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Blue Ribbon Task Force Delta Vision

Our Vision for California's Delta

Third draft prepared by staff (revised November 19, 2007)

Revisions based on discussion at the Blue Ribbon Task Force meeting October 25-26, 2007

Please submit comments online to: dv_context@calwater.ca.gov
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Delta Vision draft
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Executive Order S-17-06 charges the Delta Vision Blue Ribbon Task Force with developing a durable vision for sustainable management of the Delta by January 1, 2008, and a strategic plan to implement that vision by October 2008. The full text of the EO and information about Delta Vision are available at: <http://www.deltavision.ca.gov/>

The Blue Ribbon Task Force will make its vision recommendation at its meeting November 29-30, 2007. Drafts will proceed through three rounds of public comment between meetings, public comment at Task Force meetings, analyses by experts, and discussion among members of the Blue Ribbon Task Force. Here are the steps:

- August 31 – Task Force directs staff to prepare first, embryonic, draft of their vision
- September 12 – first, embryonic draft prepared by staff released for public comment
- September 20-21 – Task Force meeting, with public comment, leading to direction to staff to prepare a revised draft
- October 18 – second draft released for public comment
- October 25-26 – Task Force meeting, with public comment, leading to preliminary decisions on parts of the vision and direction to the staff to prepare a revised draft
- November 22 – third draft released for public comment
- November 29-30 – Task Force meeting, with public comment, leading to final recommendation on vision and direction to staff regarding work plan for strategic plan to be completed by October 2008

Important information continues to be developed regarding critical issues and the Task Force will wait for that information when possible. On the critical issue of alternatives for conveyance of water out of the Delta, for example, important information will become available through November. Similarly, important information is developing on improving Delta ecosystem function.

The Task Force is also developing recommendations for near term actions separate from this vision.

1
2 **I. Executive summary**
3

4 The Delta is a regional, state and national treasure. Its unique combination of estuary, water sup-
5 ply, recreation and tourism, aesthetics, life style, and rural character make it a special place that
6 we must recognize and protect.
7

8 **The Delta is critically important to California but cannot be sustained as we know and use**
9 **it today.** Its unique character and its capacity to serve California are threatened by diversions of
10 water, urbanization, flood and seismic risks, and invasive species.
11

12 For the past 150 years, Californians have viewed the Delta as a place to farm or fish and as a
13 source of water for use elsewhere. We gave little thought to the environmental consequences of
14 these actions. Levees built 100 years ago confined water to channels and transformed the Delta
15 from marshland into dry “islands” of land available for human use. In the 837,594 acres in the
16 Delta and Suisun Marsh, levees confine water to 10 percent of the total area, with agricultural
17 uses in 557,896 acres. There are now 1300 miles of levees in the Delta - a longer stretch than the
18 entire California coastline. When levees were built, most celebrated the new farmland and few
19 thought of what might be lost. There were no regulatory policies to make people consider the im-
20 pacts of levees on the ecosystem. Similarly, many water diversions upstream and within the Delta
21 were made before the public demanded environmental protection.
22

23 In later years, the channels built to create farmland were used to export water from the Delta. The
24 federal Central Valley Project and the State Water Project, built from the 1940s through the early
25 1970s, changed the natural flow of water in the Delta and reversed the flow of the San Joaquin
26 River.
27

28 Today more than half of Californians rely on water conveyed through the Delta for at least part of
29 their water. Residents and businesses near the Delta and San Francisco Bay area are most de-
30 pendent on water from the Delta and its watershed. Urban areas south of the Tehachapi Moun-
31 tains also use water exported from the Delta. Much of California’s agriculture depends on water
32 from the Delta watershed; 1/6th of all irrigated lands in the nation are in this watershed. Agriculture
33 in the southern San Joaquin valley relies heavily on water exported through the Delta.
34

35 In addition to water diversions and exports, other factors have changed the Delta or threaten large
36 changes in the future. Invasive species have changed basic aquatic food production chains in the
37 Delta. Ninety-five percent of living organisms in bottom samples are non-native species.
38

39 Almost 400,000 people lived in the Delta and Suisun Marsh in 2000, and nearby suburbs are mov-
40 ing into lands at the edges of the Delta needed for flood bypasses and habitat.
41

42 Many levees in the Delta were built with minimal engineering. As land dried out and was farmed,
43 it subsided. Some islands are now more than 20 feet below sea level. In most years, at least one
44 levee fails from floods or other events. Earthquakes could liquefy soils, destroy miles of levees,
45 and threaten the many roads, water aqueducts, electricity lines and gas pipelines that cross the

1 Delta and are critical to the state's economy. The risk of earthquakes is growing as pressure
2 builds in nearby faults.

3
4 Climate change is also bringing risks. It may increase the severity of winter storms and floods that
5 could damage levees and threaten people and infrastructure. The sea level may rise 28 to 55
6 inches by 2100 – more if large ice sheets melt.

7
8 New societal values and laws require changes

9
10 As the public has come to understand these problems, societal values have changed. Over the
11 past 45 years, California's legislatures have passed many laws to protect the environment, water
12 quality, and endangered species. California's governors have led regulatory efforts to ensure that
13 water projects and diversions are judged on how they impact the environment. The federal gov-
14 ernment has followed suit.

15
16 Since the Delta is a critical natural resource and also the hub of a major part of California's water
17 supply, negative environmental impacts in the area are a matter of statewide concern. In summer
18 2007, the pumps of the State Water Project were stopped and the pumps of the federal Central
19 Valley Project reduced to minimum operations for several days because of severe declines in
20 Delta Smelt.

21
22 California law provides for both environmental protection and the use of the state's waters. The
23 reasonable use and public trust principles of the California constitution provide a strong legal
24 foundation for weighing water demands and uses.

25
26 In the past, much of the debate about water supply has focused on "conveyance" solutions – that
27 is, on physical structures and on management that moves water around or through the Delta.
28 This approach generally leaves other issues as either "mitigation" or afterthoughts to the convey-
29 ance scheme being discussed. Our vision is a more holistic and broad ranging. We must address
30 statewide water use, governance, population growth, public safety, public service infrastructure,
31 long-term climate change, ecosystem threats within and outside the immediate Delta, seismic risk,
32 and the character of the Delta as a place. From this perspective, decisions about conveyance
33 are not the starting point but the final piece of the puzzle. Decisions about conveyance will flow
34 from policies that address the full range of concerns. All of these policies must be implemented
35 effectively for water to be exported reliably from the Delta.

36
37 **This is the time to act.** The difficult choices we face today will become more difficult in the fu-
38 ture. Procrastination will result in irretrievable losses – severe reductions in water uses and severe
39 damage to the estuarine ecosystem.

40
41 The Delta Vision Task Force was created to "develop a durable vision for sustainable manage-
42 ment" of the Delta. Its objective is to "restore and maintain identified functions and values that are

1 determined to be important to the environmental quality of the Delta and the economic and social
2 well being of the people of the state.”¹

3
4 **A workable vision must include change in current policies and behaviors to achieve:**

- 5 • a comprehensive approach,
- 6 • clear priorities among uses,
- 7 • policies to address critical issues more effectively,
- 8 • science-based, adaptive actions, and
- 9 • a sound institutional foundation.

10
11 **Our vision for the Delta and for California includes twelve interrelated elements:**

- 12
13 1. **The Delta ecosystem and a reliable water supply for California are the primary,**
14 **co-equal goals for sustainable management of the Delta.**
- 15
16 2. **The Delta ecosystem must function as an integral part of the San Francisco Bay**
estuary.
- 17
18 3. **California’s water supply is limited and must be managed well to be adequate for**
its future population, growing economy and vital environment.
- 19
20 4. **The California Delta is a unique and valued area, warranting special protection by**
the State of California.
- 21
22 5. **The principles of reasonable use and public trust in California’s constitution pro-**
23 **vide a sound legal foundation for policymaking about California water resources**
and are particularly important to the Delta.
- 24
25 6. **The goals of sustainable use and conservation are the foundation for all of Cali-**
fornia’s water policies.
- 26
27 7. **A revitalized Delta ecosystem may require reduced diversions, or changes in pat-**
terns of diversions upstream, within, and exported from the Delta.
- 28
29 8. **Water storage capacity and improvements in the system of water export relying**
on the Delta are linked, and are a key part of California’s water future.
- 30
31 9. **Major investments in the California Delta must pursue specific policies in this vi-**
sion.
- 32
33 10. **Strategic investments must strengthen selected levees, improve flood plain man-**
agement, and improve water circulation and quality.
- 34
35 11. **The current boundaries and the current governance systems of the Delta must be**
changed.
- 36
37 12. **Institutions and policies for the Delta should be designed for resiliency and adap-**
tation.

38

¹ Executive Order S-17-06 is attached as Appendix 2. The Executive Order specifies a number of factors to be addressed which are incorporated into this vision and will be further developed during the strategic planning phase of Delta Vision in 2008.

1 Improved levees, more ground and surface water storage, changed conveyance, and mitigation
 2 projects are needed and must occur. But they are insufficient to satisfy the intergenerational
 3 charge to Delta Vision. Achieving a durable vision for sustainable management of the Delta re-
 4 quires urgent and integrated action. Delay or selection of some elements of this vision while ignor-
 5 ing others will lead to failure.

6
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1 I. Twelve interrelated elements in the Delta Vision

3 The Delta is critically important to California but cannot be sustained as we know it today.

5 The Delta is a regional, state and national treasure. Its unique combination of estuary, water supply, recreation and tourism, aesthetics, life style, and rural character make it a special place that we must recognize and protect. Its unique character and its capacity to serve California are threatened by the harmful effects of diversions of water throughout its watershed, encroaching urbanization, flood and seismic risks, and invasive species.

11 The Delta Vision Task Force was created to “develop a durable vision for sustainable management” of the Delta. The objective is to “restore and maintain identified functions and values that are determined to be important to the environmental quality of the Delta and the economic and social well being of the people of the state.”

16 Changed systems of water storage and conveyance, even with mitigation of environmental impacts required by endangered species acts, are not enough to make the Delta ecosystem sustainable. Nor can those actions ensure reliable water supplies for Californians two or four generations from today.

21 Improved levees, more ground and surface storage, changed conveyance, and mitigation projects are needed and must occur. But “fixing” water supply alone will fail to provide reliable water supplies. And “fixing” the ecosystem alone will jeopardize needed water supplies. “Fixing” levees alone will freeze in place current problems in both water supply and negative environmental impacts. “Fixing” the Delta without making basic changes in policies and institutions will fail as storms, sea level rise, earthquakes, invasive species and urban growth pressures force change.

31 Success in meeting the charge to Delta Vision requires:

- 32 • a comprehensive approach
- 33 • clear priorities among uses of the Delta,
- 34 • policies to address critical issues more effectively,
- 35 • science-based adaptive actions, and
- 36 • a sound institutional foundation.

38 Integrated, comprehensive action is needed; delay or selection of some elements of this vision while ignoring others will lead to failure.

41 **This is the time to act.** Choices that are difficult today will only become more difficult in the future. Procrastination may result in irretrievable losses in critical values associated with the Delta – either severe reductions in water uses or severe negative changes in the estuary ecosystem.

This is a draft vision of the independent Delta Vision Blue Ribbon Task Force. A vision is a picture of a hoped-for end result: what it would look like, how it will function, and what it will produce.

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1 **Our vision for the Delta and for California includes twelve interrelated elements:**

- 2
- 3 **1. The Delta ecosystem and a reliable water supply for California are the primary, co-**
- 4 **equal goals for sustainable management of the Delta.** California's water supply and the
- 5 ecological resources of the Delta are both of paramount importance. They are co-equal:
- 6 each is indispensable to California as a whole and our actions must secure the future of
- 7 both.

8 Current uses of Delta water – including diversions upstream, and within the Delta as well as

9 exports – are a major barrier to a “durable vision for sustainable management of the Delta.”

10 But problems in the Delta can be solved only as part of a comprehensive effort to improve

11 statewide water management and ecosystem management. Failure to protect the estuary

12 could result in an inland salt sea or collapse of an estuarine ecosystem with loss of pro-

13 tected and desired species. The consequences for statewide water supply would be unac-

14 ceptable. The loss of a reliable supply of water from the Delta could lead to substantial

15 economic hardships because large fractions of the state's water supply must come from the

16 Delta watershed. Some of this water must be exported from the Delta to other parts of the

17 state.

- 18 **2. The Delta ecosystem must function as an effective part of the San Francisco estuary.**
- 19 The goal for the Delta should be to create a more heterogeneous estuarine environment,
- 20 including a diverse habitat mosaic, expanded areas of seasonal and tidal wetlands, effec-
- 21 tive connections between the estuary and the larger landscape and fresh water flows of the
- 22 right temperatures at the right times. At present, the Delta does not function robustly as an
- 23 element of the estuary.

24 The Delta cannot be returned to a pristine state and the Delta cannot be armored against

25 all future changes in nature. It can and should be reconstituted to function more fully as an

26 estuary, to better support native species and recreational fishing and, importantly, to be re-

27 siliant to future change in ways that achieve desired goals. As we take steps to improve

28 habitats and establish more natural flood flows, we must design these policies carefully,

29 constantly monitor and analyze results, and adjust policies as our knowledge increases.

30 Efforts must also be made to reduce the number of invasive species and to monitor and

31 manage the impacts of these species.

- 32 **3. California's water supply is limited and must be managed well to be adequate for its**
- 33 **future population and growing economy.** It is possible to achieve this goal only if we
- 34 Californians change our policies and our habits of water use. There is no unlimited supply
- 35 of cheap water in California. Greater conservation, increased regional self sufficiency in wa-
- 36 ter supplies, more conjunctive uses, integrated water system management and demand
- 37 management, and new technologies will all be essential. In addition, the state should seek
- 38 equitable access to higher quality water sources.

- 1 **4. The California Delta is a unique and valued area, warranting special protection by the**
 2 **State of California.** The Delta is a place of natural beauty, with historic towns, productive
 3 farming and close-knit communities. The Delta is an integral part of the largest estuary on
 4 the west coast of the Americas, connecting rivers originating in the Sierra Nevada to the
 5 Pacific Ocean. The Delta is also an indispensable part of the Pacific Flyway. These values
 6 should be preserved in any vision of a future Delta.

7 The Delta has been defined in state legislation and recognized by the federal government
 8 as part of the San Francisco Estuary. The state should take steps to increase the visibility
 9 of the Delta as a unique and valued area. This would help create a statewide public iden-
 10 tity for the Delta and encourage expanded tourism and recreational investment. For pur-
 11 poses of discussion of appropriate designation and protection, the name “California Delta
 12 Resource Area” will serve.

13 Protecting California’s Delta from encroaching urbanization is critical both to preserving its
 14 unique character and to ensuring adequate public safety and emergency response. Land
 15 use and governance considerations will be particularly important in that effort.

- 16 **5. The principles of reasonable use and public trust in California’s constitution provide**
 17 **a sound legal foundation for policymaking about California water resources and are**
 18 **particularly important to the Delta.** There are inevitable conflicts between protection of
 19 the ecosystem and provision of water for California. Application of the twin principles of
 20 reasonable use and public trust is the best way to determine how these competing values
 21 will be addressed.

- 22 **6. The goals of sustainable use and conservation are the foundation for all of Califor-**
 23 **nia’s water policies.** California must manage its natural resources sustainably to accom-
 24 modate its growing population and economy. We must start by requiring and investing in
 25 water conservation by all users throughout the state. The fastest ways to address the
 26 growing demands for water are to conserve and to increase the efficiency of the water sup-
 27 ply system. These efforts can start almost immediately. In contrast, building more water
 28 supply capacity can take years – or decades if there is litigation. Vigorous conservation ef-
 29 forts can be productive as far as we can see into the future.

- 30 **7. A revitalized Delta ecosystem may require reduced diversions, or patterns of those**
 31 **diversions, upstream, within the Delta and exported from the Delta.** Water diversions
 32 upstream threaten the Delta ecosystem, as do Delta exports. Similarly, diversions for use
 33 within the Delta, largely for agriculture, affect the health of the Delta. Some diverted water
 34 is ultimately returned to the Delta but almost invariably these return flows are of poor qual-
 35 ity. Projected changes in snow pack because of climate change and increased diversions
 36 upstream of the Delta will also affect quantities, timing and quality of water reaching the
 37 Delta.

- 38 **8. Water storage capacity and improvements in the system of water export relying on**
 39 **the Delta are linked and are a key part of California’s water future.** All Californians
 40 want their water supplies to be regular and reliable. But history shows us that there are no

1 guarantees about when or how much rain and snow will fall. We build dams or fill under-
2 ground water aquifers in wet years so we can use the water in dry years or at dry locations.

3 Different users want water on different schedules. Urban users want water on a consistent
4 schedule. Agricultural users want water when crops need it. Agencies responsible for spe-
5 cies protection and ecosystem function want flows that follow natural patterns of high flows,
6 floods and lower flows, and they want water when protected species need it. Different users
7 also want water in different places. Current storage and conveyance systems often fail to
8 meet competing expectations or even to allow accurate short-term predictions of water
9 availability.

10 We need to sort through these diverse requirements and to develop a system that is less
11 reliant on the fragile nature of the Delta and on the legal constraints of meeting the needs
12 of endangered species. Any construction or change in the operations of conveyance facili-
13 ties in the Delta must be “coupled” to the construction and operations of storage facilities to
14 ensure that the physical structures, timing, and operations of all facilities can be managed
15 to meet all competing needs – for both environmental and economic uses. For example,
16 new storage facilities for surface waters or groundwater and on the floodplain should cap-
17 ture water when and where they would be least damaging to the environment.

18 One way to manage water exports is to create isolated facilities that take water around the
19 Delta. Perhaps this would enhance the reliability of exports, create fewer problems for se-
20 lected species, be less exposed to seismic risk, and result in higher water quality. But at
21 this point, there is not sufficient specific information to guarantee these outcomes.

22 Similarly, the concept of a “dual” conveyance, joining an isolated facility to improved con-
23 veyance through the Delta, might increase reliability and capture more high-water flows, but
24 again, not enough information is available at this point to ensure this.

25 Advocates of improving through-Delta conveyance argue that it will protect those who
26 draw water from the Delta and will also create incentives to both to water exporters and
27 those who use water in the Delta to invest in maintaining levees and fresh water flows
28 through the Delta. But specific information about water quality, costs, seismic risk or meet-
29 ing species protection laws is still incomplete.

30 Any decision about conveyance and related storage must meet the standards of the Cali-
31 fornia Environmental Quality Act (CEQA) and federal and state endangered species acts.
32 The Bay Delta Conservation Plan has the goal of satisfying the California Natural Commu-
33 nity Conservation Planning Act and the federal Habitat Conservation Plan act to address
34 species protection laws. The analyses for CEQA and species protection statutes are nec-
35 essary and important. But the eventual decisions about conveyance, storage and mitigation
36 are only a part of what California must do to secure future needed water supplies and pro-
37 tect ecosystems as climate change alters water availability, sea level rise inundates more
38 areas, and population and economic growth increase demand for water.

1 The goals of reliable water supply and functioning ecosystems will be achieved by recog-
 2 nizing the interdependence of all elements of a sustainable Delta vision and making deci-
 3 sions about conveyance and storage within that larger perspective.

4 To that end, analyses of conveyance and storage should not focus just on the immediate
 5 Delta and satisfying CEQA or NCCPA, as limited analyses cannot provide needed informa-
 6 tion in important areas such as full economic impacts or life cycle costs. The analyses
 7 launched in 2008 must go beyond conveyance, storage and project mitigation to assess
 8 how the full set of policy choices from this vision will serve California for 70 to 100 years. In
 9 final policy making, the specifics of conveyance and storage can be expected to be less
 10 than half of what is needed to meet the charge to the Delta Vision Blue Ribbon Task Force
 11 found in Executive Order S-17-06.

12 CEQA analyses on conveyance and storage should begin in early 2008 and analyses re-
 13 lated to the broader perspective should begin simultaneously. As entry points into the
 14 CEQA analyses, the choices regarding conveyance and storage could be structured as:

15 **ALTERNATIVE LANGUAGE TO BE SELECTED BY TF:**

16 *(a) A dual conveyance system as the preferred alternative, focused on understanding the*
 17 *optimal combination of through Delta and isolated facility improvements, or*

18 *(b) An isolated conveyance as the preferred alternative, or*

19 *(c) A process should be launched to assemble available information (including expert*
 20 *judgment where needed) on design features, cost and performance of alternative convey-*
 21 *ance and storage systems against specified criteria to allow selection of a preferred alter-*
 22 *native by June 2008, or*

23 *(d) Insufficient information exists to identify a preferred alternative at this time and cannot*
 24 *be developed by mid 2008 but a CEQA process should be launched in early 2008 without*
 25 *identifying a preferred alternative, thus giving even-handed deliberation to key alternatives.*

26 Each alternative storage and conveyance system must be evaluated in regard to the full
 27 range of Delta resources and services, not just species listed under the state or federal en-
 28 dangered species acts but also estuary ecosystem function, water quality and water supply
 29 reliability goals, and impacts on the other factors identified in Executive Order S-17-06.

30 The Delta Vision Strategic Plan will provide much of the context for such evaluation.
 31 Benchmarks for assessing progress toward critical goals should also be developed drawing
 32 on contributions from scientists, agency managers of programs and knowledgeable citi-
 33 zens.

34 Since constructing any major improvements in storage and conveyance will take several
 35 years, current systems should be protected and improved. This will require strategic in-
 36 vestments in the near term while final design and assessment of longer-term alternatives
 37 are completed.

1 **9. Major investments in the California Delta must pursue specific policies in this vision.**

2 Over the next few decades, billions of dollars will be spent to improve the estuary's ecosys-
3 tem and levees, as well as the California's water systems. Unless these investments are
4 made in pursuit of clear goals, they will be of limited value.

5 Investments in statewide water conservation or regional self-sufficiency efforts are essen-
6 tial, and of immediate utility.

7 Beneficiaries must pay their appropriate share of these investments and also share in the
8 risks and possible liabilities of action.

9 **10. The current boundaries and the current governance systems of the Delta must be**
10 **changed.** Current governance systems are inadequate to the challenge at hand and must
11 be changed. The new governance system needs a single entity with a statewide perspec-
12 tive to ensure integrated action to implement this vision. This single entity would have the
13 capacity to apply the constitutional principles of reasonable use and public trust to ensure
14 that the co-equal priorities of protecting and improving the Delta ecosystem while also mak-
15 ing a reasonable amount of water available for human use.

16 The single entity must

- 17 a. have sufficient authority, including authority over ecosystem improvements and
18 water diversions and exports;
- 19 b. have sufficient financing to sustain activities over decades, including ability to
20 impose fees on those who use water resources from the Delta watershed or
21 otherwise impact the Delta ecosystem;
- 22 c. have clear, effective working relationships with federal and local agencies and
23 officials;
- 24 d. incorporate contributions of stakeholders, probably developed through struc-
25 tured collaborative processes, and
- 26 e. be supported with state and federal policies that align the incentives and costs
27 that individuals, businesses and others face with a sound long-term vision for
28 the Delta.

29 In addition to this single entity, other structures will be needed to address critical issues or
30 to provide arenas for stakeholders and experts to participate in decision making processes.
31 For example, the responsibility to ensure that land use decisions about specific parcels
32 within the Delta planning area are consistent with the vision and will implement the policies
33 of the single governance entity should be vested in a separate body that includes a sub-
34 stantial number of relevant local government officials.

35 This governance system must be supported by robust programs of science focused on im-
36 proving understanding of the Delta and of the effects of policies and programs.

1 **11. Strategic investments will strengthen selected levees and improve flood plain man-**
 2 **agement.** Significant Delta levee improvements must be made to protect urban popula-
 3 tions, key islands needed to control salinity, water conveyance and reconfigured infrastruc-
 4 ture corridors. There will not be enough money to improve all levees. Funds should be al-
 5 located to match level of protection required. Levee design should focus on recoverability,
 6 not impenetrability.

7 Over time, reliance on levees should decrease. New urban development should be re-
 8 stricted in flood prone areas, including areas below projected sea level, all areas of deep
 9 floodplains, and areas necessary for flood bypasses and floodplains. Protecting, restoring
 10 and enhancing flood plains that can reduce flood risks and reduce the strain on levees in
 11 the Delta should be a high priority.

12 **12. Institutions and policies for the Delta should be designed for resiliency and adapta-**
 13 **tion.** There are no simple fixes for the Delta. There are significant uncertainties about both
 14 important natural processes and the effectiveness of human engineering and policies. Over
 15 the coming decades, California's Delta will be subject to powerful external sources of
 16 change. Some of these sources are natural, like floods or earthquakes. Humans contribute
 17 to other sources of change, like population growth and urban development, introduction of
 18 invasive species or climate change. These external forces of change mean the physical
 19 configuration of the Delta as it exists today is not stable. Policies seeking to maintain a
 20 static Delta against these changes will fail.

21 The Delta will change. Achieving sustainable management of the Delta means designing
 22 physical and institutional forms that will allow the system as a whole – and the critical eco-
 23 nomic and ecological functions it provides – to survive what could otherwise be catastro-
 24 phic shocks.

25 These factors argue for designing for resilience, the capacity to avoid catastrophic failure,
 26 and ensuring capacity for adaptation. Robust science and public understanding will be criti-
 27 cal to support effective policy making and operational management required for adaptation.

28 **II. Policies to achieve the vision**

29
 30
 31 A successful vision states important values, provides a common understanding of the desired
 32 goals, and motivates broad commitment and action. Achieving a vision requires contributions from
 33 everyone--governments, individuals, businesses and non-profit organizations. Achieving a vision
 34 presents several challenges. One challenge in achieving a vision is recommending public policy
 35 strategies and identifying the institutions that can carry out these recommendations.

36 a. The "California Delta Resource Area" as a unique and valued place

37
 38
 39 Though little recognized by many Californians, the Delta is a region of unique and irreplaceable
 40 cultural value. It is a place where Native Americans lived and harvested food, where river travel-
 41 ers have long passed between the Central Valley and the ocean, where America's only rural "Chi-
 42 natown" was built and still stands, and where industrious farmers invented entirely new imple-

1 ments to work the unique Delta soils. In more recent times, it has been a recreational haven to
2 millions of Californians, offering valued boating, fishing, hunting, and bird-watching – or simply the
3 chance to partake of a slower pace of life for a time. Its agricultural lifestyle and rural quality of life
4 contrast sharply with the intense urbanism of the Bay Area, Stockton, and Sacramento. (Figure 1.
5 Map of the Sacramento-San Joaquin Delta and Suisun Marsh).

6
7 **Figure 1. Map of the Sacramento-San Joaquin Delta and Suisun Marsh**

8
9 From wine grapes, blueberries and pears to rice, corn and tomatoes, the Delta grows more than
10 90 different crops, producing more than \$650 million in farm sales for the California and Delta
11 economies. The combination of fertile soils, a marine-influenced climate, proximity to market and
12 the accumulated experience with this unique farm region of generations of farming families,
13 makes the Delta a key and valuable part of California's famed diverse and rich agricultural bounty.

14
15 The Delta must change, but its core values as a unique place must be preserved and enhanced in
16 the future. With millions more people arriving in northern California over the coming decades, the
17 Delta's role as a recreational retreat will become even more valuable than it is today. Indeed, with
18 its rich mixture of habitats, farmlands, open spaces, watercourses, fisheries, and historic towns,
19 the Delta could become a compelling new kind of tourist destination that mixes ecosystem restora-
20 tion, outdoor recreation, and an active local economy. In addition, the Delta is home to several key
21 infrastructure systems of statewide importance, including highways, railroads, aqueducts, and
22 electricity and natural gas lines, which cannot be allowed to fail for long periods of time.

23
24 For all these reasons, there must be increased recognition, increased status, and increased pro-
25 tection of the Delta as a place, not just a water supply or a species habitat. The goals of regener-
26 ating the Delta and securing critical infrastructure should not diminish the cultural and recreational
27 value of the Delta. On the contrary, these should be mutually supporting. New investments to
28 meet ecosystem and water supply objectives can complement efforts to enhance the Delta's rec-
29 reational and tourism, and agricultural, economies and should not diminish disaster protection for
30 critical infrastructure.

31
32 The Delta's land use pattern must enhance both the region's unique values and the overall resil-
33 ience of the system. To preserve the Delta's place values, the region's landscape should continue
34 to be dominated by agriculture, wildlife habitat, and recreation, with mutually beneficial mixtures of
35 these wherever possible. Specialized forms of agriculture that are particularly well suited to the
36 Delta must be encouraged, such as subsidence-reversing crops, carbon-sequestering crops, and
37 wildlife-friendly farming practices.

38
39 The Delta's recreation and tourism economies also should be the subject of active investment and
40 promotion by private, non-profit, and governmental entities over the coming decades. Rather than
41 being frozen in time, the Sacramento River legacy towns, the agricultural areas, and the wildlife
42 habitats that attract visitors today should be allowed to change in ways that are consistent with the
43 Delta Vision. New enterprises that present the Delta's values to the larger public should be al-
44 lowed and encouraged. For example, the mutually beneficial co-existence of habitat restoration,
45 recreation, agriculture and public education that takes place as part of the collaboratively man-
46 aged Yolo Bypass Wildlife Area could be replicated elsewhere in the Delta.

1
2 To enhance the resilience of the system, however, land use choices should both protect human
3 residents of all economic levels from disaster, and preserve management flexibility for the Delta
4 over the long term. Housing development must be kept out of all flood-prone areas, including all
5 areas below current or projected sea level and all areas in deep floodplains, whether within or out-
6 side of the existing Delta primary zone. Protection of human life is of supreme importance, and
7 Delta floodplains are a fundamentally unsafe place for housing development even with new in-
8 vestments in levees.

9
10 Equally importantly, new housing development cannot be allowed to compromise the flood protec-
11 tion for existing Delta residents and businesses. New housing developments in floodplains con-
12 strain flood conveyance capacity and can increase the threat of levee failure in surrounding areas
13 and downstream. Areas suitable for the creation of new flood bypasses to protect existing Delta
14 residents and services must also be kept free of housing developments. Recent court decisions
15 on liability for levee failure have heightened the urgency of these issues for the state government.

16
17 Finally, land use policy must recognize that many areas at the Delta periphery that are under the
18 greatest pressure for urbanization are also indispensable to the long-term management of the
19 ecosystem and water supply. As sea level rises, the geographical areas suitable for tidal wetlands
20 regeneration will shift accordingly – but only if they have not been paved over or cut off by levees.
21 Floodplain habitats on all rivers entering the Delta can provide crucial rearing and migration habi-
22 tat for key fish species, but these functions would be greatly diminished by the presence of hous-
23 ing developments. Lastly, the most logical rights-of-way for any isolated conveyance facilities also
24 pass through areas that are under significant urbanization pressure.

25
26 Even the expectation of future development will make preservation of these key Delta functions
27 dramatically harder. Habitat restoration and water conveyance routing require land acquisition that
28 will be far more expensive if land prices are determined by speculation on future development. As
29 a result, efforts should be made to prevent a rush to establish development entitlements before
30 appropriate Delta protections are in place.

31
32 Given the fragmented nature of institutions in the Delta today, this coordination will be best
33 achieved by a new planning area that encompasses (but does not replace) the existing bounda-
34 ries of the Delta Protection Commission. The geographical boundaries of this planning area
35 should extend beyond the existing legal Delta to incorporate adjacent areas where land use
36 choices will have a substantial impact on the fate of the legal Delta. This boundary also should be
37 set in accordance with a relevant, coherent and defensible ecological or hydrological criterion,
38 such as a future high-tide line or elevation line.

39
40 Much of the Delta consists of lands subject to the ebb and flow of the tide. These lands are sub-
41 ject to what is commonly known as the public trust, under which the State of California holds them
42 subject to a duty to see that they are used so as to preserve the people's interest in such trust pur-
43 poses as commerce, navigation, fisheries and ecological study. Generally speaking, the State of
44 California's interest in the tidelands extends to the mean high tide mark (as opposed to the public
45 trust interest in fresh water, navigable waterways, which extends to the ordinary high water mark).

1 As sea levels rise due to global climate change, the mean high tide mark will move farther up the
2 land in and around the Delta. In planning for the future of the Delta, and of immediately surround-
3 ing lands that may be subject to tidal influence, state and local agencies have a duty to avoid ac-
4 tivities that would injure trust purposes whenever feasible, and to mitigate them if they are un-
5 avoidable.

6
7 The proposed planning area must clearly designate the Delta as a special area, and should help
8 inspire and guide investments in ecosystem regeneration, land acquisition or protection, and the
9 recreation, agricultural and tourism economy. The investments themselves, however, should be
10 made by a variety of actors, including private entrepreneurs, non-profit organizations, and gov-
11 ernment at all levels. This planning area must also ensure that all such investments conform with
12 the overall regional management goals of ecosystem regeneration, water supply reliability and
13 quality, human safety, and preservation of the Delta's unique value as a place.

14 15 b. Policies to achieve a more resilient estuarine ecosystem

16
17 The Delta is an integral part of the largest estuary on the west coast of the Americas. It connects
18 rivers originating in the Sierra Nevada to San Francisco Bay and the Pacific Ocean and productive
19 upland with tidal marsh. Estuaries are subject to tidal influence, mixing salt, brackish and fresh
20 water at different locations according to seasonal river flows and tides. This estuarine environment
21 once teemed with fish and wildlife and is still essential to hundreds of species from crabs to
22 mammals and fungi to grasses. Some of these are unique to the region, such as the Delta smelt
23 and the Antioch dunes evening primrose. The Delta is also an indispensable part of the Pacific
24 Flyway, an intercontinental migration corridor for hundreds of bird species. The Delta historically
25 has supported lucrative commercial and sport fisheries of both native and non-native fish.

26
27 In developing policies to revitalize the Delta ecosystem, many ecological roles must be kept in
28 mind. The Delta, the flyway, and the fisheries all provide great value to the State of California,
29 both as tangible economic assets and as a trust that we must steward for future generations.
30 Delta lands are also important elements of the Delta ecosystem and provide large value to the
31 State of California. Delta levees are vital to protecting water as much as to protecting islands and
32 infrastructure, and make critical contributions to the successful functioning of the Delta.

33
34 The Delta's ecosystem must be regenerated so that it functions more effectively as an integral
35 part of the San Francisco Bay estuary, combining tidal and river flow patterns within appropriate
36 physical habitat types characteristic of the historic Delta. The Delta must also contain thriving ter-
37 restrial habitats and sport and commercial fisheries that have been important to the northern Cali-
38 fornia's culture and economy for decades. To meet these objectives, the different areas of the
39 Delta will be managed differently.

40
41 The Delta ecosystem cannot be returned to its pre-European contact condition, when it was a vast
42 sea-level tidal marsh. It is also facing powerful sources of change including rising sea levels and
43 water temperatures, and the prospect of sudden changes in habitat structure caused by levee fail-
44 ures. Given these facts, a desired Delta ecosystem should not be defined in terms of a static "end
45 state," but rather in terms of the beneficial functions and uses that it provides, and the resilience of
46 those functions and uses to external disturbances.

1
2 When CALFED began, the scientific conceptualization of how the Delta worked was derived
3 mainly from the long history of research on east coast estuaries. CALFED greatly increased the
4 research on the upper San Francisco estuary, particularly the Delta, gathering new data and syn-
5 thesizing information from 30 years of monitoring conducted by the Interagency Ecological Pro-
6 gram, U.S. Geological Survey, and other agencies. The result has been a greatly improved under-
7 standing of the Delta as part of a unique ecosystem and a much firmer foundation for planning ef-
8 fective ecological restoration. As we enter a new era of water and environmental management in
9 the Delta, an era that will be characterized by important changes in hydrology, climate and land
10 use, it is imperative that we strengthen the science infrastructure in support of the new vision for
11 the Delta.

12
13 Applied science, particularly science supported through the CALFED Bay-Delta program, provided
14 the foundation of understanding that identified the need for a new vision. One of the most impor-
15 tant results of research focused on the Delta was a clear recognition that the Delta is threatened
16 by impending change, that the Delta of today is not sustainable. Despite our growing understand-
17 ing of the Delta, and California's water supply, the future remains uncertain. Adaptive manage-
18 ment provides an effective tool for addressing future uncertainty and is heavily dependent on a
19 solid infrastructure for science. Focused Delta science as part of a system of adaptive manage-
20 ment will be an essential component of the new vision.

21
22 As an estuary, the important functions of the Delta are the patterns of food production, nutrient
23 distribution, water flow, migration, salinity, water temperature, and more. The entire web of estua-
24 rine relationships must be rewoven and sustained. Estuaries are variable environments by nature,
25 and therefore the Delta should incorporate enough of that variability to achieve the desired func-
26 tions and processes. This will be especially true in the longer term, as climate change makes it
27 more and more difficult to sustain relatively constant conditions. Figure 2 shows the positive re-
28 sults from functioning habitats. (Figure 2. Better habitat equals greater growth)

30 **Figure 2. Better habitat equals greater growth of fish**

31
32 In any ecosystem, ecological functions are a product of a given physical habitat structure, and the
33 ecological and physical processes that occur there, with additional influence from external stress-
34 ors, such as pollution or powerful water pumping that alters currents.

35
36 All of these elements are of critical importance in the Delta, and all are limiting the success of de-
37 sirable species in one way or another. For the Delta as a whole, a resilient, regenerated ecosys-
38 tem will contain:

40 *Physical habitat*

- 41 1. Seasonal and inter annual patterns of freshwater flow into and through the Delta that will
42 reestablish variable water residence time and floodplain inundation for the benefit of native
43 species;
- 44 2. Channel configurations that are more "dendritic" and contribute to variable water resi-
45 dence time and greater habitat complexity;

- 1 3. Tidal access to low lying marginal lands to encourage tidal freshwater and saltwater
- 2 marsh development;
- 3 4. Patterns of sediment transport, deposition, and erosion that maintain appropriate turbid-
- 4 ity as well as intertidal and shallow sub tidal land forms;
- 5 5. Broad corridors of natural and semi-natural habitats connecting marsh to extensive up-
- 6 land;
- 7 6. Geometry and topography that allows expression of the full suite of ecosystem types ex-
- 8 pected in a delta-estuary system;
- 9 7. Marginal land reserves that will allow upslope migration of wetland types in response to
- 10 sea level rise.

11 *Ecological Process*

- 13 1. Enhanced processes of productivity and delivery of productivity to valued components of
- 14 the ecosystem;
- 15 2. Restoration and expansion of ecosystem types on which rare and threatened species
- 16 depend;
- 17 3. Enhanced processes that strengthen competitive ability of native species.

18 *Stressors*

- 20 1. Reduced impact of chemical stressors of all types on Delta species and ecosystems;
- 21 2. Reduced impact of established non-native species on native species;
- 22 3. Reduced opportunity for invasion of new non-native species;
- 23 4. Reduced or eliminated entrainment of desired species and food organisms into water in-
- 24 takes;
- 25 5. Reduced or eliminated effects of export pumping on flow patterns in the Delta.

26
27 Figure 3 suggests how actions at the northern edges of the Delta could enhance estuarine func-

28 tion. This is not a complete list, nor evaluated sufficiently to be specific recommendations, but il-

29 lustrates how varied natural elevations in the area can be exploited to improve estuarine functions.

30 (Figure3. Illustration of improving estuarine ecosystem functions)

31 **Figure 3. Illustration of improving estuarine ecosystem functions**

32 **c. Policies to achieve a more resilient water system for California**

33
34
35
36 The principle of resilience also applies more broadly to the State of California's water system. The

37 Delta's watershed is almost 40 percent of the land area of California and receives nearly half of

38 the precipitation for the state. Large populations outside of the watershed are serviced by ex-

39 ported Delta water. As shown in Figure 4, precipitation in California has changed little in decades,

40 though climate change projections suggest more rainfall than snow, reduced snow pack and more

41 severe storms in the future.

42 **Figure 4. Precipitation History (insert here)**

43
44
45 The amounts and characteristics of the water flowing through the Delta are profoundly shaped by

46 the land uses, technologies, and human behaviors that occur in both of these areas. Figure 5

1 shows the Delta watershed boundaries on a map of California. (Figure 5. Map of Delta watershed
2 boundaries.)

4 **Figure 5. Map of Delta watershed boundaries.**

6 Because of California's Mediterranean climate, the key challenge for the statewide water system
7 has been to shift water from wet years, wet seasons, and wet locations to drier times and places.
8 The California's major supply of water is from rain and snow that falls north and east of the Delta
9 (with a relatively modest amount imported from other states). But the major demand for water is
10 west and south of the Delta.

12 The Delta is an important, but not dominant, part of the California's water supply. A relatively
13 small proportion of total state water flows into the Delta – 15 percent in a wet year, 13 percent in
14 an average year and 9 percent in a dry year. But the Delta is more important than its share of wa-
15 ter because it is the hub of the two largest waters systems in the state, the federal Central Valley
16 Project and the State Water Project. These projects use the Delta as a hub of their water convey-
17 ance system; the Delta also plays that role in some local water systems, while other users divert
18 directly from the Delta's waterways. Diversions from the Delta have increased dramatically over
19 the past half century, as shown in Figure 6. (Figure 6. Diversions from the Delta.)

21 **Figure 6. Diversions from the Delta.**

23 The resilient California Delta treats the water supply and its ecosystem as co-equal values, each
24 central to the future of the region and to California. In order for both to thrive, the ecosystem must
25 be protected from the operations of the Delta pumps and other diversions from within the Delta or
26 upstream. Achieving this protection must proceed in a staged and transparent manner, so the ef-
27 fects of any action upon both the ecosystem and the water supply can be fully evaluated as im-
28 plementation proceeds. A series of performance standards, widely agreed upon by stakeholders,
29 must be the basis for these evaluations.

31 As greater protection is achieved, management of both the water system and the ecosystem must
32 proceed in an adaptive manner. In a system as dynamic as the Delta, and with climatic and other
33 conditions changing in unpredictable ways, it is essential that management flexibility be preserved
34 and exercised. This may mean creating multiple pathways for water conveyance so critical water
35 supplies cannot be interrupted completely by levee failures, salinity intrusion, or other sudden
36 changes.

38 All water conveyance should be designed to be quickly recoverable in the event of a major disas-
39 ter. Designs for storage and conveyance should incorporate expectations of reduced diversions
40 upstream, within and exported from the Delta during dry periods, and also the need to capture,
41 convey and store water when least harmful to the environment. The systems of storage and con-
42 veyance should be designed to accommodate expected transfer of water from points of capture to
43 points of use, recognizing such transfers are critical to meeting water needs but must be accom-
44 plished with least negative ecosystem impacts.

1 New storage, both in ground and above ground, and improved conveyance must be constructed
 2 to capture water when least damaging to the environment and efficiently move it to areas of need.
 3 Building new conveyance alone, without new storage, would seriously compromise the ability to
 4 protect the estuary and provide sufficient environmental flows. Storage and conveyance must be
 5 coupled in order to operate the system with sufficient flexibility to protect both the environment and
 6 economy. The storage and conveyance systems should also meet water quality standards (which
 7 are tightening) and also allow operation of legal water markets.

8
 9 Figure 7 shows how water from the Delta watershed is used both within that watershed, in coastal
 10 urban areas and in the Tulare Basin (where most use is for agriculture). As a result of these con-
 11 veyance projects, the majority of Californians, in one way or another, use water from the Delta and
 12 its watershed. However, it is important also to understand that most water systems in California
 13 are local projects and that the State Water Project and the Federal project provide modest sup-
 14 plies of the total dedicated water used in the state. (Figure 7. Upstream and export diversion from
 15 the Delta watershed.)

16
 17 **Figure 7. Upstream and export diversion from the Delta watershed.**

18
 19
 20 More water is commonly exported from the Delta in average or dry water years than is exported
 21 during wet years. In wet years, about 4.6 million acre-feet of water is exported from the Delta; in
 22 average and dry years, water exports are about 6.3 million and 5.1 million, respectively. The cur-
 23 rent infrastructure for water conveyance and storage limits ability to capture and store water dur-
 24 ing high flows for use in dry years. Figure 7 shows these relationships. (Figure 8. Water balance in
 25 the Delta by water year type.)

26
 27 **Figure 8. Water balance in the Delta by water year type.**

28
 29 This capture, storage and conveyance occurs under water rights law where the Central Valley
 30 Project or State Water Project, or other users, hold rights to divert water from upstream sources,
 31 store it in reservoirs and then convey it in canals and by pumps to points of use. Water is essen-
 32 tial to human life and health, and human consumptive uses are the top priority for developed water
 33 supply in California under existing law. Water supply, regardless of source, also is an important
 34 part of the California economy. Thus, water is both an important natural resource and an important
 35 economic resource. There is great competition for the limited amount of developed water supply.
 36 A new attitude and approach to water supply development and water use must take hold in Cali-
 37 fornia.

38
 39 Public trust principles, well established in the American legal system, with roots back to England
 40 and parallel principles in other legal systems, provides a way to frame decisions about the use of
 41 water in the Delta and Delta watershed. In our legal system, water is not owned by any user, but
 42 the State of California and public retain ownership. Users gain the right for use of water in various
 43 ways (riparian, appropriative, etc.,) but those rights are conditional both as stated in the term rea-
 44 sonable use, and by the underlying public trust for protection of the resource. Public trust princi-
 45 ples should provide an ethic and foundation for public policy making regarding water resources in
 46 all of California and is especially relevant and important in the Delta.

1
2 Reducing reliance on the Delta means building greater regional water self sufficiency throughout
3 California. Most attractive storage opportunities have already been developed; there is a dam at
4 almost every highly effective site. The sites left for building dams often have high environmental
5 impacts or high cost for their yield. Therefore, there have been few major dams constructed in
6 California recently.

7
8 Figure 9 details the water sources for urban uses in California, confirming the pattern just dis-
9 cussed. All urban areas of California rely on some water from the Delta and its watershed, but the
10 proportions vary tremendously. (Figure 9. Estimated distribution of water sources used to meet
11 daily urban water demand.)

12
13 **Figure 9. Estimated distribution of water sources used to meet daily urban water demand.**

14
15 California must also develop water from all available sources in order to reduce reliance on the
16 Delta. Figure 10 is a summary of the analysis of potential water demand reduction or supply aug-
17 mentation for eight strategies from Update 2005 of the State Water Plan. These strategies need to
18 be further developed and pursued as possible. (Figure 10. Strategies to reduce demand for or in-
19 crease supply of water.)

20
21 **Figure 10. Strategies to reduce demand for or increase supply of water.**

22
23
24 d. Delta levees

25
26 This vision's goals for the water system, for other infrastructure and the Delta as a unique place all
27 require a reliable and recoverable levee system. Levees are the fine threads that stitch together
28 the Delta waterways and landscape, and that make most current human uses of the land and wa-
29 ter possible. As in New Orleans before Hurricane Katrina, however, the Delta's levees and the
30 protection they provide are too often taken for granted. Levees require continual attention, in-
31 vestment and maintenance, especially in situations where they protect water supplies and also
32 land below sea level. The care of Delta levees will therefore be a key responsibility for state and
33 local government and Delta inhabitants, in perpetuity.

34
35 Given the risks of levee failures and the requirement for continuing maintenance against increas-
36 ing threats, the State of California should adopt two policies:

- 37
38 1. California's reliance upon levees should be reduced wherever possible and avoided
39 in the future. As an example, reliance of critical infrastructure on levees should be
40 minimized where possible.
- 41
42 2. The State of California should adopt standards for levels of protection afforded by
43 levees of different design and determine allowable land uses in areas flooded when
44 levees fail.
- 45

1 However, allowing numerous levees to fail (either gradually or *en masse*) is not desirable because
2 of the damage it would do to the Delta's regional economy even if water conveyance were secure.
3 And yet, fully fortifying all of the levees against the many threats they face – ranging from earth-
4 quake risks to subsidence to climate change – would be astronomically expensive.

5
6 For these reasons, levee management must emphasize recoverability from, rather than resistance
7 to, failures of all kinds.

8
9
10 e. Important policies outside the Delta are critical to achieving this vision

11
12 Because the Delta is central to California's natural hydrology and water system, any comprehen-
13 sive vision to secure its future must include measures that take place outside of its legal bounda-
14 ries. Indeed, in one way or another, much of the State of California is intimately connected to the
15 Delta.

16
17 As has been noted, water conservation throughout California is essential to accommodate trends
18 in long-term population growth, climate change, and disaster risk. Water conservation strategies
19 must begin by recognizing that not all uses of water are equally valuable. Water is a public re-
20 source, subject to the public trust, to be managed appropriately for identifiable public benefit and
21 preserved for future generations. The sustenance of human life, the conservation of ecosystems,
22 and the supply of critical economic activities must be explicitly recognized as the highest uses of
23 California's water in all local water management decisions.

24
25 In addition, the state and local water agencies must vigorously investigate all opportunities for
26 conjunctive management of reservoirs, floodplains, and groundwater aquifers. Conjunctive man-
27 agement that infiltrates more wet-season runoff into the Central Valley's groundwater aquifers, for
28 example, has the potential to reduce flood pressure on the Delta and to expand local dry-season
29 supply. Conveying that water from surface reservoirs to infiltration sites through existing river
30 channels can also help restore riverine habitats, especially in the dewatered reaches of the San
31 Joaquin River. These conjunctive management strategies must also include the Tulare Basin,
32 which, although not naturally hydrologically connected to the Delta, is a major consumer of Delta
33 water for agricultural irrigation, and has very large groundwater storage potential.

34
35
36
37 **III. Governance**

38
39 The Delta combines extraordinary value, extraordinary risk, and extraordinary uncertainty all in the
40 same place. Despite many studies and varied policies and programs, a strong sense of uncer-
41 tainty about the effects of human action is still the most accurate characterization of our under-
42 standing of the Delta today.

43
44 Far from being a prescription for paralysis, however, recognizing both uncertainty in knowledge
45 and uncertainty about outcomes of policies and programs has very specific implications for future
46 Delta management. Managing a valuable resource of any kind under conditions of uncertainty

1 calls for common sense wisdom – spread risks, create backups where possible, work in reversible
2 steps, and learn from experience. The State of California must act decisively and deliberatively to
3 reduce known threats, but must also adopt a long-range stewardship philosophy that results in a
4 resilient Delta environment and a resilient water supply system for California.

5
6 Needed energies must be mobilized, often in the face of opposition. A related challenge is to
7 adapt strategies over time as experience reveals unexpected consequences and science or tech-
8 nology creates new understanding and new tools. Current ways of making policy, providing incen-
9 tives and distributing liabilities and financing need to change for this vision to be successful. The
10 over arching issue for all these challenges is “governance.”

11
12 California’s Delta is its largest estuary and lies at the center of a complex statewide water system.
13 This water system combines the massive engineered state and federal water projects with a di-
14 verse range of local water management activities. Despite its importance to California, uses of the
15 Delta are not governed effectively. No current governance structure effectively addresses the
16 range of policy issues or threats facing the Delta today. There are at least 220 governmental
17 agencies with some authority for different aspects of the Delta. Moreover, there are only weak
18 ways to organize existing agencies and jurisdictions toward broad functions in the Delta. Addition-
19 ally, there are also incentives to misuse or overuse Delta water that ensure a constant over-
20 subscription of the resource.

21
22 Effective governance is necessary to improve the Delta’s estuarine ecosystem and capacity to ex-
23 port water. The first issue to address is what needs to be governed in order to meet the charge of
24 “sustainable management of the Delta?” This vision identifies five areas needing governance:

- 25
26 1. Integrating the two critical co-equal values of ecosystem and water system functions
27 into policies and investment choices, while incorporating the other values society
28 seeks through the Delta.
- 29 2. Shaping land forms and land uses within the Delta and critical nearby areas consis-
30 tent with this vision.
- 31 3. Integrating management of Delta-relevant water systems and ecosystem protection
32 and improvement projects, including the authority to adjust rapidly to achieve the
33 stated goals.
- 34 4. Shaping decisions in the Delta watershed which affect Delta water flows (quantity,
35 timing, quality).
- 36 5. Establishing policies which improve water uses across California, including conser-
37 vation, system efficiencies and improvements that lead to regional self sufficiency,
38 and permit the reasonable exchange of water among users.

39
40 For the first area of governance, of integrating the two co-equal values, a single entity with a state
41 wide perspective is needed. This entity would ensure integrated action to implement this vision,
42 including application of the constitutional principles of reasonable use and public trust.

43 That entity must have (a) sufficient authority, including over ecosystem improvements and water
44 diversions and exports, (b) sufficient financing to sustain activities over decades, including ability
45 to impose fees on those who use water resources from the Delta watershed or otherwise impact

1 the Delta ecosystem, (c) have clear, effective working relationships with federal and local agen-
2 cies and officials and (d) incorporate contributions of stakeholders, probably through structured
3 collaborative processes, and (e) be supported with state and federal policies which align incen-
4 tives and costs for individuals, businesses and others with the vision.

5 In addition to this single entity, other structures will be needed to address critical issues or to pro-
6 vide arenas for needed stakeholder and expert participation in decision making processes. For
7 example, the second area of governance involves parcel specific land use decisions within the
8 Delta required to achieve the vision. These decisions would be made within the policies adopted
9 by the first entity. This responsibility should be the charge of a separate body which includes
10 heavy representation of relevant local governments.

11 This governance system must be supported by robust programs of science focused on improving
12 understanding of the Delta and of the effects of policies and programs.

13 Further development of proposals on governance will occur as more detailed work will occur dur-
14 ing the strategic planning stage of Delta Vision in 2008. Successful approaches to governance in
15 all five areas identified above are needed but not yet identified. At this stage, seven attributes re-
16 quired for success of a governance entity are identified:

- 17
- 18 • Has needed authority
- 19 • Can make needed decisions balancing critical values
- 20 • Can ensure implementation of its decisions, including control of needed finances and suffi-
21 cient legal authority
- 22 • Is responsive to society and major constituencies
- 23 • Is accessible to all and equitable in its decisions, meeting expectations for justice in our
24 society
- 25 • Can change over time to better meet its goals
- 26 • Is supported by an effective financing system that receives funds from those who benefit
27 from use of the public resource or public policies where ever possible
- 28

29 The existing entities charged with major roles in governing the Delta relevant to the five identified
30 areas do not have all of these attributes. In considering changes, it is desirable to use existing
31 governance entities and systems where possible, but they are often hard to change, so major re-
32 structuring may be needed. When restructuring is required, it is important to clearly express new
33 roles and remove old activities.

34

35 Additionally, governance is not just about institutions and policies. It is also desirable to join deci-
36 sion making, financing and liability wherever possible; this is a governance principle applicable
37 from institutions to individuals. The opportunities and costs experienced by families, businesses,
38 farmers, and other governments are affected by the policies of the State of California. Effective
39 governance requires aligning these opportunities and costs in ways that support achieving desired
40 policy goals.

41

1 It is reasonable to expect that progress on the vision will be uneven for several reasons: results
2 from enacted policies will come in at different times; some interests will resist policy changes; and
3 some policies will not work and need to be revised. This unevenness is one reason for designing
4 governance systems with resiliency in mind.

5
6 ALTERNATE/ADDITIONAL language for consideration by TF members in italics:

7
8 *If the State of California is to achieve the co-equal priorities we have identified, creating a new*
9 *governance structure, with new authority, is essential. We will elaborate on the needed structure*
10 *in our strategic plan, but tentatively conclude that the following elements may be appropriate:*

11
12 *a. **A new, small governing body for the Delta should be appointed by the gover-***
13 ***nor and confirmed by the State Senate.** The Delta ecosystem and water supplies*
14 *for human uses are of co-equal statewide importance. The body appointed to*
15 *achieve these results should not be another entity with a large number of members*
16 *representing interest groups. Experience has shown that approach leads only to*
17 *deadlock.*

18
19 *b. **The assigned duties of this body should include direct responsibility for the***
20 ***co-equal priorities of protection and revitalization of the Delta ecosystem and***
21 ***for a reasonable amount of water made available for human uses.** A major bar-*
22 *rier to any change in California water policy is that the various interests do not trust*
23 *anyone to make decisions that affect them. The result is absolute deadlock, the ab-*
24 *sence of a rational water policy, and periodic court orders or regulatory action deal-*
25 *ing with limited issues. That approach is not working, and we believe only by entrust-*
26 *ing a small group with the duty (and powers) to achieve the co-equal priorities, can*
27 *California water policy improve.*

28
29 *c. **The new governing body should have the authority to approve, modify or re-***
30 ***ject plans and spending for both Delta ecosystem revitalization, and for pro-***
31 ***tection of the water export system.** Yes, we recommend this body ultimately ap-*
32 *prove, change or reject proposals and plans --- and the spending of money --- to*
33 *achieve these objectives. There is no ability to achieve a result without concurrent*
34 *authority.*

35
36 *d. **The new governing body should have authority to approve, modify or reject***
37 ***specific levels of water exports.** It is of no surprise that many of the interests do*
38 *not trust existing State of California agencies to plan or implement a new water pol-*
39 *icy. Although much of this distrust is unfounded in our judgment, it still exists. Ac-*
40 *cordingly, we believe that this new governing body should be authorized to approve,*
41 *reject or modify any recommended level of water exports from the Delta. Yes, we*
42 *are aware of water contracts, assertion of water rights, the implications of federal*
43 *laws and regulations, but no better system suggests itself.*

1 ***e. During the strategic plan process we will decide whether to recommend that***
2 ***this new body have meaningful land use control over the Delta, or whether the***
3 ***Delta Protection Commission should be continued, with its powers expanded.***
4 *We have heard many opinions on how land use issues should be resolved in the*
5 *Delta. In our strategic plan we intend to study and recommend steps to achieve this*
6 *result. At the present time, the alternatives seem to be assigning this authority to the*
7 *new governing body, or recognizing the existence of the Delta Protection Commis-*
8 *sion, continue the authority at that level, but expand and clarify the role*

9
10 ***f. The new authority should have the ability to impose on those who use water***
11 ***resources from the Delta watershed or otherwise impact the Delta ecosystem***
12 ***to finance the new duties and responsibilities.*** *It is impossible to ask a new gov-*
13 *erning body to undertake substantial changes and not provide the needed staff and*
14 *organizational support, including funds. It appears appropriate to ask those who use*
15 *water resources from the Delta, or those who are otherwise benefited, to assume the*
16 *reasonable cost of that supervision.*

17 18 **IV. The vision achieved**

19
20 A vision is our hoped for future. It describes what that future would look like, how it will function,
21 and what it will produce. It is something to which decision-makers should aspire. These are condi-
22 tions we see as desirable if not ideal, challenging to achieve but not infeasible. The vision must
23 result in a Delta that serves California for several generations. A vision is not a plan with targets,
24 timetables, analysis of alternatives or costs. Equally though, a vision must convey confidence that
25 it can be achieved and that requires discussions of policies and investments sufficient to warrant
26 acceptance of the vision.
27

1 By the 22nd century, California's Delta is a vibrant and safe place to live, work and
2 recreate. It is a place where the heart of California beats to a strong, steady rhythm
3 of river flows, estuarine life and human activity.

4
5 The Delta will look different, with more areas experiencing tidal flows and broad cor-
6 ridors of natural and semi-natural habitats connecting marsh to extensive uplands.
7 The Delta will also be used differently, with land uses, water exports and recreational
8 uses that respect and work with the natural processes of the estuary.

9
10 As this vision is realized, California's Delta will be a place where foresight, learning
11 and flexibility have resulted in a fruitful integration of the environment and the econ-
12 omy. In the 22nd century, California's Delta is a showcase for the nation and the
13 world of how to integrate nature and technology. In the 22nd century, California's
14 Delta functions as an integral part of a vital estuary, teeming with life. In the 22nd
15 century, Californians have reliable supplies of high quality water from many sources,
16 including the Delta.

17
18 At the core of this vision is the recognition that water resources are a public trust, a resource both
19 provided by, and critical to, functioning ecosystems. Water supplies for future generations must be
20 provided while maintaining other ecosystem values, for which a resilient ecosystem is essential.
21 A resilient ecosystem can withstand and rebound from disturbances, and thereby continue to pro-
22 vide values desired by society. The public trust doctrine applies both to water under management
23 and to the tide and submerged lands that are the foundation of the Delta ecosystem.

24
25 As the vision is achieved, **the two co-equal values of ecosystem function and water provision**
26 **will be deeply woven into the institutions and policies** through which California mobilizes pub-
27 lic resources to achieve a vision for the future. This principle of equality does not mean that these
28 two values will somehow be precisely balanced in every policy or management decision. Rather,
29 it means that each is indispensable to the whole state and that each must be advanced in any de-
30 cision. The sum of our actions must secure the future of both, ideally through choices which inte-
31 grate the two values. This will result in change in historic ways of using the Delta and its water-
32 shed.

33
34
35 As the vision is achieved, **the Delta will function more effectively as part of an estuary.** The
36 land forms and water areas of the Delta will change, including subsidence reversal on selected
37 islands, improved flood plains and increased salt water and fresh water marshes, for example.
38 Sufficient water flows will sustain the estuary.

39
40 As the vision is achieved, **all areas of the State of California will have increased regional self**
41 **sufficiency and water conservation will be the ethic underlying water policy.** Additional, al-
42 ternative ways to move water among areas of the state will be developed. A revitalized ecosystem
43 may require reduced diversions or changes in the patterns of those diversions, upstream, within
44 the Delta or exported from the Delta. As the vision is achieved, water management practices will
45 have adapted to those changes.

1 As the vision is achieved, **California's Delta will be recognized as a unique place that has**
2 **value** in its own right. It is not solely an infrastructure system or an ecosystem. The Delta is a
3 place of natural beauty, valued first by Native Americans. It has a regional economy and a re-
4 gional culture as old as any in California, consisting of historic towns, productive farming and
5 close-knit communities. These values will be preserved in this vision of a future Delta.

6
7 This vision protects California's Delta from encroaching urbanization as critical to preserving its
8 unique character and to public safety. Public safety and emergency response capacity must be
9 high priorities to protect both local and statewide interests. Land use and governance contribute to
10 protection of the Delta.

11
12 As the vision is achieved, **California's Delta is and will remain a powerful mixture of natural**
13 **and human forces**. Humans will learn to work with natural processes to achieve desired goals in
14 the Delta. Natural processes will accomplish much of the regeneration necessary for the Delta
15 and its ecosystem functions. Humans will help. Human designs and engineering will support en-
16 hanced ecosystem function. For example, human cultivation of tules and wetland crops helps to
17 rebuild subsided islands, or management of tidal action helps to recreate marshes. To achieve
18 the desired goals in the Delta, California must blend these natural and human energies into a pro-
19 ductive new synthesis that restores and sustains ecological and human values equally.

20
21 As the vision is achieved, **California will develop more capacity to anticipate and respond to**
22 **powerful external sources of change**. Some of these sources are natural, like floods or earth-
23 quakes. Humans contribute to other sources of change, like urban growth or climate change.
24 These external sources of change mean the physical configuration of the Delta as it exists today is
25 not stable. The changes will happen, and achieving sustainable management of the Delta means
26 designing physical and institutional forms that will allow the system as a whole – and the critical
27 economic and ecological functions it provides – to survive what could otherwise be catastrophic
28 shocks. Designs for seeking a static Delta against these changes will not achieve sustainable
29 management.

30
31 As the vision is achieved, **California will have developed institutions and policies designed**
32 **for resiliency**, both in the Delta and in the California water system as a whole. Resiliency means
33 the ability of a system to adjust to disturbance without changing into a totally different system con-
34 trolled by a different set of processes. A resilient ecosystem can withstand disturbances and re-
35 build itself in ways that are valuable to society. Resiliency for the water system means a statewide
36 water system that has the ability to withstand disturbances in the environment and to be operated
37 to meet changing demands. Resiliency for both the ecosystem and the water system also means
38 that people need to reduce their reliance on water from any single source, including the Delta.

39
40 Fragile systems are those that rely on a few brittle parts, an accurate description of the Delta eco-
41 system and state water system today. Resilient systems rely on multiple mutually supporting
42 parts, functional redundancies, and the capacity for gradual (not catastrophic) change in response
43 to new conditions. Resiliency is necessary for the future. The Delta covers a large area with many
44 different types of land forms and water channels. This diversity is an asset in designing for resil-
45 iency because it distributes functions and risks throughout the area. Figure 1 shows the diversity
46 of the Delta.

1
2 As the vision is achieved, **water for human uses will be more effectively separated from water**
3 **for the ecosystem** to achieve both increased water system resiliency and higher water quality for
4 human uses and greater allocation of water for environmental purposes. The ecosystem cannot
5 recover if it remains vulnerable to the upstream diversions and in-Delta water system operations
6 of the recent past. Likewise, water system reliability cannot be achieved if ecosystem problems
7 continually disrupt deliveries. As the vision is achieved, increased storage capacity and improved
8 conveyance will be in place to capture water at times that are least damaging to the environment
9 and efficiently move it to areas and times of need.

10
11 As the vision is achieved, **reliance on levees to protect Delta water, Delta lands, and humans**
12 **is reduced and policies are in place to match levee designs to land uses protected by those**
13 **levees**. The Delta ecosystem and water systems in the Delta rely on the 1,300 miles of levees
14 that also protect all in-Delta water and land uses. Levees are critical to the Delta's future. Yet, ex-
15 isting levees are vulnerable to failure from earthquakes, floods, and structural decay. Multiple
16 levee failures at one time in the Delta could flood dozens of islands, cause dramatic changes in
17 the ecosystem, and halt all water exports from the Delta for years. Recognizing these possibilities
18 does not mean abandoning the levees that define the Delta. It does mean that policies to reverse
19 subsidence should be pursued, that decisions about infrastructure should seek to reduce reliance
20 on levees, and that not all levees should provide equal levels of protection. As the vision is
21 achieved, levees protecting urban areas will be designed to provide more protection than levees
22 protecting agricultural land or recreational land.

23 24 **V. Summary**

25
26 Virtually every person who presented views to the Task Force echoed the premise of Executive
27 Order S-17-06 under which we work: the current condition and uses of the Delta are unsustain-
28 able. Rising sea levels will lead to intrusion of salt water further upriver in the Delta, altering the
29 ecology of fish and plants and contaminating waters withdrawn for diversion to agriculture and ur-
30 ban uses. Inevitable floods will inundate vast areas, overwhelm levees, destroy property and in-
31 frastructure and endanger lives in flood-prone areas. Less certain but potentially more catastro-
32 phic earthquakes could profoundly alter the physical geography of vast areas of the Delta, obliter-
33 ating settled areas with major flooding, destroying bridges, levees, roads, power transmission,
34 gas pipelines and buildings.

35
36 Our vision accepts the judgment that the current situation of the Delta is not sustainable. We rec-
37 ognize among all the uses that must be accommodated in planning for the future of the Delta two
38 overriding priorities – ecosystem protection and water provision for human use.

39
40 By giving a priority to ecosystem protection we do not mean restoration to historic conditions that
41 prevailed prior to the alterations that humans have effected over the past two centuries. We mean
42 adapting patterns of construction, settlement and uses to enhance the functioning of the Delta as
43 an integral part of the San Francisco estuary to the extent practicable within a relatively mature
44 and developed economy.

1 By assigning a priority to water provision we do not envision any increases in available supplies
2 for export outside the Delta. To do so would compromise our priority for ecosystem protection.
3

4 For success over generations, our policies for ecosystem protection and water provision must be
5 designed not for one best solution, but for resiliency, for the capacity to recover from threats and
6 adapt to changes many of which we cannot now predict with accuracy. We must also develop
7 policies which respect and work with natural processes rather than seeking to bend nature to our
8 engineering designs. Resilient natural systems help to sustain resilient human systems. We
9 should also respect human aspirations and capacities and develop policies which mobilize the
10 great energy of Californians to act individually and in families, firms and non-profit organizations
11 rather than relying solely on state or federal governmental actions and regulations to achieve the
12 desired vision.

13
14 We must govern differently, integrating policy making for ecosystem protection and water provi-
15 sion, protecting the Delta as a place of value and also of living communities, and achieving
16 needed changes in water delivery and use across all California. The Delta watershed is critical to
17 the future of California and changes in conveyance and storage are required, and these actions
18 must occur as the ecosystem is protected and all California moves to a more efficient and resilient
19 water system. Changed institutions, policies, financing systems and distributions of liabilities are
20 required to move a fragmented system for decision making toward the vision proposed.

21
22 Achieving durable, sustainable management of the Delta requires comprehensive, integrated poli-
23 cies, well-funded and pursued over decades through an effective governance system that ensures
24 continuity of action while adjusting policies and programs as needed in pursuit of this vision.
25

Appendix 1. Delta Vision Process

The governor's Executive Order S-17-06 (below) recognized the value of California's Delta and risks to its future. It formed the Delta Vision process to "develop a durable vision for sustainable management of the Delta" that can "restore and maintain identified functions and values that are determined to be important to the environmental quality of the Delta and the economic and social well being of the people of the state."

Four groups, each with a distinct charge, were established under the executive order. The seven-member independent Blue Ribbon Task Force is charged with developing the Delta Vision in 2007 and a strategic plan to carry out the vision in 2008. In their meetings, the Task Force members heard statements from scientists, stakeholders, government officials and the general public to assist in forming their vision. The Task Force also requested and received ideas and visions from the general public.

The five-member Delta Vision Committee is chaired by the Secretary for Resources; other members include the secretaries for the California Environmental Protection Agency; the Business, Transportation, and Housing Agency; the Department of Food and Agriculture; and the president of the Public Utilities Commission. These cabinet members are charged to report to the governor about the vision and strategic plan in late 2008, and appoint the Stakeholder Coordination Group and the Delta Vision Science Advisors.

The 43-member Stakeholder Coordination Group consists of representatives from all major interests using or living in California's Delta. With dedication and understanding, these women and men had 13 days of meetings to develop and refine nine principles, two emerging visions for California's Delta, and a list of near term actions. These emerging visions were first presented to the Task Force in August 2007, and contributed greatly to forming the vision. Many of the ideas presented in the Stakeholder Coordination Group will be more fully addressed during the strategic planning process.

Two science advisors, Dr. Michael Healey and Dr. Jeffrey Mount, consult with the Task Force, the Delta Vision Committee and the Stakeholder Coordination Group and give advice about the scientific issues regarding the Delta. The science advisors formed an assessment team to review the scientific and technical issues found in the Stakeholder Coordination Group's two emerging visions and the eight external visions submitted by the general public.

The Delta Vision process coordinates with and builds upon many of the ongoing but separate Delta planning efforts. Among these are:

- The Bay-Delta Conservation Plan
- Delta Risk Management Strategy
- Delta Regional Ecosystem Restoration Implementation Plan
- Ecosystem Restoration Program's Conservation Strategy
- Suisun Marsh Plan

EXECUTIVE ORDER S-17-06

WHEREAS the Sacramento-San Joaquin Delta estuary, including Suisun Bay and Marsh (hereafter "Delta"), supports a unique and irreplaceable combination of environmental and economic resources. The Delta is a source of water for farmlands, growing communities and businesses and provides a unique estuarine habitat for many resident and migratory fish and birds, some listed as threatened or endangered species. It is an area that supports vital energy, transportation, communications and water facilities, and important agricultural, recreational and cultural resources. The Delta is of state and national significance and must be protected and managed effectively for the future well being of the people and the environment; and

WHEREAS the Delta is intersected by highways, roads, and utility lines critical to regional, state and interstate commerce and economy; and

WHEREAS the Delta is the hub of California's two largest water distribution systems, the federal Central Valley Project and State Water Project, and at least 7,000 other permitted water diverters have developed water supplies from the watershed feeding the Bay-Delta estuary, providing drinking water to about 23 million people and irrigation water to about 7 million acres of highly productive agricultural lands; and

WHEREAS recent events like the Lower Jones Tract levee failure and Hurricane Katrina, and recent findings that indicate a two in three chance of a major earthquake occurring in or near the Delta in the next fifty years, have raised awareness and concerns about the vulnerability of Delta levees. Failure of Delta levees can have devastating consequences on farms, communities, roads, railways, power and fuel transmission lines, water conveyance and quality, wildlife resources, and the local and state economy; and

WHEREAS threats such as an aging levee system, regional climate change, rising sea levels, seismic events and urbanization pose an imminent threat to the Delta; and

WHEREAS recent legislation, a number of planning efforts and scientists have affirmed that current uses and ecosystem health in the Delta are unsustainable over the long-term; and

WHEREAS there is growing recognition that prior Delta and Suisun strategic planning efforts have been too narrowly focused on only a few of the Delta's many uses and resources; and

WHEREAS the combined threats and changing conditions within the Delta require immediate attention because of the potentially catastrophic environmental and economic consequences if timely action is not planned for and undertaken; and

WHEREAS the existing complex system of Delta governance has been criticized because no one level of government is fully in charge, or capable of responding in an orderly and effective way to address and mitigate the range of threats to the Delta.

NOW, THEREFORE, I, ARNOLD SCHWARZENEGGER, Governor of the State of California, by virtue of the power vested in me by the Constitution and statutes of the State of California, do hereby order effective immediately:

1. I hereby initiate the Delta Vision and establish an independent Blue Ribbon Task Force to develop a durable vision for sustainable management of the Delta. Making the Delta more sustainable will require a concerted, coordinated and creative response from leaders at all levels of government, stakeholders, academia and affected communities, and will require significant private and public partnerships and investments. The Delta Vision is designed to accomplish these goals:

(a) Meet the requirements of Assembly Bill 1200 (Water Code Sections 139.2 and 139.4), Assembly Bill 1803 (Water Code Section 79473) and SB 1574.

(b) Coordinate and build on the many ongoing but separate Delta planning efforts.

(c) Assess the risks and consequences to the Delta's many uses and resources in light of changing climatic, hydrologic, environmental, seismic, and land use conditions. This assessment will look at:

- The environment, including aquatic and terrestrial functions and biodiversity.
- Land use and land use patterns, including agriculture, urbanization, and housing.

- 1
2 • Transportation, including streets, roads, highways, waterways, and ship channels.
3
4 • Utilities, including aqueducts, pipelines, and gas/electric transmission corridors.
5
6 • Water supply and quality, municipal/industrial discharges and urban and agricultural runoff.
7
8 • Recreation and tourism, including boating, fishing, and hunting.
9
10 • Flood risk management, including levee maintenance.
11
12 • Emergency response.
13
14 • Local and state economies.
15
16
17

18 (d) Develop a program for sustainable management of the Delta's multiple uses, resources and ecosystem. Sustainable management
19 of the Delta means managing the Delta over the long term to restore and maintain identified functions and values that are deter-
20 mined to be important to the environmental quality of the Delta and the economic and social well being of the people of the state.
21 As part of the Delta Vision, priority functions and values will be identified, and measures necessary to provide long-term protection
22 and management will be evaluated.
23

24 (e) Develop a Strategic Plan to implement findings and recommendations for public policy changes, public and private investment
25 strategies, Delta-Suisun preparedness and emergency response plans for near-term catastrophic events, levee maintenance options,
26 and how to monitor and report performance.
27

28 (f) Develop recommendations on institutional changes and funding mechanisms necessary for sustainable management of the Delta.
29 Recommendations may include a discussion of oversight, land use and implementation authorities.
30

31 (g) Inform and be informed by current and future Delta planning decisions such as those pertaining to the CALFED Bay-Delta Pro-
32 gram, Bay Delta Conservation Plan, Suisun Marsh Plan, Water Plan, updates of related General Plans, transportation and utilities
33 infrastructure plans, integrated regional water management plans, and other resource plans.
34

35 2. The Secretary of the Resources Agency as chair, and the Secretaries of the Business, Transportation and Housing Agency, De-
36 partment of Food and Agriculture and the California Environmental Protection Agency, along with the President of the Public Utili-
37 ties Commission shall be the Delta Vision Committee, for the Delta Vision. They shall undertake the following:
38

39 (a) Explore entering into agreements with private and non-governmental organizations to receive funding for Delta Vision. In addi-
40 tion, the Director of Finance may also accept monetary and in kind contributions to support the activities of the Delta Vision.
41

42 (b) Create a Stakeholder Coordination Group to involve local government, stakeholders, scientists, engineers, and members of the
43 public in this effort to develop a Delta Vision.
44

45 (c) Select Delta Science Advisors from diverse scientific disciplines to provide independent review and advice to the Blue Ribbon
46 Task Force on technical, scientific, and engineering data, analyses, and reports.
47

48 (d) Report to the Governor and the Legislature by December 31, 2008 with recommendations for implementing the Delta Vision
49 and Strategic Plan.
50
51
52

53 3. I will appoint the members of a Blue Ribbon Task Force to include diverse expertise and perspectives, policy and resource ex-
54 perts, strategic problem solvers, and individuals having successfully resolved multi-interest conflicts. The Task Force will seek in-
55 put from a broad array of public officials, stakeholders, scientists, and engineers. The Task Force will prepare an independent public
56 report that will be submitted to the Delta Vision Committee and Governor that sets forth its findings and recommendations on the
57 sustainable management of the Delta by January 1, 2008 and a Strategic Plan to implement the Delta Vision by October 31, 2008.
58

1 4. Upon submittal of the Delta Vision Committee's recommendations to the Governor and Legislature, the Delta Vision initiative
2 shall terminate unless extended by another executive order.
3

4 5. This order is not intended to create, and does not create, any right or benefit, whether substantive or procedural, enforceable at
5 law or in equity, against the State of California, its agencies, departments, entities, officers, employees, agents, or any other person.
6
7

8
9 IN WITNESS WHEREOF I have here unto set my hand and caused the Great Seal of the State of California to be affixed this 28th
10 day of September 2006.
11
12
13
14
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16
17

18 _____
19
20 ARNOLD SCHWARZENEGGER
21
22 Governor of California
23
24
25
26
27

28 ATTEST:
29
30
31
32
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35
36
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38 _____
39 BRUCE McPHERSON
40 Secretary of State
41
42
43
44
45

Figure 1

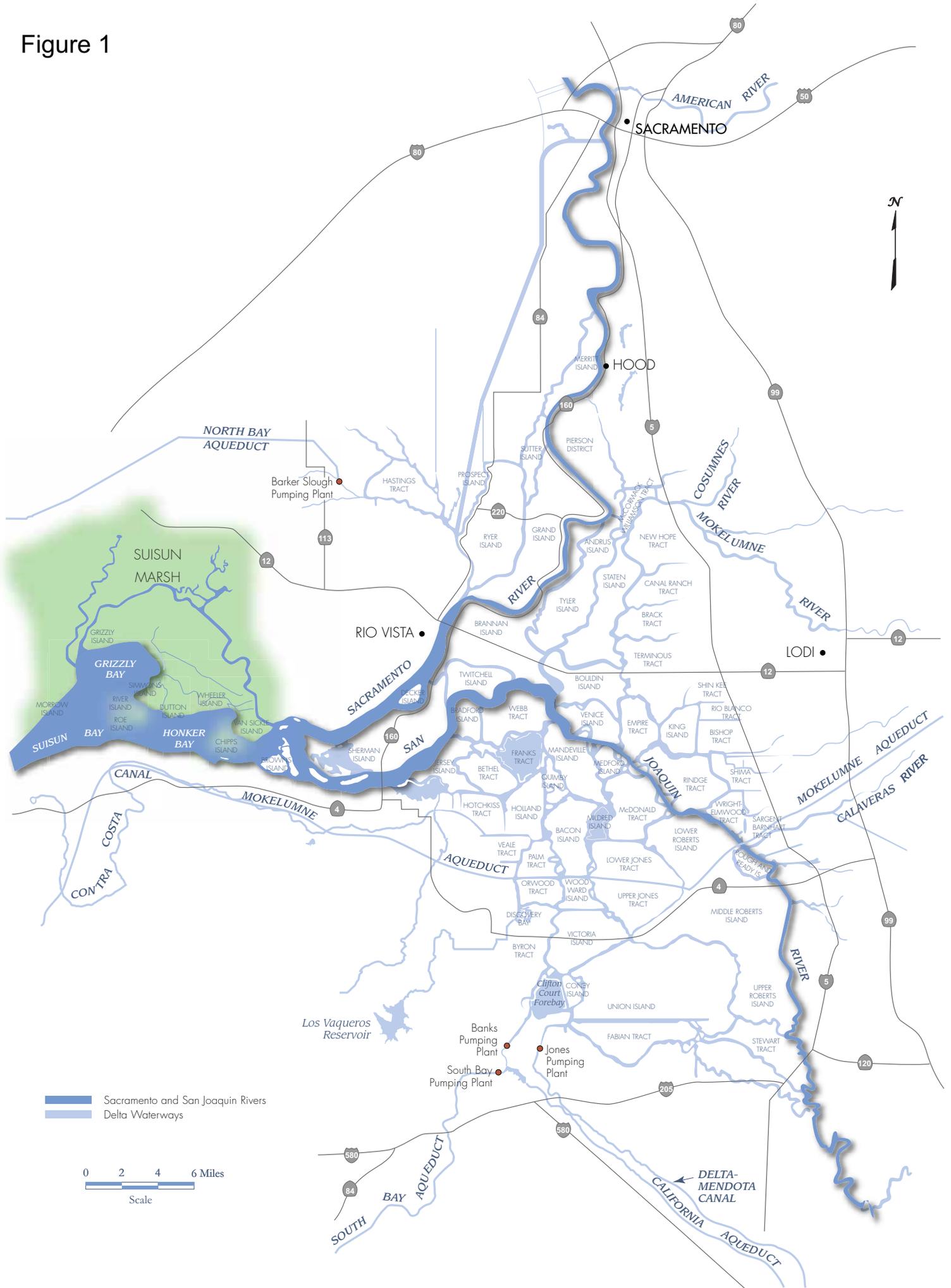


Figure 2. Better Habitat Equals Better Growth



Figure 3

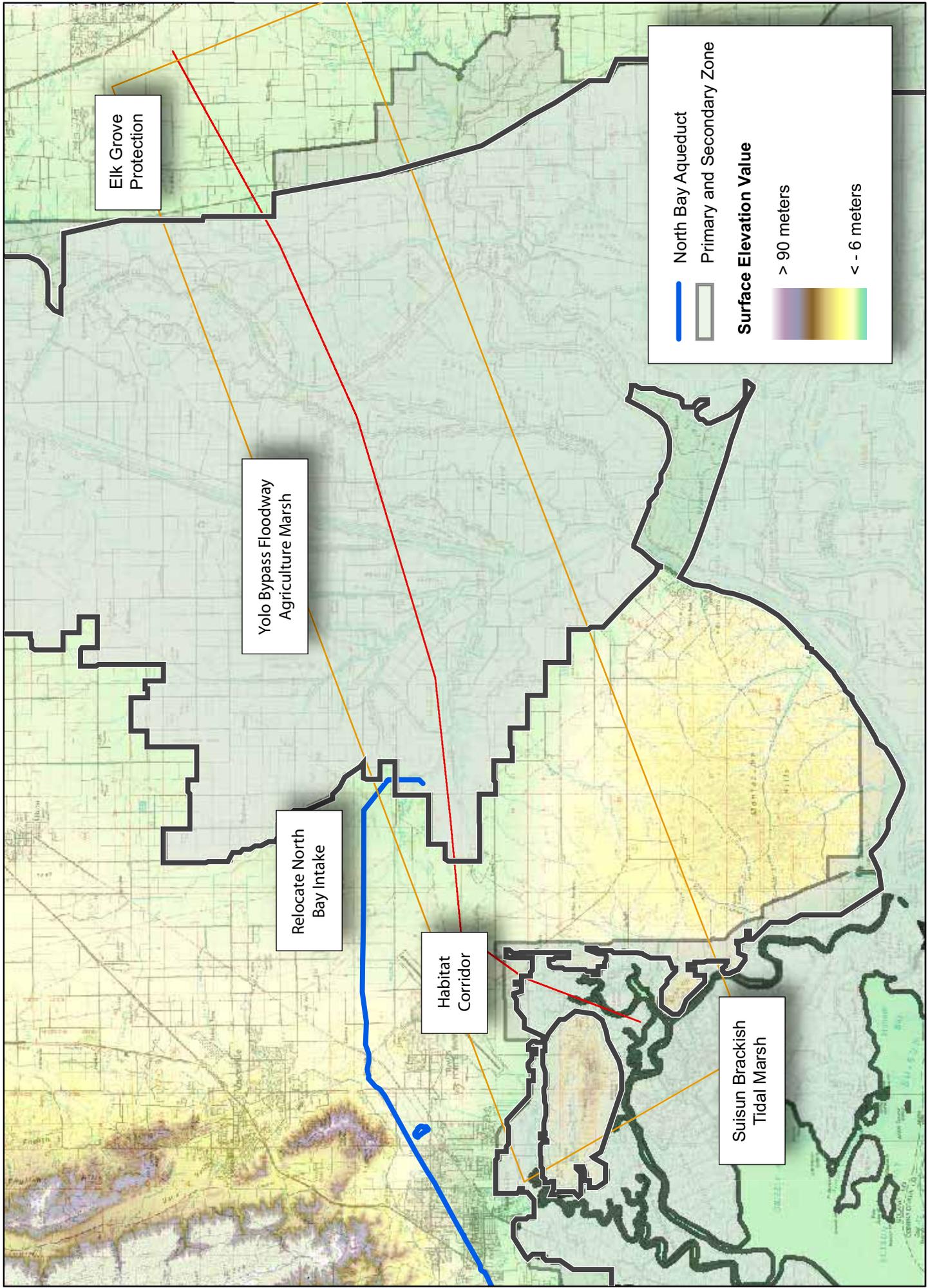
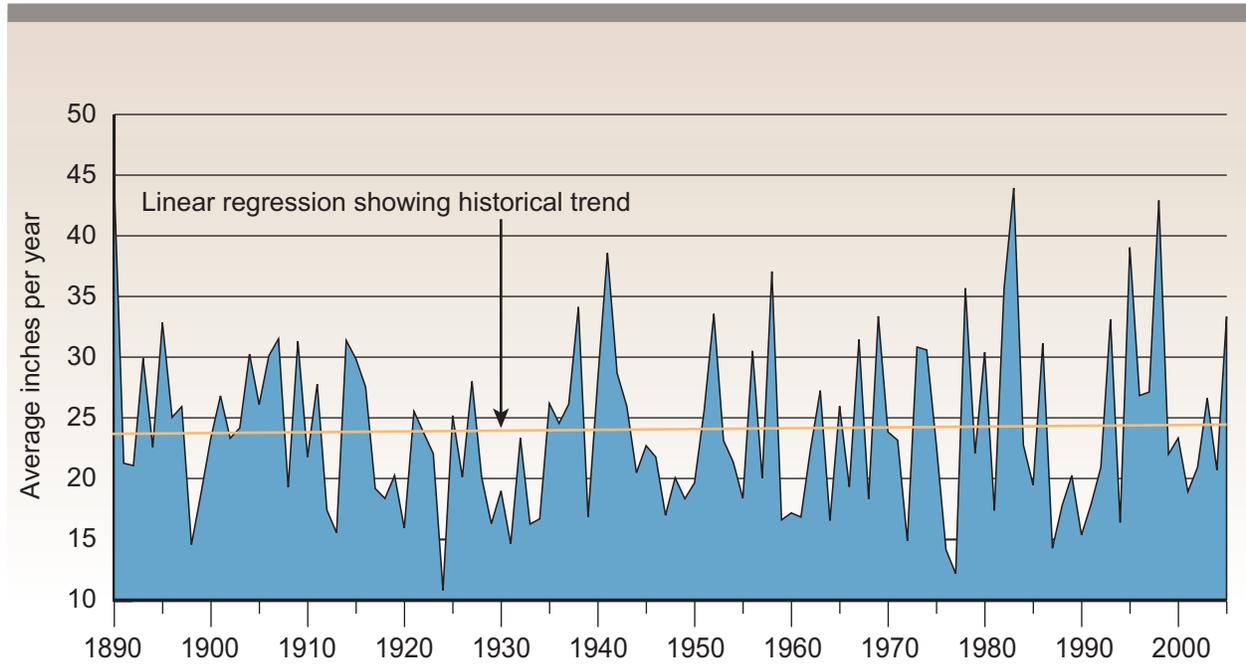


Figure 4. California Precipitation Trend

Yearly precipitation calculated from average of 95 stations spread across California. Data collected by Jim Goodridge, State climatologist formerly with DWR.

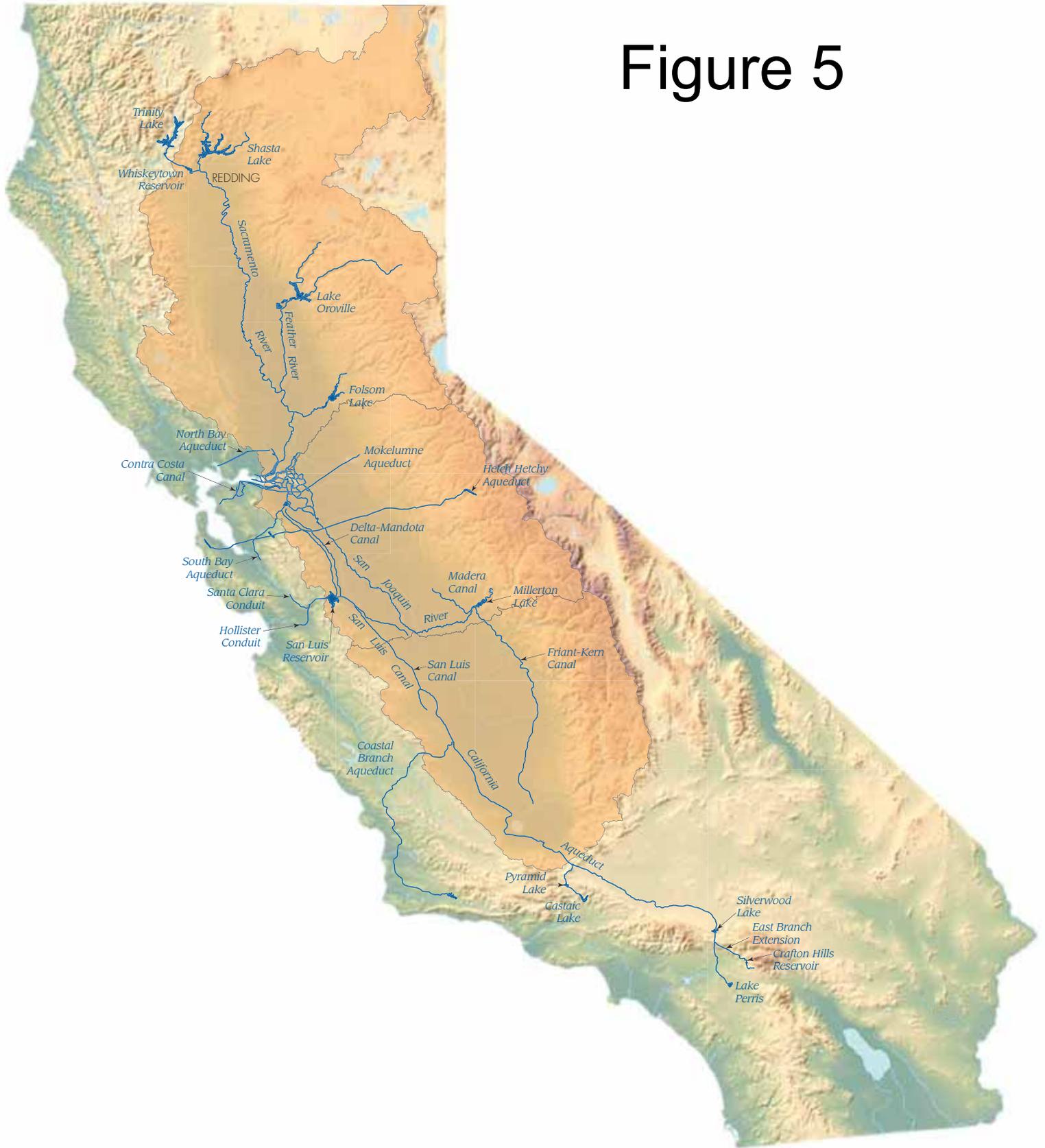


116 year average: 23.88 inches

Driest 30 years (1908-1937): 21.28 inches

Wettest 30 years (1977-2006): 24.88 inches

Figure 5



■ In-Delta Diversions ■ Tracy Exports ■ Banks Exports

Figure 6

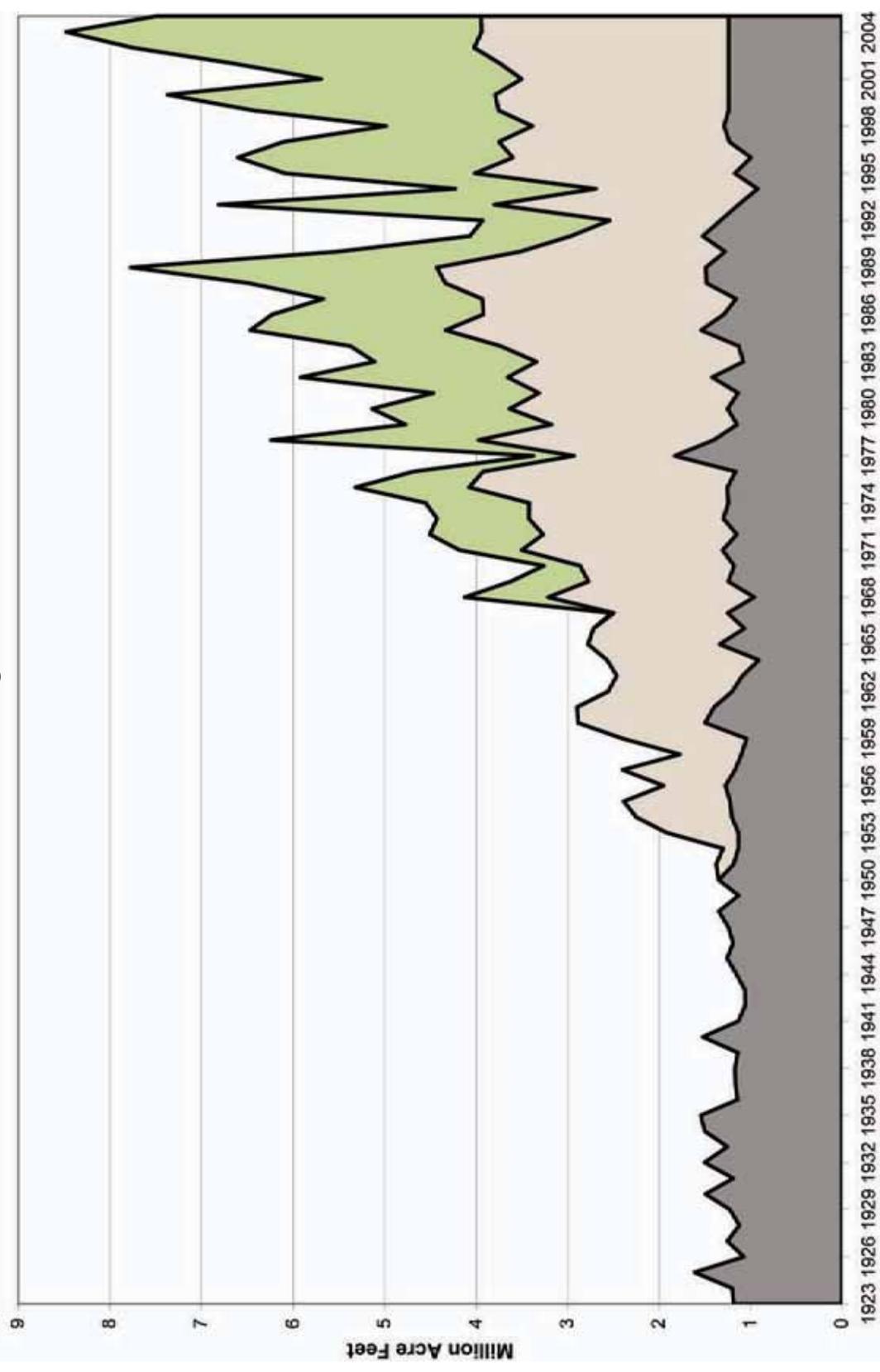
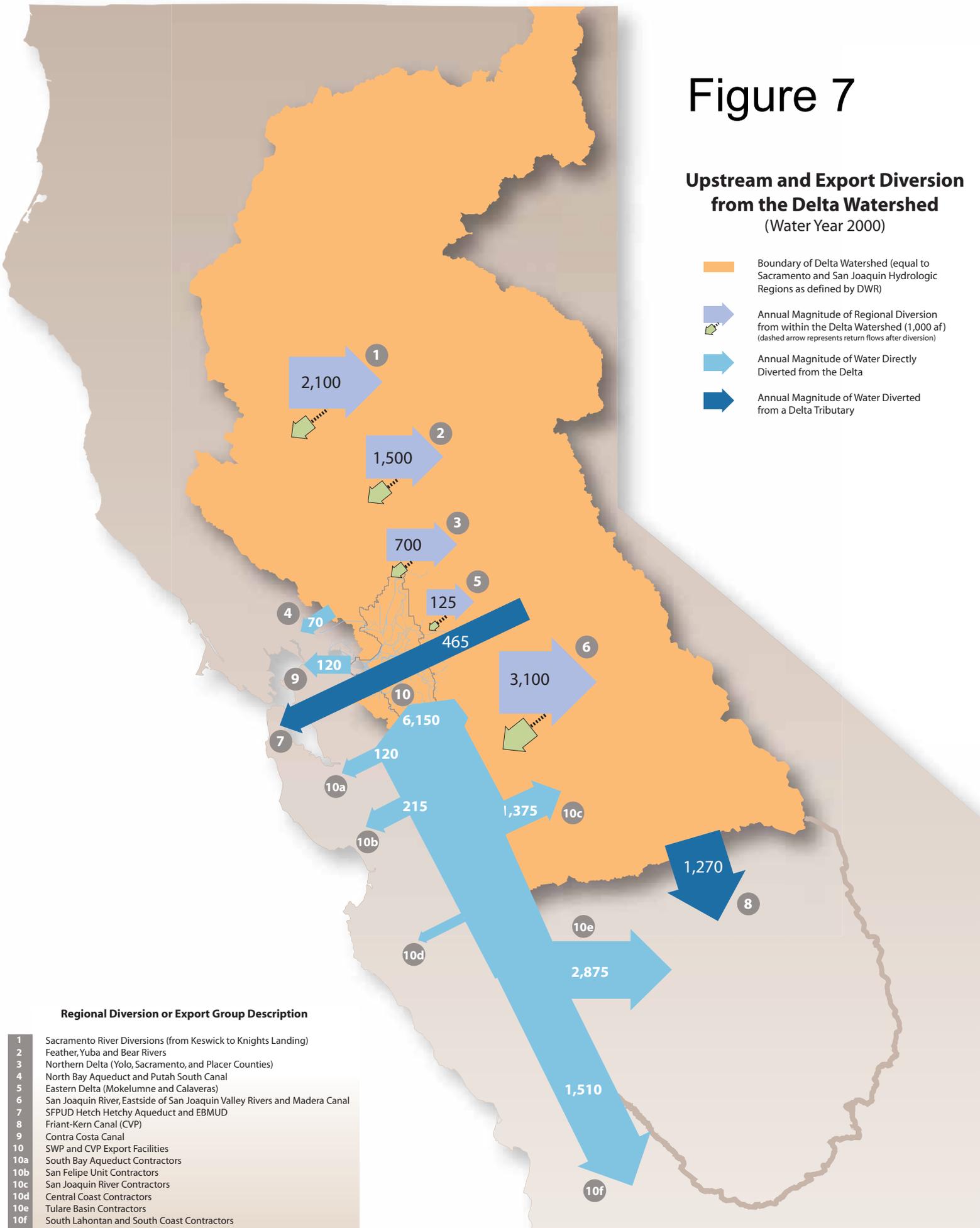


Figure 7

Upstream and Export Diversion from the Delta Watershed (Water Year 2000)

-  Boundary of Delta Watershed (equal to Sacramento and San Joaquin Hydrologic Regions as defined by DWR)
-  Annual Magnitude of Regional Diversion from within the Delta Watershed (1,000 af) (dashed arrow represents return flows after diversion)
-  Annual Magnitude of Water Directly Diverted from the Delta
-  Annual Magnitude of Water Diverted from a Delta Tributary

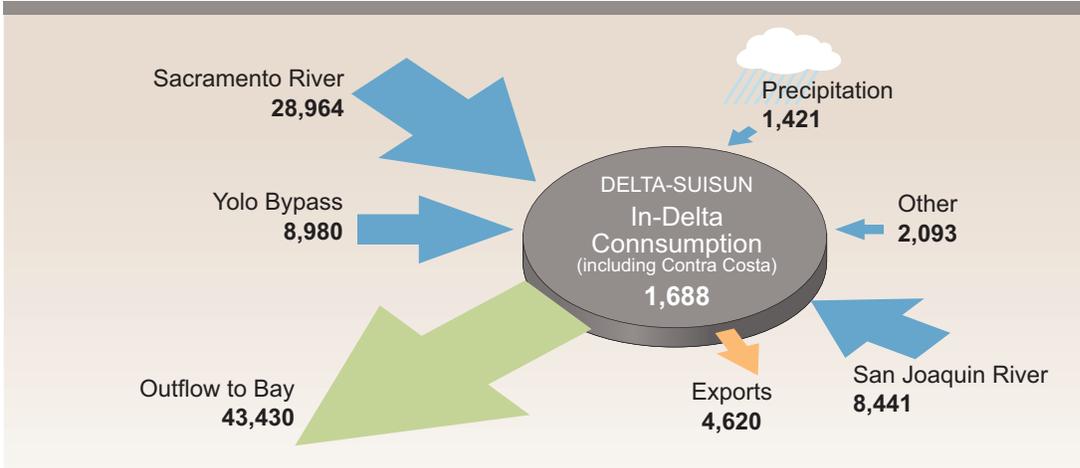


Regional Diversion or Export Group Description

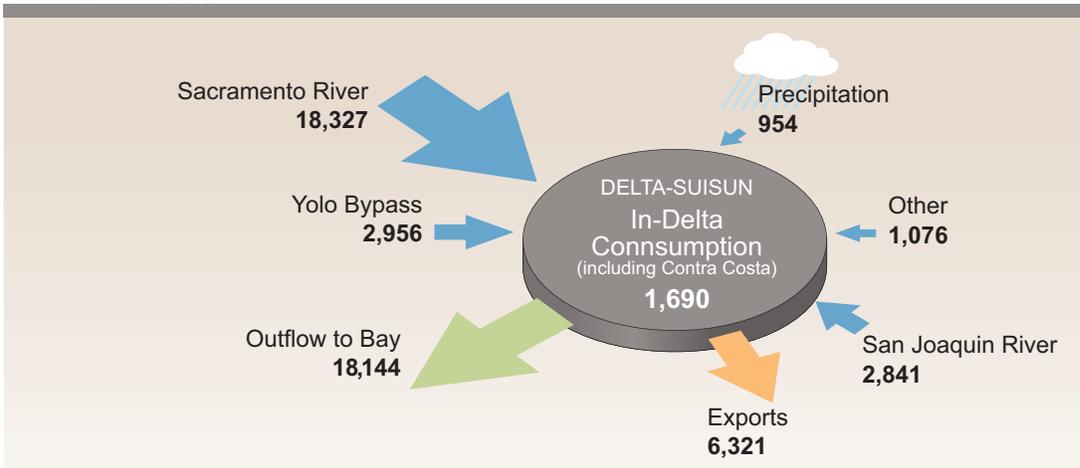
- 1 Sacramento River Diversions (from Keswick to Knights Landing)
- 2 Feather, Yuba and Bear Rivers
- 3 Northern Delta (Yolo, Sacramento, and Placer Counties)
- 4 North Bay Aqueduct and Putah South Canal
- 5 Eastern Delta (Mokelumne and Calaveras)
- 6 San Joaquin River, Eastside of San Joaquin Valley Rivers and Madera Canal
- 7 SFPUD Hetch Hetchy Aqueduct and EBMUD
- 8 Friant-Kern Canal (CVP)
- 9 Contra Costa Canal
- 10 SWP and CVP Export Facilities
- 10a South Bay Aqueduct Contractors
- 10b San Felipe Unit Contractors
- 10c San Joaquin River Contractors
- 10d Central Coast Contractors
- 10e Tulare Basin Contractors
- 10f South Lahontan and South Coast Contractors

Figure 8. Water Balance in Delta by Water Year Type
 (source: *Status and Trends of Delta Suisun Services*, DWR 2007)

1998 (Wet)



2000 (Average)



2001 (Dry)

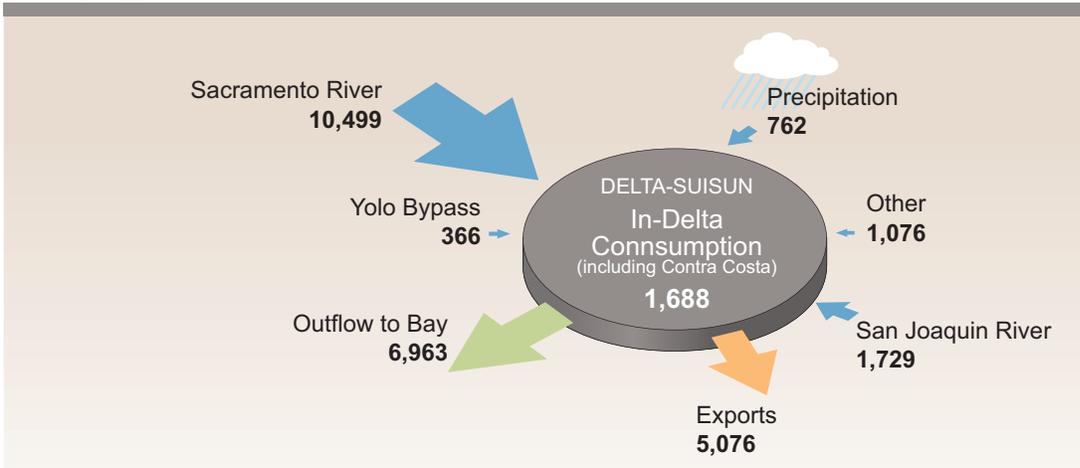


Figure 9. Estimated Distribution of Water Sources used to Meet Daily Urban Water Demand (Water Year 2000)

Using data from the 2005 *California Water Plan Update, v.3*, this graphic shows an estimated representation of how various sources of water available to a region may have been used to meet a region's urban per-capita water use. However, because data is not distinguished to separate the destination of source water, some of the water available to a region may have gone exclusively to agricultural uses or urban uses, thus skewing what is represented here.

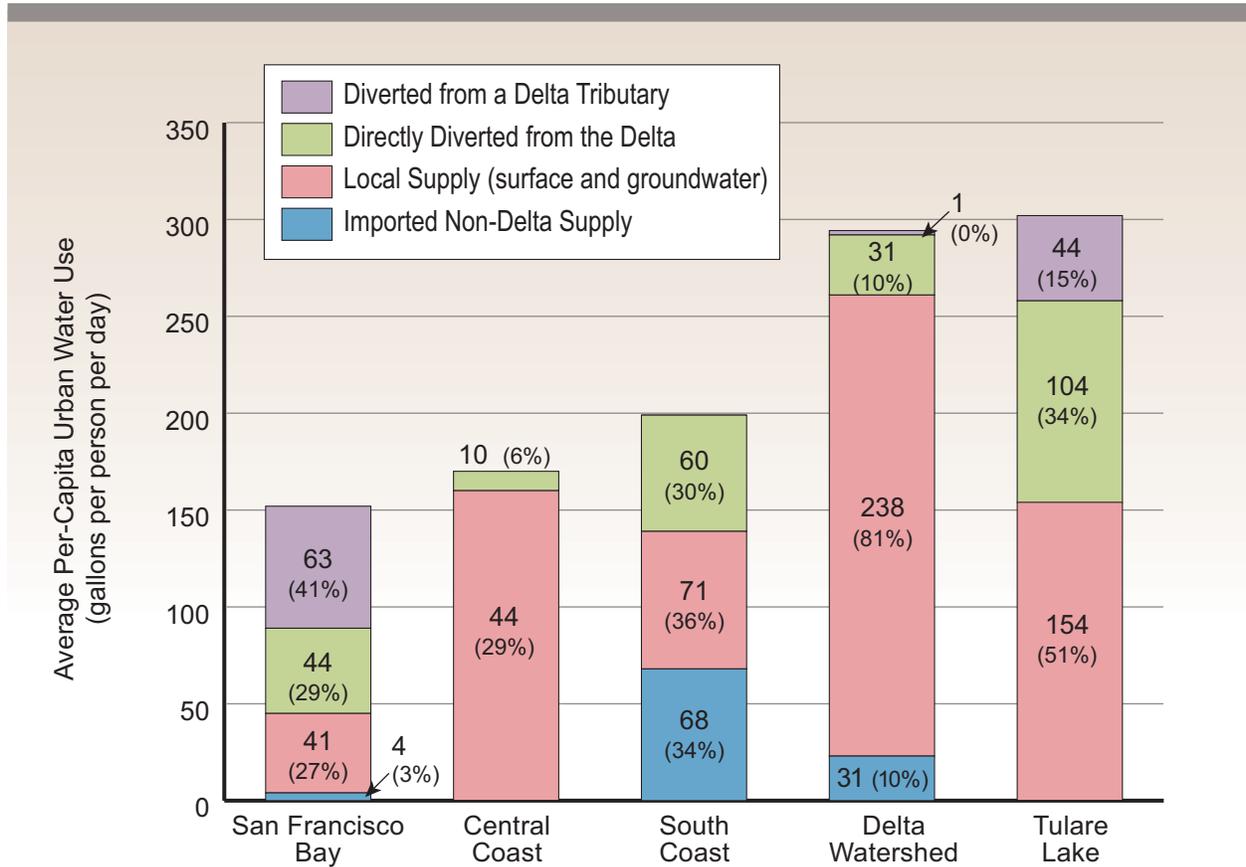


Figure 10. Range of Additional Annual Water for Eight Resource Management Choices

This graph shows the potential range of more water demand reduction and supply augmentation each year for eight resource management strategies. Low estimates are shown in the lower (dark blue) section of each bar. The water supply benefits of the resource management strategies are not additive. As presented here, urban water use efficiency includes reduction in both consumptive and nonconsumptive uses (or applied water), whereas agricultural water use efficiency only includes reduction in consumptive uses (or net water).

