



B A S M A A

- Project:** Alternative Green Infrastructure (GI) Facility Sizing Analysis & Guidance
- Description:** The project used continuous simulation modeling to evaluate relationships of facility size to facility performance for the purpose of using these relationships to develop and justify an approach for implementing Green Infrastructure projects when there are constraints on facility size. The project tasks included adapting existing continuous simulation models that simulate bioretention, compiling and updating long-term hourly rainfall records at six Bay Area locations, and running continuous simulations and evaluating outputs to address the following questions:
1. What is the minimum bioretention sizing factor (facility surface area/tributary impervious area) that meets the criterion of capturing and treating 80% of average annual runoff, as stated in Provision C.3.d.? This will be calculated for each of six rain gauges with long-term hourly data.
 2. How does the percent of average annual runoff captured and treated vary as a function of sizing factor? This will be shown graphically and/or by regression equations.
 3. Examine the sensitivity of the percent of average annual runoff infiltrated to: (a) facility sizing factor and (b) rate of exfiltration from the facility. Also, examine the sensitivity of anticipated pollutant loading reductions to the following variables: average pollutant concentrations in runoff (influent), underdrain discharge pollutant concentration, rate of exfiltration from the facility, and facility sizing factor.
- In FYs 17/18 and 18/19, the Development Committee formed a Green Infrastructure Facility Sizing Work Group to identify and discuss ways in which the Green Infrastructure Facility Sizing Analysis results could be applied. The results of the Work Group's discussions was the development of guidance on an approach to using the analysis.
- FY:** 16/17 through 18/19
- Overseer:** Development Committee
- Contracting Agency:** BASMAA
- Contractor:** Dubin Environmental; Dan Cloak Environmental Consulting
- Budget:** \$30,000

Alternative Green Infrastructure (GI) Facility Sizing Analysis & Guidance

Status: Done

Deliverable(s): *Green Infrastructure Facility Sizing for Non-Regulated Street Projects* (December 2017); *Guidance for Sizing Green Infrastructure Facilities in Street Projects with companion analysis: Green Infrastructure Facility Sizing for Non-Regulated Street Projects* (June 2019)
