10. STORMWATER MANAGEMENT

The proposed project must comply with the water quality, stormwater management, and erosion control standards identified by the City of Portland in the Land Use Chapter of the Code of Ordinances. Section 14-527 of the Code of Ordinances requires that the stormwater standards must be met for this level of permit submission.

10.1 EXISTING CONDITIONS

The Site is located in the Eastern Waterfront Area on City-owned property. The project area is primarily impervious, with exception to small landscaped islands. The topography is relatively flat. Runoff from the site enters catch basins on adjacent properties that drain directly to the Fore River or to a separated stormwater system that ultimately drains to an outfall in the Fore River.

10.2 PROPOSED DEVELOPMENT

The project consists of a building addition, pier head extension, marine infrastructure repair and exterior site improvements, as described in Section 2 of this application. Landscaped areas will not differ significantly from pre-development conditions; therefore, no new impervious area will be created as part of this project. Proposed grades are largely consistent with existing grades, with improvements to better direct runoff into catch basins; therefore, drainage patterns of the site exterior are largely maintained.

In the post-development condition, runoff from the northern and western portions of the site will be directed into catch basins that drain to an R-tank storage chamber system with a downstream Jellyfish Filter. Overflow from the R-tank system during high intensity rain events will bypass the Jellyfish Filter and flow directly to the downstream drainage system. Runoff for the remainder of the site will largely mimic existing drainage patterns and will be conveyed via overland flow into existing drainage infrastructure.

10.3 STORMWATER STANDARDS

The project will comply with the Basic, General, and Flooding standards as outlined in the City of Portland's Technical Manual Section 5 and the MaineDEP Chapter 500 Stormwater Management Rules.

10.3.1 Basic Standard

In accordance with Section 5 of the City of Portland Technical Standards, the project is required to meet the Basic Standard of the MaineDEP Chapter 500 rules. Erosion and sedimentation control measures will be utilized during construction to ensure that the work will not result in the release of sediment to any natural resources.

Details for all proposed erosion and sedimentation control measures are included in the engineering plan set submitted with this application. The plans include a narrative and construction details describing the plan for all temporary and permanent erosion control techniques to be utilized on this project in accordance with MaineDEP Erosion Control Best Management Practices.

10.3.2 General Standard

In accordance with Section 5 of the Technical Manual, projects including redevelopment of non-roof impervious area greater than 5,000 square feet shall provide stormwater quality treatment in accordance with the General Standard for at least 50 percent (35,437 square-feet of 70,874 square-feet) of the redeveloped impervious area. Calculations demonstrating the proposed BMPs meet the redevelopment requirements of the General Standard are provided in Appendix C.

The proposed stormwater systems have been designed based on Volume III of the DEP Stormwater BMP Manual. A proprietary Jellyfish Filter sized to treat 1.01 acres of impervious area is proposed to treat runoff from the western and southern portions of the redeveloped area. Jellyfish Filter sizing calculations prepared by Contech are provided in Appendix C. The treatment system results in treatment of greater than 50 percent of the redeveloped area. Overflow will bypass the Jellyfish Filter and be directed via storm drain pipe that ultimately discharges into an existing drainage outfall on the southern edge of the site.

10.3.3 Flooding Standard

The project will not create any new impervious surface and is therefore not required to provide stormwater management features for stormwater quantity control in accordance with the Flooding Standard; in addition, discharge from the site is directed to the adjacent tidal water. A minimal decrease in flow rates and volumes is anticipated to result from the proposed project, as shown in **Table 10-1**.

Table 10-1: Pre- & Post Development Peak Rate of Runoff

Study Point		Peak Rate of Runoff (cfs)			
		1-Inch Storm Event (1.0")	2-Year Storm Event (3.21")	10-Year Storm Event (5.01")	25-year Storm Event (6.13")
1	Pre-development	0.68	2.37	3.72	4.56
	Post-development	0.64	2.24	3.52	4.31
2	Pre-development	1.23	4.30	6.76	8.28
	Post-development	0.54	3.77	6.40	7.92
Net Change	Pre-development	1.91	6.67	10.48	12.84
	Post-development	1.18	6.01	9.92	12.23

10.4 INSPECTION AND MAINTENANCE OF STORMWATER SYSTEMS

General inspection and maintenance during and after construction must take place in accordance with the requirements outlined in Chapter 500, Stormwater Management, Appendix B, Inspection and Maintenance and Stormwater Management, Maine Department of Environmental Protection publication No. DEPLW0738. Casco Bay Lines will be responsible for implementing the maintenance and inspection requirements for the stormwater management system associated with the new development, potentially by way of a contractor that specializes in stormwater management system maintenance. The Jellyfish Filter and associated R-Tank chamber system will be inspected and maintained per the Owner's Manual provided in Appendix C.

The inspection and maintenance criteria outlined in Chapter 500 Stormwater Regulations will be followed. Monitoring and maintenance is critical for the proper operation of stormwater treatment systems. First year post-construction monitoring differs primarily by its increased frequency to assure proper system functioning. Post-construction routine monitoring is based on USEPA requirements for good housekeeping practices.

Post-Construction: Inspection frequency should be at least once every six months and after every major storm in the first year following construction.

- ❑ Perform sediment removal for depths reaching 12 inches or greater, or within 3 years.
- ❑ Removal all trash and debris

10.5 ATTACHMENTS

- Redevelopment and Treatment Sizing Calculations
- Stormwater Erosion & Sedimentation Control Inspection Report Form
- Stormwater Inspection and Maintenance Plan

STORMWATER EROSION & SEDIMENTATION CONTROL
INSPECTION REPORT FORM

Inspectors: Date: ___ / ___ / _____

_____ of _____ (Project Owner)
_____ of _____ (Contractor)
_____ of _____
_____ of _____

Storm Event? ☐ Yes ☐ No Rainfall Amount _____ Storm Duration _____ hours

Visual Observations of Activity and Site Conditions:
Disturbed Soil Areas:

_____
_____
_____

Storage of Soils:

_____
_____
_____

Sediment & Erosion Control Measures:

_____
_____
_____

Construction Site Entrance:

_____
_____
_____

Surface Stabilization:

_____
_____
_____

Corrective Actions Taken

Attachments (if any):

Signature:

Representing:

Representing: