Attachment A

MEMORANDUM

To: Austin Street Partners, LLC

From: Nelson\Nygaard Consulting Associates, Inc.

Date: May 12, 2015

Subject: 28 Austin Street – Transportation Impact Study

This technical memo is provided in support of the Special Permit Application for 28 Austin Street, and is intended to evaluate the potential transportation and parking impacts of the proposed development in the village of Newtonville. The basis for the transportation evaluation of the Development was coordinated with City of Newton staff and informed by Austin Street Partners LLC's continued conversation with the community and City staff. This memo will describe the general project plan, articulate existing transportation conditions and model the potential future transportation impacts given the site program, proposed uses, and the context of nearby transportation trends and opportunities. While the overall transportation impacts of the Development are minimal, the memorandum further includes a qualitative evaluation of potential area improvements that may be contemplated and completed by the City.

SUMMARY

In summary, the 28 Austin Street project will:

- Increase retail frontage on Austin Street, extending the street-wall and active environment of Newtonville.
- Widen sidewalks, add pedestrian connectivity and create additional pedestrian plaza areas and outdoor seating for Newtonville.
- Retain the existing public parking (127 spaces) for public use.
- Create additional parking (92 spaces) that will adequately serve the proposed program.
- Contribute to the vital, active, mixed-use, multimodal environment of Newtonville.
- Generate relatively few peak hour vehicle trips (32 AM peak; 46 PM peak).
- Maintains overall operations for all study area intersections as Level of Service (LOS) A in both Existing and Build scenarios.
- All intersection approaches operate below capacity (volume/capacity < 1.0), with minor changes in LOS for only two approaches, which are resulting from small (< 5 seconds) additional delay.
- Identify potential improvements to traffic circulation and operations in Newtonville.
- Evaluate options for additional parking during and post construction.
- Continue to coordinate with the City-led working group on Village-wide issues.

1.0 – PROJECT DESCRIPTION

In response to a Request for Proposals issued by the City of Newton, Austin Street Partners LLC was chosen as the developer to build a mixed-use residential development at 28 Austin Street in the village of Newtonville. The 28 Austin Street site currently serves as a municipal (surface) parking lot owned by the City of Newton and open to the public.

Newtonville is a dense, active, vibrant area of the City of Newton. It has local-serving retail, established adjacent residential neighborhoods, a solid walking environment, a supermarket, and good public transportation access. Its streets are active, and serve many types of transportation users. As proposed, the development will modestly expand the retail frontage in Newtonville along Austin Street, while being attractive to new apartment residents with a desire to take advantage of the amenities in the village. From a streetscape perspective, the proposed Development will add improved sidewalks, provide better pedestrian connections, retain public parking and contribute vitality, activity and amenities to Newtonville. The project will infill an underutilized area of the village fabric but it will also fulfill a need for diverse housing options in Newton, all with walkable access to local services, entertainment and transit. The development would be sited on what currently serves as a municipal-owned parking lot.

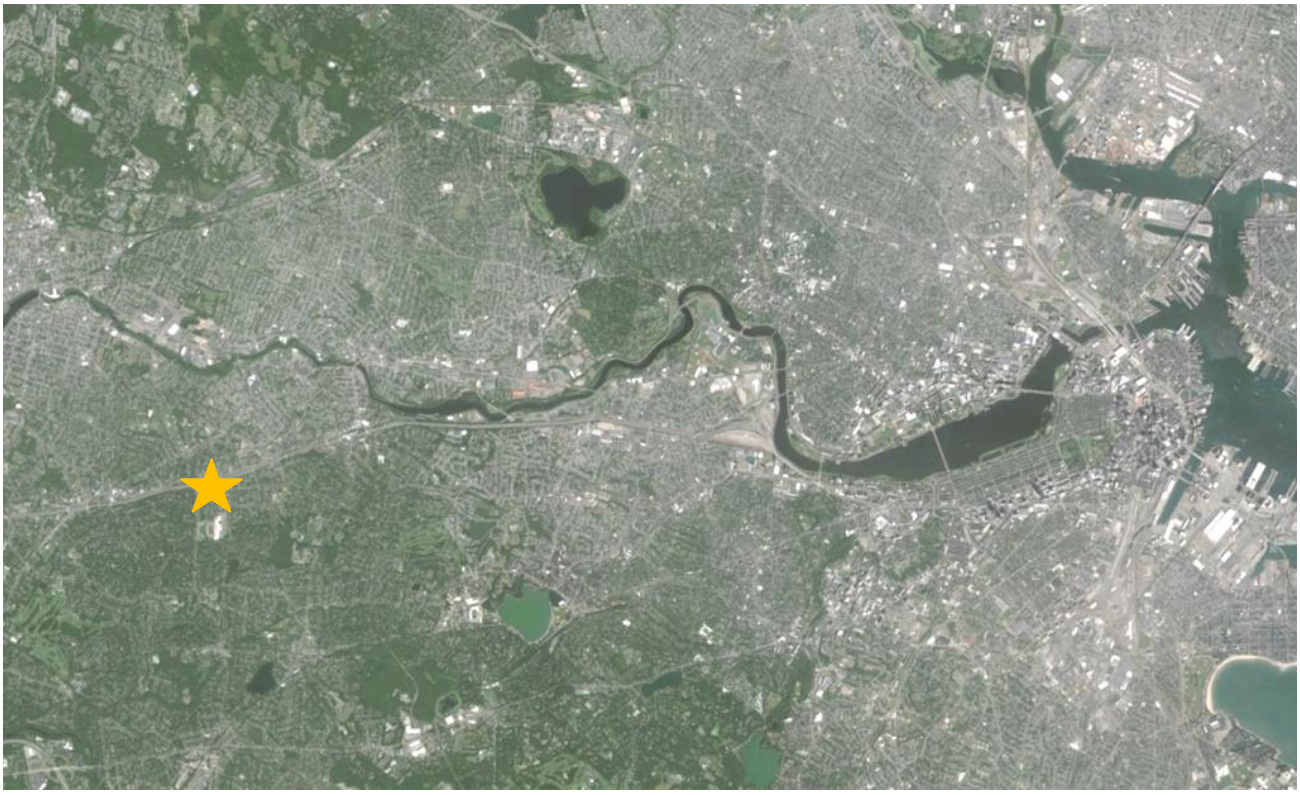
1.1 Project Location

The proposed 28 Austin Street development would be sited on the south side of Austin Street, just west of the Walnut Street commercial corridor. The Site, currently a City of Newton municipal parking lot, is bounded on the north side by Austin Street and on the east side by Philip Bram Way. The site is located in the commercial village of Newtonville, which is approximately ten miles west of Boston. Newtonville, and the site, are in close proximity of the Massachusetts Turnpike (I-90) corridor. Walnut Street, Lowell Avenue and Washington Streets provide good local and regional access. ***Figure 1*** identifies the general location of the proposed site.

Newtonville is a highly walkable environment. A Star Market supermarket is located across Austin Street from the site, with additional adjacent local-serving retail a short, pleasant walk away. The site is currently bounded by a bank on the west side, a church and apartments on the south side, a retail building on the east, and the Star Market across Austin Street.

Public transportation, including four (4) bus routes and the Newtonville MBTA Commuter Rail station are all within a short walk. Newtonville residents already enjoy ready access to all these amenities, and it is expected that project residents will be attracted to and use these as well. In fact, the project will expand local retail and recreational opportunities.

Figure 1: Project Location



1.2 Existing Use

The 28 Austin Street site currently serves as a municipal (surface) parking lot owned by the City of Newton and open to the public. The proponent, Austin Street Partners LLC, was chosen as the developer in response to a Request for Proposals issued by the City of Newton. In total, the lot provides 127 metered public parking spaces (4 of which are designated handicapped) and an additional thirty-two (32) spots which are restricted for use for Newton North High School "Tiger" student permit parking. The site is well used for access to Newtonville, and a recent study of parking supply and occupancy was completed by the City of Newton and is described in detail further in this memorandum.

Metered spaces in the Austin Street lot are in effect Monday through Friday from 8:00 am to 6:00 pm. Spaces are free on weekends, when incidentally they show higher utilization on Saturdays. Sixty-eight (68) meters have a three (3) hour time limit and are $0.75/hour. Fifty-five (55) meters are 12-hour meters and are $0.50/hour. There are four (4) handicapped spaces, and the additional thirty-two (32) Newton North High School "Tiger" restricted permit spaces located in the lot.

A desire for a new use on the site was first put forth in the City of Newton's 2007 comprehensive plan and, in 2010, the City issued a request for interest to redevelop the site. As envisioned, a redevelopment would transform the existing parking lot into a mixed use development not to exceed five stories. The development would also be required to retain existing public parking on the site, which is shown further in ***Figure 2***.

Figure 2: 28 Austin Street Site

1.3 Proposed Program and Uses

The development proposes a mixed-use four-story building that will be integrated into the Newtonville area. The project program is comprised of housing, with ground level retail and associated parking. Public parking on the site will also be retained. The project will greatly enhance the streetscape and access along Austin Street, providing wider sidewalks, outdoor seating, and an active, well-managed frontage. The program as proposed includes 68 housing units, to be located on the upper three floors. The ground level will have approximately 1,500 square feet of shared office space and 3,500 square feet of retail. A summary of the building program can be found in ***Table 1***.

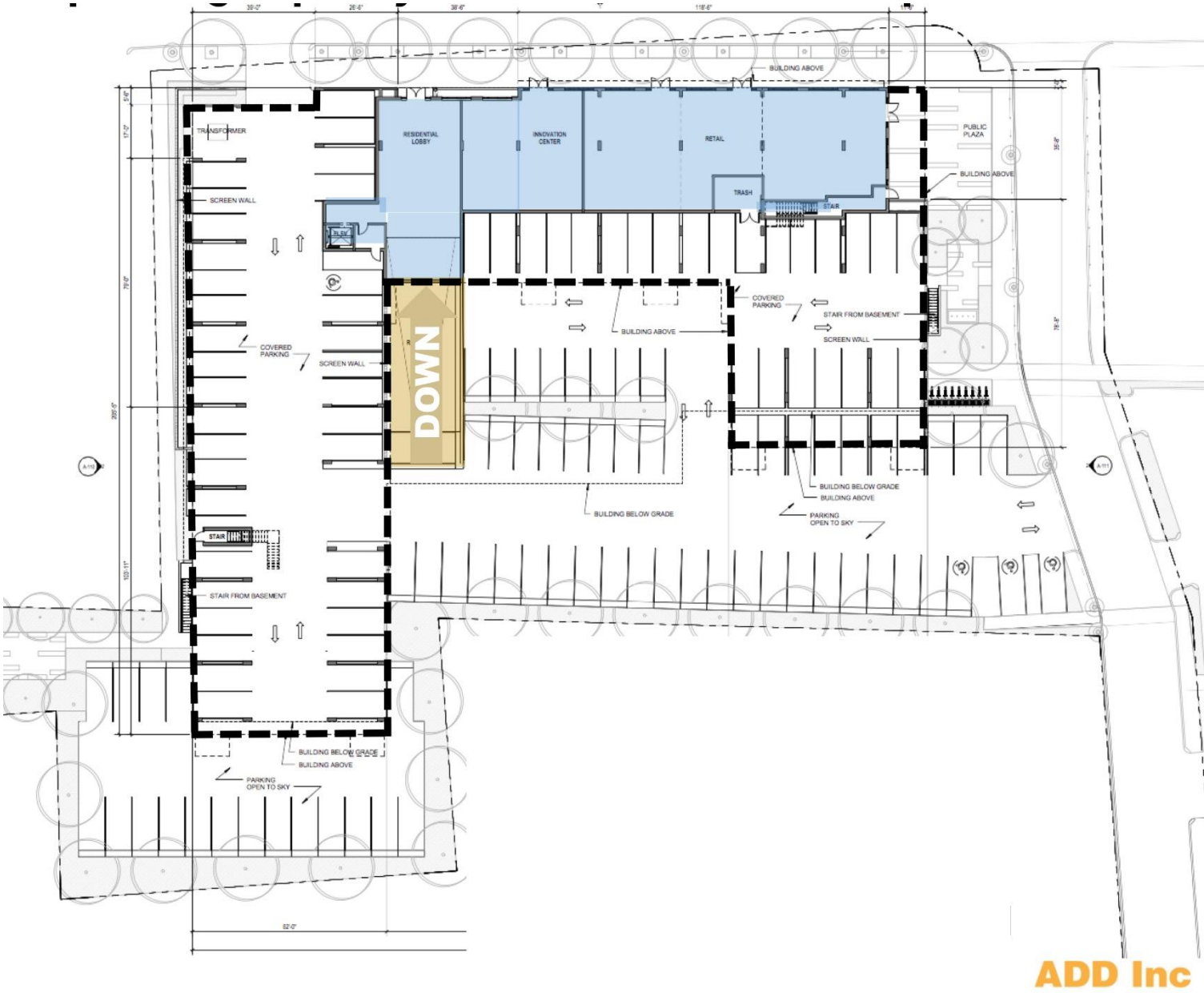
The project will have pedestrian friendly access to grocery, pharmacy, restaurants, and shopping. Vehicular site access is planned via a driveway on Austin Street and another driveway on Philip Bram Way. The site is also planned to allow for a future Hubway station, electric vehicle charging stations, car sharing (Zipcar, if possible), bicycle racks, and market pricing (for residents' second parking space) to minimize car ownership. The plan for parking will retain all of the current 127 public parking spaces at grade and an additional ninety (90) private parking spaces will be provided underground for residents and employees, accessible from the new public parking lot located behind the development.

Table 1: 28 Austin Street Development Program

Project Component	Units/Square Feet
Residential	68 units
Retail	3,500 SF
Shared Offices	1,500 SF
Parking - Private	90 spaces
Parking - Public	127 spaces

Figure 3: Current Concept Rendering, Credit: ADD Inc

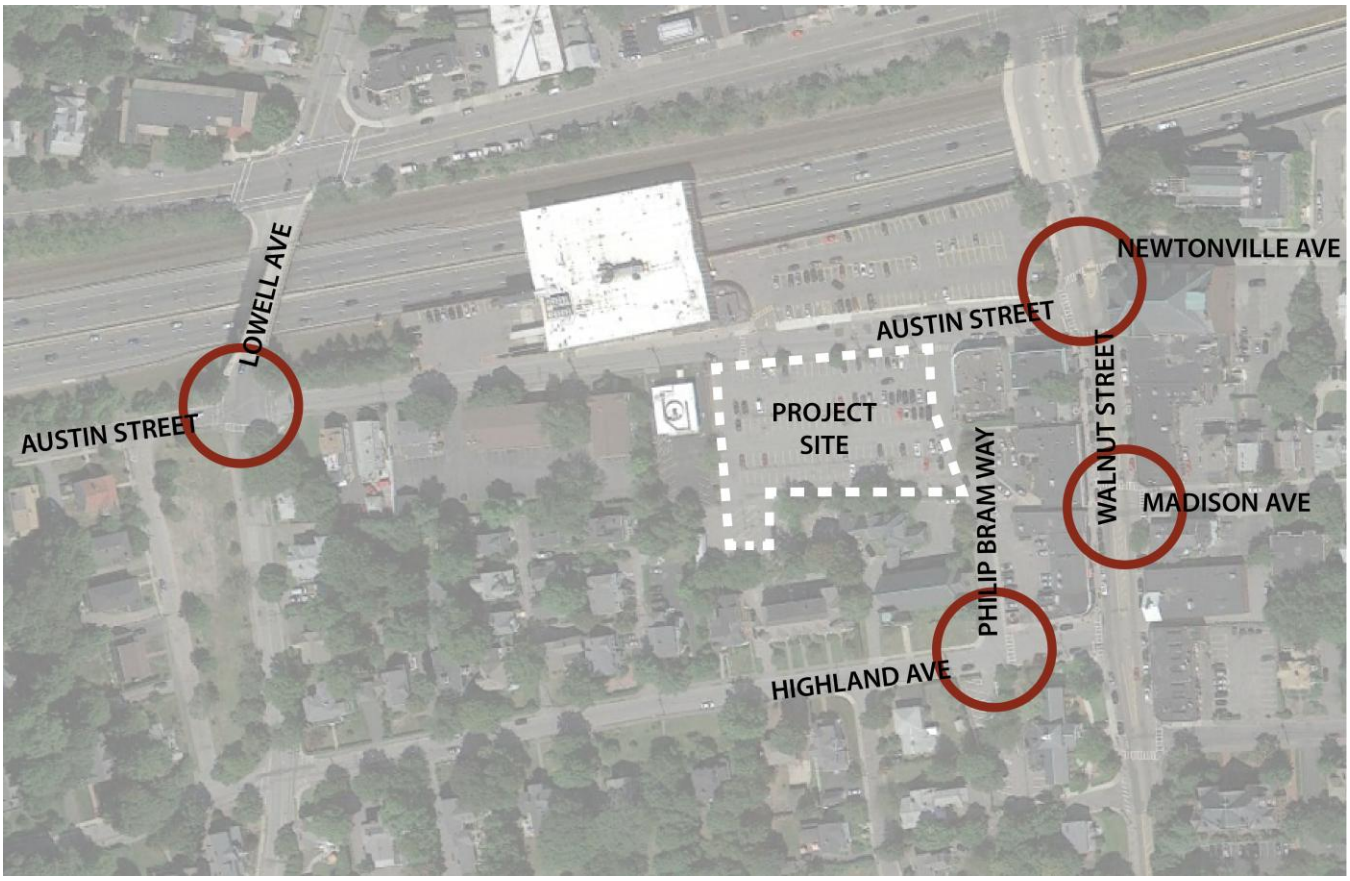
Figure 4: Ground Level Parking Program



2.0 – EXISTING CONDITIONS

The 28 Austin Street development site is located in the heart of Newtonville with frontage on Austin Street, as shown in ***Figure 5*** below. The project will be situated on the site of the municipal parking lot in Newtonville, just west of the Walnut Street intersection. Newtonville is one of the thirteen villages of Newton and contains a robust, local retail area which extends both on the North and South side of the Massachusetts Turnpike. As in most of Newton, the village area is surrounded by established residential blocks. The Newtonville area is blessed with good connectivity, with both Walnut and Lowell Streets extending across the Massachusetts Turnpike, and many local connecting streets crossing the neighborhood. The commercial area and the surrounding neighborhood are extremely walkable, with well-used sidewalks connecting neighbors to the amenities of village living. The site is well-situated near the commercial, retail and neighboring residential offerings of this part of the city, and is also well-served by multiple public transportation options. The combination of transit access, walkable neighborhood, vibrant retail, and a well-connected roadway network will continue to attract the kind of residents and merchants that seek a range of travel alternatives. A description and analysis of the existing roadways and intersections in the below study area are to follow.

Figure 5: Project Study Area



2.1 Existing Roadway Network

The current municipal parking lot (and thus the proposed development) site has primary frontage and access from Austin Street. As a mixed-use development, with primarily local serving uses, the project will most directly utilize the sidewalks, roadways and transit immediately surrounding the Site. These streets include a mix of local residential streets along with local collectors that provide connections to other Newton neighborhoods. The

following is a brief description of the principal study area roadways and intersections evaluated as part of this analysis.

Walnut Street

The project site is located a half block west of Walnut Street which is a two-way, two-lane urban collector that runs north to south from Crafts Street to Dedham Street. In the vicinity of the site, Walnut Street is a commercial street, lined with retail. Walnut Street also provides a connection across the Massachusetts Turnpike. The curb-to-curb width over the area between Austin Street and Washington Park varies between approximately 40 and 55 feet. On the bridge over the Mass Pike/I-90, Walnut Street is 72' and six lanes wide, with three lanes in each direction. There are 8 foot sidewalks on both sides of the street. One-hour parking is generally allowed between the hours of 7:00 am and 7:00 pm on both sides of the roadway from Austin Street to Washington Park, a stretch which also includes a striped median of varying width.

Austin Street

Austin Street is a two-way, two-lane local street that runs east-west, parallel to the Massachusetts Turnpike from Chestnut Street on the west to Walnut Street on the east. The current municipal lot (and development site) have frontage on the section of Austin Street between Lowell Avenue and Philip Bram Way. Across from the Site, Austin Street hosts a Star Market supermarket, with significant parking, while west of the site, Austin Street is primarily two and three-story commercial buildings with office with some residential further west. Parking is allowed on both sides of the street between Philip Bram Way and Walnut Street where the curb to curb width is around 40 feet. There is parking on the North side of the street only between the westerly curb cut to the main Star Market parking lot and Philip Bram Way, a stretch which is only 30' wide. Parking is not allowed between Lowell Avenue and the Star Market's parking lot curb cut. Two-way traffic on Austin Street is divided by a double yellow line. There are 8-foot sidewalks on both sides of the street.

Philip Bram Way

Philip Bram Way is a driveway that acts as a two-way local access street that runs north to south between Austin Street and Highland Avenue. Philip Bram Way functions as a public roadway, and is also used by local merchants to access the rear of the several properties fronting Walnut Street and extends along the backs of these properties from Highland Avenue to Austin Street. Prior agreement with the City established a right of way giving abutters rear access to their shops over the right of way. The paved driving way is 30' wide from Austin Street to the southerly edge of the Austin Street parking lot and the paved width varies from 22 to 24' from the Austin Street lot to where Philip Bram Way meets Highland Avenue. There is a six foot sidewalk running along the east side of Philip Bram Way and there is not a sidewalk on the west side. Parking is not currently allowed on either side of Philip Bram Way, which is also not divided by any pavement markings.

Lowell Avenue

Lowell Avenue is a two-way local collector that runs north to south from Watertown Street to Commonwealth Avenue. Lowell Avenue runs essentially parallel to Walnut Street and also provides a connection across the Massachusetts Turnpike. Land use along Lowell Avenue is primarily residential. Parking is prohibited on the west side of the street 7:00 am to 10:00 pm from Austin Street southerly to Otis Street. Parking is allowed on the east side of the street between Austin Street and Highland Ave with the exception of between 7:00 am and 9:00 am. The curb-to-curb width is 32' and there are five foot sidewalks on both sides of the road. Traffic on Lowell is divided by a double yellow line.

Newtonville Avenue

Newtonville Avenue is a two-way local street that runs west to east from Walnut Street to Centre Street. Newtonville Avenue ends at Walnut Street, offset, and just slightly north from the Austin Street terminus. From Walnut Street to just past Bowers Street, Newtonville Avenue is commercial and provides access to parking facilities for properties that front on Walnut Street. East of Bowers Street, it is primarily residential. Newtonville is

25' wide curb-to-curb and parking is only allowed on the south side of the street. The parking 120 feet easterly of Walnut Street on the south side is metered with a one-hour limit 8:00am to 6:00 pm, while parking between 120 feet east of Walnut Street to Bowers Avenue is free and time-limited to one hour between 8:00 am and 6:00 pm From Bowers Street to Harvard Street, parking has a two-hour limit during the 8:00 am to 6:00 pm period. Two-way travel on Newtonville Avenue is divided by a double yellow line. There are eight foot sidewalks on both sides of the street.

Madison Avenue

Madison Avenue is a two-way local street that runs from west to east from Walnut Street to Harvard Street. The curb-to-curb width is 26'. Parking is never allowed on the south side of the street in the study area and parking is only allowed on the north side of the street. On the north side, parking between Walnut Street and a point 95' east has a one-hour time limit from 7:00 am to 7:00 pm and eastward from a point 115' east of Walnut, parking is prohibited during the daytime from 7:00 am to 10:00 am. There are not any pavement markings dividing traffic directions on the Madison Ave. There are seven-foot sidewalks on both sides of the street.

2.2 Existing Intersections

Four intersections adjacent to the site have been evaluated as part of the analysis for the proposed Development. ***Figure 5*** identifies the location of the intersections and their relation to the project site.

Austin Street/Lowell Avenue

The intersection of Austin Street and Lowell Avenue is an unsignalized four leg intersection with vehicular approaches from all directions. The north and southbound approaches on Lowell Avenue allow for uncontrolled movements. Both the east and westbound movements on Austin Street are controlled by stop signs. Sidewalks are provided along all sides of the intersection. There are two crosswalks across Austin Street and one crosswalk across Lowell Avenue on the south side of the intersection. There are curb ramps on all legs of the intersection.

Austin Street/Walnut Street/Newtonville Avenue

The intersection of Austin Street, Walnut Street and Newtonville Avenue is an unsignalized intersection, comprised of two off-set intersections. Walnut Street runs north-south, while the Newtonville Avenue approach is on the east side of Walnut Street, located just north of Austin Street. Austin Street runs east-west and intersects Walnut on the west side. These essentially function as one intersection, with both the Newtonville and Austin components having three approaches and all ways permitting two-way travel.

The northbound approach to Austin Street on Walnut Street has one left turn lane and one through lane. The southbound approach on Walnut Street has one left turn lane to Newtonville Avenue, one through lane, and one right turn lane to Austin Street. Northbound traffic on Walnut Street, north of Newtonville Avenue, is received by three lanes in the northbound direction on the bridge over I-90. North and southbound movements on Walnut Street are uncontrolled. Both the eastbound approach to Walnut Street on Austin Street and the westbound approach to Walnut Street on Newtonville Avenue are stop-controlled and permit two-way travel with one lane in each direction.

There are sidewalks on all legs of the intersection and there are crosswalks across Austin Street and across Newtonville Avenue. There are also crossings of Walnut Street on both the south side of Austin Street and the area between Austin Street and Newtonville Avenue. The crosswalk across Walnut Street on the north side of Austin Street includes an accessible median protected refuge in the center of the street. There are curb ramps wherever there are crosswalks. There is one parking space within the intersection on the right side of Walnut Street.

Madison Avenue/Walnut Street

The intersection of Madison Avenue and Walnut Street is an unsignalized T intersection where Madison Avenue terminates at Walnut Street. Both Walnut Street and Madison Avenue permit two-way travel with one lane in each

direction. Madison Avenue is stop controlled at the intersection of Walnut Street. There are 8 foot sidewalks on all legs of the intersections. There is a crosswalk across Madison Ave and across Walnut Street on the north side of the intersection. There are curb ramps where there are crosswalks.

Highland Avenue/Philip Bram Way

The intersection of Highland Avenue and Philip Bram Way is an unsignalized T intersection with Philip Bram Way terminating at Highland Avenue. Both Highland Avenue and Philip Bram Way permit two-way travel with one lane in each direction. Both the east and west movements on Highland Avenue are uncontrolled. Philip Bram Way has no stop control, but essentially functions as such, with limited overall volumes. A driveway to the senior center opens on the intersection from the south side of Highland Avenue. There are sidewalks on all legs of the intersection and curb ramps at the northwest and northeast corners. There are not currently any crosswalks at this intersection.

2.3 Existing Bicycle and Pedestrian Accommodations

Generally, the public streets directly adjacent and in the vicinity of Newtonville are in good condition. The adjacent, surrounding streets connect the nearby residential neighborhood to Newtonville Village Center. This primarily local serving area works as a "park-once" environment, with many patrons apparently visiting multiple establishments. The area provides well-suited connections that create and enable a safe walking environment for pedestrians. Recognizing the attractiveness, utility and continued vitality of Newtonville, the City of Newton has plans to re-pave and widen sidewalks in a section of Walnut Street through Newtonville in the near future.

Generally, most streets within at least a quarter-mile radius of the Site provide continuous sidewalks on both sides of the road with adequate pedestrian curb ramps and crossings. The pedestrian ramps are in fair condition, but many do not meet current accessibility standards. Currently there is a sidewalk on only one side of Philip Bram Way and the existing municipal parking lot does not provide adequate accommodations for pedestrians or those in wheelchairs. The majority of commercial streets have eight foot wide sidewalks and residential side streets typically have six foot wide sidewalks.

While there are not currently any designated on-street bicycle facilities on the streets directly adjacent to the site, Lowell Ave and Walnut Street are both designated bicycle routes as part of the Newton Bike Network Plan. 1 There is a bicycle rack at Star Market and a bicycle rack in front of the adjacent Starbucks but generally Newtonville is otherwise underserved by bicycle parking options.

The section of Walnut Street that runs through Newtonville is slated to be repaved soon and this work might include a plan for sidewalk and crossing improvements, bicycle facilities and other streetscape improvements.

2.4 Existing Public Transportation

Newtonville is well served by public transportation, with local bus service, a commuter rail station, and express service to Downtown Boston all within an easy walk of the Site.

Newtonville Commuter Rail Station

The site is within a five minute walk from the MBTA's Newtonville station, which runs parallel to the Massachusetts Turnpike, and has pedestrian access from Walnut Street. Newtonville Station is on the MBTA's Framingham/Worcester Commuter Rail Line, which provides daily and weekend service. Newtonville Station is in Commuter Rail fare Zone 1, and provides a 10 minute ride to Yawkey Station, a 15 minute ride to Back Bay Station and a 20 minute connection to South Station in downtown Boston. Newtonville is served by 26 trains/day, with 10

[1] http://www.newtonma.gov/civicax/filebank/documents/45917p17

inbound and 16 outbound stops. In the AM and PM peak times, there are five trains each connecting Newtonville to Downtown Boston.

MBTA Bus Service

Newtonville is also served by four MBTA bus routes with stops in walking distance to the Site. A map of routes and stops is included as ***Figure 6***. Route 59 is a local route that runs north/south on Walnut Street and has a stop on Walnut Street, less than one block from the proposed development. The bus stop on the northwest corner of Walnut and Austin Streets, has a covered shelter for riders. Route 59 runs throughout Newton, and connects north to Watertown Square. To the south it runs to Needham connecting through Needham Center all the way to the commuter rail station at Needham Junction. It also connects with the MBTA's Green Line "D" branch at Newton Highlands. Route 59 runs on 30-40 minute peak hour headways.

MBTA Routes 553, 554 and 556, run along Washington Street and connect as Express Routes (using the Massachusetts Turnpike) to downtown Boston. These routes have combined stops within a short walk of the Site, over the Walnut Street bridge. Westbound these routes connect to Brandeis/Roberts commuter rail station, Waltham Center, Waltham Highlands and Waverly Station. Combined there are over 15 rush hour buses in each direction on Washington Street near the Site. These buses also operate locally, with local fares allowed for riders who do not travel on the MassPike portion of the trip. The details of the MBTA bus routes are further shown in ***Table 2*** below.

Figure 6: MBTA Transit Options Near Site

Table 2 Newtonville MBTA Bus Routes

Bus Route	Origin- Destination	Weekday Peak/ Off Peak	Weekend
Route 59	Needham Junction – Watertown Square	30-40 minutes/ 35-45 minutes	90 minutes
Route 553	Roberts - Downtown Boston	25-30 minutes/60 minutes	40-45 minutes
Route 554	Waverley Square – Downtown Boston	30-40 minutes/ 60 minutes	No weekend service.
Route 556	Waltham Highlands – Downtown Boston	30 minutes/ 60 minutes	No weekend service.

2.5 Existing Modesplit

Newtonville is a dense, diverse, well-connected village that provides ample opportunities to travel using transit, walking, and biking. To better understand how current residents travel, mode split data was extracted from the U.S. Census in order to provide a baseline from which to evaluate predicted travel patterns. American Community Survey mode split information, from 2013 for a 5-year period, was drawn for Census Tract 3734. While this tract comprises the core of Newtonville, it extends well beyond the heart of the Village to include the larger residential neighborhood. ***Figure 7*** shows the Site in relation to the larger census tract. The proposed development is located within close proximity to both public transportation options, and the local-serving retail of Newtonville.

Figure 7: Location of Newtonville Census Tract 3734

Table 3: Existing Modesplit in Newtonville, Tract 3734, and City of Newton

Source: 2013 American Community Survey, 5-Year Estimates

Mode of Travel to Work	Newtonville	City of Newton	State of Massachusetts
Drove Alone	66.2%	64.1%	72.1%
Carpooled	5.8%	8.6%	7.9%
Public Transportation	13.0%	11.5%	9.3%
Walked	3.4%	5.5%	4.7%
Bicycle	0%	1.3%	0.7%
Taxi, Motorcycle or Other	0.6%	0.7%	0.8%
Worked at Home	11.1%	8.3%	4.3%

The existing mode split for Tract 3734 is similar to that of the City of Newton at large, as seen in ***Table 3***. More people take public transportation and work from home in Newtonville, than the city at large and less people walk, bike, and carpool to get to work as compared to the city. The area also shows a lower driving rate than the State of Massachusetts, and can be expected to have a lower rate than typical developments captured in national analyses by the Institute of Transportation Engineers (ITE). Additionally, as the development will be located in the heart of the village, with many daily amenities (including a supermarket, drug store and other significant shops) nearby, it can be expected to attract tenants more likely to use non-auto travel than the larger census tract.

2.6 Existing Volumes

In order to document existing transportation patterns, vehicle, pedestrian and bicycle turning movement counts (TMC's) were conducted. Following consultation with City of Newton staff, it was determined that counts could be conducted on Thursday, April 16th and Saturday, May 2nd. Turning movement counts were collected between 7:00 am and 9:00 am and 4:00 pm and 6:00 pm on Thursday and between 11:00 am and 2:00 pm on Saturday.[2] Counts included heavy vehicles, buses, cars, pedestrians and bicyclists. The raw counts are included in the Appendix of this memo. The analysis herein documents the patterns in volumes and turning movement counts at the study area intersections near the site. The existing conditions network was then used as a baseline to create the future scenarios also documented in Section 3. Maps of peak vehicular volumes are documented in the graphics to follow.

Vehicles

All of the streets in the study area carry relatively low volumes of vehicular traffic. On weekdays, in AM and PM peak periods, Walnut Street and Lowell Avenue carry higher volumes in both directions. It should also be noted that about 60 cars make the offset through movement from Austin Street to Newtonville Avenue in the weekday AM peak. During Saturday peak, Walnut Street and Lowell Avenue still carry the majority of vehicular volumes, though Lowell Avenue carries slightly less traffic than weekday peak. Activity is comparable on weekends and weekdays in other areas with the exception of increased activity on weekends in both directions on Philip Bram Way and around the Senior Center at Philip Bram Way and Highland Avenue.

[2] The peak period times were selected based on a discussion with the transportation staff of the City of Newton as City of Newton Schools were in session on Thursday, April 16th. We note further that Newton North High School classes start at 7:50AM and end between 2:20 and 3:20PM depending on the school day.

Bicycles

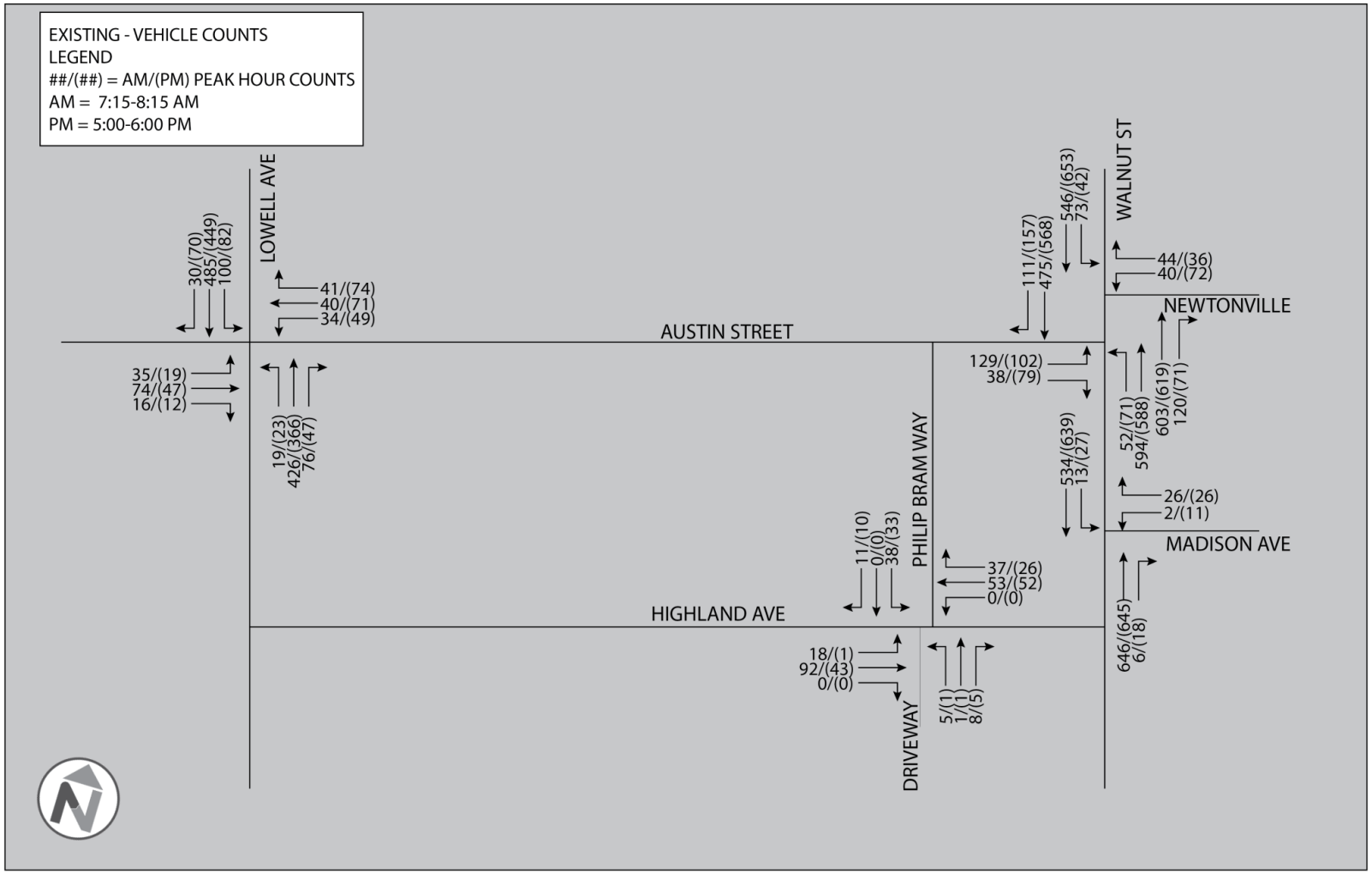
Peak hour bicycle volumes were observed and recorded as described above. The counts showed relatively low overall bicycle activity within the study area. The volume of bicycles is less than 1% of total intersection traffic, even at intersections with the most bicycling activity. The small volume of bicycles is mainly concentrated moving north and south on Walnut Street during the AM and PM peak. Currently there are not any striped on-street bicycle facilities within a ¼ mile walk radius from the site.

Pedestrians

Peak hour pedestrian counts were recorded as part of the transportation observations conducted on April 16th and May 2nd. Pedestrian volumes in the areas near the site indicate that PM peak activity is higher than AM peak on weekdays. On weekdays and weekends, the majority of pedestrian activity occurs along Walnut Street at both the intersection of Austin Street, Walnut Street and Newtonville Avenue and at Walnut Street and Madison Avenue.

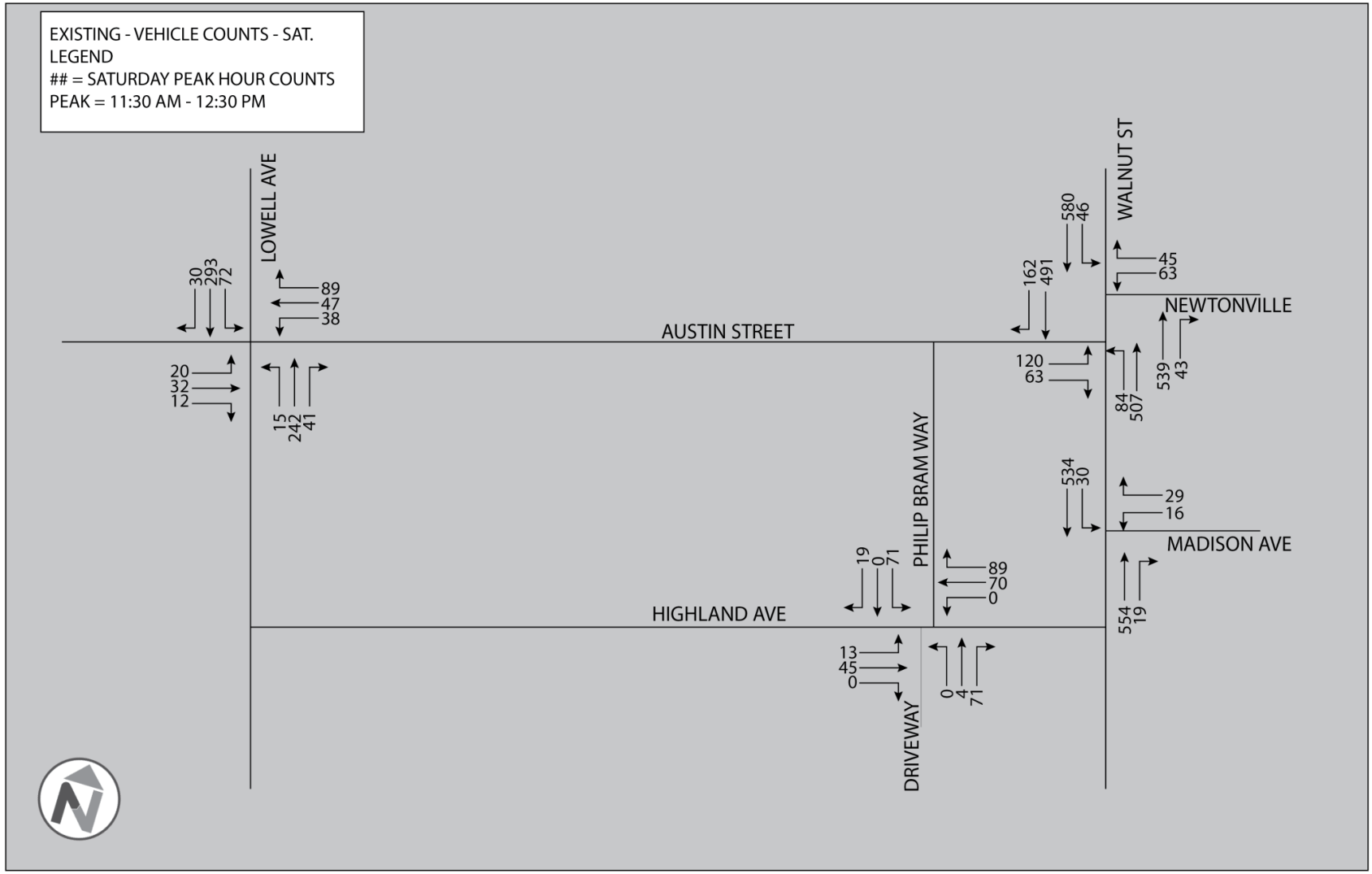
Figure 8 through Figure 11 show Vehicle, Bicycle and Pedestrian Turning Movements for the Peak Hour on a Weekday and Saturday respectively

Figure 8: Existing Peak Hour Vehicle Volumes – Weekday Peak



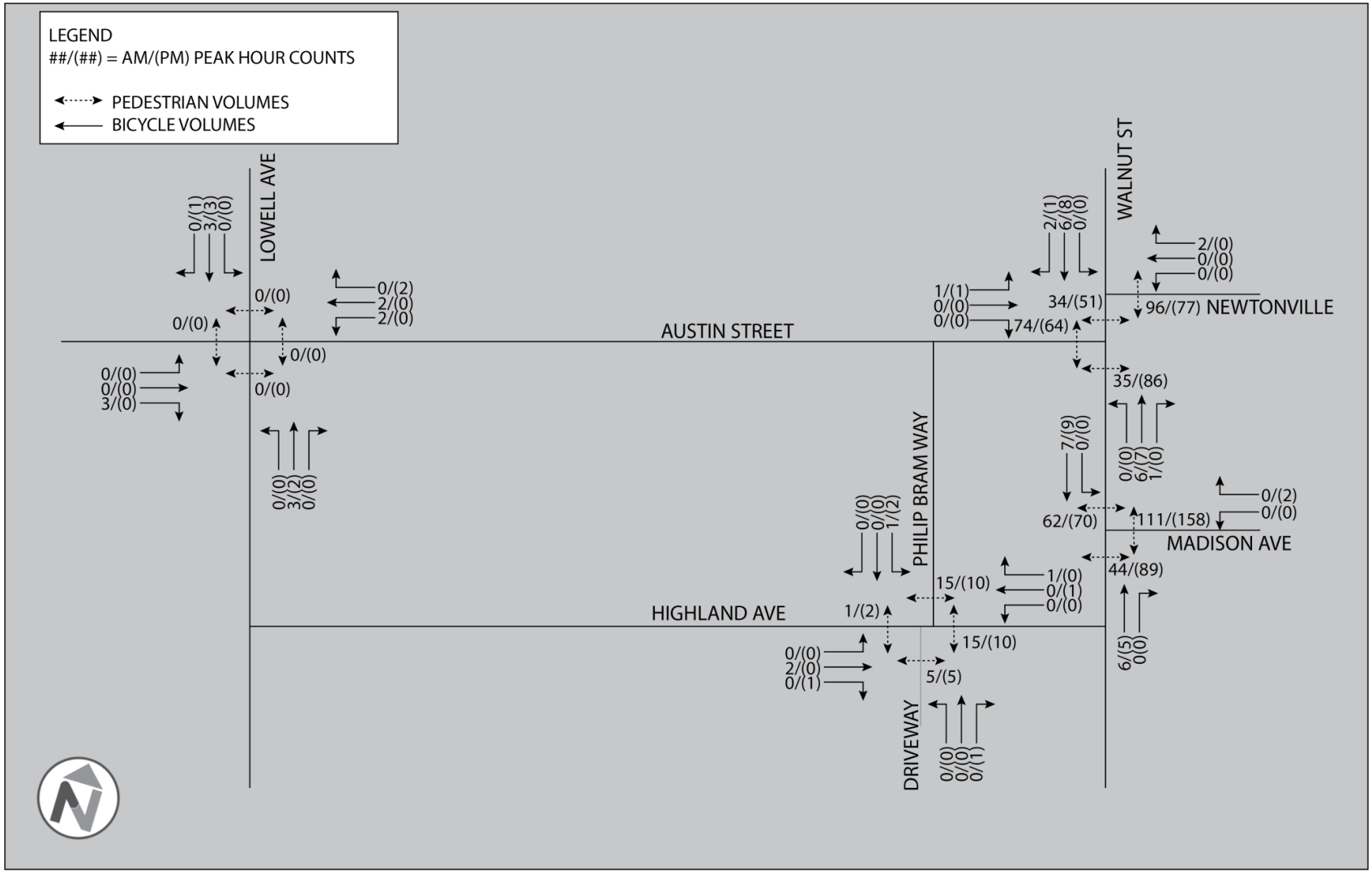
Note: Mapped based on overall study area activity peak.

Figure 9: Existing Peak Hour Vehicle Volumes – Saturday Peak



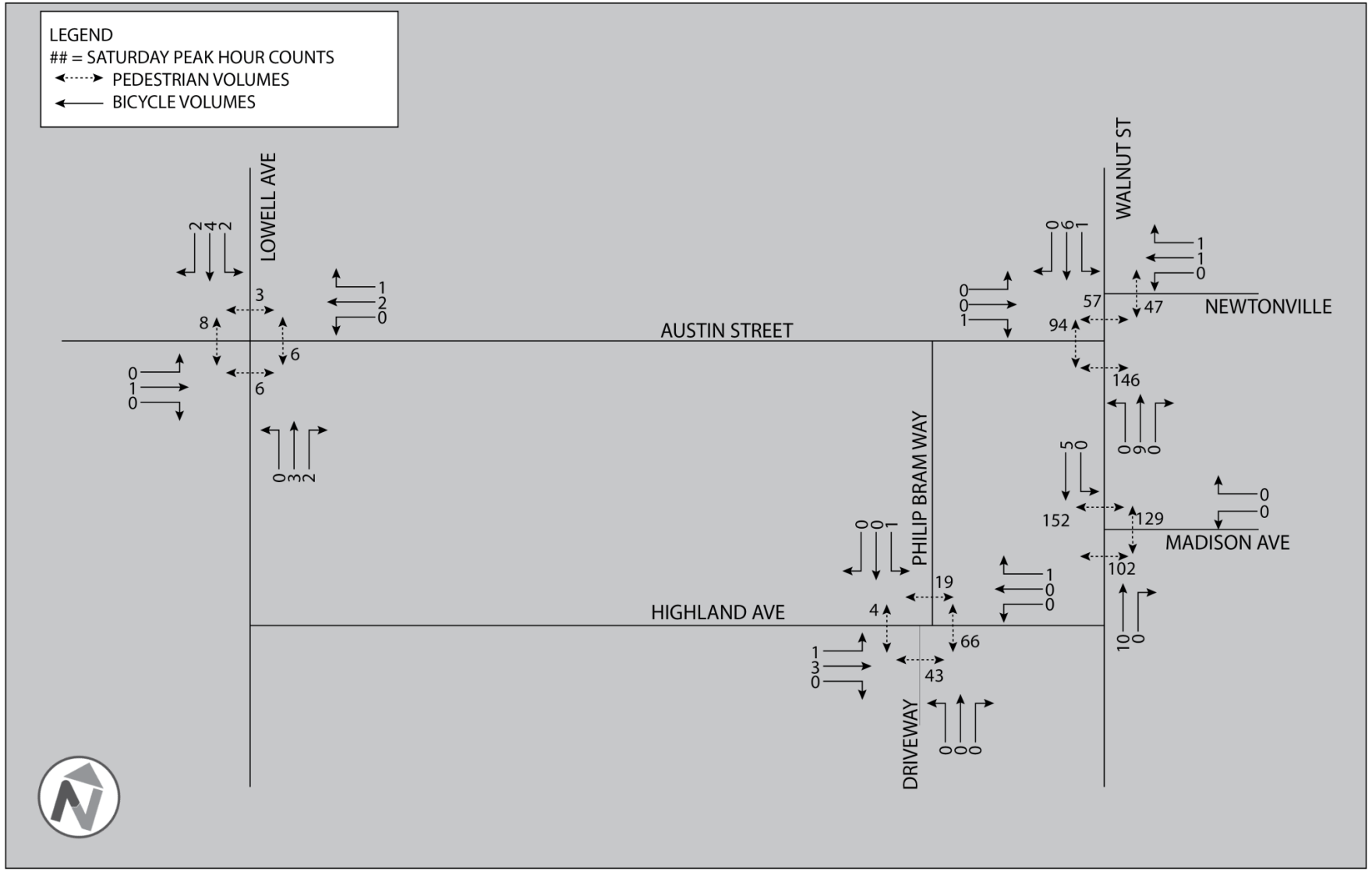
Note: Mapped based on overall study area activity peak.

Figure 10: Existing Bicycle/Pedestrian Volumes - Weekday



Note: Mapped based on peak for each intersection, rather than overall activity peak.

Figure 11: Existing Bicycle/Pedestrian Volumes - Saturday



Note: Mapped based on peak for each intersection, rather than overall activity peak.

2.7 Existing Traffic Capacity

To assess existing traffic operations at intersections, turning movement counts and volumes were compiled and evaluated utilizing the procedures outlined by the 2010 Highway Capacity Manual (HCM). Each intersection within the study area was analyzed for level-of-service (LOS), reporting the vehicular delay with a letter grade A to F, volume to capacity ratio (V/C), the average vehicle stop time delay in seconds and the 95th percentile queue lengths.

The capacity and performance of unsignalized intersections are very sensitive to the values of critical gap (headway) and follow-up headway parameters. In particular, in the case of unsignalized intersections controlled by two-way stops, there is often a need to calibrate these key parameters to suit local driver characteristics and conditions. In the case of Newtonville, it was found that the critical gaps and follow-up headways were shorter than the standard MUTCD definitions. As such, the traffic analysis was adjusted to reflect these findings and subsequently depict the conditions seen in the field.

A summary chart of the results of the existing traffic capacity analysis for weekday and Saturday peaks are in ***Table 4 & Table 5*** respectively. The intersection capacity analysis worksheets are provided in the Appendix of this memo. In the existing conditions, overall level of service at all study area intersections operates at LOS A, with minimal delay and queue lengths. This is largely due to the fact that the higher volumes approaches at these intersections generally operate without stop control. Certain approaches from cross streets to Walnut Street operate acceptably, but with delay due to both stop control and the volumes on Walnut Street. For example, the eastbound movement (left and right) from Austin Street operates at LOS D during both weekday peak hours, and at LOS E on weekends, though at well below capacity. Also, the westbound movement (left and right) from Madison Avenue to Walnut Street operates with delay (LOS C or worse), but at very low V/C ratios (0.29 on Saturday).

Table 4: Existing Level of Service Summary - Weekday

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	Delay	V/C	Queue(ft) 95th %	LOS	Delay	V/C	Queue(ft) 95th %
Lowell Ave at Austin St	EB LTR	C	23.9	0.40	48	C	18.0	0.22	21
	WB LTR	C	19.3	.32	35	C	19.7	0.44	59
	SB LTR	A	2.4	0.09	8	A	1.9	0.07	6
	NB LTR	A	0.5	0.02	1	A	0.7	0.02	2
	Intersection	A	5.1	0.40		A	5.1	0.44	
Highland Ave at Philip Baum Way									
	EB LT	A	1.3	0.01	1	A	0.2	0	0
	WB TR	A	0	0.05	0	A	0	0	0
	SB LR	B	10.3	0.07	5	A	9.8	0.05	4
	NB LTR	A	9.5	0.02	1	A	9.1	0.01	1
	Intersection	A	3.0	0.07		A	2.9	0.05	
Walnut St at Madison Ave									
	WB LTR	C	18.7	0.10	8	D	32.1	0.22	21
	SB LT	A	0.5	0.02	1	A	1.0	0.04	3
	NB TR	A	0	0.38	0	A	0	0.39	0
	Intersection	A	0.6	0.38		A	1.4	0.39	
Walnut St at Austin St									
	EB LR	D	28.8	0.53	80	D	33.6	0.59	103
	SB T	A	0	0.28	0	A	0	0.33	0
	SB R	A	0	0.07	0	A	0	0.09	0
	NB T	A	0	0.35	0	A	0	0.35	0
	NB L	A	9.5	0.06	5	B	10.0	0.09	7
	Intersection	A	3.8	0.53		A	4.3	0.59	
Walnut St at Newtonville Ave									
	WB LR	C	16.4	0.21	20	C	20.0	0.31	33
	SB T	A	0	0.16	0	A	0	0.19	0
	SB L	B	10.4	0.10	8	A	9.8	0.05	4
	NB TR	A	0	0.24	0	A	0	0.24	0
	Intersection	A	1.5	0.24		A	1.7	0.31	

Table 5: Existing Level of Service - Saturday

Intersection	Movement	Saturday Existing Peak Hour			
		LOS	Delay	V/C	Queue(ft) 95th %
Lowell Ave at Austin St	EB LTR	C	15.0	0.20	18
	WB LTR	B	14.3	0.35	39
	SB LTR	A	2.0	0.06	5
	NB LTR	A	0.5	0.01	1
	Intersection	A	5.0	0.35	
Highland Ave at Philip Baum Way					
	EB LT	A	1.8	0.01	1
	WB TR	A	0.0	0.11	0
	SB LR	B	14.3	0.21	20
	NB LTR	B	10.2	0.11	9
	Intersection	A	5.6	0.21	
Walnut St at Madison Ave					
	WB LTR	D	33.4	0.29	28
	SB LT	A	1.1	0.04	3
	NB TR	A	0.0	0.35	0
	Intersection	A	1.9	0.35	
Walnut St at Austin St					
	EB LR	E	48.6	0.74	134
	SB T	A	0.0	0.31	0
	SB R	A	0.0	0.10	0
	NB T	A	0.0	0.31	0
	NB L	B	10.3	0.12	10
	Intersection	A	7.0	0.74	
Walnut St at Newtonville Ave					
	WB LR	C	18.8	0.31	33
	SB T	A	0	0.18	0
	SB L	A	9.2	0.05	4
	NB TR	A	0.0	0.22	0
	Intersection	A	1.9	0.31	

2.8 Existing Parking Supply and Utilization

The 2014 Parking and Traffic Engineering Study for Newtonville, commissioned by the City of Newton and conducted by Greenman-Pedersen, Inc. (GPI), examined public parking (and parking at the Star Market's grocery parking lot) in an established study area surrounding the Austin Street development site. In the study area examined by GPI, there are 448 public parking spaces, including 172 metered on-street spaces, 117 un-metered on-street parking spaces, and 159 metered surface lot spaces in the Austin Street Lot (including 32 NNHS Tiger permit-only spots).[3]

The location of parking spaces surveyed is mapped in ***Figure 12***. Public on-street meters are priced currently from 8:00 am to 6:00 pm on Monday through Saturday. On-street metered spaces in the study area are free on Sundays and on holidays and the four handicapped on-street spaces are free of charge at all times. Ninety (90) on-street meters have a one (1) hour time limit and are $0.75/hour. Forty (40) on-street meters in the study area are two (2) hour time-limited and are $0.75/hour. Forty-two (42) on-street meters have a twelve (12) hour time limit and are $0.50/hour.

Metered spaces in the Austin Street lot are in effect Monday through Friday from 8:00 am to 6:00 pm. Spaces are free on weekends, when incidentally they show higher utilization. Sixty-eight (68) meters have a three (3) hour time limit and are $0.75/hour. Fifty-five (55) meters are 12-hour meters and are $0.50/hour. There are four (40 handicapped spaces, and an additional thirty-two (32) Newton North High School Tiger Permitted spaces located in the lot.[4]

The Newtonville Parking Study also completed a utilization analysis of these parking spaces between 7:00 am and 8:00 pm on a Tuesday, a Thursday and two typical Saturdays in March of 2014. The utilization counts found that peak parking accumulation occurs from 12:00 noon -1:00 pm on Saturdays. However, even at this time, overall parking is only 78% full, which means that ***there are almost 100 unused spaces*** within the Newtonville Study area. On weekdays, parking utilization peaks between 11:00 am and 2:00 pm and then approaches that peak utilization again only after 5:00 pm.

The Newtonville Parking study further examined the utilization of the 127 public spaces within the Austin Street parking lot itself and found that parking peaked on Saturdays around lunchtime. Based on the data presented in this study, the average utilization of this lot is 37% on weekdays and 45% on Saturdays. Utilization peaked at 66% on a weekday and 94% on a Saturday (this figure was 20% higher than all other Saturday peaks observed).[5]

The 116-space[6] Star Market parking lot, located directly across the street from the proposed development, was also examined as part of the 2014 parking study. The Star Market lot has a peak utilization of 83% on weekdays from 12:00 noon – 1:00 pm and of 75% on Saturdays during that same time period. The study also found that, on average, 39% of the demand is driven by the public (non-Star Market parking) on weekdays and 26% on weekends (when the Austin Street lot is free).[7] Since this study, Star Market has begun a closer monitoring of parking activity through the employment of a lot attendant.

[3] http://www.newtonma.gov/civicax/filebank/documents/60432, p4.

[4] http://www.newtonma.gov/civicax/filebank/documents/60432, p42.

[5] http://www.newtonma.gov/civicax/filebank/documents/59906, p1.

[6] Eastern lot has 106 striped spaces but ten unofficial spaces utilized on a regular basis and thus counted as supply in utilization counts, http://www.newtonma.gov/civicax/filebank/documents/60432, p25.

[7] http://www.newtonma.gov/civicax/filebank/documents/60432, p26.

Figure 12: Existing Parking Regulations in Newtonville, 2014

Credit: GPI for the City of Newton

3.0 – FUTURE BUILD ANALYSIS

3.1 Proposed Project

The development proposes a mixed-use, four-story building that will be integrated into the Newtonville area. The existing site is occupied by a public parking lot, making it an uninviting environment for pedestrians to walk down Austin Street or Philip Bram Way. Those who walk will be better accommodated by a shared use walkable accommodation along this street, the designs of which will help blend the development into the fabric of the greater village.

The project program is comprised of housing, with ground level retail and associated parking. Public parking on the site will also be retained. The project will greatly enhance the streetscape and access along Austin Street, providing wider sidewalks, outdoor seating, and an active, well managed frontage. The program as proposed includes 68 housing units, to be located on the upper three floors. The ground level will have approximately 1,500 square feet of shared office space and 3,500 square feet of retail. This program is summarized in ***Table 6***.

The project will have pedestrian-friendly access to grocery, pharmacy, restaurants, and shopping. Vehicular site access is planned via a driveway on Austin Street and another driveway on Philip Bram Way. The site is also planned to have a both outdoor bicycle parking with potential for a future Hubway bike sharing station, electric vehicle charging, a carsharing service like Zipcar, underground bicycle parking for residents, and market vehicle pricing (for residents' second parking space) to minimize car ownership. The plan for parking will retain the 127 public parking spaces and an additional 90 private parking spaces will be provided underground for residents and employees, accessible from the new public parking lot located behind the development.

Table 6: Austin Street Development Program

Project Component	Units/Square Feet
Residential	68 units
Retail	3,500 SF
Shared Offices	1,500 SF
Parking - Private	90 spaces
Parking - Public	127 spaces

Parking will be accessed from one curb cut on Austin Street just west of the development and one on Philip Bram Way, just south of the development. Exits from the parking lot will be stop-controlled. People who walk will be able to access the building through various entrances on Austin Street and Philip Bram Way. Bicyclists can access the development through the garage and also use various bicycle racks around the development. The proposed access improvements will continue to shift the area towards an environment that is friendly for all modes.

3.2 Trip Generation

To estimate the number of individual vehicle, transit, walk, and bicycle trips associated with the proposed development, trip generation analysis and estimates were developed based on the most recent data presented in the ITE Trip Generation Manual, 9th Edition. Because the project consists of three land use components including 68 residential units, 3,500 square feet of retail, and 1,500 square feet of shared office space, trip estimates were based on ITE trip rates for Land Use 220 (Apartment), Land Use 710 (General Office), and Land use 820

(Shopping Center)[8]. The three ITE land use categories and their corresponding trip rates used for analysis are shown in ***Table 7***.

Table 7: ITE Trip Generation Rates[9]

ITE Class	Apartment (220)	Office (710)	Shopping Center (820)
	Trips per Dwelling Unit	Trips per 1000 SF GFA	Trips per 1000 SF GLA
Weekday	6.65	11.03	42.70
Saturday	6.39	2.46	49.97
AM Peak Hour	0.51*	1.56	0.96*
PM Peak Hour	0.62*	1.49	3.71*

*Peak hour of adjacent street traffic

Trip generation estimates using ITE analyses, are vehicular-based. In mixed-use neighborhood environments, like Newtonville, trips are made by all modes, with the ability to walk, bicycle or take public transportation as a significant benefit and amenity to living, working or shopping in these neighborhoods. Travel data taken from the US Census bears this out, as the drive alone mode share in Newtonville is comparable to the rest of the City of Newton and shows that about one-third of all trips are non-single occupancy vehicle trips.

Ultimately, the transportation use of the proposed development will be multimodal, and measured in person trips. Thus, the following analysis uses the U.S. Census 2013 5-year mode splits credits to accurately divide person trips amongst the modes of driving, bicycling, and walking. The analysis also uses the 2013 average vehicle occupancy for Newtonville from the 2013 American Community Survey (1.1 vehicle occupancy) to convert vehicle trips to person trips. Finally, the site will have multiple uses and thus generate a certain rate of internal capture, especially since a grocery store, drugstore, and other amenities are in a less than five minute walk from the development. To remain conservative, this analysis does not take a reduction factor internally captured trips, which would otherwise reduce vehicular trips to and from the site slightly from the numbers in ***Table 7***.

As can be seen, the expected trip generation from the project can be seen as similar to the overall patterns exhibited in Newtonville itself. There is little difference between weekday and Saturday overall trip generation expected from the site. PM peak hour trip generation is somewhat higher than during the AM peak hour, largely due to the retail component of the proposal. We would note though that pedestrian trips are likely undercounted, both in census data and thus in the analysis included herein, as the ability to walk to additional retail and village amenities will undoubtedly be higher than the numbers shown in ***Table 7.***

3.3 Future Trip Distribution and Trip Assignment

A trip distribution was developed - characterizing the overall split of person trips by mode and then assigning the vehicle trips to the network. As shown in **Table 8**, the majority of site-generated trips for all uses and time periods are shown as person trips. To determine auto trips, person trips by automobile were re-calculated into vehicle trips using the same vehicle occupancy rate (1.1) used to derive overall person trips. The vehicle trip distribution was derived using 2013 Census 5-year mode shares as guidelines and based on assumptions about local traffic distribution based on the patterns in existing counts. These trips are summarized in ***Table 8***. Site generated trips are assumed to use both the Austin Street and Philip Bram Way entrances enter and exit to the site. Auto trips were then assigned to the network using the directional distribution shown in ***Figure 13 &***

[8] Exact retail user and office type user has not been defined. General urban retail and shared space/innovation centers are not classified in ITE. ITE Shopping center (820) and General Office (710) represent accurate approximations for representative trip generations

[9] ITE, Trip Generation, 9th Ed., Apartment (220), Vol. 2, p332-359, General office building (710), Vol. 3, p1250-1265, Shopping Center (820), Vol. 3, p1557-1567

Figure 14. Based on a review of the existing vehicle volumes, and area connectivity, it is assumed that a majority of exiting vehicles would be heading north on Walnut Street to head to Washington Street and the I-90 corridor. In the PM, a majority of vehicles would head south on Walnut Street back to the development. A majority of entering vehicles to the site would come from the north heading south on Walnut Street.

Table 8: Site-Generated Person and Vehicle Trips

	ENTERING				EXITING				
	Apartment	Shopping	Office	Total Person Trips	Apartment	Shopping	Office	Total Person Trips	TOTAL ENTER + EXIT
AM Peak Hour Mode Shares									
Auto	5	2	2	**9**	22	1	0	**23**	**32**
Transit	1	0	0	**2**	4	0	0	**4**	**6**
Walk	0	0	0	**0**	1	0	0	**1**	**2**
PM Peak Hour Mode Shares									
Auto	22	5	0	**27**	12	5	1	**19**	**46**
Transit	4	1	0	**5**	2	1	0	**3**	**8**
Walk	1	0	0	**1**	1	0	0	**1**	**2**
Daily 24 Hour Mode Shares									
Auto	179	60	7	**245**	179	60	7	**245**	**490**
Transit	32	11	1	**44**	32	11	1	**44**	**89**
Walk	8	3	0	**12**	8	3	0	**12**	**17**
Saturday Peak Hour Mode Shares									
Auto	14	7	0	**21**	14	6	0	**21**	**42**
Transit	3	1	0	**4**	3	1	0	**4**	**8**
Walk	1	0	0	**1**	1	0	0	**1**	**2**
Daily 24 Hour Saturday Mode Shares									
Auto	172	69	1	**243**	172	69	1	**243**	**486**
Transit	31	13	0	**44**	31	13	0	**44**	**88**
Walk	8	3	0	**11**	8	3	0	**11**	**23**

Figure 13: Vehicle Trip Distribution – Weekday Peak

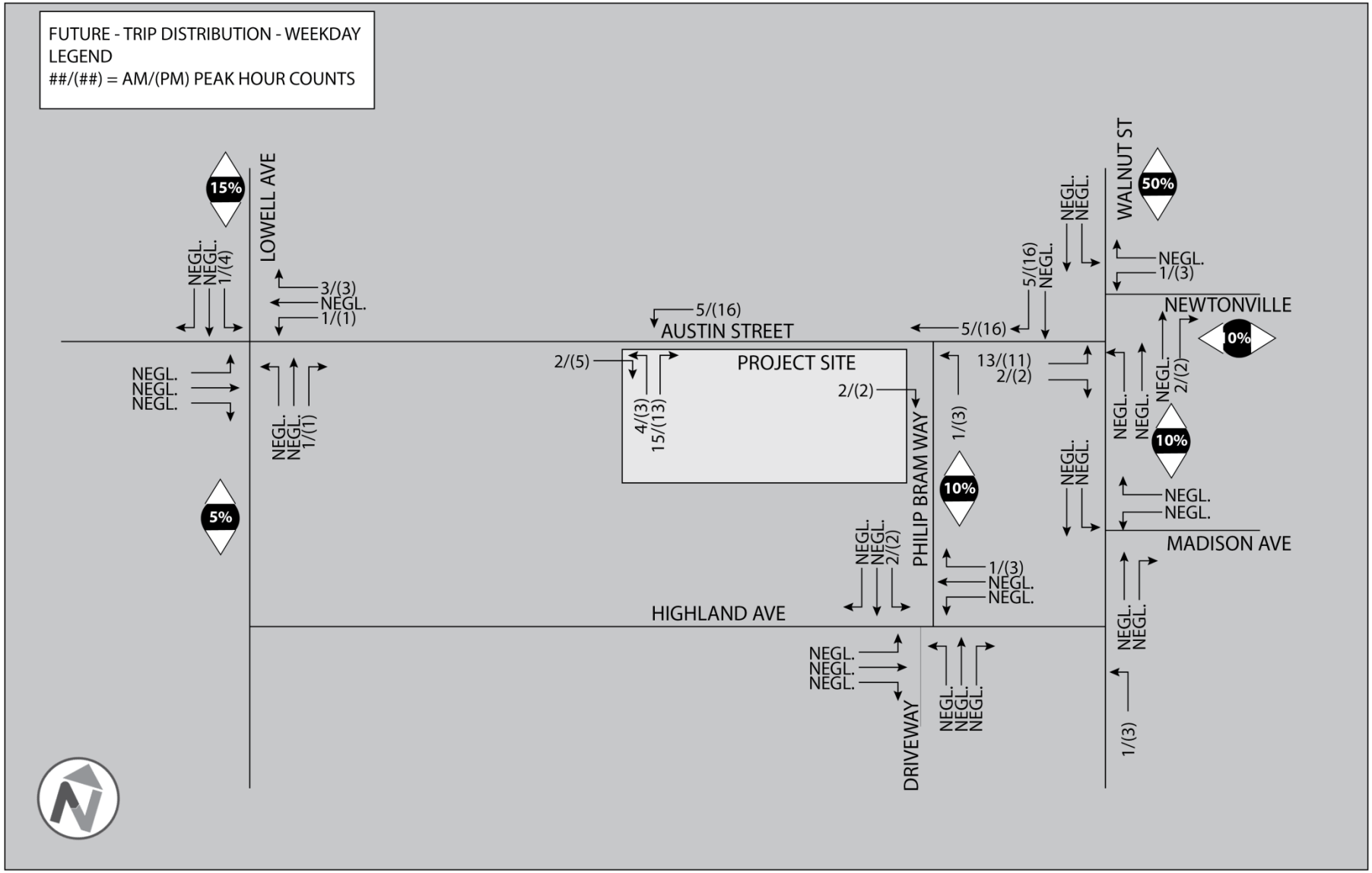
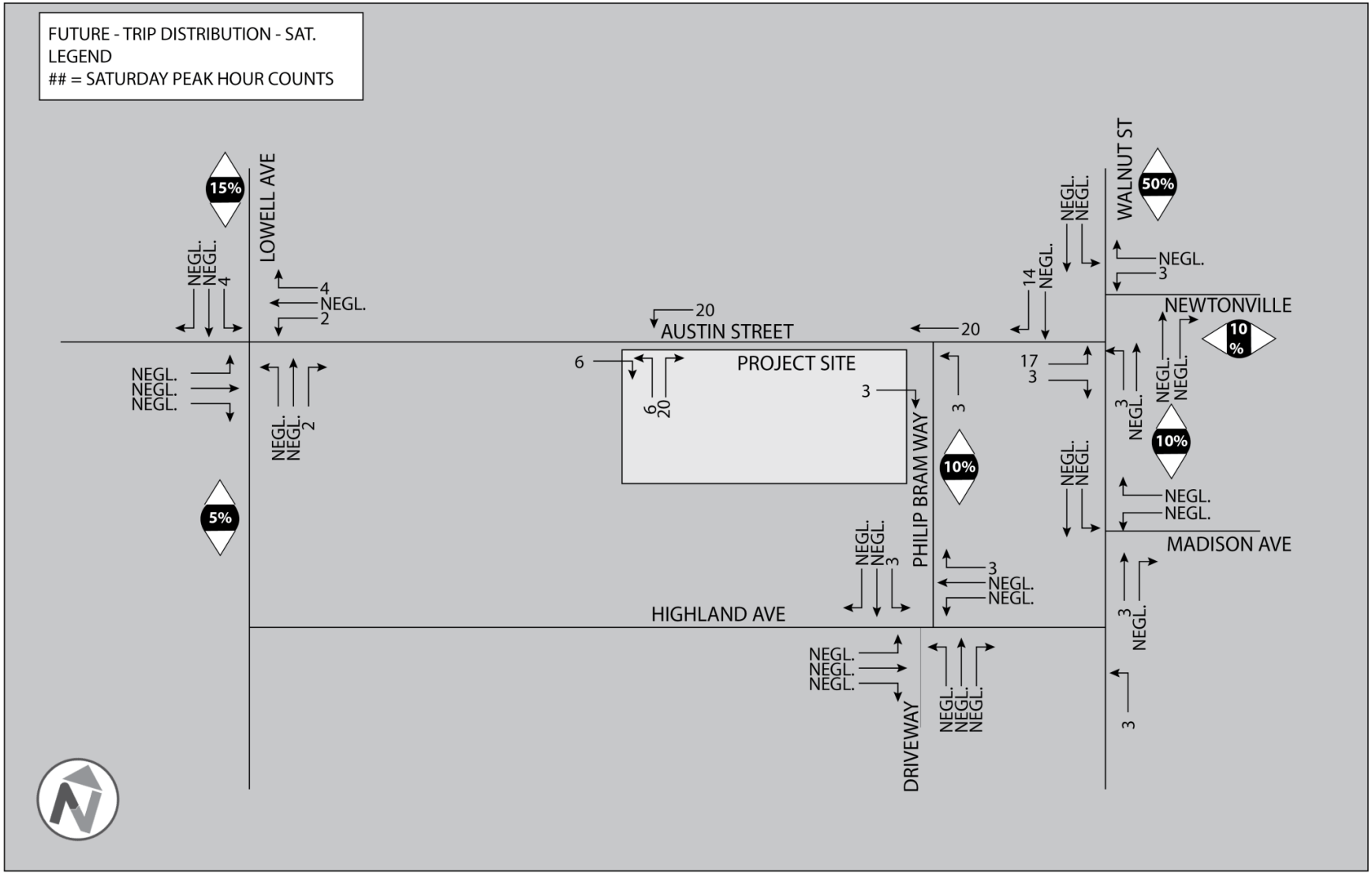


Figure 14: Vehicle Trip Distribution – Saturday Peak



3.4 Future Build Capacity Analysis

The future build scenario vehicle network was developed by adding the site-generated vehicle trips to the existing network described above. Each intersection within the study area was again analyzed for level-of-service (LOS), reporting the average vehicular delay with a letter grade A to F, volume to capacity ratio (V/C), the average vehicle stop time delay in seconds and the 95th percentile queue lengths. Based on a conversation with city staff, a growth rate was not used in modeling future volumes. And, as noted in the existing conditions analysis, the capacity and performance of unsignalized intersections are very sensitive to the values of critical gap (headway) and follow-up headway parameters. The traffic analysis was adjusted to reflect these findings and subsequently depict the conditions seen in the field. The intersection capacity analysis worksheets are provided in Appendix of this report. Summary charts of the results of this analysis are shown in ***Table 9*** & ***Table 10***. The future build analysis includes the proposed driveways and its intersections with Austin Street.

A review of traffic operations in the future build scenario conditions, shows that overall Level of Service at all study area intersections continue to operate at LOS A, with minimal delay and queue lengths. With the added project trips, almost all approaches at Study Area intersections show no degradation in LOS, with only minimal changes in other measurables. In the future build analysis, only the eastbound approach from Austin Street to Walnut Street shows a slight change in LOS (in both PM and Saturday peak). However, this result comes from a small additional delay in this move that decreases the LOS. The other vehicle measurables show that this approach still operates with acceptable volume/capacity (below 1.0) and experiences small additional queues on the order of five seconds (at the 95th percentile). This approach has potential to be mitigated, with several options presented later in this memorandum. Furthermore, as presently configured and proposed, options to avoid this approach exist, as vehicles could travel west on Austin Street to Lowell Street (which provides similar connectivity to Walnut Street) or south on Philip Bram Way. The westbound left, through, and right lane approach on Austin at Lowell Avenue also shows a slightly lower LOS, but with only a one-second increased delay, on Saturdays.

Table 9: Future Build Capacity Analysis – Weekday (Change in LOS Highlighted)

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	Delay	V/C	Queue(ft) 95th %	LOS	Delay	V/C	Queue(ft) 95th %
Lowell Ave at Austin St	EB LTR	C	24.1	0.40	49	C	18.3	0.22	22
	WB LTR	C	19.8	0.33	36	C	20.1	0.46	62
	SB LTR	A	2.4	0.09	8	A	1.9	0.07	6
	NB LTR	A	0.5	0.02	1	A	0.7	0.02	2
	Intersection	A	5.1	0.40		A	5.2	0.46	
Highland Ave at Philip Baum Way									
	EB LT	A	1.3	0.01	1	A	0.2	0	0
	WB TR	A	0	0.05	0	A	0	0	0
	SB LR	B	10.3	0.07	5	A	9.9	0.05	5
	NB LTR	A	9.5	0.02	1	A	9.1	0.01	1
	Intersection	A	3.0	0.07		A	2.9	0.06	
Walnut St at Madison Ave									
	WB LTR	C	18.7	0.10	8	D	32.2	0.22	21
	SB LT	A	0.5	0.02	1	A	1.0	0.04	3
	NB TR	A	0	0.38	0	A	0	0.39	0
	Intersection	A	0.6	0.38		A	1.4	0.39	
Walnut St at Austin St									
	EB LR	D	31.1	0.57	93	E	38.9	0.65	129
	SB T	A	0	0.28	0	A	0	0.33	0
	SB R	A	0	0.07	0	A	0	0.09	0
	NB T	A	0	0.35	0	A	0	0.35	0
	NB L	A	9.5	0.06	5	B	10.1	0.09	8
	Intersection	A	4.3	0.57		A	5.2	0.65	
Walnut St at Newtonville Ave									
	WB LR	C	16.7	0.22	21	C	20.4	0.32	34
	SB T	A	0	0.16	0	A	0	0.19	0
	SB L	B	10.4	0.10	8	A	9.8	0.05	4
	NB TR	A	0	0.24	0	A	0	0.25	0
	Intersection	A	1.5	0.24		A	1.7	0.32	
Austin St at Site Access									
	WB TL	A	0.3	0.00	0	A	0.7	0.01	1
	EB TR	A	0	0.15	0	A	0	0.11	0
	NB LR	B	10.1	0.03	2	A	9.6	0.03	2
	Intersection	A	0.5	0.15		A	0.7	0.11	

Table 10: Future Build Capacity Analysis – Saturday (Change in LOS Highlighted)

Intersection	Movement	Saturday Future Build Peak Hour			
		LOS	Delay	V/C	Queue(ft) 95th %
Lowell Ave at Austin St	EB LTR	C	16.5	0.22	21
	WB LTR	C	15.6	0.38	45
	SB LTR	A	2.1	0.07	5
	NB LTR	A	1.4	0.04	3
	Intersection	A	5.6	0.38	
Highland Ave at Philip Baum Way					
	EB LT	A	1.8	0.01	1
	WB TR	A	0.0	0.11	0
	SB LR	B	14.5	0.22	21
	NB LTR	B	10.2	0.11	9
	Intersection	A	5.6	0.22	
Walnut St at Madison Ave					
	WB LTR	D	33.6	0.29	28
	SB LT	A	1.1	0.04	3
	NB TR	A	0.0	0.35	0
	Intersection	A	1.9	0.35	
Walnut St at Austin St					
	EB LR	F	63.0	0.84	172
	SB T	A	0.0	0.31	0
	SB R	A	0.0	0.11	0
	NB T	A	0.0	0.31	0
	NB L	B	10.4	0.12	10
	Intersection	A	9.6	0.84	
Walnut St at Newtonville Ave					
	WB LR	C	19.2	0.33	35
	SB T	A	0	0.18	0
	SB L	A	9.2	0.05	4
	NB TR	A	0.0	0.22	0
	Intersection	A	2.0	0.33	
Austin St at Site Access					
	WB TL	A	0.9	0.02	1
	EB TR	A	0	0.10	0
	NB LR	A	9.7	0.04	3
	Intersection	A	1.2	0.10	

3.5 Future Parking Supply and Demand

The proposed 28 Austin Street development is mostly residential, providing sixty-eight (68) apartment units, along with ground level retail. Overall, the project will have a total of 217 parking spaces, which both replaces the 127 off-street surface public parking spaces and will provide 90 new spaces -- an additional eighty-five (85) spaces for the residential apartment units and five spaces for employees of the combined 5,000 square feet of retail and shared office space. The garage spaces will be accessible via one secure ramped entrance behind the building.

The Newton Zoning Code allows a minimum parking ratio of 1.25 spaces per residential unit in apartment houses by special permit. Newton zoning also requires 1 space per 300 square feet of retail (with an additional 1 space for the employee with the longest shift) and 1 per 250 square feet of office.[10] As shown in ***Table 11*** below, the proposed development corresponds with the city's special permit ratio for residential apartments but provides less than the recommended parking for retail and office.

In recent studies presented to the City of Newton, residential parking utilization has been shown to be comparable to the ratios proposed for 28 Austin Street. In two other large mixed income apartment communities, parking occupancy counts were taken during expected peak residential hours (9 pm – 12 midnight), and showed an average utilization that translated to 1.24 spaces per unit in larger apartment communities with even less favorable access to transit[11].

Like these other mixed income apartment communities, the project will only provide second parking spaces for residents at market rates –currently $150 per month, which will help to control the demand for parking. In addition, the project is intended to attract tenants for whom the walkable amenities of Newtonville, the easy access to public transportation, and the multimodal options of car-sharing, future bike-sharing and other amenities will encourage car-free living. The site is planned to provide a future Hubway station as well as ample bike parking for residents and visitors. In addition, as office and retail parking demand is complementary with residential demand, additional parking supply is likely to be unused and thus available for employees and other users during weekdays and weekends (i.e., residents go to work and vacate their parking spaces which can be used to satisfy weekday office and retail parking demand).

Moreover, the site will continually provide 127 public parking spaces, which will be available for use of office and retail employees and customers, similar to that of other users in Newtonville. As described in the 2014 Parking and Traffic Engineering Study for Newtonville[12], spaces within the existing municipal lot are never completely full, with typical average utilization of this lot of 37% on weekdays and 45% on Saturdays. Although demand in the Austin Street lot has increased with Star Market's recent enforcement of its shoppers-only policy in its parking lot, recently collected data show that the Austin Street municipal lot still has space available even at the peak hours on weekdays and weekends, which would continue to support existing and new uses. Moreover, average utilization of the lot and surrounding streets still shows general availability of parking at off-peak and on-peak times.

Table 11: Parking Ratio of Proposed Development

Use	Units/KSF	Number of On-Site Parking Spaces Provided	Number of Parking Spaces Required	Effective Project Parking Ratio
Residential	68	85	85 (by special permit)	1.25 space/ unit
Retail & Shared	5	5	18	1 space/ ksf

[10] Section 30-19 and 3-24, Newton Zoning Code, http://www.newtonma.gov/civicax/filebank/documents/44026

[11] http://www.newtonma.gov/civicax/filebank/documents/62425

[12] http://www.newtonma.gov/civicax/filebank/documents/60432

Office				

4.0 - QUALITATIVE ANALYSIS OF OTHER SCENARIOS

The City of Newton and the Newtonville neighborhood have been engaged in numerous discussions about the potential for transportation improvements on the streets surrounding the site. These were part of the planning that led to the issuance of the Request for Proposals for the site, have continued through the development of preliminary streetscape plans for Walnut Street, and certainly have been furthered through ongoing community discussions about the potential changes occurring with the Development.

The analysis of both existing and proposed conditions included in this memorandum, along with the previously completed Parking Analysis, provides a strong analytical basis from which those discussions can continue. While the potential transportation impacts of the proposed development are minimal, as shown in this memo, the analysis below includes a qualitative evaluation of several transportation and circulation scenarios that have been raised in previous discussions in light of the information presented herein. This evaluation is neither an endorsement, nor a proposal, nor a commitment of the development, but is included to further community discussion. We note further that though each of these opportunities are evaluated separately, making one change may impact how additional opportunities are evaluated, e.g. converting Austin Street to one-way eastbound may change the thinking about if a signal should be included at its intersection with Walnut Street. Ultimately, any additional changes to the surrounding street network or its operation would be completed at the discretion of the City of Newton.

4.1 Austin Street as One-way

Austin Street will already be improved as part of the 28 Austin Street development. At least along the site frontage, the character will change significantly, with retail frontage, wider sidewalks, improved streetscape and active edges. The potential conversion of Austin Street from two-way to one-way would create even further opportunities to enhance the street, and potentially add parking, greenspace or active space. Additionally, such a conversion might make room for improvements at any of the proposed or existing driveway access points. A possible conversion from two-way to one-way could occur along the entire length of the street from Walnut Street to Lowell Street or be established at Philip Bram Way, the Star Market driveway or the proposed Site driveway. The overall impacts described below will be similar regardless, while the opportunities for enhanced streetscape and parking may differ depending on the alternative pursued.

We note that the existing peak hour volumes on Austin Street are fairly balanced. The PM peak volumes are generally higher than AM peak, though AM eastbound from Lowell Street towards Walnut Street is the highest overall volume.

Austin Street as One-Way in East Direction

- Reconfiguration of Austin Street to one-way eastbound could enable separate Left Turn and Right Turn lanes at the intersection with Walnut Street, which would likely improve LOS and reduce delay on that eastbound approach
- Area circulation would be altered, possibly resulting in more circulating traffic, higher speeds, and reduced connectivity.
- Additional westbound traffic would likely utilize Lowell Avenue to access Austin Street or Highland Avenue as the alternate westbound movement.
- One-way eastbound would have the potential to significantly increase Austin Street traffic volumes at Walnut Street, potentially increasing the probability of the need for a traffic signal.

- The streetscape and right-of-way on Austin Street could be reconfigured to include additional sidewalk, mixed-use space, turning lanes or up to an additional [25]on-street parking spaces.
- Driveway access to the Site and Star Market could be altered to create efficiencies, improve safety and potentially add more on-site parking.

Austin Street as One-way in West Direction

- Reconfiguration of Austin Street to one-way westbound could enable separate Left Turn and Right Turn lanes at the intersection with Lowell Avenue, though this approach already operates effectively.
- Area circulation would be altered, possibly resulting in more circulating traffic, higher speeds, and reduced connectivity.
- Additional traffic would likely utilize Walnut Street to access Austin Street or Highland Avenue and Philip Bram Way as the alternate EB/NB movement.

- One-way westbound would have the potential to significantly increase Austin Street traffic volumes at Lowell Avenue, potentially increasing the probability of the need for a traffic signal at this location.
- The streetscape and right-of-way on Austin Street could be reconfigured to include additional sidewalk, mixed-use space, turning lanes or on-street parking.
- Driveway access to the site and Star Market could be altered to create efficiencies, improve safety and potentially add up to an additional [25]on-street parking spaces.

4.2 Philip Bram Way as One-way

The developer has shown that converting Philip Bram Way, which currently serves as a two-way right-of-way, is a possibility. If converted, Philip Bram Way could serve as a one-way "shared use" street, which may allow for different surface treatments, would make room for walking and could possibly add up to seven (7) additional on-street parking spaces. The intersection of Philip Bram Way and Highland Avenue operates well within acceptable Level of Service (LOS) in all directions today, but does carry 50+ vehicles (combined directions) during weekday peak hours and over 150 vehicles during the Saturday peak hour.

Philip Bram Way as One-Way in North Direction

- Would limit access to the site and to Highland Avenue.
- Would limit access to the land-uses along Phillip Bram Way.
- Southbound traffic would be forced to utilize Lowell Avenue or Walnut Street, exacerbating conditions at these approaches.
- Continue to provide relief for the Walnut Street northbound left to Austin Street.

Philip Bram Way as One-way in South Direction

- Would limit access to the site and to Austin Street.
- Northbound traffic would be forced to utilize Lowell Ave or Walnut Street. and turn on Austin Street.
- Would limit access to the land uses along Phillip Bram Way.
- Would reduce left turns from Walnut Street to Highland Avenue, but increase turns from Walnut Street to Austin Street.

4.3 Changes to the Intersection of Austin Street/Walnut Street/Newtonville Avenue

Many community discussions have centered around potential improvements to the off-set intersection of Walnut Street, Austin Street and Newtonville Avenue. Walnut Street runs uncontrolled today, with left and right turn lanes at certain approaches as described earlier. The proposed development adds little vehicular traffic to this intersection, but has now provided baseline data and the opportunity to re-evaluate previous discussions on how best to approach this intersection to the benefit of all users.

Removing Parking for Left Turn Pocket at Austin and Walnut Streets

The eastbound approach to Walnut Street experiences some delay in both the existing and build analysis. This is partially due to the fact there is one approach lane, which handles both left and right turning vehicles onto Walnut Street. Assuming Austin Street remains two-way, the potential exists to improve this approach by removing two or three parking spaces on Austin Street at its Walnut Street approach. Enough room could be made to create separate left and right turn lanes, which would minimize delay and potentially improve Level of Service for that maneuver.

Changes at Intersection of Newtonville Avenue and Walnut Street

The T-intersection of Newtonville Avenue and Walnut Street could be altered by either making this a right in/right out intersection and/or eliminating the southbound left turn from Walnut Street to Newtonville Avenue.

- Removal of southbound left turn lane would limit access and mobility along Newtonville Avenue.
- Southbound left turn traffic would be redirected via either Harvard Street or Madison Avenue bringing additional traffic to those roadways.
- The southbound Walnut Street left turn lane currently continues from the bridge, removal could enable reconfiguration on the bridge for parking, if permitted by MassDOT.
- Additional infrastructure (with costs) would be required to restrict movements to right-in/right-out.
- The right-in, right-out could be reinforced by a median allowing streetscape improvement potential and improved pedestrian refuge.

4.4 Scenarios Under Consideration for Walnut Street

The City and community have held meetings to envision conceptual improvements along the Walnut Street corridor. These activities have generated varied discussion about potential improvements that could include wider sidewalks, curb extensions, bicycle accommodations, and angled parking. The City has not conducted traffic counts, detailed engineering analysis nor full-fledged cost estimates for any of the concepts. Some of these conceptual scenarios result in streetscape improvements that may impact street width to a point where the northbound left turn lane from Walnut Street to Austin Street is not feasible. If this northbound left turn was removed, it could have the following implications:

- Would force the left-turning traffic to turn from a single lane combined with through traffic.
- Would increase the potential for northbound queuing along Walnut Street as through traffic waits for left-turning vehicles.
- Would enable the re-configuration of parking along Walnut Street.

5.0 – QUALITATIVE PARKING IMPACT SUMMARY

The current municipal parking facility is an important resource for Newtonville, and serves the shops, restaurants, services, commuters and employees of the village. The recent Parking and Traffic

Engineering Study for Newtonville shows that, even though never fully occupied, the parking lot is used at varying levels throughout the day and on weekends (when it is free). The site currently operates as a 127-space public parking lot with an additional 32 parking spaces being used for Newton North High School "Tiger" student permit parking, as described in the Existing Conditions section of this memorandum. The City of Newton has identified new locations and the Tiger permit parking will be relocated prior to construction. Prior usage levels of the Austin Street lot have increased with Star Market's recent enforcement of non-supermarket parkers but capacity still appears to remain adequate at almost all times.

As part of the City of Newton's Request for Proposals for the site, the need to retain public parking is important and a key consideration in any development. The project, as proposed, will restore the 127 public parking spaces as well as provide adequate parking for the project program. An analysis of the proposed condition is included in Section 3 of this memorandum. However, through the community conversation around the RFP and improvements in Newtonville, concerns around parking have been continually raised. So, even while the City's study showed that even at peak Saturday times (between 11 AM and 1 PM), overall parking was only 78% full and averages significantly less than that – opportunities to add parking in Newtonville exist and should be further explored. In response, the following sections show potential areas where parking could be expanded on either a temporary or permanent basis.

5.1 Parking Options during Construction

During the projected 12 months of site preparation and construction, replacements for the 127 current on-site parking spaces could be found within the Newtonville area. A Construction Period Parking Working Group consisting of representatives of Newtonville area merchants, the developer, the Newtonville Area Council, and the City Transportation and Economic Development departments have met regularly during March, April and May 2015 to identify suitable replacement parking during construction.

An initial planning level analysis of the streets around the Site showed numerous locations where parking could be added. Strategies for the temporary (or permanent) addition of parking include:

- Free one hour parking on Walnut Street to encourage quick turnover.
- Temporary one-way Austin Street to add up to 25 parking spaces.
- Temporary one-way Philip Bram Way to add up to 7 parking spaces.
- Relocating 35 commuter parking spaces to West Newton.
- Relocating up to 30 nearby private employee parking spaces to remote permit parking on Washington Street.
- Utilizing up to 100 parking spaces at Newton North High School's Walnut Street lot during the summer and weekends.
- Creating up to 30 spaces on Elm Road for summer and weekend parking.
- Creating 5 to 7 angle parking spaces on Bowkers Street.
- Contracting with private property owners for unused Saturday parking.
- Regulatory changes to convert lightly used one (1) hour parking on side streets near the village to longer term (but metered) parking.
- Physical re-striping to add spaces on nearby streets.
- Temporary installation of spaces on the Walnut Street bridge over the Massachusetts Turnpike, if permitted.
- Adding parking on Walnut Street.

In addition, these figures do not include the potential for alternative parking management strategies like working with Star Market to create a shared parking collaboration during the period of construction. In the Parking and Traffic Engineering Study for Newtonville, the Star Market lot was found to be under-utilized on average.

In addition to the potential changes described above, additional streets were evaluated for their potential to add long-term (employee) parking spaces. These spaces may be farther away from the village as spaces that are accessible to the commercial area of Newtonville, may be more desirable as customer or short-term parking,

5.2 Options for Relocating Tiger Permit Parking Spots

The City of Newton has recently identified locations that Tiger Permit parking spaces can be relocated to prior to construction, reducing the need to find locations for these current 32 spaces. Likewise, the Goodwill trailer (currently on-site) will reportedly be re-located to another location in the City.