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ENGINEERS AND ENVIRONMENTAL SCIENTISTS

**Transportation Service Study
Phase I – Progress Report
City of Cambridge
Cambridge, Massachusetts**

**Submitted to:
City of Cambridge**

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1.0 Introduction

1.1 Problem Statement

Rizzo Associates, Inc. was retained by the City of Cambridge to examine current transit service in the city and possible improvements to that service. In addition to the Massachusetts Bay Transportation Authority (MBTA), which provides public transit service to the city, private organizations operate various shuttles that are generally not available to the public. The motivation for this study grew out of concerns that existing transit service was failing to meet community and neighborhood needs. In light of the priority the city has placed on reducing vehicle trips, the lack of viable alternatives to driving was of particular concern. One of the strategies that has been suggested was that the city should offer its own, supplemental transit services.

Various options for changing transit service have been proposed by citizens and officials in the past. These have included:

- Changing MBTA service.
- Supplementing existing MBTA service.
- Opening existing private shuttle services to the public.
- Operating shuttles to connect neighborhoods not connected by existing MBTA services.
- Operating a shuttle targeted to the needs of senior citizens.
- Operating a shuttle targeted to the after-school and extracurricular needs of high school students.

Some of these suggestions would be difficult to implement. For example, the city by law cannot run separate service parallel to existing MBTA lines. However, the fact that proposals to that effect have been made suggests that there may be a demand for additional transit service within Cambridge. In order to assess the feasibility of possible transit service changes and enhancements, one must first document existing transit services in the City of Cambridge, investigate unmet needs, and describe the issues relating to satisfying these needs. Phase I of this study was designed to accomplish these tasks.

1.2 Study Objectives

This study focused on four questions that dealt with the key transit issues facing Cambridge:

- What is the nature of existing transit service?
- Where might there be demand for additional service?
- What is the public perception of existing transit service and how might it be improved?
- What has been the experience of other Boston area municipalities that have provided their own supplemental transit service, and what would be the implications for the City of Cambridge?

Answers to these questions will provide an important analysis framework for contemplating potential changes to transit service in Cambridge.

1.3 Overall Approach

Several different analysis methods were used to obtain the information on and evaluate the options for enhanced transit service in Cambridge. The characteristics of existing transit service were obtained from a number of sources, including public documents, information collected by the city, and discussions with public and private officials. Telephone interviews were conducted with the operators of public and private shuttle operators. A Geographic Information System (GIS) was used to analyze existing service conditions. Demographic data and existing service patterns were mapped graphically to determine which areas currently experience lower levels of service. In addition, this mapping was beneficial in identifying Cambridge neighborhoods missing transit connections to the rest of the city.

Public perception of existing service and the need and/or desire for new service was obtained in several ways. First, the Transportation Committee of the City Council convened a hearing on shuttle service, which helped to frame the questions to be answered by this study. Next, city staff conducted a series of public meetings whose aim was to gather information and opinions on existing and potential transit service. Then, a random telephone survey of residents was used to obtain similar information. Both of these were targeted at those neighborhoods having lower levels of transit service. Finally, information on transportation needs and a survey form was posted on the city's web site. The study results were thus based on service analysis and public input.

2.0 Inventory of Existing Services

2.1 Current MBTA Transit Services

The City of Cambridge is currently served with a variety of MBTA services. Six rapid transit stations, one commuter rail stop, and 21 bus routes provide service to Cambridge. An additional 11 bus routes serve subway stations in the city but run almost their entire length outside of the city boundaries. In addition, a free public shuttle service is operated between the Kendall Square Red Line station and the Cambridge Galleria, with interim stops at the Kendall Cinemas and the Courthouse. Other shuttle services, which are not available to the public, are provided by employers, hotels or universities.

Table 1 lists existing MBTA routes providing service in Cambridge and also shows peak and midday headways¹.

Table 1 MBTA Routes Serving Trips Within Cambridge

Route No.	Route Description	Peak Headway (minutes)	Midday Headway (minutes)
Route 1	Harvard-Dudley Square	8	12
Route 47	Central Square – Broadway	20	25
Route 64	Oak Square – Central/Kendall	20	30
Route 68	Harvard Square – Kendall/MIT	NA	30
Route 69	Harvard Square – Lechmere	17	23
Route 70	Waltham – Central	15	30
Route 70A	North Waltham – Central Square	45	V
Route 71	Watertown Square – Harvard Square	9	12
Route 72	Huron Ave – Harvard Square	15	30
Route 73	Waverly Square – Harvard Square	5	12
Route 74/75	Belmont Center – Harvard Square	15	30
Route 77	Arlington Heights – Harvard Square	8	11
Route 77A	North Cambridge – Harvard Square	10	V
Route 78	Arlmont – Harvard Station	15	30
Route 83	Rindge Ave – Central Square	15	30
Route 85	Spring Hill – Kendall/MIT	40	40
Route 86	Sullivan Square – Cleveland Circle	20	30
Route 91	Sullivan Square – Central Square	25	25
Route 96	Medford Square – Harvard Square	20	40
Route CT1	Central Square – BU Medical	15	30
Route CT2	Kendall Square – Ruggles	20	30

NA = No Peak Service

V = Variable Headway

¹ A “headway” is the amount of time scheduled between transit vehicles. For instance, a bus which stops at Central Square at 8:00 A.M. and 8:07 A.M. has a 7-minute headway.

As mentioned above, several bus routes serve subway stations in Cambridge, but leave the city limits almost immediately. These routes are shown in Table 2.

Table 2

Bus Routes Serving Rapid Transit Stations Not Suitable for Trips Within Cambridge

Rapid Transit Stations	Routes
Alewife	62, 67, 76, 79, 84, 350, 351
Harvard	66
Lechmere	80, 87, 88

2.2 Assessment of Current Service Provision

Existing public bus service provides coverage to most parts of the city. Figure 1 shows existing MBTA routes superimposed over an aerial photograph of the city. A quarter-mile distance has been measured around each route. The areas outlined in light gray solid lines typically are farther from existing service than this distance. A quarter-mile is typically used as a rule-of-thumb estimate of the distance most people will walk to a bus stop. Obviously some people will walk farther, and some people will regard as inconvenient any service which is farther than a block away, but this shows that by the standard measure, most parts of Cambridge have basic access to bus service. In addition, some areas outside this distance (such as the cemetery) are areas where it would not make sense to provide service.

Evaluation of existing service adequacy also depends on the frequency of service. In Figure 1 all bus routes are demoted the same regardless of frequency. For the purpose of this analysis, service was divided into frequent and less frequent service. Frequent service was defined as operating at least every 10 minutes during the peak hours, and every 15 minutes during the middle of the day. Routes meeting these criteria operate along Massachusetts Avenue and Mount Auburn Street. The Massachusetts Avenue corridor is also important because three of the five Red Line subway stations in the city are located directly along it. As a result of this, trips along the Massachusetts Avenue corridor are well served by existing MBTA transit. Figure 2 presents the most frequent service in wider solid black lines.

While the wider solid lines denoting frequent service in Figure 2 represent a corridor with good transit service, they also represent a barrier for other trips. Very few bus routes cross Massachusetts Avenue to connect the

neighborhoods of Cambridge. No bus routes from West Cambridge cross Massachusetts Avenue at Harvard Square. Only one (peak hour service for route 64) ever crosses Massachusetts Avenue at Central Square.

Trips from neighborhoods not along the Massachusetts Avenue corridor are thus less well served by transit. In these areas, off-peak bus service may be no more frequent than every half-hour. These services link the neighborhood with the Massachusetts Avenue corridor but not with other outlying neighborhoods. Trips made between two of these neighborhoods are made more complicated by the need to transfer between bus routes each operating only every half-hour and the required payment of two fares².

Figure 3 highlights these neighborhoods. The buffer around all bus routes has been replaced with one which shows only those within a quarter mile of the most frequently running bus routes. This also makes it possible to identify the neighborhoods on the side of the Massachusetts Avenue corridor. These areas of relatively lower service are: West Cambridge, Cambridgeport, Inman Square/ East Cambridge north of Massachusetts Avenue. Our survey of transit needs was therefore targeted to these neighborhoods. If there is a need for increased transit service for the city of Cambridge, it is these neighborhoods which would experience it most acutely. Consequently both the phone survey, and the public meetings were targeted to people living in these areas.

2.3 Current Shuttle Services in Cambridge

Because Cambridge is host to many large employers and hotels, several shuttle services operate in the city that cater to a selected clientele. Table 3 shows the shuttle services that are known to currently operate in the city³. These services have been implemented primarily in response to city requirements to reduce mode share for single-occupant vehicles. A recent example of these shuttle services is "the Link," a shuttle service operated by The Charles River Transportation Management Association (CRTMA)

² Riders paying fares in cash must pay a separate fare for each leg of the trip. Thus, if a transfer to either bus or subway is required, two full fares are required for what the rider considers one trip. Many riders using monthly passes, which cover an unlimited number of rides during that month, do not experience this disincentive. Since they have paid a fixed cost for all of their transit for the month, each incremental trip is "free". However, if one is using a bus only or subway only monthly pass, transferring to the other mode will require an additional fare.

³ Other private shuttle services may exist. As shuttle services are typically not registered with the city, there may be others that have been begun on a voluntary basis.

servicing its member companies in areas such as south of Vassar Street and Tech Square. (According to MIT's latest IPOP studies, CRTMA operates the Tech shuttle).

In addition to "The Tech" shuttle, operated for MIT by CRTMA, MIT also operates a nighttime "Saferide" shuttle in Cambridge and the Back Bay. Harvard operates a number of routes connecting its campuses in Cambridge and Allston. The MASCO (Medical Academic and Scientific Community Organization) M2 shuttle operates along Massachusetts Avenue connecting Harvard, MIT, and Central Square with the Longwood Medical Area. MASCO shuttle tickets are sold to members of MASCO-affiliated organizations.

Table 3 Existing Shuttle Services in Cambridge by Operator

Employee	Residence	Institution	Retail/Hotel
▪ Abt - Alewife	▪ Museum Towers/North Inc.	▪ MIT "the Tech"	▪ Cambridge Inn
▪ ADD-Kendall	▪ EF Education	▪ MIT Saferide	▪ Cambridgeside "the Wave"
▪ CDM - Kendall		▪ Harvard Shuttles	▪ Hyatt Regency
▪ CRTMA "the Link"		▪ MASCO M2	▪ Porter Square Shopping Center
▪ GTE - Alewife		▪ Lesley College	
▪ Lotus-Kendall		▪ Cambridge Hospital	
▪ Lotus-North Station			
▪ Millennium - Kendall			
▪ University Park			
▪ US Trust - Kendall			

This service operates as frequently as every 10 minutes during peak times. Other institutions offering shuttle service are Lesley College (to the Porter Square MBTA station) and the Cambridge Hospital (to its Binney Street parking garage).

"The Wave" service connects the shops at the Cambridgeside Galleria with the Kendall Square/MIT Red Line Station. It also provides service to the Kendall Square Cinemas. This shuttle is free, open to the public, and listed on MBTA maps. This is the most visible retail shuttle service, but intermittent service has been proposed for remote parking lots at Porter Square. Two hotels also offer shuttle service. The Hyatt Regency offers a shuttle service to various points in Cambridge and Boston. Finally, Cambridge Inn offers a shuttle service to Logan airport, with stops in Boston.

Most of the employer shuttle services operate on 20 minute peak headways as required by Cambridge. Importantly for overall transit service in the city, most of these shuttles feed into the MBTA Red Line. Except for the CRTMA service, which by definition focuses on a service

linked with the needs of an area of the city, however, there is very little coordination between operations. For instance, both CDM (Camp, Dresser, and McKee) and ADD operate shuttles between the Kendall/MIT Red Line Station and their offices on Hampshire Street. Although these shuttles provide in essence the identical service (that is, alignments and schedules), there is no coordination between the two.

Because most of these private services are new, very little information is available regarding ridership. These services are not open to the general public, but are restricted to employees, guests, or residents of particular buildings. It should be pointed out that because many of these services connect two specific locations and do not make intermediate stops, the ability (and perhaps desirability) of the general public to use them would be limited.

2.4 Current Shuttle Services Outside Cambridge

The success of transit services will depend on many factors, some of which are very specific to a particular community. Cambridge, for example, exhibits several unique characteristics, such as population density and composition, business and non-profit institutional presence, and urban form. Several other communities in the Boston metropolitan area have instituted shuttle services. Although these communities are different from Cambridge, their experience with these services could provide important insights into potential shuttle services in Cambridge.

Table 4 summarizes information gathered from telephone conversations with the operators of existing community shuttles in the metropolitan Boston area. Some agencies recorded ridership by month, other by year. For those reporting monthly ridership, yearly ridership was estimated. Most operators collecting monthly ridership estimates said that these numbers could vary widely.

The results of the shuttle operator survey show that these services are generally similar in terms of hours of operation, frequency, and size of vehicles (See Table 4). There are some differences, especially in terms of ridership composition. LIFT routes (based in Framingham) have a majority of journey-to-work riders; Beverly has a majority of elderly riders; and Lexpress in Lexington a majority of school-age youth. In each case, the travel patterns and destinations of the respective market groups were explicitly considered when the routes were designed.

Operating costs for these routes tend to average approximately \$3.00 to \$4.00 per rider per trip. The exceptions are Newton and Somerville, which have a much higher operating cost per rider, due largely to low ridership, rather than unusually high costs. There are two possible explanations for the low ridership. Both are comparatively new services, less than five years old, whereas most other services have been operating for at least ten years. Secondly, both operate in communities with a wide variety of transit options. Other towns, such as Lexington and Beverly, are served by existing MBTA buses, but these generally run only slightly more frequently than the shuttle services. Mission Hill, located in the Roxbury section of Boston, also has access to a number of MBTA services, but none operates on the Hill itself. The steep grades and frequency of service may make it an attractive way for people on Mission Hill to access other transit services.

The Somerville service originated in response to similar concerns to those voiced in the City of Cambridge. There are many bus routes that run through Somerville, generally to MBTA stations in other communities. Moving from one neighborhood to another within Somerville, however, often requires several transfers with existing MBTA services. Moreover, no parts of Somerville have the frequency of service observed in Cambridge along the Massachusetts Avenue corridor. In spite of these gaps in MBTA service, the Somerville shuttle does not yet appear to have tapped into a large pool of unmet demand, having an estimated 6 to 8 boardings per trip.

The carriers surveyed made a number of other comments, which might be relevant to planning new routes in Cambridge. LIFT in Framingham recently added a new route, and Somerville and Beverly are currently examining ways to improve their service, so these communities are looking at the same issues as Cambridge. Some of the comments are presented below.

The operator of the LIFT in Framingham suggested that journey-to-work trips should target clusters of retail/service employment. These are most likely to draw local residents. In contrast, office jobs tend to draw regionally and are difficult to serve with community transit.

The Beverly Shoppers Shuttle operators commented that serving outlying areas may be inefficient, since these areas do not yield marginal ridership and also make trips longer for other riders. In addition, in areas of rental housing, there is often no institutional knowledge of the service because of resident turnover. From an operational standpoint, it was brought out that

the absence of permanent lettering on the vehicle for a number of years confused people.

In Somerville, transit labor unions asked the city to assume liability to pay if the Crosstown Shuttle service resulted in the discontinuation of existing MBTA routes. This is a requirement of Federal labor law.

The operators of the Newton Nexus noted that the frequency of service may be less important than reliability. Ridership increased in spite of an increase in scheduled headways because service became more reliable and consistent throughout the day. They also pointed out that the Newton Nexus service has attracted workers from other towns who transfer from the MBTA Green Line. Finally, they emphasized the importance of having a reliable funding source for several years. Otherwise a lot of energy may go into maintaining funding.

In summary, the experience of other shuttle services outside of Cambridge has been very limited. The community most like Cambridge in terms of population density, geography, level of MBTA service, and population, Somerville, has the worst experience with shuttle service. In addition, these communities differ from Cambridge in some very meaningful ways. Thus, this experience suggests significant challenges for any potential shuttle service in Cambridge.

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Table 4 Existing Community Shuttle Services

Service	Ridership	Operating Cost	Fares	Frequency	Span of Service	Years in Operation	Vehicle	Notes
Somerville Crosstown Bus Runs clockwise and counter-clockwise routes	33,500/year (est.) 2,800/mo	\$342,000/year \$37/hour	\$0.50 \$0.25 seniors, children	Hourly, 30 min during peaks	6:30 AM – 6:30 PM	Less than 2 years (November 1998)	18 passenger van	Mostly Seniors
Mission Hill Link variable routing throughout the day	60,000/year	\$170,000/year \$544/day	\$0.50 \$0.25 seniors, children	20-30 min	5:30 AM – 9:30 PM	12 –14 years	24 seat "half-bus"	Supported by New England Baptist Hospital
Nexus Newton 3 routes	48,000/year (est.) 4,000/mo	\$400,000/year	\$1.00 \$0.50 seniors, students	Hourly	6:30 AM – 7:30 PM	4 years	20 seat Blue- bird bus	Growing percentage of working adults
Lexpress Lexington, MA 6 routes on a pulse system	100,000/year	\$400,000/year	\$1.00 \$0.50 seniors	Hourly	7:00 AM – 6:30 PM	20 years	23 seat Blue- bird Trans Shuttle	60% students (youth)
LIFT Framingham, MA 5 routes, 2 in Framingham, 3 outside, all centered on Commuter Rail station	22,800/year (est.) 19,000/mo 10,000/mo Framingham Routes	>\$700,000/year* \$340,000/year Framingham routes	\$1.50	Hourly	6:30 AM – 6:30 PM	16 years	24 seat Blue bird Trans Shuttle	60% journey-to- work
Beverly Shoppers Shuttle 1 route managed by Beverly Chamber of Commerce	27,500/year (est.) 2,300/mo	\$105,000/year	\$0.25	Hourly	6:45 AM – 6:00 PM	>10 years	40 seat bus, converting to 22 seat bus	1,500 of 2,300 riders (65%) are seniors

3.0 Analysis of Travel Patterns

3.1 Demographic Information

Demographic information was available from two sources—the 1990 census and City of Cambridge neighborhood statistics. Tables 5 and 6 present some of the data for the 13 neighborhoods used by the Community Development Department. Figures 4 through 8 present the demographic information in graphic form.

Table 5

Age Distribution Information

	Percent by Age				Median Age (est.)
	Under 14	15-24	25-64	Over 65	
East Cambridge	11%	14%	58%	17%	30
MIT	5%	64%	28%	3%	18
Wellington-Harrington	18%	15%	55%	11%	27
Area 4	22%	19%	52%	8%	24
Cambridgeport	14%	13%	63%	10%	28
Mid-Cambridge	7%	21%	63%	9%	27
Riverside	8%	43%	44%	5%	20
Agassiz	7%	30%	58%	5%	23
Neighborhood 9	10%	21%	60%	10%	28
Neighborhood 10	12%	8%	65%	15%	32
North Cambridge	16%	13%	56%	15%	29
Cambridge Highlands	3%	10%	61%	26%	37
Strawberry Hill	17%	10%	51%	22%	31
Citywide	12%	22%	56%	10%	26

Source: City of Cambridge

Although the boundaries used by the city do not correspond to those described in Figures 2 and 3 as having relatively lower service, there is some overlap. While conclusions about the demographic information cannot be definitive, they can be suggestive. For instance, an examination of information on age distribution suggests that neighborhoods referred to as West Cambridge for the purposes of this study are broadly similar to the city as a whole in age distribution. Cambridgeport appears to have a higher percentage of youth age 14 and under. The city divides the area north of Massachusetts Avenue into two neighborhoods: Wellington/Harrington (including Inman Square) and East Cambridge. Wellington/Harrington appears to have a higher percentage of youth than the city as a whole, as well as a larger household size and more persons per acre. East Cambridge appears to have a higher percentage of persons

over age 65 and is less dense than Wellington/Harrington. Because of this difference in these neighborhoods, it was decided to treat them as two separate areas for the purposes of tabulating the results of the telephone survey.

Table 6 Other Demographic Information Provided by the City of Cambridge

	Persons Per Household	Persons Per Acre	Dwelling Units	Median Household Income
East Cambridge	2.06	14	3,197	30,281
MIT	2.17	22	864	26,397
Wellington-Harrington	2.59	48	2,922	30,231
Area 4	2.64	34	2,694	24,665
Cambridgeport	2.06	27	4,430	28,466
Mid-Cambridge	1.75	44	6,359	37,075
Riverside	1.97	52	3,647	27,415
Agassiz	1.81	27	1,988	36,853
Neighborhood 9	1.89	27	5,474	36,608
Neighborhood 10	2.07	12	4,149	54,656
North Cambridge	2.25	19	4,916	31,516
Cambridge Highlands	1.70	2	240	37,125
Strawberry Hill	2.30	20	1,099	26,368
Citywide	2.08	24	41,979	33,140

Source: City of Cambridge

3.2 Public Outreach

3.2.1 Approach

A program of public outreach was conducted to elicit needs, concerns, and opinions regarding transportation services and the potential demand for a shuttle service. As noted previously, this program included a series of three public meetings, a random telephone survey, and posting a survey form for the response and comments on the City's web site. The results of the community meetings are described below.

3.2.2 Meeting Results

The Community Development Department advertised and posted information for three community meetings on travel needs to elicit demand for a potential shuttle service. The meetings were held on Thursday, June 8, Wednesday, June 21 and Wednesday, June 28, 2000 and

targeted the neighborhoods least served by transit. These meetings were announced in the Boston Globe, in the Cambridge Chronicle, through flyers at other public meetings on related topics, on the City's web site, and through direct mailings. At the first meeting, no members of the public attended. At the second meeting, there were only two public attendees. At the third meeting, there were two members of the public.

One of the attendees was a coordinator for the Shepherd Center, a partnership of several Cambridge and Somerville churches, which offers escorted transportation to the elderly. Volunteers, using their own cars, drive an individual senior citizen to his/her desired destination. Seniors can wait inside their homes and are given assistance to and from the car. Elderly transportation service needs were described, including emergency transportation (typically for medical reasons), regular medical appointments and rides to church. Concerns about the ability of vans, shuttles, and buses to serve seniors, for whom steps may pose a significant problem, were raised. It was suggested that a shuttle service between origin and destination minimize the need to make route transfers on current MBTA service.

Another public attendee expressed the need for better transportation service for the commercial area near Magazine Beach (including Trader Joe's, MicroCenter, and Strawberry's) and the recreational facilities at Magazine Beach; to and from Inman Square; travel between the Huron Village area and the Alewife area; and to the Kendall Square Cinema. It was discussed that this latter demand could be served by improvements to the Broadway bus (MBTA Route #68). It was also suggested that the Cambridge-side Galleria "the Wave" shuttle could be improved with better signage.

3.3 Telephone Survey

3.3.1 Approach/Methodology

A telephone survey was developed to administer to residents in geographic areas of Cambridge with relatively lower levels of existing MBTA service. As noted previously, areas with lower levels of bus service were defined as those parts of the city more than one-quarter mile from existing frequent MBTA service as shown in Figures 2 and 3. A map incorporating this buffer was used to determine the names of streets in each of these areas. For streets partially inside and partially outside the buffer, only addresses more than a quarter mile from transit were used. [For instance,

on Brookline Street only addresses greater than 100 (approximately one-quarter mile south of Massachusetts Avenue) were used in the Cambridgeport listing.] This list was then cross-referenced with commercially available directory software, which permits listing of phone numbers, by street address. Random numbers provided by an Excel spreadsheet, were used to select the addresses to be contacted.

The listings available from the software included non-solicitation flags⁴, as well as duplicate numbers. The non-solicitation flags available in the listing at the time of publication were respected, and these addresses and phone numbers were not included in the listings provided to the surveyors. Because the information was dated 1999 it also included out-of-service numbers and numbers being used as fax machines. These lists included more than ten times the number of surveys being sought in order to reflect the possibilities of out-of-service numbers, refusal to participate, or people not being home. Surveyors called during the midday and again after 6:00 p.m. The time and date of each call were recorded along with the phone number.

The survey included nine questions, with one (Question 3) incorporating three parts for each member of the household (though in practice few respondents gave information for more than three individuals). Respondents were asked about current travel patterns, places they would like to visit but which were not conveniently served by transit, and to rate existing transit service and the importance of improving it. The survey form is included in the appendix.

The survey goal was to obtain a one percent sample of households in the study areas. The desired number of responses was estimated based on the approximate number of households in the area according to the 1990 Census. Table 7 shows the number of surveys sought for each neighborhood. As noted previously, the area north of Massachusetts Avenue was divided for reporting purposes to reflect the different age distribution for the East Cambridge and Inman Square neighborhoods suggested by information provided by the City of Cambridge in Tables 5 and 6.

⁴ Flags are notations in the telephone listing that indicate this telephone number should not be used for solicitations.

Table 7

Surveys by Neighborhood

Neighborhood	Minimum Surveys
Cambridgeport	40
East Cambridge	35
Inman Square	60
West Cambridge	65
Total	200

3.3.2 Summary and Highlights of Results

The final survey included 205 surveys from the four neighborhoods. These 205 surveys represent 1,775 phone calls, of which 360 were answered. An almost equal number of phone numbers were discovered to be invalid (out-of-service, fax machines, or being used by businesses). In the remaining cases there was no answer, or an answering machine. Thus, 48 percent of people answering the phone when called agreed to answer the survey. The response rate varied by neighborhood however, from 32 percent in Cambridgeport to 80 percent in West Cambridge. Some of this variation reflects the fact that Cambridgeport was the first neighborhood surveyed. Changes made after this experience included screening the phone lists more carefully for duplicate numbers and concentrating phone calls during different hours during the midday. After these changes, the lowest neighborhood response rate was 54 percent for East Cambridge.

Question 2 asked how many people in the household primarily drove and how many primarily used other means (walked, transit, or were driven). Table 8 presents results from this question. Some surveyors felt that some respondents were reluctant to reveal the number of persons in the household. From the answers to question 3, it appears that many people did not include children when discussing household trip-making. This may account for the fact that average household sizes, particularly for East Cambridge, seem lower than one might expect from other demographic sources (see Table 6). In light of this fact, no breakdown is presented in terms of the percent of residents who are primarily auto drivers, and those primarily oriented toward other modes. Table 8 does present the percentage of households where the respondents indicated that all residents primarily drove, or where they primarily used other modes.

Table 8 Household Members and Primary Mode Choice (Question 2)

Neighborhood	Surveys	Residents Primarily Driving	Residents Primarily Using Other Modes	Everyone Primarily Drives	No One Primarily Drives
Cambridgeport	40	49	45	38%	23%
East Cambridge	36	17	28	36%	58%
Inman Square	62	28	32	39%	44%
West Cambridge	<u>67</u>	<u>37</u>	<u>48</u>	<u>36%</u>	<u>48%</u>
Total	205	131	153	37%	47%

Question 3 was intended to determine the existing trip-making patterns for the neighborhood. Respondents were asked to give information on trips within Cambridge for each member of their household, starting with themselves. The first question asked people to categorize the subject by age category. The results are shown in Table 9. Some respondents felt uncomfortable giving information for other members of the household, or indicated that they wanted to cut the interview short before giving information about each member. As a result the number of records is somewhat lower than the number of household members indicated in Table 8, especially for the Cambridgeport neighborhood. It also appears that respondents were reluctant to give information about children in their household, or did not consider them as independent trip-makers.

Table 9 Individual Records and Age Breakdown (Question 3, part I)

Neighborhood	Under 16	16-64	65 or Older	No Answer	Total Individuals	Total Surveys
Cambridgeport	2	55	8	9	70	40
East Cambridge		25	14	1	40	36
Inman Square		48	18	2	69	62
West Cambridge	<u>1</u>	<u>67</u>	<u>13</u>	<u>4</u>	<u>85</u>	<u>67</u>
Total	3	196	53	16	264	205

Question 3 also asked about existing trip-making patterns. People were asked to list places in Cambridge where they usually went, how often they went, whether these trips were in the peak or off-peak, and what mode they used. Table 10 summarizes the most frequent destinations listed in response to these questions. For the most frequently recurring destinations, it lists the total number of responses, as well as the estimated number of weekly trips this represents in each neighborhood. Because some respondents did not give a value for weekly trips, however, these numbers are probably low. As with any of the subsequent questions about places, summarizing responses raises some questions. People may have widely divergent ideas about neighborhood boundaries: respondents might have

widely different ideas about what constitutes North Cambridge, and whether it would be appropriate to group it with Porter Square. On the other hand, there is the question of consolidation: Twin Cities Plaza, East Cambridge, Lechmere, and the Galleria, are fairly close to one another, but a shuttle service to serve people destined to one might not be convenient to people going to another.

The totals column refers to the total number of surveys, and the total estimated distinct trips. These include trips to some locations that are not included in this table, due to the small number of respondents indicating them. Table 10 should in no way be taken as representative of overall flows on the Cambridge street or transit network, since both of those include people traveling to or from destinations outside Cambridge. What it does show is that, as one would expect, destinations along the Mass Ave/Red Line corridor (Harvard, Central, Kendall) are very popular.

Question 3 also contained a section asking respondents if there were places in Cambridge they wanted to go during the week, but could not because they lacked convenient transportation. This was one of several questions designed to elicit information about where transportation improvements might be made. Question 5 asked a similar question about weekend trips. In some cases respondents stated that since they had a car, there was no place they found inconvenient to get to. In all cases, respondents were allowed to give multiple answers, while most people gave no answers. Table 11 shows the total number of responses for each of these questions, and lists the destinations that were cited by multiple respondents.

Table 10 Most Frequently Recurring Destinations in Cambridge (Question 3, part 2)

Destination	Cambridgeport		East Cambridge		Inman Square		West Cambridge	
	Res	Trips	Res	Trips	Res	Trips	Res	Trips
Alewife	3	9					1	1
Beacon St/Foodmaster			7	10				
Cambridge St/Hospital			1	12			1	5
Cambridgeport	4	20			6	22	2	3
Central	35	102	6	11	15	37	5	16
CRLS/Library	3	4			3	3	2	5
Danehy Park	2	10					1	1
East Cambridge	2	7	2	9	6	16		
Fresh Pond	3	7			4	9	3	5
Galleria/Lechmere	4	7	6	16	5	17	1	4
Harvard	26	61	9	33	23	42	19	65
Inman Square	7	9	3	4	5	16		
Kendall	5	13	1	2	3	8	6	23
MIT	4	17			3	7	3	11
Mount Auburn			1	2	4	8	6	8
North Camb	5	18	3	5	2	12	1	4
Porter	5	9	1	2	11	22	7	19
Twin Cities	4	12	1	2	5	11		
Other	<u>20</u>	<u>12</u>	<u>16</u>	<u>45</u>	<u>27</u>	<u>80</u>	<u>21</u>	<u>81</u>
Total	132	317	50	143	129	320	79	251

Res = number of surveys

As can be seen for Question 7, less than a third of respondents generally gave any response, and for other questions the rate was even lower. In Cambridgeport, for instance, only 13 of 40 respondents gave any answer to question 7, although they provided 25 separate locations where they thought transit should be improved.

To some extent this lack of response probably reflects existing conditions rather than justifying them—if someplace is difficult to get to, people may not even consider taking advantage of employment, social, or shopping opportunities there. Nonetheless it does seem clear that positive sentiment for improved transit service is limited, and to the extent that it exists there is no clear mandate for particular linkages. The most frequently recommended linkages (Inman to Cambridgeport, Cambridgeport to Central, and East Cambridge to Inman) represent only 10 percent of the respondents for their respective neighborhoods. In addition, the follow-up Question 8 indicated that these individuals would not use such a transit

service every day, although they might use it multiple times during a week.

For the most frequently mentioned routing (Inman to Cambridgeport), half of the respondents indicated that improved transit service was not important to them. Moreover, both the Cambridgeport to Central and the East Cambridge to Inman movements are ones for which some existing bus support exists: Routes 47 and 64 along Magazine and Brookline Streets to Central Square respectively, and Route 69 along Cambridge Street to Inman Square. These existing routes might be some distance away from particular residents, or may not operate frequently enough to be considered truly convenient. However, a conventional fixed-route shuttle system would probably be only slightly more convenient or frequent.

It should be pointed out that some individuals were very strong in their support for improved transit service. Although comments were not solicited as part of the survey, surveyors did record comments made over the course of answering the survey. Because surveyors identified themselves as working for the City of Cambridge, respondents may have wanted to take advantage of having a representative of the city to whom they could address their concerns. Some of these comments were supportive of existing service: a respondent in East Cambridge liked the bus on Broadway (MBTA Route #68), for instance. In Cambridgeport especially, several expressed support for improving service. One respondent who rated both existing service and the need for new service above average commented that it was important to improve transit as a matter of principle but there was a pretty good network already. Another strongly complained about the difficulty of traveling between Cambridgeport and Twin Cities by transit: "A ten minute drive takes forty minutes and multiple transfers on the T."

Table II Survey Responses Bearing on Location to Improve Transit Service

Neighborhood	Surveys	Cited as Difficult to get to for Daily Trips (Question 3)		Cited as Difficult to Reach for Weekend Trips (Question 5)		Recommended for Improved Transit (Question 7)	
		Responses	Recurring Destinations	Responses	Recurring Destinations	Responses	Recurring Destinations
Cambridgeport	40	10 surveys 13 locations	<ul style="list-style-type: none"> ▪ Galleria (2) ▪ Harvard (2) ▪ Twin Cities/ East Cambridge (2) 	4 surveys 6 locations	<ul style="list-style-type: none"> ▪ Galleria (2) 	13 surveys 25 locations	<ul style="list-style-type: none"> ▪ Central (4) ▪ Galleria/Lechmere (3) ▪ Across BU Bridge (3) ▪ Harvard (2) ▪ Inman (2) ▪ Twin Cities/ East Cambridge (2)
East Cambridge	36	6 surveys 6 locations	<ul style="list-style-type: none"> ▪ Inman (2) 	2 surveys 2 locations	None Recurring	9 surveys 12 locations	<ul style="list-style-type: none"> ▪ Inman (3) ▪ Central (2) ▪ Galleria (2) ▪ Kendall (2)
Inman Square	62	13 surveys 13 locations	<ul style="list-style-type: none"> ▪ Cambridge St (2) ▪ Cambridgeport (2) ▪ East Cambridge/ Galleria (2) 	3 surveys 4 locations	None Recurring	16 surveys 23 locations	<ul style="list-style-type: none"> ▪ Cambridgeport (6) (includes 2 for Trader Joe's specifically)
West Cambridge	67	2 surveys 3 locations	None Recurring	9 surveys 11 locations	<ul style="list-style-type: none"> ▪ Cambridgeport (2) ▪ East Cambridge (2) 	18 surveys 28 locations	<ul style="list-style-type: none"> ▪ Fresh Pond/ Fresh Pond Mall (4) ▪ Cambridgeport (3) ▪ Cambridge Street (3) ▪ Kendall (2) ▪ Mount Auburn(2)

Note: 3 individuals in West Cambridge mentioned in question 3 that they had difficulty getting to the Burlington Mall.

However, as noted above, this survey did not provide evidence of a large latent demand for any of these movements. Table 12 summarizes comments specifically related to transportation.

Table 12 Summary of Incidental Comments

Cambridgeport	East Cambridge	Inman Square	West Cambridge
<ul style="list-style-type: none"> ▪ General support for improved transit (5) ▪ Specific recommendations for improved service (3) ▪ Service is good (2) ▪ Too much traffic (1) ▪ Buses get delayed on Sundays (1) 	<ul style="list-style-type: none"> ▪ Complaints about Parking (3) ▪ No collector at Lechmere (1) ▪ East Cambridge always gets bad service (1) ▪ Broadway bus is good (1) ▪ Red Line should connect to Lechmere (1) 	<ul style="list-style-type: none"> ▪ Broadway bus should run later (1) ▪ Inman should have a subway (1) ▪ Shouldn't be parking tickets for residents (1) ▪ More bus service in general (1) ▪ No bus service on Sunday (1) 	<ul style="list-style-type: none"> ▪ Weekend buses are unreliable (4) ▪ Driving on Mass Ave is confusing (2) ▪ Parking complaints (2)

Question 6 asked respondents to rate existing transit service for their neighborhood on a scale of 1 to 5, with 1 being horrible and 5 being outstanding. Table 13 presents the number of respondents giving each response, as well as the overall average rating. As can be seen, all neighborhoods seemed to rate existing service above average, but service in Cambridgeport received the lowest rating overall.

Table 13 Rating of Existing Service from 1 (Horrible) to 5 (Outstanding) (Question 6)

Neighborhood	Surveys	Blank	1 Horrible	2	3 Neutral	4	5 Outstanding	Rating
Cambridgeport	40	1	3	3	12	15	6	3.5
East Cambridge	36		1	3	7	12	13	3.9
Inman Square	62	2	1	2	21	18	19	3.9
West Cambridge	<u>67</u>	—	—	<u>2</u>	<u>9</u>	<u>32</u>	<u>24</u>	<u>4.0</u>
Total	205	3	5	10	49	77	62	3.9

Question 9 asked respondents to rate the importance of improving service, again on a scale of 1 to 5 where 1 was not important at all and 5 was very important. Table 14 presents the results of this question. Overall, most respondents appeared to rate improved transit service as being of average importance. Respondents in Cambridgeport appeared to attach the strongest importance to improving transit service of any neighborhood surveyed.

Table 14 Rating of Importance of Additional Transit Service from 1 to 5 (Question 9)

Neighborhood	Surveys	Blank	1 Not Important	2 Somewhat Important	3 Neutral	4 Important	5 Very Important	Rating
Cambridgeport	40	2	6	6	7	8	11	3.3
East Canbridge	36	1	8	3	11	10	3	2.9
Inman Square	62	1	14	16	13	8	10	2.4
West Cambridge	<u>67</u>	<u>1</u>	<u>16</u>	<u>4</u>	<u>21</u>	<u>13</u>	<u>12</u>	<u>3.0</u>
Total	205	5	44	29	52	39	36	3.0

This survey did not identify widespread latent demand for additional transit routes. Sentiment for improved transit service seemed to be strongest in Cambridgeport. This neighborhood rated existing service the worst, attached a highest importance to new service, and made the largest number of incidental comments supporting improved transit service. Even here, however, two-thirds of respondents had no suggestions when asked where new transit routes should go. One-third of respondents said that all members of their household primarily drove when making trips.

This survey was intended to be an overall assessment of transit demands in the neighborhoods where existing transit service is poorest. It was not targeted to specific markets, such as children, the elderly, or transit-dependent workers. Sentiment in favor of improved transit may be higher in such specific groups, and as discussed in the section on transit services in other metropolitan Boston communities, targeting such specific groups appears to be the best strategy for local transit. Nevertheless, this survey shows that Cambridge residents as a whole are satisfied with their existing service, do not seem significantly inconvenienced by poor service to parts of the city, and most often travel to locations along the Massachusetts Avenue corridor where transit service is strongest. Some residents are affected by the difficulties of neighborhood-to-neighborhood travel away from this corridor, but they make up only a fraction of the general population targeted by this survey.

4.0 Conclusions and Recommendations

4.1 Statement and Classification of Identified Travel Needs

This study has examined the level of existing transit service in the City of Cambridge and has investigated the feasibility of providing new shuttle

service in those neighborhoods currently receiving poor service. Although the data collected during the study was limited in magnitude, the methodology used provides a strong foundation for making observations on the need for service enhancements in the city. These observations include:

1. The public meetings held specifically on this topic were sparsely attended, and comments tended to focus on possible improvements to existing services, rather than the need for new services.
2. The telephone survey found limited concern about transit service to the city neighborhoods. The large majority of respondents (188 out of 205, over 90 percent) rated existing service as being acceptable to outstanding.
3. The telephone survey found a more uniform distribution of responses relating to the importance of additional transit service in the city. Assuming a ranking of "3" meant that the respondent felt additional service was neither important or unimportant, 73 respondents did not feel such service was important (ranked "1" or "2") while 75 felt that additional service was an important issue (ranked "4" or "5"). Of the neighborhoods surveyed, Cambridgeport seemed to be the most interested in improved transit service.
4. Not surprisingly, the most frequented destinations in the city were Central Square, Harvard Square, and Kendall Square. The most cited locations recommended as destinations for improved transit service were first Central Square, Fresh Pond Mall and the Galleria area, followed by Harvard Square, Inman Square, and Kendall Square. However, no more than 10 respondents mentioned the same location (the Galleria) as a destination to be better served by transit.
5. The initial analysis of current transit service indicated that neighborhood-to-neighborhood travel not currently served by MBTA service could be an important latent travel demand market for shuttle services. The survey results suggest that this is not the case. For example, only two respondents from Cambridgeport mentioned East Cambridge as a destination for improved service; only three respondents from West Cambridge mentioned Cambridgeport; and only three respondents from East Cambridge mentioned Inman. To some extent this should not be surprising in that existing travel patterns are strongly influenced by existing services and thus many

respondents might not know of reasons to visit these other neighborhoods.

6. A review of existing shuttle services in the Boston metropolitan area revealed that in most cases shuttle services were targeted at specific market groups (e.g., elderly, children and shoppers). Survey respondents were hesitant to discuss children in response to the survey questions, although the surveyors asked targeted questions concerning such household members.
7. The proposed Urban Ring will provide a better connection between Cambridgeport and the MBTA Red Line and East Cambridge/Lechmere.

4.2 Recommendations

The following recommendations are based on the results of the public outreach program and the analysis of transit service deficiencies in the City of Cambridge:

Community Wide

1. There is limited evidence of neighborhood interest or demand for enhanced transit service in the city. Some respondents were very enthusiastic about enhanced service, but they represented a clear minority. Given the costs associated with such service for what appears to be a very small market, it may not be appropriate to implement shuttle services at this time.
2. There is demand for improvements to existing MBTA service. As noted in Section 3, existing bus routes do serve some of the connections respondents to the survey recommended for better service. Travel between Cambridgeport and Central Square is served by routes 47 and 64 (and to a lesser extent route 70 and 70A). Travel between some parts of East Cambridge and Inman Square is possible on Route 69. Improving the frequency of the existing MBTA services might be one step to addressing these concerns. It is also possible that not all residents are aware of these services, or their schedules, so better outreach might be another consideration.

Targeted Opportunities

3. Survey respondents desiring enhanced service identified existing activity centers as those areas most in need of enhanced service. The

city may want to work with employers and shopping centers in these areas to implement transit services that will better serve these existing centers of economic activity, although, once again, a large number of respondents were satisfied with existing service. This recommendation is aimed especially at new developments that would add new trips to the transportation network.

4. The methodology used in this study was limited to input from the general population. As evidenced from other transit services in the metropolitan area, there might be a potential market in the city for transit services aimed at specific markets, such as the elderly or students. It may be appropriate to undertake a more detailed study of these markets during Phase II of this study.

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FIGURES

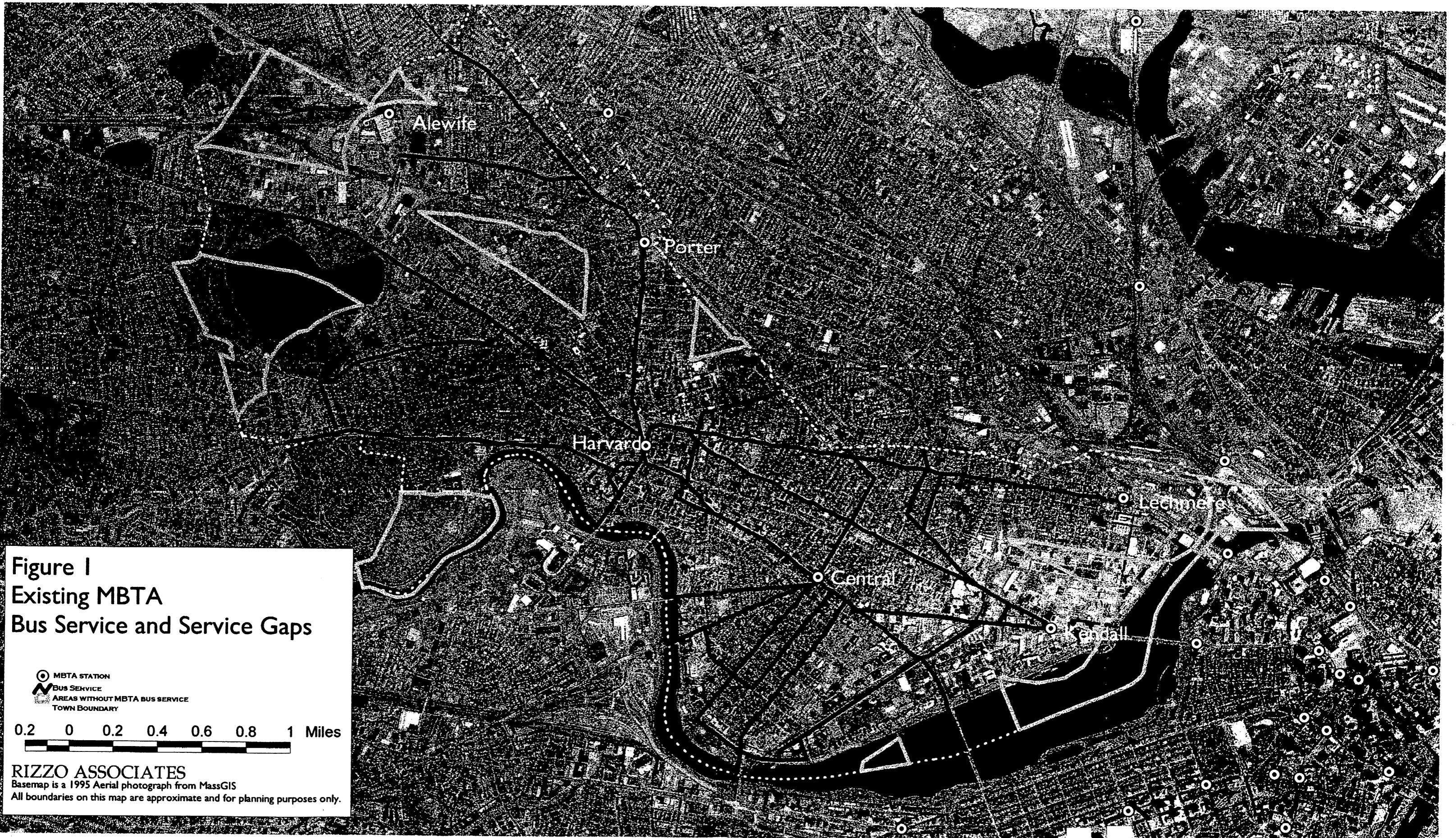


Figure 1
Existing MBTA
Bus Service and Service Gaps

MBTA STATION
BUS SERVICE
AREAS WITHOUT MBTA BUS SERVICE
TOWN BOUNDARY

0.2 0 0.2 0.4 0.6 0.8 1 Miles

RIZZO ASSOCIATES
Basemap is a 1995 Aerial photograph from MassGIS
All boundaries on this map are approximate and for planning purposes only.

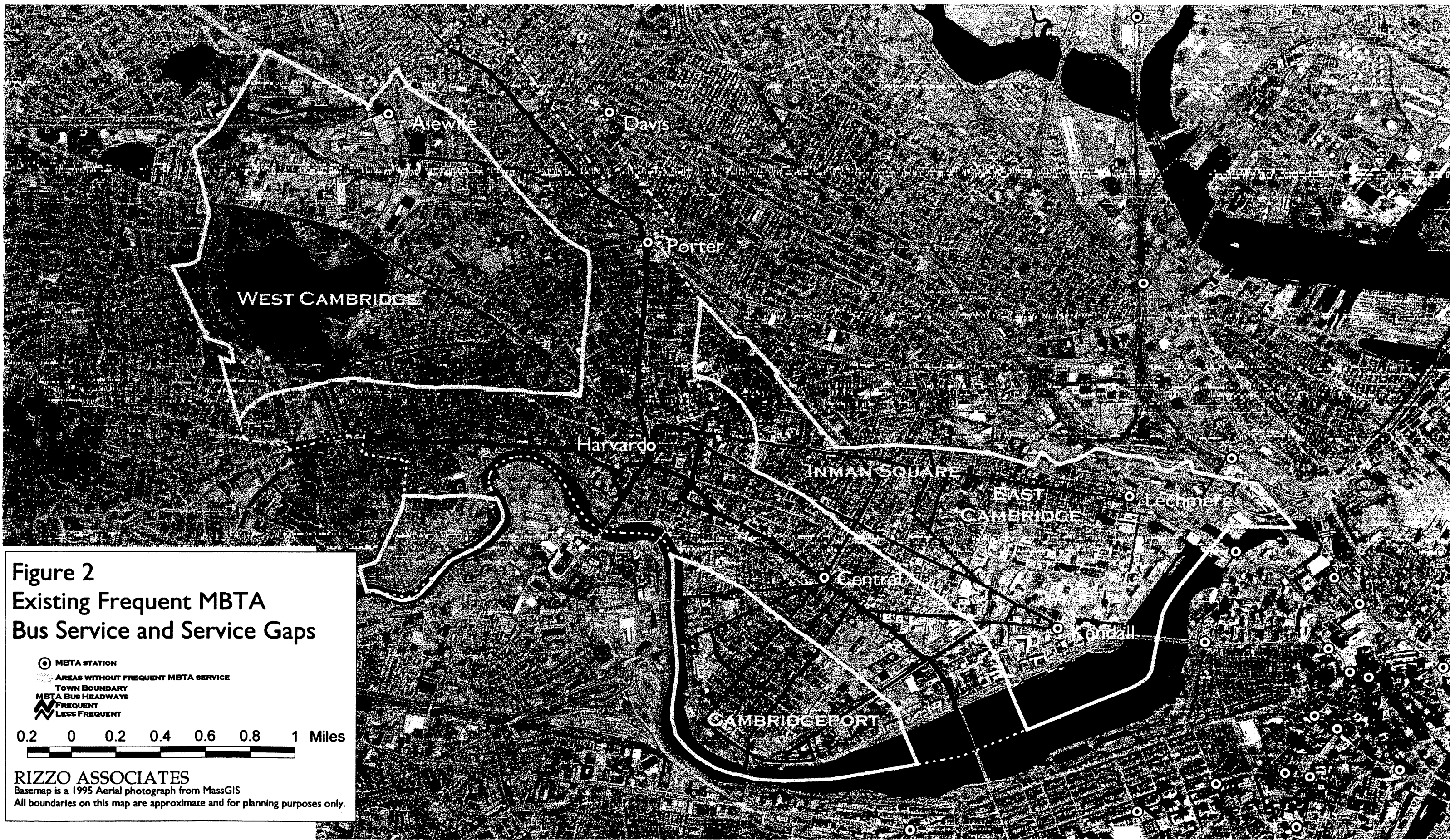


Figure 2
Existing Frequent MBTA
Bus Service and Service Gaps

○ MBTA STATION
 - - - AREAS WITHOUT FREQUENT MBTA SERVICE
 - - - TOWN BOUNDARY
 - - - MBTA BUS HEADWAYS
 - - - FREQUENT
 - - - LESS FREQUENT

0.2 0 0.2 0.4 0.6 0.8 1 Miles

RIZZO ASSOCIATES
 Basemap is a 1995 Aerial photograph from MassGIS
 All boundaries on this map are approximate and for planning purposes only.

FIGURE 3: AREAS WITHOUT FREQUENT MBTA SERVICE IN RELATION TO CAMBRIDGE NEIGHBORHOOD BOUNDARIES

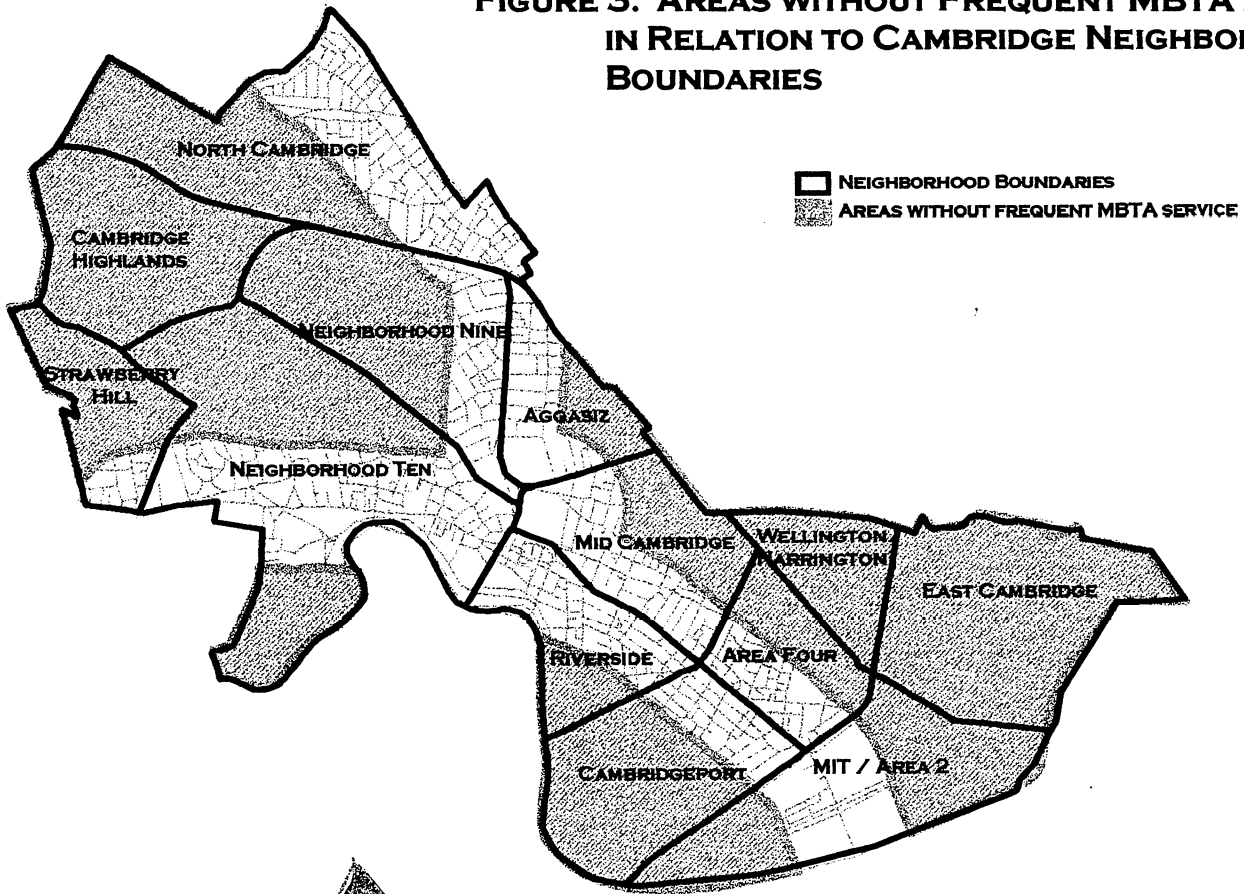
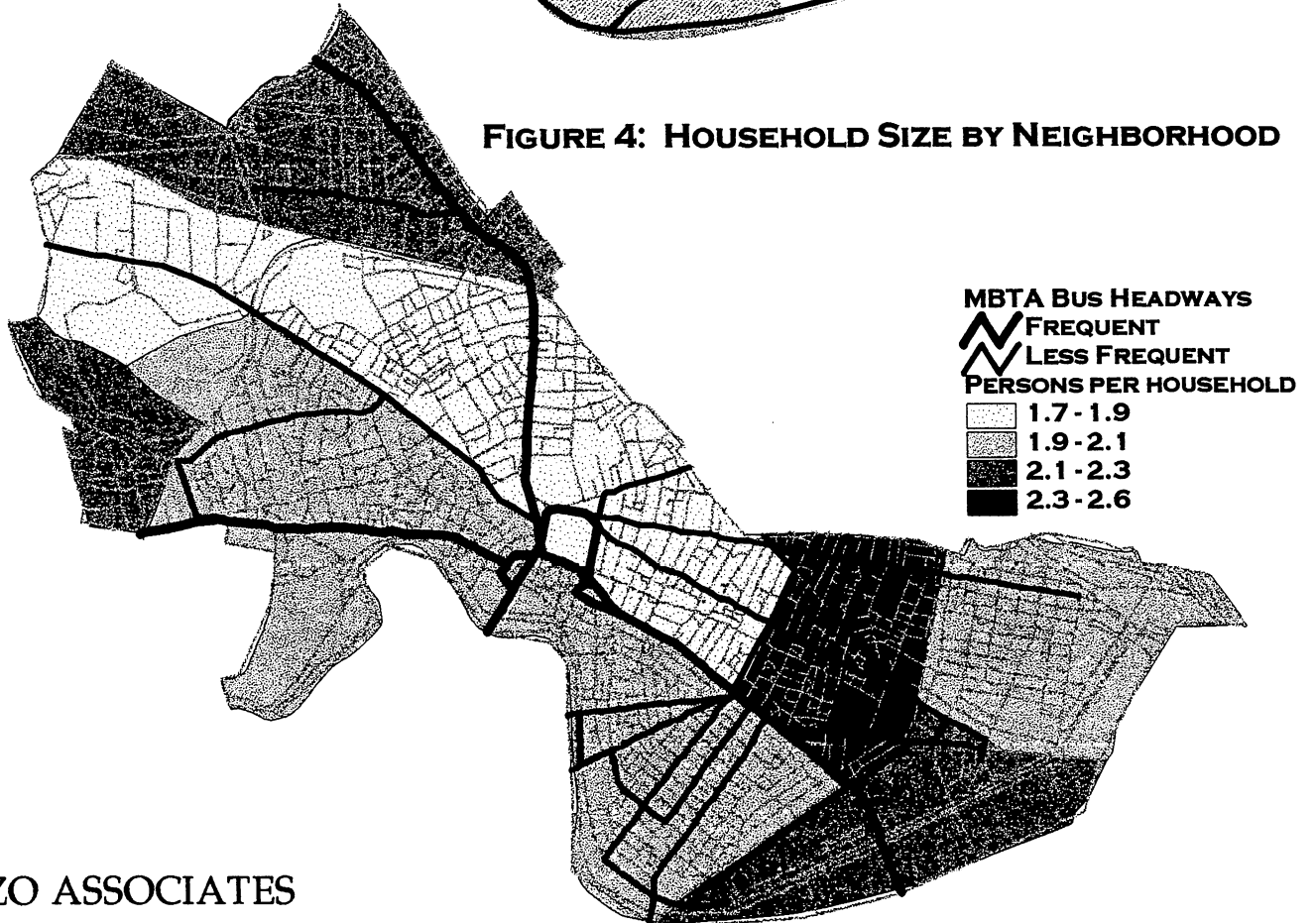


FIGURE 4: HOUSEHOLD SIZE BY NEIGHBORHOOD



RIZZO ASSOCIATES

All information on this map is approximate and for planning purposes only.
 Roadways are based on census geography and may not match field conditions.

FIGURE 5: PERCENT OF POPULATION 14 OR UNDER BY NEIGHBORHOOD

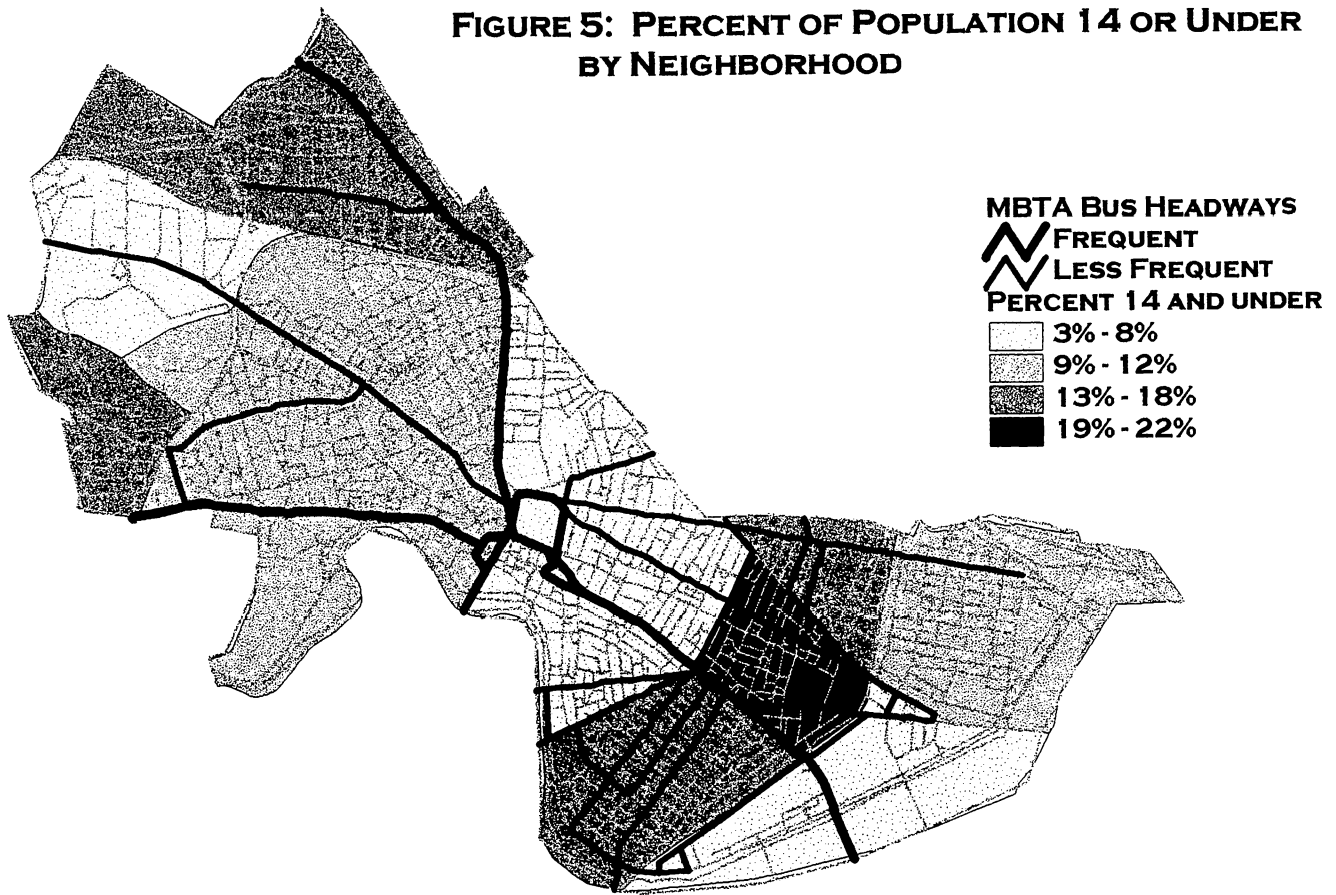
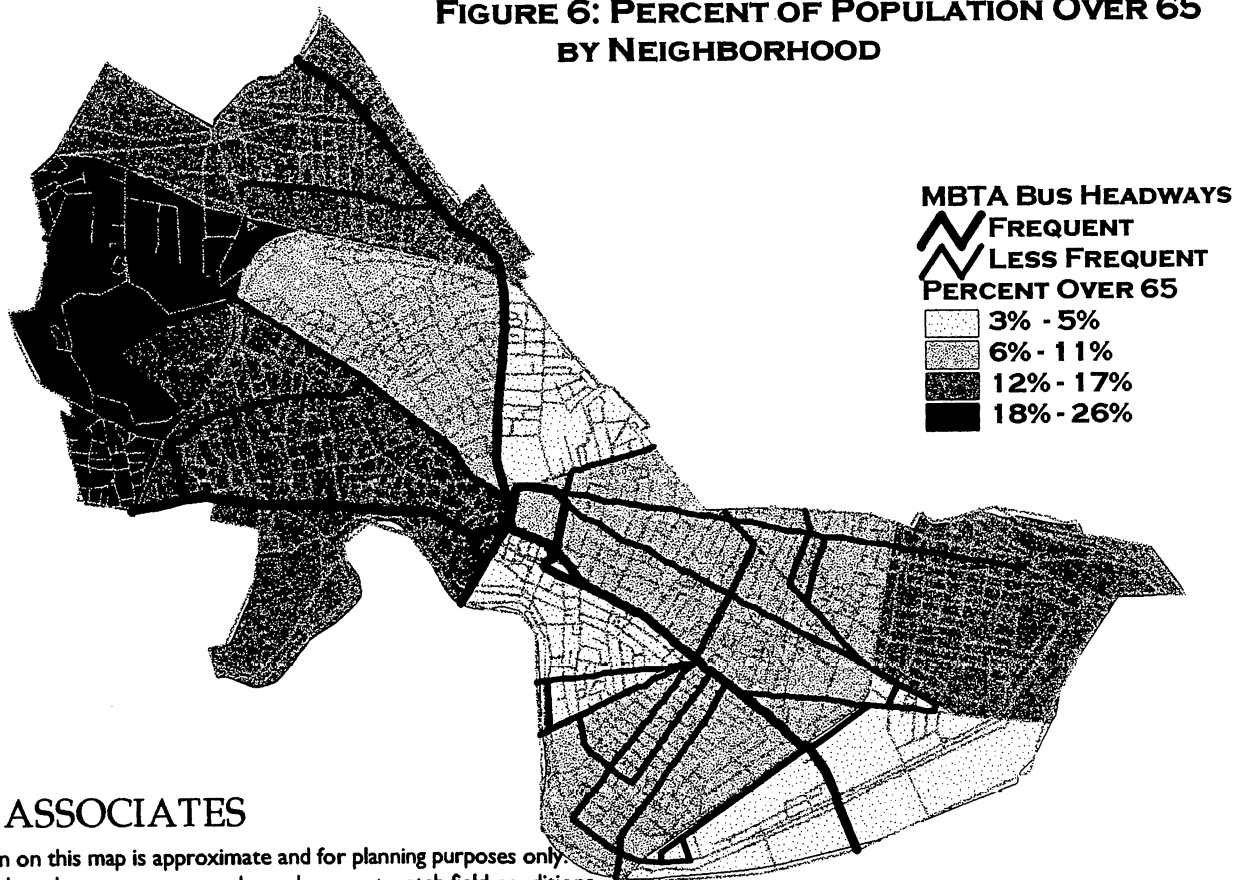


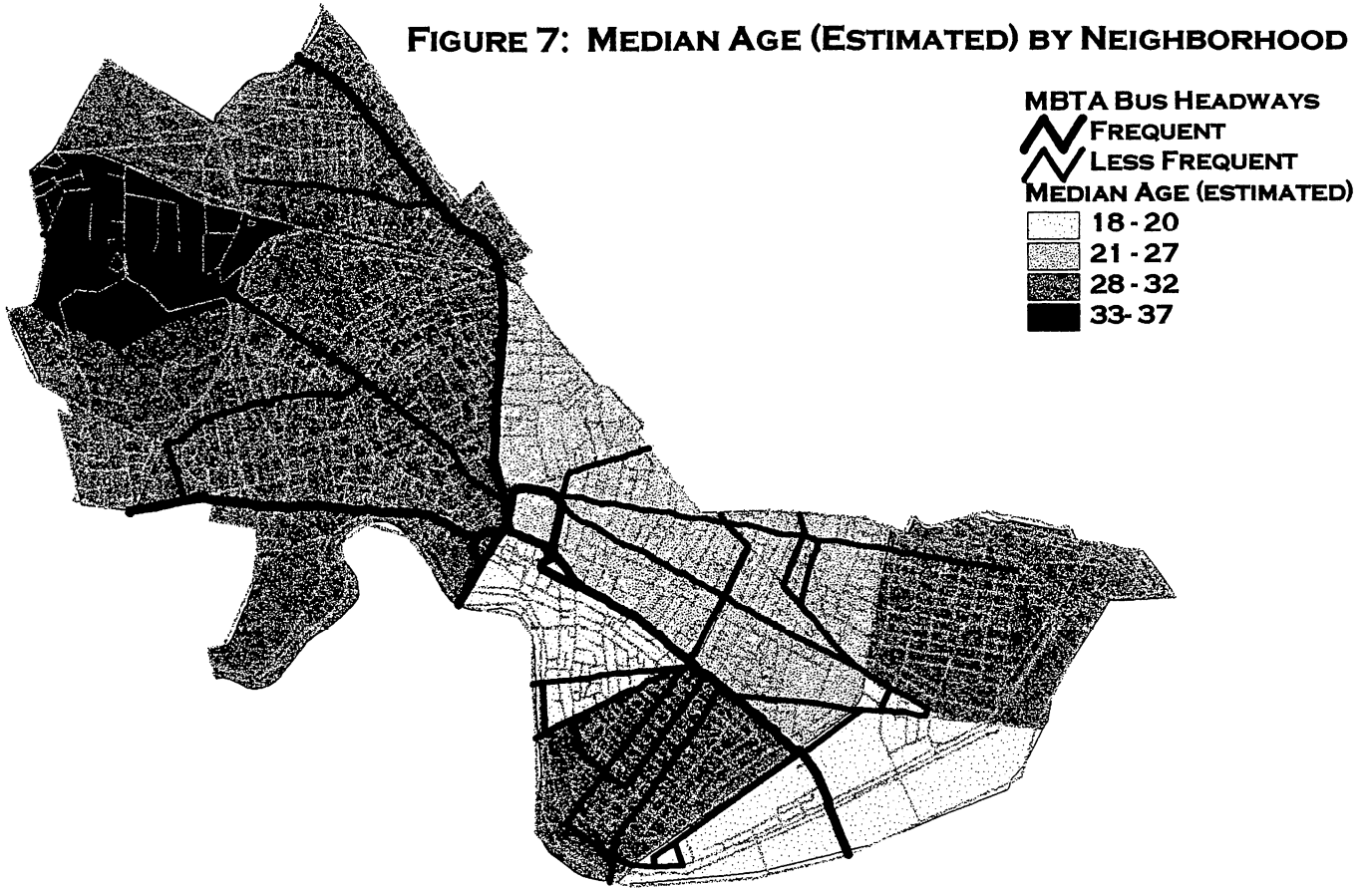
FIGURE 6: PERCENT OF POPULATION OVER 65 BY NEIGHBORHOOD



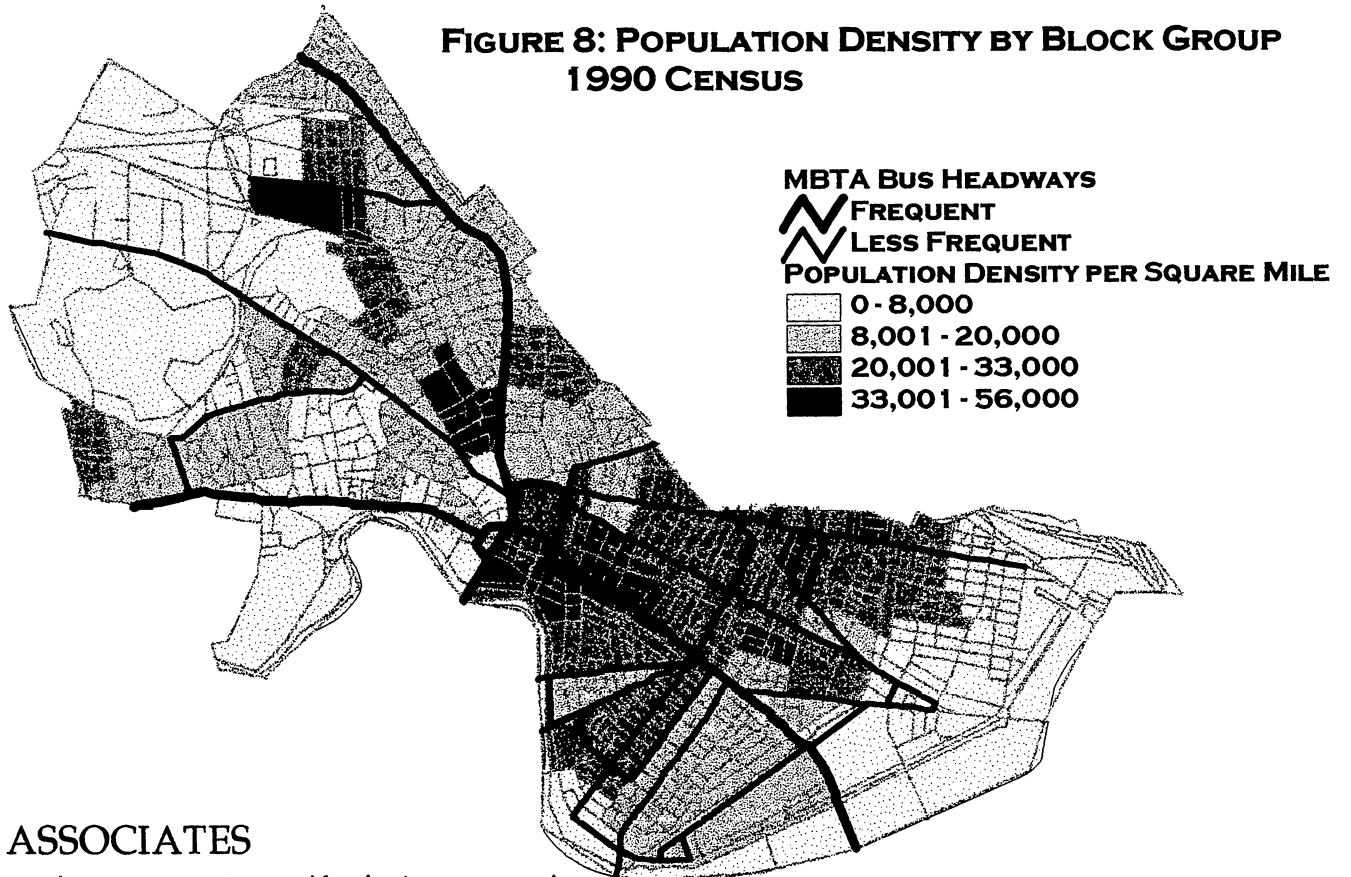
RIZZO ASSOCIATES

All information on this map is approximate and for planning purposes only.
 Roadways are based on census geography and may not match field conditions.

FIGURE 7: MEDIAN AGE (ESTIMATED) BY NEIGHBORHOOD



**FIGURE 8: POPULATION DENSITY BY BLOCK GROUP
1990 CENSUS**



RIZZO ASSOCIATES

All information on this map is approximate and for planning purposes only.
Roadways are based on census geography and may not match field conditions.

APPENDICES

Appendix
Telephone Survey Form

Date _____ Time _____ Surveyor _____ Address _____ ph _____

TELEPHONE SURVEY

(Note: If child answers, ask to speak to an adult)

Hello, my name is _____. We are conducting a survey for the City of Cambridge. This survey is about travel within the city. We will be asking about current transportation services and how they could be improved to better serve the city and its neighborhoods.

1. Can you take a few minutes to answer some questions concerning transportation service in your neighborhood?

[No] Thank you for your time. Have a good day.

[Yes] Thank you. We appreciate your cooperation.

2. We are interested in how people in your household get around. We are interested in two categories: people who drive more than half of the time they leave the house, and people who primarily get around by other means (are driven, walk, or take transit).

Number of people who primarily drive

[] One

[] Two

[] Three

[] Four or more

Number who primarily use other means

[] One

[] Two

[] Three

[] Four or more

3. See next page

4. On a typical weekend (Saturday and Sunday), describe what trips you would likely take within Cambridge.

[] Work, where? _____

[] Shop, where? _____

[] Social, where? _____

[] School, where? _____

[] Recreation, where? _____

[] Other, where? _____

5. For weekend trips, what destinations in Cambridge would you like to go to but can't because you have no convenient way of getting there? (list any that are mentioned)

3. We have four questions about each person. These questions have to do with the places in Cambridge where people go. When we ask about places we are interested in general areas (Inman Square, Twin Cities Plaza, etc.) not specific stores or buildings. Please start with yourself, and then with people who do not usually drive when they leave the house. Please include children over age 11.

What the age category are you? under 16 _____ 16 - 64 _____ 65+ _____

<p>List the places you usually go during the week. We are interested in any trip (to work, to shop, or for recreation) in the city of Cambridge. Please also say how many times you go there per week and whether you make these trips during the peak hours (7am – 9 am; 4 pm – 7 pm).</p> <p>Destination Times per week Peak/ off peak?</p> <p>(1) _____</p> <p>(2) _____</p> <p>(3) _____</p> <p>(4) _____</p>	<p>For each of these destinations, how were the trips made?</p> <p>[1] I drove [2] someone else drove [3] I Walked [4] I Biked [5] I took the Bus [6] I took the Subway [7] Other _____ (please explain)</p> <p>Destination 1: [] _____ Destination 2: [] _____ Destination 3: [] _____ Destination 4: [] _____</p>	<p>Are there places you would like to go during the week that you can't because there is no convenient way of getting there? If so, list the places and whether these trips would be made during the peak (7 am –9 am; 4 pm-7pm) or off-peak?</p> <p>Destinations Peak/off-peak</p> <p>_____</p> <p>_____</p> <p>_____</p>
--	---	---

Person #2 What the age category is this person? under 16 _____ 16 - 64 _____ 65+ _____

<p>To your knowledge, list the places this person usually goes during the week. Again include the number of times per week and whether these are made during peak hours (7am – 9 am; 4 pm – 7 pm).</p> <p>Destination Times per week Peak/ off peak?</p> <p>(1) _____</p> <p>(2) _____</p> <p>(3) _____</p> <p>(4) _____</p>	<p>For each of these destinations, how were the trips made?</p> <p>[1] he/she drove [2] someone else drove [3] he/she Walked [4] he/she Biked [5] took the Bus [6] took the Subway [7] Other _____ (please explain)</p> <p>Destination 1: [] _____ Destination 2: [] _____ Destination 3: [] _____ Destination 4: [] _____</p>	<p>Are there places this person would like to go during the week but can't because there is no convenient way of getting there? If so, list the places and whether these trips would be made during the peak (7 am –9 am; 4 pm-7pm) or off-peak?</p> <p>Destinations Peak/off-peak</p> <p>_____</p> <p>_____</p> <p>_____</p>
---	--	--

Person #3 What the age category is this person? under 16 _____ 16 - 64 _____ 65+ _____

<p>To your knowledge, list the places this person usually goes during the week. Again include the number of times per week and whether these are made during peak hours (7am – 9 am; 4 pm – 7 pm).</p> <p>Destination Times per week Peak/ off peak?</p> <p>(1) _____</p> <p>(2) _____</p> <p>(3) _____</p> <p>(4) _____</p>	<p>For each of these destinations, how were the trips made?</p> <p>[1] he/she drove [2] someone else drove [3] he/she Walked [4] he/she Biked [5] took the Bus [6] took the Subway [7] Other _____ (please explain)</p> <p>Destination 1: [] _____ Destination 2: [] _____ Destination 3: [] _____ Destination 4: [] _____</p>	<p>Are there places this person would like to go during the week but can't because there is no convenient way of getting there? If so, list the places and whether these trips would be made during the peak (7 am –9 am; 4 pm-7pm) or off-peak?</p> <p>Destinations Peak/off-peak</p> <p>_____</p> <p>_____</p> <p>_____</p>
---	--	--

Person #4 What the age category is this person? under 16 _____ 16 - 64 _____ 65+ _____

<p>To your knowledge, list the places this person usually goes during the week. Again include the number of times per week and whether these are made during peak hours (7am – 9 am; 4 pm – 7 pm).</p> <p>Destination Times per week Peak/ off peak?</p> <p>(1) _____</p> <p>(2) _____</p> <p>(3) _____</p> <p>(4) _____</p>	<p>For each of these destinations, how were the trips made?</p> <p>[1] he/she drove [2] someone else drove [3] he/she Walked [4] he/she Biked [5] took the Bus [6] took the Subway [7] Other _____ (please explain)</p> <p>Destination 1: [] _____ Destination 2: [] _____ Destination 3: [] _____ Destination 4: [] _____</p>	<p>Are there places this person would like to go during the week but can't because there is no convenient way of getting there? If so, list the places and whether these trips would be made during the peak (7 am –9 am; 4 pm-7pm) or off-peak?</p> <p>Destinations Peak/off-peak</p> <p>_____</p> <p>_____</p> <p>_____</p>
---	--	--

Person #5 What the age category is this person? under 16 _____ 16 - 64 _____ 65+ _____

<p>To your knowledge, list the places this person usually goes during the week. Again include the number of times per week and whether these are made during peak hours (7am – 9 am; 4 pm – 7 pm).</p> <p>Destination Times per week Peak/ off peak?</p> <p>(1) _____</p> <p>(2) _____</p> <p>(3) _____</p> <p>(4) _____</p>	<p>For each of these destinations, how were the trips made?</p> <p>[1] he/she drove [2] someone else drove [3] he/she Walked [4] he/she Biked [5] took the Bus [6] took the Subway [7] Other _____ (please explain)</p> <p>Destination 1: [] _____ Destination 2: [] _____ Destination 3: [] _____ Destination 4: [] _____</p>	<p>Are there places this person would like to go during the week but can't because there is no convenient way of getting there? If so, list the places and whether these trips would be made during the peak (7 am –9 am; 4 pm-7pm) or off-peak?</p> <p>Destinations Peak/off-peak</p> <p>_____</p> <p>_____</p> <p>_____</p>
---	--	--

6. On a scale from 1 to 5, where 1 is horrible and 5 is outstanding, how well is your neighborhood served by transit service for trips you would likely take?

1	2	3	4	5
Horrible		Neutral		Outstanding

7. Of the destinations in Cambridge that are not currently served well by transit, which ones are the most important to be served with better or new transit service?

Destination 1 _____

Destination 2 _____

Destination 3 _____

Destination 4 _____

Destination 5 _____

8. What is the likelihood that you would use transit for a trip to these destinations? (1) Never, (2) once or twice a week, (3) three or four times a week, (4) every day, (5) I would use, but depends on when the service is offered.

Destination 1 []

Destination 2 []

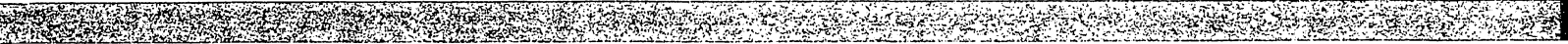
Destination 3 []

Destination 4 []

Destination 5 []

9. How important is it to you that additional transit service be provided for your neighborhood?

	Somewhat Important		Important	
1	2	3	4	5
Not at all important		neutral		Very important





CITY OF CAMBRIDGE
COMMUNITY DEVELOPMENT DEPARTMENT

BETH RUBENSTEIN
Assistant City Manager for
Community Development

MALAINA BOWKER
Deputy Director for
Community Development

Memorandum

To: Robert W. Healy
City Manager

From: Beth Rubenstein *BR*
Assistant City Manager for Community Development

Re: Cambridge Shuttle Study - Phase I Progress Report

Date: July 25, 2000

Attached is a copy of the Phase I Progress Report on the Cambridge Shuttle Study. The study was undertaken in response to requests from the City Council and the public for an investigation of the need for improved and/or additional transit service in the City.

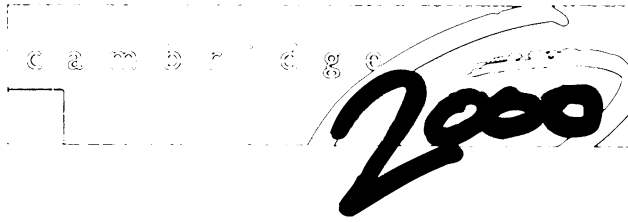
Phase I includes an inventory of existing transit and shuttle services, and identifies neighborhoods receiving the least transit service. Neighborhoods having high levels of elderly and school-age children are also identified. Neighborhoods with the least transit service were the subject of a targeted telephone survey and a series of public meetings were held to elicit information on transportation needs not being adequately met.

Neither the telephone survey nor the public meetings identified a broad demand for additional transit service. Of the needs which were expressed, most concerned improvements to existing MBTA service. Concerns about adequate and appropriate transportation options for senior citizens were also raised on several occasions.

Phase II of the Shuttle Study will focus on the transportation needs of transit-dependent populations, such as the elderly and school-aged children. Specific services for these needs, including use of existing public and private services, will then be analyzed and recommendations made. Phase II will also include an exploration of the feasibility of making private shuttles available to the public. We will identify specific improvements to MBTA service that might meet these needs. We anticipate Phase II of the Shuttle Study will be complete by the end of October.

Please make this report available to the City Council. We look forward to discussing it with the Transportation, Traffic and Parking Committee.

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CITY OF CAMBRIDGE • EXECUTIVE DEPARTMENT

Robert W. Healy, City Manager

Richard C. Rossi, Deputy City Manager

July 31, 2000

To The Honorable, The City Council:

Please find attached for your consideration the Cambridge Shuttle Study – Phase 1 Progress Report, received from Assistant City Manager for Community Development Beth Rubenstein.

Very truly yours,

Robert W. Healy
City Manager

RWH/mec
Attachment



2000 Things 2 Do in 2000

5232

Consent Agenda #32

Relative to the Cambridge
Shuttle Study - Phase 1 Progress
Report.

In City Council July 31, 2000

Referred to
~~Transportation Traffic~~
and Parking Committee

sent to H. Davis on 8/2/00.