

New Jersey Department of Transportation
Bureau of Research

Technical Brief



Defining the Hudson-Bergen Light Rail Catchment Area

The objective of this research study was to conduct a comprehensive onboard survey of Hudson Bergen Light Rail (HBLR) weekday riders and use the results of the survey and analysis of secondary data to identify the ridership catchment area of the HBLR system, in the context of its interaction with other transportation modes in the area. To achieve these research objectives, the research team employed a mixed methods approach that included a review of available literature, focus groups to collect qualitative impressions of how HBLR riders use the system, primary data collection in the form of a passenger intercept survey and analysis of both primary and secondary data.

Background

The Hudson-Bergen Light Rail (HBLR) system is a major component of northern New Jersey's transportation network. The area served by the HBLR system has experienced significant growth in recent years. There has never been a comprehensive survey of HBLR riders and no research to date has sought to define the full "catchment area" of the HBLR system and its stations.

Findings & Conclusions

Between 1990 and 2017, Hudson County, New Jersey's population increased by 25 percent with growth concentrated along the HBLR corridor. Growth was more significant in the areas surrounding the HBLR's Core System stations between Hoboken Terminal and Jersey Ave Station in Jersey City than at other stations.

Analysis of 3,300 completed surveys found that most of HBLR riders are frequent users and more than 80 percent of all trips are for work commute purposes. Most riders live nearby and walk to their boarding station, but a substantial number of riders also drive, use NJ TRANSIT trains, PATH trains, and buses to access stations. Most riders use HBLR to

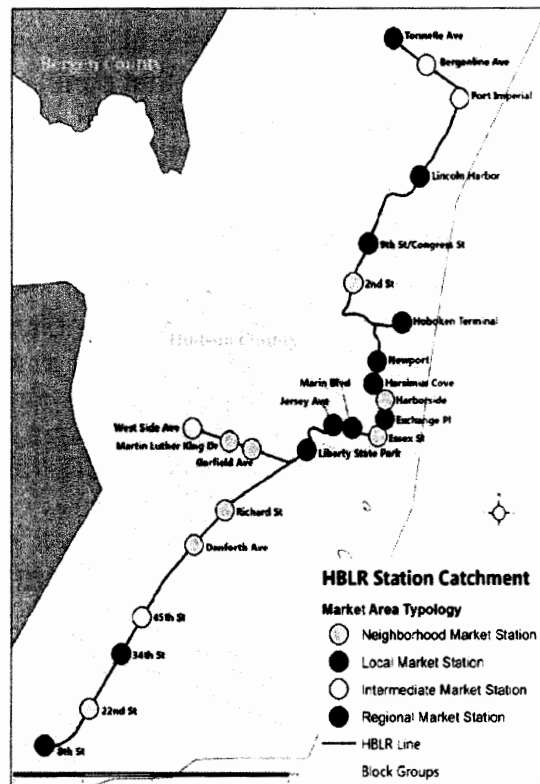


Figure 1. HBLR Catchment Area Station Market Typology

97490
R152
2019a
TR

travel to Hudson County destinations. PATH is the predominant egress mode to travel to New York City.

The analyses indicate that the HBLR system and many of its stations have both a macro- and a micro- catchment area that includes neighborhood, local, intermediate and regional markets. Like many light rail systems, the HBLR serves an important function as a collector/distributor system. The HBLR facilitates intra-county travel along the Hudson County waterfront and also connects travelers to the larger regional transportation system facilitating inter-county travel via multimodal connections. The communities served directly by stations and the immediate areas around stations make up the system’s micro-catchment area which includes a neighborhood market that is within a 1/2-mile linear buffer of stations and a local market area that extends to a 1-mile linear buffer of stations. The micro-catchment area is defined primarily by walking distance. Network walking distances of one mile or less generally fall within a 1/2-mile linear buffer of stations, while network walking distances of between one and 1.5 miles generally fall within a 1-mile buffer of stations. All of the HBLR stations serve a neighborhood market.

Seven stations serve primarily a neighborhood market (see Figure 1). Six stations appear to also serve an extended local market that encompasses the area within a 1-mile linear buffer of stations. The HBLR macro-catchment area includes both an intermediate market (a 1-5 linear mile buffer) and a regional market (>5-mile buffer). The macro-catchment area is defined by the transportation modes that connect with the system at key stations. The intermediate market is connected to the HBLR primarily via bus and auto modes, while the regional market is connected via auto, bus, NJ TRANSIT trains and PATH trains.

Five stations serve both a neighborhood market and an intermediate market area. The share of riders accessing intermediate market stations by auto and bus is generally greater than neighborhood and/or local market stations. Finally, there are six stations that serve a regional market area in addition to intermediate, local and neighborhood markets. These stations have a catchment area that extends beyond a 5-mile linear buffer of the stations. The share of riders accessing these station by modes other than walking is substantially higher than other stations and mean network access distances range up to 23.5 miles. For these stations, multimodal connections via bus, NJ TRANSIT trains, PATH trains and park and ride lots extend the reach to counties further out.

For More Information Contact:

| | |
|-------------------------|---|
| NJDOT Project Manager: | Giri Venkateela, Ph.D. (609) 530-8038, giri.venkateela@dot.nj.gov |
| Principal Investigator: | Jon Carnegie, AICP/PP, Consultant Alan M. Voorhees Transportation Center, Rutgers University (848) 932-2840 carnegie@ejb.rutgers.edu |

A final report is available online at: <http://www.state.nj.us/transportation/refdata/research/>.
If you would like a copy of the full report, send an e-mail to: Research.Bureau@dot.state.nj.us.

Defining the Hudson-Bergen Light Rail Catchment Area
NJDOT Research Report No: FHWA-NJ-2019-001