River Plan / North Reach

Mitigation and Vegetation Enhancement Standard amendments
Calculating THE MITIGATION AND VEGETATION IN-LIEU FEES
November 24, 2009

I. Introduction

As a result of the River Plan / North Reach stakeholder meetings with Mayor Adams, amendments will be proposed for the plan's mitigation and vegetation enhancement requirements:

- Mitigation. When river review is required, offer a fee in lieu of mitigation option when off-site mitigation is approved. The fee in lieu option will substitute for an operating mitigation bank until such time as a certified bank has been approved for operation in the North Reach by City, state and federal agencies. The mitigation requirement is intended to ensure that significant natural resources within the river environmental overlay zone are replaced when development in the overlay zone impacts the resources.

- Vegetation Enhancement Standard. Revise the vegetation enhancement standard to reflect a requirement that an applicant spend 1% of project value on three different enhancement options—on-site vegetation, off-site vegetation and/or an eco-roof. The off-site option for meeting the standard is a fee in lieu. The cost per permit for complying with the revised vegetation enhancement standard will be capped at $200,000. The standard will be met when 15% of a site is vegetated or the applicant has paid fees-in-lieu of on-site vegetation totaling the City's estimate of the cost to plant 15% of the site with vegetation. The vegetation enhancement standard is intended to address the plan's stated objective of enhancing the river's natural qualities over time.

A. The Mitigation Requirement and In-Lieu Fee Option

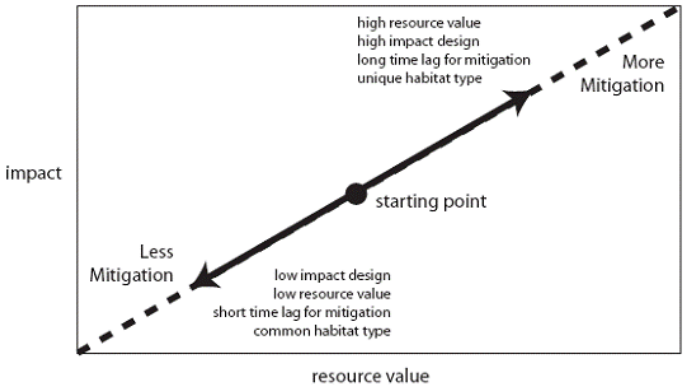
The May 26, 2009 Planning Commission Worksession packet contains examples of potential mitigation scenarios that could result from River Review. One of these examples is new development on a riverfront site with a new 60,000 square foot dock. This example is being widely cited as evidence that the plan establishes what appears to be an unrealistically high mitigation requirement for projects constructed near or in the river. However, these discussions usually do not acknowledge that the example outlines a worst case scenario. This paper revisits the example to show several reasonable mitigation scenarios that could occur in the North Reach in addition to the one that assumes a total loss of fully functioning pristine habitat.

The River Plan / North Reach would require applicants to avoid, minimize and mitigate for impacts to natural resources in the river environmental overlay zone. Applicants must first seek ways to mitigate on-site, but off-site mitigation can be allowed as a result of a review. The Planning Commission's recommendation is to facilitate off-site mitigation through a mitigation bank. Development of a mitigation bank will take several years, and Mayor Adams recommends that the City offer applicants the option of paying an in-lieu fee to the City until a mitigation bank is up and running. The fee will be used for restoration projects in the North Reach. The fee will be determined using the methodology described below.

The methodology is based on widely accepted models used by natural resource scientists to place a habitat score on upland, riparian, riverine, and stream habitat areas both before and after development. The difference between the pre- and post-development scores is a quantification of the impact from development. Another part of the model will then factor in the time lag between the time of development and when the values will be replaced, yielding a final impact score. The final step is to multiply this score by the cost of replacing the lost habitat for each habitat type, and add them together to get the full cost of what it would take to replace the habitat elsewhere. This model will be going through scientific review beginning in early December.

Figure 1 demonstrates the relationship between impacts and resource value. The resource value (x-axis) is based on a Habitat Evaluation Procedure that ranks habitat on a scale of 0 to 1, a score of 1 representing highest possible habitat value. The impact scale (y-axis) represents the degree of adverse impact of development on natural resources, ranging from low to high. Simply put, the greater the development impact, and the higher the habitat value at a given site, the greater the amount of mitigation required.

Figure 1: Mitigation Determination



B. Vegetation requirement and In-Lieu Fee Alternative

The River Plan / North Reach would require an applicant to spend 1% of project value on vegetation enhancement. The standard can be met in one of three ways: vegetate on-site, vegetate off-site or install an ecoroof. The off-site vegetation option will be accomplished through paying the City a fee-in-lieu of planting and maintaining vegetation. The cost per permit for complying with the standard will be capped at $200,000.

II. The In-Lieu Fee Scenarios

The following scenarios illustrate how the mitigation and vegetation enhancement fee-in-lieu options could play out given different assumptions for the natural resources on the development site, and different assumptions about the dock design. In all of the scenarios, the development on the 10 acre site is a new 60,000 sq. ft. dock and a new building with a total building permit value of $25 million. Figure 2 illustrates the dock and building configuration for the scenarios and shows how the calculations for the in-lieu fees will be determined.

Mitigation Requirement

The cost of mitigation in the three scenarios below is limited to the dock structure because the new building is outside the e-overlay zone. The scenarios assume that off-site mitigation has been deemed appropriate through river review. To simplify the example, the cost for temporal loss (time factor between habitat loss and habitat restoration) has not been included. The cost figures used in this paper are currently under review by a consulting firm working for the City.

Vegetation in lieu fee

The project value in all three scenarios is $25 million. One percent of $25 million is $250,000. The standard includes a per permit cap of $200,000, therefore the cost to meet the off-site vegetation enhancement standard is $200,000 in all scenarios.

In-Lieu Fee Scenarios

These scenarios are for illustrative purposes only. The amounts calculated as part of a permit could vary due to differing habitat conditions, project designs and updated cost information. The mitigation figures do not include a value for temporal loss.

Scenario 1: Lower impact dock; mid-range habitat

Assumes mid-range value habitat (some shallow water, compromised resources), and a lower impact dock design (piling supported, minimal shallow water dredging) See calculations for riverine in-lieu fee in box below.

Vegetation in-lieu fee=$200,000 (cap)
Off-site mitigation in-lieu fee:
- Upland in-lieu fee=$7,690
- Riparian in-lieu fee=$57,000
- Riverine in-lieu fee=$579,000

TOTAL IN-LIEU FEE = $843,690

Scenario 1: Riverine in lieu fee calculations

1. Pre-development habitat score (.5) – post-development habitat score (.3) = Preliminary development impact score (.2)
2. Preliminary development impact score x time lag between development and the replaced function = Final development impact score *This factor not included in example.*
3. Final development impact score (.2) x 60,000 sq ft x cost/sq. ft. of habitat replacement ($48.25) = Fee-in-lieu for riverine ($579,000)

Scenario 2: High impact dock; mid-range habitat

Assumes mid-range value habitat (some shallow water, compromised natural resources), and a high impact dock design (full fill/bulkhead, dredging removes shallow water habitat). See calculations for riverine in-lieu fee in box below.

Vegetation in-lieu fee=$200,000 (cap)
Off-site mitigation in-lieu fee:
- Upland in-lieu fee=$19,225
- Riparian in-lieu fee=$142,500
- Riverine in-lieu fee=$1,447,500

TOTAL IN-LIEU FEE = $1,809,225

Scenario 2: Riverine in-lieu fee calculations

1. Pre-development habitat score (.5) – post-development habitat score (.0) = Preliminary development impact score (.5)
2. Preliminary development impact score x time lag between development and the replaced function = Final development impact score *This factor not included in example.*
3. Final development impact score (.5) x 60,000 sq. ft. x cost/sq. ft. of habitat replacement ($48.25) = Fee-in-lieu for riverine ($1,447,500)

Scenario 3: High impact dock; pristine habitat (River Plan Option 1, Example 2. May 22, 2009)

Assumes highest value habitat (all shallow water, pristine, fully functioning habitat), and the dock results in 60,000 sq. ft. of fill. See calculations for riverine in-lieu fee in box below.

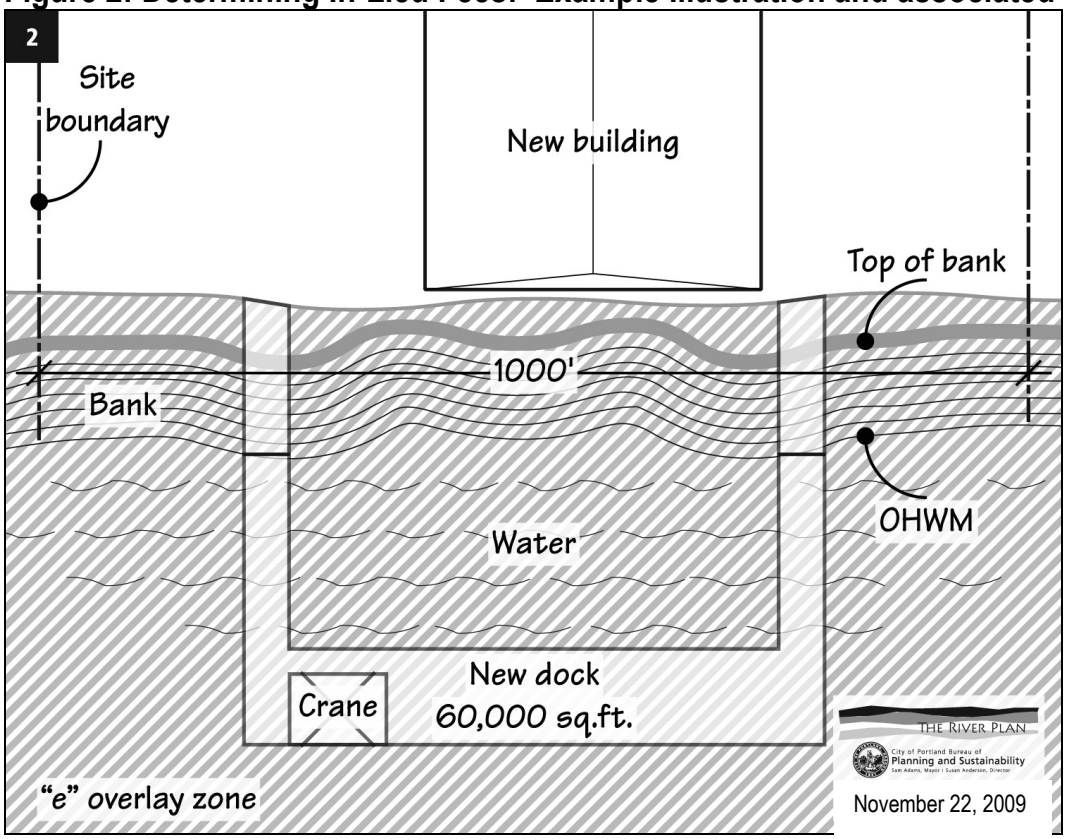
Vegetation in-lieu fee=$200,000 (cap)
Off-site mitigation in-lieu fee:
- Upland in-lieu fee=$38,450
- Riparian in-lieu fee=$285,000
- Riverine in-lieu fee=$2,895,000

TOTAL IN-LIEU FEE = $3,418,450

Scenario 3: Riverine in-lieu fee calculations

1. Pre-development habitat score (1) – post-development habitat score (.0) = Preliminary development impact score (0)
2. Preliminary development impact score x time lag between development and the replaced function = Final development impact score *This factor not included in example.*
3. Final development impact score (1) x 60,000 sq. ft. x cost/sq. ft. of habitat replacement ($48.25) = Fee-in-lieu for riverine ($2,895,000)

Figure 2: Determining In-Lieu Fees: Example Illustration and associated calculations



New development including building and dock
Site: 10 acres
Project Value: $25 million ($5M for building + $20M for dock)

Vegetation in-lieu fee			
435,600 sq. ft. x .15 x $6.70/sq. ft.		$437,778	
Fee Cap = Project Value x 1% or $200,000		$200,000	
	Total Vegetation in-lieu fee		*$200,000*
Mitigation in-lieu fee			
*Upland		$ A	
*Riparian		$ B	
*Riverine		$ C	
	Total Mitigation in-lieu fee		*$A+B+C*
Total project in-lieu fees			**$200,000 + A+B+C**

* This example assumes use of a City developed model to value habitat types, and determine a cost per unit of habitat to calculate the fee-in-lieu for each type.
The model would work as follows for each habitat area (upland, riparian, riverine):
1. Pre-development habitat score – post-development habitat score = Preliminary development impact score
2. Preliminary development impact score x time lag between development and the replaced function = Final development impact score
3. Final development impact score x area x cost/habitat replacement unit = Fee-in-lieu for each habitat type (upland, riparian, and riverine).