

Design Consultants, Inc.

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MEMORANDUM

DCI JOB NO. 2012-106.10

TO: Terence Smith, Traffic & Parking
City of Somerville, MA

FROM: Amos Fernandes, P.E., PTOE, AICP
Transportation Manager

SUBJECT: **Parking & Trip Generation Study**
593-595 Somerville Ave
Somerville, MA

DATE: December 3, 2013

Design Consultants, Inc. has been retained by Beacon Court Partnership to evaluate the transportation and parking impacts of the project site at 593-595 Somerville Avenue in Somerville, Massachusetts. The Project at 593-595 Somerville Avenue consists of the following:

595 Somerville Ave

- 1 commercial space- 406GSF
- 4 units residential each 870-1,379GSF

593 Somerville Ave

- 2 units commercial space each @ 707 GSF
- 7 units residential 981-1,298GSF

Beacon Court Partnership will be seeking the following Special Permits and Variances:

595 Somerville Avenue

- Required: 6 parking spaces for residential, 1 space for retail
- Special Permit for 4 units;
- Special Permit for parking design standards (to be shared on #593 lot);
- Special Permit for shared parking (spaces 12, 13, 14); and
- Special Permit for parking on a separate lot.

593 Somerville Avenue

- *Required: 11 parking spaces for residential, 3 spaces for retail, 1 for a visitor*
- *Special permit w/Site Plan review for 7 units;*
- *Special Permit for parking design standards;*
- *Special Permit for shared parking (spaces 12, 13, 14);*
- *Special Permit for shared driveway; and,*
- *A Variance for 5 parking spaces.*

The proposed redevelopment at 593 and 595 Somerville Avenue will be integrated and have shared parking on-site.

The redevelopment at 595 Somerville Avenue consists of a three-story residential building with four (4) residential units and 406 square feet of ground floor commercial space. Four (4) parking spaces are proposed on Site. Two (2) new on-street parking spaces on Somerville Avenue will be provided to the City via the closing of one of the Site's curb cuts. Four (4) wall bike racks will be provided on-site and two (2) new public bicycle racks will be provided on Somerville Avenue. To be clear, the proposed new on-street parking is not taken as credit towards meeting the parking requirement.

The redevelopment at 593 Somerville Avenue consists of a four-story residential building with seven (7) residential units and two (2) commercial units at 707 square feet each. Ten (10) parking spaces are proposed on Site. Included in the 10 parking space total is one (1) handicap parking space and three (3) compact parking spaces. Three (3) new on-street parking spaces on Somerville Avenue will be provided to the City via the closing of two of the Site's curb cuts. Five (5) wall bike racks will be provided on-site and (1) new public bicycle rack will be provided on Somerville Avenue. To be clear, the proposed new on-street parking is not taken as credit towards meeting the parking requirement. This project will also include moving and preserving the existing historic building closer to Somerville Avenue and in alignment with the proposed 593 redevelopment.

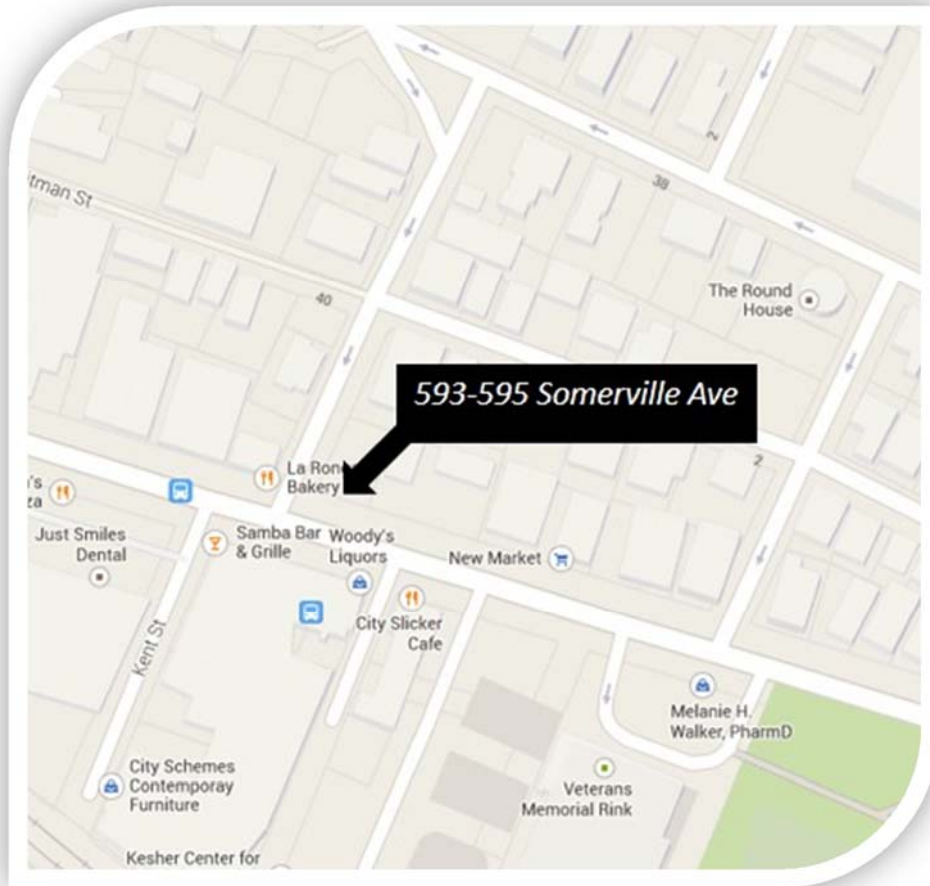
The 593-595 Somerville Avenue is located on the northeast quadrant of Somerville Avenue and Spring Street - shown in Figure 1. The site current serves *Somerville Ave Auto Sales* and *Foreign Body Works* (which also provides auto repair sales). In the vicinity, Somerville Avenue serves as a main arterial that is surrounded by low-density commercial and low-to medium-density residential homes. Somerville Avenue is a 2 lane roadway with painted bicycle lanes in both directions. On-street parking is provided on both sides. Conway Park and Veteran's Memorial Rink are located 200 feet east.

This memorandum serves to demonstrate that the 593-595 Somerville Avenue redevelopment project provides adequate parking to satisfy the proposed redevelopment and that the site will not have an adverse impact on the surrounding neighborhood's on-street parking supply. The following characteristics of the Site and the surrounding area serve to justify the special permits and parking variance requested for the redevelopment:

- Proposed Shared Off-Street Parking;

- Additional On-Street Parking Spaces;
- Proximity to Public Transit;
- Mode Choice;
- On-Street Parking Utilization; and,
- Negligible Trip Generation.

Figure 1: Project Location



Proposed Shared Off-Street Parking

The proposed parking on-site will be accessed from Spring Street with a 15-foot curb cut and a 15-foot concrete driveway at the back site.

The redevelopment at 595 Somerville Avenue will have four (4) parking spaces. Four (4) wall bike racks will be provided on-site.

The redevelopment at 593 Somerville Avenue includes ten (10) parking spaces. Included in the 10 parking space total is one (1) handicap parking space and three (3) compact parking spaces. Five (5) wall bike racks will be provided on-site

New On-Street Parking

The 593-595 Somerville Ave redevelopment in whole will provide five (5) new on-street parking spaces and three (3) new public bicycle racks on Somerville Avenue. The proposed redevelopment will close multiple existing curb cuts on Somerville Avenue. These closings will result in five (5) new on-street public parking spaces. The added on-street parking serves the surrounding neighborhood since they will be available to all residential permit parking holders. To be clear, the proposed new on-street parking is not taken as credit towards meeting the parking requirement.

Transit Supply

In addition to the proposed off-street and new on-street parking offered with the development, the Site is conveniently situated close to public transportation. The Site is less than 1-mile away from the Porter Square Transit Station and approximately 1-mile from the Harvard Square Transit Station. Moreover, the Site is served by the following MBTA bus routes #83 and #87 on Somerville Avenue:

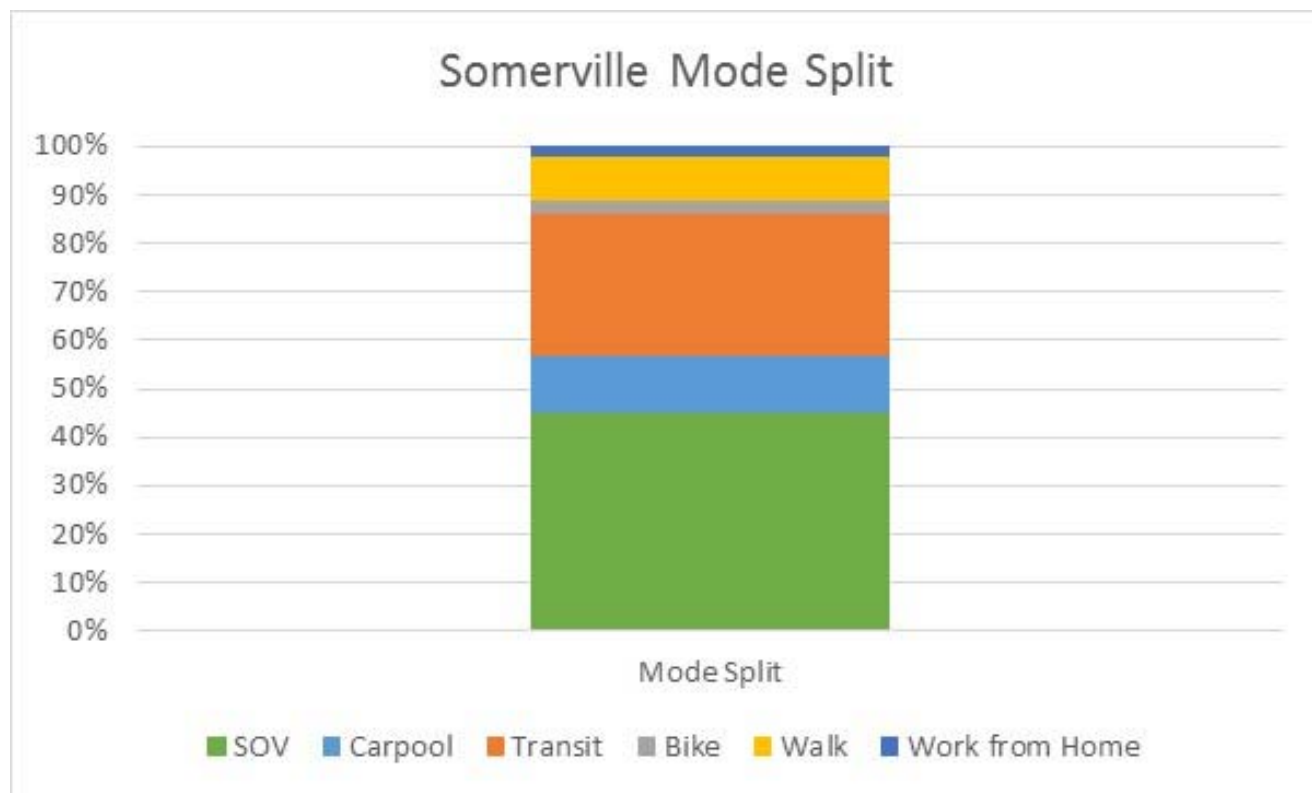
The Green Line Extension (GLX) project will have a proposed transit stations at Gilman Square and Union Square Station – both less than 1-mile away. The anticipated completion date for the Union Square Station is 2016. Gilman Square Station is expected to be complete by 2019. This project will extend the existing MBTA Green Line service from a relocated Lechmere Station in East Cambridge to Union Square in Somerville and College Avenue in Medford. This project is a major transportation priority of the Commonwealth and will offer a “one-seat” ride along the project corridor to downtown Boston, (eliminating the need for transfers at Lechmere Station and at Orange and Red Line stations) improving travel times within the project corridor. The new transit station will meet or exceed the Americans with Disabilities Act (ADA) standards. Mitigation measures during construction will reduce existing noise and vibration impacts from area railroads. Once completed, trains will operate every five to six minutes in the peak periods, providing fast and efficient service to downtown Boston.

Transportation Mode Choice

This redevelopment encourages non-vehicular modes of transportation with its proposed private and public bike racks, reduced on-site parking, proposed new on-street parking, and proximity to transit. Non-vehicular modes of transportation includes bicycling, walking, transit, and telecommuting. Census Data from 2007 to 2011 indicates that 24% of Somerville residents do not own a vehicle.

According to data from the 2000 US Census and the Center for Transit-Orientated Development National Database, more than 50% of existing Somerville residents travel to work via modes other than by a single occupant vehicle (SOV). Figure 2 shows the mode choice distributions for Somerville residents.

Figure 2: Mode Choice, City of Somerville



Shared Parking, Shared Driveway, and Compact Parking Spaces

Given that both parcels at 593 and 595 Somerville Avenue are being redeveloped, a combined site plan and a shared driveway is proposed from Spring Street.

Justification for a Shared Driveway

As shown later in detail, the shared driveway will facilitate similar vehicular trip generation compared to the existing land uses at 593 and 595 Somerville Avenue. No driveway capacity issues are anticipated due to the low traffic demand for the proposed redevelopment. A maximum of 14 peak hour trips are estimated for the entire redevelopment.

Parking Requirements

According to the Somerville Zoning Ordinance, for 595 Somerville Avenue specifically, 6 parking spaces for residential and 1 space for retail are required.

On the Site Plan, for 595 Somerville Avenue, 4 dedicated residential spaces (spaces 1 through 4 – See attached Site Plan) are provided. Two (2) residential and 1 retail space is proposed at the adjacent site (593 Somerville Avenue) which are intended to be shared and

compact (spaces 12, 13, and 14). Therefore, no variance is required for the redevelopment of 595 Somerville Avenue.

For 593 Somerville Avenue specifically, 11 parking spaces for residential, 3 spaces for retail, and 1 for a visitor are required.

On the Site Plan, for 593 Somerville Avenue, 7 residential provided on site that are dedicated specifically to each of the 7 residential units. The 3 retail on site is to be shared with adjacent site (595 Somerville Avenue, spaces 12, 13, and 14). Therefore, a variance is required for the remaining 4 residential spaces and 1 visitor space for a total of 5 parking spaces.

Justification for Shared Parking

It should be noted that five (5) new public on-street spaces are proposed on Somerville Avenue via the closure of multiple curb cuts. To be clear, the proposed new on-street parking is not taken as credit.

Given the complimentary nature of the land uses, shared parking is expected to sufficiently serve the residential parking demand and retail demand. The peak period parking demand for residential condominiums is 11:00PM to 6:00AM according to the Institute of Transportation Engineer's (ITE) Parking Generation, 4th Edition. The peak period parking demand for retail ranges from 11:00AM to 10:00PM. The timelines for typical peak period demand for parking is offset between the uses as they do not overlap.

Moreover, Census Data from 2007 to 2011 indicates that almost 1 out of 4 Somerville residents do not own a vehicle. According to data from the 2000 US Census and the Center for Transit-Orientated Development National Database, more than 50% of existing Somerville workers travel to work via modes other than by a single occupant vehicle (SOV). These modes of travel to work include carpooling, bicycling, walking, transit, and telecommuting.

It is important to note that nine (9) on-site bicycle parking spaces and three (3) new public bike racks are proposed with the redevelopment at 593 and 595 Somerville Avenue. To be clear, the proposed new bike parking is not taken as credit.

Justification for Compact Parking

Three (3) out of the 14 provided on-site parking spaces are proposed to be compact. Shared parking spaces 12, 13, and 14 as shown in the attached Site Plan are proposed to be compact. They measure approximately 8 feet by 16 feet. These compact parking spaces are more commonly accepted by the Somerville Zoning Ordinance and nationwide according to the Institute of Transportation Engineers Planning Handbook (3rd Edition).

Existing On-Street Parking Utilization

The study area included all on-street parking and municipal off-street parking in the vicinity of 593-595 Somerville Avenue within 500 linear feet. DCI performed a parking survey of all available on-street and off-street parking areas to determine the existing parking utilization. The study area included the following roadways:

- 1) Somerville Avenue, between Belmont Street and Central Street
- 2) Beech Street, from Atherton Street and Somerville Avenue
- 3) Pitman Street, from Beech Street to Spring Street
- 4) Spring Street, from Atherton Street and Somerville Avenue
- 5) Kent Street, from Somerville Avenue to Dead End
- 6) Conway Municipal Parking Lot

This study area is shown in Figure 3.

Figure 3: Project Study Area



On-Street Parking Capacity

Parking on Somerville Avenue between Belmont Street and Central Street

On the north and south side of Somerville Avenue, there is 2-hour on-street parking (except with residential permit) between Belmont Street and Central Street. On the north side, there are approximately 22 parking spaces. Four (4) of those spaces are considered loading in addition to the 2-hour limitation with exception to permits. It should be noted that during the weekday data collection, three parking spaces were temporarily prohibited on Somerville Avenue near Beech Street due to building reconstruction. On the south side, Somerville Avenue provides approximately 18 on-street parking spaces designated as 2-hour on-street parking (except with residential permit).

Parking on Beech Street, from Atherton Street to Somerville Avenue

On the east side of Beech Street, there are approximately 11 on-street permit parking spaces available. On the west side, there are approximately 13 on-street permit parking spaces available.

Parking on Pitman Street, from Beech Street to Spring Street

On the south side of Pitman Street, there are approximately 14 on-street permit parking spaces available. Westward beyond Spring Street, Pitman Street is a private roadway.

Parking on Spring Street, from Atherton Street to Somerville Avenue

On the east side of Spring Street, there are approximately 15 on-street permit parking spaces available. On the west side, there are approximately 14 on-street permit parking spaces available.

Parking on Kent Street

On the west side of Kent Street, there are approximately 9 on-street permit parking spaces available.

Parking at the Conway Parking Lot

The Conway Parking Lot provides Park visitor parking to the recreational uses at the Park which includes a baseball field, basketball courts, and 2 ice rinks (Veteran's Memorial and a practice rink). There are approximately 71 spaces designated as permit parking from 12Am to 6AM. Those same spaces are available to Park visitors from 5:30AM to 1AM. There is also 4 handicap parking spaces provided in the lot, along with 1 zip car spaces. Due to the limitations of this lot, the data collected in the utilization study did not count towards available parking capacity.

Summary of On-Street Parking Capacity

In aggregate, there are approximately 113 existing on-street permit parking spaces within the study area. This does not include the parking at the Conway Public Parking Lot, handicap parking, or loading zone parking.

On-Street Parking Inventory

DCI recorded the number of available parking spaces in the study area streets during a typical weekday and during a typical Saturday. The parking data were collected during the following time periods:

- Wednesday, November 20, 2013 (5:00 – 7:00 PM)
- Thursday, November 21, 2013 (12:00 – 2:00 PM)
- Saturday, November 23, 2013 (11:00 – 2:00 PM)

The results of the parking surveys are summarized in Table 1. The findings only relate to the 113 existing on-street permit parking spaces. This does not include the parking at the Conway Public Parking Lot, handicap parking, or loading zone parking. Detailed tables with the complete parking survey data are contained in the attached Appendix.

As indicated by the parking survey summary, an average total of 71 permit parking spaces were available during the weekday mid-day period (12:00 PM to 2:00 PM). An average of 65 of permit parking spaces were available during the weekday evening period (5:00 PM to 7:00 PM). On Saturday, during the mid-day observation period (11:00 AM to 2:00 PM), an average of 56 permit parking spaces were available.

The results of this parking survey indicate that there is a substantial amount of under-utilized permit parking spaces spread amongst the study area streets.

Table 1: Parking Survey Summary

Street	Side	From	To	Parking Notes /Type	Total No. of Spaces	Avg. Number of Cars Parked		
						Weekday		Saturday
						Afternoon	Evening	Afternoon
Somerville Ave	Northside	Central St	Belmont St	2HR Parking except by Permit	15	6.0	10.5	12.0
				2HR Parking except by Permit + Loading	4	3.0	0.5	2.7
	Southside	Belmont St	Central St	Temporary No Parking During Study	3	0.0	0.0	0.0
				2HR Parking except by Permit	18	8.5	8.5	10.3
Beech St	Eastside	Atherton St	Somerville Ave	Permit Only	11	2.5	3.5	6.0
	Westside	Atherton St	Somerville Ave	Permit Only	13	1.0	5.0	5.0
Pitman St	Southside	Beech St	Spring St	Permit Only	14	5.0	7.0	7.7
Spring St	Eastside	Atherton St	Somerville Ave	Permit Only	15	4.0	3.5	3.7
	Westside	Atherton St	Somerville Ave	Permit Only	14	7.5	7.0	8.0
Kent St	Westside	Somerville Ave	End of St	Permit Only	9	4.5	3.0	2.0
Conway Parking Lot				Permit Parking 12AM-6AM, Park Visitors 5:30-1AM	71	25.0	55.5	49.3
				Handicap Parking	4	0.0	1.5	1.0
				Zip Car Parking	1	0.5	1.0	0.7
Gross Totals					192	67.5	106.5	108.3
Permit Parking Only Totals					113	42.0	48.5	57.3
Number of Permit Parking Spaces Available						71.0	64.5	55.7
% of Permit Parking Spaces Available						63%	57%	49%

Trip Generation

The site current serves *Somerville Ave Auto Sales* and *Foreign Body Works* (which also provides auto repair services). This redevelopment will consist of a total of 11 residential condos and 1,820 square feet of supporting retail shops.

The Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition*, was used to estimate trips associated with the existing site and the proposed redevelopment. The detail trip generation analysis worksheets are included in the Appendix.

For the existing site, ITE Land Use Code 841 were used for the auto sales and auto repair services. For the proposed redevelopment, ITE Land Use Codes 820 and 230 were used for the retail and residential condos, respectively. The net trip generation between the existing site and proposed redevelopment is shown in Table 2.

As shown in Table 2, the proposed redevelopment is expected to generate similar traffic at the site compared to existing conditions for a typical weekday AM and PM Peak Hour, a typical weekday, a typical Saturday midday peak hour, and a typical Saturday.

Table 2: Net Trip Generation

	AM Peak	PM Peak	Weekday Daily	Sat. Midday Peak	Sat. Daily
Existing Trips					
Total Trips	10	14	169	21	155
Entering Trips	8	6	85	11	78
Exiting Trips	2	8	84	10	77
Proposed Trips					
Total Trips	7	13	142	14	153
Entering Trips	2	7	71	8	77
Exiting Trips	5	6	71	6	76
Net Trips					
Net Total Trips	-3	-1	-27	-7	-2
Net Entering Trips	-6	1	-14	-3	-1
Net Exiting Trips	3	-2	-13	-4	-1

Conclusions

This memorandum has determined that the redevelopment project at 593-593 Somerville Avenue will have negligible impact on the surrounding area's permit parking supply. The factors that serve to justify the requested special permits and parking variance includes the creation of fourteen (14) on-site parking spaces (including 1 handicap space and 3 compact car spaces), five (5) new on-street spaces via the closure of multiple curb cuts, nine (9) on-site bicycle parking spaces and three (3) public bike racks, proximity to transit and the future Green Line Extension Station, local mode choice, current levels of on-street permit parking availability, and the negligible trip generation impact. To be clear, the proposed new on-street parking is not taken as credit towards meeting the parking requirement.

During weekday mid-day, weekday evening, and Saturday midday hours there were between 55 and 71 permit parking spaces available within approximately 500 feet of site. Additionally, the newly provided on-street parking will serve the surrounding neighborhood since they will be available to all residential permit parking holders.

Moreover, the proposed redevelopment is expected to generate less traffic at the site compared to existing conditions.

The site plan layout for 593 and 595 Somerville Avenue follows *The SomerVision Comprehensive Plan (2010-2030)* goals for Transportation and Infrastructure. Specific goals from the Comp Plan are listed below:

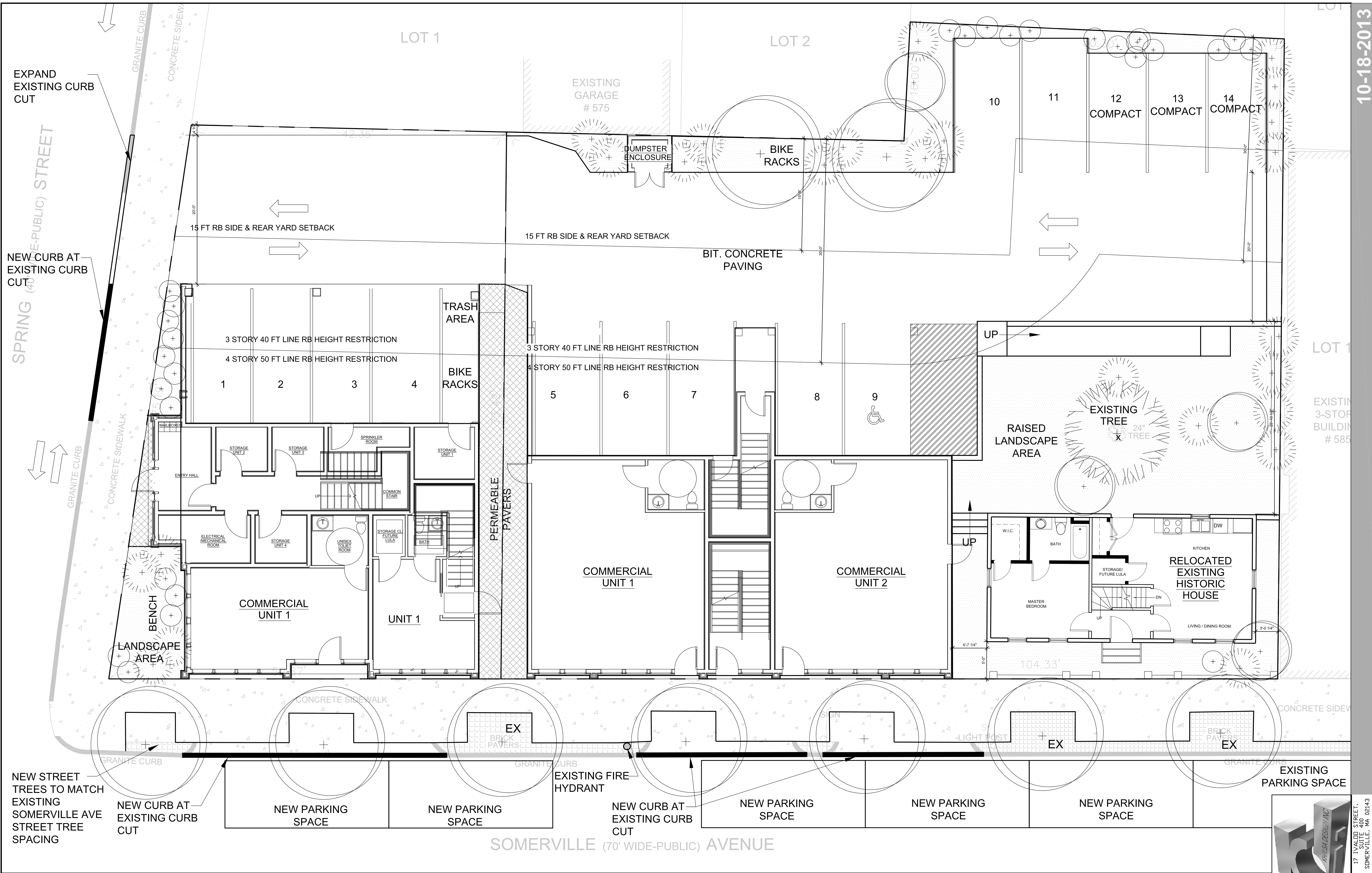
- Increase active and alternative transportation options, reduce congestion and promote workplace based policies and incentives for mode choice, work hours, and employment location.

- Manage parking supply and demand in a flexible, rational and innovative manner, to balance transportation, economic development and residential goals.

Driveway capacity issues are not expected due to the low traffic demand (14 peak hour trips) for the proposed redevelopment. Given the complimentary nature of the land uses, shared parking is expected to sufficiently serve the residential parking demand and retail demand (peak period parking for both uses do not overlap). Census Data indicates that almost 1 out of 4 Somerville residents do not own a vehicle. More than 50% of existing Somerville workers travel to work via carpooling, bicycling, walking, transit, and telecommuting. The three (3) compact parking spaces are more commonly accepted by the Somerville Zoning Ordinance and nationwide according to the *Institute of Transportation Engineers Planning Handbook (3rd Edition)*.

Synthesizing these site characteristics holistically, in combination with the supporting multimodal transportation infrastructure, the proposed redevelopment is expected to encourage and fit the lifestyle and goals of the local community and the City of Somerville.

Appendix
Site Plan
Parking Survey Data Sheets & Calculations
Trip Generation Analysis



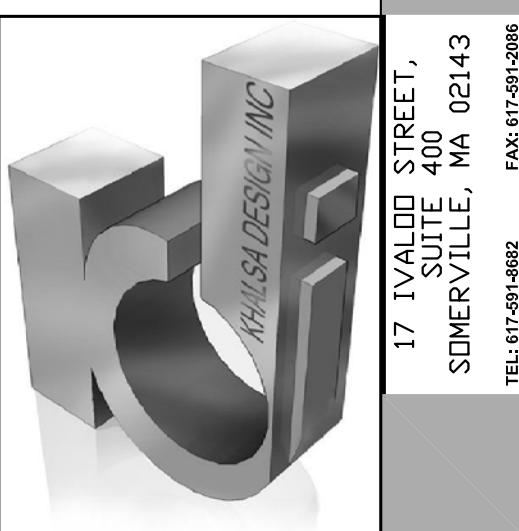
EXPAND EXISTING CURB CUT
 NEW CURB AT EXISTING CURB CUT
 SPRING (40' WIDE-PUBLIC) STREET

NEW STREET TREES TO MATCH EXISTING SOMERVILLE AVE STREET TREE SPACING
 NEW CURB AT EXISTING CURB CUT

EXISTING 3-STORY BUILDING # 585

SOMERVILLE (70' WIDE-PUBLIC) AVENUE

593-595 Somerville Ave Site Plan



Design Consultants, Inc.

Parking Survey

Site Location: 593-595 Somerville Ave
 City: Somerville, MA
 Date: Saturday, 23 November 2013
 Weather: Clear, 40's

Proj. No.: 2012-106.10
 Sheet No.: _____
 Field Tech.: AXF
 Notes: _____

							Number of Cars Parked		
							Saturday		
	Street	Side	From	To	Parking Notes /Type	Total No. of Spaces	11-12PM	12-1PM	1-2PM
1	Somerville Ave	Northside	Central St	Belmont St	2HR Parking except by Permit	18	14	9	13
					2HR Parking except by Permit + Loading	4	2	3	3
		Temporary No Parking During Study	-	0	0	0			
		Southside	Belmont St	Central St	2HR Parking except by Permit	18	10	10	11
2	Beech St	Eastside	Atherton St	Somerville Ave	Permit Only	11	7	6	5
		Westside	Atherton St	Somerville Ave	Permit Only	13	5	6	4
3	Pitman St	Southside	Beech St	Spring St	Permit Only	14	9	5	9
4	Spring St	Eastside	Atherton St	Somerville Ave	Permit Only	15	4	3	4
		Westside	Atherton St	Somerville Ave	Permit Only	14	9	7	8
5	Kent St	Westside	Somerville Ave	End of St	Permit Only	9	1	2	3
6	Conway Parking Lot				Permit Parking 12AM-6AM, Park Visitors 5:30-1AM	71	44	48	56
					Handicap Parking	4	2	0	1
					Zip Car Parking	1	0	1	1

Design Consultants, Inc.

Parking Survey

Site Location: 593-595 Somerville Ave
 City: Somerville, MA
 Date: Wednesday, 20 November 2013
 Weather: Clear, 40's

Proj. No.: 2012-106.10
 Sheet No.: _____
 Field Tech.: AXF
 Notes: _____

	Street	Side	From	To	Parking Notes /Type	Total No. of Spaces	Number of Cars Parked			
							Weekday			
							12-1PM ¹	1-2PM	5-6PM	6-7PM
1	Somerville Ave	Northside	Central St	Belmont St	2HR Parking except by Permit	15	4	8	10	11
					2HR Parking except by Permit + Loading	4	4	2	1	0
		Temporary No Parking During Study	3	0	0	0	0			
		Southside	Belmont St	Central St	2HR Parking except by Permit	18	11	6	9	8
2	Beech St	Eastside	Atherton St	Somerville Ave	Permit Only	11	4	1	3	4
		Westside	Atherton St	Somerville Ave	Permit Only	13	0	2	4	6
3	Pitman St	Southside	Beech St	Spring St	Permit Only	14	5	5	6	8
4	Spring St	Eastside	Atherton St	Somerville Ave	Permit Only	15	2	6	4	3
		Westside	Atherton St	Somerville Ave	Permit Only	14	7	8	7	7
5	Kent St	Westside	Somerville Ave	End of St	Permit Only	9	3	6	3	3
6	Conway Parking Lot				Permit Parking 12AM-6AM, Park Visitors 5:30-1AM	71	17	33	53	58
					Handicap Parking	4	0	0	1	2
					Zip Car Parking	1	0	1	1	1

¹Collected on Thursday, 21 November 2013

Design Consultants, Inc.
 Nov-13
 593-595 Somerville Avenue, Somerville, MA
 Preliminary Trip Generation Calculations
 Based on ITE's Trip Generation Manual, 9th Edition (2012)

Land Use: 230, Residential Condos

number of units: **11** units

	AM Peak	PM Peak	Weekday Daily	Sat. Midday Peak	Sat. Daily
Average Rate (per num. of dwelling units)	0.44	0.52	5.81	0.47	5.67
Percent Entering	17%	67%	50%	54%	50%
Percent Exiting	83%	33%	50%	50%	50%
Total Trips	5	6	64	5	62
Entering Trips	1	4	32	3	31
Exiting Trips	4	2	32	2	31

Land Use: 820, Shopping Center

gross leasable area: **1,820 SF**

	AM Peak	PM Peak	Weekday Daily	Sat. Midday Peak	Sat. Daily
Average Rate (per 1,000 SF)	0.96	3.71	42.70	4.82	49.97
Percent Entering	62%	48%	50%	52%	50%
Percent Exiting	38%	52%	50%	48%	50%
Total Trips	2	7	78	9	91
Entering Trips	1	3	39	5	46
Exiting Trips	1	4	39	4	45

	AM Peak	PM Peak	Weekday Daily	Sat. Midday Peak	Sat. Daily
Total Trips	7	13	142	14	153
Entering Trips	2	7	71	8	77
Exiting Trips	5	6	71	6	76

Land Use: 841, Auto Sales

gross leasable area: **5,220 SF**

	AM Peak	PM Peak	Weekday Daily	Sat. Midday Peak	Sat. Daily
Average Rate (per 1,000 SF)	1.92	2.62	32.30	4.02	29.74
Percent Entering	75%	40%	50%	50%	50%
Percent Exiting	25%	60%	50%	50%	50%
Total Trips	10	14	169	21	155
Entering Trips	8	6	85	11	78
Exiting Trips	2	8	84	10	77