

NEW RIVER WETLANDS PROJECT

Improving The Quality of Water

NEW RIVER WETLANDS PROJECT STATUS

CITIZENS TASK FORCE ON THE NEW RIVER (CTFNR)

- 1997 - LEON LESICKA AND CONGRESSMAN DUNCAN HUNTER FORMED CTFNR TO ADDRESS PROBLEMS THRU FOLLOWING ACTIONS:
- OBTAIN GRANT MONIES
- OBTAIN NECESSARY PERMITS
- CONSTRUCT WETLANDS - 2 SITES
- CONSTRUCT AERATION STRUCTURES ALONG NEW RIVER

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PROBLEM

- RIVER CONTENTS:
 - AG RUNOFF
 - RAW SEWAGE
 - FOAM
 - ORGANIC COMPOUNDS
 - METALS
 - PESTICIDES
 - DISEASES

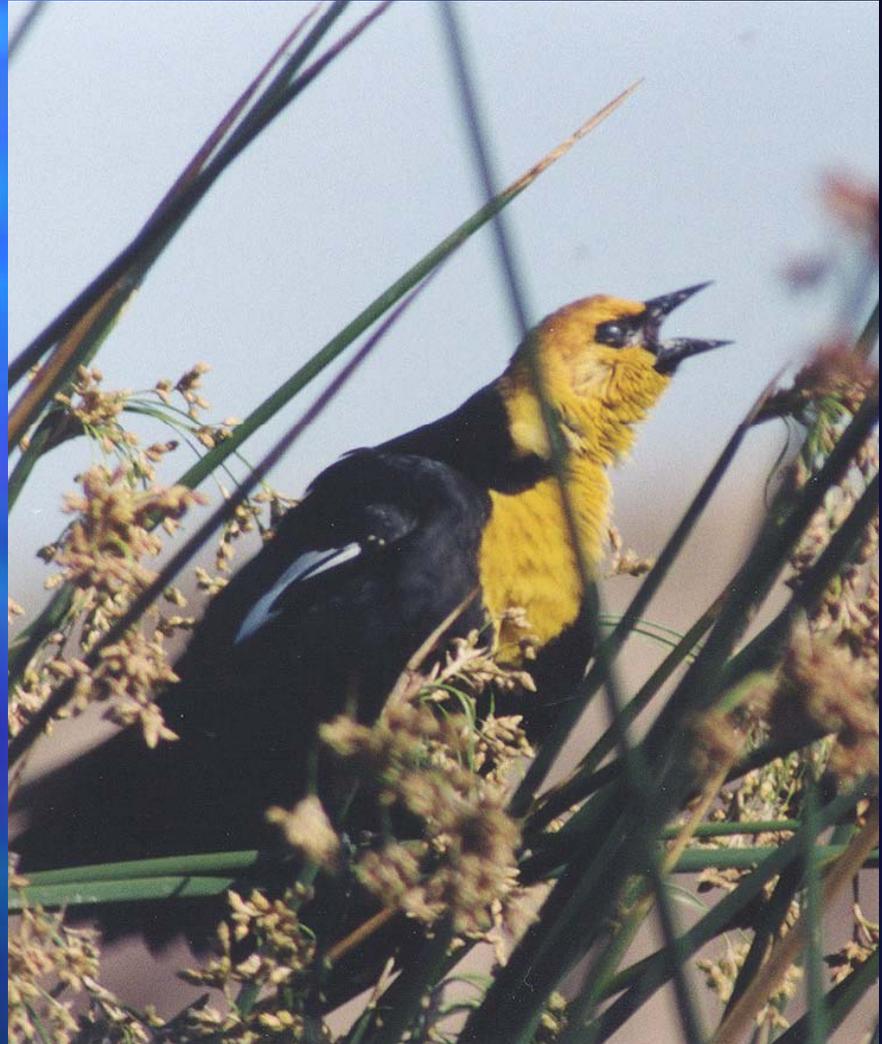


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WETLANDS

- BREAK DOWN NUTRIENTS
- HABITAT
- ABSORB HEAVY METALS
- FILTER OUT TOXINS
- MASSIVE FOOD BASE



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BENEFITS OF WETLANDS

- PROCESS NITRATES
- SEQUESTERS PHOS.
- RELEASE OXYGEN
- REMOVE CARBON DIOXIDE
- RECREATION
- BIRD WATCHING



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HOW DOES IT WORK?

- Decreases acidity, metals, pathogens, trace organics, nitrogen and phosphates
- Aquatic plants provide oxygen to nitrifying microorganisms
- In presence of oxygen, nitrifying bacteria convert ammonium to nitrate which is converted to gaseous nitrogen by denitrifying bacteria and N is lost to atmosphere

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HAS IT BEEN DONE BEFORE?

- Wetlands – Nature's filter
- Most wetlands are used to treat tertiary waste water from domestic treatment plants
- Agricultural wetlands differ in necessity to remove sediment

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DESIGN CONSIDERATIONS

- Area requirements
- Water depth
- Number of cells
- Cell shape
- Flow velocity
- Wastewater retention time
- Substrate

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PILOT PROJECT

■ IMPERIAL SITE

- 68 ACRES OFF RICE DRAIN
- AGRICULTURAL WATER
- SETTLING POND
- FOUR WETLANDS

■ BRAWLEY SITE

- 7 ACRES ON IMPERIAL RESEARCH STATION
- NEW RIVER WATER
- SETTLING POND
- TWO WETLANDS

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– IMPERIAL SITE

■ AERIAL PHOTO



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BRAWLEY SITE

- AERIAL PHOTO



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SPECIFICATIONS

Site	Water Source	Wet Acres	Flow Rate
Imperial Wetland	Ag drain	22.7	6.5 cfs
Brawley Wetland	New River	6	1 cfs

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SPECIFICATIONS

Site	Total water in pond	Retention time	Maximum depth
Imperial Wetland	127 acre feet	9- 10 days	Sed: 14 ft cells: 4-6 ft
Brawley Wetland	21 acre feet	6 days	Sed: 10 ft cells:4-6 ft

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MONITORING RESULTS

2001/2007

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IMPERIAL WETLAND WATER QUALITY MONITORING SUMMARY (AVERAGES) 2001/2007

CONSTITUENT	INLET	OUTLET	% Change
DISSOLVED OXYGEN (mg/l)	8.20	6.87	16.2 DECREASE
TOTAL NITROGEN (mg/l)	6.8	3.5	48.5 DECREASE
TOTAL PHOSPHORUS	1.39	.86	38.1 DECREASE
SELENIUM (ug/L)	7.9	6.2	21.5 DECREASE
BIOLOGICAL OXYGEN DEMAND (mg/l)	12	11.2	6.7 DECREASE
FECAL COLIFORM (MPN/100ml)	91,441	518	99.4 DECREASE
TOTAL SUSPENDED SOLIDS (mg/l)	192	11	94.3 DECREASE

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BRAWLEY WETLAND WATER QUALITY MONITORING SUMMARY (AVERAGES) 2001/2007

CONSTITUENT	INLET	OUTLET	% Change
DISSOLVED OXYGEN(mg/l)	3.43	7.73	125 INCREASE
TOTAL NITROGEN (mg/l)	7.9	2.2	72.2 DECREASE
TOTAL PHOSPHORUS (mg/l)	1.45	.74	49.0 DECREASE
SELENIUM (ug/L)	10.3	10.2	1.0 DECREASE
BIOLOGICAL OXYGEN DEMAND (mg/l)	11.6	10.8	6.9 DECREASE
FECAL COLIFORM (MPN/100ml)	1.3m	547	99.9 DECREASE
TOTAL SUSPENDED SOLIDS (mg/l)	185	14	92.4 DECREASE

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SEDIMENT MONITORING



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FUTURE OF THE PROJECT

- RECONNAISSANCE INVENTORY OF WETLAND AND SEDIMENTATION BASIN SITES NEW & ALAMO RIVER COMPLETED
- IDENTIFIED 25-35 FAVORABLE WETLAND SITES
- SELECTED FIRST TEN SITES
- ELEVATIONS HAVE BEEN IDENTIFIED ON TEN SITES

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FUTURE (CONTINUED)

- BIOLOGICAL/ARCHEOLOGICAL SURVEYS NOT COMPLETE FOR ALL SITES
- CEQA/NEPA PERMITS ARE PREPARED AS NEEDED
- CONSTRUCTION ALMOST COMPLETE ON THE SHANK ROAD SITE

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VICINITY MAP

Reconnaissance Inventory of Wetland Sedimentation Basin Sites
 Map 1 from Nolte Report
 Citizen's Congressional Task Force On the New River
 May 2002
 Revised June 2006 Based Upon Surveys Conducted in
 2005 and 2006

Project Boundary Line

Project area includes the flood plain area of the New and Alamo Rivers. In most cases disturbance would be within 2,000 feet of either side of the Rivers not including access roads, if needed.

Proposed Wetland Acreage

Based upon surveys conducted in 2005 and 2006, the total acreage proposed for wetlands is 2,493 acres. This is reduced from the 4,500 acres estimated in 2002.

Proposed Wetland Sites - Priority Sites

- ▲ AR 15 Category 1 site (Gravity flow for implementation)
- ▲ AR 15 Category 2 site (Diversion required for implementation)
- ▲ AR 15 Category 1 site deemed no longer feasible from surveys conducted in 2005 and 2006
- ▲ AR 15 Category 2 site deemed no longer feasible from surveys conducted in 2005 and 2006

Proposed Wetland Sites - Less Feasible Sites

- NR 17 Category 2 Sites - (potential sites but not as feasible as above sites)
- NR 17 Category 3 Sites - (Pumping required for implementation / least feasible sites)
- NR 17 Category 2 site deemed no longer feasible from surveys conducted in 2005 and 2006
- NR 17 Category 3 site deemed no longer feasible from surveys conducted in 2005 and 2006

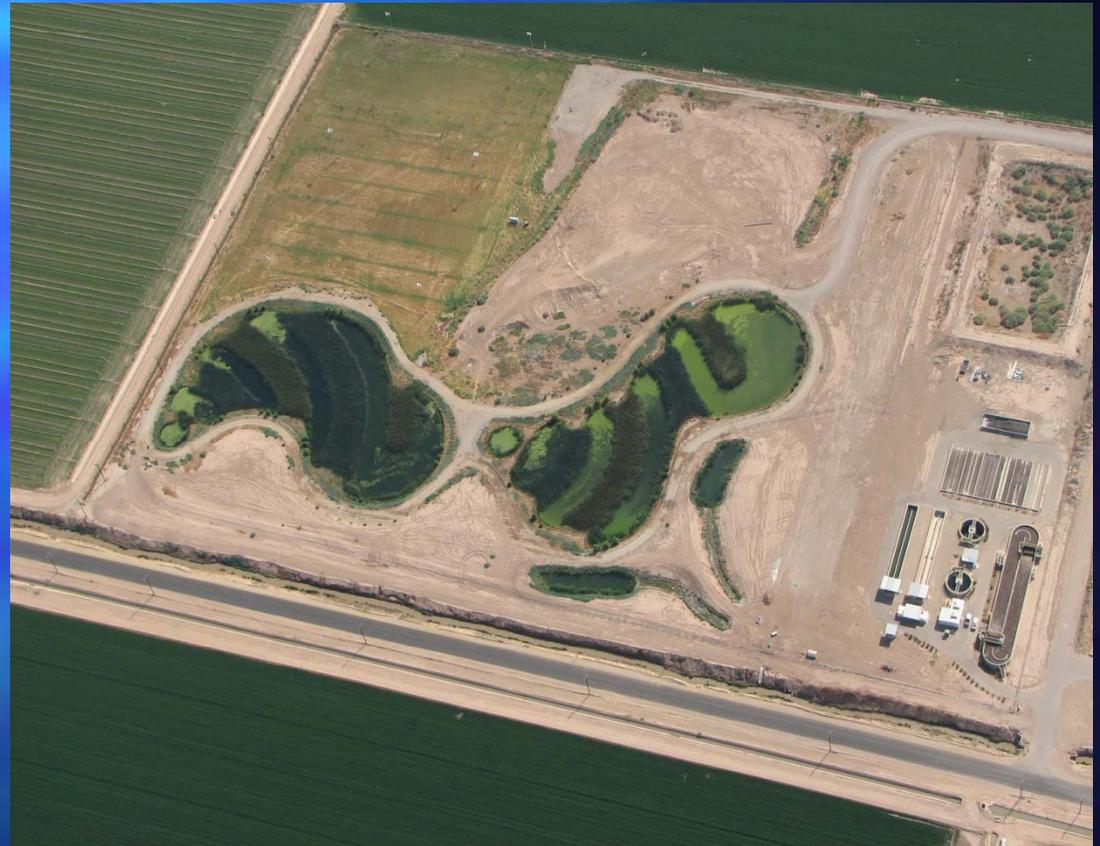
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NEW CONSTRUCTION WESTMORLAND WASTEWATER PLANT

- On line 2006
- Phosphates
- Nitrates
- Fenced
- Closed down & no longer operating



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NEW CONSTRUCTION SHANK ROAD

- Design complete
- Construction 95%
- Educational outreach to Magnolia/Mulberry Schools
- \$\$\$\$\$\$



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NEW CONSTRUCTION HOLTVILLE

- Design completed
- Land purchased
- Grading begun
- \$\$\$\$



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SCHOOL TOURS



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EDUCATIONAL OUTREACH



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SALT CEDAR CLEAN UP DAY



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MALLARD RELEASE



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Salton Sea International Bird Festival

- New River Wetlands projects on tours
- Over 145 species of birds found at wetlands
- Registration form/brochure on website:
www.newriverwetlands.com

You Lookin' for me?!



*7th Annual
Salton Sea*

International

Bird Festival



*Presidents Day Weekend
Feb 13-16 2004*

(760) 344 5359

www.newriverwetlands.com/saltonsea.html

Photos by Bob Miller

www.southwestbirders.com

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WHO ELSE IS HELPING TO CLEAN UP THE NEW RIVER?

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Imperial County Farm Bureau's Voluntary Silt TMDL Program

LESS SILT = LESS PHOSPHATE





Farmers agreed to try and reduce the silt in their drain water by 50% over a 13 to 15 year period. Yearly goals were set and the area was divided into 10 different drain sheds

Regional Board and IID do the monitoring. Farmers are not required to monitor as long as they met their goals

Participation Advantages..... the way the TMDL was crafted

- **Gives individuals assistance in meeting TMDL requirements and operates under a conditional prohibition.**
- **Allows growers to maintain control over their own farming operations and protects them from individual scrutiny from the Regional Board**
- **Growers who are participating in the program are not subject to additional enforcement actions as long as goals are being met.**

Farm Bureau's Responsibility Under the Voluntary Compliance Program

- Organization of program membership
- Provide technical assistance to farmers
- Liaison between regulatory agencies and farmers
- Educate regional board
- Educate farmers
- Educate Imperial Irrigation District
- Obtain and maintain grants to run the program
- Provide On-Farm Assistance with a Consultant

TMDL Voluntary Compliance Program - Mozilla Firefox

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IMPERIAL COUNTY FARM BUREAU



WE DEVELOPED A USER FRIENDLY WEBSITE
(www.ivtmdl.com)

NOTICE
Farm Water Quality Management
Plan Update Deadline:
September 1, 2007

TMDL
Total Maximum Daily Load
Voluntary Compliance Program

1000 Broadway - El Centro, CA 92243 - 760.352.3831 - Fax 760.352.0232 - info@ivtmdl.com
"To inform, educate and demonstrate how to reduce impairments in drainwater"
Copyright © 2003, IVTMDL, All Rights Reserved

another quality **conveyfor**group production

Done McAfee SiteAdvisor



BMP's

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[Sediment BMP's](#)
[Nutrients BMP's](#)
[Info Video](#)

 [BMP Booklet](#)

Drain Box
[Drain Box 1](#)
[Drain Box 2](#)
[Drain Box 3](#)
[Plastic Drain Box](#)

Wide Drain Box
[Wide Drain Box](#)

Erosion Wings
[Erosion Wings 1](#)
[Erosion Wings 2](#)

Cascade
[Cascade1](#)
[Cascade 2](#)

Land Leveling
[Laser Leveling](#)

Pan Ditch
[V-Drain](#)
[Pan Ditch](#)

[Sediment BMP's](#)
[Nutrients BMP's](#)
[Info Video](#)

 [BMP Booklet](#)



Speed Bump

A roll of fiber mat material makes an excellent ditch check and is very fast and easy to install. Just roll it to the diameter you want, leave an apron on the down-stream side to stop erosion as the water flows over it, and hammer some stakes through it to hold it in place during the first irrigation.



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<input type="text"/>
Password
<input type="password"/>
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[Need Help?](#)

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<input type="text"/>	Get my Password





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Need Help?

Manage Fields for Kalin Farms

[Add a Field](#)

Updated on or before 9/1/2006

- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Rockwood Lateral #. Gate #: RW 37C001 Field: Demoulin 4 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Tamarack Lateral #. Gate #: TAM201 001 Field: HK-2 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Tamarack Lateral #. Gate #: TAM201 002 Field: CN-1 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Tamarack Lateral #. Gate #: TAM201A002 Field: Hook 1 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Tamarack Lateral #. Gate #: TAM202 001 Field: CN-2 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Tamarack Lateral #. Gate #: TAM202 003 Field: HK-3 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Tamarack Lateral #. Gate #: TAM202A001 Field: CN-3 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Tamarack Lateral #. Gate #: TAM202A002 Field: HK-4 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Trifolium Lateral #. 10 Gate #: T10193 001 Field: Hog 1 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Trifolium Lateral #. 10 Gate #: T10193 002 Field: Hog 2 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Trifolium Lateral #. 11 Gate #: T11220 001 Field: Childress 8 Last Update: 05/10/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Trifolium Lateral #. 11 Gate #: T11220A001 Field: Childress 9 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Trifolium Lateral #. 12 Gate #: T12235 001 Field: North Field - Ruston 11 Last Update: 08/17/2006
- [\[Edit Info\]](#) | [\[Transfer\]](#) | [\[Remove\]](#) Canal Name: Trifolium Lateral #. 12 Gate #: T12235 001 Field: South Field - Ruston 10 Last Update: 08/17/2006

Canal Info

Canal Name	<input type="text" value="Tamarack"/>	Lateral	<input type="text"/>
Gate	<input type="text" value="TAM201 002"/>	Drain	<input type="text" value="Timothy 2"/>
<div style="border: 1px solid red; padding: 5px; width: fit-content;"><p>Example RW 30 001 = Rockwood Gate 30 Account 001 RW 38A001 = Rockwood Gate 38 A Account 001</p></div>			
Drain Shed	<input type="text" value="Upper New River"/>	Edit Canal Info	

Field Info

Field	<input type="text" value="CN-1"/>	Net Farmable Acres	<input type="text" value="53.8"/>
-------	-----------------------------------	--------------------	-----------------------------------

Owner Info

Landowner Name	<input type="text" value="Kalin Farms"/>	Address	<input type="text" value="P.O. Box 1234"/>
City	<input type="text" value="Brawley"/>	State	<input type="text" value="California"/>
Zip	<input type="text" value="92227"/>	Phone	<input type="text" value="(760) 344-2550"/>

Site Conditions

Current or Projected Crops for Next 12 Months

<input checked="" type="radio"/> Under Cultivation	<input type="checkbox"/> Annual Field Crops
<input type="radio"/> Currently Idled (In-between crops)	<input checked="" type="checkbox"/> Perennial Field Crops
<input type="radio"/> Currently Fallowed (Idle more than 1 year)	<input type="checkbox"/> Vegetable Crops
<input type="text" value=""/> <input type="radio"/> Used for other Purposes (i.e. Duck Ponds)	<input type="checkbox"/> Orchard
	<input type="text" value=""/> <input type="checkbox"/> Other

Best Management Practices BMP

ExistingPlanned N/A

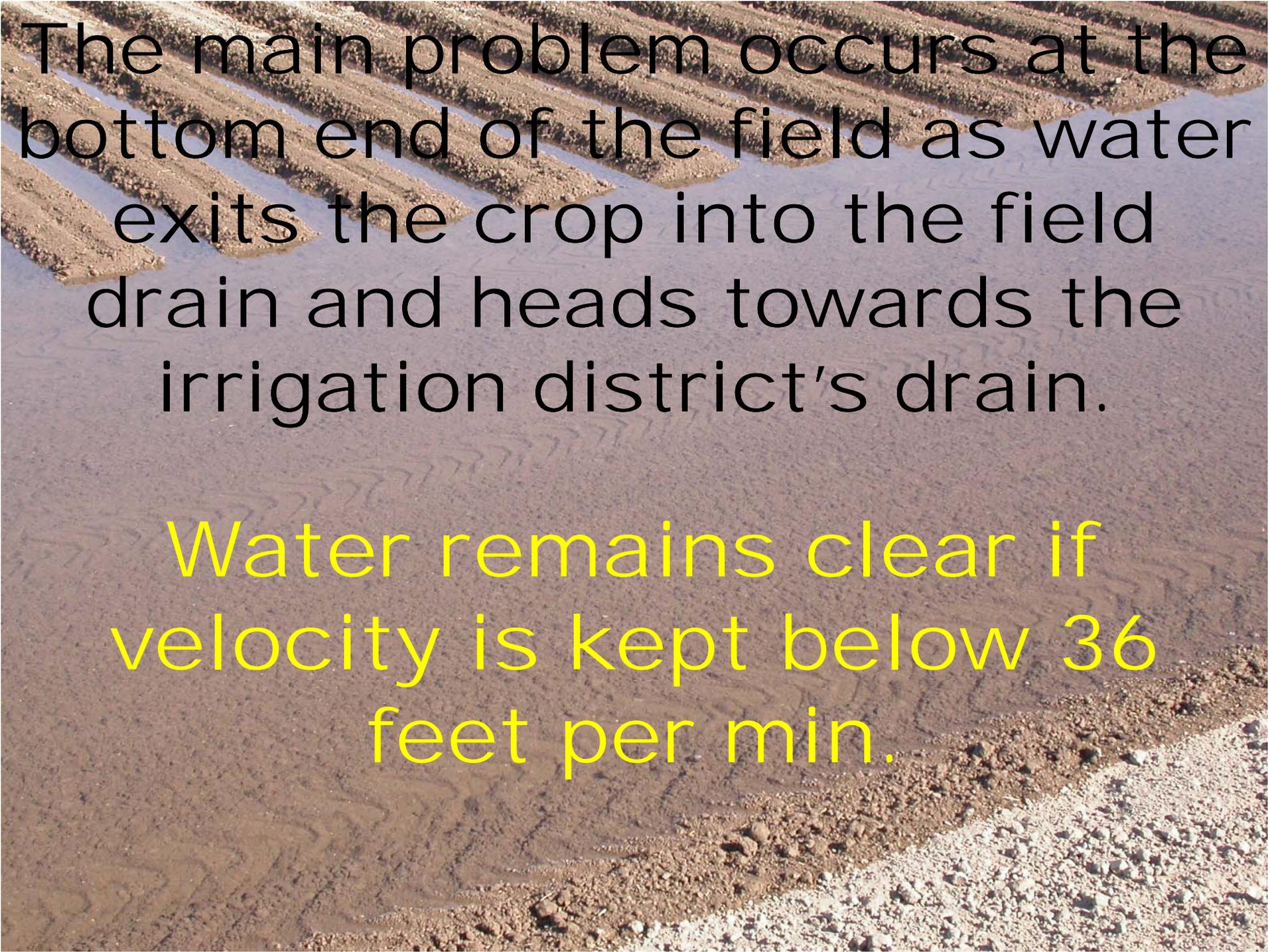
(within a year)

- | | | | |
|----------------------------------|-----------------------|----------------------------------|---|
| <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | IID regulation 39 adherence-Tail water drain box with working raised, adjustable grade board (in working, measurable condition) |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Erosion wings on drain box |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Cascade Irrigation-drainwater used to irrigate adjacent field |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Wider drain box (42 inches) |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Multiple Drainboxes |
| <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | Land leveling including field at proper grade near the drain box |
| <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | Pan ditch (wide, flat taileditch) with or without grass growing in the bottom |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | No drain ditch |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Settling Basin |
| <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | Gopher Control and/or Gopher Ditch |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Tailwater ditch checks or check dams |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Lined spillways or drop boxes to drain water into drain ditch |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Plastic sheeting used to control erosion |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Fiber mat used to control erosion |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Filter Strips |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Grass Strips in taileditch |
| <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | Irrigation Water Management |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Sprinkler irrigation including sprinkler germination |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Drip irrigation |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Level basin irrigation |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Pump-back System |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Use of Polyacrylamides (PAMs) |
| <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | Reduced Tillage (including minimum till planting) |

<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Settling Basin
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Gopher Control and/or Gopher Ditch
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Tailwater ditch checks or check dams
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Lined spillways or drop boxes to drain water into drain ditch
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Plastic sheeting used to control erosion
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Fiber mat used to control erosion
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Filter Strips
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Grass Strips in tailditch
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Irrigation Water Management
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Sprinkler irrigation including sprinkler germination
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Drip irrigation
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Level basin irrigation
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Pump-back System
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Use of Polyacrylamides (PAMs)
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Reduced Tillage (including minimum till planting)
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Furrow Dikes (Dirt/paper, C-Taps, etc)
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Planting in the Mulch
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Other <input type="text"/>
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Other <input type="text"/>

Potential or Current Non-Point Source Problems

<input type="checkbox"/>	Steep Slope
<input type="checkbox"/>	Soil Type
<input type="checkbox"/>	Other <input type="text"/>
<input checked="" type="checkbox"/>	None



The main problem occurs at the bottom end of the field as water exits the crop into the field drain and heads towards the irrigation district's drain.

Water remains clear if velocity is kept below 36 feet per min.

**Innovative and effective BMP's
were developed by the farmers**





**Many farmers were still using
Deep V-ditches**

**There are better types of drains
that don't create as much silt**

A wide, shallow ditch runs through a rural landscape. The ditch is filled with water and is bordered by a dirt road on the left and a field of green crops on the right. The water in the ditch is a muddy brown color. In the background, there are some buildings and a clear sky.

Wide Pan Ditch

Carries just as much water at a much slower speed...equals less silt in the drain water.



Properly installed drain box with erosion wings on both sides



Wide 42" drain box



Where are we now?

- **98+% farmable acres have completed Farm Water Quality Management Plans – Updated yearly.**

- **Unofficial monitoring results show dramatic progress in reducing silt loading**
 - 50% reduction of silt in the New River**
 - 38% reduction of silt in the Alamo River**

Continue to educate individual farmers on BMPs

OUR TMDL EFFORTS HAVE RESULTED IN NUMEROUS AWARDS



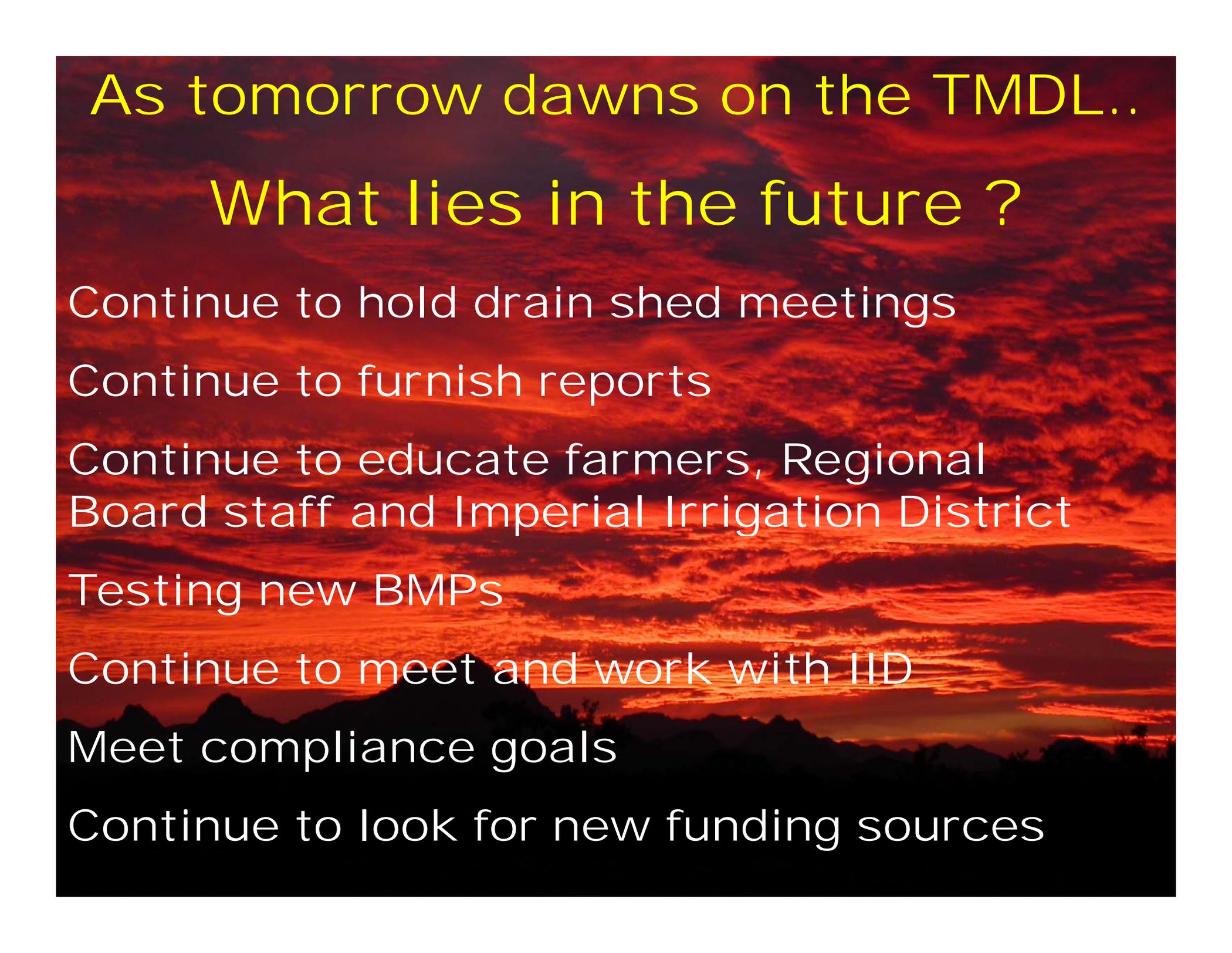
**2004 Governor's
Environmental & Economical
Leadership Award**



**2006 EPA Region 9
Environmental Award for
Outstanding Achievement**



Farm Bureau and IID meet regularly to discuss ways IID can improve drain maintenance techniques and vegetation management to further reduce silt going to the Salton Sea



As tomorrow dawns on the TMDL..

What lies in the future ?

Continue to hold drain shed meetings

Continue to furnish reports

Continue to educate farmers, Regional Board staff and Imperial Irrigation District

Testing new BMPs

Continue to meet and work with IID

Meet compliance goals

Continue to look for new funding sources

NEW RIVER WETLANDS PROJECT

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QUESTIONS

Wetland Website: newriverwetlands.com

Wetland Email: newriver@usa.net

TMDL Website: www.ivtmdl.com

TMDL Email: info@ivtmdl.com