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MEMORANDUM

DCI PROJECT NO. 2014-083

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

FROM: David Giangrande, P.E., M.S.
Principal

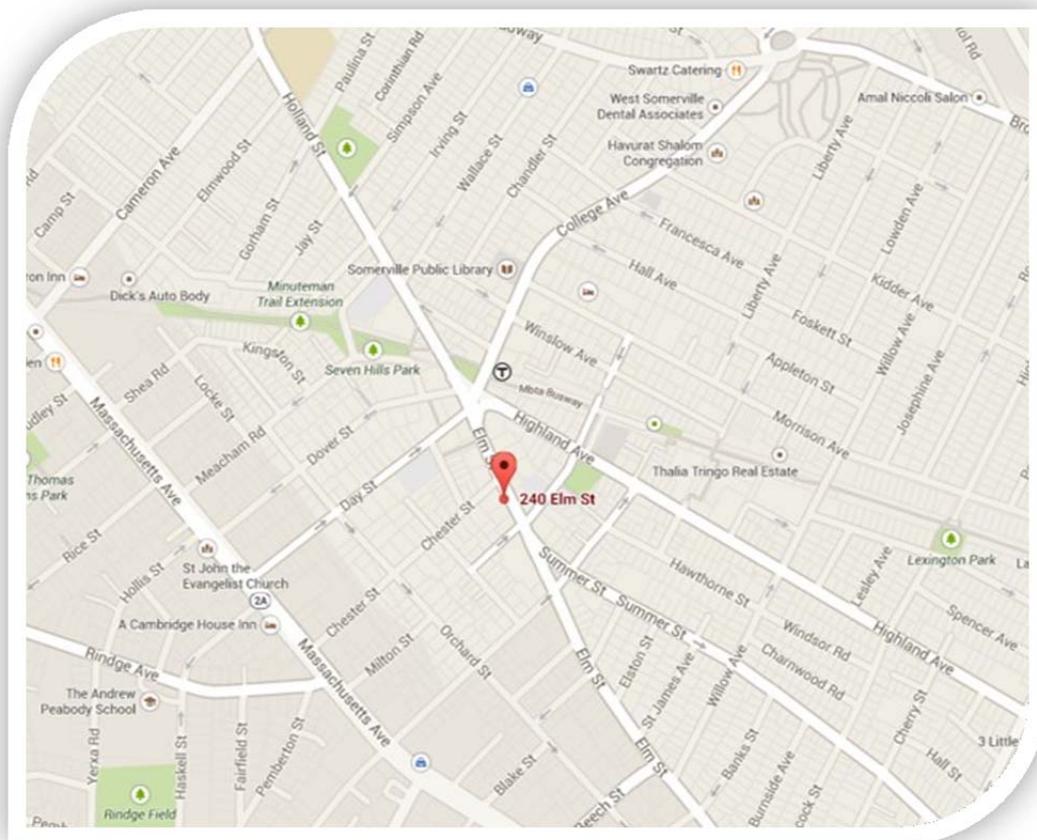
SUBJECT: **Parking Utilization Study**
240 Elm Street
Somerville, MA

DATE: July 30, 2014, Revised September 24, 2014

Design Consultants, Inc. (DCI) has been retained by Roche Bros. Supermarkets to evaluate the transportation and parking impacts of the project site at 240 Elm Street in Somerville, Massachusetts. The subject site is shown in Figure 1. The primary objective of the *Parking Utilization Study for 240 Elm Street* is summarized below:

1. Identify the number of required parking spaces due to the change in use per Somerville Zoning Ordinance (SZO) Article 9 (Off-Street Parking).
2. Identify the number of parking spaces requiring relief from the SZO.
3. Determine the potential impact of the number of parking spaces requiring relief on the local neighborhood within 500 linear feet from the Site.

Figure 1: Project Location



Map Source: Google Maps

1. *Identify the number of required parking spaces due to the change in use per Somerville Zoning Ordinance Article 9 (Off-Street Parking).*

The property at 240 Elm Street will undergo a change of use. It is proposed that 40,405 SF of existing office space and 2,941 SF of retail space (1,497 SF in basement) will be converted to 11,169 SF of office space, 20,108 SF of retail space (6,827 SF in basement, 12,218 SF first floor Brothers Market) and 17,037 SF health club space. Article 9 of the Somerville Zoning Ordinance indicates the following parking requirements:

- 1 space / 575 SF for office (existing and proposed)
- 1 space / 500 SF for retail (existing and proposed, not including basement space)
- whichever is greater of 1 space / 500 SF for health club or 1 / 4 persons based on occupancy of the largest assembly area (proposed)

Subtracting the existing required parking from the proposed required parking leaves a deficit of six (6) spaces. Applying a 20% reduction for proximity to rapid transit and public parking (SZO 9.6.3) results in a deficit of five (5) spaces. Based on floor area calculations provided by David Square Architects, Inc. on 9/23/14, the allocation of these spaces is 2.8 for the retail use and 2.2 for the health club use. Per communications with

City of Somerville Staff, the five (5) spaces are divided by 2 to obtain the parking requirement for the proposed change in use. Therefore, a net of three (3) on-site parking spaces are required for the proposed change of use.

2. Identify the number of parking spaces requiring relief from the SZO.

The subject site currently has no on-site parking. Therefore, parking relief of three (3) spaces is being sought for the proposed change of use. To determine the potential impact on the local neighborhood, the Somerville Planning Department requested a parking utilization study.

3. Determine the potential impact of the number of parking spaces requiring relief on the local neighborhood within 500 linear feet from the Site.

The parking utilization study determined that the impact of the three (3) parking spaces is negligible on the local neighborhood. The study revealed an average total of 41 parking spaces available during the weekday afternoon period (12:00 to 2:00 PM). Of these spaces, 8 were permit parking, 10 were metered parking, and 23 were kiosk parking. An average of 33 of parking spaces were available during the weekday evening period (5:00 PM to 7:00 PM). Of these spaces, 12 were permit parking, 16 were metered parking, and 5 were kiosk parking. On Saturday, during the afternoon period (12:00 to 2:00 PM), an average of 61 parking spaces were available. Of these spaces, 22 were permit parking, 21 were metered parking, and 18 were kiosk parking. On Saturday, during the evening period (5:00 to 7:00 PM), an average of 53 parking spaces were available. Of these spaces, 30 were permit parking, 15 were metered parking, and 8 were kiosk parking.

Mode Split Demographics

The Site is located in an area that has a high portion of non-vehicular trips. The latest data (2008-2012) associated with US Census Tract 3509 (which encompasses 240 Elm Street) shows that 67.2% of the working residential population in the area travel to work via modes other than by a single occupant vehicle (SOV). Moreover, the Census Data indicates that 27% of the residents in Census Tract 3509 do not own a vehicle.

240 Elm Street is conveniently located close to rapid transportation. The Site is 730 feet from the Davis Square Transit Station and Red Line subway route. On Elm Street, the Site is served by the following existing MBTA bus routes #87, #88, #89, #90, #94 and #96.

As of 2009, 5% of Somerville residents commute by bicycle. This is almost double the bicycle traffic from 10 years ago. The increase of bicyclists in the City has paralleled the improving conditions for bicycling in Somerville. These improvements over the past decade include bicycle lanes, bicycle parking, traffic calming measures, the Somerville Community Path, the Hubway bicycle program, and City-sponsored community bike rides. In 2012, approximately 3 miles of new bicycle lanes and sharrows were installed. In addition, regular maintenance included the repainting of over 700 sharrows throughout

Figure 3: Mode Split Comparison

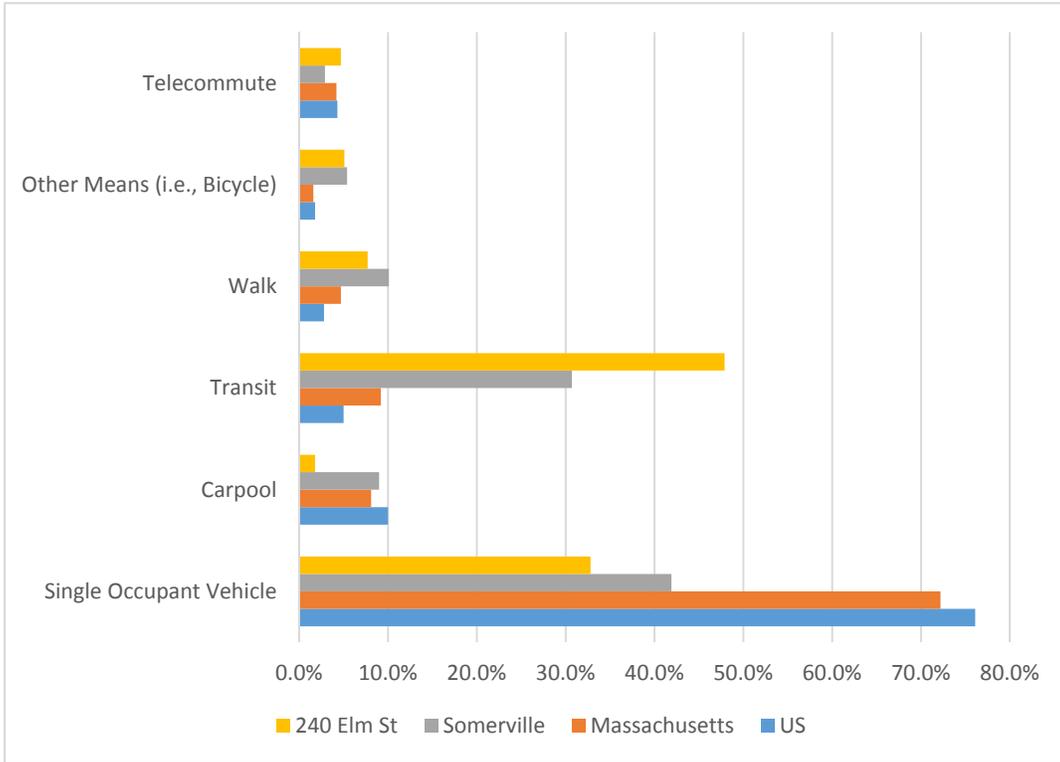
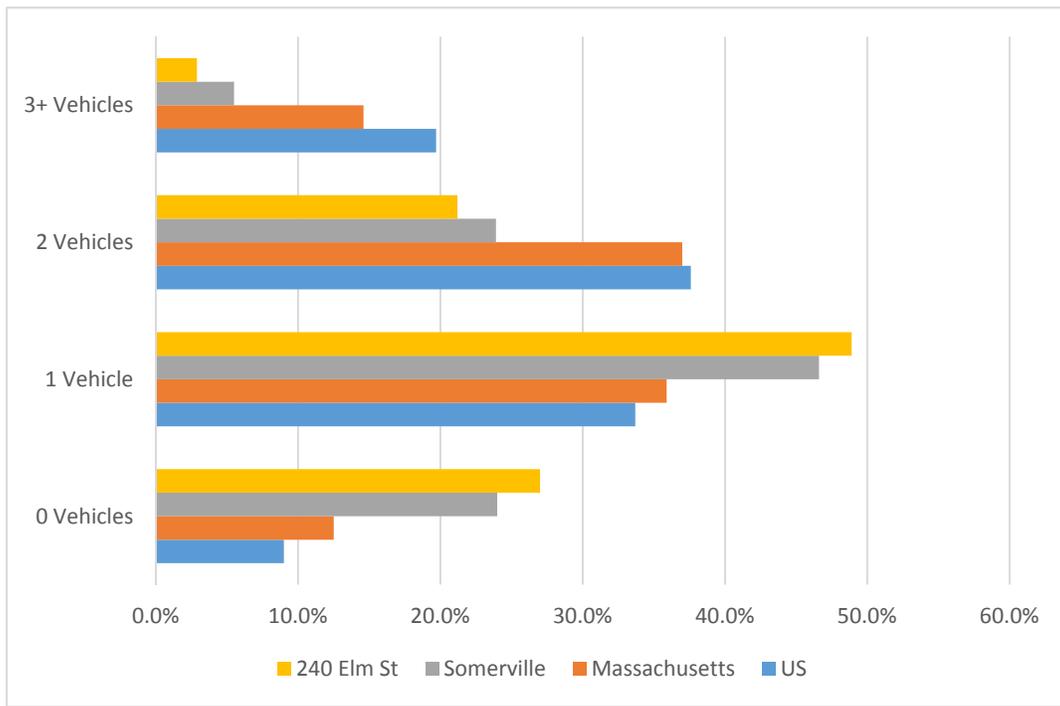


Figure 4: Vehicle Ownership Comparison



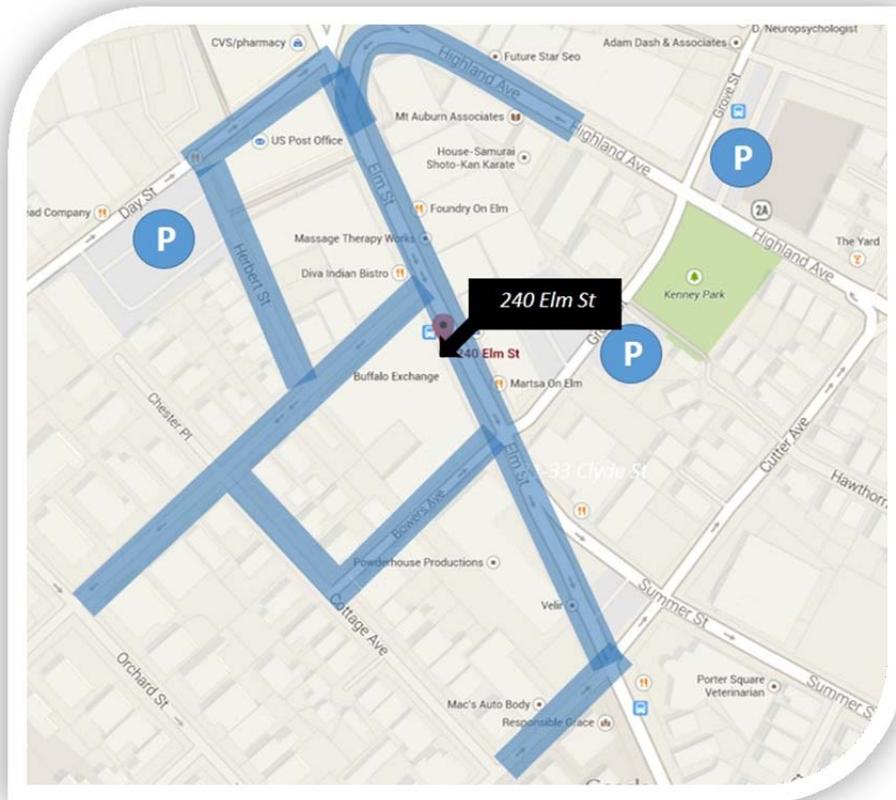
Existing Parking Utilization

The study area included all on-street parking and off-site municipal parking in the vicinity of 240 Elm Street within 500 linear feet. DCI performed a parking survey of all available on-street parking and off-site municipal parking in the area to determine the existing parking utilization. The study area included the following roadways and municipal parking lots:

- Elm St between Dover St and Russell St
- Herbert St between Day St and Chester St
- Cottage Ave between Chester St and Bowers Ave
- Day St between Elm St and Herbert St
- Highland Ave between Day St and #407 Highland Ave
- Chester St between Elm St and Orchard St
- Bowers Ave between Elm St and Cottage Ave
- Grove St between Elm St and Highland Ave
- Russell St between Elm St and Cottage Ave
- Parking Lot at - #394 Highland Ave
- Parking Lot at - Grove St
- Parking Lot at - Summer St/ Elm St
- Parking Lot at - Day St/ Herbert St

This study area is shown in Figure 5.

Figure 5: Project Study Area



Map Source: Google Maps

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

- Thursday, January 30, 2014 (12:00 – 2:00 PM)
- Thursday, January 30, 2014 (5:00 – 7:00 PM)
- Saturday, February 1, 2014 (12:00 – 2:00 PM)
- Saturday, February 1, 2014 (5:00 – 7:00 PM)

The results of the parking surveys are summarized in Table 1. Detailed tables with the complete parking survey data are contained in the attached Appendix.

Table 1: Parking Survey Summary

Street	Section		Subsection	Weekday		Weekend	
	From	to		Afternoon Average	Evening Average	Afternoon Average	Evening Average
Elm St	Dover St	Russell St	East Side	15	17	15	16
			West Side	23	22	17	20
Herbert St	Day St	Chester St	East Side	6	6	4	4
			East Side	7	5	3	2
Cottage Ave	Chester St	Bowers Ave	West Side	9	8	5	4
			North Side	4	4	4	5
Day St	Elm St	Herbert St	South Side	1	1	2	2
			North Side	7	2	7	6
Highland Ave	Day St	#407 Highland Ave	South Side	3	3	3	3
			North Side	20	22	16	14
Chester St	Elm St	Orchard St	South Side	23	22	20	17
			North Side	5	6	5	3
Bowers Ave	Elm St	Cottage Ave	North Side	7	5	6	5
			South Side	11	12	8	12
Parking Lot at #394 Highland Ave			East Side	13	13	8	12
			West Side	9	7	9	8
Parking Lot at Grove St (East)			North Side	9	7	8	9
			Center Side	3	3	3	3
Parking Lot at Grove St (West)			South Side	6	5	6	6
			North Side	4	5	3	5
Parking Lot at Summer St/ Elm St			South Side	4	5	4	6
			North Side	20	29	26	27
Parking Lot at Day St/ Herbert St			South Side	19	27	26	27
			Permit Parking Capacity	65	65	65	65
			Occupied Permit Parking	57	53	43	35
			Available Permit Parking	8	12	22	30
			Metered Parking Capacity	118	118	118	118
			Occupied Metered Parking	108	102	97	103
			Available Metered Parking	10	16	21	15
			Kiosk Parking Capacity	86	86	86	86
			Occupied Kiosk Parking	63	81	68	78
			Available Kiosk Parking	23	5	18	8
			Total Available Parking	41	33	61	53

As indicated by the parking survey summary, an average total of 41 parking spaces were available during the weekday afternoon period (12:00 to 2:00 PM). Of these spaces, 8 were permit parking, 10 were metered parking, and 23 were kiosk parking. An average of 33 of parking spaces were available during the weekday evening period (5:00 PM to 7:00 PM). Of these spaces, 12 were permit parking, 16 were metered parking, and 5 were kiosk parking.

On Saturday, during the afternoon period (12:00 to 2:00 PM), an average of 61 parking spaces were available. Of these spaces, 22 were permit parking, 21 were metered parking, and 18 were kiosk parking. On Saturday, during the evening period (5:00 to 7:00 PM), an average of 53 parking spaces were available. Of these spaces, 30 were permit parking, 15 were metered parking, and 8 were kiosk parking.

Parking Demand in Urban Areas

The proposed change in use at 240 Elm Street is not proposing any off-street parking. To assist in confirming the adequacy of the current plan without off-street parking, transportation mode split surveys at grocery stores and a fitness gym were conducted in nearby areas, with similar urban characteristics as Somerville.

The urban grocery stores and fitness gym were surveyed in August 2014 for mode split data. At least 30 samples were obtained at each site. The results are shown in Table 2.

Table 2: Empirical Mode Split Data

Mode Split	Urban Grocery Store 1	Urban Grocery Store 2	Urban Fitness Gym
Single Occupant Vehicle (SOV)	3%	10%	13%
Carpool	7%	3%	0%
Transit	13%	7%	17%
Bicycle	0%	7%	0%
Walk	77%	73%	67%
Other	0%	0%	3%

As shown in Table 2, the empirical data collected in August 2014 at local urban grocery stores indicate that vehicle trips represent 10% or less than the total trips to/from the sites. For the urban fitness gym, vehicle trips represent 13% of the total trips to/from the site. The majority of the trips to these urban sites are via walking and transit.

Conclusions

In accordance with Somerville Zoning Ordinances (Article 9), five off-site parking spaces are required for this proposed change of use. However, this memorandum has determined that the proposed change of use at 240 Elm Street from office and retail to office, retail and health club should have available parking within 500 feet of the Site to satisfy the expected parking demand. The following characteristics of the Site and the surrounding area serve to justify this finding:

- Proximity to Public Transit;
- Mode Choice;
- Expected Parking Demand; and,
- Available On-Street and Off-Street Parking Utilization.

The Site is located in an area that has a relatively high portion of non-vehicular travel to and from employment. The latest data (2008-2012) associated with US Census Tract 3509 (which encompasses 240 Elm Street) shows that 67.2% of the working residential population in the area travel to work via modes other than by a single occupant vehicle (SOV). Moreover, the Census Data indicates that 27% of the residents in Census Tract 3509 do not own a vehicle.

The Site is conveniently located close to public transportation. The Site is 730 feet from the Red Line at Davis Square Transit Station. The Site is served by the following existing MBTA bus routes #87, #88, #89, #90, #94, and #96 on Elm Street.

At 240 Elm Street, it is proposed that 40,405 SF of existing office space and 2,941 SF of retail space (1,497 SF in basement) will be converted to 11,169 SF of office space, 20,108 SF of retail space (6,827 SF in basement, 12,218 SF first floor Brothers Market) and 17,037 SF health club space. There is no parking provided at the Site.

According to ITE's Parking Generation Manual, 4th Edition, for Supermarkets - Urban (LUC 850), the weekday average peak period parking demand for a 12,218 square foot urban supermarket is 28 spaces. The manual does not provide data for the Saturday peak period. US Census Tract Data for 240 Elm Street indicates that 65.5% of the working population does not use an automobile for commuting purposes. These 65.5% use transit, bike or walk to work. Therefore, the peak hour parking demand for the weekday is expected to be approximately 10.

According to ITE's Parking Generation Manual, 4th Edition, for Health and Fitness Clubs (LUC 492), the weekday average peak period parking demand for a 17,037 square foot gymnasium is 90 spaces. The Saturday average peak period parking demand for a 17,037 square foot gymnasium is 49 spaces. US Census Tract Data for 240 Elm Street indicates that 65.5% of the working population does not use an automobile for commuting purposes. These 65.5% use transit, bike, or walk. Therefore, the peak hour parking demand for the weekday and weekend is expected to be approximately 31 spaces and 17 spaces, respectively.

The parking study found an average total of 41 parking spaces available during the weekday afternoon period within 500 feet of the Site. An average of 33 of parking spaces were available during the weekday evening period.

On Saturday, during the afternoon period, an average of 61 parking spaces were available. During the evening period, an average of 53 parking spaces were available.

Considering these site characteristics holistically, in combination with the supporting multimodal transportation infrastructure, the proposed change of use at 240 Elm Street is expected to fit the local community texture and the City of Somerville.

Appendix

Parking Survey Data Sheets & Calculations

Parking Survey

City: Somerville, MA

Proj. No.: 2014-008

Street: 240 Elm St.

Sheet No.: 1

Date: 1/30/2014 Thursday

Field by: Steve Wen

Weather: sunny

Notes: _____

Total Available Parking Spaces

Street	Section		Subsection	Total Available Spaces
	From	to		
Elm St	Dover St	Russell St	East Side	17
			West Side	26
Herbert St	Day St	Chester St	East Side	6
			West Side	No Parking
Cottage Ave	Chester St	Bowers Ave	East Side	9
			West Side	9
Day St	Elm St	Herbert St	North Side	4
			South Side	1
			South Side	3
Highland Ave	Day St	#407 Highland Ave	North Side	1
			South Side	7
Chester St	Elm St	Orchard St	North Side	7
			Permit	13
			South Side	5
			Permit	18
Bowers Ave	Elm St	Cottage Ave	North Side	7
			South Side	9
Grove St	Elm St	Highland Ave	North Side	No Parking
			South Side	No Parking
Russell St	Elm St	Cottage Ave	North Side	No Parking
			South Side	7
Parking Lot at #394 Highland Ave (Rite-Aid Pharmacy)	-	-	East Side	12
			West Side	13
Parking Lot at Grove St (East)	-	-	East Side	9
			West Side	9
Parking Lot at Grove St (West)	-	-	North Side	9
			Center Side	4
			South Side	6
Parking Lot at Summer St/ Elm St	-	-	North Side	5
			South Side	7
Parking Lot at Day St/ Herbert St	-	-	North Side	30
			South Side	31
			TOTAL:	271
			Residential Permit	65
			Parking lot Kiosk	86
			Parking Meter	118
			HP	2

Parking Survey

City: Somerville, MA

Proj. No.: 2014-008

Street: 240 Elm St.

Sheet No.: 2

Date: 1/30/2014 Thursday

Field by: Steve Wen

Weather: sunny

Notes: _____

Weekday Occupied Parking Spaces

Street	Section		Subsection	12:00 PM to 1:00 PM	1:00 PM to 2:00 PM	5:00 PM to 6:00 PM	6:00 PM to 7:00 PM
	From	to					
Elm St	Dover St	Russell St	East Side	15	14	17	17
			West Side	24	22	21	22
Herbert St	Day St	Chester St	East Side	5	6	6	6
			West Side	No Parking	No Parking	No Parking	No Parking
Cottage Ave	Chester St	Bowers Ave	East Side	7	6	5	5
			West Side	9	8	8	8
Day St	Elm St	Herbert St	North Side	3	5	4	4
			South Side	1	0	1	0
Highland Ave	Day St	#407 Highland Ave	North Side	7	7	1	3
			South Side	3	3	3	3
Chester St	Elm St	Orchard St	North Side	19	20	22	22
			South Side	23	23	22	22
Bowers Ave	Elm St	Cottage Ave	North Side	4	6	5	6
			South Side	No Parking	No Parking	No Parking	No Parking
Grove St	Elm St	Highland Ave	North Side	No Parking	No Parking	No Parking	No Parking
			South Side	No Parking	No Parking	No Parking	No Parking
Russell St	Elm St	Cottage Ave	North Side	No Parking	No Parking	No Parking	No Parking
			South Side	7	7	5	5
Parking Lot at #394 Highland Ave (Rite-Aid Pharmacy)	-	-	East Side	10	12	12	12
			West Side	12	13	12	13
Parking Lot at Grove St (East)	-	-	West Side	8	9	7	7
Parking Lot at Grove St (West)	-	-	North Side	9	9	7	6
			Center Side	3	3	2	3
			South Side	5	6	5	5
Parking Lot at Summer St/ Elm St	-	-	North Side	4	4	5	5
			South Side	4	4	4	5
Parking Lot at Day St/ Herbert St	-	-	North Side	18	22	28	29
			South Side	16	22	26	27
TOTAL:				216	231	228	235

Grocery Survey

City: Boston, MA Proj. No.: 2014-083
Street: 899 Boylston Street, Boston, MA Name of the grocer: Trader Joe's
Date: July 29, 2014 Field by: Frantz Renard
Weather: Overcast 80's Notes: 4:00 to 4:40PM

Mode of Transportation	Car	Carpool	Transit	Bicycle	Walk	Other	Total
Count	3	1	2	2	22	0	30
	10.0%	3.3%	6.7%	6.7%	73.3%	0.0%	

Grocery Survey

City: Boston, MA Proj. No.: 2014-083
Street: 160 Charles Street, Boston, MA Name of the grocer: Savenor's Market
Date: July 25, 2014 Field by: Frantz Renard
Weather: Overcast 80's Notes: 3:30PM to 4:40PM

Mode of Transportation	Car	Carpool	Transit	Bicycle	Walk	Other	Total
Count	1	2	4	0	23	0	30
	3.3%	6.7%	13.3%	0.0%	76.7%	0.0%	

Grocery Survey

City: Boston, MA Proj. No.: 2014-083
Street: 71 Landsdowne Street, Boston, MA Name of the fitness gym: Leap Fitness
Date: August 2 & 5, 2014 Field by: Frantz Renard
Weather: Overcast 80's Notes: 8:00AM-8:30AM, 2:00-2:25PM, 5:00 to 5:50PM

Mode of Transportation	Car	Carpool	Transit	Bicycle	Walk	Skateboard	Total
Count	4	0	5	0	20	1	30
	13.3%	0.0%	16.7%	0.0%	66.7%	3.3%	

Parking Survey

City: Somerville, MA

Proj. No.: 2014-008

Street: 240 Elm St.

Sheet No.: 3

Date: 2/1/2014 Saturday

Field by: Steve Wen

Weather: sunny

Notes: _____

Saturday Occupied Parking Spaces

Street	Section		Subsection	12:00 PM	1:00 PM	5:00 PM	6:00 PM
	From	to		to 1:00 PM	to 2:00 PM	to 6:00 PM	to 7:00 PM
Elm St	Dover St	Russell St	East Side	14	16	15	16
			West Side	16	18	19	20
Herbert St	Day St	Chester St	East Side	2	5	4	3
			West Side	No Parking	No Parking	No Parking	No Parking
Cottage Ave	Chester St	Bowers Ave	East Side	3	3	2	2
			West Side	4	6	4	4
Day St	Elm St	Herbert St	North Side	5	3	4	5
			South Side	1	2	2	1
Highland Ave	Day St	#407 Highland Ave	North Side	7	7	6	5
			South Side	3	3	3	3
Chester St	Elm St	Orchard St	North Side	14	18	14	13
			South Side	19	21	18	16
Bowers Ave	Elm St	Cottage Ave	North Side	5	4	3	3
			South Side	No Parking	No Parking	No Parking	No Parking
Grove St	Elm St	Highland Ave	North Side	No Parking	No Parking	No Parking	No Parking
			South Side	No Parking	No Parking	No Parking	No Parking
Russell St	Elm St	Cottage Ave	North Side	No Parking	No Parking	No Parking	No Parking
			South Side	6	6	5	4
Parking Lot at #394 Highland Ave (Rite-Aid Pharmacy)	-	-	East Side	6	9	11	12
			West Side	5	10	12	12
Parking Lot at Grove St (East)	-	-	East Side	2	4	4	3
			West Side	8	9	8	7
Parking Lot at Grove St (West)	-	-	North Side	7	9	8	9
			Center Side	3	3	3	3
			South Side	6	6	6	6
Parking Lot at Summer St/ Elm St	-	-	North Side	1	5	4	5
			South Side	2	6	6	6
Parking Lot at Day St/ Herbert St	-	-	North Side	22	29	27	27
			South Side	21	30	28	25
TOTAL:				182	232	216	210