

---

STAFF SUPPLEMENTAL REPORT  
SEDIMENTATION/SILTATION TOTAL MAXIMUM DAILY LOAD  
IMPERIAL VALLEY DRAINS: NILAND 2, P, AND PUMICE DRAINS; AND  
IMPLEMENTATION PLAN

---

The California Regional Water Quality Control Board, Colorado River Basin Region (Regional Board) began a Public Hearing at a Regional Board Meeting on July 1, 2004 for a proposed amendment to the Region's Water Quality Control Plan (Basin Plan) to incorporate the Sedimentation/Siltation Total Maximum Daily Load (TMDL) for Imperial Valley Drains: Niland 2, P, and Pumice Drains, and Implementation Plan. During the hearing, Mr. Al Kalin raised concerns on behalf of the Imperial County Farm Bureau (ICFB) regarding the Economic Impact Assessment (EIA) prepared in support of the TMDL. Generally, the concerns question the data and assumptions used for the EIA. The Regional Board decided to continue the Hearing on the matter and directed staff to re-evaluate and address the economic concerns raised on behalf of the ICFB. Accordingly, staff has worked closely with the ICFB and the State Water Resources Control Board Economics Unit (the author of the EIA) to address ICFB's concerns. This report responds to the Board's directive and provides the Board with revised economic estimates for its consideration.

#### **OVERVIEW OF EIA**

The purpose of a TMDL EIA is to estimate costs to implement management practices (MPs) to comply with the Basin Plan amendment. More specifically, the EIA provides a range of costs using the least to most expensive MPs that Imperial Valley farmers are expected to implement to comply with the TMDL, based on best-case and worst-case scenarios. At the core of this assessment is the premise that the actual cost of compliance lies between the two estimates. Within this context, the Board can judge whether growers/farmers can comply with the TMDL at a reasonable cost. The EIA was developed using the most current information available. Since then, the ICFB has provided relevant data to State and Regional Board staff to calculate new cost estimates.

#### **OVERVIEW OF ICFB COMMENTS**

During the July 2004 Hearing, the ICFB raised the following four main issues:

- Field size determines drainage cost and there is a difference between using parcel acreage and cropland acreage for estimating costs (crops do not cover the entire parcel due to ditches and roads). The data from the Farm Services Agency (FSA) provide cropland acreage for Imperial Valley, and they should therefore be used for the EIA.
- Using fibermat to line the entire drainage ditch is an extreme and costly practice that is not likely to be implemented in the Imperial Valley.
- The shape of the field and how it is irrigated determine per acre cost of drainage.
- The cost used for fibermat material is 59 percent higher than actual costs.

The following paragraphs address the ICFB’s concerns and provide the revised information for the record.

**NET ACREAGE VERSES CROPLAND ACREAGE (FIELD SIZE AND FSA DATA)**

The ICFB indicates that field size determines drainage cost and that the EIA estimates costs inaccurately because it uses parcel acreage, not cropland acreage, to determine cost. During the Hearing, the ICFB also indicated that the FSA has data of the cropland acreage of every field in Imperial Valley, and that data should therefore be used for the EIA.

Staff concurs that field size is a determining factor in drainage costs, with small fields generally costing less per acre than large fields. Irrigating a small field the short way is an example of an exception. However, what constitutes “cropland” acreage, how it should be calculated, the accuracy of calculations, and what purpose it serves are highly subjective. Mr. Kalin’s August 31, 2004 letter (attached) provides the results of his research on the matter and more aptly describes the subjectivity. The following table summarizes the “acreage” terminology used by key stakeholders<sup>1</sup>:

<b>Table 1: Acreage Terminology Used in Imperial County</b>	
<b>Agency/Party</b>	<b>Definition</b>
County Tax Assessor’s Office	<b>Gross Acreage</b> = Everything within the boundaries of the property (i.e., farm) including all right of ways  (County does not use “net acreage” terminology)
Imperial Irrigation District (IID)	<b>Gross Acreage</b> = (County Tax Assessor’s Gross Acreage) – (area covered by County right of ways such as roads) – (area taken up by IID delivery canals)  <b>Net Acreage</b> = (IID Gross Acreage) – (area covered by home sites) – (area covered by drains) – (raw, undeveloped land)
Farmer	<b>Net Acreage</b> = (IID Net Acreage) – (area occupied by farmer’s irrigation ditches) – (areas needed for equipment turnaround at the ends of the field) – (“other” areas not used for growing crops such as gopher ditches, field roads, and stack areas for hay and equipment)
FSA	<b>Net Acreage</b> <sup>2</sup> = Area planted in a field

Besides the partisan terminology, there are marked differences in the accuracy of the methodology used by various agencies to measure the “acreage.” It is the professional opinion of the staff that the County’s methodology is the most accurate because the

<sup>1</sup> Staff has extracted the information from Mr. Kalin’s letter.

<sup>2</sup> The term used by FSA is actually “Official Acreage”

acreage has been surveyed (probably within 1/10<sup>th</sup> of an inch). Mr. Kalin's letter acknowledges so. The IID data also are based on surveys. The difference between the County's gross acreage and the IID net acreage is reportedly 5 to 8 percent. ICFB reports that the FSA's method has an error that could be as high as 15 percent. Based on Mr. Kalin's calculations, the difference between the FSA acreage and the IID Net Acreage is about 3 percent.

The EIA presented to the Board during its July 2004 TMDL Hearing estimated costs based on the IID Gross Acreage data partly because the data are routinely updated and available in digital format. The FSA data available to the staff are at least 12 years old and have other glaring limitations (e.g., difficult to tell what farm acreage has been updated and when). For this Supplemental Report, new estimates were calculated using the IID Net Acreage data to fundamentally address the "net acreage" issue raised by ICFB. The estimate based on net acreage was 15.6 % lower than the estimate for gross acreage (\$14.83 per cropped acre versus \$17.59 per parcel acre). If the FSA data were to be used instead of the IID data, the revised costs would be 3 percent lower.

**USE OF FIBERMAT FOR LINING DITCHES**

The ICFB indicates that using fibermat to line the entire drainage ditch is an extreme and costly practice that is not likely to be implemented in the Imperial Valley. Regional Board staff concur. Pursuant to the ICFB's recommendations, Table 1, below, provides estimates for lining different percentages (10% and 50%) of the drainage ditch, instead of lining 100% of the drainage ditch. The new estimates are based on recommendations by the ICFB, including (a) allowing for a 100-foot field offset (for roads, equipment, ditches, etc.) on one side of a parcel, which has the net result of reducing the length of the ditch by that amount; (b) a cost of \$0.64 per running foot of fibermat material, assuming a 2-meter width; and (c) planting and maintaining grass filter strips costs \$0.13 per foot. The results of this analysis are presented in Table 1, below.

**Table 1: Revised Cost of Fibermat and Grass Filter Strips**

	<b>Fibermat on 50% of drainage ditch</b>	<b>Fibermat on 10% of drainage ditch</b>	<b>Grass Filter Strips on 100% of drainage ditch</b>
<b>Cost per foot</b>	\$0.64	\$0.64	\$0.13
<b>Cost per foot of drain</b>	\$0.32	\$0.06	\$0.13
<b>Total cost</b>	\$243,059	\$48,612	\$98,512

Therefore, the least expensive alternative is fibermat installed on 10% of the drainage ditch, totaling \$48,612. The most expensive alternative is fibermat installed on 50% of the drainage ditch, totaling \$243,059. Installing grass filter strips represents the mid-range of the costs at \$98,512.

## **FIELD SHAPE AND IRRIGATION METHOD**

The ICFB indicates that:

- the shape of the field and how it is irrigated determines per acre cost of drainage,
- not all of the fields are square, and
- the length of a drain ditch is not one side of that square.

Regional Board staff concurs. State Board staff calculated cost estimates using Fibermat C350 and actual field dimensions (i.e., minus farmsteads, non-irrigated land, roads, etc.), rather than estimates for 160-acre square fields. The new cost is \$14.83 per cropped acre, instead of \$17.59 per parcel acre (see “NET ACREAGE VERSES CROPLAND ACREAGE (FIELD SIZE AND FSA DATA)” above).

## **FIBERMAT COST**

The ICFB indicates that the cost of the fibermat material used for the EIA is 59% higher than the variety of fibermat commonly used by Imperial Valley farmers. Regional Board staff concurs. New cost estimates were based on using the less expensive fibermat material (see “USE OF FIBERMAT FOR LINING DITCHES” above).

## **SUMMARY AND RECOMMENDATIONS**

The EIA satisfies the requirements of the California Water Code Section 13141, which requires the Board to consider economics. The assessment reflects the least to most expensive costs based on best-case and worst-case scenarios for area-wide future planning. This Supplemental Report provides the Board with more current information and estimates for the EIA, and addresses ICFB concerns and suggestions. The State Board’s Economic Unit has been instrumental in revising the estimates.

With the revised data, the ICFB does not oppose the adoption of the subject TMDL, which will place the entire Imperial Valley under the same sediment standard when adopted. Staff recommends the Board adopt the proposed Basin Plan amendment as revised. Staff greatly appreciates the ICFB’s time and effort on this matter, particularly Mr. Kalin’s research and willingness to share his results—factors that were crucial in completing this report. Staff will continue to work with Imperial Valley stakeholders to ensure successful development and implementation of TMDLs for the Valley.