IRRIGATION TECHNICAL SPECIFICATIONS

EFFECTIVE JUNE 1, 2014

EAST CHERRY CREEK VALLEY
WATER AND SANITATION DISTRICT
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SECTION 1. GENERAL

1.01 PURPOSE

These irrigation design and water use requirements are the performance standard for East Cherry Creek Valley Water & Sanitation District (ECCV). All irrigation system designs shall be submitted for review and approval prior to the issuance of an irrigation tap for non-single family residential properties. Any deviation from these requirements must be approved by the District in writing. Irrigation systems will be inspected during and after installation to assure compliance with these requirements and that the system was installed as it was designed and approved.

These design and usage requirements are put forth to encourage and promote the conservation and efficient use of water. Higher water usage and maintenance expenses may be reduced or limited when these irrigation system requirements are followed during the design, installation, and ongoing maintenance. These required irrigation efficiency measures shall apply to all new irrigation systems, except single family residences.

1.02 DISTRICT SERVICE AREA

The East Cherry Creek Valley Water and Sanitation District Service Area is located in Arapahoe County, Colorado. Generally, the District is located west of Gun Club Road, south of Hampden Avenue, east of Parker Road, and north of Arapahoe Road.

1.03 AUTHORITY

These Specifications shall be administered by the District and shall include all interpretation, enforcement, revision, waiver and variance with all such actions being finally determined by the District.

1.04 REVISIONS

These Specifications are effective as of June 1, 2014. Revisions to these specifications may be made from time to time by the District. Any revisions shall be in effect at the date of issuance by the District. Any person using these specifications should contact the District for information relative to revisions.

1.05 DESIGNER QUALIFICATIONS

The irrigation designer shall be a certified irrigation designer (commercial) as regulated by the Irrigation Association, or other professional with extensive experience in the design of commercial irrigation systems as determined by the District Manager. The designer shall upon request, produce evidence of their experience that may include references, letters of recommendation, portfolio of work, photographs, and employment records.

1.06 VARIANCE

The applicant may request a variance from these requirements from ECCV. Any such variance request should be made to ECCV in writing and any approved variance request or response from ECCV should also be made in writing. These are the current ECCV Irrigation System and Water Conservation Requirements, but these requirements are subject to revision and update by ECCV at any time.

SECTION 2. IRRIGATION SYSTEM DESIGN

2.01 GENERAL

All water lines, appurtenances, and related public water system within the East Cherry Creek Valley Water and Sanitation District shall be designed in accordance with these Specifications, and any other applicable Federal, State, and Local regulations. Any deviation from these Specifications shall require the written authorization of the District prior to design or construction. The intent is to provide a consistently designed, long-term, reliable system.

2.02 IRRIGATION DESIGN PLAN

An irrigation design plan and project cover letter shall be submitted and approved by the District Manager prior to installation of any non-residential irrigation system. The project cover letter should provide a brief project overview and description of the landscaping and include system details including any unique water use aspects, features, or requirements.

The irrigation design plan shall accurately and clearly identify:

A. Property boundaries

B. Locations, model and size of all components of the irrigation system

C. Static water pressure and elevation at the point of connection

D. Flow rate, zone number, application rate (inches per hour), and design operating pressure for each zone or station on the controller

E. Backflow Preventer

F. The total square footage of the following material types.

1. Irrigated turf grass
2. Low water use turf grass
3. Native and non-irrigated grass
4. Traditional shrubs and perennials
5. Xeriscape or xeric shrubs and perennials
6. Annual flower and color beds
7. Tree only areas

G. Describe the use of subsurface or drip irrigation on the project, if applicable.

H. Site water requirements

I. A pressure loss worksheet

J. Calculation of the total expected water usage in gallons per year with a breakdown of the usage by category of each type of irrigated plant material.

2.03 LANDSCAPE DESIGN AND PLANT SELECTION

ECCV understands and values the contribution of high quality landscaping to the look and feel of our neighborhoods and community. At the same time, ECCV encourages the thoughtful design and the strategic use of plant materials that reflect our natural, semi-arid environment and that require lower water use where possible while providing the necessary quality of aesthetics and long term sustainability for a given site and location.

2.04 SOIL PREPARATION REQUIREMENT

The soil in all irrigated landscape planting areas: turf, shrub beds, and native grass areas should receive proper soil preparation to improve the soil condition and water holding capacity of the rootzone. For irrigated areas, 5 yards of organic soil amendment per 1000 sq.ft. should be incorporated or tilled in to a depth of 6" or deeper.

Areas that are to be planted in a native grass should also receive a similar soil preparation, but at a lesser, 2 yards per 1000 sq.ft. ECCV is not specifying the type of soil amendment at this time, but expect that typical, quality soil amendment products will be used. ECCV may request soil amendment delivery tickets and inspect soil preparation to verify compliance.

2.05 PLANT TYPES AND DEFINITIONS

The following descriptions are provided to clarify and allow for categorization of the typical landscape planting areas and their water use requirements. Plant materials with similar water demand requirements shall be grouped together for effective and efficient irrigation.

A. Irrigated Turf Grass

All traditional, high quality, high use lawn areas that are managed for foot traffic, athletics, or aesthetics and that are actively maintained or mowed on a weekly basis during the growing season. Irrigated turf has a high water use requirement. Examples of high water use turf grass include (but not limited to): Kentucky Bluegrass, Ryegrass, and Tall Fescue.

B. Low Water Use Turf Grass

These are secondary and more peripheral grass areas that are managed and maintained to a lower usage and/or lower aesthetic standard. They require less water, are mowed infrequently usually less than once a month. This turf is irrigated to keep the areas healthy and green, but require and will use 25-50% less water than irrigated turf grass. Examples of low water use turf grass include (but not limited to): Blue Gramma, Buffalograss, and Bermudagrass.

C. Native and Non-Irrigated Grass

This grass or area may be irrigated initially for establishment, but otherwise is not intended to be irrigated on an ongoing basis. It is intended to be generally a thinner and less green look that is suitable for natural areas that do not receive a lot of use or require a lush, green aesthetic. This grass is intended to grow and survive on natural precipitation.

D. Non Turf Area: Traditional Shrubs and Perennials

These plantings are primary, high visibility areas with plant materials that require regular and consistent watering to maintain their health and aesthetics. These areas should be mulched with wood or rock products to aid in water retention and to minimize erosion and runoff.

E. Non Turf Area: Xeriscape or Xeric Shrubs and Perennials

These are specially selected low water use, often native plant materials that typically need some, but not a lot of supplemental irrigation to maintain their health and aesthetics. These can be used in primary areas, but are especially useful to conserve water on a site when used in secondary or more peripheral shrub areas.

F. Non Turf Area: Annual Flowers and Color Beds

These have high water requirements and are best used only in high visibility, high use areas that are within close proximity to people. Annuals have their place and provide great aesthetic value, but should be strategically planned and carefully irrigated.

G. Tree Only Area

Tree only areas are defined as trees that require irrigation and that are located in Native Non-Irrigated Grass areas. These have water requirements similar to Irrigated Turf Grass areas based on the mature canopy size.

2.06 SYSTEM REQUIREMENTS

A. Flow Requirements

The system shall be designed so it is capable of providing sufficient water for adequate plant growth during periods of peak demand when Evapo-Transpiration (ET) is highest. Peak demand shall be based on 1.8 inches per week for turf and 1.0 inch per week for planting beds. Water requirements for each site must be determined prior to designing the system in order to size the system for adequate capacity.

B. Site Water Budget

The system should be designed for a total water budget of 1.5 inches per week in the combined turf and planting beds.

C. Run Times

All systems shall be designed and managed to run no more than 16 hours per day and no more than three days per week. The allowed watering windows, under normal, non-restrictions usage shall be from 6:00PM to 10:00AM. Water restrictions may be applied by ECCV at any time which may limit and reduce run times, water usage, or watering days or hours. Subsurface Drip Irrigation is allowed and may be operated outside the allowed watering window upon approval from ECCV.

D. Controller

The use of a Smart or ET weather based controller is highly recommended. The controller type and required weather station, rain sensors, subscriptions, or related components shall be submitted to the District.

All automatic controllers shall have the ability to make automated scheduling adjustments based on site conditions and localized weather events. The controllers shall have onsite weather sensors or web based communications to receive or calculate daily Evapo-Transpiration (ET) and make daily watering adjustments. All controllers shall include a local rain sensor or tipping bucket to automatically shut the system down for a prescribed time during a rainfall event. Soil moisture sensing controllers and equipment are allowed and may also be used.

The design shall include provisions for any initial subscriptions required to operate the ET Based controllers for the first two seasons. It is the responsibility of the Owner to continue the subscriptions as general maintenance of the system.

If a non-ET or non-weather based controller is planned, a proposed mid-season irrigation schedule is required.

The controller shall be capable of providing the required water based on the District's weekly watering schedule.

E. Pressure Control

In order to control pressure and protect the system from damage, pressure reducing valves shall be installed immediately downstream of the backflow preventer if static pressure is in excess of 100 psi. Pressure regulation at the zones remote control valve is recommended if pressure is 15 psi above the system design pressure. System design pressure is the required operating pressure at the head plus system pressure losses including meter and service line losses.

Pressure at all heads should be within 10 percent of the system design operating pressure.

Example: A head designed for 30.0 PSI should operate within the 27.0 to 33.0 PSI range. This should be consistent if the pressure regulating heads are utilized. These are typically only available in the spray body type sprinklers. This shall be accomplished by using pressure reducing valves (not flow control valves or flow restriction devices) installed under or in the base/stem of the head. A combination pressure reducing and control valve can be used to control the pressure within a zone.

Booster Pumps are not permitted unless pre-approved by ECCV. Booster pumps must be equipped with an automatic pressure shut off device.

F. Sprinkler Head Layout

Head spacing shall not exceed 50 percent of the diameter of its effective coverage, what is commonly referred to as head to head coverage. The system shall be designed to avoid overspray onto buildings, asphalt, concrete, including walkways.

Head placement and selection shall be designed to provide matched precipitation rates and efficient Distribution Uniformity (DU).

1. Slopes in excess of a 3 to 1 ratio

   Heads placed at the bottom of a slope need to be valved separately. Mid-point on the slope will need a moderate amount of water and therefore these heads shall also have their own zone. Heads placed on the top of the slope must be valved separately, as they will water for the longest period of time because this section will have no run-off from above and is exposed to more sun and wind. Lateral lines on slopes shall be installed along the contour rather than up and down the slopes.

2. Narrow strips and medians

   If the area is less than 15 feet wide, use pop-up spray heads with a nozzle radius that does not exceed the width of the strip. If the area is less than four feet wide, eliminate turf in favor of tree and shrub plantings if possible, or install subsurface drip irrigation.

G. Zoning For Control

Irrigated areas shall be divided into Hydro-Zones that have the same water requirements such as turf, planting beds, ground cover, etc. Cultivated planting beds will require more water than areas that are mulched with wood, rock, or other products.

Identify any low areas, drainage ways, and storm water detention ponds, and zone these low or bottom areas separately from the adjacent areas. Heads and valves shall be installed adjacent to and outside of these low areas where possible.

All heads within a given zone must have matched precipitation rates, i.e., bubblers, rotors, spray heads, and must be zoned separately. Parking lot medians and islands, due to the surrounding asphalt and heat, will require more water and thus should be on a separate zone.

H. Hydraulics

The submitted irrigation design should include a pressure loss worksheet for the zones with the highest flow and furthermost from the source, listing the following:

1. Valve number and flow rate
2. Available static water pressure at source
3. Loss or gain due to elevation
4. Detailed list of various component pressure losses and velocities
5. The operating pressure requirements
6. Project location and date
7. Water service & expected meter size

Table 2.01: Average Flow & Pressure Losses of Displacement Type Meters and "K" Copper Pipe

Maximum Capacity AWWA Flow Criteria			70% of Max		"K" Copper (C=130) Service Line Loss	
Size	GPM	PSI Loss	GPM	PSI Loss	PSI/100 ft	PSI/50 ft
1"	50	9.3	35	5.5	41.2	20.6
1-1/2"	100	11.3	70	7.5	21.5	10.7
2"	160	10.4	112	5.7	13.2	6.6
3"	300	13.1	210	7.3	6.1	3.1
4" and Larger	Contact District for sizing criteria					

Use 70 % of the maximum safe water flow for all irrigation systems.

I. Backflow Preventer & Specialty Valves

Back Flow devices shall be reduced pressure principle type and shall be installed per manufacturer recommendations. Maximum velocity for water flow through backflow preventers shall not exceed 7.5 fps. When using pressure-reducing valves, the sizing shall be based on the valve's flow capacity at a reduced pressure level.

Backflow Preventers shall be in locked and secure enclosures, typically secured to a concrete pad, or in a locked, indoor room to prevent unauthorized access and theft. Enclosures should be kept locked at all times.

J. Pipe Sizing

The pipe sizing shall be calculated so that the velocities shall not exceed 5 fps in mainline and lateral pipes.

K. Pressure Difference

The pressure difference between any two heads in the zone shall not exceed 10 percent of the highest pressure within the zone.

L. Equipment Selection

New, quality, commercial grade equipment shall be used for all system components.

M. Drip Systems

Continuously self-flushing, pressure-compensating drip irrigation or subsurface tubing is encouraged in non-cultivated planting beds that are mulched or in narrow turf strips where spray heads are not practical. Drip irrigation zones should be properly zoned for varying plant water requirements, slopes, and exposures. Drip control valves assemblies shall include a filter and pressure regulator.

N. Spray Heads

Pop-up spray heads shall have a pressure regulating device set at the pressure for optimal performance as recommended by the nozzle manufacturer. The regulator shall be integrated in the base of the stem. A manufacturer installed check valve shall be included to reduce low head drainage.

Heads shall seal in the operating position at 10 PSI or less, and the water used in the flush mode shall not exceed 0.05 gpm. Head shall have a ratcheting feature for adjusting the direction of spray.

1. Pop-up spray heads for turf areas shall have a minimum pop-up height of 6-inches.

2. 12-inch pop-up height heads will be used in shrubs, ground cover, and flower beds, but drip irrigation shall be used when possible

<u>High efficiency stream or spray nozzles are required on all heads to improve the distribution uniformity and overall efficiency.</u>

O. Rotary Heads

Use an internal drive, closed case rotor with wiper seals and spring retraction. Pop-up stem surface diameter shall be less than 2 inches, and a minimum pop-up height of 4 inches. All heads shall have check valves built into the bottom of the body

Use high efficiency, multi-stream rotary nozzles for areas that range from 15 feet to 30 feet wide. Single stream rotors may be used in areas larger than 30 feet. Use nozzles for single stream rotors that provide matched precipitation rates. Radius reduction for single stream rotary heads shall be avoided as much as possible and shall not exceed 25 percent of the maximum or as indicated in manufacturer's catalog.

P. Flow Sensors

Flow sensors are recommended and encouraged though not required. Flow sensors will limit water waste and loss and minimize leaks and unscheduled flows by shutting down the system and alerting the system manager if problems occur. If flow sensors are used, ensure that the specified controller has flow sensing capabilities.

2.07 PERFORMANCE STANDARDS FOR WATER USES

Each project shall be designed to allow a maximum peak hydraulic capacity of 28 inches (17.46 gallons) of water per square foot annually for irrigated turfgrass. Rainfall is not included in this total. Water use can be calculated by plant requirements by type or hydrozones. Hydrozones shall be defined into the following levels of water requirements:

Table 2.02: Water Use by Hydrozone

Hydrozone	Plant Type	Water Budget	
		Inches/Sq Ft/Yr	Gallons/Sq Ft/Yr
High	Turf Grass	28.0	17.46
Moderate	Shrubs and Perennials	18.7	11.70
Low	Low Water Use Turf	14.0	8.73
Very Low	Xeric Shrubs and Perennials	7.00	4.36

If plant types or hydrozones are mixed, the higher usage plant material should be used for calculation purposes. Traditional or typical shrubs and perennials require 33% less water than turf or 11.7 gallons of water per sq.ft. per season. Low water use turf should use 50% (or less) of the water of irrigated turfgrass or 8.73 gallons per square foot per season. Non-irrigated turf is not expected to use any water following first year establishment unless prior approval by the District is obtained. Xeric shrubs and xeric perennials require 75% less water than irrigated turf or 4.36 gallons per square foot after establishment.

Calculation: One acre of irrigated turf (lawn) calculates out as 43,560 sq.ft. x 28" x 0.623 = 759,860 gallons of water per season.

A calculation of the irrigated areas by plant type or hydrozone and the expected annual water requirements of each and the total annual water requirement shall be provided with the design submittal.

2.08 TAP SIZING FOR LANDSCAPE IRRIGATION

Required minimum meter size based on adjusted irrigated area:

Table 2.03: Tap Size

Adjusted Irrigated Area (Sq Ft)	Meter Size
Up to 25,000	3/4"
Up to 50,000	1"
Up to 110,000	1-1/2"
Up to 200,000	2"
Up to 400,000	3"

To calculate, add the adjusted square footage of the other irrigated landscape areas to the irrigated turf square footages to arrive at a total equivalent of irrigated turf area and then determine the required meter size from Table 2.03 above. Please use the following calculations and submit a summary with the submittal.

Table 2.04: Adjusted Irrigated Area

Plant Type	Design Area		Adjusted Area	
Irrigated Turf Grass		*sq.ft*		*sq.ft.*
Low Water Use Turf Grass		*sq.ft. x 0.5*		*sq.ft.*
Native and Non-Irrigated Grass		*sq.ft. x 0.5*		*sq.ft.*
Non-Turf Area: Traditional Shrubs and Perennials		*sq.ft. x 0.25*		*sq.ft.*
Non-Turf Area: Xeriscape or Xeric Shrubs and Perennials		*sq.ft. x 0.25*		*sq.ft.*
Non-Turf Area: Annual Flowers and Color Beds		*sq.ft. x 0.25*		*sq.ft.*
Tree Only Area		*sq.ft. x 0.25*		*sq.ft.*
TOTAL ADJUSTED IRRIGATED AREA =				*sq.ft.*

TAP SIZE = _____- based on above Tap Size Table 2.03.

2.09 IRRIGATION SCHEDULE

An irrigation schedule for the highest ET demand week of the season shall be included on the plans. The irrigation schedule shall include:

A. Station #
B. Sprinkler Type
C. Hydrozone
D. Runtime
E. Number of cycles per day
F. Frequency of irrigation for each zone

Table 2.05 – Sample Irrigation Schedule

Station #	Hydrozone	Sprinkler Type	PR	Max Weekly ET	Total Run Time	Frequency	Soil Infiltration Rate	Cycles	Cycle Time
A1	High	Rotary Spray	0.45	1.8	240	3	0.2	3	27
A2	Low	Spray	1.00	0.9	54	3	0.2	5	4

2.10 TAP FEES

The applicant shall contact the District to determine the tap connection fees. The fees will be calculated based on the Rates, Fees, & Charges identified in the District's Rules & Regulations. The fee calculation includes but is not limited to planting area and meter size for all permanent irrigation.

Temporary irrigation to establish native seeding will be allowed for one irrigation season, subject to District approval. A tap fee for the temporary irrigation will be required after one irrigation season if the Developer does not prove to the District that the temporary irrigation has been physically disconnected from the rest of the irrigation. If the tap fee is not paid, the water service will be shut off until payment is received.

2.11 PRE-CONSTRUCTION MEETING

The District and ECCV's Irrigation Consultant shall meet with the applicant that is installing the irrigation system prior to the start of the installation. The purpose of this meeting is to do a general review the project, to review the Irrigation Requirements, and to discuss the required ECCV Inspections. After the preconstruction meeting is held, the contractor shall, at least 48 hours prior to the start of construction, notify the District of construction schedule and start date.

2.12 CONSTRUCTION OBSERVATION

The District/ECCV or its representatives may also conduct random, spot checking of the installation work in progress to check for general compliance of the equipment and workmanship to the approved irrigation design.

A hydrostatic mainline inspection shall be performed to confirm that there are no leaks in the mainline. Backfilling of the mainline is permitted, however all joints and fittings shall remain exposed for visual inspection. The mainline shall be pressurized at static pressure and isolated for a minimum of 2 hours prior to the inspection. A pressure gauge shall be installed on the isolated mainline section prior to the 2 hour test and the pressure recorded at that time. Any leaks discovered shall be repaired and the test shall be performed again until all leaks have been repaired. A 3 Business Day notice must be provided to ECCV in advance to schedule this inspection. Once the inspection is completed and approved, the remaining mainline may then be backfilled.

If at any time, the applicant has any questions including: system requirements, design, efficiency, allowable substitutions or changes, inspections, or ECCV

requirements, please contact ECCV with any needs, questions, requests, or concerns.

2.13 FINAL INSPECTION

The applicant shall notify shall notify the District within 7 days after installation of the irrigation system to allow for scheduling of Final Inspections. The company name, contact name and phone number and email of the irrigation company will be provided to ECCV.

ECCV or its representatives must conduct a Final Inspection of the irrigation system to determine the general quality of work, meeting irrigation system and efficiency requirements, and to verify general compliance with plans and specifications. ECCV or its representative will inspect and review the system for general compliance to the plans as drawn and submittals and as approved including use of the specified products or products which are equivalent or greater in quality and efficiency, system pressure, controller settings, etc.

If the system or parts of it are found not to be in compliance or as approved on the submitted plans, ECCV can require compliance. During installation, it is strongly suggested that the applicant contact ECCV if any question, change, or significant deviation occurs or may occur which could affect water usage or system efficiency that is different from the submitted and approved plan.

ECCV or its representatives are not responsible for the quality of materials or workmanship, or for compliance with the ECCV's irrigation requirements. It is not the intent of ECCV to be punitive to the applicant with respect to the construction observation and final inspection, but rather to have a quality, efficient irrigation system for the benefit of ECCV, its customers, and the community. ECCV reserves the right to adjust the meter calculation figures, tap fees, withhold water service, or terminate water service if the irrigation requirements including inspections are not followed.

2.14 SYSTEM EFFIENCY TEST

It is important that an irrigation system is properly designed and installed with the newer, more efficient components and equipment to achieve ongoing system efficiency and water savings. A representative catch cup, Distribution Uniformity (DU) test shall be conducted to calculate the system efficiency of tested stations or zones. The greater of, either: two zones (minimum per tap) or 5% of the spray or rotary zones on a tap will be tested. Drip zones may be checked for proper operation, but will not be specifically subject to the efficiency testing. The test shall conform to Irrigation Association standards and shall be completed by an independent, Irrigation Association Certified Auditor approved by the District.

The ECCV minimum DU on a new system shall have a 70% or greater distribution uniformity, if ECCV's 70% DU Efficiency Standard is not met, the auditor should provide written recommendations to correct or increase the system's efficiency. System inefficiencies shall be corrected within 30 days and then the catch cup test will be repeated. If the system still does not meet the 70% Efficiency Standard then ECCV will review options to increase the

efficiency. Results of the DU and System Efficiency Test(s) should be provided to ECCV including: the Testing Company's Name, Person Performing the testing, and their contact information. Efficiency tests cannot be performed by the installer's staff and must be performed by an independent, third party auditor.

2.15 SYSTEM MAINTENANCE, CONTROLLER SCHEDULING, AND SYSTEM AUDITING

A. Maintenance Requirements

The applicant is expected to provide ongoing management and maintenance of the irrigation system for the efficient ongoing operation.

System checks should be done on the entire system a minimum of monthly, but more preferably every 1-2 weeks to verify that the system is operating efficiently and properly and to minimize water lost due to malfunctions that are left unrepaired for extended periods of time. Heads and lines will be observed while the system is operating and checked for proper functioning, coverage, excessive overspray, and any leaks. Adjustments and repairs are to be made as needed and on a timely basis to keep the system operating efficiently.

When system repairs are made, especially heads and nozzles, they shall be replaced with identical components/parts with matched precipitation and identical performance characteristics. Random mixing of heads, nozzles, and other components when system repairs are made over time is not acceptable and will reduce system performance and lead to decreased efficiency.

B. System Operation and Controller Management

Systems shall be properly programmed and set up initially and then operated to irrigate in an efficient, water conserving manner on an ongoing basis. Weather based, ET Controllers shall be properly programmed and any required subscriptions shall be paid up and kept current. Rain, Soil, or other sensors or weather stations shall also be checked for proper operation a minimum of two times per season.

Controllers shall be checked for proper operation and adjusted as needed. Even "Smart" Controllers should be checked regularly. Scheduled watering days shall be based on ECCV's current and allowed watering days and times. Controller setup and functioning shall be checked a minimum of monthly during the irrigation season to make sure the controllers are setup and operating properly. Any controller alarms or alerts shall be corrected and addressed when or as they occur.

C. Landscape Irrigation Audit Schedule

ECCV recommends an irrigation audit be performed every 5 years by an independent, Irrigation Association certified auditor approved by the District. A copy of the audit shall be provided to the Property Manager

and the District when completed along with any planned or completed repairs or adjustments to be made or other comments as a result of the audit.

A catch cup, Distribution Uniformity (DU) test should be provided with the audit to calculate system efficiency of the tested stations or zones to ensure the system efficiency is adequately maintained. The DU test should be conducted after all repairs have been made to the system.

The intent of this audit is to verify that the system at the subject's property is being operated in an effective and efficient manner and to make note of any efficiency needs or issues with the system operation and functioning. If efficiency issues or deficiencies are found, these repairs or adjustments should be promptly corrected.