

# Memorandum



To: Natlie Mast, AMA Director  
From: Casey Allman, Madison Moreno  
Date: 11/5/2024  
Re: **Douglas Active Management Area (AMA) Irrigation Efficiencies as a component of Water Duty Calculation**

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Comments: During the development of the Douglas AMA First Management Plan (1MP), research into irrigation efficiencies within the basin showed higher overall efficiencies due to technological advances. The scale of irrigation efficiencies used within the management plan is a regulatory tool, based off USGS data of irrigation efficiencies within the Douglas Basin. The range of medians of irrigation efficiencies observed are 80, 83, and 85 percent.

Consistent with A.R.S. § 45-569, the Water Duty Calculation utilizes irrigation efficiencies, crop consumptive use, and water duty acreage to calculate an allotment for each agricultural water user.

Upon analysis of applications received in the basin, the largest share of acreage is part of only a few large farming operations. By adhering to the 85 percent efficiency regulatory requirement, these large farms would make a substantial impact on reducing the withdrawals of groundwater from the aquifer. Additionally, these larger farming operations often times also more financial resources available to accomplish these irrigation efficiencies as compared to smaller farming operations.

The Department found that setting the acreage distribution of farms at 10-99 acres, 100-499 acres, and farms 500 acres or more creates a more equitable administration of the irrigation efficiency percentages among the applications received and the farm sizes associated with those applications.

By setting the regulatory irrigation efficiencies to these percentages, the Department sets the intention of reducing withdrawals of groundwater and supporting the general economy and public welfare of users within the basin.