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James Freas
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PUBLIC HEARING/WORKING SESSION MEMORANDUM

DATE: May 20, 2016
MEETING DATE: May 24, 2016
TO: Land Use Committee of the City Council
FROM: James Freas, Acting Director of Planning and Development
Alexandra Ananth, Chief Planner for Current Planning
Michael Gleba, Senior Planner
CC: Petitioner

In response to questions raised at the May 3, 2016 Land Use Committee public hearing, and/or staff technical reviews, the Planning Department is providing the following information for the upcoming public hearing/working session. This information is supplemental to staff analysis previously provided at the public hearing.

PETITION #48-16

255-257 Newtonville Avenue

Request for Special Permit/Site Plan Approval to construct a three-story, 113,187 square foot self-storage facility which will increase the Floor Area Ratio to 1.5, where 1.0 is the maximum allowed by right as well as a waiver of 36 parking stalls and waivers of other parking requirements.

The Land Use Committee (the "Committee") held a public hearing on April 5, 2016 that was held open so that the petitioner could respond to questions/concerns that were raised in the Planning Department's memorandum and at the public hearing by the Committee and the public. A site visit was held by the Land Use Committee on April 28, 2016 to further explore the issues raised at the public hearing. A subsequent public hearing was held on May 3, 2016. This memo reflects those issues and concerns addressed to the Planning Department at that public hearing, as well as revised plans and additional information submitted by the petitioner on May 19, 2016.

Zoning Relief

The petitioner has proposed to raze the existing buildings and construct an 113,187 square foot self-storage facility with 1,025 storage units. Per § 4.4.1 of the NZO, storage facilities are allowed by right in the Manufacturing district. However, to construct the facility as proposed the petitioner is seeking a special permit under the NZO to allow a building that is three stories, with a floor area ratio (FAR) of

1.5, and for a building greater than 20,000 square feet.

The petitioner is also seeking waivers to reduce the number of required parking stalls by 36; to reduce the number of handicapped accessible parking stalls by one; to allow parking in the side setback; to waive the landscape screening requirements; and to waive lighting requirements.

Plan Modifications

The petitioner submitted revised plans on May 19, 2016 that include an updated landscape plan. The Planning Department has forwarded the updated landscape plan to Conservation Commission staff for review.

Concerns Raised at May 3, 2016 Public Hearing

The following is a compilation of several issues addressed to the Planning Department at the May 3, 2016 public hearing:

1. *Landscaping Along Lewis Terrace:*

As referenced above, the petitioner submitted a revised landscape plan on May 19, 2016. The new plan shows the addition of 26 evergreen trees with heights of 15 feet at planting. This response to previous comments should further address concerns about the adequateness of the vegetative screening of the proposed facility along Lewis Terrace.

2. *Lighting on Lewis Terrace:*

The present proposal indicates that no lighting will be provided along the Lewis Terrace façade. A question was raised as to whether this is an appropriate approach. The Planning Department suggests that determining the appropriateness of the proposed light levels on Lewis Terrace represents a tension between potential annoyance for neighbors and providing security. The Planning Department recommends that the use of motion-sensor lights and or video cameras be considered so as to limit unnecessary light pollution and annoyance while still providing for a sense of security and control.

3. *Hours of operation:*

- a. As stated in the Planning Department's memo prepared for the May 3, 2016 Working Session, this issue was addressed in the Petitioner's April 27, 2016 letter to the Committee, indicating that access to storage units would be available to customers 6:00a – 10:00p daily, with the management office staffed from 9:30a – 6:00p daily. This appears consistent with common practices of similar facilities. However, in recognition of the proposed facility being located adjacent to residential districts, the Planning Department recommends that the hours of operation be set at 7:00 am – 9:00 pm daily and this be made a condition such as the one included in the draft Order.
- b. Concerns were also expressed regarding those times during which customers would have access to the building but the management office would be closed, especially regarding potentially noisy truck visits. Again, in recognition of the proposed facility location adjacent to residential districts, the Planning Department recommends that truck access to the facility be further limited to 8:00 am – 8:00 pm and this be made a condition included in the Order, such as the one included in the draft Order.

4. Roof issues:

- a. The Planning Department continues to recommend that some form of “green roof” be installed on a portion or portions of the proposed facility’s large, flat roof so as to both respond to the concerns of nearby residents and in furtherance of achieving the special permit criteria provided by §7.3.3.C.5 that structures in excess of 20,000 square feet of gross floor area “contribute significantly to the efficient use and conservation of natural resources and energy.”
- b. Some concern has been raised regarding the location of HVAC units on the roof and any possible sound impacts. The units are projected to be approximately seven feet in height and located near the Massachusetts Turnpike, away from residences adjacent to the site. The petitioner submitted a sound report on May 17, 2016 (**Attachment C**), indicating that while the sound impacts on Lewis Terrace and Newtonville Avenue created by the facility’s HVAC units would comply with the Massachusetts Department of Environmental Protection’s (MassDEP) Noise Policy (310 CMR 7.10), they would exceed the City’s more stringent Noise Control Ordinance (Rev’d Ordinances, §20-13(g)(5)). The petitioner’s report suggests that this condition could be addressed through the installation of additional acoustical treatments (i.e., condenser fan panels). The Planning Department recommends that such installation be made a condition, such as the one included in the draft Order.

5. Alternative allowed land uses:

The self-storage facility is a use allowed by right in the Manufacturing zone. The site’s Manufacturing designation allows for various other uses by-right, including fabrication of materials, bottling, contractor’s yards, food processing agricultural uses and printing, as well as offices, research facilities, religious institutions and daycare centers. Uses allowed by special permit include other types of manufacturing, educational facilities, and auto repair and sales. It is also conceivable that a change in zone could be requested (which would require approval by a 2/3 vote of the City Council) or that a developer might seek a comprehensive permit for multi-family housing dwelling.

6. Traffic and Parking Issues:

- a. Concerns have been voiced about existing general conditions in the area, especially along Newtonville Avenue. As requested by the Land Use Committee, the Planning Department examined the possible traffic impacts of the proposed facility and alternative, by right uses of the site. Any such impacts would, of course, be dependent on the specific size and scale of such uses. However, the ITE Trip Generation Manual, 7th Edition, provides some general guidance, drawn from projects across the United States and Canada, as to the projected levels of traffic that would be generated by different land uses.

The Manual estimates that approximately 142 total vehicles would visit the proposed facility on each weekday (130 on Saturdays and 95 on Sundays). By comparison, allowed manufacturing uses of the site could have significantly greater traffic impacts,

as the Manual suggests that a “general light industrial building” or an industrial park with FARs of 1.0 would attract 265 vehicles per weekday.

Other commercial uses would also have greater traffic impacts. A similarly sized office building (i.e., 114,000 square feet, 1.5 FAR) would attract approximately 628 vehicles per weekday; a smaller, 76,000 square foot office building (FAR- 1.0), would attract 418. A research and development (R&D) center with the same size as the proposed facility could be expected to attract approximately 462 vehicles per weekday; a smaller, 76,000 square foot R&D center (FAR- 1.0), would still attract 308. Also, unlike with the proposed self-storage facility, the traffic generated by office space or R&D center would be concentrated during the AM and PM peak rush hours, not more evenly distributed during the day, as with a self-storage facility.

It should be noted that the property is large enough to possibly accommodate a combination of smaller, allowed uses. For example, a 5,000 square foot daycare center (FAR- 0.07) alone would be expected to generate more traffic, with approximately 198 vehicles visiting the site each weekday. Joined by such uses as 5,000 square foot stores selling tires (62 vehicles daily), paint (128 daily) and building materials (113 daily), an alternate development of allowed uses could have a greater impact on traffic.

- b. Regarding the parking demand expected for the proposed self-storage facility, the ITE Trip Generation Manual indicates Saturday as having the peak hour of usage; in turn, the *ITE Parking Generation Manual, 4th Edition*, indicates that approximately 7.3 parking spaces would be required for that peak demand.

This estimate is fairly consistent with the findings of the supplemental traffic and parking study (**Attachment B**) submitted by the Petitioner on May 17, 2016, in response to questions by the Committee as to whether the previously submitted study, which examined similar nearby facilities during selected timeframes around Labor Day 2015, was representative. The second study found an average of 2.3 vehicles entering the Public Storage at 945 Moody Street between 7:30 am – 10:30 am on Tuesday, May 10, 2016, and an average of 5.0 vehicles entering the EZ Storage at 300 Needham Street in Newton between and 2:45 pm-5:45 pm on Wednesday, May 11, 2016.

7. Building Height:

The petitioner’s previous calculation of the height of the proposed building included the height of the decorative ‘tower’ element of the north, Massachusetts Turnpike-facing façade (the location of the “self storage” sign shown in the elevations). However, as subsequently noted by the petitioner, such an element is not considered a part of the building’s height as per § 1.5.4.A.1.d.

Therefore, the height of the building is approximately 28 feet as defined by the NZO, not the 35 feet, 6 inches previously indicated.

8. If the facility was moved eastward toward Lewis Terrace, could it be recast into a by right project?

As any development of 20,000 or more square feet of gross floor area requires a special permit (§4.3.2.B.1), merely moving the building to some other site would not make it “by right.” Similarly, any 3-story building would similarly require a special permit. However, it appears there are some modifications to the project, including shifting it toward Lewis Terrace (necessitating the removal of additional existing trees), that could reduce the zoning relief required for the project.

While emphasizing that it is not an alternate proposal, the petitioner has provided a schematic “test fit” showing a shift of the building eastward toward Lewis Terrace and further “into the hill.” By increasing the grade plane average to 114.5, this could reduce its measured height to approximately 24 feet. The petitioner has suggested that the building could then be considered only two-stories as the lowest floor, by now being as much as two-thirds below the grade plane, could then be considered a ‘basement.’ Citing §1.5.5.B.2 (“Gross floor area shall not include any portion of a basement used for storage, parking, or building mechanicals”), the petitioner has further suggested that such ‘basement’ square footage would not be countable toward the building’s Gross Floor Area (GFA), and therefore reducing its GFA to approximately 76,000 square feet and its FAR to approximately 1.0, thus negating the need for a special permit to allowing three stories with an FAR of 1.5.

However, the Planning Department is not prepared to state whether such a “basement” would be usable for the proposed commercial self-storage purposes as a reasonable interpretation §1.5.5.B.2 could hold that the “storage” contemplated by the provision would be that which is accessory to a principal use, not the principal use itself.

Nevertheless, shifting the building closer to Lewis Terrace would have a less desirable impact on the amount of landscaping that could be provided and the petitioner is not intending to do this.

ATTACHMENTS:

- Attachment A:** Draft Order
Attachment B: Second traffic and parking study
Attachment C: Sound report

CITY OF NEWTONIN CITY COUNCIL

June 6, 2016

ORDERED:

That the Council, finding that the public convenience and welfare will be substantially served by its action, that the use of the site will be in harmony with the conditions, safeguards and limitations set forth in the Zoning Ordinance, and that said action will be without substantial detriment to the public good, and without substantially derogating from the intent or purpose of the Zoning Ordinance, grants approval of the following SPECIAL PERMIT/SITE PLAN APPROVAL for a three-story, 113,187 square foot self-storage facility, as recommended by the Land Use Committee for the reasons given by the Committee through its Chairman, Councilor Marc Laredo:

1. The site is an appropriate location for a building of three stories and 27 feet, 6 inches in height with a floor area ratio (FAR) of 1.5 as its sloping topography allow for a significant portion of the structure's mass and height to be concealed from neighboring properties and streets. (§4.3.3 and §7.3.3.C.1)
2. The site is an appropriate location for a building of greater than 20,000 square feet as the site is zoned Manufacturing and consists of approximately 76,000 square feet of land. Furthermore, its sloping topography allow for much of the structure's mass to be concealed from neighboring properties and streets. (§4.3.2.B.1 and §7.3.3.C.1)
3. Access to the site over streets is appropriate for the types and numbers of vehicles involved as the proposed low intensity, transitional use will have limited impact on the adjacent roadways that also serve the adjacent residential neighborhood. (§7.3.3.C.4)
4. The site planning, building design, construction, maintenance or long-term operation of the premises will contribute significantly to the efficient use and conservation of natural resources and energy. The proposed site plan has been reviewed and approved by the Newton Conservation Commission and the petitioners will be enhancing natural habitat areas with native plantings. (§7.3.3.C.5)
5. The requested exceptions related to the number of parking stalls, the number of handicapped accessible stalls, landscaping and lighting of parking facilities are appropriate because such exceptions would be in the public interest and provide for

the protection of environmental features by reducing the amount of unnecessary paving on the site. The petitioner submitted a parking study indicating that the number of stalls proposed will be sufficient to meet expected demand without spillover onto neighborhood streets. (§5.1.13)

PETITION NUMBER: #48-16

PETITIONER: Storage Development Partners, LLC/Norcross Trust

LOCATION: 255-257 Newtonville Avenue, Ward 2, Newtonville, on land known as Section 12 Block 16 Lot 8, containing approximately 75,634 square feet of land

OWNER: Norcross Trust

ADDRESS OF OWNER: 25 Fisher Avenue, Newton, MA 02461

TO BE USED FOR: Three-story, 113,187 square foot self-storage facility

CONSTRUCTION: Masonry

EXPLANATORY NOTES: §4.3.2.B.1 to allow a building greater than 20,000 square feet; §4.3.2.B.3 and §4.3.3 to allow a building with three stories, 36 feet in height, and an FAR of 1.5; §5.1.4 and §5.1.13 to waive 36 parking stalls; §5.1.8.A.1 and §5.1.13 to allow parking in the side setback; §5.1.8.B.3, §5.1.8.B.4 and §5.1.13 to waive one accessible parking stall; §5.1.9.A.1 and §5.1.13 to waive landscape screening requirements; §5.1.10.A and §5.1.13 to waive lighting requirements.

ZONING: Manufacturing District

Approved subject to the following conditions:

1. All buildings, parking areas, driveways, walkways, landscaping and other site features associated with this special permit/site plan approval shall be located and constructed consistent with:
 - a. Land Development Plans prepared by BL Companies, stamped and signed by Timothy B. Bennett, consisting of twenty-five (25) sheets, as follows:
 - i. Title Sheet; dated February 5, 2016, as revised through April 20, 2016;
 - ii. "Existing Conditions Survey," dated May 15, 2015;

- iii. "General Notes," dated February 5, 2016, as revised through April 20, 2016 (GN-1);
 - iv. "Demolition Plan," dated February 5, 2016, as revised through April 20, 2016 (DM-1);
 - v. "Site Plan," dated February 5, 2016, as revised through April 20, 2016 (SP-1);
 - vi. "Grading and Drainage," Plan dated February 5, 2016, as revised through April 20, 2016 (GD-1);
 - vii. "Utility Plan," dated February 5, 2016, as revised through April 20, 2016 (SU-1);
 - viii. "Sedimentation and Erosion Control Plan- Phase 1," dated February 5, 2016, as revised through April 20, 2016 (EC-1A);
 - ix. "Sedimentation and Erosion Control Plan- Phase 2," dated February 5, 2016, as revised through April 20, 2016 (EC-1B);
 - x. "Sedimentation and Erosion Control Notes," dated February 5, 2016, as revised through April 20, 2016 (EC-2);
 - xi. "Landscape Plan," dated February 5, 2016, as revised through April 20, 2016 (LL-1);
 - xii. "Landscape Details," dated February 5, 2016, as revised through April 20, 2016 (LL-2);
 - xiii. "Site Lighting Plan," dated February 5, 2016, as revised through April 20, 2016 (LP-1);
 - xiv. "Details," dated February 5, 2016, as revised through April 20, 2016 (DN-1);
 - xv. "Details," dated February 5, 2016, as revised through April 20, 2016 (DN-2);
 - xvi. "Details," dated February 5, 2016, as revised through April 20, 2016 (DN-3);
 - xvii. "Details," dated February 5, 2016, as revised through April 20, 2016 (DN-4);
 - xviii. "Details," dated February 5, 2016, as revised through April 20, 2016 (DN-5);
 - xix. "Details," dated February 5, 2016, as revised through April 20, 2016 (DN-6);
 - xx. "Details," dated February 5, 2016, as revised through April 20, 2016 (DN-7);
 - xxi. "Massing Model Plan," dated February 5, 2016, as revised through April 20, 2016 (MA-1);
 - xxii. "Main Level Floor Plan," dated April 20, 2016 (A1.01);
 - xxiii. "Second Level Floor Plan," dated April 20, 2016 (A1.02);
 - xxiv. "Third Level Floor Plan," dated April 20, 2016 (A1.03);
 - xxv. "Exterior Elevations," (South and East) dated April 20, 2016 (A5.01);
 - xxvi. "Exterior Elevations," (North and West) dated April 20, 2016 (A5.02).
2. The petitioner shall comply with the Tree Preservation Ordinance and the landscaping shown on the approved Landscaping Plan, shall be maintained in good condition by the petitioner. The plantings shall be inspected annually and any plant material that becomes diseased or dies shall be replaced in a timely manner with similar material.

3. Before applying for any building permit pursuant to the Order, the petitioner shall seek permission to install trees and/or other plantings to be located on City-owned property at the intersection of Newtonville Avenue and Lewis Terrace and the Newtonville Avenue / East Side Parkway traffic island, as identified in the Final Landscaping Plan. Petitioner shall ensure that said landscaping shall be maintained in good condition and any such plant material that becomes diseased or dies shall be replaced in a timely manner with similar material.
4. The hours of operation shall be limited to 7:00 AM – 9:00 PM daily; truck access shall be further limited to 8:00 AM – 8:00 PM daily.
5. The petitioner shall comply with the City Noise Control Ordinance at all times, included but not limited to the installation and maintenance of acoustical treatments of any and all Heating, Ventilation and Air Conditioning (HVAC) units required to comply with the provisions of said ordinance.
6. The property shall not be used for the rental or sale of any vehicles.
7. The property shall not be used for the rental or sale of propane.
8. All utilities shall be located underground from the property line.
9. Prior to the issuance of any Building Permit, the petitioner shall provide a final Operations and Maintenance Plan (O&M) for stormwater management to the Engineering Division of Public Works for review and approval. Once approved, the O&M must be adopted by applicant, incorporated into the deeds, and recorded at the Middlesex Registry of Deeds. A certified copy of the O&M shall be submitted to the Engineering Division of Public Works.
10. Prior to the issuance of any Building Permit, the petitioner shall provide a final Site Plan for review and approval by the Department of Planning and Development, Engineering Division of Public Works and Fire Department.
11. Prior to the issuance of any Building Permits, the petitioner shall provide a Final Landscape Plan showing compliance with the Tree Preservation Ordinance and all new plantings, for review and approval by the Director of Planning and Development.
12. Prior to the issuance of any Building Permit, the petitioner shall submit a final Construction Management Plan (CMP) to the Commissioner of Inspectional Services, the Director of Urban Forestry, the Engineering Division of Public Works, the Director of the Department of Planning and Development, the Newton Fire Department and Newton Police Department, which plan should shall include at a minimum:
 - a. 24-hour contact information for the general contractor of the project.
 - b. Hours of construction: construction shall be limited to between the hours of 7:00 a.m. and 5:00 p.m. on weekdays, and between the hours of 8:00 a.m. and 3:00 p.m. on Saturdays. No construction is permitted on Sundays or holidays except in emergencies, and only with prior approval from the Commissioner of Inspectional Services.

- c. Proposed methods for dust control including, but not limited to: covering trucks for transportation of excavated material; minimizing storage of debris on-site by using dumpsters and regularly emptying them; using tarps to cover piles of bulk building materials and soil; locating a truck washing station to clean muddy wheels on all truck and construction vehicles before exiting the site.
 - d. A tree preservation plan to define the proposed method for protection of existing trees to remain on the site and on abutting properties during construction.
 - e. A plan for site access and traffic control.
 - f. A plan regulating the delivery of material to the site, including the staging and storage of construction vehicles.
 - g. A plan for rodent control during construction.
 - h. If blasting of on-site ledge is required, the petitioner shall obtain a Blasting Permit from the Newton Fire Department.
13. No Building Permit shall be issued pursuant to this Special Permit/Site Plan Approval until the petitioner has:
- a. Received final approval from the Director of Planning and Development for the Construction Management Plan.
 - b. Recorded a certified copy of this Order for the approved Special Permit/Site Plan Approval with the Registry of Deeds for the Southern District of Middlesex County.
 - c. Filed a copy of such recorded Order with the City Clerk, the Department of Inspectional Services, and the Department of Planning and Development.
 - d. Obtained a written statement from the Planning Department that confirms the Building Permit plans are consistent with plans approved in Condition #1.
 - e. Obtained a written statement from the Engineering Division of Public Works that confirms the receipt of a certified copy of the recorded O&M in accordance with Condition #9.
 - f. Filed a final Landscape Plan to the Director of Planning and Development for review and approval.
 - g. Contributed \$10,000 to the cost of conducting a traffic study of the area.
14. No occupancy permit for the building constructed pursuant to this Special Permit/Site Plan Approval shall be issued until the petitioner has:
- a. Filed with the City Clerk, the Department of Inspectional Services, and the Department of Planning and Development a statement by a registered architect certifying compliance with Condition #1.
 - b. Submitted to the Department of Inspectional Services, and the Department of Planning and Development a final as-built survey plan in digital format.
 - c. Filed with the Conservation Commission, Department of Inspectional Services, and the Department of Planning and Development a statement by the City Engineer certifying that finished grades and final construction details of driveways, parking

- areas and drainage systems have been constructed to the standards of the City Engineering Department.
- d. Filed with the City Clerk and the Department of Inspectional Services a statement by the Director of Planning and Development approving final location, number and type of plant materials, final landscape features and fencing.
15. Notwithstanding the provisions of Condition #15d above, the Commissioner of Inspectional Services may issue one or more certificates of temporary occupancy for all or portions of the buildings prior to installation of final landscaping provide that the petitioner shall first have filed a bond, letter of credit, cash or other security in the form satisfactory to the Director of Planning and Development in an amount not less than 135% of the value of the aforementioned remaining landscaping to secure installation of such landscaping.

DRAFT

To: Land Use Committee of the Newton City Council

From: Lou Mercuri, Planning Horizons

Re: 255-257 Newtonville Avenue

Date: May 16, 2016

On behalf of the petitioner for this land use petition, Planning Horizons is submitting this supplemental report regarding the supporting vehicle trip surveys for the proposed self storage facility location at 255-257 Newtonville Avenue in Newtonville.

At the May 3 public hearing, requests were made by the Council to undertake additional traffic counts and Planning Horizons conducted both onsite and comparable facility counts between May 6 and May 11, 2016. Our original detailed report dated September 21, 2015 to the Council will be referenced in this report; in particular, the data from earlier counts in August and September 2015 will be noted. Other sections of that report, including project overview, existing conditions, and survey methodology remain the same and will generally not be reproduced here.

A total of 6 additional hours of vehicle trips to Public Storage at 945 Moody Street in Waltham and EZ Storage at 300 Needham Street in Newton were recently generated. In addition, for comparison purposes, 5 hours of survey observations were conducted on May 6 and May 9 at the proposed site at 255-257 Newtonville Avenue, which currently houses a landscape business and a separate nonprofit organization known as Waypoint Adventures that serves people with disabilities.

The following summarizes all of the traffic/customer count surveys conducted to date:

1. Public Storage, 945 Moody Street, Waltham – 1015 storage units; a total of 6 hours of surveys, 3 separate 1-hour counts in August and September 2015 and one consecutive 3-hour count on Tuesday, May 10, 2016.
2. EZ Storage, 300 Needham Street, Newton – 1400 storage units; a total of 6 hours of surveys, 3 separate 1-hour counts in August and September 2015 and one consecutive 3-hour count on Wednesday, May 11, 2016.
3. 255-257 Newtonville Avenue – existing site with a landscape business and Waypoint Adventures; a total of 5 hours of surveys on May 6 and May 9, 2016.

Results of Counts/Surveys

The following data compiled in chart form identifies the results of the counts/surveys from the most recent to the previous surveys conducted in 2015. In the May 2016 counts, it was decided to capture a

morning peak time of 3 hours at one facility and an afternoon peak time of 3 hours at the other storage facility. Both morning and afternoon peak hour surveys were conducted at 255-257 Newtonville Avenue.

1. Public Storage, 945 Moody Street, Waltham

Date: Tuesday, May 10, 2016 Time: 7:30 AM – 10:30 AM 50° , Sunny			
	# vehicles entering site	# vehicles exiting site	# trucks/vans entering site
7:30-7:45	0	1	0
7:45-8:00	2	1	0
8:00-8:15	0	1	0
8:15-8:30	1	0	0
8:30-8:45	1	1	1
8:45-9:00	0	1	0
9:00-9:15	1	0	0
9:15-9:30	1	1	0
9:30-9:45	0	1	0
9:45-10:00	0	0	0
10:00-10:15	0	0	0
10:13-10:30	1	1	0
TOTAL (2.3 per hour)	7	8	1

Date: Friday, August 28, 2015 Time: 9:00 AM – 10:00 AM 70° , Sunny	
	# vehicles entering site
9:00-9:15	2
9:15-9:30	0
9:30-9:45	2
9:45-10:00	3
TOTAL	7

Date: Tuesday, September 1, 2015 Time: 4:00 PM – 5:00 PM 85° , Sunny	
	# vehicles entering site
4:00-4:15	4
4:15-4:30	3
4:30-4:45	3
4:45-5:00	1
TOTAL	11

Date: Saturday, September 5, 2015 Time: 9:00 AM – 10:00 AM 65° , Sunny	
	# vehicles entering site
9:00-9:15	1
9:15-9:30	2
9:30-9:45	2
9:45-10:00	2
TOTAL	7

Results for Public Storage, 945 Moody Street, Waltham: 6-hour site average: 5.3 vehicle trips entering per hour

2. EZ Storage, 300 Needham Street, Newton

Date: Wednesday, May 11, 2016 Time: 2:45 PM – 5:45 PM 75° , Sunny		
	# vehicles entering site*	# trucks/vans entering site
2:45-3:00	1	0
3:00-3:15	0	0
3:15-3:30	1	0
3:30-3:45	1	0
3:45-4:00	1	1
4:00-4:15	2	0
4:15-4:30	1	1
4:30-4:45	0	0
4:45-5:00	3	1
5:00-5:15	3	1
5:15-5:30	1	0
5:30-5:45	1	0
TOTAL (5.0 per hour)	15	4

* It was not possible to survey vehicles exiting the site at this location since both the site entrance and site exit could not be viewed simultaneously.

Date: Tuesday, September 1, 2015 Time: 9:00 AM – 10:00 AM 75° , Sunny	
	# vehicles entering site
9:00-9:15	2
9:15-9:30	3
9:30-9:45	0
9:45-10:00	2
TOTAL	7

Date: Friday, September 4, 2015 Time: 4:15 PM – 5:15 PM 75° , Sunny	
	# vehicles entering site
4:15-4:30	3
4:30-4:45	4
4:45-5:00	1
5:00-5:15	2
TOTAL	10

Date: Saturday, September 5, 2015 Time: 11:45 AM – 12:45 AM 75° , Sunny	
	# vehicles entering site
11:45-12:00	0
12:00-12:15	2
12:15-12:30	3
12:30-12:45	3
TOTAL	8

Results for EZ Storage, 300 Needham Street, Newton: 6-hour site average: 6.7 vehicle trips entering per hour

3. Current site, 255-257 Newtonville Avenue, landscaping business and non-profit organization (Waypoint Adventures)

Date: Friday, May 6, 2016 Time: 1:30 PM – 3:30 PM 55° , Cloudy			
	# vehicles entering site	# vehicles exiting site	# trucks/vans entering site
1:30-1:45	2	0	1
1:45-2:00	4	2	0
2:00-2:15	1	1	0
2:15-2:30	2	1	1
2:30-2:45	2	1	1
2:45-3:00	0	2	0
3:00-3:15	2	0	0
3:15-3:30	1	0	0
TOTAL	14	7	3

Date: Monday, May 9, 2016 Time: 3:30 PM – 4:30 PM 65° , Sunny			
	# vehicles entering site	# vehicles exiting site	# trucks/vans entering site
3:30-3:45	2	3	0
3:45-4:00	0	0	0
4:00-4:15	3	0	3
4:15-4:30	1	0	0
TOTAL	6	3	3

Date: Monday, May 9, 2016 Time: 7:30 AM – 9:30 AM 55° , Partly Sunny			
	# vehicles entering site	# vehicles exiting site	# trucks/vans entering site
7:30-7:45	0	1	0
7:45-8:00	2	2	2
8:00-8:15	1	0	0
8:15-8:30	1	1	1
8:30-8:45	1	2	1
8:45-9:00	1	1	0
9:00-9:15	1	0	0
9:15-9:30	1	0	1
TOTAL	8	7	5

Results for current Site: 5-hour site average: 5.6 vehicle trips entering per hour

Combining the data from both 2015 and 2016 for the two comparable storage facilities reveals several points. First, the total number of vehicle trips to both sites during the 12 hours of observations was 72. This equates to 6.0 trips per hour or roughly one vehicle entering the site every 10 minutes. If both entering and exiting trips are factored in, the projected number of two trips is 12.0 per hour or one trip every 5.0 minutes. Second, the 15-minute intervals reveal a range of between 0 and 4 entering trips during the 48 surveyed intervals. This reveals that traffic to the storage facilities (even at peak times) is relatively small and steady regardless of the day and time.

The 2015 report highlighted that the perceived peak time of year for self storage facilities occurs in late August and early September, coinciding with the start of the college academic year. Our recent surveys revealed that this perception has validity, as the August/September 2015 counts showed 8.3 vehicles per hour entering both facilities whereas in May 2016 it was just 3.7 vehicles entering per hour, using an equal number of surveyed hours (6) at peak times. Based on the observed data points, it is likely that no more than 8 vehicles per peak hour would enter the site at the peak time of year.

The size of both storage facilities can be factored in to the proposed Newtonville Avenue site. Public Storage on Moody Street in Waltham is very comparable in both the total building square footage and in terms of the number of units. Public Storage is 117,500 gross square feet with 1015 storage units. The proposed facility on Newtonville Avenue would have 113,187 gross square feet with 1025 storage units. Public Storage generated an average of 5.3 one-way trips to the site per hour when combining both the 2015 and 2016 surveys. The figure was 8.3 trips per hour in August/September 2015 and 2.3 in May 2016 at Public Storage. An upper limit estimate of approximately 8 trips per hour at the peak time of year is therefore a reasonable expectation for 255-257 Newtonville Avenue.

Using the May 2016 data recorded for the current landscaping business and non-profit office use, there are on average 5.6 vehicle trips entering the site during the 5 peak hours surveyed. This is very close to the overall 6.0 trips for both storage facilities using all of the surveys (12 hours) from 2015 and May 2016. If all of the counts (both on site and at comparable storage facilities) from only the May 2016 counts are compared, it is important to note that the two comparable storage facilities generated an average of 3.7 trips per hour whereas the present uses produced an even higher average of 5.6 trips per hour. It must be noted that the current site is underutilized and other possible future land uses whether it be office or other types of commercial or even residential would almost certainly result in a large increase in vehicular trips to the site, well above 5.6 trips per hour.

The number and potentially high percentage of truck trips to a self storage facility was identified as a concern at the May 3 public hearing. The recent May 2016 surveys at the two comparable facilities made note of the number of truck and van trips to the sites. Of the 22 vehicle trips to both sites recorded in the 6 hours of observations, a total of 5 trucks and vans or just 22.7% of the trips to both sites originated by truck, the rest were smaller passenger vehicles accessing the site.

Summary and Conclusion

The proposed self-storage facility at 255-257 Newtonville Avenue is a relatively low traffic generator when compared with office or residential uses of a similar scale. Our study of two comparably sized storage facilities reveals an average trip rate of 6.0 trips per hour to each site. This figure works out to one trip to the site approximately every ten minutes, even during peak periods. During off-peak hours, the number of trips to the site will be far less, or almost non-existent. Our May 2016 survey showed the current land use generating 5.6 entering trips per hour, if this is compared with the two comparable storage facilities at the same time period (May 2016) where 3.7 entering trips per hour were observed, then the proposed storage use would generate fewer trips than what is currently being experienced at this time of year. It is important to note that the current site is certainly underutilized compared with potential office, commercial, or residential uses that might occupy it and the larger number of vehicle trips those uses would generate.

The current surveys conducted in May 2016 reinforce the earlier findings in 2015 that the late August-early September timeframe is likely the busiest time of year for facilities of this type. Even at the peak hours of the peak times of year, an overall upper limit of approximately 8 vehicles entering per hour can be expected at the Newtonville site. The data acquired from Public Storage in Waltham is most reliable as that facility and the proposed Newtonville facility are nearly identical in size and number of storage units.



May 17, 2016

Mr. Andrew E Graves LEED AP
Principal Architect
BL Companies
355 Research Parkway
Meriden, CT 06450

Ref 4121

Re: Self-Storage Facility Sound Study Opinion Letter, Newton, MA

Dear Mr. Graves:

Tech Environmental, Inc. (TE) performed a sound evaluation for a proposed self-storage facility on 255-257 Newtonville Avenue, Newton, MA. The sound evaluation includes a review of existing land use and sound conditions, proposed building and site plans, and rooftop units (RTUs) specifications.

COMMON MEASURES OF COMMUNITY NOISE

Noise is defined as "unwanted sound", which implies sound pressure levels that are annoying or disrupt activities people are engaged in. The human sense of hearing is subjective and highly variable between individuals. Noise regulations and guidelines set quantitative limits to the sound pressure level (measured with sound analyzers and predicted with computer models) in order to protect people from sound exposures that most would judge to be annoying or disruptive.

The loudness of a sound is dependent on the radiated energy of the sound source and the propagation and attenuation characteristics of the air. The standard unit of sound pressure level (L_p) is the decibel (dB), a logarithmic scale formed by taking 20 times the \log_{10} of a ratio of two pressures: the measured sound pressure divided by a reference sound pressure. The decibel level scale conveniently compresses the range of audible sound pressures, which span 12 orders of magnitude, into an easy-to-use scale spanning 0 to 120 dB. Airborne sound is referenced to 20 micro-Pascals (20 μPa), which corresponds to 0 dB and the threshold of hearing. A property of the decibel scale is that the sound pressure levels of two separate sounds are not directly additive. For example, if a sound of 70 dB is added to another sound of 70 dB, the total is only a 3-decibel increase (or 73 dB), not a doubling to 140 dB. For broadband sounds, a 3 dB change is the minimum change perceptible to the human ear.

Non-steady noise exposure in a community is commonly expressed in terms of the A-weighted sound level (dBA); A-weighting approximates the frequency response of the human ear. Levels of many sounds change from moment to moment. Some are sharp impulses lasting one-second or less, while others rise and fall over much longer periods of time. There are various measures of sound pressure designed for different purposes. To establish the background ambient sound level in an area, the L_{90}

metric, which is the sound level exceeded 90 percent of the time, is typically used. The L_{90} can also be thought of as the level representing the quietest 10 percent over a given time period. The L_{eq} , or equivalent sound level, is the steady-state sound level over a period of time that has the same acoustic energy as the fluctuating sounds that actually occurred during that same period. It is commonly referred to as the average sound level. The L_{max} , or maximum sound level, represents the one-second peak level experienced during a given time period. These measures are generally reported to the nearest whole decibel as broadband sound pressure level, i.e., broadband sound levels include sounds at all frequencies. Sound level data also typically include an analysis of the sound spectrum into its various frequency components to determine tonal characteristics. The unit of frequency is Hertz (Hz), measuring the cycles per second of the sound pressure waves, and typically the frequency analysis examines eleven octave bands from 16 to 16,000 Hz. MassDEP Noise Policy states that a source creates a pure tone if acoustic energy is concentrated in a narrow frequency range and one octave band has a sound level 3 dB greater than both adjacent octave bands.

Table 1 presents the perceived change in loudness of different changes in sound pressure levels.

TABLE 1
SUBJECTIVE EFFECT OF CHANGES IN SOUND PRESSURE LEVELS

Change in Sound Pressure Level	Perceived Change in Loudness
3 dB	Just perceptible
5 dB	Noticeable
10 dB	Twice (or half) as loud

APPLICABLE NOISE REGULATIONS

MassDEP Noise Policy

The Massachusetts Department of Environmental Protection (MassDEP) regulates noise through 310 CMR 7.10, "Air Pollution Control". In these regulations "air contaminant" is defined to include sound and a condition of "air pollution" includes the presence of an air contaminant in such concentration and duration as to "cause a nuisance" or "unreasonably interfere with the comfortable enjoyment of life and property".

Regulation 7.10 prohibits "unnecessary emissions" of noise. The MassDEP Noise Policy (Policy Statement 90-001, February 1, 1990) interprets a violation of this noise regulation to have occurred if the source causes either:

- (1) An increase in the broadband sound pressure level of more than 10 dBA above the ambient, or
- (2) A "pure tone" condition

The "ambient level" is defined as the L_{90} level measured during equipment operating hours. A "pure tone" condition occurs when any octave band sound pressure level exceeds both of the two adjacent octave band sound pressure levels by 3 dB or more.

The MassDEP does not regulate sound from construction activity and does not regulate sound from motor vehicles accessing the site or from truck safety backup alarms.

City of Newton

The Noise Control Ordinance of the City of Newton (Section 20-3 Noise Control) defines noise as a condition caused by a source that increases noise levels 10 dB(A) or more above background noise level, except if the noise source produces a tonal sound, in which case an increase of 5 dB(A) or more above background noise level is sufficient to cause noise pollution.

The ordinance defines a tonal sound as any sound that is judged by a listener to have the characteristics of a pure tone, whine, hum or buzz.

The Noise Control Ordinance establishes maximum noise levels for HVAC systems. The ordinance states that "*No person shall operate any air conditioning, refrigeration or heating equipment for any residence or other structure or operate any pumping, filtering or heating equipment for any pool or reservoir in such manner as to create any noise which would cause the noise level on the premises of any other occupied property or if a condominium, apartment house, duplex, or attached business, within any adjoining unit, to exceed the background noise level by more than 5 dB(A).*"

EXISTING SOUND CONDITIONS

The proposed site is bound by Interstate 90 (I-90) to the north, the NEFCO property to the west, Lewis Terrace residences to the east and Newtonville Avenue residences to the south. The dominant noise sources are traffic along I-90 and local traffic along Newtonville Avenue. Highway traffic noise tends to be the loudest just before and after the peak morning and afternoon rush hours. However, the major source of sound from the proposed self-storage building will be roof top units (RTUs), which can operate 24 hours a day and seven days a week; thus, the quietest nighttime hours are used to determine compliance with the MassDEP Noise Policy and City Noise Control Ordinance.

The residences on Lewis Terrace are closest to I-90, and therefore, the background sound levels will be the loudest compared to residences on Newtonville Avenue, which are also impacted by local traffic noise. TE has not taken sound level measurements to define existing background conditions. However, the average (L_{eq}) sound levels near a highway during the quietest nighttime hours similar to the conditions near the proposed site are 50 to 60 dBA and the background ambient (L_{90}) sound levels are approximately 10 dBA quieter or 40 to 50 dBA based on similar sound level measurements taken near an interstate highway in Massachusetts.¹

¹ Tech Environmental sound level measurements of I-495 in Bellingham, MA.

PROPOSED FACILITY SOUND LEVELS

The primary sources of continuous operational sound are four package rooftop units (RTUs) situated closest to the I-90. The acoustic profile from all four RTUs operating concurrently under full load conditions is assumed as a worst-case scenario. The roof plan shows that four (25-ton) Carrier RTUs will be installed on the west side of the building furthest away from residences on Lewis Terrace and Newtonville Avenue. According to Carrier's manufacturer specification, the reference sound power level is 86 dBA.² A review of the octave band sound levels reveals that the proposed unit does not produce a tonal sound.

Sound propagating outdoors through the atmosphere generally decreases in level with increasing distance between the source and the receiver. This attenuation is the result of several mechanisms, principally, geometrical divergence from the sound source, absorption of acoustic energy by the air through which the sound waves propagate, and the effect of the propagation close to different ground surfaces. The distance between the RTUs and the nearest residences on Lewis Terrace and Newtonville Avenue ranges from approximately 240 to 340 feet away. Accounting for sound attenuation due to geometric divergence (distance) only, the calculated sound levels from the RTUs at the nearest residences on Lewis Terrace and Newtonville Avenue would be 45 and 46 dBA, respectively. The adding of the RTUs sound levels to the assumed background L_{90} sound level of 40 dBA would increase the background levels to 46 to 47 dBA, or approximately 6 to 7 dBA. These changes in sound levels would comply with the MassDEP Noise Policy allowable sound level increase of 10 dBA, but would exceed the City's Noise Control Ordinance allowable sound level increase of 5 dBA for HVAC equipment.

You have advised me that additional acoustical treatment including perimeter condenser fan panels such as the BRD Noise and Vibration, Inc. HUSH GUARD (HGU model) or equal will be installed on each RTU. This would reduce the predicted sound level increases to less than 3 dBA above the background L_{90} level. A less than 3 dBA increase in background sound level is readily achievable with those fan panels and will be imperceptible by people at the Lewis Terrace and Newtonville Avenue residences.

² A sound power level of 87 dBA produces a relatively low sound pressure level of 43 dBA at a distance of 100 feet.

CONCLUSION

It is my professional opinion that the operations of the RTUs on the self-storage facility will comply with the MassDEP Noise Policy and City's Noise Control Ordinance with the installation of acoustic condenser fan panels on all four RTUs. This would reduce the predicted sound level increases to less than 3 dBA above the background L₉₀ level. A less than 3 dBA increase in background sound level is readily achievable with those fan panels and will be imperceptible by people at the Lewis Terrace and Newtonville Avenue residences.

Sincerely yours,

TECH ENVIRONMENTAL, INC.



Marc C. Wallace, QEP
Principal