

NAME _____

Water Plan GUIDING PRINCIPLES - [1] Use a broad, stakeholder-based, long-term perspective for water mgmt. [2] Promote sustainable resource management on a watershed basis. [3] Increase regional drought and flood preparedness. [4] Increase regional self-sufficiency. [5] Promote regional coordination and collaboration among local governments and agencies, public and private organizations, and Tribal governments and Tribal communities. [6] Determine values for economic, environmental and social benefits, costs, and tradeoffs to base investment decisions on sustainability. [7] Incorporate future variability, uncertainties, and risk in the decision-making process. [8] Use the longstanding constitutional principles of reasonable use and public trust. [9] Promote environmental justice - the fair treatment of people of all races, cultures, and incomes. [10] Use science, best data, and local and indigenous peoples' knowledge

WATER PLAN UPDATE 2009
DAY 1 PLENARY WORKBOOK

September 18-19, 2008
 Starting at 9:00 am on Sept. 18th
 Concluding at 4:00 pm on Sept. 19th
 Double Tree Hotel, 2001 Point West Way
 Sacramento, California

in a transparent and documented process. ** **Water Plan GUIDING PRINCIPLES**
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The California Water Plan guides and informs the State's decision makers and water users in determining water resource investments, policies and priorities. Stakeholder input is essential to finding durable, sustainable water management approaches. Thank you in advance for your participation in the Second Annual Water Plan Plenary.



WATER PLAN UPDATE 2009 PLENARY SESSION SEPTEMBER 18-19, 2008

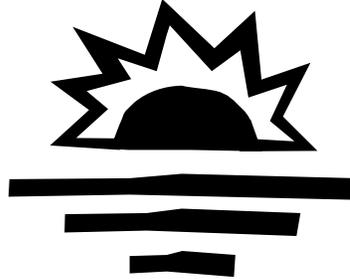
AGENDA-Day 1 – Thursday

**** NOTE: The agenda will be adjusted for a live broadcast of Director Snow's Remarks to the Delta Vision Blue Ribbon Task Force (at approximately 9 a.m.)**

	TIME	CONTENT	PRESENTERS
1.	8:30	Early Registration	
2.	9:00	Welcome, Agenda Review, Ground Rules, Logistics	DWR Staff, Facilitators
3.	9:15	OPENING REMARKS	Mark Cowin, DWR
4.	9:20	Recap of Update 2009 Activities <i>Update on Volumes 2 (RMS) and 3 (Regional Reports), and Tribal Communication Plan</i>	Kamyar Guivetchi, DWR
5.	9:30	Preview of Volume 1 for Update 2009 <i>Overview of content for Volume 1 – Chapters 1 to 7</i>	Kamyar Guivetchi, DWR
6.	9:45	Review of Strategic Plan Elements (Vol. 1, Chapters 2 and 7) <i>Goals, Objectives, Recommendations ...Discussion</i>	Kamyar Guivetchi, DWR
7.	11:45	Overview of Existing Conditions (Vol. 1, Chapters 3-4) <i>Companion State Plans California Water Today (key themes)</i>	David Sumi, CCP Paul Dabbs, DWR
8.	12:15	Working Lunch - Discussion of Existing Conditions	All
9.	1:15	Overview of Existing Conditions <i>discussion continued</i> <i>Group Report Outs</i>	All
10.	2:15	Updates on Related Efforts <i>WetCAT</i>	Fran Spivy-Weber, SWRCB
11.	2:30	Environmental Justice/Disadvantaged Communities Presentation <i>...Discussion</i>	Gary Mulcahy, AC & Debbie Davis, Environmental Coalition for Water All

DAY 1 CONTINUED ...

	TIME	CONTENT	PRESENTERS
12.	4:00	Updates on Related Efforts - <i>Drought</i> - <i>20X2020</i>	Wendy Halverson-Martin, DWR Rick Soehren, DWR
13.	4:30	Recess	



AGENDA -Day 2 – Friday

	TIME	CONTENT	PRESENTERS
14.	8:00 AM	Late Registration	All
15.	8:30	Welcome, Recap, Agenda Review, Ground Rules, Logistics	DWR Staff, Facilitators
16.	8:40	Updates on Modeling and Scenarios (Volume 1, Chapters 5 and 6)	Rich Juricich, DWR
17.	9:00	Climate Change Technical Advisory Group Update	John Andrew, DWR
18.	9:15	Resource Management Strategies Recommendations - <i>Discussion</i>	Evelyn Tipton, DWR All
19.	11:30	Recycled Water – Panel Presentation	Jon Bishop, SWRCB Brian Bernados, DPH Mary Grace Pawson, Water ReUse Assn. Dean Reynolds, DWR
20.	12:30	Working Lunch Recycled Water – Poster Sessions	All
21.	1:30	Integration of Flood Management into Water Resource Planning	Flood Team, DWR
22.	3:30	Recap, Action Items, Next Steps	
23.	3:45	Adjourn	DWR

GROUND RULES

There will be many opportunities for Plenary participants to engage group discussion. Participants are asked to subscribe to several key agreements to allow for productive outcomes

USE COMMON CONVERSATIONAL COURTESY

Don't interrupt; use appropriate language, no third party discussions, etc.

ALL IDEAS AND POINTS OF VIEW HAVE VALUE

You may hear something you do not agree with or you think is "silly" or "wrong." Please remember that the purpose of the forum is to share ideas. All ideas have value in this setting. The goal is to achieve understanding. Simply listen, you do not have to agree, defend or advocate.

HONOR TIME

We have an ambitious agenda, in order to meet our goals it will be important to follow the time guidelines given by the facilitator.

HUMOR IS WELCOME

BUT humor should never be at someone else's expense.

BE COMFORTABLE

Please feel help yourself to refreshments or take personal breaks. If you have other needs please let a facilitator know.

SPELLING DOESN'T COUNT

Recent research indicates that writing on a vertical surface (like blackboards or flipcharts) actually increases the number of spelling errors.

CELL PHONE COURTESY

Most of the participants have demanding responsibilities outside of the meeting room. We ask that these responsibilities be left at the door. Your attention is needed for the full meeting. Please turn cell phones, or any other communication item with an on/off switch to "silent." If you do not believe you will be able to participate fully, please discuss your situation with one of the facilitators.

USE THE MICROPHONE

We are in a large room with varying acoustics. Please use a microphone so that others can hear you.

AVOID EDITORIALS

It will be tempting to analyze the motives of others or offer editorial comments. Please talk about YOUR ideas and thoughts.

OTHER?



WORKING IN GROUPS

You will spend most of the Plenary working in groups. As a group you will be asked to analyze or develop ideas, keep track of the issues you develop then make a report to the larger group. Each group will need:

Facilitators/ Staff: Staff will be available to work with most of the groups. In the event staff is not available, one or more members should ensure that the group stays with the assigned task and that all participants have an opportunity to share ideas. This person and all group members should ensure use of the ground rules.

Recorder: Ideas will be shared on flipcharts. Information from the charts will be used to make reports AND used later to transcribe the proceedings of the meeting. Ask the facilitators if you need help with this. For each set of questions please:

- A. Put Table # and Page # on each sheet
- B. Note the issue being addressed
- C. Prepare Summary Sheet for the reporter

Reporter: Someone will report on behalf of the full group.

- Will summarize table conclusions from Flip Charts
- Should not be staff
- Must speak into microphone
- Limit presentation to time allotted by Large Group Facilitator



Time Keeper: All activities will involve specific blocks of time. In order to complete tasks, one group member needs to keep track of time.

Personal Worksheets: In addition to the group notes, you may wish to make more in-depth individual or organizational comments. Extra workbooks, notepaper, and on-line options are available to do this. The Large Group note takers appreciate your table notes being turned in at the end of the session. If you are willing to include your name and contact information, it will help the person preparing the notes in the event they have questions.

WATER PLAN VISION, MISSION, PRINCIPLES, & GOALS REVIEW TO DATE

- Building on Update 2005, Strategic Plan Elements were first reviewed at the June, 2007 in the Advisory Committee (AC) meeting & revisions made to the Mission, Vision, Goals, and Guiding Principles
- December 2007 – the AC reviewed and further refined
- Through February 2008, AC and State-agency Steering Committee (SC) members submitted comments on the Strategic Plan Elements. The proposed Mission, Vision, and Goals received a final review during the July 2008 AC meeting.
- Mission and Vision framed by Agency and Department responsibilities, as well as requirements established by the Legislature through the California Water Code.
- Guiding Principles were introduced and revised in the same timeframes.
- The Mission, Vision, and Guiding Principles serve as the background framework for today's discussion on the Goals, Objectives, and Recommendations.

REVIEW OF THE STRATEGIC PLAN ELEMENTS



Volume 1, Chapter 2 creates a Strategic Framework for Update 2009. The Strategic Planning Elements include a mission, vision, goals, objectives and related actions, and recommendations.

Vision

California has integrated, reliable and secure water resources and management systems that

- Enhance public health, safety, and quality of life in all its communities;
- Sustain economic growth, business vitality, and the agricultural industry; and
- Protect and restore California's unique biological diversity, ecological values, and cultural heritage.

Mission

Updating the California Water Plan provides State, federal, Tribal, regional, and local governments and organizations a continuous strategic planning forum to collaboratively:

- Recommend strategic goals, objectives, and near-term actions that conserve, manage, and develop California's water resources and management systems, needed to ensure water supplies that are adequate, reliable, secure, affordable, sustainable and of suitable quality for beneficial uses;
- Prepare response plans for floods, droughts, and catastrophic events that would threaten water resources and management systems, the environment, property, and the health, welfare and livelihood of the people of California; and
- Evaluate current and future water conditions, challenges, and opportunities.

1. The vision statement describes the desired future for California water resources and management and serves as a foundation for water and flood planning during the planning horizon.
2. The mission statement describes the Water Plan's unique purpose and its overarching reason for existence. It identifies what the plan should do and why, and for whom it does it.
3. The guiding principles describe the core values and philosophies used to achieve the vision, mission, and goals. In other words, the guiding principles describe how to make decisions and do business.
4. The goals are the desired outcomes of the Water Plan over its planning horizon. The goals are founded on the statewide vision.
 - Broad long-range statement
 - High-level to provide overall context for what we want to accomplish
 - More abstract expression of what we want to accomplish
5. The objectives are specific and measurable targets for accomplishing a goal. They mark interim steps toward achieving the mission and goals. They are measurable, time-based statements of intent, linked directly to the goals and emphasize the results of actions at the end of a specific time.
 - Specifies a single result
 - Details what and when, not how
 - Measurable (specific and quantitative)
 - Specifies a target date
 - Relevant and attainable
 - Identifies metric for evaluating performance
6. Recommendations **IMPLEMENT** the goals and objectives.

UPDATE 2009: GOALS

If you have not already done so, introduce yourself to your group. As an individual, spend a few minutes reviewing the Vision, Mission, and Guiding Principles from the previous page and workbook cover.

As a group review the Update 2009 Goals for about 15-20 minutes.

Based on lessons learned from past Water Plans and the new information, would you add, subtract or change anything in the Goals for Update 2009?

(Reminder – you will need a notetaker and a reporter.)

Update 2009 Goals

1. State government supports long-range, integrated water resources planning and management through leadership, oversight, and public funding.
2. Regional partnerships have a central role in California water resources planning, sustainable water management, and increasing regional self-sufficiency.
3. Water resources planning and management, together with land use planning for urban and rural development, protect, preserve, and enhance watersheds, communities, and environmental and agricultural resources.
4. Natural resource and land use planners make informed and collaborative decisions to integrate water supply, water conservation, water quality, flood management, and environmental stewardship in light of climate and other drivers of change.
5. Integrated flood management, as part of integrated water resources management, increases flood protection, improves preparedness and emergency response, enhances floodplain ecosystems, and promotes sustainable flood management systems.
6. The benefits and consequences of water decisions and access to State government resources are equitable across all communities.

UPDATE 2009 OBJECTIVES

COMPANION PLANS

Some of the proposed objectives were gathered from Companion State Plans, including the:

- Draft Climate Change Adaptation White Paper (DWR)
- Draft Water-Energy Climate Change Mitigation Strategies (WETCAT)
- Draft FloodSafe Strategic Plan Preliminary Staff Draft Delta Vision Strategic Plan Water Boards Strategic Plan 2008-2012 (DWR)
- Draft Bay-Delta Strategic Work Plan Water Action Plan (DV)
- California Wildlife Action Plan (DFG)
- California Transportation Plan 2025 (April, 2006) and 2030 (BTH)
- Update 2009 Draft Tribal Communication Plan (TCC)
- Preparing for California's Next Drought – Changes Since 1987–1992 (DWR, 2000)
- Critical Water Shortage Contingency Plan, (Governor's Advisory Drought Panel)
- California Drought, An Update (DWR)

The following objectives, along with their related actions, are proposed to help provide greater system diversity and resilience to future uncertainties and risk, and to help California deal with climate conditions and other future uncertainties and risks. The objectives and related actions are presented in Chapter 7 of Volume 1. Two copies of Chapter 7 are provided at each table for reference.

As a group, spend about 15-20 minutes looking at the Objectives considering the following questions:

Thinking about the 12 Objectives listed on this and the following page, do they need adjustment? If so, in what way?

Objective 1 – Promote, improve, and expand Integrated Regional Water Management to build regional partnerships that have a central role in California water resources planning, sustainable watershed and floodplain management, and increasing regional self-sufficiency.

Objective 2 – Increase water use efficiency, recycling, and reuse to help meet future water demands and adapt to climate change.

Objective 3 – Advance and expand conjunctive management of multiple water supplies to prepare for future droughts and climate change.

Objective 4 – Protect and restore surface water and groundwater quality to safeguard public and environmental health and secure California's water supplies for their intended uses.

Objective 5 – Promote, improve, and expand ecosystem stewardship to sustain the environment and water and flood management systems.

Objective 6 – Promote and practice Integrated Flood Management to provide multiple benefits for better emergency preparedness and response, higher flood protection, more sustainable flood and water management systems, and enhanced floodplain ecosystems.

Objective 7 – Practice sustainable management of the California Delta with the Delta ecosystem and a reliable water supply for California as co-equal goals and by recognizing the Delta as a unique and valued area.

Objective 8 – Prepare response plans for floods, droughts, and catastrophic events to help residents and communities make decisions that reduce the consequences of these events when they occur.

Objective 9 – Reduce the energy consumption of water and wastewater management systems to mitigate greenhouse gas emissions.

Objective 10 – Improve and expand monitoring, data management, and analysis to support decision-making in light of uncertainties that support Integrated Regional Water Management and statewide flood and water resources management systems.

Objective 11 – Identify and fund focused research on new water technology to help carry out water programs and better manage water systems.

Objective 12 – Increase Tribal participation and access to funding for water programs and projects to have more sustainable Tribal water resources.

UPDATE 2009 DRAFT RECOMMENDATIONS

California Water Plan Update 2009 identifies the most pressing water management issues and challenges faced by the state and regions. Recommendations are in the form of policies, strategies, and approaches that will help reduce and remove impediments and/or leverage resources and opportunities to help implement the Water Plan's actions and achieve its goals and objectives through 2050. Recommendations will be directed at decision-makers throughout California, the executive and legislative branches of State government, DWR and other State agencies, and all water users.

NUMEROUS SPECIFIC RECOMMENDATIONS ARE CONTAINED IN THE RESOURCE MANAGEMENT STRATEGIES. THOSE WILL BE REVIEWED TOMORROW ON FRIDAY SEP. 19. THE FOLLOWING RECOMMENDATIONS SHOULD BE OVERARCHING.

As a group, spend about 25-30 minutes looking at the 9 Recommendations, considering the following questions: Thinking about the Recommendations listed on this and the following pages, do they need adjustment? If so, in what way?

1. California should implement the Water Plan's related actions to achieve its goals and objectives.

State, federal, Tribal, regional, and local governments and agencies, public and private organizations, and water users should implement the actions of California Water Plan Update 2009 to achieve its goals and objectives. They should in partnership adopt an integrated, collaborative, multi-benefit, and transparent approach toward resource planning and management. Californians, acting as individuals, make daily choices that can impact water quality and prevent water waste. State government should create incentives for citizens to aggressively participate in water protection and conservation efforts. These efforts may be modeled after energy conservation efforts conducted by the State.

By statute, the California Water Plan cannot mandate actions nor authorize spending for its recommendations. But in preparing the California Water Plan, DWR has sought participation from other State agencies, federal, Tribal, regional and local governments and agencies, the public and nongovernmental entities. State agencies should use the California Water Plan as a guiding document. California Water Plan Update 2009 reflects our common priorities and values that promote sustaining California's water and environmental resources and ensuring safe, high-quality, and reliable water supplies and improved flood protection for our communities and industry.

2. State government should manage California's water resources with ecosystem health and water supply reliability as co-equal goals, and should protect public trust resources.

Healthy, functioning ecosystems and reliable water supplies are primary and co-equal goals for sustainable management of California's water resources and management systems. To achieve this, State government should exercise continuous supervision over California's: water resources; the flows and quality of rivers, streams and navigable waters; and the lands beneath them and from which they flow.

State government should protect resources held in public trust. State agencies should explicitly consider public trust values in the planning and allocation of water resources and protect public trust uses whenever feasible. State government should protect the public's rights to commerce, navigation, fisheries, recreation, ecological preservation, and related beneficial uses.

3. State government should lead and support planning and research to help California adapt and mitigate for climate change impacts, and emphasize drought and flood contingency planning.

(Modified from Update 2005)

State government should help predict and prepare for the effects of global climate change on our water resources, water management systems, and water-dependent ecosystems. State government should work with and assist researchers to monitor, predict, and prepare for the effects of global climate change on California's water and flood protection systems and the environment. DWR should develop alternative flow data to help State, federal, Tribal, regional and local governments and planners test the potential effects of global climate change on different resource management strategies, and to help water facility operators test alternative reoperation strategies.

California is already seeing the effects of climate change on hydrology (snowpack, river flows), storm intensity, temperature, winds, and sea levels. Planning for, mitigating, and adapting to these changes, particularly their impacts on public safety and reliable, high-quality, long-term supplies of water, will be one of the most significant challenges facing water managers this century. While the existing system has some capacity to cope with climate variability, extreme climatic events may become more frequent with growing populations in their path, demanding improvements in drought and flood preparedness, and emergency response and recovery plans.

4. California should improve the integration of land use policies and practices, development decisions, and water and flood planning and management.

The success and sustainability of water and flood management actions and infrastructure depends on land use policies and practices and development decisions made by: local officials and planners; State, federal and Tribal land managers; the building industry; and homeowners. Closer integration of land use policies and practices, development decisions, and water and flood planning and management can help protect groundwater recharge areas, help restore natural processes in watersheds to increase infiltration, slow surface runoff and reduce flood peaks, improve water quality, augment the natural storage of water, and increase regional self-sufficiency.

To achieve this:

- State government should assist local governments with data, technical, and financial assistance.
- Local governments should update General Plans to address drought, water quality, and flood risks in light of existing and future climate change impacts.
- Regional partnerships should develop and update Integrated Regional Water Management plans in close coordination with: local General Plans; State, federal and Tribal land management plans; transportation Regional Blueprint Plans; and energy, ecosystem, and resource plans.
- Federal agencies as trustees of about 50 percent of California lands should partner with local, State, and Tribal governments and agencies in developing their land and resource management plans.

5. California should maintain, rehabilitate, and improve its aging water and flood infrastructure. (modified from Update 2005)

California should maintain, rehabilitate, and improve its aging water and flood infrastructure, especially drinking water, sewage treatment and collection systems, flood protection facilities, operated by State, federal, Tribal, and local entities.

State government should lead an effort, with input from public and private owners of water infrastructure, to identify and prioritize water infrastructure maintenance of key components with regional or statewide significance. Improvements may include refinements in the way

water systems are operated, additional conveyance capacity, and new water storage. This effort should also identify and implement financing strategies for continued public investments in the resulting infrastructure maintenance plan.

6. California should provide sustainable funding for statewide and regional water and flood management recognizing the critical role of public-private partnerships, the principle of beneficiary pays, incentive-based water pricing and user fees, and investment decisions based on sustainability. (similar to Update 2005)

State government should lead an effort to identify and prioritize funding strategies to finance regional and statewide water resources planning, programs, infrastructure, monitoring, and technology research. State government needs to clearly articulate when, and for what actions, to use public investments from State and federal sources. California's water finance plan should also recognize the critical role of local public and private partnerships and funding based on the principle of beneficiary pays, incentive-based water pricing and user fees, and investment decisions based on sustainability.

While recent bond measures have provided a down payment for improving California's water and flood systems and the environment, the State Legislature should conduct a formal assessment of State and local financing mechanisms to provide a continuous, stable source of revenue to sustain the programs described in Water Plan Update 2009. Activities in need of certainty and continuity in funding include: regional water planning and management for water efficiency, quality and supplies; ecosystem stewardship, updating county and city general plans to address climate change impacts and adaptation, inspection and maintenance of flood management facilities, observational networks, and water-related climate change adaptation research. State and local governments and water purveyors should implement incentive programs and cost-avoidance on-bill financing to promote water efficiency improvements and retrofits by urban water users.

7. State government should provide effective leadership, assistance, and oversight for California's water and flood planning and management activities. (modified from Update 2005)

State government should lead water and flood planning and management activities that: (a) regions cannot accomplish on their own, (b) the State can do more efficiently, (c) involve interregional, interstate, or international issues, or (d) have broad public benefits.

These activities include, but are not limited to: (1) preparing California Water Plan updates as a public forum to integrate State, federal, Tribal, regional, and local plans to meet the State's future agricultural, urban, and environmental water demands and water management objectives; (2) operating and maintaining the State Water Project and State-federal flood management system; (3) providing regulatory oversight to protect public health and safety and public trust values, including water quality, environmental protection, flood management, and dam safety; (4) participating in major regional initiatives and (5) forming public-private partnerships to implement regional programs like the Colorado River Quantification Settlement Agreement.

8. California should clarify the roles, authorities, rights and responsibilities of federal, Tribal, State, regional, and local governments and agencies responsible for water and flood management. (modified from Update 2005)

California should define and articulate the respective roles, authorities, rights, and responsibilities of federal, Tribal, State, and local governments and agencies responsible for water and flood management. In light of the growing role of Tribal and local agencies and governments in regional water and flood planning and management, State government should redefine how to empower and assist them to implement their regional water plans and programs.

State government should also conduct an internal review of how State resource agencies do business and identify ways to make these agencies more efficient, effective, and responsive to Californians. State government should continue an interagency water forum like the State-agency Steering Committee for Water Plan Update 2009 to strengthen coordination among State agencies responsible for water supplies, water quality, flood protection, ecosystem stewardship, and ocean water desalination.

9. State agencies should ensure Environmental Justice in all communities and equal access to State funding for water and flood projects. (modified from Update 2005)

State agencies must encourage and assist representatives from disadvantaged communities and vulnerable populations, and the local agencies and private utilities serving them, to participate in statewide, regional, and local water planning processes and to get equal access to State funding for water projects.

Recent State policy establishes social equity and environmental justice as a State planning priority to ensure the fair treatment of people of all races, cultures, and income, in particular those having experienced significant disproportionate adverse health and environmental impacts.

GETTING READY FOR REPORTS

Working in your group, Spend the last 8 minutes preparing your report on **what if anything should be changed or adjusted and why.**

You may wish to select one reporter for each group of questions.

- Goals
- Objectives
- Recommendations

We will use ADD IN, for the reports. One group will present a topic and their answers and other tables will note anything new or different that their group said about that topic. Once everyone has added in we will move to the next topic.

You will also be asked to introduce your group - name and where they are from.



OVERVIEW OF EXISTING CONDITIONS ENVIRONMENTAL SCAN

Update 2009 Chapter 3 discusses water management in California and summarizes key Companion State Plans that relate to and inform, the Water Plan. A separate handout lists the key companion plans.

Chapter 4, “California Water Today,” describes major aspects of water conditions and challenges the Water Plan must address. The **challenges** are categorized into the following themes:

<p>1. Drought, reservoir conditions, and Colorado River supplies</p>	<p>California is facing the most significant water crisis in its history. After experiencing two years of drought and the driest spring in recorded history, water reserves are extremely low. With the Sacramento-San Joaquin Delta ecosystem near collapse, court-ordered restrictions on water deliveries from the Delta have reduced supplies from the state's two largest water systems by twenty to thirty percent. Drought conditions in the Colorado River Basin and a Sierra snowpack that is now dangerously unreliable due to global climate change, is leaving many communities throughout California facing mandatory restrictions on water use and/or rising water bills. If the drought continues into next year, the results could be catastrophic to our economy.</p>
<p>2. Floods and flooding</p>	<p>Many Californians already face an unacceptable risk of flooding. Catastrophic flooding within the Central Valley could mirror or exceed the economic, social, and environmental damages caused by Hurricane Katrina in 2005. Over a half million people live behind levees in California now, with populations continuing to grow. Climate change may worsen the state's flood risk by producing higher peak flows and a shift toward more intense winter precipitation. Further, State government liability in the aftermath of the Paterno decision worsens the financial consequences of flooding. Flood systems throughout the state must be modified and, in some cases, enlarged, to accommodate the higher variability of flood flow magnitude and frequency, and managed to protect public safety, stabilize the economy, and sustain ecosystems.</p>
<p>3. Environment/ecosystem</p>	<p>Reliable water supplies and resilient flood protection require ecosystem stewardship and sustainability to be a primary goal and foundational action for water resources management. Building adaptive capacity and system sustainability requires water and flood management projects to incorporate restoration and maintenance of biological diversity and natural ecosystem processes.¹ Water supply and flood management systems are significantly more sustainable and economical when they preserve, enhance, and restore ecosystem functions. Planning and designing for ecosystem functions will help maintain resilient systems that can recover from severe natural disruptions and, in fact, allow quicker recovery with lower economic costs. Moreover, by reducing existing, non-climate stressors on the environment,</p>

¹ *Adaptive Capacity* is the ability of systems, organizations, and individuals to 1) adjust to actual or potential adverse changes and events, 2) take advantage of existing and emerging opportunities that support essential functions or relationships, and/or 3) cope with adverse consequences, mitigate damages, and recover from system failures. It is an indicator of how well a system could or would adjust and/or recover to external changes or large perturbations (e.g. severe floods or droughts).

Resilience: Improve capacity of resource/natural system to return to prior conditions after disturbance.

	<p>ecosystems will have more capacity to adapt to new stressors and uncertainties brought by climate change.</p>
<p>4. Climate change</p>	<p>Climate change impacts on hydrology and water resources management will be significant. The trends of the last century will likely intensify in this century. While the existing system has some capacity to cope with climate variability, extreme weather events, increased droughts and floods, and scarcity of water in some parts of the state will stretch that capacity to meet future needs. The water management community has invested in, and now depends upon, a system that relied on historic hydrology as a guide to the future for water supply and flood protection. However, this historic hydrology may have limited utility as a planning tool.</p> <p>Climate change may also impact not just water supply, but water demand as well. Warmer temperatures will increase evapotranspiration rates, thereby increasing the amount of water that is needed for the irrigation of certain crops and urban landscaping. Drought will particularly affect the environment and other water users that rely only on annual rainfall, and not on managed water sources – dry-land agriculture, livestock grazing on non-irrigated rangeland, and water-based recreation.</p>
<p>5. Sea-level rise</p>	<p>Like all climate change impacts, sea level rise is difficult to project, particularly so in this case, because of ongoing scientific uncertainty about the melting of ice sheets on western Antarctica and Greenland. Nonetheless, scientists have documented sea level rise over the past century, and generally agree that the seas will continue to rise, but there remains a high degree of uncertainty regarding the rate of rise. Recent peer-reviewed studies estimate a rise of between 7-55 inches by 2100. Such sea level rise poses increased risk of flooding for California’s coastal residents, and a particular danger for many of the state’s wastewater treatment plants, which are located at or near sea level. However, for Californians living in the Delta, or the millions who rely on drinking water or agriculture irrigated by Delta exports, the most critical impact of rising seas may be the amplified pressure on an already vulnerable levee system, which protects numerous islands that are below sea level and continue to sink. Catastrophic levee failures could inundate Delta communities and interrupt water supplies throughout the state. According to the Public Policy Institute of California, the economic cost of a single episode of unexpected levee failure in the Sacramento–San Joaquin Delta could reach \$40 billion.</p> <p>Even without levee failures, Delta water supplies will be affected. Increases in sea level will allow greater penetration of saltier seawater into the Delta, further degrading drinking water quality and potentially aquatic habitat. More freshwater releases from upstream reservoirs, which may be concurrently affected by drought and increased demand, will be required to repel the sea and maintain even current salinity levels for beneficial uses. Sea level rise may also affect drinking water supplies for coastal communities due to the intrusion of seawater into coastal aquifers, especially those that are already overdrafted.</p> <p>California lies within multiple climate zones. Therefore, each region of the state will experience unique impacts from climate change. For some regions, improving watershed health will be an important concern. Other areas will be affected by saltwater intrusion. In particular, regions that depend heavily on water imports from other regions will need vigilant strategies to cope with greater uncertainty in their future supply. Because economic and environmental effects depend on location, adaptation strategies must be regionally suited.</p>

	<p>Of the many impacts of climate change, sea level rise presents the most challenging problem for which to plan because of the great uncertainty around ice sheet dynamics, as well as the potentially large impacts. Sea level rise also depends on local and regional factors such as land movement and atmospheric conditions. Much of the Sacramento-San Joaquin Delta, the hub of California's state and federal water projects, consists of islands that are below sea level and protected by levees. Rising sea levels will increase pressure on fragile levees and will pose a significant threat to water quality. Local and regional investments in water and flood management infrastructure, as well as wetland and aquatic restoration projects, are also vulnerable to rising seas.</p>
<p>6. Water and energy</p>	<p>Climate change may reduce the reliability of California's hydroelectricity operations, which, according to the California Climate Action Registry and the California Air Resources Board, is the state's largest source of energy that does not emit GHG emissions. Heavier winter and spring rainfall and floods can strike during flood control season, when reservoirs must be maintained at lower levels. Increased or fluctuating water inflows to reservoirs may exceed generation capacity, forcing water releases over spillways and resulting in lost hydropower potential. Higher snow elevation, decreased snowpack, and earlier melting result in less water available for power generation during hot summer months, when energy demand is highest. The impact is compounded overall by the anticipated increased energy consumption due to higher temperatures and greater water demands in summer when less water is available. These conditions may in turn force greater dependency on fossil fuel generation that produces greenhouse gases. (from CC 7/24/08)</p> <p>While water generates approximately one-third of the state's electricity, water use also requires significant amounts of energy. Approximately one-fifth of the electricity and a third of the non-power plant, natural gas consumed in the state are associated with water use. According to the California Energy Commission, end use of water is the most energy intensive portion of the water use cycle in California. In addition to the many efficiency efforts throughout the state, the Department of Water Resources is implementing a directive from the Governor to develop a plan to reduce per capita water use by 20 percent by 2020. Measures to increase water use efficiency and re-use will reduce electricity demand from the Water sector, reducing greenhouse gas emissions.</p> <p>Water and energy are two resources that are inherently linked, especially in California. Taken together, pumping, treating, and distributing potable water, groundwater pumping, desalination, heating and cooling processes, pressurization, and the collection, treatment, recycling, and discharge of wastewater, consume approximately 20 percent of the state's total electricity, 30 percent of the natural gas, and 88 million gallons of diesel. Some water systems are net energy producers, for example, the federal CVP as well as San Francisco's Hetch Hetchy and the Los Angeles Aqueduct water systems. Others are net energy consumers, for example, Metropolitan Water District's Colorado River Aqueduct and the SWP. In fact, the SWP is the single largest user of electricity in the state, although the project produces about half of the energy it consumes.</p>
<p>7. Contamination of surface water and groundwater - Placeholder – text being developed</p>	

<p>8. Delta vulnerabilities</p>	<p>The California Delta is the heart of our state, at once a water supply, an ecosystem, and a place that is indispensable to modern California.</p> <p>Delta challenges include</p> <ul style="list-style-type: none"> • Subsidence • Earthquakes • Climate change • Sea level rise • More powerful storms • Declining species • 162 levee failures in 100 Years • 64% chance of catastrophic failure due to earthquake or storm in the next 50 years. <p><i>Placeholder – text being developed</i></p>
<p>9. Deferred maintenance, aging infrastructure, and levees</p>	<p>California depends on vast statewide water management systems to provide clean and reliable water supplies, protect lives and property from floods, withstand drought, and sustain environmental values. These water management systems include physical facilities and their operational policies and regulations. Facilities include over 1,200 State, federal, and local reservoirs, as well as canals, treatment plants, and levees. Systems are often interconnected. The operation of one system can depend on the smooth operation of another. The successful operation of the complete system can be vulnerable if any parts fail.</p> <p>Current water resources infrastructure is already strained to meet existing, competing objectives for water supply, flood management, environmental protection, water quality, hydropower, and recreation. In a changing climate, the conflicts between competing interests will be even greater as supplies become less reliable. As prediction of climate change impacts will never be perfect, flexibility must be a fundamental tactic, especially with respect to water system operations.</p> <p>California’s facilities require costly maintenance and rehabilitation as they age. In addition, they face many challenges: meeting the needs of a growing population and changing water use patterns, withstanding catastrophic natural events like earthquakes and floods, and adapting to the changes that accompany global climate change. Bottlenecks develop when physical and operational changes of existing water management systems do not keep pace with changes in capacity, regulations, and new environmental data.</p> <p>Aging facilities risk public safety, water supply reliability, and water quality. The SWP is more than 30 years old; the federal CVP is more than 50 years old. Some local facilities were constructed nearly 100 years ago. Current infrastructure disrepair, outages, and failures and the degradation of local water delivery systems are in part the result of years of underinvestment in preventive maintenance, repair, and rehabilitation. The Public Policy Institute of California estimated the state’s water supply and wastewater treatment systems maintenance backlog to be about \$40 billion (Dowall and Whittington 2003).</p>

<p>10. Levees</p>	<p>Governor Schwarzenegger in 2006 declared a State of Emergency for California's Levee System. The urgency became more pronounced as the world watched the Katrina disaster hit New Orleans.</p> <p>DWR's document "Flood Warnings: Responding to California's Flood Crisis," identified major deficiencies and challenges to the flood control system in the California Central Valley. Other levee concerns included:</p> <ul style="list-style-type: none"> • A magnitude 6.5 earthquake in the Sacramento Delta region would likely result in a catastrophic levee failure that threatens the drinking water supply for 24 million citizens in California. • A majority of California's agriculture industry is dependent on water from the Sacramento Delta and a catastrophic levee failure would result in cessation of pumping capacity for as much as 18 months, causing \$30 billion to \$40 billion in economic damage to the state. • A catastrophic levee failure would threaten tens of thousands of homes and major transportation corridors. • A catastrophic levee failure would result in significant environmental impacts including the permanent loss of critical habitat for endangered species around the Sacramento Delta. <p>The US Army Corps of Engineers identified 24 critical erosion sites on project levees in the Sacramento and San Joaquin River Flood Control systems that needed repaired before a catastrophic levee failure occurred. And they continue to assess the vulnerability of levees elsewhere in the Delta.</p>
<p>11. Catastrophic events and emergency response - Placeholder – text being developed</p>	
<p>12. Data gathering and sharing - Placeholder – text being developed</p>	
<p>13. Environmental justice</p> <p><i>Additional discussion on this topic is later in the day.</i></p>	<p>Californians from disadvantaged and under-represented communities continue to face economic and environmental inequities with respect to water supply, participation in water policy and management decisions, and access to State funding for water projects. All Californians do not have equal opportunity or equal access to State planning processes, programs, and funding for water allocation, improving water quality, and determining how to mitigate potential adverse impacts to communities associated with pro-posed water programs and projects. (See Volume 4 Reference Guide article "Environmental Justice in California Government.")</p>
<p>14. Funding</p>	<p>While recent bond measures have provided a down payment for improving California's water and flood systems, climate change presents an ongoing risk that requires a long-term commitment of funding that is properly matched to anticipated expenditures, beneficiaries, and responsible parties.</p>
<p>15. Regional and local challenges (drawing from Regional Reports in Vol. 3)</p> <p>Text to summarize regional reports in Volume 3. Organize around general issues? or by region?</p>	



OVERVIEW OF EXISTING CONDITIONS

CHALLENGES

As a group spend about 30 minutes discussing the 15 Water Challenges that the Water Plan is facing and should be trying to address. Thinking about this list, is this the right list? What if anything would you add, subtract or change about this list?

In the sections with placeholders, are there concepts that you would like to propose?



WORKING LUNCH OVERVIEW OF EXISTING CONDITIONS RESPONSES AND OPPORTUNITIES

The State has initiated a number of **responses** to these challenges and there are existing **opportunities** where even more could be done. Following are areas that should be more fully leveraged to address the State’s needs.

1. Stewardship And Sustainability	<i>Placeholder</i>
2. Conservation And Water Use Efficiency	<p>Californians are called on to reduce their per capita water consumption by 20 percent by the year 2020. DWR is aggressively moving forward with water conservation programs to help meet that goal. Some of the department’s conservation efforts include:</p> <ul style="list-style-type: none"> • Encouraging increased widespread implementation of cost-effective conservation programs by urban and agricultural water suppliers • Helping water agencies develop water shortage contingency plans so they are prepared for future dry conditions or supply interruptions • Implementing programs to conserve water in landscaping and helping irrigation districts, farmers, and managers of large urban landscapes stretch their available water by providing daily information on plant water needs (drought).
3. Regional/Local Planning And Management – relationships between regions and Drought Water Bank – coordination of water and land use planning – integrated regional water management and planning – integrated flood planning and management	<p>Water managers have learned that even though imported supplies will continue to be important, they cannot be relied on to satisfy growing water demands. In the 1980s concerns for protecting the environment were manifested in strong new laws and regulations. These regulations affected the ability of imported water projects to deliver water. The resulting uncertainty also contributed to hesitancy to invest in additional facilities for these interbasin systems and forced water agencies to face difficult decisions about how to provide a reliable water supply.</p> <p>Local and regional agencies are looking more intensely at local water management options such as water conservation and recycling measures and groundwater storage. Water managers are learning that planning for sustainable water use must address multiple resource objectives—water use efficiency, water quality protection, and environmental stewardship—and consider broad needs—economic growth, environmental quality, and social equity.</p> <p>Throughout California, stakeholders are working together to develop regional and watershed pro-grams that cover multiple jurisdictions and provide multiple resource benefits. In several regions, agencies formed partnerships to combine capabilities and share costs. Integrated regional water management has taken a foothold and is on the rise. (See Box 3-6</p>

	Examples of Ongoing Regional Water Planning Efforts.)
<p>4. Statewide and inter-regional planning and response</p>	<p>California’s water management issues are best planned and carried out on a regional basis. However, the State has led collaborative efforts to find solutions to water issues having broad public benefits such as protecting and restoring the Delta, Salton Sea, Lake Tahoe, and Mono Lake. Statewide and interregional responses to water resource emergencies and management needs are summarized in this section, including programs, task forces, reports, water bonds, legislation, and federal programs.</p> <ul style="list-style-type: none"> – Governor’s Action Plan – California Water Boards – Delta Vision – Drought Contingency Plan – Prop 84 – 2008 Drinking Water Supply Act
<p>5. Statewide Water Analysis Network (SWAN)</p>	<p>The Statewide Water Analysis Network (SWAN) is preparing both a short-term and long-term plan to improve and peer-review data and analytical tools. SWAN’s plan will also include the development of presentation and decision-support tools to make complex technical information more accessible to decision-makers and resource managers.</p> <p>For example, the uncertainty that remains in the rate and magnitude of long-term climate change must be reduced. Improved data collection and a robust monitoring network will help identify trends, provide for better real-time system management, and evaluate and, if necessary, correct mitigation and adaptation strategies.</p>
<p>6. New Technology</p>	<p>State government will work with California research and academic institutions, like the California Academy of Science, California Council on Science and Technology, the University of California, and other universities and colleges, to identify and prioritize applied research projects leading to the commercialization of new water technologies and better scientific understanding of California’s water-related systems.</p>
<p>7. AB32, Global Warming Solutions Act</p>	<p>AB 32, the California Global Warming Solutions Act of 2006, requires the California Air Resources Board (CARB) to develop regulations and market mechanisms that will ultimately reduce California’s greenhouse gas emissions by 25 percent by 2020. Mandatory caps will begin in 2012 for significant sources and ratchet down to meet the 2020 goals. CARB has begun to measure the greenhouse gas emissions of the industries.</p> <p>Because of California’s massive and growing economy, the state is the 12th largest emitter of carbon in the world despite leading the nation in energy efficiency standards and lead role in protecting its environment.</p>

8. AB 162 Levee Repair	\$4 billion levee repair and flood control bond element of the Strategic Growth Plan approved by voters in November 2006, and signed AB 142 that appropriated \$500 million from the general fund to the Department of Water Resources for levee evaluation and repair.
9. AB 140	\$4 billion levee repair and flood control bond element of the Strategic Growth Plan meant to protect Californians from a Katrina-style disaster in the future. The Governor also signed AB 142 that appropriates \$500 million from the general fund to the Department of Water Resources for levee evaluation and repair in 2006-2007.
10. Proposition 1E – Disaster Preparedness and Flood Protection Bond Act	Approved by voters November 2006: This act rebuilds and repairs California’s most vulnerable flood protection structures to protect homes and prevent loss of life from flood-related disasters, including levee failures, flash floods, and mudslides; protects California’s drinking water supply system by rebuilding delta levees that are vulnerable to earthquakes and storms; authorizes a \$4.09 billion bond act; and appropriates money from the general fund to pay off bonds.

OVERVIEW OF EXISTING CONDITIONS – RESPONSES & OPPORTUNITIES

As a group spend about 30 minutes discussing the 10 Water Responses & Opportunities that the Water Plan is trying to leverage. Thinking about this list, is this the right list? What if anything would you add, subtract or change about this list? In the section with a placeholder, are there concepts that you would like to propose?

GETTING READY FOR REPORTS

Working in your group, Spend the last 7 minutes preparing a report summarizing your conclusions.

EACH GROUP WILL HAVE 3 MINUTES TO REPORT on both topics you considered. You will need a **REPORTER** and a **TIME KEEPER**.