

Multifamily Trip Generation Research Summary



June 2019

STUDY BACKGROUND

The **Community Impacts of Multifamily Development** is a planning study being conducted by DVRPC to investigate a variety of issues related to multifamily residential development in Greater Philadelphia. This study has been undertaken to help our county and municipal planning partners better understand the potential transportation, economic, and community impacts of various types of multifamily development.

MEMO PURPOSE

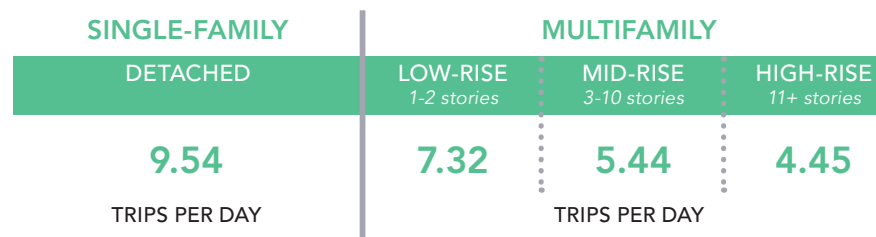
This memorandum summarizes the process by which DVRPC collected traffic data at 17 recently constructed multifamily properties in the region. This local data was collected to help planners and elected officials better understand the potential travel impacts of multifamily development projects in our region and to help supplement data available in the ITE Trip Generation Manual. These findings will be incorporated into a summary document that DVRPC intends to share with regional stakeholders in summer 2019.

Concerns about increased traffic and congestion are often raised when new multifamily development projects are proposed. However, accurately evaluating the travel impacts of new development can be a challenge for planners and public officials. How does the travel behavior of multifamily residents compare to residents of single-family detached homes? How does development form, location, and context influence travel choice?

The guidance most often used for estimating trip generation is the Institute of Transportation Engineers (ITE) Trip Generation Manual. Daily trip generation rates from the 10th edition for single-family detached homes and multifamily housing are listed in Figure 1 below. In this most recent edition, the multifamily housing category includes apartments, condominiums, and townhomes and trip generation rates are presented according to development height.

Although the Manual contains a tremendous amount of data and new editions are released periodically, some analysts have identified aspects of the data that may limit its usefulness in certain locations. In particular, numerous research studies have suggested that ITE trip rates may overstate the vehicular traffic generated by newer multifamily development in denser areas with transit service. ITE recognizes the challenges of developing universal trip generation rates and encourages users to collect local data, when practical, to supplement ITE data.

Figure 1: ITE Trip Generation per Dwelling Unit: Daily Trip Rate



Source: Institute of Transportation Engineers, *Trip Generation Manual*, 10th Edition

DVRPC Approach

As part of its investigation of regional multifamily housing trends and impacts, DVRPC used video cameras to collect traffic data at 17 recently constructed multifamily developments throughout Greater Philadelphia. To help differentiate individual sites, each property was categorized according to its proximity to rail transit, development form, and land use context (see pages 3 and 4). Developments categorized as “Near Rail Transit” are generally located within one-half mile of a rail transit station. The developments that were observed represent a combination of garden style, low-, and mid-rise properties that are generally consistent with ITE land use classifications for low- and mid-rise developments.

The land use context of each development was assigned based on descriptions established in the Smart Transportation Guidebook, a planning document jointly developed by PennDOT and NJDOT in 2008. Each development is further contextualized by presenting its Walk Score® (page 3) and location within one of four Planning Areas that DVRPC uses to assess regional development patterns (page 4).

The developments listed here were observed on weekdays in late 2018 or early 2019. The daily and AM peak hour trip generation rates presented in this memo were calculated for each site using occupancy rates derived from the CoStar Commercial Real Estate Database for each property at the time of observation.

Figure 2 presents observed vehicular trip rates for the AM peak hour and Figure 3 and presents observed daily trip rates. The corresponding ITE trip rates for low- and mid-rise multifamily housing are shown on each figure for comparison.

Preliminary Findings and Next Steps

DVRPC’s trip generation observations suggest that development context and transit accessibility play a significant role in determining the traffic impacts of a multifamily development. The developments that generated the least traffic on a per unit basis were located in denser, more walkable neighborhoods (categorized here as urban centers/neighborhoods and town centers/neighborhoods) in close proximity to rail transit. Factors that lend themselves to a greater number of non-vehicular trips in portions of our region may include the presence of pedestrian, bike, and transit facilities; high density; mix of land uses in close proximity; good roadway connectivity; and travel demand management programs.

Furthermore, ITE guidelines appear to significantly overestimate the traffic generated by multifamily properties in urban settings within our region. The results are more mixed in town and suburban settings near transit. Local developments in these contexts are more closely aligned with ITE expectations in the AM peak hour. However, the trips generated by these properties on a daily basis generally fall well short of ITE daily expectations.

The discrepancy between ITE expectations and DVRPC’s observations was less clear in suburban locations without transit—where observed trip rates exceeded ITE expectations at two of the five sites. DVRPC’s Office of Travel Trends and Forecasts is in the process of creating guidelines that can be used to adjust ITE expectations for multifamily development in urban and suburban locations in our region with and without rail access.

Trip Generation Observation Sites

LAND USE CONTEXT*

	URBAN CENTER/NEIGHBORHOOD	TOWN CENTER/NEIGHBORHOOD	SUBURBAN NEIGHBORHOOD
NEAR RAIL TRANSIT	<p>1 Southstar Lofts Philadelphia, PA Mid-Rise Walk Score: 98</p> <p>2 777 S. Broad Philadelphia, PA Mid-Rise Walk Score: 97</p> <p>3 Roebling Lofts Trenton, NJ Low-Rise Walk Score: 77</p>	<p>4 Haddon Town Center Haddon Township, NJ Mid-Rise Walk Score: 72</p> <p>5 Londonbury/Riverwalk at Millenium Conshohocken, PA Mid-Rise Walk Score: 61</p> <p>6 Silk Factory Lofts Lansdale, PA Low-Rise Walk Score: 71</p> <p>7 Station at Manayunk Philadelphia, PA Garden Walk Score: 40</p> <p>8 Courts at Spring Mill Station Whitemarsh, PA Mid-Rise Walk Score: 41</p>	<p>9 Cinnaminson Harbor/Camelot Cinnaminson, NJ Garden & Townhomes Walk Score: 15</p> <p>10 Jacksonville Station Warminster, PA Mid-Rise Walk Score: 45</p> <p>11 Station at Bucks County Warminster, PA Garden Walk Score: 52</p>
		<p>12 Riverworks Phoenixville, PA Mid-Rise Walk Score: 51</p>	<p>13 Essex Chase Glassboro, NJ Garden Walk Score: 6</p> <p>14 The Pointe at West Chester West Chester, PA Mid-Rise Walk Score: 35</p> <p>15 Madison Ellis Preserve Newtown Square, PA Mid-Rise Walk Score: 44</p> <p>16 Greene 750 at Bear Tavern Ewing Township, NJ Garden Walk Score: 22</p> <p>17 Gardens at Birmingham Ewing Township, NJ Garden Walk Score: 47</p>
	NO RAIL TRANSIT		

Property Key

Development

Location

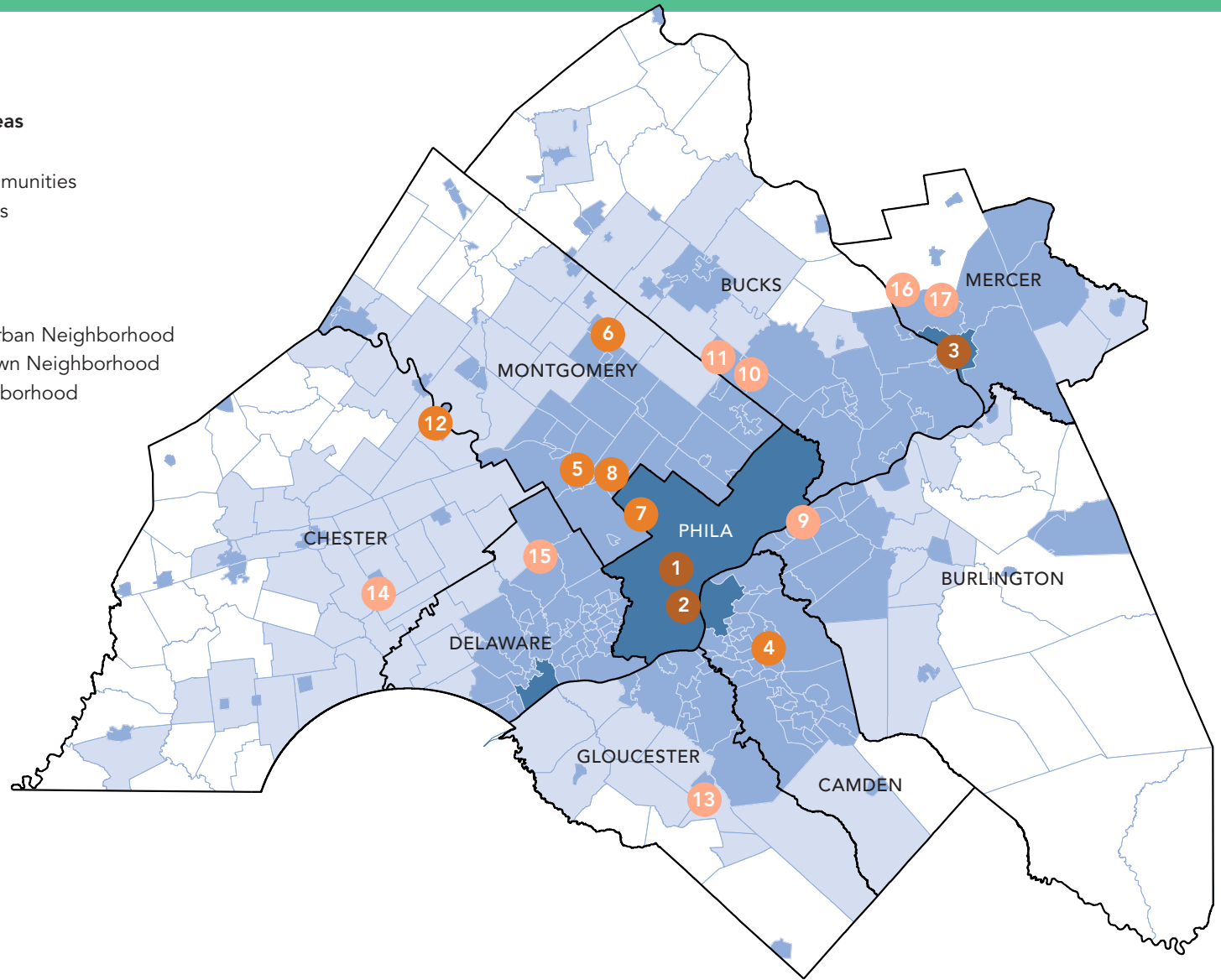
Development Form: Garden, Low-, Mid-Rise | Walk Score: 1 to 100

DVRPC Planning Areas

- Core Cities
- Developed Communities
- Growing Suburbs
- Rural Areas

Land Use Context*

- Urban Center/Urban Neighborhood
- Town Center/Town Neighborhood
- Suburban Neighborhood



* The land use contexts of each development site is based on classifications described in the *Smart Transportation Guidebook*. For more information, please visit: www.dvrpc.org/products/08030A.



Figure 2: Observed AM Peak Hour Vehicular Trips per Dwelling Unit

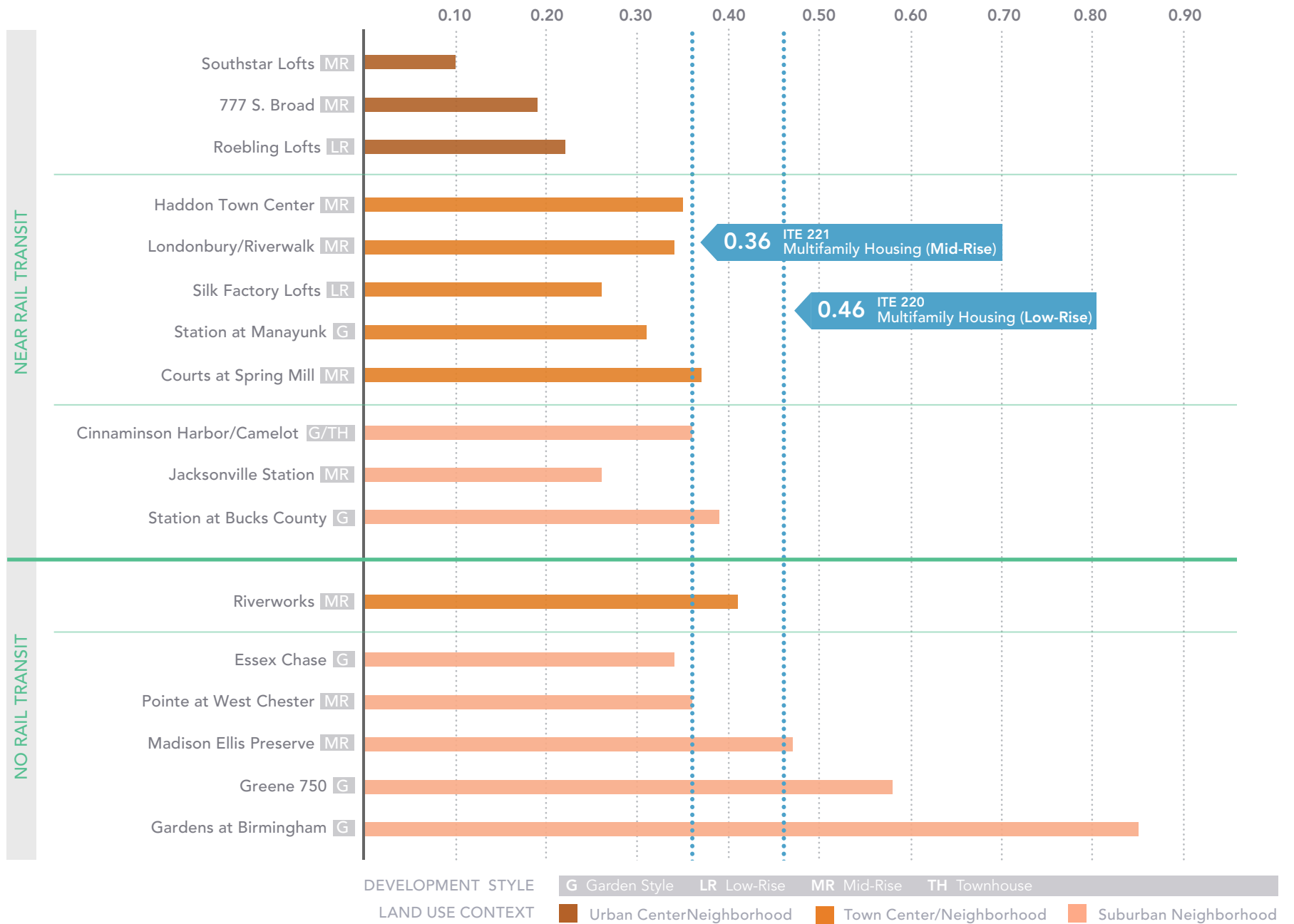


Figure 4: Observed Daily Vehicular Trips per Dwelling Unit

