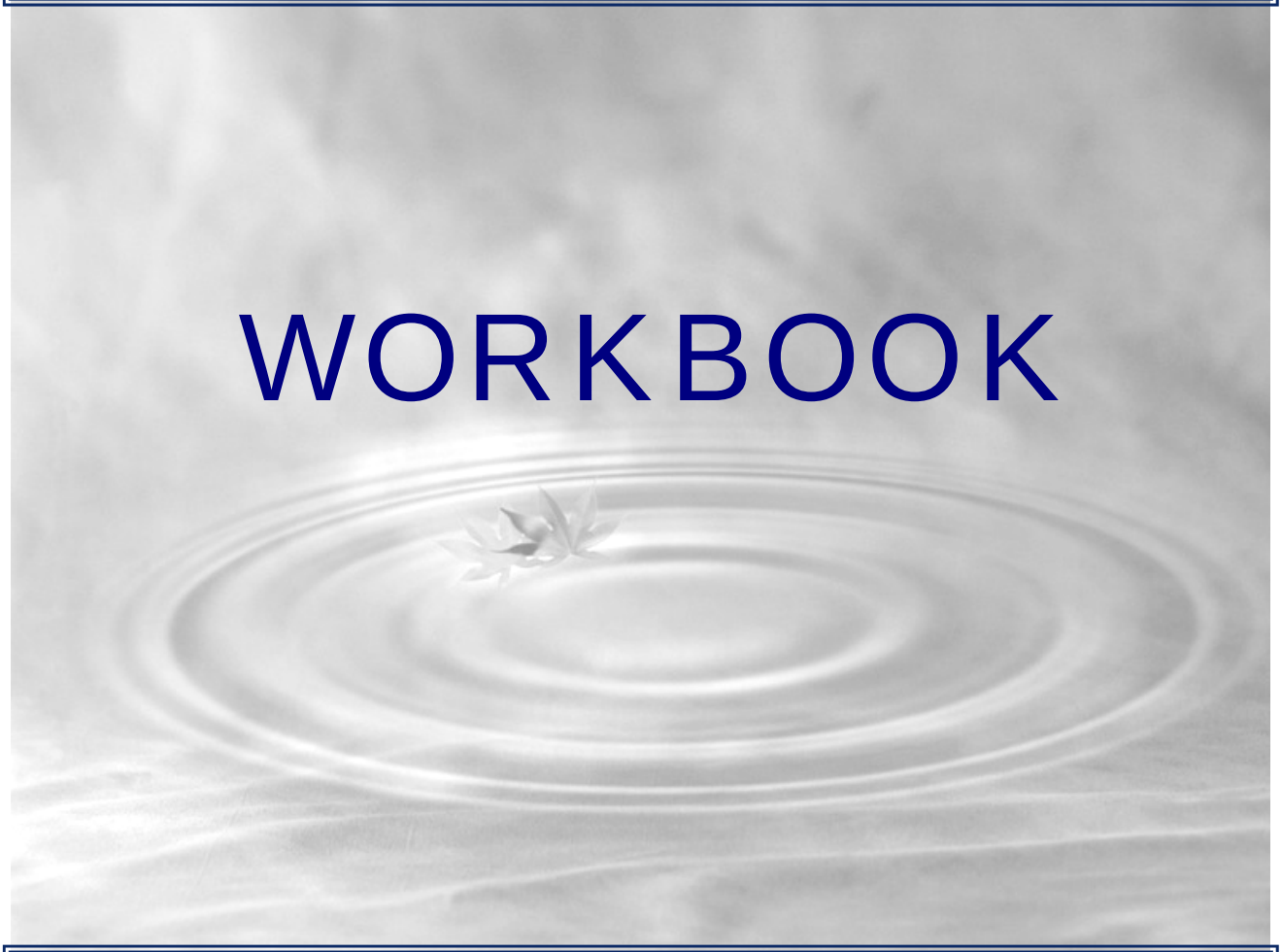
NAME: _____

State of California

CALIFORNIA WATER PLAN
UPDATE 2009
ALL REGIONS MEETING
SEPT. 17-18, ONTARIO MARRIOT HOTEL



"This is not just another update of the California Water Plan. It represents a fundamental transition in the way state government needs to be involved with local entities and interest groups to deal with water issues in the state."

Lester Snow, Director, Department of Water Resources

CALIFORNIA WATER PLAN, UPDATE 2009
AGENDA
ALL-REGIONS FORUM
SEPTEMBER 17 & 18, 2007

ONTARIO AIRPORT MARRIOTT
2200 E HOLT BOULEVARD
ONTARIO, CA 91761

DAY 1: September 17, 2007

	TIME	CONTENT	SPEAKER
1.	PM 12:30	**Registration**	
2.	1:00	**Opening Session** 1. Welcome and Greetings – Opening Remarks 2. Introduction of the Delegates 3. Ground Rules 4. Group Role in the Process – Chartering	Lisa Beutler, Facilitator*
3.	1:10	**GENERAL WORK PLAN THROUGH 2009** Presentation and Q & A	Kamyar Guivetchi, California Department of Water Resources (DWR)
4.	1:45	**REVIEW OF REGIONAL WORKSHOPS – Presentation and Discussion** 1. Where are there key differences? 2. What are major common themes? 3. What are the regional priorities? 4. What are the issues that need to be addressed at the statewide level? 5. Discussion	Paul Dabbs, DWR; Regional DWR Staff; Judith Talbot, Facilitator All
5.	3:00	**Statewide Water Analysis Network (SWAN) SCENARIOS WORKSHOP** 1. Description of SWAN and its role in preparing CWP Update 2009 2. Use of Scenarios in the California Water Plan 3. Motivation for enhancing the CWP Update 2005 scenario approach 4. Simple supply and demand scenarios for Southern California 5. Integrated water management scenarios for the Sacramento Hydrologic Region 6. Integrated water management scenarios for the Inland Empire 7. Lessons learned for future applications 8. Discussion	Rich Juricich, DWR; David Groves, RAND Corp; David Purkey, Stockholm Environment Institute; David Yates, National Center for Atmospheric Research All
6.	6:00 PM	**Adjourn**	

* *Note the Facilitators are from the Center for Collaborative Policy at Sacramento State*

DAY 2: Tuesday, September 18, 2007
8:30 pm – 5:00 pm

	TIME	CONTENT	SPEAKER
1.	AM 8:30	**Registration**	
2.	9:00	**Reconvene – Overview of Day and Other Announcements**	DWR and Facilitators
3.	9:15	**25 RESOURCE MANAGEMENT STRATEGIES** 1. What are the regional scenarios being use/proposed? 2. What mix of strategies is being used in your region? 3. Are there other opportunities to use other strategies? 4. What are the barriers to doing this up to now? 5. What are the current and future drivers, and do you see them changing?	DWR Small Group by REGION GROUPING
4.	10:15	**Small Group Report-Outs**	
5.	10:40	Part 1: Defining the Regional Perspectives about: **Reducing Water Demand** *Time includes report back to full group*	DWR, All (Mixed Regional Groups)
6.	11:45	Lunch	
7.	PM 12:15	Part 2: Defining the Regional Perspectives about: **Improving Operational Efficiency & Transfers** *Time includes report back to full group*	DWR, All (Mixed Regional Groups)
8.	1:15	Part 3: Defining the Regional Perspectives about: **Increasing Water Supply** *Time includes report back to full group*	DWR, All (Mixed Regional Groups)
9.	2:15	Part 4: Defining the Regional Perspectives about: **Improving Water Quality** *Time includes report back to full group*	DWR, All (Mixed Regional Groups)
10.	3:30	Part 5: Defining the Regional Perspectives about: **Practicing Resource Stewardship** *Time includes report back to full group*	DWR, All (Mixed Regional Groups)
11.	4:55	**Wrap up – prepare for Plenary (October 22-23)**	ALL
12.	PM 5:00	**Adjourn**	

MEETING GROUND RULES

There will be many opportunities for meeting 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

During our initial meetings 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

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.

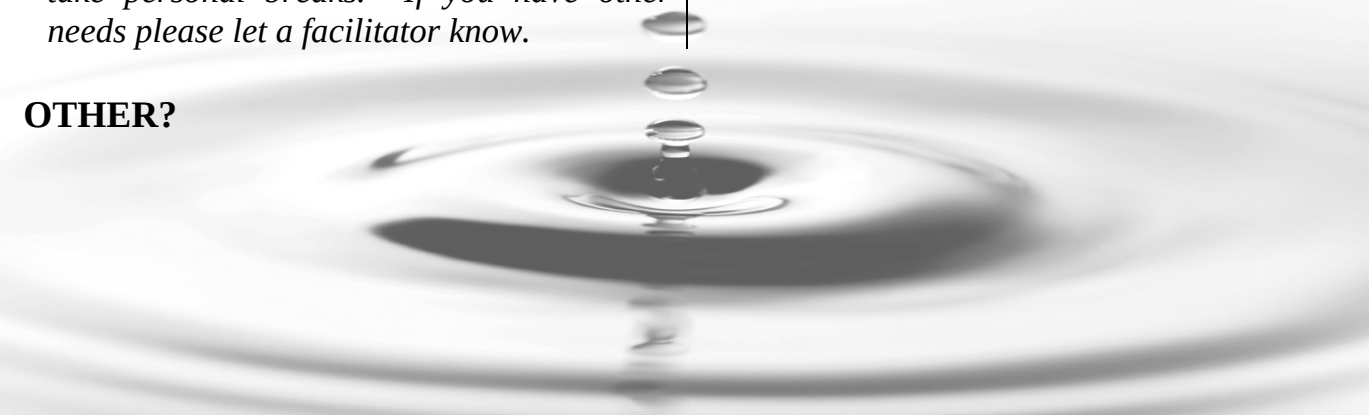
USE THE MICROPHONE

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?



You will spend most of the meeting 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/ Leaders: DWR Staff or Facilitators will be available to work with most of the groups. In the event a 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 staff if you need help with this. For each set of questions please:

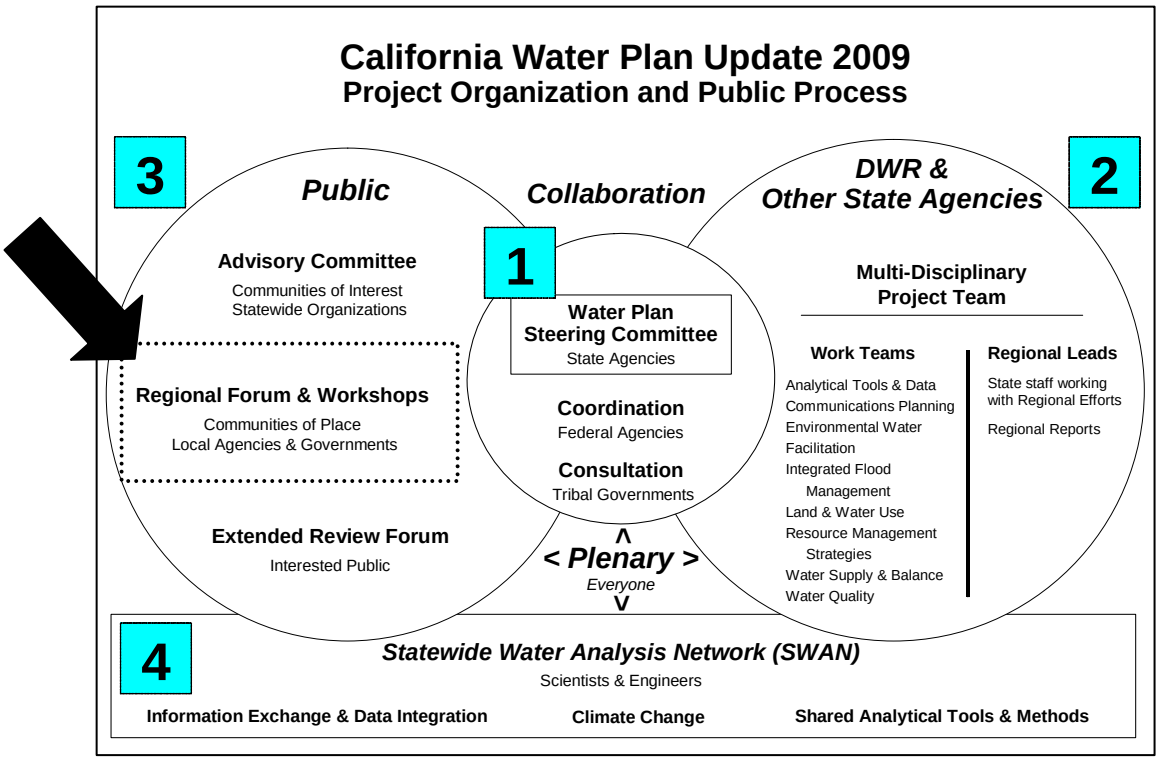
A. Put Table # and Page # on each sheet
B. Note the issue being addressed
C. Prepare Summary Sheet for the reporter

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

- Will summarize table conclusions from Flip Charts
- Should not be a facilitator or 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 tract of time.

Personal Worksheets: In addition to the group notes, you may wish to make more in-depth individual or organizational comments. Extra workbooks will be available in each group to do this. These may also be 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.



The California Water Plan Update 2009 will derive from the following:

KEY ACTIVITIES & DOCUMENT REVIEW

Activities	Description
Strategic Plan	1. Review and revise as needed the vision, mission, and goals of the Water Plan, and update its initiatives, recommendations, and actions. This includes addressing stakeholder/customer survey, and incorporating issues and initiatives from Steering Committee members
Scenarios	2. Develop multiple scenarios of future California water conditions, and use them to evaluate different combinations of resource management strategies for a range of water demand and supply assumptions.
Climate Change	3. Develop climate change scenarios to evaluate impacts on California's water resources and water systems, and to recommend statewide and regional adaptation strategies.
Regional Reports	4. Update the Regional Reports for the 10 Hydrologic Regions, and for the Sacramento-San Joaquin Delta and Mountain Counties as areas of special concern. Use information gained through the regional outreach process to describe critical issues, initiatives, and the effectiveness of regional planning efforts.
Management Strategies & Response Packages	5. Update the 25 Resource Management Strategies. Expand strategy narratives to describe their suitability for integrated flood management, new challenges and opportunities from global climate change, and future implementation in regions
Water Portfolios	6. Estimate and present actual water uses, supplies, and quality (Water Portfolios) for water years 1998 through 2005. Improve methods for representing consumptive and non-consumptive environmental water uses, and where reuse of water is occurring
Analytical Tools	7. Improve information exchange, conceptual models, and analytical tools.
Companion Plans	8. Incorporate findings and recommendations from companion State strategic Plans

KEY ACTIVITIES & DOCUMENT REVIEW

Key Activities

GROUP NAME Table entries are (Month . Year)	Strategic Plan	Scenarios	Climate Change	Regional Reports	Management Strategies & Response Packages	Water Portfolios	Analytical Tools	Companion Plans
Advisory Committee	6.07 6.08 3.09	8.07 12.07 3.08	6.07 8.07 12.07 3.08		3.08 6.08 3.09		6.07 12.07	8.07 3.08 3.09
Regional Workshops, (In-Region)	7.07	2.08		7.07 2.08	2.08	2.08		7.07
All-Regions Forum (Alternates North & South CA)		9.07 5.08	9.07	9.07 5.08 8.09	9.07 5.08	5.08		
Plenary Meeting	10.07		10.07		10.07		10.07	
SWAN Workshop		9.07 11.07	11.07			9.07		
Tribal Water Summit	*Dates and Agenda for the Summit are being planned. The purpose of the summit is to enable statewide collaboration and consultation on the Water Plan*							

Document Review

GROUP NAME Table entries are (Month . Year)	Assumptions & Estimates Report	Public Review Draft	Review Comments	Final Update 2009	Process Review & Scope U2013
Advisory Committee	Outline 8.07 Draft 12.07	Outline 8.07 Draft 6.08 Preview 12.08	7.09	Preview 10.09	10.09
Regional Workshops (In-Region), Public Comments for Public Review Draft		4 & 5.09			
All-Regions Forum (Alternates North to South CA)			8.09	Last Input 08.09	
Plenary Meeting	Outline 10.07	Admin Draft 9.08	9.09	Last Input 09.09 Preview 12.09	12.09
SWAN Workshops					

RECAP FROM THE REGIONS

UPDATE 2009 REGIONAL WORKSHOP PRELIMINARY THEMES

State Leadership

- Facilitate movement through long, institutional processes associated with water efforts
- Provide access to data to help complete permit applications
- Streamline permitting processes, such as:
    - SWRCB point-of-use
    - Exchange water agreements with multiple agencies
    - DHS recycled water use
    - DHS water banking and groundwater storage
    - DHS rainwater catchments
    - Coastal commission desalination and brine discharge
- Coordinate codes and requirements at all levels to support creative solutions/pilot projects; state could connect or broker projects
- Assist disadvantaged communities with:
    - Availability, reliability, and affordability of water supplies/distribution
    - Infrastructure for wastewater/treatment
    - Funding for necessary projects/repairs
- Provide templates/model ordinances to assist local governments
- Facilitate greater use/implementation of reuse/recycled water
- Provide baseline framework for water elements within general plans

Water Management

- Map out locations/condition of existing infrastructure and see what is missing for:
    - Drinking water distribution
    - Wastewater treatment
    - Recycling (purple pipes)
    - Storm water reuse
- Identify interdependencies between water quality and water supply – match quality of water with use, identify regional interdependencies
- Describe role of watersheds regarding water quality, water supply, “green infrastructure” for water storage, reduction of peak flood flows
- Discuss next level of conservation efforts
- Report on energy required to move and treat water (CPUC) – reduce energy demands
- Evaluate & recommend resource management strategies: effectiveness, feasibility, costs, and performance measures
- Expand water quality discussion: imports, exchanges, recharge aspects
- Consider storage options (surface and ground)
- Look at integration and cooperation regarding conveyance and inter-ties
- Provide better coordination of, and better access to, data

Coordinated Planning

- Identify linkage to land use such as constraints that affect water supply and demand forecasts
- Review of IRWMPs and UWMPs by county planners
- Impacts of land use on water supply and quality
- Define water-smart growth, including linkage with flood management
- Impervious surface data and associated land use
- Describe emergency response planning and emergency water supplies
- Evaluate drought challenges and planning
- Explain relationship to other planning efforts (Bureau of Reclamation, Water Boards, DHS, DFG, other State, Federal, interstate, regional, and local agencies)
- Integrate Delta Vision recommendations
- Support improvement, coordination, and sharing of water data
- Report on climate change impacts and response strategies
- Partner with US Geological Survey to develop better groundwater understanding and data
- Coordinate regional reports with Basin Plans, IRWMPs; highlight IRWMP activities/projects
- Provide information on relevant legislation that is proposed

Regional Approach and Outreach

- Continue current approach and regional report – stimulates regional communication
- Provide greater advance notice – with materials and agenda to promote pre-work
- Initiate statewide water awareness campaign (e.g. “flex your power”); reach out to youth
- Increase range of represented interests:
    - Local/regional decision-makers
    - Landscape industry
    - Planners
    - Agricultural interests
    - Local water-related agencies: public works directors (flood issues), environmental health
    - Military installations
    - Land trusts
- Target representation and outreach for specific components of water plan
- Other state agencies related to water issues and water management
- Using a “case study” approach, discuss how project proponents have navigated CEQA and other regulatory requirements; get different perspectives on same issue
- Provide summaries, participant contact information from workshops
- Use additional outreach methods (e-mail, web) – match topics with audience interests
- Create a venue to address inter-regional issues and multi-region systems (e.g. Hetch Hetchy; upstream/downstream aspects of multi-region systems)

DISCUSSION: You will have ___ minutes to work on this section.

As an individual spend a few minutes considering the Regional Recap List

Questions:

1. Where do you see key differences in the regional perspectives?

2. Within this list, what are the critical priorities for your region?

3. What are issues that need to be addressed at the statewide level rather than at the regional level? Where do you see needs for consist policy statewide?

As a group, share your ideas.

For your report -

A. List the top 3-5 items you collectively believe are the priorities for your region.

B. List up to 5 items you believe should have a consistent statewide approach.

In the last 5 minutes of your group time prepare a 2 minute report on **your list.** Remember to pick a reporter and timekeeper, mark your flipcharts or notes to turn into the meeting note-taker, AND announce which Region(s) were represented in your group.

Session Objectives:

1. Describe Statewide Water Analysis Network (SWAN) and its roles in CWP Update 2009
2. Describe use of scenarios in the California Water Plan
3. Present case studies in implementing scenarios for regional planning
4. Solicit feedback for implementing scenarios for Water Plan Update 2009

A variety of decisions need to be made about the Update 2009 Scenarios and the connection to regional planning. Based on the presentations you saw today, what are your thoughts about the following:

1) Geographic scale: What is the most helpful level of geographic detail for Scenarios from a regional planning perspective? Should information be aggregated to a region or include individual facilities and water agencies?

2) Temporal scale: In Update 2005 we reported information only for 2030, but could have reported information yearly from 2000 to 2030. Thinking about Update 2009 - What would you suggest regarding the Planning Horizon and the frequency of reporting information? Should the planning horizon be longer or shorter than 2030? What should the frequency of reporting information be?

3) Is it important that scenarios track changes in important drivers (i.e. population growth, water use patterns, etc.) over time or is the fixed level of development approach used in past Bulletins sufficient?

4) How can the Update 2005 Scenario approach be modified to consider new requirements to address climate change, drought conditions, and flood management? What are the important factors to consider?

5) Given resource and schedule constraints, what minimum level of detail would you like to see in the Update 2009 Scenarios? How important is the trade off in developing scenarios to capture trends and hydrologic variability versus just modeling for trends? What would your recommend?

6) In update 2005 there were a small number of handcrafted scenarios. How important is it to generate a much larger number of scenarios to capture the uncertainty of the future? For your region what do you think is the reasonable number of scenarios that is needed to describe plausible conditions you must be aware of?

7) (As time permits) what other suggestions do you have about quantifying Scenarios?

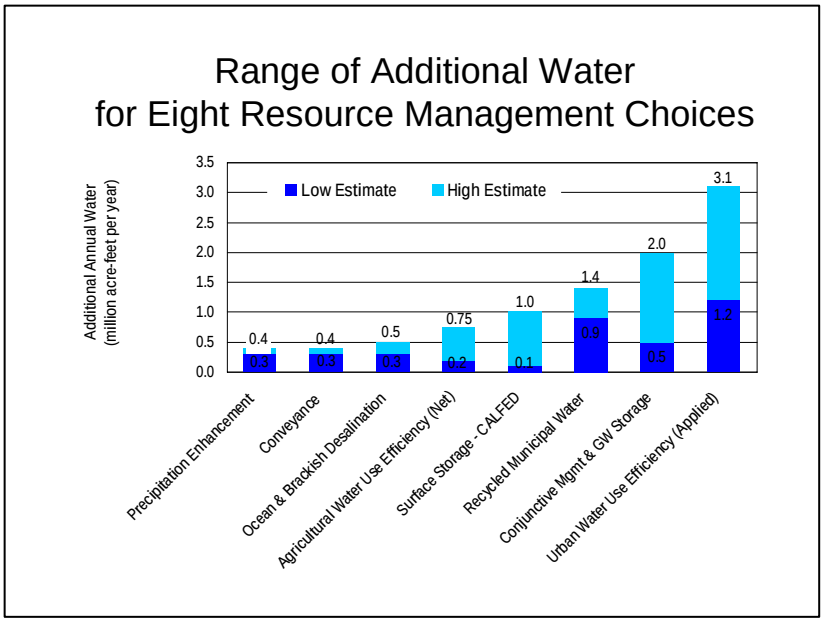
RESOURCE MANAGEMENT STRATEGIES

A resource management strategy is a project, program or policy that helps local agencies and governments manage their water and related resources. For example, urban water use efficiency is a strategy to reduce urban water use. A pricing policy or incentive for customers to reduce water use also is a strategy. New water storage to improve water supply, reliability and quality is another strategy.

Think of these strategies as tools in a tool kit. Just as the mix of tools in the kit will depend on the job, the combination of strategies will vary from region to region depending on climate, projected growth, existing water system, and environmental and social conditions. At the local level, it is important that the proposed strategies complement the operation of the existing water system. Some strategies may have little value in some regions. For example, because of geology, the opportunity for groundwater development in the Sierra Nevada is not nearly as significant as in the Sacramento Valley. Other strategies may have little value at certain times. For example, precipitation enhancement may not be effective during droughts.

A key objective of the California Water Plan is to present a diverse set of resource management strategies to meet the water related resource management needs of each region and statewide. The basic intent is to prepare good plans that are diversified, satisfy regional and state needs, meet multiple objectives, include public input, address environmental justice, mitigate impacts, protect public trust assets, and are affordable.

This graph shows the potential range of more water demand reduction and supply augmentation for eight resource management strategies by 2030. Low estimates are shown in the lower (dark) section of each bar. Estimates are from different studies described in Volume 2 of *California Water Plan Update 2005.*



The water supply benefits of the resource management strategies are not always additive. As presented here, urban water use efficiency includes reduction in both consumptive and non-consumptive uses (or applied water), whereas agricultural water use efficiency only includes reduction in consumptive uses (or net water). As presented, implementing agricultural water use efficiency measures by 2030 could reduce applied water use by 2.9 million acre-feet / year.

STRATEGY SUMMARY TABLE

Resource Management Strategies	Water Management Objectives									Cumulative Cost of Option by 2030 ($ Billion) See narratives for backup
	Provide Water Supply Benefit	Improve Drought Preparedness	Improve Water Quality	Operational Flex & Efficient	Reduce Flood Impacts	Environmental Benefits	Energy Benefits	Recreational Opportunities	Reduce GW Overdraft	
Reduce Water Demand										
Agricultural Water Use Efficiency	●	●	●	●		●	●		●	0.3 – 4.0
Urban Water Use Efficiency	●	●	●	●		●	●			2.5 - 6.0
Improve Operational Efficiency & Transfers										
Conveyance	●	●	●	●	●	●	●	●	●	0.2 – 2.4
System Reoperation	●	●	●	●	●	●		●		
Water Transfers		●	●	●		●				
Increase Water Supply										
Conjunctive Management & Groundwater Storage	●	●	●	●	●	●			●	1.5 – 5.0
Desalination – Brackish	●	●	●	●					●	0.2 – 1.6
– Seawater	●	●	●	●					●	0.7 – 1.3
Precipitation Enhancement	●	●					●			0.2
Recycled Municipal Water	●	●	●	●		●	●	●	●	6.0 – 9.0
Surface Storage – CALFED	●	●	●	●	●	●	●	●	●	0.2 – 5.6
Surface Storage – Regional/Local	●	●	●	●	●	●		●	●	
Improve Water Quality										
Drinking Water Treatment and Distribution			●							17.0 – 21.0
Groundwater/Aquifer Remediation	●	●	●						●	20.0
Matching Quality to Use	●	●	●							0.1
Pollution Prevention			●			●		●		15.0
Urban Runoff Management	●	●	●		●	●		●	●	
Practice Resource Stewardship										
Agricultural Lands Stewardship	●	●	●	●	●	●	●	●	●	5.3
Economic Incentives (Loans, Grants, and Water Pricing)	●	●	●	●		●			●	
Ecosystem Restoration	●			●	●	●		●		7.5 – 11.3
Floodplain Management				●	●	●		●		0.5
Recharge Areas Protection	●	●	●		●				●	
Urban Land Use Management	●		●		●	●		●	●	
Water-Dependent Recreation								●		3 – 6% of total
Watershed Management	●	●	●		●	●			●	0.5 – 3.6

Essential Support Activities to Integrate Strategies and Reduce Uncertainty	
The following support activities are essential for successfully integrating packages of these resource management strategies. Compared with the costs of implementing the resource management strategies, the costs are relatively small for the essential support activities shown below (see Chapters 2 and 4 of Volume 1).	
Regional Integrated Resource Planning & Management	0.25
Statewide Water Planning	0.17
Data & Tool Improvement	0.25
Research & Development	0.25
Science	3 – 5% of total

DISCUSSION: You will have ___ minutes to work on this section.

As an individual spend a few minutes considering the Resource Management Strategies. Then, work with your group to answer the following.

Questions: Many suggest that use of the resource management strategies need to be tailored to individual regions. Looking at the strategies, on a scale of 1-3, **FOR YOUR REGION**, which strategies are the most viable now and in the future? If there are major differences within the region you may prepare more than one work sheet.

KEY
1 = (now) highly viable, high use or extremely important use or (future) great potential for use
2 = (now) moderately viable, moderate use or used routinely but other options equally viable or (future) moderate potential
3 = (now) low viability or potential, less desirable or (future) not very viable

STRATEGY		RANK (Now)	RANK (Future)
Reduce Water Demand	Agricultural Water Use Efficiency		
	Urban Water Use Efficiency		
Improve Operational Efficiency &Transfers	Conveyance		
	System Reoperation		
	Water Transfers		
Increase Water Supply	Conjunctive Management & Groundwater Storage		
	Precipitation Enhancement		
	Desalination – Brackish		
	Desalination – Seawater		
	Recycled Municipal Water		
	Surface Storage – CALFED		
	Surface Storage – Regional/Local		
Improve Water Quality	Drinking Water Treatment and Distribution		
	Groundwater/Aquifer Remediation		
	Matching Quality to Use		
	Pollution Prevention		
	Urban Runoff Management		
Practice Resource Stewardship	Agricultural Lands Stewardship		
	Economic Incentives (Loans, Grants, and Water Pricing)		
	Ecosystem Restoration		
	Floodplain Management		
	Recharge Areas Protection		
	Urban Land Use Management		
	Water-Dependent Recreation		
	Watershed Management		
Flood Management	▪		
	▪		
	▪		
	▪		
	▪		

In the last 5 minutes of your group time prepare a 2 minute overview on what you learned from working on **your lists.** Remember to pick a reporter and timekeeper, mark your flipcharts or notes to turn into the meeting note-taker, AND announce which Region(s)/Subregion(s) were represented in your group.

If you need it, here is an EXTRA WORKSHEET

KEY
1 = (now) highly viable, high use or extremely important use or (future) great potential for use
2 = (now) moderately viable, moderate use or used routinely but other options equally viable or (future) moderate potential
3 = (now) low viability or potential, less desirable or (future) not very viable

STRATEGY		RANK (Now)	RANK (Future)
Reduce Water Demand	Agricultural Water Use Efficiency		
	Urban Water Use Efficiency		
Improve Operational Efficiency &Transfers	Conveyance		
	System Reoperation		
	Water Transfers		
Increase Water Supply	Conjunctive Management & Groundwater Storage		
	Precipitation Enhancement		
	Desalination – Brackish		
	Desalination – Seawater		
	Recycled Municipal Water		
	Surface Storage – CALFED		
	Surface Storage – Regional/Local		
Improve Water Quality	Drinking Water Treatment and Distribution		
	Groundwater/Aquifer Remediation		
	Matching Quality to Use		
	Pollution Prevention		
	Urban Runoff Management		
Practice Resource Stewardship	Agricultural Lands Stewardship		
	Economic Incentives (Loans, Grants, and Water Pricing)		
	Ecosystem Restoration		
	Floodplain Management		
	Recharge Areas Protection		
	Urban Land Use Management		
	Water-Dependent Recreation		
	Watershed Management		
Flood Management	▪		
	▪		
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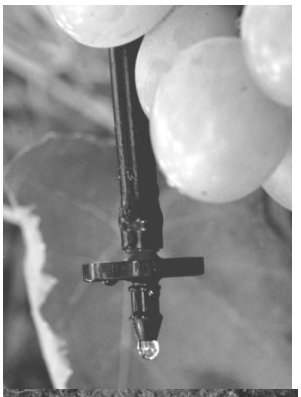
	▪		
	▪		

STRATEGIES TO REDUCE WATER DEMAND



Agricultural Water Use Efficiency

Agricultural water use efficiency involves improvements in technologies and management of agricultural water that result in water supply, water quality, and environmental benefits. These improvements generally include hardware (on-farm irrigation equipment), crop and farm water management practices, and improvements to water supplier distribution systems. Such improvements are intended to reduce water losses from excess surface runoff, seepage and excess plant evapotranspiration. Drip water systems and computerized water system controllers are two common examples of this technology.

Urban Water Use Efficiency

Urban water use efficiency involves technological or behavioral improvements in indoor and outdoor residential, commercial, industrial and institutional water use that lower water demand, lower per capita water use, and result in benefits to water supply, water quality, and the environment. The primary benefit of improving water use efficiency is the lowering of demand and the ability to cost-effectively stretch existing water supplies. Once viewed and invoked primarily as a temporary source of water supply in response to drought or emergency water shortage situations, water use efficiency and conservation approaches have become a viable long-term supply option, saving considerable capital and operating costs for utilities and consumers, avoiding environmental degradation, and creating multiple benefits.

DISCUSSION: You will have ___ minutes to work on this section.

As an individual spend a few minutes considering strategies to reduce water demand then in your group consider the following:

1. What are key differences among the Regions in the strategies and/or the way they are used?
2. What are current inter-regional linkages & challenges?
3. What are the regional (versus statewide) priorities for reducing water demand?
4. What are the issues that need to be addressed at the statewide level?
5. Under what circumstances should the regions have flexibility to tailor approaches to water use efficiency? – Please give an example of what the tailoring would be, or how it might work.

In the last 5 minutes of your group time prepare a 2 minute report on **your list.** Remember to pick a reporter and timekeeper, mark your flipcharts or notes to turn into the meeting note-taker, AND announce which Region(s) were represented in your group.

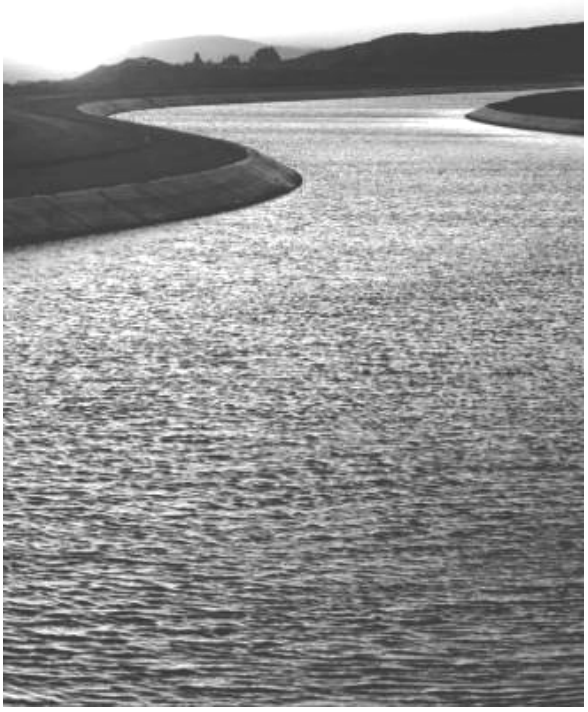
STRATEGIES TO IMPROVE OPERATIONAL EFFICIENCY

Conveyance

Conveyance provides adequate capacity for the movement of water. Specific objectives of natural and managed water conveyance activities include flood management, consumptive and non-consumptive environmental uses, water quality improvement, recreation, operational flexibility, and urban and agricultural water deliveries. Conveyance infrastructure includes natural watercourses as well as constructed facilities like canals, pipelines and related structures, including pumping plants, diversion structures, distribution systems, and fish screens. Groundwater aquifers are also used to convey water. Common water management objectives are to design water transmission systems with adequate water capacity to efficiently distribute imported or locally produced water to storage or the end users, so that system bottlenecks do not occur.

System Reoperation

System reoperation means changing the existing operation and management procedures for such water facilities as dams and canals to meet multiple beneficial uses. System reoperation may improve the efficiency of existing uses, reduce water losses, or it may increase the emphasis of one use over another. In some cases, physical modifications to the facilities may be needed to expand the reoperation capability.



Water Transfers

A water transfer is defined in the Water Code as a temporary or long-term change in the point of diversion, place of use, or purpose of use due to a transfer or exchange of water or water rights. Many transfers, such as those among contractors of the State Water Project or Central Valley Project, do not fit this definition. A more general definition is that water transfers are a voluntary change in the way water is usually distributed among water users in response to water scarcity. Transfers can be from one party with extra water in one year to another who is water-short that year. Transfers can be between water districts that are neighboring or across the state, provided there is a means to convey and store the water. Water transfers can be a temporary or permanent sale of a water right by the water right holder; a lease of the right to use water from the water right holder; or a sale or lease of a contractual right to water supply. In practice many water transfers become a form of flexible system reoperation linked to many other water management strategies including surface water and groundwater storage, conjunctive management, conveyance efficiency, water use efficiency, water quality improvements, and planned crop shifting or crop idling. These linkages often result in increased beneficial use and reuse of water overall.

DISCUSSION: You will have ___ minutes to work on this section.

As an individual spend a few minutes considering strategies to improve operational efficiency, then, in your group consider the following:

1. What are key differences among the Regions in the strategies and/or the way they are used?

2. What are current inter-regional linkages & challenges?

3. In terms of improving operational efficiency, what are major regional (versus statewide) priorities?

4. What are the issues that need to be addressed at the statewide level?

5. Under what circumstances should the regions have flexibility to tailor approaches to operational efficiency? – Please give an example of what the tailoring would be, or how it might work.

In the last 5 minutes of your group time prepare a 2 minute report on **your list.** Remember to pick a reporter and timekeeper, mark your flipcharts or notes to turn into the meeting note-taker, AND announce which Region(s) were represented in your group

STRATEGIES TO INCREASE WATER SUPPLY

Conjunctive Management and Groundwater Storage

Conjunctive management is the coordinated operation of surface water storage and use, groundwater storage and use, and conveyance facilities to meet water management objectives. Although surface water and groundwater are sometimes considered to be separate resources, they are connected by the hydrologic cycle. Conjunctive management allows surface water and groundwater to be managed in an efficient manner by taking advantage of the ability of surface storage to capture and temporarily store storm water and the ability of aquifers to serve as long-term storage.

Desalination

Desalination is a water treatment process for the removal of salt from water for beneficial use. There are two primary types of desalination, one for brackish (low-salinity) surface or groundwater, and the second for ocean water. In California, the principal method for desalination is through reverse osmosis technology. This process can be used to remove salt as well as specific contaminants in water such as trihalomethane precursors, volatile organic carbons, nitrates and pathogens. Desalination usually requires large amounts of energy to run the reverse osmosis equipment, which in turn results in generally results in high production costs.

Precipitation Enhancement

Precipitation enhancement, commonly called "cloud seeding," artificially stimulates clouds to produce more rainfall or snowfall than they would naturally. Cloud seeding injects special substances into the clouds that enable snowflakes and raindrops to form more easily. Precipitation enhancement in the form of cloud seeding has been practiced continuously in several California river basins since the early 1950s. Most projects are along the central and southern Sierra Nevada with some in the coast ranges. The projects generally use silver iodide as the active cloud-seeding agent, and it can be applied from either ground generators or from airplanes. The number of operating projects has tended to increase during droughts, up to 20 in 1991, but have leveled off to about 12 or 13 in recent years. Precipitation enhancement projects are intended to increase surface water supplies or hydroelectric power. The amounts of water produced are difficult to determine, but estimates range from a 2 to 15 percent increase in annual precipitation or runoff.

Recycled Municipal Water

Water recycling, also known as reclamation or reuse, is an umbrella term encompassing the process of treating wastewater from previous uses, and then storing, distributing, and using this recycled water to meet demands. Recycled water is defined in the California Water Code to mean "water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur." The treatment and use of municipal wastewater for golf course irrigation is an example of water recycling. Higher levels of treatment can make municipal wastewater reusable for school yards, residential landscape and park irrigation, industrial uses or even uses within office and institutional buildings for toilet flushing. The use of recycled water to meet additional demands results in a direct reduction in the amount of new water supplies needed to serve a community or region.

Surface Storage - CALFED

The CALFED Record of Decision (2000) identified five potential surface storage reservoirs that are being investigated by the California Department of Water Resources, U.S. Bureau of Reclamation, and local water interests. Building one or more of the reservoirs would be part

of CALFED's long-term comprehensive plan to restore ecological health and improve water management of the Bay-Delta. The five surface storage investigations are:

- Shasta Lake Water Resources Investigation (reservoir enlargement)
- North-of-the-Delta Offstream Storage (Sites reservoir project)
- In-Delta Storage Project
- Los Vaqueros Reservoir Expansion
- Upper San Joaquin River Basin Storage Investigation

Planning for the five CALFED-directed investigations has made varying levels of progress, with all planning studies to be completed by 2009. Essentially, the planning consists of project formulation, environmental documentation and engineering design, and project cost estimates.

Surface Storage – Regional / Local

Surface storage is the use of reservoirs to collect water for later release and use. Surface storage has played an important role in California where the pattern and timing of water use does not always match the natural runoff pattern. The two categories of surface storage are (1) on-stream storage where a dam and reservoir are located directly in a river system, and (2) off-stream storage, where surface water is moved to a basin or valley that is in a location away from the river course. When justified, local agencies can plan, finance and build surface reservoirs without federal or State partners. Recent examples of surface storage reservoirs completed by local/regional entities include Olivenhain Dam, Los Vaqueros Reservoir, Diamond Valley Reservoir and Seven Oaks Dam. The primary benefits of new reservoirs are related to flood control (Seven Oaks), water quality, system operational flexibility, and system reliability against catastrophic events and droughts.

DISCUSSION: You will have ___ minutes to work on this section.

As an individual spend a few minutes considering strategies to increase supply, then, in your group consider the following:

1. What are key differences among the Regions in the strategies and/or the way they are used?
2. What are current inter-regional linkages & challenges?
3. What are major regional (versus statewide) priorities for increasing water supply?
4. What are the issues that need to be addressed at the statewide level?
5. Under what circumstances should the regions have flexibility to tailor approaches to increase water supply? – Please give an example of what the tailoring would be, or how it might work.

In the last 5 minutes of your group time prepare a 2 minute report on **your list.** Remember to pick a reporter and timekeeper, mark your flipcharts or notes to turn into the meeting note-taker, AND announce which Region(s) were represented in your group.

STRATEGIES TO IMPROVE WATER QUALITY

Drinking Water Treatment and Distribution

Drinking-water treatment includes physical, biological, and chemical processes to make water suitable for potable use. Distribution includes the storage, pumping, and pipe systems to protect and deliver the water to customers. Potable water supplies generally require some of level of water treatment (disinfection and fluoridation) to achieve a safe level of quality, which will then need to be maintained in a distribution system. By producing improved water quality in distribution systems the dangers from water contamination can be reduced, which in turn provides health benefits to customers and reduces waterborne illnesses and associated costs.

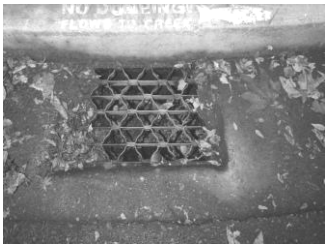
Groundwater Remediation / Aquifer Remediation

Groundwater remediation involves the extraction of contaminated groundwater from the aquifer, treating it through physical and chemical processes, and then discharging it to a water course or using it for approved purposes. It is also possible to inject the treated water back into the aquifer as a form of groundwater recharge. Contaminated groundwater can result from a multitude of sources, both manmade and naturally occurring. Examples of naturally occurring contaminants include heavy metals, high total dissolved solids, and high salinity from specific geologic formations or conditions. There are about 18,500 sites in California where active cleanup of groundwater contaminants is ongoing, which will eventually create usable aquifers to store water for urban and agricultural purposes.

Matching Water Quality to Water Use

Matching water quality to water use is a management strategy that recognizes that not all water uses require the same quality of source water. One common example of inefficient use occurs when source water is treated for urban distribution and use, after which a portion is diverted from the distribution system for agricultural purposes (which did not require treatment). This can occur in areas where only one water distribution system exists to serve both urban and agricultural customers. High quality water sources can be used for drinking and industrial purposes that benefit from higher quality water, and lesser quality water can be adequate for other uses, such as riparian streams with plant materials benefiting fish. Further, some new water supplies, such as recycled water, can be treated to a wide range of purities that can be matched to different uses. By properly matching the water source and level of treatment to the intended uses, system efficiency can be improved and treatment costs can be minimized.

Pollution Prevention



Pollution prevention can improve water quality for all beneficial uses by protecting water at its source, reducing the need and cost for other water management and treatment options. By preventing pollution throughout a watershed, water supplies can be used, and re-used, for a broader number and types of downstream water uses. Improving water quality by protecting source water is consistent with a watershed management approach to water resources problems. In addition, the legal doctrine of "public trust" demands that the State protect certain natural resources for the benefit of the public, including uses such as fishing, protection of fish and wildlife, and commerce, all of which are affected by pollution.

Urban Runoff Management

Urban runoff management is a broad series of activities that manage both stormwater and dry-weather runoff. Dry weather runoff occurs when, for example, excess landscape irrigation water flows to the storm drain. Urban runoff management is linked to several other resource strategies including pollution prevention, land use management, watershed management, water use efficiency, recycled water, protecting recharge areas, and conjunctive management. Traditionally, urban runoff management was viewed as a response to flood control concerns resulting from the effects of urbanization. Concerns about the water quality impacts of urban runoff have led water agencies to look at watershed approaches to control runoff and provide other benefits. The watershed approach for urban runoff management tries to emulate and preserve the natural hydrologic cycle that is altered by urbanization. The watershed approach consists of a series of best management practices (BMPs) designed to reduce the pollutant load, volume, and flow rate of urban runoff reaching waterways.

DISCUSSION: You will have ___ minutes to work on this section.

As an individual spend a few minutes considering strategies to improve water quality, then, in your group consider the following:

1. What are key differences among the Regions in the strategies and/or the way they are used?

2. What are current inter-regional linkages & challenges?

3. What are major regional (versus statewide) priorities for increasing water quality?

4. What are the issues that need to be addressed at the statewide level?

5. Under what circumstances should the regions have flexibility to tailor approaches to increase water quality? – Please give an example of what the tailoring would be, or how it might work.

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STRATEGIES TO PRACTICE RESOURCE STEWARDSHIP

Agricultural Lands Stewardship

Agricultural lands stewardship broadly means conserving natural resources and protecting the environment by utilizing farming practices that conserve and improve lands for food, fiber, watershed functions, soil, air, energy, plant and animal and other conservation purposes. Effective use of these practices will help improve watersheds and stream systems, which can lead to improvements to water quality, the environment and water resources. This strategy is focused on agricultural land (cropped and grazed land) as defined by the California Land Conservation (Williamson) Act. A few examples of effective agricultural lands stewardship can include crop rotation practices, wetland restoration, irrigation tailwater recovery, and riparian buffers to help filter runoff.

Economic Incentives (Loans, Grants, and Water Pricing)

Economic incentives are financial assistance and pricing policies intended to influence water management. For example, economic incentives can influence amount of use, time of use, wastewater volume, and source of supply. Economic incentives include low-interest loans, grants, and water pricing rates. Free services, rebates, and the use of tax revenues to partially fund water services also have a direct effect on the prices paid by the water users. In general, higher water rates to water users tends to reduce water use, which can result in water conservation when water supplies are inadequate (such as during drought conditions).

Ecosystem Restoration

Ecosystem restoration generally includes practices that change the flows in streams and rivers, restore fish and wildlife habitat, control waste discharge into streams, rivers, lakes or reservoirs, or remove barriers in streams and rivers so salmon and steelhead can spawn. Ecosystem restoration improves the condition of our modified natural landscapes and biotic communities to provide for the watershed sustainability and improved water quality. Ecosystem restoration focuses on rehabilitating damaged ecosystems so that they can supply important elements of their original structure and function in a sustainable manner.

Floodplain Management (as a water supply –ecosystem strategy)

Floodplain management reduces risks to life and property and benefits natural resources. Management of broadened floodplains allows for periodic flooding of the watercourse and generally is a preferred alternative to keeping rivers confined to narrow channels. Seasonal inundation of floodplains provides essential habitat for hundreds of species of plants and animals, many of them dependent on periodic floods. There are also benefits to the economy, agriculture and society from keeping rivers and their floodplains connected, including water quality improvements (sediment settles in slower currents), groundwater recharge, and minimizing of flood impacts to adjacent urban and agricultural lands. (Note: Flood Management will be discussed extensively at the Oct. Plenary Session.)

Recharge Areas Protection

Recharge areas protection involves keeping important groundwater recharge sites from being paved over or otherwise developed, and guarding such recharge areas so they do not become contaminated. Protection of recharge lands, whether natural or man-made, is necessary if the quantity and quality of groundwater in the aquifer are to be maintained. Existing and potential recharge areas must be protected so that they remain functional and they are not contaminated with chemical or microbial constituents. Protecting recharge areas by itself does not provide a supply of groundwater, but instead insures that the capability to percolate surface water into the groundwater aquifer will be available when needed.

Urban Land Use Management

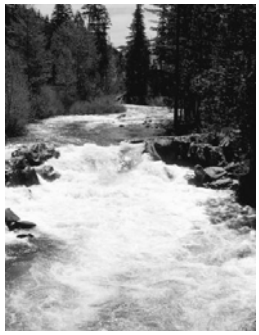
Effective urban land use management consists of planning for the housing and economic development needs of a growing population while providing for the efficient use of water and other resources. The way in which land

uses are planned has a direct relationship to water supply and water quality needs of a region. Higher density urban development and the redevelopment of existing urban areas promotes more efficient use of new water supplies, and reduces water transmission and water quality costs.

Water-Dependent Recreation

Water-dependent recreation includes a wide variety of outdoor activities that can be divided into two categories. The first category includes fishing, boating, swimming and rafting, which occur on lakes, reservoirs, and rivers. The second category includes recreation that is enhanced by water features but does not require actual use of the water, such as wildlife viewing, picnicking, camping and hiking. Water-dependent recreation is included among the water management strategies because recreation is an important consideration for water managers. Water management, and water infrastructure, can have significant effects on recreation. By considering recreation during the planning process, water managers can take advantage of opportunities to enhance recreation, and can guard against actions that would limit recreation. Water-dependent recreation influences tourism, business and residential choices. It increases expenditures in the community for travel, food and accommodations.

Watershed Management



Watershed management is the process of evaluating, planning, managing, restoring and organizing land and other resource use within an area of land that has a single common drainage point. Watershed management tries to provide sustainable human benefits, while maintaining a sustainable ecosystem. Watershed management assumes that a prerequisite for any project is the sustained ability for the watershed to maintain the functions and processes that support the native ecology of the watershed. It is recognized that watersheds are dynamic and the precise make up of plants, animals, and other characteristics will change over time. Watershed management seeks to balance changes in community needs with these evolving ecological conditions in ways that generate water quality and water supply benefits.

DISCUSSION: You will have ___ minutes to work on this section.

As an individual spend a few minutes considering resource stewardship strategies, then, in your group consider the following:

1. What are key differences among the Regions in the strategies and/or the way they are used?
2. What are current inter-regional linkages & challenges?
3. What are the regional (versus statewide) priorities for increasing resource stewardship?
4. What are the issues that need to be addressed at the statewide level?
5. Under what circumstances should the regions have flexibility to tailor approaches to resource stewardship? – Please give an example of what the tailoring would be, or how it might work.

In the last 5 minutes of your group time prepare a 2 minute report on **your list.** Remember to pick a reporter and timekeeper, mark your flipcharts or notes to turn into the meeting note-taker, AND announce which Region(s) were represented in your group.

OTHER STRATEGIES

The *California Water Plan Update 2005* highlighted a variety of water management strategies that can potentially generate benefits that meet one or more water management objectives, such as water supply augmentation or water quality enhancements. However, these management strategies are currently limited in their capacity to strategically address long-term regional water planning needs.

- **Crop Idling for Water Transfers:** Crop Idling is removal of lands from irrigation with the aim of returning the lands to irrigation at a later time.
- **Dewvaporation or Atmospheric Pressure Desalination:** Dewvaporation is a specific process of humidification-dehumidification desalination. Brackish water is evaporated by heated air, which deposits fresh water as dew on the opposite side of a heat transfer wall. Energy for evaporation is supplied by the energy released from dew formation.
- **Fog Collection:** Precipitation enhancement also includes other methods, such as physical structures or nets to induce and collect precipitation. Precipitation enhancement in the form of fog collection has not been used in California as a management technique but does occur naturally with coastal vegetation; fog provides an important portion of summer moisture to our coastal redwoods.
- **Irrigated Land Retirement:** Irrigated land retirement is the removal of farmland from irrigated agriculture. The permanent land retirement is perpetual cessation of irrigation of lands from agricultural production, which is done for water transfer or for solving drainage-related problems. Crop idling, with the intent of water transfer, is discussed in the Crop Idling for Water Transfers strategy.
- **Rainfed Agriculture:** Rainfed agriculture is when all crop consumptive water use is provided directly by rainfall on a real time basis. Due to unpredictability of rainfall frequency, duration, and amount, there is significant uncertainty and risk in relying solely on rainfed agriculture.
- **Waterbag Transport/Storage Technology:** The use of waterbag transport/storage technology involves diverting water in areas that have unallocated fresh water supplies, storing the water in large inflatable bladders, and towing to an alternate coastal region.

THE 2009 WATER PLAN WILL ALSO INCLUDE STRATEGIES TO REDUCE FLOOD RISK. ALL THE STRATEGIES, ALONG WITH SCENARIOS AND CLIMATE CHANGE, WILL BE DISCUSSED MORE EXTENSIVELY AT THE OCTOBER PLENARY SESSION, OCT. 22-23, 2007, DOUBLE TREE HOTEL (OFF ARDEN WAY) IN SACRAMENTO.

PLENARY CONCEPTS – WORKSHOP - OCTOBER 22-23
SACRAMENTO, CALIFORNIA 1 ½ DAY SESSION

DAY ONE
0930 - Registration 1000 - Welcome and Greetings, Opening Remarks
1130 - SUSTAINABILITY and INDICATORS Implementation Plans and Performance Measures Review of recent thinking in this arena (special guests)
1300 CLIMATE CHANGE - Latest information on the state Initiative
1230 - Lunch
1330 - BREAKOUT SESSIONS
Dialogues on issues that have emerged at the regional, statewide, and technical dialogues related to the following topics:

IRWM	*FLOOD*	*Scenarios*

1530 – Full group Discussion
1600 -.Grants – Program status and state initiatives. Enacting grant programs to support water plan goals and implement Executive Order S-02-07. Small Group Discussion - Reports
1700 – Prepare for next day

DAY TWO
0900 – Reconnect for day
0915 hrs Break Out Sessions – THE 25 RESOURCE MANAGEMENT STRATEGIES. 5 Tracks – 5 rounds of break out sections Track #

1	**2**	**3**	**4**	**5**
Topic 1	*Topic 1*	*Topic 1*	*Topic 1*	*Topic 1*
Topic 2	*Topic 2*	*Topic 2*	*Topic 2*	*Topic 2*
Topic 3	*Topic 3*	*Topic 3*	*Topic 3*	*Topic 3*
Topic 4	*Topic 4*	*Topic 4*	*Topic 4*	*Topic 4*
Topic 5	*Topic 5*	*Topic5*	*Topic 5*	*Topic 5*

All sessions address the same questions:

1. What is the nexus of this strategy to Energy and Climate change approaches?
2. How should this strategy be applied in a newly integrated flood and regional water management approach?
3. What needs to be done to achieve **sustainability** using this strategy
4. What should the performance indicators be for this strategy?

1600 - TRACK RECAP – Full Group Debrief of Resource Management Track
5 PM CLOSE