

memo

To: Mike O'Brien, Pressey & Assoc. Date: 6/6/19

From: Tanja Wilcox, RLA Project: Arcata Community Health Center

Re: Preliminary Irrigation Design Recommendations with Water Conservation Measures

Irrigation Design

Outlined below is a recommendation for efficient irrigation of new plantings. Watering for plant establishment, whether native, drought-tolerant or ornamental should take place for a minimum of three years following installation of plant materials. Once established, native and drought-tolerant plants are more likely to survive than many ornamental plants or plants with frequent or heavy watering needs. With an in-ground automatic irrigation system, watering is recommended to extend for 2 additional years to improve the growth rate.

Automatic Irrigation System

The automatic irrigation system will connect directly to the existing or proposed main line. A meter and double check valve will be required. An automatic irrigation system uses an automatic controller, which enables the system to water during times of low evapotranspiration rates and for only as much time as is needed. With soil moisture sensors, these systems will not water when it is raining or get tricked by the frequent morning/afternoon fogs that occur in the area that might otherwise allow a rain sensor to not water. A combination of efficient sprinkler and drip irrigated systems allows us to address the variable watering needs further.

Water Conservation Methods:

- Irrigate during morning hours (between 5:00 am and 10:00 am) when the sun is low, winds are calm and temperatures are cool. This reduces evaporation and wind drift.
- Install an irrigation controller that has a seasonal adjust feature which turns watering times down as seasons and conditions change.
- Install high efficiency nozzles that are adjustable to reduce potential over-spray.
- Program the irrigation controller to split watering times into a few shorter periods so water has a chance to soak in, rather than applying more water than the ground can absorb at one time, leading to runoff onto streets or sidewalks.
- Group irrigation stations based on sun and shade conditions and use a soil moisture sensor to prevent watering until plants require it. Owner may decide to also use a rain sensor, but foggy conditions may cause inaccurate information. This could be combined with the soil moisture sensor as noted above, to ensure adequate water to plant material.
- Layout sprinkler and drip irrigation according to water needs and aforementioned environmental conditions.

Irrigation System Design

Proposed irrigation system will be a combination sprinkler and drip irrigated system that irrigates all landscape zones within the site, including bio-retention cells and architectural bio-retention planters. It will be an in-ground irrigation system with mainlines and lateral lines buried 18" deep.

Hose bibs are assumed to be provided at key locations on the exterior walls to allow for flexible watering even after the irrigation system has been shut down. Quick couplers will be proposed in landscape areas further from the building and associated with the irrigation mainline.

Irrigation system will draw from a water supply in Foster Avenue or Sunset Avenue. Point of connection will be established with the project civil engineer.

An irrigation meter will be installed in an upland landscape area; alternatively, a deduct meter may be installed in the mechanical room coordinated with civil and mechanical.

A reduced pressure backflow assembly (RPBA) or a double check valve assembly (DCVA) will be required for the irrigation supply. Location and type will be assessed with civil and mechanical engineers.

An irrigation controller will be required for operation of the system. This will be a wall mounted controller and is assumed to be located in the mechanical room.

Irrigation areas:

1. Planting areas located north and northwest of the building will be grouped together for irrigation timing, as these are generally shady and more moist.
2. Planting areas located south and southwest of the building will be grouped together, as these are generally areas more likely to be dry during summer. Of these, retention planters may require irrigation, and if so, will be zoned together for irrigation timing purposes.
3. Parking area landscape will be a series of irrigation zones grouped together for irrigation timing.
4. Green screens, located on the east and north-facing walls, will be included in their adjacent irrigation zones.

Proposed irrigation products:

Meter or deduct meter: by civil; size to be determined.

RPBA or DCVA: Size and type to be determined.

Controller: Rainbird

Rainbird or Toro pop-up sprinkler equipment

Netafim or Rainbird for drip equipment