



CITY OF MELROSE

DEPARTMENT OF PUBLIC WORKS
Administration & Engineering–Water–Sewer–Facilities
Park & Forestry–Highway–Sanitation–Cemetery–Fleet

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MEMORANDUM

To: Denise Gaffey, City Planner & Director of Community Development

CC: Emma Schnur, Senior Planner, OPCD
Richard Stinson, Interim Director of Public Works
Jason Coy, Deputy City Engineer

From: Elena Proakis Ellis, City Engineer/Assistant DPW Director

Date: February 15, 2020

**Re: Site Plan Review and Affordable Housing Incentive Program Special Permit Applications:
(Case 19-006) – 99 Washington Street**

This memorandum summarizes comments from the Department of Public Works on the plans, drawings, and reports received to date for the subject project, as well as meetings with the project proponents and their engineers, architects, and counsel. The following issues, concerns, and considerations have been identified during the course of our review:

Right-of-way and Traffic Comments

The documentation reviewed for these comments includes the December 10, 2019 Traffic Impact Study by Howard Stein Hudson and the Traffic Management Plan and Construction Management Plan submitted with the application.

1. The methodology used in the Traffic Impact Study was deemed appropriate, including the specific study areas (eight nearby intersections) and the dates and durations of the traffic counts.
2. Washington Street was ranked in the City's most recent roadway condition assessment as having "good/excellent" pavement condition. Any work which requires disruption to any portion of the right-of-way on Washington Street, including sidewalks, driveway aprons, curbing, roadway, street lights, pavement markings, and all other appurtenances, shall be restored to their pre-construction condition or better. Roadway restoration will require curb-to-curb paving of any disturbed areas, including milling and inlaying to repair those areas.
3. Snow plowing, storage, and removal are the responsibility of the property owner(s). Snow is not permitted to be moved into the public way.

4. All work within or impacting the roadway must be performed in coordination with the Engineering Division and the Melrose Police Department, and any police and fire details required as part of the project are the responsibility of the applicant.
5. Construction vehicles should access the site using main roads whenever feasible and avoid highly residential areas.
6. The traffic impact study indicates an intent to provide interior storage for 30 bikes and exterior storage for an additional 5 bikes. The Engineering Division encourages and applauds this approach. While these values already exceed the requirements, any additional storage that could be provided would be beneficial.
7. The Traffic Impact Study made reference to bike share services such as Lime Bike. The City understands that Lime Bike will likely no longer be in Melrose. The applicant should consider any ways to have an onsite bike-share system for residents or others in the neighborhood.
8. The Engineering Division agrees that new residents should be provided with a one month MBTA pass to encourage the use of transit. The Division also supports the installation of real-time monitoring of the nearby MBTA trains and buses.
9. The project proponent should consider having more than one space for a shared vehicle (e.g., Zipcar).
10. The project should incorporate multiple EV charging stations within the parking lot. The percentage of EV drivers is increasing exponentially, and it would stand to reason that those interested in transit-oriented development would also be a similar demographic to those owning electric vehicles.
11. The proposed driveways are shared between the subject property and the adjacent properties. An agreement should be required to be implemented and recorded with the deed for each property establishing ownership and responsibilities within the shared driveways. Similarly, any shared utilities such as drainage should include a written and recorded agreement addressing long term operations and maintenance.
12. The Traffic Impact Study shows no substantial changes to the Level of Service (LOS) of any of the intersections studied in the build-condition as compared to the future no-build condition. The assumptions included in the traffic analysis appear to be reasonable to account for future traffic volumes, both from the project site and from other growth. If anything, the number of anticipated daily transit riders seems low, while net vehicle trips appear to be reasonably assumed.
13. The proponent should investigate the possibility for providing bus stop improvements in conjunction with the project, including possible benches and/or shelters. This may entail recommending shifting of one or more bus stops.
14. The proponent should investigate whether there are opportunities to provide connected walking paths through the site in conjunction with the other neighboring developments, to encourage residents or neighbors to get exercise by walking on paths through the complex. Wayfinding of an exercise route along the paths could also be beneficial if long enough routes could be established in a reasonable and desirable manner.

15. The Traffic Impact Study shows 140 pedestrians currently passing by the site under existing conditions during the combined two peak hours of the day. This highlights the need to accommodate pedestrian access through all phases of construction and to ensure final restoration of sidewalks is satisfactorily performed. All sidewalk repairs shall be consistent with City standards for concrete sidewalks.
16. The Traffic Impact Study also shows 30 to 40 bicycle trips during the two peak hours combined. Safe bicycle access must also be provided during all construction phases.
17. The type of lighting provided should be LED. Specifications of the proposed lighting should be submitted and approved by the Engineering Division, in addition to any other approval requirements, prior to purchase and installation.
18. The Traffic Impact Analysis shows that the highest Melrose crash location of the intersections analyzed was at the corner of Pleasant Street, Stone Place, and the driveway to 99 Washington currently shown as having two-way traffic. Given that traffic volumes will increase at the intersection, albeit by only a small volume, the site circulation should be reconsidered to determine if the driveway could be changed to an entrance only. If this is not feasible, the applicant should possibly provide intersection reconfiguration to improve safety.
19. No parking of construction vehicles should be allowed within the City's right-of-way. While onsite parking is supposed to be limited during construction to encourage the use of transit, should parking spill out onto Washington Street due to these restrictions, they should be loosened to ensure that on-street parking of construction vehicles does not occur.
20. The Construction Management Plan notes that idling vehicles will not be allowed. This comment simply reinforces the importance of meeting this requirement to protect the environment and limit unnecessary construction noise.
21. Trash pickup is described in the application as likely to be weekly. Trash pickup should be required to be weekly at a minimum. Furthermore, the trash collection area appears to be small to also encompass recycling. The applicant should be required to have on-site recycling of various types, along with a service for collection and hauling of recycling.
22. The City supports the closing in of the unnecessary curb cuts totaling approximately 90 linear feet of frontage, to improve walkability and aesthetics. The City must be present to oversee this work.
23. The proposed parking space widths are 8.5 feet rather than the required 9 feet. The Engineering Division supports the use of 8.5-foot wide parking spaces, as they have proven to be adequate in other locations. Also, the reduction in width may allow for more green space on the property, which is encouraged.
24. The City promotes the planting of as many new trees as feasible as part of this project. While the sidewalk width may not be adequate, if there are areas where street trees could be planted, the City would support the planting of trees in appropriate locations within the right-of-way. The Engineering Division also promotes the protection of mature trees within the site during construction.

Sewer System Comments

These comments are based on review of the revised Sewer Impact Analysis, dated February 7, 2020.

25. The Engineering Division is pleased with the detailed analysis provided by Allen & Major in the Sewer Impact Analysis. The analysis uses Title 5 flows with an additional peaking factor of 5.6 to establish peak flows within the existing and proposed sewer systems. The analysis also assumes a Manning's Equation "n" value of 0.013 for all clay pipes and 0.010 for all newer PVC pipes. The existing flow conditions are compared with the proposed conditions for each pipe reach downstream of the proposed project, as well as the service lateral from 99 Washington Street. The methodology and flow values used for the analysis were reviewed and are appropriate.
26. The Engineering Division reviewed the impact analysis compared to a best practice value of sewer peak design flows not exceeding 60% full in any given pipe reach. This is an appropriate value to use, especially given that any extraneous flows (infiltration and inflow) would be above and beyond the peak sanitary flow volumes. Under existing conditions, the analysis shows that the only pipe approaching 60% full is Pipe Reach #9, immediately upstream of the MWRA sewer, downstream of Stone Place. This pipe reach was replaced as part of the Stone Place project, along with Pipe Reaches #4, #5, #6, #7, and #8, with new 12-inch PVC pipe. Under proposed conditions, using the conservative methodology applied under this analysis, Pipe Reach #9 is projected to be 65% full and Pipe Reach #3 is 60% full. Pipe Reach #3 is an 8-inch clay sewer main.
27. The analysis presented includes many conservative assumptions. While the peaking factors used are appropriate, both the Title 5 calculation for daily flows and the peaking factor of 5.6 for peak instantaneous flows add a level of conservatism to the analysis. Based on the results, further analysis is required on Pipe Reaches #3 and #9 to confirm future peak flow conditions will be less than 60% full. The Engineering Division recommends that the project proponent perform flow metering in two locations – the downstream end of Pipe Reach #8 and the downstream end of Pipe Reach #3. If this metering can show springtime peak flows lower than the existing flow rates calculated in the conservative analysis, those flow rates could be used instead to establish baseline conditions.
28. The worst case scenario is that the City would require Pipe Reaches #3 and #9 to be replaced. If this was done, Pipe Reach #3 would need to be upsized to either 10" or 12" pipe, and Pipe Reach #9 would need to be upsized to at least 15" pipe. The final sizes would be based on achieving a peak flow of less than 60% of the pipe volume. Please note that Pipe Reach #9 does not meet the minimum recommended slope for a 12" pipe. This is suspected to be dictated by the connection to the MWRA pipeline. In order to meet minimum slopes, a 21" pipe would be required; however, this is not recommended at this time and would depend on the additional data noted above. The lack of meeting minimum slope is not anticipated to be problematic provided that peak flow velocities are sufficient to move solids and prevent settling.
29. The applicant should perform a CCTV mainline inspection of the sewer mains in Washington Street downstream of the project (Pipe Reaches #2 and #3), to ensure that their condition is adequate for tying in the additional flow. Pipe Reaches #2 and #3 are believed to be 10-inch and 8-inch vitrified clay pipe, respectively. The condition of the pipes may also result in a recommendation to either replace or line these pipe reaches. The City plans to perform a CCTV inspection of the pipe reaches in

Washington Street upstream of the connection for 99 Washington Street, in conjunction with the work currently underway to rehabilitate sewers on Brazil Street (lining and/or replacement).

30. Prior to the issuance of a building permit, the applicant will be required to pay a one-time infiltration/inflow (I/I) fund contribution for any increase in proposed sewer flows compared to existing conditions. The current cost for this fee is \$6.89 per gallon-per-day (gpd), calculated using Title 5 flows to determine the pre- and post-construction conditions. Assessor's Department records and floor plans will be used by the Engineering Division to make the final determination regarding flows before and after construction. Based on the preliminary estimate provided by Allen & Major Associates of an increase in flows of 14,582 gpd, the fee would be \$100,470. Final confirmation of the fee will occur prior to the issuance of the building permit.
31. Depending on the outcome of the flow metering noted above, the City may opt to spend the I/I mitigation fee, or some portion thereof, on I/I reduction within the sewer subarea in which the project is located (Subarea 9A), beyond the sewer reaches to be potentially addressed by the developer. This would help to minimize future peak flows in this neighborhood. I/I in this neighborhood is not anticipated to be significant, given that much of the pipe within the subarea has recently been replaced during the Stone Place and other development projects; however, the combination of CCTV inspections and flow metering data will allow the City to more accurately make this determination.

Drainage System Comments

These comments are based on our review of the Drainage Summary Letter report for the proposed project, dated November 25, 2019. The Engineering Division is pleased with the analysis provided by Allen & Major in the Drainage Summary Letter. It would be beneficial if the following comments could be addressed prior to approval of the project. If this is not feasible, the Engineering Division would require the opportunity to review updated documents prior to final approval of this Division's permits for the project.

32. The calculations included in the Drainage Summary Letter present an overall increase in impervious area on site from 111,298 sf to 116,095 sf (+4,797 sf). This is due to the fact that the porous pavement proposed to be added does not count as pervious area, while the existing gravel parking lot does. Despite this increase, there is an overall decrease in peak rates of runoff.
33. The City strongly supports the use of porous pavement, as included in the design, and notes the importance of routine maintenance to maintain its effectiveness. The applicant's engineers have indicated that the porous pavement will meet University of New Hampshire standards.
34. The Drainage Summary Letter does not specifically address some of the requirements outlined in the Site Plan Review section of the Zoning Code pertaining to stormwater. Specifically, those requirements state that, to the extent practicable, best management practices "shall be sized to capture, retain, and percolate to ground all runoff from impermeable surfaces generated by the five-year, twenty-four hour storm event. Preferred BMPs shall include, but not be limited to, constructed wetlands, pocket wetlands, rain gardens, vegetated swales, retention/detention ponds, and subsurface leaching systems." Furthermore, the code references other low-impact design elements such as "porous pavements, bioretention cells, infiltration trenches, rainwater collection cisterns, and other design methods that maximize the use of landscaped areas for stormwater control and

promote the reuse of runoff.” The applicant should provide a written statement indicating whether the project meets these requirements and, if these requirements are not met, and explanation should be provided as to why and how they were addressed “to the extent practicable.”

35. Please provide a checklist and backup data showing that the project is in compliance with all applicable MassDEP Stormwater Handbook standards. Due to the increase in impervious area, this project will be classified as a new development. Therefore, the project is required to fully meet the applicable stormwater management standards.
36. Please provide additional information and any backup data on the downstream structures. It is difficult to fully understand the stormwater quality improvements that will occur prior to discharge without a better understanding of the offsite structures into which the site drainage will discharge. Furthermore, as noted above, agreements should be put into place for any commonly owned drainage features with adjacent properties. These should address ownership, maintenance, and replacement responsibilities, both now and in the future.
37. Please show connections of all drainage structures (existing and proposed) within the site and on the abutting properties. It is unclear where some DMHs and CBs discharge and flow to/from. Even though there is an overall decrease in peak rates of runoff to SP-1, there are ultimately two offsite discharge points. The DMH discharge point to the southwest appears to have a decrease in peak rates of runoff while the DMH discharge point to the southeast appears to have an increase. The cumulative peak rates of runoff shows an overall decrease, however, we want to make sure the southwest point will be able to convey the increase stated above.
38. Please add flow direction arrows to the watershed maps.
39. Please add a link for Study Point SP-2 in the existing conditions model.
40. Please add all at-grade utility structures to the Layout and Materials plan.
41. Please confirm there are no constructability issues of DM-06 with new 12” roof drain and existing 12” drain from Ex CB-A. There shall be 12” minimum of concrete between the OD of each inlet pipe.
42. The proposed watershed model labels DM-04 as DM-05. Please clarify.
43. Please clarify what the 44.77 flood elevation is for structure DMH-05 in the model.
44. Please replace CB-01 with a standard 4-diameter concrete catch basin structure.
45. The parking lot drainage on the eastern side of the site appears to be very flat (less than 0.5% slope), which may cause ponding in rain events. Please revise or clarify runoff patterns in this area. If possible, please adjust all paved areas to 1% minimum slopes. It is advised to consider depressed rain gardens with overflows in the landscape island(s) to collect and treat runoff in this area. This may be a good option to increase the parking lot slope while not requiring the lowering of the existing CB rim. This would also provide additional compliance with the Site Plan Review stormwater requirements.

46. An operations and maintenance plan for all drainage system components must be submitted meeting all manufacturers' recommendations. The responsibility for implementation will lie with the property owner(s). If maintenance is not performed, the City reserves the right to perform such maintenance and charge the owners. The requirement for maintenance must be incorporated into any homeowners' agreement if there are ultimately multiple owners in the building.

Water System Comments

These comments are based on the Utilities Plan by Allen and Major dated November 25, 2019.

47. The proposed water service to the building appears to be provided via an existing private 10-inch water main off of the City's main on Washington Street. That applicant should confirm that this main is, and will continue to be, privately owned and maintained.
48. Please note the material and age of the existing private water main. If the main is unlined cast iron, the applicant should consider either replacing or cleaning and cement lining the main. If it is lined cast iron, the condition should be confirmed during excavation for the new taps.
49. The private water main appropriately terminates with a 6" gate valve and a hydrant, which can be used by the property owner to flush the main. The City recommends flushing this main once every other year at a minimum.
50. In a prior discussion with the applicant, the City had been informed that the private water main was looped back into the City's system. This does not appear to be the case based on the drawings. Please clarify if this is the case. If so, the City may require backflow prevention devices on all connections off the main.
51. The fire service appears to presently be tapped off the private main in the rear of the building. This tap is proposed to be reused for both the fire and domestic services to the building. The applicant will be permitted to use this tap for the fire service only. A new domestic tap should be made off of the 10-inch private main, in order to separate the fire and domestic services into two separate lines.
52. The notes indicate that if water and sewer services cannot maintain adequate separation, they should be encased in concrete. The City prefers to have the services sleeved for 10-feet on either side of the area where minimum separation cannot be maintained, rather than encased in concrete, for the ease of future maintenance and repairs. Please update this information in the notes on the Utilities Plan.
53. The applicant will be required to determine the water meter size in conjunction with the Water and Sewer Billing Division. The meter will be required to include the technology required for the City's remote read system. In addition, the applicant could consider submetering within the building if desired. This would, however, require separate plumbing to each unit, which may not be practicable in a building of this size. Furthermore, since the property is proposed to be apartments, the City would only read the master meter and would bill based on that usage.
54. All required backflow prevention devices must be registered for routine inspections with the City's subcontractor, Water Safety Services Inc., in Woburn, MA. The applicant must contact Bob Heitz or

Joe Heitz at Water Safety Services to add this address to the inspection list. He can be reached at 781-932-8787. All initial inspections shall be completed prior to occupancy.

55. Any water used during construction must be metered. No water use is allowed off of a hydrant, unless a meter has been installed on the hydrant and the City takes both initial and final reads. If necessary, this can be coordinated through the Water and Sewer Billing Division at 781-979-4175.
56. The City must be present to witness all pressure and bacterial tests on new water infrastructure. This can be scheduled through the Engineering Division.

Other Utility Comments

These comments are also based on the Utilities Plan by Allen and Major dated November 25, 2019.

57. The City concurs with all notes on the Utilities Plan unless otherwise noted herein.
58. It appears that a new electrical transformer is proposed to be installed in the front of the building, where the existing transformer is presently located. Adequate screening should be provided to make this location aesthetically acceptable to the neighboring properties. The applicant should work with National Grid as early as possible in the process to ensure adequate capacity exists within their system and to identify the needs to feed the new transformer.
59. Any new underground electrical utilities proposed to be buried within the right-of-way will require a Grant of Location from the Melrose City Council. This would be coordinated between National Grid and the City Clerk's office.
60. Gas utility upgrades do not appear to be shown on the plans. Please indicate whether the gas service will require replacement.
61. Any abandoned water and sewer utility connections to the City's mains will be required to be cut and capped at the respective mains.

General Comments

62. All work within the right-of-way, and any utility work, including that on private property, will require permits from the Engineering Division. These permits can be obtained by bonded and insured contractors by contacting Rick Cantone at 781-979-4172. Permit requirements will include notification by the applicant to nearby properties in advance of any work in the roadway, in addition to other provisions as deemed appropriate by the Engineering Division.
63. Any work in the vicinity of MWRA water or sewer utilities will require 8(m) permits from the MWRA. These would be obtained by the applicant or their representatives.
64. Please provide copies of any environmental remediation reports either for recent testing within the building or for remediation required during the demolition of the building interior.

65. Given the scale of the project, the project proponent should have a Resident Project Representative onsite during all utility construction or rehabilitation, as well as during paving and placement of porous pavement. Furthermore, the City requests that evidence of shop drawing reviews by the Engineer be provided to the City for all materials used for the proposed utility and paving work, including elements of the water, sewer, and drainage systems.

66. As-built plans will be required at the conclusion of the project, submitted to the Engineering Division for our files, including the final locations, materials, and sizes of all utilities and other features as deemed necessary by the City. Any comments on the draft as-built plans shall be addressed and the plans resubmitted if requested by the Engineering Division.