

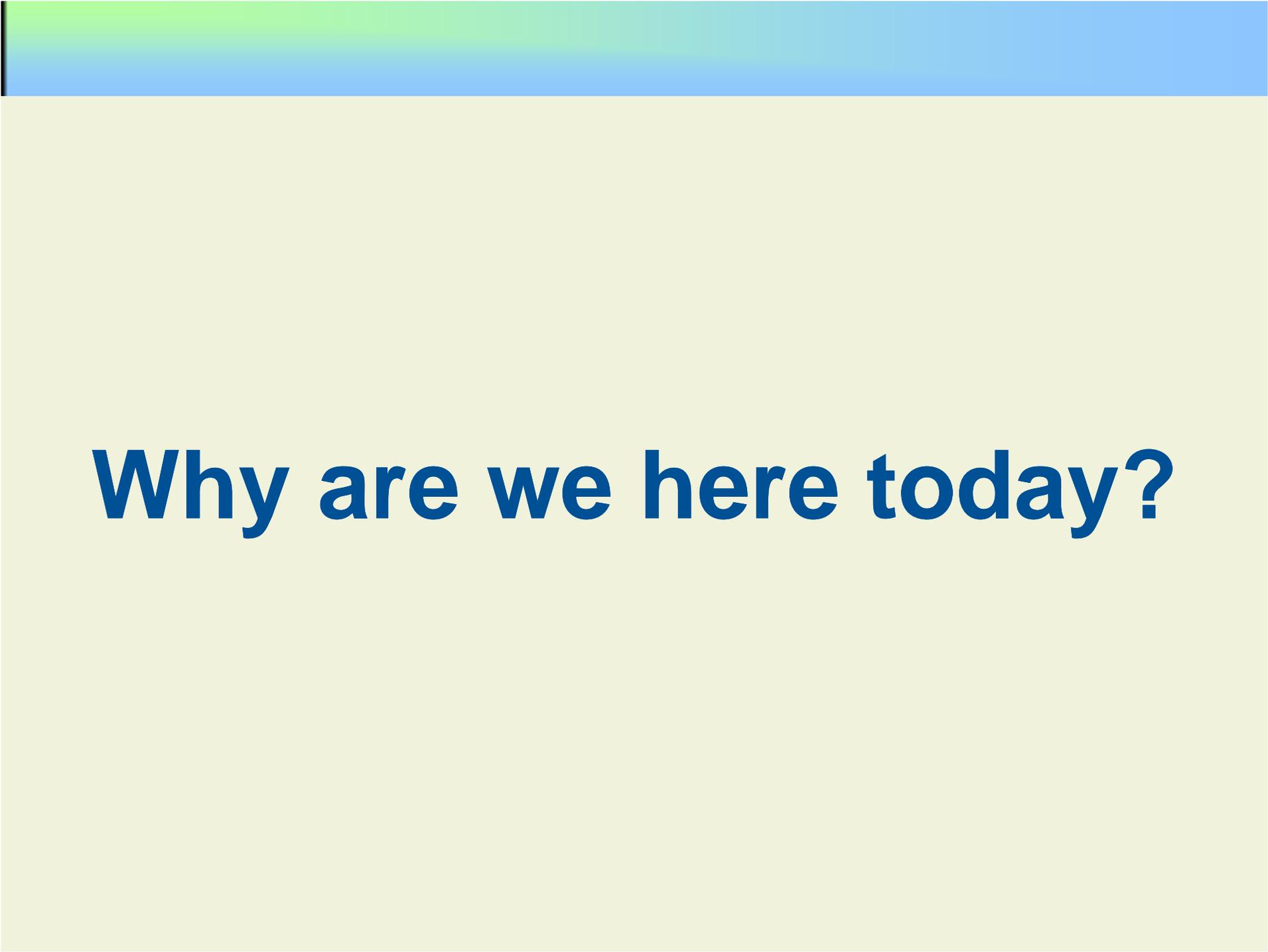


# **2008 Urban Drought Workshop Preparing for Action**

**Metropolitan Water District of Southern California  
October 15, 2008**



# **Welcome & Introductions**



**Why are we here today?**



**Local Host (MWD)**  
**Welcome and regional  
status**



# **State & Federal Water Supply Update**

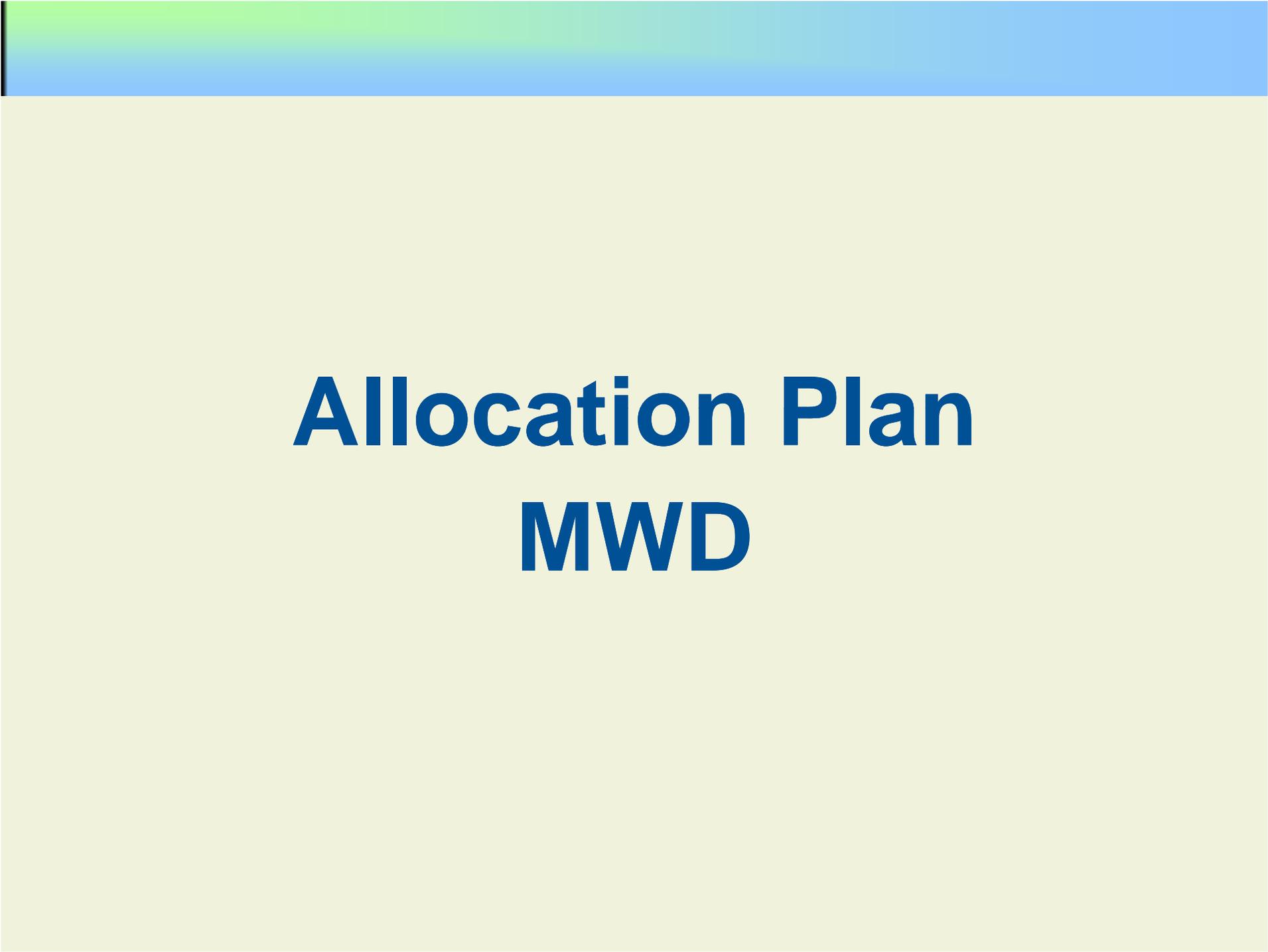


# **State Water Project Projected Deliveries**

## **Drought Water Bank**

# **Projected Deliveries & Funding**

**Bill Steele,  
So. Calif. Area Office  
Lower Colorado Region  
USBR**



# **Allocation Plan**

## **MWD**



# **Local Agency Experience**

# The Seven Steps

<b>ONE</b>	Establish a Water Shortage Response Team
<b>TWO</b>	Forecast Supply in Relation to Demand
<b>THREE</b>	Balance Supply and Demand: Assess Mitigation Options
<b>FOUR</b>	Establish Triggering Levels
<b>FIVE</b>	Develop Staged Demand Reduction Program
<b>SIX</b>	Adopt the Water Shortage Contingency Plan
<b>SEVEN</b>	Administer and Implement the Water Shortage Contingency Plan

# Establish a Team

- Designate Water Shortage Response Team Leader
- Designate team member from each department or division

# Select Team

General Manager

Water Shortage Response Team Leader

Water Treatment

Finance

Conservation

Engineering

Operations

Customer Service

# Compile Supply Data

Quantify worst-case supply for next **FIVE** or more years

- Local surface

- Wholesale

- Groundwater

- Private Transfers

- Other

Example Approach - Table 1a & 1b

# Supply Data

Table 1a

<b>Source</b>	<b>Full Supply</b>	<b>2009</b>	<b>2010</b>
<b>USBR</b>	9,322	9,322	8,390
(% of normal)	100%	100%	90%
<b>State Water Supply</b>	7,500	1,125	750
SWP (% of normal)	100%	15%	10%
<b>Other (define)</b>		0	0
Other (% of normal)	100%		
<b>Groundwater</b>	2,350	2,350	2,350
GW (% of normal)	100%	100%	100%
<b>Direct Purchases (?)</b>		5,000	5,000
<b>TOTAL</b>	19,172	17,797	16,490

# Supply Data

Table 1b

Source	Full Supply	2011	2012	2013	2014
<b>USBR</b>	9,322	7,458	6,525	5,593	4,661
(% of normal)	100%	80%	70%	60%	50%
<b>State Water Supply</b>	7,500	1,875	1,875	1,875	1,875
SWP (% of normal)	100%	25%	25%	25%	25%
<b>Other (define)</b>		0	0	0	0
Other (% of normal)	100%				
<b>Groundwater</b>	2,350	2,115	1,880	1,645	1,645
GW (% of normal)	100%	90%	80%	70%	70%
<b>Direct Purchases (?)</b>		4,000	3,000	2,000	1,000
<b>TOTAL</b>	19,172	15,448	13,280	11,113	9,181

# Compile Demand Data

Quantify average demand for previous five years

- Single Family
- Multifamily
- Commercial
- Industrial
- Institutional
- Landscape
- Agricultural

Example Approach - Table 2

# Demand Data

Table 2

Wet

Dry

Customer types	Yr 2003	Yr 2004	Yr 2005	Yr 2006	Yr 2007	5-yr Avg
Single family	6,897	7,421	6,027	6,539	7,556	6,888
Multi-family	3,099	3,165	2,520	2,742	2,982	2,902
Commercial	2,475	2,665	2,376	2,511	2,849	2,575
Industrial	177	190	170	179	203	184
Institutional	884	952	849	897	1,017	920
Landscape	552	650	494	564	668	586
Agricultural	3,638	4,422	2,882	3,518	5,069	3,906
<b>Demand subtotal</b>	<b>17,722</b>	<b>19,465</b>	<b>15,318</b>	<b>16,950</b>	<b>20,344</b>	<b>17,960</b>
NRW (8%)	1,418	1,557	1,225	1,356	1,627	1,437
<b>Total demand</b>	<b>19,140</b>	<b>21,022</b>	<b>16,543</b>	<b>18,305</b>	<b>21,971</b>	<b>19,396</b>

# Determine Supply & Demand Balance

- Quantify shortage for 2009 and project 2010
- Project worst case supply for 2011 - 2014

Example Approach - Table 3a & 3b

# Supply & Demand Balance

Table 3a - Worst Case Supply vs. Average Demand & Dry Yr. Demand

		<b>2009 Supply</b>	<b>2009 Balance</b>	<b>2010 Supply</b>	<b>2010 Balance</b>
<b>Avg. Demand</b>	<b>19,396</b>	17,797	(1,599)	16,490	(2,906)
<b>Percent Shortage</b>		8%		15%	
<b>Dry Yr Demand</b>	<b>21,971</b>	17,797	(4,174)	16,490	(5,481)
<b>Percent Shortage</b>		19%		25%	

# Supply & Demand Balance

Table 3b - Worst Case Supply vs. Average Demand & Dry Yr. Demand (AF)

		<b>2011 Supply</b>	<b>2012 Supply</b>	<b>2013 Supply</b>	<b>2014 Supply</b>
<b>Avg. Demand</b>	<b>19,396</b>	15,448	13,280	11,113	9,181
<b>Percent Shortage</b>		20%	32%	43%	53%
<b>Dry Yr Demand</b>	<b>21,971</b>	15,448	13,280	11,113	9,181
<b>Percent Shortage</b>		30%	40%	49%	58%

# Increase Supply

- Pursue supplemental supplies – Drought Water Bank, transfers
- Increase groundwater capacity - schedule well driller
- Plan to increase supplier efficiency (a few percent)
  - Meter Replacement
  - System losses
  - System pressure
  - System flushing
  - Fires and Hydrants
  - Supplier landscaping

Example Approach - Table 4

# Increase Supply / Reduce NRW

<b>New Supplies</b>	<b>2009 AF</b>	<b>2010 AF</b>
Well(s)	900	1,800
Water Bank	500	1,000
Transfer	250	250
<b>Total</b>	<b>1,650</b>	<b>3,050</b>

<b>Losses</b>	<b>2007 AF</b>	<b>% reduction</b>	<b>AF savings</b>
Meter Replacement	1,000	20%	200
System Losses	100	10%	10
System Pressure		3%	33
System Flushing	10	100%	10
Fires & Hydrant	5	75%	4
Supplier Landscape	30	50%	15
<b>Total</b>	<b>1,145</b>		<b>272</b>

# Decrease Demand

- Determine health & safety minimum supply
- Determine potential savings by customer type (landscape, other regulations)
- Select water allocation method by customer class & stage
- Adopt restriction enforcement rules and penalties

Example Approach - Table 5a & 5b

# Decrease Demand

## STAGE I (85%) Available Supply 17,604

Priority	Residential	CII	Agriculture	Landscape	NRW	TOTAL
Average Use (2003-07)	9,890	3,729	3,906	586	1,449	19,560
Health & Safety (50 gpcd)	4,593	150	0	0		4,743
Commercial	0	2,793	0	0		2,793
Agriculture	0	0	3,515	0		3,515
Landscape	3,708	515	0	498		4,722
New Connections	100	50	0	0		150
<b>TOTAL (AF)</b>	<b>8,401</b>	<b>3,508</b>	<b>3,515</b>	<b>498</b>	<b>1,274</b>	<b>17,196</b>
% reduction	15%	6%	10%	15%	12%	12%

## STAGE II (75%) Available Supply 15,648

Priority	Residential	CII	Agriculture	Landscape	NRW	TOTAL
Average Use (2003-07)	9,890	3,729	3,906	586	1,449	19,560
Health & Safety (50 gpcd)	4,593	150	0	0		4,743
Commercial	0	2,793	0	0		2,793
Agriculture	0	0	3,515	0		3,515
Landscape	2,649	368	0	440		3,456
New Connections	0	0	0	0		0
<b>TOTAL (AF)</b>	<b>7,241</b>	<b>3,311</b>	<b>3,515</b>	<b>440</b>	<b>1,161</b>	<b>15,668</b>
% reduction	27%	11%	10%	25%	20%	20%

# Decrease Demand

Table 5b showing water allocation method  
by customer class & stage

# Decrease Demand

## STAGE I (85%) Available Supply 17,604

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voluntary 10%  
2-days/wk irrigation

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% reduction	27%	11%	10%	25%	20%	20%

maintain jobs  
maintain jobs  
reduce  
no new connections

Rationing  
50 gpcd  
irrig -50%

Rationing  
irrig -50%

Rationing  
irrig -10%

Rationing  
irrig -25%

# Balance the Budget

- Prepare new pricing structure and rates by stage (Prop. 218)
- Decreased sales, increased costs by stage

Example Approach - Table 6

# Balance the Budget

Sales	Normal	Stage 1	Stage 2	Stage 3	Stage 4
% of Normal Supply		85% normal	75% normal	65% normal	50% normal
% Rate Increase		6% rate increase	12% rate increase	26% rate increase	57% rate increase
Fixed charge	\$7,687,889	\$7,687,889	\$7,687,889	\$7,687,889	\$7,687,889
Quantity charge	\$11,524,068	\$10,643,938	\$10,129,399	\$9,923,566	\$9,838,528
<b>Total Income</b>	\$19,211,957	\$18,331,828	\$17,817,289	\$17,611,455	\$17,526,417

Operating Expenses	Normal	Stage 1	Stage 2	Stage 3	Stage 4
overhead expense	\$525,500	\$550,000	\$575,000	\$600,000	\$600,000
source of supply	\$3,903,000	\$3,505,170	\$3,099,800	\$2,647,800	\$2,695,750
product. & purification	\$2,000,000	\$2,556,136	\$2,249,840	\$1,858,240	\$1,716,600
trans. & distribution	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000
customer accounts expense	\$850,000	\$900,000	\$950,000	\$1,000,000	\$1,000,000
general & admin. expense	\$3,000,000	\$3,300,000	\$3,600,000	\$3,900,000	\$3,900,000
Conservation	\$175,000	\$300,000	\$900,000	\$1,200,000	\$1,200,000
depreciation	\$3,600,000	\$3,600,000	\$3,600,000	\$3,600,000	\$3,600,000
capital projects	\$1,500,000	\$750,000	\$0	\$0	\$0
<b>Total Operating expense</b>	\$18,053,500	\$17,961,306	\$17,474,640	\$17,306,040	\$17,212,350

# Implement

- Establish stage triggers based on priorities and quantifiable supply availability by source
- Identify lag-time and seasonal issues related to each reduction program
- Consider and monitor impact of limited-number-of-days irrigation programs
- Develop customer appeal procedure
- Involve community

# **Make it work**

## **for your agency & customers**

- Establish required computer capabilities for billing, data tracking and customer support
- Identify required changes to existing computer systems
- Make required computer system changes and test thoroughly

# Make it work for your agency & customers

- Prepare customer information brochures
- Plumbing hardware recommendations and rebate programs
- Customer assistance programs
- Identify needed new full-time and part-time contract staff and required space and equipment
- Work with media

# Planning timeline Oct - Feb

<b>NOW</b>	Staff member begins to research and draft an updated rationing plan.
<b>1 - Nov</b>	GM and team review draft plan, suggest changes. The plan is modified and expanded to include implementation procedures. Essential staff review plan and comment on how it effects their functions, ensure that it is 'workable.'
<b>1 - Dec</b>	Board subcommittee reviews the plan, suggests changes, and sends the plan to the Board for review and action
<b>3 - Jan</b>	Full Board reviews the draft plan and schedules public hearings.
<b>Jan-Feb</b>	Plan released for public review. Three public hearings - suggested changes incorporated into plan.

# Planning timeline March - May

<b>1 - Mar</b>	The Board declares a Water Shortage Emergency, requests 15% reduction - <i>rainy season is almost over</i>
<b>1 - Apr</b>	Customers are notified by direct mail that mandatory rationing has been adopted and how the plan will affect them
<b>15 - Apr</b>	Customers receive individual letter with their allotment, description of rationing plan and appeal procedure, general rationing/information brochure, and conservation information on how to reduce use.
<b>1 - May</b>	Board declares a Water Shortage Emergency, Stage 2 - <i>rainy season is over</i>

# Wrap Up

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# Further Discussion

See you at  
1:30 PM