WATER EFFICIENT LANDSCAPE ORDINANCE

Audit Report

CITY OF ROSEVILLE CALIFORNIA

Name: _____ Auditor#: _____

Choose One: ☐ CLIA ☐ QWEL ☐ EPA

Field Audit Submission Package

Summary

- Read and follow the directions carefully. Field audits are mandatory for: new construction, rehabilitated projects, developer installed or home owner provided landscaping.
- All landscape irrigation audits shall be conducted by a third party certified landscape irrigation auditor. Landscape audits shall not be conducted by the person who designed the landscape or installed the landscape.Auditors must hold certifications from Irrigation Association-CLIA, Qualified Water Efficient Landscaper-QWEL, or the Environmental Protection Agency-Water Sense - Irrigation System Auditor.
- All landscape requiring a building permit, Improvement Plan Permit, or Design Review Permit require a certified landscape irrigation audit.
- In large projects or projects with multiple landscape installations (i.e. production home developments) an auditing rate of 1 in 7 lots or approximately 15% of the projects irrigation valves will satisfy this requirement. City of Roseville Municipal Code 14.18.080 B.

Background

- Landscapes that are planned, designed, installed, and maintained with the watershed based approach can improve California's environmental conditions and provide benefits and realize sustainability goals.
- Irrigation systems that apply water at a usable rate within the root zone of the plants, through automatic irrigation controllers, containing moisture sensors that override automatic irrigation when the soil is already moist or wet are all measures that can reduce water demands, yet at the same time provide sufficient moisture to maintain the City's climate appropriate landscaping.

Expectations

The project applicant shall submit an irrigation audit report with the Certificate of Completion to the local agency that may include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule, including configuring irrigation controllers with application rate, soil types, plant factors, slope, exposure and any other factors necessary for accurate programing.

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Auditor Information

Auditor Name: _____ Auditor License #: _____

Phone: _____ Email: _____

Site Information

Contact: _____ Date: _____

Company: _____

Phone: _____ Email: _____

Site Name: _____ Lot Number: _____

Site Address: _____

Site Type *Check applicable*

☐ Residential ☐ Commercial ☐ Municipal

Installation Type *Check applicable*

☐ New Project ☐ Rehabilitation

Irrigation System Data *Check applicable*

Static Pressure: _____ ☐ Hose Spigot ☐ Quick Coupler ☐ Backflow (outgoing) ☐ Other _____

Water Type: ☐ Potable ☐ Recycled Meter Number: _____ Meter Size: _____

Units of Measure: _____ Backflow Preventer? ☐ Yes ☐ No

Flow Sensor Installed? ☐ Yes ☐ No Size: _____ Master Valve Installed? ☐ Yes ☐ No Size: _____

Booster Pump? ☐ Yes ☐ No Size: _____ Pump Max Pressure: _____ Pump Max Flow GPM: _____

Water Source: *Check one* ☐ Potable ☐ Reclaimed ☐ Other _____

Backflow Device: *Check one*

☐ Reduced Pressure Assembly ☐ Double Check Valve ☐ Pressure Vacuum Breaker

☐ Atmospheric Vacuum Breaker ☐ None

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POC Field Flow Data

Station #	Sprinkler Type	Dynamic Pressure	Beginning Read	Ending Readings	Design Flow	Actual Field Flow	Total Run Time
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Hydrozone Information

Controller Name:										
Irrigated Area										
Plant Material *All that apply*										
Plant Condition *Choose one*	N/A		N/A		N/A		N/A		N/A	
Microclimate *Choose one*										
Soil Category *Choose one*										
Root Depth		in.		in.		in.		in.		in.
Slope *Choose one*										
Compaction *Yes or No*										
Runtime Until Runoff		min.		min.		min.		min.		min.
Standing Water *Yes or No*										
Hydrozone Separation *Yes or No*										
Wind Speed *Catch can*										

Abbreviation Key

Plant Materials

CS= Cool Season Turf
WS= Warm Season Turf
T= Trees
S= Shrubs
N= Natives
GC= Ground Cover

Microclimate

FS= Full sun
PS= Part shade, less 6hrs per day
SH= Full shade all day
EX= Extreme conditions (hot)

Slope

F= Flat
SL= Slight
Mod= Moderate
STP= Steep

Plant Condition

LM= Low or lack of maintenance, stressed.
TRD= Traditional some stress, generally good condtion.
HQ= High quality, majority are vigorously growing.

Soil Category

C= Course
MC= Moderately Course
M= Medium
MF= Moderately Fine
F= Fine

Other

N/A= Not Available

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Sprinkler System Review

Controller Name:										
Sprinkler Type *Choose one below*	---		---		---		---		---	
Station Flow Rate *(Plan Set)*		gpm		gpm		gpm		gpm		gpm
High Pressure		psi		psi		psi		psi		psi
Low Pressure		psi		psi		psi		psi		psi
Action Required *X = Needs Correction ✓ = Completed*	✗	✓	✗	✓	✗	✓	✗	✓	✗	✓
Broken Pipes										
Missing/broken heads										
Missing nozzle										
psi adjustment needed										
Clogged nozzle										
Heads not turning										
Arc misalignment										
Low head drainage										
Leaking seals/fittings										
Spray deflected/blocked										
Sunken head										
Tilted heads										
Mismatched heads										
Spray/rotor separation										
Spacing uneven										
Valve malfunction										

Observations on Maintenance Frequency

Site Conditions

CRITERIA		YES	NO	N/A
Leaks	System operates without leaks.			
Overspray Run-off	System operates without overspray to buildings or hardscape?			
	System confined to property, no run-off to hardscape, sidewalk, or gutter. These must be demonstrated and confirmed in the audit.			
Controller	A self-adjusting weather or soil moisture based controller has been installed?			
	Weather sensor has been installed and is communicating with controller via on-site sensor, WiFi or central controller?			
	Controller installed per plan set?			
	Back up battery installed and tab removed?			
	Are sensor(s) operating properly with the controller?			
Spray Heads Rotors Bubblers	Spray heads installed in areas greater than 10 ft wide, only.			
	In areas where slope is greater than 25%, nozzels installed have a percipitation rate of .75"/hour or less.			
	All nozzels & bubbles have been installed with pressure regulation as needed per manufacturer recommended specifications?			
	All nozzels & bubbles have been installed per plan set standard details?			
	Nozzles have been adjusted to prevent ALL overspray and runoff?			
	All sprinkler heads have check valves designed to prevent run off from low head drainage where needed?			
	Spacing of heads is uniform and designed to promote a high DU?			
	Nozzles are of like kind and precipitation rates are not mismatched?			
Drip Systems	Low volume irrigation was used in mulched planting areas?			
	Drip is installed per manufacturers recommendation or per plan?			
	All drip valves, filters and tubing have been flushed and are operating per manufacturers specifications?			
Landscape	" of mulch installed?			
	Plants have been installed per planting plan, planting notes and by hydrozone?			
Master Valve	If indicated on plan, the master valve has been installed, programmed to the controller and is fully functional per program			
Flow Sensor	Flow sensor has been installed per plans, is wired and is functioning properly with the programmed controller?			

Notes:

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Test Area Map

Project Name: _____ Date: _____

Address: _____

Auditor ID #: _____

Test Area/Station: _____

Test Run Time: _____ min Wind: _____ mph Pressure: _____ psi

Meter Start: _____ Meter Stop: _____ Total: _____

**Indicate north and ALL audit area and sprinkler dimensions.

O = SPRINKLER – Record the location of each sprinkler and sprinkler spacing.

X = CATCH DEVICE – Record the location of each catch device and catch amount.

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Catch Can Test

Project Name: _____ Date: _____

Address: _____

Auditor ID #: _____

Test Area/Station: _____

Catch Device Area (A_{CD}): _____ $in.^2$ Test Run Time (t_R): _____ min

Catch Device Volumes

1		13		25		37		49		61		73	
2		14		26		38		50		62		74	
3		15		27		39		51		63		75	
4		16		28		40		52		64		76	
5		17		29		41		53		65		77	
6		18		30		42		54		66		78	
7		19		31		43		55		67		79	
8		20		32		44		56		68		80	
9		21		33		45		57		69		81	
10		22		34		46		58		70		82	
11		23		35		47		59		71		83	
12		24		36		48		60		72		84	
Sub Total		Sub Total		Sub Total		Sub Total		Sub Total		Sub Total		Sub Total	

Calculate Distribution Uniformity (Show Work)

$$(DU_{LQ}) = \frac{\text{avg catch in low quarter}}{\text{avg catch volume}}$$

$$X \frac{\text{mL}}{\text{mL}} =$$

Calculate Net Precipitation Rate (Show Work)

$$PR_{net} = \frac{3.66 \times V_{avg}}{T_r \times A_{CD}}$$

$$X \frac{3.66 \times (\quad \text{mL})}{(\quad \text{min}) \times (\quad in.^2)} =$$

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Controller Name: _____ Date: _____

Manufacturer: _____

Total Operational Stations Being Used: _____

Smart Controller? ☐ Yes ☐ No

Type of Sensor: ☐ Onsite ☐ Wi-Fi ☐ Central Controller

Notes:

☐ System needs corrections ☐ System functions properly

I, _____ declare that I have performed a third party Irrigation Audit on the property listed above and not affiliated with the property owner, builder or landscape installer. This audit was performed with all guidelines and codes of licensing body that certified me as a landscape irrigation auditor.

Irrigation Auditor Name: _____ Certification #: _____

Signature: _____ Date: _____