

Determination of a Fee-in-Lieu Amount for the Draft Alternative Compliance Model Ordinance

Where a municipality has approved an Alternative Compliance request from a Project Applicant and the Project Applicant has chosen the fee-in-lieu option, the amount of money to be obtained for mitigation is most commonly expressed in dollars per volume of stormwater.

In setting a fee, municipalities must charge a high enough fee to cover the full cost of mitigating the stormwater impact while remaining fair to the developer. When setting a fee, municipalities must account for cost variability due to specific site characteristics as well as future inflationary pressures. The ideal fee estimate should reflect the typical costs of implementing the on-site accepted Stormwater Control Measures (SCMs) for retrofits.

Two fee-in-lieu options were created for this exercise:

Option 1: A fee based on bioretention mitigation costs. This option assumes that both water quality and quantity mitigation must be achieved.

Option 2: A fee based on impervious surface removal and soil amendment costs. This option assumes that only water quantity retention/infiltration must be mitigated.

These options are described in the following paragraphs.

Option 1: A fee-in-lieu for projects that must mitigate both water quality and quantity impacts

The suggested fee-in-lieu amount for AC projects that mitigate both water quality and retention/infiltration is \$45 per cubic foot of stormwater.

Option 1 is based on using costs associated with a “typical” SCM to determine the fee-in-lieu amount. A typical SCM should be one that is anticipated by the municipality or regulator to be used widely to comply with the MS4 General Permit standards, and for which cost data are available. Bioretention is the SCM of choice for this exercise, based on its suitability for a wide variety of sites and emphasis in both the Region 3 and Statewide Municipal Stormwater NPDES Permit requirements for post-construction stormwater control. Typical costs to implement bioretention are used to set the payment-in-lieu fee as a proxy for a variety of SCMs. While actual costs to implement other BMPs may be higher or lower, it is assumed that a fee based on bioretention will split the difference and be a fair and equitable method.

A fee-in-lieu amount takes into consideration planning/design, construction and long-term operations and maintenance. For this exercise, a range of bioretention costs in the literature

and direct project data were evaluated. Evaluation of cost data considered several factors including:

- Whether reported costs were consistent with the bioretention projects that reflected designs consistent with regulatory compliance. Cost for residential rain gardens, for example, are not indicative of the type of bioretention costs associated with post-construction requirements. These low range costs were not included in the fee determination.
- Bioretention costs were based on the assumption that projects will largely be retrofits on prior developed land. Reported costs for new development or those located in open space areas are not typical of municipal alternative compliance project, which are generally constructed within the urban residential and commercial land uses.
- Bioretention projects that meet regulatory requirements have a significant range in cost due to factors such as engineering complexity, site constraints, and native soil condition. Average costs were used to identify likely planning/design, construction, and maintenance (Table 1). Extreme outlier costs were excluded.

Bioretention Implementation Costs				
Per cubic foot of stormwater				Per gallon of stormwater
Plan/Design	Construct	20-Year O&M	Suggested fee-in-lieu (per cubic foot)	Suggested fee-in-lieu (per gallon)
\$14	\$26	\$5	\$45	\$6.0

Resources evaluated for bioretention costs:

- (1)Grey, D. Sorem, C. Alexander, and R. Boon. 2013. The Cost of LID. Stormwater Magazine.
- (2)Pristel, V. An Alternative Compliance Framework for Stormwater Management in the Central Coast Region.
- (3)Brown and Schueler (includes design and construction)
- (4)Center for Watershed Protection. Guidance for Developing an Off-Site Stormwater Compliance Program in West Virginia. 2012.
- (5)King D., P. Hagen. 2011. Costs of Stormwater Management Practices in Maryland Counties. Prepared for the Maryland Department of the Environment Science Services Administration (MDESSA), by the University of Maryland Center for Environmental Science.
- (6)Paso Robles 21st Complete/Green Street. Unpublished cost-benefit analysis completed by the Central Coast Low Impact Development Initiative.

Over time, the municipality may collect additional local bioretention cost data to improve the fee-in-lieu amount. Additionally, cost data for other SCM types can be collected to reflect other SCM types. However, even with improved cost information, many municipalities choose to

retain the basic fee structure as a cost “menu” requires that the municipality already has some knowledge of the type of SCM that will constitute the mitigation.

Option 2: A fee-in-lieu based on impervious surface removal and soil amendment.
CURRENTLY BEING DEVELOPED

While Option 1 assumes mitigation costs for SCMs that provide both water quality treatment and retention/infiltration, Option 2 assumes that only retention/infiltration must be mitigated. When the Project Applicant is able to meet water quality requirements on-site, a fee-in-lieu option should be available that reflects costs for retention/infiltration.

Removal of existing impervious surfaces and subsequent soil amendment is probably the most cost-effective SCM that can be used as an Alternative Compliance tool. Existing impervious surfaces that are hydrologically connected to surface waters will provide the greatest mitigation benefit. Other community benefits and objectives can be achieved with this SCM. There is currently very little data to create a fee-in-lieu amount for this SCM approach and additional research is needed. However, some data do exist and an initial attempt at creating a fee-in-lieu amount for Option 2 is in development.