

# LCRA WATER MANAGEMENT PLAN

Participant Meeting

Oct. 25, 2018



FOR DISCUSSION PURPOSES ONLY

# Agenda

- Timeline
- Activity since last meeting on Oct. 4
- Comments received since Oct. 4
- Updates to WMP model
- Model results
- Criteria for Drought Worse Than Drought of Record
- Discussion

# Timeline

- May 21 – First participant meeting
- July 12 – Second participant meeting
- Sept. 6 – Third participant meeting
- Oct. 4 – Fourth participant meeting
- **Oct. 25 – Fifth participant meeting**
- Nov. 8 – Sixth participant meeting
- December – WMP before LCRA Board for approval
- Early 2019 – Plan submitted to TCEQ

# Activity Since Last Meeting

- Meetings with participants
- Technical paper on firm yield model
- Updated WMP model and results

# Comments Received – CWIC

- Lower trigger for entering Less Severe Drought from 1.6 to 1.4 million acre-feet
- Lower trigger for entering partial curtailment of second crop in Normal conditions from 1.55 to 1.4 million acre-feet
- Allow unused first season allocation, as of July 1, to be added to the second season allocation, up to the full second season allocation

# Comments Received – Jordan Furnans

- Request for CWIC material
- Request for firm yield modeling

# Comments Received – Environmental Stewardship

- Clarify terminology with regard to “base flows” and “reliable flows”
- Consider using estimated groundwater contributions to river flows in a prior study instead of the reliable flows used in the WMP model

# Comments Received – CTWC

- Request for firm yield modeling
- Consider concerns with CWIC proposed approach
- Consider firm customer diversion points
- Consider impact of allocated interruptible sales on actual water availability for firm water customers
- Add a safety reserve in firm yield process
- Develop procedures related to released but not diverted interruptible stored water



# UPDATES TO THE WAM MODEL

# Updates to WAM Model Since Oct. 4

- Added additional test for entering Extraordinary Drought
  - Further response to 2011 conditions
- Raised combined storage for “anytime cutoff” of interruptible water
  - Increased to 1 million acre-feet
- Added limit on release of stored water
  - Includes ordered-not-diverted and interruptible stored water

# Updates to WAM Model Since Oct. 4

- Revised interruptible stored water allocation tables
  - Normal conditions
    - No allocation below 1.1 million acre-feet
    - Adjusted second season allocation
  - Less Severe Drought conditions
    - Adjusted entry test downward to 1.5 million acre-feet
    - Adjusted allocations

# Updates to WAM Model Since Oct. 4

- Adjusted the combined storage for entering Bay freshwater inflow criteria OP-3 on Nov. 1
- Modified a provision to limit storable inflow releases to meet bay inflow requirements when combined storage above 1.5 million acre-feet
- Added interim steps and limits for storable inflow releases to meet bay inflow requirements

# Model Results Recap

	Oct. 4 WAM	Oct. 25 WAM
Minimum combined storage (acre-feet)	624,654	659,903
Percent of months storage is above 900,000 acre-feet	97 percent	97 percent

# Model Results Recap

Water for agricultural irrigation:

	Oct. 4 WAM	Oct. 25 WAM
	(years out of 77)	(years out of 77)
<b>Full supply both 1st and 2nd season</b>	51	58
<b>Full supply 1st season</b>	58	61
<b>Curtailed 1st season</b>	8	4
<b>No stored water 1st season</b>	11	11
<b>Mid-crop cutoff</b>	0	1
<b>Full supply second season</b>	51	58
<b>Curtailed 2nd season</b>	12	4
<b>No stored water second season</b>	14	15

# Model Results Recap

Attainment of instream flows at Wharton:

	Oct. 4 WAM (percent)	Oct. 25 WAM (percent)
Base-Average	56	56
Base-Dry	77	77
Subsistence	99.7	99.8

Attainment of bay inflows:

	Oct. 4 WAM (percent)	Oct. 25 WAM (percent)
MBHE-4	38	38
MBHE-3	43	43
MBHE-2	55	53
MBHE-1	69	69
Threshold	95	95

# CRITERIA FOR DROUGHT WORSE THAN DROUGHT OF RECORD



# Drought Worse Than Drought of Record Declaration

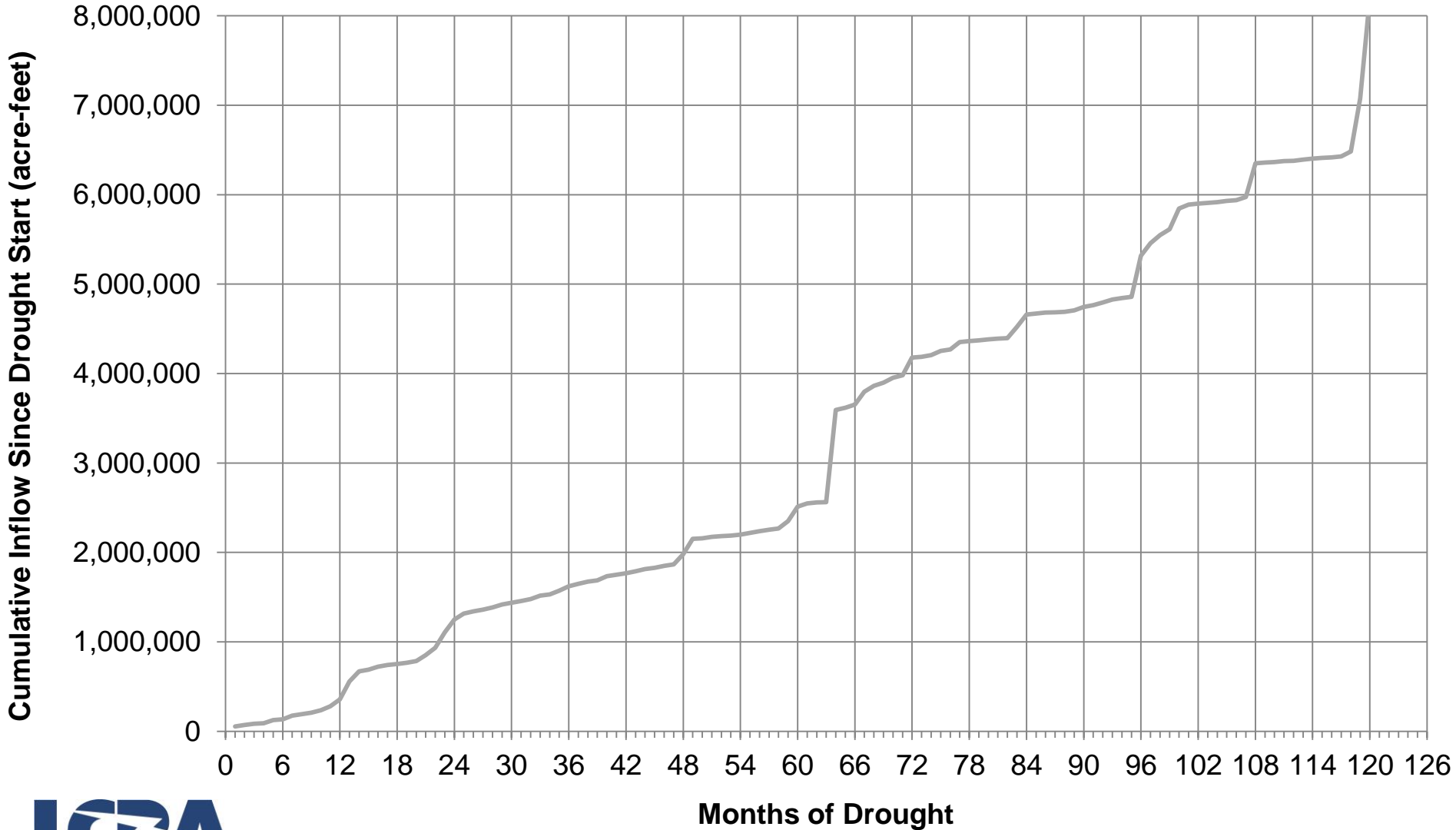
- Required by TCEQ
- Real-time tracking of water supply conditions
- Identifies hydrology potentially worse than historical hydrology
- Basis for pro-rata curtailment of firm water uses

# Proposed DWDR Criteria

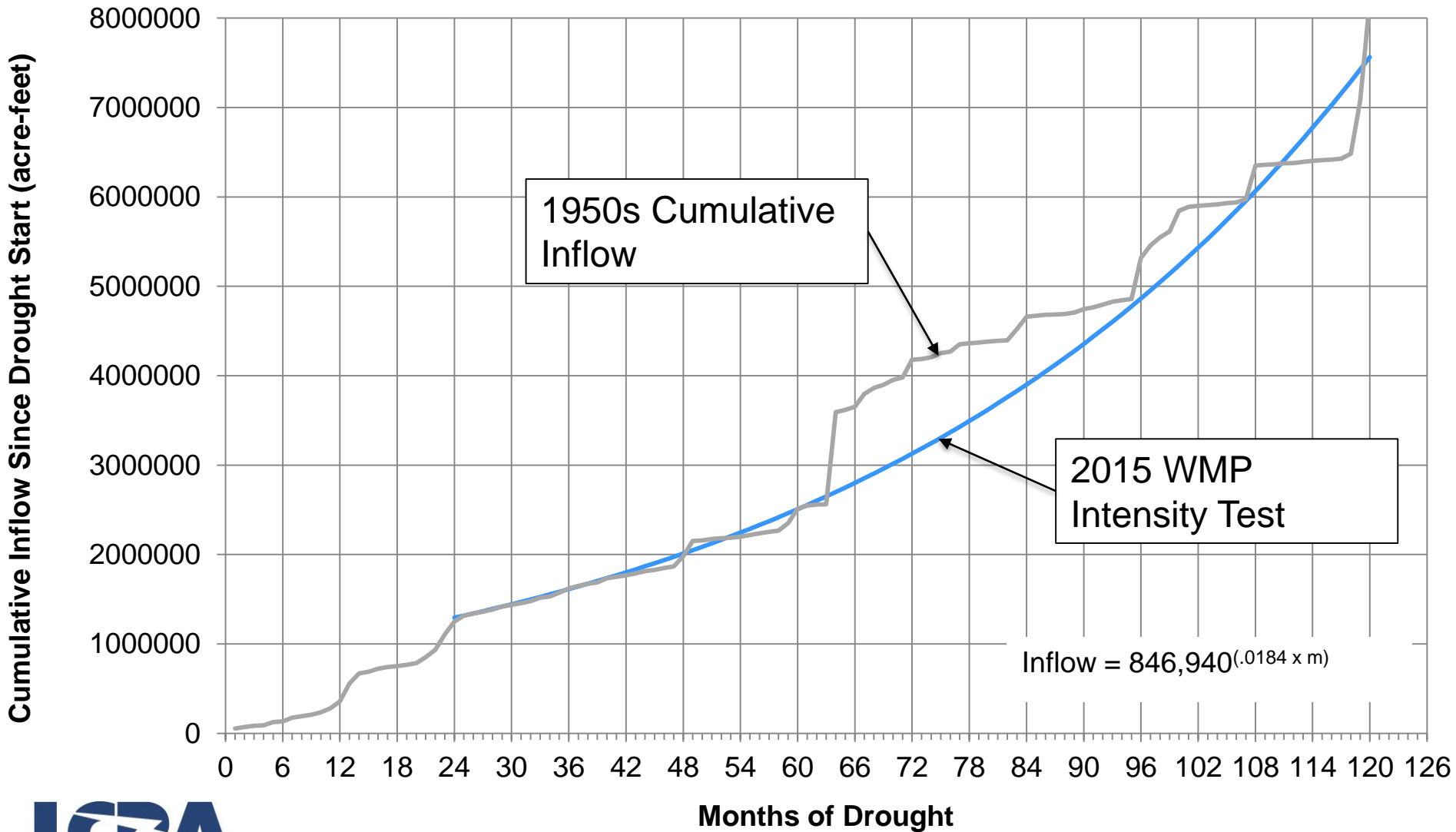
Enter DWDR conditions if either test is met.

- Intensity test:
  - Updated cumulative inflow test, based on 2008-2016 drought  
*AND*
  - 24 months or more since lakes last full  
*AND*
  - Combined storage below 600,000 acre-feet
- Duration test:
  - Current drought longer than 84 months  
*AND*
  - Combined storage below 600,000 acre-feet

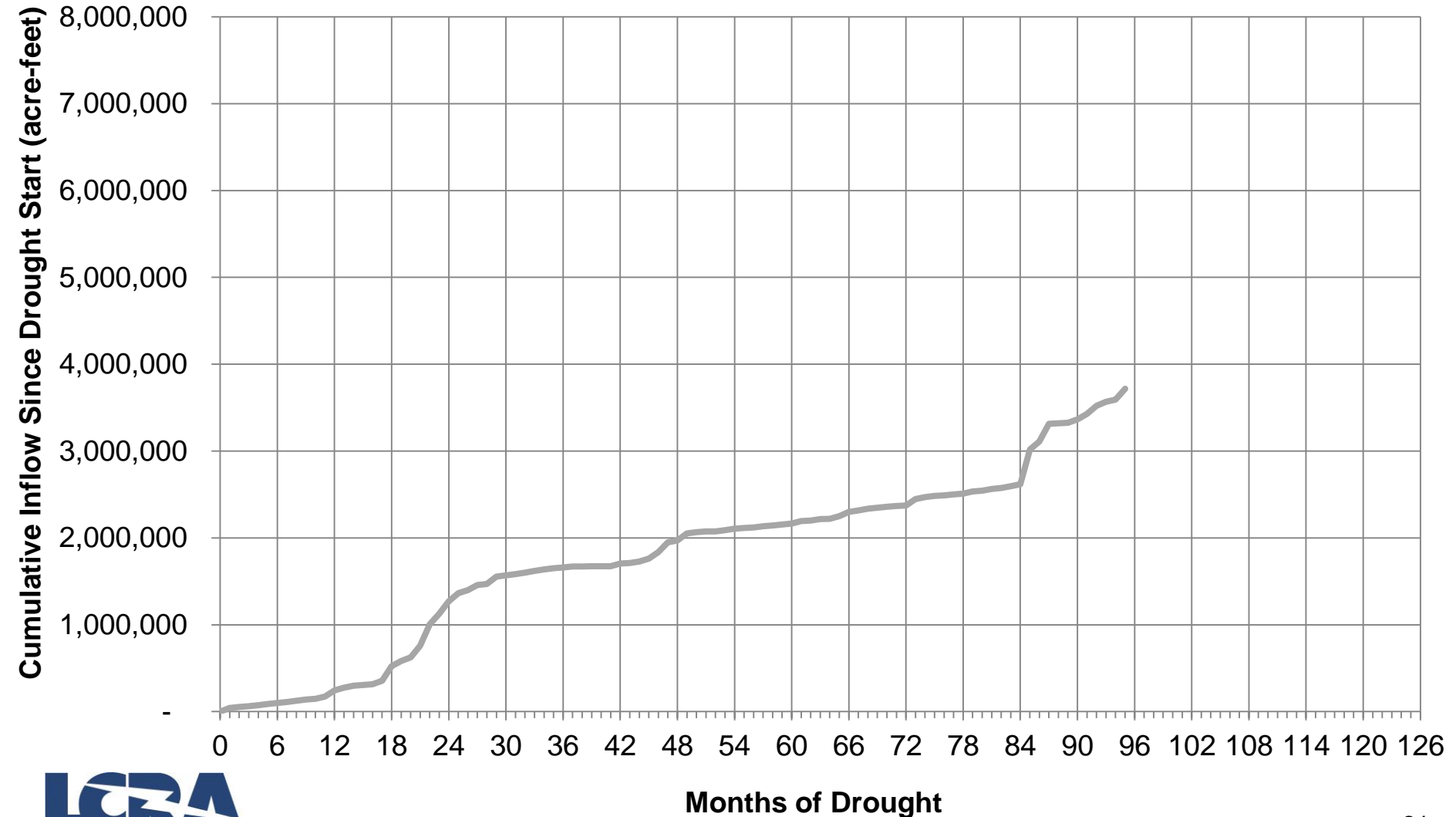
# 1950s Drought Cumulative Inflow



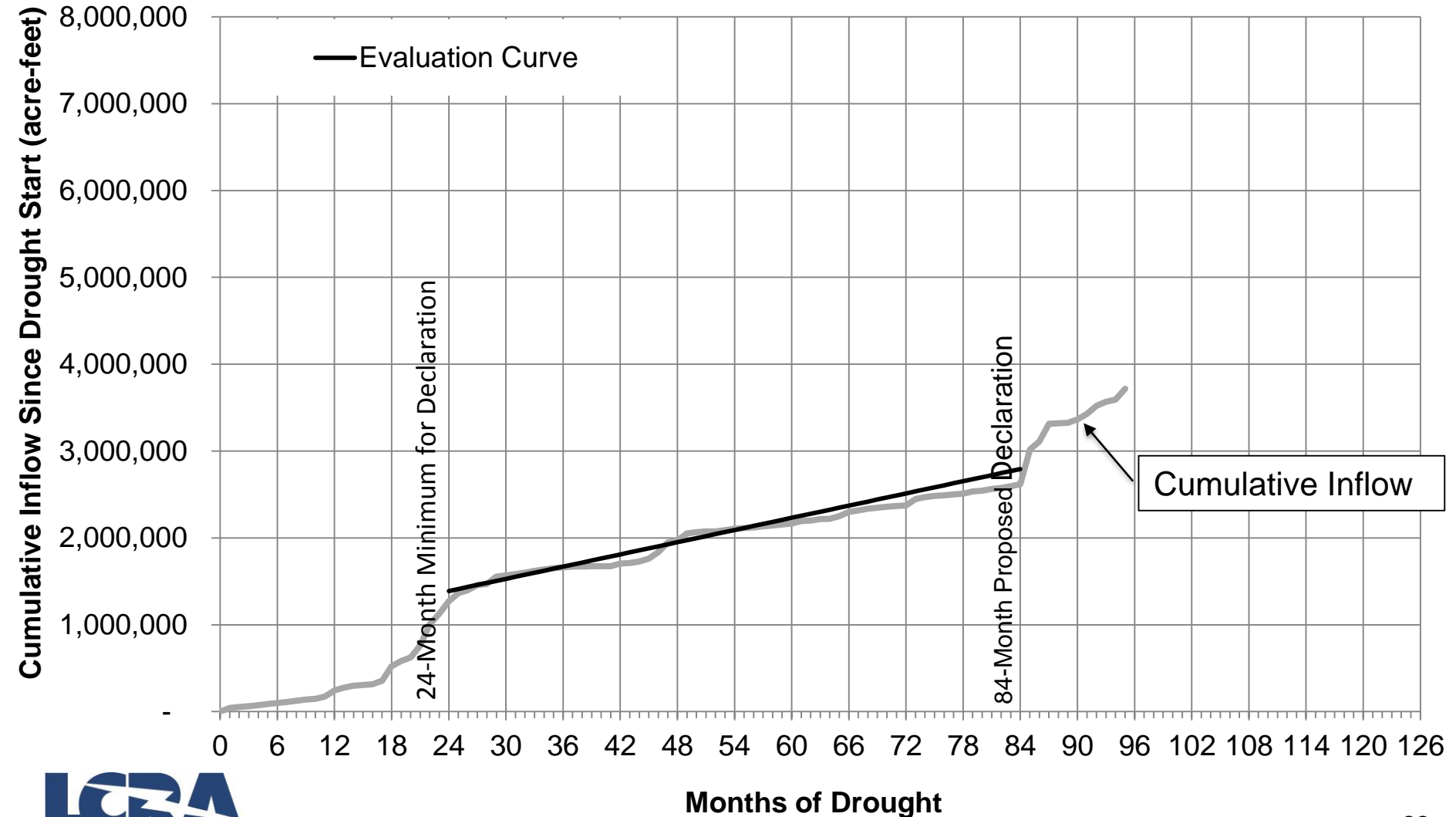
# DWDR Intensity Test in 2015 WMP



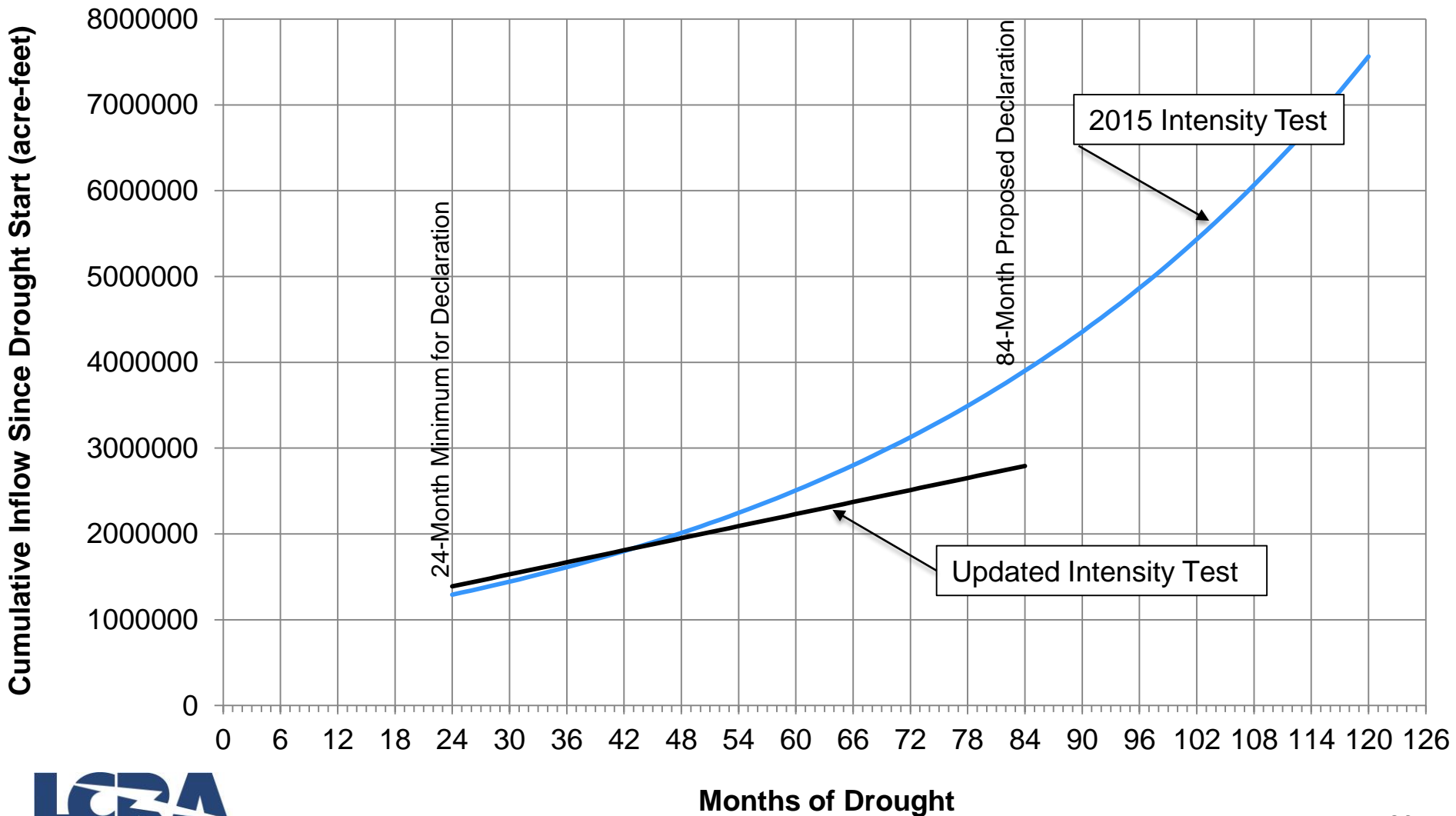
# 2008 to 2016 Drought Cumulative Inflow



# Proposed DWDR Intensity Test



# DWDR Intensity in 2015 WMP and Updated Test



# Proposed DWDR Criteria

Enter DWDR conditions if either test is met.

- Intensity test:
  - Updated cumulative inflow test, based on 2008-2016 drought  
*AND*
  - 24 months or more since lakes last full  
*AND*
  - Combined storage below 600,000 acre-feet
- Duration test:
  - Current drought longer than 84 months  
*AND*
  - Combined storage below 600,000 acre-feet



# DISCUSSION



# Next Steps

- Comments requested by Nov. 1
  - Submit comments to [LCRAWMP@lcra.org](mailto:LCRAWMP@lcra.org)
- Nov. 8 – Sixth participant meeting
  - Discuss proposal we plan to present to LCRA Board