

TOWARDS CREATING THE TASTY POINT: Exploring Food Retail Prospects in Pointe-Saint-Charles

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Residents in many sectors of Pointe-Saint-Charles (PSC) cannot access fresh fruits and vegetables (FVs) due to the small number of stores selling them, small quantities of FVs available at these stores, long distances to stores with higher FV quantities and better quality, and the limited open hours in which people can access FVs from community food security initiatives. In response to these difficulties in accessing FVs, this supervised research project (SRP) explores the viability of establishing a new grocery store in PSC. Particularly, this study determines if there are potential locations containing minimal competition and maximum consumer demand. This involves surveying the quantity and price of FVs in stores within and nearby the neighbourhood, conducting an origin-destination cost analysis between dissemination areas and stores within a 1km radius, as well as performing a demographic analysis. To better understand the reasons behind this disparity in accessing FVs and to obtain community feedback and suggestions on the option of establishing a new grocery store, the study also uses results from discussions that took place in 2 focus groups and from casual conversations with visitors at a kiosk at the monthly neighbourhood FV market. In addition, interviews were conducted with store owners and representatives of community groups.

The new development projects along the Lachine Canal, the redevelopment of Building 7, and the success of the Fruixi present opportunities for entrepreneurs to access less expensive commercial space and an increasing consumer market. However, there is more competition along the Canal and poor street access to Building 7. Fruixis, food trucks, food stands and other temporary pop-up art can utilize areas with maximum demand and minimal competition but require greater dialogue with the Sud Ouest Borough to determine if this is legally feasible. Nonetheless, plans to develop stores or food pop-ups selling FVs in these areas should still be encouraged, further developed and pursued. These steps can be fully realized and made viable through community outreach initiatives that will stimulate more people to buy FVs.

Results from this study show that there needs to be more consumer traffic and available space in order for a new grocery store to be viable. Currently, it is very difficult to find a location in the neighbourhood that has access to enough consumer traffic. In addition, the available commercial spaces are expensive to rent. Areas with higher demand are dispersed throughout the neighbourhood. The areas with the least competition and the highest demand either have expensive rents or no space available. Another challenge is catering to a diverse clientele consisting of families, single person households, and different income groups. The lack of existing demand illustrates that it is currently not viable to establish a new grocery store in PSC unless there is a sufficient client base who will buy FVs within the neighbourhood on a frequent basis. However, the new development and changes in ownership present opportunities for demand in the future. When considering the next steps, it is necessary to increase the demand among existing residents and examine, study and utilize the demand among incoming residents.

#food desert #disparities in accessing fruits and vegetables #food retail #Pointe-Saint-Charles #access #food environments #availability





Les résidents de plusieurs secteurs de Pointe-Saint-Charles (PSC) n'ont pas accès à des fruits et légumes frais (FLs) à cause d'une pénurie de magasins qui en vendent, la petite quantité de FLs disponible dans ces magasins, la distance importante aux magasins ayant une plus grande quantité et une meilleure qualité, et l'horaire limité où les gens peuvent accéder les services d'initiatives communautaires en sécurité alimentaire. En réponse aux difficultés d'accès aux FLs, ce projet de recherche supervisé (PRS) explore la viabilité d'établir une nouvelle épicerie à PSC. Plus précisément, cette étude examine la présence potentielle de site dans le quartier où il y aurait un minimum de compétition et le maximum de demande des consommateurs. Cela implique de faire une enquête des quantités et des prix de FLs offerts dans les magasins dans et à proximité du quartier, une analyse des coûts origine-destination entre les aires de diffusion et les magasins dans un rayon d'un kilomètre, ainsi qu'une analyse démographique. Afin d'obtenir une meilleure connaissance des raisons de cette disparité en accès à des FLs et afin d'obtenir des retours et suggestions de la communauté sur l'option d'établir un nouveau magasin, cette étude utilise aussi les comptes rendus de rencontres de deux groupes de discussions ainsi que quelques conversations informelles avec des membres de la communauté. De plus, des entrevues ont été conduites avec quelques gestionnaires d'épiceries et quelques représentants de groupes communautaires.

Les nouveaux projets de développement le long du canal Lachine, le réaménagement du Bâtiment 7 et le succès du Fruixi présentent des opportunités pour les entrepreneurs d'accéder à un espace commercial abordable et à un marché de consommateurs en croissance. Néanmoins, il y a plus de concurrence le long du canal et l'accès au Bâtiment 7 est déficient. Les Fruixis, les marchés publics temporaires, les camions-cuisine et autres types d'installations temporaires peuvent utiliser les endroits avec demande maximale et concurrence minimale. Ils devront négocier avec l'Arrondissement du Sud-Ouest pour déterminer si cette option est possible légalement. Cependant, le développement des épiceries qui vendent des FLs le long du canal Lachine, dans le Bâtiment 7, ainsi que d'autres « pop-up » alimentaires, doit être encouragé. Ces étapes peuvent être réalisées et mises en place par des initiatives de sensibilisation communautaire encourageant plus de gens à acheter des fruits et légumes, afin de stimuler une demande locale.

Les résultats de cette étude montrent qu'il faut générer de l'affluence de clients potentiels et créer plus d'espace commercial dans le quartier afin qu'une nouvelle épicerie soit viable. Actuellement, il est très difficile de trouver un endroit dans le quartier avec suffisamment d'achalandage. De plus, les loyers des espaces commerciaux existants sont élevés. Les aires ayant une demande élevée sont dispersées à travers le quartier. Les secteurs ayant le moins de concurrence et une demande suffisante ont les loyers les plus élevés ou pas d'espace commercial disponible. Un autre défi consiste à desservir une clientèle diverse constituée de familles, ménages d'une personne et groupes de revenues différents. Néanmoins, les nouveaux développements et l'arrivée de nouveaux propriétaires présentent des opportunités. Pour décider des prochaines étapes à suivre, il faudra augmenter la demande parmi les résidents existants et examiner, étudier, et utiliser la demande des nouveaux résidents.

#désert alimentaire #disparité en accès aux fruits et légumes #commerce de détail alimentaire #Pointe-Saint-Charles #accès #environnement alimentaire #disponibilité



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Carte du transport en commun à Pointe-Saint-Charles



*The STM recently created the 71-du Centre bus after the neighbourhood had a meeting with the Sud Ouest Borough and the STM and sent complaints to Source: Action Gardien (2009). "Carte du transport en commun à Pointe Saint Charles". Enquête sur le service d'autobus. Powerpoint Presentation. the STM of the buses not respecting their schedules.

Source: Action Watchdog Community Coalition of Point St Charles (2012a). The Tasty Point for a Better Access to Food Winter 2012 Newsletter. Accessed from http://actiongardien.org/sites/actiongardien.org/files/Newsletter%20The%20Tasty%20Point%20-%202012%20Winter.pdf





New Development in Pointe-Saint-Charles

LIST ACRONYMS

CN Canadian National Railway DA Dissemination area DARD Department of Agriculture and Rural Development of Alberta EDLP Everyday Low Pricing FD Food Deserts FV Fresh fruits and vegetables GIS Geographic Information Systems NAIC North American Industry Classification PSC Pointe-Saint-Charles SME Small and medium enterprises SRP Supervised Research Project



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CHAPTER 1: INTRODUCTION

Food deserts (FDs) are seen as a threat to the nutritional intake and health of people living within them unless their inhabitants can and are willing to travel further for healthy food or pay more for delivery. They are considered a problem, yet a vaguely defined one. The term food desert is normally used to describe an area (food environment) with poor levels of access to healthy food. Usually, studies on FDs emphasize access to fresh frutis and vegetables (FVs) (Black et. al. 2011; Bader et. al. 2010; Bertrand et. al. 2008; Cummins et. al. 2010; Drouin et. al. 2009; Herzfeld and McManus 2007; Pouliot and Hamelin 2008). Poor levels of access can mean either a limited ability to obtain a reasonable supply of FVs at an affordable price, a limited supply of (affordable) FVs available within and near an area's boundaries (whether in cities, suburbs, exurbs, or rural areas), or both. Such areas are discussed in terms of supply, unit price, and the spatial distribution of this supply rather than as a result of a lack in demand for healthy food.

FDs have been tabled as a topic of discussion in Canadian cities (as well as in cities all over the world) since they can threaten food security. The Rome Declaration Plan of Action states that:

"Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

- World Food Summit Plan of Action, Para. 1 (FAO, 1996).

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In FDs, residents cannot be food secure unless they have the monetary or transport means (or both) to be able to access healthy food.

Food environment is an area of analysis for examining the types of food available. Although food environment includes commercial food establishments and other facilities where people can purchase or obtain food to cook at home or a prepared meal, it is worth focusing on food eaten and/or prepared at home since people have more control over what goes in their meals as well as proportions of different food groups. Most studies focus on stores selling food that can be eaten or prepared from home, such as grocery stores of a certain size (Bader et. al. 2010; Beaulac et. al. 2009; Black et. al. 2006; Chung and Myers 1999; Cummins et. al. 2010; Drouin et. al. 2009; Glanz and Yaroch 2004; Kersten et. al. 2009; Krukowski et. al. 2010), specialty stores, or a combination of different food stores types (Bedore 2012; Black et. al. 2011; Kersten et. al. 2009). This may be because it is typically cheaper and more feasible to buy larger quantities of FVs for multiple meals or snacks from a grocery store.

Although grocery trips may originate from home, school (Kerr et. al. 2012; Kestens and Daniel 2010), work (Kerr et. al. 2012), an extra-curricular activity (Kerr et. al. 2012), or any other frequently visited places (Kerr et. al. 2012), most studies focus on travel between residences and a type of food store (Apparicio et. al. 2007; Bader et. al. 2010; Leete et. al. 2012, Chung and Myers 1999; Smoyer-Tomic et. al. 2008). Researchers use the home as the origin out of convenience. It may be useful to use



home as the origin since generally, it is more convenient for people to do their grocery shopping on weekends when they are at home.

In Montreal, the concern for difficulties in accessing FVs in certain neighbourhoods has been expressed in a study released by the Direction de santé publique, Agence de la santé et des services sociaux de Montreal (2006) and more recently in an article in *Le Devoir* (Mont Petit 2010). Another study in 2007 found that access to the nearest supermarket was generally not a problem (Apparicio et. al. 2007).

An article in Le Devoir mentions Pointe-Saint-Charles (PSC) as a food desert (Mont Petit 2010). PSC is a neighbourhood in Montreal with a strong industrial heritage, located at a euclidean distance of just over 800 metres from the southern-most boundary of downtown Montreal. Although it has a high population density, there are many stores selling FV's located around the neighbourhood but not many stores with FVs located in the neighbourhood. The study released by the Direction de santé publique, Agence de la santé et des services sociaux de Montreal (2006) evaluated access by developing and applying an FV Index. The FV Index was based on the percentage of households owning at least one car in the dissemination area (DA) and total surface area of FVs in all stores within 500 metres and three kilometres from the centre of each DA. Using this index, their study found that most sectors of PSC had a low score (although less than the suburbs) and very little FVs available in terms of surface area. Although the study by Apparicio et. al. (2007) found that all neighbourhoods are 800 metres away from a supermarket on average, they also found that the average distance to the nearest

supermarket for many sectors of PSC exceed this distance.

The issue of the level of access to FVs in the neighbourhood was raised at the Tasty Point Forum in October 2010 (Action Gardien 2010a) and at the May 2012 Family Forum (Action Gardien 2012). The neighbourhood currently has only one supermarket, three ethnic grocery stores, and several convenience stores (which, in Montreal, are known as "dépanneurs"). FVs at the IGA are known for being expensive and for not having good quality while the FVs at other dépanneurs and stores are very limited, if not, non-existent. There are other stores outside of the neighbourhood that sell more FVs but are too far for many residents unless they have a vehicle. The prices also differ significantly among stores. The community initiatives available (food banks and delivery services) are unable to provide FVs on a frequent basis due to funding constraints. Although not all parts of the neighbourhood can be considered "FDs", these factors illustrate a disparity in the level of access to FVs throughout the neighbourhood.

Increasing access to more FVs involves ensuring that there is an entity that will distribute them to the neighbourhood, either for sale or for free, on a more frequent basis, and at convenient times. The distributor can take one of many forms, including supermarkets, small grocery stores, specialty food stores, farmers markets, food trucks (or similar mobile food businesses such as the newly developed Fruixi), community supported agriculture, food banks, urban agriculture, and the list goes on.

In response to this challenge, this supervised research project (SRP) performs

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Type of Store	Size (m ²)						
	Policy Link 2007 Definitions						
Convenience Storessmall supply of food: snacks, soft drinks, and alcoholic93-4drinks, and sometimes produce and dairy							
Full-service grocery stores	dry food, canned food, produce, meat, dairy	939-3252					
Conventional Supermarkets	at least 15,000 products, sometimes with a deli or a bakery: meat, produce, dairy products	2787-4180					
Superstores	bigger version of conventional supermarkets with the same products	3716					
Food and drug store combination supermarkets	same as supermarket products	~2787-4180 (varies)					
Wholesale buying clubs food and non-food products in bulk quantities		~2787-4180 (varies)					
Canada Food Expenditure Survey Definitions							
Specialty Food Stores	wide variety of only certain products	Not specified.					

Table 1: Grocery Store Types described by PolicyLink (converted from ft² to m²)

Source: Policy Link (2007). "Grocery Store Attraction Strategies: A Resource Guide for Community Activists and Local Governments". Accessed from http://www.community-wealth.org/_pdfs/tools/cdcs/tool-policylink-grocery.pdf and

Statistics Canada (2001). "Classification of Food Purchases". Food Expenditure Survey. Statistics Canada Catalogue no. 62-554-XIE. Released 2003. Accessed from http://www.statcan.gc.ca/pub/62-554-x/62-554-x2001001-eng.pdf

a case study analysis on PSC with a focus on potential economic strategies for increasing access to FVs. Ultimately, it assesses the viability of establishing a new small-scale small grocery store in this neighbourhood. Doing this entails determining if the neighbourhood has areas that can potentially host a new grocery by seeking locations containing minimal competition and maximum consumer demand. The study concludes by discussing reasons behind the food disparity in PSC, desirable consumer markets for stores selling FVs, potential locations, and steps for creating a friendlier environment for stores or initiatives distributing FVs.

In the United States, the size of a grocery store determines the quantities and products that can be sold within it while in Canada, size is a less significant factor. The grocery store types described by PolicyLink in Table 1 are only useful for categorizing stores based on the quantities and food items sold while Table 2 is useful for categorizing stores based on size. The size ranges in Table 1 reflect store sizes in the American suburbs and do not apply to store types in Montreal's urban neighbourhoods as seen in Images 1-2. The size categories in Table 2 are appropriate for the context of Point-Saint-Charles since they are based on a study on regions of Côte-Nord, located northeast of Montreal.





Image 1: Examples of Grocery Store Sizes in the United States

Smaller format grocery store:



Parking Entrance Parking entrance with housing above

Taken directly from Policy Link (2007). "Grocery Store Attraction Strategies: A Resource Guide for Community Activists and Local Governments". Accessed at http://www.community-wealth.org/_pdfs/tools/cdcs/tool-policylink-grocery.pdf



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Image 2: Examples of Grocery Store Sizes in Downtown Montreal



Small Grocery Store in Montreal: Marché Lobo 3509 avenue du Parc Area: ~ 506.25

Source (Area): Évaluation Foncière (2013). "Consultation du rôle foncier: 3509 avenue du Parc". Accessed at http:// evalweb.ville.montreal.qc.ca/Role2011actualise/CompteFoncier.ASP?id_uef= 1125583



Supermarket in Montreal: Supermarché PA Location 1420 du Fort Area: 854.71 m²

Source (Photo): Google Maps Streetview. Supermarché PA. Accessed at https://maps.google.ca/maps?ie=UTF-8&q=pa+supermarche&fb=1&gl=ca&hq=pa+superma rche&hnear=0x4cc91a541c64b70d:0x654e3138211fe fef,Montreal,+QC&ei=IE-JUemYBYrJ0wGR6oDQCA&ved=0CKEBELYD

Source (Area): Évaluation Foncière (2013). "Consultation du rôle foncier: 1420 du Fort". Accessed at http://evalweb.ville.montreal.qc.ca/Role2011actualise/CompteFoncier.ASP?id_uef= 1037562

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Stores by Size (converted from ft ² to m ²)					
Category	Size (m ²)				
Very Small	<278.71				
Small	279 – 650				
Medium	650 - 1394				
Large	1395 – 2787				
Very Large	>2787				

Table 2: Grocery Stores by Size in Quebec (translated)

Source: Duquette, Marie-Paule; Demmers, Théa; Lacroix, Amélie, Scatliff, Candice; and Desrosiers-Choquette, Janine (2011). "Étude sur la Détermination du coût du panier à provisions nutritif dans trois régions du Québec: Rapport du projet—Région de la Côte-Nord". *Dispensaire Diététique de Montréal*. 38 Accessed at http:// www.agencesante09.gouv.qc.ca/Document.aspx?id=810&lang=FR

In this context, size matters more than type because there are varying size ranges of store types, space constraints in Montreal urban neighbourhoods, and a general need for more FVs in PSC. Hence, this SRP focuses on small grocery stores (650m² or less) that do not require parking. The small grocery store can be either a full-service grocery store or a supermarket so long as it falls within this "small" size category.

1.1 DEFINITION OF THE PROBLEM AND OBJECTIVES

The problem is that residents in many parts of the neighbourhood cannot access FVs due to a small number of stores selling FVs, limited FV supplies available at nearby and accessible stores, long distances to stores with higher FV quantities and better quality, and the limited availability of community food security initiatives. One potential solution is to establish a new small grocery store, one that contains more FVs, at a location that residents from different parts of the neighbourhood can access on a more frequent basis.

The results of this SRP are intended to:

- Advance knowledge on solutions to FDs by exploring planning-related factors and obtaining a better understanding the grocery store industry.
- Inform strategies aimed at addressing FDs and combating food insecurity in PSC.

This SRP is organized as follows. The second chapter investigates the literature to obtain a better understanding of how to measure FDs in terms of accessibility and the availability of FVs in the food environment. The third chapter explains the qualitative and quantitative methods used to achieve the above objectives. The fourth chapter outlines the contextual parameters and examines the existing consumer demand. The fifth chapter investigates the existing supply of FVs through both an area and a store assessment. The next three chapters explore the perspectives of residents, business owners, and community groups by revealing the results from the interviews and discussion groups. The final two chapters provide potential locations and recommendations.



CHAPTER 2: LITERATURE REVIEW

2.1 IDENTIFYING AND MEA-SURING FDs

Definitions in the literature generally describe FDs as areas where residents have little or no access to FVs due to distance, cost, a limited supply, or a combination of these obstacles. They exist when the consumer cannot access FVs because they face at least one of three types of constraints: financial (due to the purchasing capacity of a high concentration of people in an area and the prices at available stores), geographic (place of residence in this case), and transport constraints (distance from the nearest public transit point, access to a vehicle, or ability to pay for different transport modes). FDs also exist when stores experience supply constraints (number of FV types and available quantities) and/or temporal constraints (the frequency and duration of time in which the supplier can provide FVs) in providing FVs. Methods of identifying FDs vary depending on how the study defines and measures supply and access.

2.1.1 Limited Supply of FVs

Supply is examined by assessing either number of suppliers in a specified area or the quantity of FVs available at suppliers located within an accessible distance.

2.1.1.1 Area Assessment: Density of Suppliers

Most studies measure the supply of FVs by looking at the density of FV suppliers within a certain radius. Measuring the supply of FVs requires identifying the suppliers and quantifying the FVs they contain.

Many studies that identify FDs at the city-level only focus on supermarkets, (usually large chain supermarkets or superstores and may include wholesale) because they are more likely to have greater quantities and greater varieties of FVs at lower prices (Apparicio et. al. 2007; Duquette et. al. 2011; Montreal Diet Dispensary 2012a). In Montreal, supermarkets had the largest share of food sales (80%) in 2002, meaning that they are the most frequently used for acquiring food (Bertrand 2002). A study on determining the cost of a nutritious basket in several Quebec regions found a negative relationship between store size and food prices (Duquette et. al. 2011) (Chart 1). Hence, measuring the density of supermarkets or the nearest distance to them is often used in studies of cities in Quebec because consumers frequently shop at supermarkets and because supermarkets are more likely to have more FVs at lower prices.

The problem with focusing solely on supermarkets is that areas that may be well served by smaller stores or other store types that sell FVs (FV specialty stores and FV













Coût du PPN selon la superficie des 140 magasins a Moins cher que dans les magasins de 3 000 pc et moins (p = 0,037) b Moins cher que dans les magasins de 3 000 pc et moins (p < 0,0001) et ceuxde 3 001 à 7 000 pc (p < 0,0001) c Moins cher que dans les magasins de 15 001 à 30 000 pc (p = 0,008), de 7 001 à 15 000 pc (p = 0,004), de 3 001 à 7 000 pc (p < 0,0001) et de 3 000 pc et moins (p < 0,0001)

Source: Duquette, Marie-Paule; Demmers, Théa; Lacroix, Amélie, Scatliff, Candice; and Desrosiers-Choquette, Janine (2011). "Étude sur la Détermination du coût du panier à provisions nutritif dans trois régions du Québec : Rapport du projet—Région de la Côte-Nord". *Dispensaire Diététique de Montréal*. 38 Accessed at http://www.agencesante09.gouv.qc.ca/Document.aspx?id=810&lang=FR

markets) would then be considered as FDs. In addition, focusing on large suppliers gives the impression that more densely populated areas with smaller spaces cannot have access to FVs because they have difficulty accommodating for the building and parking requirements of larger stores (although some larger stores have successfully established in dense neighbourhoods in Montreal with little parking space). With this in mind, some studies measure the supply by examining the total number of supermarkets in addition to farmers markets and/or FV markets (Bader et. al. 2010), or generally the total number of grocery stores (all sizes), green grocers, and convenience stores (Drouin et. al. 2009). Wegener and Hanning (2010) acknowledge retail locations aside from stores directly facing a



street that are often overlooked, such as online and delivery services, specialty stores (urban or rural), community supported agriculture, and food retailers in school campuses and hospitals. They refer to these distributors and retail locations as Alternative Retail Food Outlets which are part of an Alternative Food Network, where producers can also be retailers (Ibid).

2.1.1.2 Store Assessment

Some studies measure the supply of FVs (the availability and quality of these products) at existing stores by assigning scores, indices, instruments, or rating systems based on:

- The presence of specific items and variety (Kersten et. al. 2009), some based on the National Food Basket (Noseworthy et. al. 2011)
- The amount of full shelf space while looking for evidence of restocking (Herzfeld & McManus 2007)
- The ranking of a store on the Nutrition Environment Measures Survey (Glanz et. al. 2007; Krukowski et. al. 2010) based on the availability, quality, and price of food products that most federal agencies and health professional organizations recommend for healthy eating.
- Cultural acceptability, mainly through language, marketing, and the presence of specific food items that is culturally familiar among residents (Short et. al. 2007)

Bertrand et. al. (2008) synthesize the number of supplies and quantity of FVs at each supplier by focusing on the number of stores selling at least 7m² of produce.

2.1.2 Accessibility Measurements: Transport Costs

The discourse on FDs measures accessibility to FVs based on the number of suppliers within a certain radius, the network distance to the nearest store, or both. Establishing a comfortable distance between consumers and FV suppliers informs the service area to be used and a benchmark for how to assess the minimum distance to the nearest store. When deciding on a distance or a radius, it is useful to look at a combination of literature on both FDs and on transport exclusion and transport accessibility measures. Distance thresholds used in the FD literature are appropriated to the study area, types of mode users, and area unit of analysis (Tables 3-4).

On the other hand, the transport literature helps provide a better understanding of additional factors influencing accessibility measures. The process of choosing a maximum distance must be based on the distance decay threshold, that is, the point at which the number of people willing to walk longer distances begins to decrease. People are generally willing to walk more than 400 metres (Larsen et. al. 2010; Yong Yang and Diez-Roux 2012). However, people generally would start to use a vehicle rather than walking for distances exceeding 2 kilometres, regardless of the trip purpose (Dillon Consulting Limited 2002).

The study by Larsen et. al. (2010) found that the average distance that people were willing to walk to go shopping was 754 metres while the median was 581 metres. The median walking distance for all purposes was 650 metres (Ibid). Seniors were able to walk 1604 metres while children were able to walk













Distance (buffers and network analysis)	Authors	Context
400 metres	 Aultman-Hall et. al. 1997 Bader e. al. 2010 	Hamilton, ONNew York
500 metres	 Bertrand et. al. 2008 Montreal Health Department Kestens et. al. 2010 	• Montreal, QC
750 metres	 Kestens and Daniel 2010 	Montreal, QC
800 metres	 Apparicio et. al. 2007 (observation) Bader et. Al 2010 Smoyer-Tomic et. al. 2008 	MontrealEdmonton
1 kilometre	 Black et. al. 2011 Daniel et. al. 2009 Larsen and Gilliland 2008 Kerr et. al. 2012 	 British Columbia (regional) CMA of Montreal London, ON Atlanta, Georgia
2 kilometres	• Sawatsky and Stroick 2005	• Calgary Alberta (1-2 kilometres)

Table 3: Distances used in the Literature (Pedestrian)

Table 4: Distances used in the LIterature (Vehicle)

Distance	Authors	Context
2.5 kilometres	• Winkler et. al. 2006	Brisbane, Australia
3 kilometres	Bertrand et. al. 2008Kestens et. al. 2010	Montreal, QCMontreal and Quebec City
10 miles	• Junfeng et. al. 2012	Rural areas





Chart 2: Distance Decay Curves for Walking Trips in Montreal

Source: Larsen, J., El-Geneidy, A., & *Yasmin, F. (2010). Beyond the quarter mile: Re-examining travel distances by active transportation. *Canadian Journal of Urban Research: Canadian Planning and Policy (supplement)*. 19(1), 70-88. Accessed at http://tram.mcgill.ca/Research/ Publications/Travel%20distance.pdf

1300 metres. The results illustrated in Chart 2 illustrate that the percentage of walking trips for both work and leisure begins to decrease at roughly 500 metres.

A standard distance chosen for accessibility must consider the distance that vulnerable groups are capable of walking while carrying potentially heavy groceries. These vulnerable groups include the elderly, pregnant women, people with canes, single parents with small children, other groups with physical limitations, as well as captive mode users (people whose choice of transport is highly constrained by their financial situation). The interviews with low-income mothers in a study by Bostock (2008) raised concerns associated with carrying children and keeping them safe from cars, hence giving mothers a need for shorter walking distances. With these factors and the results from Larsen et. al's study in mind, 500 metres may be an applicable standard for Montreal.

Indeed, there are additional factors within the walking environment (such as physical obstacles, the quality of the sidewalk, crime, signage, and traffic lights) that may influence people to take a longer route. These can be more difficult to measure because they can change frequently.

2.2 POTENTIAL SOLUTION: ESTABLISHING A NEW GRO-CERY STORE

One potential solution is to establish a new grocery store in order to increase the number of FV suppliers in a way that can contribute to the overall FV supply available within a specified distance. Given the many costs (financial and temporal) and risks as-



sociated with this option, it is necessary to understand the grocery store industry, where grocery stores are more likely to locate, and the clientele required for them to be viable. Approaching the FD problem from the lens of a potential storeowner can contribute to an understanding of the products stores can offer at given prices.

2.2.1 Understanding the Grocery Store Industry 2.2.1.1 Costs and Risks

The survival and profitability of a store depends on the expenses, revenues and losses associated with the nature of its operations. FVs place risks on profitability due to their perishability. Some stores cannot sell certain FV types because the costs of refrigeration are too high and because refrigeration cannot eliminate the risk of spoilage and waste, unlike with frozen foods.

Certain stores pay more for specific expenses depending on their size and store type. Convenience stores are typically smaller and do not sell FVs, thereby lessening the need for labour and reducing the risk of spoilage. Large supermarkets and big box stores have lots of space to maintain, more departments, and therefore must pay more for labour than smaller stores. These costs are not necessarily per square metre or square foot or as a fraction of sales. Large supermarkets sell a diverse stock of products, requiring more operating equipment but also distributing risk in a way that lessens the effect of produce spoilage. Smaller grocery stores may not have enough room or funding for a certain number of freezers or refrigerators, thereby increasing

the risk of spoilage. FV specialty stores require a certain number of refrigerators or freezers and have the highest risk of spoilage since most of their products are perishable. Nonetheless, they require less labour since they are typically smaller than large supermarkets.

The 2010 small and medium enterprises (SME) benchmark profile reports in Quebec for small and medium grocery stores reports the expenses, revenues and losses associated with operating different store types in that specific year. It categorizes stores using the North American Industry Classification (NAIC) codes 4451 (grocery stores with a general line of food products), 44511 (supermarkets and other grocery stores excluding convenience stores and superstores), 44512 (convenience stores, excluding those that sell gasoline) and 44523 (specialty food stores, including fruit and vegetable stores, stands, and retail stores but excluding food grown and sold at roadside stands). The codes do not specify the grocery store sizes.

As seen in Table 5, results from these reports illustrate that convenience stores in Quebec generated the highest rate of return at 2.6% while supermarkets and other grocery produced the lowest at 1.9% (Table 3). Grocery stores had a higher net profit at 2.3% compared to FV markets at 2.1%. Convenience stores nonetheless paid the lowest dollar value expenses while FV markets paid the highest dollar value expenses (Statistics Canada Small Business Profiles 2012a-d).

Moreover, these results show that convenience stores had the highest proportion of businesses that were profitable at 80.4% while FV markets had the highest proportion of businesses that were non-profitable at 30.6%



Table 5: 2010 Revenues and Expenses for FV Specialty Stores, Grocery Stores, Supermarkets, and Convenience Stores in Quebec

	44523 - Fruit & Vegetable Markets		4451 - Grocery Stores		44511 - Supermarkets & Other Grocery (except Convenience) Stores		44512 - Convenience Stores	
REVENUES	Amount (\$ 000)	% of Revenue	Amount (\$ 000)	% of Revenue	Amount (\$ 000)	% of Revenue	Amount (\$ 000)	% of Revenue
Total revenue	1053.30		766.70	100	1015.60	100	661.40	100
Cost of sales (direct expenses)	765.30	72.6%	621.30	81%	792.70	78%	548.80	83%
Wages & benefits	17.00	1.6%	5.10	0.7%	8.00	0.8%	3.90	0.6%
Purchases, materials & sub-contracts	749.00	71%	614.20	80%	782.60	77%	543.00	82%
Opening Inventory	46.40	4.4%	57.30	7%	74.60	7%	50.00	8%
Closing inventory	47.10	4.4%	55.30	7%	72.50	7%	48.10	7%
OPERATING EXPENSES	265.40	25%	127.40	17%	203.60	20%	95.30	14%
Labour & commissions	129.60	12%	58.80	8%	100.10	10%	41.30	6%
Amortization & depletion	13.50	1.28%	7.20	0.94%	11.30	1.11%	5.40	0.82%
Repairs & maintenance	13.10	1.24%	6.10	0.80%	10.50	1.03%	4.20	0.64%
Utilities/telephone/ telecommunication	14.90	1.41%	9.80	1.28%	15.10	1.49%	7.50	1.13%
Rent	32.70	3.10%	14.00	1.83%	15.60	1.54%	13.40	2.03%
Interest & bank charges	4.70	0.45%	4.20	0.55%	6.70	0.66%	3.20	0.48%
Professional/business fees	5.60	0.53%	3.90	0.51%	5.40	0.53%	3.30	0.50%
Advertising & promotion	8.90	0.84%	2.40	0.31%	5.40	0.53%	1.10	0.17%
Delivery, shipping & warehouse expenses	2.90	0.3%	0.90	0.1%	1.80	0.2%	0.60	0.1%
Insurance	4.90	0.47%	3.00	0.39%	4.40	0.43%	2.40	0.36%
Other expenses	34.70	3.29%	17.10	2.23%	27.10	2.67%	12.90	1.95%
Total expenses	1030.70	97.9%	748.80	97.7%	996.30	98.1%	644.10	97.4%
Net profit/loss	22.60	2.1%	17.90	2.3%	19.40	1.9%	17.30	2.6%

Sources : Statistics Canada Small Business Profiles (2012a). "Benchmarking Tool Report: 2010 Quebec NAICS 4451—Grocery Stores (except Convenience Stores)". *Industry Canada SME Benchmarking Tool*. Accessed at http://www.ic.gc.ca/app/sme-pme/bnchmrkngtl/rprt-flw. pub?execution=e1s10

Statistics Canada Small Business Profiles (2012b). "Benchmarking Tool Report: 2010 Quebec NAICS 44511—Supermarkets and Other Grocery Stores (except Convenience Stores)". *Industry Canada SME Benchmarking Tool*. Accessed at http://www.ic.gc.ca/app/sme-pme/bnchmrkngtl/rprt-flw.pub?execution=e1s4

Statistics Canada Small Business Profiles (2012c). "Benchmarking Tool Report: 2010 Quebec NAICS 44512—Convenience Stores". *Industry Canada SME Benchmarking Tool*. Accessed at http://www.ic.gc.ca/app/sme-pme/bnchmrkngtl/rprt-flw.pub?execution=e1s8

Statistics Canada Small Business Profiles (2012d). "Benchmarking Tool Report: 2010 Quebec NAICS 44523—Fruit and Vegetable Markets". Industry Canada SME Benchmarking Tool. Accessed at http://www.ic.gc.ca/app/sme-pme/bnchmrkngtl/rprt-flw.pub?execution=e1s8





Table 6: Profitable Versus Non-Profitable Firms

		44523 - Fi Vegetabl kets	44523 - Fruit & Vegetable Mar- kets		4451 - Grocery Stores		upermar- her Gro- ept Con- Stores	44512 - Convenier Stores	nce
	Percent of businesses (%)	69.40		79.70		78.00		80.40	
fitable	Total revenue (\$1000s)	1066.70		796.70		1059.80		688.80	
Prot		Amount (\$ 000)	% of Revenue	Amount (\$ 000)	% of Revenue	Amount (\$ 000)	% of Revenue	Amount (\$ 000)	% of Revenue
	Total expenses	1023.40	95.9%	768.90	96.5%	1026.60	96.9%	663.10	96.3%
	Net profit	43.30	4.1%	27.90	3.5%	33.20	3.1%	25.70	3.7%
	Percent of businesses (%)	30.60		20.30		22.00		19.60	
rofitable	Total revenue (\$1000s)	1023.10		648.90		859.00		549.20	
Non-p		(\$1000s)	% of Revenue	(\$1000s)	% of Revenue	(\$1000s)	% of Revenue	(\$1000s)	% of Revenue
	Total ex- penses	1047.40	102.4%	669.90	103.2%	888.60	103.4%	566.20	103.1%
	Net loss	-24.30	-2.4%	-21.00	-3.2%	-29.70	-3.5%	-16.90	-3.1%

Sources : Statistics Canada Small Business Profiles (2012a). "Benchmarking Tool Report: 2010 Quebec NAICS 4451—Grocery Stores (except Convenience Stores)". *Industry Canada SME Benchmarking Tool*. Accessed at http://www.ic.gc.ca/app/sme-pme/bnchmrkngtl/rprt-flw. pub?execution=e1s10

Statistics Canada Small Business Profiles (2012b). "Benchmarking Tool Report: 2010 Quebec NAICS 44511—Supermarkets and Other Grocery Stores (except Convenience Stores)". *Industry Canada SME Benchmarking Tool*. Accessed at http://www.ic.gc.ca/app/sme-pme/bnchmrkngtl/rprt-flw.pub?execution=e1s4

Statistics Canada Small Business Profiles (2012c). "Benchmarking Tool Report: 2010 Quebec NAICS 44512—Convenience Stores". *Industry Canada SME Benchmarking Tool*. Accessed at http://www.ic.gc.ca/app/sme-pme/bnchmrkngtl/rprt-flw.pub?execution=e1s8

Statistics Canada Small Business Profiles (2012d). "Benchmarking Tool Report: 2010 Quebec NAICS 44523—Fruit and Vegetable Markets". *Industry Canada SME Benchmarking Tool*. Accessed at http://www.ic.gc.ca/app/sme-pme/bnchmrkngtl/rprt-flw.pub?execution=e1s8



(Table 6).

Out of the profitable firms, FV markets also had the highest net profit while convenience stores had the second highest. According to Table 6, supermarkets and other grocery (except Convenience stores) had the lowest net profit. Out of the non-profitable firms, supermarkets and grocery faced the highest net loss at -3.5% or -\$29,700. FV markets had the lowest loss in terms of percentage (-2.4% and -\$24,300). Convenience stores faced the lowest net loss in terms of dollar value (-3.1% and -\$16,900) (Statistics Canada Small Business Profiles 2012c). Supermarkets have the 2nd lowest percentage of businesses that are profitable, the 2nd lowest profit margin among the profitable businesses, and the highest loss among the non-profitable businesses (Statistics Canada Small Business Profiles 2012a-d). This may imply that the risk is still great for the supermarkets and other grocery compared to the other categories.

These figures illustrate that convenience stores generally face the lowest risk, lowest expenses, and the highest rate of return. Grocery stores have a very neutral standing among the average, the profitable, and the non-profitable businesses. Supermarkets and other grocery undergo high risks and the low returns while FV markets face a high risk and a high return. Nonetheless, securing a good location is easier for supermarkets and convenience stores since their more diverse stock allows them to appeal to more customers. On the other hand, FV markets require higher concentrations of customers interested in FVs since they cannot offer much else to customers wanting non-FV products. Hence, it is less risky, less labour intensive and more profitable to establish a convenience store while a FV

store would be more appealing for more daring investors who can find the right location.

Small grocery stores face a high competition with the larger stores. This competition has led a decline in small grocery stores across Canada. Between 1996-2006, the number of independent food retailers decreased from 47% of all industry to 39% (32,000 stores to 24,000 stores) (Bedore et. al. 2012). According to Bedore, there appears to be a competition for space whereby larger supermarkets have enough capital to leave buildings unoccupied in order to prevent the competitors from establishing in a nearby or strategic location. Although this is not necessarily be the case in PSC, establishing a new business near a supermarket can still be a risk if not a deterrent. While less competition is more preferable, the number of competing stores at a close proximity may not be as significant if there are enough consumers to buy a new store's products.

2.2.1.2 Pricing Mechanisms

A store's pricing mechanism and products offered depend on four factors: 1) consumer preferences and purchasing power 2) operating costs 3) inventory costs and 4) the store's budget and money available.

Popkowski Leszczyc et. al. (2004) categorizes grocery store price mechanisms into two types (Table 7). In practice, these location patterns are not always associated with these store types listed. There are large chain supermarkets that are located in high density areas and/or in residential areas that do not sell prices that are lower than average. At the same time, there also exist small stores that are on main streets selling produce at lower prices



Table 7: Grocery Store Pricing Mechanisms (Popkowski Leszczyc et. al. 2004)

Grocery Store Pricing Mechanism	Definition	Location Pattern
Everyday Low Pricing	 Low average prices Suitable for shoppers who purchase groceries in large quantities (families) 	 Often big box stores Typically located in low density areas
Hi-Lo	 Frequent discounts on different items Suitable for shoppers who purchase groceries in small quantities 	 Usually applies to small grocery stores Typically close to a residential area

Source: Popkowski Leszczyc, Peter T.L.; Sinha, Ashish; Sahgal, Anna (2004). "The effect of multi-purpose shopping on pricing and location strategy for grocery stores". *Journal of Retailing*. 80(2) 86-91. ISSN 0022-4359, 10.1016/j.jretai.2004.04.006. Accessed at http://www.sciencedirect. com/science/article/pii/S0022435904000247

than the larger supermarkets.

The pricing mechanism ultimately depends on the clientele available. Consumer store choice is based on the distance from home, weekly expenditures, household shopping frequency, household size, income, and the price for a basket of goods (Popkowski Leszczyc 2004). Some consumers may find it convenient to shop at a store nearby work or school, meaning that a potential location can benefit from being close to an employment area near an educational institution in addition to residential areas. Consumers will ultimately choose to shop at a store based on proximity and cost but will weigh these two factors depending on their purchasing capacity, available time budgets, and preference for either service or price.

Popkowski Leszczyc et. al. 2004 categorizes grocery shoppers into three types to provide a better understanding of shoppers' priorities in relation to time and price (Table 8).

Establishing a new Everyday Low Pricing (EDLP) store would benefit time constrained price seekers and particularly, captive mode users: people whose financial situation constrains their choice of how to get around (walking, transit, vehicle, and/or bicycle). Food specialty stores are better suited for single-purpose shopping trips where consumers can get smaller quantities: often the types of trips conducted to meet the needs of small, non-family households. EDLP supermarkets are more suitable for families since they offer more products at guaranteed low prices. Hence, the price mechanism of a new store depends on the price mechanisms of existing stores and the preferences of customers regarding time and price.

2.2.2 Understanding Where Small Grocery Stores are more likely to locate

Generally, stores of all types choose a location by examining features useful for operating a business, a client base willing to purchase the firm's products, transportation costs of inventory, and net revenue generated from selling to external markets (Hoover 1971). Location choices are also affected by the cost of rent or owning space and risks regarding security.

There are different types of retail locations, each with different attraction features.



	1. Time-Constraint Service Seekers	2. Time Constraint Price Seekers	3. Cherry Pickers
Characteristics	 Able to optimize shopping trips through multipurpose shopping Buys higher quantities Values proximity and service over price 	 High opportunity costs Values price over proximity: will travel a bit further to save money 	 Unconstrained by time Values price over proximity: will travel further to save money Typically do not make multi-purpose trips
Benefits from Everyday Low Pricing (EDLP)	 Convenient: multipur- pose, all at one stop 	Guaranteed low prices	Alternative when dissatis- fied with Hi-Lo
Benefits from Hi-Lo	 Proximity, high level service 	 Proximity Some opportunities for lower prices, but less guaranteed than everyday low pricing 	 Alternative when dissat- isfied with Everday Low Pricing prices

Table 8: Consumer	Types in relation	to Grocery Store	e Pricing Mecha	nisms

Source: Popkowski Leszczyc, Peter T.L.; Sinha, Ashish; Sahgal, Anna (2004). "The effect of multi-purpose shopping on pricing and location strategy for grocery stores". *Journal of Retailing*. 80(2), 86-91. ISSN 0022-4359, 10.1016/j.jretai.2004.04.006. Accessed at http://www.sciencedirect.com/ science/article/pii/S0022435904000247

Secondary business districts are shopping areas located at the intersection of two major streets (Burnaz and Topcu 2005) and are therefore attractive to any firm seeking customers by its visibility, such as the intersection between rues Charlevoix and Wellington. Neighbourhood districts consist of many small stores in a residential area on a main street where the leading retailer is often a supermarket, a large drug store, or a variety store (Ibid). Parts of rue du Centre, between rues Island and de la Sucrerie, can be considered a neighbourhood district. Stand-alone stores can serve as "a primary destination point of consumers and should offer special goods or services because there would be a shortage of synergy with other retailers" (Burnaz and Topcu 2005). This type of location benefits from lower rents, and the absence of direct competition (Ibid). Costco may fall under this definition of a stand-alone.

In addition to the types of streets and districts, there are additional variables associated with the clientele that affect the distribution of stores selling FV. The results of how these variables relate to FV store distribution patterns can give an idea of the location attributes and consumer characteristics that attract retailers selling greater quantities of produce. The literature cannot agree on these variables because they do not use the same area unit of analysis and because their study areas of concern are not at the same scale. Studies identifying FDs at the city-level generally use census tracts (Apparicio et. al. 2007; Bader et. al. 2010; Daniel et. al. 2009; Larsen and Gilliland 2008; LeDoux & Vojnovic 2012; Leete et. al. 2012; Morland et. al. 2002; Zenk and Powell 2008) while those looking at specific areas in a city use smaller units, such as census block groups (Raja et. al. 2008; Smoyer-Tomic et. al. 2008), dissemination areas (Bertrand et. al.



2006), counties (Kerr et. al 2012), wards (Pettinger et. al. 2008) or neighbourhoods (Short et. al. 2007).

Furthermore, a major problem with finding these variables is that most of them focus on supermarkets using a definition based on size (Apparicio et. al. 2007, Morland et. al. 2002; Pouliot and Hamelin 2008; Short et. al. 2007). In contrast, this study focuses on small stores where supermarkets are defined based on the type and number of food products sold within rather than the size.

Despite using different area unit analyses, the studies by Chung and Myers (1999) (which uses Minnesota counties), Short et. al. (2007) (San Francisco Bay neighbourhoods), and Morland et. al. (2002) (census tracts of Mississippi, Maryland, North Carolina, and Minnesota), and Smoyer-Tomic et. al. (2006) (census blocks in the City of Edmonton) found that the density of supermarkets or chain stores increases with income while the density of smaller grocery stores decreases with income. The study by Raja et. al. (2008), which uses census block groups in Erie County in New York, found that the density of supermarkets increased in white neighbourhoods and decreased in non-white neighbourhoods.

There is also literature that suggests that the number of small stores versus large stores in an area depends on population density rather than income. Winkler et. al. (2006) acknowledges that the perceived relationship between income and lower densities of FV retail outlets may be a result of higher poverty rates in urban areas nearby Brisbane's central business district. Studies in London, Ontario and Detroit, Michigan (based on census tracts) demonstrate that supermarkets prefer suburbs because these low density areas provide more retail and parking space at a lower cost (Larsen and Gilliland 2008; LeDoux and Vojnovic 2012), allowing them to operate and sell higher quantities of FVs at competitive prices. When expanding the scale to the provincial level, Black et. al. (2011) found that smaller retail outlets perform better in areas with high pedestrian traffic while supermarkets are targeted more towards drivers. Hence, the density of smaller stores selling FVs is not necessarily related with income but is perhaps higher in higher density areas where there is high pedestrian traffic.

Notably, results from a Montreal study by Daniel et. al. (2009) found higher concentrations of FV stores in census tracts with higher concentrations of Allophone households and fewer concentrations of these food retailers in Francophone and Anglophone neighbourhoods. Their study's definition of FV stores included "fruit and vegetable stores; supermarkets and grocery retail stores; and farm markets" (Daniel et. al. 2009). Their study does not specify the size of stores.

Other factors that were found to be positively related to FV store density were concentrations of full-time university students, single person households, and roads with high traffic (Daniel et. al. 2009). The study also found that the higher the local road density, the higher the FV supplier density however the higher the highway density, the lower the FV supplier density (Ibid). It is unclear whether or not the density of single person households is associated with FV store density or if this trend is instead a result of high local road density. Their study found no relationship between household income and



the distribution of FV stores.

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Therefore, the concentration of stores selling FVs is not necessarily related to income but instead may be affected by the number of households with children, single person households, allophone households, full-time university students, high traffic streets, and density. The reasons behind these variables and why they are applicable to PSC is explained in Chapter 4 and 6 in the discussion of the neighbourhood and its demographics.



CHAPTER 3: METHODOLOGY

The overall study (literature review, data collection, and overall analysis) was conducted in a period of 12 weeks between January and April 2013.

3.1 DEFINITIONS USED IN THIS STUDY

Food environments are geographic areas used for analyzing the types of food available based on quantity and spatial distribution. Although the food environment includes food that is consumed or prepared outside of the home, this study focuses solely on food eaten and/or prepared at home.

Food deserts (FDs) are food environments in which residents have poor access to fresh FVs due to either a limited supply, the distance between FV suppliers and residents, or both.

Access refers to one's ability to obtain a need or service based on their available choices of travel routes, the length of these travel routes, and transport mode options for using these routes. Access can be measured using residences, work, or schools as the origin. In the same way, it can be measured using grocery stores, farmers markets, food banks, community gardens, restaurants, or any other food establishment or food security initiative as the destination. In this study, access is measured using residences as the origin. The destinations are any food retail outlet where consumers can buy FVs to be eaten or prepared at home, particularly food stores and farmers markets that sell FVs on a frequent basis. The destinations and store assessment surveys only include food retail outlets containing at least 7m² of FVs.

An area's food environment can be considered a food desert in many ways. It is possible for a neighbourhood to have access to one or many grocery stores but with small quantities of produce. At the same time, it is possible for a neighbourhood to have access to a high supply of produce at one distributor but a high transport cost to get to the nearest retailer that has at least a decent, if not, comparable quantity.

For this reason, it may be better to assess food environments through a store assessment (supply of FVs at all stores within an area) in addition to an area assessment (number of retailers selling FVs within an area). More specific to produce, a more accurate measure would be to have a fruit and vegetable supply density, which refers to the quantity of FVs (in terms of weight) either at each store or the sum of the quantity of FVs at the stores within a specified distance. A more accurate measure of food density would include the amount of food wasted and in storage. This measure may nonetheless be too demanding because the required information is too detailed and can be time-consuming to implement and difficult to measure. Such data may not be sufficient with store assessment surveying alone: it may only be sufficient if a food retailer agrees to disclose such information. Quality is also worth including because it affects peoples' willingness to buy products from a specific store. Hence, it may be more



practical to measure supply by estimating the volume of FVs at a store, shelf space area (as used by Bertrand et. al. 2008 and Drouin et. al. 2009), FV diversity (the number of types of FV items), and to note the overall impressions of produce quality at a store.

This SRP assesses the viability of establishing a new small-scale grocery store in PSC. Small-scale grocery stores refer to stores (including chain stores and supermarkets) that do not exceed 650m² in size. This size is derived from the study by Duquette et. al. 2011, which found that stores between 250m² - 650 m² still maintained lower food basket prices and that stores exceeding this had even lower basket prices while stores below this range had higher basket prices. Because supermarkets are usually larger in size and typically require a certain amount of space for parking (although there are exceptions), it is less desirable to use them as a unit alone because it assumes that less dense areas with smaller spaces are food deserts.

QUANTITATIVE METH-3.2 **ODS AND SITE ANALYSES 3.2.1 Store Surveying**

Store assessment surveys took place throughout February 2013 between 9AM-1PM to ensure that the quantities available were as fully stocked as possible. The surveys contained records of the estimated the volume (shelf space multiplied by height in m³), shelf space (m^2) , and the number of FVs at all stores (regardless of type) containing a minimum shelf space of 7m² located within 1 kilometre from PSC's residential areas. Although FVs were available at four dépanneurs during the

process, these dépanneurs, along with Marché Bengal, were excluded from the analysis because the quantities were too small and their contributions to the neighbourhood's overall FV supply available were very marginal. Only stores meeting the 7m² standard set by Bertrand et. al. (2008) were analyzed.

The study also recorded the lowest price of items that were common among most stores in PSC in the August 2009 study by Action Gardien (2010) and that are listed in the Food Basket outlined by the Montreal Diet Dispensary (Tables 9-10). These lists have been previously used in 2009 Portrait of PSC by Action Gardien. The study uses these lists in order to analyze how the situation has evolved since the 2009 study. The original list consisted of 12 items: 6 fruits (apples, oranges, bananas, strawberries, cantaloupes, tomatoes) and 6 vegetables (spinach, carrots, onions, lettuce, celery, cabbage), but was narrowed down to 8 (strawberries, cantaloupes, celery and cabbage were removed) due to either the absence of produce in certain stores on the day that it was surveyed or different quantitative units that could not be converted (Table 11). Otherwise, the absence of a food item would affect the total price of the food basket: it would make stores that do not have certain items appear to have a cheaper food basket than stores containing all items in the original list. The surveying also involved recording notes on the quality of FVs, cleanliness of the store, the date, and the weather.

An issue with these lists is that they do not contain certain FVs that are common in ethnic grocery stores. There are also popular items, some available locally, that are not on these lists, such as strawberries.







Table 9: Montreal Food Basket (Narrowed down to FVs only)

Kinds and Size of Foods Used in Pricing List – January 2013

Citrus \$2.37/ kg Oranges \$3.31/kg Frozen orange juice \$2.15/341 mL

Other fruits \$3.39/ kg

Apples \$3.31/kg Bananas \$1.96/kg Grapes \$8.80/kg Pears \$4.38/kg Cantaloup \$1.92/kg Fruit cocktail \$2.69/796 mL Raisins \$2.99/375 g

Other vegetables \$3,58/ kg

Carrots \$3.49/2.27 kg Onions \$1.49/908 g Celery \$2.49/1 unit Spinach \$1.99/170 g Broccoli \$3.99/unit Lettuce. iceberg \$2.49/unit Turnip \$1.96/kg Cabbage \$0.76/1 kg Tomatoes \$4.38/kg Tomatoes. canned \$1.39/796 mL Tomato juice \$0.99/540 mL Tomato paste \$0.69/156 mL Green peas \$1.39/540 mL Corn. whole kernel \$1.39/540 mL Frozen macedoine \$3.29/kg

Taken directly from Montreal Diet Dispensary (2012)."Kinds and Size of Foods Used in Pricing List". Accessed at http://www.ddm-mdd.org/files/pdf/eng/12-03-Eating-Well-Eng.pdf





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Table 10: Food Basket List and Price Comparison Among PSC Stores by Action Gardien 2009 (translated)

Store/ Address	Maxi	Super C	Marché Quenneville	Dépanneur Gong	IGA	Marché Al Raji	Marché Bengal	Maison Elikya	Dépanneur Sammy	Club Populaire des	Mean	DDM (2009)	# stores with this
										Consommateurs			food item
Food Items	3000 Wellington	147 Atwater	1936 Wellington	502 Bourgeois	2600 Mullins	2544 Centre	2499 Centre	2124 Centre	1922 Centre	1945 Mullins			
Oranges	2.2	2.94	3.56		2.94	2.5		3.73		1.91	2.83	2.93	7
Apples	2.2	3.95	5.33		2.93	2.78	3.73	4.93		1.74	3.45	2.2	8
Bananas	1.74	1.52	2.35	1.65	1.74		2.12	2.08	1,16	1.32	1.82	1.74	8
Raisins	4.39	4.39			4.39					4.03	4.30	5.49	4
Pears	3.28	3.29								1.69	2.75	3.95	3
Cantaloupes	1.3	1.25		2.93	1.99					0.95	1.68	1.81	5
Potatoes	0.94	0.99	0.99	0.99	1.1	0.77	0.99	1.06		0.44	0.92	1.1	6
Carrots	1.83	1.83		2.19	1.98	1.64		2.36		0.88	1.82	1.54	7
Onions	1.68	1.83	2.2	1.54	1.76	1.32	1.62	2.19	1,43	0.68	1.65	2.19	6
Celery	0.99	1.29			1.49				1	0.59	1.07	2.49	5
Spinach	9.45	8.82			10.53		5.25			2.35	7.28	11.71	5
Broccoli	2.33	3.38			4.39					0.73	2.71	4.38	4
Lettuce	0.79	1.29	1.99	1.45	1.29			1.5		0.75	1.29	1.49	7
Turnip	2.19	2.85			3.73					0.64	2.35	2.18	4
Cabbage	1.24	1.39			1.74		1.07		1.07	0.37	1.15	1.3	6
Tomatoes	2.2	4.39	3.47	3.16	2.49	2.36				1.58	2.81	2.84	7

Source: 1. Action Gardien (2010a). La Pointe en bouche : Forum sur l'accès aux aliments à Pointe-Saint-Charles . 11. Neighbourhood Newsletter.



						FV SUPPLY/PRICE SURVEY	
Date/Time: Weather: Store Name and Address:						Store Type Convenience Store Supermarket Small Grocery Store Specialty Store	
Fruits	Price	Unit	Quality	Shelf Space (m ²)	Height	Image/ Cleanliness/Impressions	
Apples				1			_
Oranges/clementine/tangerines							
Bananas							
Strawberries							
Cantaloupes							
Tomatoes							
TOTAL TYPES:	ESTIMA	ED TOTA	L SHELF SPACE	_m ² ESTIMATED 1	OTAL VOLUI		-
VEGETABLES	Price	Unit	Quality	Shelf Space (m ²)	Height	Image/ Cleanliness/Impressions	
Spinach							
Carrots							
Onions							
Lettuce							
Celery							
Cabbage							
TOTAL TYPES:	ESTIMA	ED TOTA	L SHELF SPACE	m ² ESTIMATED T	OTAL VOLUN	1Em³	-





Table 11: List of FV Items used to Evaluate Price and Quality











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The MDD list includes certain canned FVs in addition to FV types that contain little nutritional value (juices, corn, raisins). It also has frozen macedoine, a type of produce that is not fresh and that is not well-known.

Similar to the MDD list, Action Gardien's list also contains certain items with little nutritional value, (potatoes, raisins).

Therefore, these lists are used to compare prices rather than for evaluating the quantity of FVs offered at each store.

3.2.2 Site Analysis

The on-the-ground analysis looks at the visibility, accessibility, and available parking space of each food retailer available in PSC and within 1 kilometre from the neighbourhood's residential areas. Other factors considered were the uses of nearby buildings, sidewalk and parking maintenance, and vehicle and consumer traffic. The site visits took place during the day at random times (weekends and weekdays) during the months of November and February. The experience of walking between stores from different parts of the neighbourhood was also taken into consideration. These factors will be discussed in Chapters 4 and 11. Results from the site visit analysis also helped determine if there was vacant commercial space in potential locations.

3.2.3 GIS

Ideally, a food retailer would want to maximize their consumer base while having minimal competition. Therefore, the methodology is based on determining if there are areas with minimal competition and maximum demand.

The analysis on the existing competition looks at the existing supply of FVs accessible to neighbourhood residents by examining

the minimum distance between residents and a store containing at least 7m² of FVs and the total volume, shelf space, and number of FV types within 500 metres and 1 kilometre using the centre and corners of each dissemination area as the origins.

Minimum distances between consumers and the available grocery stores and farmers markets containing at least 7m² of produce were calculated using an origin-destination (OD) cost matrix analysis: a GIS tool that measures the shortest route between each origin to each destination. The origins entered were the centroids and the corners of each dissemination area.

The total supply was calculated by determining the total number of stores within 500 metres and 1 kilometre and the total volume, shelf space, and number of FV types of stores within these service areas. These service areas were chosen based on the distance decay curves by Larsen et. al. (2010) for Montreal. Since people are willing to walk up to a maximum of 2 kilometres (Dillon Consulting Ltd 2002), this study assumes that people would prefer to walk half this distance at the most while carrying heavy groceries in the worst weather, although for some, this may still be an uncomfortable distance. The study does not look into delivery options because this option is more expensive for both the store and the consumer. These extra costs will be


discussed in Chapter 7.

3.2.4 Statistical Analysis on PSC Residents 3.2.4.1 Consumer profile of PSC Residents

To determine consumer characteristics and ability to access FVs (both in and within 1 kilometre of the neighbourhood's residential areas), the analysis looks at population, income, transport mode, and the variables proven to be significantly related to the distribution of FV stores in Daniel et. al's 2009 study: household composition, mother tongue, and education. Although all people need access to FVs, results from the study by Daniel et. al (2009) imply that single-person households, university graduates" and allophone households are most likely to buy FVs in Montreal.

Although Daniel et. al. used language spoken at home to count the number of allophone households, allophones in this analysis primarily refer to those having a language that is neither English nor French as their mother tongue or one of their first languages. This is done in order to account for allophones living with francophone or anglophone roommates, or allophone parents who choose to use an official language at home for their children.

Information on these attributes was obtained using data from the most recent Census for relevant topics (2011 for demographics and 2006 for social attributes). The study uses census tracts to evaluate the neighbourhood as a whole as well as dissemination areas (DAs), which are smaller than census tracts, for more detailed information on each part of the neighbourhood.

The analysis is limited given the data available in the census. Due to recent reforms, the most recent census (2011) only contains information on population, languages, and household attributes. For this reason, the study uses the 2006 census for other factors such as level of educational attainment and income. Despite the reforms, the analysisstill faces limitations since the Census is based on self-reported data that is taken every 5 years. In addition, much of the data on social attributes are based on 20% samples rather than the entire population.

In addition to these sources, information on transport modes is derived from data from the 2008 OD survey and results from the 2010 Action Gardien Survey.

3.2.4.2 Consumer Needs and Preferences

Information on consumer shopping patterns, preference, needs was derived from the results of the 2010 Action Gardien Survey. This data was not available online but instead obtained directly from one of the representatives of Action Gardien.

3.2.6 Analysis of By-laws and Zoning Analysis

The study also looks at existing land use zoning regulations to see if any zoning changes are necessary to establish a grocery store in the suggested locations. This was done



using the interactive map of the Sud Ouest borough and analyzing the borough's by-laws.

3.3 QUALITATIVE METHODS 3.3.1 Interviews with Business owners and Community Groups

The study obtains a business perspective using interviews with representatives from four grocery stores to find attributes they look for in a location. Furthermore, the study uses interviews with representatives from food security initiatives in order to obtain a better sense of consumer preferences, the capacity of community groups in providing FVs and type of direction they wish to take towards food security.

3.3.2 Semi-structured Survey, Discussion group, Kiosk, and previous survey results

The study also explored consumer preferences and resident perceptions of the existing FV supply available using a discussion group, a semi-structured survey, interviews with representatives from food security initiatives, and a kiosk that took place at the monthly FV market.

CHAPTER 4: CONTEXT, PREVIOUS STUDIES, AND POTENTIAL SOLUTIONS

4.1 GEOGRAPHY AND TRANSPORT



Map 1: Pointe-Saint-Charles

Source: Google Maps. Accessed February 7, 2013 from https:// maps.google.ca/maps?hl=en&q=sud+ouest+montreal&ie=UTF-8&hq=&hnear=0x4cc9108e59910e91:0xc6101958db39d282,So uthwest,+Montreal,+QC&gl=ca&ei=1hGFUeiNGsSM0QGGqICA CA&sqi=2&ved=0ClsBELYD Pointe-Saint-Charles (PSC), also known as "The Point", is an industrial neighbourhood in Montreal within the Sud-Ouest Borough (Maps 1-2). It comprises 3.97 km² (1.96km² excluding the railywards on the south) within the borders of the Lachine Canal on the north, Autoroute Bonaventure and the Saint Lawrence River on the south and the east, and Autoroute 15 and avenue Atwater to the west (Statistics Canada 2012a-e, g).

There are physical barriers that isolate PSC from the rest of the city and that create divisions in the neighbourhood.

The Lachine Canal and the CN railway tracks limit the number of access points to the neighbourhood. Because of the Lachine Canal, PSC can only connect to Griffintown



Map 2: Pointe-Saint-Charles in Relation to the Sud Ouest Borough and Montreal

Source: RÉSO (2013). Présentation du Service aux entreprises du RESO. Accessed at http://www.resomtl.com/docs/pptdec12sae.pdf





Map 3: Master Plan for Pointe-Saint-Charles

Source: City of Montreal (2012, October). "Catégories d'affectation du sol". *Plan d'Urbanisme de Montréal*. Accessed at http://ville. montreal.qc.ca/pls/portal/docs/page/plan_urbanisme_fr/media/documents/121022_affectation_12.pdf

using one street (rue Wellington), and to Little Burgundy through three streets (avenue Atwater and rues des Seigneurs and Charlevoix).

The CN tracks and the street network create poor connection within PSC and limits connection to nearby neighbourhoods. Because of the CN tracks, there is only one street connecting PSC to Côte Saint-Paul (rue Saint Patrick) and four streets to Verdun (avenue Atwater, rues Wellington, rue d'Argenson/ Boulevard Lasalle and a pedestrian bridge extending from rue Thomas-Keefer). Additionally, the CN tracks divide the neighbourhood into two parts: the north and the south. The "south" refers to inhabited areas north of the rail yards. This leaves only three streets that cross through both parts of the neighbourhood (rues Charlevoix, d'Hibernia, and Wellington). There are also many small side streets that are difficult to find as well as many dead end streets, mainly in the south.

Moreover, there are also the railyards on the south and the commercial and industrial uses (such as the Loto Quebec and the Costco) in the east. Although the Census includes the commercial and industrial areas east of the CN tracks, residents do not consider these areas part of the neighbourhood.

The Sud Ouest Masterplan shows that the neighbourhood is being planned largely for residential and employment use, although the northern area along the Lachine Canal is intended for mixed use (Map 3). Currently, the mixed-use areas contain residential lofts, garages and other automobile related services, film and music studios, recreational centres and businesses (such as yoga, boat rental, and indoor mountain climbing), and a few businesses related to housing and home improvement.

Restaurants, bars, and two ethnic grocery stores are situated on rue Centre and rue Wellington while dépanneurs (convenience stores) are dispersed throughout the neighbourhood.



4.2 DEMOGRAPHICS

PSC has a total of 13,831 residents (Statistics Canada 2012a-e). Given that the neighbourhood has an area of approximately 1.96km² (excluding the railyard), this comes to a residential population density of 7057 people per km². In the past 10 years; there have been very marginal changes in the population; it has increased by 5% between 2001 and 2006 and decreased by 0.7% between 2006 and 2011 (Ibid).

PSC hosts two distinct types of clientele: working class residents who have lived there for decades and more affluent residents who have recently arrived as a result of the new condominium developments (F. Crossling, Personal Communication, March 13, 2013). This is because PSC has a history of being a working class neighbourhood but now has different income groups as a result of new housing projects in the private sector.

Kazempiur and Sitall Halli (2000) define a low-income neighbourhood as one where at least 40% of the population falls under the low-income cut-off point. Low Income cut-offs are defined as paying 20% more than the average family on food, shelter and clothing (Statistics Canada 2012f). The 2006 Census shows that 46% of residents were under low income status before taxes and 38% after taxes based on a 20% sample from each census tract. The Census tracts located south and immediately north of the tracks had half of the population under low-income status before taxes while the northwest had the lowest poverty rate (40% before taxes) (Statistics Canada 2006a,c,d) (Map 4). The 2006 Census indicates that the median household income after taxes in 2005 was \$24,787 which is 40%

less than that of the amalgamation of Montreal (\$41,463). In addition, the Census shows that the after-tax income of 38% of all PSC households falls under the low income mark (Statistics Canada 2007a).

Nonetheless, the neighbourhood has experienced gentrification in the past few years, both in areas north and south of the tracks. Condominium construction has occurred and is continuing mainly along the Lachine Canal. A similar trend has occurred and is continuing in other parts of the neighbourhood, including south of the tracks, although to a lesser extent than areas along the Lachine Canal. Given the Census date of the household income figure and the construction of several new condominium buildings in 2011, this median household income may no longer be applicable. Hence, PSC is going through demographic transition that can expect incoming numbers of households who have income levels that are different from current residents.

Map 5 illustrates the population distribution in the neighbourhood. The most populated DAs are located north of the tracks next to rue Atwater and south of the tracks within rues Hibernia, Coleraine and Wellington. The DAs located along the Lachine Canal are generally more populated. It is important to note that the population data for DA 24661047 is for the entire DA and not just for the parts of the DA that fall within PSC.

The neighbourhood largely consists of 1 to 2 person households. There is also a nearly equal gender split and a small population of immigrants dispersed around the neighbourhood. Most residents are over the age of 25 with 85% of the population over





Map 4: Prevalence of Low Income in each Census Tract

Supermarket/Superstore

Census Tract	PSC	46020072.00 (South)	46020073.00 (Northeast)	46020074.00 (Central)	46020075.00 (North)	46020076.00 (North)
% in low income before tax - All persons	46%	50.8	42.7	45.6	50	40
% in low income after tax - All persons	38%	38.4	41.6	37.4	39.6	32.5

Source: Statistics Canada 2006 Census





Map 5: 2011 Pointe-Saint-Charles 2011 Population by Dissemination Area

the age of 15 (Statistics Canada 2012a-e). The largest cohorts are ages 25 to 29 and 30 to 34, which together, total 20% of the population (Charts 3-6). Additionally, 10% of the neighbourhood population is of retirement age. This indicates that 75% of the population is at an age where they can obtain a source of income. In fact, most residents over the age of 15 are employed: in 2006, an estimated 93% of persons over the age of 15 had some source of income (Statistics Canada 2012a-e). PSC is not lacking density, therefore, there may be additional factors affecting the success of a grocery store.









Chart 4: 2011 CMA of Montreal Population by Age

Source: Statistics Canada 2011 Census





Chart 5: 2011 Pointe-Saint-Charles Population by Age

Source: Statistics Canada 2011 Census



Chart 6: 2011 CMA of Montreal Population by Age

Source: Statistics Canada 2011 Census



4.2.1 Household Composition

Daniel et. al's study in 2009 found more stores selling FVs in areas with high numbers of single households. This may be because single-person households are less reliant on a vehicle than family households and typically live on high-traffic streets.

The household composition of PSC mainly consists of 1-2 person households (Chart 7), indicating that residents in the neighbourhood generally would buy FVs in smaller quantities.

The proportion of households with children gives an idea of level of quantities needed as well as purchasing capacity since it suggests the number of persons who are able to work. Family households with more children and less people earning income will more likely need lower priced produce. Hence, lone-parent one-family households with more children have a greater need for affordable produce while single households are less affected.

Although Census family households make up 47% of the total private households, this does not necessarily mean that all families have children. In fact, 32% of Census family households are couples (married and common-law) without children (Statistics Canada 2012a-e). Chart 8 illustrates that 28.4% of households (1970 households) have children while 70.8% of households (4915) do not have children (Ibid). It details the types of Census family households with children. Couple households include one-family households and other family households. Other family households include one-family households with additional persons and multiple censusfamily households (Ibid). Lone-parent family households were split into two in order to show the number of lone-parent households with only one person who can earn income versus that belonging to a group that is more likely to have more than one person capable of earning income.

Since PSC already has the IGA, which is suitable for smaller households due to smaller quantities and higher prices compared to other supermarkets, there may be a need for a store appropriate for families in the neighbourhood. Although there are more households without children, this may change in the next few years: couple households without



Source: Statistics Canada 2011 Census





Chart 8: 2011 Households with Children

children may decide to have children, existing families with children may choose to have more children, or families from outside the neighbourhood may move into PSC. While the Costco may serve the needs of families for large quanties at lower prices, there may be a need for a store for families located at a more accessible location (in terms of distance, visibility and safety) and that does not require membership.

Map 6 illustrates the number of family households with children for each DA. Each DA has at least 35 family households with

children and at least 15 lone-parent households. There are more family households with children living north of the CN tracks than families living south of the tracks (1175 in the North and 970 in the south). DAs 24661127, (located within rues d'Hibernia, Grand Trunk, Island, du Centre, Shearer, and the CN tracks) and 24661243 have the highest number of family households with children since they are near at least one school and a recreation centre. Generally, higher numbers of lone-parent family households are in areas that generally have high numbers of family households with children.



Map 6: 2011 Number of Family Households with children per Dissemination Area

Source: Statistics Canada 2011 Census



4.2.2 Income

Income was found to be weakly correlated with the distribution of stores selling FV in Daniel et. al's (2009) study but is still worth examining to understand the purchasing capacity of residents. The maximum price level at which a consumer will pay, or price equilibrium, decreases as the consumer's purchasing capacity decreases. Hence, it is difficult to sell in areas where people have lower earnings due to lower price equilibriums and diminishing profits. Income is also needed to determine a price mechanism.

Map 7 illustrates the prevalence for low-income (after-taxes) among persons in private households in each DA. The prevalence of low-income households exceeding the 40% threshold exist throughout the northern, middle and southern parts of the neighbourhood. Indeed, the DA with the highest prevalence of low-income is located south of rue Wellington. Outside of this extreme, the low-income DAs located north of the tracks have higher prevalence rates than those in the south.





Source: Statistics Canada 2006 Census



Map 8 shows the average after-tax household income of each DA. Generally, incomes are not very high and in many areas, they are not very low either. DAs in the southern part of the neighbourhood have the lowest average after-tax household income compared to the rest of the neighbourhood.

The above trends are from 2006 and may have changed in the past 7 years. DA 24661252, located on the northeastern edge of the neighbourhood within rues Wellington, Grand Trunk, Shearer, des Seigneurs, and the Lachine Canal, did not have any residents at the time the 2006 Census was taken, hence there is no data available on this area except for topics covered in the 2011 Census (population, age and sex, household composition, marital status, family composition and languages spoken). With this in mind, the diversity in income may be greater than the Statistics on Census Tracts suggest. On one hand, a higher diversity in income may indicate that there has been an increase in the number of people with a higher purchasing capacity. On the other hand, these trends make it difficult to determine an appropriate store type and pricing mechanism because stores typically cater to either condominium owners or low income groups (F. Crossling, Personal Communication March 13, 2013).

In the survey conducted by Action Gardien in 2010, 58% of respondents respon-





Have you experienced difficulty in buying food?	Response based on Area (%)	Response based on Area (%)		Area (%)	
	PSC	South	Middle	North	
Yes	39	43	40	35	
No	58	53	54	65	
If yes, why?					
Lack of money	34	35	38	32	
Lack of transport	13	18	13	11	
Health problems	13	10	10	16	
The stores are too far	12	15	17	7	
Lack of money for transport	9	12	2	12	

Source: Action Gardien (2010b). Résultats du sondage en alimentation. Survey Results.

dents claimed that they experienced difficulties in buying food(Action Gardien 2010b). This response came from more respondents in the north (65% said yes) compared to other sectors (53% of respondents from the middle, 54% from the south). Out of the respondents who responded saying "yes", money was the most reported reason for all sectors as it comprised 34% of responses (Table 12). In addition, an equal proportion of respondents from the 2010 survey who said "yes" from the south and the north reporting having financial difficulties paying for transit.

These results indicate a strong preference for affordable grocery stores within a close proximity due to personal preferences and financial capabilities.

4.2.3 Education

Based on a 20% sample taken for each Census Tract, roughly one-third of the respondents did not have a high school diploma (Chart 9). These figures illustrate the percentage of responses and exclude those in the sample that did not receive a response. Furthermore, 23% of respondents said they had some university education (Statistics Canada 2007a-b).

Map 9 displays the percentage of people without a high school diploma in 2006 also using a 20% sample from each DA while Map 10 shows the percentage of people with at least some university education (either at university at the time or a university graduate). Most DAs have between 30-40% of respondents who did not have a high school diploma. Excluding DA 24661252 which did not have any residents at the time of the 2006 Census, less than 30% did not have a high school diploma in only 4 DAs.

There are generally more people without a high school certificate than there are people with some level of university education. The percentage of people with a level of university education varies between 5 – 39% among each DA. The highest percentage of those with a university education is only marginally higher than the average percentage of the population without a high school certificate. DAs with higher percentages of people with some university education are concentrated along rue Wellington in the South and are along either rue Charlevoix or rue du Centre in the north: they are generally located along the three major streets. This may explain why the existing stores, including the IGA, have less quantities of produce compared to stores immediately outside of the neighbourhood.



Chart 9: 2006 Levels of Educational Attainment

Source: Statistics Canada 2006 Census





Map 9: % of People within each DA without a High School Certificate in 2006





Source: Statistics Canada 2006 Census





4.2.4 Language

Daniel et. al. (2009) use language spoken at home to measure the number of allophone households. More than half of the population uses French at home while 13% of people use a non-official language, either as their only or as one of the languages at home (Chart 10).

Map 11 illustrates the number of residents who use a non-official language as their most frequently used or one of their most frequently used languages at home. There are generally very low numbers of people who use a non-official language at home. More residents who use a non-official language at home reside north of the CN tracks than south (1115 versus 810).

Chart 10: 2011 Languages most Frequently Used at Home among PSC Residents



It is also worth looking at mother tongue because there are immigrant households that may speak an official language at home but still have the knowledge or values



Map 11: 2011 # of People who Speak a Non-Official Language at Home



that are more prone to cooking or eating more FVs.

Map 12 shows higher numbers of people with a non-official language as their mother tongue than people who use a nonofficial language the most frequently at home.

Data from the 2011 Census shows that more than half of residents have French as their first language (Chart 11). In addition, 19.4% of residents have a non-official language as their mother tongue or one of their first languages. Both sets of data indicate that PSC has a low allophone population. This may imply that there are fewer residents with a tendency or preferences to cook.

Chart 11: 2011 Residents in PSC with a Non-Official Language as their only or one of their first Languages







4.2.5 Mode Users and Mobility

Results from the 2008 Origin Destination Survey indicate that there were 0.78 automobiles per dwelling in the Sud Ouest borough (Secrétariat à l'enquete Origine-Destination 2008). Specifically, 59.2% of trips beginning from the borough were by vehicle whereas 63.3% of trips to the borough were done by vehicle.

This is a stark contrast from data revealed in the 2006 Census. Unfortunately, the boundaries for both data sources are not consistent. Chart 12 reveals the mode of transportation used by residents of PSC based on the 2006 Census while the OD survey provides information on transportation modes



Chart 12: Mode of Transportation

used by residents of the entire borough. Results from the sample survey from the 2006 Census reveal that 42% of residents in PSC use a vehicle to get to work, either as a driver or a passenger while the rest use non-vehicle modes (Statistics Canada 2007a).





Source: Statistics Canada 2006 Census



Overall, an ideal location for a grocery store selling produce is an area with high concentrations of people that buy FVs. PSC has clientele with characteristics of people who are likely to buy FVs but they are few in number and dispersed throughout the neighbourhood. The high density and number of single person households may not necessarily mean that there is enough consumer traffic because of the lifestyle of these households and the low number of high-traffic streets.

4.3 DISPARITY IN ACCESSING FRESH FVs (FVs)

The available studies and news articles that focus on access to FVs in PSC itself use 500 metres as a distance measure. Among them, the study by Bertrand et. al. (2008) on access to stores containing at least 7m² of of FVs within 500 metres from the centre of each DA has shown that PSC has less access to FVs compared to other parts of Montreal (Map



Map 14: Access to a Store Containing at least 7m² of FVs within 500 metres in Montreal

Source: Bertrand, Lisa; Thérien, François and Cloutier, Marie-Soleil (2008). "Measuring and Mapping Disparities in Access to Fresh Fruits and Vegetables in Montreal". *Revue Canadienne de Santé Publique*. 99(1): 6-11.





14).

Assuming that transport mode used for work trips reflects access to a vehicle, the small FV supply available in the neighbourhood (both the number of suppliers and the amount within stores) poses a problem because more than half the population does not use a vehicle to get to work (Statistics Canada 2007a). Roughly 40% of trips beginning from the Sud Ouest borough are through nonvehicle means (2008 Montreal Origin Destination Survey), while approximately two-thirds of neighbourhood residents do their grocery shopping on foot (Action Gardien 2010b).

The neighbourhood overall has experienced difficulty in attracting and sustaining commercial development due to the poor transportation network, the barrier created by the CN railway as well as the lack of visible, and adequately sized commercial spaces.

There are few main streets that connect stores to consumers in the neighbourhood. Rues Charlevoix and Wellington stretch

Table 13: Supply of Grocery Stores in PSC

THE SUPPLY OF GROCERY STORES

There are 30 stores that sell some sort of food in Point St. Charles:

- 1 supermarket (IGA);
- 1 Maxi and 1 Super C located just outside the neighbourhood;
- 1 hypermarket (Costco) (accessible only by car and you have to be a member);
- 3 ethnic grocery stores (african, indian, etc.);
- 3 delicatessens;
- 1 pastry shop;
- 1 fine food store;
- 2 drugstores;
- 18 corner stores more than half of all businesses.

There is also a monthly fruit and vegetable market, run by a community organization, the *Club populaire des consommateurs*. For more information: 514-932-5088, see p.8 for the markets dates.

Finally, Club Produktif, an artisan bakery produces breads that are now available at *Chez Ma Tante Quiche* (2471 Centre Street) and at the monthly markets from Club populaire des consommateurs. For information: club@produktif.com

Taken directly from Action Gardien (2012a). *The Tasty Point for a Better Access to Food Winter 2012 Newsletter*. Accessed from http://actiongardien.org/sites/actiongardien.org/files/Newsletter%20The%20Tasty%20Point%20-%202012%20Winter.pdf

across the neighbourhood and also allow PSC to access Griffintown, Little Burgundy, and Verdun. Rue Hibernia connects areas south of the tracks to the Charles Lemoyne elementary school, the library, and the sports centre but does not pass rue Grand Trunk in the north. Rue Centre, located north of the CN tracks, is the most recognized commercial street while rue Wellington has many vacancies and rue Charlevoix is mostly residential. Rues Charlevoix and Wellington are the only streets that connect to rue Centre from the south. Residents have said that stores that are not located on these three main streets are more difficult to find. During the discussion group, some participants were unaware of certain stores that were located just by their home (Discussion group participant, personal communication, March 14, 2013).

The Winter Newsletter of the Action Gardien's Food Security Committee lists 30 stores that sell food in the neighbourhood (Action Gardien 2012) (Table 13). Map 15 (oriented towards Montreal North) shows 18 dépanneurs. However, two of these dépanneurs were not found during the site visits or store surveying process. The Committee also reported a high vacancy rate on rues du Centre and Wellington at 19.2% and 27.2% respectively (Ibid).

Map 15 indicates the amount of FV sold at each of the stores plotted: pink spots represent stores with large amounts, orange with medium, light yellow as few, and blue as none. The pink spot with the number 33 represents the Marché Solidaire du Nord which comes every first Saturday of the month (Club Populaire des Consommateurs 2012b). Although the exact quantities were not specified, the map still illustrates that there are 18

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retailers that do not sell FVs as indicated by the blue dots. Two of these retailers no longer exist. It can be assumed that the "medium" category contains the minimum 7m² standard while the smaller spots do not. This is difficult to verify due to the date in which this study was implemented.

In considering access by foot to higher quantities of produce, Map 16 illustrates the few areas that fall within a 500 metre buffer from the big supermarkets and wholesale stores nearby supermarkets and wholesale stores.

A network analysis, which measures the shortest route rather than "as the crow flies", shows that, because of the street network, there are fewer areas within reach of distributors within and immediately external to the neighbourhood (Map 17).

4.3.1 Expressed Need/Problem

PSC community groups and articles in news agencies based in PSC and in Montreal consider the neighbourhood to be a food desert and view this as a pressing issue. Such views were expressed in Le Devoir (Mont Petit 2010), and La VoixPop (Desroches 2012), as well as in consultation briefs written by Action Gardien (2009), and Club Populaire des Consommateurs (2012b). However, some of these define food deserts as access to healthy food as a whole rather than just FVs. At the PSC Family Forum in May 2012, 100 parents participated and expressed their concerns with the limited number of food services available (Action Gardien 2012). The report from this meeting notes that access to food is still difficult particularly in the areas east of





Map 15: Quantities of Fruits and Vegetables Available at each Store 2009

Source: Action Gardien (2009). "Vol 8 : Alimentation : Securité Alimentaire". *Regard communautaire sur les conditions de vie à Pointe-Saint*-*Charles : Un Portrait de Quartier.* 6 Accessed at http://actiongardien.org/sites/actiongardien.org/files/8%20S%C3%A9curit%C3%A9%20alimentaire.pdf





Map 16: Areas within a 500 metre radius from a Supermarket/Superstore







Table 14: Proposals for Action from thePointe-Saint-Charles Family Forum

PROPOSALS FOR ACTION

Expanding food stores should be a priority.

Approach small food chains and encourage them to move into the neighbourhood.

Support the opening of food stores, providing financial and administrative support with RÉSO.

Support the campaign for Building 7. It includes different projects, including food services.

Encourage carpooling among neighbours to food cooperatives or for grocery shopping outside the neighbourhood.

Taken directly from Action Gardien Community Coalition of Point St Charles (2012). "Food Services". Pointe-Saint-Charles: A Family Matter—Report from the Family Forum Organized by the Action Gardien Community Coalition of Point St Charles, May 4-5 2012. Accessed at http:// actiongardien.org/sites/actiongardien.org/files/Actes%20 Forum%20familles%20Eng.pdf

Liverpool and Island and South of Wellington, as will be shown in the results of this study.

Participants in the PSC Family Forum in May 2012 developed proposals for action conveying a preference for bringing more food stores to the neighbourhood (Table 14). These proposals are nonetheless relevant strategies towards increasing access to FVs in PSC.

Indeed, initiatives at the community level already exist, including food banks, community gardens, and a few delivery services. However, it is difficult for these initiatives to provide FVs on a frequent basis (and sometimes even at an affordable price) due to financial constraints. Such restrictions will be discussed in Chapter 8.

These proposals illustrate that there are active members of the community who recognize the establishment of new grocery stores as a potential strategy towards food security in the neighbourhood. The forums have succeeded in capturing the need for greater access to healthy food as a whole but were not able to obtain information reflecting an economic perspective. The Course of Action listed in the Portrait of PSC by Action Gardien also lists expanding food commerce, mainly in the South, as a strategy towards increasing access to FV (Table 15). For this reason, this SRP focuses on the viability of first two proposals to expand food stores and "approach small food chains and encourage them to move into the neighbourhood". To determine the viability of these proposals, the study examines PSC through the lens of a storeowner by:

- Examining existing consumer market, competition, and
- Searching for areas that can potentially host a small grocery store.

4.4 PREVIOUS STUDIES AND CURRENT INITIATIVES

Previous studies done by Convercité provide insight on some of the economic deterrents in the neighbourhood. Convercité is a non-profit consulting firm that conducts feasibility studies and writes neighbourhood profiles through an approach that involves consulting stakeholders and converging their ideas and resources. In 2010, the firm conducted a study on rue Wellington upon request from the Sud-Ouest borough. Results



Table 15: Courses of Action towards Food Security in the neighbourhood as listed inthe Portrait of Pointe-Saint-Charles

Pistes d'action

Le comité en sécurité alimentaire de la Table Action-Gardien a réalisé un diagnostic sur l'accès aux aliments dans le quartier et tiendra un forum à l'automne 2010. Parmi les pistes d'action, certaines sont déjà connues, telles que la consolidation des ressources existantes, tandis que d'autres sont à explorer. Même si l'on trouve des solutions alternatives pour augmenter l'offre et baisser les prix des aliments, la question de l'incapacité financière d'une partie importante de la population à couvrir ses besoins essentiels, dont l'alimentation, va demeurer. Il est essentiel, dans une politique visant à contrer l'insécurité alimentaire, d'augmenter le budget disponible pour l'épicerie, c'est-à-dire le revenu.

- 1. Augmenter l'offre d'aliments dans le quartier
 - Consolider les sources alternatives d'offre de fruits et légumes (ex. Marchés publics du Club populaire des consommateurs) et d'aliments variés (groupes d'achats)
 - Explorer la possibilité de :
 - » Travailler avec les commerçants qui vendent déjà des fruits et légumes pour qu'ils augmentent leur inventaire;
 - » Ajouter un autre commerce en alimentation, notamment au sud du quartier sur la rue Wellington

2. Diminuer le coût des aliments

- Consolider les activités offertes par les groupes communautaires qui permettent l'acquisition de produits alimentaires à faible coût (groupes d'achats collectifs, cuisines collectives, marchés publics, agriculture urbaine);
- Augmenter l'espace consacré à l'agriculture urbaine;
- Ajouter un supermarché dans la Pointe pourrait contribuer à augmenter la concurrence et ainsi diminuer les prix en alimentation.
- 3. Augmenter le revenu des citoyenne-s
 - Augmenter les montants accordés aux prestataires des programmes gouvernementaux;
 - Augmenter le salaire minimum;
 - Favoriser l'employabilité.
- 4. Améliorer l'accessibilité aux commerces en alimentation
 - Améliorer la fréquence des passages des autobus à toute heure du jour, puisqu'il n'est pas pratique de faire l'épicerie à l'heure de pointe;
 - Diminuer le coût du transport en commun, car ces frais contribuent à augmenter le budget consacré à l'alimentation;
 - Améliorer les trajets des autobus dans le but de mieux desservir les commerces en alimentation (particulièrement le Super C)

Taken directly from Action Gardien (2009). "Vol 8 : Alimentation : Securité Alimentaire". *Regard communautaire sur les conditions de vie à Pointe-Saint-Charles : Un Portrait de Quartier*. 10 Accessed at http://actiongardien.org/sites/actiongardien.org/files/8%20 S%C3%A9curit%C3%A9%20alimentaire.pdf











from these studies show that residents living south of the railway are the most marginalized, living the furthest away from any food retailer (Convercité 2010, 20). The zoning limits the height of mixed-use buildings to 12.5 metres and to having commercial use on the ground floor only: The ability to see these businesses from a distance is limited because their signs are low and can be easily blocked by nearby buildings of the same height.

Convercité's analysis also reveals opportunities within public spaces and existing commercial streets. The consulting firm recommends creating a commercial area on Wellington between Fortune and Charon to give residents living south of the railway access more shopping activities. They also



Map 18: Commercial Area for Revitalizing rue Wellington (as recommended by Convercité)

Source: Convercité (2010). "Évaluation du potential commercial de la rue Wellington à Pointe-Saint-Charles". Accessed from http://actiongardien. org/sites/actiongardien.org/files/Rapport%20final%20Wellington%20convercit%C3%A9.pdf



mention the opportunity of utilizing the Share the Warmth charity, Grace Church, Françoise et Guillaume Inc, Community Clinic, YMCA, and the schools, Saint Gabriel's and Jeanne le Ber to create a hub of commercial, social and community activities to attract more businesses (Map 18).

4.5 POTENTIAL SOLUTIONS

There are several ways of improving the availability of FVs at neighbourhood stores. Particularly, PolicyLink, an American research and action institute, lists three main market solutions in their Grocery Store Attraction Strategies (Table 16).

	Developing New Grocery Stores	Improving Existing Neighbourhood Stores	Starting and Sustaining Farmers Markets
Complexity/Time	 Complex, time-consuming Must prove to chain stores that area has capacity to hold them Timely regulatory processes (construction/zoning) 	 Still a challenge yet less complex and time-consum- ing Results appear sooner. 	 Still a challenge yet less complex and time-consuming Results appear sooner.
Spaces Required	 Parking lots May function as anchors to other existing larger developments Small grocery stores may fit into existing sites 	 There is already space for food retail. No additional land required. 	 Parking lot Streets or any space that can be blocked for short time durations
Funding	 Millions of dollars to con- struct or operate for both new supermarkets and new small grocery stores 	 ~\$100,000 for retrofitting: technical assistance, equip- ment, inventory 	 Start up year: ~\$34,000 Operating thereafter: \$2000- \$150,000/year
Customer Base	 Supermarkets need an extremely high concentra- tion of consumers beyond its immediate surrounding neighbourhood Small-scale grocery stores can survive with a consumer base in the neighbourhood 	 Communities need to dem- onstrate interest in buying fruits and vegetables so storeowners can meet these demands and earn a profit 	 Needs a consumer base large enough for revenues to pay for vendors' time at the market, transportation costs, and to profit the market coordinator

Table 16: Comparing Market Solutions for Increasing Access to FVs

Taken directly from Policy Link (2007). Grocery Store Attraction Strategies: A Resource Guide for Community Activists and Local Governments.14 Accessed from http://www.community-wealth.org/_pdfs/tools/cdcs/tool-policylink-grocery.pdf



4.5.1 Improving Existing Neighbourhood Stores

PolicyLink believes that this is the most cost-effective option since it utilizes and improves existing space. The difficulty is getting stores to sell FVs due to the risks involved: the perishability requires them to be sold within a certain time frame.

Most food establishments in PSC are dépanneurs. It is difficult for dépanneurs to sell FVs because of the perception that convenience stores have lower FV quality and expensive prices. Hence, it is difficult to convince dépanneur owners that their produce will be sold.

Further details on how to make produce more affordable in stores are discussed in Chapter 7.

4.5.2. Starting and Sustaining a Farmers' Market

Farmers markets are a relevant means of increasing access to FVs because they contain numerous FV vendors in one venue, thereby increasing the quantities and varieties in produce available.

The Department of Agriculture and Rural Development of Alberta (DARD) states that farmers markets attract significantly more crowds than individual businesses (2010). DARD and PolicyLink agree that farmers markets are easier to plan, coordinate and implement than setting up individual retail since they cost less time and money (DARD 2010; 2012). Farmers markets also aid the survival of small/medium farms as they give farmers the opportunity to acquire, develop, and improve their entrepreneurial capabilities by learning from other farmers selling in the same venue (PolicyLink 2012).

In order to succeed, DARD recommends that farmers markets must have "a stable location with adequate parking and other amenities that customers demand" (2010). Undoubtedly, vendors require parking to ensure that large quantities of produce are transported to the venue of sale (which may require larger vehicles to deliver). Customer parking may be necessary for these farmers to sell to consumer markets outside of the neighbourhood.

There are three challenges pertaining to establishing a farmers market in PSC:

1. Lack of large space that give it visibility

First, there needs to be enough retail and parking space for multiple vendors. Indeed, there are a few vacancies along rue Centre and rue Wellington but they do not contain enough space for a farmers market. These streets only have side street parking. The only places that have visible ground parking lots are the IGA, Costco, École Jeanne-LeBer as well as the churches and industrial buildings.

In addition, there must also be enough space and visibility to attract customers living within and outside of PSC. Farmers markets usually attract consumer markets external to the neighbourhood. Accommodating for consumer markets outside of the neighbourhood requires sufficient space to hold customers and to provide vehicle and bicycle parking to accommodate for different modes. They also



need to be visible from one or more high traffic point of transportation, such as a highway or a metro station.

2. Competing with the Atwater Market

The Atwater Market, located in Saint Henri just across the Lachine Canal from PSC, is difficult to compete with because it is located in an area with a lot of parking space and is less than a ten minute walk away from Charlevoix Metro Station. Its height gives it good visibility from across the Lachine Canal. For a new farmers market to compete, it must be located in a large area and be visible from main streets or the highway. There is a large space near the highway, the Costco and the Lachine Canal but is now owned by the Canada Lands Company as of 2010.

The Atwater Market is insufficient in meeting the needs for FVs among residents of PSC since it is expensive and far from residents living south of the tracks.

3. Finding a market operator.

After the community groups acquired Building 7, an abandoned industrial building located southeast of the neighbourhood enclosed by the railway, they now have the option of starting their own farmers markets in this space (by recruiting market operators; either urban farmers or existing rural farmers. To attract vendors, the neighbourhood can use the existing purchasing groups and make the farmers market a consumer cooperative. One alternative is to have the community groups expand the Marché Solidaire (FV market), but that option is difficult to do because it is run entirely by volunteers. In addition, more traffic is needed for the Marché Solidaire to sell more FVs and expand.

Overall, starting a farmers market in PSC does not seem feasible unless a site with large space and visibility can be made available.

4.5.3 Establishing a New Small-scale Grocery Store

PolicyLink depicts this strategy as a more complex and time-consuming process. Nonetheless, creating a new store may be essential for increasing the availability of FVs. It is also easier for new stores to create the image they need to sell FVs since there is no previous image for them to change. A new grocery store, with the right image, appeal, marketing tactics, and location, may be a more effective strategy than increasing the supply of FVs at stores that few people now go to for FVs or finding space large enough to accommodate a farmers market.

PolicyLink Institute (2007) says that retailers ideally prefer an additional 4645 to7432m² (50,000 to 80,000 ft²) allocated for approximately five visible surface parking spaces for every 929m² (1000ft²) as well as access roads for both customers and delivery trucks. The amount of space required can vary depending on if the site is in a suburban context or an urban residential area. These parking requirements from PolicyLink may not apply to a neighbourhood where most people walk and use transit or in an area where grocery stores are located within a walking distance away.



Considering the lack of space and parking available in PSC, the focus is on small grocery stores or stores that do not exceed 650m² in size and that do not require a parking lot. These stores require fewer start-up costs than supermarkets and less space than both supermarkets and farmers markets. Starting a new small grocery store may not necessarily be the cheapest or most feasible option, but it still increases the number of food distributors in the neighbourhood available on a frequent basis and can potentially increase the supply of produce.





Map 19: Stores Available to Residents of Pointe-Saint-Charles within 1 Kilometre

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*Photos of Costco (4) and Marché Djurdjura (8) were taken from google streetview.

CHAPTER 5: LOCATION OF COMPETING FV OUTLETS

A new grocery store selling FVs will prefer to locate in an area with minimal competition. An area of minimal competition would be a location that has one or more of the following attributes:

- Few competing stores within a distance that people are willing to travel.
- Stores selling less variety or fewer quantities than the new store of the new store's products (FVs in this case).
- Stores selling the new store's products at a higher rate or at a lower quality than the new store.

In search of such a location, this chapter examines the quantity, quality, and price of FVs at existing stores and how accessible they are to neighbourhood residents. It is important to note that the data on price and the available FV supply is very speculative due to the specific day and season in which the study took place. For this reason, Chapter 6 on resident perceptions conveys peoples' impressions on the price and quality of produce.

5.1 COMPETING STORES

There are 8 stores selling at least 7m² available to PSC residents: 2 in the neighbourhood and 6 in adjacent neighbourhoods. . This chapter focuses on these eight stores while those that do have fresh FVs but that do not meet this standard are discussed in less detail.

The IGA is the only supermarket in the neighbourhood. It is where most residents go for their groceries and to buy produce (Action Gardien 2010b) (Tables 17). As seen in

Where People shop for their groceries	Response based on Area (%)			%)
Name of Grocery Food Retail Business	PSC	South	Middle	North
IGA	54	49	69	49
Costco	3	6	4	1
Dépanneur	4	7	2	4
Maxi (Verdun)	33	34	33	31
Metro (Verdun)	3	6	0	3
Super C (Little Burgundy)	26	21	13	41
Public/Farmers Market (ex : Atwater Market in Saint Henri)	11	9	6	13

Table 17: Stores where People Shop for their Groceries

Source: Action Gardien (2010b). Résultats du sondage en alimentation. Survey Results.



Table 18: Stores Where People Buy Their FVs (translated)

Where do you buy your FVs?	Response based on Area (%)			
Stores	PSC	South	Middle	North
IGA	50	53	60	40
Costco	3	4	6	1
Club populaire des consommateurs	13	12	21	9
Maxi (Verdun)	35	37	42	27
Metro (Verdun)	6	7	8	4
Super C (Petite-Bourgogne)	31	25	19	45
Public/Farmers Market (ex : Atwater) (Saint-Henri)	42	40	48	39

Source: Action Gardien (2010b). Résultats du sondage en alimentation. Survey Results.

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Map 20: Dépanneurs found with small quantities of FVs

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Map 19, most parts of the neighbourhood are beyond 500 metres from the IGA.

Costco on the east falls within the street boundaries but is not considered to be within PSC. Located off the highway, near offices and industrial buildings, Costco has no residential areas within 500 metres. It also takes 15 minutes to walk to Costco walk from the closest noticeable residential dwelling. While produce offered at Costco far exceeds 7m² in quantity, it is often sold in bulk which may be difficult to carry for a 15-minute or longer walk.

Four dépanneurs have small quantities of FVs while the other twelve sell canned FVs, or no produce at all (Map 20). The quantities of FVs at the dépanneurs that sell them range from three pieces of fruit to approximately 6 ft². The variety is often more than the quantity: there may be up to six types of FV but only a small box of one FV item and two pieces of the other items. The produce available in dépanneurs is often overripe or rotting. Poor quality and limited quantity of FVs indicates that people generally do not buy them and that much of this produce is wasted. For this reason, dépanneurs are not included in the analysis.

Residents have observed that the ethnic grocery stores are "often unappreciated and do not have enough fresh food" (Action Gardien 2012). Marché Al-Raji meets the 7m² standard and has 16 different types of FVs. However, many of these FVs are not used in typical North American diets, such as okra, cassava, and plantain. The quality of the FVs offered differs depending on the store and the day. There are also several foreign spices available that can be used to season the produce. While Marché Bengal has a mix of produce recognizable in North American culture and some exotic produce, it does not meet the 7m² standard and has a smaller variety than Marché Al-Raji. For this reason, it is not included in the supply analysis.

Although Marché Elikya does not meet this standard, it is worth including in this analysis because it sells more than just a few small boxes. This store is known for selling African and Latin American food but also offers produce that is recognizable in North American culture.

Two grocery stores located immediately outside of the neighbourhood and within the borough are the Atwater Market and the Super C. Pedestrians can access both of these stores by using the pedestrian path bridges that connects rue Thomas-Keefer to avenue Atwater or by taking rue Charlevoix. The latter is a less comfortable path consisting of two vehicle lanes and a narrow sidewalk (Images 3-4).

Another store included in the analysis but that is not acknowledged in previous studies is Marché Djurdjura in Verdun. The store falls within one kilometre of PSC. In fact, there are parts of PSC towards the West that have better access to both the Maxi and Marché Djurdjura compared to the other stores listed. Although it has small quantities of FVs, it meets the 7m² standard.



Image 3: Winter Walk to the Atwater Market via Pedestrian Bridge at Thomas-Keefer



Image 4: Walk to the Atwater Market via rue Charlevoix




5.2 PRICE AND QUALITY

Table 19 lists the lowest prices found at each store on the day that they were visited. The results in this table do not necessarily compare prices between stores but instead illustrate that the lowest prices of some of the more expensive stores can be less than those listed in the food basket of the Montreal Dietetic Dispensary during the winter, depending on the sale of the day.

The FV prices in ethnic grocery stores, including Marché Djurdjura are not included in the price analysis because the prices were not listed. An employee from one of these stores said that they do not show the price because the quantities are too small (Employee from one of the stores within PSC, Personal Communication, February 26, 2013). The owner of another store said that he does not show the price because the prices are constantly fluctuating (Personal Communication, February 27, 2013).

It is important to note that the prices for different products fluctuate frequently and that the prices gathered from the survey reflect the lowest gathered for the day they were surveyed rather than the average price of the month. More accurate studies on price would require more surveying time throughout a longer period and perhaps a comparison between seasons. It would also be useful to investigate times of year when sales typically take place aside from seasonal transitions. Unfortunately, this more detailed method was not feasible to implement due the time constraints of this study.

It is also difficult to make a price comparison because the base prices set by the 2013 Montreal Dietetic Dispensary are near the highest. Hence, it is very difficult to analyze the prices based on the surveying process alone. For this reason, the price analysis

Tab	le	19:	Price

		DMM 2013 Base Price	IGA	Costco	Maxi	Super C	Atwater Market (1 store only)
				Pri	ce (\$/kg	;)	
	Fruits						
	apples	3.31	3.28	2.20	3.95	3.95	3.73
	bananas	1.96	1.96	1.24	1.52	1.52	1.96
	oranges	3.31	3.00	2.03	2.14	1.65	4.95
a	tomatoes	4.38	2.84	7.70	2.84	2.18	4.39
ric	Vegetables						
	lettuce (each)	2.49	1.17	1.49	1.99	0.99	1.79
	onions	1.64	1.86	2.1	1.36	1.83	1.42
	spinach	11.71	11.71	9.58	15.40	11.60	8.77
	carrots	2.27	1.97	1.10	0.65	1.83	1.64
	TOTAL	31.07	27.80	27.44	29.85	25.55	28.65



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will also include general perceptions of price derived from semi-structured surveys and discussion groups.

Super C has the lowest aggregate price of all 8 items. It can be considered as an Everyday Low Pricing store.

Costco has the 2nd lowest aggregate price of all 8 items. However, consumers can only access products in this superstore through an annual \$55 membership fee (Costco Wholesale Canada Limited 2013). Including the \$50 annual membership fee would increase the price by \$1.05 per trip, assuming that consumers shop weekly for 50 weeks per year. While this extra cost may be insignificant to shoppers who buy large quantities more frequently, it may be a higher cost for shoppers who buy smaller quantities with more variety. Costco may be considered as an ELDP.

The Atwater Market is known for having high quality produce at expensive prices. It is not an Everyday Low Pricing (EDLP) store but rather a more expensive farmer's market where sales are not evident. The expensive prices may attribute to high commercial rents for operating at the market and the targeted clientele. Corporation de Gestion des Marché Publics de Montreal describes the Atwater Market as "the most luxurious establishment of its kind in Montreal" (2013). There are many features that give this location a high value. The costs of constructing the Atwater Market in 1933 reached over \$1 million while the renovations in 1982 were valued at \$1.2 million (Ibid). The building has an event room and a gymnasium, and its height and proximity to a main busy road give it a high value (Ibid). Hence, the prices may be expensive due to the market's reputation and high commercial rent.

The price surveying results illustrate that the IGA has the third highest aggregate price, indicating that there are frequent sales on specific items and implying that it can be considered as a Hi-Lo store. The delivery service adds to the cost as it requires a minimum purchase of \$45 plus \$4 for the service and 5 cents for every bag (Sobeys 2008).

Maxi is known for selling cheap produce but at a lower quality (Respondents from semi-structured surveys, Personal Communication, March 12, 2013). It can be considered as an every-day low pricing store that may only sell at low prices due to the quality.

5.3 Access to Competing Stores

The number of stores between 500 metres and 1 kilometre ranges from 0 to 4 stores. Table 20 shows that more FV suppliers can be found within 1 km versus 500 metres. The mean number of stores within 1 kilometre is twice of that within 500 metres. On average, there are two stores between 500 metres and 1 kilometre from each dissemination area (Table 10).

Map 21 shows the number of stores within a 500 metre and 1 km radius from the centre and edges of each DA using the OD cost matrix tool. Areas south of Favard have no access to an FV supplier within 1000 metres. Areas south of Wellington have no stores within 500 metres.



Service Area	#	Minimum	Maximum	Mean	Standard Deviation
500 metres	25	0	4	1.56	1.356
1 kilometre	25	0	6	3.96	1.62
Between 500 m - 1 km	25	0	4	2.4	1
Valid # (listwise)	25				

Table 20: Number of Stores within 500 metres and 1 kilometre

Dissemination areas (DA) 1125 and 2129 have 4 stores within 500 metres—the highest number of FV supplies within this distance due to their proximity to rues du Centre, Charlevoix, and the Lachine Canal. However, there is a marginal change when expanding to 1000 metres from these DAs as there is only 1 more store available between 500 metres and 1000 metres. This marginal change may attribute to either the available clientele or the fewer number of key access points between 500 metres and 1 kilometre.

The west part of the neighbourhood along rue Charlevoix, and south of rue du Centre have the highest number of distributors overall as they have 3 stores within 500 metres and 6 within 1000 metres. The change in the number of stores accessible between 500 metres and 1 kilometre is highest for DA 2127, located west of rue Charlevoix (from 2 stores to six stores). The CN tracks prevent more of







these stores to be accessed with 500 metres.

In contrast, the area enclosed by rues Favard, Bourgeoys, Le Ber and avenue Ash (DA1244) has the poorest access as it has no FV supplier within 500 metres or 1000 metres. Residences southeast of rue Le Ber and rue Charon also have poor access, but the crescent-shaped dissemination area where it is situated in makes it seem as if this area has access to more stores.

Overall, the areas with the highest number of stores available within 1 kilometre are those to the west of the neighbourhood, situated along rue Charlevoix and the CN tracks while the areas with the least number of stores are to the southeast, not by a main road, and are near areas containing more rail and industrial land. Dissemination areas along rues Charlevoix and du Centre have more stores within 500 metres compared to the rest of the neighbourhood because they are near the neighbourhood streets that are most used.

5.4 SUPPLY OF FVs IN COM-PETING STORES

In order to assess the quantity of FVs available to PSC residents, it is necessary to look at the FV volume (m³), FV diversity (number of types), and FV shelf space (m²). Volume (shelf space multiplied by height) shows the actual quantity of FV regardless of store size. Shelf space, or surface area, gives an idea of how much FVs a store can potentially hold: the more shelf space, the more potential to add height. Charts 13 - 15 show the FV Volume, diversity and shelf space of each store described in the previous section. The points represent individual stores. It was difficult to find a method of assessing all three measures simultaneously. Hence, two measures will be assessed at a time in each chart.

Generally, the existing stores have higher shelf space and diversity than volume with the exception of Costco. This means that there is potential to stock more FV to create higher volumes assuming that a larger shelf can hold more produce.

Although these measures show the supply at each store, they may also suggest the nature of demand of the store's consumer market. Higher volumes may imply that there is a high preference for a small variety of specific food items. The higher FV diversity than FV Volume at most stores may imply that there is no high preference for specific FV items. It may be difficult for some stores to stock higher volumes if the demand is not high enough for specific items. Higher FV Volumes may call for fewer FV types to limit risk.

Costco had the highest FV Volume but did not have much variety compared to some of the other stores. Super C had the highest amount of shelf space, the most diversity, and the 2nd highest volume. This may attribute to the fact that Costco is a wholesale superstore (which implies larger volumes) rather than a supermarket. Most items available at Costco are recognized in North American diets.

Out of all of the larger stores, IGA has the smallest FV volume, the second smallest amount of FV shelf space, and the second lowest number of FV types. The lower quality of the FV may attribute to the lack of purchasing capacity to buy FV at these prices, causing them to stay on the shelf longer.





Chart 13: FV Shelf Space vs. FV Volume







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Chart 15: FV Shelfspace vs. FV Diversity

For a new small grocery store to compete as an EDLP store, it must be in a location where people are too far from the Super C or the Maxi (assuming that people are not willing to pay the Costco membership fee). There must also be a substantial number of families if not an even higher number of single-person households who prefer lower prices in order for an EDLP store to sell higher quantities of FVs. Volumes do not need to be as high as the Costco since the small grocery store of concern would primarily be targeted towards PSC residents rather than external markets.

For a new small grocery store to compete as a Hi-Lo, it must offer produce with better quality than the IGA but at a similar, if not lower price. This will also allow it to compete with both the IGA and the Atwater Market even if it is located not too far from them. If it is far from the IGA and/or the Atwater Market, it must be in an area where people do single purpose trips, buy smaller quantities, and where people are more likely to prioritize proximity and time over price. This would work well in areas with single senior households consisting of people who are not willing to walk far.

5.5 ACCESS TO FVs

After understanding the quantity, quality and price of produce offered at existing stores, it is necessary to look at how well PSC residents can access these competitors. In measuring access, this section considers both quantity and distance.

DAs along rue Charlevoix have the shortest distance to the nearest store and generally are closer to more stores because they are near stores within the neighbourhood and are easily connected to stores in Saint Henri, Little Burgundy, and Verdun. This means that these DAs have FV quantities available from multiple suppliers within a shorter distance.

Areas located east of rue Fortune south of both the CN Tracks and rue Wellington have the longest distance to the near-



est store. The nearest stores for these areas (Costco and Maxi) generally have high supply of produce but are located beyond 500 metres. The DA within avenue Ash and rues Favard, Charon, and Le Ber (the darkest green area) has the highest minimum distance to a grocery store at 1044 metres.

Maps 22 - 3 show the FV quantities within 500 metres and 1 kilometre from each DA. Generally, the areas located towards avenue Atwater, the Lachine Canal and along rue Charlevoix have the highest quantities available in terms of FV Shelf Space, FV diversity, and high FV Volumes within 500 metres.

The amount of shelf space, volume, and diversity is much higher when the accessibility distance is extended to 1 kilometre.

DAs south of the CN tracks generally have FV shelf space and diversity within 1 kilometre but limited FV or no FV within 500 metres. FV Shelf space and diversity within 1 km is generally high for all DAs except for the areas within avenue Ash and rues Favard, Sebastopol, and Le Ber. DAs falling within roughly 1.4 kilometres of the Super C have higher surface area of FVs within a 1 km radius.

The DA hosting new residents to the Lachine Canal and the DA south of the CN tracks between rues Wellington and Hibernia have the highest FV Volume available within 1 kilometre because they are along streets that lead to Costco. However, there are not many other stores with high FV quantities located within 500 metres or 1 kilometre from these DAs. Assuming that PSC residents do not

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Map 22: Access to FVs within 500 metres

Map 23: Access to FVs within 1 kilometre



Table 21: Spatial Distribution Summary of FV in Pointe-Saint-Charles

	N	Minimum	Maximum	Mean	Standard Deviation
FV Shelf space within 500 m (m ²)	25	0	183.7	70	71
FV Volume within 500 m (m ³)	25	0	46.7	13.5	16
FV Diversity within 500 m	25	0	138	50	50.1
FV Shelf space within 1 km (m ²)	25	0	325.3	177	90.1
FV Volume within 1 km (m ³)	25	0	146.6	49.8	38.8
FV Diversity within 1 km	25	0	243	130.5	66.6
Valid N (listwise)	25				

have membership at Costco, the DAs with the highest FV Volume available within 1 km are located in the western section of the neighbourhood towards the Lachine Canal, avenue Atwater, and along rue Charlevoix and rue Hibernia. Hence access to FV Volumes within 500 metres and 1 kilometre is very sensitive to people having membership to Costco. The FV quantity available within 500 metres and 1 kilometre for the neighbourhood is summarized in Table 21.

Such spatial distributions indicate a polarization in PSC as the FV quantities available and the minimum distance can differ drastically among each DA. The standard deviation of each measure is nearly equivalent



to the mean. The average FV Shelf Space and Volume doubles when changing the distance from 500 metres to 1 kilometre. The average FV Diversity nearly triples when changing the distance from 500 metres to 1 kilometre.

Table 22 illustrates the percentage of change in FV quantities (sensitivity analysis) as a result of changing the distance from 500 metres to 1 kilometre. The quantity available changes more drastically for areas with access to more numbers of smaller stores within 500 metres and less for those that have access within at least one of the larger stores within both 500 metres and 1 km.

This difference is greater detailed in Map 24. The FV quantity between these distances, particularly volume, is generally most sensitive for areas located northeast of rue Shearer and the CN tracks towards the Costco. It was difficult to calculate the % of change for areas south of rue Wellington because they do not have stores within 500 metres. The FV quantities of areas west of the neighbourhood and north of rue Wellington are generally not very sensitive to the change in distance.

Overall, the minimum distance to the nearest store, the number of stores and the quantity of FVs available within 500 metres versus 1 kilometres reveal a disparity in access to FVs in PSC and an overall unevenness in access to the existing competition. The quantity of FVs available within a certain distance depends on the quantities available at each individual store in these service areas. Some DAs are located closer to multiple stores with a limited FV supply within 500 metres. Other DAs (mainly those south of rue Wellington and the CN tracks) do not have any stores within 500 metres but have access to stores with higher quantities of FV between 500 metres and 1 kilometre.

The DAs located northwest of the neighbourhood towards avenue Atwater and the Lachine Canal and along rue Charlevoix generally have the highest access to produce because they are near many larger grocery stores with higher FV quantities (assuming that most people do not have Costco membership) and are also the closest to adjacent neighbourhoods.

In contrast, DAs in PSC with the poorest access to FVs are located closer to the railyards and further away from adjacent neighbourhoods. The street network and isolation make it difficult for a potential store to connect with its clientele. It can hinder a new store's visibility, making it difficult for a new store to make its products and presence known.

The store survey results illustrate that the Hi-Lo stores can have lower rates than the existing Everyday-low pricing stores in certain occasions. In spite of these sales, Super C was found to have the lowest prices overall while the Atwater Market still was among the highest priced. The existing stores have lower

Table 22: Sensitivity Analysis—Change in FV Quantity Available between 500 m and 1 km

	Shelf Space	Volume	Diversity	Number of Stores
Minimum Change	9%	6%	36%	25%
Maximum Change	21161%	89306%	1100%	300%





Map 24 Sensitivity Analysis – Change in FV Quantity Available between 500 m and 1 km

prices than the current Montreal Dietetic Dispensary base price which may make it difficult for smaller stores to sell FV at competitive prices.

Therefore, a new store would have to face a diverse competition that is generally more accessible to residents living near the neighbourhood boundaries. Locating in an area with the least competition runs the risk of losing clientele from adjacent neighbourhoods or being in an area with fewer people.

CHAPTER 6: PERCEPTIONS OF RESIDENTS

Map 25: 2010 Action Gardien Survey Representative Sample



6.1 CONSUMER NEEDS AND DIFFICULTIES IN ACCESSING FOOD

In the 2010 Action Gardien Survey, nearly two-thirds of respondents said that they travel to and from the grocery store on foot while more than a third perform these trips by vehicle (Table 24). In the middle sector, 75% of respondents did their grocery shopping trips on foot. The southern sector had the highest percentage of respondents who use a vehicle to go grocery shopping (43%) compared to the other sectors (31% in the middle and 33% in the north). However, 56% of respondents from the south do these trips on foot. Bike and transit were the least

Table 24: Mode of Transportation based on2010 Action Gardien Survey

	Response based on Area (%)						
	PSC South Middle North						
Walk	64	56	75	67			
Vehicle	35	43	43 31 33				
Bicycle	18	21	17	16			
Public Transit	14 19 13 9						

Source: Action Gardien (2010b). *Résultats du sondage en alimentation.* Survey Results.



reported; hence, improvements in transit and bikability are less effective strategies for improving accessibility to a grocery store. These results illustrate that there is a mix of mode users and that there is still a need for FV to be available within a walkable distance.

Indeed, stores can reach a larger market and to the less mobile by delivering food. However, delivery increases the price for both the customer and the store. Delivery service at the IGA requires a minimum purchase of \$45 plus \$4 for the service and 5 cents for every bag (Sobeys 2008). The reason why there is a minimum purchase required for delivery is because the business has to pay for the labour to prepare the order as well as the delivery (Sobeys 2008; Manager of a store outside of PSC, Personal Communication, March 11, 2013). Therefore, grocery trips involve less expenses for both the consumer and the store.

Results from the 2010 Action Gardien survey and discussion group in this study reveal a need to increase the availability of FVs in the neighbourhod. The semi-structured survey yielded mixed results. When asked if there were enough food retail stores in Point St. Charles, 75% of respondents in the 2010 Action Gardien Survey said no. This view was most strongly expressed in the Northern sector (79%) despite their closer proximity to the available grocery stores compared to the other areas. The differences in responses among sectors was not very different: 71% in the south said no while 75% in the middle said no.

Table 26 shows that respondents expressed an interest in having more access to more affordable, better quality FVs in the neighbourhood.

These results illustrate that respondents would be willing to buy FVs in the neighbourhood if they had access to affordable, better quality food in more varieties and larger quantities. Providing affordable produce in existing stores and bringing new stores were the most preferred options. Likewise, participants in the discussion group agreed that establishing a new grocery store would be an effective strategy towards improving access to FVs in the neighbourhood.

 Table 26: "Would you buy more fruits and vegetables in the neighbourhood if..."

	Response based on Area (%)			
	PSC	South	Middle	North
There was a fruit and vegetable market in the neighbourhood?	73	74	77	73
The neighbourhood stores offered better prices?	72	71	69	77
There was a fruit and vegetable specialty store in the neighbourhood?	65	63	71	63
The products in neighbourhood stores were more fresh?	62	66	58	60
Public transit were to be improved in the neighbourhood?	27	29	25	24

Source: Action Gardien (2010b). Rue Wellington. Survey Results





Not many discussion group participants and respondents from the 2010 survey found that improvement in public transit would attract residents to buy more FVs in the neighbourhood. However, discussion group participants suggested that the 71 (which connects the south to stores in Little Burgundy and Verdun) and the 57 (connects the south to stores in Little Burgundy) should come at different times so that transit users can access a grocery store from the next bus if they missed the first one.

The semi-structured survey, and kiosk did not come to a consensus on whether there was a need for a new grocery store or FV supplier.

Eight out of nine participants in the semi-structured surveys emphasized price. Only three respondents mentioned proximity as a priority because some of the participants already lived near a store they trusted. In the semi-structured surveys, three respondents were satisfied with the stores available because they lived near those stores. One said that the number of stores selling FVs was not a problem for him because he lived alone but said his views would change if he had a family (Respondent from the semi-structured surveys, Personal Communication, March 12, 2013). Two respondents said that they prefer to have more grocery stores available. One person who came to the kiosk suggested opening a FV market while another suggested promoting nearby small businesses in the neighbourhood.

Participants in the discussion group agreed that establishing a new grocery store would be an effective way to increase access to FVs. At the kiosk, there was a person who suggested promoting existing small businesses in the neighbourhood and another that suggested opening a FV market while the rest suggested alternative methods of increasing access to FVs that did not involve establishing a new store (Participants at the kiosk, Personal Communication, March 2, 2013).

Despite these mixed responses, the 2010 survey has a more appropriate sample while the semi-structured surveys were not intended to be analyzed in the same way as a formal survey. Instead, the semi-structured surveys were originally intended to be discussion groups that would reveal more detailed reasons. With this in mind, there is still an expressed desire for a new grocery store.

6.3 CONSUMER PREFER-ENCES CONSUMER CHOICE: WHERE RESIDENTS CUR-RENTLY SHOP AND WHY

In the 2010 Survey, most respondents said that they shop at either the IGA, Maxi, or the Super C for their overall groceries (Table 17). Roughly half of respondents said that they shop at the IGA, both for FV and their overall groceries. The Middle sector is much more reliant on the IGA compared to the other two sectors which may attribute to proximity. Results show that more than half of respondents are willing to go grocery shopping outside of the neighbourhood.

Other than the 2010 Survey, results from the semi-structured surveys, discussion group, and some of the interviews reveal general perceptions of the existing stores. During the semi-structured surveys, respon-

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dents found that FVs at the Super C are good quality, more affordable, and at a good variety. Costco was not mentioned as a frequently used grocery store in any of these events except by two residents in the semi-structured interview. A representative from one of the community groups within the PSC says that Costco is not a store for the poor. During the semi-structured surveys, one participant said that he shopped at the Atwater Market despite their prices because it had the best quality produce. Participants also noted that IGA is known for having low quality produce at expensive prices (Respondents in semistructured surveys, Personal Communication, March 12, 2013).

Despite the small availability of produce in Dépanneurs and the higher number of them within a walking distance, the 2010 survey respondents did not list them as one of the places where they obtain their FVs (Tables 17-18). While most of these respondents reported buying most of their groceries from the IGA, nearly three quarters of respondents reported obtaining their FVs from the Super C and Atwater Market across the Canal. These results illustrate that survey respondents are willing to travel for better quality FVs. However, one respondent in the semistructured survey said that she knew many people who depend on dépanneurs for groceries. In addition, the neighbourhood has men with addiction issues, mainly between ages 40 and 64, who tend to shop at dépanneurs (F. Crossling, Personal Communication, March 13, 2013).

A small percentage of the 2010 survey respondents gets their FVs from the FV market by Club Populaire des Consommateurs. This could attribute to the lower frequency and availability of the FV market compared to the other food distributors. Fewer respondents from the northern sector buy from the FV market and the Atwater Market compared to respondents from the middle sector. This is despite the fact that the FV market is located in the northern part of the neighbourhood and that the northern part also is the closest to the Atwater Market.

When asked for reasons behind their principal store choice, 60% of respondents in the 2010 Action Gardien Survey listed proximity as one of their determining factors while nearly half of respondents listed price (Table 25). The results show that proximity was a main priority in the middle sector while price

	Response based on Area (%)					
	PSC South Middle North					
Proximity : Closest Store to Residence	56	44	83	53		
Price	46	50	38	51		
Choice/Variety	23	32	17	20		
Freshness and Quality	20	19	21	20		

Table 25: Reasons for Grocery Store Choice

Source: Action Gardien (2010b). Résultats du sondage en alimentation. Survey Results.



was the main priority in both the northern and southern sectors. Variety was more of a concern in the south sector compared to the other areas (Action Gardien 2010b).

The semi-structured surveys and discussion group found similar results but also reveal how the quality and where the food comes from can attract or deter them from a store. Two respondents said that they shopped at the IGA regularly because they lived closeby. Two respondents for the semi-structured surveys said that the Atwater Market has the best quality products. One of them said that he shopped there due to quality and proximity to the Atwater Market. Another respondent said that Maxi has the worst quality and that it is too far for residents who do not have a vehicle. He also said that the produce at Maxi were more likely to have chemicals since many of their products come from Mexico.

Overall, despite the additional reasons revealed in the semi-structured surveys, price and proximity were the main factors affecting consumers' choice of where to shop in all three methods. Nonetheless, a higher preference for price was expressed in both the semi-structured surveys and the discussion group.

6.2 PREFERRED STORE TYPE

A separate survey conducted in the same year with a focus on rue Wellington asked for the types of stores people would like to have in PSC. In this survey, 20% of respondents expressed that there was a lack of commerce on this street said that it lacked food services while 15% said there were not enough stores selling FVs (Action Gardien 2010).When asked, "Would you purchase in these stores if they were on rue Wellington", FV specialty stores and FV markets had the highest number of "yes" responses (Action Gardien 2010)(Table 27). Respondents were allowed to choose more than one answer.

Specialty stores were the most popular while small grocery stores and ethnic grocery stores were the least popular. This may attribute to the low allophone population and slightly higher Francophone population com-

"Would you purchase in these stores if they were on rue Wellington?"	PSC (%)	Sud et Centre (%)
Fruit and Vegetable Specialty Store	57	59
Fruit and Vegetable Market (ex : Club populaire des consommateurs)	57	56
Public/Farmers Market (ex : Atwater)	52	56
Natural Foods Store	46	47
Supermarket	42	43
Ethnic grocery store	36	40
Small grocery store	34	36

Table 27: Suggested Stores for rue Wellington (translated)

Source: Action Gardien (2010c). Rue Wellington. Survey Results











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pared to Anglophones. The results from this survey reinforce that there is a higher demand for FV markets and specialty stores compared to any other store type.

There is also a higher tendency to shop at the larger stores available but an expressed desire for a specialty store, a FV market, or a farmers market. This means that people will prefer to buy their FVs from stores that they know will sell FVs and that will sell recognizable produce.

6.3 CONSUMER BEHAVIOUR: NON-COOKING HABITS AND LIFESTYLES

While results from the 2010 survey, semi-structured survey, discussion group and kiosk reveal a desire for a grocery store selling FVs, this demand does not manifest itself in practice. As noted in Chapter 7, there are not enough people buying produce. Particularly, there are not enough customers who buy produce at the existing stores.

The reasons behind this lack of consumer traffic buying produce were brought up in the discussion group and in two interviews with community group representatives. There are not enough people who buy FVs in the neighbourhood as a whole due to the lack of knowledge of the benefits of eating produce, how to use certain FV items and how to cook, in addition to the habit of not cooking. One participant mentioned that some people do not know how to cook the items given in the Good Food Box (Participant in the discussion group, Personal Communication, March 14, 2013). As a solution, this participant recommended that stores can have recipes to show people ways in which they can use and cook FVs (Ibid).

Patricia Lisson, director of Saint Columba House, said "people are losing their ability to cook and have become used to eating out of a can". She also notes that single person households are not motivated to cook only for themselves and that there are many residents who are not familiar with how to use FVs (Personal Interview 2013). Lisson also raised the issue of living spaces. People are not willing to buy in bulk because there is not enough storage space.

As a result, there is a concern on the availability of FVs but the demand is generally insufficient due to the lack of knowledge of what FVs are, their benefits, and how to incorporate them into meals.



CHAPTER 7: PERCEPTIONS OF BUSINESS OWNERS

7.1 FACTORS AFFECTING STORE LOCATION

To understand factors affecting store location choice, interviews took place with representatives from grocery stores to obtain a perspective from those in the industry. The major theme emphasized during the interviews was the need for high consumer traffic.

Parking space for delivery trucks was less important. Three out of four of the store representatives said that they pick up the produce from the wholesaler or the market themselves while only one said that their store gets them delivered by their suppliers. This illustrates that the need for delivery space depends on the strategy and preferences of the storeowner. A representative from one of the stores outside of PSC said that waking up early to pick up the produce was one of the disadvantages of selling produce.

Parking space was also less significant. The store representatives did not mention parking as a main factor during these interviews. It was expressed as an advantage rather than a necessity. A representative from a store outside of PSC said that one of the disadvantages of the location of his store was that there was no parking (Manager of a store outside of PSC, Personal Communication, March 11, 2013). Two of the storeowners (one store within PSC and one outside of PSC) said that selling FVs was an advantage. The owner of a store outside of PSC said that selling produce in his store's location attracts clients because "everyone eats fresh these days" (Ibid). The other storeowner, whose store specializes in selling ethnic foods, said that he sells FVs to attract white or Canadian customers who are more familiar with North American products (Manager of a store in PSC, Personal Communication, February 27, 2013).

7.2 FACTORS AFFECTING PRICE

Interviews with storeowners in the San Francisco Bay Area by Short et. al. (2007) provide insight on the difficulties with selling FVs at affordable prices while generating profit. One interview discloses that the larger stores have the privilege to the first choice of produce, thereby leaving lower quality leftover produce for the smaller stores (Short et. al. 2007). Smaller stores sell this produce at lower costs to ensure they are sold before expiring. In addition, these stores often rely on cheap, if not, unpaid labour from family members in order to limit costs (Ibid).

Such results were not found in this study. Rather, the selling price ultimately depends on the buying price. The buying price depends on where the store buys produce. A storeowner's choice on where to buy produce



depends on the quantities needed, the buying price, and the purchasing power capacity of the clientele. Results from the interviews with storeowners show that the main strategy for selling affordable produce is by purchasing FV from a wholesaler that sells larger quantities at a lower cost. An employee and a storeowner from two of the stores in PSC said that they buy their produce from a farmers market or another nearby marketplace (Manager of a store in PSC, personal communication, February 27, 2013; Employee of a grocery store in PSC, personal communication, February 26, 2013). None of these stores reported buying produce directly from a farm, but the manager of a store outside of PSC said that they buy Quebec products in the summer.

There needs to be enough customers buying FVs in order to justify buying large FV quantities from a wholesaler. Otherwise, more money and produce is wasted despite the lower unit costs. A representative from one of the stores outside of PSC advised that a store needs clients who will do 50% of their shopping at its location (Manager of a store outside of PSC, Personal Communication, March 11, 2013).

Without enough consumer traffic, stores are constrained from buying in larger quantities and selling produce at a lower price. A manager from a store in PSC said that his clientele does not buy his products in large quantities while a representative from another store in the neighbourhood said that their store only buys FVs in small quantities because half of it sold while the other half is wasted (Manager of a store in PSC, Personal Communication, February 27, 2013; Employee of a store in PSC, Personal Communication, February 26, 2013).

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One challenge with ensuring affordable prices mentioned was price fluctuation and occasions in which a price suitable for the clientele is unavailable. The owner of one of the stores outside of PSC said that sometimes he does not have control over the prices because he cannot find cheaper products (Manager of a store outside of PSC, Personal communication, February 26, 2013). He also mentioned that prices vary greatly depending on the season: strawberries are roughly \$8-\$12/case in the summer but can increase to as high as \$45/case in the winter (Ibid). A storeowner from another store outside of PSC said that his strategy for selling high quality produce at low prices was being a good negotiator and getting the right products (Ibid).

Another factor in determining price is the purchasing power capacity of the clientele. The owner of one of the stores outside of PSC said that he places a limit on how much he is willing to spend on produce: if he thinks that he cannot sell the products at a price that people can afford, he will not buy the item (Manager of a store outside of PSC, personal communication, February 26, 2013). Generally, this storeowner looks for the best price among many different wholesalers, and then chooses a few to buy from once he becomes familiar with the types of products they sell. The manager from one of the stores in PSC said that he too ensures that prices are not too high or else the produce will stay and spoil (Feb 27, 2013).

The purchasing capacity of the clientele can make it difficult for a store to sell better quality produce. An employee from one of the stores in PSC said that it was difficult to sell in the neighbourhood because it is a poor area where most people depend on welfare (Per-



sonal communication, February 26, 2013). The manager of a store from outside of PSC said that it is difficult to sell good quality produce at lower prices in a neighbourhood where people are financially constrained unless there is enough density (Personal communication, March 11, 2013). This is because purchasing FVs may not be a priority for those who spend more for a basic need (Ibid; F. Crossling, Personal Communication, March 13, 2013). Furthermore, it is difficult to sell to this type of clientele because the price at which they can afford may be near, if not less than the store's buying price, thereby decreasing profit.

Often, density is desired in a location since higher residential densities increase the likelihood of people buying food from a nearby store. High consumer traffic generated from either residential density, consumer density or employment density, makes it viable for stores to buy more produce at a cheaper price from one or more wholesalers. Parking is not necessary if pedestrian traffic brings enough consumer traffic; it is only required by stores targeting people that live beyond a walking distance from the store and who have access to a vehicle.

High consumer traffic allows for more strategies for selling produce at an affordable price. A strategy mentioned by the owner of a store outside of PSC was selling medium quality produce before any other products so that he can sell them at a lower rate (Manager of a grocery store outside of PSC, Personal Communication, February 26, 2013). The green products would be kept in storage and sold another day (Ibid). The owner from another store outside of PSC brought up the option of buying discounted products: ripe produce that look a bit aged (Manager of a store outside of PSC, Personal Communication, March 11, 2013). Some stores fill their stock with discounted products, but only if they know that enough people will buy them all immediately (Ibid).

7.3 FACTORS AFFECTING AVAILABLE FV PRODUCTS

Stores diversify FV types using a mix of local and foreign produce as a strategy to provide year-round FV to different markets while saving costs. Both local and foreign produce are available at wholesalers. Generally, stores and consumers will buy higher quantities of produce that is in season due to lower prices. Stores will also buy food that their clientele is familiar with to ensure that the products will be sold.

There are many reasons for buying local produce. People are likely to buy local produce because of familiarity, trust, and other reasons. People generally have a greater familiarity of local products and how to use them. Likewise, there are many people who place more trust in local produce more and who feel greater security in produce grown in places where they are familiar with the regulations on how it is produced (Respondent from semi-structured survey, Personal Communication, March 12, 2013). Also, some people have high preferences for Quebec or National products either out of national pride, tradition, environmental consciousness, or concern for local farmers.

Local produce is not always the cheapest due to the diminishing supply of agricultural land and the expenses associated with

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growing food in greenhouses. The Canadian vegetable industry is facing problems in providing competitive prices compared to importer countries due to high labour costs, high greenhouse capital costs, difficulty in providing a year-round supply, and water security issues (Market Analysis and Information Section et. al. 2012). Although Quebec has the second highest number of vegetable farms and greenhouse farms growing vegetables (Ibid), the province still depends on imported produce. In fact, Quebec alone lost 3% of the number of farms growing vegetables and of its field area for growing vegetables (Ibid).

Although growing produce in greenhouses increases the temporal availability of FVs, it is still expensive and limited. The capital costs of operating a greenhouse range between \$600,000/acre to \$1,000,000/acre in order to pay for the glass or plastic structures, lighting, heating/venting/shading systems, plant nutrition, automation and harvesting components (Market Analysis and Information Section et. al. 2012). In 2010, the average operating space was 9 acres(Ibid). These greenhouses provide produce for roughly 9 months for certain products, but between December and March, Canadian retailers must still import vegetables to ensure an adequate supply for the demand (Ibid).

Due to these difficulties in producing local FVs at lower prices, produce sold in Quebec largely come from various parts of the world. Quebec imports mainly from the United States (\$96,867,264 in 2010) followed by China (\$25,300,882 in 2010) (Market Analysis and Information Section et. al. 2012). Other countries where Quebec derives the majority of its imports are Spain, Italy, and Peru. Major products imported are peppers, olives, tomatoes, mushrooms, lettuce, and beans.

The sources of FVs at each store were not recorded in the surveying process due to time constraints. However, some of this information is disclosed on the store websites. The Super C makes it known online that it sells produce from the United States (particularly Florida, and California), Honduras, Guatemala, Mexico, and Italy (Super C 2013). Maxi also discloses online that they sell produce from Mexico, the United States (particularly California), South Africa (Metro 2013). These stores also publicly disclose a wide variety of Quebec products available at their stores. IGA markets that they favour local produce (Sobeys 2008). The Atwater Market has 26 FV vendors but only five of them sell FVs yearround.

Hence, although Quebec or national products are likely to be sold, many stores buy products mainly throughout North America and other parts of the world to meet the demand throughout all seasons. Foreign produce is available at competitive prices more often throughout the year. Nonetheless, a diverse FV stock containing both foreign and local produce is preferable since it can appeal to more people who have different preferences. The type of produce to be sold ultimately depends on the demand.



CHAPTER 8: PERCEPTIONS OF COMMUNITY GROUPS REGARDING CAPACITY AND DEMAND

Community groups in all parts of the neighbourhood have been very proactive in response to the concerns of the lack of FV options available. They have many initiatives offering food that can be eaten and/or prepared at home and food that can be eaten and prepared outside of the home. The community initiatives providing access to FVs are 2 collective kitchens, 1 community garden, 7 collective gardens, 2 buyer groups/consumer cooperatives, 4 food banks, and 6 community meals (Action Gardien 2012) (Map 25). In addition, Équiterre organizes a community supported agricultural program in which residents can order produce from Verger aux 4 Vents farm and then pick up their orders at Éco-quartier Pointe-Saint-Charles (Équiterre 2012a and b).

Nonetheless, many of these initiatives focused on providing access to FVs are not always available.

The collective and community gardens are generally only available in the summer and parts of the autumn. Community gardens are generally available according to a specific schedule of open hours while collective gardens are only accessible when an animator is present (Jane Walk Facilitator, Personal Communication, May 5, 2013; Representative from one of the Community Groups in PSC, Personal Communication, February 20, 2013). The collective and community gardens are generally not available during the winter months.

The FV Market by Club Populaire des Consommateurs, known as the Marché Solidaire, comes only once a month and is only available between 10AM – 2:30PM (Club Populaire des Consommateurs 2012a). Club Pop also has another public market, known as the Épicerie Solidaire, that comes every Thursday which sells only canned FVs and other non-FV foods.

The Good Food Box a collective buyers group, delivers FVs twice a month at certain drop-off points throughout the City (Share the Warmth 2013; MultiCaf Community Food Resource 2011). The communitysupported agriculture initiative by Équiterre comes bi-weekly (Équiterre 2012a).

The food security initiatives providing food other than just FVs are not available on a frequent basis. Generally, food banks are open 1 - 2 days a week but individual residents are only allowed to access the food bank once a week (Maison du Partage d'Youville 2013) or twice a month (Share the Warmth 2013) due







FOOD BANKS

problems making ends meet. Each month, these organizations distribute food baskets to more than Four organizations in Point St. Charles provide immediate assistance for people who are having ,000 families in the neighbourhood.

- MAISON DU PARTAGE D'YOUVILLE | 2327 DU CENTRE STREET | 514-935-9846 m
 - SHARE THE WARMTH | 625 FORTUNE STREET | 514-933-5599
- ÉGLISE SAINT- CHARLES | 2115 DU CENTRE STREET | 514-932-5335
 - SAINT-GABRIEL'S CHURCH | 2157 DU CENTRE STREET | 514-937-3597 ĥ





COMMUNITY MEALS

Community meals programs provide not only very inexpensive meals for neighbourhood residents but also a place where people can meet and talk to one another. Students at the Charles Lemoyne and Jeanne Leber schools can also get inexpensive meals through the Garde-Manger Pour Tous program.

- 6 GRACE CHURCH | 620 FORTUNE STREET | 514-937-0160 | MONDAY TO FRIDAY
- 7 SAINT COLUMBA HOUSE | 2365 GRAND TRUNK STREET | 514-932-6202 | MONDAY TO FRIDAY
 - MAISON DU PARTAGE D'YOUVILLE | 2327 CENTRE STREET | 514-935-9846
- 8 MISSION GRAND BERGER 2510 CENTRE STREET | 514-933-9608
 - SHARE THE WARMTH | 625 FORTUNE STREET | 514-933-5599
- YMCA POINT ST. CHARLES (65+ AND OLDER) | 255 ASH STREET | 514-935-4711

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COMMUNITY GARDENS

Community gardens are pieces of land divided into plots where members of the community can grow things. The program is run by the City of Montreal. In Point St. Charles, there is only one community garden, consisting of 44 plots.

ARRONDISSEMENT LE SUD-OUEST

BUREAU ACCÈS-MONTRÉAL, 815 BEL-AIR STREET | DIAL 3-1-1

A THE POINTE-VERTE, ON KNOX STREET

COLLECTIVE GARDENS

Collective gardens are managed by a group of citizens who share gardening work and the vegetables they grow. We have six collective gardens run by various organizations:

CLUB POPULAIRE DES CONSOMMATEURS 1945 MULLINS STREET #30 | 514-932-5088

- B THE CONCOMBRE MASQUÉ, ON ISLAND STREET
- C THE DENT VERTE, BEHIND JEANNE-LEBER SCHOOL
 - D THE TOMATE KUNG FU, ON KNOX STREET
- E THE RATATOUILLÉ, A GARDEN WITH PLANT GROWERS, IN FRONT OF MAISON SAINT CHARLES

POINT ST. CHARLES ÉCO-QUARTIER / YMCA 255 ASH STREET | 514-935-4711 # 233

F POINT ST. CHARLES YMCA'S GARDEN

SAINT COLUMBA HOUSE 2365 GRAND TRUNK STREET | 514-932-6202

G OASIS GARDEN, A ROOFTOP GARDEN

PURCHASING GROUPS

The Club populaire des consommateurs has set up purchasing groups. The program's goal is to bring together a number of people who can pool their resources to buy food at lower costs. The groups can make bulk purchases at wholesale prices.

CLUB POPULAIRE DES CONSOMMATEURS 1945 MULLINS STREET #30 | 514-932-5088

Share the Warmth brings you the Good Food Box, a program you can use to get a box of good quality fresh fruit and vegetables at a reasonable price. Boxes are delivered twice a month and are available in three formats!

2 SHARE THE WARMTH | 625 FORTUNE STREET | 514-933-5599

FRUIT AND VEGETABLE MARKET

Since 2009, the residents of Point St. Charles have been able to buy fresh fruits and vegetables for between 30% and 50% less than in neighbourhood stores, thanks to the fruit and vegetable market run by the *Club populaire des consommateurs*. The market is usually held on the first Saturday of the month at Maison Saint Charles.

1 CLUB POPULAIRE DES CONSOMMATEURS 1945 MULLINS STREET #30 | 514-932-5088

Dates for the next markets : February 4, March 3, March 31, May 5, June 2, July 7, August 4

COLLECTIVE KITCHENS

Collective kitchens are small groups of people who pool their time, money and skills to make healthy dishes that are inexpensive and tasty. Prepared meals cost around \$1,50 per portion, making this a very inexpensive option.

1 CLUB POPULAIRE DES CONSOMMATEURS 1945 MULINS STREET #30 | 514-932-5088

Cooking workshops for single men are offered to help men develop a taste for preparing healthy, low-cost meals and overcome their isolation by participating in an activity where talking to others comes naturally!

3 MAISON DU PARTAGE D'YOUVILLE 2327 CENTRE STREET | 514-935-9846

Taken directly from Action Gardien (2012a). The Tasty Point for a Better Access to Food Winter 2012 Newsletter. Accessed from http://actiongardien.org/sites/actiongardien.org/files/Newsletter%20The%20Tasty%20Point%20-%202012%20Winter.pdf



to the food banks' funding constraints. Such restrictions are also in place because many of these initiatives reach out to people from all over the Sud Ouest and parts of Verdun.

The only initiatives available nearly every day, year-round are community meals which are only available in the afternoon for lunch. Therefore, meals that are eaten and prepared outside of the home are available more frequently and they are not guaranteed to have much FVs.

It is also difficult for community groups to provide higher quantities of FVs at many of these initiatives due to less control over what is donated as well as less consumer traffic at initiatives focused on providing FVs. Donors are more likely to give pasta and non-perishable goods (F. Crossling, Personal Communication, March 13, 2013) to reduce waste and because such foods last longer. The quantity and number of FV types at the FV market is also limited which may attribute to the low numbers of people who attend. Club Pop may restrict the number of produce they sell in order to limit waste.

These concerns were expressed at the Family Forum organized by the Action Gardien Community Coalition and to a certain extent, in the semi-structured surveys. At the former, parents articulated a preference for the FV market to be available on a weekly basis (Action Gardien 2012b, 12). One of the respondents in the semi-structured interviews said that the hours of the FV market were inconvenient and found the prices to be expensive (Respondent from the semi-structured interviews, Personal Communication, March 12, 2013). This same respondent and the discussion group participants mentioned that there was not enough variety at the FV market (Ibid; Discussion Group participant, Personal Communication, March 14, 2013). Parents also expressed that there were not enough community and collective gardens (Action Gardien 2012b, 12). Additionally, parents also noted that the organic food baskets are increasingly more available but are expensive (Ibid).

It is difficult to keep these services available frequently, mainly due to limited funding and access to space at a good location at an affordable price (Karine Triollet, Personal Communication, March 12, 2013). These organizations receive their food or funding from donations. Therefore, although there are many alternative sources where residents can obtain their FVs, the funding mechanisms, volunteer labour and difficulties in finding space constrain the ability of community groups to provide affordable quality produce more often. It may be more convenient for residents and community groups if a new grocery store were available to ensure that higher quantities of FV are available at affordable or competitive prices on a more frequent basis.





CHAPTER 9: ANALYSIS OF FEASIBLE SOLUTIONS

This chapter first reveals results from the analysis on finding areas with minimum competition and the maximum demand. Next, there is a discussion on alternatives in the event that a small grocery store selling FVs cannot be viable; alternatives which can potentially still establish at these same locations. Finally, specific locations within these potential areas in which a new store or alternative FV supplier can establish are revealed with an analysis on the estimated consumer market and the feasibility of using these locations.

9.1 AREAS WITH MINIMUM COMPETITION AND MAXI-MUM DEMAND

Overall, the areas with the highest number of competitors and the most access to FVs within 1 kilometre are those to the west of the neighbourhood, situated along rue Charlevoix and the CN tracks while the areas with the least number of stores are to the southeast, not by a main road, and are near areas containing more rail and industrial land.

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Map 27: Areas with Minimum Competition and Maximum Demand



DAs along rues Charlevoix and du Centre have more stores within 500 metres compared to the other neighbourhood because they are near the most highly used main streets in the neighbourhood.

Generally, the DAs that best maximizes demand in terms of population while minimizing competition is located north of the tracks between DAs 24661126, 1127, and 1252 (Map 27). Although there is competition, there is a considerable concentration of the desired clientele as well as non-vehicle users as seen in Table 24.

Most areas in the south have minimal competition but also are not very populated. These areas also have lower concentrations of the desired clientele. DA 24661243, located at rues Favard, Fortune, Dick Irving, Le Ber, and avenue Ash has among the highest number of people and among the lowest competition in addition to a high number of family households and a relatively high number of allophone households. However, it also has a 70.6% low-income rate and a higher proportion of people without a high school certificate versus the proportion of people with some level of university education. Unlike the previous DAs mentioned, the areas adjacent to this DA are not very populated.

9.2 ALTERNATIVE SOLUTIONS

Alternative solutions are pop-up food, collective kitchens, and buyers groups. These methods are easier to implement because pop-up food and buyers groups do not require much space while collective kitchens and buyers groups already exist. The latter two will make it easier to advertise for a store that is unable to establish at a visible location. These steps do not require any major zoning changes. The main benefit of these initiatives is that they are feasible in the south and can create a better consumer environment for grocery stores to establish in the future.

In the discussion groups, participants suggested creating a network of fruixis, FV stands or tents throughout the neighbourhood. The central station of this network, where the food is prepared or packaged, could be located at the former SAQ at rue Charle-

Dissemination Area	1126	1127	1252
Total Area (km ²)	0.06	0.08	0.28
Estimated Population	632	696	680
Estimated # of Households	355	295	415
Estimated # of Family Households with children	90	120	70
Estimated # Allophones	85	210	120
Estimated % who are University Students	24%	15%	n/a
Estimated % of non-vehicle users	64%	55%	n/a
Average After-tax Income	\$23,886	\$19,053	n/a

Table 28: Dissemination Areas with Maximum Demand and Minimum Supply

Source: Statistics Canada 2006 and 2011







voix and rue du Centre (which is now occupied by Go Plana Bakery). They suggested on having these pop-up FV stations at the YMCA, the schools in the south, Marguerite Bourgeoys Park, Joe Beef Park, the sports recreation centre, and also by areas with cyclist lanes. These FV stands could be available once or twice a week during the summer sometime after school or during lunch. They suggested using these fruit stands to unify people. One participant suggested keeping the leftover food frozen in storage to make smoothies or to give them to collective kitchens or community meals (Discussion group participant, Personal Communication, March 14, 2013). She also suggested having containers selling FV, similar to the ones at the Old Port.

Pop-up food generally can comprise as little as the size of a parking spot, if not



Map 28: Discussion Group Ideas on Fruit and Vegetable Pop-up Site Locations in PSC

Source: Discussion group results with 4 participants. Conducted at Saint Gabriel Church. Personal Communication, March 15, 2013.



smaller if it is a fruixi or a smaller stand. Subsequent initiatives or studies should look into the infrastructure required to implement these alternative solutions.

9.3: POTENTIAL LOCATIONS

Potential locations were chosen based on proximity to the desired clientele and competing stores. The study looked for areas with a minimum number of stores and FV supply and maximum numbers of the desired clientele. Since it may be unfeasible to locate in a highly populated area, the decision process considered points of interests that attract people such as schools and recreation centres as well as proximity to access streets.

After choosing the potential areas, the study examined the population affected by examining the most recent data available on the dissemination areas within 500 metres and 1 kilometre from each option. Since there were situations where only parts of the dissemination area fell within 500 metres or 1 kilometre, the study took the percentage of land that fell within the service area and applied that percentage to the population of that DA. The study took the total population if the total residential area fell within the 1 km or 500 metre radius.

Most of these locations are in areas that are not zoned for commercial use. If the zoning cannot be changed or if people prefer to not have the space converted into commercial space, these would be good locations for pop-up food, fruit stands, or other alternatives that do not require space permanently. It is most beneficial to have the pop-ups during the summer for visibility. If the FV pop-ups perform well, they can continue throughout the winter and the autumn so long as they can find an indoor location and enough marketing during its peak times that informs people of their year-round availability. If there is enough funding and if they can find willing employees, the stand may even be able to function outdoors during the winter, but such an option may be preferable if there were also cooked items available and if there were enough winter events to generate consumer traffic.

9.3.1 Potential Location 1: rues Mullins and d'Hibernia

The intersection of rues Hibernia and Mullins is a location that can maximize the clientele that is more likely to buy produce at lower prices since there are a high number of allophones and families. There are also many services that attract people: the sports recreation centre, the library, and École Charles LeMoyne. In addition, rue Hibernia gives access to the south part of the neighbourhood. This also allows connection to another highly populated DA located immediately south of the tracks that has a high number of households with children.

The high number of allophones and family households with children indicates that the population immediately surrounding this potential location has incentives to cook and buy larger quantities.

Table 29 illustrates that nearly twothirds of residents living within 500 metres of this potential area do not use a vehicle to get to work. This means that a new store may not be significantly affected by the existing com-





petition so long as they sell more produce at a cheaper price and better quality than the IGA.

This area is currently zoned for residential and institutional use with one park. The issue is that establishing a business here requires losing park space: an option that is not favourable in the neighbourhood due to the high demand for green space. There may also be difficulties with obtaining enough space for delivery or parking for the storeowner. If neither the zoning nor the political climate allow for space for a new grocery store, it may be beneficial to bring the monthly FV market by Club Populaire des Consommateurs to this area outdoors during the summer in competition with other fruit stands during days and times where there is high consumer traffic. A good time would be to have this market at a time when there are big events hosted by at least two of the points of interest simultaneously.

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Map 29: Potential Location 1: rues Mullins and d'Hibernia



Table 29: Consumer Market within 500 m of Potential Location 1

Total Area (km²)	0.49
Estimated Population	6533
Estimated # of Households	3159
Estimated # of Family House- holds with children	1009
Estimated # Allophones	1287
Estimated % who are University Students	15%
Estimated % of non-vehicle users	61%

Table 30: Consumer Market within 1 km ofPotential Location 1

Total Area (km²)	1.76
Estimated Population	13412
Estimated # of Households	6677
Estimated # of Family House- holds with children	1034
Estimated # Allophones	2560
Estimated % who are University Students	22%
Estimated % of non-vehicle users	57%



Image 5: rue Grand Trunk and rue Hibernia facing Montreal south to rue Mullins



9.3.2 Potential Location 2: rue du Centre between rues Island and rue de la Sucrerie

Another location that connects the higher populated DAs in the north would be on rue Centre between rue Island and rue de la Sucrerie (Map 30). This blockface has many residences, bars, restaurants and specialty stores that already generate consumer traffic. It is also located by the Nordelec building and Joe Beef Park. If the restaurants are willing, they can purchase FVs from the new grocery store (Representative from one of the community groups in the PSC Food Security Committee, Personal Communication, March 5, 2013) although it may be best to sell frozen produce in large quantities as well. Fortunately, this blockface is zoned for commercial use. A recent site visit in April found vacant space at rue du Centre and rue Shearer. More information is needed on vacancies along this blockface.

While it is commercially viable to locate a grocery store along this blockface, such a location would not be very accessible for residents living south of the tracks.

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Table 31: Consumer Market within 500 mof Potential Location 2

Total Area (km²)	0.38
Estimated Population	2826
Estimated # of Households	1445
Estimated # of Family House- holds with children	417
Estimated # Allophones	555
Estimated % who are University Students	16%
Estimated % of non-vehicle users	59%

Table 32: Consumer Market within 1 km ofPotential Location 2

Total Area (km²)	1.30
Estimated Population	11229
Estimated # of Households	5608
Estimated # of Family House- holds with children	859
Estimated # Allophones	2276
Estimated % who are University Students	22%
Estimated % of non-vehicle users	58%



Image 6: rues Shearer and du Centre facing Montreal Northeast at the Nordelec Building



9.3.4 Potential Area 3: rues Wellington and Charon

Establishing a store at the intersection of rues Wellington and Charon (Map 31) would allow greater connection to the customers in both DAs 24661242 and 1243 which are the most highly populated DAs south of the tracks. The zoning at the intersection allows for a grocery store to establish. This location primarily benefits from its ability to connect with areas both north and south of the CN tracks. Rue Wellington runs through both the north and south sides of the tracks while rue Charon connects to rue d'Hibernia, a street that also connects through both parts. This location is currently occupied by a dépanneur, a pizza restaurant, a church, and an apartment. It may be beneficial to have a fruit stand, fruixi of any FV pop-up by the church since it has a setback large enough to accommodate for a small, temporary business. If there is a change in ownership at this intersection, it is possible to establish a grocery store here to provide FVs for residents living in the south.

This location is also within close proximity to the PSC Community Clinic

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Map 31: Potential Location 3: rues Wellington and Charon



Table 33: Consumer Market within 500 m of Potential Location 4

Total Area	0.42
Estimated Population	4865
Estimated # of Households	2351
Estimated # of Family House- holds with children	732
Estimated # Allophones	804
Estimated % who are University Students	17%
Estimated % of non-vehicle users	58%

Table 34: Consumer Market within 1 km of Potential Location 4

Total Area (km²)	1.30
Estimated Population	11229
Estimated # of Households	5608
Estimated # of Family House- holds with children	859
Estimated # Allophones	2276
Estimated % who are University Students	22%
Estimated % of non-vehicle users	58%



Image 7: rues Charon and Wellington facing Montreal Southwest at the Mount Zion Seventh Day Adventist Church





(~280 metres), the YMCA (~650 metres), and Parc LeBer (~550 metres). Locating near the clinic would attract people who are aware or who are willing to become aware of the health benefits of consuming FVs. It is also beneficial to be located near the YMCA and the park where there are people whotypically exercise, are concerned about health and who may be more willing to eat more FVs.

9.4 OTHER OPPORTUNITIES

The redevelopment of Building 7 into a community complex presents opportunity for space and incoming consumer traffic (Image 9). However, it is not located along any main streets and has difficulty obtaining visibility. Similarly, while Building 7 can make FVs more accessible to areas with minimal FVs available between 500 metres to 1 kilometre, it is also located in an area that does not have many people. Fortunately, the 57 PSC bus line leads to this area and can bring more customers (Interview with a representa-



Image 8: rues Ash and Favard facing cardinal southwest at the Pointe-Saint-Charles Health



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tive from one of the groups in the PSC Food Security Committee, March 5, 2013). Redeveloping it into a community centre and the involvement of the community groups in its redevelopment process will make it known and will bring traffic.

Indeed, the new development along the Lachine Canal can also potentially bring enough people to increase consumer traffic. However, a store needs to better understand the type of clientele entering the neighbourhood to determine how it relates to the rest of the neighbourhood and to determine a targeted clientele and pricing mechanism.

If the incoming clientele continues to bring in more affluent and educated singleperson households, a Hi-Lo fruiterie can potentially made viable in the north as long as it is on a high traffic street adjacent to other uses that also generate high consumer traffic. To attract consumers away from the competition in that area, a new store (regardless if it

Image 9: Building 7 facing northeast

is a grocery store or a fruiterie) will have to sell higher quantities of produce of a higher quality than IGA but at a lower price than the Atwater Market.

An EDLP may have trouble competing in the northern parts of the neighbourhood because of the competition with the Super C. However, if the restaurants along rue du Centre are willing to buy fresh FVs from the new grocery store, this may justify the option for the new store to buy FVs in bulk.

The zoning allows for grocery stores to establish towards the Lachine Canal along rue Saint Patrick. However, since these areas fall under Category I.4 land, the size of a grocery store is limited to 200m² which is the typical size of a dépanneur (Reglement d'urbanisme Sud Ouest 01-280). If the new residential development generate enough traffic along rue Saint Patrick, it may be feasible to establish a fruiterie in these commercially zoned areas on this street.

Image 10: Flag Presentation Location of one of the Lachine Canal Developers--located at rues Saint Patrick and Thomas Keefer facing east



Source: "Dévoilement des «Ateliers 7 à nous»". *La Voix Pop.* Accessed at http:// www.lavoixpop.com/Actualites/Vos-nouvelles/2012-02-29/article-2911254/Devoilement-des-%26laquo%3BAteliers-7-a-nous%26raquo%3B/1unis/2012/02/29/ photo_2018243_resize_article.jpg




CHAPTER 10: CONCLUSION AND RECOMMENDATIONS

10.1 DISCUSSION ON FDs

FDs can be seen as result of planning factors that limit consumer traffic. Particularly, land uses (both available space for establishing a business and neighbouring uses), transportation networks, zoning, and the built environment greatly impact the ability of stores and consumers to interact.

Consumer traffic is the most important factor affecting the viability of a store of any type and size. When examining food desert areas or choosing a location for a new grocery store, it is best to investigate how variables in the nearby surroundings affect consumer traffic levels. A supplier of any type and of any size needs a certain level of people who will buy their produce. The sale of large quantities of quality FVs at an affordable or competitive price is only feasible if there is enough consumer traffic to justify buying produce from a wholesaler or another supplier in bulk.

Income can make it difficult for an FV store to be viable unless there is enough consumer traffic. This is because there is the risk that the price that consumers can afford may be nearly equivalent, if not less than the price at which the store buys produce from a supplier, thereby making it difficult for a store to pay its expenses and make a profit. Given enough consumer traffic, a store may be able to negotiate with another supplier on buying even larger quantities that they can sell at a lower unit price or buy discounted products (lower quality produce) that can be sold immediately.

The viability of FV suppliers of all types depend on land uses, transportation networks, zoning, and the built environment because they affect visibility, accessibility, the spatial distribution of people or density, and interaction opportunities. It is difficult to establish a grocery store in an area with a low population numbers or low numbers of people who frequently buy FVs unless there are transport networks and other uses that can attract people from outside of the neighbourhood to increase consumer traffic. It can also be difficult for a new store to establish in neighbourhoods that have the ideal clientele if the street network and built environment make the store difficult to find. Furthermore, it can also be difficult for a store selling FVs to thrive if people who buy FVs on a frequent basis are dispersed and if they have limited transport mode options.

Stores can be viable in areas where they are visible from either multiple view points or few points in locations that attract high levels of traffic, preferably among more than one type of transport mode user. Despite



poor accessibility and visibility, nearby points of interest or interaction spaces that attract enough people on a frequent basis (such as schools, churches, recreation centres, parks, employment areas with many employees, restaurants), can generate enough consumer traffic for a grocery store.

Establishing a new small-scale grocery store can be a viable solution towards eradicating FDs as it can increase the number of FV suppliers and potentially the overall supply of FVs available. PolicyLink found this to be a costly, complex, and time-consuming option. The viability of a grocery store depends on the available consumer traffic, the feasibility of obtaining space, and the ability to find an owner and enough employees. In higher density areas, a grocery store can increase its clientele by being in a location that is accessible and convenient for non-vehicle users. Higher density improves the likelihood of there being consumer traffic so long as the street network allows for easy access. In lower density areas, a store can increase its clientele by locating near infrastructure that brings in high traffic among different transport modes.

Establishing a new grocery store also depends on an entrepreneur's resources. The ability for an entrepreneur to obtain enough funding and resources can depend on the type of ownership. Further study on contexts in which certain types of ownership are more appropriate would be beneficial.

Hence, solutions for eradicating FDs may be to generate a sufficient level of consumer demand that would give incentive for new stores to develop and for existing stores to sell enough produce. Drouin et. al.'s findings were that there were higher densities of

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FV stores in census tracts with higher concentrations of university students, single person households, allophones and with more high traffic streets; there is higher demand in areas with such characteristics It would be interesting to verify if the results from their study apply at the DA level.

Generating a sufficient client base can be done by educating people or convincing people to buy FVs in order to build the demand or by finding ways of connecting and gathering the existing demand to a location where they can buy FVs.

10.2 VIABILITY OF ESTAB-LISHING A NEW GROCERY STORE IN PSC

In order for a store to sell more FVs and be viable, it must be known for selling produce and be located in an area where people know how to use FVs and to cook or have the resources to learn. Currently, it is not viable to establish a new grocery store in PSC for the following reasons:

1. There is a lack of clientele that buys FVs

One problem is that the people who have characteristics that make them more likely to purchase FVs (allophones, high traffic streets, university graduates) are few in number and are dispersed throughout the neighbourhood. It is especially difficult for a new grocery store to establish in the south because it is not very populated.



2. The available space does not connect well to customers while the well-connected areas with high demand and low competition are already occupied.

To increase access in the south, the locations that best connect the demand are unfortunately in areas where it is difficult to obtain space. Spaces on Wellington between Ash and Charon are already occupied by dépanneurs and restaurants. Although there are vacant spaces along rue Wellington between rues de la Congregation and Bourgeoys, these spaces are expensive to rent with less access to higher populated areas. There are also vacancies at rue du Centre and rue Ropery where the competition is very high. Hence, there are no opportunities for a store to locate along main streets and in areas accessible to customers and away from the competition.

3. Diversity: Difficulty in determining an appropriate price mechanism

The differences in income, household structure, and new and incoming households make it difficult to determine an appropriate price mechanism. First, it is difficult to determine if customers are more likely to buy higher quantities at each trip or if they require fewer quantities. While the significant percentage of single-person households (53%) may suggest a higher demand for a Hi-Lo store, there are still a significant proportion of households with children and married couple households that may have children in the future. For an EDLP to be viable, there needs to be enough single person households that will also buy from their store.

The remaining challenge is how to make a grocery store viable in an area where

the population is polarized and sparsely distributed. There are many people but also many types of capacities and needs and there are also low levels of each category based on capacity and need. It is easier to choose a location in an enclave where there are high levels of people who have either similar purchasing capacities, transport mode capacities, likelihood of buying FVs, or all the above. However, PSC has a mix of condominium owners and welfare users as well as singles versus families living within a few metres from each other. This makes it difficult not only to decide on an appropriate price mechanism and volume, but also to obtain a sufficient consumer base among residents.

Choosing a potential location depends on the entrepreneur and their available resources but there must first be an incentive for them to establish at a specific location. The study investigated the existing supply of competitors both at through an area analysis and a store analysis then examining the existing demand. While the study established locations, more study is needed on vacancies, changes in ownership, and changes in demographics. Additionally, more study is needed to gain a sense of the likelihood that space in one of the potential locations listed will be available. Given the many risks associated with establishing a new grocery store, the beneficial solution to eradicating FDs in the short term would be to improve the environment for new and existing stores to sell produce by generating consumer traffic for FVs.

For these reasons, it is not viable for a grocery store to establish in the neighbourhood in the immediate term given the demand among current residents and the current lack of space.



However, it may be viable for a small scale grocery store to establish in the next five to ten years due to the redevelopment of Building 7 and the new condominium projects. Market conditions constantly change, particularly the level of demand and changes in ownership.

A grocery store can still thrive in a location adjacent to buildings with additional uses that gather people rather than just in an area that connects to peoples' residences. Since the current conditions inhibit a potential grocery store from locating in an area with the maximum demand and the minimum competition, it may be best to locate nearby a well-known and well-used establishment. By establishing a grocery store near or inside of Building 7, a storeowner can obtain clientele among people who visit the incoming community centre. Locating in multipurpose buildings or in areas with uses that gather people allows for stores to succeed even in locations that are less visible and less connected to the demand.

The new condominium projects will change the needs and level of demand for FVs among residents. To cater to this changing demand, subsequent studies should perform a demographic analysis and projections on the demand among residents who will be living in the new condominiums. The new condominium developments in neighbouring areas (Griffintown, Bassin Peel and the Bonaventure autoroute)may also increase the demand and should also be looked into.

With this in mind, subsequent studies should consider examining precedents such as the redevelopment of the Maple Leaf Gardens in Toronto into a multi-purpose building with a Loblaws, a sports centre for Ryerson University, and other retail uses. The former Maple Leaf Gardens was in a location that was not well-connected to peoples' residences until new condominiums developed years after its opening.

10.3 RECOMMENDATIONS

While establishing a new grocery store in PSC can be a viable solution in the near future, food security initiatives should also consider other options of providing FVs in a way that will increase the demand and decrease the level of risk. The following recommendations focus on increasing the demand among existing residents. The community group representatives interviewed were already aware of strategies that would help create a better consumer climate for selling FVs. Building on their advice, this SRP recommends three ways of preparing the way for a new store, expansion of existing initiatives or FV pop-ups.

1. Gathering Consumers and connecting them to an FV Supplier

Fiona Crossling believes that the best strategy would be to have community groups organize trips to the FV market (Personal Communication, March 13, 2013). This would ensure that less produce is wasted and provides incentive for buying higher quantities and more varieties of FVs in bulk. Crossling says that having a shopping day as part of an activity at the collective kitchen would also be a good strategy as it would connect stores to customers and teach residents how to use and cook produce. She believes that the potential of the FV market can be realized by educating



people and engaging women, youth groups, parents, and people who regularly come to food banks. This is a good marketing strategy for the FV market. Collaborating with a new store to host these trips would be a good marketing strategy as well as it would guarantee a certain number of customers at specific times.

2. Determining the types of FV to sell and when to sell it

Another effective strategy would be to survey people on the types of produce they would like, the types of produce they would consider, how often they would want a supply of FV available for sale, convenient times for them to purchase FV items, and how many people whom they buy food for in their household. The surveys can include photos of prepared meals with FVs that can be potentially sold at a store, asking people whether or not they would want the ingredients for creating such a dish.

It would be more effective to have kiosks with samples of these dishes to aid people fill the survey and to provide an incentive for people to take the survey.

A simpler method of obtaining this information would be to have people who use the existing FV resources to fill a short survey and sign-in sheet before obtaining their food.

Such information would help determine the types of FV to sell and how much of it to sell in order to reduce waste. This would also limit the hours of operation to times where people can actually purchase food in order to minimize labour costs. This can also serve as an educational activity on different dishes and the health benefits of these FV items.

It would be helpful if such information was available at a central database at Action Gardien. This information can also be used to help community groups that work towards food security reach out to people at convenient times and to potentially generate enough traffic to establish their own grocery store under a cooperative or collective management.

3. Providing recipes at all existing programs

This is an additional step towards creating a clientele that is more likely to purchase FVs. The existing programs can provide recipes and nutritional information on the food they offer. These recipe and nutrition sheets can have the logo of where the program obtained its food, thereby providing free marketing and potentially increased donations from a new store.

It can be viable to establish a grocery store in PSC if there is more consumer traffic. Space is less of an issue since the zoning can be change and because there are vacancies in rue du Centre. However, it is still difficult to find opportunities for increasing access to FVs for residents living in the south. Following these recommendations will therefore aid in creating enough demand for a new grocery store.



10.4 Lessons Learned

Food deserts exist where there are not enough people who buy fruits and vegetables. Typically, the people who do buy FVs are those who are aware of the health benefits and who know how to use them in meals. Therefore, FDs mainly exist in areas where there are not enough people who know how to incorporate FVs into their meals. While there are people who have the means to travel further to obtain FVs, FDs pose a problem to captive mode users.

The most accurate way to measure FDs is through an area assessment (the density of stores selling FVs) and a store assessment (the quantities of FVs available at each store) while considering distance decay curves and access to different modes of transport. For larger scales of analysis, it is better to examine the density of stores selling at least a minimum quantity of FVs.

Establishing a new grocery store can be a viable solution towards increasing access to FVs. To be viable, a grocery store will have to locate in an area that maximizes the demand and ideally minimizes competition or in an area nearby uses that gather people who are likely to buy FVs.

There needs to be flexibility when considering solutions to FDs. While small scale grocery stores involve less risk than a large supermarket, it is also useful to consider mobile food vendors, FV markets, and other temporary food establishments since they require less space and can even serve to generate a higher demand for FVs. These alternatives can be more effective with an understanding of when and how often consumers buy FVs. Such solutions can be implemented through collaboration and links with different partners, such as community groups and vendors, in order to balance social purpose with the economic dynamics of selling FVs.





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