

Delta Vision

Context Memorandum: Sustainability

This context memorandum provides critical information about sustainability to support policy making. As they are developed, the context memos will create a common understanding and language about the critical factors in establishing a Delta Vision.

This is an iterative process and this document represents the beginning of a dialogue with you about how best to understand sustainability and to inform recommendations by the Delta Vision Blue Ribbon Task Force. You have two weeks to submit comments that may be incorporated into the next iteration.

You may submit your comments in two ways: either online at dv_context@calwater.ca.gov or by mail. If you are using mail, please send your comments to: Delta Vision Context Memo: Sustainability, 650 Capitol Mall, 5th Floor, Sacramento, CA 95814.

Your attributed comment will be posted on the Delta Vision web site (<http://www.deltavision.ca.gov>). Please cite page and line number with specific comments; general comments may be keyed to sections.

Your participation in this iterative process is valuable and important and is greatly appreciated. Thank you for your comments.

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1 *Section 1. General Policy*

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On September 28, 2006, Governor Schwarzenegger issued Executive Order S-17-06 (Executive Order) initiating the Delta Vision and ordering the Blue Ribbon Task Force (Task Force) to “develop a durable vision for sustainable management of the Delta.” The purposes of this context memo are to: (1) characterize the working definitions of sustainable and sustainable management; and (2) provide the Task Force with a framework for sustainable management policy development.

The Executive Order defines sustainable management as “managing the Delta over the long term to restore and maintain identified functions and values that are determined to be important to the environmental quality of the Delta and economic and social well being of the people of the state.” This definition centers upon the competition for resources among the nine identified Delta services:¹

- Land Use (agriculture, urban, and conservation)
- Flood Management
- Ecosystem
- Water Supply
- Water Quality Management and Discharges
- Transportation
- Utilities
- Recreation/Tourism and
- Local and State Economics.

The geographic scope of these services reaches beyond the Delta Protection Act’s legally-defined Delta. In reality, global economic issues such as commerce and navigation may impact the Delta as much as local power production or urbanization. This issue is important for purposes of evaluating sustainability because the Delta services’ geographic extent complicates the management actions needed to sustain the Delta. Accordingly, to develop a strategy to sustainably manage the Delta in the context of the nine services, the Task Force will need to:

- Evaluate the geographic reach of the services impacting the Delta environment.
- Connect the human actions and governance structures relevant to those services.

¹ These services are identified in the *Status and Trends of Delta-Suisun Services* document. A slightly different set of “uses and resources” is identified in Executive Order S-17-06 of Governor Schwarzenegger dated September 28, 2006. The Executive Order includes “Emergency Response” and combines “Water Supply and Quality.”

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- 1 • Measure the impact of those services on the Delta environment.
- 2
- 3 Sustainable management of the Delta – in the context of the nine identified services
- 4 – has been imbedded in numerous political efforts for over 30 years. In 1974, the
- 5 California Legislature passed and the Governor signed the Suisun Marsh Preservation
- 6 Act (SMPA). The SMPA directed the San Francisco Bay Conservation and
- 7 Development Commission (BCDC) and the Department of Fish and Game to “preserve
- 8 the integrity and assure continued wildlife use” of Suisun Marsh. In 1992, the state
- 9 revised the Delta Protection Act² (DPA) to:
- 10
- 11 protect, maintain, and where possible, enhance and restore the overall
- 12 quality of the Delta environment, including but not limited to agriculture,
- 13 wildlife habitat, and recreational activities [and to] assure orderly,
- 14 balanced conservation and development of Delta land resources and
- 15 improve flood protection by structural and nonstructural means to ensure
- 16 an increased level of public health and safety.
- 17
- 18 And, in 2000, the CALFED Program sought to “develop a long-term comprehensive
- 19 plan [to] restore ecological health and improve water management for beneficial uses of
- 20 the Bay-Delta system.” More specifically, CALFED was directed to:
- 21
- 22 (1) restore the ecological health of a fragile and depleted Bay-Delta
- 23 estuary; (2) improve the water supply reliability for the State’s farms and
- 24 growing cities that draw water from the Delta and its tributaries, including
- 25 7 million acres of the world’s most productive farmland; (3) protect the
- 26 drinking water quality of the 22 million Californians who rely on the Delta
- 27 for their supplies; and (4) protect the Delta levees that ensure its integrity
- 28 as a conveyance and ecosystem.
- 29
- 30 In July 2006, export water users and the state and federal resource agencies signed
- 31 a Memorandum of Agreement (MOA) thereby embarking on an aggressive plan to
- 32 develop the Bay-Delta Habitat Conservation Plan (BDCP). The goal of the BDCP is to
- 33 provide for the conservation and management of both listed and non-listed species, as
- 34 well as the communities and ecosystems that support those species. This process will
- 35 entail an accurate identification of the geographic scope of the resource, and the
- 36 geographic scope of actions that impact the resource.
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- 38 Water Code Section 79473 and the Executive Order are the most recent declarations
- 39 calling for sustainable management of the Delta.

² The original Delta Protection Act was adopted in 1959.

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2 In the context of existing law, policy, and academic information on the meaning of
3 sustainable management, the Task Force will be faced with the following policy
4 questions to develop a program and plan for sustainable management of the Delta:
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1) What does sustainable management of the Delta mean?

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2) Why is the Delta currently unsustainable?

8

3) What actions must be taken to achieve sustainable management of the
9 Delta?

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4) Who will take the actions?

11

5) When must the identified actions be taken?

12

6) How do these actions adjust to "Drivers of Change," like global climate
13 change?³

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16 In short, sustainable management of the Delta requires a social choice about Delta
17 services and what actions are necessary to congruently manage those chosen services.
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Section 2. Conceptual Models and Related Science and Engineering

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Section 3. History, Institutions, Policies and Economics of Sustainable and Sustainable Management

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25 The definition of sustainable and sustainable management varies in legal, political,
26 and academic disciplines. The existing definitions may be synthesized into the following
27 four points:
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- Sustainable management requires that specific actions be implemented in
31 relationship to an identified resource.

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- Sustaining a resource is a process, requiring actions to be taken over time that
33 result in a sustainable resource.

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- Sustainable is not a legally defined term that mandates certain actions in the
35 context of an identified resource. Existing law can merely force actions that
36 result in sustainable management practices.

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³ The Drivers of Change are listed in the *Status and Trends of Delta-Suisun Services* Public Review Draft (March 2007, p. 3).

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- 1 • Sustainable management has no universally accepted meaning in politics or
2 academia. The varied definitions can be synthesized to encompass the three E's
3 – environment, equity, and economic well-being.
4

5 **Legal Definitions of Sustainable Management.** California law is replete with
6 references to the concept of sustainable management, but there is no universally
7 accepted legal definition. In a few instances, the concept of sustainability is embraced
8 within the context of identified actions affecting an identified resource rather than used
9 as a conceptual or enabling goal.
10

- 11 • The Office of Planning and Research (OPR) has developed General Plan
12 Guidelines for “sustainable development” under Government Code section
13 65040.12. OPR defines sustainability as the ability to meet the needs of current
14 generations without compromising the ability of future generations to meet their
15 own needs, thus promoting a balance among economy, environment, and equity.
16 OPR narrows this definition for purposes of evaluating sustainable development.
17 Specifically, OPR recommends that General Plans balance suburban growth;
18 open space and working landscapes; local and regional economies; energy and
19 resource efficiency; and equity.
20
- 21 • The California Pollution Control Financing Authority Act and its implementing
22 regulations⁴ define “sustainable development” as a project that reduces pollution
23 hazards; promotes infill development; promotes economic development within
24 economically distressed communities; supports alternative transportation options;
25 ensures a mix of business and housing, including affordable housing.
26
- 27 • Sections 552 and 553 of the Food and Agriculture Code define “sustainable
28 agricultural practices” as “organic [farming] methods, biological control, and
29 integrated pest management” and includes “the analysis of economic factors
30 influencing the long-term sustainability of California agriculture.”
31
- 32 • California Government Code section 12805.4 discusses a Strategic Vision for a
33 Sustainable Sacramento-San Joaquin Delta that addresses sustainable:
34 ecosystem functions, including aquatic and terrestrial flora and fauna; land use
35 and land use patterns; transportation uses, including streets, roads and
36 highways, and waterborne transportation; utility uses, including aqueducts,
37 pipelines, and power transmission corridors; recreation uses, including current

⁴ Title 4, Division 11, Article 10 of the California Code of Regulations

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- 1 and future recreational and tourism uses; flood management strategies; and
2 other aspects of sustainability deemed desirable.
3
- 4 • Public Resources Code section 35500(d) (the Ocean Protection Act) defines
5 “sustainable” and “sustainability” to mean both of the following: (1) Continuous
6 replacement of resources, taking into account fluctuations and abundance and
7 environmental variability; and (2) securing the fullest possible range of present
8 and long-term economic, social, and ecological benefits, while maintaining
9 biological diversity.
10
 - 11 • The Wildlife Conservation Law of 1947, codified at Fish and Game Code section
12 1300 et seq. embodies the idea of sustainability in the following: “ ... it is the
13 policy of the State to acquire and restore to the highest possible level, and
14 maintain in a state of high productivity, those areas that can be most successfully
15 used to sustain wildlife and which will provide adequate and suitable recreation.
16 To carry out these purposes, a single and coordinated program for the
17 acquisition of lands and facilities suitable for recreational purposes, and
18 adaptable for conservation, propagation, and utilization of the fish and game
19 resources of the State, is established.
20

21 In summary, the statutory references, including the SMPA and DPA, separately
22 address components of sustainability by focusing on preservation, enhancement and
23 restoration of various services, but they do not clearly establish a long-term working
24 definition that reflects the important balancing process between economics, environment
25 and equity that the Task Force may undertake to develop a sustainable management
26 plan for the Delta.
27

28 *Public Trust & Reasonable Use Doctrines.* The Public Trust Doctrine embraces
29 the concepts of sustainability and sustainable management. The Public Trust Doctrine
30 counsels that the state has an obligation to manage public trust assets for the benefit of
31 the general public (both current and future generations). This concept has been adopted
32 in several western states. The California Supreme Court has ruled that the Public Trust
33 Doctrine requires the state to take the public trust into account in the planning and
34 allocation of water resources and to protect public trust uses where feasible and
35 consistent with the public interest. Here the concept of protecting public trust resources
36 for current and future generations is akin to the concept of sustainability and sustainable
37 management. The Public Trust Doctrine, however, is merely a legal mechanism to
38 mandate sustainable management practices. The Doctrine does not provide a legal
39 definition of what those practices may be in light of the legal application to an identified

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1 resource. Those actions are left to the management agencies to develop upon mandate
2 from the Court.

3
4 Similarly, the Reasonable Use Doctrine in Article X, Section 2 of the California
5 Constitution has its underpinnings in the idea of sustainable management of water
6 resources. Here the right to use water is “limited to such water as shall be reasonably
7 required for the beneficial use to be served, and such right does not and shall not extend
8 to the waste or unreasonable use...of water.” As many commentators have noted,
9 Reasonable Use has different meanings in different contexts and may change its
10 meaning over time. In fact, some commentators have expanded the idea of reasonable
11 use to include the possibility that one use of water may be unreasonable in light of other
12 competing uses for the same water. Imbedded in the process of evaluating whether a
13 use is reasonable, is the principle of sustainable management of water resources. This
14 balancing process recognizes that water resources are limited and there is a public
15 interest in ensuring that resources are allocated to maximize economic well being and
16 environmental values for current and future generations. This is accomplished through
17 the flexible application of the rule reasonable use, which may be adjusted to address the
18 facts and circumstances of each case.

19
20 In summary, both of these mechanisms are passive in that the result concludes “it is
21 in the public interest or is not” or “it is a reasonable use of water or is not.” While both of
22 these doctrines do not define sustainability or sustainable water management, they do
23 provide a mechanism for the public to evaluate competing water uses in light of current
24 circumstances. Therefore, these doctrines offer an opportunity to evaluate and modify
25 uses in a dynamic context – over an intergenerational time period. It is worth noting that
26 “balancing competing uses” under these doctrines is theoretical and strong water rights
27 laws and Constitutional provisions may limit their application.

28
29 *Oregon Law on Sustainability.* The Oregon Legislature enacted a law (2001
30 Oregon Laws Ch. 918) that mandates the creation of a Sustainability Board to identify,
31 evaluate and propose incentives and the removal of disincentives for the purposes of
32 encouraging activities that best sustain, protect and enhance the quality of the
33 environment, economy and community for the present and future benefit of Oregonians.
34 This law defines “sustainability” as developing and protecting resources in a manner that
35 enables people to meet current needs and provides that future generations can also
36 meet future needs, from the joint perspective of environmental, economic and
37 community objectives. The act Ordered the Institute for Natural Resources at OSU to
38 serve as a clearinghouse for scientifically based natural resources information, and
39 provide this information to state agencies for decision making purposes. Similarly, the
40 Oregon Sustainability Executive Order 03-03 requires development of a “Sustainability

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1 Guidance” document by each state agency, encompassing: definitions, strategies for
2 achieving sustainability, and policy directives for achieving economic, environmental and
3 social sustainability, as well as performance measures.

4
5 **Political Definitions of Sustainable Management.** There are numerous political
6 definitions of sustainable and sustainable management. One of the first political
7 definitions was promulgated by the Brundtland Commission as part of the 1987 World
8 Commission on Environmental Development. The Brundtland Commission’s definition
9 of sustainable development is “development that meets the needs of the present without
10 compromising the ability of future generations to meet their own needs.” This broad
11 definition is still used today to describe sustainable development in the context of global
12 ecosystems. This definition has a core temporal component where present and future
13 needs are sustained.

14
15 The World Wildlife Fund’s definition of sustainable development in the context of
16 global ecosystem preservation is “improvement in the quality of human life within the
17 carrying capacity of supporting ecosystems.” This definition specifically identifies the
18 resource to be sustained – “supporting ecosystems” and the economic and social
19 implications of the resource preservation – “human life.” Accordingly, these definitions
20 illustrate the need to address both an identified resource and the preservation of that
21 resource over time.

22
23 Other definitions focus more upon the process of sustainable management rather
24 than trying to define a sustainable outcome. The National Academy of Sciences recently
25 defined “sustainability science” as “understanding of the human-environment condition
26 with the dual objectives of meeting the needs of society while sustaining the life support
27 systems of the planet.” Furthermore, the NAS has stated that “defining sustainability is
28 ultimately a social choice about what to develop, what to sustain, and for how long.”
29 Finally, the World Summit for Sustainable Development has focused upon a “sustainable
30 transition” noting that the process toward achieving sustainability leads towards a
31 sustainable development end.

32
33 These political definitions embody the key components of sustainable management
34 of resource identification, intergenerational resource preservation, and developing a
35 process to achieve sustainability.

36
37 **Academic Definitions of Sustainable Management.** The reconcilable dictionary
38 definitions of “sustainable” are “a method of using a resource so that the resource is not
39 depleted or permanently damaged”, “avoiding depletion of resources”, and “capable of

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1 being continued.” These definitions can be reconciled to mean that sustainability is an
2 end result that requires a process of actions to accomplish.

3

4 Experts in the theory of sustainable management generally identify the following
5 three factors – “the 3 E’s” – in examining the sustainability of a resource like the Delta:

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7 (1) Environment– accurate identification of the resource, the geographic scope of
8 the resource, and the geographic scope of actions that impact the resource.

9 (2) Equity – intergenerational
10 and intragenerational
11 resource sustention for
12 values and uses that may
13 not have been identified

14 (3) Economic Well Being –
15 accurate identification
16 and consideration of
17 local, regional, and global
18 economic activities
19 related to that resource.

20

21 Figure 1 illustrates the
22 interaction of the 3-E’s. Academia
23 contends that at the intersection of these elements, sustainability is achieved.

24

25 *Environment.* The ecosystem has been identified as one of the primary services
26 of the Delta⁵. Numerous biological and ecological studies have been performed on the
27 Delta, and yet new biological phenomena continue to confound scientists, including the
28 pelagic organism decline on one extreme and then record salmon runs the next.
29 Numerous planning processes have been initiated through legal and political
30 mechanisms to address these environmental conditions with the overarching planning
31 goal of sustainability of the resource. The preservation and enhancement process
32 requires at least the following four components: (1) an ability to define environmental
33 assets; (2) an ability to assess impacts upon that “environmental asset,” (3) an ability to
34 assess the value of the environmental asset; (4) ability to value actions designed to
35 protect the asset.

36

37 *Equity.* The academic literature speaks of equity in terms of intragenerational and
38 intergenerational well being. As it relates to resource management, there is a specific
39 emphasis upon sustenance of the natural resource so that others have an opportunity to

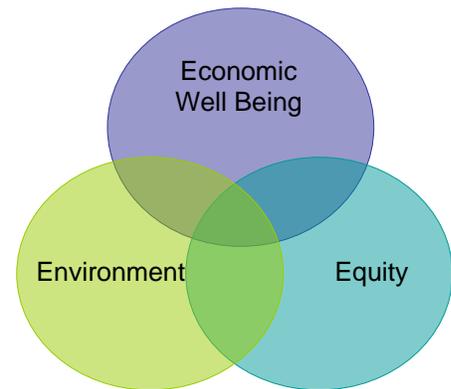


Figure 1 – The 3-E’s

⁵ See the *Background* for the list of defined Delta Services

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1 use or enjoy the resources in the future. Similar to environmental quality, the attempt to
2 ensure equity is driven by the fact that resources are scarce and humans are seeking to
3 achieve ends now that may or may not consider whether future generations will have an
4 opportunity to acquire and utilize the resources. These resources may be generally
5 placed into two categories: (1) resources that serve as inputs to production processes
6 (e.g., water, soil, natural gas); and (2) resources that also have intrinsic worth (salmon,
7 waterfowl).

8
9 *Economic Well Being.* To consider actions intended to achieve economic well
10 being, it is useful to consider the definition of economics: an evaluation of human
11 behavior between ends and scarce resources which have multiple uses. Each Delta
12 service described in the *Status and Trends of Delta-Suisun Services* document has its
13 own economic framework. Sustainability counsels that not only may economic decisions
14 be limited by the scarcity of the resource itself, but there may be broader public interest
15 reasons for limiting access to certain resources that would otherwise be desired by
16 private entities because of environmental and equity values. The process by which
17 economic decisions are made about each of the Delta services is thus a balancing act
18 between desires to utilize a resource for economic benefits now or in the future and the
19 process by which others seek to protect a resource for the same purposes. These
20 interests may not be mutually exclusive, and many will argue that a market-driven
21 approach will actually sustain the environment for future generations by creating a
22 personal stake in the resource. In the alternative, protection of a resource may require
23 government oversight to protect the resource from extra-geographical resource use.

24
25 The following operating principles may be valuable for individuals or entities making
26 business decisions regarding the Delta services: (1) whether use of resources is within
27 regenerative capacities of natural system; (2) whether depletion of nonrenewable
28 resources is at a rate consistent with renewable substitutes developed by human
29 invention and investment; (3) whether the economic system is within carrying capacity;
30 (4) whether technological progress is efficient or induces undesirable wastes; (5)
31 whether a function is within the assimilative capacity of the environment and without
32 degradation of future absorption capacity.

33
34 **Summary of Sustainable Management.** In summary, the legal, political, and academic
35 definitions can be synthesized into the following four points:

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- 38 • Sustainable management requires that specific actions be implemented in
39 relationship to an identified resource.
 - 40 • Sustaining a resource is a process, requiring actions to be taken over time that
result in a sustainable resource.

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- 1 • Sustainable is not a legally defined term that mandates certain actions in the
2 context of an identified resource. Existing law can merely force actions that
3 demand implementation of sustainable management practices.
4 • Sustainable management has no universally accepted meaning in politics or
5 academia. The varied definitions can be synthesized to encompass the three E's
6 – environment, economics, and equity.

7

8 *Section 4. References*

9

10 *To be developed.*

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