Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 02/05/18

Code Analysis

Below is a code analysis for the site access/circulation and fire protection. Multiple sources are referenced including the required documents in the Building Permit Application.

Proposed uses of structures:

NFPA: Storage Occupancy

IBC: Storage

NFPA 1 – Chapter 13 Fire Protection Systems

13.1.3. Obstructions shall not be placed or kept near fire hydrants, fire department inlet connections or fire protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately visible and accessible.

Response: The owner will ensure that obstructions will not be placed or kept by fire hydrants.

13.1.4. A minimum 36 in. of clear space shall be maintained to permit access to and operation of fire protection equipment, fire department inlet connections, or fire protection system control valves. The fire department shall not be deterred or hindered from gaining immediate access to fire protection equipment.

Response: A minimum clearance of 36 inches from the fire hydrant will be maintained, including bollards.

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The project site is located in a densely developed area and is fronted by a public street. The following pavement street width is currently available:

- Riverside Street: 47.25 feet

Per NFPA 1 – Chapter 18.2.3.3.1, there is not public street access within 50 feet of at least one exterior door. The closest distance from an exterior door to the Riverside Right-of-Way is 250'. The closest distance from an exterior door to the Leighton Avenue Right-of-Way is 105'. Due the site constraints, it not feasible to reduce these distances.

Per NFPA 1 – Chapter 18.2.3.2.2.1, the office building and self-storage units are located less than 450 feet from a Fire Department access road. The internal drive aisles have been designed to accommodate the turning radii of fire trucks and will be paved.

NFPA 1 – Chapter 34 General Storage

This section primarily addresses palletized storage configurations and bulk industrial storage and does not apply to the intended use of a self-storage facility. The storage of highly combustible items will not

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be permitted in the storage containers.

City of Portland Technical Manual – Section 3 Public Safety

3.4.1 Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).

Response: Not applicable

3.4.2 Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas.

Response: In most cases, the access to the structures do not meet the two-side minimum requirement. However, the structures are small (8.5 feet) and built from steel. The layout does not represent a situation that would require significant fire truck access such as a multi-story building.

3.4.3 Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors:

- *Building Height.*
- *Building Occupancy.*
- *Construction Type.*
- *Impediments to the Structures.*
- *Safety Features Provided.*

Response: The proposed development layout has contemplated emergency access conditions and provides for safe and efficient access along the public street for emergency vehicles.

3.4.4. Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure.

Response: The office is proposed to be placed approximately 250' from Riverside St. The narrow section of the property closer to Riverside St. does not allow space for both a driveway and an office building.

3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.

Response: The proposed site maintains the required clearance height of nine feet.

3.4.6. Elevators shall be sized to accommodate an 80 x 24-inch stretcher.

Response: Not applicable.

3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

Response: The applicant will work with the City's Public Services Division to assign street addresses and numbering to meet City Standards.

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City of Portland City Code – Chapter 10 Fire Prevention and Protection

10-27 (a) Any private fire hydrant installed, replaced or upgraded on or after the effective date of this article must meet all of the standards utilized by the Portland Water District at the time of such installation. In addition, such hydrants shall meet the fire flow, marking and location standards adopted by the National Fire Protection Association and in effect at the time of such installation. The owner of the private fire hydrant shall provide certification of meeting such standards upon installation in the same manner as provided in section 10-28(a)(1) below. It shall be a violation of this Code to provide false certification under this article.

Response: The fire hydrant will meet all of the PWD and NFPA standards. The Owner will provide certification of meeting these standards.

10-28 (a) *The owner of any property upon which a private fire hydrant is located shall maintain, or arrange to have maintained, any such private fire hydrant in compliance with the maintenance program utilized by the Portland Water District, and with the following standards, at a minimum:*

(1) No less than an annual inspection, annual written statement describing the owner's maintenance program and who is responsible for carrying out that program and annual written certification in regard to fire flow and operability by a person qualified to make such City of Portland Fire Prevention and Protection Code of Ordinances Chapter 10 Sec. 10-28 Rev.11-7-13 10-21 certification, which all shall be sent to the fire chief, with a copy to the Portland Water District;

(2) Painting to match City Hydrants except that the body shall be red, no less than every five years;

(3) Repair of any and all damage to the hydrant, within no less than seventy-two (72) hours of actual notice of such damage.

(b) The authority having jurisdiction shall have the right to enter upon adjacent land with men and machines to maintain hydrants, including, but not limited to, the removal of aquatic vegetation and dredging of the water source to ensure acceptable performance of any hydrant.

Response: The Owner and Contractor will work to maintain the hydrant system in accordance with the PWD's program and standards.

10-29 (a) The owner of property upon which a private fire hydrant is located shall be responsible for ensuring that said hydrant is accessible for use by the fire department at all times.

(b) Accessible for use shall mean and include:

(1) That no later than March 31, 2001, the owner provides an emergency access lane from a public right-of-way to the hydrant, which access lane meets the standards under articles IV and V of chapter 14 of this Code and the "Section IV: Public Safety Standards" of the Technical and Design Standards as adopted by the Portland Planning Board; a map identifying the location of said lane shall be provided to the fire chief upon request;

(2) That the owner maintains and repairs the emergency access lane required hereunder, which maintenance and repair shall include snow and ice removal, removal of obstruction and encumbrances, including but not limited to debris, junked vehicles and other refuse, so that the emergency access lane shall remain reasonably passable for firefighting and preventive apparatus and vehicles and other public emergency vehicles of the city;

(3) That the owner removes snow from the emergency access lane so that at no time shall the

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snow accumulate to an average depth in excess of four (4) inches and shall also remove snow f the lane of a depth of less than four (4) inches if subsequent rain, hail or temperatures result in the snow on the lane becoming so frozen as to render the lane impassable by such firefighting and public emergency vehicles; and

(4) That the owner removes snow in accordance with the Standard for Hydrant Snow Removal of the Portland Fire Department, which shall include removal of snow for no less than forty-eight (48) inches from around the hydrant in all directions, with a minimum forty-eight-inch pathway to the open street or accessway.

(c) In addition to any other remedies provided herein, if the owner shall fail to remove such nonfrozen snow accumulating in excess of four (4) inches in depth within twenty-four (24) hours after the cessation of the storm creating such snow, or if the owner shall fail to remove such ice within twenty-four (24) hours after ice has accumulated or formed to the state as to render the emergency access lane impassable for said purposes, or if the owner shall fail to remove said obstructions and encumbrances on the emergency access lane (that are not the result of precipitation) which render the emergency access lane impassable for said purposes within twenty-four (24) hours after such obstructions and encumbrances arise, then the city shall have the right, but not the obligation, to enter upon the emergency access lane and adjacent land as necessary with men and machines in order to plow and clear, or cause to be plowed and cleared, such snow and ice and to remove said obstructions and encumbrances from the emergency access lane and bill the owner for the expense of the same. The city shall submit its itemized bill for such expenses to the owner which the owner shall pay to the city within sixty (60) days of receipt. The expenses billed to the owner shall include the time spent for travel to and from the property.

(d) Nothing herein is intended, nor shall it be construed to modify, amend or otherwise change any requirement to enter into an emergency access lane agreement pursuant to articles IV or V of chapter 14 of this Code and the standards adopted by the Portland Planning Board nor to modify, amend or otherwise change the requirements of any such executed emergency access lane agreement.

Response: The Owner will ensure that the hydrant is accessible at all times and that all provisions of section 10-29 are met.

10-30 This article may be enforced in any manner provided in section 10-25, including without limitation, the provision for emergency entrance onto any property.

Response: The Owner is aware of the enforcement provisions set forth in Section 10-25 and their application to the project and the maintenance of fire protection infrastructure.

10-31 The fire chief may promulgate all reasonable rules and regulations to carry out the purposes and provisions hereof. Such rules and regulations shall be in writing and shall take effect no less than thirty (30) days following the date of issuance.

Response: The Owner is aware of the rules and regulations that the fire chief may carry out.

<u>City of Portland Fire Department Rules and Regulations</u>

2.5 Private Main & Hydrant Maintenance. All private fire mains and hydrants shall be maintained in accordance with NFPA 25 and documentation provided to the Fire Department annually on the Fire

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Department's approved forms.

Response: The private hydrant and service line will be maintained in accordance with NFPA 25. Documentation will be provided annually on the approved forms.

2.5.1. The Test and Maintenance Report – Private Fire Hydrant shall be completed and submitted as a pdf annually in the month of July.

Response: The owner will work to complete this report annually in July.

2.5.2. An up to date plot plan showing location of private mains, their appurtenances, and hydrants shall be provided to the Fire Department. In addition to PIV, and OS&Y valves, hydrants shall be numbered on the map to correspond with the number to be painted on the hydrant or marked on the valve and the inspection report paperwork.

Response: The owner will work to provide the Department with this information.

2.5.3. All valves, including check valves, must be inspected for correct operation within the past 5 years. Lack of documentation will be considered evidence of not being inspected.

Response: The owner will ensure inspection of valves every 5 years at a minimum.

2.6.1. Required Fire Flow. Required fire flow as determined by NFPA 1 shall be developed through approved fire hydrants. Minimum hydrant flow shall be 1,000 GPM unless approved by the Fire Prevention Bureau.

Response: The fire hydrant will have a minimum flow of 1,000 GPM.

2.7.2 Hydrant Locations. Hydrant spacing shall be as determined by Annex I of NFPA 1, Fire Code and the City of Portland Technical Manual. Private fire hydrant shall not be located within 40' of the structure being protected without prior approval of the Fire Prevention Bureau.

Response: The fire hydrant will not be located within 40' of any of the structures it will be protecting.

3.6. Gates. Manual gates shall utilize Knox Padlocks for access. Electric gates shall utilize Knox Key Switch part number 3502; or where authorized by the Portland Fire Department a Click2Enter gate access system may be approved.

Response: The site has been designed to promote safe and inviting public access. An access gate and security fence will be installed just past the main office. This gate will be controlled by automatic card readers and access cards that each customer will have upon renting a storage unit. These card readers will be built with Click2Enter technology in which emergency vehicles and personnel will be able to enter gated area using a radio transceiver.

3.7. Maintenance Requirements. Installation, maintenance and repair of Fire Department Access Equipment is the responsibility of the owner.

Response: The access roads and gates will be maintained and ensured that they are functioning properly.