



Code Review
for
Maine Wharf Egress

Portland, Maine

Prepared by:

FIREPRO Incorporated

July 18, 2012

Rev.2

FIREPRO Incorporated
1600 Osgood Street, 2082, North Andover, MA 01845
T: 781.270.5200 F: 781.229.2922
www.fireproincorporated.com

Introduction

This report is intended to outline the exit discharge requirements associated with the renovation of the existing one story building on Maine Wharf in Portland, Maine. The existing building is one story of approximately 8,500 sqft and the proposed renovation will consist of an additional two stories. As we understand, the first story will be an assembly (restaurant) occupancy, and the second and third floors will be a business (office) occupancy. This review is limited to the exterior of the building. It will focus on the exit discharge and fire department access requirements based on NFPA 1 – Fire Code, 2009 edition as adopted and amended by the City of Portland.

FIREPRO® makes all reasonable efforts to incorporate practical and advanced fire protection concepts into its advice. The extent to which this advice is carried out affects the probability of fire safety. It should be recognized, however, that fire protection is not an exact science. No amount of advice can, therefore, guarantee freedom from either ignition or fire damage.

Referenced Documents

- NFPA 1 – Fire Code, 2009 edition as adopted and amended by the City of Portland
- NFPA 101 – Life Safety Code, 2009
- NFPA 14 - Installation of Standpipes and Hose Systems, 2007

Existing Conditions

Maine Wharf is connected to Commercial Street. The wharf is approximately 600 feet long, and 75 feet wide. The building under review is at the Commercial Street end of the wharf, closest to the shore.

The majority of the 8,500 sqft building is located on Maine Wharf, and a portion of the building is over the land. It is our understanding that the existing building will be equipped throughout with an automatic fire sprinkler system. The primary means of egress from the building is for the occupants to travel towards Commercial Street on the paved driveway on the East side of the building that leads out to the entry of the wharf.

As we understand, the wharf's paved driveway is currently used for parking on one side, and the other side will either be used for additional parking or a walkway. Based on this information that has been provided to us, we have attached a sketch of the area including the clear egress width between the parking space the obstruction on the paved driveway.

Egress Code Review

On the East side of the building, there is approximately 27'-4" of space between the building, and the obstructions (ie. dumpster) on the opposite side of the paved driveway. If it is assumed

that there is an 8-foot wide parking spot occupies the far side, and an 8-foot wide parking spot or other obstruction on the near side of the paved driveway, there will be 11'-4" of clear space available for pedestrian egress. The clear egress width has been measured at the smallest choke point on the paved driveway, prior to the point at which egress travel has passed the end of the building and exited the wharf.

As part of this report, we reviewed NFPA 1, Chapter 28 *Marinas, Boatyards, Marine Terminals, Piers, and Wharves*. Chapter 28 does not address any specific requirements for egress to this type of wharf. Therefore, based on NFPA 1, Chapter 14 *Means of Egress*, which references Chapter 7 of NFPA 101 *Life Safety Code*, the capacity factor of 0.2 inches of width per person was used for egress through a level component. As a result we can conclude that 684 people can egress through the available clear width of the paved driveway for Maine Wharf.

NFPA 101 Chapter 11, Section 11.5.2.2 requires that piers such as the Maine Wharf meet one of the following requirements:

- a) *Provide two separate ways to travel to shore, such as by two well-separated walkways or independent structures, or*
- b) *The pier deck shall be open, fire resistive, and set on noncombustible supports, or*
- c) *The pier shall be open, unobstructed, and the width shall be not less than 10% of the length, or*
- d) *The pier deck shall be provided with an approved automatic sprinkler system in accordance with Section 9.7 for combustible substructures.*

It is our opinion that the most practical choice is Option A, to provide a second separate means of egress in addition to the paved driveway. As we understand, there is currently a small walkway on the West side of the building that can be used for emergency egress, and would be considered well-separated. We recommend that as part of the renovation of the building, this walkway should be made useable for emergency egress.

It is our understanding that the walkway on the West side of the building is approximately 44-inches wide. If it is made acceptable for egress, this would allow an additional 220 people to egress from the building, for a total of 904 people. We are not aware of any requirement to install a railing on this walkway.

Once the two separate egress paths reach land and are no longer on the wharf, they converge and proceed toward Commercial Street as shown on the attached sketch.

Fire Department Access

It is our understanding that the Fire Department's preference is to not drive down the pier, but to stage equipment from the side of Commercial Street. There is a hydrant located on Commercial Street next to the Dry Dock Restaurant Tavern, which is located directly at the end of Maine Wharf. The hydrant is approximately 150 feet from the edge of the building being reviewed.

In accordance with NFPA 1, Section 28.1.6.3.1, a Class I Standpipe System is required to be installed where the hose lay distances from fire apparatus exceeds 150 feet. In this case, it will be approximately 400 feet from the edge of Commercial Street to the far end of the building under review. A Class I Standpipe system is network of 2 ½-inch hose connections to supply water for use by the fire department. The location of the Standpipe System shall be determined by the AHJ.