

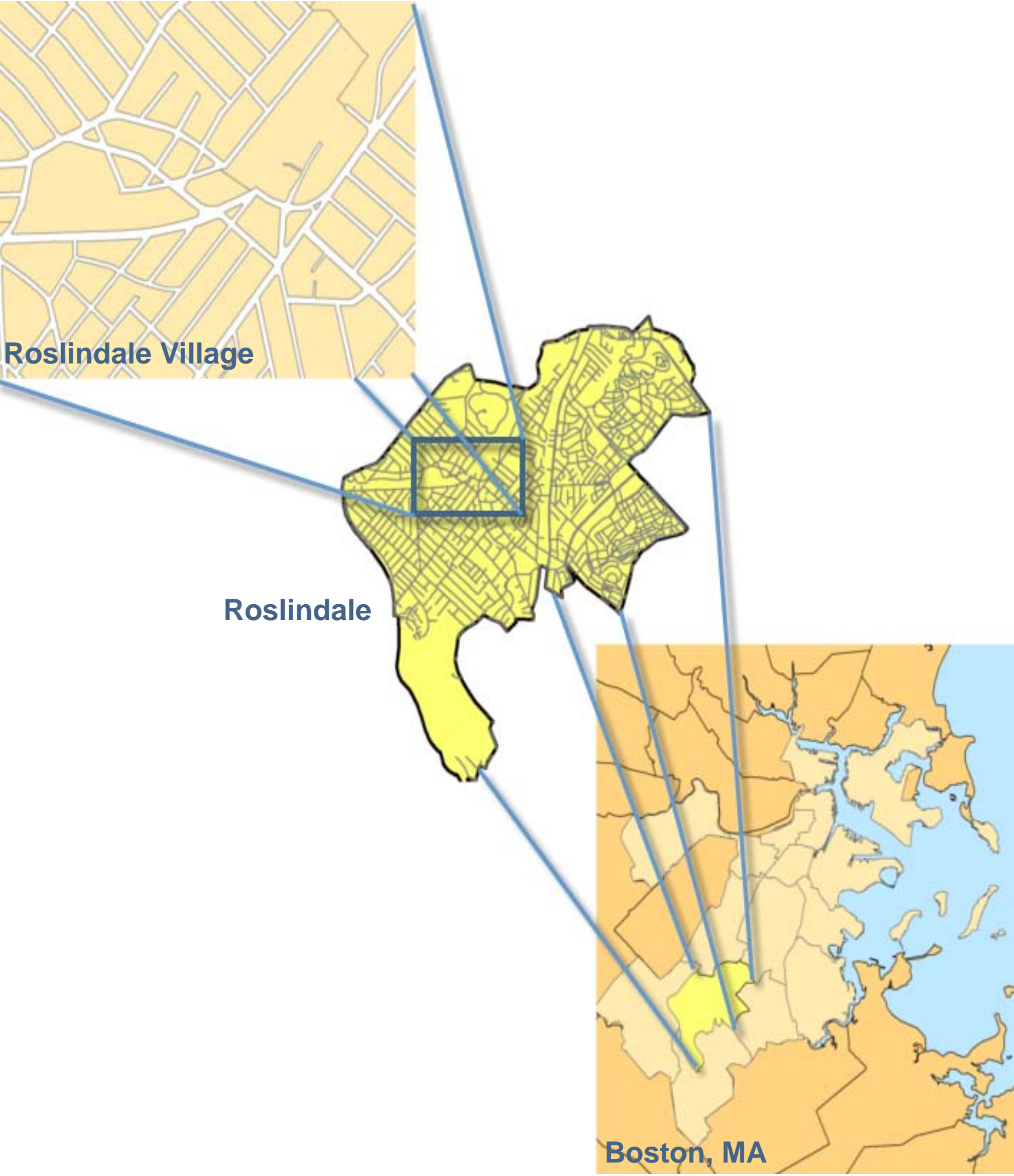
Roslindale Village : Neighborhood Accessibility Analysis

Introduction

Roslindale Village is at the core of a dense urban community in Boston. Non-profit organizations, volunteers and businesses in the neighborhood collaborate to promote Roslindale Village as a destination and to make it an accessible and inviting district. The Village is currently experiencing a transition encompassing its economic development and physical identity, as well as the demographic makeup of its population. As part of a broader analysis of these shifts, this project focuses on a physical assessment of Village access through an inventory of its public transportation and parking infrastructure as well as the walking environment of the area. In addition to an inventory, further analyses of the parking and pedestrian experience were conducted using a study guide developed by the Metropolitan Area Planning Council (MAPC) and the Pedestrian Environment Data Scan (PEDS) survey.

Roslindale Village is located in the Roslindale district of Boston, Massachusetts as shown in **Map 1**. It is bordered by 5 other Boston districts including Jamaica Plain, West Roxbury, Hyde Park, Mattapan and Roxbury.

Map 1: Location of Roslindale Village



Conclusions

GIS proved to be a very effective tool in determining an inventory of transportation modes to access the Roslindale Village neighborhood. It was also valuable in illustrating and spatially analyzing the parking situation and pedestrian environment of the Village.

Overall, the analysis of area parking proved that there is not a lack of available spaces in the Village, however, the spatial distribution of high occupancy areas is concentrated in the core of the neighborhood on-street parking spaces. Parking lots in general are highly underutilized.

The study results found that Roslindale Village is highly walkable. With a valuation providing an overall score range of 0 (least walkable) to 100 (most walkable), a majority of the streets in the district scored higher than 54. The core of the business district scored very well due to the presence of mixed-use development and recreational open space, as well as availability of public amenities and good sidewalk maintenance. Residential-only areas, mostly located on the edges of the analysis area, generally scored lower in this walkability assessment.

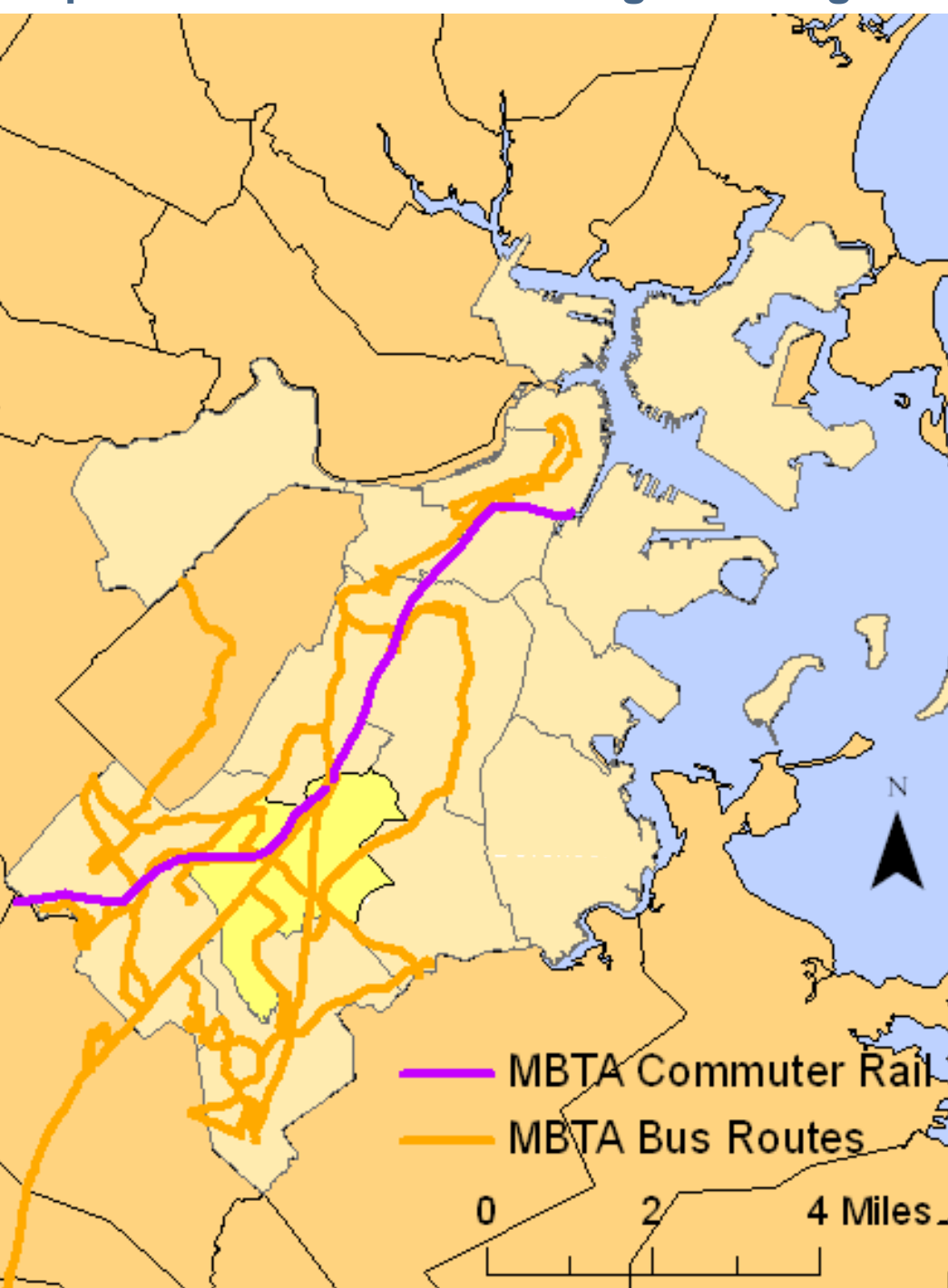
Cartographer: Melissa Shakro
 Data Sources:
 MassGIS, City of Boston
 UEP 232 – Introduction to GIS
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Overall Roslindale Village is highly accessible by multiple modes of transportation. One suggestion for further analysis is to do a more detailed analysis of public transit by incorporating schedule information. Additionally, the pedestrian shed could be assessed further by analyzing census block data within this area to get more detailed information about the population within walking distance.

Methodology

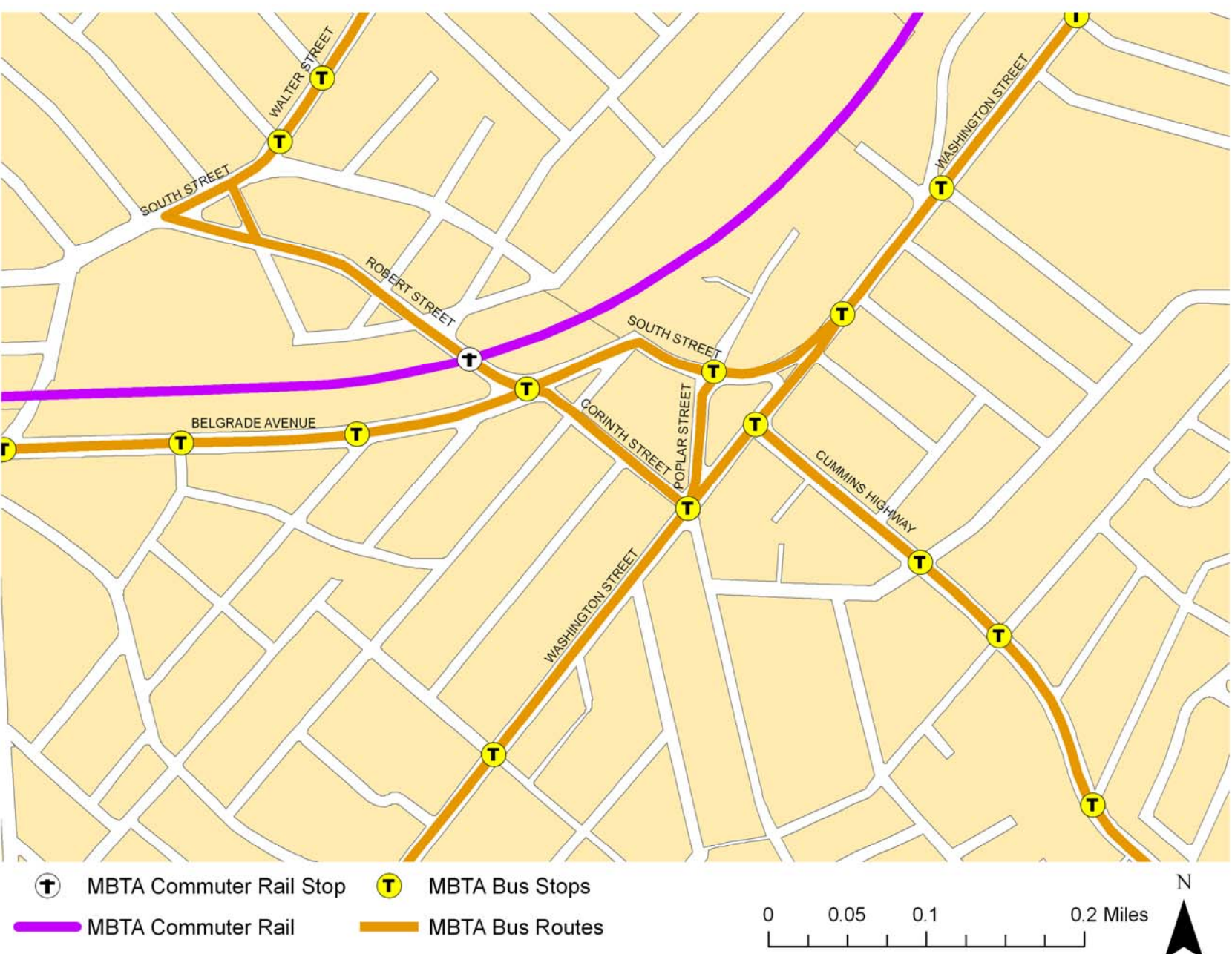
Public Transit

Map 2: Public Transit Servicing the Village



There are 14 MBTA bus routes that serve Roslindale Village, many of which stop at the Forest Hills Orange Line Station approximately one mile from the center of the Village. The Needham commuter rail line also has a station located directly in the Village. The bus routes and commuter rail line that service Roslindale Village are far-reaching and provide direct connections to many other Boston neighborhoods as illustrated in **Map 2**. These were determined by defining the study area and selecting the bus routes and rail lines that intersect it. **Map 3** shows the routes and stops for the bus and commuter rail lines within Roslindale Village. As illustrated, there are over a dozen MBTA bus stops within the business district.

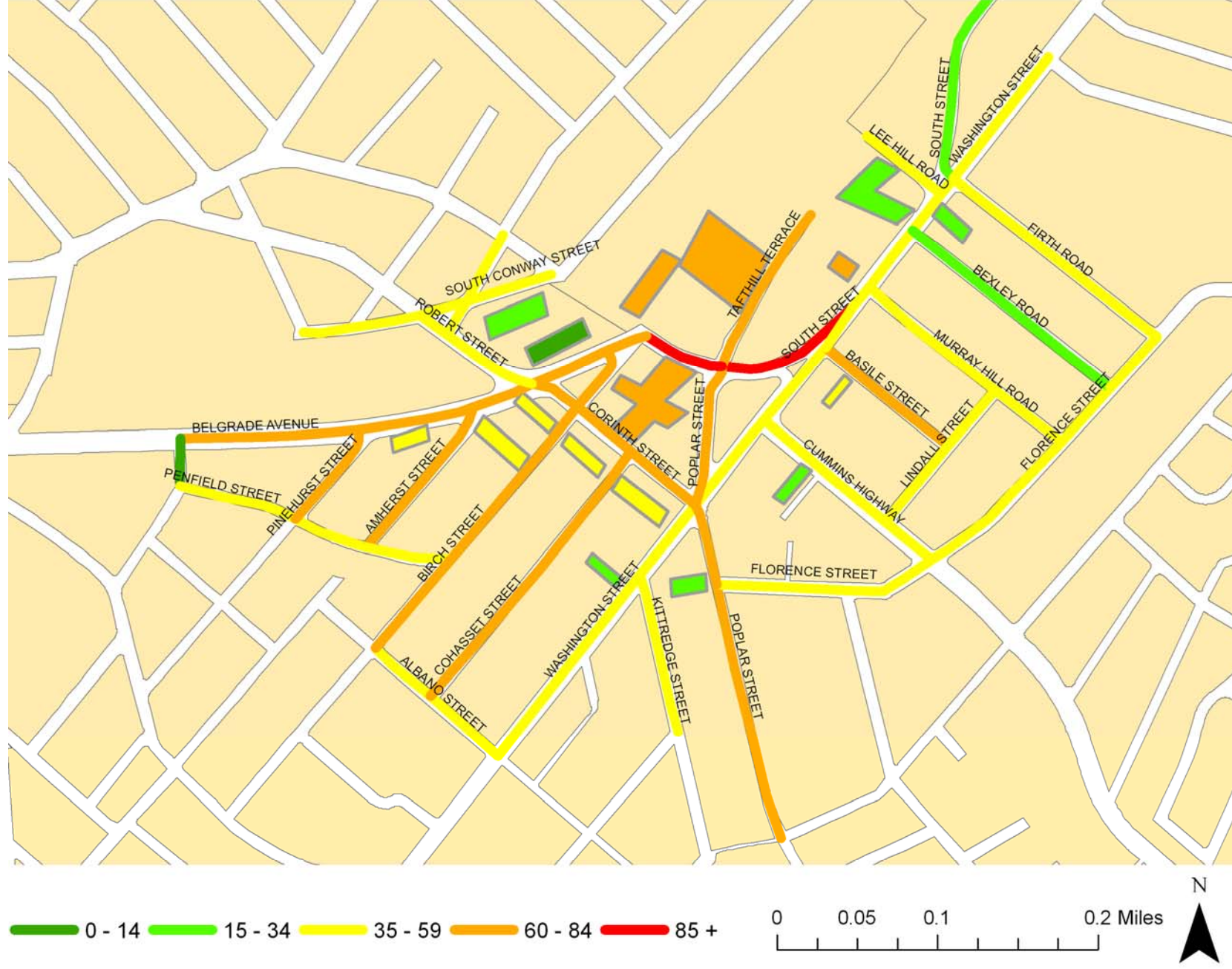
Map 3: Public Transit Within Roslindale Village



Vehicles & Parking

There is a perceived lack of parking in Roslindale Village, making an assessment of parking usage a valuable focus of study. An inventory of parking space in Roslindale Village yields a total of 1,662 spots: 1,076 on-street and 586 in parking lots (residential lots were not inventoried).

Map 4: Parking Occupancy Rates (%)



In accordance with a parking study guide by the Massachusetts Area Planning Council (MAPC), the occupied spaces were observed during several time periods over 5 days. The usage rates were recorded and analyzed. The table shown here illustrates the occupancy rates observed for the core business streets in the district broken down by

	Weekdays				Weekdays			
	Morning	Afternoon	Evening	Overall	Morning	Afternoon	Evening	Overall
Belgrade Ave	62%	60%	41%	53%	61%	29%	36%	38%
Corinth St	65%	77%	72%	73%	70%	71%	73%	71%
South St	99%	94%	72%	85%	69%	56%	66%	60%
Poplar St	69%	61%	78%	71%	58%	88%	100%	78%
Washington St	49%	49%	38%	45%	44%	43%	33%	40%
Cummins Hwy	50%	53%	32%	42%	42%	19%	24%	24%
Overall	66%	66%	55%	61%	57%	51%	55%	52%

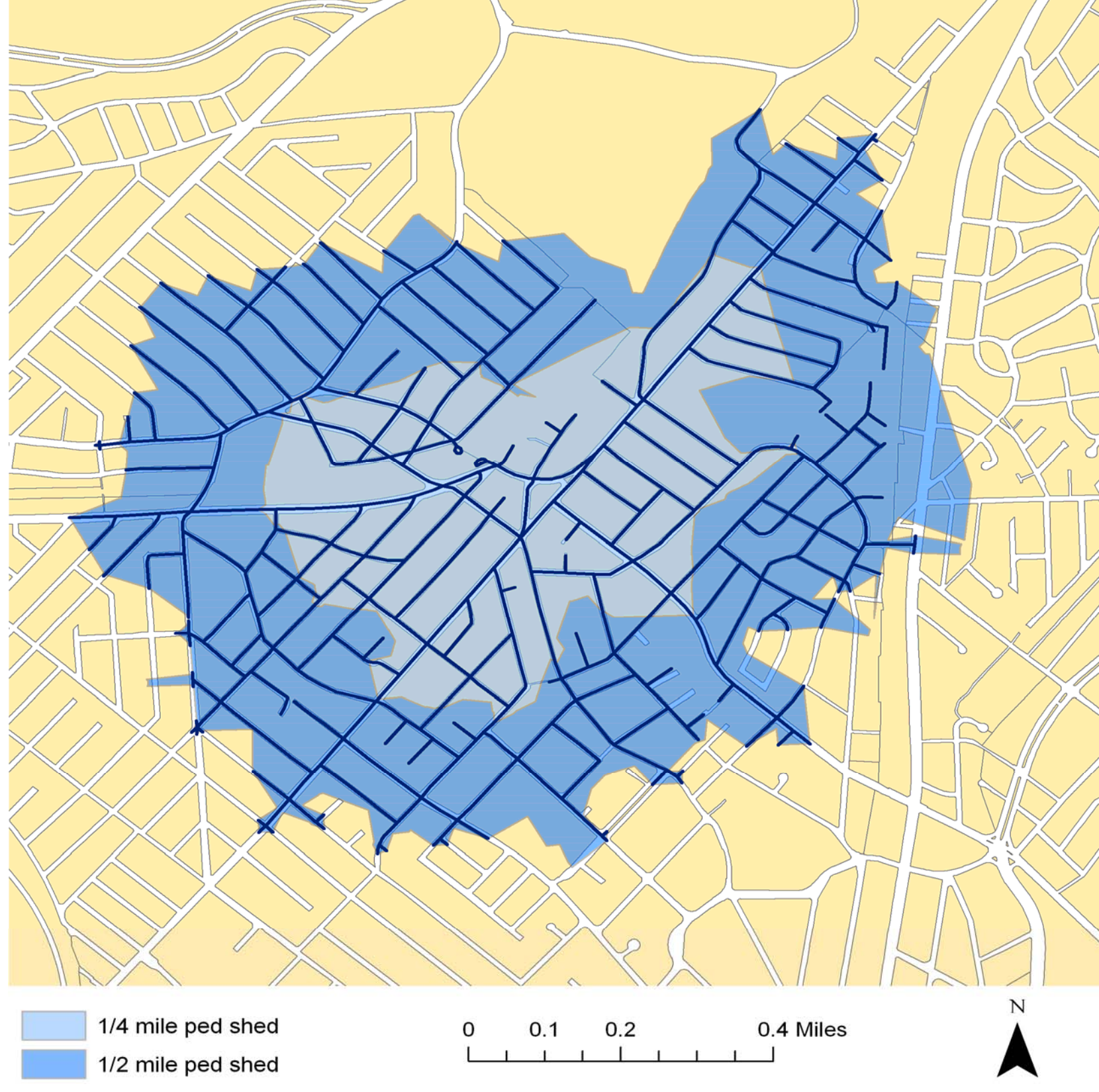
weekday and weekend and additionally by time of day. The data from this chart along with the usage statistics for the rest of the Village at various times and days was aggregated and mapped in GIS to illustrate the problem areas as well as to determine where occupancy was low in order to make recommendations for the redirection of traffic and diffusing of high use areas.

The street occupancy rate data was joined to street segments, while the usage statistics for the parking lots were joined to a manually created data layer. A uniform rating scale was applied to each of these layers. **Map 4** shows the aggregation of all parking occupancy data collected. MAPC defines an occupancy rate of 85% or greater to be full or problematic, these areas are shown in red on the map. Dark green indicates the least problematic parking areas with the lowest overall occupancy rates.

Walkability

Surrounded by a dense residential neighborhood, Roslindale Village is easily accessible distance-wise by foot to many area residents. **Map 5** illustrates the pedestrian shed, or walkable area surrounding the Village. These areas were determined by performing a network analysis on the area road network using 4 key intersections within the Village as nodes, and distances of 1/4 and 1/2 mile.

Map 5: Pedestrian Shed



In addition to determining the accessibility by distance of Roslindale Village, the Village itself was scrutinized for walkability using the Pedestrian Environment Data Scan (PEDS). This data collection instrument was developed in 2004 by a team led by Dr. Kelly Clifton of the University of Maryland, and consists of 40 criteria utilized to assess street segments. A standard evaluation system for PEDS has not been created, therefore, a unique rating system was developed for the 68 segments analyzed in this study. A 0-100 scale, 0 being least and 100 being most walkable, was developed by combining and normalizing these ratings. By joining the PEDS data to street segments, **Map 6** was produced which shows the overall walkability ratings of the streets studied. Additional categories analyzed and mapped for this study not shown here include safety, ease and comfort of travel and aesthetics.

Map 6: Overall PEDS Scores

