

January 30, 2015
Irrigation Allowance Index Workshop



Goals

1. Brief background on Emergency Ordinance E.
2. The Irrigation Allowance Index (IAI) and what it means to growers.
3. Clarifications since the July 2014 Workshop.
4. Available online resources/tools.
5. Training on Irrigation Allowance Index Paperwork.

Brief Background

- Serious concerns including extended drought, groundwater levels near or below historic lows, seawater intrusion, and loss of water for recharge caused development of Emergency Ordinance E.
- Significant concern and stakeholder involvement.
- FCGMA Board determined a phased in 20% reduction in Municipal/Industrial, and Agricultural Groundwater Extractions was required.

Brief Background

- Requires the use of the Irrigation Allowance Index.
- Reduction to irrigation allowances were made effective August 1, 2014.
- Additional reductions will be phased in to accomplish a 20% reduction in groundwater extractions starting August 1, 2015.

Brief Background

- The Agency's requirement is a significant change.
- It doubles the number of well operator accounts that will use this, from ~150 to ~300 accounts.
- For many the process is new. Getting clear information to IAI users is very important.

The IAI since Emer. Ord. E.

- Significant time meeting and discussing with growers group.
- Needed technical clarifications were identified and instruction and tools have been developed.

The IAI since Emer. Ord. E.

- The Board of Directors has clarified its policies related to IAI surcharges and the agency-wide cap.
- Some additional clarification from the Board will be needed on the “fallow land issue” very soon.

What is the IAI?

- It is an annual reporting requirement by the FCGMA, that is used by Growers and the Fox Canyon Groundwater Management Agency to determine a groundwater extraction allocation.
- The index should be below 1.0. If its greater than 1.0, surcharges are assessed by the FCGMA in line with its Ordinance Code.

How is it computed?

- It is a ratio:

$$\frac{\textit{Total Water Applied}}{\textit{Irrigation Allowance}}$$

- Where do the terms come from?
 - Total Water Applied is all sources of water, groundwater, surface water, potable water, etc.
 - Irrigation Allowance is computed based on acres, crop type, year type, duration grown.

Where do I get the numbers?

- Applied Water
 - Extractions from wells are included.
 - Deliveries from United Water Conservation District, Pleasant Valley County Water District, mutual water companies, municipal entities, etc. are included.
 - Deliveries of water from a neighbor's well would be included.
 - These applied water sources are added up on the IAI form.

Where do I get the numbers?

- Irrigation Allowance
 - Agricultural crops receive an irrigation allowance (in AF/acre)
 - Allowances are for permanent crops, and seasonal crops.
 - Irrigation allowances are added together for multiple crops.
 - Computing the allowance is fairly straightforward, but it can be tricky in some cases.
 - Today's workshop is designed to clarify these cases.
 - These irrigation allowances are added up on the IAI form

How were the Irrigation Allowances developed?

- Multi year analysis from the Cal Poly Irrigation Training and Research Center- with tech support from:
 - U.C. Cooperative Extension
 - Growers
- The technical reports that make up the analysis (along with other IAI information) are available on the FCGMA website.

Irrigation Allowances were reduced as part of Emer. Ord. E.

- Extensive review of CY 2013 data showed that the average IAI was 0.63 (1.0 or less is the current target).
- The FCGMA Board reduced these numbers by 25%, Effective August 1, 2014, as part of Emergency Ordinance E.
- The FCGMA may reduce the irrigation allowances again.

What has been clarified since the last workshop?

- The Surcharge structure.
- The Agency wide cap.
- Irrigation Allowance Calculator.
- Fallow Land Allocation (final component will come from Board).

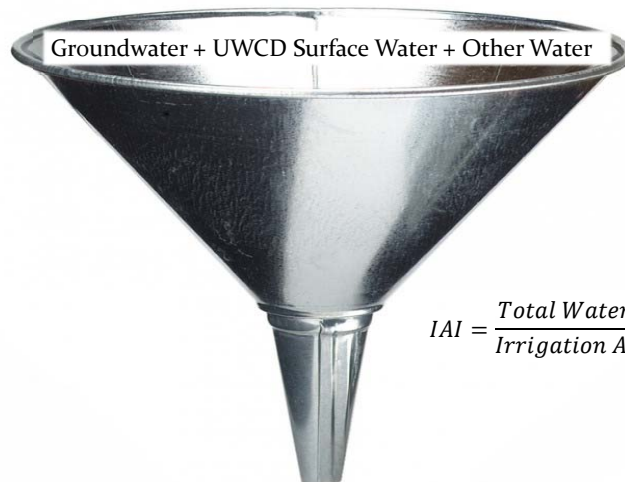
Surcharge

- There are two related surcharge issues. First relates to its computation relative to the IAI, the other relates to the Agency-wide cap.
- 1. If the IAI exceeds 1.0, a surcharge will be assessed per the Agency's rules.
- 2. If the Agency-wide cap is exceeded, a surcharge will be assessed per the Agency's rules. (will discuss this when we get to "agency-wide" cap slides)

Surcharge

- In December the Board adopted Ordinance 8.8 that clarifies the surcharge structure during the period of Emergency Ordinance E.
- Growers continue to report all sources of water used, but if the IAI exceeds 1.0, the IAI will be recalculated for surcharge purposes by only including certain water sources.
- Explanatory graphics follow

Surcharge Step 1

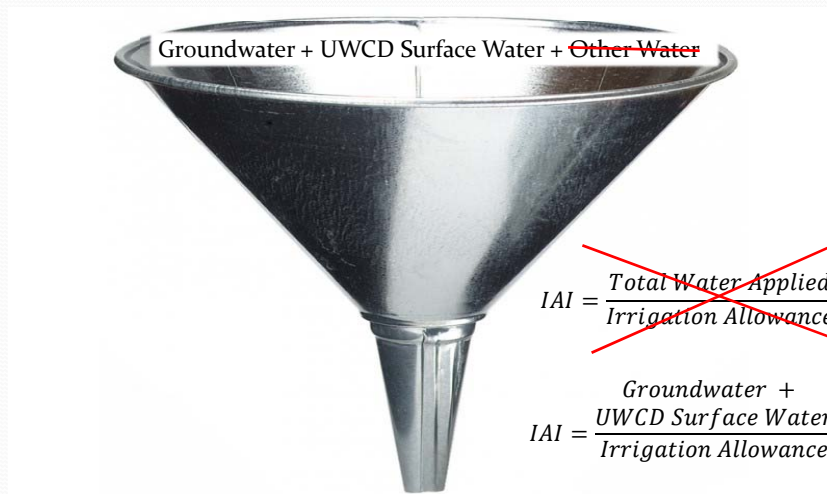


Is IAI > 1.0? Yes, or No?

Surcharge Step 1

- If IAI is less than one, then “you’re done” with this step.
- If IAI is greater than one, then go to Step 2 and recompute the IAI using groundwater + UWCD surface water. Determine if there is still an IAI of 1.0 exceedance.

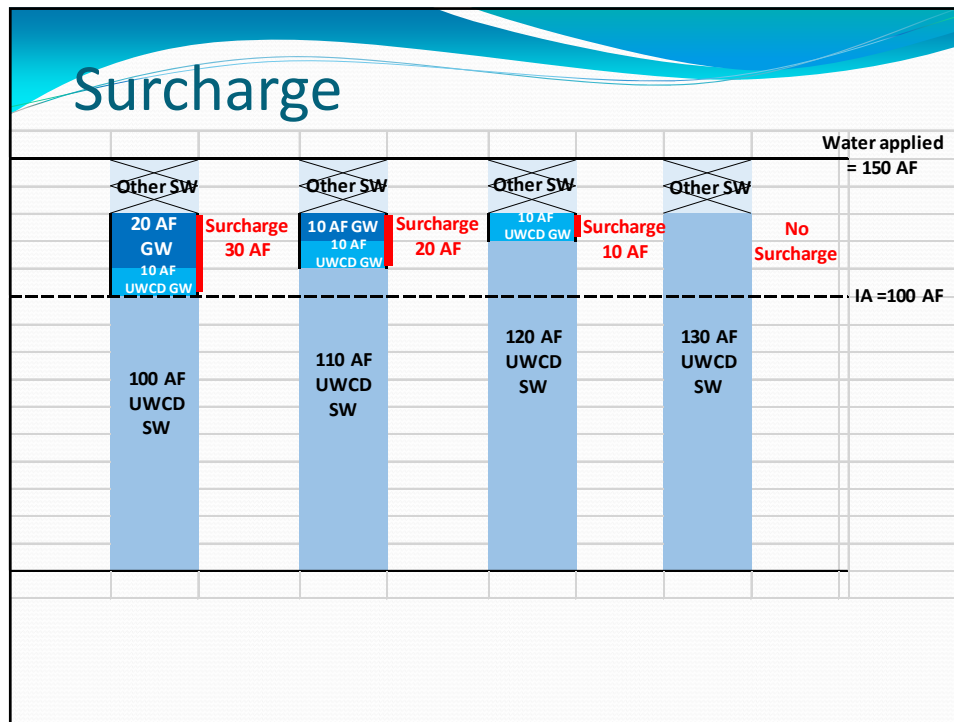
Surcharge Step 2



Is Groundwater plus UWCD Surface Water IAI > 1.0? Yes, or No?

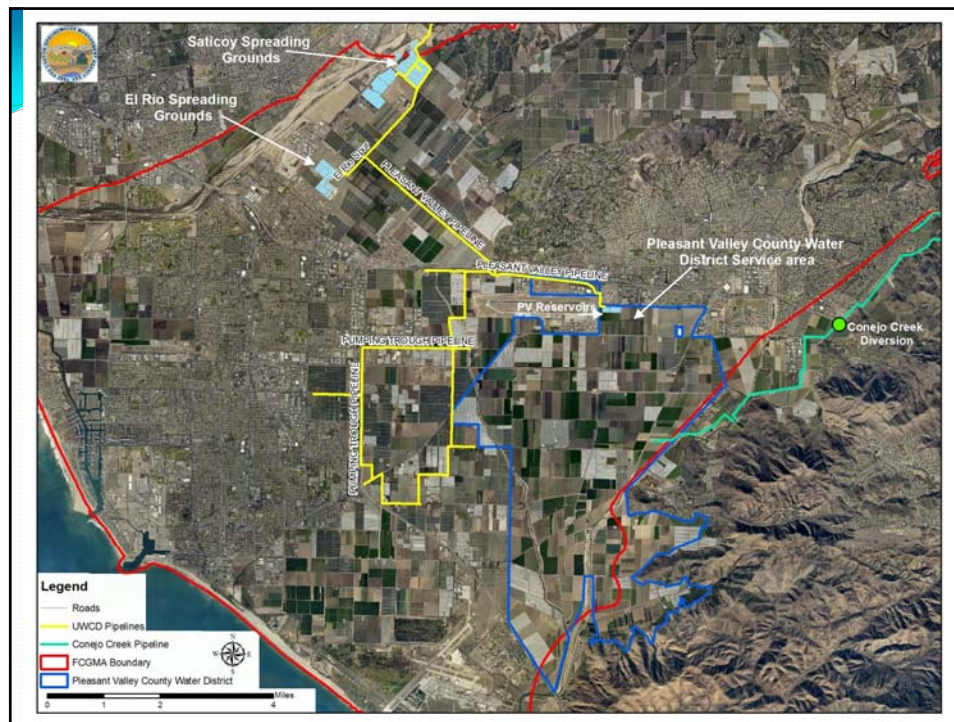
Surcharge Step 3

- If “Groundwater + UWCD Surface Water” IAI is less than one, then “you’re done” with this step.
- If “Groundwater + UWCD Surface Water” IAI is greater than one, that amount is further reduced again to the volume of extracted groundwater that is less than or equal to the IAI exceedance.
- Explanatory graphic follows.



Surcharge

- The inclusion of UWCD Surface Water was discussed in great detail at the December 2014 Board meeting.
- The idea in including this UWCD surface water is it could otherwise be used to recharge groundwater in the Oxnard Forebay to help mitigate seawater intrusion.
- Because of that water's importance, it is treated this way.



Agency-wide cap

- The IAI program allows for “rolling up” of crops to create an annual water allowance.
- There had been legitimate concern that under this approach, there was no upper limit of how much water could be applied to irrigated acres.
- That fact created significant uncertainty and resource management concerns.

Agency-wide cap

- To address this concern, the Board (in August 2014) directed staff to set an Agency-wide cap at the Nursery Greenhouse irrigation allowance.

- The Board needed to formalize it in its Ordinance Code, and at its December 2014 Board meeting, it adopted special Ordinance language to accomplish this.

Agency-wide cap

- This is the language:
 - 5.8.5.1. Notwithstanding an operator's irrigation allowance, extractions from an Agricultural Extraction Facility in excess of the irrigation allowance for "Nursery (Greenhouse)" shall be subject to surcharges.

Irrigation Allowance Calculator Tool

- Growers desired a simple tool to run various crop and irrigation allowance scenarios.
- An excel tool has been created and will be on the Agency's website by Feb 6.
- Can compute water application relative to the Agency-wide cap.

Irrigation Allowance Calculator Tool

- The downloaded excel file can't update itself as new IA numbers are released.
- When you use the tool, verify you have the most current IA numbers.
 - Check website, staff, or also use the online tool.
- Example calculations to check for exceeding Agency-wide cap follow.

Agency-wide cap

- How will the Agency wide cap be implemented?
 - For crop combinations that have no clear cap, an additional computation by the well operator is required.

- Which well operators does this effect?
 - All, but primarily those who report more than 2 seasonal crops.
 - It should also be checked for any inter intercropping scenario.
 - Ultimately the grower needs to make sure that he or she understands what the cap is and if it affects them.
 - Call FCGMA staff or meet with us to discuss if you aren't sure.

Agency-wide cap: Example 1

Crop Name	Crop Type	IA in AF/acre	No. Acres	Total IA in AF
Celery	Celery	1.6	100	160
Celery	Celery	1.6	100	160
Annual Irrigation Allowance				320 AF
Irrigation Allowance Converted to AF/Acre				3.2 AF/acre

- For example a grower applies 310 AF water.

$$IAI = \frac{310 \text{ AF Applied}}{320 \text{ AF Allowed}}$$

$$IAI = 0.96$$

Agency-wide cap

- Two celery crops, 100 acres each.
- Crop acres = 200, Irrigated Acres=100
- IA= 3.2 AF/ irrigated acre. (Total water applied is 310 AF)
- Cap is 3.5 AF/ irrigated acre. (Cap is 350 AF)
- Here the total water applied is lower than the cap, and the IAI was not exceeded. Nothing else is needed.

Agency-wide cap: Example 2

Crop Name	Crop Type	IA in AF/acre	No. Acres	Total IA in AF
Spinach	Misc. Veg. Single Crop- Summer	1.5	100	150
Celery	Celery	1.6	100	160
Celery	Celery	1.6	100	160
Annual Irrigation Allowance				470
Irrigation Allowance Converted to AF/Acre				4.7

- For example a grower applies 400 AF water.

$$IAI = \frac{400 \text{ AF Applied}}{470 \text{ AF Allowed}}$$

$$IAI = 0.85$$

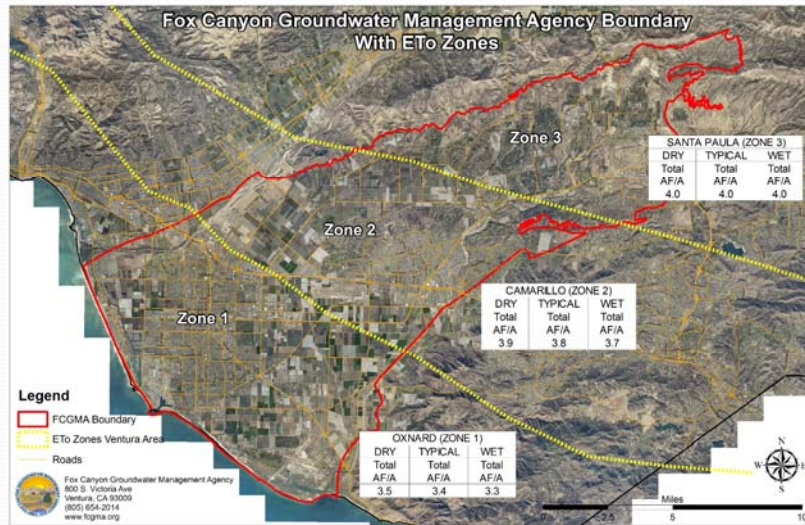
Agency-wide cap

- Two celery crops, one Misc. Veg. Single Crop Summer, 100 acres each.
- Crop acres = 300, Irrigated Acres=100
- IA= 4.7 AF/ irrigated acre. (Total water applied is 400 AF)
- Cap is 3.5 AF/irrigated acre. (Cap is 350 AF)
- Here the total water applied exceeded the cap by 50 AF, but the IAI was not exceeded.
- Surcharge would be assessed on 50 AF.

Agency-wide cap

- The computation is pretty straightforward, and we have developed a standard example calculations that are embedded in an [excel tool](#).
- It will require additional reporting by growers that report more than 2 seasonal crops.
- In terms of year-end filing, some revisions to the Agency's IAI paperwork process will be necessary.

Agency-wide cap



Summary re Surcharge and Cap

- The surcharge computation is a multi step process.
- It includes determining if a surcharge is assessed for:
 1. Exceeding the IAI of 1.0. and
 2. Exceeding the agency-wide cap.

If you are unsure about any of this, please contact staff here and we will explain it.

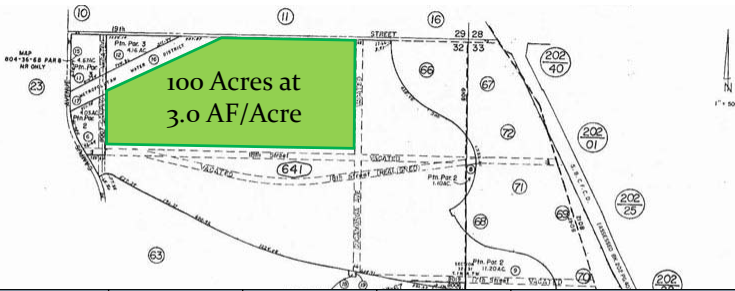
Adjusting the IA for unirrigated land

- Emergency Ordinance E. Basic concept.
- “For computing the irrigation allowance, the definition of Planted Acre may include designated areas that grew irrigated crops in the twelve months prior to August 1, 2014, but have subsequently been fallowed or are growing a non-irrigated crop.”

Adjusting the IA for unirrigated land

- This allows for newly unirrigated or fallow land to have an irrigation allowance. That IA can be moved to the irrigated crop to increase its allowance.
- There are some limitations. It must be separately applied for, the allowance cannot be obtained for routine down time, the duration of the unirrigated period or fallow land period ≥ 90 days.

Crop Year 14/15 IAI Example



Irrigation Allowance	Acres	Total Allowance	Total Water Applied	IAI Result (applied/ allowed)
3.0 Af/Ac	100 Ac	300 Ac-Ft	300 Ac-Ft	1.0 (300/300)

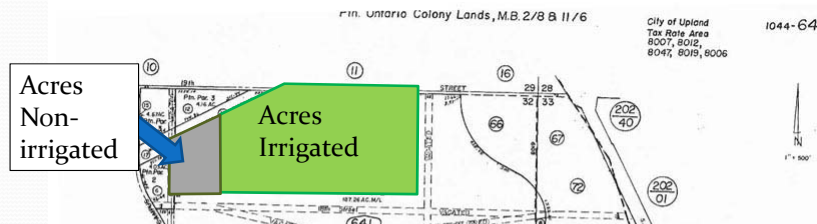
REVISED 11/20/2009
 PARCEL MAP NO. 15231, P.M. 187/59-65
 P.M. PARCEL MAP NO. 8260, P.M. 94/63-67

Pin. Sec. 32 & 33
 T.1N., R.7W.

Assessor's Map
 Book 1044, Page 64
 San Bernardino County

REVISED 11/20/2009
 PARCEL MAP NO. 15231, P.M. 187/59-65
 P.M. PARCEL MAP NO. 8260, P.M. 94/63-67

Crop Year 14/15 IAI Example



In this example, the IA for irrigated land is 3.0 AF/acre, but the Grower determines 3.3 AF is needed.

The irrigation allowance for the unirrigated land will guide how much land is taken out of production.

The exact irrigation allowance for the unirrigated land will be discussed by the Board in February.

REVISED 11/20/2009
 PARCEL MAP NO. 15231, P.M. 187/59-65
 P.M. PARCEL MAP NO. 8260, P.M. 94/63-67

Pin. Sec. 32 & 33
 T.1N., R.7W.

Assessor's Map
 Book 1044, Page 64
 San Bernardino County

REVISED 11/20/2009
 PARCEL MAP NO. 15231, P.M. 187/59-65
 P.M. PARCEL MAP NO. 8260, P.M. 94/63-67

Will the FCGMA consider reducing the IA numbers again?

- Yes. In February 2015 the Board may undertake an additional adjustment to the IAs, or other pumping restrictions, in order to achieve a cumulative 10% reduction in pumping by Agricultural Operators.
- The same step occurs August 1, 2015 to achieve a cumulative 20% reduction in pumping.
- Staff intends to provide the Board any information it has regarding pumping reductions in February.

Other questions

- I'm a well owner/operator and customer of a water company. Who files this IAI paperwork?
 - The primary well operator (note the water company)
- I don't own a well but am a customer of a water supplier? Who files this IAI paperwork?
 - We are working with water suppliers to find best solutions.
- Staff intends to seek Board's input in February.

Starting August 1, 2014

- Agricultural well operators report extractions for the first and second half of each calendar year.
 - August 1- Dec 31 (completed)
 - January 1- July 31
- Filings for the Irrigation Allowance Index (IAI) are now due after the crop year ends (reports due Aug-Oct)

What does the Grower need to know?

- Learn how to calculate the Irrigation Allowance.
- Calculate it for your crops.
 - If your crops change, revise the calculation.
 - If you need assistance, please contact FCGMA staff.
 - Because the FCGMA may reduce the allowance in February, and August plan accordingly.
 - Learn how to use a mapping tool.
- Check FCGMA website for training and tools.
- Run water and crop planning scenarios using tools.

What does the Grower need to know?

- Using the Irrigation Allowance, determine how much water can be applied to your crops without exceeding the IAI of 1.0 or the Agency-wide cap.

- Track your water use accordingly.
 - Record groundwater extracted
 - Record other water sources
 - Water company? Neighbor's well?

- Put the required data on Agency paperwork.

What does the Grower need to know?

- Second part of 2014/2015 crop year
 - Read flowmeter July 31, 2015.
 - Report extractions/fill out the IAI paperwork/pay extraction charge (\$6 AF)
 - Consider using the online filing system to make map, calculations, and save time.

Next

- Jessica Kam will provide an overview of the FCGMA Website.
- Mandi Freitas will demonstrate the online filing tool.
- We will take a break.
- Growers will lead training.

-- End --