

Section 4

Strategic Issues and Strategy Statements

4.1 METHODOLOGY

Section 2 described the planning process, and explained how the Stakeholder Group developed strategic issues and strategy statements. The Stakeholder Group used the information contained in the SWOTs to identify common themes and concerns. These themes provided the basis for the strategic issues.

4.2 STRATEGIC ISSUES

This section discusses the ten strategic issues identified by the Stakeholder Group. Table 4-1 shows the list of strategic issues and the abbreviations for each issue that are used in the rest of the document.

Table 4-1
Strategic Issues and Abbreviations

Strategic Issue	Strategic Issue Abbreviation
1. How can supply best match demand through the long term?	Supply and Demand
2. What measures are necessary to manage the County's groundwater resources?	Groundwater
3. What measures should be taken to encourage sending water of the appropriate quality to the appropriate end user?	Quality to Users
4. What measures can be taken to improve runoff quality?	Runoff Water Quality
5. How can flood management services best be managed?	Flood Management
6. What should participation in multi-county flood control entail?	Multi-County Flood Control
7. How can environmental resources best be managed?	Environment
8. How can state and federal funding opportunities best be leveraged?	Funding
9. What measures would best address safety and security issues?	Safety and Security
10. How should the region prepare for climate change?	Climate Change

1. How can supply best match demand through the long term?

As a water wholesaler, SCWA strives to provide water to member agencies to meet demands. Retailers obtain supplies from SCWA and other local sources to meet local demands. Estimates show that the Solano agencies can provide adequate (or even surplus) water supplies in some years, but supplies may not be adequate to meet future needs in all years. The major supply concerns are related to limitations on timing of supplies, and number and location of facilities.

- 1. Timing of supplies.** Most supplies are reduced during dry years, and all surface water supplies are vulnerable in extreme droughts. During dry summers, some supplies that are contingent on Delta summer conditions are not available because SWRCB declares Term 91 is in effect. Furthermore, some supplies that local agencies depend on are not permanent supplies. Temporary arrangements may expire in the long-term, leaving agencies with inadequate supplies.
- 2. Limitations on facilities.** SCWA's surface water storage is limited to Lake Berryessa, which can only store water from the Solano Project. Without additional storage, SCWA cannot store supplies from wet years until they are needed in dry years. Conveyance facilities also have limitations; older facilities cannot convey the design capacity and have increased conveyance losses.

- 3. Treatment facility limitations.** Some areas cannot use all available supplies because of treatment limitations.

Reduced supplies in drought years could have widespread and severe consequences. Some demands would not be met, which could have consequences ranging from parched landscaping to public health risks (lack of fire protection) or reduced economic productivity.

2. What measures are necessary to manage the County's groundwater resources?

Agencies within the region used groundwater as the primary supply prior to development of the Solano Project. In more recent years, groundwater use has decreased relative to historic patterns. Despite this decrease in use, some areas still experience localized groundwater quantity and quality problems. Many areas have little or no groundwater monitoring; therefore, groundwater problems or opportunities in these areas are unknown. Major concerns include:

- 1. Knowledge of conditions.** Groundwater conditions in some areas are well understood; however, other areas have little or no available information. Conditions outside of the water district boundaries and outside of the Putah Creek/Tehama Formation are largely unknown.
- 2. Quality concerns.** Water quality of the basal unit of the Tehama Formation is good in the Vacaville area; however, no adequate countywide characterization of groundwater and surface water quality exists. High nitrate levels potentially limit use for potable purposes in Fairfield and Suisun City, and saline intrusion in shallow wells potentially limit use in Fairfield and Benicia.
- 3. Quantity concerns.** Reports do not include any indications of overdraft in the Solano Subbasin; however, extended drought could affect groundwater levels in the Putah Fan/Tehama Formation. Shallow groundwater pumpers are also subject to drought impacts.

If knowledge regarding groundwater is not improved, County residents may not learn of potential quality or quantity problems. Many residents outside of district boundaries depend on groundwater wells for their water supply; quality or quantity problems could cause a decrease in available supplies for domestic and agricultural uses. Local agencies would not be able to initiate conjunctive management of groundwater and surface water without further groundwater understanding and management.

3. What measures should be taken to encourage sending water of the appropriate quality to the appropriate end user?

The region relies on multiple water sources, including Solano Project water and diversions from the SWP, which have varying levels of water quality. The region does not fully utilize recycled water. Future drinking water quality standards may become more stringent. Major water quality concerns include applicable uses and more stringent water quality standards.

- 1. Appropriate level of water quality.** Surface water quality of SCWA's supplies is acceptable for agricultural uses in the region; however, some supplies require a high level of treatment before municipal use.
- 2. Recycled water.** The constituents in recycled water produced in the region limit its applicability for offsetting potable supplies, and render it unsuitable for some uses.

- 3. Regulatory changes.** More stringent drinking water quality standards may require treatment facilities to upgrade their treatment capabilities. Treatment facilities' current processes may not be able to meet standards for the end users.

As a consequence, some end users may not receive the quality of water that they need or they may have to invest in more costly treatment processes to meet their needs.

4. What measures can be taken to improve runoff quality?

The poor quality of runoff water compromises the quality of surface water and groundwater supplies. Poor runoff quality because of land use practices affects NBA water quality and groundwater quality.

- 1. NBA water quality.** Constituents in runoff from the Barker Slough watershed contribute heavily to the degraded quality of NBA water. Soils and decaying plant matter are sources of organic carbon, while livestock grazing and erosion in the local watershed contribute to turbidity. Traditional BMPs, such as vegetative buffers and settling ponds, would not be effective in the Barker Slough watershed because of the unique soil conditions in the watershed.
- 2. Future and unanticipated changes in agricultural practices and processing types** may affect the quality of agricultural runoff. Currently, nitrates from agricultural practices affect runoff quality and eventually affect groundwater quality.

If the Solano agencies do not address runoff issues, the impaired condition of the region's water supplies will continue or worsen. Treatment of potable supplies will become more costly.

5. How can flood management services best be managed?

The cities in the region are responsible for their own storm drainage/flood control facilities; however, SCWA takes the lead in planning for flood control in unincorporated areas. Important facets of managing flood control services are: 1) providing adequate flood control facilities, operations and maintenance (O&M), and flood hazard awareness in rural areas; and 2) planning for the long-term viability of existing flood control projects and protecting them from encroachment and liability concerns.

- 1. Flood control infrastructure** in rural areas of the region is not adequate, and a need exists to improve flood hazard information and residents' awareness thereof. Because flood information is not adequate, land use planning in these areas is difficult. The limited population and flood hazard awareness in these areas also increases the difficulty of identifying and providing cost-effective facilities, for which SCWA will provide construction funds, but which require a local commitment to perform O&M.
- 2. The Ulati and Green Valley Flood Control Projects** face threats of increased runoff from urban development; housing encroachment; increased flow and debris from poorly maintained streams and ditches; and increased liability associated with multi-purpose use. In addition, environmental concerns are likely to become increasingly competitive with flood control and facility maintenance objectives.

If SCWA does not address the issue of providing flood control, the potential for flood damage throughout the region is likely to increase, because of increased urban development, inappropriate land uses in unincorporated areas, lack of infrastructure in unincorporated areas, and inadequate O&M.

6. What should participation in multi-county flood control entail?

SCWA manages flood and drainage control activities at a local scale in unincorporated areas of Solano County. However, there is a need for multi-county flood control planning based on the lack of Delta levee integrity and the potential actions that could affect local areas.

1. **The Delta levee system protects Delta islands and helps maintain water quality.** However, there exists a potential for the levee system to fail in the Delta. System failure would affect Delta water quality and regional users, who depend upon the Delta as a major supply.
2. **Sacramento Area Flood Control Agency plans to implement flood control measures along the Yolo Bypass.** Although these plans will improve the reliability of the Yolo Bypass, these measures could have a damaging effects on Rio Vista, where the measures may increase flooding.

If the Solano agencies do not address flood control at a multi-county level, the region will be susceptible to major flood damage. Additionally, an influx of salt water into the Delta because of a levee breach could affect the water quality in Barker Slough.

7. How can environmental resources best be managed?

The Solano agencies are actively restoring Putah Creek and developing the Countywide Habitat Conservation Plan. The Solano agencies are involved in larger restoration projects such as enhancement of the Lower Putah Creek; however, they are not involved in management or restoration efforts of smaller local rivers and creeks in the region.

1. **Involvement in Lower Putah Creek activities.** The Solano agencies are currently involved in the Lower Putah Creek Coordinating Committee, which coordinates habitat enhancement projects; however, those projects typically require adaptive management and constant monitoring activity.
2. **River and creek restoration.** The Solano agencies are not involved in enhancing the County's small local rivers and creeks. Degraded riparian corridors could increase sedimentation and reduce water quality.

If the enhancement and restoration of rivers and creeks is not supported, threatened and endangered species populations will continue to decline. Erosional deposits from stream banks into these channels will contribute to flood control issues and affect water quality. Endangered species and water quality will likely affect the operation and maintenance objectives of water agencies.

8. How can state and federal funding opportunities best be leveraged?

Large water resource and infrastructure projects have traditionally sought state and federal funding to assist with high capital costs. Solano County has experienced significant population growth creating a need for added flood protection and water supplies. These projects have high initial costs, but provide regional benefits. The Solano agencies can seek external funding from two sources: 1) state programs including Propositions 40 and 50, and 2) federal funding through Reclamation or the U.S. Army Corps of Engineers (USACE).

1. **Propositions 40 and 50** are state bond measures that make available tens of millions of dollars for water resource projects related to increased supply, reliability, and quality. This funding is often

contingent upon the completion of an IRWMP. Funding is available in the form of grants, loans, and matching funds on a competitive basis from the State Resource Agencies.

- 2. Federal funding is available for water resource projects** primarily through two sources: Reclamation's Energy and Water Development Appropriation bill and the USACE's Water Resource Development Appropriation bill. Competition for federal funds under these and other programs is fierce, and requires lobbying in addition to legislative support. Reclamation may have an incentive to fund new projects associated with maximizing efficiency of the Solano Project.

If the Solano agencies choose not to pursue state or federal funding, projects will be developed at the sole expense of the residences and businesses in the region. If capital costs exceed the Solano agencies' financial reserve, these projects will not be developed or county tax increases will be required for project financing.

9. What measures would best address safety and security issues?

SCWA shares responsibility for two major water supply projects in the county: the Solano Project and the NBA. Although the facilities are operated by Reclamation and DWR, respectively, the projects are within the region and provide the most significant sources of water to the Solano agencies. Safety and security issues relate to both natural disasters and homeland security. The vulnerable system components include:

- 1. Dams.** Three dams are potentially at risk: the Monticello, Putah Diversion, and Terminal Reservoir. The Terminal Reservoir dam has safety issues associated with its proximity to a fault and with substantial downstream development. The Monticello Dam, impounding 1.6 million acre-feet, may be vulnerable to potential terrorist threats.
- 2. Levees.** Several levees in the county associated with the Ulati and Green Valley Flood Control Projects and the Sacramento River are at risk for potential failure during natural disasters or from intentional damage.
- 3. Conveyance.** Pipelines and canals are potentially at risk from earthquakes and could result in long-term shutdowns or shortages under a worst-case scenario. Open canals are also a potential target for terrorist threats from chemicals or pathogens.

If the Solano agencies do not address safety and security of its facilities, a natural disaster could result in significant shortages. Facility failures from natural disasters or terrorist actions could result in major service disruptions and/or catastrophic loss of life and property.

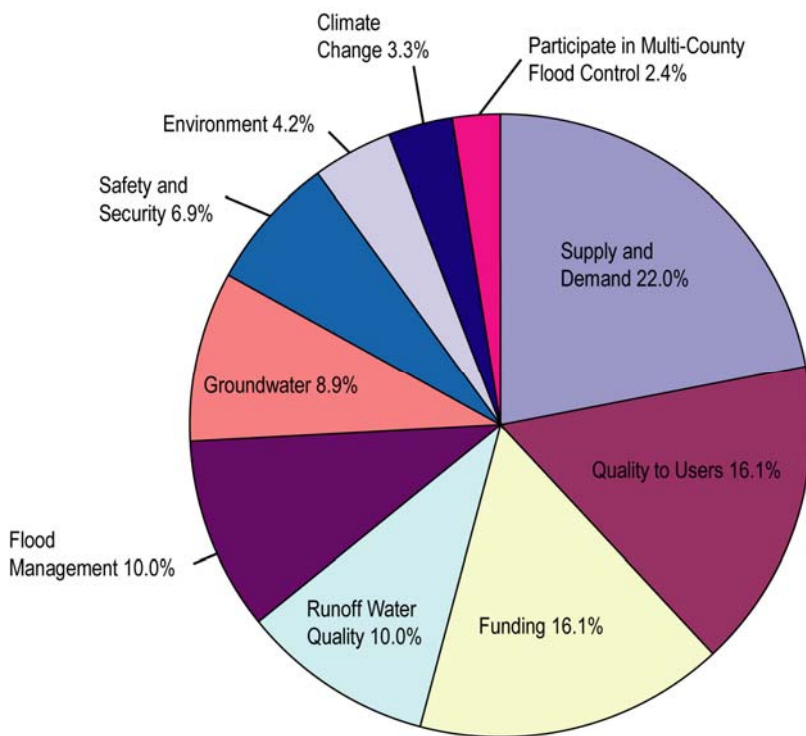
10. How should the region prepare for climate change?

Although climate change is a subject of much study and debate, its potential effects relate directly to the region's water supplies, human health, and ecological health. The potential effects of climate change include:

- 1. Diminished levels of snowpack** in the Sierra Mountains could lead to less capture of water in reservoirs and a corresponding decrease in SWP supplies.

2. **Rising ocean levels could inundate facilities** and contribute to a significant decline in water quality by increasing Delta salinity. County treatment facilities might be unable to treat the increased salinity to a level that could make the water available for potable uses.
3. **Regional climate changes** may affect human health, agricultural crops, and ecosystems.
4. **Rising ocean levels will flood low lying areas** and place increased strain on Delta levees.

If the Solano agencies do not consider the effects of climate change, climate and water level changes may potentially occur that could affect the health and safety of the region. A time frame for fully addressing this problem is unknown, and potential impacts are the subject of much scientific investigation and uncertainty. No significant impacts are likely until sometime in the distant future. However, developing and understanding potential impacts will help in prioritizing other SCWA water resource actions.



**Figure 4-1
Strategic Issue Weighting Results**

4.2 STRATEGIC ISSUE WEIGHTING

The planning team asked the Stakeholder Group to weight each strategic issue to show relative importance. Section 2.3.2 describes the weighting process. The weight represents the relative importance of each strategic issue. Figure 4-1 presents the results of the strategic issue weighting. The Stakeholder Group determined that strategic issue 1 (match supply to demand) was the most important strategic issue.

After the planning group compiled the results of the strategic issue weighting exercise, the Stakeholder Group reviewed the weighting to verify that it matched their understanding of the most important strategic issues. The Stakeholder Group determined that the weighting exercise did not fully reflect the importance of delivering water quality to

users because the strategic issue received only approximately 12 percent of the votes. The Stakeholder Group agreed that they should increase the weight of that issue to be equal to the funding opportunities strategic issue, and adjust the weights of the other issues accordingly. Figure 4-1 shows the resulting weights. The Stakeholder Group agrees that these weights match their understanding about the most important strategic issues in the region.

4.3 CONNECTION TO PROPOSITION 50

As described in strategic issue 8, Proposition 50 contains state funds for water resources projects. Proposition 50 specifically funds development and implementation of IRWMPs. As part of the draft

guidelines for implementation of this portion of Proposition 50, DWR and SWRCB identified water management elements that an IRWMP must consider to be eligible for funding. These elements represent the primary statewide water management concerns and issues.

The Stakeholder Group developed the strategic issues based on local and regional concerns and SWOTs. The Group compared its issues to the statewide issues from Proposition 50, and realized that many local and regional issues are also statewide issues. Table 4-2 shows the connections between the Solano agencies' strategic issues and Proposition 50 issues.

Table 4-2
Connection between Regional and Statewide Issues

Solano Agencies' Strategic Issue	Proposition 50 Water Management Element
1. How can supply best match demand through the long term?	Water supply reliability Water recycling, water conservation
2. What measures are necessary to manage the County's groundwater resources?	Groundwater management
3. What measures should be taken to encourage sending water of the appropriate quality to the appropriate end user?	Water quality protection and improvement
4. What measures can be taken to improve runoff quality?	Water quality protection and improvement Stormwater capture and management
5. How can flood management services best be managed?	Flood management
6. What should participation in multi-county flood control entail?	Flood management
7. How can environmental resources best be managed?	Ecosystem restoration Environmental and habitat protection and improvement
8. How can state and federal funding opportunities best be leveraged?	
9. What measures would best address safety and security issues?	
10. How should the region prepare for climate change?	

The only Proposition 50 element that this IRWMP does not include is "Recreation and Access." The Stakeholder Group considered this element, but determined that it is not a strategic issue within the region. Many water bodies within the region have existing recreation facilities, or are externally managed (e.g., Reclamation manages Lake Berryessa recreation). The remaining water bodies purposely limit human contact recreation because of the water quality implications.

4.4 STRATEGY STATEMENTS

As described in Section 2, strategy statements are brief descriptions of a pattern of policies, decisions, actions, or resource allocations that are formulated to address a strategic issue. The Stakeholder Group identified a series of potential strategy statements for each strategic issue. The Group then considered if they should narrow the strategy statements to enable the IRWMP to focus in just a few directions, but they decided that multiple strategy statements is acceptable. Having multiple strategy statements for each strategic issue allows the Solano agencies to have several directions, which could allow them to more fully address the strategic issues. Figure 4-2 shows the strategy statements associated with each strategic issue.

