

2024 Annual Report



WATER CONSERVATION MANAGEMENT PROGRAM

**104 West Baseline Road
Buckeye, Arizona 85326**

Sponsored By:



**2024 Annual Report
Water Conservation Management Program**

Submitted to:

Arizona Department of Water Resources
1110 West Washington Street
Phoenix, Arizona 85007

Submitted by:

Buckeye Valley Natural Resource Conservation District
Water Conservation Management Program
104 West Baseline Road
Buckeye, Arizona 85326

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2024 Annual Report

Water Conservation Management Program

1.0 Introduction

The Buckeye Valley Natural Resource Conservation District (NRCD) began overseeing the Water Conservation Management Program (WCMP) in 2023, through a cooperative agreement with the Arizona Department of Water Resources (ADWR). The WCMP is managed by the Buckeye Valley NRCD Board of Directors in Buckeye, Arizona while serving water users throughout the Phoenix Active Management Area (AMA).

2.0 Program Background

The WCMP was originally established in June 1991, through a cooperative agreement between the ADWR, Agua Fria-New River and Buckeye Valley NRCD, United States Department of Agriculture (USDA) -Natural Resource Conservation Service (NRCS) and the Maricopa County Municipal Water Conservation District No. 1 (MWD).

Shortly thereafter, the East Maricopa Water Conservation Management Program was established by a cooperative agreement between the East Maricopa NRCD, ADWR, and the NRCS.

November 1997, the two programs merged forming the Central Arizona Water Conservation Management Program. Each Water Conservation Management Program was supervised and directed by their respected NRCD Board of Directors, which consists of an NRCS District Conservationist, local agriculture water users, and WCMP team members. In 2003, the Central Arizona Water Conservation Management Program transitioned into one mobile laboratory program.

To date, the WCMP continues to successfully achieve the conservation goals of its program supporters throughout Maricopa County while the Arizona Department of Water Resources, Phoenix AMA, Water Management Assistance Program (WMAAP), has provided the majority of the WCMP's funding. The WMAAP monies are generated from a local tax on groundwater pumping by the authority of the 1980 Ground Water Management Act. Beginning in 2006, additional grant monies were received by the WCMP from ADWR to provide management assistance with the Agriculture Best Management Practices (BMP) program.

The Buckeye Valley NRCD contributes substantially to the program by providing office space, supplies, field equipment, technical support, and staff time. Cooperation between the WCMP and Buckeye Valley NRCD strengthens the ability to achieve water conservation goals.

3.0 Techniques Used by the WCMP

Techniques used by the WCMP are designed to give water users a “snapshot” of what is actually happening during an irrigation event. We identify irrigation management weaknesses that occur during a single irrigation event and provide practical recommendations to improve the situation, enabling water users to irrigate more efficiently. To accomplish this, program staff conduct irrigation system performance evaluations, irrigation training workshops, pump energy analyses, field topographic surveys, flow rate confirmations, and other technical irrigation water management (IWM) services. These services are free of charge, non-discriminatory, and confidential in the sense that no names are linked to the on-farm irrigation evaluation information.

An initial irrigation system performance evaluation begins by familiarizing a water user with the program and the collection of preliminary irrigation information. This information includes the objectives of the irrigation,

current set times, flow rates ordered, etc. Once this information has been collected and a relationship has been established with the grower, irrigation system data is collected.

Irrigation system data collected by the WCMP includes: the field size, flow rate, slope of field (end fall and side fall), soil texture, soil moisture needs, and size of the set being irrigated. During an irrigation event, the overall management of the irrigation event is observed, water advance times are measured, and when present tail water is measured. When evaluating the performance of a sprinkler or micro-spray irrigation system, the WCMP methodically locates catchments throughout the field and pressure measurements are obtained and recorded. A typical irrigation system performance evaluation requires approximately sixteen-man hours from inception to completion.

Once the field data has been collected and analyzed, recommendations can then be made. The first step in the recommendation process is to determine the amount of water required to refill the soil profile to field capacity. We estimate soil moisture at the time of the irrigation event by using the “feel and appearance” method developed by the USDA - NRCS. Using this method, we classify soil textures, estimate the Available Water Holding Capacity (AWHC), and determine the soil moisture content as a percentage of field capacity. When the amount of water needed to refill the soil profile is estimated and the amount of water applied is known, the Field Application Efficiency (FAE) determination can be made.

As soon as someone can walk onto the irrigation site after the observed irrigation event, (usually 48 – 72 hours) a measurement of moisture penetration is evaluated. This entails using a “ball probe”, a steel rod that is pushed into the soil perpendicularly that stops when the end of the wetted front is reached. Penetration depths are recorded every 100 feet along the length of the field.

An irrigation system performance evaluation summary report is compiled once all the necessary information is collected and observations are complete. The summary report is then presented to the grower with recommendations to improve the irrigation system performance with attempts to conduct follow-up irrigation evaluations. Follow up irrigation evaluations are pursued when applicable to verify implementation of the provided recommendations and their effectiveness.

4.0 Technical Activities

In the 2024 fiscal year, the WCMP conducted 40 irrigation system performance evaluations. An alphabetical list of participants can be found in “Appendix A” and a brief summary of each irrigation system performance evaluation can be found in “Appendix B”. Each summary identifies the evaluation number, whether the evaluation was a Follow Up “F”, crop being grown, type of irrigation system, soil texture, slope of field, and the date of the irrigation event. Included in the irrigation system performance evaluation summaries are the suggestions to the grower for improved IWM.

5.0 Field and Educational/Outreach Services

In the 2024 fiscal year, the WCMP conducted 20 technical services including: irrigation scheduling, topographic surveys, flow rate confirmations, and numerous other services. In addition to the technical services, the WCMP also conducted services pertaining to the Agriculture BMP Program, produced three irrigation water management newsletters, and designed and launched a program web site. “Appendix C” is a compilation of a brief, summary of each service including copies of the newsletters.

6.0 Program Impact

The WCMP and its supporters strive for excellence in preserving and conserving Arizona Agriculture. In

support of this, the WCMP has provided irrigation water management services to an estimated 80% of all agriculture water users throughout the Phoenix AMA. According to the 2022 USDA Census of Agriculture, 502,029 acres of Arizona Land in Maricopa County were in agriculture production and of this total, 206,958 (41%) was considered irrigated land. In the 2024 Fiscal Year, the WCMP impacted 18,640 acres or approximately 9% of irrigated land in Maricopa County, conserving an estimated 5,245.6 acre feet of irrigation water or the equivalent of 1,709,278,760 gallons. According to the 2015 United States Geologic Survey (USGS) the average person uses 53,290 gallons of water per year and the average household uses approximately 108,665 gallons of water per year. Essentially, the WCMP's efforts conserve enough water to supply 15,730 households or 32,075 people a year. The impact of the WCMP, assisting agriculture water users become more efficient with their irrigation water, reaches far outside the confines of the agriculture industry.

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Water Conservation Management Program
October 1, 2024 – September 30, 2025

Work Completed:

- Completed 40 Standard Evaluations
- Completed 20 Technical Irrigation & BMP Services
- Completed 4 Outreach/Education/Promotional Activities

**Water Conservation Management Program
Program Participants**

The WCMP and its Board of Directors strongly believe in maintaining the anonymity of its cooperators. Therefore, for purposes of this report, below is an alphabetical list of WCMP cooperators who received irrigation water management services during this fiscal year. There is no correlation between this list or the random identifier numbers assigned to each irrigation water management service.

Bales & Bales Farms

Flying R Farms

Freeman Farms

Fort McDowell Farm

H Four Farms

Stotz Farms

Water Conservation Management Program Standard Evaluation Summaries

24-01, Alfalfa, Graded Border, Tucson Loam, 0.2'/100' Row Fall, evaluated 10/23/2024

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 67% and an irrigation efficiency (IE) of 71%. The average amount needed to refill the root zone at the time of the event was 4.3 acre inches per acre. 10 cfs was applied to the 32.7 acre field with a total irrigation time of 24 hours, resulting in a gross application of 6.42 acre inches per acre and a net application of 6.1 acre inches per acre as 0.32 acre inches per acre left the field in the form of captured tail water. The WCMP respectfully suggested targeting set times to not exceed 3 hours to improve irrigation efficiency approximately 8% and saving approximately 3 acre feet per irrigation event.

24-02, Corn, Graded Furrow, Laveen Loam, 0.6'/100' Row Fall, evaluated 03/14/2025

This standard evaluation was conducted on a corn field using a graded furrow irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 74% and an irrigation efficiency (IE) of 83%. The average amount needed to refill the root zone at the time of the event was 2.4 acre inches per acre. 6.3 cfs was applied to the 81.3 acre field with a total irrigation time of 48 hours, resulting in a gross application of 3.69 acre inches per acre and a net application of 3.32 acre inches per acre as 0.37 acre inches per acre left the field in the form of captured tail water. The WCMP respectfully suggested targeting set times to not exceed 7 hours to improve irrigation efficiency approximately 9%, saving approximately 3 acre feet per irrigation event.

24-03, Corn, Graded Furrow, Mariposa Sandy Loam, 0.6'/100' Row Fall, evaluated 03/16/2025

This standard evaluation was conducted on a corn field using a graded furrow irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 57% and an irrigation efficiency (IE) of 64%. The average amount needed to refill the root zone at the time of the event was 2.4 acre inches per acre. 6.3 cfs was applied to the 71.7 acre field with a total irrigation time of 48 hours, resulting in a gross application of 4.18 acre inches per acre and a net application of 3.76 acre inches per acre as 0.42 acre inches per acre left the field in the form of captured tail water. The WCMP respectfully suggested targeting set times to not exceed 5 hours to improve irrigation efficiency approximately 12%, saving approximately 4.1 acre feet per irrigation event.

24-04, Corn, Graded Furrow, Mariposa Sandy Loam, 0.6'/100' Row Fall, evaluated 03/18/2025

This standard evaluation was conducted on a corn field using a graded furrow irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 52% and an irrigation efficiency (IE) of 58%. The average amount needed to refill the root zone at the time of the event was 2.4 acre inches per acre. 6.3 cfs was applied to the 48.9 acre field with a total irrigation time of 36 hours, resulting in a gross application of 4.6 acre inches per acre and a net application of 4.14 acre inches per acre as

0.46 acre inches per acre left the field in the form of captured tail water. The WCMP respectfully suggested targeting set times to not exceed 5 hours to improve irrigation efficiency approximately 11%, saving approximately 3 acre feet per irrigation event.

24-05, Alfalfa, Graded Border, Laveen Sandy Loam, 0.7'/100' Row Fall, evaluated 03/22/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 74% and an irrigation efficiency (IE) of 82%. The average amount needed to refill the root zone at the time of the event was 3.2 acre inches per acre. 5.6 cfs was applied to the 18.2 acre field with a total irrigation time of 12 hours, resulting in a gross application of 4.33 acre inches per acre and a net application of 3.9 acre inches per acre as 0.43 acre inches per acre left the field in the form of captured tail water. The WCMP respectfully suggested targeting set times to not exceed 2 hours to improve irrigation efficiency approximately 12%, saving approximately 1 acre foot per irrigation event.

24-06, Corn, Graded Furrow, Laveen Sandy Loam, 0.7'/100' Row Fall, evaluated 03/24/2025

This standard evaluation was conducted on a corn field using a graded furrow irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 75% and an irrigation efficiency (IE) of 100%. The average amount needed to refill the root zone at the time of the event was 2.8 acre inches per acre. 6.3 cfs was applied to the 80 acre field with a total irrigation time of 48 hours, resulting in a gross application of 3.75 acre inches per acre and a net application of 2.81 acre inches per acre as 0.94 acre inches per acre left the field in the form of captured tail water. The WCMP respectfully declined offering suggestions for improvement at this time. This was a good irrigation event.

24-07, Alfalfa, Graded Border, Glenbar Clay Loam, 0.1'/100' Row Fall, evaluated 05/12/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 78% and an irrigation efficiency (IE) of 78%. The average amount needed to refill the root zone at the time of the event was 4.0 acre inches per acre. 4.0 cfs was applied to the 35.2 acre field with a total irrigation time of 42 hours, resulting in a gross and net application of 5.12 acre inches per acre. No water left the irrigated area in the form of captured or uncaptured tailwater. The WCMP respectfully declined offering suggestions for improvement on this field, at this time. This was a good irrigation event.

24-08, Alfalfa, Graded Border, Gilman Clay Loam, 0.1'/100' Row Fall, evaluated 05/12/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 73% and an irrigation efficiency (IE) of 73%. The average amount needed to refill the root zone at the time of the event was 3.6 acre inches per acre. 5.0 cfs was applied to the 40.4 acre field with a total irrigation time of 40 hours, resulting in a gross and net application of 4.95 acre inches per acre. No water left the irrigated area in the form of capture or uncaptured tailwater. The WCMP respectfully suggested scheduling irrigation events when the soil has reached a maximum allowable depletion (MAD) of 50% to increase irrigation efficiency by approximately 7%.

24-09, Alfalfa, Graded Border, Gilman Clay Loam, 0.1'/100' Row Fall, evaluated 05/12/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 136% and an irrigation efficiency (IE) of 136%. The average amount needed to refill the root zone at the time of the event was 4.8 acre inches per acre. 6.5 cfs was applied to the 25.7 acre field with a total irrigation time of 14 hours, resulting in a gross and net application of 3.54 acre inches per acre. No water left the irrigated area in the form of capture or uncaptured tailwater. This field was deficit irrigated. The WCMP respectfully suggested scheduling irrigation events when the soil has reached a maximum allowable depletion (MAD) of 50% for the irrigation system's design specifications to meet the irrigation water requirements of the field and the demands of the crop.

24-10, Wheat, Linear Sprinkler, Contine Clay Loam, evaluated 05/15/2025

This standard evaluation was conducted on a wheat field using a linear sprinkler irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 94% and a distribution uniformity (DU) of 44%. The average amount needed to refill the root zone at the time of the event was 1.5 acre inches per acre. 7.3 cfs was applied to the 275.17 acre field with a total irrigation time of 60 hours, resulting in an application of 1.6 acre inches per acre. The WCMP respectfully suggested replacing sprinkler nozzles to improve distribution uniformity that is being affected by friction loss with increased distance from the pump.

24-11, Alfalfa, Graded Border, Laveen Sandy Loam, 0.2'/100' Row Fall, evaluated 05/16/2025

This standard evaluation was conducted on an alfalfa field using a graded furrow irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 63% and an irrigation efficiency (IE) of 70%. The average amount needed to refill the root zone at the time of the event was 3.6 acre inches per acre. 8.0 cfs was applied to the 33.8 acre field with a total irrigation time of 24 hours, resulting in a gross application of 5.68 acre inches per acre and a net application of 5.11 acre inches per acre as 0.57 acre inches per acre left the field in the form of captured tail water. The WCMP respectfully suggested reducing set times by 15 minutes (a total field irrigation time of 21 hours) to save approximately 2 acre feet, improving irrigation efficiency by approximately 7%.

24-12, Alfalfa, Graded Border, Wellton Loam, 0.2'/100' Row Fall, evaluated 05/17/2025

This standard evaluation was conducted on a corn field using a graded furrow irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 85% and an irrigation efficiency (IE) of 95%. The average amount needed to refill the root zone at the time of the event was 3.2 acre inches per acre. 10.0 cfs was applied to the 32.0 acre field with a total irrigation time of 12 hours, resulting in a gross application of 3.76 acre inches per acre and a net application of 3.38 acre inches per acre as 0.38 acre inches per acre left the field in the form of captured tail water. The WCMP respectfully declined offering any suggestions for improvement in this field at this time. This was a great irrigation event.

24-13, Alfalfa, Graded Border, Gilman Loam, 0.2'/100' Row Fall, evaluated 05/23/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The

WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 54% and an irrigation efficiency (IE) of 54%. The average amount needed to refill the root zone at the time of the event was 3.6 acre inches per acre. 10.0 cfs was applied to the 32.7 acre field with a total irrigation time of 22 hours, resulting in a gross and net application of 6.72 acre inches per acre. No water left the irrigated area in the form of capture or uncaptured tailwater. The WCMP respectfully suggested reducing the flow rate to 8 cfs while increasing the set times to 3 hours and 25 minutes to reduce the total application by approximately 2 acre feet and improve irrigation efficiency by approximately 7%.

24-14, Alfalfa, Graded Border, Gilman Loam, 0.5'/100' Row Fall, evaluated 05/29/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 58% and an irrigation efficiency (IE) of 58%. The average amount needed to refill the root zone at the time of the event was 3.2 acre inches per acre. 8.5 cfs was applied to the 55.6 acre field with a total irrigation time of 36 hours, resulting in a gross application of 5.50 acre inches per acre and a net application of 4.95 acre inches per acre, as 0.55 acre inches per acre left the irrigated area as uncaptured tailwater. The WCMP respectfully suggested changing sets when the water front is approximately 100 feet from the end of the field to reduce the total application amount, improve irrigation efficiency, and minimize runoff.

24-15, Alfalfa, Graded Border, Gilman Loam, 0.1'/100' Row Fall, evaluated 05/30/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 69% and an irrigation efficiency (IE) of 69%. The average amount needed to refill the root zone at the time of the event was 3.4 acre inches per acre. 8.0 cfs was applied to the 58.9 acre field with a total irrigation time of 36 hours, resulting in a gross application of 4.89 acre inches per acre and a net application of 4.40 acre inches per acre, as 0.49 acre inches per acre left the irrigated area as uncaptured tailwater. The WCMP respectfully suggested changing sets when the water front is approximately 50 feet from the end of the field to reduce the total application amount, improve irrigation efficiency by approximately 6%, and minimize runoff.

24-16, Alfalfa, Graded Border, Avondale Clay Loam, 0.05'/100' Row Fall, evaluated 06/02/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 87% and an irrigation efficiency (IE) of 87%. The average amount needed to refill the root zone at the time of the event was 2.8 acre inches per acre. 4.0 cfs was applied to the 37.3 acre field with a total irrigation time of 30 hours, resulting in a gross application of 3.22 acre inches per acre and a net application of 2.90 acre inches per acre, as 0.32 acre inches per acre left the irrigated area as uncaptured tailwater. The WCMP respectfully suggested establishing specific irrigation application goals for each irrigation event. This field was irrigated prior to the soil reaching a maximum allowable depletion (MAD) of 50%. Had this field been irrigated when it had reached 50% depletion with the same amount of water being applied, the field would have been deficit irrigated requiring an additional irrigation event to meet crop requirements.

24-17, Alfalfa, Graded Border, Gilman Loam, 0.05'/100' Row Fall, evaluated 06/03/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The

WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 70% and an irrigation efficiency (IE) of 70%. The average amount needed to refill the root zone at the time of the event was 4.3 acre inches per acre. 5.5 cfs was applied to the 37.3 acre field with a total irrigation time of 42 hours, resulting in a gross application of 6.19 acre inches per acre and a net application of 5.57 acre inches per acre, as 0.62 acre inches per acre left the irrigated area as uncaptured tailwater. The WCMP respectfully suggested increasing the flow rate to 7 cfs to advance the water down the field quicker and changing sets when the water is approximately 50 feet from the end of the field to reduce the overall total field irrigation time, improving irrigation efficiency.

24-18, Pecan Grove, Micro Spray, Pinaleno – Tres Hermanos Complex, evaluated 06/12/2025

This standard evaluation was conducted on a pecan grove using a low-pressure micro spray irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 137% and a distribution uniformity (DU) of 38%. The average amount needed to refill the root zone at the time of the event was 1.68 acre inches per acre. 1.54 cfs was applied to the 30.0 acre field with a total irrigation time of 24 hours, resulting in an application of 1.23 acre inches per acre. This was a deficit irrigation. The WCMP respectfully suggested scheduling irrigation events to occur every 5 days during this time of year to meet the daily demands of the crop while meeting the constraints of the system. Additionally, spray nozzles should be replaced to be uniform throughout the irrigation set, ensure the spray nozzle stakes are intact and in the proper position, and trim low hanging branches that obstruct the spray pattern to improve distribution uniformity.

24-19, Pecan Grove, Micro Spray, Gunsight - Fillito Complex, evaluated 06/12/2025

This standard evaluation was conducted on a pecan grove using a low-pressure micro spray irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 137% and a distribution uniformity (DU) of 50%. The average amount needed to refill the root zone at the time of the event was 1.68 acre inches per acre. 1.22 cfs was applied to the 23.9 acre field with a total irrigation time of 24 hours, resulting in an application of 1.23 acre inches per acre. This was a deficit irrigation. The WCMP respectfully suggested scheduling irrigation events to occur every 5 days during this time of year to meet the daily demands of the crop while meeting the constraints of the system. Additionally, spray nozzles should be replaced to be uniform throughout the irrigation set and to ensure the spray nozzle stakes are intact and in the proper position to improve distribution uniformity.

24-20, Pecan Grove, Micro Spray, Tremant Gravelly Loam, evaluated 06/12/2025

This standard evaluation was conducted on a pecan grove using a low-pressure micro spray irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 136% and a distribution uniformity (DU) of 80%. The average amount needed to refill the root zone at the time of the event was 1.68 acre inches per acre. 1.29 cfs was applied to the 24.9 acre field with a total irrigation time of 24 hours, resulting in an application of 1.24 acre inches per acre. This was a deficit irrigation. The WCMP respectfully suggested scheduling irrigation events to occur every 5 days during this time of year to meet the daily demands of the crop while meeting the constraints of the system. Additionally, spray nozzles should be replaced to be uniform throughout the irrigation set and to ensure the spray nozzle stakes are intact and in the proper position to improve distribution uniformity.

24-21, Pecan Grove, Micro Spray, Tremant Gravelly Loam, evaluated 06/13/2025

This standard evaluation was conducted on a pecan grove using a low-pressure micro spray irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 134% and a distribution uniformity (DU) of 83%. The average amount needed to refill the root zone at the time of the event was 1.68 acre inches per acre. 1.57 cfs was applied to the 29.9 acre field with a total irrigation time of 24 hours, resulting in an application of 1.25 acre inches per acre. This was a deficit irrigation. The WCMP respectfully suggested scheduling irrigation events to occur every 5 days during this time of year to meet the daily demands of the crop while meeting the constraints of the system, improving irrigation efficiency to approximately 97%. The WCMP did not provide suggestions to improve DU at this time.

24-22, Alfalfa, Graded Border, Perryville Gravelly Loam, 0.55'/100' Row Fall, evaluated 07/01/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 74% and an irrigation efficiency (IE) of 87%. The average amount needed to refill the root zone at the time of the event was 3.6 acre inches per acre. 7.5 cfs was applied to the 52.3 acre field with a total irrigation time of 34 hours, resulting in a gross application of 4.87 acre inches per acre and a net application of 4.14 acre inches per acre, as 0.56 acre inches per acre left the irrigated area as captured tailwater. The WCMP respectfully suggested reducing set times by approximately 10 minutes each to potentially improve irrigation efficiency by 5%.

24-23, Corn, Graded Border, Laveen Sandy Loam, 0.23'/100' Row Fall, evaluated 07/01/2025

This standard evaluation was conducted on a corn field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 57% and an irrigation efficiency (IE) of 57%. The average amount needed to refill the root zone at the time of the event was 2.9 acre inches per acre. 7.5 cfs was applied to the 17.9 acre field with a total irrigation time of 12 hours, resulting in a gross and net application of 5.03 acre inches per acre. No water left the irrigated area in the form of capture or uncaptured tailwater. The WCMP respectfully suggested scheduling irrigation events to occur when the soil has reached a maximum allowable depletion of 50% and to reduce the flow rate to 5 cfs while maintaining as close to the same set time as possible to improve irrigation efficiency by approximately 30%.

24-24, Corn, Graded Border, Laveen Sandy Loam, 0.23'/100' Row Fall, evaluated 07/02/2025

This standard evaluation was conducted on a corn field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 46% and an irrigation efficiency (IE) of 46%. The average amount needed to refill the root zone at the time of the event was 2.9 acre inches per acre. 7.5 cfs was applied to the 28.7 acre field with a total irrigation time of 24 hours, resulting in a gross and net application of 6.28 acre inches per acre. No water left the irrigated area in the form of capture or uncaptured tailwater. The WCMP respectfully suggested scheduling irrigation events to occur when the soil has reached a maximum allowable depletion of 50% and to reduce the flow rate to 5 cfs while maintaining as close to the same set time as possible to improve irrigation efficiency by approximately 23%.

24-25, Corn, Graded Border, Perryville Gravelly Loam, 0.61'/100' Row Fall, evaluated 07/02/2025

This standard evaluation was conducted on a corn field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 47% and an irrigation efficiency (IE) of 58%. The average amount needed to refill the root zone at the time of the event was 2.4 acre inches per acre. 5.0 cfs was applied to the 46.7 acre field with a total irrigation time of 48 hours, resulting in a gross application of 5.14 acre inches per acre and a net application of 4.11 acre inches per acre, as 1.03 acre inches per acre left the irrigated area as captured tailwater. The WCMP respectfully suggested changing sets when the water front is approximately 50 feet from the end of the field to potentially improve irrigation efficiency by approximately 15%.

24-26, Pecan, Micro Spray, Tremant Gravelly Loam, evaluated 07/21/2025

This standard evaluation was conducted on a pecan grove using a low-pressure micro spray irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 77% and a distribution uniformity (DU) of 56%. The average amount needed to refill the root zone at the time of the event was 0.78 acre inches per acre. 1.26 cfs was applied to the 29.9 acre field with a total irrigation time of 24 hours, resulting in an application of 1.01 acre inches per acre. The WCMP respectfully suggested scheduling irrigation events to occur every 4 days during this time of year to meet the daily demands of the crop while meeting the constraints of the system, improving irrigation efficiency to approximately 100%. Additionally, the WCMP suggested uniforming micro spray nozzles to improve DU.

24-27, Pecan, Micro Spray, Pinaleno-Tres Hermanos Complex, evaluated 07/21/2025

This standard evaluation was conducted on a pecan grove using a low-pressure micro spray irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 65% and a distribution uniformity (DU) of 43%. The average amount needed to refill the root zone at the time of the event was 0.78 acre inches per acre. 1.49 cfs was applied to the 29.9 acre field with a total irrigation time of 24 hours, resulting in an application of 1.19 acre inches per acre. The WCMP respectfully suggested scheduling irrigation events to occur every 4 days during this time of year to meet the daily demands of the crop while meeting the constraints of the system, improving irrigation efficiency to approximately 87%. Additionally, the WCMP suggested uniforming the micro spray nozzles across the entire irrigated area to improve DU.

24-28, Pecan, Micro Spray, Ebon-Contine Complex, evaluated 07/21/2025

This standard evaluation was conducted on a pecan grove using a low-pressure micro spray irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 72% and a distribution uniformity (DU) of 35%. The average amount needed to refill the root zone at the time of the event was 0.78 acre inches per acre. 0.85 cfs was applied to the 18.83 acre field with a total irrigation time of 24 hours, resulting in an application of 1.08 acre inches per acre. The WCMP respectfully suggested scheduling irrigation events to occur every 4 days during this time of year to meet the daily demands of the crop while meeting the constraints of the system, improving irrigation efficiency to approximately 96%. Additionally, the WCMP suggested uniforming the micro spray nozzles across the entire irrigated area to improve DU.

24-29, Pecan, Micro Spray, Mohall Clay Loam, evaluated 07/21/2025

This standard evaluation was conducted on a pecan grove using a low-pressure micro spray irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 63% and a distribution uniformity (DU) of 55%. The average amount needed to refill the root zone at the time of the event was 0.78 acre inches per acre. 1.10 cfs was applied to the 21.49 acre field with a total irrigation time of 24 hours, resulting in an application of 1.23 acre inches per acre. The WCMP respectfully suggested scheduling irrigation events to occur every 4 days during this time of year to meet the daily demands of the crop while meeting the constraints of the system, improving irrigation efficiency to approximately 84%. Additionally, the WCMP suggested uniforming the micro spray nozzles across the entire irrigated area to improve DU.

24-30, Cotton, Graded Border, Antho Sandy Loam, 0.5'/100' Row Fall, evaluated 07/27/2025

This standard evaluation was conducted on a cotton field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 44% and an irrigation efficiency (IE) of 55%. The average amount needed to refill the root zone at the time of the event was 2.9 acre inches per acre. 8.5 cfs was applied to the 39.2 acre field with a total irrigation time of 30 hours, resulting in a gross application of 6.5 acre inches per acre and a net application of 5.2 acre inches per acre, as 0.70 acre inches per acre left the irrigated area as captured tailwater. The WCMP respectfully suggested changing sets when the water front is approximately 50 – 100 feet from the end of the field, targeting a total field irrigation time of 24 hours, to improve irrigation efficiency by approximately 11%.

24-31, Cotton, Graded Border, Coolidge Sandy Loam, 0.5'/100' Row Fall, evaluated 07/28/2025

This standard evaluation was conducted on a cotton field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 62% and an irrigation efficiency (IE) of 73%. The average amount needed to refill the root zone at the time of the event was 2.9 acre inches per acre. 8.0 cfs was applied to the 34.3 acre field with a total irrigation time of 20 hours, resulting in a gross application of 4.67 acre inches per acre and a net application of 3.97 acre inches per acre, as 0.70 acre inches per acre left the irrigated area as captured tailwater. The WCMP respectfully suggested changing sets when the water front is approximately 50 – 100 feet from the end of the field, targeting a total field irrigation time of 20 hours, to improve irrigation efficiency by approximately 13%.

24-32, Cotton, Graded Border, Coolidge Sandy Loam, 0.5'/100' Row Fall, evaluated 07/29/2025

This standard evaluation was conducted on a cotton field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 46% and an irrigation efficiency (IE) of 57%. The average amount needed to refill the root zone at the time of the event was 2.9 acre inches per acre. 8.0 cfs was applied to the 31.8 acre field with a total irrigation time of 25 hours, resulting in a gross application of 6.29 acre inches per acre and a net application of 5.03 acre inches per acre, as 1.26 acre inches per acre left the irrigated area as captured tailwater. The WCMP respectfully suggested changing sets when the water front is approximately 50 – 100 feet from the end of the field, targeting a total field irrigation time of 20 hours, to improve irrigation efficiency by approximately 11%.

24-33, Cotton, Graded Border, Coolidge Sandy Loam, 0.5'/100' Row Fall, evaluated 07/30/2025

This standard evaluation was conducted on a cotton field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 67% and an irrigation efficiency (IE) of 84%. The average amount needed to refill the root zone at the time of the event was 2.9 acre inches per acre. 5.0 cfs was applied to the 35.1 acre field with a total irrigation time of 30 hours, resulting in a gross application of 4.28 acre inches per acre and a net application of 3.42 acre inches per acre, as 0.86 acre inches per acre left the irrigated area as captured tailwater. The WCMP respectfully declined offering suggestions for improvement at this time, as this was a good irrigation event for this field.

24-34, Alfalfa, Graded Border, Mohall Loam, 0.0'/100' Row Fall, evaluated 07/31/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 65% and an irrigation efficiency (IE) of 65%. The average amount needed to refill the root zone at the time of the event was 2.9 acre inches per acre. 7.0 cfs was applied to the 4.8 acre field with a total irrigation time of 3 hours, resulting in a gross application of 4.4 acre inches per acre and a net application of 4.4 acre inches per acre, as no water left the irrigated area. The WCMP respectfully suggested increasing the flow rate to 7.5 cfs with a targeted total field irrigation time of 2.25 hours to improve irrigation efficiency by approximately 16%.

24-35, Alfalfa, Graded Border, Mohall Loam, 0.0'/100' Row Fall, evaluated 07/31/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 69% and an irrigation efficiency (IE) of 69%. The average amount needed to refill the root zone at the time of the event was 2.9 acre inches per acre. 8.0 cfs was applied to the 6.8 acre field with a total irrigation time of 3.5 hours, resulting in a gross application of 4.15 acre inches per acre and a net application of 4.15 acre inches per acre, as no water left the irrigated area. The WCMP respectfully suggested increasing the flow rate to 10.5 cfs with a targeted total field irrigation time of 2.25 hours to improve irrigation efficiency by approximately 13%.

24-36, Alfalfa, Graded Border, Mohall Loam, 0.0'/100' Row Fall, evaluated 07/31/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 72% and an irrigation efficiency (IE) of 72%. The average amount needed to refill the root zone at the time of the event was 2.9 acre inches per acre. 8.0 cfs was applied to the 10.0 acre field with a total irrigation time of 5.0 hours, resulting in a gross application of 4.0 acre inches per acre and a net application of 4.0 acre inches per acre, as no water left the irrigated area. The WCMP respectfully suggested targeting a total field irrigation time of 4.5 hours to improve irrigation efficiency by approximately 8%.

24-37, Alfalfa, Graded Border, Mohall Tremant Complex, 0.0'/100' Row Fall, evaluated 07/31/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 77% and an irrigation efficiency (IE) of 77%. The average amount needed to refill the root zone at the time of the

event was 2.9 acre inches per acre. 5.0 cfs was applied to the 6.7 acre field with a total irrigation time of 5.0 hours, resulting in a gross application of 3.73 acre inches per acre and a net application of 3.73 acre inches per acre, as no water left the irrigated area. The WCMP respectfully declined offering suggestions for improvement on this field at this time. This was a good irrigation event.

24-38, Alfalfa, Graded Border, Ebon Gravelly Loam, 0.0'/100' Row Fall, evaluated 08/01/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 77% and an irrigation efficiency (IE) of 77%. The average amount needed to refill the root zone at the time of the event was 2.5 acre inches per acre. 7.0 cfs was applied to the 8.1 acre field with a total irrigation time of 3.75 hours, resulting in a gross application of 3.23 acre inches per acre and a net application of 3.23 acre inches per acre, as no water left the irrigated area. The WCMP respectfully declined offering suggestions for improvement on this field at this time. This was a good irrigation event.

24-39, Alfalfa, Graded Border, Vint Loamy Sand, 0.0'/100' Row Fall, evaluated 08/11/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 76% and an irrigation efficiency (IE) of 76%. The average amount needed to refill the root zone at the time of the event was 2.5 acre inches per acre. 7.0 cfs was applied to the 8.5 acre field with a total irrigation time of 4.0 hours, resulting in a gross application of 3.29 acre inches per acre and a net application of 3.29 acre inches per acre, as no water left the irrigated area. The WCMP respectfully declined offering suggestions for improvement on this field at this time. This was a good irrigation event.

24-40, Alfalfa, Graded Border, Vint Loamy Sand, 0.0'/100' Row Fall, evaluated 08/11/2025

This standard evaluation was conducted on an alfalfa field using a graded border irrigation system. The WCMP discussed all necessary concerns and questions with the grower prior to the evaluation and all field notes were recorded. The results of the evaluation are as follows: field application efficiency (FAE) of 81% and an irrigation efficiency (IE) of 81%. The average amount needed to refill the root zone at the time of the event was 3.2 acre inches per acre. 5.0 cfs was applied to the 7.3 acre field with a total irrigation time of 5.75 hours, resulting in a gross application of 3.93 acre inches per acre and a net application of 3.93 acre inches per acre, as no water left the irrigated area. The WCMP respectfully declined offering suggestions for improvement on this field at this time. This was a good irrigation event.

Water Conservation Management Program Technical Irrigation & BMP Service Summaries

S24-01, BMP Service, 10/8/2024

A grower contacted the WCMP to discuss the BMP enrollment process. The WCMP addressed all questions and concerns the grower had regarding the application process. The WCMP also encouraged the grower to contact the program with any further questions or if any assistance is needed completing the application.

S24-02, Technical Service, 10/23/2024

A grower contacted the WCMP requesting a flow rate measurement on an irrigation well. The WCMP met the grower on site. All questions and concerns were addressed. The portable weir was used to obtain the measurement. The flow rate was reported back to the grower in gallons per minute and cubic feet per second.

S24-03, BMP Service, 11/11/2024

A grower contacted the WCMP regarding the 5th Management Plan AG BMP program. The WCMP addressed all questions and concerns the grower had regarding the changes from the 4th to the 5th Management Plan programs. The WCMP encouraged the grower to contact the program with any further questions or if any assistance is needed completing a BMP application.

S24-04, BMP Service, 3/05/2025

A grower contacted the WCMP to inquire about the 5th MP BMP program. The grower's production model and specifics of the operation were discussed. The benefits of the BMP were explained with the grower and how it pertained to his cropping pattern. The grower described his irrigation system to assess its eligibility for the program. Flex credits were also addressed and clarified for the grower. Annual reporting for the BMP was also discussed. The grower was provided with the Ag BMP packet that contained all the explanations, definitions and documents for the grower to read through and begin the application process. The grower was encouraged to contact the WCMP at their convenience for assistance with completing the enrollment application.

S24-05, BMP Service, 3/28/2025

A grower contacted the WCMP to inquire about the 5th MP BMP program. The grower's questions pertaining to the BMP qualifying factors were addressed. The grower inquired about the annual water use reporting, flex credit accounts, and anticipated changes upon enrollment into the BMP. The grower was encouraged to contact the WCMP to assist with the application process.

S24-06, Technical Service, 5/12/2025

A grower requested a flow rate measurement of a split head. The WCMP met the grower on site and all questions and concerns were addressed. The portable weir was used to obtain the measurement. The results were reported back to the grower in GPM and CFS.

S24-07, Technical Service, 5/18/2025

A grower requested assistance scheduling the upcoming irrigation on an alfalfa crop. The WCMP met the

grower on site and all questions and concerns were addressed. The grower accompanied the WCMP to the field and by utilizing a JMC soil probe, the soil moisture depletion was estimated. The calculations were completed and the estimated date of when the irrigation should start was provided to the grower. The grower was provided with a historical crop consumptive use chart for the grower to use as an irrigation scheduling guide. The WCMP encouraged the grower to contact the program in the future with any questions or if any assistance is needed scheduling irrigation events.

S24-08, Technical Service, 6/20/2025

A grower contacted the WCMP requesting assistance with measuring a sump pump flow rate. The WCMP met the grower on site. All questions and concerns were addressed. The portable weir was used to obtain the measurement. The results were provided to the grower in gallons per minute and cubic feet per second.

S24-09, Technical Service, 6/20/2025

A grower contacted the WCMP requesting assistance with measuring a sump pump flow rate. The WCMP met the grower on site. All questions and concerns were addressed. The portable weir was used to obtain the measurement. The results were provided to the grower in gallons per minute and cubic feet per second.

S24-10, Technical Service, 6/25/2025

A grower contacted the WCMP to discuss soil moisture sensors that have been installed in various crops on their operation. The grower requested the WCMP's assistance with determining current soil moisture levels to compare against the soil sensor data. The WCMP met with the grower on site. All questions and concerns were addressed. The JMC probe was used to obtain soil cores near the soil moisture sensors. The soil moisture depletion percentages were provided back to the grower.

S24-11, Technical Service, 07/01/2025

A grower contacted the WCMP to request a flow rate measurement of an irrigation well. The WCMP met the grower on site and addressed all questions and concerns. The portable weir was used to obtain the well measurement. The results were reported back to the grower in cubic feet per second and gallons per minute.

S24-12, Technical Service, 07/01/2025

A grower contacted the WCMP to request a flow rate measurement of a sump pump. The WCMP met the grower on site and addressed all questions and concerns. The portable weir was used to obtain the measurement. The results were reported back to the grower in cubic feet per second and gallons per minute.

S24-13, Technical Service, 07/02/2025

A grower contacted the WCMP to request a flow rate confirmation of a district water delivery. The WCMP met the grower on site and addressed all questions and concerns. The siphon tube discharge was used to obtain the flow measurement. The results were reported back to the grower in cubic feet per second and gallons per minute.

S24-14, Technical Service, 07/21/2025

A grower contacted the WCMP to request assistance with determining the total irrigatable acres of a field. The

WCMP met the grower on site and addressed all questions and concerns. Farm maps were provided by the grower. The WCMP utilized GPS software to obtain the measurements. A map depicting the field measurements and irrigatable acres was provided to the grower.

S24-15, Technical Service, 07/21/2025

A grower contacted the WCMP to request assistance with determining water penetration depth following an irrigation event. The WCMP met the grower on site and addressed all questions and concerns. A hand auger was used to verify water depth reached at least 3 feet across several locations within the field. A field map identifying assessment sites within the field and the depth achieved at each location was provided to the grower.

S24-16, Technical Service, 07/22/2025

A grower contacted the WCMP to request assistance scheduling an upcoming irrigation event. The WCMP met the grower on site and addressed all questions and concerns. The WCMP used a soil probe to evaluate the current soil moisture content. The plant growth stage and weather forecast, in addition to current rate of daily plant water consumption was utilized to estimate when the next irrigation event should occur to avoid plant stress. The anticipated date was provided to the grower as well as a historical consumptive use chart for future reference.

S24-17, Technical Service, 7/30/2025

A cooperater contacted the WCMP requesting assistance determining an irrigation interval on a pecan tree field. The WCMP met the grower on-site and all questions and concerns were addressed. The grower's main concern was when the irrigation interval should start increasing without causing crop stress. Field conditions were assessed, and it was determined that another assessment should be performed in mid to late October to better determine an appropriate time to begin changing the interval. The information was discussed with the grower and arrangements for a future meeting were made.

S24-18, Technical Service, 8/1/2025

A grower contacted the WCMP to measure the flow rate of a lift pump. The WCMP met the grower on-site and all questions and concerns were addressed. It was determined that the portable weir was the best, appropriate device to obtain the measurement. The measurement was provided back to the grower in cubic feet per second and gallons per minute.

S24-19, Technical Service, 8/12/2025

A grower contacted the WCMP to verify water penetration depth of an irrigation event that utilizes an above ground micro spray irrigation system. The WCMP met the grower on-site and all questions and concerns discussed. A hand auger was utilized to check water penetration depths in several locations across a field. The results of the assessment were provided to the grower with suggestions to improve distribution uniformity.

S24-20, BMP Service, 8/22/2025

A grower contacted the WCMP regarding Ag BMP application deadlines. The grower's questions and concerns were addressed and included explaining the minimum system and practice qualifications for the program. The grower explained his concerns with practicality of enrolling into the program. The grower was encouraged to contact the WCMP with any additional questions or if any assistance with the application is needed.

Water Conservation Management Program Outreach/Education/Promotional Activities

Newsletter, "Wheat" December 2024

Water Conservation Management Program

NEWSLETTER

December 2024

WHEAT

Historical Consumptive Use

Water management directly impacts the success of any crop but especially wheat and other small grains. Scheduling irrigation events to occur when the crop and soil require it is key to maximizing irrigation efficiency crop production. There are approximately six critical crop growth stages when the crop should not be under any water related stress to maximize crop production and quality: the 5 leaf stage, 2 nodes, pre-boot, heading/flowering, milk, and soft dough. Although these are good rules of thumb, there are several other factors that influence when an irrigation event should occur to maximize crop production, quality, and irrigation efficiency. Determining the active root zone, the soil moisture content within the active root zone, crop growth stage, and weather conditions should be considered when making irrigation scheduling decisions.

To the right, is a "Mean Consumptive Use Chart" from the University of Arizona that estimates the water requirements for Wheat produced in Arizona. The estimated crop water use is broken down into the first and last half of each month. Divide one of those halves, for a given month, by 15 to determine an estimated daily water requirement. Once a daily requirement has been established, take half of the water holding capacity of a field and divide it by the daily water requirement. The result is a rough estimation of how many days you have between irrigation events to avoid water related crop stress. Again, *this is a rough estimate*. It does not take into consideration weather or soil conditions.

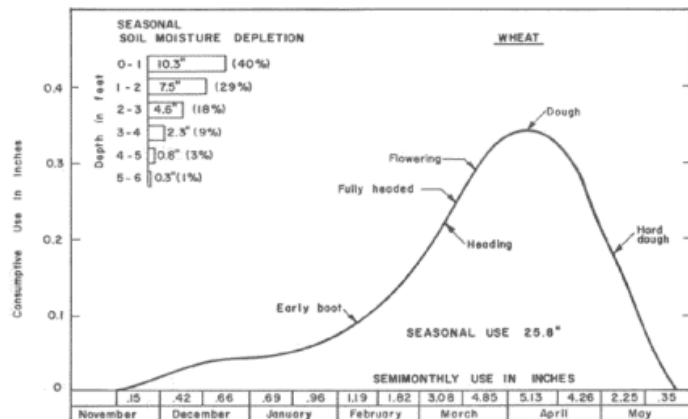


Figure 14.—Mean consumptive use for high-yielding wheats at Mesa, Ariz., 1959-70.

The WCMP is available to assist with irrigation scheduling, interpreting consumptive use charts, determining water holding capacities, and many other technical irrigation services to help you become as efficient as possible. Call the WCMP today!!

WCMP SERVICES

- ❖ Irrigation System Performance Evaluations
- ❖ Flow Rate Measurement
- ❖ Ag BMP Enrollment
- ❖ Irrigation Scheduling Assistance
- ❖ Topographic Survey
- ❖ Soil Texture & Water Holding Capacity Identification
- ❖ Root Depth Determination
- ❖ Field & Set Size Measurement

**Call the WCMP today!
480.466.2968**



The WCMP provides irrigation services that help improve irrigation efficiency and save you money. Through a cooperative effort between the Buckeye Valley Natural Resource Conservation District and the Arizona Department of Water Resources, the WCMP is a free irrigation management services program helping to sustain production agriculture in the Phoenix AMA. The WCMP provides water measurement, slope determination, irrigation scheduling assistance, irrigation system evaluations, pump, and practical recommendations to help improve irrigation efficiency.

Call today to experience the value of the WCMP 480.466.2968

Web Site design and launch – March 2025

The WCMP contracted with a web site design firm to develop a web site that brings the program into the technology era by providing a professional presence on the internet. On the website, visitors can read about the history of the program and its affiliation with ADWR. Visitors can read about the services provided to water users with the Phoenix AMA as well as newsletters published by the program. Visitors to the site can also contact the WCMP via telephone or email directly requesting technical field assistance or with other questions regarding irrigation water management in central Arizona. The WCMP's website address is www.waterconservationmp.com.

Water Conservation Management Program

NEWSLETTER

August 2025

"Irrigator's Formula"

$$Q t = d A$$

Know how much water you're applying? By using the Irrigator's Formula you can. We tend to fear math especially algebra but once you become familiar with this you'll realize it's fairly simple to use and it can help you become a better water manager. Each letter of the formula represents something related to an irrigation event and you only need to know 3 out of the 4. The one thing you don't know out of the four is what you will be solving for: "Q" is the flow rate in cubic feet per second (cfs), "t" is the time the water ran in hours, "d" is depth of water applied (acre inches per acre), and "A" is the acreage the water is applied to. As an example, **6 cfs** ran for **2 hours** on a **3 acre** set. In this case we have "Q, t and A" therefore, we are solving for "d" or the amount of water applied (the depth).

- 1) $6 (Q) * 2 (t) = (d) * 3 (A)$
- 2) $\frac{12}{3} = (d) * 3$
 $3 = 3$
- 3) $4 = (d)$ or acre inches applied per acre

The WCMP is here to help you with this and other technical irrigation services!

The WCMP provides irrigation services that help improve irrigation efficiency and save you money. Through a cooperative effort between the Buckeye Valley Natural Resource Conservation District and the Arizona Department of Water Resources, the WCMP is a free irrigation management services program helping to sustain production agriculture in the Phoenix AMA. The WCMP provides water measurement, slope determination, irrigation scheduling assistance, irrigation system evaluations, and practical recommendations to help improve irrigation efficiency.



Call today to experience the value of the WCMP 480.466.2968



WCMP is here to assist YOU

Call today 480.466.2968

1 gallon = 8.3 pounds
1 cubic foot = 7.48 gallons = 62.4 pounds
450 gallons per minute (gpm) = 1 cubic foot per second
1 cubic foot per second (cfs) = 1 acre-inch per hour
1 acre-inch = 27,000 gallons = 1 acre flooded 1 inch deep
1 acre foot = 12 acre-inches = 43,560 cubic feet = 325,900 gallons
1 gallon = 3.785 liters = 0.003785 cubic meters
1 cubic meter = 1000 liters = 264.2 gallons

Water Conservation Management Program

NEWSLETTER

August 2025

“The Final Irrigation”

For many Arizona cotton growers, irrigation water represents one of the most significant—and costly—inputs in the production system. That’s why deciding when to make the final irrigation is more than just a field management choice; it’s an economic one.

Late-season irrigations are not always necessary and can add up quickly. In some cases, two extra irrigations may amount to an additional acre-foot of water—an expense that may not return value at harvest.

The best strategy for terminating irrigation begins with identifying the last set of bolls you plan to carry to harvest. Once those are selected, set a cutoff date that allows at least 600 heat units (about 21 days) with adequate soil moisture to ensure proper development of those bolls. At the same time, don’t overlook insect pressure or weather patterns, as these both can influence whether additional irrigations are justified.

Whether you’re aiming to finish the crop early or push for a top-crop, determining the last set of blooms to harvest is a critical step. This decision directly impacts both yield potential and water-use efficiency, making it one of the most important management calls cotton producers will face each season.

The WCMP is available to help with making the “Final Irrigation” decision. Call today to schedule an appointment.

The WCMP provides irrigation services that help improve irrigation efficiency and save you money. Through a cooperative effort between the Buckeye Valley Natural Resource Conservation District and the Arizona Department of Water Resources, the WCMP is a free irrigation management services program helping to sustain production agriculture in the Phoenix AMA. The WCMP provides water measurement, slope determination, irrigation scheduling assistance, irrigation system performance evaluations, and practical recommendations to help improve irrigation efficiency.



Call today to experience the value of the WCMP 480.466.2968 or find us on the web at www.waterconservationmp.com



WCMP is here to assist YOU

Call today 480.466.2968

1 gallon = 8.3 pounds
1 cubic foot = 7.48 gallons = 62.4 pounds
450 gallons per minute (gpm) = 1 cubic foot per second
1 cubic foot per second (cfs) = 1 acre-inch per hour
1 acre-inch = 27,000 gallons = 1 acre flooded 1 inch deep
1 acre foot = 12 acre-inches = 43,560 cubic feet = 325,900 gallons
1 gallon = 3.785 liters = 0.003785 cubic meters
1 cubic meter = 1000 liters = 264.2 gallons

Fiscal Year 2024
Grower Estimate of Water Saved and Program Benefits

Eval Number	Grower Est. Acres Affected	Grower Est Water Saved Ac-Ft/Ac	Est Total Water Saved Ac-Ft	Water Cost Per Acre Foot	Water Savings in Dollars	Grower Est Program Benefits \$/Ac	Program Benefits per Grower
24-01	600	0.25	150	\$65.00	\$9,750.00	\$15.00	\$9,000.00
24-02	240	0.5	120	\$65.00	\$7,800.00	\$18.00	\$4,320.00
24-03	240	0.5	120	\$65.00	\$7,800.00	\$18.00	\$4,320.00
24-04	240	0.5	120	\$65.00	\$7,800.00	\$18.00	\$4,320.00
24-05	240	0.5	120	\$65.00	\$7,800.00	\$18.00	\$4,320.00
24-06	240	0.5	120	\$65.00	\$7,800.00	\$18.00	\$4,320.00
24-07	500	0.3	150	\$54.00	\$8,100.00	\$25.00	\$12,500.00
24-08	500	0.3	150	\$54.00	\$8,100.00	\$25.00	\$12,500.00
24-09	500	0.3	150	\$54.00	\$8,100.00	\$25.00	\$12,500.00
24-10	500	0.3	150	\$54.00	\$8,100.00	\$25.00	\$12,500.00
24-11	300	0.25	75	\$65.00	\$4,875.00	\$15.00	\$4,500.00
24-12	300	0.25	75	\$65.00	\$4,875.00	\$15.00	\$4,500.00
24-13	300	0.25	75	\$65.00	\$4,875.00	\$15.00	\$4,500.00
24-14	800	0.5	400	\$35.00	\$14,000.00	\$12.50	\$10,000.00
24-15	800	0.5	400	\$35.00	\$14,000.00	\$12.50	\$10,000.00
24-16	800	0.5	400	\$35.00	\$14,000.00	\$12.50	\$10,000.00
24-17	800	0.5	400	\$35.00	\$14,000.00	\$12.50	\$10,000.00
24-18	620	0.1	62	\$25.00	\$1,550.00	\$30.00	\$18,600.00
24-19	620	0.1	62	\$25.00	\$1,550.00	\$30.00	\$18,600.00
24-20	620	0.1	62	\$25.00	\$1,550.00	\$30.00	\$18,600.00
24-21	620	0.1	62	\$25.00	\$1,550.00	\$30.00	\$18,600.00
24-22	320	0.2	64	\$65.00	\$4,160.00	\$2.00	\$640.00
24-23	320	0.2	64	\$65.00	\$4,160.00	\$2.00	\$640.00
24-24	320	0.2	64	\$65.00	\$4,160.00	\$2.00	\$640.00
24-25	320	0.2	64	\$65.00	\$4,160.00	\$2.00	\$640.00
24-26	620	0.1	62	\$25.00	\$1,550.00	\$30.00	\$18,600.00
24-27	620	0.1	62	\$25.00	\$1,550.00	\$30.00	\$18,600.00
24-28	620	0.1	62	\$25.00	\$1,550.00	\$30.00	\$18,600.00
24-29	620	0.1	62	\$25.00	\$1,550.00	\$30.00	\$18,600.00
24-30	320	0.2	64	\$65.00	\$4,160.00	\$2.00	\$640.00
24-31	320	0.2	64	\$65.00	\$4,160.00	\$2.00	\$640.00
24-32	320	0.2	64	\$65.00	\$4,160.00	\$2.00	\$640.00
24-33	320	0.2	64	\$65.00	\$4,160.00	\$2.00	\$640.00
24-34	460	0.33	151.8	\$25.00	\$3,795.00	\$15.00	\$6,900.00
24-35	460	0.33	151.8	\$25.00	\$3,795.00	\$15.00	\$6,900.00
24-36	460	0.33	151.8	\$25.00	\$3,795.00	\$15.00	\$6,900.00
24-37	460	0.33	151.8	\$25.00	\$3,795.00	\$15.00	\$6,900.00
24-38	460	0.33	151.8	\$25.00	\$3,795.00	\$15.00	\$6,900.00
24-39	460	0.33	151.8	\$25.00	\$3,795.00	\$15.00	\$6,900.00
24-40	460	0.33	151.8	\$25.00	\$3,795.00	\$15.00	\$6,900.00
Totals	18640	0.29	5245.6	\$45.90	\$224,020.00	\$16.53	\$311,320.00

*Number of acres affected is an estimate produced by program participants.
 The values listed are grower estimates that indicate the acreage impacted as a result of participating with the WCMP, with the exception of "water cost per acre foot".

GROWER SURVEYS

Below are questions from the 2024 irrigation follow-up survey, total yes and total no answers, and the written responses to the questions. The written responses provided by the participants are identified by the evaluation number randomly assigned to each program participant.

Water Conservation Management Program Follow Up Survey

In order to evaluate the effectiveness of the services provided by the WCMP and to improve the quality of services in the future, we would like you to respond to this survey with frankness and honesty. The WCMP conducted one or more irrigation system performance evaluations on your farm this year. In your opinion.....

1. ...did the WCMP adequately measure and evaluate the various components of your irrigation system?

YES - 36

NO -

Unavailable - 4

2. ...was the technical information presented to you in such a way that you could easily understand it?

YES - 36

NO -

Unavailable - 4

3. ...did the WCMP staff have the technical skills necessary to help you?

YES - 36

NO -

Unavailable - 4

4. ...did you apply any of the irrigation water management practices suggested by the WCMP?

YES - 36

NO -

Unavailable - 4

5. ...of the services provided, what was of the most value to you as a grower?

24-01 The efficiencies

24-02 The results

24-03 Efficiencies

24-04 It's all good information

24-05 The information

24-06 How much we applied

24-07 Unavailable

24-08 Unavailable

24-09 Unavailable

24-10 Unavailable

24-11 Amount applied

24-12 How much we actually used

24-13 Application amount

24-14 Application amounts

24-15 How much was applied

24-16 All of it

24-17 The efficiencies

24-18 Irrigation applications

24-19 Efficiency percentages

24-20 Nozzle performance

24-21 Application uniformity

24-22 Well measurement

24-23 Water flow measurement

24-24 Irrigation efficiency

24-25 Efficiency

24-26 Application amount

24-27 Efficiency percentage

24-28 Efficiencies

24-29 Application quantified

24-30 Irrigation efficiency

24-31 Water measurement

24-32 Flow measurement

24-33 Efficiency

24-34 Applications

24-35 Application amounts

24-36 Application uniformity

24-37 Uniformity

24-38 Application quantified

24-39 Percentages

24-40 Uniformity percentages

6. ...what could the WCMP do differently to improve the services provided to you?
- | | |
|--|-----------------------------------|
| 24-01 More evals | 24-02 Nothing |
| 24-03 Good how it is | 24-04 More time |
| 24-05 Seasonal study | 24-06 It's a good program |
| 24-07 Unavailable | 24-08 Unavailable |
| 24-09 Unavailable | 24-10 Unavailable |
| 24-11 More time on my place | 24-12 Season long study |
| 24-13 Good how it is | 24-14 Appreciate the info |
| 24-15 Great Program | 24-16 Can't think of anything |
| 24-17 Don't change it | 24-18 Nothing right now |
| 24-19 Can't think of anything | 24-20 Nothing |
| 24-21 Nothing I can think of | 24-22 Provide digital monitoring |
| 24-23 Nothing | 24-24 Provide a monitoring system |
| 24-25 Nothing | 24-26 Nothing |
| 24-27 Can't think of anything | 24-28 Nothing I can think of |
| 24-29 Nothing | 24-30 Nothing |
| 24-31 Monitoring system | 24-32 Don't change it |
| 24-33 Nothing I can think of | 24-34 Nothing |
| 24-35 Nothing I can think of right now | 24-36 Not anything |
| 24-37 Can't think of anything | 24-38 Nothing |
| 24-39 Nothing | 24-40 Nothing |

7. If you had the power to make the funding decision for the WCMP 2025 program year, would you vote in favor of funding the WCMP?

YES - 36

NO -

Unavailable - 4

Appendix F

Final accounting of all funds spent during FY 2024

1 st Quarter (October 1, 2024 – December 31, 2024)	
1 Standard Evaluation	
3 Technical Irrigation / BMP Services	
1 Promotional / Outreach Activity	\$25,000
2 nd Quarter (January 1, 2025 – March 30, 2025)	
5 Standard Evaluations	
2 Technical Irrigation / BMP Services	
1 Promotional / Outreach Activity	\$25,000
3 rd Quarter (April 1, 2025 – June 30, 2025)	
15 Standard Evaluations	
5 Technical Irrigation / BMP Services	\$25,000
4 th Quarter (July 1, 2025 – September 30, 2025)	
19 Standard Evaluations	
10 Technical Irrigation / BMP Services	
2 Promotional / Outreach Activity	\$33,000
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Total FY 2024 Expenditures	\$108,000.00

Final List of Equipment

No additional equipment purchased during FY 2023	\$0
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