for the farming community," he said.

The committee could include the Stanislaus County Farm Bureau. It opposed the San Francisco sales but has indicated that farmers could accept somewhat higher water rates to pay for a slimmed-down version of the system upgrade.

Members of the group's Young Farmers and Ranchers program went ahead Tuesday evening with a scheduled discussion of the San Francisco proposal.

Jake Wenger, a walnut and almond grower west of Modesto, said he did not like the idea that San Francisco would have had the "right of first refusal" on other MID sales. He also noted the 50-year term for the first sale and the lack of escape clauses for the district.

"The only way MID could get out of the contract is if the city and county of San Francisco let them out," he said.

Tuesday's open session of the MID board drew several critics of the sale, as has been the case in recent months even when the matter was not on the agenda.

John Duarte, who grows wine grapes east of Modesto, suggested that the MID sell water to nearby farmers who rely on uncertain groundwater supplies.

"It doesn't seem that there is any inherent logic to making water available to San Francisco during a prolonged drought when it's water we will need in a prolonged drought," he said.

Bee staff writer John Holland can be reached at jholland@modbee.com or (209) 578-2385.

Related content

Legal threat, foes force MID to hold off on SF water sale vote

PDF: Hetch Hetchy Water and Power System

EXHIBIT 26

GROUNDWATER CRISIS JANUARY 23, 2014 4:14 PM

Modesto Irrigation District blocks Oakdale water sale to SF, for now

HIGHLIGHTS

The Modesto Irrigation District, which dropped a hotly contested proposal to sell water to San Francisco two years ago, temporarily has stopped the Oakdale Irrigation District from doing the same thing. However, MID's blockage could be removed someday when the district finishes creating a policy addressing highly controversial water transfers.

The Modesto Irrigation District building in downtown Modesto is seen here in 2011. Modesto Bee

By Garth Stapley - gstapley@modbee.com

The Modesto Irrigation District, which dropped a hotly contested proposal to sell water to San Francisco two years ago, temporarily has stopped the Oakdale Irrigation District from doing the same thing.

However, MID's blockage could be removed someday when the district finishes creating a policy addressing highly controversial water transfers.

With such a framework, MID could facilitate OID's deal with San Francisco, "and potentially much more," MID Board Chairman Nick Blom said last week in a "not yet" letter to OID leaders.

In light of news that OID is negotiating separate, much larger sales to wealthy water buyers to the south, Blom on Thursday said MID has not talked recently about shopping its water. But MID leaders do envision short-term sales sometime in the future, if the district can store up enough extra without hurting local farmers, Blom said.

OID has been talking about paying some of its customers to fallow their land and selling water that would have been used there to thirsty districts in the Fresno area and beyond. Because of the drought, OID might not have enough to spare from its mountain snowmelt

via the Stanislaus River, but the district intends to pump more than 5 billion gallons of groundwater this year, or five times more than normal.

That could threaten the wells of nearby farms and residents. “If their plan is just to continue pumping, that’s not a good thing for anyone,” Blom said Thursday.

OID, an active player in the water transfer market, has improved its canals and other facilities with $51 million reaped in recent water sales, the district said in a “briefing paper” on its proposed deal with San Francisco.

In October, the OID board agreed to accept San Francisco’s $112,000 option, plus an undetermined fee for 730 million gallons of OID water in a one-time deal this year.

But the agreement depends on MID’s blessing because it shares a connection with San Francisco on the Tuolumne River, and OID does not. MID would give some of its allotment to the city and receive a like amount from OID through a canal connection near Albers Road and Dusty Lane, between Modesto and Waterford, and MID would get 10 percent of the option and sales revenue for its trouble, according to the OID pitch.

Similar agreements between the Oakdale and Modesto utilities date to 1917 and were used regularly to fulfill state government demands for better fish habitat in the Tuolumne from 1998 through 2010.

But this time, MID said “no,” at least for now.

MID leaders don’t want to trade their pure river water for OID’s canal water, which is tainted to some degree with tailwater, or leftovers after draining from Oakdale

customers' farms. The MID board has not been satisfied, Blom said, with OID's assurances regarding water quality.

Further, MID is more interested in "a comprehensive agreement covering the long term" than in a one-time deal, Blom said in the letter. He also chastised OID for "inferring MID's participation in any water transfer" at OID meetings "or with the media."

Tom Orvis of the Stanislaus County Farm Bureau said it makes sense for MID and OID to "at least explore opportunities" for cooperation in a formal framework.

On Thursday, Blom said the MID board has not talked about paying customers to fallow their land. "To me, district water is there for your district and not for you just to sell. I'd rather keep growing here and not make as much money," he said.

OID General Manager Steve Knell could not be reached Thursday for this report. His district has sold water over the years to Stockton-area taps and to a federal agency boosting fishery flows. Last year, OID sold more than 13 billion gallons to irrigation districts on the southwest side of the San Joaquin Valley, including Fresno-based Westlands Water District. Those transfers were handled on the Stanislaus River and did not require MID permission.

Last year, OID offered to sell water to the Modesto and Turlock irrigation districts, and in another deal, MID agreed to sell water to TID. But all of those ideas were dropped for various reasons, including an uptick in TID groundwater pumping to augment its surface water.

MID's proposed sale to San Francisco fell apart in 2012 amid concerns over having enough for local farmers in dry years.

RELATED CONTENT

- Oakdale Irrigation District sets closed session to discuss water sale
- OID reveals proposal to sell water to Westlands Water District

MORE GROUNDWATER CRISIS

SUGGESTED FOR YOU

Celebs Who Got Their Start In Porn
CelebChatter

Dad Who Humiliated Daughter By Recreating Her 'Sexy Selfies' Now Has Twice As Many Followers As Her
OddChatter

Musicians' Most Embarrassing Onstage Incidents
CelebChatter

Man Afraid Of Flying Dies On First Flight
OddChatter

COMMENTS

EXHIBIT 27

NEWS OCTOBER 13, 2015 7:05 PM

OID reveals big-money water sale to outside buyers

HIGHLIGHTS

$11.5 million deal will help fish, farmers elsewhere and Oakdale Irrigation District finances, leaders say

Stanislaus officials stunned to learn of water transfer negotiated in secret

Candidates challenging incumbents say deal is perfect example of nontransparency

BY GARTH STAPLEY
gstapley@modbee.com

OAKDALE — Irrigation agencies in Oakdale and Manteca will reap $11.5 million selling Stanislaus River water to outsiders in coming weeks.

Sensitive to pressure from local farmers, government officials and media, the Oakdale Irrigation District kept the deal under wraps until Tuesday's announcement. It surprised some Stanislaus County leaders who had been urging OID to negotiate with local buyers

during the ongoing drought, and angered candidates for the OID board who have railed on secrecy and called for transparency.

"This really is a rogue agency," said county Supervisor Jim DeMartini, among many encouraging local deals. "With the (OID) board operating in secret and not being truthful in presentations, I'll have a hard time believing anything they say anymore."

> **"THIS REALLY IS A ROGUE AGENCY.**
> Jim DeMartini, supervisor, Stanislaus County

OID leaders defended the deal as helpful to all parties: state and federal wildlife agencies overseeing river conditions for fish, thirsty farmers in the Southern San Joaquin Valley and OID customers benefiting from a cash infusion.

"The end product is what we all wanted," said OID General Manager Steve Knell. "It worked out good. And it's no different from what we've done in the past."

He referred to water transfers that have brought $50 million to OID in the past dozen years, helping to upgrade canals and equipment.

Knell noted that terms of those water sales were negotiated behind closed doors and announced publicly when deals were consummated. OID and its partner on the Stanislaus, the South San Joaquin Irrigation District, will present a summary of the current deal Thursday when both boards meet jointly in Manteca as the Tri-Dam Power Authority.

“We’ll explain the whole thing in the open,” OID board chairman Steve Webb said.

Although the negotiation-announcement pattern is similar, the agencies went a step further this time, approving in August a draft contract with obscure wording on a Tri-Dam agenda – not as separate boards, as was done with previous contracts. Also, OID officials said nothing of the deal during lengthy discussions about water transfers in meetings of the Stanislaus Local Agency Formation Commission, in a public debate in Oakdale, in a debate before Modesto Bee editors and in last week’s OID board meeting.

> **“IT WOULD NOT BE GOOD POLITICS FOR US (TO DISCUSS PUBLICLY) BECAUSE PEOPLE ARE GOING TO ASK QUESTIONS. WE AGREED WE WOULD DO IT ALL AT TRI-DAM.**
>
> Steve Knell, general manager, Oakdale Irrigation District

"This is very disturbing news," said Gail Altieri, a board candidate whose platform focuses on transparency. "We were told there was going to be no water sale, then they pull a stunt like this."

Linda Santos, a candidate for another OID seat, questioned whether the deal was handled on the Tri-Dam level "to circumvent those of us watching OID. It just irks me to no end. They don't have a right to sell our water unless we give them that right."

Both said opposition to outside water transfers helped prompt them to run for office.

Santos attended the Aug. 20 Tri-Dam meeting but saw no indication from agenda language that the joint boards were fixing to approve the water sale. The item read, "Discussion and possible action regarding a fall water release in cooperation with state and federal agencies."

Knell said that fulfilled the agencies' obligation under California open meetings law, but acknowledged that the vote was taken with no public discussion of terms of the pending deal, including price or volume of water to be sold. Tri-Dam later published meeting minutes indicating that the joint boards had approved a "contract to transfer water" under that agenda item.

The districts will sell 23,000 acre-feet of water at $500 per acre-foot, for a combined $11.5 million to split between them. The Stanislaus will swell with the extra water beginning next Tuesday.

Six days after the Tri-Dam meeting, Knell gave a lengthy presentation to LAFCO on OID's operations, including its history of selling water to outsiders, and outlined benefits to OID and

its customers. Knell said OID had shopped extra water to eight local agencies but got no takers, for various reasons, as well as to five outside agencies. The last two, state and federal contractors, "will take as much as they can" and were "willing to work on an annual contract in the interim, till some of these water issues get worked out," Knell said, without noting OID's deal with those very buyers.

Three county supervisors – DeMartini, Terry Withrow and Bill O'Brien – urged Knell to negotiate with locals. All three came away from the meeting, they said this week, with no understanding that OID already had approved a multimillion-dollar deal with outsiders.

"Local farmers not in OID want some OID water, that I do know is true," said O'Brien, whose county district overlaps with much of OID's.

Withrow said, "There's just no need for that water to leave this county."

Oakdale-area grower Louis Brichetto has been at odds for years with OID despite having served previously as a board member. He said Tuesday that he has tried for eight years to buy OID water and said several others in recent years have, too.

His lawsuit threat earlier this year derailed an OID plan to sell water to Fresno-area buyers, based on environmental studies that OID failed to conduct. The district is pushing ahead with such studies in hopes of striking a new bargain next year, but needs no such document for the current deal, approved in the past couple of weeks by state and federal water and wildlife agencies.

"We don't want to beat up on the district," Brichetto said. "We just want to buy water, and we'll pay a premium for it."

Knell in August told LAFCO that growers in the Paulsell Valley southeast of Oakdale, such as Brichetto, would see land values instantly rise $15 million if annexed into OID. On Monday, Withrow said that reasoning made little sense to him: "What's that got to do with the water? Are you jealous of him?" Withrow said.

"I think a lot of bad blood out there is interfering with things that could benefit our county and we've got to get past that," Withrow continued. "We can't have old disputes preventing sound deals from being made."

Another of OID's prickly relationships, with the Modesto Irrigation District, stands in the way of dealing with other local agencies.

With the drought worsening two years ago, OID formally sought offers from MID and its partners on the Tuolumne River, the Turlock Irrigation District and San Francisco. At the LAFCO meeting, Knell said MID and TID "didn't want any part of it;" at last week's OID meeting, he said, "after meeting with MID, we decided there was no point in pursuing this."

Others, such as the Del Puerto Irrigation District near Patterson, would happily buy OID water but have no connection to receive it. MID could "wheel" the water, acting as a broker, by giving Del Puerto some of its supply from the Tuolumne and receiving in exchange a like amount from an MID canal adjacent to one of OID's. But that OID water would have traveled through OID farms, picking up impurities, MID said in a January letter to OID.

> **“THE ABILITY TO KEEP WATER LOCAL FOR LOCAL USES TO A LARGE EXTENT ... DEPENDS FOREMOST AND PRINCIPALLY ON THE COOPERATION OF MID.**
>
> OID staff report, Oct. 6 meeting

MID also wanted a commitment to develop a long-term water-swapping policy, but OID apparently wasn't interested. "Our questions and concerns have yet to be addressed," MID spokeswoman Melissa Williams said.

Last week, the OID board considered taking another run at shopping surplus water to local agencies, but decided to hold off because weather forecasts predict a wet winter. Webb on Monday said that issue was discussed as a response to comments made at a political debate two weeks ago.

Political machinations aside, the deal will bring $5.75 million each to OID and SSJID. The cash, Knell said, will help offset an expected $10 million budget gap over the past two years; with little water captured in dams, the districts are generating less electricity for wholesale to a private buyer, and have few other ways of raising income.

Because the districts have no claim on water stored in federally operated New Melones Dam each year after October, it's possible that state and federal wildlife agencies might have released that water to cool the Stanislaus and attract salmon returning from the ocean to spawning beds, with no regard for OID or SSJID. That would have angered the districts, which in April formally agreed to conserve water for so-called pulse flows benefiting fish

in the fall, at the request of the state and federal agencies, and a dispute could have resulted in an ugly lawsuit.

The deal gives credit to the districts while allowing them to sell the water to the San Luis & Delta-Mendota Water Authority, which has 28 member agencies on the Valley's west and south sides.

"We turned a loss into a benefit, not only for us but for the fisheries," Knell said. "We extended cooperation and are building on working relationships while other fisheries around the state are suffering."

O'Brien said, "You can probably justify the transfer, if they were just going to take it from us anyway; this way, they get paid for it. But we do have farmers still trying to buy this water."

Many farmers made planting decisions based on OID's action earlier this year to cut back on the amount customers typically get, imposing a ceiling for the first time in the district's 105-year history.

"They cut us (customers) back," Santos said, "because they wanted to make a water sale at the end of the season. I am so angry that this board thinks this is the way to do business."

Her opponent on the Nov. 3 ballot is board member Al Bairos, who was not reached for comment. Altieri is challenging board member Frank Clark, who said he had nothing to add to an OID news release touting cooperation among the various agencies.

Knell said the water sale will be explained in a portion of the Tri-Dam meeting labeled on the agenda as the general manager's report. The meeting begins at 9 a.m. Thursday in the SSJID chambers at 11011 Highway 120, Manteca.

Garth Stapley: 209-578-2390

MORE NEWS

SUGGESTED FOR YOU

COMMENTS

5 Comments Sort by **Oldest**

Add a comment...

Diane Noon

Water is vital for the valley farmers. OID is going to ruin the farmers while everyone just looks on and watches. Vote and make a difference.

Like · Reply · 1 · Oct 14, 2015 9:34am

Chris Gulick

Which farmers Diane ?
Those who are NOT chosen to succeed ?
The IN crowd doesn't seem to have a problem with these sales as it keeps their water costs artificially low at everyone elses expense.
Vote how ?
Incumbents for status quo or new blood for real change ?
It's not clear what your message is.

Like · Reply · 1 · Oct 14, 2015 4:14pm

EXHIBIT 28

Publication:THE MODESTO BEE

Edition:ALL

Zone:

Desk:

Section:A

Section Letter:A

Page Number:1

Print Run Date:9/9/2013

Day:Monday

Credit:

Source:

Editor:

Reporter:BY KEN CARLSON
KCARLSON@MODBEE.COM

Reporter Phone:

Reporter Email:

Column Name:

Headlines:WATER EXPORT RULES COMING

SUPERVISORS VOTE ON ORDINANCE OCT. 1

Subhead:

Corrections:

Body Text:By next month, Stanislaus County is expected to have a long-awaited ordinance to restrict groundwater exports and prohibit the sale of groundwater outside the county.

The Board of Supervisors is expected to vote Oct. 1 on an ordinance billed as a starting point for preventing the adverse effects of groundwater overdrafting.

The ordinance has exemptions for local irrigation districts, but proponents said it will protect a vital resource by outlawing out-of-county groundwater sales and transfers that threaten to deplete aquifers.

County leaders asked their Agricultural Advisory Board to start working on an ordinance four years ago, after farmers in western Stanislaus County were exporting groundwater so they could irrigate their orchards near Firebaugh.

That type of transfer, which was not a water sale, would be possible under the ordinance if applicants for a permit showed the transfer would not hurt neighbors' wells or drain the aquifer, officials said.

Two supervisors praised the proposed ordinance because it would prevent an irrigation district from pumping groundwater to replace surface water sold to a buyer outside the county. That scenario was raised by the Modesto Irrigation District's proposal to sell water to San Francisco, which was dropped last year after months of fierce debate.

"Water is a precious resource in Stanislaus County," said county board Chairman Vito Chiesa. "We need to save every drop."

The county's initial attempt to formulate an ordinance was rebuffed by water districts and farming interests. The county made progress, however, when it brought in a facilitator to run meetings with "stakeholder" groups such as the Modesto, Turlock and Oakdale irrigation districts and the cities of Modesto and Turlock.

PRAISE AND CRITICISM

The resulting ordinance is praised for bringing the different agencies together but criticized for being watered down.

"We ended up with a lot of exemptions," acknowledged Supervisor Terry Withrow, who worked on the effort with Supervisor Jim DeMartini.

Withrow said the exceptions were needed to allow water agencies to continue certain practices that are consistent with sound use of groundwater. It would allow farmers near the county border to irrigate crops on contiguous land across the county line and allow pumping for conservation projects and recharge of groundwater.

Other language in the agreement grants an exemption for areas with a shallow water table, small wells that produce 100 gallons per minute or less, and the sale of bottled water.

People who violate the ordinance could be prosecuted on misdemeanor charges and ordered to pay a fine of as much as $1,000 or spend six months in jail.

The county Department of Environmental Resources will be responsible for enforcing the ordinance and will review any applications for permits to export groundwater.

Sarge Green, a staff scientist for the California Water Institute at Fresno State University, served as facilitator for the meetings with local groups. He said the ordinance is less restrictive than the rules in other counties, which require a permit for any proposal to convey groundwater.

By contrast, the Stanislaus County ordinance gives credence to the groundwater management plans of local water districts, Green said. Permits will be required only for activity that is not exempt.

Green said some transfers have value by helping to save crops during dry years or draining shallow groundwater that damages the roots of crops.

Jam Aggers, county environmental services director, said the permit process likely will include an environmental review, engineering data and a groundwater study. Staff is developing the review process for board approval Oct. 1 and could recommend that each groundwater export permit require approval from supervisors.

The ordinance does not address agricultural pumping in the eastern part of the county, which has affected residential wells and threatened to cause soil subsidence. Chiesa said the board will consider hiring a water expert -- either a staff member or consultant -- to work on a comprehensive plan to address those issues.

With millions of dollars invested in nut trees and vines, it's a hard problem to tackle. "You can't just stop people from pumping water," Chiesa said. But inaction by local government could lead to the state imposing rules on the county, he said.

RESTRICTIONS SUGGESTED

DeMartini said the county should consider limits on pumping in the eastern foothills or possible restrictions on tree planting outside irrigation districts. "Once the groundwater (in the eastern foothills) is gone, it's not a rechargeable system," he said. "That is going to be real controversial."

Stanislaus would follow 28 other counties in California in adopting a groundwater ordinance.

Officials hope to avoid the kind of groundwater crisis that's gripped another county. Last month, San Luis Obispo County approved an emergency ordinance that prohibits new irrigated crops within the groundwater basin near Paso Robles unless there's a water offset. The growth of wineries and vineyards there has reportedly dropped aquifer levels by 70 feet since the late 1990s.

Withrow said he wants to get other water districts and cities involved in the next round of policy-making.

"It's not going to happen overnight; I have no idea how long it will take," Withrow said. "We can build on this first ordinance and then address the issue with the relationships we built in the stakeholders group."

Bee staff writer Ken Carlson can be reached at kcarlson@modbee.com or (209) 578-2321.

Caption:

Keywords:modbee;water

Category:

Supplemental Category:

Copyright:

Budget Slug:

Budget ID:

Length:0

Word Count:874

Media ID:

Re: Request for Copy of September 13, 2013 News Article
Figueroa, Maria
to:
Linda.Ma
02/06/2017 01:58 PM
Cc:
Ken Carlson
Hide Details
From: "Figueroa, Maria" <mfigueroa@modbee.com>
To: Linda.Ma@sfgov.org,
Cc: Ken Carlson <kcarlson@modbee.com>
Security:
To ensure privacy, images from remote sites were prevented from downloading. Show Images
History: This message has been replied to and forwarded.

2 Attachments

A1.ii1.txt WATER EXPORT RULES COMING 09092013.doc

Hi Linda,

I would be happy to help with this request. Because this was before our front pages were archived digitally, there is no electronic pdf available. I have attached the story from our system as it exports into a text file and I also attached as a word document that you may convert to PDF.

If you wanted to get an actual copy of the front page, I would need to go into our physical archive to pull and print. I can proceed with this task if you like, and I would be able to send later this week. Let me know how you would like to proceed, the article is attached.

On Mon, Feb 6, 2017 at 1:32 PM, Carlson, Ken <kcarlson@modbee.com> wrote:

> Can you send a PDF of the story, referenced below, to the San Francisco City Attorney's Office. I don't know how to get it out of the system. Please send it to Linda Ma's email address.
>
> ---------- Forwarded message ----------
> From: **Linda Ma** <Linda.Ma@sfgov.org>
> Date: Thu, Feb 2, 2017 at 3:41 PM
> Subject: Request for Copy of September 13, 2013 News Article
> To: kcarlson@modbee.com
>
> Mr. Carlson:
>
> I work at the San Francisco City Attorney's Office and our office would like to request for a copy of the news article that you wrote entitled "Stanislaus County Supervisors to Vote on Water Export Rules" in the September 9, 2013 edition of the Modesto Bee. Can you pdf a copy of the news article to me.
>
> Your attention to this matter is appreciated. Thank you.
>
> --
> **Ken Carlson**
> Staff Writer

Modesto Bee
kcarlson@modbee.com
(209) 578-2321

--

Maria Luisa Figueroa
Research and Information Specialist

The Modesto Bee
1325 H Street
Modesto, CA 95357
(209) 578-2392
mfigueroa@modbee.com

EXHIBIT 29

FAQs

What is the status of the project?

The project was completed at the end of 2015 and is currently in operation. Find out more on the project website.

What's Carlsbad's role in the project?

The project is located in Carlsbad, but it is not a city project. The project's developer is a private company called Poseidon Water. The San Diego County Water Authority purchases the water and distributes it to water agencies throughout the region, including in Carlsbad.

The City of Carlsbad was very involved in helping this project get off the ground. Originally, the City of Carlsbad planned to buy water directly from Poseidon. When Poseidon could not secure financing for the project, the San Diego County Water Authority worked on a deal with Poseidon to purchase water from the desalination project and distribute it to water agencies in the region. This deal, called a water purchase agreement, was approved Nov. 29, 2012, by the San Diego County Water Authority board of directors.

Will Carlsbad get all its water from the desalination project?

No. The desalination project will provide about 7 to 10 percent of the region's water supply in 2020. Carlsbad Municipal Water District currently purchases all of its drinking water from the San Diego County Water Authority. The San Diego County Water Authority adds desalinated water to its water supply mix prior to distributing water throughout its water distribution system. Water purchased by CMWD is a blend of desalinated water and other imported water supplies.

What does the water taste like?

Desalinated water is very high quality and tastes much like bottled water.

Is desalinated water expensive?

Desalinated water costs more that our current imported water supply, but those supplies are limited, and the price is increasing. It is estimated that in about 10 years, the cost of desalinated water would be comparable to the cost of imported supplies, and it will eventually be less expensive.

Do Carlsbad residents still have to conserve?

Yes. Locally controlled water sources,like desalinated seawater help, but water conservation will continue to be a way of life in Carlsbad. Mandatory water use restrictions are currently in effect statewide.

What does the plant look like?

The project is two-stories high, located north of the existing power plant. The exterior of the plant was built to look like an office building rather than an industrial building, so it will be compatible with future redevelopment of the power plant site once the old power plant is torn down.

What happens when the old power plant is torn down?

Poseidon has always anticipated that the desalination plant would eventually outlive the power plant. Poseidon has acquired the first right to use the power station water intake and outfall facilities when the power plant shuts down.

What about the proposed new power plant?

A new, smaller power plant has been approved just east of the desalination project site. This project is currently under construction and does not affect the desalination plant.

Will the project cause growth?

No. Growth in Carlsbad and San Diego County will occur in accordance with land use policies. In Carlsbad, voters approved a Growth Management Plan in 1986, which limits the amount of building that can occur and sets aside nearly 40 percent of the city as open space. Regionally, SANDAG has projected that the county's population will grow by one million by 2030, with most of that occurring from births rather than in-migration. This project will help meet these projected needs and compensate for the expected cutbacks of supply from Northern California and the Colorado River.

What are the project's effects on marine life?

The city took the initiative during the environmental review process to extensively study the desalination plant's impact to the environment. The city's certified EIR concluded that the desalination plant can operate without significant impacts to marine life. In fact, since the desalination plant will withdraw from and discharge into the same seawater outfall pipeline that the power plant uses now, effects are essentially the same as current conditions. When and if the power plant stops using the seawater intake and outfall pipes, the desalination plant will continue to use them, subject first to approval of additional environmental review.

Does desalination require a lot of energy?

Carlsbad's current water supply must be pumped from hundreds of miles away, over mountains, requiring significant energy. Although seawater desalination also requires energy, the desalination plant will be "carbon neutral" because Poseidon is mitigating the plant's energy use.

EXHIBIT 30

Agua Hedionda Lagoon

Located between Tamarack Avenue and Cannon Road, Agua Hedionda Lagoon allows active use, such as boating, water skiing and wake boarding, personal watercraft use, sailing, windsurfing and fishing. It includes three inter-connected lagoons, which are divided by the I-5 freeway and the railroad bridge. The lagoon is owned by Cabrillo Power 1 LLC.

The 66 acre outer lagoon, adjacent to the Pacific Ocean, provides cooling water for the power plant, shore fishing and is leased to an aquaculture company cultivating shellfish for a wide-ranging market. The 27 acre middle lagoon is home to the North Coast YMCA Aquatic Park. The 295 acre inner lagoon extends approximately 1,800 yards in a southeasterly direction from the Interstate 5 highway bridge.

The inner lagoon may be used for boating. Permitted crafts include jet skis, power boats and passive vessels, like sail boats and kayaks. In order to operate any vessel on the lagoon, visitors and residents must meet certain requirements and purchase either an annual or daily permit.

The inner lagoon has one point for public power vessel launching, the privately owned and operated California Water Sports, located at the northwest end. It features a dock, launch ramp, a water sports equipment rental shop and snack bar. Fees for daily lagoon use permits, boat launching and parking can be paid here. Public access for launching passive vessels is located at the south end of Bayshore Drive. The Bayshore Drive public access is for use of the beach along the shoreline and fishing from shore only.

The Agua Hedionda Lagoon Discovery Center offers public programs and outreach activities, such as exhibits, lectures and festivals celebrating the lagoon.

Before visiting the lagoon, be sure to review all rules and regulations.

For more information, visit the Agua Hedionda Lagoon Foundation.

EXHIBIT 31

Desalination’s Future in California Is Clouded by Cost and Controversy

ww2.kqed.org/science/2016/10/31/desalination-why-tapping-sea-water-has-slowed-to-a-trickle-in-california/

By David Gorn

Audio Player

00:00
00:00
Use Up/Down Arrow keys to increase or decrease volume.

Once thought to be the wave of the future, desalination is proving to be a tough sell in California.

The idea of turning ocean water into drinking water has long held promise, but the dream of sticking a straw in the sea and getting unlimited clean water simply by opening the spigot of technology — that’s looking less and less likely here.

Scarcely a decade ago, when “desal” was relatively new to the state and optimism was high, there were 22 different proposals for plants up and down the California coast. Since then, Marin, Santa Cruz and other coastal cities have scrapped their plans. A tiny desal plant has been constructed in Sand City, north of Monterey, but only one significant project has been completed.

It’s in Carlsbad, 30 miles north of San Diego, and it’s the largest desal plant in the nation, built and operated by Boston-based Poseidon Water. Peter MacLaggan looks up at the giant building like it’s a monument to common sense.

“If you don’t plan for the future and ensure you have an adequate supply,” says MacLaggan, a senior vice president with Poseidon, “you’re going to find yourself in a crisis that costs a lot more than if you plan ahead and do it right.”

He says one of the reasons the San Diego area managed to get a desal plant built is because of its location at the tail end of the state’s water pipe.

“When you look at San Diego and where it’s located in the water supply system in California, it’s at the end of a very long plumbing system, 500 miles from its nearest source,” MacLaggan says.

That intensified the need for another water supply, he says. This plant supplies about 10% of the San Diego area’s water needs.

The sprawling Carlsbad desalination plant is the nation's largest. It's been online for less than a year but has been cited several times for environmental violations. *(Adam Keigwin/Poseidon Water)*

Environmental Costs

MacLaggan and other proponents hold up Carlsbad as proof-positive that desal works. But just 60 miles up the coast from Carlsbad, you get a different view; another one of these gigantic plants is proposed for a white expanse of sand at Huntington Beach.

Ray Hiemstra says this spot is the poster child for why desal *doesn't* work.

"It's going to kill marine life, pollute your water, increase your rates and most importantly we don't need it," he says.

Hiemstra works for Orange County Coastkeeper, a South Coast environmental watchdog. He starts to run out of fingers as he enumerates all the other reasons to reject the plant proposed for Huntington Beach. There's an active earthquake fault here. It's in a tsunami zone. And its elevation is so low that rising seas might inundate the proposed site.

One of the big problems with taking the salt out of seawater, says Hiemstra, is what to do with it after it's removed; that highly concentrated brine typically goes back into the ocean. At Huntington Beach, you can see the outflow pipe just a thousand feet offshore.

"It's right there," he says, squinting and pointing at the surf line. "There's a couple of surfers out there, right by it."

The proposed Huntington Beach desal plant would use the outflow pipe from the AES power plant (background) to deposit salt residue (known as brine) back into the ocean.

When you increase the level of salt in the water, he says, even diluted to low levels, it disrupts marine life all around that spot.

“Anything that comes through here and realizes that brine plume and higher salinity, even a little bit higher salinity, it’s just going to move away.”

That area of less sea life and the water at the outfall can drift south, he says, affecting the food supply of the California least tern, a threatened bird living nearby.

And there’s another problem with putting water from a desal plant back in the ocean: it may have residue from the chemicals used to treat the water, such as chlorine.

‘There are some people who still hold onto it as the Holy Grail.’*Heather Cooley, Pacific Institute*

The Carlsbad plant isn’t even a year old but state officials have cited it a dozen times for environmental violations. That includes what they call “chronic toxicity,” from an unknown chemical used in water treatment that has been piped into the ocean. The company is still trying to identify, isolate and clean it up.

Expensive Water

Despite their severity, environmental concerns aren’t the main barrier.

“In general, one of the big challenges has really been the cost,” says Heather Cooley, an analyst with the Pacific Institute in Oakland. The nonpartisan research group recently issued a lengthy report on the state of desalination in California.

Beyond the environmental cost is the actual price tag: the plant in Carlsbad cost $1 billion to build, with a rough estimate of $50 million a year for the power to run it. The estimated cost of the water to San Diego is about $2,300 dollars an acre-foot — more than double the cost most Southern California cities pay for water. (An acre-foot is enough water to supply one-to-two California households per year.) And ratepayers need to pony up for that water even during rainy seasons when the price of water from more traditional sources plummets.

Cooley says the expense is the main reason communities have turned away from desalination.

“As many of these projects sort of went through the process and started looking more seriously at the cost,” she says, “there started to be concern that that was too high, that there very likely were other options.”

Those options include treating wastewater and putting it back into the water table, catching stormwater runoff, or simple conservation efforts. That’s the future most agencies are pursuing in California.

Cooley says desal used to be high on the list of possible water sources, but now it’s closer to the last choice on the list.

“There are some people who still hold onto it as the Holy Grail,” she says, “that thing you’re seeking that’s going to solve our problem.”

Now, six years into the drought and counting, the demand for water sources is only liable to intensify. That could set the stage next year for yet another fight over approval for the Huntington Beach desal plant.

Explore: Engineering, Environment, News, Oceans, Radio, Water, desalination
24 Comments

Related

World War I-Era California Ship Torn Apart By Massive Waves

On the Front Lines at Oroville Dam: Little Sleep, Lots of OT

Archerfish Says..."I Spit in Your Face!"

Another California Dam Grapples With Flood Danger

With Dam Gone, California River Comes Back to Life

Why Climate Change Continues to Be a Tough Sell

Powered by

EXHIBIT 32

State's biggest desal plant to open: What it means

By **Bradley J. Fikes**

DECEMBER 13, 2015, 6:28 AM

Poseidon Water's desalination plant in Carlsbad is poised to begin regular operations within days — decades after water officials first considered harvesting drinking water from the sea and 14 years after they formally took the first steps toward its construction.

The opening, to be celebrated with an anticipatory ceremony Monday, will be a milestone for the company, for arid San Diego County and for all of California.

Related

- Desal plant launches amid ample water
- New desal rules costly, but offer road map for industry
- Work starts on 10-mile desal pipeline
- Desalination plant construction starting up
- Water authority approves desalination contract
- WATER: Carlsbad desal project faces big tests in 2011
- WATER: Report gives desalination cautious thumbs-up
- Water Authority OKs conditions for negotiating desal deal
- Carlsbad desalination plant virtually approved by regional board
- Desalination project draws environmental challenge
- Report says Carlsbad desal plant won't harm marine life
- Water officials at odds again with desalination company
- Public to view new desal plant plans
- Desalination dispute deepens
- Water Authority begins desal study
- County water agencies eye the ocean

The San Diego region, which imports most of its water, will enter a new era in its quest for a reliable supply of this precious and increasingly pricey commodity. For the first time, a significant portion of its water supply will come from the sea.

Poseidon will sell the fresh water it produces to the San Diego County Water Authority, the region's main provider. The authority will resell that water to retail districts that serve residents, schools and businesses. The Poseidon plant can create up to 50 million gallons of fresh water a day; that's about 8 percent to 10 percent of the county's overall supply.

For California, the Poseidon plant represents the mainstreaming of seawater desalination in California. Ocean desalination has long been used in nations such as Saudi Arabia, Australia and Israel, where the company that designed the Carlsbad plant,

Israel Desalination Enterprises, is based. Israel's extensive use of desalination to conquer a seemingly perpetual drought has become an internationally recognized success story.

California may be poised to join the trend. About 15 other desalination projects have been proposed for the state's coastline, from the San Francisco Bay Area to Southern California. The figure doesn't include those in Mexico that would serve San Diego County to varying degrees.

And for Poseidon, successfully operating the largest desalination plant in the Western Hemisphere would demonstrate that large-scale ocean desalination is feasible in California. It could strengthen the company's case for building a similar facility in Huntington Beach.

View the photo gallery: Getting drinking water from sea

While desalination of brackish water has been common, seawater desalination has been mostly confined to niche applications where no other source of water is available, such as on Catalina Island.

Along with other steps that San Diego County officials have taken or hope to take, from buying water from Imperial Valley farmers to potentially recycling wastewater into tap water, ocean desalination could give the region greater control over its water destiny.

That prospect comes at a steep price: Altogether, the undertakings will cost billions of dollars. Business, agricultural and residential water utility customers will bear these expenses.

Water from the Poseidon plant costs about twice as much as water purchased from the Metropolitan Water District of Southern California, the region's largest water wholesaler.

Ocean desalination is also more expensive than the drinking water recycled from sewage, from which the city of San Diego plans to get one-third of its drinkable water by 2035. Previous city leaders rejected the option, fearing a public backlash over what some dubbed "toilet to tap."

San Diego Mayor Kevin Faulconer — urged on by regulators, environmentalists, the life-sciences industry and others — has decided that the need for water recycling is too great to continue passing it up. He and the City Council last month supported a multi-year increase in water bills partly to pay for expansion of the recycling infrastructure, which is expected to grow from a single-site pilot project to a network of filtration plants, pumps and pipelines.

NUMBERS

$1 BILLION: Final cost for the building project, which includes a 10-mile pipeline connecting the plant to the county's water-distribution system.

50 MILLION: Maximum amount of potable water (in gallons) the facility can produce each day; that's 8 percent to 10 percent of the county's entire water supply.

$2,000: Approximate cost of an acre-foot of water from the new desalination plant, which is about double what the Metropolitan Water District of Southern California charges for the same amount of water from its supply.

48,000: Minimum number of acre-feet of desalinated water the San Diego County Water Authority has agreed to buy each year, for 30 years, from Poseidon.

15: Proposed desalination sites along California's coastline.

Critics of the Poseidon plant in Carlsbad said its technology uses enormous amounts of electricity, harms marine life and locks San Diegans into a costly option that they could have avoided entirely. They said for years the region's elected officials and water managers should have put more stress on everyday conservation while being more aggressive in starting water recycling.

End of the pipeline

San Diego County has always been vulnerable to drought because it has little water of its own and is located at the end of the pipeline for imported water.

This vulnerability didn't hit home until the late 1980s. Until then, the Metropolitan Water District had proved to be an extremely reliable source of water. In most years, there was an abundance, and in lean years there was still enough to scrape by.

That changed with the severe drought of 1987 to 1992.

By 1991, Metropolitan board members were seriously discussing a proposal to cut water deliveries to its member agencies by 50 percent. Since the agency supplied about 95 percent of the water used in the county, that would have represented a ruinous cutback.

By contrast, the city of Los Angeles was less vulnerable. The city had secured its own municipal supply decades ago from the Owens Valley, and used Metropolitan water as a secondary source.

That 50 percent cut never materialized, thanks to the last-minute storms that produced what went down in history as "Miracle March" in 1991.

The county water authority resolved to get the county out of that vulnerable position by diversifying its supply. This included conserving water and securing supplies from outside Metropolitan. Ocean desalination became part of that mix of options.

The Poseidon plant arose out of two events at the turn of the century. One, Poseidon began a feasibility study in 2000 about building a desalination plant in Carlsbad by the Encina power plant, the location that was ultimately chosen. Two, the San Diego County Water Authority voted in 2001 to spend $50,000 to search for good locations for a desalination plant.

The Carlsbad site had the significant advantage of being able to piggyback on an existing seawater intake and return system, used to cool the power plant. That meant the desalination plant should have less of an environmental impact than at other coastal locations. Moreover, the city of Carlsbad was interested in securing the water.

Then as now, desalination cost more than other sources of water. But the difference had narrowed considerably by 2001.

In 1991, Southern California Edison shut down an experimental seawater desalination plant it built on Catalina Island. The desalted water produced by that facility cost about $3,000 per acre-foot.

In 2001, Poseidon reported having reduced that expense to about $560 per acre-foot, about 7 percent more than the $521 per acre-foot that members of the county water authority paid for water at the time.

An acre-foot is about 326,000 gallons of water — what two average single-family households use in a year.

Busting the budget

MILESTONES

2000: Boston-based Poseidon conducts feasibility study on building a seawater desalination plant on the grounds of the Encina Power Station.

2001: San Diego County Water Authority approves $50,000 in spending to identify promising locations for a desalination facility.

2006: Carlsbad gives OK to desalination plant. A coalition of environmentalists sues the city over that approval.

2008: California Coastal Commission approves the Poseidon project. So does the State Lands Commission. Surfrider Foundation and the Planning and Conservation League file suit against the Coastal Commission, seeking a reversal of the agency's decision.

2009: Another key agency, the San Diego Regional Water Quality Control Board, grants a permit for the desalination facility.

2012: San Diego County Water Authority approves a 30-year water purchase agreement with Poseidon. Financing for the project closes in December. Also, the final pieces of litigation against the project are resolved.

2013: Construction begins on the facility and surrounding infrastructure.

2015: Plant conducts test runs in November and December, leading up to Monday's scheduled start of normal operations.

In the early 2000s, the Poseidon plant was estimated to cost about $270 million, a figure that rose to $300 million, to $530 million and finally to about $1 billion. One environmentalist critic, Peter Gleick, named it one of the "zombie" water projects that would never get built, but never die.

However, the price for other sources of water also went up, and continued shortages of imported water drove home the desirability of a local source.

Now, 14 years later, the actual cost of Poseidon's desalination water turned out to be about $2,000 an acre-foot, while water from Metropolitan costs about half that. Plans for the desalination plant were changed, environmental mitigation added in, and energy costs to run the plant also rose.

Years of planning reviews and public hearings lay ahead, along with protests and lawsuits over potential environmental harm, along with a temporary halt to talks between the county water authority and Poseidon in 2006. This was prompted by a decision of the power plant's owner to replace it with a new facility that didn't need seawater for cooling. The switch made an environmental impact report based on the earlier assumption no longer valid.

"Please know that this board is fully committed to seawater desalination as an important water supply for the county, but we will no longer pursue such a facility in Carlsbad.," wrote then-water authority Chairman James Bond in an opinion article in the North County Times. "Rather, we will focus our seawater desalination efforts in other parts of the county and work closely with our member agencies on other local water supply projects."

At that time, it looked like Poseidon and the city of Carlsbad might conclude their own deal. But Carlsbad by itself lacked the financial heft the county water authority carried, essential for financing the project.

Poseidon pushed ahead, and in 2008 won a critical approval from the California Coastal Commission, which had previously been skeptical of the project. Other good news for Poseidon swiftly followed.

In 2009, the San Diego Regional Water Quality Control Board unanimously approved a permit for the plant, lawsuits against the plant were rejected and various local water agencies signed on to buy water from Poseidon.

However, those agencies struggled to conclude a workable deal, so they asked the county water authority to help. That agency stepped in, and after months of negotiations approved a term sheet setting the general conditions, followed by more negotiations. Final approval came on Nov. 29, 2012.

New environment

The three years since that approval have both confirmed and challenged assumptions that went into the desalination project.

Extended drought has confirmed that San Diego County needs more local sources of water to provide a reliable supply. But now that the water is available, local water agencies may not benefit as they anticipated — at least in the short term.

Under Gov. Jerry Brown's executive order for the drought, water agencies must cut back an average of 25 percent from residential water use of two years ago. That mandate is strictly based on past usage, and doesn't take into account any new sources of water that a region may have been able to secure.

The county water authority and other civic leaders said this arrangement is unfair, pointing to the billions of dollars they have spent on water reliability programs during the past 25 years. Those efforts have allowed the region to lower its demand for water from Northern California and the Metropolitan Water District.

Such investments should be recognized with lower conservation targets, the local leaders said.

Brown has given general assurances that he will make adjustments once the existing conservation mandate expires in February.

He hasn't specified whether San Diego County's water-reliability programs, including the new supply from the Poseidon facility in Carlsbad, will influence his calculations. And if the much-heralded El Niño storms don't relieve the drought by January, Brown said he will extend the conservation mandate.

EXHIBIT 33

BAY-DELTA PHASE I STAFF

TECHNICAL WORKSHOP OF DECEMBER 5, 2016

TRANSCRIPT OF VIDEO RECORDING

Reported by: Amanda Johnson, CSR No. 13922

LES GROBER: Good morning. For those watching on the web, we don't have a very big crowd here. So I

hope the crowds are on the web and are going to take advantage of being able to see all of this from the comfort of your office.

My name is Les Grober. I am the deputy director for water rights at the State Water Resources Control Board, and the topics for today's discussion are technical workshops. This is the first of two workshops. The next one is on Monday, December 12th to discuss the phase one update of the Bay-Delta Plan.

I am joined on my left by Will Anderson and Tim Nelson. They are water resource control engineers that are going to be doing the heavy lifting this morning, presenting a lot of material on the methods and results today for the water supply effect model and some other things.

I am going to have a 15- or 20-minute

presentation introduction that I am going to go into in just a couple of minutes. But before I get started, I would like to remind folks that in the event that we have an alarm, you should look around now and identify the exits nearest you, and if there is an alarm, you should take your valuables with you and use the stairways, not the elevators, and exit to our relocation site, which is

kitty-corner across the street in Cesar Chavez Park. And if you can't use the stairs, the staff or someone will assist you to find a protected area.

So with that, welcome all. As I said, this is the first of two technical workshops. Some of you may have already participated in the first day of five days of hearing last week, on November 29th. The purpose

today, however, is for staff to provide a deeper description and understanding of the models that were used to develop the Substitute Environmental Document, or SED, for the amendment of the water quality control plan, and that is for that phase one update having to do with San Joaquin flows and Southern Delta salinity.

We can answer questions to help interested persons prepare their comments both for the upcoming hearings but also for their written comments. So we have at least a couple of hours of direct presentation and PowerPoints to show our work and then opportunities after each session -- three or four half-hour sessions to answer comments.

Since we have a small crowd here today, I suggest you come on down to the front. We can make this less formal. So as we go through the presentation, if

you have clarifying questions, we want to do what works for folks that are here to understand what we have done.

So the order of the day, we have this welcome introduction and overview followed by Gita Kapahi, the director of the Office of Public Participation, is going to describe some of her work, how she is going to be helping us today with a roving mic, and other things.

Then we are going to have the topics shown on the slide. First, the water supply effects model, the methods, and then the results followed by the temperature model and the HEC5Q model and results. Then in the afternoon, the ecological benefits and a closing session/next steps. Actually, I think the split is for

some of the results -- some of the HEC5Q in the afternoon.

And I apologize now for those of you that were at the November 29th or other meetings, but just to make sure that everybody is on the same page that haven't been to those meetings, I have about a 15-minute introduction to just understand what the project is. So this is the update of the plan -- of two elements of the plan, San Joaquin River Flow Objectives for the Reasonable Protection of Fish and Wildlife and Southern Delta Salinity Objectives for the Reasonable Production of Agriculture and the programs of implementation for those objectives.

To show us where we have been, where we are, and

where we are going, this time line shows a few elements that I will refer to in these introductory comments. You can see about in the middle, in 2009, that is when we issued the notice of preparation for this project. That is also when the Delta Reform Act was adopted by the legislature. That was followed by our preparation per the Delta Reform Act of the Delta flow criteria report, which provides much of the scientific basis for this as well as the 2011 -- well, and then we did a scientific peer review on the scientific basis for the proposal.

We released a draft SED in 2012. Comments were received. Based on the number of comments and the complexity of the comments and concerns, we took several years to recirculate a draft SED. We also had the intervening drought years. So that is where we are today, and we hope to get this back before the board for

their consideration by summer of 2017.

So the impetus for this project is that for the current plan, as we have shown in the previous time line, the last major update was in 1995 with a minor update in 2006. We reidentified the need for an update because a lot of things have changed. Conditions have changed. We have had a decline of species.

With that decline of species, the Endangered Species Act has caused water restrictions because of

managing RPAs. That is on the Delta but also on the Stanislaus. Consistent with the administration's water action plan, that is one of the elements of that plan, to implement or obtain the coequal goals of reliable water supply and ecosystem protection.

So that is what this plan is really all about. It is doing that thing -- that balancing, if you will, with regard to San Joaquin River flows and Southern Delta salinity. The project area is shown on this map in a very schematic form for the flow objectives. It is the lower San Joaquin River; the three salmon-bearing tributaries -- the Merced, the Tuolumne, and the San Joaquin River -- leading to the confluence; then to Vernalis, where it enters the Delta; and showing a bit of the Southern Delta, just north of Vernalis and west is the Southern Delta. That is where the Southern Delta Salinity Objective applies.

A little bit more detail -- and I see we have several folks here from districts in the affected area, but the principal affected area is the San Joaquin River

basin downstream of the confluence of the Merced River, including the watersheds of the Merced, the Tuolumne, and Stanislaus. And principally where the flow objectives would apply is in the valley floor parts of it, downstream of the Rim dams. And this chart shows a

number of the districts that would be affected by the principal effects of the projects, which would be the water supply effects.

So the purpose and goal, as I have already expressed, is the two objectives. And one is for the flow objectives, and the key word there -- it is about the reasonable production of fish and wildlife objectives in the San Joaquin River, and it is for the three eastside salmon-bearing tributaries. So that basically

summarizes what the project is about. It is about those three salmon-bearing tributaries, and it is for the reasonable production.

Similarly, for agriculture, it is for the reasonable production of agriculture. I emphasize that "reasonable" because it is not about absolute protection. That is what the SED is all about. It is how you look at the costs and the effects of implementing these objectives.

This immediately begs the question of "Why do we focus on flow?" We are focusing on flow because scientific studies -- and a lot of that new information shows that that is the major factor that is relevant to the survival of fish, such as salmon. There are many benefits to flow. There is direct effects immediately, such as water temperature and increase in floodplain.

That leads to ancillary effects that can reduce the risk of predation, disease. It can increase the success and resilience of the species because of improvement in various life stages.

That being said, the board is very mindful of the program implementation and has many words about and speaks to the importance of non-flow measures. But this board has limited authority to require non-flow measures. But to recognize that, that is part of the successful implementation.

Just a couple of slides to show that flow is important. We have had these declines -- and why focus on the San Joaquin River? The chart here shows the difference in salmon abundance between two time periods:

the 1992 through 2011 time period, the more recent period, compared to 1967 through 1991. So it is showing the difference. A negative means there has been a decline.

Of all of these Sacramento River watersheds, the San Joaquin is the one that has had the biggest declines through those three. So it is really striking compared to successes elsewhere in the basin. This other one makes the point as well of showing how important flow is with regard to salmon production.

This chart is showing the returns of adult

salmon and the flow experienced by juveniles. It shows that by shifting what is on the right axis, the total

tributary discharge. It is showing that for the two years prior to the returns, mindful of the life cycle of salmon.

And you can see a very strong correlation then between what is shown on the left, escapement, the returns of adults. They coincide with those flows. So flow is really that major factor. And as noted here, as you will see in a number of other charts and tables today, we make reference as appropriate to where the figure comes from in the SED, or Substitute Environmental Document.

So the board is also very mindful of how hard this is. This is getting to the crux of what the board does. It is the balancing. I had mentioned that 2010 flow criteria report required by the Delta Reform Act. That was a purely technical report that said if you

weren't going to look at any of the other beneficial uses -- if you weren't going to look at the effects, the costs on other uses of water, what quantity of water would you need to protect fish, like salmon? And it found that 60 percent of the flow should be left in the San Joaquin River.

Unimpaired flow -- and "unimpaired flow,"

meaning that is the total quantity of water if you weren't diverting it or storing it in a reservoir. The current uses, as this analysis shows, are upwards of 80 percent of the unimpaired flow -- agriculture, drinking water, other things, consumptive uses of water. Sometimes when I say, "and more," some of that February through June period where we are proposing flow

requirements, there can be unimpaired flow in the single digits. More than 90 percent of the flow is being taken out of the river.

So unlike this 2010 report, the current proposal -- the current staff report is intended to balance those competing uses of water. That is why the recommendation is for between 30 and 50 percent of unimpaired flow with a starting point of 40 percent. So this is a big increase, but still it is not the quantity of water that the science shows would be best if you didn't have to consider those competing uses of water.

So this is a hard thing to do. That is an understatement. But it is why we have five days of hearing including the affected area. That is why we are having these couple of days of workshops and additional outreach. It is very important for the board to make

sure that we are communicating effectively both what the proposal is and the basis for the proposal.

We are showing our work. But it is because it is hard. It is just what the state water board has to do. It is one of the best things they do, the most important things they do. And because it is hard, the board also has crafted this in a way to encourage settlements so that we have a rather durable solution to the problem and not end up necessarily in court or arguing. But is there a better way to implement this that can make the best use of water?

When I say the proposal is wrapped around this, at the core of the proposal is this thing called

"adaptive implementation," which means that we have that adaptive rain, that 30 to 50 percent rain, so that water can be used wisely, effectively, most effectively, and rely upon other measures that can achieve the narrative goals of fish and wildlife protection.

So it is not about just hitting the numbers but rather also about reasonably protecting fish and wildlife. This is why we have had outreach in the affected area because part of that settlement will come from the ground up, from those that are most familiar with how the systems are managed and how to best implement other solutions, non-flow solutions to fish and wildlife protection.

The Natural Resources Agency is the key driver

that is leading settlement discussions, and they are looking for that comprehensive agreement. Not just in the San Joaquin River, some of this can be linked up with -- and they are also looking to how this can be achieved in the Sacramento River as well as it relates to our phase two update for other elements of the Bay-Delta Plan.

So to describe just briefly now what the proposal is, the current spring flow objective is just at one location -- the San Joaquin River. If you recall that graphic, it is at the San Joaquin River at Vernalis, and it is in the form of minimum monthly flows that vary by water year type. It includes a pulse flow mindful of the migration period in April and May of each year. But since it is only on the one location and it was implemented through water right priority, the Bureau of

Reclamation is the only responsible water right holder, which means most of the flows now come from the Stanislaus River, which is not optimal.

So in contrast, the proposal is now for the three salmon-bearing tributaries -- so at the confluence of each the Merced, the Tuolumne, and the Stanislaus River -- and the proposal takes two forms. It has a narrative objective that I referred to. So the ultimate goal is to achieve that narrative objective to maintain

inflow conditions from the San Joaquin River watershed to the Delta at Vernalis sufficient to support and maintain the natural production of viable native San Joaquin River fish population last migrating through the Delta. And that numeric portion, as I said, is that 30 to 50 percent

range with a 40 percent starting point. And the definition, again, is that of unimpaired flow.

That critical element, adaptive implementation, which allows adjustment within that range in two different ways -- shaping that using it as a block of water through that February through June period so that perhaps it is the -- in a particular year, it is best to just have something to get the lower end of that range -- 20 percent, 30 percent -- and then bulk it up so that you have the equivalent of 50 percent at some later month to achieve something with more flow, something that is optimal for fish and wildlife.

It also allows for a portion of the flow to be shifted to periods outside of that February through June period. So it can be used to avoid temperature impacts,

say in the fall. It has crafted to it the adapted implementation that would be guided by what we refer to as the Stanislaus, Tuolumne, and Merced, or STM, working group. It would be the implementing entity. That could also be the entity that would fall out from the

development of voluntary agreements or some settlement.

One of the first tasks will be the development of biological goals because that is all about what you can do to improve fish and wildlife protection, salmon specifically, in the tributaries without the concern for the effects of the Delta or ocean conditions. So it is about developing biological goals that are controllable.

It can be achieved just by manipulating flows and non-flow measures in the salmon-bearing tributaries. It

also has elements of planning, monitoring, and reporting that would be covered within the STM working group. And as I said, voluntary agreements can be one in the same with the STM working group.

The current Southern Delta Salinity Objectives are now variable objectives where there is an April through August 0.7 microsiemens per centimeter and a winter non-irrigation season of 1.0 based on different salt sensitivities of different times. And there are four compliance locations, one at the San Joaquin River at Vernalis on the river system and three on the interior Southern Delta.

The proposal is to change it to -- and this gets back to that reasonable production of fish and wildlife. The science has shown that 1.0 year-round provides for the reasonable production and growing of all crops in the

Southern Delta, and it is also generally reflective of the current condition.

The other part of the proposal is to change the three compliance locations in the Southern Delta to water channel segments, including initially to do some analysis of how to best monitor salinity because the three current stations aren't necessarily most representative of salinity conditions in the overall Southern Delta.

The proposal would call for a continued conditioning of the bureau and the Department of Water Rights and specifically of the bureau to maintain that summer 0.7 millimhos per centimeter so as to provide a simulative capacity in the interior Southern Delta stations. It would also continue to require the

department and the bureau to continue what they have been doing with regard to the operation of barriers and other measures to address the other impacts of the Central Valley contract and state water projects.

Other requirements include a comprehensive operations plan. That has to do with better understanding of how to best monitor and operate in that Southern Delta, including the maintenance of water levels and flow conditions that could affect salinity monitoring and reporting, and that initial study I referred to to understand initially the dynamics of water level flow and

salinity conditions.

It is worth noting that this is a package, these

combined proposals, that the flow proposal would have the effect of increased flows in the spring months, the most important time for germination of many crops. So there is that incidental benefit of increased flows from the San Joaquin River that would provide improvement also in the Southern Delta.

So you are going to see a lot more about this later this morning and the rest of the day, but just to give a bit of -- lay a foundation for the modelling that was done, here we have a map of the affected area. And now imposing on it a schematic of the three major eastside tributaries, the Rim dams, the three tributaries from south to north -- Merced, Tuolumne, and Stanislaus -- and the San Joaquin River to the west.

The existing requirements are a mix of FERC requirements on the Merced and the Tuolumne and RPAs

having to do a biop on the Stanislaus as well as these current Bay-Delta Plan requirements at the San Joaquin River at Vernalis.

So this proposal is for unimpaired flows -- a percent of unimpaired flow at the confluence of each of those salmon-bearing tributaries. So it begs the question of what to do. How do you model what -- this

seems to be a fairly simple system, but as you will see when Will will show some of his impressive slides, it can actually be quite complicated. How do you bring it back to be simple and actually crunch the numbers to do all of this?

So the tool that does most of this is what we call the water supply effect model. That is the core

model. It does two principal things. It gives you output in terms of it shows the water supply effect, the reduced water available for consumptive purposes, principally agriculture. It also tells you what the new instream flows will be. So it gives you both what would be the negative effects, the impacts that could occur, and also the positive benefits with regard to fish and wildlife.

So on the right side, the CEQA impact analysis, it shows that you can develop the surface water deficit and make determinations about groundwater, run it through a model to see what kind of cropping would occur, and then in the end what would be the economic impacts. And then on the benefits side, you can see both floodplain inundation and temperature improvements.

I want to remind everyone here that this is a

programmatic analysis. We use the quantitative information from these models to inform us what would be

the physical changes that could result from the planned amendments and have the potential for the impacts. And the principal resources that we looked at are river flows, reservoir operation, surface water diversions, groundwater pumping, and all of these are described in the SED in the chapters for the various resources and fish benefits because it is important. That is one of the comments that we got in the last round. It is like, "Well, this is all about the impact. Show us something about the benefits."

So this is part one of the technical workshop.

I am going to pause here now and introduce again Gita Kapahi to talk a little bit about how we are going to be running the meeting and have the roving mics.

GITA KAPAHI: Thank you, Les.

Good morning, everyone. I am Gita Kapahi. I am the director of the Office of Public Participation. I will be facilitating the dialogue today and at the second technical workshop next Monday. Again, as a reminder, we will not be discussing policy. This is a technical workshop.

Because there is so few of you, I think I am going to change things around a little bit and allow clarifying questions during the presentations. If it gets to be unruly, I may cut that and monitor the time

and ask you to wait until the end of the presentation to make your comments. There are blue cards at the back of the room. For the clarifying questions, we don't need them filled out. However, for the others, I would like you to fill out the card and indicate the subject you wish to speak on. That way we can manage the comments at the end of each session. My job, again, is to keep you on track and on time.

A little historical note on the time line, in another life, ten years ago, I was chief of Bay-Delta and brought the 2006 update before the board. So that was a long time ago.

There are a few challenges. There is a holiday event going on. So the mezzanine area has tables. There will be about 600 people filtering through this area in the next little while, but they will start at noon. Our

break is at 12:30. Hopefully, we will not be in conflict with that. There will be a couple of breaks during the day. And let me see. What else do I want to say?

Ground rules, please silence any noise-making devices. I have to do that myself. Please honor time. If you have a comment to make, if you could make it concisely. Use common conversational courtesy. All ideas have points and value. Our job here today is to make sure you understand the work that the staff has done

and why they have chosen to do what they have done, and that is it for that part of it.

Again, please, the cards, there are a number of them at the back of the room. This will help me manage the comments at the end of each session. There are four

technical presentations today. When you are making comments, if you could please state your name and use the microphone. There are folks on the web, and we want to make sure everyone can hear you. I will have staff running through the room, bringing you a microphone. So raise your hand. I will take you in the order that I see you, and we will make sure that everyone gets heard.

That is it for right now. So we will turn it over to Will.

LES GROBER: Actually, just one more word. I just want to make a point very clear. This is a technical workshop so that we can answer clarifying questions to help you navigate the documents. But in terms of comments, we have five days of hearing -- and we have had one, four more coming up -- on the 16th, the

19th, and the 20th of this month and the 3rd of January. So this is to help you provide comments to make sure that they get before the board, you know, either in oral or written form with a comment period ending January 17th.

With that, I will turn it over to Will.

WILL ANDERSON: Good morning. Thank you for joining us. My name is Will Anderson. I am a water resource control engineer in the division of water rights. I have been with the State Water Resources Control Board for a little over three years now. And since I will be talking to you for quite a while, I will tell you a little bit more about my background.

Before working with the water board, I started my career in working with Tetra Tech in 2001 after

receiving my bachelor's in science and engineering and civil and environmental engineering. And with Tetra Tech, I derived quantitative watershed assessments as a contractor for the EPA and state water agencies for the purpose of developing total maximum daily loads, or TMDLs as they are known as, the Clean Water Act analysis.

There is a similar kind of grand comparative analysis where you compare a baseline to other scenarios of gluten loadings to receiving waters. And to do this often requires watershed models, receiving water, hydraulic 1D, 2D, 3D models, as well as water quality models as well.

I moved to California ten years ago to South Lake Tahoe to continue to work with Tetra Tech in supporting the Hunt and Regional Water Quality Control Board in their Lake Tahoe TMDL and their integrative

watershed management program. I spent a couple years with my boots on the ground with the resource conservation district implementing some of the erosion control VMPs that they have up in Tahoe before moving here and joining the division of water rights.

Can you hear me okay? Do I need to get closer? Is that working? Okay. There we go.

So the main thing I am going to talk about today is the water supply effects model; why this was derived; how it was derived; some of the changes, if you have seen an earlier version of this, from the 2012 SED; our definition of what is a baseline for the CEQA analysis and how we implement our alternatives; how instream flow requirements are established; and how they are evaluated

and analyzed in the context of the lower San Joaquin River alternatives.

The characterization of surface water demands and how much water is needed for consumptive uses is an important driver for how much is available instream and how much needs to be balanced between the beneficial uses. And, finally, the allocation of water within the model is a little tricky to wrap your mind around as it was, you know, for anybody in there. And how this plays over from an individual year to an 82-year sequence and how allocation changes in the alternatives is one that we

are really trying to communicate today. So any kind of questions are very valuable to continue that

conversation.

As Les showed, here is kind of a wider plan area, the three rivers, the three major Rim reservoirs -- New Exchequer to the south and Merced to Don Pedro on the Tuolumne River and New Malones Reservoir on the Stanislaus River.

We all know -- you know, I just want to add a couple more pictures to just give an idea of what we are getting into in a spreadsheet model. This is a picture of New Malones Reservoir at a very low state in 2015 at the Parrotts Ferry Bridge. This is a little shot of a diversion canal. This is the Oakdale south canal at Goodwin. And here is a photo of the Honolulu Bar restoration site on the Stanislaus. This is a good example of a non-flow measure increasing fisheries habitats.

So Les mentioned a little bit about the historical context or what the instream flows have been, and I have got a couple of slides that show that from 1984 to 2015. What we see here on the top bar chart, we have got in blue the unimpaired flow as estimated by the Department of Water Resources at the Rim Reservoir. And in red is the instream flow at the confluence reach, in

this case at Ripon on the Stanislaus. And these are total flow volumes from February through June, which will be the time that the alternatives will be implemented.

And on the lower chart is the actual fraction for that year's total, February through June, resulting instream flow at the confluence as a fraction of the total February through June unimpaired flow at the Rim

Dam. And we see that, for the Stanislaus, about half the years are well below the 40 percent level, and some exceed that.

So the fraction of unimpaired flow alternative would rise in the years that are below 40 percent to that level as a minimum. We have seen some commenters try to average multiple years and say, "Well, there is X percent over a 10-year or a 20-year or 30-year time frame," and we are really looking at the instream flow requirement for each month, February through June, in every year.

So this actually lumps the months together, if you parse the difference there between the monthly meeting a minimum of 40 percent and a total February through June 40 percent. But that is a minor detail. But keep that in mind. Here, we have the Tuolumne, as Les mentioned, in the single digits in the late '80s,

early '90s drought down to as low as 6 to 8 percent of the Rim Dam unimpaired flow. There are a couple of low

years, especially in the 2014, 2015 time frame.

We see those are about 75 percent of the years or at some point below the 40 percent level, and we also see about that characteristic on the Merced. And I am going to go through pretty quickly. I have a lot to go through. Feel free to raise your hand and say, "Stop" or "Go back," if you are still looking at something and I blow past it too fast. So same picture on the Merced, well below 40 percent in a lot of the years. I hope that that is clear.

So the water supply effects model that I am here

to talk about today is essentially an Excel spreadsheet that evaluates the mass balance -- the water balance in the system. It is a monthly spreadsheet model that utilizes the calcium mass balance framework that many of you may be aware of. We use it to evaluate the effects of unimpaired flow for each lower San Joaquin River alternative. We have got our baseline -- which I will describe in detail to you -- of 20, 40, and 60 percent of unimpaired flow at the confluence reaches.

So unimpaired flow is not the same as inflow. We get this comment also that, "How can we compare the unimpaired flow at the Rim Dam to what is at a confluence?" There may be -- there definitely are additional inflows, accretions, and depletions below the

Rim Dam and above the confluence reach. Essentially, what this proposal does is uses that unimpaired flow estimate as an index for what could be in the stream at the confluence reach for the protection of beneficial uses, and that is an important distinction that I have got to clear up there.

And it is not trivial that there is accretions and depletions between the Rim Dam and the confluence reach. These do have an effect and can effectively -- when there is times when there is a lot of ample precipitation, you might have the tributaries' accretions contribute quite a bit towards that target, which means there may be less release required. And at other times, when there are minimal accretions, then that would require more release from the reservoir.

So the basic core of the WSE is the allocation

scheme based on the demands for each of the major districts as well as some minor and riparian diversions at each node. We allocate based on the need from March through September, which essentially is the same as the way the New Malones index operates, if you are familiar with that.

You start with the reservoir storage at the beginning of March and you add what you are expecting for inflow for that, and that kind of gives you an idea of

your total water supply for the growing season. And we allocate some fraction of that after our instream flow requirement has been met.

Reservoir constraints are a key part of that, and a lot of my talk will go into how these work. We

have guidelines for carryover storage, which is a modelling parameter that will essentially drive that fraction of allocation. It includes a fraction called the percent draw from storage, and these parameters work together to show what amount of supply is available.

In some cases, we have a minimum percent allocation to balance out the equation, which will give districts some minimum amount. So if for some reason there is a dry year but quite a bit of storage, you don't want to see that diversion delivery go too low all at once. It kind of balances it out.

And the last one is drought refill constraint. We found that if you go into a drought and your reservoir levels are extremely low, there is some benefit to kind of restricting or restraining diversions in order to let

the reservoir build back up again. That will not only increase the cold pool but also give a little bit more reliability for the following year.

This is a diagram that we showed last Tuesday. It is a basic visual idea of allocating inflows to major

reservoirs, including the constraints, and basically between stream flow requirements and surface diversions. That is the main nut to crack here. If we are putting more toward stream flow requirements, that will undoubtedly make less available for diversions, and the storage dynamic is what the model is designed to assess.

Les already showed the chart and how the WSE model is the core of our effects analysis. We use it to evaluate the diversions that can be made and the

alternatives which then leads to the deficit of surface water, applied water needs, groundwater use, which we will be talking about next month. So I won't be getting into too much detail about exactly how those are calculated. I am going to stick with the core model.

We are going to talk a little bit about the temperature model this afternoon. And generally when we run an alternative in a water supply scenario, we will have temperature model effects, and we would then maybe see some things that we would want to balance out, times where we see a reservoir going too low, and that causes the temperatures to spike. It will iterate and work with different parameters to get that final set you have seen published in the SED.

How did we come up with the spreadsheet model? Well, this predates me a little bit, and CalSim predates

me by quite a lot. But, essentially, starting with the CalSim 2 model for the San Joaquin River basin, it essentially establishes a common assumption set of hydrology parameters of inflows, accretion, and depletions, and demands that was developed by the California Department of Water Resources and Reclamation. Many of you may have been involved with that in the past, but it is basically a mass balance -- what goes in must come out sooner or later.

This version of CalSim 2 was peer reviewed back in 2005. It includes 82 years of monthly records from 1922 to 2003. Those are water years. And it hasn't been updated since then. We are expecting CalSim 3 to come out imminently, we are told. But this 82 years of

monthly records is the very best available set of hydrology that includes the entire three-river plan area in the lower San Joaquin. If you have comments about that dataset, that could be very helpful in writing to inform the work in the future.

The important thing about CalSim 2, the main mass routing that we have to work with is the inflow bound rating at each rim reservoir. So that is not the same as unimpaired flow. In the case of Tuolumne, it would also account for diversions by the city and county of San Francisco Chechenski (phonetic.) And in the case

of the Stanislaus River, it would include different types of inflows to the reservoir based on upstream hydropower

facilities.

It includes diversion demands. CalSim has an allocation scheme that we mimic in the baseline condition, and return flows are also a factor where they come back into the system. As I mentioned before, the local hydrology, the inflows, the accretion, and the depletions are key factors for those downstream reaches.

One last point about the CalSim overview is that scenarios are based on user specification. The hydrology set for CalSim 2 is essentially -- for our purposes, it is fixed. There are alternative versions of CalSim, though. But the scenario is made by user specification. So you may choose to run an evaluation of the upper San Joaquin restoration program. You may have a baseline that is before the biological opinion or with the biological opinion or with the biological opinion with an

off-ramp where it doesn't apply in certain years.

The implementation of decision 1641 and different implementations of CVP contractor demands are all factors that the user specifies. So we have gone in, and we have a water board version of CalSim 2 that we use for our foundation of our WSE model.

So we showed this last Tuesday, also. This is

the grand schematic of the lower San Joaquin part of CalSim. Not to wow you with complexity, but each of these arrows represents a mass flow from one node to another. We have got the three inflows, the Rim reservoirs, a couple of stream nodes, and so on. I am going to break that down in a minute, but it essentially represents the physical system as we know it.

The three big reservoirs, the major regulating reservoirs, are an important part of the distribution system. We can see the five major senior districts and the two CVP contractors in San Joaquin County. Also, the Merced riparian and adjudicated water rights, known as the Cal agreement diversions, are an important part of the flow stream there.

If we simplify that spaghetti diagram a little bit, this is the CalSim 2 schematic with the three rivers with just the ins and outs. We will get into how we figure out what the demands are in a minute, but this is the basic hydrology, if you will, incorporating -- all of the blue arrows are -- the major ones at the top are the major inflows of the three tributaries. The minor blue arrows are accretions or depletions. The red arrows are diversions for consumptive use. The green arrows are

return flows, and you can see how all of these will combine to result in flows.

♀ 32

These are average monthly flows for each stream reach between the nodes, and we will be evaluating the stream flows in the confluence reaches, which are the nodes between Ripon, Modesto, and the lower node on the Merced, Steavenson, and the San Joaquin River, respectively.

So the scenario that we have used at the water board in CalSim 2 incorporates the baseline conditions that, in our discretion, represent the existing environment at the time of our notice of preparation in 2009, and we include the pulse flow implementation and

the Vernalis Adaptive Management Program, or VAMP. For the remainder of the spring season, we have the decision 1641 requirement at Vernalis for stream flow and salinity.

We have the 2009 salmonid biological opinion, reasonable and prudent alternatives, and also, if I recollect, requirements at the diversion dams. And these are the Goodwin on the Stanislaus, La Grange on the Tuolumne, and Crocker-Huffman Dam on the Merced River. Our CalSim 2 scenario also includes the surface water demands for irrigation districts as well as minor and riparian diversions at each node.

Just to step back up here, there are 17 nodes in this diagram. So it is very finite. Each one of those

can be described in detail and has a monthly time series. The minor and riparian are fairly static from year to year. We generally deliver the full amount to those, and it is the senior districts with the largest demands that do experience allocation issues at times of shortage.

Let's go back here. So refinements that we have made since the 2012 SED, the original SED had used the department of water resources delivery and reliability report CalSim from 2009. We received some extensive comments from the U.S. Bureau of Reclamation that pointed out that they had made some revisions to this in their implementation of VAMP and the way that they implemented the biological opinion and also the specific amounts that should be allocated to the CVP contractors based on their contracts with Stockton East Water District and Central San Joaquin Water District.

So going along with using a new CalSim, we have done quite a bit of refinement to the water effect supply models since 2012. For one, it is continuous and year-round. Before we had done each year separately, and this time, instead of using a fixed demand for every year, we used the monthly variance demands from CalSim. And these were really the key linchpin in representing the variation between years.

You might have a higher district demand in a dry

year versus a wet year where precipitation contributes to meet that total demand. And CalSim conservative use components incorporate the fact to be of that total demand, and we use that pattern variation to build our total demand time series.

In the new SED, the water supply effects model compares the WSE flow alternatives for unimpaired flow to a WSE baseline, whereas before it was the water supply effects model allocation compared to CalSim baseline, which was a little bit of a hybrid approach that had some issues with that. So, now, we are more apples to apples.

In WSE, we now include FERC flows and a more accurate representation of the Cal agreement and Davis-Grunsky flows on the Merced. We have included consideration of the Stanislaus 1988 agreement between Oakdale Irrigation and South San Joaquin Irrigation with the Bureau of Reclamation, and we have also used data from the agricultural water management plans to characterize efficiencies within the district. And those are used to translate the consumptive use crop demand to

the total surface demand required at the diversions.

I am going to describe that in further detail.

It is important to note that the components of the water balance after diversions are used to create the total surface demand, but WSE only really evaluates that total

demand and allocation scheme. The specific components of the total demand are not used or considered by the WSE. So comments that inform how those efficiencies are used will be relevant for the groundwater analyses and the applied water shortage analysis that we will talk about next Monday. But the specific components are not used within the WSE once that total surface demand is calculated.

UNIDENTIFIED SPEAKER: What exactly do you mean

by "the specific components"?

WILL ANDERSON: So I will get into that. So hopefully I will answer your question in a few upcoming slides. I will describe them for you now.

So the total surface demand at a point of diversion, or the other water diverted, has various fates, if you will. There is a component that may return to the river as an operational spill or a return. There is a portion that will be percolated from a regulating reservoir or evaporated from a regulating reservoir. It could be lost in a conveyance system to either, in some cases, riparian use, which is generally small, or percolated in an unlined ditch or evaporated. And there is a component that would be the major component. It is the beneficial use at the farm gate. But I hope that -- we will get into a little bit more detail about that.

And essentially we have evaluated the ag water management plan data to get an idea for how operations work and represented those in a generalized sense to translate what is needed at the field to what is actually diverted from the river. And so I hope that it will become clear as we move forward.

Just a snapshot of what the model looks like, it is a spreadsheet. It includes a time series of flow data from each arrow that we saw on the CalSim diagram, and then we will go and, you know, basically essentially do the math of what is available for stream flows and allocations.

The way we use it is a comparative analysis. That means that we have got a baseline scenario, which

has certain conditions for the 82-year time period. So these conditions, such as decision 1641 and the flow requirements at Vernalis, did not exist in 1922 nor did the full build-out of the districts nor did the major Rim reservoirs. But for the comparative analysis, we are looking at what would happen based on this historical hydrology if the system were in place at the level of demand that we see in the 2009 time frame.

So this baseline again represents the existing environment in 2009, decision 1641 requirements, and VAMP. And, also, the biological opinion stream flow

♀ 37

requirements and the FERC stream flow requirements and comparing the alternatives of 20, 40, and 60 percent of

unimpaired flow from February through June, we can see the effects compared to baseline of what the allocations will do.

We have included some in the latest version, an adaptive implementation of this 20, 40, and 60 percent of unimpaired flow, and there is a few different ways that works that Les has described. And one of these is that we shift flow to outside of the February through June period to the summer and fall. And the main intent of that and the alternatives is to offset, reduce, and otherwise eliminate the indirect effects and temperature impacts of reoperating the system.

So what happens if we allocate water to instream flow as well as water district demands? The reservoir could be lower, and that could cause increased temperatures in the project. And then in order to reduce

that effect, we would have some additional flow, a fraction, which we have restricted to a maximum of 25 percent of the February through June flow to be allocated to other months. It doesn't usually get up towards 25 percent, but there is cases where that is a constraint.

So here is a visual for you of model comparisons and scenarios that I have described in droning in so many

words. Starting out with the water specified scenario of CalSim 2 with our baseline conditions, as I have just described, based on the Bureau of Reclamation's new and improved 2013 CalSim version, it was used to create the WSE model foundation, which is those baseline results, which is an 82-year monthly time series of each flow component.

Now, we have got the WSE model spreadsheet with all of the same parameters of CalSim, which creates our WSE baseline, which there is going to be some slides where we call it the WSE/CalSim, which is the best comparison of mimicking the CalSim system. There is times where we have adjusted a few of the demand levels to what we think better represents the system, and those are called the WSE/CEQA baseline, which is then used to compare the alternative results for the impacts. And so that keeps everything apples to apples.

We started off looking to CalSim to make sure that our representation of the system is consistent. If we have to adjust anything, then we do that apples to apples on the impacts analysis. Now, the changes are minor to the demands. It is just a little tweaking here and there based on the new and improved information of ag

water management plans and, in some cases, district operation models -- the FERC operation model on the

Tuolumne as well as the Stanislaus operation model and the Merced operation model -- and it gives us a representation of demands in a way that was not available prior.

I am going to start off -- I am just going to dive in here to some plots of how WSE compares to CalSim. It looks like I am going to go a little over time on the first section. I have got about ten minutes. I am going to break for any questions and then move forward with that timing.

Now, let's see how this shows up on the big

screen. Okay. This is a representation of stream flow on the Stanislaus at Ripon. This is the confluence reach, as we call it, the downstream point on the Stanislaus River. There is two traces on here, and these are monthly results for stream flow based on CalSim and our WSE baseline.

The CalSim is going to be the tan or orange line, and the WSE baseline is going to be green. You can see that they are both operating to the same stream flow requirements, the same excess flows, the same big flood in January of '97, which causes a reservoir spill. We can see that they do diverge a little bit in 2001, 2002, and 2003 just to show you that there is actually -- they are different models.

But you can see in this plot, which is the monthly total diversions for the Stanislaus River, again comparing the CalSim baseline to WSE baseline. And these are monthly values. We see them, you know, in growing season, a peak of diversions to meet water supply demand. We observed that in the '88 to '92, '93 drought that diversions are much less in CalSim, as well as in WSE, and they track very closely together with each other.

This next trace, which makes up the triumvirate of the mass balance here, is the storage condition of the New Malones Reservoir. Starting off in '85, '86, it is almost full. After a number of critical years under the San Joaquin index, it ends up being almost completely empty in '91 and '92 with a little bit of a refill in water year '93. It goes back down in '94, and then it will come up and eventually spill in a little later

successive year. So the WSE baseline is tracking CalSim pretty closely here. The little red line at the top is the top of the conservation pool or otherwise in this plot denoted as the flood stage, though WSE doesn't go over that.

This is an annual summary of the diversion plot that we saw a couple slides ago. The annual total diversions from the Stanislaus River -- that includes Oakdale Irrigation District, South San Joaquin Irrigation

District, the CVP contractors, Stockton east, and Central San Joaquin Water District, and the riparian and minor diversions along the Stanislaus River, which are a minor component -- added up for each water year from 1922 to 2003.

So this represents the core of the allocation where WSE matches baseline. We will notice a few of the years that have low deliveries essentially show where there is not enough in the system, not enough in the reservoir and combined with inflow to meet the diversion demands. Now, there are a lot of years that the demands can be met. We have a fairly high reliability in the baseline condition, and you can see that there is about a 10 to 15 percent variation between the wet and dry years. And that is important with how we characterize that total demand when we look at using the monthly CalSim core demand or the COAW demand.

So a little bit about some more of the exceedance plots that we are going to see for the rest of the day here, many of you, I'm sure, are familiar with

exceedance plots, but this is that -- a way of rank ordering the data in the plot from smallest to largest, where the largest value, the maximum, is never exceeded. In other words, it is exceeded zero percent of the time. The 50 percent would be a median value. The minimum ever

observed in this system for total annual diversion delivery would be -- looks to be about 260,000 acre-feet, and that is exceeded 100 percent of the time.

I would like to point out that if we look at any percent -- exceedance on this plot, for example, at 10 percent -- or excuse me -- 90 percent exceedance would be the value at which 90 percent of the years would receive a greater diversion than this value, and 10 percent of the years would be less than this value. There is a very

notable inflection point at about 94 percent. The four years in the 82-year sequence that had supply shortages are kind of the key factor that we are talking about when we look at allocations and any kind of scenario results of how does moving water to instream flow affect the inflection point where demands can't be met anymore?

Also, the whole left side of this -- so the 90 percent of the time that demands are met, there is quite a bit of variation, and again that is the wet versus dry year dynamic that I was pointing out before. If we see at the 90 percent level, it is a little bit more than 500,000 acre-feet for the Stanislaus River example. This is just one last way that we can confirm that the WSE model is comparing adequately with the CalSim model.

We are going to see a few of these today, the four exceedance plots in this configuration. The top

left is the February through June total instream flow at the confluence downstream reach there. The top right is the exceedance plot of the reservoir storage conditions at the end of September. The bottom left is the diversion delivery exceedance plots that we were just looking at in the prior slide, and the lower right is a percent of that total February through June flow quantity as a function of the unimpaired flow index.

In this case, we see that the lowest years in the Stanislaus are around -- it looks like the lowest year is 10 percent, and then there is a bunch of years around 20 and 30 percent. The median is about 35 percent, but in some cases, it is higher than that. So the instream flows will see that flatten out.

So the next thing I am going to talk about is the way that we evaluate instream flow requirements in the WSE model, and I guess I am going to stick to our schedule here. I have got plenty of time to talk about the other model methods, but I can break here for any questions and then move forward if there aren't questions at this time on what I have covered so far.

BARBARA: Hi. This is Barbara. I am with MIMS. When you -- and I guess maybe this is coming out of a CalSim demand. On the Stanislaus, for example, when the conditions are dry, you mentioned that is where the water

supply effect is strongest. Is the amount of that water supply impact, is that determined in the model by