2. BACKGROUND

This report is prepared pursuant to legislation enacted in 2000 that requires LAFCO to conduct a comprehensive review of municipal service delivery and update the spheres of influence (SOIs) of all agencies under LAFCO's jurisdiction. The focus of this report is water service providers throughout the County. This chapter provides an overview of the County's water system, as well as the planning context and regulatory setting affecting water service in the County. The outline of the chapter is as follows:

1) The background of LAFCO,
2) Purpose of the service review,
3) Sphere of influence updating process,
4) Process and methodology of the review,
5) The local and regional planning context,
6) Key laws affecting water supply analysis and planning, and
7) Regulation of water providers.

LAFCOS, SERVICE REVIEWS, AND SPHERES OF INFLUENCE

History of LAFCO

After World War II, California experienced dramatic growth in population and economic development. With this boom came a demand for housing, jobs and public services. To accommodate this demand, many new local government agencies were formed, often with little forethought as to the ultimate governance structures in a given region, and existing agencies often competed for expansion areas. The lack of coordination and adequate planning led to a multitude of overlapping, inefficient jurisdictional and service boundaries, and the premature conversion of California's agricultural and open-space lands.

Recognizing this problem, in 1959, Governor Edmund G. Brown, Sr. appointed the Commission on Metropolitan Area Problems. The Commission's charge was to study and make recommendations on the "misuse of land resources" and the growing complexity of local governmental jurisdictions. The Commission's recommendations on local governmental reorganization were introduced in the Legislature in 1963, resulting in the creation of a Local Agency Formation Commission, or "LAFCO," operating in every county except San Francisco.

LAFCO of Santa Clara County was formed as a countywide agency to discourage urban sprawl, preserve agricultural and open space resources, promote efficient service provision and encourage the orderly formation and development of local government agencies. LAFCO is responsible for coordinating logical and timely changes in local governmental boundaries, including annexations and detachments of territory, incorporations of cities, formations of special districts, and consolidations, mergers and dissolutions of districts, as well as reviewing ways to reorganize, simplify, and streamline governmental structure. The Commission's efforts are focused on ensuring that services are provided efficiently and economically while agricultural and open-space lands are protected. To better inform itself and the community as it seeks to exercise its charge, LAFCO conducts service reviews to evaluate the provision of services within the County.

LAFCO regulates, through approval, denial, conditions and modification, boundary changes proposed by public agencies or individuals. It also regulates the extension of public services by cities and special districts outside their boundaries. LAFCO is empowered to initiate updates to the SOIs and proposals involving the dissolution or consolidation of special districts, mergers, establishment of subsidiary districts, and any reorganization including such actions. Otherwise, LAFCO actions must originate as petitions or resolutions from affected voters, landowners, cities or districts.

LAFCO of Santa Clara County consists of five regular members: two members from the Santa Clara County Board of Supervisors, two city council members with one permanent seat for San Jose as the largest city, and one public member who is appointed by the other members of the Commission. There is an alternate in each category. All Commissioners are appointed to four-year terms.

The mandate for LAFCOs to conduct service reviews is part of the Cortese-Knox Hertzberg Local Government Reorganization Act of 2000 (CKH Act), California Government Code §56000 et seq. LAFCOs are required to conduct service reviews prior to or in conjunction with sphere of influence updates and are required to review and update the sphere of influence for each city and special district as necessary, but not less than once every five years. LAFCO of Santa Clara County completed and adopted its first round of service reviews and sphere of influence updates prior to January 1, 2008, as required by state law.

LAFCO of Santa Clara County is responsible for establishing, reviewing and updating spheres of influence for 44 public agencies in Santa Clara County (15 cities and 28 special districts). LAFCO's service reviews work plan calls for the completion of these studies over the next three calendar years. This report is the second in a series of service reviews by subject that LAFCO plans to complete

Service Reviews

The service review requirement was enacted by the Legislature months after the release of two studies recommending that LAFCOs conduct reviews of local agencies. The

"Little Hoover Commission" focused on the need for oversight and consolidation of special districts, whereas the "Commission on Local Governance for the 21st Century" focused on the need for regional planning to ensure adequate and efficient local governmental services as the California population continues to grow.

Little Hoover Commission

In May 2000, the Little Hoover Commission released a report entitled Special Districts: Relics of the Past or Resources for the Future? This report focused on governance and financial challenges among independent special districts, and the barriers to LAFCO's pursuit of consolidation and dissolution of districts. The report raised the concern that "the underlying patchwork of special district governments has become unnecessarily redundant, inefficient and unaccountable."

In particular, the report raised concern about a lack of visibility and accountability among some independent special districts. The report indicated that many special districts hold excessive reserve funds and some receive questionable property tax revenue. The report expressed concern about the lack of financial oversight of the districts. It asserted that financial reporting by special districts is inadequate, that districts are not required to submit financial information to local elected officials, and concluded that district financial information is "largely meaningless as a tool to evaluate the effectiveness and efficiency of services provided by districts, or to make comparisons with neighboring districts or services provided through a city or county."[4]

The report questioned the accountability and relevance of certain special districts with uncontested elections and without adequate notice of public meetings. In addition to concerns about the accountability and visibility of special districts, the report raised concerns about special districts with outdated boundaries and outdated missions. The report questioned the public benefit provided by health care districts that have sold, leased or closed their hospitals, and asserted that LAFCOs consistently fail to examine whether they should be eliminated. The report pointed to service improvements and cost reductions associated with special district consolidations, but asserted that LAFCOs have generally failed to pursue special district reorganizations.

The report called on the Legislature to increase the oversight of special districts by mandating that LAFCOs identify service duplications and study reorganization alternatives when service duplications are identified, when a district appears insolvent, when district reserves are excessive, when rate inequities surface, when a district's mission changes, when a new city incorporates and when service levels are unsatisfactory. To accomplish this, the report recommended that the State strengthen the independence and funding of LAFCOs, require districts to report to their respective LAFCO, and require LAFCOs to study service duplications.

[4] Little Hoover Commission, 2000, page 24.

Commission on Local Governance for the 21st Century

The Legislature formed the Commission on Local Governance for the 21st Century ("21st Century Commission") in 1997 to review statutes on the policies, criteria, procedures and precedents for city, county and special district boundary changes. After conducting extensive research and holding 25 days of public hearings throughout the State, at which it heard from over 160 organizations and individuals, the 21st Century Commission released its final report, Growth Within Bounds: Planning California Governance for the 21st Century, in January 2000.[5] The report examines the way that government is organized and operates and establishes a vision of how the State will grow by "making better use of the often invisible LAFCOs in each county."

The report points to the expectation that California's population will double over the first four decades of the 21st Century, and raises concern that our government institutions were designed when our population was much smaller and our society was less complex. The report warns that without a strategy open spaces will be swallowed up, expensive freeway extensions will be needed, job centers will become farther removed from housing, and this will lead to longer commutes, increased pollution and more stressful lives. Growth Within Bounds acknowledges that local governments face unprecedented challenges in their ability to finance service delivery since voters cut property tax revenues in 1978 and the Legislature shifted property tax revenues from local government to schools in 1993. The report asserts that these financial strains have created governmental entrepreneurism in which agencies compete for sales tax revenue and market share.

The 21st Century Commission recommended that effective, efficient and easily understandable government be encouraged. In accomplishing this, the 21st Century Commission recommended consolidation of small, inefficient or overlapping providers, transparency of municipal service delivery to the people, and accountability of municipal service providers. The sheer number of special districts, the report asserts, "has provoked controversy, including several legislative attempts to initiate district consolidations,"[6] but cautions LAFCOs that decisions to consolidate districts should focus on the adequacy of services, not on the number of districts.

Growth Within Bounds stated that LAFCOs cannot achieve their fundamental purposes without a comprehensive knowledge of the services available within its county, the current efficiency of providing service within various areas of the county, future needs for each service, and expansion capacity of each service provider. Comprehensive knowledge of water and sanitary providers, the report argued, would promote consolidations of water and sanitary districts, reduce water costs and promote a more comprehensive approach to the use of water resources. Further, the report asserted that many LAFCOs lack such

[5] The Commission on Local Governance for the 21st Century ceased to exist on July 1, 2000, pursuant to a statutory sunset provision.

[6] Commission on Local Governance for the 21st Century, 2000, page 70.

knowledge and should be required to conduct such a review to ensure that municipal services are logically extended to meet California's future growth and development.

Service reviews would require LAFCO to look broadly at all agencies within a geographic region that provide a particular municipal service and to examine consolidation or reorganization of service providers. The 21st Century Commission recommended that the review include water, wastewater, and other municipal services that LAFCO judges to be important to future growth. The Commission recommended that the service review be followed by consolidation studies and be performed in conjunction with updates of SOIs. The recommendation was that service reviews be designed to make nine determinations, each of which was incorporated verbatim in the subsequently adopted legislation. The legislature since consolidated the determinations into six required findings.

Municipal Services Review Legislation

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 requires LAFCO to review and update SOIs not less than every five years and to review municipal services before updating SOIs. The requirement for service reviews arises from the identified need for a more coordinated and efficient public service structure to support California's anticipated growth. The service review provides LAFCO with a tool to study existing and future public service conditions comprehensively and to evaluate organizational options for accommodating growth, preventing urban sprawl, and ensuring that critical services are provided efficiently.

Effective January 1, 2008, Government Code §56430 requires LAFCO to conduct a review of municipal services provided in the county by region, sub-region or other designated geographic area, as appropriate, for the service or services to be reviewed, and prepare a written statement of determination with respect to each of the following topics:

- Growth and population projections for the affected area;
- Present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies;
- Financial ability of agencies to provide services;
- Status of, and opportunities for shared facilities;
- Accountability for community service needs, including governmental structure and operational efficiencies; and
- Any other matter related to effective or efficient service delivery, as required by commission policy.

Purposes of the Report

This Countywide Water Service Review will be available for use by LAFCO, the County, cities, special districts, and the public to better understand how water service is provided within Santa Clara County. Additionally, the review will be a resource to inform LAFCO decisions, including:

- Updating spheres of influence,
- Initiating or considering jurisdictional boundary changes,
- Considering other types of LAFCO applications, and
- Providing a resource for further studies.

LAFCO will use this report as a basis to update the spheres of influence of the four water districts and two resource conservation districts. With regard to the cities' spheres of influence, LAFCO will use information from this report along with the information gathered in subsequent service reviews to update the spheres of influence of cities.

The report contains a discussion of various alternative government structures for efficient service provision. LAFCO is not required to initiate any boundary changes based on service reviews. However, LAFCO, other local agencies (including cities, special districts or the County) or the public may subsequently use this report together with additional research and analysis, where necessary, to pursue changes in jurisdictional boundaries. Government Code Section 56375(a) gives LAFCO the power to initiate certain types of boundary changes consistent with a service review and sphere of influence study. These boundary changes include:

- Consolidation of districts (joining two or more districts into a single new successor district);
- Dissolution (termination of the existence of a district and its corporate powers);
- Merger (termination of the existence of a district by the merger of that district with a city);
- Establishment of a subsidiary district (where the city council is designated as the board of directors of the district); or
- A reorganization that includes any of the above.

LAFCO may also use the information presented in the service reviews in reviewing future proposals for annexations or extensions of services beyond an agency's jurisdictional boundaries or for proposals seeking amendment of urban service area boundaries of cities or sphere of influence boundaries of districts.

Other entities and the public may use this report as a foundation for further studies and analysis of issues relating to water related services in this County.

Sphere Of Influence Updates

The Commission is charged with developing and updating the sphere of influence (SOI) for each city and special district within the county.[7]

An SOI is a LAFCO-approved plan that designates an agency's probable future boundary and service area. Spheres are planning tools used to provide guidance for individual boundary change proposals and are intended to encourage efficient provision of organized community services, discourage urban sprawl and premature conversion of agricultural and open space lands, and prevent overlapping jurisdictions and duplication of services.

Every determination made by a commission must be consistent with the SOIs of local agencies affected by that determination,[8] for example, territory may not be annexed to a city or district unless it is within that agency's sphere. In other words, the SOI essentially defines where and what types of government reorganizations (e.g., annexation, detachment, dissolution and consolidation) may be initiated. If and when a government reorganization is initiated, there are a number of procedural steps that must be conducted for a reorganization to be approved. Such steps include more in-depth analysis, LAFCO consideration at a noticed public hearing, and processes by which affected agencies and/or residents may voice their approval or disapproval.

SOIs should discourage duplication of services by local governmental agencies, guide the Commission's consideration of individual proposals for changes of organization, and identify the need for specific reorganization studies, and provide the basis for recommendations to particular agencies for government reorganizations.

The Cortese-Knox-Hertzberg (CKH) Act requires LAFCO to develop and determine the SOI of each local governmental agency within the county and to review and update the SOI every five years, as necessary. LAFCOs are empowered to adopt, update and amend the SOI. They may do so with or without an application and any interested person may submit an application proposing an SOI amendment.

LAFCO may recommend government reorganizations to particular agencies in the county, using the SOIs as the basis for those recommendations. In determining the SOI, LAFCO is required to complete a service review and adopt the six determinations

[7] The initial statutory mandate, in 1971, imposed no deadline for completing sphere designations. When most LAFCOs failed to act, 1984 legislation required all LAFCos to establish spheres of influence by 1985.

[8] Government Code §56375.5.

previously discussed. In addition, in adopting or amending an SOI, LAFCO must make the following determinations:

- Present and planned land uses in the area, including agricultural and open-space lands;
- Present and probable need for public facilities and services in the area;
- Present capacity of public facilities and adequacy of public service that the agency provides or is authorized to provide;
- Existence of any social or economic communities of interest in the area if the Commission determines these are relevant to the agency; and
- In the case of special districts, the nature, location, and extent of any functions or classes of services provided by existing districts.

By statute, LAFCO must notify affected agencies 21 days before holding the public hearing to consider the SOI and may not update the SOI until after that hearing. The LAFCO Executive Officer must issue a report including recommendations on the SOI amendments and updates under consideration at least five days before the public hearing.

A CEQA determination is made by LAFCO on a case-by-case basis for each sphere of influence action and each change of organization, once the proposed project characteristics are sufficiently identified to assess environmental impacts.

Urban Service Area

In Santa Clara County, the SOI as defined in state law is relevant for special districts; however, for cities, the inclusion of an area within a city's SOI should not necessarily be seen as an indication that the city will either annex or allow urban development and services in the areas. The urban service area (USA) is the more critical boundary considered by LAFCO for the cities, and serves as the primary means of indicating whether an area will be annexed to a city and provided with urban services.

Review and amendment of USA boundaries is the Commission's primary vehicle for encouraging orderly city growth. Within the USAs, LAFCO does not review city annexations and reorganizations if the proposals are initiated by city resolution and meet certain conditions. State law gives cities in Santa Clara County the authority to approve such reorganizations.

SERVICE REVIEW PROCESS AND METHODOLOGY

Standard analytical tools and practices were used to gather and analyze information for the water service review. The service review process is outlined as follows:

- **Technical Advisory Committee**: LAFCO formed a committee to provide input on the service review and insight into any particular water related issues.

- **Outreach**: LAFCO performed outreach and explanation of the project through a letter and informational flier.

- **Establishment of Criteria**: Preliminary criteria to be used in making the determinations required under the laws governing service reviews were developed. These criteria were presented to the LAFCO staff and Technical Advisory Committee for review and comment.

- **Data Discovery**: Collection of data from available online and central data resources (i.e., agency websites, California Department of Public Health, Santa Clara County and Department of Environmental Health, the Environmental Protection Agency). Population information and projections, developed by the Association of Bay Area Governments (ABAG),.

- **Request for Information**: Creation of a personalized questionnaire based on available information for each agency, and distribution to the agencies for completion. A dedicated online website was used to allow agencies to upload requested information.

- **Interviews**: After reviewing each agency's questionnaire response and submitted documents, the agencies were interviewed to fill in missing information, follow up on current matters, as well as to see what progress was made on issues identified in the previous service review. Interviews were conducted with a number of stakeholders, including managing and operating staff at the various agencies, the Santa Clara and San Benito County Auditor Controllers Office, staff from the California Department of Public Health, Santa Clara County Department of Environmental Health, California Division of Safety of Dams, and National Resource Conservation Services. A list the individuals interviewed during this engagement can be found in the appendix.

- **Drafting of Agency Chapters**: Chapters on each of the agencies were compiled, using a standard format, based on the interviews and data collected. Agencies responded to information requests in varying levels of detail. Reasonable efforts were taken to obtain a level of consistency in the data to make the required determinations and analyze issues.

- **Agency Review for Accuracy**: The chapters were provided to each agency for internal review and comment, to ensure accuracy prior to release of the document.

- **Data Analysis and Service Review Determinations**: Information gathered from the agencies and the interviews was analyzed and applied to the determination criteria to make the required determinations for each agency and reach conclusion about the focus issues identified in the RFP.

- **Public Review Draft Released**: The draft document is released for public review and comment.

- **LAFCO Hearing**: LAFCO holds a public hearing to solicit agency and public feedback and comments on the draft report.

- **Final Draft Released**: The revised redlined draft document is released with a comment log indicating any action taken pursuant to the comment.

- **Adoption of Final Report**: LAFCO holds a public hearing where the Commission may adopt the final report.

Review Criteria

Each agency under LAFCO jurisdiction is assessed in each category using the criteria described below.

Growth and population projections for the affected area

- The amount and percent of population growth projected by the Association of Bay Area Governments between 2010 and 2035.

- The type and extent of any significant planned or proposed development.

Present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies

- The total annual raw water supply under entitlement for the agency's use from various sources (with each source and authorized use identified).

- The maximum total annual raw water supply that can be guaranteed every year for the agency's use from various sources (this is the agency's "firm yield"). Identification of the primary causes of the differences between total raw water supply under entitlement and "firm yield"; and what augmentations each agency is pursuing to close that gap.

- The percentage of the firm yield water supplies in use during average and peak demand periods.

- Projected firm yield estimates over the future planning horizon in 5-year increments (i.e., 2010, 2015, 2020, etc.)

- The age and condition of the conveyance, treatment, distribution and storage facilities as reported by the agency (including groundwater wells).

- The physical and operational capacities of the treatment, distribution, and storage system.

- The need for capacity enhancement based on the percent of existing capacity in use during average and peak demand periods

- The need for capacity redundancy and/or safeguards against service interruptions.

- The number of days in full compliance with Primary Drinking Water Regulations in 2010 where 361 days or 99 percent is the industry standard.

- The number and type of health and monitoring violations for drinking water recorded by EPA since 2000.

- The extent of the agency's water reserves in days of available water supply should a major disruption in raw water delivery occur

- An assessment of the adequacy of the agency's system, operations, and management, including any required improvements, as evaluated and recommended by the California Department of Public Health during the most recent inspection.

- Infrastructure needs and agency's plans to address these needs, as reported by the agency, or identified in capital improvement plans, and/or recommended by the Department of Public Health.

- The percent of the system's capacity in use during average and peak demand periods.

- Projected demands (by use category) to 2035 as reported by the agency.

- Comparison of available firm yield, system capacities, and projected demands to illustrate each agencies' ability to serve in 5-year increments to 2035 (i.e., 2010, 2015, 2020, etc.)

- Management practices: To establish public trust and accountability, best management practices include 1) preparing a budget before the beginning of the fiscal year, 2) conducting periodic financial audits, 3) maintaining relatively current financial records, 4) evaluating rates and fees periodically, 5) planning and budgeting for community service needs, and 6) an established process to address complaints.

Financial ability of agency to provide services

- The adequacy of the level of financing and any financing challenges or constraints as reported by the agency.

- Rates: The degree to which the rates (and other revenue, if applicable) are able to cover annual operating and capital costs, anticipated future capital costs, and maintain a healthy a reserve.

- The degree to which the agency is investing in capital as compared to depreciation of capital assets during FYs 08, 09, and 10.

- Capital planning: Whether or not the agency has an up-to-date capital improvement plan with estimated timing and anticipated financing sources for each project.

- Capital reserves: the capital reserve fund balance as of June 30, 2010 and the anticipated capital funding needs based on identified infrastructure needs and estimated costs.

- Reserves: the audited unrestricted fund balance as of June 30. A reserve of three months of operating costs is considered reasonable.

Status of and opportunities for shared facilities

- The degree of existing cost minimization efforts through facility, personnel and equipment sharing.

- The potential for facility, personnel, and equipment sharing as reported by the agency.

Accountability for community service needs, including governmental structure and operational efficiencies

- Public Access and Outreach: Agency efforts to engage and educate constituents through outreach activities and availability of information on a website, in addition to compliance with open meeting and public records laws.

- Governance and Service Delivery Options: The potential to restructure the governance of agencies and/or service providers, or change the service provider with the goal of increasing service efficiency.

SETTING

As described in the following sections, the County's available water supply is subject to imposed regulatory constraints (e.g., Delta Flow Criteria, new instream flow standards, etc.) and ongoing climatic shifts leading to associated effects to California's weather patterns and resultant hydrology.

POTENTIAL EFFECTS OF CLIMATIC SHIFTS ON WATER SUPPLY

Ongoing climatic shifts will affect water supply reliability throughout Santa Clara County in the future. However, the degree, timing, and long-term effect will depend on numerous factors including natural climatic cyclicality (i.e., variability), atmosphere-ocean interactions, the robustness of the Pacific oscillation cycles, global emissions of greenhouse gases, and our Statewide adaptive capabilities of offsetting the resulting hydrologic changes, to name but a few. Since the delicate atmosphere-ocean feedback mechanisms that dictate global circulation of both the atmospheric and oceanic systems are driven by the energy balance of the earth, changes in that balance will affect our climate. While many believe this to be a political debate, climatology is a physical science governed by incontrovertible physical laws. Shifts in the energy balance, such as those caused by attenuated outgoing longwave radiation regardless of cause will affect climate to some degree. How such climatic shifts ultimately affect California and, more specifically, Santa Clara County, will depend on each of the aforementioned factors. A dominating factor in the weather of California is the semi-permanent high pressure area of the north Pacific Ocean. This pressure center typically moves northward in summer, holding storm tracks well to the north and, as a result, California receives little or no precipitation from this source during that period. In winter, however, the Pacific high typically retreats southward permitting storm centers to swing into and across California. These storms bring widespread precipitation to the State. When changes in the circulation pattern, however, permit storm centers to approach the California coast from a southwesterly direction, copious amounts of moisture are carried by the northeastward streaming air (the "Pineapple Express"). This circulation of the Pacific high, when combined with the topography of California is what influences the actual precipitation patterns we observe on the ground.

A major oscillation in the Pacific atmospheric circulation is known as the El Niño Southern Oscillation (ENSO) condition. Under an ENSO condition, sea surface temperatures in the eastern Pacific are above normal and the central and eastern Pacific experience increased convection activity. It is this convection activity that manifests itself into what we observe as a typically wet winter in California. The opposite ENSO phase is known as La Niña where, cold upwelling water in the eastern Pacific coincides with convection activity displaced further westwards towards the central Pacific. In California, we typically observe this more distant displacement of Pacific convection activity as a drier period. One need only recall the recent wet and dry weather episodes in California to

appreciate the large scale effects that the ENSO can have on our observed precipitation and air temperatures. Shifts in global circulation, due to climate change that affect ENSO, will result in associated effects to California's weather patterns and resultant hydrology.

In general, from a hydrological perspective, climatic shifts have the effect of reducing or at least changing the overall managed water asset pool, or what hydrologists refer to as system yield. Climatic perturbations will result in an added diminishment to a system yield that is already under increasing pressures from imposed regulatory constraints (e.g., Delta Flow Criteria, new instream flow standards, etc.).

For Santa Clara County, these effects will be experienced in three primary ways. First and foremost, will be a reduction of available imported water supplies. Second, will be a decrease in locally-derived water supplies, should the prevailing storm tracks experience permanent latitudinal shifts. And finally, as the volume of freshwater inflows from melting permanent icepacks coupled with thermal expansion of the oceanic water bodies will lead to a rise in mean sea levels worldwide. The first two represent the primary concerns for Santa Clara County, for the potential effects imparted by those processes will be observed far before any measurable detection of sea level rise along the north county shorelines.

California's precipitation (and, therefore, primary water source) is largely focused in upper watershed areas or source areas. This time sensitive supply will likely experience both a change in character, from snow to rain, where a higher proportion of the annual precipitation could occur as rain, and a change in overall precipitation quantity as well as timing. With a shift in primary precipitation from snow to rain, the responsiveness of the draining streams and rivers will also be affected. No longer will the time-released capability of the existing snowpack play the role that it does today. It is expected, therefore, that alterations in hydrologic composition will occur and exhibit a more pronounced shift from snow-dominated to rain or rain/snow- dominated systems. For Santa Clara County this has implications to water supply security by reducing the ability of the existing CVP/SWP terminal reservoirs to manage altered inflow under their existing operational rules.

Generally, one can surmise that, with less snowfall, watershed responses will be quicker and, in many cases, earlier. In fact, some claim that this progression has already started (or has been in place for some time) and the data seem to support this contention. The spring pulse, which represents the largest flow period for the river has been reduced in importance by approximately 10 percent over the past 100 years in many CVP mainstem tributaries. Such inferences to water managers is significant, since it is during this time period that much of the allocated quantities (e.g., irrigation deliveries, instream needs, refuges/wetlands, etc.) are assigned.

For all of the regions and systems within the State that rely on river flows, a decrease in the proportionality of the spring pulse can have significant implications as demands for allocations continue to increase. Under these diverging conditions, there will quite simply be less water to go around. This anticipated shortage includes the entire Delta watershed including the Delta itself, its upper catchments, CVP/SWP terminal reservoirs, the

mainstem rivers (Sacramento and San Joaquin) and their tributaries (e.g., Feather, American, Stanislaus, etc.), and to a lesser extent the Coastal watersheds and Southern California watersheds. Santa Clara County, which relies significantly on imported water from the source area watersheds of the Sierra Nevada and lower Cascades, stands to be notably affected by these changes. This would include the Hetch Hetchy system relied upon by SFPUC, and consequently, all of the BAWSCA partners that use SFPUC water.

Acknowledging the various trends set forth in the numerous hydrological and climatological studies is very useful in providing the baseline from which to forewarn policy makers, water managers, and resource management practitioners of the potential repercussions of climatic shifts to water resources, including governance issues such as water rights.

Some of the likely trends in the exact source area watersheds upon which Santa Clara County rely include, but are not limited to:

1) Lower summer and late-spring runoff,

2) Higher mid-winter streamflows,

3) Altered total annual precipitation,

4) Shift in precipitation form, from snow to rain,

5) Snowpack peak water content earlier in the year,

6) Lower natural snowpack storage and, therefore, a decrease in time-delay capability,

7) More responsive watersheds (quicker flow response),

8) Watershed saturation and storage will occur earlier in the season,

9) Rates of water flows will by stunted (a more flattened unit hydrograph),

10) Existing ephemeral streams may dry up earlier,

11) Intensities of individual precipitation events may increase, and

12) Likely shift towards overall drier annual conditions.

For each of these general trends, however, variations between watersheds will exist. Each watershed, some even adjacent to each other, will respond differently depending on their own inherent physiologic, geologic, pedologic, and hydrologic characteristics. Universal applicability of these trends across all watersheds is not possible—despite modelers' attempts to do so. The degree to which these trends play out across California will depend significantly on the robustness of the shifts in Pacific storm tracks, which as

discussed earlier, will depend on a complex series of atmospheric and hydroclimatological interactions.

For Santa Clara County, the potential implications to water supply and water resources management resulting from these likely trends include, but are not limited to:

13) Reduced Federal/State contract deliveries,

14) Increased frequency of shortage impositions by Federal/State water managers on contractor deliveries,

15) Shifted seasonal availability from which Sierra Nevada supplies would be available,

16) Long-term shift away from imported supplies,

17) Increased need to develop new local/regional storage—with longer carryover potential,

18) Higher variability in inter-annual localized reservoir inflows (more intense drier and wetter periods),

19) Greater urgency to develop groundwater storage and banking,

20) Increased localized storm intensities,

21) Revisiting localized flood detention/stormwater management strategies,

22) Increased recycled water development,

23) Longer-term sea level rise, and

24) Increased frequency of seasonal desiccation of localized streams, but coincident with higher peak flow events.

LOCAL AND REGIONAL PLANNING CONTEXT

Regional Water Planning

Regional water planning has become increasingly critical to increase drought preparedness, regional self-sufficiency, sustainable resource management, and to improve coordination among land use and water planners. The Legislature promoted the concept by authorizing local public agencies to form regional water management groups and adopt regional plans to address qualified programs or projects (SB 1672). The legislation requires the State Department of Water Resources (DWR) to prioritize funding for projects identified in integrated regional water management plans (IRWMPs). Integrated resource planning is a comprehensive systems approach to resource management and planning that explores the cause-and-effect relationships affecting water resources. The plans are recommended to not only analyze the watershed and espouse principles, but also to effect change by including a finance plan with prioritized objectives, an implementation plan, and plans for ongoing performance measurement to evaluate progress.

Bay Area Integrated Regional Water Management Plan

San Francisco Bay Area water, wastewater, flood protection and stormwater management agencies; cities and counties represented by ABAG; and watershed management interests represented by the California Coastal Conservancy (CCC) and non-governmental organizations signed a Letter of Mutual Understanding (LOMU) to develop an Integrated Regional Water Management Plan (IRWMP) for the San Francisco Bay Area.

Participants included the Bay Area Water Agencies Coalition (BAWAC) involving water supply and water quality, the Bay Area Clean Water Agencies (BACWA) involving wastewater and recycled water, Bay Area Flood Protection and Stormwater Management Agencies and Districts involving flood protection and stormwater management, and ABAG and the CCC involving watershed management and habitat protection and restoration.

The combined efforts of these participating organizations culminated in adoption of the Bay Area IRWMP in 2006. The overall objectives of the Plan are to:

- Foster coordination, collaboration and communication among Bay Area agencies responsible for water and habitat-related issues;
- Achieve greater efficiencies and build public support for vital projects; and
- Improve regional competitiveness for project funding.

Urban Water Management Plans

The 2010 Urban Water Management Plans (UWMPs) were required to be adopted by July 1, 2011 and submitted to DWR by August 1, 2011. Usually, UWMPs are due on December 31 of years ending in 0 and 5, but a 6-month extension has been granted for submittal of the 2010 UWMPs to provide additional time for water suppliers to address the SBX7 7 water conservation requirements noted in a following section. A new Guidebook to assist in the preparation of the 2010 Urban Water Management Plans is available from DWR. These new UWMPs update baseline water supply, infrastructure, conservation, and water demand/needs information across Santa Clara County.

Adoption dates and references to individual city and special district UWMPs are contained within each agency chapter.

Santa Clara Valley Habitat Conservation Plan and Natural Community Conservation Plan

The cities of Gilroy, Morgan Hill and San Jose, the County of Santa Clara, the Santa Clara Valley Transportation Authority and the Santa Clara Valley Water District have initiated a collaborative process to prepare and implement a Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) for the Santa Clara Valley. These Local Partners, in association with the U.S. Fish and Wildlife Service, California Department of Fish and Game, stakeholder groups and the general public will develop a long-range plan to protect and enhance ecological diversity and function within a large section of Santa Clara County, while allowing for currently planned development and growth. The Plan will provide a framework for the protection of natural resources while streamlining and improving the environmental permitting process for both private and public development including activities such as road, water, and other infrastructure construction and maintenance work. The plan will create a number of new habitat reserves that will be larger in scale and more ecologically valuable than the fragmented, piecemeal habitats currently yielded by mitigating projects on an individual basis.

Objectives of the Santa Clara Valley HCP/NCCP include:

- Conserving natural biological communities at the ecosystem scale by agreeing as a region on essential habitat for the protection of certain endangered and threatened species, and proactively preserving that habitat to both mitigate for the environmental impacts of development and enhance and restore the natural communities that support endangered plants and animals.

- Accommodating land uses compatible with local General Plans by streamlining the permitting process and allowing public and private development and operations/maintenance projects requiring permits from state and federal agencies to proceed without the costly and time-consuming delays associated with negotiating endangered species issues on a project-by-project basis.

- Facilitating the provision of water supply and flood protection by preserving and enhancing watersheds and by meeting state and federal habitat requirements for contracts to import water from outside the County.

- Providing a process with extensive and numerous opportunities for public involvement throughout development and implementation of the HCP/NCCP.

The Applicants are requesting a 50-year Section 10(a)(1)(b) incidental take permit because 21 proposed Covered Species, including 11 animal species and 10 plant species, could be affected by development, operations and maintenance, and reserve management activities within the proposed 509,883-acre permit area, located in the Santa Clara Valley. Public comment closed on April 18, 2011.

REGULATION OF WATER PROVIDER AGENCIES

Water providers are subject to numerous federal and state requirements covering water rights, long-term water planning, protecting water systems from terrorism vulnerabilities, and ensuring that water employees are adequately trained to perform their functions, among others. This section provides an overview of the more significant and recent requirements.

Federal, state and local agencies play regulatory roles in Santa Clara water.

Figure 2-1: Water Regulatory Agencies

Agency	Regulatory Role
U.S. Bureau of Reclamation	Central Valley Project
U.S. Environmental Protection Agency	Drinking water quality standards, source water protection, contaminated site remediation
State Water Resources Control Board	Water rights, water quality standards, water protection plans, discharger enforcement
CA Department of Water Resources	State Water Project, water planning, dam safety, flood control
CA Department of Public Health	Water provider operational permits, drinking water quality standards, water employee certification, water security
CA Department of Fish and Game	Stream flow requirements, streambed alterations, species conservation
CA Department of Toxic Substances Controls	Oversight of hazardous substances, remediation of contaminated sites
Santa Clara County Department of Environmental Health	Drinking water quality standards
Santa Clara Valley Water District	Monitoring and mangement of groundwater use

The U.S. Bureau of Reclamation (USBR) operates the Central Valley Project, an extensive network of dams, canals and related facilities. USBR serves as watermaster overseeing contentious water rights issues, and runs drought protection programs.

The U.S. Environmental Protection Agency (EPA) is responsible for enforcing drinking water quality standards, although much of this authority is delegated to the states. EPA conducts groundwater protection and contaminated site remediation programs.

The State Water Resources Control Board (SWRCB) allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine Regional Water Quality Control Boards located in the major watersheds of the state. SWRCB is responsible for granting water rights permits and approving certain transfers of water rights, to investigate violations and reconsider or amend water rights. The nine Regional Water Quality Control Boards (RWQCBs) develop and enforce water quality objectives and implementation plans.

DWR is responsible for the planning, construction and operation of State Water Project facilities and sets conditions on use of SWP facilities. In addition, DWR is responsible for

statewide water planning, evaluating urban water management plans, overseeing dam safety and flood control, and transfer of certain water rights permits (e.g., pre-1914).

The California Department of Public Health (DPH) is responsible for the enforcement of the federal and California Safe Drinking Water Acts and the operational permitting and regulatory oversight of public water systems of more than 15 connections. DPH also conducts water source assessments, oversees water recycling projects, permits water treatment devices, certifies water system employees, and promotes water system security.

The California Department of Toxic Substances Control (DTSC) is responsible for oversight of hazardous substances and remediation of contaminated sites, including water sources. The California Department of Fish and Game (DFG) has jurisdiction over conservation and protection of fish, wildlife, plants and habitat. DFG determines stream flow requirements in certain streams, acts as permitting agency for streambed alterations, presents evidence at water rights hearings on the needs of fish and wildlife, and enforces the California Endangered Species Act.

The County of Santa Clara's Department of Environmental Health (DEH) is responsible for monitoring the State Small Water Systems—systems of less than 15 connections that serve less than 25 individuals—within the County for water quality.

Water Supply Regulations

Water rights are subject to various and complex legal requirements, many of which have been resolved in the courts. For surface water sources within California, the state monitors water rights and allocations. The groundwater basins in Santa Clara County are not adjudicated, SCVWD does monitor and manage the groundwater basins in the County, as well as the use and operation of wells in the County.

Since 2001, land use agencies in California have been required to obtain written verification of sufficient water supply before approving plans for new development. Any project subject to the California Environmental Quality Act (CEQA) supplied with water from a public water system must be provided a water supply assessment, except as specified in the law. The plan must include information relating to the quality of existing sources of water available to an urban water supplier over given periods and include the manner in which water quality affects water management strategies and supply reliability.[9]

In recent years, state law has increased infrastructure and reporting requirements for the State Water Project (SWP). DWR began preparing a SWP water delivery reliability report in response to the 2001 legislation requiring water supply assessments for new development. Evaluation of the impacts of earthquakes, natural disasters and climate change on the Sacramento-San Joaquin Delta on water supplies must be conducted by DWR

[9] California DWR, 2003, p. 68.

and the Department of Fish and Game (DFG), including comparative rating of policy options. Recent law imposed new requirements on DWR to expand the content of its statewide water plan.

The Natural Resources Defense Council released a 2001 study raising concerns over groundwater contamination in California . The report described the regulatory framework as fragmented and an "ineffective patchwork of monitoring and assessment"[10] and described planning and data as inadequate. Legislation followed shortly thereafter to establish comprehensive groundwater monitoring and increase the availability of information about groundwater quality to the public. The legislation requires the State Water Resources Control Board (SWRCB) to integrate existing monitoring programs and design new program elements, as necessary, to establish a comprehensive statewide groundwater quality monitoring program.

Urban water suppliers are required by the Urban Water Management Planning (UWMP) Act to prepare a water shortage contingency plan every five years. The plan describes and evaluates sources of water supply, efficient uses of water, demand management measures, implementation strategy and schedule, and other relevant information and programs. Those reliant on groundwater must provide evidence to the State of their water rights, and if the particular groundwater basin is overdrafted (i.e., the water used exceeds the water replenished over the long-term), must describe efforts to correct the problem.

Enhanced water conservation is the policy goal of other recent state law. DWR was required by legislation to report on opportunities and constraints for increasing recycled water use in 2003. Since 2005, urban water suppliers have been required to install water meters on municipal and industrial services connections, and must begin by 2010 to charge customers based on volume of water.

The federal government recently required water providers to prepare terrorism vulnerability assessments and implementation of needed corrections. Water treatment personnel must meet State certification requirements.

Source Quality

To prevent further deterioration of impaired water bodies, the EPA and state and regional water quality boards have established Total Maximum Daily Load standards (TMDLs) for many impaired water bodies. TMDLs set numerical targets for the amount of pollutants allowed in a water body and methods for meeting those targets. TMDLs are established for high-priority, impaired water bodies. Numerous TMDLs have been established since 2003 in Santa Clara County to mitigate the effects of trash, bacteria, nutrients, and other pollutants.

[10] Helperin, Beckman and Inwood, 2001, pp. 72-75.

Two primary articles of legislation provide the legal basis and authority for water quality standards in California. The Federal Clean Water Act (CWA) specifically and directly addresses the matter of water pollution control. The primary California legislation addressing the control of water quality is the "Porter-Cologne Water Quality Control Act."

The CWA requires that states adopt water quality standards, including standards for toxic substances. The states are also required to have an ongoing planning process, to conduct public hearings once every three years to review water quality standards and revise them if necessary. After about 20 years of water pollution regulation from point sources, the act was amended in 1990 to require management of stormwater and urban runoff water quality.

The Porter-Cologne Water Quality Control Act established a comprehensive program for the protection of water quality and the beneficial uses of water. It applies to surface waters, wetlands and groundwater, and to both point and nonpoint sources of pollution or waste discharge.[11] In addition, Title 23 of the California Code of Regulations (CCR) contains administrative and regulatory elements of water quality and quantity management in California. Other pertinent state law affecting water quality in California include regulations set forth by the Health and Safety Code, the Fish and Game Code, the Public Resources Code, and the Revenue and Taxation Code. The California Environmental Quality Act (CEQA) requires all state agencies, boards and commissions to include an environmental impact report (EIR) in any report on any project having a significant effect on the environment.

CWA delegates the responsibility to administer the act to the EPA. In turn, the EPA has delegated responsibility for portions of CWA to state and regional boards, including water quality planning and control programs such as the National Pollutant Discharge Elimination System (NPDES).

CWA directs states to review water quality standards every three years and, as appropriate, modify and adopt new standards. CWA also regulates wastewater operation through state boards. CWA authorizes the EPA to administer requirements and primarily deal with the quality of effluent which may be discharged from treatment facilities, the recycling of residual solids generated in the process, the reuse of reclaimed water for irrigation and industrial uses to conserve potable water, and the nature of waste material (particularly industrial) discharged into the collection system.

The Porter-Cologne Water Quality Control Act directs the California state and regional boards to review and update Water Quality Control Plans, or Basin Plans, periodically. The act also authorizes state boards to adopt water quality control plans. In the event of inconsistencies among state and regional board plans, the more stringent provisions apply.

[11] California Water Code §1300.

To reduce pollution in watersheds, CWA directed the states to establish TMDLs of pollutants. The San Francisco Bay RWQCB has jurisdiction in Santa Clara County, and thus the authority to establish TMDLs in the County. The TMDLs require local agencies to monitor pollutant levels and develop remedial actions that will prevent contaminants from exceeding maximum allowable levels. TMDLs present numerical targets for water quality pollutant levels in impaired water bodies.

Water bodies in Santa Clara County that are significantly affected by pollutants and classified as impaired include Alamitos Creek, Calero Reservoir, Coyote Creek, and Guadalupe Creek, Reservoir, River. The priority level of the impaired water body is shown in Figure 2-2 as determined by the San Francisco Bay RWQCB. Primary pollutants that affect the County's water bodies are mercury and diazinon.

Figure 2-2: Santa Clara County Impaired Water Bodies

Water Body	Pollutant	Priority
Alamitos Creek	Mercury	Medium
Calero Reservoir	Mercury	Medium
Coyote Creek	Diazinon	High
Guadalupe Creek	Mercury	Medium
Guadalupe Reservoir	Mercury	Medium
Guadalupe River	Diazinon/Mercury	High/Medium

Source: 2002 CWA Section 303(d) List of Water Qulity Limited Segments

Potable Water Regulations

Potable water systems in Santa Clara County are regulated by a number of agencies, depending on the type of entity (public or investor-owned) and size of system (number of connections). The regulatory oversight includes both operational for service areas, system capacity and rates, and health for water quality.

Various operations and activities of these water systems are regulated by several agencies depending on size (number of connections and population served), water source, and ownership. The primary regulators for health purposes are the County Department of Environmental Health (DEH) for systems consisting of five to 14 connections and the California Department of Public Health (DPH) for systems of greater than 15 connections. Systems of four or less connections are not regulated by a public health agency. Water systems that are investor owned, meaning that the owners, whether it be an individual or group, are not customers of the water system, are regulated by the California Public Utilities Commission (CPUC). CPUC oversees the service areas and rates of these utilities. A system may be regulated by both CPUC and a public health agency; the two are not mutually exclusive. A breakdown of the regulating agency by size of the water system is shown in Figure 2-3. Regulation of the various sized systems is described in more detail below.

Figure 2-3: Regulating Agencies Based on Size of System

System	County	State	PUC	SCVWD
Individual	✓			✓
Shared (2-4 connections)	✓		✓	✓
Small (5-14 connections)	✓		✓	✓
Public (15 or more connections)	✓	✓	✓	✓

Individual Private Water System – 1 connection

A private water system which receives water from a well and serves only one owner is not subject to the regulatory authority of the State. Local regulations are primarily related to new well construction or abandonment. For any new system, a clearance must be obtained from the County through the Department of Environmental Health prior to construction. As a condition of approval, the applicant must demonstrate acceptable water quality through lab testing and analysis, the reliability of water supply, and adequate storage. Source capacity must be equal to or exceed a sustained 2.5 gallons per minute during a twenty-four hour period of continuous pumping, or until 3,600 gallons have been achieved during a time period of twenty-four hours or less of continuous pumping. In addition, a sustained 2.5 gallons-per-minute yield must be demonstrated during the dry season of August through October. Minimum required storage capacity is 1,000 gallons.

In addition, the system is subject to the SCVWD's Well Ordinance 90-1 and a permit must be obtained prior to construction. Any change in the well's status, including abandonment, requires a permit to change the classification. System maintenance and water quality monitoring is the responsibility of the system's owner.

Shared Water System – 2 to 4 connections

The regulatory authority for shared systems with two to four connections is similar to that of individual systems, with a few exceptions. A clearance must be obtained from the County prior to construction. As with individual systems, the same requirements apply for water quality, adequate supply and storage with the minimum capacity applicable to each connection.

If the system is operated as a corporation, association or mutual water company and only providing water to its stockholders and members at cost, or to the State or any state agency or department, or any public district (city, county, school district, etc.), or federal agency for use in fire protection or park operations, then it is not subject to the regulation of the California Public Utilities Commission. In addition, mutual water companies may provide water in an emergency to property located within or adjacent to the service area of the MWC without changing the MWC's status.

If the system is providing water to anyone other than the above, the water company will be subject to the regulatory oversight of the Public Utilities Commission. The system would have to be approved by the CPUC for its operational components, including service area, system capacity and rates.

If the system's water source includes groundwater, it is subject to the Santa Clara Valley Water District's Well Ordinance 90-1 as described above. Water quality is monitored by the individual owners; neither the County nor the California Department of Public Health inspects these smaller systems.

Small Water System – 5 to 14 connections (State Small Water Systems)

Water systems with five to fourteen connections are known as "State Small Water Systems." A permit from the County's Department of Environmental Health is required for construction and operation. Any change in ownership requires submission of a new application. No permit will be issued if water service for each or all connections is available from an existing public, private or mutual water system. As a condition of approval, the applicant must demonstrate that there is adequate system capacity to supply a minimum of three gallons per minute for at least twenty-four hours for each connection.

As with the smaller systems described above, ownership determines operational oversight. If it is operated as a corporation, association or mutual water company and only providing water to its owners or stockholders, it does not fall under the jurisdiction of the CPUC. If it is providing water to anyone else, it will be subject to the jurisdiction of the CPUC and General Order Nos. 103 and 96-A.

If the system's water supply includes groundwater, it is subject to the Santa Clara Valley Water District's Well Ordinance 90-1 as described above, requiring the appropriate permitting and reporting for construction, inactivity and abandonment.

The County of Santa Clara's Department of Environmental Health is responsible for monitoring the State Small Water Systems within the County for water quality. System operators are required to submit testing results at least once every three months. In addition, the State Department of Public Health may monitor systems with less than 15 service connections that meet the population threshold of 25 individuals served daily at least 60 days out of the year.

Public Water System – 15 or more connections

Water systems with 15 or more connections that serve at least 25 individuals at least 60 days out of the year are considered public water systems. These typically include county and municipal water districts, private water companies and larger mutual water companies. The public water agencies are subject to the numerous code sections in both the State's Public Utilities Code and Health and Safety Code. Private water companies are subject to the regulatory oversight of the CPUC as described above. MWCs do not fall under the Commission's purview provided they meet the service limitations described above.

If the system's water source includes groundwater, it will be subject to the Santa Clara Valley Water District's Well Ordinance 90-1 as described above, requiring the appropriate permitting and reporting.

DPH monitors the water quality of the systems with regular inspections, testing, and reporting.

Applicable Regulations

Some of the regulations applicable to water systems within the County include the following:

- California Health and Safety Code
- California Public Utilities Code
- California Public Utilities Commission: The California Public Utilities Commission (CPUC) governs the provision of water by private entities, including service area, system design, levels of service and rates. The Commission regulates investor-owned water systems, but does not have jurisdiction over municipal utilities or districts. Mutual water companies or companies owned by homeowner associations are exempt if they serve only their stockholders or members. The following General Orders apply:
  - General Order No. 103: Rules Governing Water Service Including Minimum Standards for Design and Construction, and
  - General Order No. 96-A, Rules Governing the Filing and Posting of Schedules of Rates, Rules, and Contracts.
- County of Santa Clara Ordinance Code
  - Division B7, Section 12 addresses water supply for fire flow and authorizes the County Fire Marshall to determine adequacy based on location and building types
  - Division B11 - Environmental Health includes the County regulations for construction of individual or small private water systems and State Small Water Systems.
- Santa Clara Valley Water District Well Ordinance 90-1 regulates the classification, construction and destruction of wells within Santa Clara County. All wells must be classified as active, inactive or abandoned/unused. Active wells within the Districts' groundwater charge zones are subject to the District's groundwater production requirements and require the filing of groundwater production statements. Any change in well status requires a permit issued by the District, including new well construction and abandonment.

Water Quality

There are a number of threats to drinking water: Improperly disposed chemicals, animal wastes, pesticides, human wastes, wastes injected deep underground, and naturally occurring substances can all contaminate drinking water. Likewise, drinking water that is not properly treated or disinfected, or which travels through an improperly maintained distribution system, may also pose a health risk.

The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. The law requires many actions to protect drinking water and its sources—rivers, lakes, reservoirs, springs and groundwater wells—and applies to public water systems serving 25 or more people. It authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants and to oversee the states, localities and water suppliers that implement the standards. EPA drinking water standards are developed as a Maximum Contaminant Level (MCL) for each chemical or microbe. The MCL is the concentration that is not anticipated to produce adverse health effects after a lifetime of exposure, based upon toxicity data and risk assessment principles. EPA's goal in setting MCLs is to assure that even small violations for a period of time do not pose significant risk to the public's health over the long run. National Primary Drinking Water Regulations (NPDWRs or primary standards) are legally enforceable standards that limit the levels of contaminants in drinking water supplied by public water systems. Secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards. Federal and State regulations on maximum contaminant levels in drinking water have evolved and expanded since 1977.

The California DPH and Santa Clara DEH implement the SDWA in Santa Clara County. These agencies require public water systems to perform routine monitoring for regulated contaminants that may be present in their drinking water supply. To meet water quality standards and comply with regulations, a water system with a contaminant exceeding an MCL must notify the public and remove the source from service or initiate a process and schedule to install treatment for removing the contaminant. Health violations occur when the contaminant amount exceeds the safety standard (MCL) or when water is not treated properly. In California, compliance is usually determined at the wellhead or the surface water intake. Monitoring violations involve failure to conduct or to report in a timely fashion the results of required monitoring.

Each of the domestic water providers is inspected by the respective regulatory agency periodically. All of the systems under LAFCO jurisdiction in Santa Clara County are inspected by DPH. Each of the providers was last inspected in 2010.

KEY LAWS AFFECTING WATER SUPPLY ANALYSIS AND PLANNING

New and pending changes to various regulatory provisions are continually challenging water resource and related land use planning agencies across California. In the water resources arena, changes, updates and completely new regulatory requirements run the full gamut of issues; including those affecting water supply, flood control, water quality, groundwater, environmental restoration (instream flow maintenance), water conservation, recycled water, etc. Since 2005, when the last Santa Clara Countywide Water Service Review was completed, several new and significant changes in water-related regulations in California have been passed. In several cases, these have imparted significant influence on how traditional water planning activities are being implemented.

Such regulatory changes or pending changes will affect the water providers in Santa Clara County to varying degrees depending on the relevancy of the change to their specific operational circumstance (e.g., water supplies, infrastructure, treatment, etc.). A presentation of the more prescient changes are identified and discussed below. The potential implications to Santa Clara County's water providers are noted and discussed.

State Comprehensive Package of Water Legislation 2009

On November 12, 2009, Governor Arnold Schwarzenegger signed into law a sweeping package of water legislation seeking to improve water supply reliability throughout California. Each of the bills, as they are commonly recognized, are summarized below.

SBX7 1 (Simitian) Delta Governance: Delta Stewardship Council, Delta Conservancy, Delta Protection Commission

SB 1 enacts the Sacramento-San Joaquin Delta Reform Act (Act) (Water Code § 85000 et seq.), which declares that "existing Delta policies are not sustainable" and "resolving the crisis requires a fundamental reorganization of the State's management of Delta watershed resources." The Act established the Bay Delta Conservation Plan (BDCP) and all Delta-related actions (e.g., Delta Flow Criteria). It is intended that, ultimately, the Delta Plan will provide the roadmap necessary to address long-standing issues regarding the Delta, issues that have, and continue to affect exporters such as the Santa Clara Valley Water District (SCVWD) through constrained Delta pumping.

SBX7 2 (Cogdill) Water Bonds

This is the major infrastructure funding for new California water projects under the Safe, Clean and Reliable Drinking Water Supply Act of 2010. While rejected by the voters last November, it will appear again on the 2012 ballot. If approved, it would authorize the issuance of bonds in the amount of $11.14 billion pursuant to the State General Obligation Bond Law to finance a safe drinking water and water supply reliability program. The total

bond amount includes $455 million for drought relief, $1.4 billion for regional water supply projects, $2.25 billion for Delta sustainability projects (including $1.5 billion for the BDCP), $3 billion for water storage, $1.785 billion for watershed conservation, $1 billion for groundwater cleanup and protection, and $1.25 billion for water recycling and water conservation. New water storage, given the State's current ability to effectively rely on existing storage capacity is a priority within the bond. New storage Statewide will help federal and State water contractors better meet inter-annual delivery targets through increased allocations. This would have direct bearing on Santa Clara County's future water supply sustainability. The County, through its various water purveyors (e.g., SCVWD) could apply for, and benefit from individual programs (e.g., new storage projects including regional water supply projects, water recycling, water conservation) or, from the broader BDCP that will ultimately help provide sustainability of Delta exports to which the County depends.

SBX7 6 (Steinberg) Groundwater Elevation Monitoring

This introduces new groundwater elevation monitoring for water providers. Under SB 6, systematic monitoring of groundwater levels in all basins and sub-basins of the state are to be collected and made readily available to the public. Monitoring would document seasonal and long-term trends in groundwater elevations. The legislation states that the new monitoring requirements will apply only to groundwater "basins" or "sub-basins," as defined by the Department of Water Resources in Bulletin 118. Reports describing the status of the State's groundwater basins and sub-basins would be made to the Governor and Legislature. Water purveyors themselves are required to implement these programs.

SBX7 7 (Steinberg) Water Conservation

One of the most recognized requirements, under SB 7, urban water suppliers have until 2020 to cut per capita urban water use by 20 percent statewide, and agricultural water suppliers must now adopt water management plans and carry out certain efficient water management practices. SB 7 requires the State to reduce urban per capita water use by 20 percent no later than December 31, 2020, and by at least 10 percent no later than December 31, 2015. The law requires urban retail water suppliers, which include all public or private entities that directly provide potable municipal water to more than 3,000 end users or that serve more than 3,000 acre feet of potable water each year, to develop urban water use targets to help achieve the water use reduction goals. While the law does not require individual urban retail water suppliers to reduce per capita water usage by more than 20 percent, each supplier will have to reduce per capita daily water use by at least 5 percent, unless water use already is 100 gallons per capita per day or less. Urban retail water suppliers will have to meet their own urban water use targets, which they will establish after noticed public hearings. These water conservation targets will affect all of the major water purveyors in Santa Clara County.

SBX7 8 (Steinberg) Water Rights Enforcement

Under SB 8, the State Water Resources Control Board (SWRCB) will expand its water rights enforcement staff and levy substantial financial penalties against water users who fail to accurately report their diversion and use of surface water. SB 8 amends a long-neglected provision of the Water Code that requires riparian water users and holders of pre-1914 appropriative rights to file Statements of Water Diversion and Use with the SWRCB every three years (Water Code § 5100 et seq.). Purveyors in Santa Clara County who hold such rights (e.g., SCVWD) would be required to meet these new reporting requirements.

Bay-Delta Actions including the BDCP

This is the new HCP/NCCP (Habitat Conservation Plan and Natural Communities Conservation Plan), which will ultimately set the "environmental" windows for export diversions through the Delta that would go to places like Santa Clara County. The BDCP focuses on the recovery of ESA-listed species and their habitat in the Bay Delta and will include major proposals for changing how water is diverted and conveyed through the Bay Delta to both the State and federal water export facilities in the south Delta. The final plan will include various projects including a Non-Physical Barrier; Delta Risk Management Strategy; Subsidence Reversal/Carbon Sequestration Studies; among others. As noted previously, these actions, by virtue of their influence on Delta pumping, will ultimately affect the sustainability of water deliveries to Santa Clara County via the Delta pumps.

Continuing Jurisdiction of U.S. District Court Judge Oliver Wanger - U.S. Bureau of Reclamation Operations and Criteria Plan Biological Opinions

This operational guideline (Operations and Criteria Plan), used by the U.S. Bureau of Reclamation, has been under challenge since 2007 through various biological opinions that have been prepared on the plan. Numerous rulings from Judge Wanger have been made on these biological opinions with several revisions completed, and currently, a new National Environmental Policy Act process is underway to assess the cumulative environmental and socio-economic effects of the alternative actions identified in the opinions. The court's final rulings will dictate how the CVP (and SWP) are operated with respect to listed federal fish species. This will have significant effect on how the Delta facilities are operated—a vital element for Santa Clara's imported federal and State water supplies.

Delta Flow Criteria

On August 3, 2010, the State Water Resources Control Board (Board) adopted Resolution 2010-0039 approving a report determining new flow criteria for the Sacramento-San Joaquin Delta ecosystem necessary to protect public trust resources

pursuant to the Board's public trust obligations in compliance with Water Code section 85086. In recognition of the fact that recent Delta flows are insufficient to support native Delta fish for today's habitats, flow criteria recommendations included maintaining:

25) 75 percent of unimpaired Delta outflow from January through June;

26) 75 percent of unimpaired Sacramento River inflow from November through June; and

27) 60 percent of unimpaired San Joaquin River inflow from February through June.

Such flow criteria, when ratified into new standards for the Delta, will significantly affect overall system operations and the ability of exporters, such as SCVWD, to increase or even maintain deliveries through the Delta pumps.

Federal Water Contract Shortages

This new U.S. Department of Interior policy will, under certain dry-years, cut CVP municipal and industrial water service contractors to 50 percent of historical deliveries based on a prorated municipal and industrial versus agricultural contract step-down from 100 percent and in consideration of public health and Welfare issues. An EIS is under preparation on this new policy and will be completed in 2012. This new policy will significantly affect the safe yield of those holding CVP M&I water service contracts, such as SCVWD.

SWRCB Instream Flow Studies

As part of the SWRCB's recognition that the State may be over allocated in terms of water rights, they are initiating instream flow studies on 127 priority streams across the State; with the ultimate goal of establishing instream flow standards. Two of those streams are in Santa Clara County. Equally important will be the new flow standards in the CVP/SWP mainstream tributaries which, if attenuated, will affect overall U.S. Bureau of Reclamation (Operations and Criteria Plan) flexibility in meeting Delta water quality standards, and thereby, Delta export pumping.

Chromium-6 - California and Federal

At the end of 2010, California's Office of Environmental Health Hazard Assessment published a revised draft technical support document for a proposed public health goal (PHG) for chromium 6 in drinking water. The new draft PHG is 0.02 parts per billion (20 parts per trillion), reduced from the 0.06 ppb identified in the first draft released in 2009. Chromium-6 in drinking water has been raised as an issue in Santa Clara County.

The U.S. EPA released a guidance document in January 2011 recommending that public water systems conduct enhanced monitoring and sampling for chromium 6.

DWR Drought Protection Programs

Since the completion of the last service review, DWR has developed numerous programs and initiatives aimed at drought protection. A few of the more notable actions include: Drought preparedness workshops; Five-Year Drought Contingency Plan (DCP); Drought Monitoring; Coordination with world-wide drought efforts; Urban Water Management Plans (UWMPs); and the 2009 Drought Water Bank. In general terms, these will assist water purveyors in Santa Clara County in coping with future drought or dry-year conditions.

From a water conservation perspective, several initiatives were launched by DWR. These included: Statewide Save Our Water Program; Water Savings at State Facilities; New Dual Plumbing Standards; and a Model Landscape Ordinance, to name but a few.

Water Supply Assessments and Water Supply Verifications under SB 610 and 221

Senate Bills 610 (Chapter 643, Statutes of 2001) and Senate Bill 221 (Chapter 642, Statutes of 2001) amended State law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 are companion measures, which seek to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. Both statutes also require this detailed information be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. Finally, both measures recognize local agencies will have responsibility for determining the availability of water for projects and the approval of projects.

In 2005, Water Supply Assessments (WSA) and Water Supply Verifications (WSV) under SB 610 and 221, respectively, had only begun to appear. Today, they are a common feature in the integration between water resources and land development. A complete Urban Water Management Plan can be a foundational document and source of information for SB 610 Water Supply Assessments and SB 221 Written Verifications of Water Supply.

An SB 610 Water Supply Assessment is required if the project is subject to CEQA and the project meets one of the criteria defined under Water Code Section 10912(a), which defines a qualifying "project" as one that meets any of the following criteria:

- A proposed residential development of more than 500 dwelling units;

- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel having more than 500 rooms;
- A proposed industrial, manufacturing or processing plant, or industrial part, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area; (The exception is a proposed photovoltaic or wind energy generation facility approved on or after the effective date of the amendments made to this section, if the facility would demand no more than 75 acre-feet of water annually).
- A mixed-use project that includes one or more of these elements described here; or
- A project creating the equivalent demand of 500 residential units.

Additionally, Water Code 10912(b) states that if a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

The SB 610 process requires the interaction and cooperation of the water supplier and the CEQA lead agency. When a CEQA lead agency determines that a project meets one of the size or demand thresholds triggering SB 610, it requests that the water supplier prepare the WSA. The water supplier must assemble specified information relating to available water supplies and approve the WSA within 90 days, which it then passes on to the CEQA lead agency. SB 610 does not require public participation in the preparation of a WSA. The lead agency must include the WSA in the CEQA document and may also include an evaluation of the WSA. Finally, the CEQA lead agency—not the water supplier—must independently determine, "based on the entire record," whether adequate water supplies exist to serve the project. That is, regardless of the conclusions in the WSA, the CEQA lead agency makes the final decision regarding whether an adequate water supply is available to serve the project.

Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. SB 221 is intended as a 'fail safe' mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs when it should—before construction begins. Verification must conclude whether the water purveyor is able or unable to provide a sufficient water

supply based upon an analysis as to whether water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection will meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agriculture and industrial uses. All of the following must be considered: 1) historical record for at least 20 years, 2) urban water shortage contingency analysis, 3) supply reduction for "specific water use sector" per water supplier's resolution, ordinance, or contract, and 4) amount of water that can be reasonably relied upon from specified supply projects, subject to the determinations outlined in Gov. § 66473.7.