Maximizing the Benefits of Mass Transit Stations: Amenities, Services, and the Improvement of Urban Space within Stations

by

Carlos Javier Montañez

B.A. Political Science
Yale University, 1997

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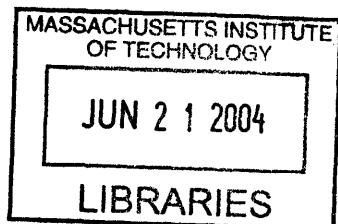Department of Urban Studies and Planning
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ABSTRACT

Little attention has been paid to the quality of the spaces within rapid mass transit stations in the United States, and their importance as places in and of themselves. For many city dwellers who rely on rapid transit service as their primary mode of travel, descending and ascending into and from transit stations is an integral part of daily life and their urban experience. Beyond being simply a piece of infrastructure offering mobility throughout a city, transit stations are an important part of the daily morning and evening rituals for many transit riders in cities with such rapid transit systems. Given their importance, it is surprising how underutilized are the interiors of stations as well as how poorly stations reveal what lies within their walls.

The purpose of this thesis is to examine how ancillary uses affect the station environment; how non-elevated mass rapid transit stations within the Massachusetts Bay Transportation Area (MBTA) system are being improved through ancillary uses; which uses are particularly beneficial to transit authorities and riders alike as well as which uses require additional operations considerations; and to make suggestions as to how to further improve the station environments through the continued use of ancillary uses.

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ACKNOWLEDGMENTS

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1 INTRODUCTION

"...one disembarks into a hostile environment. It is almost as though the subway tube is planned just like water mains or gas lines which run under the city, unseen but essential; but these tubes carry people!"[1]

"Human satisfaction with the total station or terminal experience deserves greater attention than it has traditionally received..."[2]

Little attention has been paid to the quality of the spaces within rapid mass transit stations in the United States, and their importance as places in and of themselves. For many city dwellers who rely on rapid transit service as their primary mode of travel, descending and ascending into and from transit stations is an integral part of daily life and their urban experience. Beyond being simply a piece of infrastructure offering mobility throughout a city, transit stations are an important part of the daily morning and evening rituals for many transit riders in cities with such rapid transit systems. Given their importance, it is surprising how underutilized are the interiors of stations as well as how poorly stations reveal what lies within their walls. Moreover, beyond underutilization, it is disconcerting the austere, unpleasant and sometimes dangerous character of some stations.

As Abernathy's analogy suggests in the first quote, transit stations should be regarded as more than mere mobility infrastructure. In contrast to the attention that is paid to the quality of experience in many public spaces, some transit stations feel as if they were designed to transport inanimate cargo. More than just connections to places elsewhere within a metropolitan area, stations themselves are places where people of various socio-economic status and cultural backgrounds

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[1] Abernathy, page 1
[2] Transit Station Planning & Design: State of the Art, p71

intersect with one another. This exposure to different faces, languages, conversations and even the music of "street"-performers on platforms, makes stations a valuable component of the public realm.

As such, the quality of the character of station interiors should be enhanced to include ancillary uses within both designed and residual spaces of stations. The inclusion of services such as locksmiths, florists, newsstands, and dry cleaning can provide convenience and added security by activating the spaces. While there are examples of more active transit stations in the United States, stations can be improved by considering alternative uses to retail concessions as well affirming the importance of ancillary uses in stations through clear organizational mission statements for transit authorities.

1.1 ENHANCING STATIONS AS PUBLIC SPACES

Far from the "eyesores" and "strong physical intrusions"[3] into districts, transit stations can contribute to the character and identity of an area by capitalizing on the intersection of transit riders from all walks of life. This entails a departure from constructing and renovating stations in the "most minimal and cost efficient manner" and instead, tapping into "[t]heir implicitly positive potential"[4], which has been largely ignored. Historically, transit stations in the US and Europe contained dining facilities, restrooms, waiting lobbies and newsstands. By approaching rapid transit stations in a similar manner as public spaces and integrating these types of convenience uses, one can help to "further organize the city"[5] by providing appealing new set of public spaces.

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[3] Karp, pages 64-73, 77
[4] Dreher, pages 23-25
[5] Jackson, page 26

Transit stations are highly public in nature. As places of public accommodation shared by an intersection of different people, the potential for interaction between strangers and friends is high. In many metropolitan areas, rapid transit stations "capture" an ample cross section of the area's demographic composition. Those stations with a high volume of riders due to their heavily trafficked locations or function as transfer points between lines or transportation modes have an important element necessary for "generating public territory": a constant and active population[6]. However, the presence alone of a large volume of pedestrians rushing through a conduit does not necessarily generate public territory if the space is austere, unpleasant or unsafe. Approaching the design of the interior spaces of the station as any other place of public of accommodation with the notion of affording greater comfort and security can assist in achieving this.

Having said this, simply making the interior of transit stations more attractive and pleasant is not enough to generate a "social ecology" within the space. In order to encourage and foster a "...network of people whose lives are intertwined and who are attached to a particular part of the city."[7], one must give transit riders and nearby urban dwellers a pretext for interacting while they wait for the next train. The inclusion of non-transit uses within the train station can take advantage of a constant stream of pedestrians, provide convenience services, enhance perceived security of the space, and ultimately add a new public space to the metropolitan area. The placement and juxtaposition of seemingly disparate but convenient or inviting uses creates a space below ground that can mimic what often occurs on the street level: exchanges between a vendor and a returning customer, or between neighboring residents who happen to frequent the same place or vendor cart.

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[6] Dreher, page 3
[7] Dreher, page 31

However, the quality of the public space can encourage or discourage interaction. If the space is characterized by poor lighting, isolated areas, and confusing layout, one would imagine a tense and apprehensive waiting environment. I am suggesting that any potential, latent social interaction can be tapped into through a more pleasant environment that instills security as well as provides the convenience of services.

The purpose of this thesis is to examine how ancillary uses affect the station environment; how non-elevated mass rapid transit stations within the MBTA system are being improved through ancillary uses; which uses are particularly beneficial to transit authorities and riders alike as well as which uses require additional operations considerations; and to make suggestions as to how to further improve the station environments through the continued use of ancillary uses.

2 SETTING THE CONTEXT

2.1 POLICY OF THE MBTA & OTHER TRANSIT AUTHORITIES

As the focus of this thesis is to gain insight from and assess existing ancillary uses within the MBTA system in order to make recommendations, the policy of the MBTA with regards to leasing and managing spaces is examined here. Additionally, for purposes of understanding the policy of other transit authorities with primarily non-elevated lines[8] and placing the MBTA's policy within perspective, I conducted interviews with practitioners employed or contracted by other transit authorities.

2.1.1 Massachusetts Bay Transportation Authority (MBTA)

In terms of policy with regards to the inclusion and management of ancillary uses, and notwithstanding some internal disagreement, the MBTA leases out space within it stations primarily (but not exclusively) for revenue generation. In 1996, the MBTA contracted Transit Realty Associates, LLC in order to maximize its return on real property assets, and increase non-fare revenues during periods of budget shortfalls.

The MBTA administers two programs for the leasing of space within its stations. One program is the leasing of fixed spaces within stations and the other program is for the management of pushcart vendors. In an interview, Lorna Moritz – executive director of Transit Realty Associates, Inc. (TRA), which is contracted by the MBTA for the leasing and management of many of its fixed spaces – explained that the pushcart program was originally developed by the MBTA in the 1990s.

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[8] I.e., stations that provide substantial shelter to transit riders and characterized by either being comprised of headhouses for stations that are entirely at grade, underground stations with surface headhouses, or below grade with partial shelter from a headhouse.

The intent of the program was to generate revenue while encouraging disadvantaged business enterprises (small, minority business owners) to use the leased spaces as "incubator space" before eventually moving on to more profitable, possibly brick-and-mortar business enterprises. She indicated that while the pushcart program has a low turnover rate and many have been operating at the same locations for years, only a handful of vendors have "graduated" from the program.

The MBTA fixed space program is comprised of thirty-plus individual leases managed directly by the MBTA through a public bidding process as well as three master leases contracted out to real estate property managers such as TRA. Two of the master leases pertain to primarily multimodal transfer stations (South Station, Back Bay, Ruggles, and Forest Hills), and the third master lease manages fixed spaces within the Alewife park-and-ride terminus station. The fixed space program brings in approximately $1.3 million in revenue excluding the Marketplace at South Station.

As a general rule of thumb, the MBTA and TRA base their decision to lease a space on whether the use poses any maintenance, security or operational externalities. Lorna Moritz explained that factors such as cleaning costs, traffic flow generation, and potential security threats are important in leasing spaces. For the latter, the MBTA created the MBTA Secure Stations Initiative Taskforce post-September 11, 2001, in order to balance station safety concerns with the authority's revenue needs. The Taskforce reviews the placement of existing and proposed pushcarts, and determines whether the pushcarts obstruct the sightlines of surveillance cameras and on-site station operators.

Interviews with Barbara Boylan and Lorna Moritz also revealed that the MBTA shies away from retrofitting uses within underground stations due to the difficulties of working in the tunnels. Instead, the MBTA is beginning to upgrade its fixed space concessions program as it conducts major renovations of stations such as the Ashmont and Government Center stations. In tandem

with the major renovation of stations, the MBTA is incorporating community concerns into the design considerations for its headhouses. The renovations for the aforementioned stations include transparent façades and "iconic" headhouse designs that allow for visual connections and are also beneficial for sheltering pushcart vendors.

2.1.2 New York City (NYC) Transit – Metropolitan Transportation Authority (MTA)

Similar to the MBTA, revenue generation was mentioned as being paramount for the transit authority in an interview with a representative of the New York MTA. Matthew McElroy, real estate specialist for the New York MTA, explained that the authority generated $144 million in revenue last year from retail leasing but emphasized that the MTA is very concerned with providing sense of security to customers as well as convenience shopping. For purposes of context, NYCT operates the largest subway car fleet in the world with an average of 4.5 million weekday riders using the system's 490 subway stations along its 25 subway lines[9].

The MTA subscribes to the concept of the human presence of merchants providing a heightened sense of security for its customers by creating activity nodes. The website for the MTA's Real Estate Department[10] also reflected this concern for safety and convenience. Among the services cited on the website and mentioned by him were newsstands, flower shops, coffee stands, clothing stores, banks and record shops.

For both high- and low-volume stations, the MTA has a policy of including fixed space retail floorplates in stations only after the station has been renovated. In the past two decades, NYC

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[9] http://www.mta.nyc.ny.us/nyct/facts/ffsubway.htm
[10] http://www.mta.nyc.ny.us/mta/realestate/

Transit has rehabilitated or upgraded almost half the stations in the system[11]. The MTA prioritizes the leasing of space by focusing on stations that are not physically constrained and do not require major reconfigurations. The MTA gives greater priority to leasing out larger spaces in stations with high volumes, and for those with lesser volumes, the authority constructs rooms of approximately 100 to 150 square feet within residual spaces and supplies them with electrical wiring and a sprinkler.

Matthew McElroy added that other concerns, albeit of a lesser priority, also factor into the decision to include ancillary uses within certain stations as well as the design of the layouts for those fixed spaces. One of the factors regards the jobs created by the inclusion of an ancillary use within a station, particularly in economically disadvantaged neighborhoods. The other concern pertains to enhancing the streetscape of a community by animating a previously blind (i.e., without windows or doors) cement station wall with an additional entrance into an ancillary use space.

While it is not suggested that the NYC Transit and MBTA systems are comparable, the rationale for including ancillary uses as well as NYC Transit's approach in doing so is of interest to me. As general observations, NYC Transit puts greater emphasis on creating or upgrading large fixed spaces within high volume stations and, in contrast to the MBTA, is less concerned with pushcart vending. Matthew McElroy indicated that this is done in order to maximize the revenue generation potential at high volume stations. Concerning NYC Transit's construction of 100- to 150-square foot rooms for concessions vending in lesser volume stations, NYC Transit may be overlooking trash removal and pest control issues by potentially creating spaces that might not address appropriate storage for food vending. This concern for "unclean" retail was mentioned by

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[11] http://www.mta.nyc.ny.us/nyct/facts/ffsubway.htm

Lorna Moritz with regards to problems the MBTA had had with three deteriorated spaces that sold food.

2.1.3 Washington Metropolitan Area Transit Authority (WMATA)

The Washington Metropolitan Area Transit Authority (WMATA) system is the second largest rail transit system with 5 heavy rail, rapid transit lines and 83 stations, which together with the bus system serve a population of 3.5 million[12]. The Metrorail ridership for the 2002 fiscal year was of 181 million total trips. Of the 83 stations, 57% are underground, 37% are on the surface, and 6% are elevated.

As a matter of policy, WMATA does not include ancillary uses within its Metrorail stations. An interview with Elisa Hill, Acting Manager for WMATA's Property Planning and Development department revealed a different mass transit agency perspective from those that have included ancillary uses within their system. There is a consensus within the organization as well as regulations from the National Capital Planning Commission[13] that prohibit ancillary uses within the stations. Elisa Hill expressed that the inclusion of any ancillary uses within stations would interfere with the architectural design of the system. Beyond prohibiting ancillary uses, WMATA prohibits the consumption of food and beverages within the system in order to maintain the system as clean as possible for aesthetic and operational purposes.

The WMATA transit system is a landmark system since it was designed to serve the United States' capital. Elisa Hill expressed that a great part of the system's beauty is due to the vaulted ceilings with coffers or "waffles". Other remarks echo this characterization of the system as "a tourist

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[12] http://www.wmata.com/about/metrofacts.pdf
[13] Environmental and Historic Preservation Policies and Procedures

attraction in itself"[14] with features such as "high, vaulted concrete ceilings, indirect lighting, and wide, tiled platforms". I believe that the design of the WMATA system make it a wonderful environment since it provides a magnificent setting that dignifies the experience for transit riders. The architectural design of the station diverges from the transit station as solely infrastructure approach. While void of convenience retail or other ancillary uses, the beauty of its design, digital dwell time displays, air conditioned environment, and mobile telephone access make it convenient for riders as well as a civic space in its own right that connects well to the surrounding.

The WMATA has in addition to providing efficient mass transit services, focused on public/private Transit-Oriented Development (TOD) opportunities external to the stations with the goals of increasing revenues, ridership and assisting WMATA local jurisdictions to recapture part of their financial contributions. While ancillary uses are not permitted within the stations, through the TOD program in 1995, WMATA partnered with other organizations[15] and constructed a 6,000-square foot child care center in a freestanding building above the Shady Grove station[16]. Among the goals of the program are to generate revenue and complement transit stations by providing transit riders with "the opportunity to obtain goods and services near transit stations and offer active public spaces"[17]. In keeping with the spirit of this goal, WMATA will be collocating a second child care center adjacent to one of its stations. Together with the extension of the Blue Line to Largo Town Center[18] scheduled for operation in the winter of 2004, the new Morgan Boulevard station will feature a child care center.

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[14] world.nycsubway.org/us/washdc/overview.html
[15] State of Maryland, Montgomery County, and The Foundation for Working Families, Inc.
[16] http://www.wedgcoengineering.com/Shady%20Grove%20Kid%20Stop.HTM
[17] http://www.wmata.com/bus2bus/jd/jointdev.cfm
[18] http://world.nycsubway.org/us/washdc/overview.html#future

Elisa Hill did indicate, however, that the WMATA has managed to forward its revenue goal while providing additional convenience to riders through mobile phone access in the underground stations and tunnels, and a fully air-conditioned underground environment, both on the trains and in the stations. Much in the same way as people can converse on their mobile phones on the surface while driving, walking or waiting for a bus, DC Metro riders can still feel connected via telephone communications while riding the system. This convenience service may be equally or more convenient for many riders as convenience retail uses within the stations would be were they allowed.

Other areas of concern that were also echoed by the MBTA and NYC Transit authorities involved safety within the system and job creation. The WMATA's mission statement mentions the provision of a safe environment and the authority has strategically placed cameras throughout the stations in order to discourage crime and vandalism[19]. Regarding job creation, in December 2000, WMATA broke ground the New York Avenue in-fill station which, "is to be the centerpiece of an initiative to transform an area of abandoned warehouses into a high-tech urban center that will create new jobs for city residents."[20] It is scheduled for completion in late 2004.

In terms of future plans for the WMATA system, the visual impact of the system will improve on the surface level. The entrances of stations, almost all of which lack headhouses, are in the process of being furnished with attractive glass canopies. While the retrofit is being done in order to prevent mechanical problems with the escalators, the design of the canopies will complement the surrounding environs with an iconic landmark[21].

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[19] world.nycsubway.org/us/washdc/overview.html
[20] http://www.wmata.com/about/history.cfm
[21] From WMATA website: July 19, 2001: Metro Board approves design for canopies to be installed over outdoor escalators. The design was submitted by the firm of Lourie & Chenoweth/Houghton as part of a

It is important to note that the WMATA system functions somewhat as a hybrid system, somewhere between an intracity subway and a commuter rail system. While it may be a moot point to consider the viability of convenience retail within such a system since WMATA does not allow it, I wonder whether the hybrid nature would make for potentially successful uses due to the longer dwell times or whether the ridership or frequency would not support retail uses. This argument however does not preclude the viability of civic-oriented uses (such as the previously mentioned day care center) if they were to be considered by WMATA elsewhere in the system; even in the form of temporary kiosk installations that would complement the architecture of the station environment.

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design competition. It is a transparent arch reminiscent of the coffered arch design of the underground stations. The design will be installed at 46 locations over a period of three years starting in spring 2002.

2.2 Ideological Split: Mass Transit Stations Solely for Transit Purposes?

In order to elicit themes about the issues and opportunities involved with introducing ancillary uses within rapid transit stations, I interviewed nine practitioners who had been or are currently involved in initiatives that are influencing the inclusion of ancillary uses within these types os stations. The insight their interviews provided reflect a combination of their formative background and as well as current organizational function. Among them are: architects who either teach, run their own practice, or work for transit authorities; real estate developers and property managers embedded within transit authorities or under contract; and an artist tenant. Common to many of the interviews were an indication of an ideological split among some transit authority officials regarding ancillary uses, the concern for revenue generation, security concerns, benefits and complications of ancillary uses, renovation issues, and how transit authorities approach identifying and obtaining tenants.

An important theme mentioned in some of the interviews regards the appropriateness of ancillary uses in rapid mass transit stations. While the WMATA has taken a clear position on excluding such uses within their stations and NYC Transit aggressively includes ancillary uses within its high volume stations, the MBTA does so with some degree of internal dissent. Lorna Moritz and Barbara Boylan both mentioned in their interviews that there is an internal struggle within the MBTA between staff members who clearly subscribe to one of two "schools of thought", or have mixed feelings. There are staff and officials within the MBTA who believe that operating and maintaining the system is the only objective of the authority and consequently the inclusion of any uses or elements within the train stations that "interfere" with this objective are unnecessary. The other school of thought subscribes to the idea that mass transit agencies and riders can benefit

from the inclusion of non-transit uses within the stations. These arguments are made principally in terms of increasing revenue. For some officials, the decision to include ancillary uses is not clear.

The MBTA's current mission statement and goals do[22] not make any reference to the inclusion of ancillary uses. Given this, it is not difficult to understand why there are officials and personnel within the same organization who subscribe to two disparate schools of thought. This organizational tug-of-war can help explain in part the extent of the integration of ancillary uses within the system as well as the quality of those uses and the station environments. While some of the fixed spaces are aesthetically pleasant, others appear to be less so. Unlike the MBTA pushcarts, there is a lack of a uniform look in terms of materials and signage for the fixed spaces. It is recommended that in order to resolve this conflict, and improve the conditions of the existing ancillary uses, the transit authority take measures to reconcile the schools of thought starting with those who are in grey area towards ancillary uses.

As a first measure, transit authorities that do decide to include non-transit uses should make the goal clear to their staff and express it clearly in their mission statement. As a second measure, transit authorities should address the competing interests and concerns of proponents of ancillary uses and those who have operations, maintenance, and train efficiency concerns. This measure could summarize the concerns of both, validate both points of view, and indicate how the authority has reviewed and come to the conclusion and decision that both can be reconciled in order to further the interests of the authority as a whole. The final part of the measure could explain the criteria for the ancillary uses such as type, size, operational logistics, and locational requirements. As part of the this measure, the authority could draft how these criteria will meet

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[22] http://www.mbta.com/insidethet/pdf/2004-Budget_Book_section2.pdf

the objectives of the proponents and not interfere with operation of the trains and station; as well as offer recommended courses of action should an operational conflict arise.

The experience of a transit rider within a mass rapid transit station is heavily influenced by the competing interests of transit authority officials, the architects and real estate consultants/property managers they hire, and the goals of tenants. Transit authorities ultimately decide the extent of including ancillary uses within mass rapid transit stations as well as the purpose of the uses. Of paramount concern for transit authorities are efficient operational efficiency as well as revenue and ridership. However, transit authorities can opt for forwarding other goals, which may be of secondary importance from an organizational standpoint but, which can help in changing the nature of the interior spaces within stations and headhouses into a more pleasant and convenient space for riders. Whether they are deciding on the design of new infill or line extension stations, or on the major renovation of stations, transit authorities can either adopt a weaker or stronger position regarding ancillary uses.

Architects also play a role in shaping the interior spaces of mass transit stations. Staff architects within transit authorities can advocate from within and counterbalance the infrastructure and operations concerns of transportation and civil engineers in order to carve out a more hospitable dwelling environment for transit riders. In a different, more independent position are architects hired for the actual design of the stations. Free of the institutional constraints and politics with which staff architects have to contend, contract architects are free to suggest and advocate for innovation within the station design. Drawing from inspiration from their observations of ancillary uses in stations elsewhere, these architects can either plant a new seed in the minds of indifferent transit authorities or give greater "external" credence to what staff architects might have been already arguing for within the transit authority.

Once an authority has determined the extent to which it will include ancillary uses or services within its stations, and has determined with its architects the spatial constraints of the existing or new station, consultation with a real estate developer/property manager can ensure that the authority is aware of the market segments and demographics that characterize the station. It is important to understand how much ancillary space the station can support from its foot traffic, as well as the nature of the uses, and the floorplate and visibility issues that will ensure the uses are financially viable.

Another influential party in shaping the character of the interior spaces is the tenants themselves. Depending on the exigence of the transit authority, the fixed spaces and freestanding kiosks can be more aesthetically pleasant through the selection of materials, and color and graphic schemes. Less trivial in nature and of greater value to transit riders and the immediate community, is the nature of the ancillary uses. Determinants such as national chain retailer versus local small business, and revenue-generating versus non-profit/community uses can affect the character of the station environment. Depending on these deterinants the selected determinants can complement and reflect the cultural demographics of a station area, and create a more civic-oriented space through the inclusion of community uses, or create more commercially-oriented environment that addresses the daily convenience needs of transit riders versus tourists.

2.2.1 Ancillary Uses Concerns

2.2.1.1 Efficiency & Operational Burden Concerns

The opposition to ancillary uses among MBTA staff is predicated on arguments centered around efficiency, operational burden, safety, pest control, and cleaning costs. Based on anecdotal evidence from the interviewees, opponents expressed that mass rapid transit systems are infrastructure systems meant to provide mobility to riders. As such, any modifications to the form and function of the transit stations that does not contribute to a faster, easier and more efficient running of the trains does not belong in the transit station. This concern with efficiency pertains to both to the rapidness of the trains arriving and departing stations as well as the expedient disembarking of transit riders onto the platform and out of the station along the pedestrian leg of the trip.

Other logistical problems with ancillary retail uses pertain to MBTA staff maintaining the station environment clean and preventing conflicts between transit riders and vendor operations. Barbara Boylan indicated that reducing MBTA cleaning costs is a significant part of the argument of those in operations who opposes ancillary uses. The problem of cleaning costs and station cleanliness is aggravated with "unclean" retail as some refer to it within the MBTA. Unclean retail refers to the vending of snacks and preparation of food in stations. The argument against food retail is made based on pest control concerns, associated cleaning costs, and improper trash removal procedures. The first argument made is that by excluding food vending within stations, the potential for pest infestation will be minimized. The public health concerns and pest extermination costs are understandable and as any transit rider who has seen vermin within stations can attest to, certainly makes for an undesirable environment. Given the importance of

revenue for a cash-strapped transit authority, arguments pertaining to additional costs gain attention; although it is unclear just how much of the MBTA's cleaning costs are directly caused by the presence of food vendors.

Irrespective of whether the ancillary uses vend food or not, many in operations are also concerned with the timely removal of trash. Due to the lack of dumpsters within underground stations, trash needs to be removed throughout the day as it accumulates. Given the marginal profit nature of some of the tenants' businesses, tenants are reluctant to temporarily shut down operations for brief periods throughout the day in order to dispose of trash on the street level, and often bend the rules. Their concerns stem from potentially losing business during the brief periods of trash removal. This problem only aggravates the littering that some transit riders commit and further instigates the point of contention for opponents of ancillary uses. Barbara Boylan added that trash removal stipulations seems to be a frequent oversight in many MBTA contracts with food vendors.

Another complaint mentioned more than once in the interviews regarded the delivery of goods to tenants. Deliveries are supposed to take place during non-peak revenue periods with prior arrangement and are to be brought into the station via the elevators. Based on the interviews, it seems that does not always occur and conflict arises with MBTA station personnel when transit riders are inconvenienced during rush hour by deliverymen obstructing the escalators.

Lastly regarding efficiency, Barbara Boylan expressed that the MBTA views station design proposals from a strong operations perspective where trains come first with an emphasis on ease of train and station operation. The inclusion of any freestanding elements such as kiosks/pushcarts, newspaper vendors, and displays potentially interferes with this objective due to queuing of buyers or patrons, which could stop a clear flow of transit riders from moving about.

2.2.1.2 Security Concerns: Queuing & Sightlines

These efficiency and operations concerns also dovetail with maintaining the station as a secure environment. Lorna Moritz explained that in general terms the MBTA views vendors as a potential security problem. The primary reason given for security concerns pertains to the blocking of sight lines used by on-site inspectors and surveillance cameras due to the queues that form at vendor kiosks and pushcarts. In addition to the inspectors, attendants in fare booths that are in close proximity to the platform need clear sight lines of the platform as well. It is argued that even if the placement of freestanding booths and kiosks does not block these sight lines, the queues formed and the gathering of people around them can potentially block these sight lines. For this reason, locating pushcarts on the station platform is generally discouraged but considered for more open areas such as station lobbies.

As previously mentioned, the MBTA Secure Stations Initiative Taskforce was created to address security concerns that arose after the September 11, 2001 terrorist attacks in the United States. The Taskforce reviews the placement of existing and proposed pushcarts, and determines whether the pushcarts obstruct the sightlines of surveillance cameras and on-site station operators. Barbara Boylan explained that there are several sightlines the MBTA wishes to maintain clear for fare booth attendants and on-site station operators such as along the platform, from the fare booth throughout the lobby and beyond the turnstiles, and from the platform into the tunnels for seeing train arrivals and departures. The existence and function of the Taskforce bolsters the influence of ancillary-use opponents in determining the nature and location of a use in the event they fail to defeat the introduction of a new ancillary use within a given station. As a result of the creation of the MBTA Secure Stations Initiative Taskforce, some of the pushcart vendor locations were not allowed for

rebidding in order to free up sightlines, stop queuing, and ensure a better pedestrian flow in the event of an emergency.

The need for the Taskforce may change in the near future with the implementation of automated fare collection. Lorna Moritz mentioned that automated fare vending will free up personnel at stations for customer service functions, reduce the number of people jumping the turnstiles, and result in larger agency revenues. This argument is predicated on the fact that those MBTA attendants in the fare booths are planned to be used as customer care representatives that will patrol the pre- and post-fare areas, offering assistance to whomever may request it. The arguments pertaining to maintaining clear sight lines becomes less salient with these mobile attendants.

2.2.2 Benefits of Ancillary Uses

On the other side of the argument are the proponents of ancillary uses within mass rapid transit stations. It is worth mentioning that while the interviewees themselves were not opposed to ancillary uses, many brought up and seemed to understand some of the concerns and the level of consequent maintenance. It is worth mentioning that the proponent/opponent tug-of-war mentioned within the MBTA seems to be less present in other transit authorities. The benefits stated by the interviewees included increased safety, revenue generation and job creation, and an enhanced station environment.

2.2.2.3 "Eyes & Ears" on the Platform: Enhanced Safety Through Vendor Presence

Interestingly enough, proponents and opponents alike use station safety arguments to bolster their respective positions. Proponents counter opposing views by stating that tenants have a vested

interest in protecting their businesses, and observing suspicious activity within stations becomes second nature for them. What the interviewees expressed was that these vendors become additional "eyes and ears" on the platform and assist transit station personnel in discouraging criminal and other ill-intentioned activities (vandalism, potential terrorism, *et cetera*) within the station. Kenneth Williams, an architect in private practice, explained that the reason he decided to propose a retail element within a Los Angeles rapid transit station was to provide activity along a long concourse and make the space feel safer. Others echoed a similar rationale including Matthew McElroy, emphasized NYC Transit's position that the presence of merchants creates a heightened sense of security for its customers through the generation of activity.

2.2.2.4 Revenue Generation & Job Creation

One of the primary reasons given for including ancillary uses regards revenue generation[23]. In addition to measures taken by transit authorities to increase fare revenues such as automated fare collection, the leasing of ancillary uses for retail uses assists the authorities in off-setting their costs. While there are actual limitations to the amount of revenue a transit authority can generate from ancillary retail leases due to the ridership volumes and market segments present around individual stations, an authority with an internal struggle such as the MBTA may not be able to maximize the potential until all the authority sends a clear message to its members that ancillary uses have a place within stations and all initiatives work together to forward the authority's non-fare revenue generation goal.

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[23] Farebox revenues in 2001 covered about 22% of the Authority's total expenses. Source: http://www.mbta.com/insidethet/taag_history11.asp

Job creation was a related theme mentioned in some of the interviews. Three transit authority-affiliated interviewees mentioned that ancillary uses, particularly revenue-generating uses, can also create local jobs notwithstanding that these authorities are not primarily in this business. The MBTA in particular had conceived of the lesser retail uses operating out of pushcarts as "incubator space" for fostering entrepreneurship and small business ventures. Job creation goals were also cited by WMATA, NYC MTA and LTD interviewees. While the WMATA job creation goals are one of the authority's primary goals, it takes place external to the stations. The NYC MTA, and LTD authorities however seek to further job creation as a goal that is subordinate to the inclusion of revenue-generating ancillary uses within stations.

2.2.2.5 Civic Space & Uses

An important theme throughout many of the interviews was that of the potential for creating civic spaces that catered to the immediate neighborhood, riders and community at large. Throughout various of the interviews, there were allusions to creating activity and enhancing the station and immediate area. Some of the interviewees referred to creating community life, using spaces for community outreach, and iconic headhouses to complement the neighborhood by serving as landmarks. It is important to note that not all of the envisioned uses are revenue generating in nature, and that the vision of transforming transit station infrastructure into civic space (beyond merely public in nature with no sense of social ecology or life) included both revenue and non-revenue generating uses. A noteworthy community use that might have been ruled out as implausible were it not for the existence of one empirical occurrence is that of an artists gallery within a mass rapid transit station. By virtue of the highly visible and accessible nature of a mass transit system, a station can make a seemingly elitist use such as an artist gallery more welcoming

and public in nature to the extent of becoming an asset to a neighboring public high school's curriculum.

The director of the gallery, James Hull, expressed that the gallery has become part of the community and serves a general resource for the neighborhood. Gallery staff have helped transit riders, visitors along the Southwest Corridor Park, and neighboring residents alike by doing such things as calling ambulances and the police for them when needed, providing directions, serving as a cultural concierge to the area restaurants. He added that MBTA staff in the fare booth could not be bothered with addressing such concerns for riders.

In terms of a station ancillary use, the art gallery feels like a civic space that, unlike the galleries housed in brownstone buildings along Newbury Street, welcomes visitors of all socio-economic classes. James Hull mentioned that while some people accidentally stumble into the gallery in search of the platform, many linger since the gallery does not have an "air of exclusivity" and is inviting. The location of the gallery in a station was advantageous in creating a memorable experience through the unusual juxtaposition of the gallery use within a transit station. The goal of the gallery was to use it, in addition to selling art, as outreach space in order to efficiently broaden their audience by providing an introduction to art as well as the social, cultural and educational activities of the gallery. The space serves as both a destination for artists and a respite for others where unexpected culturally edifying experiences can be had by all as well as opportunities for personal reflection.

2.2.2.6 Transit Rider Convenience

More pragmatic in nature than the potential for creating civic-oriented space, is the inclusion of convenience uses for rider convenience – revenue-generating or not. The arguments made for providing convenience to transit riders are based on making the experience more pleasant as a whole, minimizing the perceived dwell time in transfer stations, and as mentioned by one of the architects who were interviewed, providing "airport style convenience"[24]. Depending on the nature of the use, this convenience can be quite significant if one ponders for example a use such as a day care center or a dry cleaner. Even seemingly lesser, "more trivial", uses such as snack carts and newsstands can afford convenience to transit riders during inclement weather.

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[24] As mentioned in the interview with Kenneth Williams

3 COMPARATIVE ANALYSIS

As part of my interest in understanding how mass rapid transit stations are being and can be further improved through the inclusion of ancillary uses, I looked at the policy of the MBTA and other transit authorities for context, the existing types of ancillary uses throughout the system, the differences between the four MBTA rapid transit lines, and the location of various types of ancillary uses within certain types of stations. The purpose of my examination of the types and distribution of the existing uses within the MBTA system is to understand the range of existing uses afforded to transit riders, how the uses affect the station environment[25], and which uses are particularly beneficial to transit authorities and riders alike as well as which uses require additional operations considerations.

3.1 SYSTEM LEVEL

The MBTA system is the fourth largest mass transit system in the United States and serves a population of 2.6 million in 175 municipalities. At the core of the MBTA system are its mass rapid transit lines[26], which accounted for over half of the entire system's 1.2 million average daily boardings in 2002[27]. There are three heavy rail, mass rapid transit lines (Red, Orange, and Blue lines), and a light rail, central subway line that furcates at one end into three surface branches and eventually surfaces at the other end (Green B, C, D, and Lechmere lines). The Green and Red lines each account for a third of the average daily rapid transit boardings, the Orange Line carries a quarter of the boardings, and the Blue Line accounts for approximately a tenth of the boardings.

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[25] Whether comprised of surface station headhouses, underground stations, or below-grade exposed stations
[26] Excluding the Silver Line BRT surface route
[27] Source: http://www.mbta.com/insidethet/taag_ridership.asp. Figures exclude the Silver Line surface BRT route

3.1.1 Policy

The policy stance of the MBTA is ambivalent with regards to the inclusion of ancillary uses. Despite concerns from within the MBTA about jeopardizing the operations of the system, the MBTA has ancillary uses widely dispersed throughout many of its rapid transit stations. An awkward friction exists between two divergent views. The first view involves including ancillary spaces and expecting the benefits of revenue and enhanced safety, which is counteracted by the competing interest of the second view of operations personnel to reduce maintenance and facilitate the flow of patrons. The context of the MBTA's stance lies in the middle of a spectrum that has NYC Transit on one end aggressively pursuing revenue-generating opportunities within its stations with annual revenues over 100 times (on the order of $144 million) that of the MBTA's, and WMATA which has opted not to compromise the aesthetic sensibility of the interiors of its stations.

NYC Transit's approach has been to generate substantial amounts of revenue by focusing its efforts on larger fixed retail uses within its more high volume stations. This approach seems to be working but I wonder whether other community and station security enhancement goals could be better served if NYC Transit were to increase the emphasis it places on alternative uses that would benefit more disadvantaged neighborhoods such as the community uses found along the MBTA Orange Line or even by providing the convenience of more pushcart locations in lesser volume stations in these neighborhoods. This increase in ancillary uses in these types of neighborhoods does not need to be mutually exclusive to the NYC Transit's goal of revenue generation, and could only increase – albeit marginally compared to the larger retail spaces it leases within busier stations. While the population and transit ridership of New York City and Boston are not comparable, it is the approach of the transit authority that I am interested in, and along that line

the MBTA has struck a balance through its fixed space and pushcart concessions programs, as well as its revenue generation and community enhancement goals.

WMATA, on the other hand, has a clearly established policy of not allowing ancillary uses within its rapid transit stations. It has separated its revenue generation initiatives from its rider security and convenience efforts. While its transit-oriented development program enhances the area adjacent to stations, WMATA efforts at serving transit riders is limited to two main areas of rider convenience: climate comfort and mobile phone communications. The fact that the entire system is air conditioned is of extreme comfort to riders particularly in the summer months of the year. Of greater convenience year-round is the ability to stay connected while traveling on the train for personal and business phone calls. This convenience, however, is limited to customers of Verizon Wireless and the limitation of customers with other providers was a compromise in order presumably obtain a more profitable contract for WMATA through exclusive placement of one provider's wireless transmitters within its underground transit system. This an area that the MBTA could improve in terms of providing consistent wireless phone service to its transit riders.

Overall, the MBTA has done well with balancing revenue-generation and community interests. One of the goals of the pushcart program was to have viable pushcart locations on a permanent basis in certain stations that would also have a double role as "incubator space" for promoting small business entrepreneurship. While many of the pushcart locations have been very successful, such as the ones at the Back Bay / South End station which Kenneth Kruckemeyer indicated have been operating since the station opened in 1987, Lorna Moritz of TRA indicated that very few of the pushcart owners have left their pushcart businesses for other business ventures. This could be interpreted as a success for the vendors who must be doing well at their locations and a well-

intended miscalculation on part of the MBTA with regards to the aspirations of some of the pushcart vendors.

The current limitations and conditions placed on vendor locations that are demanded by ancillary use opponents involved with operations could be limiting the benefits of having more ancillary uses in place throughout its system. Their efforts could also result in the preclusion of considering new uses not present within the MBTA which they may be objecting based on presumptions of security comprise or maintenance costs. The MBTA would benefit from demonstrating to operations personnel how security compromises within stations could be avoided through criteria for the placement and selection of uses. Pertaining to cleaning costs and procedures, it appears that based on some of the interviews conducted, clearly defining trash removal procedures within the contracts of the vendors can begin to lower the MBTA's cleaning costs and address pest control concerns, particularly with food vendors.

3.1.2 Existing Ancillary Uses within MBTA Mass Rapid Transit Stations

I am interested in the stations along these mass rapid transit lines whose infrastructure provide substantial[28] shelter to transit riders. By substantial, I am referring to the ability of the station to shelter all or most of the transit riders from the natural elements, particularly rain and snow. These stations can either be comprised of headhouses[29] for stations that are entirely at grade[30] (e.g., Lechmere), underground stations and their surface headhouses (e.g., Harvard), or stations that are below grade and partially sheltered by a headhouse (e.g., Green Street).

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[28] Merriam-Webster Online definition: **5** : being largely but not wholly that which is specified; The Silver Line BRT shelters are not substantial enough to house ancillary uses and are more similar to regular bus shelters in their size and exposure to the natural elements.

[29] The main building and entrance of a mass rapid transit station that is seen by entering riders and protrudes from the surface of streets and sidewalks.

[30] At grade: on the same level; -- said of the crossing of a railroad with another railroad or a highway, when they are on the same level at the point of crossing. Source: http://dictionary.reference.com; : a crossing of highways, railroad tracks, or pedestrian walks or combinations of these on the same level Source: Merriam-Webster

Figure 1: Location of MBTA Rapid Transit Stations with Ancillary Uses
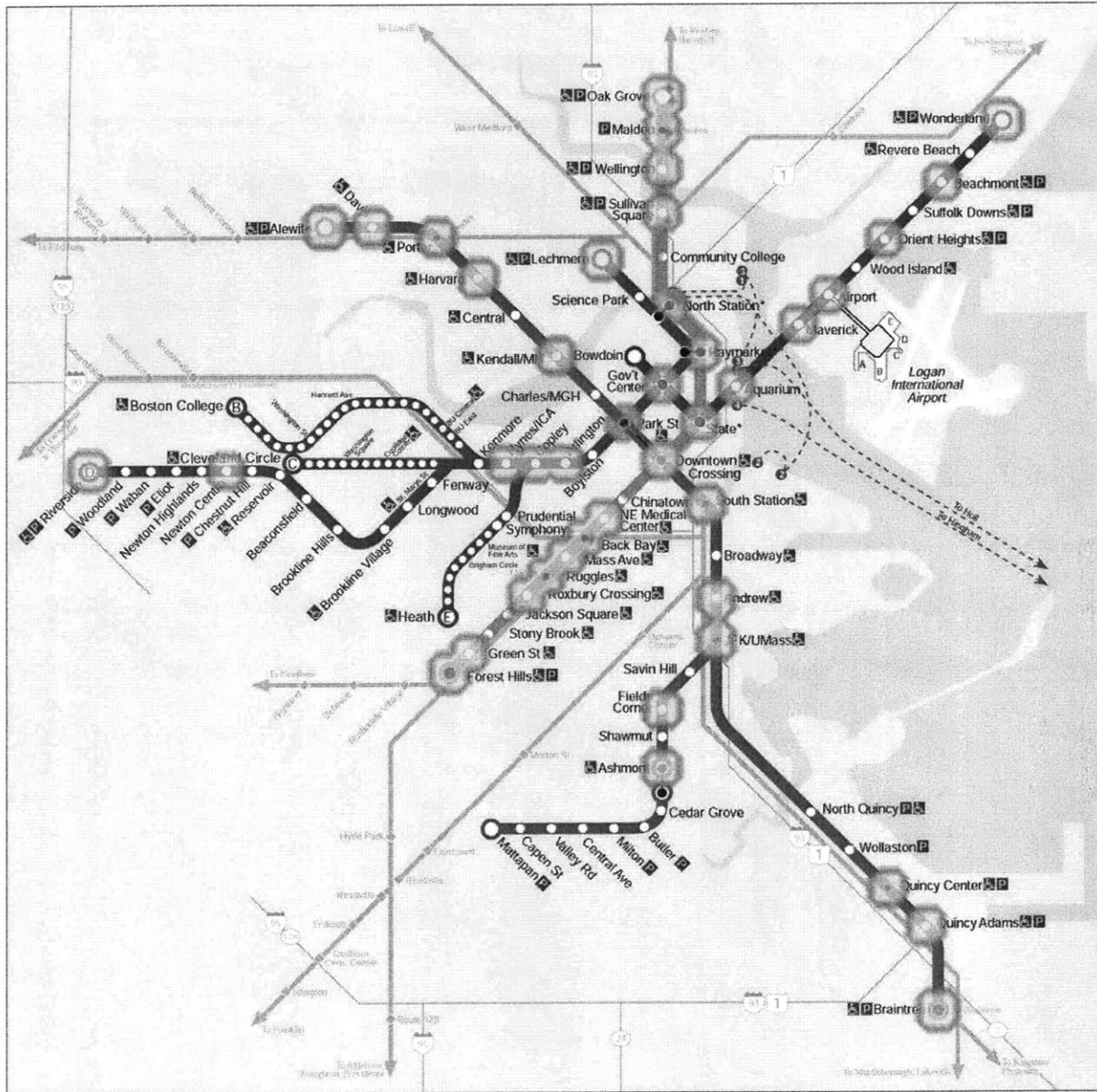
Airport	Davis	Kendall	Porter
Alewife	Downtown Crossing	Lechmere	Quincy Adams
Andrew	Fields Corner	Malden	Quincy Center
Aquarium	Forest Hills	Mass Ave.	Roxbury Crossing
Arlington	Government Center	Maverick	Ruggles
Ashmont	Green St.	NEMC	South Station
Back Bay/South End	Harvard	North Station	State St.
Beachmont	Haymarket	Oak Grove	Sullivan Sq.
Braintree	Hynes/ICA	Orient Heights	Wellington
Copley	JFK	Park Street	Wonderland

Figure 2: Ancillary Uses within MBTA Rapid Transit Stations

ANCILLARY USES WITHIN MBTA RAPID TRANSIT STATIONS

Shoe Repair, 1%

Fruit / Vegetable Stand, 1%

Day Care, 1%

Restaurant, 1%

Newsstand, 8%

ATM, 5%

Florist, 8%

Dry Cleaners, 1%

Community, 5%

Gift Shop, 3%

Books, 1%

Trolley Tours, 1%

General Convenience / Pushcart, 34%

Fast Food / Snacks / Coffee, 30%
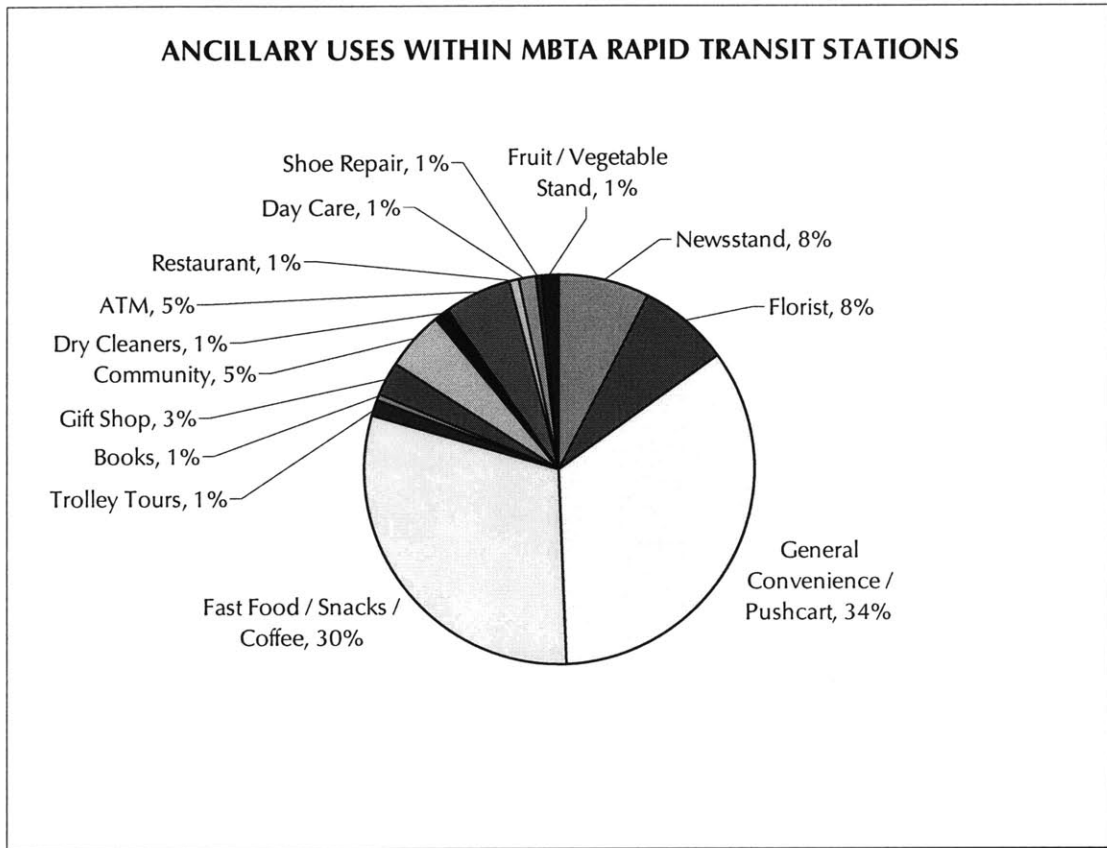
Approximately a third of the MBTA system's 131 mass rapid transit stations have some type of ancillary use. Of these stations with ancillary uses, 80% of the uses are along two of the heavy rail lines. Approximately a third of the uses system-wide are general convenience retail, and nearly another third of the uses are for the sale of fast food, snacks, and coffee. Two other uses – florists and newsstands – each constituted 8% each of the system-wide uses. The remainder of the uses included fruit and vegetable stands, dry cleaners, shoe repair, a day care, a restaurant, automated teller machines, book sales, gift shops, trolley tour sales, and community-oriented uses.

Figure 3: Types of Ancillary Uses by Station Line

Type of Ancillary Use	Red	Orange	Green	Blue
Newsstand	11%	2%	10%	15%
Florist	7%	9%	10%	0%
General Convenience / Pushcart	46%	17%	35%	54%
Fast Food / Snacks / Coffee	18%	38%	40%	31%
Trolley Tours	2%	2%	0%	0%
Books	2%	0%	0%	0%
Gift Shop	2%	5%	0%	0%
Community	4%	9%	0%	0%
Dry Cleaners	2%	2%	0%	0%
ATM	2%	10%	5%	0%
Restaurant	2%	0%	0%	0%
Day Care	2%	2%	0%	0%
Shoe Repair	0%	2%	0%	0%
Fruit / Vegetable Stand	2%	3%	0%	0%
Totals by MBTA Line	100%	100%	100%	100%

In terms of convenience, all of the uses provide some level of utility for transit riders and even nearby community members. While most of the uses are for profit, the community-oriented uses within the stations are particularly interesting due to their potential for transforming some of the station infrastructure areas into civic spaces. The MBTA Orange Line has most of the community-oriented uses within the system. The more interesting community-oriented uses include: a contemporary art gallery within the Green Street station; an employment assistance center and a university architectural studio space at the Ruggles station; and a day care facility at the Roxbury Crossing station.

These types of uses can afford the MBTA and other transit authorities the opportunity to generate revenue through the leasing of the spaces while improving the public nature of the stations with civic-minded uses. Transit riders and the community at large benefit from the convenience of easily accessing these services while traveling to and from the stations. These uses have the

potential to establish a social or human ecology[31] by intersecting nearby residents, transit riders, and staff of these organizations, and "anchoring" them within the spaces of the station in a kind of common ground.

Surprisingly, a strong correlation between rapid transit stations and the presence or number of ancillary uses does not exist within the MBTA system based on the 1997 daily boarding and alightings counts provided by the Boston Metropolitan Planning Organization's (MPO) Central Transportation Planning Staff (CTPS).   Stations with ancillary uses had a wide range of boarding and alighting counts ranging from 4,000 at Beachmont to 150,000 at Park Street. Figures 3 and 4 suggest that stations with higher volumes do not have more ancillary uses within them. Among the reasons that might explain this are stations too constrained to be able to physically accommodate uses, and the influence of demanding communities neighboring certain stations.

Figure 4: Correlation Between Boardings & Alightings, & Number of Ancillary Uses in Stations with Uses

Correlation Between MBTA Boardings & Alightings, & Number of Ancillary Uses in Stations with Such Uses

$R^2 = 0.044$

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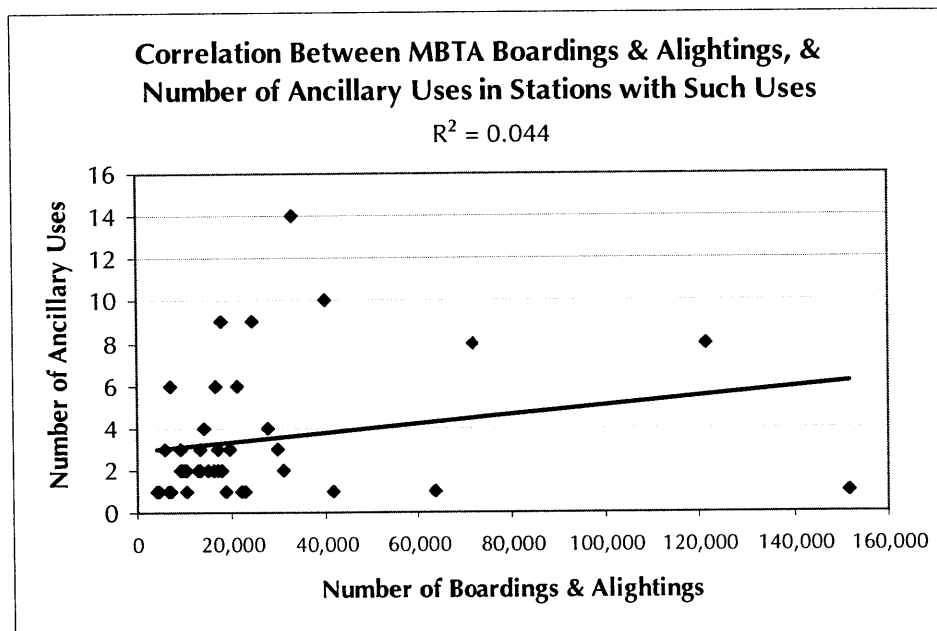
[31] The branch of sociology that is concerned with studying the relationships between human groups and their physical and social environments. Also called human ecology. Source: http://dictionary.reference.com/ ; Also 1 : a branch of sociology dealing especially with the spatial and temporal interrelationships between humans and their economic, social, and political organization Source: http://www.m-w.com

Figure 5: Correlation between Number of Boardings & Alightings, & Number of Ancillary Uses in Stations Including Those Without Such Uses

Correlation between Number of Boardings & Alightings, & Number of Ancillary Uses in Stations Including Those Without Such Uses

$R^2 = 0.117$

(scatter plot: X-axis "Boardings & Alightings" ranging 0 to 160,000; Y-axis "Number of Ancillary Uses" ranging 0 to 16)
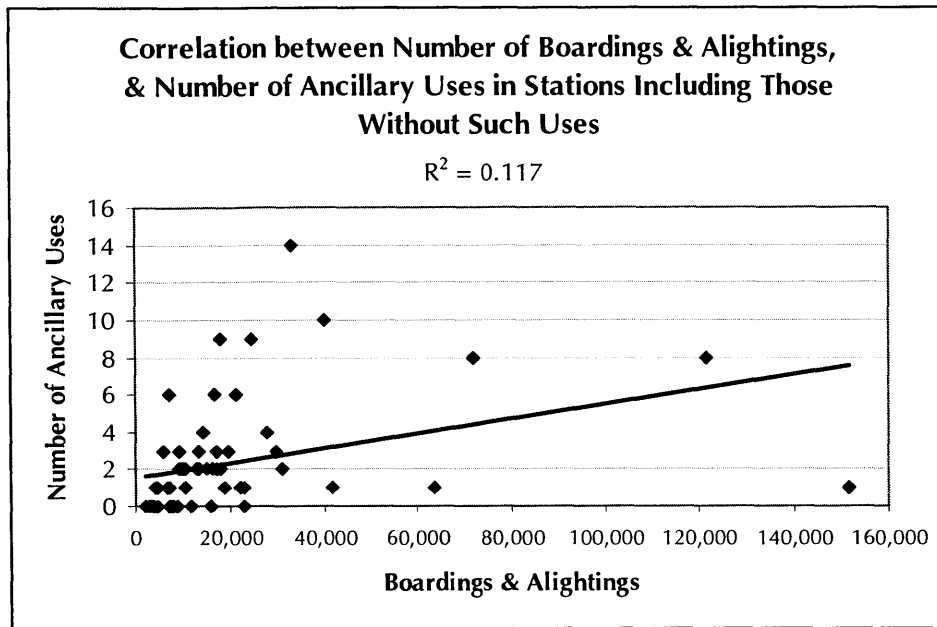
There are stations that, despite having high ridership activity, are too physically constrained to either house fixed spaces or even pushcart locations. Examples of these stations are Park Street, State Street, Kendall/MIT and Central which while having some of the highest boardings and alightings within the system, have only one ancillary use. In the case of Kendall/MIT the one ancillary use is actually located outside the station in front of the headhouse, and in the case of Central, the station does not have any ancillary uses despite there being 28 stations with less rider activity that have at least one ancillary use.

Some stations with lower rider volumes may have ancillary uses thanks to influential institutions that have taken an interest in anchoring the community at the station and enhancing the image of the community by investing itself in the station. Examples of this are the Green Street and Ruggles stations where institutions such as the Gallery at Green Street and Northeastern University are currently leasing space.

Also, influential institutions and communities may be influencing a larger number of ancillary uses within a station. Examples of this are the Harvard, Back Bay/South End, and Forest Hills stations which have considerable numbers of riders, and seem to have more ancillary uses than stations with higher boardings and alightings, such as the State and Park Street stations. In the case of the Harvard station, perhaps Harvard University has taken an interest in providing an enhanced rapid transit station environment to tourists and regular transit riders alike. In the case of the Back Bay/South End station, the members of the Southwest Corridor community played an important role decades earlier in demanding public benefits inside and outside of the transit stations. While the station has comparable or less rider activity than the Braintree, North Station, State and Park stations, it has 14 uses while the other four stations have a combined total of 7. Similar to the Back Bay/South End station, the Forest Hills station accounts for a larger share of ancillary uses with a total of 9 while the Copley, Braintree and North stations all have greater volumes while collectively having the same number of ancillary uses as the Forest Hills station.

In terms of transit station function, the number of ancillary uses system-wide seemed to be distributed relatively evenly among the different types of stations. Non-transfer stations (stations along a rapid transit line and not being a terminus or facilitating a connection to another mass transit service) had a quarter of the ancillary uses compared to transfer stations. Along the same lines, terminus stations and stations offering commuter rail service (excluding those at terminus stations) had approximately a fifth and approximately a quarter of the system-wide uses respectively. Additionally, I looked at stations without ancillary uses in order to discern whether there were any patterns or reasons for the lack of ancillary uses. These stations looked at excluded the B, C, D & E lines for which no CTPS boarding and alighting counts were available, as well as stations without a substantial headhouse or station area to shelter potential ancillary uses. Two of the stations caught my attention for having greater rider activity than 18 stations that do

have some type of ancillary use within them yet not having single use despite having sufficient riders to in theory be able to support an ancillary use. These two stations were Central and Kenmore. Both of these stations are physically constrained and could at best awkwardly accommodate a pushcart along the platforms. With regards to the function of these stations without ancillary uses, all but one were non-transfer stations, suggesting that despite the fact that many non-transfer stations with uses do exist, it might be more difficult to support them at non-transfer stations with low ridership.

Regarding the location of uses within stations, with the exceptions of Lechmere, Riverside and Newton Centre, none of the other surface stations have ancillary uses due to the lack of an actual station and headhouse. The Lechmere and Riverside surface stations actually have an adjoining bus terminal and overhead shelter that in addition to protecting riders from rain, sun and snow, do house pushcarts and a snack stand. The Newton Centre station actually has an old station building that the MBTA leases for office space. All the other ancillary uses identified within MBTA rapid transit stations are found in underground stations predominantly in the pre-fare lobby areas with some housed in street level headhouses, and a few on the post-fare platform areas. I believe that ancillary uses within street level headhouses are at an advantage since they enjoy street-level visibility and the ability to capture passersby as well as transit riders. Whenever possible, station headhouses should be made large and transparent enough to house street level ancillary uses for riders entering the station. As an example, with the necessary surface rights, the Porter Square station headhouse could be expanded to include part or most of the area of the hardscaped plaza that surrounds it. This could increase the volume of the headhouse to provide an actual shelter for the adjoining bus stop on Massachusetts Avenue and an enclosed and warmer respite for passersby and transit riders, as well as an opportunity for additional pushcarts vendors in addition to the florist that exists there.

Within the 22 stations rapid transit stations that facilitate a transfer between modes[32], 77% of the stations had the ancillary uses placed within them in a manner that allowed transit riders to access the ancillary uses without having to pay an additional fare.

Figure 6: MBTA Rapid Transit Stations with Ancillary Uses Sorted by Boardings & Alightings[33]

MBTA Rapid Transit Stations with Ancillary Uses Sorted by Boardings & Alightings

Station	Attribute	Boardings & Alightings	No. of Uses	News Stand	Florist	Gen. Conv./ Push Cart	Fast Food/ Snacks/ Coffee	Trolley Tours	Books	Gift Shop	Com-munity	Dry Clean	ATM	Rest-aurant	Day Care	Shoe Shine	Fruit/ Veg. Stand
Park Street	Transfer	151,882	1							1							
Downtown Crossing	Transfer	121,379	8			2	3			1	1						1
Government Center	Transfer	71,870	8	2	1	3	2										
State St.	Transfer	63,554	1				1										
South Station	Transfer/Commuter	41,884	1		1												
Harvard	Transfer/BusTerminal	39,925	10		1	4	2		1					1			1
BackBay/SE	Transfer/Commuter	33,188	14		1	3	6						1	2			1
Braintree	Terminal/Commuter	31,087	2	1			1										
North Station	Transfer/Commuter	29,793	3		1		1				1						
Copley	Transfer	27,678	4			1	3										
Forest Hills	Terminal/Commuter	24,557	9	1	1	1	4						1				1
Haymarket	Transfer	22,889	1					1									
Kendall	Non-Transfer	22,087	1					1									
Ashmont	Terminal/Trolley	21,213	6	1		2	2				1						
Arlington	Non-Transfer	19,514	3		1	1	1										
Malden	Transfer/Commuter	18,450	1			1											
Davis	Non-Transfer	17,964	2		1		1										
Alewife	Terminal	17,737	9	2	1	1	1						1	1	1	1	
Hynes/ICA	Non-Transfer	17,156	3				1							1		1	
Sullivan Sq.	Non-Transfer	16,884	2			1	1										
Ruggles	Transfer/Commuter	16,357	6			1	2					2		1			
Maverick	Non-Transfer	16,217	2				2										
JFK	Transfer/Commuter	14,937	2				2										
Porter	Transfer/Commuter	14,093	4	1	1	1	1										
Wellington	Non-Transfer	13,383	3		1		2										
Quincy Center	Non-Transfer	13,357	2	1		1											
NEMC	Non-Transfer	12,802	2				2										
Wonderland	Terminal	10,467	1				1										
Mass Ave.	Non-Transfer	10,434	2				1						1				
Lechmere	Terminal/Bus Terminal	10,093	2				2										
Fields Corner	Non-Transfer	9,688	2				2										
Oak Grove	Terminal	9,065	2		1		1										
Airport	Transfer	9,028	3	1			2										
Orient Heights	Non-Transfer	7,168	1				1										
Roxbury Crossing	Non-Transfer	7,070	6				1				1	2		1	1		
Green St.	Non-Transfer	6,410	1									1					
Aquarium	Non-Transfer	5,696	3			3											
Quincy Adams	Non-Transfer	4,636	1			1											
Andrew	Non-Transfer	4,635	1										1				
Beachmont	Non-Transfer	4,121	1				1										
Totals		1,010,348	136	10	12	38	42	2	1	5	7	2	9	1	2	2	3

[32] I define the transfer station as one that facilitates a transfer between rapid transit lines (heavy and/or light rail), between rapid transit lines and on-site bus terminals, and between rapid transit lines and commuter rail service. Between rapid transit lines, the transfer occurs within the same fare zone whereas this is not the case between rapid transit lines and buses and commuter-oriented services or facilities.

[33] Boardings and alightings include boardings and alightings for both rapid transit lines at transfer stations but exclude commuter rail boardings and alightings

Figure 7: MBTA Rapid Transit Stations with Ancillary Uses Sorted by Station Attribute[34]

MBTA Rapid Transit Stations with Ancillary Uses Sorted by Attribute

Station	Attribute	Boardings & Alightings	No. of Uses	News Stand	Florist	Gen. Conv./ Push Cart	Fast Food/ Snacks/ Coffee	Trolley Tours	Books	Gift Shop	Com-munity	Dry Clean	ATM	Rest-aurant	Day Care	Shoe Shine	Fruit/ Veg. Stand
Kendall	Non-Transfer	22,087	1					1									
Arlington	Non-Transfer	19,514	3		1	1	1										
Davis	Non-Transfer	17,964	2		1		1										
Hynes/ICA	Non-Transfer	17,156	3			1							1			1	
Sullivan Sq.	Non-Transfer	16,884	2			1	1										
Maverick	Non-Transfer	16,217	2			2											
Wellington	Non-Transfer	13,383	3		1		2										
Quincy Center	Non-Transfer	13,357	2	1		1											
NEMC	Non-Transfer	12,802	2			2											
Mass Ave.	Non-Transfer	10,434	2				1						1				
Fields Corner	Non-Transfer	9,688	2			2											
Orient Heights	Non-Transfer	7,168	1				1										
Roxbury Crossing	Non-Transfer	7,070	6				1			1	2		1		1		
Green St.	Non-Transfer	6,410	1								1						
Aquarium	Non-Transfer	5,696	3			3											
Quincy Adams	Non-Transfer	4,636	1			1											
Andrew	Non-Transfer	4,635	1							1							
Beachmont	Non-Transfer	4,121	1				1										
Alewife	Terminal	17,737	9	2	1	1	1						1	1	1	1	
Wonderland	Terminal	10,467	1				1										
Oak Grove	Terminal	9,065	2		1		1										
Lechmere	Terminal/BusTerminal	10,093	2				2										
Braintree	Terminal/Commuter	31,087	2	1			1										
Forest Hills	Terminal/Commuter	24,557	9	1	1	1	4						1				1
Ashmont	Terminal/Trolley	21,213	6	1		2	2				1						
Park Street	Transfer	151,882	1							1							
Government Center	Transfer	71,870	8	2	1	3	2										
State St.	Transfer	63,554	1				1										
Copley	Transfer	27,678	4			1	3										
Haymarket	Transfer	22,889	1					1									
Airport	Transfer	9,028	3	1		2											
Downtown Crossing	Transfer	121,379	8			2	3			1	1					1	
Harvard	Transfer/BusTerminal	39,925	10		1	4	2		1					1			1
South Station	Transfer/Commuter	41,884	1		1												
BackBay/SE	Transfer/Commuter	33,188	14		1	3	6						1	2			1
North Station	Transfer/Commuter	29,793	3		1		1			1							
Malden	Transfer/Commuter	18,450	1			1											
Ruggles	Transfer/Commuter	16,357	6			1	2				2			1			
JFK	Transfer/Commuter	14,937	2			2											
Porter	Transfer/Commuter	14,093	4	1	1	1	1										
Totals		1,010,348	136	10	12	38	42	2	1	5	7	2	9	1	2	2	3

[34] I define transfer station as one that facilitates a transfer between rapid transit lines (heavy and/or light rail), between rapid transit lines and on-site bus terminals, and between rapid transit lines and commuter rail or park-and-ride facilities. Terminals are stations at the end of the line that do not have a commuter function and rely on walk-in neighborhood riders. Non-transfer stations are stations that do not have a significant on-site bus terminal and do not facilitate connections to another rapid transit line or commuter service.

Figure 8: MBTA Stations without Ancillary Uses Sorted by Boardings & Alightings

MBTA Rapid Transit Stations without Ancillary Uses Sorted by Boardings & Alightings		
Station	Attribute	Boardings & Alightings
Central	Non-Transfer	22,829
MGH	Non-Transfer	15,761
Kenmore	Transfer	15,586
North Quincy	Non-Transfer	11,504
Boylston	Non-Transfer	11,372
Jackson Sq.	Non-Transfer	8,553
Broadway	Non-Transfer	8,030
Chinatown	Non-Transfer	7,831
Wollaston	Non-Transfer	7,533
Community College	Non-Transfer	7,158
Stony Brook	Non-Transfer	4,553
Revere Beach	Non-Transfer	3,895
Wood Island	Non-Transfer	3,602
Prudential	Non-Transfer	3,464
Savin Hill	Non-Transfer	3,214
Shawmut	Non-Transfer	3,142
Bowdoin	Terminal	3,102
Symphony	Non-Transfer	2,963
Science Park	Non-Transfer	2,698
Suffolk Downs	Non-Transfer	1,928

Figure 9: MBTA Stations without Ancillary Uses Sorted by Boarding & Alightings

MBTA Rapid Transit Stations without Ancillary Uses Sorted by Attribute		
Station	Attribute	Boardings & Alightings
Suffolk Downs	Non-Transfer	1,928
Science Park	Non-Transfer	2,698
Symphony	Non-Transfer	2,963
Shawmut	Non-Transfer	3,142
Savin Hill	Non-Transfer	3,214
Prudential	Non-Transfer	3,464
Wood Island	Non-Transfer	3,602
Revere Beach	Non-Transfer	3,895
Stony Brook	Non-Transfer	4,553
Community College	Non-Transfer	7,158
Wollaston	Non-Transfer	7,533
Chinatown	Non-Transfer	7,831
Broadway	Non-Transfer	8,030
Jackson Sq.	Non-Transfer	8,553
Boylston	Non-Transfer	11,372
North Quincy	Non-Transfer	11,504
MGH	Non-Transfer	15,761
Central	Non-Transfer	22,829
Bowdoin	Terminal	3,102
Kenmore	Transfer	15,586

3.2 MBTA Line Level

In terms of observations that can be made by individual rapid transit lines, although the Orange Line only accounts for a quarter of the average daily boardings, it is interesting to note that it has 44% of all of the system-wide number of ancillary uses within its rapid transit stations, and four out of five of its stations have at least one ancillary use. This disparity suggests that the transit mode and type of station infrastructure affects the ability to accommodate spaces for ancillary uses within stations. When one looks at the boardings of the Green Line, one can observe that despite the fact that it accounts for a third of them, the occurrence of ancillary uses within its stations is only 14% and only 11% of its stations have at least one ancillary use. The occurrence of ancillary uses along the Blue and the Red lines seems to be in line with percentage of boardings they account for system-wide.

Other differences that exist between the lines regard community involvement during the extension of two of the lines, and the lack of a station infrastructure per se for most of the stations along one of the lines. The extensions of the Orange Line and the Red Line differed as did the nature of the ancillary uses with the stations along those extensions. The extension of the Orange Line involved proposing an alignment through three neighborhoods that had been physically breached and socio-economically disenfranchised and had demanded to change the future course of their communities during the Civil Rights era. The extension of the Red Line from Harvard to Alewife took place during a different era politically and within a different physical and socio-economic context. The areas of the new stations had not experienced the physical divide that the Southwest Corridor had represented, and the neighborhoods along it did not have the same pressing need to develop neighborhood nodes in order to reconstruct a sense of place. The Green Line differs since

most of its underground stations are constrained and its surface stations along its B, C, D & E branches lack ancillary uses due to an absence of a station headhouse and consisting only of surface platforms.

3.2.1 MBTA Orange Line

Figure 10: MBTA Orange Line Stations with Ancillary Uses Sorted by Attribute

MBTA Orange Line Stations with Ancillary Uses Sorted by Attribute

Station	Attribute	Boardings & Alightings	No. of Uses	News Stand	Florist	Gen. Conv./ Push Cart	Fast Food/ Snacks/ Coffee	Trolley Tours	Books	Gift Shop	Com-munity	Dry Clean	ATM	Rest-aurant	Day Care	Shoe Shine	Fruit/ Veg. Stand
Sullivan Sq.	Non-Transfer	16,884	2			1	1										
NEMC	Non-Transfer	12,802	2				2										
Mass Ave.	Non-Transfer	10,434	2			1							1				
Roxbury Crossing	Non-Transfer	7,070	6				1			1	2		1		1		
Green St.	Non-Transfer	6,410	1								1						
Oak Grove	Terminal	9,065	2		1	1											
Forest Hills	Terminal/Commuter	24,557	9	1	1	1	4						1				1
State St.	Transfer	63,554	1				1										
Haymarket	Transfer	22,889	1					1									
Downtown Crossing	Transfer	121,379	8			2	3			1	1					1	
BackBay/SE	Transfer/Commuter	33,188	14		1	3	6					1	2				1
Malden	Transfer/Commuter	18,450	1			1											
Ruggles	Transfer/Commuter	16,357	6			1	2				2		1				
Totals		363,039	55	1	3	11	20	1	0	2	6	1	6	0	1	1	2

Most of the stations along the Orange Line (~80%) have some type of ancillary uses within them. With the exception of the Roxbury Crossing station, the stations with the more numerous ancillary uses either offer connections to commuter rail service or transfer to another rapid transit line. Again, non-transfer stations seem to have fewer ancillary uses within them (24%) given the number of non-transfer stations with ancillary uses (38%). Transfer stations had greater parity whereby they constituted 23% of the stations and had 18% of the uses. Terminal and commuter rail stations represented 38% of the stations along the Red Line but had 58% of the ancillary uses.

It is worth noting that a larger portion of Orange Line stations have community-oriented ancillary uses, day care, gift shops, a grocery stand and ATMs and a lesser portion dedicated to general convenience pushcarts and newsstands. Furthermore, these community-oriented uses are located along the southern segment of the Orange Line. Not only are the uses interesting and extremely

beneficial to the community and transit riders alike due to their nature but the difference types of community uses are impressive. The uses range from a day care center to architectural studio space, and are discussed in further detail in the station-by-station section of this thesis.

The history of how the transit stations and the high concentration of community-oriented ancillary uses within them came about is one that involves understanding the history of the communities along this segment of the Orange Line. For approximately a century, the granite-faced embankment of the old Penn Central railroad that ran along most of the length of the Southwest Corridor had divided many of Boston's densely populated communities.[35] The metal foundries, beer brewing plants, and other industrial uses that had been served by the railroad had disappeared and the unsightly railroad tracks remained with the communities giving their back to it. This physical and social breach would have in all likelihood continued in a new form through state highway plans for providing convenient suburban automobile access to downtown. State officials conceived of removing the railroad in preparation for an eight-laned elevated highway connecting downtown Boston through Ruggles to Cambridge and eventually to the high-tech developments along Route 128.

By the time eminent domain land acquisition, family relocations and building demolition had taken place in the South End, Roxbury and Jamaica Plain, urban antihighway activism had taken root in politically influential community members in Cambridge who saw a similar fate nearby[36]. Responding to the protests in 1970, Governor Francis Sargent declared a temporary moratorium on highway construction and commissioned a regional transportation study. As a result of the study, Governor Sargent cancelled the Southwest Expressway project in 1972. Notwithstanding

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[35] Mann, page 46.
[36] Peirce, pages 91-93

the success of the community-based coalition in stopping the construction of the Southwest Expressway, the clearance of buildings for the "inner belt" had already caused the significant damage between Ruggles and Forest Hills, particularly the area around the Jackson Square station, which had "suffered the greatest demolition during the land clearance program for the Southwest Expressway"[37] [38].

A year later in 1973, plans began for the relocation of a segment of the then elevated Orange Line along Washington Street to an alignment along the Southwest Corridor. Among those involved in the effort were Southwest Corridor project manager and development coordinator, Anthony Pangaro, along with Kenneth Kruckemeyer, both of whom worked on a project that would have unusually high level of community participation throughout the environmental, financing, design, construction and eventually operations phases. The activism of the coalition that succeeded in stopping the highway had afforded the coalition substantial political clout. In acknowledgment of the coalition's influence, the MBTA suggested that the coalition formally organize itself into a corridor-wide Working Committee for the planning phase of the project. The Working Committee formed and participation was open to anyone who had an interest in the community and not restricted only to elected community representatives. Immediately, the committee became "actively involved in the pre-design and planning phases of the Park and transit corridor."[39]

From the Committee's monthly corridor-wide meeting came demands for public uses along the corridor and within the transit stations that would benefit the communities along its length.[40] In recognition of the interests of the three major communities along the corridor – the South End,

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[37] Mann, page 54
[38] Most of the area remained undeveloped for considerable time
[39] Mann, page 48
[40] Mann, page 47

Roxbury, and Jamaica Plain – and in order to complement the corridor-wide issues, the Working Committee created three smaller task forces to address the needs of these communities. From these three community-based task forces came about another level of community review for the design phase in the form of eight localized Station Area Task Forces[41], each one corresponding to a rapid transit station along the relocated segment of the Orange Line. The various levels of community participation ensured that community needs were met in a comprehensive and specific manner sometimes working independently or collectively depending on the issue.

The goal of Southwest Corridor Park was to create good places for residents to live oriented toward the corridor instead of communities turning their back to it. The community wanted to mimic the focal points that existed elsewhere in the community such as Dudley Square and Centre Street. Many successes of the project resulted from an unprecedented level of community participation and collaboration with state officials. Among the successes of the project were the innovative acoustic decking solution over the more urban segment between the Back Bay and Mass Ave stations that simultaneously mitigated noise levels and separated the park from the rapid transit, commuter and intracity rail below. Another major success was the creation of a major new educational institution adjacent to one of the stations, a major disappointment of the Southwest Corridor plan was the length of time it has taken to see the redevelopment of several parcels of cleared land, most notably portions of Parcel 18 in the Ruggles station area[42].

The success of ancillary uses within transit stations is a function of the existence of adjacent development, the stage or condition of the adjacent development, whether the station is a trip origin or destination, and the hours of operation of the uses. As an example, the construction of

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[41] The stations are Back Bay/South End, Massachusetts Avenue, Ruggles, Roxbury Crossing, Jackson Square, Stonybrook, Green Street, and Forest Hills.
[42] Peirce, pages 89-90

subsidized housing by a station could initially deter the leasing of ancillary spaces within a station or affect the sales of a vendor but, over time, the viability of the ancillary uses within a station could improve with changing perceptions toward the subsidized housing project and/or an attractive renovation of the housing. Such is the case of the $4 billion HOPE VI rebuilding of the Mission Main housing project near the Roxbury Crossing and Ruggles stations.

As has been explained, the unique and highly positive nature of the ancillary uses within the southern segment of the Orange Line came about from an unusual series of events. This history explains why the nature of the uses within those stations are so different and I would argue better for community building and enhancing the spaces within rapid transit stations than just uses of a commercial retail nature. The specific uses within these stations are discussed in further detail in the station- and use-specific section of this thesis.

3.2.2 MBTA Red Line

Figure 11: MBTA Red Line Stations with Ancillary Uses Sorted by Attribute

MBTA Rapid Transit Stations with Ancillary Uses Sorted by Attribute

Station	Attribute	Boardings & Alightings	No. of Uses	News Stand	Florist	Gen. Conv./ Push Cart	Fast Food/ Snacks/ Coffee	Trolley Tours	Books	Gift Shop	Com-munity	Dry Clean	ATM	Rest-aurant	Day Care	Shoe Shine	Fruit/ Veg. Stand
Kendall	Non-Transfer	22,087	1					1									
Davis	Non-Transfer	17,964	2		1		1										
Quincy Center	Non-Transfer	13,357	2	1		1											
Fields Corner	Non-Transfer	9,688	2			2											
Quincy Adams	Non-Transfer	4,636	1			1											
Andrew	Non-Transfer	4,635	1							1							
Alewife	Terminal/Park & Ride	17,737	9	2	1	1	1						1	1	1	1	
Braintree	Terminal/Commuter	31,087	2	1			1										
Ashmont	Terminal/Trolley	21,213	6	1		2	2					1					
Park Street	Transfer	151,882	1								1						
Downtown Crossing	Transfer	121,379	8			2	3			1	1		1				
Harvard	Transfer/BusTerminal	39,925	10		1	4	2		1	1							1
South Station	Transfer/Commuter	41,884	1		1												
JFK	Transfer/Commuter	14,937	2			2											
Porter	Transfer/Commuter	14,093	4	1	1	1	1										
Totals		526,504	52	6	5	16	11	1	1	3	2	1	2	1	1	1	1

Approximately half of the Red Line stations have at least one ancillary use within them, and almost half of these stations with ancillary uses are non-transfer stations. Despite the non-transfer stations

constituting almost half of the stations with uses, the number of uses within them was only 17%, while transfer stations constitute a fifth of the stations but have 37% of the ancillary uses within the Red Line. This disparity between transfer and non-transfer stations seems to suggest again that it might be more difficult to support ancillary uses within non-transfer stations. The number of terminal and commuter rail stations collectively seemed to be on par with the number of ancillary uses within them at approximately 43% of the uses.

The extension of the Red Line from Harvard to Alewife did not result in the varied and interesting community uses that the realignment of the Orange Line resulted in. Given the reputation of Cambridge and the Harvard Square area for forward thinking, it is interesting to observe that uses comparable to artists and architectural space and employment training assistance did not arise. With the exception of the Alewife station, there might not have been the same level of demand for changing the nature of the surrounding area since Cambridge did not have an eyesore such as the old Penn Central railroad embankment with which to deal. In addition, the clearance of land for the Southwest Expressway had left cleared land that was devoid of commercial activity while in Cambridge and Somerville buildings remained and it was the desire, for the most part, to reinvigorate existing commercial spaces rather than construct new space.

Development in the area around the Alewife station was accomplished in spite of watershed and drainage concerns, regional traffic flow issues, and opposition from the neighboring town of Arlington about the undesirability of urban dwellers being able to travel to their towns via rapid transit. The area was underdeveloped and characterized by light manufacturing uses and warehouses, and to some extent remains so today. In addition to the construction of the Alewife rapid transit station, a mammoth park and ride structure was built. Within this transit station and parking structure complex, numerous ancillary uses were included in an effort to provide

commuters with a much more convenient environment in which they could take care of many needs. The station caters to commuters and features newsstands, a florist, a dry cleaner, a day care center, fast food establishments, and a sit down restaurant. Of these uses, I deem the day care center and dry cleaner to offer the most convenience. The former due to the difficulty with which single parents and households with parents commuting in opposite directions have to contend, and the latter because of the lack of time for many of these office workers to remember to stop by the cleaners to drop off or pick up articles of clothing.

3.2.3 MBTA Green Line

Figure 12: Selected MBTA Green Line Stations with Ancillary Uses Sorted by Attribute

MBTA Green Line Stations with Ancillary Uses Sorted by Attribute

Station	Attribute	Boardings & Alightings	No. of Uses	News Stand	Florist	Gen. Conv./ Push Cart	Fast Food/ Snacks/ Coffee	Trolley Tours	Books	Gift Shop	Com- munity	Dry Clean	ATM	Rest- aurant	Day Care	Shoe Shine	Fruit/ Veg. Stand
Arlington	Non-Transfer	19,514	3		1	1	1										
Hynes/ICA	Non-Transfer	17,156	3			1							1			1	
Lechmere	Terminal/BusTerminal	10,093	2				2										
Park Street	Transfer	151,882	1							1							
Government Center	Transfer	71,870	8	2	1	3	2										
Copley	Transfer	27,678	4			1	3										
Haymarket	Transfer	22,889	1					1									
North Station	Transfer/Commuter	29,793	3		1		1			1							
Totals		350,875	25	2	3	6	9	1	0	2	0	0	1	0	0	1	0

The Green Line differs from the other lines in that it consists of light rail rapid transit trains that run underground for a portion and branch off into surface stations with at-grade platforms and no substantial headhouses for accommodating pushcarts or other vendors. The underground stations are oldest in the system since they form part of the original MBTA line, and are relatively physically constrained; only able to barely accommodate pushcarts near the platform. With the boarding and alighting data, it appears that given the number of transfer stations, non-transfer stations and terminal/commuter stations, the number of ancillary uses with each of those types of stations is on par. The most interesting use of these is that of the tourist trolley tour sales out of the Haymarket station, which capitalizes on the proximity of the station to historic sites in the

downtown Boston area. However, this use does not offer any utility to the regular riders of the system.

3.2.4 MBTA Blue Line

Figure 13: MBTA Blue Line Stations with Ancillary Uses Sorted by Attribute

MBTA Blue Line Stations with Ancillary Uses Sorted by Attribute																	
Station	Attribute	Boardings & Alightings	No. of Uses	News Stand	Florist	Gen. Conv./ Push Cart	Fast Food/ Snacks/ Coffee	Trolley Tours	Books	Gift Shop	Com- munity	Dry Clean	ATM	Rest- aurant	Day Care	Shoe Shine	Fruit/ Veg. Stand
Maverick	Non-Transfer	16,217	2			2											
Orient Heights	Non-Transfer	7,168	1				1										
Aquarium	Non-Transfer	5,696	3			3											
Beachmont	Non-Transfer	4,121	1				1										
Wonderland	Terminal	10,467	1				1										
Government Center	Transfer	24,609	1			1											
State St.	Transfer	63,554	1				1										
Airport	Transfer	9,028	3	1		2											
Totals		140,860	13	1	0	8	4	0	0	0	0	0	0	0	0	0	0

The Blue Line is the shortest rapid transit line within the MBTA and has only 12 stations. Of these, eight of them have some type of ancillary use. The ancillary uses within these stations are limited to retail services limited primarily to general convenience, and snacks and coffee. Similar to the MBTA Green Line stations with uses, it appears that given the number of transfer stations, non-transfer stations and terminal stations, the number of ancillary uses with each of those types of stations is on par as well.

3.3 ANCILLARY USE COMPARISONS

The following section looks at the types of ancillary uses found within the aforementioned transit lines and assesses the benefits, disadvantages and locations of these uses within certain types of stations.

3.3.1 Stations with Ancillary Uses in Post-Fare Zone

Ancillary uses throughout the MBTA system are predominantly located in the pre-fare zones of the station with the exception of the Airport, Beachmont, Wonderland, Copley, Government Center, Hynes, State, South Station, and Oak Grove stations. Of the nine stations with ancillary uses in the post-fare zone, five facilitate transfers to another line or mode of mass transit, and five were physically constrained enough to warrant placing the vendor before the turnstiles. Based on this, it appears that ancillary uses are preferred by the MBTA away from the post-fare platform areas and are more viable to vendors due to the potential to capture non-transit riders who might enter the station lobby and ultimately not pass the turnstiles.

Figure 14: Stations with Ancillary Uses in Post-Fare Zone

Stations with Ancillary Uses in Post-Fare Zone		
Station	Attribute	Boardings & Alightings
Airport	Transfer	9,028
Government Center	Transfer	71,870
Beachmont	Non-Transfer	4,121
State St.	Transfer	63,554
South Station	Transfer/Commuter	41,884
Wonderland	Terminal	10,467
Oak Grove	Terminal/Park & Ride	9,065
Hynes/ICA	Non-Transfer	17,156
Copley	Non-Transfer	27,678

3.3.2 Newsstands

Over half of the newsstands are located in terminals and commuter-oriented stations. If one adds transfer stations, then all but one of the newsstand ancillary uses are located within stations that

are either catering to commuters or intracity transit riders who have wait at the station after transferring to another transportation mode. Newsstands are not just beneficial to commuters looking for reading material for their trip. They can also offer "free" information to passersbys by who are able to pause to glance at the major headlines. Additionally, the added convenience of being able to purchase a newspaper or magazine would benefit intracity transit riders. This use is also advantageous to the MBTA since as a "clean" use that does not aggravate pest control problems.

Figure 15: Stations with Newsstand Uses

Newsstands		
Station	Attribute	Boardings & Alightings
Alewife	Terminal/Park & Ride	17,737
Ashmont	Terminal/Trolley	21,213
Braintree	Terminal/Commuter	31,087
Forest Hills	Terminal/Commuter	24,557
Airport	Transfer	9,028
Government Center	Transfer	71,870
Porter	Transfer/Commuter	14,093
Quincy Center	Non-Transfer	13,357

3.3.3 Books

The sale of used paperback books is an unusual use that can be found at the Harvard Square station. The sale of books, reflects on the character of the area surrounding the station. This use offers an alternative for tourists wanting a memento (and an alternative to traditional souvenirs) from their visit to the area, or an employee in the area seeking reading material for the train ride back home.

3.3.4 Fast Food & Snacks

Comprising almost a third of the ancillary uses within MBTA rapid transit stations, the sale of fast food and snacks within stations is a common use within the system. Food vending was found

throughout the MBTA system, located in stations of all functions, from terminals and transfer stations to stations with connecting commuter rail service.

Lorna Moritz echoed concerns expressed by others about "unclean food retail". The damp, underground conditions of the transit stations in tandem with the sale of food create pest control problems, and she stated that the MBTA has removed food vendors in many locations for this reason. She mentioned that three locations in particular had this problem and when they went back to bid were required to undergo a complete renovation because the fixed spaces had deteriorated. However, the disadvantages associated with food vending are avoidable. The accumulation of trash and consequent pest control problems require transit authorities to clearly include proper procedures within the contracts with vendors as well as the penalties associated for not doing so. Moreover, the MBTA should consider retrofitting stations with areas for temporary trash storage either on the surface or within the station.This would mitigate the negative consequences of food vending and continue to afford transit riders with the convenience of food vending.

Figure 16: Stations with Fast Food & Snack Vendors

Fast Food & Snacks		
Station	Attribute	Boardings & Alightings
Arlington	Non-Transfer	19,514
Davis	Non-Transfer	17,964
Sullivan Sq.	Non-Transfer	16,884
Mass Ave.	Non-Transfer	10,434
Orient Heights	Non-Transfer	7,168
Roxbury Crossing	Non-Transfer	7,070
Beachmont	Non-Transfer	4,121
Wellington	Non-Transfer	13,383
Alewife	Terminal	17,737
Wonderland	Terminal	10,467
Oak Grove	Terminal	9,065
Lechmere	Terminal/BusTerminal	10,093
Braintree	Terminal/Commuter	31,087
Forest Hills	Terminal/Commuter	24,557
Ashmont	Terminal/Trolley	21,213
State St.	Transfer	63,554
Government Center	Transfer	71,870
Copley	Transfer	27,678
Downtown Crossing	Transfer	121,379
Harvard	Transfer/BusTerminal	39,925
North Station	Transfer/Commuter	29,793
Porter	Transfer/Commuter	14,093
Ruggles	Transfer/Commuter	16,357
BackBay/SE	Transfer/Commuter	33,188

3.3.5 Tourist Uses & Gift Shops

There were two types of ancillary uses within the stations that seemed to cater to tourists. The first is the sale of trolley tours at the Haymarket and Kendall stations. In all likelihood, the trolley tour sales booth at the Kendall station is due to the number of hotels within that part of Cambridge as well as its proximity to the Charles River and downtown Boston. The use at Haymarket can be explained by its proximity to Faneuil Hall, Quincy Market, the Freedom Trail, and other historic sites in downtown Boston. The second ancillary use that seemed to cater to tourists was of gift shops. Three of the five gift shops were located in the urban core of Boston in close proximity to many of the central historic sites and the Financial District. While there is nothing wrong with

these uses they do not particularly benefit regular transit riders since the merchandise sold is primarily souvenirs.

3.3.6 Office Worker Convenience

Dry cleaning and shoe shine ancillary uses within stations seem to be catering to office workers. There are two dry cleaners located at the Back Bay/South End and Alewife stations, both of which are heavily oriented toward office workers commuting from the suburbs. The Back Bay/South End station functions as more of an office destination with nearby offices in Copley Place and the Prudential buildings, while the Alewife station does not primarily function as an office destination and instead as a park-and-ride station. Similarly, there are shoe shine uses at the Government Center and Hynes/ICA stations that seem to cater mainly to office workers and business travelers. The dry cleaning use is particularly useful but seems to be best suited near major office destinations or stations offering commuter rail service. While the use was absent in the South station, it was due to the fact there were dry cleaners in close proximity to both stations.

3.3.7 Community

Among the more interesting uses that in addition to generating revenue provide station interiors with more of a community asset and destination are the community-oriented uses within the MBTA system. As has been explained, almost all of the community-oriented uses were located along a segment of the Orange Line from the Back Bay/South End to Forest Hills. These uses are the ones I found the most interesting and promising for fostering activity within stations and positively contributing to the nearby communities. The uses included architectural studio space, the sale of ethnic arts and crafts, an artists gallery, and an employment training center. These uses came about from a history of community participation of three Boston neighborhoods and a

concern for revitalizing the community. As mentioned by Kenneth Kruckemeyer, the Nubian Notion store had been a long established seller of African arts and disseminator of African cultural information that had early on decided to relocate to the Ruggles train station. This proved beneficial since the use gains high visibility from transit riders as well as providing a local cultural resource for the area.

Another interesting use is the architectural studio space that Northeastern University leased within the Ruggles station for architectural studio space in 2000[43] through a 25-year lease. The chair of the architecture department, George Thrush, had a strong interest in mass transit and six years earlier had suggested that the university locate the studio space within the Ruggles station. In an article, George Thrush expressed, "What was a dead spot on campus is now expressing the urban mission of the university to commuters ... who use the T station". George Thrush elaborated by praising the row of large front windows that help showcase the center to passersby[44]. This comment emphasizes the benefits of visibility that can be gained from ancillary uses with stations as well as activation of the space within.

A final community-oriented use I will comment on is that of fruit and vegetable stands that function as both a convenience use and another potential agent for fostering social interaction. There are three such stands, two of which are located at the Forest Hills and Back Bay/South End stations on the Orange Line, and the third at the Harvard station. All three of these stations are intermodal in nature as well, and suggest that the use benefits from the traffic of riders transferring between modes since these transfers happen outside the paid area. Again, as with fast food vendors, the proper disposal of trash and unsold goods can ensure that pest control problems are not increased.

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[43] http://www.nunews.neu.edu/nu-news/Issues/101800/n3.html
[44] http://www.nunews.neu.edu/nu-news/Issues/101800/n3.html

3.3.8 Day Care

There are two day care centers located within the MBTA system. One is located within the Alewife commuter-oriented park-and-ride station and the other is located at Roxbury Crossing. Although the Roxbury Crossing station only has half the rider activity of the Alewife station, the day care center came about from community needs and concerns with affording working residents who use mass transit with a convenient day care facility. The day care center at Alewife makes sense from a busy commuter perspective and were it not for the existence of several day care centers within a half mile of the Back Bay/South End (there are five neighboring day care centers), and South Stations (there are three day care centers within a half-mile of the station), one could anticipate at least another day care center in one of these stations with commuter rail service.

3.3.9 Florists

There are a total of 12 florists within the MBTA system: 7 are in transfer stations, 6 of which are also intermodal in nature, and 5 of which have commuter rail service. Additionally, two of the stations are park-and-ride terminals. The florists seem to cater to busy commuters relying on impulse and last-minute special occasion purchases. The use itself is an attractive one even for those who are not making the purchases.

Figure 17: Stations with Florists

Florists		
Station	Attribute	Boardings & Alightings
Government Center	Transfer	71,870
Harvard	Transfer/Bus Terminal	39,925
Back Bay / South End	Transfer/Commuter	33,188
North Station	Transfer/Commuter	29,793
Porter	Transfer/Commuter	14,093
South Station	Transfer/Commuter	41,884
Arlington	Non-Transfer	19,514
Davis	Non-Transfer	17,964
Wellington	Non-Transfer	13,383
Oak Grove	Terminal/Park & Ride	9,065
Alewife	Terminal/Park & Ride	17,737
Forest Hills	Terminal/Commuter	24,557

3.3.10 Restaurant

An unusual ancillary use within the MBTA system is that of a sit down restaurant. The Bertucci's restaurant is located at the Alewife station but does not have direct internal access to the station interior, and is oriented externally within the larger station and parking structure complex. The manner in which this ancillary use was placed within the station building essentially does not allow it to contribute to enhancing the station environment since its location does not influence the space within. Were the restaurant to be located within the station with both visibility from the street and direct access to interior of the station lobby, the station environment would be better served. The slower nature of sit down restaurant service does not allow for last minute consumption decisions for travelers in a rush. This use would work better at an intermodal station facilitating connections to commuter rail service due to the waiting periods involved rather than at a park-and-ride lot. The Bertucci's restaurant at Alewife probably has more benefit to animate the exterior of the station but suffers from a lack of "street life" in the vicinity of the Alewife station.

3.3.11 General Convenience Uses & Pushcarts

Comprising a third of the ancillary uses within the MBTA system, these uses were mainly small variety shops and pushcarts selling a combination of goods including prepackaged snacks, accessories, umbrellas, and phone cards. These uses were common throughout various types of stations with different functions.

Figure 18: Stations with General Convenience Uses & Pushcarts

General Convenience Uses & Pushcarts		
Station	Attribute	Boardings & Alightings
Copley	Non-Transfer	27,678
Arlington	Non-Transfer	19,514
Hynes/ICA	Non-Transfer	17,156
Sullivan Sq.	Non-Transfer	16,884
Quincy Center	Non-Transfer	13,357
Quincy Adams	Non-Transfer	4,636
Maverick	Non-Transfer	16,217
NEMC	Non-Transfer	12,802
Fields Corner	Non-Transfer	9,688
Aquarium	Non-Transfer	5,696
Alewife	Terminal/Park & Ride	17,737
Ashmont	Terminal/Trolley	21,213
Forest Hills	Terminal/Commuter	24,557
Airport	Transfer	9,028
Government Center	Transfer	71,870
Downtown Crossing	Transfer	121,379
Harvard	Transfer/Bus	39,925
Malden	Transfer/Commuter	18,450
Ruggles	Transfer/Commuter	16,357
Porter	Transfer/Commuter	14,093
JFK/UMass	Transfer/Commuter	14,937
Back Bay / South End	Transfer/Commuter	33,188

3.3.12 Ancillary Use Observations within Selected Stations

The stations that I have chosen to comment on illustrate a range of mass rapid transit modes, and surface and underground stations. From light and heavy rail rapid transit to single- and multi-

modal stations, I looked at the inclusion of ancillary convenience uses with stations for lessons into the type, utility and scale of uses. Stations whose function was of that of a terminal primarily for intercity rail service were excluded since I am interested in understanding how the experience of intracity riders can be improved.

While it can be argued that certain transportation modes might be better suited for accommodating ancillary uses within the headhouses, the viability of a use will be determined based on its visibility from the street and within the station and/or the volume of foot traffic within the station. In particular, the MBTA Green Street, Roxbury Crossing and Back Bay/South End stations were stations that had fixed spaces laid out in a manner that provided advantageous street visibility as well as internal access from the station lobby. Figure 6 in section 3.1.2 shows the CTPS foot traffic within the stations (boardings and alightings 1997 counts). An interesting observation is that the station with the highest volume of transit riders boarding and disembarking, Park Street station on the Red Line, only until recently had one sole ancillary use within the station. The station itself is comprised of little more than the platforms and a physically constrained headhouse and helps to explain why despite the high volume of transit riders, there has not been any ancillary uses and solely one use is being introduced within the next year.

Some of the stations have or are about to undergo renovation, were retrofitted or built with fixed space, and/or were designed with floorplates in mind or carved out of residual spaces. Some of the interviewed practitioners indicated that the transit authorities prefer or execute as a matter of policy, to include or renovate fixed spaces for ancillary uses only upon conducting a major renovation of the stations. Matthew McElroy of the NYC MTA particularly made this point but remarks made by Lorna Moritz and Barbara Boylan pertaining to the MBTA also suggested or explicitly indicated the difficulty involved in retrofitting spaces within areas of stations. Some of

the MBTA stations were originally built with fixed spaces in mind such as all of those with concessions on the Southwest Corridor portion of the Orange Line. The commonalities among these stations were substantial headhouses due to the availability of surface rights, fixed spaces for ancillary uses some of which had direct access to both the lobby and the street, and frontage along and visibility from a street.

Visibility as afforded by transparency of the station headhouse façades was also an element of some existing stations as well in planned major renovations of stations. Transparency and the permeation of natural light into parts of the station was observable as an important design consideration particularly of the existing Back Bay/South End station but also present in the Green Street station. A defining characteristic of the Back Bay/South End station was the voluminous lobby penetrated by natural light from its tall front and back glass façades. The presence of natural light was observable to a lesser extent within the Green Street station through the use of skylights. MBTA plans for planned major renovations of stations indicate that the transparency of station headhouses remains an important design consideration.

The plans for the Ashmont station speak to the importance of glass façades for views in and out of the station as well as of aiding in the orientation of transit riders through the use of natural light. It can also be argued that transparency of the station headhouses benefits the uses within by exposing the vendors to pedestrians outside of the headhouses. I also believe that allowing for views from the street and sidewalk into the headhouse and vertically into station can help animate the streetscape since the activity within can be seen. Plans for the Government Center renovation also reveal that transparency of the headhouse through the use of glass is important to the MBTA. While fixed spaces are not being considered within the headhouse, Barbara Boylan indicated that the newspaper vendor and the florist are both welcome to seek shelter under the eaves of the

headhouse. The transparency of the headhouse can only further benefit business for these vendors by affording greater exposure. An added benefit pertains to safety for riders entering and exiting the station, particularly at night.

The following are specific observations of particular mass transit stations that provide insight into the inclusion of ancillary uses within stations. Some of the uses provide great utility and others could benefit from better placement within stations.

3.3.12.1   Green Street Station Observations

The Green Street station on the MBTA's Orange Line offers great insight into the range of uses that can thrive in and enhance a station environment. The station is located along the Southwest Corridor park and is in close proximity to a public high school. As part of a condition of approval for locating an MBTA bus yard elsewhere in the Jamaica Plain neighborhood of Boston, the MBTA agreed to mitigate for the bus yard by constructing and reserving a fixed space within the Green Street station. The space had remained vacant until an artist proposed using the space as an artists gallery. The gallery has been operating since 1996 and has been well embraced by artists, the community and transit riders.

The tenant's public outreach and education goal has made the seemingly disparate use a success by providing for an inviting destination and pass-through space, a waiting respite for transit riders, and a resource for the nearby high school's arts curriculum. Given the circumstances around the reservation of the space for a community-oriented use, the MBTA's goal was not one of revenue-generation. The MBTA has offered the tenant an affordable leasing arrangement that will ensure that the gallery will remain in the future but has reserved the right to a percentage of the revenue

generated from the sale of art. This singular example of an ancillary use within a mass rapid transit station can point to the consideration of other unconventional uses within mass rapid transit stations that can function as places of public accommodation. Beyond a place of public accommodation, the space functions as a civic one by embracing varied segments of society and the community, and allowing these segments to use the space for different purposes.

While the circumstances pertaining to the artists gallery use at the Green Street station are unique, the MBTA and other transit authorities begin to identify alternative uses to convenience retail that enhance the station environment by simultaneously providing a convenient service to transit riders and extending civic life closer to the platform. Community-oriented uses such as public health organizations, non-profit service-oriented organizations, and even local government agencies involved in public outreach could be well served by leasing a kiosk or fixed space as a satellite "outreach" space.

3.3.12.2   Ruggles Station Observations

The Ruggles station on the MBTA Orange Line is an intermodal station facilitating connections to a heavy rail rapid transit line, a commuter line, thirteen bus routes, and the Longwood Medical Area/MASCO "Ruggles Express" shuttle, which provides service to all employees and students of MASCO member institutions. Additionally, the station is located within the right-of-way of the Southwest Corridor Park and its bike and pedestrian paths. The station has an at grade level with the Northeastern University campus and Forsyth Street, an upper concourse level, and a below grade level for the platform and rails.

There are four fixed space uses, a pushcart, and an ATM within the station, all of which are located in the pre-fare zone. Two of the fixed spaces are located at grade, have street frontage on and visibility from Forsyth Street, have internal access to the station lobby, and are community-oriented uses. One of the uses is the STRIVE employment assistance training center which offers workforce development and job seeking services, and the other use is "Ruggles Center", the primary architectural studio space for Northeastern University's Department of Art and Architecture. The employment center provides a valuable social service to the community while activating the station. The architectural studio space is of great convenience to students and faculty in the department. The space offers the additional benefit to transit riders of nighttime activity and additional "eyes" on the platform from the students that remain working late in the studio and happen to have outside views to the platform and lobby.

The other uses are located on the upper concourse level and include national commercial enterprises and local small businesses. The "Nubian Notion" is a local variety store that is also located in a fixed space and has long "internal frontage or visibility" along the length of the concourse. The store's name reflects part of the cultural demographics of the neighborhood. The other uses are a Dunkin' Donuts coffee shop, a Fleet ATM, and a hot dog pushcart.

The uses located within the Ruggles station are an excellent intersection of commercial and community-oriented uses that benefit the transit authority, transit riders, and the community as a whole. The community-oriented uses are particularly useful in stitching the surrounding community and the train station infrastructure into more of a civic space. The space lease with Northeastern University also suggests how transit authorities should capitalize on the presence of key institutions, businesses and residents in determining ancillary uses within transit stations.

3.3.12.3   Government Center Station Observations

The Government Center station is a transfer station for the MBTA Green and Blue heavy rail rapid transit lines. The original Scollay Square station was rebuilt and renamed Government Center in 1963. The existing station headhouse can be characterized as a large irregular mass of red brick that rises awkwardly from the red brick of the City Hall Plaza.

The entrance to the headhouse is partially sheltered from a protruding roof eave. To both sides of the main entrance doors are small partially exposed spaces that are leased to a florist and a newspaper vendor. The doors lead to a small at grade lobby with a fare booth to one side and turnstiles directly ahead that lead stairs and escalators that descend to the Green Line platforms below. The Green Line level has a triangular platform configuration with tracks on two sides providing service and the third side was reserved for an infrequently used loop track (for turning trains back to Lechmere[45]). This level has five designated ancillary use spaces by the MBTA. Two of the uses are fixed spaces that house a Dunkin' Donuts, and a snacks and coffee stand. There also three designated convenience pushcart locations vending phone cards, tourist tee-shirts, and other miscellaneous items.

Another stairwell on this level leads to the Blue Line platform below. The Blue Line platform is configured as a center island with tracks on both sides. This platform has a fixed space in the center which was previously operated as a newsstand but has since been closed. It appears to have been abandoned due to poor visibility and/or not enough foot traffic on this level. This observation provides insight into the importance of visibility and foot traffic needed to support a use. The upper level benefits from its own foot traffic plus that of transfer foot traffic from the lower

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[45] http:// world.nycsubway.org

level to the extent that it can support five uses while the lower level has its sole designated space currently vacant.

The Government Center station is scheduled for a major renovation within the next year and its redesign highlights the competing interests in terms of operations needs with the allocation of ancillary uses within stations. In the case of the Green Line platform, Lorna Moritz commented it was necessary to deliberately "design out" some of the existing tenants due to spatial constraints and pedestrian circulation concerns. The rail lines were reconfigured and the size of the platform area was reduced accordingly such that the existing Dunkin' Donuts fixed space could no longer be accommodated. However, some of the existing pushcarts on the platform will be reintroduced into the station upon renovation.

Regarding the aesthetics of the station, Barbara Boylan spoke enthusiastically about how the station headhouse will feature skylights and transparent glass façades. The new headhouse will allow for natural light to reach part of the platform. The beauty of the design also lies in the asymmetry of the headhouse, likely to serve as an area landmark, and how it extends from the City Hall Plaza surface in a more pleasant manner. The transparent headhouse will improve the condition of the two existing uses operating within the current headhouse. She added that the flower vendor receives particularly positive reaction from transit riders and indicated that the flower vendor is welcome to back once the station is renovated.

3.3.12.4   Roxbury Crossing Station Observations

The Roxbury Crossing station provides access to the MBTA Orange Line's heavy rail rapid transit service. The station itself is characterized by below grade rails with a central island platform that

intersect a substantial at grade station headhouse. In addition to the station lobby, the headhouse is comprised of four fixed spaces with frontage along and visibility from Tremont Street. The spaces enjoy direct access from the street as well as the station interior.

The ancillary uses include both national and local small businesses, of which the latter reflect the needs and culture of the local neighborhood. In addition to a Domino's Pizza fast food franchise and a Fleet ATM, the station features an MBTA police station, a day care center, and an East African arts store. The Domino's Pizza restaurant has immediate access to the lobby, while being oriented to the outdoor seating area, and enjoys visibility from the corner of Tremont Street and New Columbus Avenue. Additionally, there is an adjacent 12-space surface parking lot for added convenience.

The community orientation of some of these uses benefit transit riders and the greater community beyond activating the station. The presence of the MBTA police is invaluable in terms of maintaining the station secure. Station safety is augmented in a less formal manner by the presence of the other uses which provide additional "eyes" in the station area. This additional level of "neighborhood watch" function arises from the vested interest that the small business owners have in protecting their investment as well as the familiarity they achieve with dealing customers and seeing the faces of regular transit riders. The inclusion of these types of uses also forwards the MBTA goal of promoting small business ownership as mentioned by Lorna Moritz in the interview.

The benefits that result from locating certain ancillary uses within mass rapid transit stations can be multiple and in the case of Balan Baalis, the art store exposes local and visiting transit riders to East

African art and culture. Of the uses mentioned, the Tartt's Day Care Center[46] provides an invaluable service to parents and families as well as society at large by encouraging transit use and discouraging automobile dependency. A family and minority-owned business founded by a registered nurse, the day care center location in the Roxbury Crossing station is actually the third and latest facility of the 55-year old business.

The cases of the MBTA Orange Line Green Street, Ruggles, and Roxbury Crossing provide a compelling argument for the inclusion not solely of ancillary uses within transit stations but also of a mix of retail and community uses within stations when possible. It is also worth noting that the three aforementioned stations are managed by Transit Retail Associates, Inc. In my opinion, TRA has achieved a wonderful balance of retail, profit-oriented uses and community serving uses. The character and quality of the ancillary uses in these stations seem to echo the remark made by Bob Weinberg and Clayton Walker about the proper identification of tenants, and the leasing and management process.

3.3.12.5   Harvard Station Observations

The case of the Harvard MBTA station is unique in that it is the result of a northwestern line extension and station realignment. The station was a terminus station for approximately seven decades until it was demolished in 1981. The new Harvard station was originally designed with a spacious lobby and mezzanines that allowed for generous circulation of transit riders. The station itself is a multi-modal transfer point with an underground bus terminus for convenient connections sheltered from the elements. The lobby interior and other areas were designed spacious enough to accommodate freestanding pushcarts. At the present, the station features approximately ten

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[46] http://www.tartt.com

pushcarts in the pre-fare areas vending goods ranging from books, flowers, fruits and vegetables, and snacks. Additionally, there are two fixed spaces in the station.

The first space is located on a mezzanine level between escalators leading from the street level above to the main lobby below. This space consists of ticket sale windows located within the wall which was originally designed for fare vending and based on observation seemed to have been abandoned due to circulation constraints caused by queue formation since it is located between the escalators. Given the spacious lobby area below, selling fares within that area at token booths poses less ingress/egress problems into the station and through the turnstiles. The space was briefly leased as a Ticketmaster vending location but the fixed space is currently not available for leasing due to the same circulation problems that motivated its disuse for fare vending.

The second fixed space is located within the lobby area proper and constitutes a retrofit. Lorna Moritz explained that as part of an MBTA effort to upgrade the concessions program, the station was renovated with a restoration of the public art in the station as well as the "carving out" of a fixed space for a retail space that was leased to Dunkin' Donuts. Lorna Moritz expressed the difficulty that was involved in retrofitting the space due to problems with working in the tunnels as well as the cost involved.

Lastly, in terms of ancillary use programming, the station environment benefits from street performance space. Pursuant to the MBTA's restated December 2003 policy on street performers, the station has a designed street performance space located in post-fare area on the southbound platform.

One could argue that certain stations within the MBTA system are associated with a certain "defining" characteristic or set of characteristics. In the case of the Harvard station, one could argue that the subjective sensory experience of arriving to the Harvard station and moving about its interior is most defined by the music of a street performer as well as the presence of many pushcarts vending various goods. It is worth noting that as a reflection of the character of the Harvard Square university and tourist area, there are two pushcarts that sell books.

3.3.12.6   Ashmont Station Observations

The Ashmont Station is another unique station within the MBTA system, and serves as an example of renewed interest on part of a transit authority in treating a station as more than solely infrastructure. Currently the station is a terminus for one of the branches of the MBTA Red Line's heavy rail rapid transit line. The station is also an intermodal station with a busway for eleven route connections as well as connection to a high speed trolley line leading 2 miles away toward Mattapan. The station and headhouse is sited on a slope which results some areas of the station being underground and some on the surface. Within, there are presently five pushcarts selling snacks and newspapers as well an MBTA police station within the station. The existing station is in disrepair, poorly lit, and has an underutilized surface parking area for MBTA employees since most transit riders actually walk in from the surrounding neighborhood instead of parking and riding.

The MBTA and local community are finalizing the designs by early summer 2004 for a complete station renovation. The proposed design: (a) orients the station toward adjacent Peabody Square and thus complements the streetscape by creating a "square-like place"; (b) recognizes the changing topography by "expressing" two headhouses so that effectively the station does not have an unattractive "back" facing the community; (c) clearly defines circulation for access to all three

transit modes; (d) "uses natural light as a means of orientation"[47]; (e) make the station into "a customer friendly, accessible, well lit and secure station"[48]; and (f) provides for transparent façades with "open views from headhouses into [the] train room."[49] The renovation and redesign of the Ashmont station was also unique in that it was possible due to a combination of land and air rights.

The interview with Lorna Moritz indicated that while some of the pushcarts will return to the renovated station, the station redesign as a whole is significantly outward in orientation. The station renovation involves the urban redesign of Peabody Square by completing the streetscape, better defining the square, and proving for TOD housing and retail. The transparent nature of the façades and the headhouses allows for both views into the station and as well as views outward to the square and new housing and retail uses. In effect, the station renovation will elevate the status of the terminus from a neglected one to a truly convenient intermodal station with generous natural light and a seamless visual and physical connection to the adjoining square and uses.

While the level flexibility involved with the redesign and renovation of Ashmont, as many of the design objectives should be considered for integration into other more physically constrained mass rapid transit stations. In particular, the transparency and natural lighting of the headhouse along with vertical views upward and downward make for a more pleasant and safer environment as well as more viable and visible convenience retail pushcart locations. These design principles can enhance a station by mitigating the disconnect between parts of the station underground and the immediate area around the station headhouse.

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[47] Ashmont Station design objectives from Cambridge Seven Associates, 24 September 2003
[48] From the MBTA website.
[49] Ashmont Station design objectives from Cambridge Seven Associates, 24 September 2003

3.3.12.7   Lechmere Station Observations

The existing Lechmere station is the terminus for MBTA Green Line located northwest of downtown Boston in eastern Cambridge. This segment of the line becomes at grade with the street level only after descending from over a street along the Lechmere Viaduct. The station area is exposed to the elements on most of its sides but has a roof overhead for shelter. It is also a multimodal transfer point and offers connections to four bus routes.

Presently, the station has a fixed space convenience news and snack stand that based on appearances could benefit from aesthetic improvements. Additionally, the MBTA has identified a location for pushcart vending which does not appear to be currently leased out. While this station does offer the convenience of purchasing a newspaper and a snack, the station as whole is not the most attractive or comfortable space and is in an obvious state of maintenance neglect.

The location of the fixed space convenience retail use seems to be accommodated in residual space along a segment of the at grade platform boarding area of the northbound rapid transit line and the busway. Had the use not been included, the area which it occupies could have been left open for additional circulation space along the boarding area or dedicated as an additional semi-enclosed plexiglass shelter for waiting transit riders.

In the future, the definition of the Lechmere station area will be blurred with its relocation and integration into the Northpoint mixed-use development on the north side of Monsignor O'Brien Highway. Given that designs for the station will in all likelihood change over the next decade, it is uncertain what the character of the redesigned station will be. The large-scale nature of the

associated Northpoint development could very well engulf the station and the substantial amount of retail uses could preclude consideration for including convenience uses within the station.

3.3.12.8   Park Street Station Observations

The MBTA recently completed aesthetic renovations to the Green Line platforms at the Park Street station. The Park Street station is a single mode transfer point for a heavy and a light rail rapid transit line. As one of the original stations of the MBTA system, the MBTA had previously restored the iconic brick, glass, and iron headhouses located along part of the Boston Common. The station however had not had any ancillary uses within it despite the high volume of foot traffic. Based on observation, the physical constraints of the station had not permitted this and it is apparent that the accommodation of pushcarts would be a challenge and pose a circulation problem. However, motivated by the historic significance of the station within the MBTA system, the authority managed to carve out a fixed space location on the outer inbound platform of the Green Line. The space was designed for the sale of MBTA "T" memorabilia as well as convenience retail goods. The space already has signage indicating it is named the "T Underground", and it is currently being placed under bidding for a tenant. Concerns expressed by some of the real estate developers and property manager consultants to transit authorities suggest that the MBTA should consider having the space operating as part of a master lease and under their management in order to obtain a more competitive vendor.

3.3.12.9   Back Bay/South End Station Observations

The Back Back/South End station on the MBTA Orange Line is an intermodal station facilitating connections between a heavy rapid transit line, a commuter rail line, an intercity Amtrak line, and

two bus lines. The station itself was constructed as part of the relocation of the elevated Orange Line formerly running along Washington Street. The new line consisted of a rapid transit heavy rail line running along the surface of much of the Southwest Corridor Park before going below grade along the more urban segment between Massachusetts Avenue and downtown Boston. The Back Bay/South End station is along the below grade segment of the line. In addition to the below grade rails and platforms, the station was constructed with a substantial headhouse, and is better characterized as of more a building due to its height and mass. The station building forms part of the streetwall along Dartmouth Street, has a transparent façade, and a spacious atrium with a tall ceiling reflecting the height of the building. The station's façade faces the northernmost, urban gateway to the Southwest Corridor Park as well as a high-rise residential building and an entrance to an enclosed urban shopping center.

From a site plan view, one can observe that the station also serves as an important pedestrian connection between Dartmouth Street and Clarendon Street allowing transit riders and pedestrians alike to enter from both sides and pass through the street level station lobby. The back façade also is transparent and leads to a busway turnaround and Clarendon Street. The design of a station that connects two urban streets, has two transparent façades, and enjoys a voluminous, spacious atrium lit with natural light infuses the station with activity beyond that of transit riders. The floor plan can be described as a fairly wide, relatively short concourse with turnstiles placed in the middle leading down to a stairwell and subsequently to the heavy rail platform. To one side of the turnstiles is one of the walkways that connects both streets and a smaller, one-story lobby for the commuter rail tracks below.

It is apparent by observation of passersby as well as the site plan, that the station was designed to encourage foot traffic and to some extent the lobby mimics a streetscape. It is also clear that the

station was designed to accommodate fixed space ancillary uses. There are a total of ten ancillary uses within the station, six of which are fixed spaces. Five of the fixed spaces are located with frontage along Dartmouth Street, on both sides of the main entrance to the lobby. In addition to lobby access, these uses benefit from street visibility and access. The fixed space uses include a florist, a general convenience store, a Dunkin' Donuts, fast food, a dry cleaners, and fruit and vegetable stand. The remaining ancillary uses include pushcarts selling phone cards, snacks, and clothing accessories. Additionally, there are two ATMs in the lobby, and five storage areas for both operations and the vendors. These storage areas are convenient for vendor deliveries. A problem mentioned by some transit authority officials and real estate property managers involved the logistics of vendor deliveries and trash removal. This station is at an advantage since the uses are at street level with easy access to dumpsters located in the back.

Part of the success of the station is how it complements the surrounding area by functioning as more than a point of mass transit access or transfer. It allows for pedestrian traffic flow through it as well as a waiting area and meeting point. It also serves as a convenient shelter and respite from inclement weather.

3.4 CONSIDERATIONS DURING STATION RENOVATION PROPOSALS

Among the considerations a transit authority should taken into account when evaluating the inclusion of ancillary uses concurrently with the major renovation of a rapid transit station are the physical placement and type of space as well as the criteria for selecting ancillary uses and the type of tenant lease.

3.4.1 Residual Versus Designed Spaces

A few of those interviewed highlighted the competing interests of ancillary use proponents, architects, and those concerned with operations during the renovation process of mass transit stations. The fixed spaces for concessions and pushcart locations can either be the result of intentional design and major importance in larger station redesigns, of secondary concern in constrained stations where spaces are carved out of "leftover spaces", or a retrofit afterthought. Bob Weinberg expressed that transit authorities are not set up to be strong clients when contracting architects for station redesigns, and architects are sometimes left to take the initiative, and risk, of proposing a non-transit element into a station while keeping within the budget and specifications of the authority. Moreover, he expressed concern with the layout of some of the retail floorplates, which, in order to be successful, should be visible, have proper utilities, and above all, be designed with a sound understanding of the market segments in the area surrounding the station. As an example applicable to rapid transit and intracity terminals alike, he commented that the original retail spaces that were designed in South Station were unrentable due to their poor visibility and poor circulation, and had to be redesigned by the architect, Hugh Stubbins & Associates, in order to make them financially viable.

Some mentioned that transit station renovation proposals open up the door for initial RFP (Requests for Proposal) "scope creeps"[50] and subsequent scope reductions due to budget constraints. Issues that can arise during the proposal-to-construction process include the reduction of station space during rail realignments and platform reconfigurations, the removal of existing ancillary uses and preclusion of future uses, and the headhouse design imperatives that create residual spaces for ancillary uses.

Regarding the area of headhouse station design, the trend has been for transparent headhouses or canopies envisioned for both sheltering from rain and snow as well as for their iconic beauty and contribution as a landmark to the surrounding area. What remains uncertain is whether the unprogrammed space beneath is suitable for freestanding vendors, or whether taking one step further and integrating revenue generation goals by including a fixed space location for an ancillary use is more beneficial. Below ground in the station, the interviewees indicated that little consideration has been given to the use of knockout panels to hide fixed spaces for potential ancillary uses. The use of knockout panels has been limited primarily to operations and utilities access purposes. Also, what is to become of the unused (second) fare booths located in many MBTA stations during station renovations? Can these booths or the spaces they occupy be used as rotating space for community outreach and public education campaign kiosks either by governmental or community organizations?

3.4.2 Ancillary Use & Tenant Selection

From the real estate development and property management aspect, some of the interviewees touched on the approach some transit authorities take in identifying and leasing out space to

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[50] As described by Barbara Boylan

tenants. While the MBTA has two separate programs for fixed space and pushcart vendors, the NYC MTA seems to focus more on fixed space locations with greater revenue potential. In general terms, and based on the comments made in many of the interviews, the selection of ancillary uses should take into account: the needs, demographics and market segments present in the surrounding community; the revenue objectives of the transit authority; and the cleaning costs, traffic flow generation, and potential security threats associated with a given use.

Based on the existing uses within the MBTA system as well as uses found elsewhere within other rapid transit stations, transit authorities can refer to a range of existing ancillary uses when considering which uses to include in a given station. Among the more prevalent uses within the MBTA system and referenced by a study on transit station induced retail development[51], are general convenience shops, food and beverage vendors, and lottery ticket sales[52]. Less prevalent were florists, newsstands, and dry cleaning ancillary uses. Other uses observed within the system and worth considering include fruit and vegetable stands, shoe repair, day care centers, automated teller machines, book sales, gift shops, guided tour sales, and community-oriented uses. Transit authorities should use this range of uses as a starting point but not preclude alternatives. Lorna Moritz indicated that TRA and the MBTA are amenable to considering alternative uses as they are proposed on a case-by-case basis. Some of the more interesting uses that provide revenue to the authority and enliven the station environment are the community-oriented uses such as artists galleries and university classroom space.

The real estate property managers interviewed suggested that in order to identify and attract quality ancillary use tenants, transit authorities should hire a retail developer and manager to handle the

[51] Rapid Transit and Commuter Rail Induced Retail Development, by M. Yeates and K. Jones, June 1998
[52] Rapid Transit and Commuter Rail Induced Retail Development, by M. Yeates and K. Jones, June 1998

leasing of the spaces. They added that the RFP public bidding process should only take place to identify a property developer and manager for "master leasing" spaces within several stations, and should avoid identifying and leasing to tenants on an individual basis.[53] Bob Weinberg expressed that due to the lack of expertise on part of transit authorities, they go about identifying tenants through bureaucratic processes that discourage many competitive retailers and vendors. As a result, quality tenants are turned out by the costly and uncertain RFP process. Clayton Walker indicated that his experience has been that many potential retail tenants prefer the straightforward approach of property managers rather than working directly with transit authorities. The process was characterized as "arcane", and set up in a way that is "unlikely to get good quality stuff" and attract "bottom-feeders"[54]. Authorities often select the lowest bidder who in an effort to make a profit cut corners and provide lesser quality services and goods.

Having said this, transit authorities should have a clear idea of the types of uses that would be beneficial to the station and surrounding area; whether these vendors should be placed under a master lease or bidded individually; determine whether there is an opportunity for creating permanent fixed space within the infrastructure of the station in addition to leasing pushcart locations; and design the spaces within the stations to better accommodate the pushcarts without obstructing pedestrian flows.

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[53] It worth mentioning that these property managers have a vested interest in managing the spaces themselves since they benefit from the success of the vendors.
[54] Bob Weinberg

4 CONCLUSIONS & RECOMMENDATIONS

In summary, my interest in ancillary uses within rapid transit stations stemmed from my interest in seeing how mass transit infrastructure could be improved to serve a dual role and function as a public and civic spaces. The purpose of this thesis was to: examine how the uses affect the station environment; how non-elevated mass rapid transit stations within the MBTA system are being improved through ancillary uses; which uses are particularly beneficial to transit authorities and riders alike as well as which uses require additional operations considerations; and make suggestions as to how to further improve the station environments through the continued use of ancillary uses.

Community-oriented uses within stations have the potential to transform the public space within stations into spaces of a civic nature. While community-oriented uses are unusually good for creating this type of space, other ancillary uses have the potential to establish a social or human ecology[55] by gathering nearby residents, transit riders and "anchoring" them within the spaces of the station to a kind of common ground. The community also benefits from the jobs created by the ancillary uses. The benefits of ancillary uses are not limited to the community and transit authorities have the ability to address a number of their own interests through the inclusion of ancillary uses.

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[55] relationships between human groups and their physical and social environments. Also called human ecology. Source: http://dictionary.reference.com/ ; Also 1 : a branch of sociology dealing especially with the spatial and temporal interrelationships between humans and their economic, social, and political organization Source: http://www.m-w.com

Transit authorities can benefit from the revenue generated by leasing out fixed and pushcart spaces within rapid transit stations. In order to avoid internal conflict within their organization, transit authorities should make the goal of including ancillary uses clear to their staff by drafting language in their mission statement to that effect. Internal memoranda and procedures documentation should explain the criteria for ancillary uses such as type, size, operational logistics, and locational requirements. As part of the this measure, the authority could draft how these criteria will meet the objectives of the proponents while not interfering with operation of the trains and station; as well as offer recommended courses of action should an operational conflict arise regarding trash removal procedures or pedestrian circulation. In order to further their revenue goals and attract competitive vendors, transit authorities should have their real estate consulting divisions develop a series of guidelines for the leasing of spaces not managed through a master lease contract. In addition to physical uses, transit authorities can provide rider convenience through services. Telecommunications services such as real-time electronic dwell-time displays and mobile phone signal transmission within the underground transit system are useful for transit riders since they make the service more convenient as well as for transit authorities with regards to the revenue generation potential of the latter.

Other noteworthy observations regard station security and the administration of the MBTA concessions program. Pertaining to the former, I believe that the potential security threats stemming from station operation concerns are not absolute ofr insurmountable. Security concerns can be fully mitigated through initiatives such as the MBTA's Secure Stations Taskforce which allow uses as long as potential security threats are avoided (queuing and the blocking of sightlines). However, such concerns dwindle once dedicated station personnel are no longer required to remained stationed at a fixed point within the station and can patrol the platform and lobby areas as customer service representatives. Regarding the MBTA concessions, I believe the

authority is exercising good practice in operating a dual concessions program where physically constrained stations that otherwise could not accommodate a fixed, permanent space, can provide convenience services from a pushcart. Additionally, retrofitting stations with fixed spaces without a major station renovation and reconfiguration is not recommended due to the difficulty involved in working underground. Another useful observation made in one of the interviews was to avoid food concessions in close proximity to the station platform since the metal filings created by passing trains accumulate and make it difficult to keep the concessions clean.

In addition to the uses mentioned in this thesis, other suggestions for ancillary uses include the following:

- Allowing community, and non-profit organizations to reserve short-term use of space within a station for public education, marketing campaigns, or fundraising. Such organizations could include the Girl Scouts of America or public health clinics, and could be set up within an area of the station that does not obstruct circulation and requires set-up in the form of a fold-up table and/or mobile display;

- Transparent station headhouses seem to be good locations for ancillary uses, particularly pushcarts;

- Satellite, public outreach space for governmental agencies and departments with continuing public education campaigns;

- Locksmiths;

- Mobile phone sales from pushcarts similar to those in the corridors of malls;

- Small art exhibit space in well illuminated, transparent and secured fixed spaces;

- Use of vacant fare booths – or the spaces they occupied – previously occupied by station attendants, once automated fare collection is in place and attendants are no longer tied to the space[56]; and

- Street performance space.

As my analysis and data suggest, there seems to be little correlation between the number of ancillary uses within stations and the volume of boardings and alightings within those stations. In order to provide a general rule of thumb for transit authorities attempting to determine whether a use can be supported at a station, a study of ancillary uses within Toronto stations[57] provided, as a minimum threshold, a minimum of 6,600 riders to support a fixed space ancillary use within a rapid transit station. Presumably pushcart vendors can survive with slightly less given that a few of the MBTA stations have volumes below the 6,600 person threshold. Another approach in determining the feasibility of a retail use was suggested by real estate consultant Bob Weinberg. It involved multiplying the number of riders within a station by a conservative "capture rate" based on an assumption of what percentage of riders would make a purchase and then multiplying that figure by the cost of the average transaction. The resulting dollar figure could then be used to determine the amount in revenue the vendor would have to make in order to break even.

The data and analysis also suggest that the inclusion of uses should take into account whether the rapid transit station has any additional functions, such as being a transfer station to another rapid transit line or intermodal in nature. Many of the ancillary uses were located within intermodal stations that benefited from aggregating the pedestrian flows of its transit riders within the station from the modes serving the station. Additionally, the data suggested that non-transfer stations had

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[56] Many of the MBTA stations have two fare booths, and most of the stations only have one of the booths occupied.
[57] M. Yeates and K. Jones . Rapid Transit and Commuter Rail Induced Retail Development. 1998

a lower number of ancillary uses within them than all other types of stations. Lastly, given that most of the ancillary uses within the stations were located in pre-fare zones, it is suggested that locating uses in the post-fare zone be avoided unless there is another objective involved in order not to lose the neighborhood commercial market segment of passersby. The design of stations where a transfer is involved that does not require an additional should take into account the flow of riders passing through the space and the opportunity to design ancillary spaces along the transfer zone in order to "capture" these riders.

With regards to the selection of better uses by the MBTA, the authority should consider consulting its riders through surveys in order to determine if there are any particularly useful services that riders would take advantage of. Given the success of the uses along the Back Bay – Forest Hills segment of the Orange Line and the high level of community input that was involved in determining those uses, the MBTA could better ensure the viability of future ancillary use leases by responding to the demand of its riders. Based on the existing uses within the MBTA is it recommended that the MBTA consider including more day care, community-oriented, newsstand, and dry cleaner uses within its stations given the high level of utility these uses provide to riders as well as the "clean" nature of these uses with regards to cleaning costs and pest control.

There were other areas of investigation that merit attention but that thesis was not able to address and which would allow a better understanding of the improvement of stations by transit authorities including ancillary uses within them. One of the shortcomings include investigating whether the individual vendors as financial successes or whether the MBTA is taking a loss with some of the lessees in order to promote activity within certain stations for the security enhancement purposes. Other areas that merits further attention involve finding out how transit authorities decide whether a contract will be profitable to the authority, as well as whether there any liabilities associated

with the policing and supervision of certain ancillary uses such as day care centers, galleries and classroom space.

These recommendations are made in order to further assist transit authorities in further improving the spaces within rapid transit stations. In order for transit authorities do so effectively, they should consider issues pertaining to the layout of the ancillary use spaces within stations, the financial feasibility of the uses, cleaning and maintenance procedures, station security, the type of lease (master contract or individual), and neighborhood benefits. By including some of the recommended types of ancillary uses, rapid transit stations can be transformed from mere infrastructure to more civically oriented spaces that provide riders with a safer and more convenient experience, and afford transit authorities with additional revenue as well as aid in maintaining stations secure from criminal activity.

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