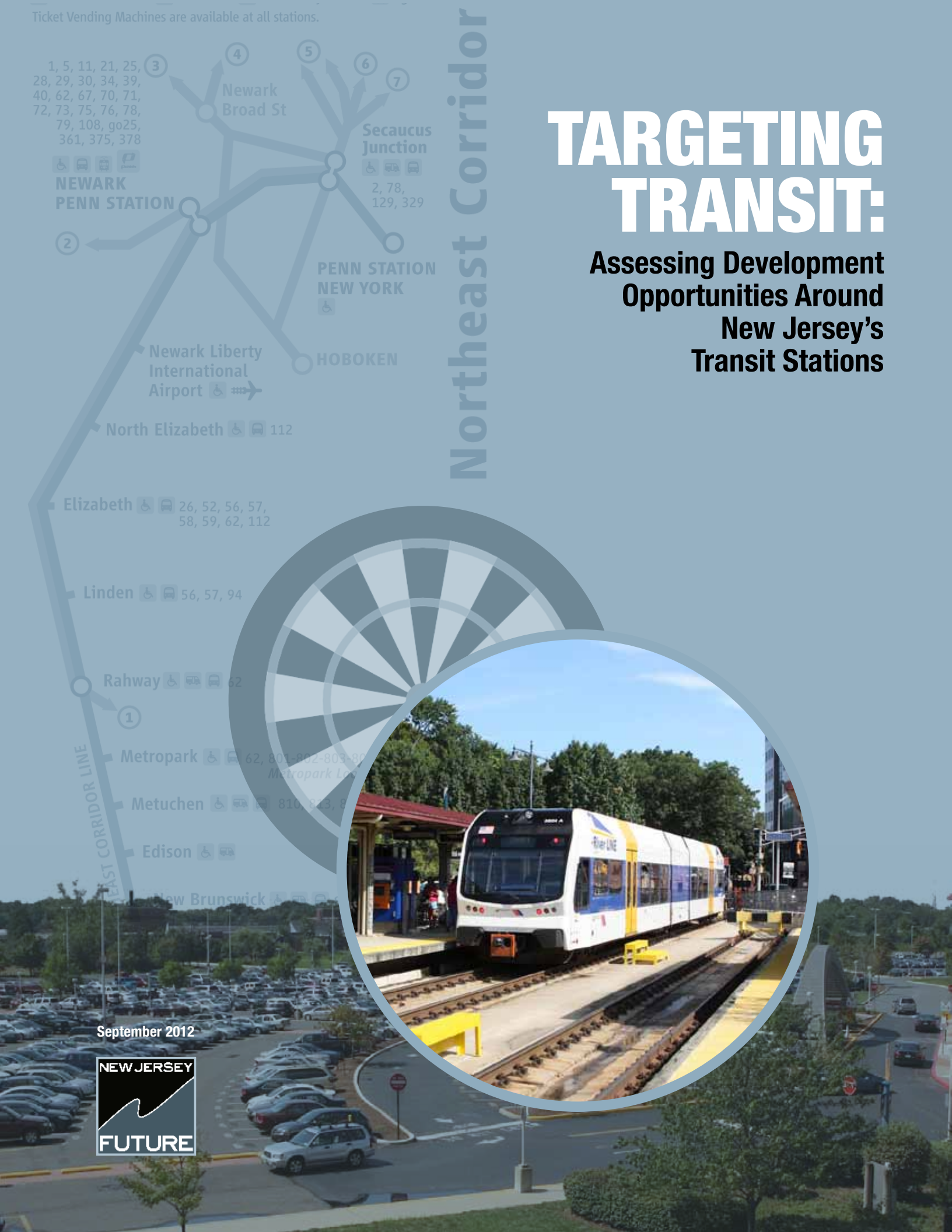
TARGETING TRANSIT:

Assessing Development Opportunities Around New Jersey's Transit Stations



September 2012

NEW JERSEY FUTURE

TARGETING TRANSIT: Assessing Development Opportunities Around New Jersey's Transit Stations

Executive Summary

New Jersey is in possession of a valuable resource: one of the most extensive public transportation systems in the country, an artifact of a transportation past that pre-dates the Interstate Highway System and the omnipresence of the automobile. The legacy bequeathed by this resource is a rate of transit commuting that is second highest among the 50 states. Transit ridership creates many societal, economic, and personal benefits: for example, reducing congestion on the state's roads; alleviating the emission of pollutants and greenhouse gases; reducing the need for vehicle ownership; and freeing up commuters' time for other uses (reading, sleeping, etc.) rather than having to pay attention to the road. In general, transit creates efficiencies and reduces the per-capita impact of the transportation system by allowing multiple travelers to share the ride.

If increasing transit ridership is a desirable goal, then an intermediate goal must be to improve *access* to transit. The more activity centers (homes, stores, workplaces) are clustered near the transit system, the more people will be able to use transit for some of their daily activities. Transit-oriented development (TOD) is a term used to describe a development pattern that concentrates activity centers near transit stations and fosters the kinds of pedestrian connectivity and amenities that help translate that physical proximity into actual foot traffic and transit use.

The transportation community, policy leaders within New Jersey state government, local officials, and private real estate developers have all embraced TOD to varying degrees. But not all TOD is necessarily equal; some transit station areas may be particularly well suited to one type of development (office, retail, residential, parking) but not to others. The unique characteristics of each individual station area can inform decisions about what kind of development should be encouraged at what locations.

Thus far, the determination of which stations are appropriate for which type of development has largely been an ad-hoc, opportunity-driven process rather than a systematic one. A comprehensive and objective assessment of conditions around *all* of New Jersey's transit stations would help identify those stations that pose the greatest opportunities for TOD in general, and for which variety of TOD. This in turn will help to direct limited public and private investments more efficiently and strategically.

The purpose of this report is to present and describe an analytic tool for prioritizing TOD investments that has been developed by New Jersey Future: an inventory of the state's transit stations, populated with key data items pertaining to each station and the area surrounding it. The report will also provide examples of the kinds of questions that can be answered with results generated from the inventory. From such a tool for quantitatively assessing and ranking transit stations and their host neighborhoods, a systematic, targeted TOD promotion strategy might evolve.

INTRODUCTION:
The Importance of Transit Ridership and Transit-Oriented Development

New Jersey is in possession of a valuable resource: one of the most extensive public transportation systems in the country, an artifact of a transportation past that predates the Interstate Highway System and the omnipresence of the automobile. The legacy bequeathed by that resource is a rate of transit commuting that, at 11.2 percent,[1] is second highest among the 50 states,[2] taking hundreds of thousands of private vehicles off the road every day. (Although this report will focus primarily on rail transit, because of the more permanent nature of its physical facilities, it should be noted that bus commuting exceeds rail commuting in New Jersey – the 11.2 percent transit commuting rate breaks down as 6.6 percent bus, 4.4 percent rail, and 0.2 percent ferry.)

Not all TOD is necessarily equal. The unique characteristics of each individual station area may inform decisions about what kind of development should be encouraged at what locations.

Transit ridership creates many societal, economic, and personal benefits. It reduces congestion on the state's roads by giving some people an alternative to driving. It alleviates the emission of pollutants and greenhouse gases that would have otherwise been generated by transit riders if they had driven cars instead. It reduces the amount of money that riders must spend on gasoline and other costs of operating private vehicles, and may even allow them to reduce the number of vehicles they need to own. It frees up time by allowing riders to work, read, sleep, or otherwise relax on a train or bus instead of having to pay attention to the road. It gives employers located near transit hubs greater access to a more dispersed workforce. In general, it creates efficiencies and reduces the per-capita impact of the transportation system by allowing multiple travelers to share the ride.

If increasing transit ridership is a desirable goal, for any or all of the above reasons, then an intermediate goal must be to improve *access* to transit, namely by increasing the number of people who can get to a transit station – whether on foot, by car, or some other means – from their point of origin within an elapsed time that does not exceed their tolerance threshold. A major factor that affects how many people have realistic access to transit is the pattern of the built environment surrounding transit stations. The more activity centers (homes, stores, workplaces) are clustered near a transit station, with proximity generally being framed in terms of walking distance, the more people will be able to use transit for some of their daily activities.

Transit-oriented development,[3] or TOD, is a term used to describe a development paradigm that seeks to concentrate activity centers near transit stations and foster the kinds of pedestrian connectivity and amenities that help translate that physical proximity into actual foot traffic and transit use. The transportation community and other policy leaders within New Jersey state government are well acquainted with the concept of TOD and have implemented it to varying degrees in a number of programs:

- **New Jersey Transit (NJ Transit)** staff, via the "Transit-Friendly Planning, Land Use & Development" program (which dates to 1992), regularly work with interested developers and local officials who seek to promote TOD at individual stations. For example, NJ Transit has been a key partner in Somerville's ongoing effort to redevelop an old landfill property adjacent to its commuter rail station. Overall, more than 50 New Jersey commu-

1 2010 one-year American Community Survey

2 The state of New York has the highest rate of transit commuting in the country, at 27.8 percent. Its top ranking is attributable to the outsized effect of its biggest city, New York City, and particularly Manhattan. The high job density in Manhattan – a major source of employment for New Jerseyans, especially in the northern half of the state – is primarily responsible for New Jersey's high national ranking in transit commuting.

3 See, for example, Chapter 1 of NJ Transit's 1994 guidebook *Planning for Transit-Friendly Land Use* for a primer on transit-oriented development.

nities to date have worked with NJ Transit to advance TOD planning since the program's inception.

- **The New Jersey Department of Transportation (NJDOT)** inaugurated its Transit Village program in 1999. It was designed to help local government officials in transit-hosting municipalities to spur revitalization in transit station areas by laying the groundwork – making zoning changes, improving streetscapes and pedestrian amenities – that would encourage redevelopment projects to happen in the station area. Currently 24 station areas are designated Transit Villages.
- The Urban Transit Hub Tax Credit (UTHTC) is a program created by the legislature[4] in 2008 and administered by the **New Jersey Economic Development Authority.** It makes available a tax credit to a developer, owner, or tenant that agrees to locate or expand a commercial or residential facility within half a mile of an NJ Transit, PATH, PATCO, or light rail station in one of nine eligible (mostly economically distressed, with Hoboken being the debatable exception) municipalities. The program incentivizes employers to locate in transit-accessible locations, so that their workforce has the option of commuting by transit, and it is targeted at municipalities in which unfavorable market conditions make such locational decisions unlikely without the incentive.
- The **Global Warming Response Act Recommendations Report** for 2020, released in 2009, recognized the connection between development patterns (i.e., where we put various societal functions and the buildings that house them) and travel behavior. Among its strategies for meeting statutory goals for greenhouse gas reduction, the report recommends reducing vehicle-miles traveled – one of the principal sources of greenhouse gas emissions in New Jersey – by encouraging TOD and doubling transit ridership by 2050.
- New Jersey's draft State Strategic Plan, prepared by the state's **Office of Planning Advocacy**, articulates a vision for the state's economic and physical development, consistent with the State Planning Act, that should be used to drive state agency actions. The Plan recognizes the importance of transit and the suitability of transit station areas for housing and redevelopment. It recommends the Office of Planning Advocacy participate in partnerships like the DOT Transit Village Working Group and advocate for solutions to spur TOD.

The private sector has embraced TOD as well, with both homebuilders and developers of commercial properties increasingly recognizing that not only does TOD produce a host of societal benefits, but there is also pent-up market demand for it. In particular, the "Millennial" generation has expressed a preference for driving less and walking more, and employers are increasingly heeding the imperative to locate in places where they will be accessible to a young workforce that wants multiple transportation options.

What is not as widely understood, and what the UTHTC's focus on employers alludes to, is that not all TOD is necessarily equal. Some transit station areas may be particularly well suited to a particular type of development but not as well suited to others. For instance, some station areas might lend themselves to hosting large concentrations of employment; others may be more appropriate for primarily a mix of high-density housing and retail; still others may sit at strategic locations on the highway network and thus be well-positioned to intercept car commuters by means of large parking decks added to the development mix. Promoting TOD is thus not necessarily a one-size-fits-all approach; the unique characteristics of each individual station area may inform decisions about what kind of development should be encouraged at what locations.

The somewhat ad-hoc nature of the list of UTHTC eligible municipalities also hints at the lack of a systematic approach to identifying promising TOD candidate locations. Why Hoboken, New Brunswick, and East Orange, for example, but not other distressed municipalities like Orange, Perth Amboy, Harrison, or Plainfield? A more comprehensive and objective assessment of conditions around *all* of New Jersey's transit stations would help identify those stations which pose greater opportunities for TOD. Limited public (both state and local) and private-sector

4 For background on the Urban Transit Hub Tax Credit Act, see this overview from Wilentz, Goldman & Spitzer.

resources could then be targeted more precisely to those stations where a particular type of development is likely to produce the greatest return on investment, whether measured in terms of ridership, economic revitalization, or some other goal advanced by TOD.

The purpose of this report is to present and describe an analytic tool, developed by New Jersey Future, for prioritizing TOD investments: an inventory of the state's transit stations, populated with key data items pertaining to each station and the area surrounding it (sometimes defined as adjacent Census tracts and sometimes as the entire host municipality). Unless otherwise indicated, this project uses as its definition of the "station area" around each transit station a set of Census tracts delineated by NJ Transit that it considers to be within half a mile (roughly a 10-minute walking distance) of that station. NJ Transit's analysis used 2000 Census tract boundaries. New 2010 Census tracts were recently defined by the Census Bureau, but NJ Transit has not as of this writing undertaken to update its station-area delineation using the new tracts. And in any event, the most recent Census Bureau data at the municipal or tract level derive from the 2005-2009 American Community Survey 5-year estimates, which use 2000 Census tract boundaries.

In a few instances, a transit station straddles municipal borders. For purposes of associating municipal-level data with a transit station, each of these stations has been assigned to a unique host municipality in order to simplify data collection. The station's host municipality is defined as the municipality appearing in the street address listed by the transit operator for the station.

For various reasons, this report will focus on transit stations that involve fixed physical plant – an exclusive right of way and/or a permanent building or platform constructed specifically for the purpose of loading and unloading transit passengers. For example, a bus depot (an actual building with waiting area and ticket windows) would qualify as a "station" but a curbside bus stop would not. Land development agents respond to the implied long-term public-sector commitment represented by permanent physical infrastructure, a commitment that is not present in boarding locations marked only with signs or shelters that are easily removed or relocated. Among other things, data are more readily available for these fixed-plant stations, likely because of the same permanence issue.

In addition to describing the variables contained in the inventory, the report will also provide examples of the kinds of questions that can be answered with results generated from the inventory. From such a tool for quantitatively assessing and ranking transit stations and their host neighborhoods, a systematic, targeted TOD promotion strategy might evolve.

Part I: Basic Facts About New Jersey's Public Transportation System

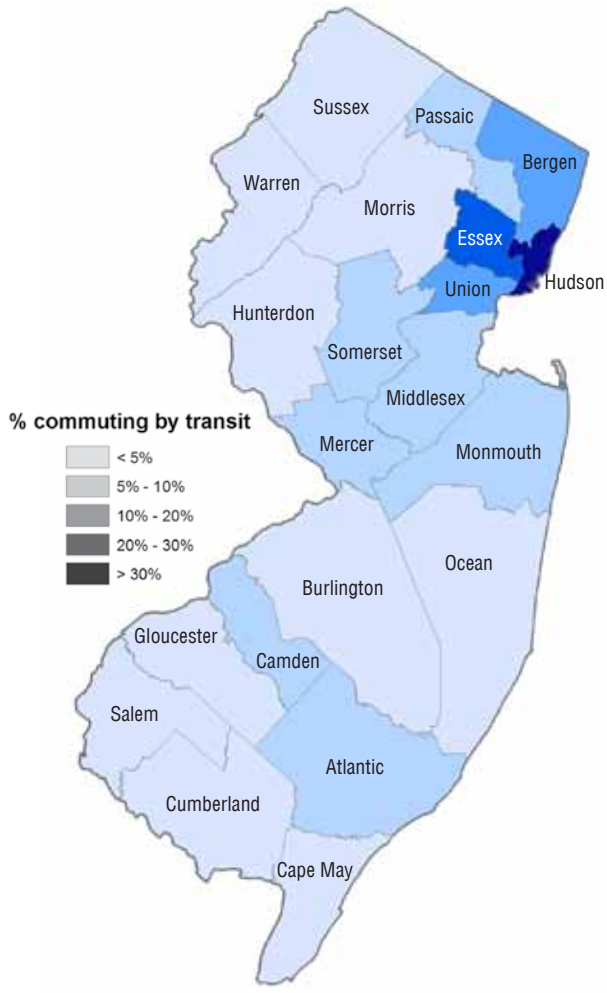
A GREATER SHARE of employed residents of New Jersey use public transportation to get to work than in any other state besides New York. As of the 2010 American Community Survey, one of every nine New Jersey commuters[5] (11.2 percent) used transit, 6.6 percent by bus and 4.4 percent by rail (with ferry riders making up the small remainder). (See **Table 1** for a list of states with the highest transit commute rates.) In absolute numbers, this is about 440,000 commuters who are not in their cars every day. Anyone unconvinced of the value of transit should contemplate what New Jersey's highway network would look like at rush hour with an additional 440,000 vehicles on it, on top of the more than 3 million people already commuting by car.

Among employed New Jersey residents whose workplaces were located within New Jersey, only 5 percent rode transit to work – no better than the national average.

Certain individual counties[6] outperform the state rate of transit commuting, specifically those closest to New York City (see **Map 1**): Hudson County (where 39.0 percent of employed residents commute by transit), Essex (20.5 percent), and Bergen (13.3 percent). (By comparison, New York City's transit commute mode share is 57.4 percent, while another 10.6 percent walked.) These county-level results reflect the transit system's primary orientation toward the economic powerhouse of New York City, and especially Manhattan.

All but one of NJ Transit's commuter rail lines converge at Newark, Secaucus, and/or Hoboken for the final trip across the Hudson River to New York. And New York-bound commuters do indeed disproportionately use transit: an NJ Transit analysis of data from the 2000 Census[7] found that one in every 15 employed New Jerseyans worked in Manhattan, and 70.6 percent of them rode transit to work, 39.1 percent by rail (or ferry; the two were tabulated together)and 31.5 percent by bus. The phe-

Map 1 Transit Commuting Rates by County



Source: 2005-2009 American Community Survey 5-year estimates

5 "Commuters" refers specifically to workers not working at home. Home-based workers are excluded from the denominator of all mode-split percentage calculations in this report.

6 County transit commute rates are from the 2005-2009 American Community Survey 5-year estimates.

7 Mode splits by destination county are not produced in tabular form by the Census Bureau; these figures are from a special analysis performed by NJ Transit. An updated analysis, using more recent American Community Survey data, will likely be performed, but the necessary input data are not yet available.

nomenon was less dramatic but still significant in the southern half of the state, with 24 percent of the New Jersey residents who worked in Philadelphia commuting by transit, 20 percent by rail and 4 percent by bus.

The other side of this coin is that among employed New Jersey residents whose workplaces were located within New Jersey, only 5 percent rode transit to work – no better than the national average. There would certainly seem to be room for improvement for New Jersey to boost its *intra-state* transit commute mode share, by directing more of its in-state job nodes toward transit-accessible locations, given how many people in New Jersey have easy access to public transportation.

While commuting to work is generally the largest component of overall transit ridership (based on certain statistics maintained in NJ Transit's quarterly ridership reports), transit use for non-work purposes is also significant and in a few places even rivals commuting. NJ Transit's 3rd-quarter fiscal-year 2012 ridership report lists just under 900,000 average weekday transit trips, summed over all modes (with each direction of a round trip counted as a separate trip). But average Saturday trips, at just under 400,000, were nearly half the weekday rate, with average Sunday trips at 261,000, between one-fourth and one-third of the weekday average.

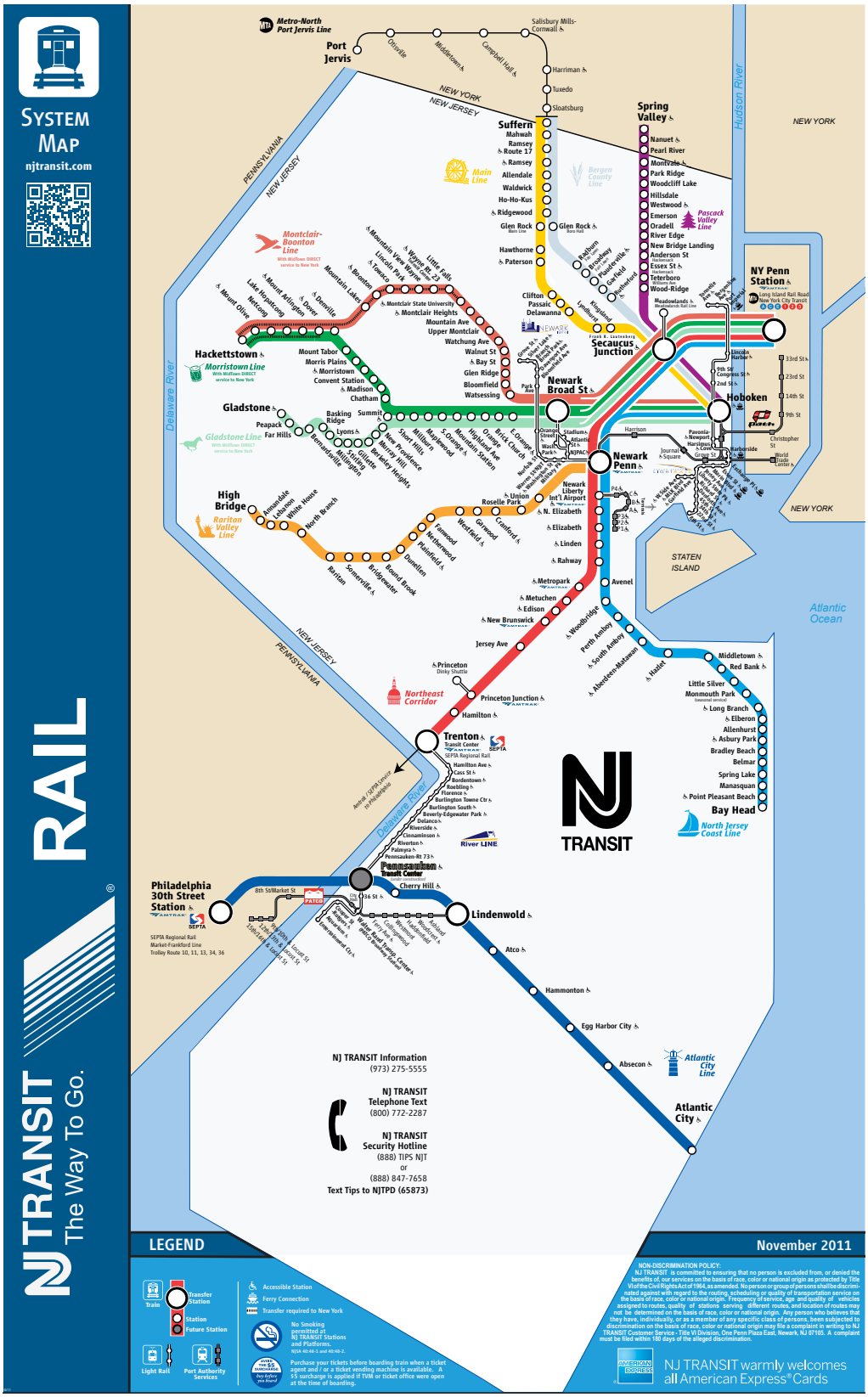
For commuter rail ridership, average Saturday trips were about one-third the weekday average, and Sunday trips about one-fourth. On the bus system, though, average Saturday trips were about half of the weekday average – 265,000 vs. 542,000. Bus ridership does not drop off as much on weekends as rail ridership typically does. Light rail behaves more similarly to bus than to commuter rail, with Saturday ridership averaging half of weekday ridership and Sunday about one-third. Like many bus routes and unlike most of the commuter rail routes, the Hudson-Bergen and Newark light-rail lines are geared primarily toward serving major urban centers within New Jersey, traversing densely-populated territory with station stops relatively close together. And though it is most similar to commuter rail among the state's three light-rail systems, in terms of its total length and the distance between its station stops, the River Line nonetheless boasts the best Saturday and Sunday performance relative to its weekday average ridership – Saturday trips actually average more than half the weekday average (about 4,900 vs. about 8,500), with Sunday (4,100) only slightly behind Saturday. The River Line's high weekend ridership likely has much to do with the on-site accessibility of key non-work destinations from several of its stations: the New Jersey State Aquarium and the Susquehanna Bank Center at the "Aquarium" and "Entertainment Center" stations, respectively, at the southern end in Camden; and the Sun Center Arena at the Hamilton Ave. station in Trenton, at the northern end. And speaking to the importance of non-work destinations, average Saturday trips actu-

Table 1. States with transit commute mode shares exceeding the national average

	number of transit commuters	transit riders as % of all commuters: total	bus	rail
United States	**5,135,586**	**5.2%**	**2.7%**	**2.4%**
New York	2,328,724	27.8%	6.7%	21.0%
New Jersey	439,572	11.2%	6.6%	4.4%
Massachusetts	285,330	9.5%	3.2%	6.2%
Maryland	245,628	9.0%	4.3%	4.7%
Illinois	494,684	8.9%	3.8%	5.1%
Hawaii	43,534	7.0%	6.9%	0.0%
Washington	167,329	5.8%	5.3%	0.3%
Pennsylvania	310,436	5.6%	4.0%	1.6%
California	820,349	5.4%	4.0%	1.4%

Source: Census Bureau, 2010 American Community Survey one-year estimates

Map 2 The Rail Transit System in New Jersey



Source: New Jersey Transit, reproduced from their website.

ally exceed average weekday trips on the Atlantic City commuter rail line, whose eastern terminus is just a few blocks from the boardwalk and casinos.

Transportation planners have a tendency to focus disproportionately on the work trip, but if a wide enough array of destinations are accessible via public transportation, riders will use transit at all hours of the day (or night, as the 24-hour New York City Subway and PATH systems can attest) for all manner of trip purposes. Good TOD should include a diverse mix of activities, to encourage transit use throughout the day, not just in the morning and evening peak periods.

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So where are all of New Jersey's opportunities for TOD? Just how many transit stations are we talking about? Many of New Jersey's citizens, and even many of its public officials, may not be cognizant of just how extensive the state's transit system actually is. First of all, the "system" is actually a collection of interconnected systems, run by multiple operators and comprising bus, rail (see **Map 2**) and ferry operations:

- NJ Transit runs a commuter rail system that it subdivides into eight individual lines for operational and accounting purposes, although the Main and Bergen lines and the Morristown and Gladstone-branches of the Morris & Essex Lines are geographically separate facilities (and are graphically depicted as such on the NJ Transit system map), arguably bringing the true functional total to 10.
- NJ Transit also operates three light-rail transit (LRT) systems: the Newark Light Rail (formerly known as the Newark City Subway), Hudson-Bergen Light Rail (HBLR, serving the Hudson River waterfront area), and River Line (connecting Camden and Trenton along the Delaware River). (See **Map 3** for detail on HBLR and Newark Light Rail.)
- Two branches of the Philadelphia-based SEPTA (Southeastern Pennsylvania Transportation Authority) "Regional Rail" commuter-rail system

Map 3 Northern New Jersey detail of NJ Transit rail system map, including PATH, Hudson-Bergen Light Rail, Newark Light Rail, and commuter rail line terminal stations

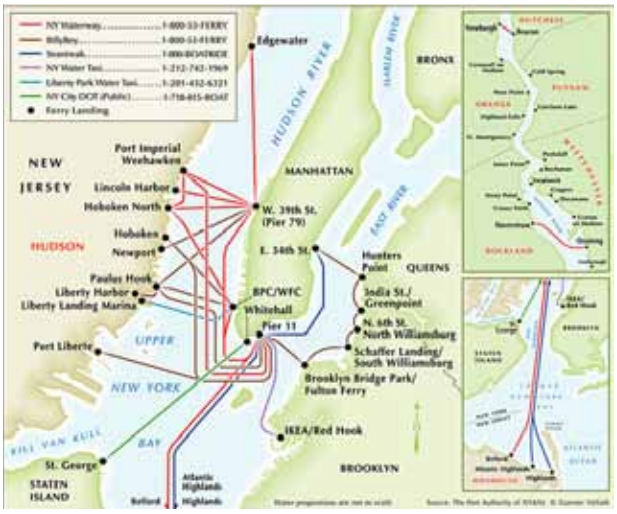
Map 4 Detail of Philadelphia-Area rail transit, including PATCO and Trenton and West Trenton SEPTA commuter rail stations

Source: Southeastern Pennsylvania Transportation Authority, reproduced from their website.

extend into New Jersey, terminating at Trenton and West Trenton. (See **Map 4**.)

- The PATH (Port Authority Trans-Hudson Corporation) subway/surface rapid-transit system (see **Map 3**) connects Newark, Jersey City, and Hoboken with Lower and Midtown Manhattan and is run by the Port Authority of New York and New Jersey.
- The PATCO (Port Authority Transit Corporation) subway/elevated rapid-transit system connects a string of Camden County suburbs with the cities of Camden and Philadelphia and is run by the Delaware River Port Authority. (See **Map 4.**)
- Fourteen ferry terminals[8] connect various points along the Hudson River waterfront in Hudson and Bergen counties – and a few on the shore of Raritan Bay in Monmouth County – with several locations in Manhattan (See **Map 5**.)
- NJ Transit identifies 25 major bus terminals[9] in New Jersey for which it tracks bus boardings; some of these are also rail stations. Bus terminals are included in the Appendix, which lists all 243 transit stations in New Jersey.
- Amtrak Northeast Corridor trains stop at several stations in New Jersey: Trenton, Princeton Junction, New Brunswick, Metropark, Newark Airport, and Newark Penn Station. While these trains are used primarily by interstate travelers, NJ Transit monthly passholders can ride Amtrak trains for commuting purposes if convenient; NJ Transit's ridership statistics include these riders.

Map 5 New Jersey and New York Ferry Terminals



Source: The Port Authority of New York and New Jersey, reproduced from their website.

Tallying up all of the state's interconnected transit systems – rail, bus, and ferry – there are 243 distinct transit stations scattered throughout New Jersey, with 152 of the state's 566 municipalities hosting at least one station.

All together, adding up the individual stations from all of the transit systems serving New Jersey and correcting for double-counting that results from the fact that a few stations serve more than one system, the New Jersey Future inventory of transit stations contains 243 distinct stations (see **Appendix**), distributed among 152 of the state's 566 municipalities. The following is a breakdown of these stations according to which modes they are served by:

- 12 are ferry terminals only
- 16 are major bus terminals not served by another mode
- 205 are served only by rail:
  - 139 are commuter rail only

8 The map indicates only 13 ferry terminals in New Jersey because it treats Warren Street Pier in Jersey City and Liberty Landing Marina as a single location.

9 The list of bus terminals on the NJ Transit website does not include the Atlantic City Rail Station or the Journal Square Transportation Center but does include several terminals outside of New Jersey.

- 9 are rapid transit[10] only (7 PATCO and 2 PATH)
- 54 are light rail only (21 HBLR, 15 Newark Light Rail, 18 River Line)
- 3 are served by multiple rail modes: Lindenwold (PATCO and commuter rail), Newark-Broad St. (commuter and light rail), and Newport/Pavonia (PATH and light rail). The Pennsauken Transit Center, currently under construction, will fall into this category as well (served by commuter and light rail).

- 10 are multimodal terminals
  - 1 (Hoboken Terminal) is served by all 3 rail modes and is also a bus and ferry terminal
  - 1 (Newark Penn Station) is served by all 3 rail modes and is also a bus terminal
  - 1 (Trenton) is served by commuter rail (both NJ Transit and SEPTA) and light rail and is a bus terminal
  - 1 (Walter Rand Transportation Center in Camden) is served by light rail and rapid transit (PATCO) and is a bus terminal
  - 4 (Metropark, New Brunswick, Asbury Park, and Atlantic City) are commuter rail stations that also serve as bus terminals
  - 1 (Journal Square) is a rapid transit station that also serves as a bus terminal
  - 1 (the Exchange Place PATH station) is a rapid transit station that also serves as a ferry terminal

A total of 215 stations are served by one or more rail modes.

Counting the stations by which modes they are served by, with double counting for stations served by multiple modes, we have:

- a total of 215 stations served by one or more rail modes
- 148 stations served by commuter rail
- 60 served by light rail
- 16 served by rapid transit (PATH or PATCO)
- 25 major bus terminals
- 14 ferry terminals

As mentioned earlier, NJ Transit has delineated a half-mile radius of Census tracts around each of the state's rail transit stations, roughly corresponding to the distance that research has shown most people are willing to walk to a station. It has not, however, carried out a similar analysis for the 28 stations on this list that are served only by bus or ferry (12 ferry-only, 16 bus-only). But even looking only at rail stations, the transit system's reach is impressive: Out of the state's 1,944 Census tracts (as defined for the 2000 Census), 657 fall at least partially within half a mile of one or more of the 215 rail stations. Using 2005-2009 ACS population estimates, the number of people living in the 657 rail tracts – about 2.8 million people – amounts to a full one-third of the state's total population (32.8 percent). With so many people living within walking distance of it, the rail transit system's potential to reduce the need for car travel should not be underestimated.

Roughly one-third of the state's total population lives within walking distance of a rail transit station.

The first step in determining how to boost the share of people with easy access to transit who actually use transit is to take account of how the 243 individual transit stations are presently functioning, in terms of things like frequency of service, how many riders they attract, or how those riders get to the station. Likewise, it is also important to assess the fiscal, demographic, and socioeconomic characteristics of the transit stations' host neighborhoods (as defined using proximate Census tracts) and municipalities (for data that are either not produced at the Census tract level or, like variables related to property taxes, are determined by the municipality). Understanding the factors that influence transit ridership at the individual station level is key to identifying which locations have the greatest potential to attract TOD, and then anticipating what kind of development is most likely to succeed at which locations.

To this end, New Jersey Future has assembled an inventory of the state's transit stations and has compiled a host of information about the stations themselves and the neighborhoods and municipalities that surround them. The next two sections of the report list these data items – one section for variables associated with the station and one section for variables associated with the surrounding area – and provide a brief explanation of what each variable contributes to an assessment of TOD potential.

10 Also called subway/elevated or "heavy rail," usually with power supplied by an electrified third rail.

Part II: Characteristics of Individual Stations

The transit station inventory variables in this section pertain directly to the individual transit station and its function as a transportation facility. These features of the transit station are important no matter what type of neighborhood the station is located in. Each variable is followed by an explanation of how its value can be interpreted as a measure of development or ridership potential.

Centrality/accessibility. Generally, the greater the number of lines that serve a station, the greater the number of origins from which the station is directly accessible. This is intuitively what we mean when we say a station is "centrally located." The total number of lines, including summing over all agencies serving the station, is a good objective measure of accessibility.

Greater centrality/accessibility is better. Stations served by more than one line within a single mode – and especially stations served by more than one mode – should score higher as TOD candidates because of their greater degree of accessibility. They can attract riders from a wider variety of origins, or can disseminate riders to a wider variety of destinations, than can stations served by only a single line. For bus and ferry terminals, connectivity could be measured by the number of routes emanating from the terminal, although these routes are less permanent than for rail transit because they do not use fixed guideways.

Centrally located stations served by multiple lines can attract riders from a wider variety of origins than can stations served by only a single line.

Intermodality. The number of transportation modes that serve a given station is another aspect of accessibility. Different modes tend to specialize in servicing trips of differing average lengths – for example, bus and light-rail vehicles stop much more frequently and lend themselves to shorter trip lengths than commuter-rail trains, because commuter trains take a longer time to accelerate and decelerate. (The distinction between modes is somewhat subjective; as previously mentioned, the River Line uses light-rail vehicles but operates more like a commuter rail line, in terms of its overall length, distance between station stops, and the types of communities it serves.) In general, having more modes serving a station increases the options for accessing that station. All other things being equal, stations served by multiple modes (commuter rail, light rail, rapid transit, bus routes, ferry) should thus score higher on TOD potential because of the greater variety of destinations from which they can attract riders, not just in terms of the number of compass directions but also in terms of the range of distances.

It should be noted that while a station being served by multiple routes and multiple modes gives that station

Accessibility: Multiple Routes, Multiple Modes… Multiple Operators?

A greater number of routes, lines, or modes serving a transit station generally makes that station accessible from a greater range of origins. But what about multiple operators? It may at first be tempting to think that more systems converging on a location is better. But when considered as a sub-issue of overall accessibility, greater complexity is less desirable, especially if the station serves as a transfer point for many riders, not just a final destination. For a given number of lines or modes serving a single station, it is generally preferable for them to be operated by the same agency, because of the implied consistency of the ticketing and access control apparatus. The complexity of transferring among systems operated by multiple agencies[11] can be overcome via integrated ticketing/farecards (NYC Subway farecards are also accepted on PATH, for example), but all other things being equal, a larger number of system operators should probably be considered a negative. Encouraging greater transit ridership by improving accessibility should involve making transfers among lines and modes as seamless as possible.

Some steps have already been taken toward better integration: NJ Transit and New York Waterway (operator of several ferry services between New Jersey and New York) recently announced a joint monthly pass that will be accepted by both carriers, and SEPTA is preparing to introduce new technology that will bypass proprietary farecards altogether by allowing riders to pay using their existing credit or debit card.

11 Or even the same agency – transferring among NJ Transit's bus, commuter rail, and light rail facilities requires separate fare payments for all riders except those holding monthly passes.

an advantage with regard to accessibility, it is also preferable if those multiple access routes are not operated by multiple entities – see sidebar on page 11.

Ridership. Current ridership statistics show which transit stations are already demonstrating an ability to attract large numbers of riders and hence may have the potential to attract more, if their host municipalities were to adopt explicit TOD strategies. Ridership statistics can be thought of as a de facto poll of the present-day transit-riding public as to which stations they think offer the closest, most convenient, or least expensive access.

Frequency of service. The inventory includes a tally of the number of stops per day at each station, compiled from timetables listed on the NJ Transit website. The number of stops in the peak period (as defined by the operator) is tabulated separately. A greater number of stops per day creates greater convenience for riders by increasing their range of departure time options. This is especially important in the peak period, when commuters need to get to work by a certain time. Higher frequency of service is thus assumed to be better. In fact, the higher frequency of service generally provided by light rail and subway-type rapid transit systems, as compared to commuter rail, probably explains why TOD has more often tended to occur naturally around those stations. The higher frequency of service means riders can use transit for all kinds of daily activities, not just the commute to work.

Number of transfers required to reach major regional destinations. Stations offering a one-seat ride to major regional destinations should score higher because the greater convenience these stations offer to their riders is likely to be a factor in attracting additional riders. (The jump in ridership on NJ Transit's Morris & Essex and Montclair-Boonton lines in the wake of the introduction of "Midtown Direct" service on those lines – direct service to New York Penn Station, as opposed to terminating in Hoboken and requiring a transfer to PATH or ferry to reach Manhattan – attests to the popularity of a one-seat ride.) More generally, the fewer transfers required to reach these major destinations, the more attractive the service becomes. Derived from maps of the state's transit systems, the inventory includes the number of transfers required to travel from each station to each of the following major destinations:

- New York Penn Station (including the 33rd St. PATH station)
- Lower Manhattan, as represented by either the World Trade Center PATH station or one of the downtown ferry terminals as the destination, or assuming a transfer to the New York City Subway A, C, and E lines at Penn Station
- Center City Philadelphia, defined as Market East, Suburban Station, or one of the Center City PATCO stops (but not 30th St. Station, which is not in Center City)
- Newark Penn Station

Travel time to major regional destinations. As with the number of transfers, the travel time required to reach major destinations will affect a station's attractiveness to riders. Obviously, a shorter travel time is more desirable. The transit station inventory includes travel times to New York Penn Station calculated by the Regional Plan Association for stations on NJ Transit's commuter rail lines. Adding travel times to other major destinations, as well as adding travel times to New York Penn for stations on other systems (PATH, HBLR), would be desirable future enhancements to the inventory.

Parking. The availability (total number of spaces), configuration (surface lots vs. structures), and utilization rate (percent of spaces typically occupied) of parking adjacent to a transit station can all provide insight into numerous aspects of how the station is accessed. Perhaps most obviously, a total absence of parking indicates that all access to the station is by some method other than private automobiles; this will typically be the case mainly in very high-density areas where a large number of residences and businesses are located within walking distance of the station.

Where parking is available, the number of spaces associated with the station relative to the number of average daily riders will give an idea of what share of the ridership typically arrives at the station by private vehicle. A higher ratio indicates greater reliance on automobile access, while a low supply of parking for a given ridership level may mean that the station is

located so as to allow many riders to reach the system without having to drive and park. Of course, a low ratio could also simply be a function of a shortage of parking associated specifically with the station, a shortage that might be causing parking pressure to overflow into surrounding neighborhoods, where transit agency parking statistics fail to capture it. A parking shortage could also be deterring some potential users from riding transit altogether.

While even park-and-ride locations can benefit from some aspects of TOD, caution should be taken about actually reducing the amount of parking available at these sites, since their strategic locations on the road network allow them to intercept commuters from throughout the surrounding region and divert them onto transit.

The number of spaces at a given station relative to other stations on the same line – or relative to the population of the station area – can hint at the effective catchment area of the station, i.e. the range of distances from which transit riders are accessing this station. Stations with a disproportionately high supply of parking may be serving as regionally important park-and-rides, with strategic locations on the road network that are able to intercept commuters from surrounding municipalities or counties (or even states!) who might otherwise drive the rest of the way to work. This is especially true if the parking utilization rate is high. While even locations that are primarily park-and-rides may benefit from the addition of some components of TOD, caution should be taken about actually reducing the amount of parking available at these sites, as this may inadvertently cause diversion of some transit riders back onto the road network. The replacement of surface parking lots with structured parking may be the optimal approach in these locations, with the freed-up space being used either for other land uses (housing, retail, etc.) or to increase the supply of parking, depending on estimated latent demand.

A low parking utilization rate, on the other hand, is a sign of excess supply and may point to sites with good redevelopment potential – that is, sites where unused parking could be replaced by TOD land uses that are designed to generate activity around the station. This is especially true if the station-area parking is all in surface lots rather than decks, as is the case at a large majority of stations, since replacing parking with more intensive uses will not involve demolition of any existing structures or the need to acquire additional property.

The transit station inventory contains information on the total number of parking spaces at each rail station and the breakdown of how many of these spaces are in surface lots vs. decks, as well as an overall average utilization rate (monitored by NJ Transit on an ongoing basis). While these statistics alone may not point toward a single conclusion as to the station's most promising potential TOD configuration, in combination with other data items they can help fill out a profile of how the station is presently functioning and thus raise necessary questions about whether and how these functions need to be maintained or reproduced elsewhere on the system.

Under-developed surface parking lots could be redeveloped with TOD land uses that are designed to generate activity around the station.

Part III: Characteristics of "Station Areas"

The variables in this section pertain to the area or neighborhood surrounding the station rather than to the station itself. Many of the factors that affect ridership at a transit station are functions of what kind of development surrounds the station, irrespective of where the station is located in the context of the larger transit network. Demographic and economic factors, such as the median household income or vehicle ownership rate of the residents who live near the station, will influence whether these residents choose to ride transit or not. Likewise, the number of jobs located near the station will affect the station's attractiveness as a destination. Furthermore, some characteristics of the station area will provide important screening criteria if revitalization of weak-market areas is an explicit goal of a particular TOD program (as is the case with the Urban Transit Hub Tax Credit).

Many of the factors that affect ridership at a transit station are functions of what kind of development surrounds the station.

For data items that are available at the Census tract level, the "station area" is defined as the set of Census tracts that NJ Transit considers to be within a half-mile radius of the station. For any such variable, the transit station inventory is structured to enable the construction of station-area summaries by cumulating the tract-level values over all station-area tracts. In other cases, an important data item is available only at the municipal level, in which case it will be associated with any and all transit stations located in that municipality. Each variable in this section is flagged as to whether it is a tract-level or municipal-level data item and is followed by an explanation of how its value can be interpreted as a measure of development or ridership potential.

Population density. Population and land area are available from the Census Bureau for all Census tracts, so density can be computed at the station level. Stations surrounded by higher-density residential development – as measured by people per square mile in the station area – should score higher as candidates for primarily residential TOD. At a very basic tautological level, more people within walking distance of the station means more potential riders. It may also be true that residents in higher-density station areas are already accustomed to density and are thus somewhat less likely to reflexively resist any new development, though some resistance to change is virtually inevitable.

More people within walking distance of the station means more potential riders.

Alternatively, density can be measured using number of households rather than population. The household-based measure will provide a more accurate picture of actual building density, since the number of households is by definition the same as the number of occupied housing units. The station inventory includes both variables.

Population change. Population loss could serve as an indicator of distress, if a TOD assistance program is intended to be targeted at municipalities or station locations where the market might not otherwise be strong enough to support redevelopment. Conversely, high population growth could indicate heavy and/or growing demand and might argue for greater public-sector involvement in facilitating TOD to harness market forces that are already moving in that direction. The inventory includes a measure of population change over the decade of the 2000s for each station area.

Employment. Employment data is typically available at the municipal level on an ongoing basis from the New Jersey Department of Labor and is included in the inventory. Employment was also formerly available every 10 years at the Census tract level from the decennial Census. With the Census long-form questionnaire having been replaced by the annual American Community Survey, employment data at the tract level should become available annually, though the first round of such data had not yet been made available as of this writing.

Whether at the municipal or station-area level, total employment can help identify large existing employment nodes near transit. Sometimes, a transit-adjacent job cluster may already be attracting significant numbers of transit commuters, in which case the job center may be a candidate for further expansion via public or private investment that will draw additional jobs to such locations. In other cases, the jobs may be located in close proximity to the transit station but are separated from the station by a major roadway or acres of surface parking or some other barrier to safe and pleasant pedestrian access. A lack of direct access to the workplace (or other final destination) from the transit station is known as the "last mile" problem (see sidebar).

In the latter instance, the more immediate concern in promoting greater transit ridership will be improving pedestrian connections and amenities for existing employees, before worrying about bringing additional jobs to the area. (Distinguishing between these two types of job concentrations – whether the station-area development is truly transit-oriented or merely transit-adjacent – need not involve extensive additional data collection; it may be as simple as browsing aerial/satellite photos of the station on one of the interactive mapping websites and observing whether the station is integrated into its surrounding neighborhood or whether it is separated from nearby buildings by large surface parking lots or wide, high-speed roads.)

"The Last Mile"

The use of public transportation is critically dependent on transit riders' ability to reach their final destination by means other than private automobile, once they exit the transit network and no longer have a vehicle available to them. You can drive from your home to the train station (provided you own a car, of course), but you can't bring your car on the train with you for use in accessing your final destination at the other end of the train trip. This is why a rider's destination being located near transit is more important than his or her point of origin [i.e., residence] being located near transit. For commuting trips, the final destination is the workplace. If we want people to be able to commute by transit, we need to put jobs in transit-accessible locations, where commuters can bridge that "last mile" on their own two feet or, less optimally, via a local shuttle service.

In addition to looking at total employment, we can also compute job density, i.e. the number of jobs per square mile, in the station area. This will help identify those stations where nearby jobs are especially spatially concentrated, placing a large number of jobs within walking distance of the station.

It should be noted that a transit-accessible job cluster is a particular type of TOD that will not necessarily be the most appropriate type of development at every transit station. Employment nodes are best fostered at locations that are accessible via many branches of the transit system rather than just one, so as to maximize the number of people who can reach that destination via transit within a prescribed travel time. Stations at the outer extremities of individual transit routes do not lend themselves to such broad access.

To enable people to commute by transit, jobs need to be in transit-accessible locations. Employment nodes are best fostered at locations that are accessible via many branches of the transit system, so as to maximize the number of people who can reach that destination efficiently.

Job change. Among stations having high job density in the surrounding area, we can distinguish between strong-market areas and weak-market areas by looking at the change in employment for the host municipality (or for the station area, once the American Community Survey has been in place long enough to generate tract-level longitudinal data on employment). Transit-accessible municipalities hosting a large number of jobs but where job growth has been nonexistent or negative (e.g. Camden, Trenton, Newark) may call for a different set of policies as compared to job-center municipalities where employment has continued to grow (e.g. Jersey City, Hackensack). The desired outcome may be the same – a transit-accessible employment node – but the proposed solutions for attaining that outcome may differ based on economic circumstances.

Income-related variables. The incomes of households living in transit station areas can inform inferences about who is currently entering the transit system at a particular station, which in turn can inform

strategies for attracting new riders, both at the station in question and at other similar stations. A high median household income in the station area could help identify where "discretionary" riders dominate; that is, where transit riders tend to have higher incomes and are presumably using transit out of choice rather than economic necessity. Characteristics of these stations could be instructive as to what might work elsewhere, in terms of inducing people to ride transit even though they can afford other options.

A low median income in the station area is useful in identifying potentially transit-dependent populations – those who cannot afford cars and are thus using transit as their only option for longer-distance travel.

On the other end of the scale, a low median income in the station area is useful in identifying potentially transit-dependent populations – those who cannot afford cars and are thus using transit as their only option for longer-distance travel. In some instances, a TOD strategy may focus on attracting more discretionary riders, while in other situations the main goal will be making sure transit-dependent households are being adequately served. It is thus important to be able to distinguish between the two.

Commuting behavior. The transit station inventory contains the percentages (from the 2005-2009 5-year American Community Survey) of commuters in the station area who commute by transit (broken out by rail vs. bus), driving (including carpooling), and walking or biking. Station areas with high rates of transit commuting – and especially those that also have high rates of people walking or biking to work – may represent opportunities to build on already existing TOD clusters. Conversely, station areas with relatively low rates of transit commuting but with high values of other variables (e.g., population density) associated with transit may point to stations where some of the ingredients of TOD are already in place but pedestrian connections or frequency of transit service need to be improved.

Vehicle ownership. Stations surrounded by higher concentrations of households with below-average vehicle ownership rates (and especially households owning zero vehicles) should perhaps score higher as TOD candidates, for either or both of two reasons. One possibility is that a low vehicle ownership rate is an indicator of a lower-income population that relies on public transportation as its primary means of getting around. Another explanation is that the low vehicle ownership rate is evidence of households actively choosing not to own a car, or to own fewer cars than they would otherwise, because good public transportation service is available as an alternative. The latter scenario would suggest that the station area already features a development style that enables at least some daily activities to be accomplished without need of a car, making the station a promising candidate for more of this type of development.

A low vehicle ownership rate near a transit station may be evidence that the station area already features a development style that enables at least some daily activities to be accomplished without need of a car, making the station a promising candidate for more of this type of development.

Whatever the reason for low vehicle ownership rates, it follows that these places are good candidates for further TOD, because they are already home to people who are accustomed to getting around with fewer cars than is typically the case in the rest of the state and who would presumably welcome more development that is not automobile-dependent. To identify these places, the transit station inventory contains data at the station level on the percent of households owning zero vehicles and the percent of single-vehicle households, as well as an estimate of the average number of vehicles per household.

Presence of a "downtown." The inventory contains an indicator of whether a station's host municipality (or, in the case of larger municipalities with multiple transit stations, the station's host neighborhood) also hosts a traditional "downtown," characterized by a mix of commercial and public uses and good street connectivity. The indicator is based on a list being compiled by Downtown New Jersey, which identifies downtowns by the presence of such things as a Main Street program, a Special Improvement Dis-

trict (SID) or Business Improvement District (BID), or some other organization run by local merchants to "complement rather than replace existing municipal government services as part of a revitalization downtown plan."[12] These authorities typically focus on services (such as street cleaning or maintenance of "street furniture" like benches and trash cans) aimed at improving the pedestrian experience, on the assumption that much of the travel among businesses in the district will be on foot rather than by car.

The presence of such an organization focused on the municipality or neighborhood in which a transit station is located can be interpreted as a sign that the station is surrounded by a traditional downtown environment and thus may already feature many of the foundational elements of "transit-oriented development." Stations whose host municipalities contain one or more designated SIDs/BIDs, Main Street programs, or similar authorities should probably score higher as TOD candidates, since these municipalities are already aware that they have a "downtown" and understand the importance of compact, walkable development.

Measures of socioeconomic distress. There are any number of indicators that can be used to describe socioeconomic conditions in a transit station's host municipality. If a program proposes to use TOD as a redevelopment tool, to be specifically targeted at "weak-market" places in which the market is unlikely to generate new development without incentive, these indicator variables would help identify the host municipalities where the needs are greatest.

Measures of socioeconomic distress – low home values, high rate of vacant housing, etc. can identify transit station neighborhoods where the market is unlikely to generate new development without incentive and which thus may benefit from targeted state programs.

In addition to measures of income, Census/ACS station-area variables included in the transit station inventory that may be useful in identifying municipalities or neighborhoods experiencing distress include:

- Median home value for owner-occupied units (self-reported, not from tax records)
- Percent of non-seasonal housing units that are vacant
- Percent of housing units that are owner-occupied vs. renter-occupied

Other potential measures of socioeconomic health that are available regularly at the municipal level and, though not presently included, could be easily added to the transit station inventory include:

- Per-capita property tax base
- Average residential value (based on assessed values from tax records)
- Rate of children on TANF (Temporary Aid to Needy Families)
- Unemployment rate

Further avenues of inquiry. There are several other characteristics of transit station areas for which data are not systematically available but which are nonetheless important to mention as determinants of a station's TOD potential. These variables are not included in New Jersey Future's transit station inventory because of the time and cost prohibitions in collecting the data for every station, but some of them may be worth looking into on an individual basis for a smaller number of stations that score particularly high on other measures of TOD potential.

- *Amount of developable land available:* Stations with vacant or under-developed land nearby should score higher as TOD candidates, for the straightforward reason that there is actually land available on which to build new developments. But actually identifying redevelopable land is a labor-intensive process involving either visiting or scrutinizing aerial photography of each station area. Researchers at Rowan and Rutgers universities (pdf) have tabulated "barren" land statewide, which serves as a stand-in for "vacant" land in already urbanized areas, but this does not include other properties where more intensive development may be appropriate, including the fairly obvious example of surface parking lots. The Rowan/Rutgers analysis categorizes surface parking as "urbanized," no different from parcels that have

12 See Rutgers University Project Community's Strategic Framework for Commercial Revitalization.

buildings on them. In a very limited sense, the amount of surface parking adjacent to the station (as monitored by NJ Transit) is at least a known subset of the larger amount of nearby under-developed land, if we accept the value judgment that surface parking is under-developed by definition. The amount of surface parking can thus conceptually be interpreted as a lower bound on the amount of potentially redevelopable land in the station area. But in general, an assessment of redevelopable land around a station is probably best undertaken via site visits on a case-by-case basis.

- *Environmental constraints:* Once any undeveloped land in the station area has been identified, the question remains as to whether it is actually developable. Some or all of it, especially around stations in more rural parts of the state, may be permanently preserved, or it may infringe on wetlands, floodplains or other environmentally sensitive sites unsuitable for development. It is also possible that some adjacent undeveloped lands lie outside sewer service areas. Again, these issues would have to be investigated on a case-by-case basis.
- *Brownfield issues:* Even if an undeveloped parcel near a transit station is confirmed as being developable, it may still require environmental cleanup, especially in heavily developed urban areas. The costs of such a cleanup might render a TOD project economically unfeasible in the absence of state intervention.
- *Amenability to non-motorized access:* Another qualitative feature of a transit station area is how well the design features of the surrounding development encourage non-motorized access to the station. Some aspects of this subjective concept can actually be quantified – for example, the presence or absence of sidewalks along each road segment within a half mile of the station, or the number of bike-rack slots available at the station – although such data do not exist in any centralized location for every station and might have to be assembled on an ad-hoc basis for individual stations. Other aspects have more to do with design and aesthetics and would best be assessed by in-person visits.
- *Presence of non-employment-related destinations:* Considering that not all transit ridership is necessarily job-related, other types of destinations could be identified and added to the station inventory, pointing to opportunities for TOD that would generate ridership during non-peak hours. Such destinations include, but are not limited to, sports and entertainment arenas, theaters, specialty shopping districts, hospitals, and colleges and universities. In principle, a greater mix of land-use types centered around transit enables a wider range of trips to be taken on transit and generates ridership throughout the day, not just in peak periods.

Part IV: Different Stations, Different Functions

As the previous section suggests, the assembly of data items describing a transit station and its surrounding neighborhood is a task that could proceed indefinitely. New Jersey Future's transit station inventory is certainly designed to facilitate the easy addition of any Census data item that is tabulated at the tract level, or any data item systematically available for all municipalities.

The compilation of data about station areas is a means to an end, not an end in itself. The data are meant to inform decisions – by regional and state agencies, real estate developers, or local government leaders – about which locations are especially promising for TOD, and among them, what particular type of development is most appropriate around which particular stations. This will in turn help clarify how best to apportion limited resources for promoting TOD.

But the compilation of data about station areas is a means to an end, not an end in itself. The data are meant to inform decisions – by regional and state agencies, real estate developers, or local government leaders – about which locations are especially promising for TOD, and among them, what particular type of development is most appropriate around which particular stations. This will in turn help clarify how best to apportion limited resources for promoting TOD.

One approach to targeting TOD investments is to develop a typology of transit stations. This involves defining several station archetypes or categories, based on a subjective assessment of the range of functions that an individual station serves or might serve in the future. A different set of development strategies can then be outlined for each station type, and the process of deciding on a course of action for an individual station becomes a matter of deciding which of the archetypes the station in question most resembles. By presenting a TOD proponent with a set of pre-defined options, a typology can simplify the otherwise somewhat scattershot process of envisioning what kind of development is desired and/or makes economic sense around a particular station. Realistically, though, a typology should be viewed as a starting point for discussion, as every location will have its own unique set of circumstances that must be taken into consideration.

NJ Transit, in its 1994 handbook *Planning for Transit-Friendly Land Use*, has in fact constructed such a typology, distinguishing six types of stations: urban center; regional hub; traditional town, village, or hamlet; single-use district or neighborhood; suburban multi-use area; and park-and-ride. It groups the first three of these types as "centers" and the other three as "non-centers." NJ Transit's typology is geared mainly toward characterizing the present configuration of the land uses surrounding the state's transit stations, though the types could also be viewed as ideals to work toward – that is, they could be used to classify stations by how they *could be* functioning, rather than how they *are* functioning.

The development of a functioning typology is an inexact science that should probably result from a collaborative process involving a range of stakeholders

North Jersey Sustainable Communities Consortium

The North Jersey Sustainable Communities Consortium comprises a diverse group of public jurisdictions and agencies, citizens, community-based organizations, nonprofit organizations and educational institutions. In November 2011 the Consortium was awarded a $5 million, three-year grant from the federal Department of Housing and Urban Development to create a regional plan for sustainable development for the 13-county North Jersey Transportation Planning Authority region in northern New Jersey. The plan will use sustainability, transit system connectivity, and TOD as its central framework to improve economic and environmental conditions while promoting regional equity and resource efficiency. A key aspect of the grant work will be the development of a "TOD transect" that identifies both existing and potential/desired station types. The Consortium will model different scenarios for future growth in the region, using the TOD transect as one of the factors determining how the model distributes growth geographically.

seeking to promote TOD, including but not limited to the transit system operators themselves, real estate developers, municipal leaders, and officials from state government agencies that more generally influence where and how development happens. Such a task is beyond the scope of this report but will be undertaken by the North Jersey Sustainable Communities Consortium (see sidebar on page 19). Nonetheless, certain key questions will help narrow the list of options for what kind of development makes sense at a particular station.

One very basic question, not usually posed explicitly, is whether more development is actually desirable around every transit station. In theory, every transit station is a candidate for TOD. But in reality, perhaps we should consider the possibility that some stations are not appropriate for further development. Possible reasons include:

- *Environmental constraints.* For example, a trio of stations along the Gladstone Branch of the Morris & Essex commuter rail line – Gillette, Stirling, and Millington – are located in Long Hill Township in Morris County, which is entirely contained in the "environmentally sensitive" planning area as defined on the 2001 State Development and Redevelopment Plan Policy Map.[13] These three stations are also just outside the boundaries of the Great Swamp National Wildlife Refuge. Is it consistent with other state goals to encourage further development around these stations? Would these stations even be constructed at all if we were building the transit system from the ground up today?
- *Limited potential catchment area,* in terms of the number of people who can walk to the station or for whom this station is the easiest one to drive to. If a station is not located strategically on the road network, is surrounded by lower-density but fully occupied (and hence not easily redeveloped) local land uses, or is located near other stations with better access, then this station may not make sense as a receiving area for new development. A sub-optimal location will often manifest itself in low ridership, and indeed NJ Transit has closed some poorly patronized stations in the past, an action that may in some cases represent a better long-term use of limited resources than investing in more development around stations with constrained potential.

As long as the residential transit village model does not preclude a later intensification of use if conditions change in the future, it should probably be considered the default pattern for development around transit stations.

Assuming the area around a station is appropriate for TOD, the next important question is whether this particular station will serve a primarily local purpose or whether it is positioned to meet some larger, regional need. Many stations might attain their full potential simply by serving as what we might call the generic transit village – primarily residential, with good pedestrian connections, a mix of housing types, higher density closer to the station, and a locally supported retail downtown, but with no major employment centers. (This description roughly corresponds with the "traditional town, village, or hamlet" type in NJ Transit's typology.) These transit villages could boost transit ridership by offering more people the opportunity to live and shop near transit, but they would serve primarily as origins, rather than destinations, for work-based transit trips. As long as the residential transit village model does not preclude a later intensification of use if conditions change in the future, it should probably be considered the default pattern for development around transit stations.

There are, however, certain locations that are of larger strategic importance relative to statewide transportation goals, where a residential transit village would not necessarily be the most efficient use of the location. Some transit stations are particularly well-suited to cultivation as employment hubs, as commute destinations rather than origins. After all, residential transit villages can't deliver on their promise of greater

13 The Christie administration is, at the time of this writing, at work on an update of the State Development and Redevelopment Plan, to be called the State Strategic Plan. Among other things, the new Plan is expected to revise the approach and form of the policy map. But the 2001 State Plan map will be in place until the State Strategic Plan Investment Area criteria have been finalized and adopted.

New Jersey need not rely solely on New York and Philadelphia to serve as the work destinations for its transit commuters; it should endeavor to foster its own home-grown transit employment hubs as well.

transit ridership if those riders can't walk to their jobs at the other end of the transit trip. New Jersey need not rely solely on New York and Philadelphia to fill this role, however; it should endeavor to foster its own home-grown transit employment hubs as well.

Another larger regional concern that certain stations may be uniquely positioned to address is capturing commuters from beyond walking-distance range of the transit system and diverting them onto transit and off the road network for at least part of their commute. This is the function of the stations that NJ Transit's typology calls park-and-rides. (Metropark and Princeton Junction, for example, presently serve this function.) New Jersey's public transportation system may be extensive, but it does not penetrate all parts of the state. Not everyone has the option of walking or biking to transit, or even of taking a short drive through neighborhood streets. Some commuters may wish to use transit to reach their final destination rather than driving the entire distance, but they may need to drive across municipal, county, and even state lines to reach the nearest transit station.

Rather than have these drivers descending on every outlying transit station and overwhelming the local street networks of dozens of towns, they can instead be channeled to a smaller number of stations that are strategically positioned on the highway network to act as regional collectors. Ease of access from the highway will increase the odds of diverting commuters onto transit when they are already in their cars, and without steering them onto towns' local street networks. It will also reduce the need for parking at in-town stations, freeing up station-area land in those towns for better TOD uses.

Even at park-and-rides, some elements of TOD can still be incorporated. Residential and retail components can be built on surface parking lots, with those spaces replaced by decked parking. In fact, structured parking can actually allow the number of parking spaces to expand while simultaneously converting some of the station-area land to non-parking uses. But it is important that the net result not be a reduction in the total amount of parking spaces, which would risk displacing many willing transit riders back onto the roads. When promoting mixed-use development around these regional-catchment stations, the mix still needs to include parking.

Part V: From Data to Information

The data items in New Jersey Future's transit station inventory were assembled with the goal of helping to answer questions that will inform a set of targeted statewide TOD strategies. Combinations of variables can be synthesized to form a clearer picture of which transit stations have the best potential for which uses. This section provides some preliminary examples of the types of questions that can potentially be answered using the information in the inventory.

Q: How might we identify promising locations for fostering transit-accessible employment hubs? As mentioned earlier, transit-focused job nodes will be most successful at the locations with the best accessibility from points throughout the transit system, because these locations maximize the number of potential employees who can reach the location conveniently via transit (see "Centrality/accessibility" in Part II). The locations with the best accessibility are generally going to be those where multiple transit lines converge, so these centrally located stations should be considered as candidates for hosting concentrations of employment, if they do not already. **Table 2** shows the transit stations that are served by more than one rail transit line (including light-rail and rapid transit systems).

An existing concentration of employment near a transit station can be thought of as a signal from the commercial real estate industry that the station's location is considered desirable by the market.

By similar reasoning, accessibility by more than one mode should also be considered a strategic advantage in terms of job location – see "Intermodality" in Part II. **Table 3** lists the transit stations that are served by multiple modes, counting the three types of rail service separately.

Given their favored locations, it is probably no coincidence that many of these centrally located stations already host disproportionately large numbers of jobs. An existing concentration of employment near a transit station can more generally be thought of as a signal from the commercial real estate industry that the station's location is considered desirable by the market, even in cases where most employees are not presently actually riding transit to work. Thus any transit-proximate (even if not transit-oriented, from a design point of view) job cluster ought to be considered as a candidate for further development into a transit-focused employment hub (see "Employment" in Part III). **Table 4** shows the top quartile of transit-hosting municipalities in terms of their ratios of jobs to employed residents, indicating that they serve as employment destinations – that they gain population during the day. Large concentrations of jobs are important in the absolute sense as well, not just relative to population – **Table 5** lists transit-hosting municipalities that hosted at least 20,000 jobs as of 2009.

Stations that appear on any of these lists warrant further consideration as focal points for concentrating jobs near transit. Stations that appear on more than one of these lists should be given even higher priority. These include stations located in:

- Atlantic City
- Camden (particularly Walter Reed Transportation Center)
- Cherry Hill Twp.
- Edison Twp.
- Elizabeth
- Hackensack
- Hoboken
- Jersey City (particularly the Newport/Pavonia, Journal Square, and Exchange Place PATH stations)
- Lindenwold
- Millburn Twp.
- New Brunswick
- Newark (particularly the three commuter rail stations)
- Parsippany-Troy Hills Twp.
- Princeton
- Secaucus
- Summit
- Trenton (particularly the Trenton Transit Center)
- Wayne Twp.
- Woodbridge Twp. (particularly the Metropark commuter rail station)

Of course, some of the municipalities on this list may not necessarily have their existing jobs concentrated near their transit stations; in these places, "last-mile" solutions (see sidebar on page 15) will continue to be important. In other municipalities, jobs might be physically located near a transit station but are surrounded by automobile-centric land uses; what is needed here are design solutions – landscaping, pedestrian paths, infill buildings, etc. – that will make the walk from the transit station to the workplace safer and more hospitable.

Q: Where are the best locations to promote higher-density residential development? One way to boost transit rid-

Table 2. Stations served by multiple rail lines

station name	host municipality	# of rail routes / lines:	line/route names
Hoboken Terminal	Hoboken	11	M & E Morristown and Gladstone branches, Montclair-Boonton, Pascack Valley, Main, Bergen, PATH, HBLR, North Jersey Coast,* Northeast Corridor,* Raritan Valley*
Secaucus Jct.	Secaucus	9	Northeast Corridor, North Jersey Coast, M & E Morristown and Gladstone* branches, Montclair-Boonton, Pascack Valley, Main, Bergen, Raritan Valley*
Newark Penn Station	Newark	5	Northeast Corridor, North Jersey Coast, Raritan Valley, PATH, Newark Light Rail
Newark - Broad St.	Newark	4	M & E Morristown and Gladstone branches, Montclair-Boonton, Newark Light Rail
Trenton Transit Center	Trenton	3	Northeast Corridor, SEPTA Trenton, River Line
Lindenwold	Lindenwold	2	Atlantic City, PATCO
Walter Rand Transportation Center	Camden	2	PATCO, River Line
Newport / Pavonia	Jersey City	2	PATH, HBLR
Newark Airport	Newark	2	Northeast Corridor, North Jersey Coast
North Elizabeth	Elizabeth	2	Northeast Corridor, North Jersey Coast
Elizabeth	Elizabeth	2	Northeast Corridor, North Jersey Coast
Linden	Linden	2	Northeast Corridor, North Jersey Coast
Rahway	Rahway	2	Northeast Corridor, North Jersey Coast
East Orange	East Orange	2	M & E Morristown and Gladstone branches
Brick Church	East Orange	2	M & E Morristown and Gladstone branches
Orange	Orange	2	M & E Morristown and Gladstone branches
Highland Ave	Orange	2	M & E Morristown and Gladstone branches
Mountain Station	South Orange	2	M & E Morristown and Gladstone branches
South Orange	South Orange	2	M & E Morristown and Gladstone branches
Maplewood	Maplewood	2	M & E Morristown and Gladstone branches
Millburn	Millburn Twp.	2	M & E Morristown and Gladstone branches
Short Hills	Millburn Twp.	2	M & E Morristown and Gladstone branches
Summit	Summit	2	M & E Morristown and Gladstone branches

For stations on the Main and Bergen lines that are located inbound from their convergence point in Secaucus, the two lines should count as separate collectors. (This applies only to Secaucus Jct. and Hoboken.) On the other hand, stations that are located beyond the outbound re-convergence point at Glen Rock, while technically served by both Main and Bergen trains, should not be counted as being served by multiple lines because, when viewed as destinations, they are only accessible via multiple lines in the outbound direction. This runs counter to the idea of being centrally located.

Denville and stations farther out, while technically served by both the M&E Morristown line and the Montclair-Boonton line, are analogous to the outer stations on the Main/Bergen line in being served as destinations by multiple lines only in the outbound direction. They are thus not counted here.

Conversely, the Morristown and Gladstone branches of the Morris & Essex lines should be treated as two separate collectors for the stations that lie inbound of their point of convergence near Summit. This applies to all stations from Summit inward to Secaucus Jct. and Hoboken.

Gladstone Branch trains do not currently stop at Secaucus Junction, but there is no reason they couldn't; Secaucus Junction is thus counted as being served by the Gladstone branch.

Raritan Valley trains currently terminate in Newark, mainly because diesel locomotives are not permitted in the trans-Hudson tunnel (the Raritan Valley line is not electrified).

But there is no reason, from a physical plant point of view, that Raritan Valley trains could not continue on to Secaucus (and to New York, with the dual-mode locomotives that NJ Transit is currently taking delivery of) -- the track configuration allows it. Secaucus Junction is thus counted as being served by the Raritan Valley line.

Similarly, the tracks are already configured to allow trains coming up the Northeast Corridor to serve Hoboken -- in fact, a small number of North Jersey Coast trains presently terminate in Hoboken. No Northeast Corridor or Raritan Valley trains currently terminate in Hoboken, but there is no physical constraint preventing them from doing so. Hoboken is thus counted as being served by the Northeast Corridor, North Jersey Coast, and Raritan Valley lines.

ership is to put more people's homes within walking distance of a transit station, which means increasing residential density in the station area. At the most basic level, the stations where higher-density residential development is most likely to succeed are those where high density is already considered the norm. **Table 6** shows the stations whose surrounding neighborhoods boast the highest population densities, based on 2005-2009 American Community Survey estimates.

Another indicator of high residential density is a low percentage of single-family detached housing, since such housing is usually incompatible with the high land values associated with more intensively developed neighborhoods. **Table 7** lists the station areas in which fewer than 10 percent of the housing units are single-family detached homes. Not surprisingly, there is substantial overlap with Table 6.

A third way to identify neighborhoods where high density – and the non-vehicular travel that it enables – may already be considered commonplace is to examine rates of vehicle ownership. High rates of households owning only one vehicle, or even no vehicles at all, point to areas where additional development that is oriented toward pedestrian access might be welcomed – see "Vehicle Ownership" in Part III. **Table 8a** lists the transit stations that are located in neighborhoods in which at least one-third of households do not own a vehicle, and **Table 8b** lists additional station areas where the proportion rises to two-thirds when single-vehicle households are factored in.

Stations appearing on any of these three lists may hold promise not only as locations in which to encourage additional higher-density residential development, but also as case studies whose development and circulation patterns could point to techniques that could be successfully applied at other stations.

None of this is to say that a current lack of density should preclude future densification. Some stations presently surrounded by development that is suburban in nature may nonetheless have such excellent connectivity or frequency of service that they could be functioning as higher-density, mixed-use transit hubs, with both employment and housing. Other data items in the inventory could be used to identify those places where higher density is economically desirable but not yet present.

Q: How can TOD programs be targeted at distressed municipalities? State government programs are often structured to prioritize funding to areas with the greatest socioeconomic needs. For example, the Urban Transit Hub Tax Credit Act singled out nine municipalities for eligibility, based on measures of distress. The transit station inventory contains numerous variables that can be used to identify "weak-market" station areas that would benefit most from new

Table 3. Stations served by more than one mode of transportation

station name	host municipality	commuter rail	light rail	rapid transit	bus	ferry	total # of modes
Hoboken Terminal	Hoboken	1	1	1	1	1	5
Newark Penn Station	Newark	1	1	1	1	0	4
Trenton Transit Center	Trenton	1	1	0	1	0	3
Walter Rand Transportation Center	Camden	0	1	1	1	0	3
Newark - Broad St.	Newark	1	1	0	0	0	2
Newport / Pavonia	Jersey City	0	1	1	0	0	2
Lindenwold	Lindenwold	1	0	1	0	0	2
Journal Square	Jersey City	0	0	1	1	0	2
Exchange Place (PATH)	Jersey City	0	0	1	0	1	2
Atlantic City Rail Station	Atlantic City	1	0	0	1	0	2
Asbury Park (James J. Howard Transp Ctr)	Asbury Park	1	0	0	1	0	2
New Brunswick	New Brunswick	1	0	0	1	0	2
Metropark	Woodbridge Twp.	1	0	0	1	0	2

Depending on the tolerance threshold below which two nearby stations are thought of as essentially functioning as a single station, Exchange Place may also be considered to be served by light rail (HBLR), bringing its mode total to 3.

investments of state or private-sector dollars. Future programs promoting "equitable TOD" – including the North Jersey Sustainable Communities Consortium, discussed earlier – may want to consider determining eligibility based on combinations of variables such as these.

Table 4. Transit municipalities with the largest ratios of jobs to employed residents
(top quartile of transit-served municipalities)

host municipality	jobs per employed resident 2009
Teterboro	382.646
New Hanover Twp. [Burlington Co.]	6.552
Secaucus	4.568
Princeton borough	4.536
Atlantic City (2 stations)	3.974
Lebanon borough	3.358
Cape May	3.102
Morris Plains	2.720
Montvale	2.688
Raritan borough	2.670
East Rutherford	2.577
Red Bank	2.351
Morristown	2.247
Freehold borough	2.195
Allendale	2.100
Trenton (3 stations)	2.053
Hackensack (3 stations)	2.003
Woodcliff Lake	1.958
Millburn Twp. (2 stations)	1.891
Parsippany-Troy Hills Twp.	1.712
Egg Harbor City	1.710
Hackettstown	1.703
New Brunswick (2 stations)	1.661
Manasquan	1.617
Far Hills	1.569
Peapack and Gladstone (2 stations)	1.549
Somerville	1.536
New Providence (2 stations)	1.533
Newark (16 stations)	1.531
Hammonton	1.491
Wildwood	1.479
Camden (6 stations)	1.470
Wayne Twp. (2 stations)	1.457
Mountain Lakes	1.452
Cherry Hill (2 stations)	1.440
Netcong	1.431
Summit	1.430
Edison Twp.	1.385

Source: NJ Dept. of Labor

As mentioned earlier, income is a good way to measure the economic health of a station area's neighborhood. **Table 9** lists the stations that are located in neighborhoods where the median household income is less than 60 percent of the statewide median of $67,681. Note that most of these stations are located in municipalities that are already among those eligible for the Urban Transit Hub Tax Credit; despite the ad-hoc nature of the UTHTC's list, it appears to have been reasonably well targeted.

Distress can also manifest itself in the form of low property values. **Table 10** shows the stations whose surrounding neighborhoods have the lowest estimated median values for owner-occupied housing units. This metric differs from income in that it includes homeowners but not renters. It may thus miss stations

Table 5. Transit municipalities with the greatest number of jobs
(at least 20,000 jobs)

host municipality	total employment 2009
Newark (16 stations)	142,823
Jersey City (21 stations)	104,022
Edison Twp.	71,001
Trenton (3 stations)	70,239
Atlantic City (2 stations)	57,268
Cherry Hill (2 stations)	50,498
Woodbridge Twp. (3 stations)	49,112
Parsippany-Troy Hills Twp.	48,740
Elizabeth (2 stations)	44,508
Hackensack (3 stations)	44,200
New Brunswick (2 stations)	41,995
Wayne Twp. (2 stations)	39,138
Paterson (2 stations)	37,186
Camden (6 stations)	33,752
Secaucus	33,315
Bridgewater Twp.	31,249
Vineland	31,103
Hamilton Twp. [Mercer Co.]	29,976
Union	29,580
Clifton (2 stations)	29,527
Lakewood	25,533
Morristown	24,281
East Brunswick Twp.	21,693
Princeton borough	21,083
Pennsauken (2 stations)	20,891

Source: NJ Dept. of Labor

where most residents are lower-income renters but where the few owner-occupied units may have relatively high values, due to the high value of the land in an otherwise densely built area. On the other hand, this metric captures some station areas, like Beverly and 36th Street in Pennsauken, whose host municipalities do not normally show up at the bottom of income rankings but where market forces are imposing economic stresses on existing residents that are not directly related to income.

Ranking station areas according to a varied array of indicators of distress will illustrate that socioeconomic hardship comes in many forms and may draw attention to less-obvious places that ought to be eligible for TOD programs targeted at weak-market neighborhoods or municipalities.

Q: Conversely, where are the station areas that are located in the strongest markets? Explicitly identifying strong-market station areas or host municipalities will serve two purposes. First, it will ensure that state incentive programs are not inadvertently subsidizing places where the market is strong enough not to need outside help. Also, analyzing at the station-area level can reveal strong-market neighborhoods in otherwise weak-market municipalities. For example, incentives targeted at Jersey City might best be reserved for station areas other than those on the Hudson River waterfront, which – unlike the rest of the city – has seen a recent wave of private-sector investment.

Second, and equally important, identifying strong-market station areas is a way to call attention to neighborhoods where markets, if left to their own devices, will tend to produce housing concentrated at the high end of the price spectrum. Incentives aimed at fostering transit-oriented neighborhoods that are affordable to a wide range of households should therefore pay special attention to these places, to make sure that future TOD is inclusive. **Table 11** lists the stations whose

Table 6. Station areas featuring the highest population densities
(density > 15,000 people per square mile)

station name	host municipality	population density (people per sq mi) in station area
9th Street (HBLR)	Hoboken	37,909
2nd Street (HBLR)	Hoboken	30,335
Hoboken Terminal	Hoboken	28,988
Harborside	Jersey City	26,077
Grove Street (PATH)	Jersey City	25,317
Lincoln Harbor (HBLR)	Weehawken	22,761
Bloomfield Avenue (Newark Light Rail)	Newark	22,734
Journal Square	Jersey City	22,666
Harsimus	Jersey City	22,060
Park Avenue (Newark Light Rail)	Newark	21,553
Orange Street (Newark Light Rail)	Newark	21,261
Elizabeth	Elizabeth	20,210
Newark - Broad St.	Newark	19,598
Newport / Pavonia	Jersey City	19,452
East Orange	East Orange	18,905
Paterson	Paterson	18,179
Davenport Avenue (Newark Light Rail)	Newark	17,986
Branch Brook Park	Newark	17,917
Delawanna	Clifton	17,002
Silver Lake (Newark Light Rail)	Belleville	15,534
Orange	Orange	15,484
West Side Avenue (HBLR)	Jersey City	15,438
Grove Street (Newark Light Rail)	Bloomfield	15,339

Source: Census Bureau, 2005-2009 American Community Survey 5-year estimates

Table 7. Stations in neighborhoods with lowest percentages of single-family detached housing (less than 10 percent single-family detached)

station name	host municipality	% of housing units that are single-family detached
Hoboken Terminal	Hoboken	0.81%
Newport / Pavonia	Jersey City	0.86%
Harborside	Jersey City	0.97%
Harsimus	Jersey City	0.99%
Exchange Place (HBLR)	Jersey City	1.29%
Exchange Place (PATH)	Jersey City	1.29%
Grove Street (PATH)	Jersey City	1.38%
Marin Boulevard (HBLR)	Jersey City	1.87%
Essex Street (HBLR)	Jersey City	1.89%
Jersey Avenue (HBLR)	Jersey City	2.49%
9th Street (HBLR)	Hoboken	3.55%
Warren Street (Newark Light Rail)	Newark	3.92%
Washington Street (Newark Light Rail)	Newark	3.94%
Liberty State Park	Jersey City	3.97%
Lincoln Harbor (HBLR)	Weehawken	4.05%
2nd Street (HBLR)	Hoboken	4.25%
Military Park (Newark Light Rail)	Newark	4.74%
Paterson	Paterson	5.21%
Norfolk Street (Newark Light Rail)	Newark	5.33%
Newark Penn Station	Newark	5.60%
Newark - Broad St.	Newark	5.60%
Journal Square	Jersey City	5.70%
Harrison	Harrison	5.97%
Newark Airport	Newark	6.53%
Orange Street (Newark Light Rail)	Newark	7.16%
City Hall	Camden	8.42%
Cooper Street (River Line)	Camden	8.57%
Hamilton Avenue (River Line)	Trenton	9.07%
Richard Street (HBLR)	Jersey City	9.19%
Garfield Avenue (HBLR)	Jersey City	9.30%
Walter Rand Transportation Center	Camden	9.73%
East Orange	East Orange	9.82%

Source: Census Bureau, 2005-2009 American Community Survey 5-year estimates

surrounding neighborhoods have the highest estimated median values for owner-occupied housing units.

Q: Which stations are most effectively functioning as catchment points for regional commuters via park-and-ride access? Park-and-ride facilities enable commuters to ride transit for the main leg of their work trip even if they don't live near a station. (See "Parking" in Part II) Stations that are currently oriented toward serving this function can be identified by looking at the ratio of the number of station-area parking spaces to the population of the station area. A large ratio, i.e. a supply of parking far out of proportion to the local population, suggests that the station's riders are primarily arriving by car from a much larger geographic area. Indeed, most of the stations that score highest on this measure (see **Table 12**) are well known for their huge parking lots.[14] Some, however, are less

14 The recently constructed Wayne Route 23 station, which is a large park-and-ride facility, does not appear on the table because NJ Transit has not yet delineated a Census tract-based station area for it.

obvious, because their total number of spots is not as large, but these should still be treated as filling a similar role. Five of these are stations on the Northeast Corridor line, perhaps speaking to the drawing power of the Corridor's route through the densely populated spine of New Jersey, where many commuters live within easy driving distance of the transit system. Interestingly, among this list, only Hamilton, Trenton, and Metropark have any structured parking on site. Perhaps the other major park-and-ride stations could make room for actual TOD by moving some of their parking spaces into new decks.

Table 8a. Stations in neighborhoods where at least one-third of households do not own a vehicle

station name	host municipality	% of households having zero vehicles	% of households having 1 vehicle
Warren Street (Newark Light Rail)	Newark	52.8%	34.0%
Washington Street (Newark Light Rail)	Newark	52.4%	32.7%
Newark Airport	Newark	48.6%	30.3%
Norfolk Street (Newark Light Rail)	Newark	47.9%	37.6%
Military Park (Newark Light Rail)	Newark	47.0%	34.1%
Journal Square	Jersey City	46.1%	39.6%
Paterson	Paterson	45.8%	38.4%
Newport / Pavonia	Jersey City	45.7%	45.5%
Newark Penn Station	Newark	45.5%	34.2%
Newark - Broad St.	Newark	44.6%	36.6%
Orange Street (Newark Light Rail)	Newark	43.8%	38.4%
Exchange Place (HBLR)	Jersey City	43.5%	48.2%
Exchange Place (PATH)	Jersey City	43.5%	48.2%
Harborside	Jersey City	43.4%	49.1%
Atlantic City Rail Station	Atlantic City	42.0%	37.5%
Harsimus	Jersey City	41.9%	49.4%
East Orange	East Orange	41.3%	40.8%
Hoboken Terminal	Hoboken	41.3%	47.6%
City Hall	Camden	41.1%	39.2%
Garfield Avenue (HBLR)	Jersey City	41.1%	38.9%
Walter Rand Transportation Center	Camden	41.1%	40.7%
Grove Street (PATH)	Jersey City	40.9%	50.4%
Harrison	Harrison	40.7%	36.6%
Cooper Street (River Line)	Camden	40.4%	42.4%
Jersey Avenue (HBLR)	Jersey City	39.7%	49.9%
MLK Drive (HBLR)	Jersey City	39.6%	37.4%
Essex Street (HBLR)	Jersey City	39.3%	51.0%
Marin Boulevard (HBLR)	Jersey City	39.3%	50.7%
Liberty State Park	Jersey City	38.6%	47.9%
2nd Street (HBLR)	Hoboken	37.9%	46.3%
Hamilton Avenue (River Line)	Trenton	37.8%	38.1%
Cass Street (River Line)	Trenton	36.4%	38.4%
Park Avenue (Newark Light Rail)	Newark	36.3%	41.8%
9th Street (HBLR)	Hoboken	36.2%	47.3%
West Side Avenue (HBLR)	Jersey City	35.6%	36.7%
Bloomfield Avenue (Newark Light Rail)	Newark	34.6%	41.8%
Trenton Transit Center	Trenton	34.3%	38.0%
Brick Church	East Orange	33.9%	44.5%

Ranking station areas according to a varied array of indicators of distress will illustrate that socio-economic hardship comes in many forms and may draw attention to less-obvious places that ought to be eligible for TOD programs targeted at weak-market neighborhoods or municipalities.

On the other end of the scale, there are about 40 stations operated by NJ Transit for which the agency's parking guide does not list any official station-area parking. Most of these are the major terminals or are along the heavily urbanized portions of the three light-rail lines (HBLR, Newark Light Rail, or the River Line stops in Camden and Trenton). But the small handful of exceptions – Garfield, Garwood, and Burlington Towne Center – may warrant further investigation, to see how a no-parking model can work even outside the state's major urban centers. Other stations outside the major cities with disproportionately low supplies of parking include Asbury Park, Edison, Glen Ridge, Anderson Street in Hackensack, Kingsland, New Brunswick, Palmyra, Passaic, Perth Amboy, Plainfield, Ridgewood, and two commuter rail stations each in Montclair (Watchung Avenue and Mountain Avenue), Orange, East Orange, and South Orange. Are their low ratios attributable simply to a shortage of parking, or to design characteristics that facilitate non-vehicular access? (It could also be that these stations' low ratios are an artifact of the limits of the data and that they are, in reality, served by privately operated parking lots not captured by NJ Transit's parking guide.)

Q: Which stations are surrounded by the largest supplies of underutilized surface parking? While at some stations parking is at a premium and is performing a valuable service in diverting large numbers of commuters off the regional road network, other stations sit amid mostly empty surface parking lots. A low parking utilization rate indicates that transit commuters who arrive by car do not consider this station a convenient location, in which case the surface parking

Table 8b. Additional stations in neighborhoods where at least two-thirds of households own at most one vehicle

station name	host municipality	% of households having zero vehicles	% of households having 1 vehicle
Entertainment Center	Camden	32.8%	49.5%
Lincoln Harbor (HBLR)	Weehawken	32.9%	49.2%
Aquarium	Camden	27.5%	50.9%
North Elizabeth	Elizabeth	27.6%	49.0%
Branch Brook Park	Newark	28.6%	44.9%
Elizabeth	Elizabeth	29.0%	44.2%
Davenport Avenue (Newark Light Rail)	Newark	27.5%	45.5%
Richard Street (HBLR)	Jersey City	30.6%	42.3%
Asbury Park (James J. Howard Transp Ctr)	Asbury Park	24.5%	46.6%
Essex St. (Pascack Valley)	Hackensack	22.1%	48.7%
Danforth Avenue (HBLR)	Jersey City	31.0%	39.5%
Grove Street (Newark Light Rail)	Bloomfield	22.8%	47.6%
Silver Lake (Newark Light Rail)	Belleville	26.2%	44.1%
22nd Street (HBLR)	Bayonne	28.6%	39.6%
Perth Amboy	Perth Amboy	27.5%	39.9%
Ferry Ave (PATCO)	Camden	24.0%	43.3%
34th Street (HBLR)	Bayonne	28.2%	39.0%
Glen Ridge	Glen Ridge	16.7%	50.4%
Orange	Orange	25.6%	41.5%
45th Street (HBLR)	Bayonne	24.2%	42.6%

Source: Census Bureau, 2005-2009 American Community Survey 5-year estimates

lots can be viewed as representing a prime redevelopment opportunity. Replacing surface parking with new TOD would have the dual benefit of returning essentially barren land into productive use while creating housing, working, or shopping options for potential new transit riders who wish to live or work near transit. If properly designed, the new developments can also create new pedestrian connections to surrounding neighborhoods, possibly inducing some existing residents who were previously put off by an unattractive, car-oriented station area environment to ride transit. **Table 13** lists the station areas where all of the adjacent parking is on surface lots and where less than one-third of the spaces are typically occupied, as monitored by the NJ Transit parking guide. These stations may present the easiest options for real estate developers looking for available land on which to build TOD projects.

In a sense, *all* surface parking is under-developed, as compared to structured parking, which makes much more efficient use of land for storing vehicles. Using the most recent available parking data for NJ Transit's stations, the inventory tallies more than 55,000 station-area surface parking spaces statewide. And this figure only hints at the redevelopment potential around transit stations, since surface parking is just one category of under-developed land.

Table 9. Stations in neighborhoods having median household income less than 60 percent of statewide median (statewide median household income = $67,681)

station name	host municipality	est. median HH income (weighted tract avg)
Paterson	Paterson	20,671
Entertainment Center	Camden	22,057
Cooper Street (River Line)	Camden	22,389
Walter Rand Transportation Center	Camden	23,957
Newark Airport	Newark	24,022
City Hall	Camden	24,895
Warren Street (Newark Light Rail)	Newark	25,156
Aquarium	Camden	28,140
Norfolk Street (Newark Light Rail)	Newark	28,164
Washington Street (Newark Light Rail)	Newark	29,009
Atlantic City Rail Station	Atlantic City	30,520
Trenton Transit Center	Trenton	32,402
Orange Street (Newark Light Rail)	Newark	32,929
Hamilton Avenue (River Line)	Trenton	33,227
Newark - Broad St.	Newark	35,492
Cass Street (River Line)	Trenton	35,533
East Orange	East Orange	36,120
Park Avenue (Newark Light Rail)	Newark	36,277
Bloomfield Avenue (Newark Light Rail)	Newark	36,844
Military Park (Newark Light Rail)	Newark	38,301
Brick Church	East Orange	38,621
Elizabeth	Elizabeth	39,344
Journal Square	Jersey City	39,580
Newark Penn Station	Newark	39,593
Asbury Park (James J. Howard Transp Ctr)	Asbury Park	39,704
Branch Brook Park	Newark	40,035

NJ statewide median household income is from the 2010 one-year American Community Survey (ACS); station-area estimates are constructed from tract-level estimates from the 2005-2009 5-year ACS.

A median household income for the whole station neighborhood was estimated by taking a weighted average of the median household incomes for each of the tracts making up the station area. Each tract's median household income was weighted by the number of households in the tract.

Table 10. Stations in neighborhoods having median home value less than 60 percent of statewide median (statewide median value of owner-occupied housing units = $339,200)

station name	host municipality	estimated median value ($$) of owner-occupied housing units in station area
Walter Rand Transportation Center	Camden	77,898
City Hall	Camden	83,850
Entertainment Center	Camden	84,982
Cooper Street (River Line)	Camden	89,243
Aquarium	Camden	100,438
Cass Street (River Line)	Trenton	121,915
36th Street (River Line)	Pennsauken	131,788
Trenton Transit Center	Trenton	139,334
Hamilton Avenue (River Line)	Trenton	142,107
Ferry Ave (PATCO)	Camden	166,931
Burlington Towne Ctr	Burlington city	176,987
Ashland	Voorhees	195,942
Beverly	Beverly	197,140

NJ statewide median home value is from the 2010 one-year American Community Survey (ACS); station-area estimates are constructed from tract-level estimates from the 2005-2009 5-year ACS.

A median home value for the whole station neighborhood was estimated by taking a weighted average of the median home values for each of the tracts making up the station area. Each tract's median home value was weighted by the number of owner-occupied housing units in the tract.

Table 11. Stations in neighborhoods having median home value greater than 200 percent of statewide median
(statewide median value of owner-occupied housing units = $339,200)

station name	host municipality	estimated median value ($$) of owner-occupied housing units in station area
Millburn	Millburn Twp.	876,576
Summit	Summit	824,003
Peapack	Peapack and Gladstone	788,800
Gladstone	Peapack and Gladstone	788,800
Ho-Ho-Kus	Ho-Ho-Kus	787,700
Princeton	Princeton borough	740,586
Spring Lake	Spring Lake	735,647
Mountain Lakes	Mountain Lakes	734,579
Bernardsville	Bernardsville	733,900
Allendale	Allendale	731,500
Oradell	Oradell	727,900
Convent	Morris Twp.	723,772
Chatham	Chatham borough	709,256
Manasquan	Manasquan	701,090
Walnut St.	Montclair	697,600
Mountain Ave	Montclair	693,800
Ridgewood	Ridgewood	690,930
Basking Ridge	Bernards Twp.	689,700
Montvale	Montvale	689,100
Glen Rock	Glen Rock	688,572
Madison	Madison	682,550

NJ statewide median home value is from the 2010 one-year American Community Survey (ACS); station-area estimates are constructed from tract-level estimates from the 2005-2009 5-year ACS.

A median home value for the whole station neighborhood was estimated by taking a weighted average of the median home values for each of the tracts making up the station area. Each tract's median home value was weighted by the number of owner-occupied housing units in the tract.

Table 12. Stations with disproportionately large supplies of parking

station name	host municipality	parking spaces per 1,000 residents in station area
Hamilton	Hamilton Twp. [Mercer Co.]	505
Princeton Junction	West Windsor Twp.	301
Secaucus Jct.	Secaucus	228
Middletown	Middletown Twp.	192
Metropark	Woodbridge Twp.	153
Lindenwold	Lindenwold	133
Aberdeen-Matawan	Aberdeen Twp.	122
Trenton Transit Center	Trenton	119
Metuchen	Metuchen	118
Westfield	Westfield	102
Oradell	Oradell	88
South Amboy	South Amboy	85
Gladstone	Peapack and Gladstone	76
Liberty State Park	Jersey City	71
Bridgewater	Bridgewater Twp.	69
Pennsauken Rt 73	Pennsauken	63
Short Hills	Millburn Twp.	63
South Orange	South Orange	61
Lincoln Park	Lincoln Park	60
median ratio over 197 stations for which parking data are available:		12

Source: *NJ Transit Parking Guide*, 2010; population data from Census Bureau, 2005-2009 American Community Survey 5-year estimates

NJ Transit has not yet identified station-area tracts for the Wayne Rt. 23 station, which has almost 1,000 parking spaces.

Table 13. Stations with large supplies of underutilized surface parking

(fewer than one-third of spaces typically occupied)

station name	host municipality	number of station-area surface parking spaces	average utilization rate
Point Pleasant Beach	Point Pleasant Beach	263	12.9%
Florence	Florence Twp.	589	14.9%
Cinnaminson	Cinnaminson	253	15.0%
Ocean City Transportation Center	Ocean City	95	20.0%
Mountain Ave	Montclair	23	21.7%
36th Street	Pennsauken	367	21.8%
West Side Avenue	Jersey City	804	24.1%
Pennsauken Rt 73	Pennsauken	452	24.3%
Mountain Lakes	Mountain Lakes	87	25.3%
Roebling	Florence Twp.	215	26.5%
Cherry Hill	Cherry Hill	350	30.0%
Atco	Waterford Twp.	189	30.2%
Hackettstown	Hackettstown	99	31.3%
Boonton	Boonton town	69	31.9%
Riverside	Riverside	314	32.8%
Towaco	Montville Twp.	220	33.2%

Source: *NJ Transit Parking Guide*, 2010

Part VI: Potential Users of the Inventory

The transit station inventory represents a wealth of information about the state's public transportation system and the neighborhoods that surround its stations, assembled in a single repository. As the examples in the previous section suggest, its ability to answer targeted questions based on strategically selected combinations of variables makes the inventory a potentially valuable resource to a variety of users. Three specific categories of users that are often actively engaged in promoting transit-oriented development – state government agencies, local government officials, and real estate developers – may find the inventory particularly useful.

State Government

The core of transit-oriented development is public transit, and transit is built and operated by the state or instrumentalities of the state. The state has a great deal of influence over the quality and quantity of transit service and owns real estate adjacent to many transit stations. Additionally, the state determines the regulatory framework and creates the financial incentives that either promote or discourage development near transit stations.

The state could invest in transit and transit-oriented development more strategically, by using the transit inventory as follows:

1. **Identify transit-rich employment hubs and reorient employment recruitment programs accordingly.** The state should identify those specific transit stations that best lend themselves to development as transit-focused employment hubs. State sponsored employer recruitment programs could then actively steer employers to these targeted locations that offer transit access to the widest array of potential workers. Programs like the Urban Transit Hub Tax Credit program, the Grow New Jersey program, and the Economic Redevelopment Growth Grant program should all be reviewed to ensure that state employment incentives are focused in station areas with the greatest employment potential. The richest incentives should be targeted to less affluent communities where they can help rebuild markets. Some residential and retail components are likely to be desirable in any employment hub, although they should probably be considered of secondary priority. State agencies and local officials should be conscious of the need to find the right mix of uses to ensure vibrancy (so as not to create hubs that become ghost towns after 6 p.m.) while fully capitalizing on the particular advantage that central locations offer as employment centers.

2. **Identify good candidates for participation in the Transit Village program.** NJDOT could use the information in the transit station inventory to identify municipalities that ought to be recruited into the Transit Village program. Municipalities with high population or employment density in their station areas, or with large populations of zero-vehicle households, or whose stations are situated in a traditional downtown environment, may be only a few new pedestrian amenities away from becoming truly transit-oriented, a gap that could be bridged by the incentives offered by the Transit Village program.

3. **Highlight promising transit hubs in the State Strategic Plan to ensure state agency support for TOD.** The Office of Planning Advocacy (OPA), in consultation with NJ Transit and NJDOT, should identify all transit station areas that are good candidates for transit-oriented development, based on ridership potential, characteristics of the surrounding area, and a lack of significant environmental constraints.

   These "promising transit hubs" should be recognized in the State Strategic Plan as Priority Growth Investment Areas to facilitate alignment of state agency programs, regulations, and capital spending in support of transit-oriented development. For example, the hubs should receive preferential access to: DOT funding to improve access to transit through roadway improvements, bike/pedestrian amenities, and community shuttles; NJ Environmental Infrastructure Trust funding for the water, wastewater, and stormwater improvements needed to accommodate additional growth;

and New Jersey Department of Environmental Protection (DEP) assistance with infrastructure permits.

4. **Consider TOD potential when making capital investment and operating decisions for the transit system.** NJ Transit could use many of the data items in the transit station inventory, in addition to its own ridership and parking utilization data, to evaluate its capital investment and operating decisions in terms of their impact on TOD potential. For example, NJ Transit could prioritize transit stations with great TOD potential for upgrades to station facilities, transit service, and expansions of the transit system.

Municipal Leaders

Local elected officials and their staffs (including planning and zoning boards) have the ability to shape the areas surrounding transit stations through planning, zoning, and public support for (or rejection of) development efforts. Chambers of Commerce, "Main Street" organizations, and other business leaders can also influence perceptions of neighborhoods around transit stations via marketing efforts and civic improvement projects (see "Presence of a 'downtown'" in Part III).

These local leaders could use the transit station inventory to learn more about the demographics of the neighborhoods surrounding transit stations in their municipalities. Things like household income, vehicle ownership, and population density can give them insights into what kinds of businesses might succeed in a TOD and how many people would have easy access to these businesses. Information about station-area parking utilization could alert them to a need for more parking, either at their own station or at another nearby station with better access to the regional road network. Or a relatively limited supply of parking but lack of an accompanying traffic problem might together indicate a high degree of non-vehicular access to the station, thus pointing to where new pedestrian amenities might prove to be a worthwhile investment.

Real Estate Developers

Developers are increasingly recognizing transit station areas as untapped resources that offer transportation choices for their residents, choices that many potential residents desire but that have been chronically undersupplied by housing markets for decades. For the right developer, even a transit station in a distressed area can be used as a focal point around which value can be restored to a presently undervalued neighborhood.

Developers could use the transit station inventory to identify station-area neighborhoods where home values (and thus land values) are low, thus presenting inexpensive transit-oriented redevelopment opportunities. They could use it to evaluate a station's marketability by looking at its frequency of transit service and its accessibility to major regional destinations. In addition, many of the demographic variables of interest to municipal leaders will also be of interest to developers, in terms of identifying opportunities to diversify the housing stock.

Part VII: Recommendations

This report highlights the extent of New Jersey's transit network and its rich potential for transit-oriented development, as well as the state of New Jersey's recognition of the importance of transit ridership in a variety of state-level plans and programs. There are a number of ways that state government can expand transit ridership and generally facilitate transit-oriented development:

1. **Establish an explicit statewide goal for increased transit ridership.** The State of New Jersey could establish a strategic goal for increasing transit ridership, such as the goal in New Jersey's Global Warming Response Act Recommendations Report for 2020 to double transit ridership by 2050. Establishing a specific target will enable state departments to align investment plans, regulations, and programs toward meeting this goal.

2. **Expand and improve the public transit system with sustainable funding.** Increasing transit ridership will involve both improving existing service for all transit modes and expanding transit infrastructure. The state can fund system-wide improvements by:

   a. Dedicating a larger percentage of transportation funds to transit. Transit ridership has increased substantially over the past decade; meanwhile, the percentage of transportation funding that goes to transit has slipped. It is important that investment in our public transit system keeps pace with the system's popularity.

   b. Increasing dedicated funding for transportation investments. New Jersey does not have a stable source of revenue large enough to meet its transportation needs. In order to effectively fund transportation and reduce our reliance on debt, the state must generate and constitutionally dedicate new revenues to the Transportation Trust Fund at a level high enough to meet New Jersey's 21st-century needs and ambitions.

   c. Creating a dedicated funding source for transit and transportation operations. New Jersey needs to end the practice of paying for New Jersey Transit and Department of Transportation operations with capital funds, instead establishing a separate, dedicated revenue stream for operations

3. **Encourage transit ridership through use of an integrated farecard.** New Jersey's multiple public transportation operators – NJ Transit, PATH, PATCO, ferry companies, and perhaps even SEPTA – could work together toward creating an integrated farecard that allows for seamless transfers among systems and also among different modes (commuter rail, light rail, bus, etc.) run by the same operator. The smoother the transfer between different transit lines, the greater the accessibility of the transit network overall and the more people can be induced to use it. An "E-ZPass" for transit (see sidebar on page 11), by simplifying fare collection, would save time and hassle for travelers and thus effectively expand transit's catchment radius for a given travel time.

4. **Foster transit-oriented development projects on NJ Transit-owned sites.** NJ Transit owns a significant amount of real estate around existing transit stations, including surface parking lots. The state has begun to view these sites as important assets that can be leveraged to stimulate appropriate station-area real estate development. The state has the ability to work with the host municipality to plan for redevelopment, and also has the power to partner with private-sector builders to develop the site, once a redevelopment strategy is in place. NJ Transit piloted this partnership approach – with favorable results – in the Highlands at Morristown Station transit village development in Morristown; it should continue looking for other similar opportunities to actively participate in creating TOD on sites it owns.

   In other parts of the country, station-area real estate projects on agency-owned land are struc-

tured to generate not just new ridership but a new revenue stream that can be dedicated to supporting ongoing transit operations. That is, the transit agency not only acts as co-developer of the site but retains a financial interest in it after projects are completed. NJ Transit should explore ways to generate operating revenue from its own redevelopment projects and should pilot the approach in one or two sites, building on its success in Morristown with the development partnership concept.

5. **Strengthen state programs that foster TOD.** Both NJ Transit's Transit-Friendly Planning, Land Use & Development Program and NJDOT's Transit Village program need continued state funding and support so they can help foster TOD. DOT's Transit Village program should actively recruit municipalities for designation, while supporting existing Transit Villages with state funding and technical assistance so that they can make changes to their station areas that encourage residents and employees to actually ride transit. NJ Transit's Transit-Friendly Planning Program should continue to assist municipalities in promoting TOD on municipally-owned sites, in addition to fostering TOD on NJ Transit-owned sites, as described above.

6. **Facilitate structured parking.** Structured parking in transit station areas facilitates TOD by making available for higher and better uses land that would otherwise be consumed by surface parking. It also allows "collector" stations (i.e., regional park-and-rides) to serve a larger number of potential transit riders from surrounding communities by increasing the total parking supply on a fixed supply of land. The state should treat structured parking in TOD locations as public infrastructure, just as it would streets. Financing mechanisms should be re-tooled and made available that will make building structured parking more economical and will ensure that it is well designed and integrated into the community, as any public investment should be. A task force could be created specifically to develop recommendations for how to make this happen.

7. **Enlist municipal support for zoning changes.** Any real estate development that takes place around a transit station will ultimately depend on the host municipality's local zoning and market conditions. In more affluent communities, where market conditions tend to be favorable, the success of TOD is mainly contingent upon whether transit-oriented development zoning is in place and the local administration is supportive. The state can provide incentives and guidance to municipalities so that they improve zoning in TOD areas to allow for the higher-density, mixed-use, walkable development that the market is already poised to supply. One incentive program that the state could adopt is the Smart Housing Incentive program, proposed by New Jersey Future and introduced in the legislature in 2009, which would provide financial incentives for towns to increase the density and variety of housing opportunities around their transit stations.

8. **Engage in market building strategies.** In less-affluent communities, the market conditions around transit stations may not yet be sufficiently robust to attract market-rate developers, even if the underlying TOD zoning is in place. Additional work and public-sector investment may be needed to prime the pump. The state can support redevelopment planning in these areas and then target market-rate housing incentives, employment incentives, and infrastructure funding to support the plan. Updating the state's Urban Transit Hub Tax Credit program, both to extend eligibility to more communities and to more accurately identify those areas that actually need public-sector intervention, would be a good start.

9. **Create a market-oriented assessment tool for targeting state resources.** To enable better identification of strong-market and weak-market places, the state should adopt an updated tool for measuring real estate market conditions, and particularly for measuring fiscal and socioeconomic distress. The tool should be usable both at the municipal level and at the census tract level, to identify multiple sub-municipal markets in those municipalities with substantial internal heterogeneity. This tool will allow market-building resources to

be more effectively directed toward those places that both need the funds and can effectively leverage the funds with private investments. Conversely, the tool will support better targeting of state programs and investments designed to increase housing opportunities for low- and moderate-income households near jobs and better schools. The NJDOT could provide it to Transit Villages to assist them in planning for private investment. This tool would have broad applicability for targeting all manner of state incentive programs, well beyond the promotion of TOD.

10. **Foster good design to ensure attractive, pedestrian-friendly station areas.** TOD offers an opportunity for communities to create places that are more vibrant, fun, and interesting by capitalizing on existing foot traffic near stations and by taking active steps to encourage more of it. It is important to pay attention to design specifics, such as allowing appropriate densities that support walking; encouraging a rich mix of uses that generate activity throughout the day; and ensuring a comfortable, safe, and visually appealing setting with sidewalks, trees, lighting, and attractive buildings. The state can support good municipal design in a cost-effective manner through:

    a. Updating NJ Transit's *Planning for Transit-Friendly Land Use*, to include design principles and model design guidelines appropriate for TOD areas of varying sizes and scales.

    b. Incorporating design principles for walkable TOD and downtown areas into the mandatory training for planning and zoning officials.

    c. Providing a competitive mini-grant program to allow municipalities with high-potential transit hubs to develop design guidelines.

11. **Promote a range of housing options near transit.** Residential development in TOD areas should include housing at a variety of prices, including homes affordable to families of more modest incomes. This gives a broader range of households access to alternative (and in many cases less expensive) transportation options for getting to jobs elsewhere in the region (provided those jobs are also transit-accessible) and allows them to live in a neighborhood where many non-work destinations are accessible on foot. For the community, it means a more diverse labor pool, more patrons for neighborhood businesses, and less traffic, as workers in a wider range of professions are able to leave their cars at home. The state can create incentives for more affluent towns to produce and integrate housing for lower-income households while engaging in market-building activities in less affluent communities, where incentives are needed to foster middle-class and higher-end housing. State programs that support TOD, including the Urban Transit Hub Tax Credit program and the Transit Village program, should require municipalities to provide a mix of housing opportunities, including housing for low- and moderate-income families.

12. **Make it easier to engage in redevelopment instead of open-space development.** Since most of the transit stations in New Jersey are located in already-developed areas, station-area development opportunities are mainly going to be redevelopment opportunities. However, for a variety of reasons, it remains easier and cheaper to develop on the state's remaining open spaces than to redevelop previously used sites. The state Office of Planning Advocacy should make a concerted effort to identify obstacles to redevelopment, including difficulties involved in land assembly and financing, and should implement specific incremental changes that will help to make redevelopment the preferred development choice.

13. **Consider environmental opportunities and constraints.** As train station areas are redeveloped, part of their vibrancy will depend on how well environmental features and amenities are incorporated. Rather than a license to develop everything, redevelopment should be viewed as an opportunity to improve both the built and the natural environments. This means designing for urban greenery, including parks and tree-lined streets, and highlighting rather than hiding or burying natural features like streams, geologic characteristics, and unique flora. It also means designing buildings that integrate better into the environment from energy, wastewater and storm-

water standpoints. An environmental plan should be part of any redevelopment plan.

The state should also identify any transit stations whose surrounding neighborhoods should *not* be targeted for future growth because of environmental constraints. Perhaps the station was built in what was then or has since become a floodplain. Perhaps the station's surrounding area has since been identified as prime farmland, critical wildlife habitat, or an important groundwater recharge area. For various reasons, not every transit station should necessarily be a candidate for further growth.

Appendix

Appendix: List of Transit Stations in New Jersey by Host County and Municipality (243 stations total)

county	host municipality	station name	modes served by:	total # of modes	lines/routes/operators presently* served by
Atlantic	Absecon city	Absecon	commuter rail	1	Atlantic City
Atlantic	Atlantic City city	Atlantic City Bus Terminal	bus terminal	1	NJT bus
Atlantic	Atlantic City city	Atlantic City Rail Station	commuter rail, bus terminal	2	Atlantic City, NJT bus
Atlantic	Egg Harbor City city	Egg Harbor City	commuter rail	1	Atlantic City
Atlantic	Hammonton town	Hammonton	commuter rail	1	Atlantic City
Atlantic	Pleasantville city	Pleasantville Bus Terminal	bus terminal	1	NJT bus
Bergen	Allendale borough	Allendale	commuter rail	1	Main, Bergen County
Bergen	East Rutherford borough	Rutherford	commuter rail	1	Bergen County
Bergen	Edgewater borough	Edgewater Ferry Landing	ferry	1	NY Waterway
Bergen	Emerson borough	Emerson	commuter rail	1	Pascack Valley
Bergen	Fair Lawn borough	Broadway	commuter rail	1	Bergen County
Bergen	Fair Lawn borough	Radburn	commuter rail	1	Bergen County
Bergen	Garfield city	Garfield	commuter rail	1	Bergen County
Bergen	Garfield city	Plauderville	commuter rail	1	Bergen County
Bergen	Glen Rock borough	Glen Rock	commuter rail	1	Main, Bergen County
Bergen	Hackensack city	Anderson St.	commuter rail	1	Pascack Valley
Bergen	Hackensack city	Essex St.	commuter rail	1	Pascack Valley
Bergen	Hackensack city	Hackensack Bus Transfer	bus terminal	1	NJT bus
Bergen	Hillsdale borough	Hillsdale	commuter rail	1	Pascack Valley
Bergen	Ho-Ho-Kus borough	Ho-Ho-Kus	commuter rail	1	Main, Bergen County
Bergen	Lyndhurst township	Kingsland	commuter rail	1	Main
Bergen	Lyndhurst township	Lyndhurst	commuter rail	1	Main
Bergen	Mahwah township	Mahwah	commuter rail	1	Main, Bergen County
Bergen	Montvale borough	Montvale	commuter rail	1	Pascack Valley
Bergen	Oradell borough	Oradell	commuter rail	1	Pascack Valley
Bergen	Park Ridge borough	Park Ridge	commuter rail	1	Pascack Valley
Bergen	Ramsey borough	Ramsey Main St.	commuter rail	1	Main, Bergen County
Bergen	Ramsey borough	Ramsey Rt. 17	commuter rail	1	Main, Bergen County
Bergen	Ridgewood village	Ridgewood	commuter rail	1	Main, Bergen County
Bergen	Ridgewood village	Ridgewood Bus Terminal	bus terminal	1	NJT bus
Bergen	River Edge borough	New Bridge Landing	commuter rail	1	Pascack Valley
Bergen	River Edge borough	River Edge	commuter rail	1	Pascack Valley
Bergen	Teterboro borough	Teterboro	commuter rail	1	Pascack Valley
Bergen	Waldwick borough	Waldwick	commuter rail	1	Main, Bergen County
Bergen	Westwood borough	Westwood	commuter rail	1	Pascack Valley
Bergen	Woodcliff Lake borough	Woodcliff Lake	commuter rail	1	Pascack Valley
Bergen	Wood-Ridge borough	Wood-Ridge	commuter rail	1	Pascack Valley
Burlington	Beverly city	Beverly	light rail	1	River Line
Burlington	Bordentown city	Bordentown	light rail	1	River Line
Burlington	Burlington city	Burlington South	light rail	1	River Line
Burlington	Burlington city	Burlington Towne Ctr	light rail	1	River Line
Burlington	Cinnaminson township	Cinnaminson	light rail	1	River Line
Burlington	Delanco township	Delanco	light rail	1	River Line
Burlington	Florence township	Florence	light rail	1	River Line
Burlington	Florence township	Roebling	light rail	1	River Line
Burlington	New Hanover township	Fort Dix Terminal	bus terminal	1	NJT bus
Burlington	Palmyra borough	Palmyra	light rail	1	River Line
Burlington	Riverside township	Riverside	light rail	1	River Line
Burlington	Riverton borough	Riverton	light rail	1	River Line

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county	host municipality	station name	modes served by:	total # of modes	lines/routes/operators presently* served by
Camden	Camden city	Aquarium	light rail	1	River Line
Camden	Camden city	City Hall	rapid transit	1	PATCO
Camden	Camden city	Cooper Street	light rail	1	River Line
Camden	Camden city	Entertainment Center	light rail	1	River Line
Camden	Camden city	Ferry Ave.	rapid transit	1	PATCO
Camden	Camden city	Walter Rand Transportation Center	light rail, rapid transit, bus terminal	3	River Line, PATCO, NJT bus
Camden	Cherry Hill township	Cherry Hill	commuter rail	1	Atlantic City
Camden	Cherry Hill township	Woodcrest	rapid transit	1	PATCO
Camden	Collingswood borough	Collingswood	rapid transit	1	PATCO
Camden	Haddon township	Westmont	rapid transit	1	PATCO
Camden	Haddonfield borough	Haddonfield	rapid transit	1	PATCO
Camden	Lindenwold borough	Lindenwold	commuter rail, rapid transit	2	Atlantic City, PATCO
Camden	Pennsauken township	36th Street	light rail	1	River Line
Camden	Pennsauken township	Pennsauken Rt 73	light rail	1	River Line
Camden	Voorhees township	Ashland	rapid transit	1	PATCO
Camden	Waterford township	Atco	commuter rail	1	Atlantic City
Cape May	Cape May city	Cape May City Depot	bus terminal	1	NJT bus
Cape May	Ocean City city	Ocean City Transportation Center	bus terminal	1	NJT bus
Cape May	Wildwood city	Wildwood Bus Terminal	bus terminal	1	NJT bus
Cumberland	Vineland city	Vineland Bus Terminal	bus terminal	1	NJT bus
Essex	Belleville township	Silver Lake	light rail	1	Newark Light Rail
Essex	Bloomfield township	Bloomfield	commuter rail	1	Montclair-Boonton
Essex	Bloomfield township	Grove Street (Newark Light Rail)	light rail	1	Newark Light Rail
Essex	Bloomfield township	Watsessing Ave	commuter rail	1	Montclair-Boonton
Essex	City of Orange township	Highland Ave	commuter rail	1	M & E Morristown, M & E Gladstone
Essex	City of Orange township	Orange	commuter rail	1	M & E Morristown, M & E Gladstone
Essex	East Orange city	Brick Church	commuter rail	1	M & E Morristown, M & E Gladstone
Essex	East Orange city	East Orange	commuter rail	1	M & E Morristown, M & E Gladstone
Essex	Glen Ridge borough	Glen Ridge	commuter rail	1	Montclair-Boonton
Essex	Irvington township	Irvington Bus Terminal	bus terminal	1	NJT bus
Essex	Maplewood township	Maplewood	commuter rail	1	M & E Morristown, M & E Gladstone
Essex	Millburn township	Millburn	commuter rail	1	M & E Morristown, M & E Gladstone
Essex	Millburn township	Short Hills	commuter rail	1	M & E Morristown, M & E Gladstone
Essex	Montclair township	Bay St.	commuter rail	1	Montclair-Boonton
Essex	Montclair township	Montclair Heights	commuter rail	1	Montclair-Boonton
Essex	Montclair township	Mountain Ave	commuter rail	1	Montclair-Boonton
Essex	Montclair township	Upper Montclair	commuter rail	1	Montclair-Boonton
Essex	Montclair township	Walnut St.	commuter rail	1	Montclair-Boonton
Essex	Montclair township	Watchung Ave	commuter rail	1	Montclair-Boonton
Essex	Newark city	Atlantic Street	light rail	1	Newark Light Rail
Essex	Newark city	Bears Stadium	light rail	1	Newark Light Rail
Essex	Newark city	Bloomfield Avenue	light rail	1	Newark Light Rail
Essex	Newark city	Branch Brook Park	light rail	1	Newark Light Rail
Essex	Newark city	Davenport Avenue	light rail	1	Newark Light Rail
Essex	Newark city	Military Park	light rail	1	Newark Light Rail
Essex	Newark city	Newark - Broad St.	commuter rail, light rail	2	M & E Morristown, M & E Gladstone, Montclair-Boonton, Newark Light Rail
Essex	Newark city	Newark Airport	commuter rail	1	Northeast Corridor, North Jersey Coast
Essex	Newark city	Newark Penn Station	commuter rail, light rail, rapid transit, bus terminal	4	Northeast Corridor, North Jersey Coast, Raritan Valley, PATH, Newark Light Rail, NJT bus
Essex	Newark city	Norfolk Street	light rail	1	Newark Light Rail
Essex	Newark city	Orange Street	light rail	1	Newark Light Rail
Essex	Newark city	Park Avenue	light rail	1	Newark Light Rail
Essex	Newark city	Performing Arts Ctr	light rail	1	Newark Light Rail
Essex	Newark city	Warren Street	light rail	1	Newark Light Rail
Essex	Newark city	Washington Park	light rail	1	Newark Light Rail
Essex	Newark city	Washington Street	light rail	1	Newark Light Rail
Essex	South Orange Village township	Mountain Station	commuter rail	1	M & E Morristown, M & E Gladstone
Essex	South Orange Village township	South Orange	commuter rail	1	M & E Morristown, M & E Gladstone

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county	host municipality	station name	modes served by:	total # of modes	lines/routes/operators presently* served by
Hudson	Bayonne city	22nd Street	light rail	1	H-B Light Rail
Hudson	Bayonne city	34th Street	light rail	1	H-B Light Rail
Hudson	Bayonne city	45th Street	light rail	1	H-B Light Rail
Hudson	Harrison town	Harrison	rapid transit	1	PATH
Hudson	Hoboken city	2nd Street	light rail	1	H-B Light Rail
Hudson	Hoboken city	9th Street	light rail	1	H-B Light Rail
Hudson	Hoboken city	Hoboken 14th St	ferry	1	NY Waterway (2 routes)
Hudson	Hoboken city	Hoboken Terminal	commuter rail, light rail, rapid transit, bus terminal, ferry	5	M & E Morristown, M & E Gladstone, Montclair-Boonton, Pascack Valley, Main, Bergen County, North Jersey Coast, PATH, H-B Light Rail, NJT bus, NY Waterway ferry (2 routes)
Hudson	Jersey City city	Danforth Avenue	light rail	1	H-B Light Rail
Hudson	Jersey City city	Essex Street	light rail	1	H-B Light Rail
Hudson	Jersey City city	Exchange Place (HBLR)	light rail	1	H-B Light Rail
Hudson	Jersey City city	Exchange Place (PATH)	rapid transit, ferry	2	PATH, NY Waterway ferry (3 routes)
Hudson	Jersey City city	Garfield Avenue	light rail	1	H-B Light Rail
Hudson	Jersey City city	Grove Street (PATH)	rapid transit	1	PATH
Hudson	Jersey City city	Harborside	light rail	1	H-B Light Rail
Hudson	Jersey City city	Harsimus	light rail	1	H-B Light Rail
Hudson	Jersey City city	Jersey Avenue (J.C.)	light rail	1	H-B Light Rail
Hudson	Jersey City city	Journal Square	rapid transit, bus terminal	2	PATH, NJT bus
Hudson	Jersey City city	Liberty Harbor / Marin Blvd.	ferry	1	NY Waterway
Hudson	Jersey City city	Liberty Landing Marina	ferry	1	Liberty Landing
Hudson	Jersey City city	Liberty State Park	light rail	1	H-B Light Rail
Hudson	Jersey City city	Marin Boulevard	light rail	1	H-B Light Rail
Hudson	Jersey City city	MLK Drive	light rail	1	H-B Light Rail
Hudson	Jersey City city	Newport	ferry	1	NY Waterway
Hudson	Jersey City city	Newport / Pavonia	light rail, rapid transit	2	H-B Light Rail, PATH
Hudson	Jersey City city	Port Liberte	ferry	1	NY Waterway
Hudson	Jersey City city	Richard Street	light rail	1	H-B Light Rail
Hudson	Jersey City city	Warren St.	ferry	1	Liberty Landing
Hudson	Jersey City city	West Side Avenue	light rail	1	H-B Light Rail
Hudson	North Bergen township	Tonnelle Avenue	light rail	1	H-B Light Rail
Hudson	Secaucus town	Secaucus Jct.	commuter rail	1	Northeast Corridor, North Jersey Coast, M & E Morristown, M & E Gladstone, Montclair-Boonton, Pascack Valley, Main, Bergen County
Hudson	Union City city	Bergenline Avenue	light rail	1	H-B Light Rail
Hudson	Weehawken township	Lincoln Harbor ferry terminal	ferry	1	NY Waterway
Hudson	Weehawken township	Lincoln Harbor (HBLR)	light rail	1	H-B Light Rail
Hudson	Weehawken township	Port Imperial (HBLR)	light rail	1	H-B Light Rail
Hudson	Weehawken township	Port Imperial Weehawken	ferry	1	NY Waterway (3 routes)
Hunterdon	Clinton township	Annandale	commuter rail	1	Raritan Valley
Hunterdon	High Bridge borough	High Bridge	commuter rail	1	Raritan Valley
Hunterdon	Lebanon borough	Lebanon	commuter rail	1	Raritan Valley
Hunterdon	Readington township	White House	commuter rail	1	Raritan Valley

Appendix: List of Transit Stations in New Jersey by Host County and Municipality (243 stations total)

county	host municipality	station name	modes served by:	total # of modes	lines/routes/operators presently*served by
Mercer	Ewing township	West Trenton	commuter rail	1	SEPTA West Trenton
Mercer	Hamilton township	Hamilton	commuter rail	1	Northeast Corridor
Mercer	Princeton borough	Princeton	commuter rail	1	Northeast Corridor
Mercer	Trenton city	Cass Street	light rail	1	River Line
Mercer	Trenton city	Hamilton Avenue	light rail	1	River Line
Mercer	Trenton city	Trenton Transit Center	commuter rail, light rail, bus terminal	3	Northeast Corridor, SEPTA Trenton, River Line, NJT bus
Mercer	West Windsor township	Princeton Junction	commuter rail	1	Northeast Corridor
Middlesex	Dunellen borough	Dunellen	commuter rail	1	Raritan Valley
Middlesex	East Brunswick township	East Brunswick Transportation Center	bus terminal	1	NJT bus
Middlesex	Edison township	Edison	commuter rail	1	Northeast Corridor
Middlesex	Metuchen borough	Metuchen	commuter rail	1	Northeast Corridor
Middlesex	New Brunswick city	Jersey Avenue (New Bruns.)	commuter rail	1	Northeast Corridor
Middlesex	New Brunswick city	New Brunswick	commuter rail, bus terminal	2	Northeast Corridor, NJT bus
Middlesex	Perth Amboy city	Perth Amboy	commuter rail	1	North Jersey Coast
Middlesex	South Amboy city	South Amboy	commuter rail	1	North Jersey Coast
Middlesex	Woodbridge township	Avenel	commuter rail	1	North Jersey Coast
Middlesex	Woodbridge township	Metropark	commuter rail, bus terminal	2	Northeast Corridor, NJT bus
Middlesex	Woodbridge township	Woodbridge	commuter rail	1	North Jersey Coast
Monmouth	Aberdeen township	Aberdeen-Matawan	commuter rail	1	North Jersey Coast
Monmouth	Allenhurst borough	Allenhurst	commuter rail	1	North Jersey Coast
Monmouth	Asbury Park city	Asbury Park (James J. Howard Transp Ctr)	commuter rail, bus terminal	2	North Jersey Coast, NJT bus
Monmouth	Atlantic Highlands borough	Atlantic Highlands	ferry	1	SeaStreak
Monmouth	Belmar borough	Belmar	commuter rail	1	North Jersey Coast
Monmouth	Bradley Beach borough	Bradley Beach	commuter rail	1	North Jersey Coast
Monmouth	Freehold borough	Freehold Centre	bus terminal	1	NJT bus
Monmouth	Hazlet township	Hazlet	commuter rail	1	North Jersey Coast
Monmouth	Highlands borough	Highlands	ferry	1	SeaStreak
Monmouth	Little Silver borough	Little Silver	commuter rail	1	North Jersey Coast
Monmouth	Long Branch city	Elberon	commuter rail	1	North Jersey Coast
Monmouth	Long Branch city	Long Branch	commuter rail	1	North Jersey Coast
Monmouth	Manasquan borough	Manasquan	commuter rail	1	North Jersey Coast
Monmouth	Middletown township	Belford / Harbor Way	ferry	1	NY Waterway (2 routes)
Monmouth	Middletown township	Middletown	commuter rail	1	North Jersey Coast
Monmouth	Red Bank borough	Red Bank	commuter rail	1	North Jersey Coast
Monmouth	Spring Lake borough	Spring Lake	commuter rail	1	North Jersey Coast

Appendix: List of Transit Stations in New Jersey by Host County and Municipality (243 stations total)

county	host municipality	station name	modes served by:	total # of modes	lines/routes/operators presently* served by
Morris	Boonton town	Boonton	commuter rail	1	Montclair-Boonton
Morris	Chatham borough	Chatham	commuter rail	1	M & E Morristown
Morris	Denville township	Denville	commuter rail	1	Montclair-Boonton, M & E Morristown
Morris	Dover town	Dover	commuter rail	1	Montclair-Boonton, M & E Morristown
Morris	Lincoln Park borough	Lincoln Park	commuter rail	1	Montclair-Boonton
Morris	Long Hill township	Gillette	commuter rail	1	M & E Gladstone
Morris	Long Hill township	Millington	commuter rail	1	M & E Gladstone
Morris	Long Hill township	Stirling	commuter rail	1	M & E Gladstone
Morris	Madison borough	Madison	commuter rail	1	M & E Morristown
Morris	Montville township	Towaco	commuter rail	1	Montclair-Boonton
Morris	Morris Plains borough	Morris Plains	commuter rail	1	M & E Morristown
Morris	Morris township	Convent	commuter rail	1	M & E Morristown
Morris	Morristown town	Morristown	commuter rail	1	M & E Morristown
Morris	Mount Arlington borough	Mount Arlington	commuter rail	1	Montclair-Boonton, M & E Morristown
Morris	Mount Olive township	Mount Olive	commuter rail	1	Montclair-Boonton, M & E Morristown
Morris	Mountain Lakes borough	Mountain Lakes	commuter rail	1	Montclair-Boonton
Morris	Netcong borough	Netcong	commuter rail	1	Montclair-Boonton, M & E Morristown
Morris	Parsippany-Troy Hills township	Mount Tabor	commuter rail	1	M & E Morristown
Morris	Roxbury Township	Lake Hopatcong	commuter rail	1	Montclair-Boonton, M & E Morristown
Ocean	Bay Head borough	Bay Head	commuter rail	1	North Jersey Coast
Ocean	Lakewood township	Lakewood Bus Terminal	bus terminal	1	NJT bus
Ocean	Point Pleasant Beach borough	Point Pleasant Beach	commuter rail	1	North Jersey Coast
Ocean	Toms River township	Dover Twp. Park-Ride Bus Terminal	bus terminal	1	NJT bus
Passaic	Clifton city	Clifton	commuter rail	1	Main
Passaic	Clifton city	Delawanna	commuter rail	1	Main
Passaic	Hawthorne borough	Hawthorne	commuter rail	1	Main
Passaic	Little Falls township	Little Falls	commuter rail	1	Montclair-Boonton
Passaic	Little Falls township	Montclair State U.	commuter rail	1	Montclair-Boonton
Passaic	Passaic city	Passaic	commuter rail	1	Main
Passaic	Passaic city	Passaic Bus Terminal	bus terminal	1	NJT bus
Passaic	Paterson city	Broadway Terminal	bus terminal	1	NJT bus
Passaic	Paterson city	Paterson	commuter rail	1	Main
Passaic	Wayne township	Mountain View	commuter rail	1	Montclair-Boonton
Passaic	Wayne township	Wayne Route 23	commuter rail	1	Montclair-Boonton
Somerset	Bernards township	Basking Ridge	commuter rail	1	M & E Gladstone
Somerset	Bernards township	Lyons	commuter rail	1	M & E Gladstone
Somerset	Bernardsville borough	Bernardsville	commuter rail	1	M & E Gladstone
Somerset	Bound Brook borough	Bound Brook	commuter rail	1	Raritan Valley
Somerset	Branchburg township	North Branch	commuter rail	1	Raritan Valley
Somerset	Bridgewater township	Bridgewater	commuter rail	1	Raritan Valley
Somerset	Far Hills borough	Far Hills	commuter rail	1	M & E Gladstone
Somerset	Peapack and Gladstone borough	Gladstone	commuter rail	1	M & E Gladstone
Somerset	Peapack and Gladstone borough	Peapack	commuter rail	1	M & E Gladstone
Somerset	Raritan borough	Raritan	commuter rail	1	Raritan Valley
Somerset	Somerville borough	Somerville	commuter rail	1	Raritan Valley

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county	host municipality	station name	modes served by:	total # of modes	lines/routes/operators presently* served by
Union	Berkeley Heights township	Berkeley Heights	commuter rail	1	M & E Gladstone
Union	Cranford township	Cranford	commuter rail	1	Raritan Valley
Union	Elizabeth city	Elizabeth	commuter rail	1	Northeast Corridor, North Jersey Coast
Union	Elizabeth city	North Elizabeth	commuter rail	1	Northeast Corridor, North Jersey Coast
Union	Fanwood borough	Fanwood	commuter rail	1	Raritan Valley
Union	Garwood borough	Garwood	commuter rail	1	Raritan Valley
Union	Linden city	Linden	commuter rail	1	Northeast Corridor, North Jersey Coast
Union	New Providence borough	Murray Hill	commuter rail	1	M & E Gladstone
Union	New Providence borough	New Providence	commuter rail	1	M & E Gladstone
Union	Plainfield city	Netherwood	commuter rail	1	Raritan Valley
Union	Plainfield city	Plainfield	commuter rail	1	Raritan Valley
Union	Rahway city	Rahway	commuter rail	1	Northeast Corridor, North Jersey Coast
Union	Roselle Park borough	Roselle Park	commuter rail	1	Raritan Valley
Union	Summit city	Summit	commuter rail	1	M & E Morristown, M & E Gladstone
Union	Union township	Union	commuter rail	1	Raritan Valley
Union	Westfield town	Westfield	commuter rail	1	Raritan Valley
Warren	Hackettstown town	Hackettstown	commuter rail	1	Montclair-Boonton, M & E Morristown

*The lines and routes listed for each station are only those that presently serve the station. The list does not include lines that could hypothetically serve the station under present track configurations but currently do not.

For example, Secaucus Junction is not counted as being served by the Raritan Valley line, even though Raritan Valley trains, which presently terminate at Newark Penn, could hypothetically go on to stop at Secaucus Junction.

Acknowledgements

The author would like to thank the following people for their assistance in providing data, reviewing drafts of the report, or otherwise helping to move this project ahead:

Eric Frantz and **Chris D'Antonio**, New Jersey Future interns

Tom Marchwinksi, R.J. Palladino, Vivian Baker, and Chuck Latini at NJ Transit

Juliette Michaelson at the Regional Plan Association

Jeffrey Perlman and **Scott Rowe** at the North Jersey Transportation Planning Authority

Rich Bickel, Karin Morris, and **Jesse Buerk** at the Delaware Valley Regional Planning Commission

Janna Chernetz and **Renata Silberblatt** at the Tri-State Transportation Campaign

Adam Gordon at the Fair Share Housing Center

Diane Sterner at the Housing and Community Development Network of New Jersey

Thanks are also due to everyone who attended a demonstration of the transit station inventory and provided feedback on its functionality.

New Jersey Future would like to acknowledge the generosity of the funders who helped make this research project possible, especially the Ford Foundation, PNC Foundation, PSEG Foundation, Wells Fargo Foundation and William Penn Foundation.

About New Jersey Future

New Jersey Future is a nonprofit, nonpartisan organization that brings together concerned citizens and leaders to promote responsible land-use policies. The organization employs original research, analysis and advocacy to build coalitions and drive land-use policies that help revitalize cities and towns, protect natural lands and farms, provide more transportation choices beyond cars, expand access to safe and affordable neighborhoods and fuel a prosperous economy.

About the Author

Tim Evans is responsible for the original research and data analysis that support New Jersey Future's policy development. He regularly documents his research results in a variety of products, including full-length research reports and the organization's twice-monthly Future Facts electronic newsletter. He also ensures that all of New Jersey Future's products and media communications are quantitatively accurate and defensible. Tim frequently provides data and advice to colleague organizations, serving as an informal research consultant to the smart growth community at large. His analysis and commentary have been featured by a wide range of state and national media outlets.
Tim holds a B.S. in mathematics from Ursinus College, an M.S. in statistics from the University of Virginia, and a master's in city and regional planning (M.C.R.P.) from the Bloustein School of Planning and Public Policy at Rutgers University. Prior to joining New Jersey Future, Tim worked for six years as a mathematical statistician for the Bureau of the Census in Washington, D.C.