

for the last year. If not already completed, the ASTs should be appropriately cleaned and disposed of consistent with local, state and federal regulations.

- The 2020 Phase I Report identified 8-10 55-gallon drums located at the vacant property within the interior and exterior of the boiler building. The drums reportedly contained waste oil and hydraulic fluid. HW recommends that the Applicant have its environmental consultant verify that the drums have not released waste oil and/or hydraulic fluid to the environment while sitting idle for the last year. The drums should also be appropriately manifested and disposed of off-site by a licensed waste disposal company.
- The 2020 Phase I Report does not provide sufficient details on the three USTs removed in 1998. At a minimum, the Applicant's environmental consultant should include details on field screening and laboratory results to verify that the three USTs were not the source of a release and that they were removed and disposed of consistent with local, state, and federal regulations.

The 2020 Phase I Report does not include sufficient details on the UST identified during site reconnaissance. The UST has been abandoned for more than one year and it is unclear if the UST was appropriately abandoned in place, has been tested for tightness and if it still contains fuel oil. At a minimum, the Applicant's environmental consultant should verify that this UST was closed consistent with state, local, and federal regulations and provide a discussion on field screening and laboratory results to verify that the USTs were not the source of a release.

Site Visit

Janet Bernardo from HW and Wayne Keefner of Design Consultants Inc. (DCI) walked around the site on January 22, 2021. The proposed stormwater management was discussed, and the locations reviewed as well as the connections to the municipal system.

Stormwater Management Review

HW has reviewed the proposed stormwater management design as per the standards of the Massachusetts Stormwater Handbook (MSH) dated February 2008. This site is considered "redevelopment" under the Massachusetts Department of Environmental Protection (MassDEP) standards and therefore is subject to the MassDEP Stormwater Standards 2 through 7 to the maximum extent practicable. Below are comments relating to the standards as presented in the MSH.

1. *Standard 1 states that no new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

- a. The Applicant has reduced impervious area, reduced the peak rate and volume of discharge to the municipal system and does not appear to be causing erosion in waters of the Commonwealth.

The Applicant complies with Standard 1.

2. *Standard 2 requires that post-development runoff does not exceed pre-development runoff off-site.*

- a. HW recommends that the Applicant clarify the proposed and existing grading in a

number of locations around the site, as noted below:

- i) At the northwest corner along Southwick Road there is an existing catch basin (CB) with a rim of 86.76. It is not clear if this catch basin will be removed, the proposed 88-foot contour crosses through what appears to be elevation 87. During our site visit DCI confirmed this catch basin will be removed. HW recommends that the additional notes are added to the plan.
 - ii) At the northwest corner on Ellsworth Road there is an existing CB with a rim of 74.33 which does not seem accurate.
 - iii) The proposed 87-foot contour along Southwick Road is lost in the property line and it is not clear how it ties back to the existing contours.
 - iv) Many of the existing contours are difficult to follow. Additional labels would be useful.
 - v) The spot grade at the proposed wall near the garage (TW=80/BW=78) may not be labeled accurately.
- b. HW recommends that the Applicant clarify the edges of pavement for Southwick Road under existing and proposed conditions.
 - c. HW recommends that the Applicant clarify how drainage in Southwick Road will be managed post construction.
 - d. The Applicant has proposed two subsurface infiltration systems labeled as Infiltration System 1 and Infiltration System 2. The HydroCAD modeling calculations indicate that these systems should each include 42 Cultec R-330XLD chambers. The Grading and Drainage Plan, C-102, revised January 12, 2021, illustrate these two systems accurately. However the detail on Sheet C-502 should also be revised.
 - e. HW has reviewed the catchment areas, curve numbers, surface treatment, times of concentration, and depths of precipitation utilized by the Applicant in the HydroCAD model and finds the values to be acceptable.
 - f. The proposed closed drainage system connects into the closed drainage system within Southwick Road. HW understands that this is a private road and recommends that the Applicant confirm it has permission to connect into this existing system.
 - g. DMH 2 may have too many inlet pipes for a 4-foot diameter structure. HW recommends that the Applicant review DMH 2 for constructability.
3. *Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.*
 - a. The Applicant has noted that the proposed site contains sandy loam with an associated infiltration rate of 1.02 in/hr. HW finds this value to be acceptable.
 - b. The bottom of each of the infiltration systems is greater than 2 feet but less than 4 feet from the estimated seasonal high ground water (ESHGW). HW recommends that the Applicant provide a mounding analysis per Volume 3, Chapter 1, page 28 of the MSH.
 4. *Standard 4 requires that the stormwater system be designed to remove 80% Total Suspended Solids (TSS) and to treat 0.5-inch of volume from the impervious area for water quality.*
 - a. The Applicant has provided several catch basins in the proposed parking areas, catch basins have a TSS removal rate of 25% and are an acceptable stormwater practice. HW

recommends that the Applicant investigate measures to provide additional TSS removal. Volume 1, Chapter 1, page 21 of the MSH states, "*New stormwater controls (retrofitted or expanded) must be incorporated into the design and result in a reduction in annual stormwater pollutant loads from the site. Proponents of redevelopment projects shall make full use of all opportunities for controlling the sources of pollution and to incorporate environmentally sensitive site design and low impact development techniques.*" HW recommends that the Applicant consider adding water quality units at DMH 2 and DMH 5.

- b. As a redevelopment site the proposed project is required to treat the water quality volume to the maximum extent practicable. The Applicant is infiltrating the roof runoff to meet the recharge criteria. However, it is not infiltrating any of the parking lot runoff. HW recommends that the Applicant justify why it is not able to infiltrate any of the parking lot runoff.
5. *Standard 5 is related to projects with a Land Use of Higher Potential Pollutant Loads (LUHPPL).*
 - a. The site is not considered a LUHPPL, therefore Standard 5 is not applicable.
 6. *Standard 6 is related to projects with stormwater discharging into a critical area, a Zone II or an Interim Wellhead Protection Area of a public water supply.*
 - a. The site is not within a critical area, therefore Standard 6 is not applicable.
 7. *Standard 7 is related to projects considered Redevelopment. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*
 - a. The proposed project as designed will reduce impervious area and therefore is considered redevelopment, the Applicant is required to meet the Stormwater Management Standards to the maximum extent practicable and improve existing conditions. As noted above HW recommends that the Applicant provide additional measures to improve the post development water quality to improve existing conditions.
 8. *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation or other pollutant sources.*

The Applicant has provided an erosion control plan Sheet C-103 with details on Sheet C-501.

- a. HW recommends that the Applicant increase the sump in the catch basin to be a minimum of 4 feet.
- b. HW recommends that the Applicant increase the length of the construction entrances to be a minimum of 50 feet.
- c. HW recommends that the Applicant specify the 18-inch diameter straw wattle.
- d. At the toe of any slopes 3:1 or steeper, HW recommends that the Applicant add a siltation fence to the straw wattle erosion control barrier.
- e. The slope on the northeast corner and southwest edge is proposed to be set at 2:1

which is considered relatively steep. HW recommends that the Applicant consider means to minimize any erosion along these steep slopes.

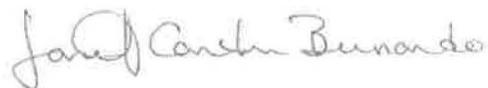
- f. It appears that the slope at the southwest corner is also set at a 2:1 slope, though it is not as high as the east side. HW recommends that the Applicant consider means to minimize erosion along King Street.
 - g. HW recommends that the Applicant note if any trees will be removed or specific trees protected during construction. A tree protection detail should be provided if applicable.
 - h. The proposed development requires disturbance of greater than one acre of land and therefore is required to obtain coverage under the NPDES Construction General Permit issued by EPA and prepare a Stormwater Pollution Prevention Plan (SWPPP). HW recommends that a copy of the SWPPP be provided to the City at least 14 days prior to commencing land disturbance activities.
9. *Standard 9 requires a Long-Term Operation and Maintenance (O & M) Plan be provided.*
- a. The Applicant has provided an O&M Plan. HW recommends that the Applicant provide a simple plan, separate from the design plans that is drawn to scale and labels the location of all stormwater practices associated with the site.
 - b. The Owner / Operator has not been identified at this time. Prior to construction the Operator should be identified.
 - c. Under Section 3. j) it is noted that the operator is to notify the City of any irregularities noted during inspection. HW recommends that the Applicant clarify this reference.
10. *Standard 10 requires an Illicit Discharge Compliance Statement to be provided.*
- a. The Applicant has stated that there are no known or suspected illicit discharges from the project site. HW recommends that a signed Illicit Discharge Compliance Statement be provided to the City prior to the discharge of any stormwater to post-construction best management practices (BMPs).

Conclusions

HW recommends that the Peabody Zoning Board of Appeals require the Applicant to provide a written response to our comments above. Please contact Janet Bernardo at jbernardo@horsleywitten.com or at 857-263-8193 if you have any questions regarding these comments.

Sincerely,

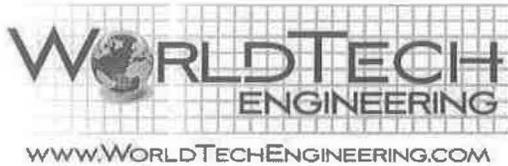
HORSLEY WITTEN GROUP, INC.



Janet Carter Bernardo, P.E.
Senior Project Manager



Bryan Massa, LSP
Senior Scientist



December 23, 2020

Mr. William G. Paulitz, P.E., City Engineer
City of Peabody, Department of Public Services
50 Farm Avenue
Peabody, MA 01960

Reference: Proposed 40B Development – (15 King Street) - Peer Review of Traffic Impact Assessment and Site Plans

Dear Mr. Paulitz:

On behalf of the City of Peabody, WorldTech Engineering Inc. has reviewed the Traffic Impact Assessment (“TIA”) dated December 2019, prepared by Vanasse & Associates, Inc. for the proposed residential development at 15 King Street. Our review focused on the adequacy of the study with regard to industry best practices for analyzing traffic operations, estimating project generated trips and related potential impacts.

In addition, the proposed off-site mitigation measures were reviewed in detail to ensure their effectiveness in accommodating projected future traffic volumes with the development in place, while also fitting with the long-term needs and goals of the City. Of particular concern are the impacts of the project to the abutting residential neighborhood, in terms of increases in traffic volumes and impact to parking within the neighborhood.

Introduction

As indicated in the TIA, the proposed development consists of 133 multi-family housing units, served by 213 parking spaces. The proposed project is estimated to generate an additional 724 vehicle trips on an average weekday, including 46 trips (12 entering, 36 exiting) during the morning peak hour and 59 trips (36 entering and 23 exiting) during the evening peak hour. No data or analyses were provided for weekend conditions.

The multi-family housing consists of 1, 2- and 3-bedroom units, with the majority of units 2-bedroom type. The amount of parking provided is based on a parking ratio of 1.6 spaces per unit rather than the 2.0 spaces per unit required by zoning. Currently the site is occupied by a multi-story former medical building with five driveways along King Street and Southwick Road. The proposed development will be served via a total of two driveways along King Street.

Study Area

The study area in the TIA includes the following intersections:

1. Ellsworth Street at King Street.

2. Lowell Street at King Street and Endicott Street.
3. Ellsworth Street at Southwick Road.
4. Lowell Street at Southwick Road.
5. Ellsworth Street at Emerson Street.
6. Lowell Street at Emerson Street.
7. King Street at West Site Street.
8. King Street at East Site Drive.

The study area is generally sufficient to evaluate the potential impact of the Project on the transportation infrastructure based on the expected trip-distribution pattern for the Project.

Traffic Volumes and Data Collection

Traffic volume data was collected at the study area intersections by means of manual turning movement counts in March of 2019 and vehicle classification counts in 2018. Pedestrian and bicycle data were collected during the peak hours at all intersections in the study area to establish a baseline for these modes of transportation.

There is a relatively large number of vehicles travelling in both directions along Ellsworth Street north and south of King Street, considering the fact that Ellsworth Street is not a thru Street at the northern end. There is also a relatively high volume of westbound left turns from King Street onto southbound Ellsworth Street and the reverse movement, northbound right turns from Ellsworth Street onto eastbound King Street during both peak hours.

There is a discrepancy in the evening peak hour volumes at the King Street/Ellsworth Street intersection and the Ellsworth Street/Southwick intersections. Traffic volumes travelling north leaving the King Street/Ellsworth Street intersection are reported to be 182 vehicles and when they arrive a short distance away along Ellsworth Street, the volume is 75 vehicles. The traffic volume counts should be checked to see if the existing peak hour volumes shown in Figure 3 are accurate.

Crash Data

Motor vehicle crash data was obtained for the study area intersections from MassDOT for the 5- year period 2013-2017. Based on a review of this information, the intersection of Lowell Street at King Street/Endicott Street is listed as an HSIP-Top 200 intersection cluster averaging 13 crashes per year. All of the remaining study area intersections were found to have crash rates which were not considered significant from a safety point of view. We agree with the findings of the analysis. The mitigation for the intersection of Lowell Street with King Street/Endicott Street will be discussed in a later section.

Future Conditions – Specific Development by Others

Traffic volumes within the study area were projected to 2026, which represents a 7-year planning horizon from the existing conditions base year (2019) that was presented in the TIA. The future No Build volume projections were developed by applying a background traffic growth rate and a seasonal adjustment to the 2019 baseline traffic volumes. No additional traffic was added to the No-Build traffic network to account for any known specific development projects by others.

The No-Build traffic network includes a conservative 1.0 percent annual compounded growth rate, plus additional traffic from all major approved developments. No specific development projects were assumed to contribute traffic to the No-Build traffic volume networks. We believe the future No-Build growth factors are appropriate for this study and with the current trend in COVID-19 reductions in travel, result in a conservative estimate.

Project-Generated Traffic

The assumptions used to estimate weekday daily and peak hour traffic volumes generated by the proposed development follow ITE standards and industry best practices. ITE Land Use Code #221, Multi-family Housing (Mid-Rise) in General Urban/ Suburban setting were used to estimate the development-related traffic volumes. No credit was taken for a transit trips adjustment.

The project is predicted to generate 734 vehicle trips on an average weekday and 48 vehicle trips in the morning peak hour and 59 in the afternoon peak hour. This represents approximately a 10% increase in the peak hour traffic on King Street using the assumed trip distribution patterns.

Trip Distribution and Assignment

Traffic volumes associated with the Project were assigned to the study area roadways based on a review of existing travel patterns (e.g., existing traffic counts). The accuracy of existing traffic count data was commented on in a previous section.

Also, a previous observation was made about the traffic travelling between King Street from the east and Ellsworth Street south of the intersection of King Street and Ellsworth Street. Our field observations of the study area revealed that due to high volumes on Lowell Street, it is difficult to turn left to/from Lowell Street to access the abutting residential neighborhood and the Perkins School. One possible way to explain the volume of turning traffic at the King Street/Ellsworth Street intersection is the use of the traffic signal at the Lowell Street/King Street intersection, firstly, to enter/leave the neighborhood and, secondly, to access the Higgins Middle School on Perkins Street more easily and safely. If this is the case, then the trip distribution pattern used for this study may be skewed.

Please review the traffic count information and the turning movements at the King Street/Ellsworth Street intersection to confirm trip distribution values.

Traffic Operations and Safety Analysis

King Street at Ellsworth Street

Based on the analysis presented in the TIA, this signalized intersection is reported to function at Level of Service (LOS) B for the morning peak and LOS C for the afternoon peak in 2026 under Build conditions. The overall intersection v/c ratios less than 1.0, indicating available capacity.

A review of the intersection's peak hour volumes indicates the intersection volumes may be below the thresholds to warrant a traffic signal operation. A traffic signal warrant analysis should be performed at this location to justify the existing traffic signal control.

Lowell Street at King Street/Endicott Street

The Lowell Street and King Street/Endicott Street intersection analyses showed that the small increase in site generated traffic resulted in minor impacts in terms of increased delays.

This intersection averaged 13 crashes per year between the years 2013 to 2017 and is listed as a top 200 intersection crash cluster. The poor safety record of this intersection indicates the need for significant traffic and safety improvements.

Ellsworth Street at Southwick Road and Ellsworth Street at Emerson Street

Both unsignalized intersections operate with the minor street operating as stop control. These intersections are expected to operate at acceptable LOS during both peak hours under Build conditions. Site generated traffic is negligible at these locations.

Lowell Street at Southwick Road and Lowell Street at Emerson Street

Both of these intersections show poor operating conditions. Drivers have difficulty seeking acceptable gaps in the Lowell Street traffic flow. However, these intersections do have relatively a small number of crashes.

Site Access and Parking

The site will be served via two driveways along King Street, located at the entrance/exit to the two main parking areas between the three buildings. The driveways are proposed to be 20 feet wide with small radii for turning vehicles. The driveway design should be reviewed in accordance with MassDOT driveway standard details and accommodations provided for ADA compliance at each crossing.

The TIA reported sufficient sight distance will be provided to meet stopping sight distance to meet 35 mph design criteria. The landscaping plan proposes to plant new trees along the curb line of King Street. The landscaping plan should be checked/revised to ensure a proper set-back of any signage or plantings that would prevent the proper site distances from being provided along King Street.

All proposed traffic signs, pavement markings, and traffic signals shall comply with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD), Standard Highway Signs and Markings Book, Massachusetts Amendments to the MUTCD, and MassDOT Standard Signs. Where discrepancies exist, Massachusetts standards shall govern. Stop signs should be considered at all driveway locations.

Parking

There are 213 spaces proposed for the 133 multifamily housing units. The 133 residential units will be composed of a combination of 1, 2- and 3-bedroom units. The breakdown of parking spaces is 7 accessible, 70 standard size spaces and 136 compact spaces. The standard size spaces are 9 feet wide and 18 feet long. The compact spaces are 8.0 feet wide and 16.5 feet long. The aisle width is 20 feet in all cases.

Using 213 spaces will result in a ratio of only 1.6 spaces per unit. Current zoning in Peabody for residential units is for 2.0 spaces per unit and 1 visitor space per 3 residential units. Several new publications indicate that a smaller number of parking spaces, below the 2.0 spaces/residential unit is desirable. ITE recently published data¹ on parking that recommended 1.7 parking spaces per multifamily housing units or 1.0 parking spaces per bedroom. The 2019 MAPC parking study² recommends the parking demand will depend on the amount of parking supplied, the number of jobs located within 30 mile of transit opportunities and the % of affordable units provided. sites surveyed range from a parking ratio of 0.25 to 2.0 spaces per unit with an average of 1.0 space per unit. Of the sites 50% were close to transit and 63% consisted of entirely affordable housing units studied. A recent update to the 2019 MAPC study was performed in four Northshore communities including Peabody. The results of this updated study showed higher average parking ratios than the communities in the Boston core region. The use of 1.6 spaces per unit, without accommodations for visitor parking or deliveries, is not recommended for this project.

The size of the spaces should be changed from 9 feet x 18 feet with a 20-foot aisle, to 8.5 feet x 18 feet with a 24- foot aisle. We recommend the number of compact spaces be capped at 10% in accordance with recent recommendations³ on the size of vehicle fleet, due to manufacturer's advances in fuel economy that has led to larger vehicles being produced. The parking spaces located under building C are not dimensioned and should be reviewed for their ability to provide adequate access and egress without backing out of the spaces to exit the underground space.

Because of the residential neighborhood abutting the proposed development, if sufficient parking is not provided on-site, residents and/or visitors will park on residential streets near the site. Other parking recommendations to be considered are uncouple the parking from the rental costs and the addition of reserved car share spaces and electric charging stations.

¹ ITE, Parking Generation, 5th Edition, 2019

² MAPC, Metro Boston, Perfect Fit Parking Initiative, July, 2019

³ ITE, Traffic Engineering Handbook, 7th Edition, 2017

Transportation Demand Management

The proposed Transportation Demand Management (TDM) measures consisted primarily in the form of posting information on carpooling opportunities, car ride services and information on pedestrian and bicycle facilities in the area. The TDM measures were not specific or detailed in how the information would be displayed and or how the information will be updated. No information was provided on public transit opportunities or the provisions for possible shuttle services. Bicycle racks were recommended in the TIA but the location or number of bicycle racks were not show on the site plans. Proposed bike rack locations should be provided.

Recommendations and Conclusions: Off-Site Improvements

At the intersection of Lowell Street and King Street/Endicott Street a Road Safety Audit (RSA) and traffic signal timing optimization is proposed. In addition to the RSA, traffic signal upgrades should be implemented, including new overhead traffic signal indications, detection, and controller replacement. Pedestrian indications and push buttons should be included in the upgrade as well as new wheelchair ramps. New vehicle and pedestrian clearance intervals should be implemented to improve safety. Other recommendations included in the RSA should be considered for implementation as well.

At the intersection of King Street and Ellsworth Street a traffic signal warrant study should be performed to determine if the existing traffic signal installation is currently warranted. If the traffic signal installation is not warranted, alternative forms of traffic control should be implemented, and new wheelchair ramps and pedestrian enhancements included.

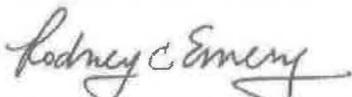
At unsignalized intersections in the study area, along Emerson Street and Lowell Street, existing stop signs should be upgraded to new signage and new stop signs should be installed on Emerson Street and Emerson Street Extension.

All signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the Manual on Uniform Traffic Control Devices (MUTCD). This note should be added to the Site Plans. Revised safety and operational improvements should be provided, and modifications proposed to the site drive on King Street if necessary, to meet these safety and operational concerns.

If you have any questions or require additional information, please feel free to contact me directly at any time.

Sincerely,

WORLDTECH ENGINEERING, LLC



Rodney C. Emery, P.E., PTOE

Horsley Witten Group

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January 22, 2021

VIA EMAIL

William G. Paulitz, P.E.
City Engineer
City of Peabody
Department of Public Services
50 Farm Avenue
Peabody, MA 01960

Re: Peer Review of Comprehensive Permit Application
King's Residences
15 King Street, Peabody, MA

Dear Mr. Paulitz and Board Members:

The Horsley Witten Group, Inc. (HW) is pleased to provide the Peabody Zoning Board of Appeals with this letter report summarizing our initial technical peer review of the residential development proposed at 15 King Street, Peabody, Massachusetts. The Comprehensive Permit application for the King's Residences development was prepared by the Panos Law Group on behalf of the Applicant, HDG King Street, LLC. The proposed development includes three (3) multi-family, apartment style buildings with 135 residential condominium ownership units. The existing previously developed site is 3.12 acres and contains a vacant hospital building, a support building, and associated parking lot. It does not appear that the site contains any wetland resource areas or buffer zones to resource areas.

HW has received the following materials associated with the proposed development:

- Letter prepared by The Panos Law Group, Application for Comprehensive Permit, 15 King Street, Peabody, MA, dated May 4, 2020 (11 pages).
- Cover and Table of Contents (3 pages).
- Application for Comprehensive Permit, 15 King Street, Peabody, MA (17 pages).
- Appendix A: Site Approval Letter, dated April 30, 2020 (9 pages).
- Appendix B: Site Information (12 pages).
- Appendix C: Reduced Site Plans, prepared by Design Consultants Inc., dated March 16, 2020 (8 sheets).
- Appendix D: Surrounding Land Use/Amenities Plan, prepared by Design Consultants Inc., dated March 13, 2020 (1 sheet).
- Appendix E: Flood Insurance Rate Map (1 Sheet).

- Appendix F: Reduced Site Architectural Plans, prepared by Khalsa, dated March 20, 2020 (30 Sheets).
- Appendix G: Traffic Impact Assessment, prepared by Vanasse & Associates, Inc., dated December 2019 (199 pages).
- Appendix H: Hydrant Flow Test Report, prepared by Allen & Major Associates, Inc., dated March 3, 2020 (6 pages).
- Appendix I: Environmental Report, prepared by RPS Group, Inc., dated January 2020 (84 pages).
- Appendix J: Waiver Requests and Zoning Exceptions (7 pages).
- Appendix K: Stormwater Management Plan, prepared by design Consultants Inc., dated March 6, 2020 (93 pages).
- Appendix L: Certified Abutter's List, stamped March 12, 2020 (3 pages).
- Appendix M: Filing Fee (1 page).
- Stormwater Management Plan, prepared by Design Consultants Inc., revised date January 12, 2021 (83 pages) including revised Grading and Drainage Plan, C-102.

Environmental Due Diligence Review: ASTM Phase I Report

HW conducted a peer review of the report titled *Phase I-Environmental Site Assessment, Vacant Kindred Hospital*, prepared by RPS Group, Inc. and dated January 2020 (the "2020 Phase I Report"). This peer review focused on determining the completeness of the 2020 Phase I Report regarding Recognized Environmental Conditions (RECs), Historical Recognized Conditions (HRECs) and Controlled Recognized Conditions (CRECs). ASTM E 1527-13 defines these as follows:

- REC: "the presence, or likely presence of any hazardous substances or petroleum products in, on or at a property: (1) due to release to the environment, (2) under conditions indicative of a release to the environment, or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions."
- HREC: "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)."
- CREC: "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)."

The 2020 Phase I Report identified the following:

- At the time of reconnaissance, the 3.2-acre property was improved with two vacant

buildings (77,900 square foot [sf] three-story main building and 10,000 sf single story boiler building) that were formerly occupied by Kindred Hospital. Former operations at the Kindred Hospital included intensive care unit services, rehabilitation, dialysis, cardio-pulmonary services and a geriatric unit. The buildings were constructed between the 1930's (boiler building) and 1962 (main building).

- According to the 2020 Phase I Report *"The main building includes a basement that houses mechanical systems, two diesel fueled emergency generators, and a chiller. The first floor includes the lobby, kitchen, cafeteria, ventilator rooms, pulmonary rooms and high oxygen patient rooms. The second floor was utilized as an ICU, patient rooms, and nurses' stations. The third floor was primarily used for storage of out of use equipment and a pharmacy. Additional interior features include two traction elevators, and a freight elevator."*
- According to the 2020 Phase I Report *"The boiler building houses one diesel-fueled emergency generator, two natural-gas fired boilers and a back-up No. 2 heating oil-powered boiler. Based on observations during site reconnaissance, heater oil is used by the backup boiler is likely stored within an underground storage tank (UST) as described below. Three fill ports set in a concrete pad, located adjacent south of the boiler building, indicating the presence of a UST. The Commonwealth of Massachusetts Department of Fire Services Freedom of Information Act (FOIA) request showed issuance of a permit to store 2,000 gallons of diesel fuel and 10,500 gallons of No. 2 fuel oil. There is no basement in the boiler building."*
- According to the 2020 Phase I Report *"[o]n June 15, 2003, 50 gallons of No. 2 fuel oil was released to the concrete floor and a floor drain within the boiler building. Based on RPS' review of historical reports, the floor drains from the boiler building flow to the municipal sanitary sewer and indications of an oil release were not identified by the City of Peabody. Following the release, remedial measures were taken to collect released fuel. Soil borings were advanced beneath the concrete where staining was observed. Soil samples were collected, and field screened for Total Petroleum Hydrocarbons (TPH) and submitted for laboratory analysis of TPH. Analytical results indicated that constituents of concern were not detected above laboratory method /Project No. 207232.612 Vacant Kindred Hospital Confidential Peabody, Massachusetts iii detection limits. Groundwater was not encountered during the sampling activities. According to the Class A-1 Response Action Outcome (RAO) report, and as indicated by information reviewed by RPS in the MassDEP database, the remedial response measures taken were sufficient to achieve a condition of no significant risk, and impacts were reduced to background levels."*
- Diesel fuel is stored in three above ground storage tanks that are connected to generators. The ASTs range in size from 50-gallons to 500-gallons. According to the 2020 Phase I Report, *"no leaks, spills, stains or other evidence of releases were identified in connection with the ASTs."*
- According to the 2020 Phase I Report *"[a]t the time of the site reconnaissance, RPS observed three fill ports, set in concrete, located adjacent to the south of the boiler building, indicating the likely presence of a UST. No staining was noted in the area around the fill ports. RPS reviewed records from The Commonwealth of Massachusetts Department of Fire Services – Office of the State Fire Marshall and discovered a permit application for a tank containing 2,000-gallons of diesel fuel and 10,500 gallons of No. 2 fuel from April 2012. No removal records were included with the documents."*

- According to the 2020 Phase I Report, “[t]he site was listed on the Massachusetts Department of Environmental Protection (MassDEP) UST Program database. One 500-gallon, one 1,500-gallon, and one 10,000-gallon fuel oil USTs were installed at the site in 1973. According to the database search report, each of these USTs is listed as removed.”
- According to the 2020 Phase I Report, “one 500-gallon, one 1,500-gallon, and one 10,000-gallon fuel oil USTs were installed at the site in 1973 and removed in 1998. Records received from the MassDEP also included the UST Tank Removal Closure Assessment from Vencor Inc., dated February 1999, that noted the removal of the 500-gallon and 10,000-gallon USTs of the site in August 1998. The report notes of the installation of a 560-gallon and 10,000-gallon tank to hold No. 2 fuel oil for the emergency generator and facility boiler at the same time of the former USTs removal. No tank removal records associated with these tanks were found.
- According to the 2020 Phase I Report, “RPS observed minor staining in the boiler room underneath the boiler around the floor drains. The observed area of staining during the site reconnaissance is considered to be de minimis.”
- According to the 2020 Phase I Report “[a]pproximately 8-10 55-gallon drums were observed to be abandoned in the boiler building and exterior that contained waste oil and waste hydraulic fluid. No spills or stains were observed around the drums.

The 2020 Phase I Report concluded that no RECs or CREs were identified. The 2020 Phase I did identify the following HREC:

- *“On June 15, 2003, 50 gallons of No. 2 fuel oil was released to the concrete floor and a floor drain within the boiler building. Based on RPS’ review of historical reports, the floor drains from the boiler building flow to the municipal sanitary sewer and indications of an oil release were not identified by the City of Peabody. Following the release, remedial measures were taken to collect released fuel. Soil borings were advanced beneath the concrete where staining was observed. Soil samples were collected, and field screened for Total Petroleum Hydrocarbons (TPH) and submitted for laboratory analysis of TPH. Analytical results indicated that constituents of concern were not detected above laboratory method /Project No. 207232.612 Vacant Kindred Hospital Confidential Peabody, Massachusetts iii detection limits. Groundwater was not encountered during the sampling activities. According to the Class A-1 Response Action Outcome (RAO) report, and as indicated by information reviewed by RPS in the MassDEP database, the remedial response measures taken were sufficient to achieve a condition of no significant risk, and impacts were reduced to background levels.”*

HW offers the following conclusions regarding the 2020 Phase I Report:

- It is not clear in the 2020 Phase I Report if the three ASTs at the vacant property contained fuel oil. HW recommends that Applicant have its environmental consultant verify that the ASTs have not released No. 2 fuel oil to the environment while sitting idle

for the last year. If not already completed, the ASTs should be appropriately cleaned and disposed of consistent with local, state and federal regulations.

- The 2020 Phase I Report identified 8-10 55-gallon drums located at the vacant property within the interior and exterior of the boiler building. The drums reportedly contained waste oil and hydraulic fluid. HW recommends that the Applicant have its environmental consultant verify that the drums have not released waste oil and/or hydraulic fluid to the environment while sitting idle for the last year. The drums should also be appropriately manifested and disposed of off-site by a licensed waste disposal company.
- The 2020 Phase I Report does not provide sufficient details on the three USTs removed in 1998. At a minimum, the Applicant's environmental consultant should include details on field screening and laboratory results to verify that the three USTs were not the source of a release and that they were removed and disposed of consistent with local, state, and federal regulations.

The 2020 Phase I Report does not include sufficient details on the UST identified during site reconnaissance. The UST has been abandoned for more than one year and it is unclear if the UST was appropriately abandoned in place, has been tested for tightness and if it still contains fuel oil. At a minimum, the Applicant's environmental consultant should verify that this UST was closed consistent with state, local, and federal regulations and provide a discussion on field screening and laboratory results to verify that the USTs were not the source of a release.

Site Visit

Janet Bernardo from HW and Wayne Keefner of Design Consultants Inc. (DCI) walked around the site on January 22, 2021. The proposed stormwater management was discussed, and the locations reviewed as well as the connections to the municipal system.

Stormwater Management Review

HW has reviewed the proposed stormwater management design as per the standards of the Massachusetts Stormwater Handbook (MSH) dated February 2008. This site is considered "redevelopment" under the Massachusetts Department of Environmental Protection (MassDEP) standards and therefore is subject to the MassDEP Stormwater Standards 2 through 7 to the maximum extent practicable. Below are comments relating to the standards as presented in the MSH.

1. *Standard 1 states that no new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

- a. The Applicant has reduced impervious area, reduced the peak rate and volume of discharge to the municipal system and does not appear to be causing erosion in waters of the Commonwealth.

The Applicant complies with Standard 1.

2. *Standard 2 requires that post-development runoff does not exceed pre-development runoff off-site.*

- a. HW recommends that the Applicant clarify the proposed and existing grading in a

number of locations around the site, as noted below:

- i) At the northwest corner along Southwick Road there is an existing catch basin (CB) with a rim of 86.76. It is not clear if this catch basin will be removed, the proposed 88-foot contour crosses through what appears to be elevation 87. During our site visit DCI confirmed this catch basin will be removed. HW recommends that the additional notes are added to the plan.
 - ii) At the northwest corner on Ellsworth Road there is an existing CB with a rim of 74.33 which does not seem accurate.
 - iii) The proposed 87-foot contour along Southwick Road is lost in the property line and it is not clear how it ties back to the existing contours.
 - iv) Many of the existing contours are difficult to follow. Additional labels would be useful.
 - v) The spot grade at the proposed wall near the garage (TW=80/BW=78) may not be labeled accurately.
- b. HW recommends that the Applicant clarify the edges of pavement for Southwick Road under existing and proposed conditions.
 - c. HW recommends that the Applicant clarify how drainage in Southwick Road will be managed post construction.
 - d. The Applicant has proposed two subsurface infiltration systems labeled as Infiltration System 1 and Infiltration System 2. The HydroCAD modeling calculations indicate that these systems should each include 42 Cultec R-330XLD chambers. The Grading and Drainage Plan, C-102, revised January 12, 2021, illustrate these two systems accurately. However the detail on Sheet C-502 should also be revised.
 - e. HW has reviewed the catchment areas, curve numbers, surface treatment, times of concentration, and depths of precipitation utilized by the Applicant in the HydroCAD model and finds the values to be acceptable.
 - f. The proposed closed drainage system connects into the closed drainage system within Southwick Road. HW understands that this is a private road and recommends that the Applicant confirm it has permission to connect into this existing system.
 - g. DMH 2 may have too many inlet pipes for a 4-foot diameter structure. HW recommends that the Applicant review DMH 2 for constructability.
3. *Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.*
 - a. The Applicant has noted that the proposed site contains sandy loam with an associated infiltration rate of 1.02 in/hr. HW finds this value to be acceptable.
 - b. The bottom of each of the infiltration systems is greater than 2 feet but less than 4 feet from the estimated seasonal high ground water (ESHGW). HW recommends that the Applicant provide a mounding analysis per Volume 3, Chapter 1, page 28 of the MSH.
 4. *Standard 4 requires that the stormwater system be designed to remove 80% Total Suspended Solids (TSS) and to treat 0.5-inch of volume from the impervious area for water quality.*
 - a. The Applicant has provided several catch basins in the proposed parking areas, catch basins have a TSS removal rate of 25% and are an acceptable stormwater practice. HW

recommends that the Applicant investigate measures to provide additional TSS removal. Volume 1, Chapter 1, page 21 of the MSH states, "New stormwater controls (retrofitted or expanded) must be incorporated into the design and result in a reduction in annual stormwater pollutant loads from the site. Proponents of redevelopment projects shall make full use of all opportunities for controlling the sources of pollution and to incorporate environmentally sensitive site design and low impact development techniques." HW recommends that the Applicant consider adding water quality units at DMH 2 and DMH 5.

- b. As a redevelopment site the proposed project is required to treat the water quality volume to the maximum extent practicable. The Applicant is infiltrating the roof runoff to meet the recharge criteria. However, it is not infiltrating any of the parking lot runoff. HW recommends that the Applicant justify why it is not able to infiltrate any of the parking lot runoff.
5. *Standard 5 is related to projects with a Land Use of Higher Potential Pollutant Loads (LUHPPL).*
 - a. The site is not considered a LUHPPL, therefore Standard 5 is not applicable.
 6. *Standard 6 is related to projects with stormwater discharging into a critical area, a Zone II or an Interim Wellhead Protection Area of a public water supply.*
 - a. The site is not within a critical area, therefore Standard 6 is not applicable.
 7. *Standard 7 is related to projects considered Redevelopment. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*
 - a. The proposed project as designed will reduce impervious area and therefore is considered redevelopment, the Applicant is required to meet the Stormwater Management Standards to the maximum extent practicable and improve existing conditions. As noted above HW recommends that the Applicant provide additional measures to improve the post development water quality to improve existing conditions.
 8. *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation or other pollutant sources.*

The Applicant has provided an erosion control plan Sheet C-103 with details on Sheet C-501.

- a. HW recommends that the Applicant increase the sump in the catch basin to be a minimum of 4 feet.
- b. HW recommends that the Applicant increase the length of the construction entrances to be a minimum of 50 feet.
- c. HW recommends that the Applicant specify the 18-inch diameter straw wattle.
- d. At the toe of any slopes 3:1 or steeper, HW recommends that the Applicant add a siltation fence to the straw wattle erosion control barrier.
- e. The slope on the northeast corner and southwest edge is proposed to be set at 2:1

which is considered relatively steep. HW recommends that the Applicant consider means to minimize any erosion along these steep slopes.

- f. It appears that the slope at the southwest corner is also set at a 2:1 slope, though it is not as high as the east side. HW recommends that the Applicant consider means to minimize erosion along King Street.
 - g. HW recommends that the Applicant note if any trees will be removed or specific trees protected during construction. A tree protection detail should be provided if applicable.
 - h. The proposed development requires disturbance of greater than one acre of land and therefore is required to obtain coverage under the NPDES Construction General Permit issued by EPA and prepare a Stormwater Pollution Prevention Plan (SWPPP). HW recommends that a copy of the SWPPP be provided to the City at least 14 days prior to commencing land disturbance activities.
9. *Standard 9 requires a Long-Term Operation and Maintenance (O & M) Plan be provided.*
- a. The Applicant has provided an O&M Plan. HW recommends that the Applicant provide a simple plan, separate from the design plans that is drawn to scale and labels the location of all stormwater practices associated with the site.
 - b. The Owner / Operator has not been identified at this time. Prior to construction the Operator should be identified.
 - c. Under Section 3. j) it is noted that the operator is to notify the City of any irregularities noted during inspection. HW recommends that the Applicant clarify this reference.
10. *Standard 10 requires an Illicit Discharge Compliance Statement to be provided.*
- a. The Applicant has stated that there are no known or suspected illicit discharges from the project site. HW recommends that a signed Illicit Discharge Compliance Statement be provided to the City prior to the discharge of any stormwater to post-construction best management practices (BMPs).

Conclusions

HW recommends that the Peabody Zoning Board of Appeals require the Applicant to provide a written response to our comments above. Please contact Janet Bernardo at jbernardo@horsleywitten.com or at 857-263-8193 if you have any questions regarding these comments.

Sincerely,

HORSLEY WITTEN GROUP, INC.



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