TO:	City of Somerville	DATE:	January 9, 2017
FROM:	Joe SanClemente, P.E., AICP Melissa Restrepo	HSH PROJECT NO.:	2016234.00
SUBJECT:	Transportation Analysis – 245 Elm Street, Somerville, Massachusetts		

Introduction

On behalf of Garden Remedies, Inc. (the Applicant), Howard Stein Hudson (HSH) has prepared this transportation assessment for the proposed Registered Marijuana Dispensary (RMD) at 245 Elm Street in the Davis Square neighborhood of Somerville.

The transportation assessment was prepared pursuant to Section 7.15 of the City's Zoning Ordinance, which states that an applicant of a medical marijuana facility is required to submit a traffic and parking study to determine any traffic mitigation or additional parking needs.

Because RMDs are not well-documented in terms of trip generation patterns, and are relatively new to the Commonwealth of Massachusetts, the proposed operations and trip generation estimates were evaluated based on information provided by the Applicant and through a qualitative assessment of the adjacent transportation network.

This memorandum presents a description of the Project, existing transportation conditions, expected operations at the proposed RMD, trip generation, parking, Transportation Demand Management (TDM) strategies, and a qualitative assessment of the adjacent transportation network.

Project Description

The proposed Project involves the renovation of the existing Family Dollar store to create two new storefronts, including an approximately 4,564 square foot (sf) RMD and about 1,208 sf that would be sub-leased to another retail tenant. No on-site parking will be provided, with the exception of a designated loading area in the surface lot behind the building.

Existing Conditions

The Project site includes one two-story building. The first floor, where the Project would be located, is currently occupied by an approximately 5,773 sf Family Dollar store and the second floor is currently occupied by a yoga studio.

Public Transportation

The site is conveniently located near several Massachusetts Bay Transportation Authority (MBTA) services. An MBTA bus stop on Elm Street at Chester Street is located across the street from the site and is served by the following six local bus routes:

Table 1. MBTA Transit Service in the Study Area

Route	Description	Peak Hour headway (minutes)[1]
87	Arlington Center or Clarendon Hill – Lechmere Station	22
88	Clarendon Hill – Lechmere Station	10-12
89	Clarendon Hill or Davis Square – Sullivan Square Station	18
90	Davis Square – Wellington Station	45-50
94	Medford Square – Davis Square Station	15-20
96	Medford Square – Harvard Station	15-20

Headway is the time between vehicles.

Source: MBTA January 2017.

The site is approximately 600 feet (3 minute walk) from the MBTA's Davis Square station, where service includes the Red Line rapid transit service as well as the above six bus routes and bike storage with 165 spaces.

Bicycle Accommodations

The Project site is also well served with a variety of bicycle accommodations.

The Somerville Community Path and Alewife Linear Park are shared use off-street pathways and are located about a block away from the site. The Community Path provides connection to points

east of Davis Square. Meanwhile the Alewife Linear Park provides connection to Alewife Station and the Minuteman Commuter Bikeway, which runs through Arlington, Lexington, and Bedford. On-street shared bicycle accommodation in the Davis Square area is provided on Elm Street, Highland Avenue, and Holland Street.

At Davis Station, approximately 165 bicycle spaces are provided by the MBTA, offering secure covered bicycle storage as well as bicycle racks. Also, within a one-minute walk from the Project site, there are several on-street bicycle racks available to the public.

In addition, a Hubway bike share station is located in front of Davis Square Station on Elm Street, providing 25 bicycles. Hubway currently provides 1,600 bikes and 180 stations across Boston, Brookline, Cambridge and Somerville.

Parking Observations

HSH inventoried existing on-street curb regulations and public parking lots in the immediate area of the Project site on Saturday, December 17, 2016. Additionally, HSH conducted parking demand observations from 6:00 – 7:00 p.m. on Saturday, December 17 and Tuesday, December 20, which is anticipated to coincide with one of the busier time periods of the proposed RMD. **Figure 1** summarizes the curb-side regulations and public parking lot locations.

ON-STREET PARKING

As shown in **Table 2**, there are approximately 84 on-street parking spaces around the Davis Square area. Excluding taxi stand spaces, there are approximately seven vacant public spaces on a weekday evening and 14 vacant public spaces on a weekend evening.

Figure 1. ***On - Street Parking in Study Area***

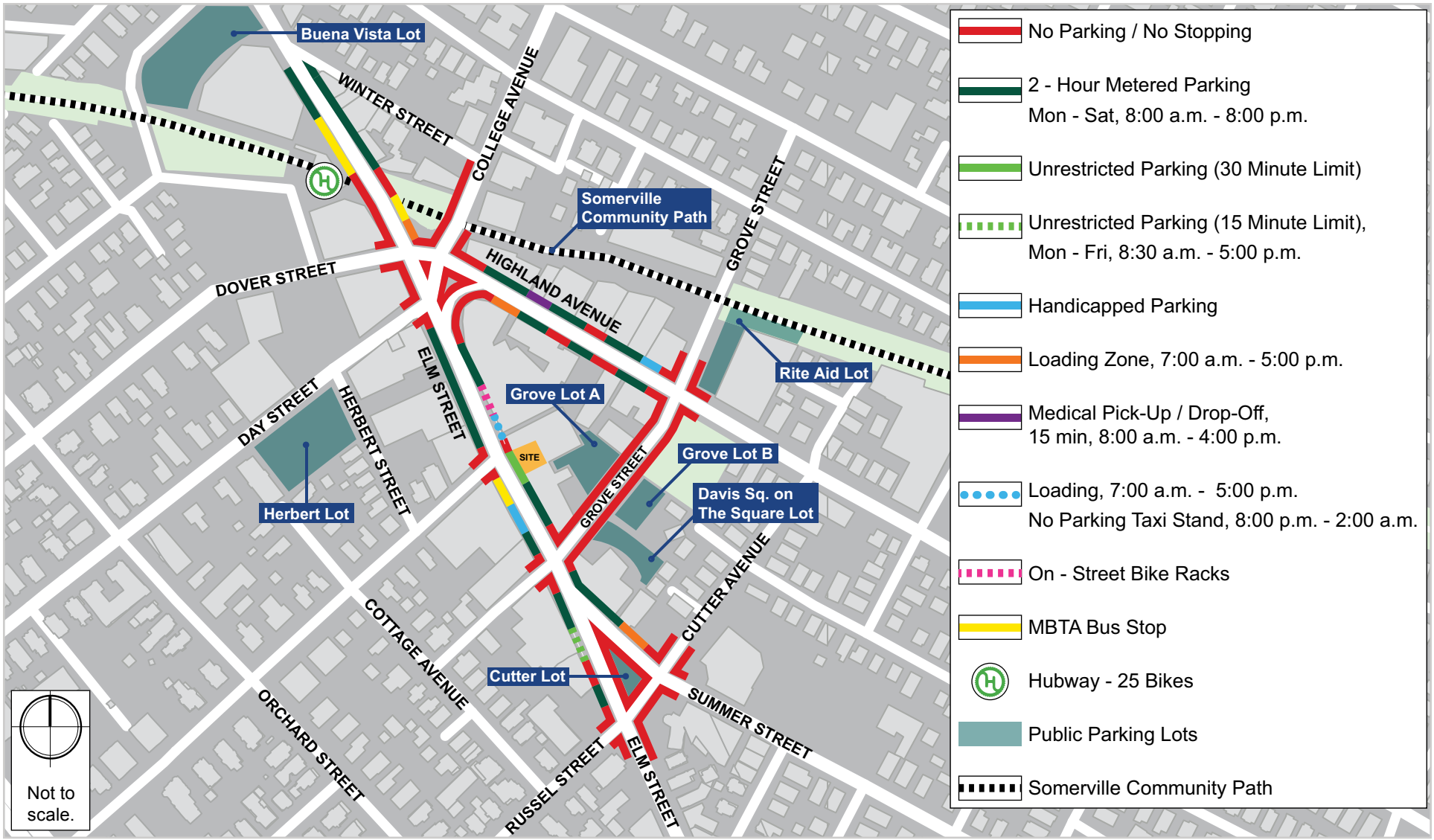

Table 2. On-street Parking Supply and Demand

Parking Regulation	Total Spaces	Vacant Spaces[1]	
		Weekday (Evening)	Saturday (Evening)
2-Hour Metered Parking (Mon-Sat 8am-8pm)	69	3	11
30-Minute Unrestricted	2	0	0
15-Minute Unrestricted (Mon-Fri 8:30am-5pm)	4	1	0
Handicapped	2	1	1
Loading Zone[2] (7am-5pm)	3	1	2
Medical Pick-up/Drop-off[2] (15-min 8am-4pm)	1	1	0
Taxi	3	3	3
Total	**84**	**10**	**17**
% Vacant	**-**	**12%**	**20%**

1. Observations conducted between 6:00 and 7:00 p.m. on Saturday, December 17 and Tuesday, December 20, 2016.
2. These spaces revert to unrestricted parking outside of these time frames.

PUBLIC PARKING LOTS

In addition to on-street parking, there are seven public parking lots within a quarter-mile distance (2-6 minute walk) from the Project site with a combined capacity of approximately 284 spaces (see **Table 3** and **Figure 1**). Based on the field observations, there are approximately 70 spaces (or about 25%) available on a weekday and 36 spaces (13%) available on a weekend evening hours within the seven public parking lots.

Table 3. Parking Lots Supply and Demand

Parking Lot	Parking Regulation	Total Spaces	Vacant	
			Weekday (Evening)	Weekend (Evening)
Buena Vista Lot	Meters: 8am – 8pm	69	30	7
	Business Permit: Mon-Sat 8am-6pm	29	19	7
	Zip Cars	2	0	2
Herbert Street Lot	Meters: 8am – 8pm	64	3	3
Rite Aid Lot	Meters: 8am – 8pm (front lot)	25	3	3
	Business Permit: 8am – 6pm (rear lot)	25	13	10
	Zip Cars (rear lot)	2	1	2
	Electric Car Charging Station 3-hr Limit (rear lot)	2	2	0
Grove Street Lot A (north side of street)	Meters: 8am – 8pm	18	2	2
Grove Street Lot B (south side of street)	Meters: 8am – 8pm	20	0	0
Davis Square on the Square Lot	2-Hr Parking: 6am – 6pm Restaurant Parking: 6pm – 6am	16[1]	-	-
Cutter Street Lot	Meters: 8am – 8pm	12	0	0
Total	**-**	**284**	**70**	**36**
% Vacant	**-**	**-**	**25%**	**13%**

1. Spaces are used for restaurant parking after 6:00 p.m.

Proposed RMD Facility

Operations

The Applicant anticipates that weekly hours of operation at the RMD will be:

- 9:00 a.m. to 9:00 p.m. from Sunday to Wednesday; and
- 9:00 a.m. to 11:00 p.m. from Thursday to Saturday.

The RMD will primarily serve Davis Square and adjacent areas. The Project will take advantage of the accessibility to public transit, bicycle connections, and overall walkability of the area. The service area will be largely dependent on the evolving competition in the area as other RMD facilities are established.

The RMD facility at 245 Elm Street will serve patients on-site, by accepting both appointments and walk-ins, and will also offer delivery primarily for homebound customers. The Applicant expects approximately 40 home deliveries per day. However, these deliveries will depart from Fitchburg, minimizing overall traffic and parking demand at the proposed Somerville facility.

Patients

The Garden Remedies, Inc. (GRI) estimates that they will service approximately 200 patients per day. This corresponds to about 400 person trips per day (200 entering and 200 exiting).

Patient visits are expected throughout the day with peak times occurring after typical work hours (weekday evenings) and on Saturday midday and evening hours. Patient activity during these peak time periods is anticipated to range between 20 and 40 patients per hour – or up to 80 person trips per hour (40 entering and 40 exiting).

HSH reviewed mode share data from the U.S. Census American Community Survey to determine how patients in the area might travel to the dispensary. Mode shares (for commuters) in this area of Somerville[1] are about 50% transit, 5% bicycle, 9% walk, and only 36% of commuters travelling via automobile. Although these data are representative of commuter trips, the rates are considered appropriate for estimating patient travel.

[1] U.S. Census, Census Explorer, 2013 American Community Survey, Census Tract 3509.

Based on the above mode shares, it is estimated that approximately 72 patients per day would arrive by automobile (72 entering trips and 72 exiting trips) and approximately 128 patients per day would arrive via transit/bike/walk (128 entering trips and 128 exiting trips).

During the busiest time periods for the facility, this would translate to about 14 patients per hour arriving by vehicle and 26 patients per hour arriving by transit/walk/bike. Although these trips estimates could be lower depending on the success of the home delivery service. These estimates may also be conservative as they do not account for pass by, or diverted, trips that may result from patients already traveling to Davis Square for other reasons (shopping, restaurants, etc.); however, no adjustment was made for pass by or diverted trips.

Employees

GRI estimates that the RMD will have about 20 to 25 (part-time and full-time) employees, with up to 15 employees on-site at any one time during the busiest hours.

Since the RMD is proposing to operate from 9:00 a.m. to 9:00 p.m. Sun-Wed and 9:00 a.m. to 11:00 p.m. Thurs-Sat, it can be assumed that employees would work on a shift basis and not all the employees would be arriving/departing at the same time.

Assuming approximately 20 unique employees traveling to the site each day (some working different shifts), it is estimated that approximately 14 employees per day would arrive via transit/bike/walk (7 entering trips and 7 exiting trips) and approximately 6 employees per day would arrive via vehicle (6 entering trips and 6 exiting trips).

Loading/Delivery Activity

The existing large dumpster (that serves the Family Dollar) will be removed to create a dedicated loading space for the RMD. A smaller sized dumpster will be positioned elsewhere behind the building.

Loading/delivery activities related to the RMD are identified below:

- Product – All product will be grown at an off-site facility and delivered to the RMD. One product delivery every 2 to 3 days is anticipated.
- US Mail and package delivery – These deliveries will occur via the main entrance, utilizing on-street loading areas.
- Trash – trash pick-up is anticipated to occur once per week.

- Cash – Cash will be picked up once per day. The timing of both the product deliveries and the cash pick-ups will vary each day to reduce predictably for security reasons.

In total, the number of loading trips are expected to be fairly minimal and will be scheduled to occur during off-peak periods, when possible.

Vehicle Trip Generation

Based on the information above, vehicle trip generation estimates have been developed for the proposed RMD taking into account patient, employee, and loading/delivery trips. In addition, when evaluating trip generation for a site that is currently occupied, it is standard practice to credit for the existing trips to identify the net new trip generation associated with the Project.

The existing Family Dollar store currently operates from 9 a.m. to 9 p.m. seven days a week. Trip rates for corresponding land use codes (LUC) from the Institute of Transportation Engineers' (ITE) publication *Trip Generation* (9th edition, 2012) were applied for the existing use using Land Use Code (LUC), Shopping Center (820).

Table 4 presents the new, existing, and net new vehicle trips for daily, a.m. peak hour, and p.m. peak hour periods. The Project is expected to generate about 184 vehicles trips per day (92 entering and 92 exiting) and about 20 to 30 vehicle trips during the peak hours. After subtracting the existing site trip activity, the Project will generate about 114 net new vehicles trips per day (57 entering and 57 exiting). During the a.m. peak hour, the Project will generate 18 new vehicles trips (12 entering and 6 exiting), and 22 new vehicles trips (11 entering and 11 exiting) during the p.m. peak hour. This corresponds to about one new vehicle trip every three minutes and will have negligible impact to traffic conditions on the adjacent roadway network.

Table 4. Project Vehicle Trip Generation

Time Period/ Direction		Project Trips RMD[1]				Existing Trips[2]	Net New Trips
		Patients	Staff	Loading/ Delivery	Total		
Daily	In	72	15	5	92	-35	57
	Out	72	15	5	92	-35	57
	Total	**144**	**30**	**10**	**184**	**-70**	**114**
a.m. Peak Hour	In	7	6	0	13	-1	12
	Out	7	0	0	7	-1	6
	Total	**14**	**6**	**0**	**20**	**-2**	**18**
p.m. Peak Hour	In	14	0	1	15	-4	11
	Out	14	1	0	15	-4	11
	Total	**28**	**1**	**1**	**30**	**-8**	**22**

1. Based on RMD's patient, staff, and service/delivery information
2. Existing trips for the Family Dollar store based on ITE trip generation for current land use: LUC 820 (Shopping Center) average rate.

Parking Demand

During the busiest time period (weekday evening), it is anticipated that approximately 14 patients per hour will arrive at the RMD via vehicle. According GRI, the anticipated service time within the facility is expected to be approximately 5 to 20 minutes and could average from 10 minutes up to 20 minutes for newer patients. Therefore, assuming the longer service time, patient parking demand is projected to be about three to five spaces depending on arrival patterns.

While the Project will not be providing dedicated customer parking spaces, metered on-street parking is currently provided along Elm Street and Highland Avenue as well as several public parking lots within close walking distance. Based on HSH's parking demand observations, there is more than ample parking supply available to adequately serve the parking needs of the RMD.

Employees of RMD will be encouraged to take public transit, bike to work, or park off-site at the several nearby public parking lots.

Transportation Demand Management (TDM)

The Project Proponent is committed to providing Transportation Demand Management (TDM) measures aimed at reducing vehicle trips to the site. TDM measures include:

- Short-term Bicycle Parking – the Applicant is exploring the feasibility of providing a bicycle rack (accommodating 5 – 8 bicycles) in the parking area behind the building.
- Secure Covered Bicycle Parking – secure covered storage (for 5 to 10 bikes) will be made available for employees within the basement level of the facility.
- Project Web Site – the RMD's website will provide information detailing travel options to the site, including MBTA service options, Hubway, secure covered bicycle parking at Davis Station, and home delivery service.
- Home Delivery Service – the Project will offer home delivery service primarily for homebound patients, which will limit the need for patients to travel to the site. These deliveries will be operated out of another facility in Fitchburg, minimizing overall traffic and parking needs for the Somerville RMD.

Summary

The Project involves the renovation of an existing Family Dollar store into a new Registered Marijuana Dispensary (RMD). HSH notes the following:

- The Project site's transit-oriented location in Davis Square will help facilitate non-auto trips, which will minimize traffic and parking impacts of the Project. The Project site is conveniently located within walking distance to 6 MBTA bus routes, MBTA Red Line rapid transit, Hubway Bike Share, secure covered bicycle parking at Davis Station, and the Somerville Community Path.
- When compared to the existing Family Dollar store, the proposed RMD will generate 114 net new vehicles trips per day (57 entering and 57 exiting), 18 new vehicles trips (12 entering and 6 exiting) during the a.m. peak hour, and 22 new vehicles trips (11 entering and 11 exiting) during the p.m. peak hour. This corresponds to only one new vehicle trip every three minutes and will have negligible impact to traffic conditions on the adjacent roadway network.
- Parking demand observations conducted by HSH during the weekday and Saturday evening peak periods (6:00 – 7:00 p.m.) indicate that there is adequate on-street and public off-street parking supply to accommodate the parking needs of the Project.

- The Applicant is committed to implementing a Transportation Demand Management (TDM) plan aimed at reducing single occupant vehicle trips to and from the site. As part of the proposed TDM plan, the Project will provide bicycle racks for patients, secure covered bicycle storage for staff, and will encourage patients and staff to utilize nearby MBTA services and Hubway bike share.
- The Project will also provide delivery service (operated out of a different facility), primarily for homebound patients that will help reduce the overall need for patients to travel to and from the site.