

A Model for Transportation-Oriented Development in Westchester County, New York

Introduction

An increasingly important issue in contemporary development is Transportation-Oriented Development (TOD) because it enables individuals to live and work without the use of a car. This lifestyle is growing in popularity among environmentally-minded individuals as well as those who cannot afford to own and maintain a car. This issue is particularly salient to Westchester County, New York because it is a largely suburban area where most residents depend on use of cars in their daily lives. At first glance, Westchester would appear like a poor place for a TOD suitability analysis because many of the residents are wealthy enough to drive cars and most of the county has been planned and laid out as such. However, Westchester County's close proximity to New York City (just south of the county) enables individuals to access the city's job and labor markets. Access to a large and diverse markets such as New York should serve as a crutch for up-and-coming TOD areas because it enables opportunities for both commuting and reverse commuting.

Methods

Even though Westchester County is mostly suburban in nature, it does have extensive coverage by the Metro-North Railroad which is a prototypical commuter railway. TOD depends on the existence of a significant transit center which fits the description of all of the Metro-North stations in the county. For the purposes of this model suitability analysis, Metro-North serve as the

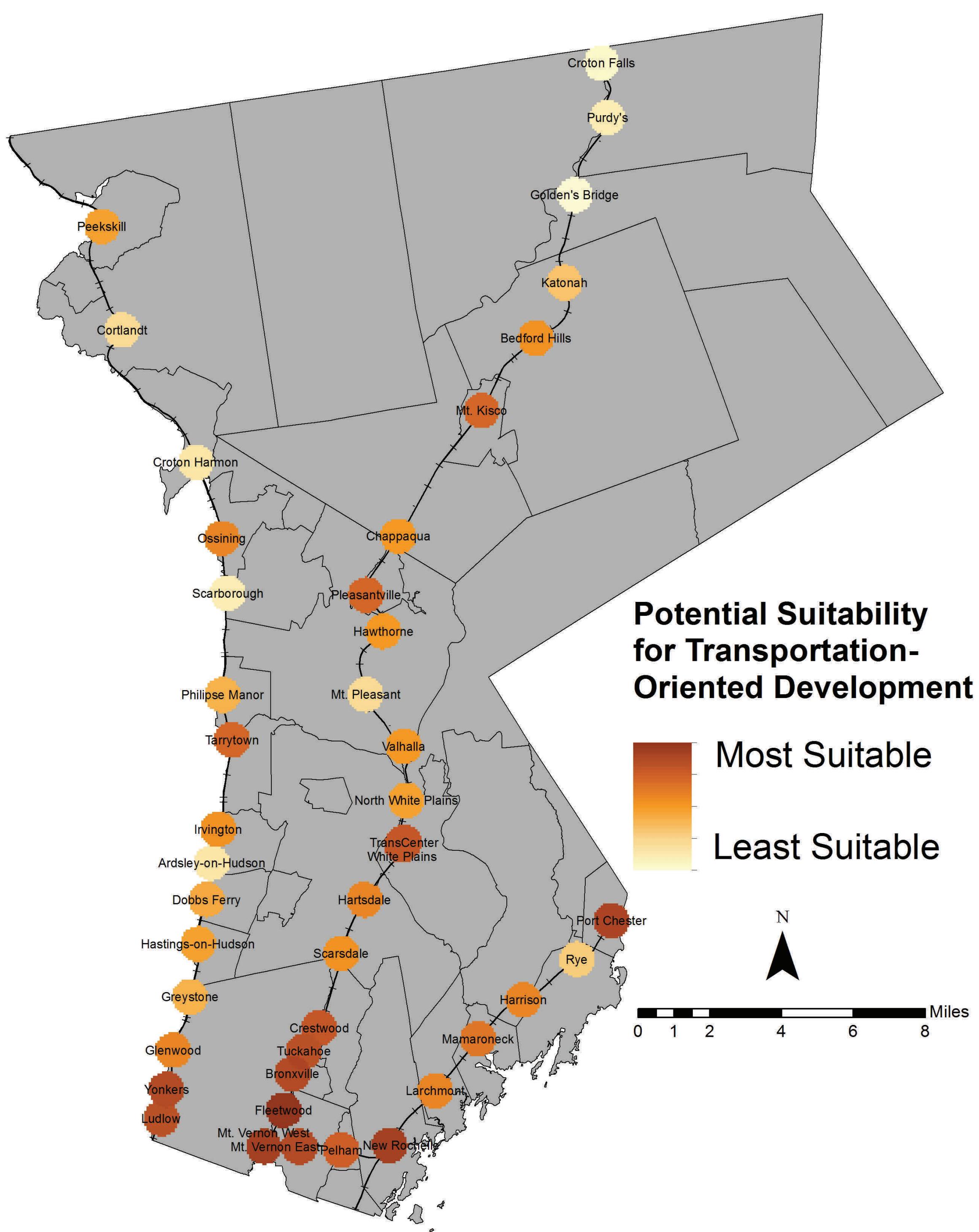
only transit centers utilized. Because studies have found that most people are willing to walk a half-mile to get to transportation or other locations¹, the areas of interest are within a half-mile from each station.

The factors which are considered relevant indicators of suitable places for TOD are population density as well as proximity to parks, mixed-use zoning, schools and libraries². Since each half-mile buffer area around a station has the same area (approximately 0.785 square miles), population and not population density is used as the primary metric. Parks and mixed-use zoning have been analyzed by examining the area of each factor within the buffer zone and ranking the size of those areas against every other buffer. For the sake of simplicity, schools and libraries are jointly referred to as services in these maps. Every category has been divided into four classes with stations roughly equal in quality and numbers similar in quantity. After that, some factors were given more importance than others for the complete analysis.

The weighting of each of these factors into the final suitability analysis is as follows:

Factor	Weight
Population	60%
Parklands	20%
Mixed-Use Zoning	10%
Services	10%

The weighting for these factors has been derived from their relative importance as indi-



cated in literature on TOD as well as the quality of the dataset that was obtained. For example, zoning is an important element of TOD, but most municipalities in Westchester County have not yet (or had not when the data was gathered) adopted mixed-use zoning statutes. Because many municipalities lacked any inclusion of mixed-use zoning, it was decided that this factor should not receive heavier weighting for fear that it would skew the results.

If this analysis were not just a model for TOD and aimed to actually find the most suitable location for TOD in Westchester, several changes would be made. The first step would be the collection and analysis of additional relevant factor datasets such as the locations of grocery stores and walkable sidewalks and paths. Furthermore, a formula for more accurate weighting of factors would be devised and utilized in a more professional TOD suitability analysis.

county where a majority of people and higher population densities are located. However, it is surprising that the area surrounding the Fleetwood Metro-North Station is the most suitable for Transportation-Oriented Development. The Fleetwood area is not particularly walkable in large part because it is wedged between the Cross County Parkway and the Bronx River as well as very near to the Bronx River Parkway. Because my calculations failed to take walkability into account, certain areas like Fleetwood are inappropriately deemed most suitable.

Even if this analysis is not truly accurate, it is only a model which hopefully will inspire more comprehensive analyses both in Westchester County and in other locations. Because if communities can work together to develop with transportation in mind, they will face the future with greener and more environmentally-friendly prospects.

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Class: Intro to GIS, Fall 2012

Date: December 14, 2012

Data Sources: Westchester County GIS, giswww.westchestergov.com (November, 2012); NYS GIS Clearinghouse, gis.ny.gov (December, 2012)

Projection: NAD 1983 State Plane New York East

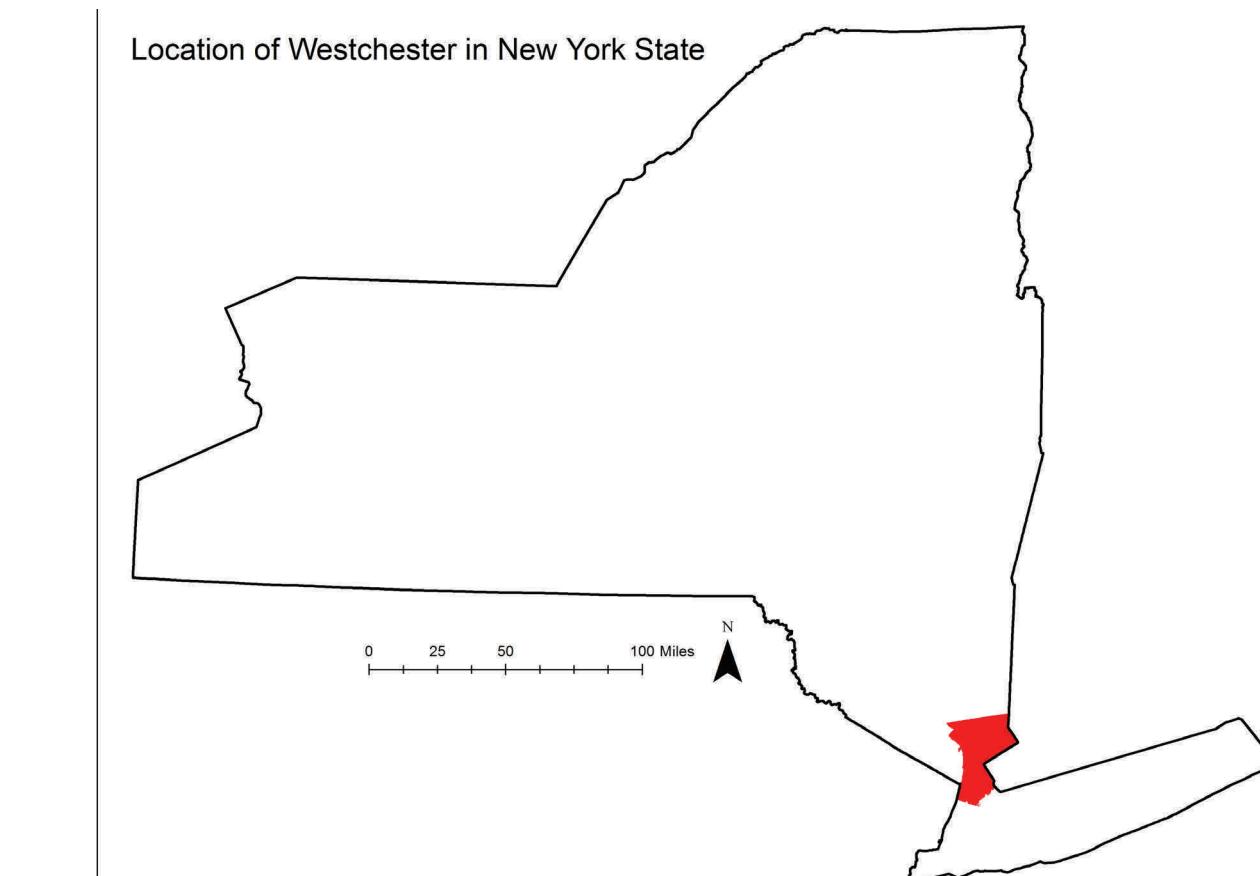
¹<http://www.gao.gov/new.items/d09871.pdf>

²http://www.cnt.org/repository/diverseTOD_FullReport.pdf

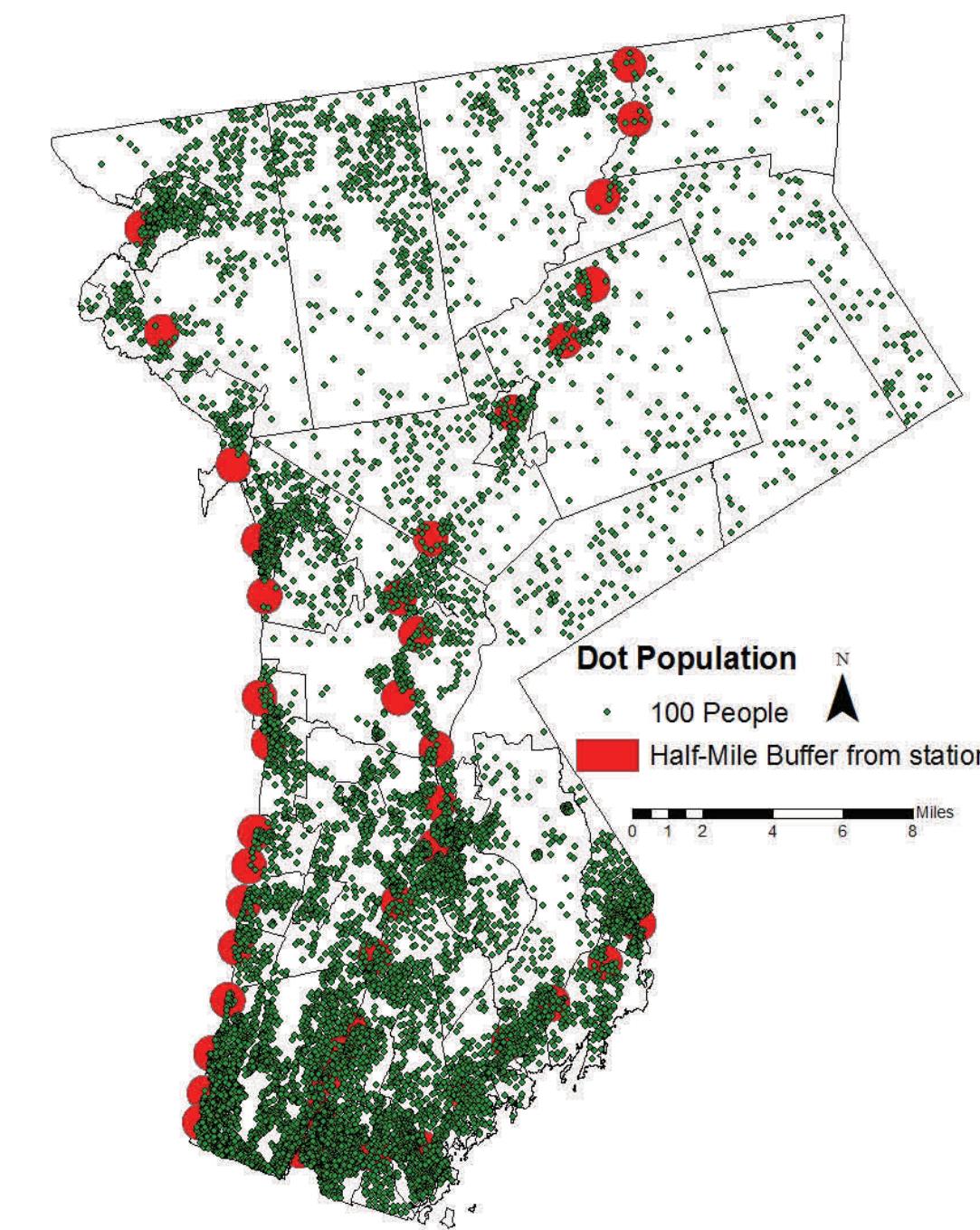


Results

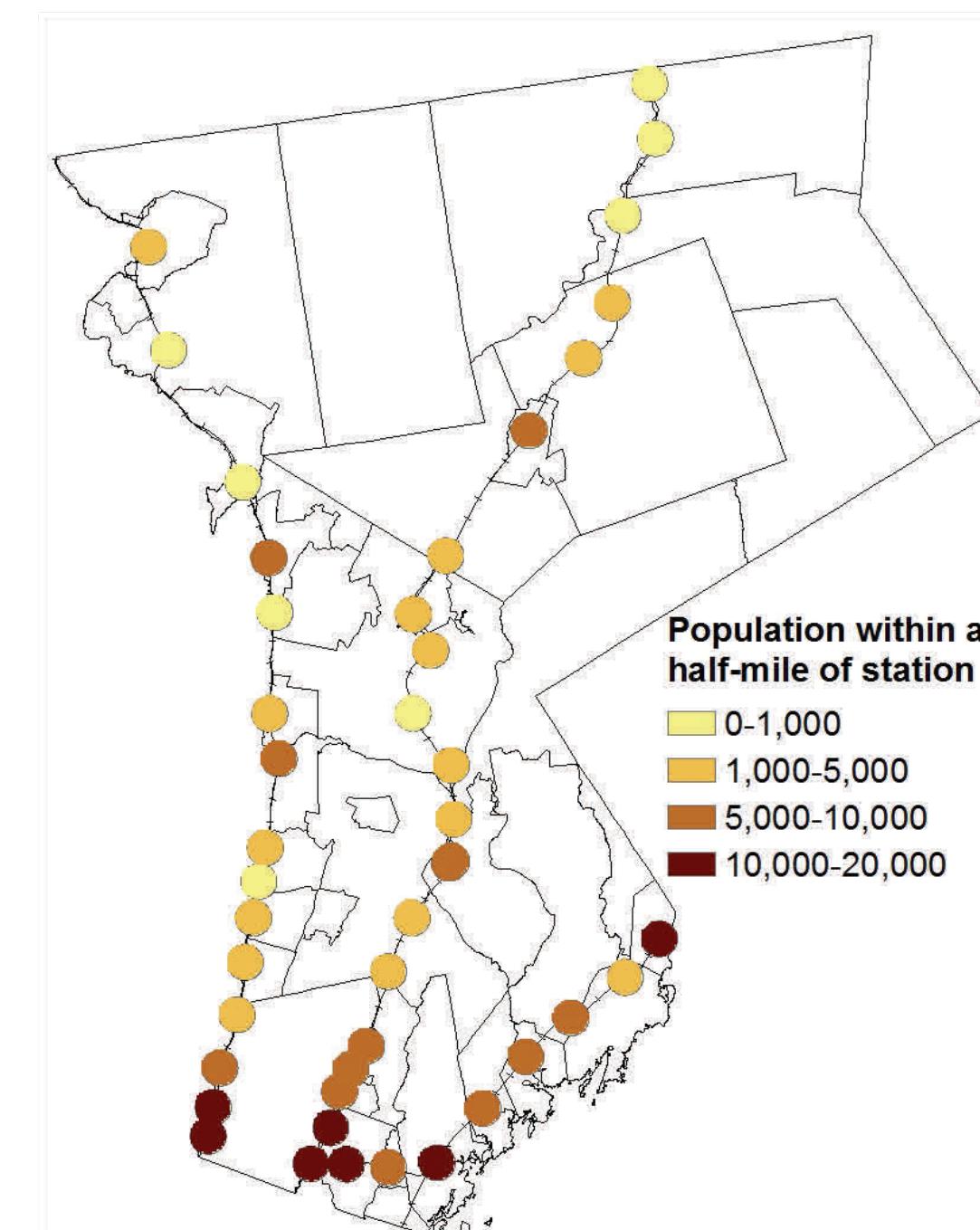
It is not surprising that the most suitable areas for TOD are in the southern part of the



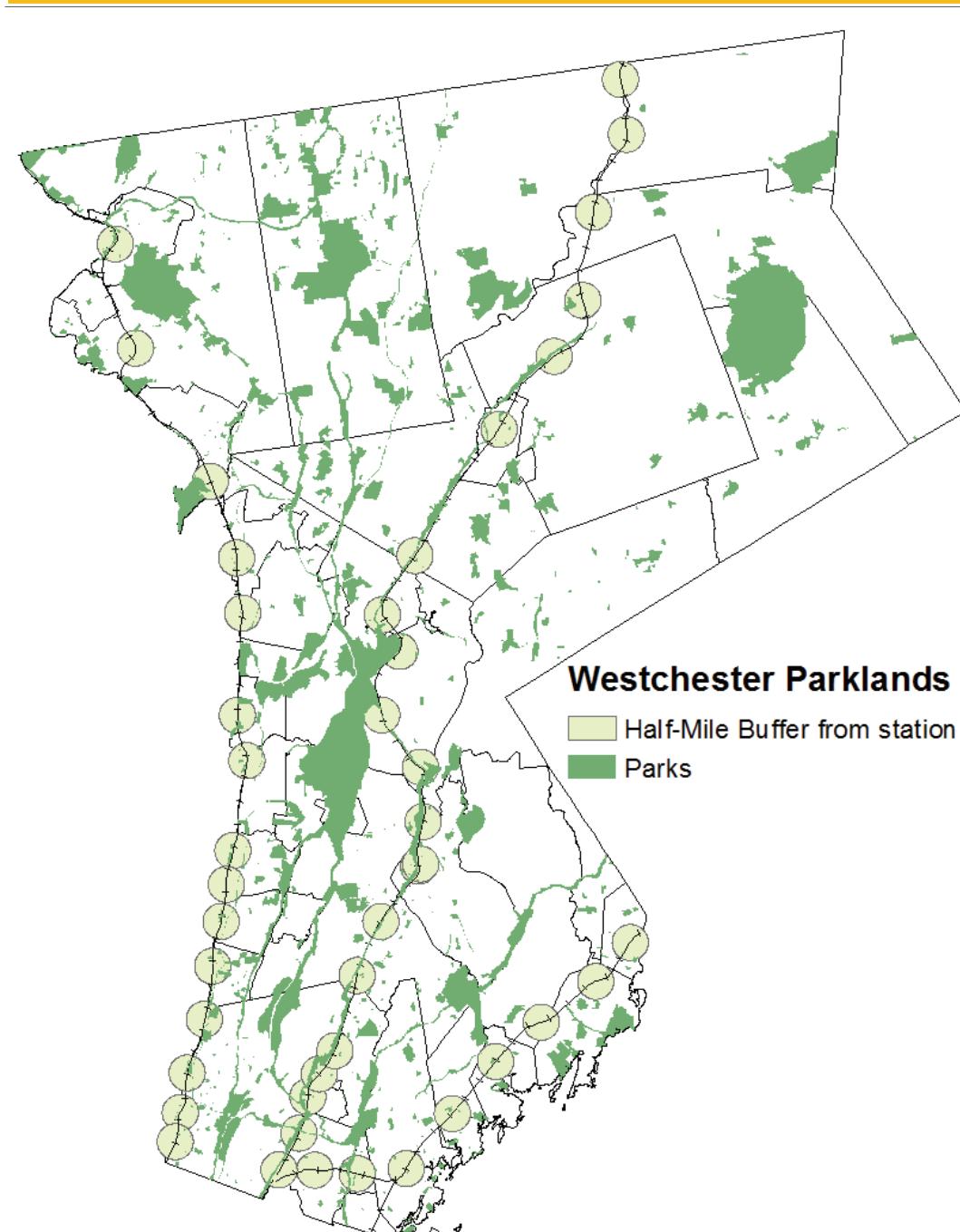
Westchester Population



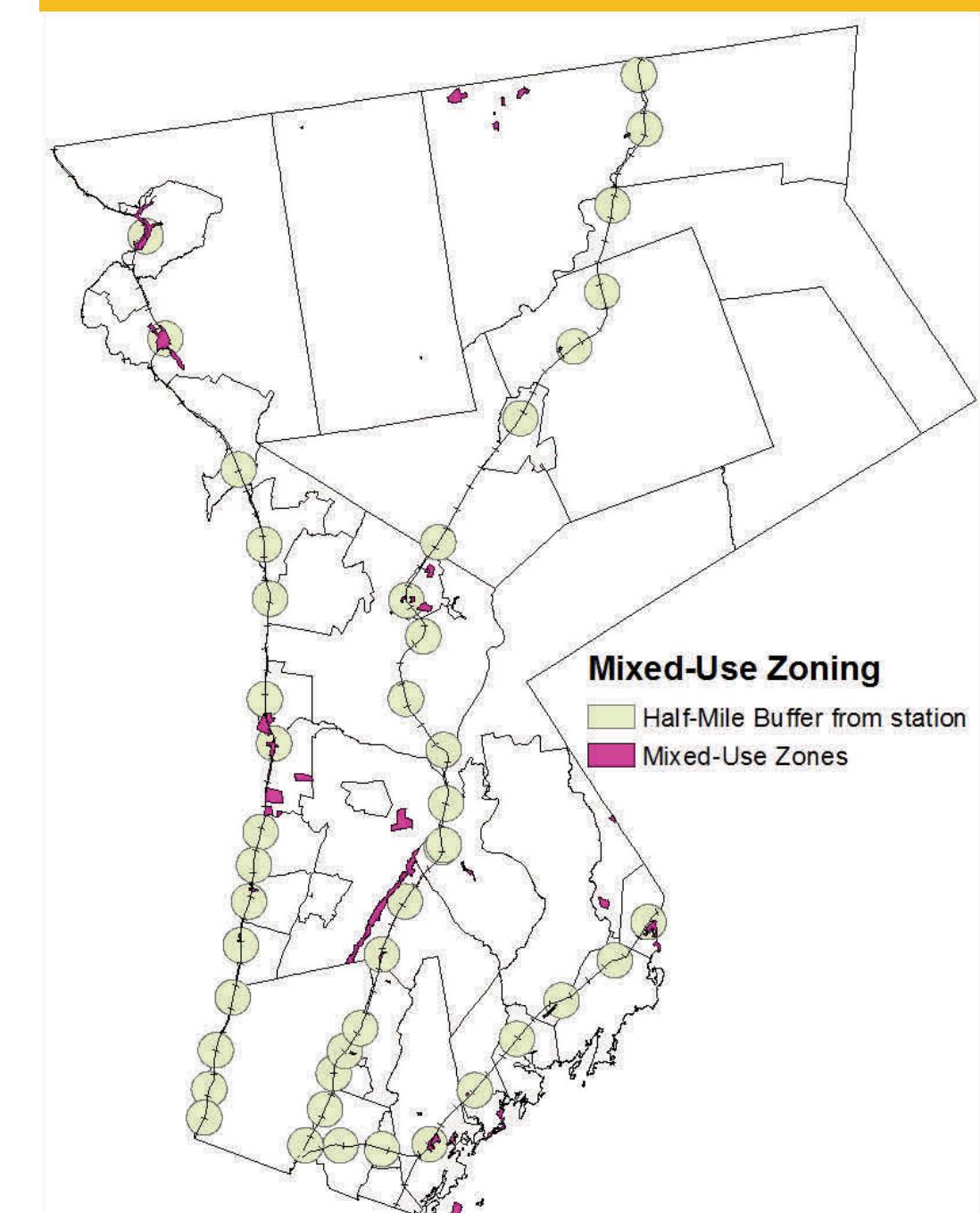
Population Near Transit Stations



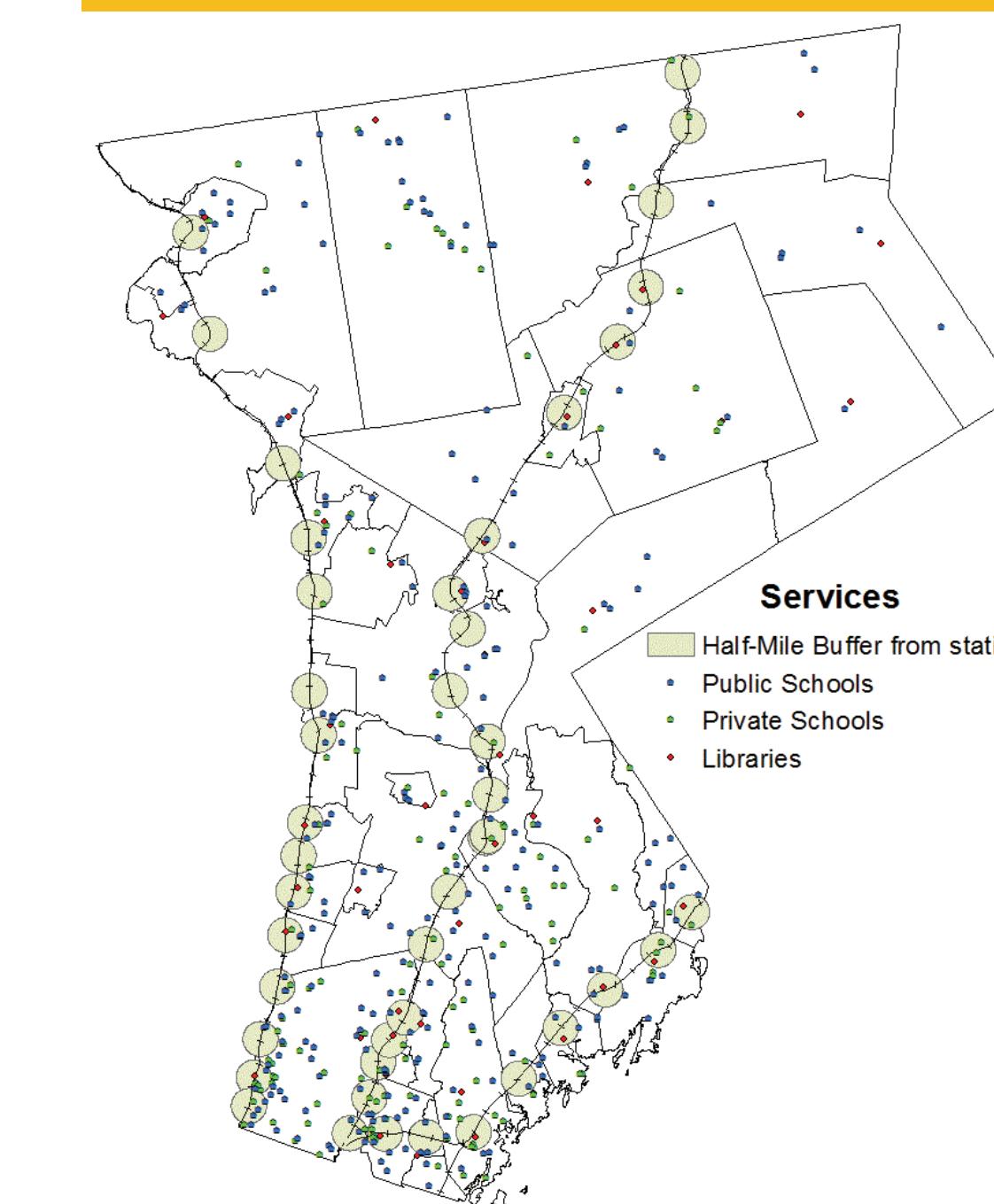
Park Locations



Locations of Mixed-Use Zoning



Locations of Services



Services Near Transit Stations

