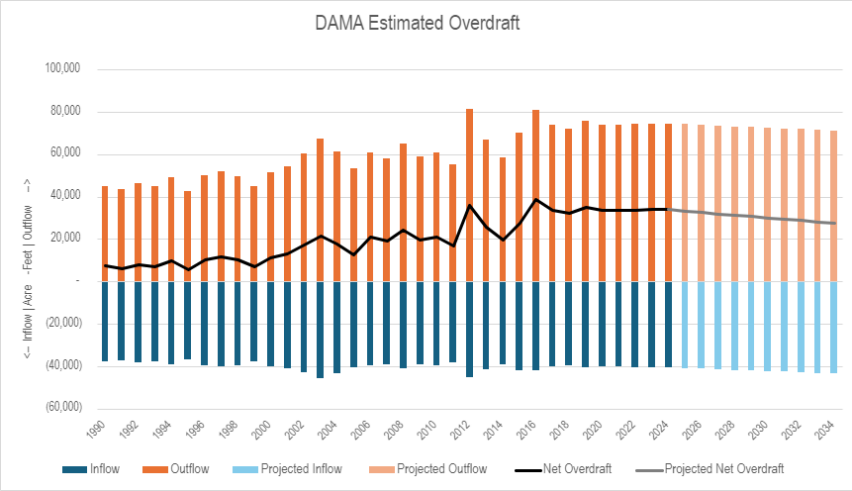
Memorandum

To:	Natalie Mast, AMA Director
From:	Casey Allman, Madison Moreno
Date:	11/5/2024
Re:	**Douglas Active Management Area (AMA) Rate of Reduction Calculation**

Comments: The Douglas AMA Management Goal states "The management goal of the Douglas AMA is to support the general economy and welfare of water users in the basin by reducing the rate of aquifer depletion by an amount established in the first management plan and by additional reductions established in each subsequent plan every 10 years thereafter." In the Executive Summary of the Douglas AMA First Management Plan (1MP), the rate of reduction is expressed as "...the Department aims to reduce each year's groundwater overdraft by an average of 640 acre-feet, to achieve a reduction in annual overdraft of 6,400 acre-feet by the end of the first ten-year period."



The Douglas overdraft estimate was determined using inflows and outflows with consideration of additional recharge advances. All inflows are recorded as natural and incidental recharge. Outflows are categorized into Agricultural, Industrial, and Municipal demand. From 1990 to 2024, the total inflows and outflows are expressed on the chart as negatives and positives, respectfully. The trendline expresses the net overdraft over time. The chart also includes

projected outflows, inflows, and net overdraft with respect to the rate of reduction amount determined by the Management Goal.

The analysis determined a rate of reduction of 640 acre-feet annually or a total of 64,000 acre-feet over a ten-year period would both strike a balance between allowing water users time to transition to initial conservation requirements and continue operations while also still reducing outflows to protect groundwater long-term. 640 acre-feet balances out to be ~1% of the annual withdrawals.

In the initial informal draft of the Douglas AMA 1st Management Plan, the rate of reduction was set to 340 acre-feet per year and did not account for potential changes in supply and future conservation efforts. Due to a large number of comments on the draft, including that of GUAC members, it was decided that having a more ambitious goal of 640 acre-feet per year would account for annual withdrawals and possible conservation efforts. The increase of the rate of reduction would aide in the overarching goal of reducing withdrawals of groundwater within the basin without having an effect on the general economy or water users of the basin. ADWR determined a 1% annual reduction in aquifer depletion can be reasonably achieved with existing conservation requirements taking into account transition time while still supporting the Management Goal for the Douglas AMA.