WRIGHT-PIERCE
Engineering a Better Environment

MEMORANDUM

TO:	Helen Donaldson, Senior Planner	**DATE:**	7/2/2018
FROM:	Michael Guethle, PE; Ryan Wingard, PE	**PROJECT NO.:**	13982B
SUBJECT:	St. John St. - 222; MMC Parking Garage (PL-000207-2018)		

Wright-Pierce has reviewed the Level III Site Plan Application information provided for the Employee Parking Garage redevelopment proposed at 222 St. John Street. The project will include redeveloping an existing parking lot into a nine-level parking garage with approximately 2,400 parking spaces; redeveloping another existing parking surface to provide a pedestrian access and vehicle access to levels 1-8 of the building; and redeveloping a third parking surface to provide 52 additional spaces of surface parking. Off-site improvements to St. John Street and D Street are also included in the proposed work. The work will reduce the total impervious surface square footage on the property by 14,506 SF.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, dated (most recent) June 22, 2018.
- Engineering Permitting Plans, dated (most recent) June 25, 2018.
- Construction Management Plan, dated June 22, 2018.

Comments:

1) Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)
    a. Basic Standard: Project Plans and Application should be provided to address erosion and sedimentation requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with MaineDEP Chapter 500,

Appendix A, B, and C. The applicant has provided information that the project will be subject to the Basic Standard. The applicant has provided:

i. An Erosion and Sedimentation Control Plan in Section 12 of the application
ii. Inspection and Maintenance information in Section 12 of the application
iii. Erosion and Sedimentation Control Details and Notes on Sheet C-200
iv. Location of Erosion and Sedimentation Control best practices were observed on the Demolition Plan.

The proposed project meets the Basic Standard.

b. General Standard: The applicant has provided information regarding the size and scope of the project indicating that the project is subject to the Redevelopment Standard within the City of Portland, which is more stringent than the Chapter 500 requirements for redevelopment. The City requirements indicate that greater than 50% of the proposed impervious surfaces must receive stormwater quality treatment pursuant to the MaineDEP Chapter 500 requirements. The applicant has provided information that 85% of the facility impervious surfaces are conveyed to a Jellyfish Filter, a proprietary unit from Contech. The applicant shall clarify the following and provide responses:

i. The HydroCAD Subcatchments report a total drainage area of 157,512 SF conveyed to the stormwater treatment unit. These values match the values reported in Table 12-1, but differ slightly from the calculations provided on Section 12, Page 13. The correct tributary area and required treatment volume to the proprietary unit shall be confirmed by the applicant.
ii. The MaineDEP approval letter dated January 21, 2015 for the Jellyfish Filter require manufacturer approval for each design, as noted in item 7 of this letter (page 14 of Section 12). This letter shall be provided as part of the application.
iii. The applicant will be required to inspect, maintain, and report on the filter in accordance with the Chapter 32 stormwater requirements. The applicant

has provided inspection, maintenance, and housekeeping information in Section 12 of the application. A stormwater maintenance agreement is required for the stormwater treatment units.

c. Flooding Standard: The applicant has provided information indicating that the total amount of impervious surfaces at the facility is being decreased. For this and additional supporting information provided in the application, the applicant is not required to meet the Flooding Standard of Chapter 500.

2) Connection to Existing System:
   a. The existing facility currently discharges to an 18" private storm drain. The proposed condition includes retaining surface runoff in order to allow runoff from a 25-year, 24-hour rain event to pass an 18" pipe. Flows from the East Stormdrain are proposed to connect to the existing 30" pipe in St. John Street. The applicant shall provide the following:
      i. The applicant has indicated that the existing 18" pipe can convey 20.81 CFS at 95% capacity. A calculation was not provided in Section 12 of the application, and this value was not observed in the HydroCAD output. The applicant shall provide a calculation for this flow rate. Once provided, this is anticipated to confirm that the project is in conformance with City of Portland Code of Ordinances section 14-526 (b) 3.a subsection ii regarding downstream private drainage.
      ii. The applicant has indicated that conversations with the City have discussed that the 30" storm drain in St. John Street has capacity to receive additional flows from the project. The applicant shall provide written or e-mail confirmation from the Department of Public Works that this work is being completed in accordance with City of Portland Code of Ordinances section 14-526 (b) 3.a, subsection iii and iv.

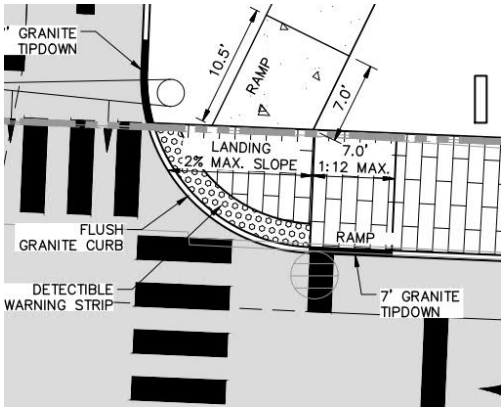
3) Proposed Drainage Design
    a. More information is needed to confirm that the pipe capacity and inlet capacity is adequate for each structure and pipe length.
    b. Additional data/detailing is needed to confirm that the R-Tank system and Jellyfish filter are designed in consonance with the HydroCAD model.
    c. CB21 on sheet C-103 calls out a 15" pipe out of the structure, but the existing pipe between CB21 and the existing CB is referenced as 18". Please confirm the existing pipe is indeed an 18" pipe.
    d. Pipe 22 has a 0.0% slope. Confirm this is the intended design or if the pipe should be sloped to the JellyFish Filter.
    e. CB12 has 1.37 feet of drop between the in and out inverts. Confirm this is the intended design or if the standard 0.1-foot drop is more appropriate.
    f. The areas presented in the Water Quality Volume for Jellyfish Filter System calculations do not match those presented in Table 12-1 (see comment 1.b.i of this response). Please remedy.
    g. The HydroCAD output files reference 24-hour design rainfall amounts of 3.1", 4.6" and 5.8" for the 2-, 10-, and 25-year events, respectively. Please provide the source of the rainfall amounts for review.
4) Capacity to Serve:
    a. The applicant has sent Capacity to Serve Letters to Utilities. Responses to these letters are required parts of the application, and the applicant has indicated that they will be provided to the City as these letters are received.
5) Parking Garage Drainage:
    a. Additional information is requested on where floor drains from the parking garage convey surface flows. Please confirm that surface flows from the parking garage's interior levels are conveyed into the oil/water separator on Sheet C-104, and then ultimately into the sanitary sewer. Please also provide a detail for the oil/water separator, or indicate which sheet this detail may be located on.

6) StormBasin Facility:
    a. The StormBasin facility will provide a level of hydrocarbon removal, and removal of other pollutants from surfaces that convey surface drainage towards St. John Stret. It is understood that this proprietary unit is currently not accepted as a stormwater treatment method under MaineDEP Chapter 500, but the applicant has provided information that Jellyfish Filter contains ample treatment volume to meet the City's Redevelopment Standard.
7) Soils:
    a. Web Soil Survey information was provided in Section 12 of the application. The information in the web soil survey was in consonance with the soil hydraulic ratings for the HydroCAD report.
    b. Section 15 of the application notes that soils were observed to have potential ash substances, and that urban infill may be likely due to the location of the project. The applicant has noted in Section 15 that a soil management plan will be provided. Final site grading will be reviewed after this soil management plan is available.
8) Snow Storage:
    a. The applicant has noted in Section 17 of the application that snow storage will be completed through means of removal and off-site storage. Snow melters will be located on the open-deck roof to the garage. It is understood that the exposed portion of the roof conveys flows to the Jellyfish Filter.
9) Details have been provided confirming the following storm drain infrastructure items that are in conformance with the City Standard Details and Technical Manual:
    a. Catch basin detail (3' sump)
    b. Manhole Frame, Cover
    c. Catch Basin Frame Cover
    d. Manhole, Manhole Steps
    e. Casco Trap

10) The following notes are provided for certain details:

a. Sheet 17: St John Street and D Street Intersection

i. Catch Basin at intersection of D Street and St. John St. is located in a transition ramp next to flat curb (image to right). Applicant shall provide spot grades or detail confirming how this catch basin grate shall be constructed with the adjacent tipdown curbing, and within a bicycle lane.



b. Sheet 17: Checker Block Concrete Grid Detail:

i. Discussion from reviewers indicated concern over winter maintenance and proposed use of this material. From review of sheet C-106, it is apparent that the Checker Block system is anticipated to be used for fire access and maintenance access, and not for stormwater treatment. It is suggested that applicant confirm the use of this material and the entry curb is confirmed as acceptable with the City Fire Department. The applicant shall submit maintenance and housekeeping information on the Checker Block system to indicate how the system will be maintained in both the summer and snow/salt conditions.