Water Education Foundation
Central Valley Tour
March 15, 2018

California Water Issues Affecting the Central Valley
Providing a water supply to over 600,000 acres of agricultural land in Western Fresno and Kings Counties to produce over 60 different crops that contribute more than $1 Billion in Ag revenue to the State of California.
Our District averages 15 miles wide by 70 miles long of prime agricultural land through the Central Valley.

700 family farms with the average size of 875 acres.

Annual CVP Allocation of 1,150,000 AF
Crops Where California Accounts for Dominant Share of US Production

<table>
<thead>
<tr>
<th>Share of Total US Production</th>
<th>Crop</th>
</tr>
</thead>
<tbody>
<tr>
<td>95% – 100%</td>
<td>Almonds, Artichoke, Broccoli, Celery, Dates, Figs, Garlic, Kiwifruit, Olives, Pistachios, Plums, Prunes, Processed Strawberries, Processing Tomatoes, Walnuts</td>
</tr>
<tr>
<td>85% – 95%</td>
<td>Nectarines, Lemons, Fresh Strawberries, Cauliflower, Apricots, Leaf Lettuce</td>
</tr>
<tr>
<td>65% - 85%</td>
<td>Avocados, Fresh Carrots, Tangerines &amp; Mandarins, Honeydew</td>
</tr>
<tr>
<td>45% - 65%</td>
<td>Melons, Peaches, Head Lettuce, Romaine Lettuce, Fresh Spinach, Chile Peppers, Raspberries</td>
</tr>
<tr>
<td>20% - 45%</td>
<td>Cantaloupe, Bell Peppers, Asparagus</td>
</tr>
<tr>
<td></td>
<td>Onions, Fresh Tomatoes, Fresh Cabbage, Pears, Fresh Market Corn</td>
</tr>
</tbody>
</table>

*SOURCE: California Department of Food and Agriculture, US Department of Agriculture.*
OBESITY IS ON THE RISE: FRESH FRUITS AND VEGETABLES ARE KEY TO SLOWING GROWTH

Self-reported Obesity Rates, By State, 2014

Gauging Water Supply

- Reservoir Storage Levels
- Hydrologic Conditions
  - Rainfall and snowpack
- Water Rights Priorities
- Water Quality Requirements
- Endangered Species Protections
- Contractual Obligations
  - Westlands
Water Supply Uncertainty

Recent History of Regulatory Constraints on Water Allocations

Percentage of South-of-Delta CVP Water Allocation to Agriculture

2009: 10%
2010: 45%
2011: 80%
2012: 40%
2013: 20%
2014: 0%
2015: 0%
2016: 5%

WATER SUPPLY
2018 – 2019

STATE WATER
PROJECT
CONTRACTORS
South of the Delta – 20% - 2018

CENTRAL VALLEY
PROJECT
CONTRACTORS
South of the Delta – 20% - 2018
Major Water Projects

Select from the following Map Views:
- Major Rivers
- State Projects
- Federal Projects
- Local Projects
- All Water Projects
Delta Stressors

STRESSORS ON NATIVE FISH POPULATIONS

Experts agree that there are numerous stressors that can lead to adverse effects on native fish populations. These include:

- CONTAMINANTS
- ALTERED NUTRIENT LOADS
- CHANGES IN FOOD AVAILABILITY AND QUALITY
- INTRODUCED FISHES
- IMPEDIMENTS TO PASSAGE, CHANGES IN OCEAN CONDITIONS, FISHING, AND HATCHERIES
- DISEASES
- CLIMATE CHANGE
- LOSS OF HABITAT
- ECOSYSTEM WATER QUALITY
- NON-NATIVE SPECIES
- HATCHERIES AND HARVEST MANAGEMENT

San Luis Reservoir – 2016 vs. 2017
California’s Broken Water System

Water supply operations in California require exhaustive navigation of a maze of bureaucracies. Water users face a disorienting network of more than 15 federal, state and regional agencies that control the water we all depend on.

[Diagram showing various water regulation issues and agencies]
WATER SUPPLY COPING STRATEGIES

- Use of Wells
  - Huge cost outlay for drilling

- Carrying water forward from one year to the next

- Purchasing water in the open market

- Fallowing acreage
Farmland Transitioned to Solar
NEWEST COPING STRATEGY
Orchard Removal
EVEN THEN, THE NUMBER OF ACRES FALLOWED DIRECTLY MIRRORS THE AVAILABILITY OF SURFACE WATER

SOURCE: District data.
Satellite Image: July

<table>
<thead>
<tr>
<th>Year</th>
<th>Allocation</th>
<th>Irrigable Acres</th>
<th>Farmed Acres</th>
<th>Fallowed Acres</th>
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<tbody>
<tr>
<td>2006</td>
<td>100%</td>
<td>559,744</td>
<td>485,652</td>
<td>56,924</td>
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</table>
Satellite Image: July 2017

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
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<tbody>
<tr>
<td>Allocation</td>
<td>100%</td>
</tr>
<tr>
<td>Irrigable Acres</td>
<td>563,600</td>
</tr>
<tr>
<td>Farmed Acres</td>
<td>370,000  est</td>
</tr>
<tr>
<td>Fallowed Acres</td>
<td>163,600  est</td>
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</table>
• Westlands Growers continue to invest in irrigation systems. More than 90% of the District uses drip or micro-sprinkler irrigation with 83% efficiency.
IN RESPONSE TO THE SHIFTING WATER SUPPLY, PRODUCTION HAS SHIFTED TO MORE PERMANENT CROPS

SOURCE: District data.
LOW WATER DELIVERIES HAVE RESULTED IN MORE GROUNDWATER USAGE

Westlands Water Resources By Source 1988 - 2016

SOURCE: District data.
Regulatory Impacts

- Sustainable Groundwater Management Act (SGMA)
- Irrigated Lands Regulatory Program (ILRP)
Legislative Efforts

Short-Term Fix – WIIN Act

- Drought Relief for CA and The West
- Upholds the ESA
- Expedites Water Storage and Delivery
- Provides Regulatory Flexibility to capture more water in existing reservoirs
  Ex: December 2016 - January 2017
  Water Supply Benefits = 166,000 AF

Long-Term Fix

- H.R. 23 – Valadao’s Legislation
UNDERSTANDING THE ECONOMIC IMPACT OF THE WESTLANDS WATER DISTRICT

• The Economic Context

The Economic Impact of Westlands Growers

• What This Means to Regional, State and National Policy
AGRICULTURE IS THE PRIMARY ECONOMIC DRIVER

1 in 8
Fresno County jobs
is on farm

1 in 6
Kings County jobs
is on farm

Support sectors account for even more jobs

- Auto, equipment, seed, chemicals
- Processing
- Resident income supports much of the rest of the economy
ECONOMIC IMPACTS ARE COMPLICATED

Farming and Crop Production
- Workers
- Purchases (seeds, chemicals, equipment, etc.)
- Water

Packing, Processing and Handling
- Workers
- Other inputs
- Purchases

Consumers Manufacturing Exports
- Workers
- Other inputs
- Purchases
IMPLICATIONS OF LOWER PRODUCTION OF CROPS IN WESTLANDS WATER DISTRICT

- Exacerbates public health problems

- Increased reliance on imports
  - National security
  - Food safety
  - Environmental issues
  - Labor standards
Thank you!

Contact:

Gayle Holman
Public Affairs Rep
gholman@westlandswater.org
(559) 241-6233
(office)http://wwd.ca.gov/