Level of Bicycle Compatibility and Connectivity Analysis

January 2023

Introduction & Background

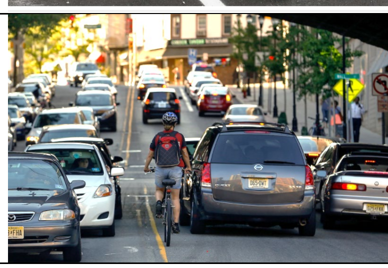
To support its goals of improving safe and efficient access for all modes of travel, the NJTPA analyzed the level of bicycle compatibility (sometimes called the level of traffic stress) on the road network to guide efforts at creating a regional connected bicycle network. Though some municipalities have developed extensive networks of dedicated facilities to accommodate cyclists, many communities have few, if any, dedicated bicycle facilities. Moreover, there is little in the way of a shared regional approach to bicycle network planning despite the cross-jurisdictional nature of many bicyclists' trips. Recognizing that resources are limited, this analysis identifies roadways and intersections throughout the region where bicycle facility improvements might be prioritized. This is a work in progress, which will be refined as more data becomes available and as input is gained from planners, engineers and others in using the methodology involving assessing bike compatibility.

This project employed a 5-tiered framework for assigning a level of bicycle compatibility (LBC) for each roadway throughout the region. An accompanying GIS map displays the assignments. A roadway or facility assigned an LBC of 1 is more likely to be used by all cyclists, whereas a roadway of LBC 4 is one likely used by only the most experienced cyclists. This paper also identifies roads that explicitly exclude cyclists as LBC 5, and facilities defined as "barrier roads" that are specifically designed for high-speed auto travel and essentially curtail the ability to create a connected bicycle network (e.g., US-1, US-22, SR-17 and SR-46).

Literature Review

The LBC framework draws from the level of traffic stress (LTS) analysis developed by Mekuria et al (2012) classifying road segments into stress levels tolerable by: most children (LTS 1), the mainstream adult population (LTS 2), "enthused and confident" American cyclists (LTS 3) and "strong and fearless" cyclists (LTS 4) [1]. These four types of roadways and their characteristics are shown in Table 1. Categorizing roads by stress levels recognizes that despite a low mode split—bicycle commuters only account for about 0.6 percent of commuters [2]—many more people would be willing to cycle for commuting or recreational purposes if facilities make bicycling safe and convenient. In a survey by Roger Geller of the Portland Office of Transportation, about 60 percent of the population falls into the "interested but concerned" category [1]. Geller says concerns include "a combination of perceived danger and other stressors (e.g., noise, exhaust fumes) associated with riding a bike close to motor traffic." Where robust cycling infrastructure exists to reduce traffic stress—notably, in European countries such as Denmark and the Netherlands—the mode split for bicycle commuters is much higher. Evidence for the relationship between increased bicycle lane miles and ridership also exists in dozens of major US cities [3] [4].

Table 1 - Levels of traffic stress

LTS	Cyclist Population	Facility Example	Roadway Characteristics
1	Most people (including children)		Physical separation from traffic, such as on a trail or lane buffered by parked cars. Intersection crossings and approaches are easy to navigate.
2	Most adult cyclists		Only occasional interaction with vehicles, bicycling zone is well defined. Most adults find intersection crossings relatively easy.
3	Confident adult cyclists (Interested but concerned)		Cyclists either have an exclusive lane or ride on single-lane shared streets and lower speeds. Intersections may have longer or higher speed crossings than LTS 1 or 2.
4	Only for very skilled cyclists, most adults feel uncomfortable		Cyclists may ride mixed in with traffic or in bike lanes or shoulders at highway speeds

A key function of the LTS analysis is to not only classify roadways but also to then identify network gaps. A typical finding in a regional LTS analysis is that there are “islands” of interconnected LTS 2 or 3 roadways (such as calmer interior neighborhood streets) that are separated by an LTS 4 roadway (such as a high-speed arterial). The LTS research indicates that cyclists tend to seek the most direct route but will deviate from a direct trajectory to ride on a lower stress route as long as the modified path is not more than 25 percent longer than the direct route [1].

LTS research has been further substantiated and explored by various transportation professionals at the state [5], county [6] and city [7] [8] levels. Perhaps most notable in the NJTPA region is the application of the LTS model in the NJDOT-funded Bike Ironbound [9] plan in which every street in the City of Newark's Ironbound neighborhood was classified with an LTS level 1-4 (see Image 1). It should be noted that LTS studies may not all be consistent with one another since there are no official criteria to determine each LTS category. In the Ironbound study, the identification of a roadway's LTS was then analyzed to determine where cycling barriers exist within the roadway network. Ultimately the study offered recommendations for improvements at key roadways or intersections that would result in a more connected network for cyclists.

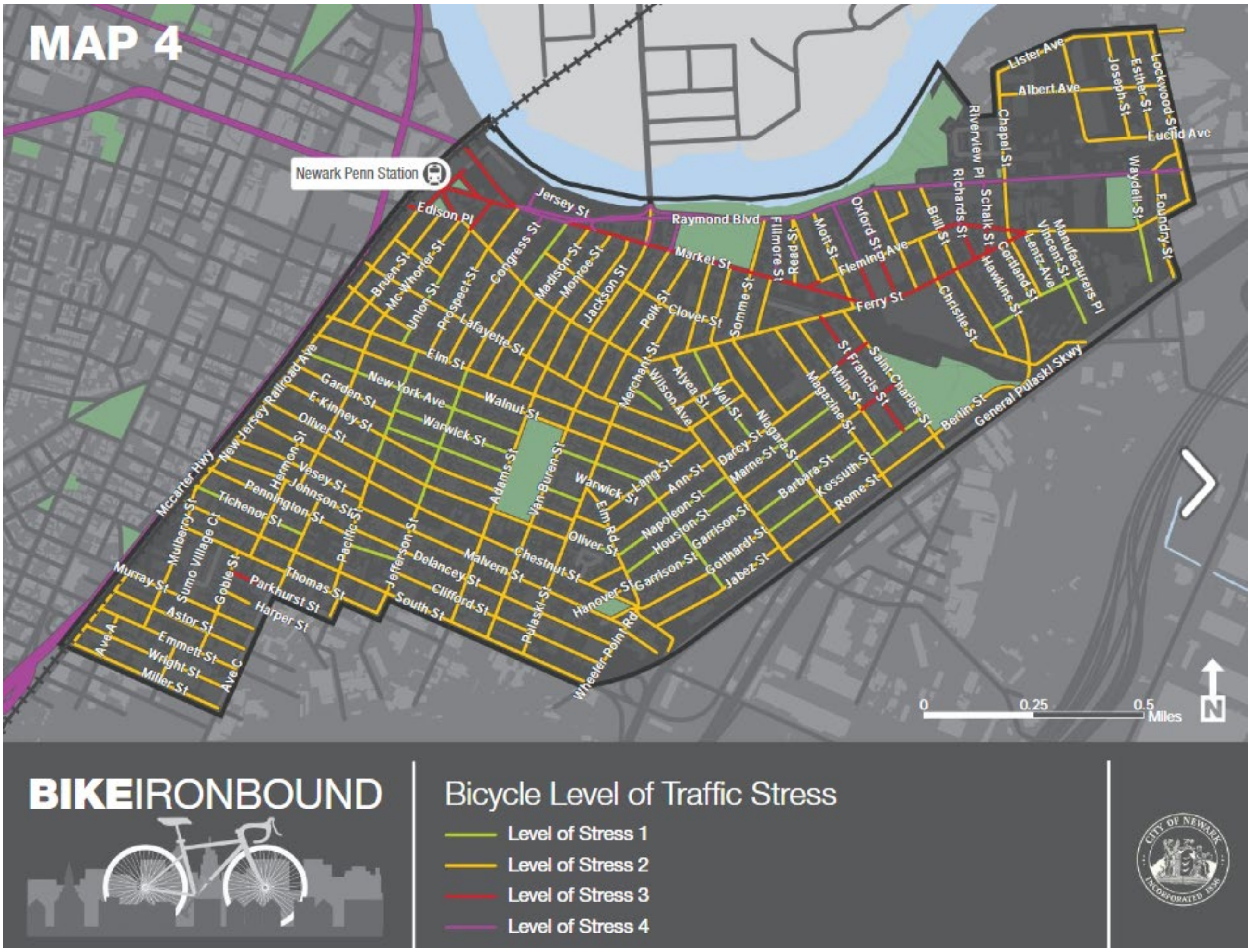


Image 1 - Ironbound LTS map

Data Preparation

The primary data source for this effort is a GIS line feature layer of all roadways in the NJTPA region and various linked attributes from the associated NJDOT Straight Line Diagram (SLD) data tables. Also incorporated into the roadway layer was a compilation of NJDOT truck volume data, bike path layers from NJDOT bike path data, Open Street Map observations and various county-level maps. There is currently no known central repository that lists the locations for all bike lanes in the region.

In addition to the SLD fields, elements in the final layer were standard route identifier (SRI), milepost start and end, parking, route, number of lanes, speed limit, shoulder width, functional system, truck route, pavement width and inventory date. Many of the roadways in the line file were composed of various segments, allowing for different sections of a road to have different feature attributes. A segment length may vary between less than 1/10 of a mile long to over 10+ miles long. Field relationships between the different sub-databases were determined by SRI and milepost. Note that not all records have information for all of the fields listed (in particular, information on the presence of on-street parking was missing for most roads). Inventory dates for different road segments also vary.

Methodology

This study is based largely on the criteria and levels identified in Mekuria et al (2012), though several of the LTS factors have been adjusted to reflect the data available and the input provided by NJTPA staff. To reflect these adjustments, this study changes "level of traffic stress" (LTS) to "level of bicycle compatibility" (LBC) and classifies all roads in the NJTPA region into LBC categories. LBC 1 is similar to LTS 1 of Mekuria et al (2012), though it is not assumed that this level is appropriate for children. LBC 2-4 are correspondingly similar to LTS 2-4, respectively. LBC 5 is a new classification created by NJTPA and does not relate to any of the levels of traffic stress developed by Mekuria et al. A complimentary analysis also classified some roads as barrier roads. Both methodologies are described below.

LBC roads: Each record was reviewed and assigned an LBC value based on its collective attributes, which categorize as follows:

- LBC 1 segments were either off-road bike paths or those on which there was a protected bike lane, the roadway had a speed limit of less than 30 mph, and there were 3 or fewer lanes.
- LBC 2 segments generally had protected bike facilities and/or a shoulder lane greater than 14-feet wide and had posted speeds of 30 mph or less.
- LBC 3 segments include principal arterials, if they do not have bike lanes, and all roads with a pavement width greater than 30 feet
- LBC 4 roads were those that have six or more lanes or at least 4 lanes with no shoulder and a speed limit greater than 35 mph. All ramps were also coded as LBC 4.
- LBC 5 are segments classified as interstates, freeways and toll routes, all of which are limited to vehicle access and prohibit cyclists.

Additionally, adjustments were made for roadway segments with high truck volumes. If daily truck volume was over 200 per day, the LBC was changed to 4. If daily truck volume was between 100 and 200 and the LBC was previously 1 or 2, it was changed to LBC 3. LBC 3 and 4 segments were adjusted on a variety of attributes best explained in Table 2 below.

Table 2 - Level of bicycle compatibility characteristics

# of Lanes	Speed	Bike Lane or Shoulder 0-6 ft (or Parking Lane < 14 ft)	Bike Lane or Shoulder 6+ ft	Parking Lane Y 14+ ft
<=3	25	2	1	2
<=3	30	3	2	2
<=3	35	3	3	3
4-5 lanes	25	3	2	2
4-5 lanes	30	4	2	2
4-5 lanes	35	4	3	3
*The fields in grey show the LBC related to the various criteria				

It should be noted that LBC designations are based on available data and may diverge from actual conditions where data is limited. In particular, inputs such as speed, volume, lanes, bike facilities, and parking presence are not always readily available, especially at a large regional scale. As a result, LBC designations should be confirmed through observation and additional data collection prior to their use in project level analysis.

Barrier roads: These roads are typically high-speed and effectively further divide the connectivity of the local bicycle network. Not all roads that prohibit bicycles are barrier roads. For example, a roadway may prohibit bicycles but not act as a barrier if there is a safe crossover area such as a shared-use bridge. Furthermore, not all barrier roads prohibit bicycles if there is a shared use path along the side of the barrier roadway. Barrier roads were identified in the SLD dataset as those roads with a dual carriageway and physical divider such as a curb. Barrier roads are defined apart from the LBC designations and consist mostly of LBC 4 and 5 level roads. They include:

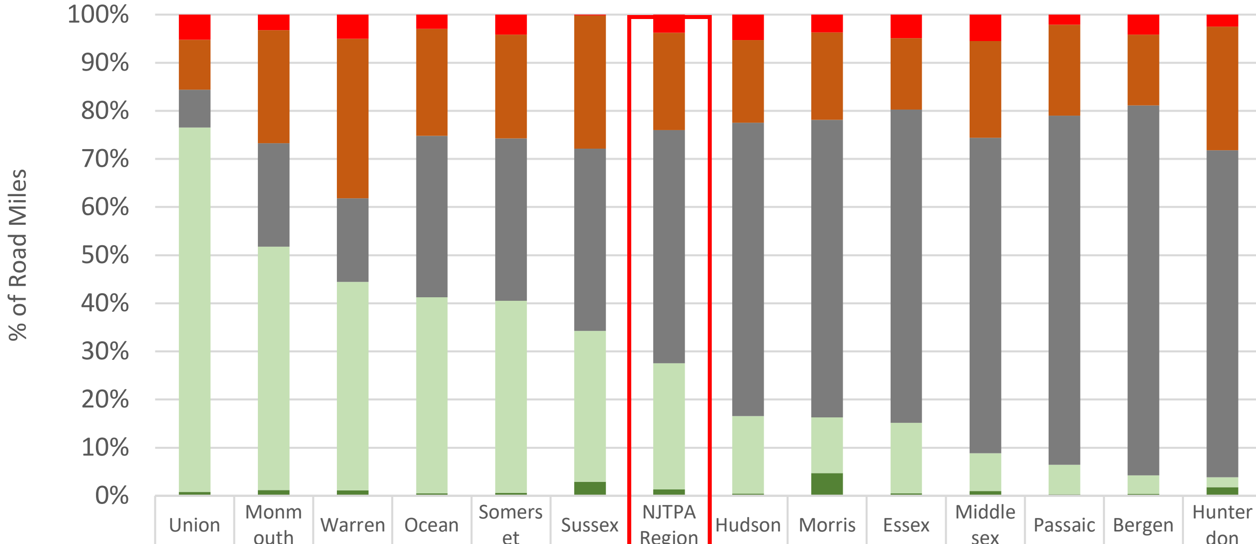
- All interstates, toll roads and ramps.
- Roads with a functional classification of "principal arterials-other freeways and expressways" (e.g., SR-18 in Monmouth county and SR-24 in Morris county).
- All roads with more than four lanes
- All roads with greater than 2 lanes and a physical median (i.e., excluding painted medians).
- Roads with a speed limit of greater than 45 mph and greater than 3 lanes

Analysis & Results

LBC Roads: The results of the analysis of roadway segments show that nearly half of the roads (in terms of centerline mileage) in New Jersey are LBC 3, thus suited for more confident riders. Four percent of roadways prohibit use by cyclists and 20 percent of roads (LBC 4) are classified as being suitable for only very skilled cyclists. Conversely, 26 percent of roads (LBC 2) are appropriate for most adults and less than 1 percent of roads (LBC 1) are suitable for almost all cyclists (this includes off-road bicycle paths).

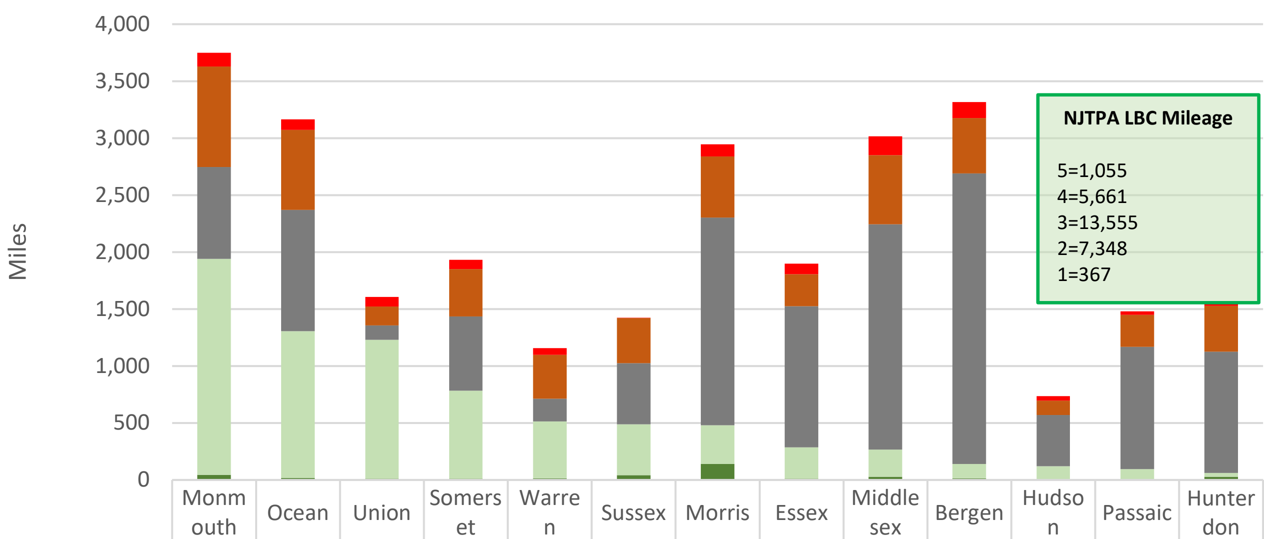
Analysis of the network for LBC 1 and 2 roads (that are likely to be comfortable for most adult cyclists) shows that six counties have a higher share than the NJTPA regional average of 28 percent. These include the largely rural western counties of Warren and Sussex. This higher-than-average LBC 1 and 2 road percentage is mostly due to the high percentage of roads within their denser town areas (e.g. Phillipsburg, Hackettstown, Newton and Sussex), which are categorized as an LBC 2, and a low density of road miles outside these downtown areas. The shore counties of Ocean and Monmouth also have a higher percentage of LBC 1 and 2 roads mostly because of the large amount of wide, low volume local roads. It is important to note that while these areas might have a high percentage of LBC 1 and 2 roads, they suffer from connectivity issues, in some cases, due to the configuration of some of the suburban developments and the presence of barrier roads.

Level of Bicycle Compatibility by County



	Union	Monmouth	Warren	Ocean	Somerset	Sussex	NJTPA Region	Hudson	Morris	Essex	Middlesex	Passaic	Bergen	Hunterdon
5	5%	3%	5%	3%	4%	0%	4%	5%	4%	5%	6%	2%	4%	3%
4	10%	24%	33%	22%	22%	28%	20%	17%	18%	15%	20%	19%	15%	26%
3	8%	22%	17%	34%	34%	38%	48%	61%	62%	65%	66%	73%	77%	68%
2	76%	51%	43%	41%	40%	31%	26%	16%	12%	15%	8%	6%	4%	2%
1	1%	1%	1%	1%	1%	3%	1%	0%	5%	1%	1%	0%	0%	2%
Bike Friendly	77%	52%	44%	41%	41%	34%	28%	17%	16%	15%	9%	6%	4%	4%

Level of Bicycle Compatibility by County

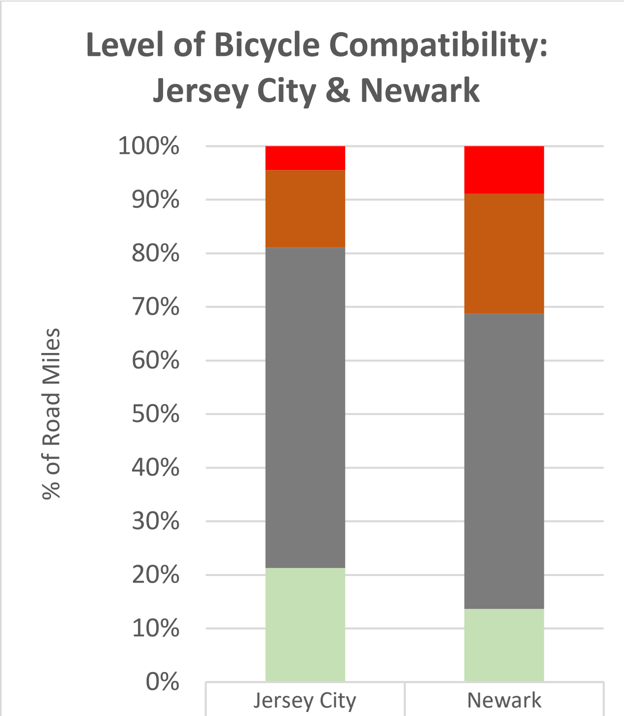


	Monmouth	Ocean	Union	Somerset	Warren	Sussex	Morris	Essex	Middlesex	Bergen	Hudson	Passaic	Hunterdon
5	120	95	84	80	58	2	109	93	167	138	39	31	39
4	881	702	166	416	383	394	535	281	606	487	126	280	403
3	807	1,062	127	652	201	538	1,822	1,236	1,977	2,549	448	1,073	1,064
2	1,894	1,290	1,217	771	501	446	342	278	238	128	119	91	33
1	45	16	12	11	13	41	139	10	29	13	3	5	28
Bike Friendly	1,940	1,306	1,229	783	514	488	481	288	267	141	122	95	60

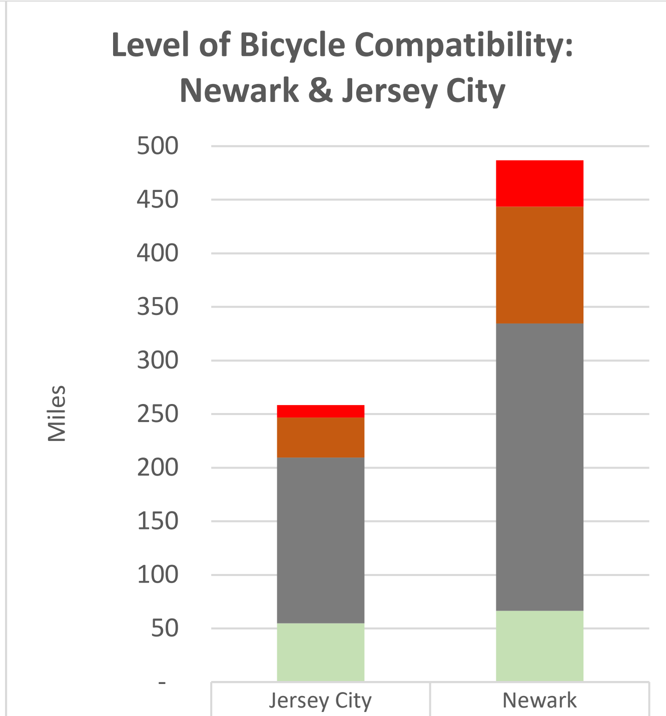
In terms of roadways which are suitable for most adult cyclists, defined as LBC 1 or 2, there is large variation between the counties. Some, like Hunterdon, Bergen and Middlesex counties have less than 10 percent with 3.9 percent, 4.2 percent and 8.9 percent, respectively. Others have more than 40 percent LBC 1 or 2, such as Union, Monmouth, Warren, and Ocean counties with 76.5 percent, 51.8 percent, 44.5 percent and 41.3 percent respectively. In terms of absolute mileage, Monmouth County has the most miles by far with 1,940 miles of LBC 1 or 2, followed by Ocean (1,307 miles) and Union (1,229 miles) counties. The counties with the fewest LBC 1 or 2 miles are Hunterdon (60 miles) and Passaic (94 miles).

Less than five percent of the region's roadways are inaccessible to cyclists, yet only about a quarter are appropriate for most adults. The bulk of roadways in northern New Jersey fall into LBC 3 which means they may appeal to an adult population that is interested in cycling but concerned about safety. The only counties which have roads/paths above 1 percent for LBC 1 are Sussex, Hunterdon and Morris. This is mostly due to their high degree of off-road bike paths. Furthermore, with the share of limited access roads being fairly uniform across the region, there is an inverse relationship between LBC 2 and 3, meaning that when the share of LBC 2 is lower in a subregion, it generally has a higher proportion of LBC 3 roads. This relationship helps to establish a rationale for implementation strategies to focus on increasing the share of LBC 1 and 2 roads by prioritizing conversion of LBC 3 (majority) roads to LBC 2.

Both New Jersey's largest cities, Newark and Jersey City, have a similar mileage of LBC 1 and 2 roads/paths (67 and 55 miles respectively); however, Newark is a larger municipality with more highways and major roads leading to its airport and port. Therefore, Newark has more road miles and a lower percentage of its roads/paths that are suitable for most cyclists.

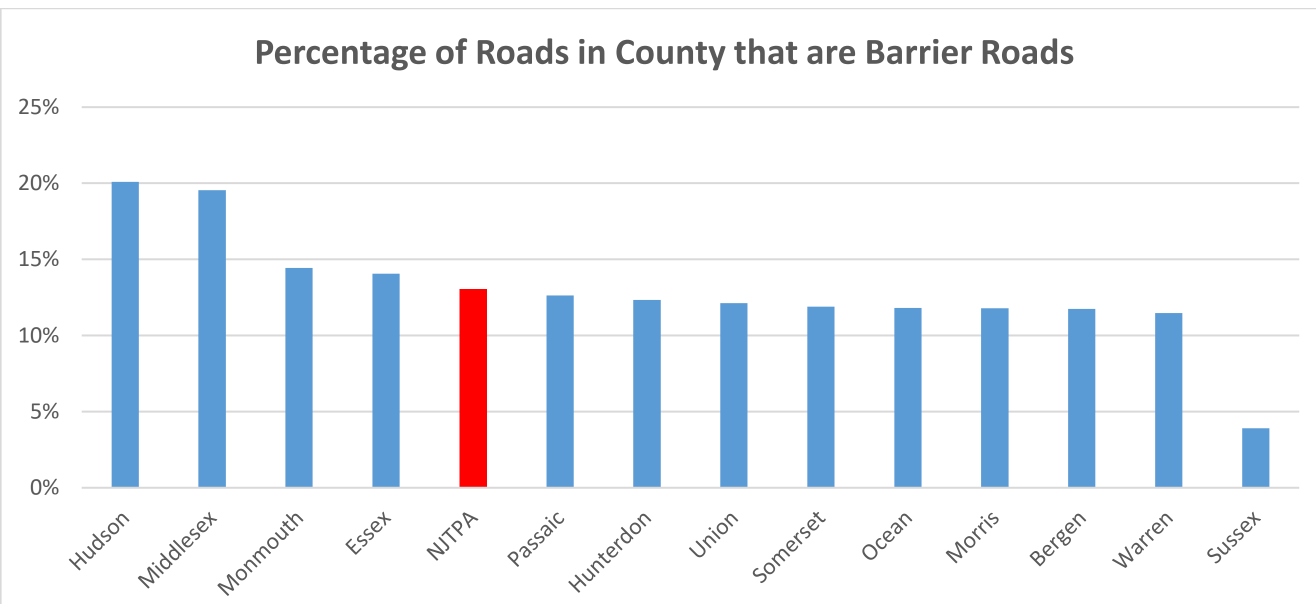


	Jersey City	Newark
5	4%	9%
4	14%	22%
3	60%	55%
2	21%	14%
1	0%	0%
Bike Friendly	21%	14%



	Jersey City	Newark
5	12	43
4	37	109
3	154	268
2	54	66
1	1	1
Bike Friendly	55	67

Barrier Roads: Hudson and Middlesex counties have the highest percentage of barrier roads in the NJTPA region.



Discussion

LBC Roads: Because of the data issues and the difficulties with defining the correct LBC under every circumstance, these LBC designations are very much a work-in-progress. Notably, a trail data collection effort is currently underway by the New Jersey Department of Environmental Protection (NJDEP) which may result in showing more mileage of LBC 1 paths throughout the region. In addition, the NJTPA began developing a Regional Active Transportation Plan in spring 2022, that will map trails comprehensively in the MPO region. Currently, Morris County accounts for almost 40 percent of the NJTPA's LBC 1 roads; however, that may be due to availability of Morris County trail data compared to other counties' data. The map shows a clustering of LBC 1 trails in Allamuchy State Park and the east-west Patriot's Path, which, despite its 53 mapped LBC 1 miles, still has several sections that are not complete or are designated for foot traffic only.

It is also important to acknowledge that having a high percentage or high mileage of LBC 1 or 2 roadways is not necessarily indicative of an ideal bicycling environment. If LBC 1 and 2 roadways and trails are not adequately accessible in a connected network, then the disjointed nature of the travel paths will result in severely limited mobility for cyclists. No analysis similar to the Mekuria et al. study (2012) was conducted in terms of connectivity and the formation of "bicycle islands," but such an analysis would help identify those connectivity issues.

Because there is no official application of LTS, the level assignment may differ depending on each study's criteria. For example, when comparing the current LBC analysis to the LTS performed in Newark's Bike Ironbound study[9], there are noticeable differences in assignment of LBC/LTS level. For example, in the 2015 LTS analysis, most of Ferry Street was designated as LTS 2; whereas in this 2021 analysis, it is designated as LBC 4. This is due to the differing definitions of LTS/LBC. The 2021 analysis had initially assigned most of Ferry Street as LBC 2, but because the truck ratio was high, it was elevated to an LBC 4. Most of the other roads in the 2015 Bike Ironbound study [9] were LTS 2 whereas they are designated as LBC 3 in the 2021 analysis. This is likely due to the pavement width or lack of shoulder criteria that will elevate a 25 mph street's LBC if the roadway does not have a shoulder or wide parking lane.

Barrier Roads: The results of existing conditions analysis shed light on the difficulties of bicycling in the region. Whether in an urban, suburb or rural area, barrier roads such as arterials that lack bicycle facilities or highways make connecting to major destinations difficult.

The prevalence of these roads in the NJTPA region leads to difficulties in creating a connected bicycle network for areas larger than single towns or sometimes neighborhoods. Revisiting of the design of some of these roads might be necessary to fulfill a desire to create a regionally scaled connected bicycle network.

Conclusion

The primary purpose of this research was to develop a map of the bicycle network in the NJTPA region that categorizes roads by their suitability for bicycling, thereby laying the groundwork up for future bicycle connectivity analyses.

The LBC analysis generated several other follow up research ideas. Traditional LTS research efforts focus predominantly on speed, number of lanes and presence of bicycle facilities, but consideration could also be given to integrating crash, volume, land use, geometry, grade and mode data. In particular:

- High crash areas may prompt a reduced LBC, although there is no standard definition for what is considered a "high crash area."
- High volume roads may trigger an increase in traffic stress, though there is a general lack of volume data on local and county roads.

- Land use categories such as commercial or residential as well as urban typologies such as urban, suburban, rural or commercial may also help to adjust LBC.
- Roadway geometry, such as curves, intersection configuration and shoulder widths may also help to determine the classification of a roadway's LBC, though such detailed data is limited or not reliably present in the NJDOT SLDs.
- Steep uphill grades may also correlate with a higher LBC, though systemwide data on road grade is not available as far as this research team knows.
- Presence of a high-frequency bus route may be another indicator for LBC. Bus routes are not noted in the NJDOT SLD but could easily be overlayed in ArcGIS as another factor to consider.

Reliance on the NJDOT SLDs has highlighted a few data issues. First, there is no official database of bike lanes; instead, the analysis utilized crowd-sourced (Open Street Map) data. Secondly, there were several instances of missing data such as speed limits or marked parking lanes. Several inaccuracies were also noted throughout the NJDOT SLD, such as roadway widths and number of lanes that were inconsistent with observations, though the extent to which inaccuracies may exist is not known.

Because of the data limitations and the difficulties with defining the correct LBC under every circumstance, these LBC designations are considered a work-in-progress. The NJTPA will continue to update the designations as data improves and criteria are refined. Therefore, this analysis, rather than offering actionable recommendations, provides a starting point to inform future studies at the local level. The report makes clear patterns across the region, particular targets for further investigation and explores a methodology for assessing bicycle compatibility in further planning activities.

In conclusion, identifying varying attributes within the regional road network, the research team was able to successfully classify all roadways in the NJTPA region from LTS 1 to 5. Future development will include an analysis of bicycle connectivity in the region.

Link to ArcGIS Viewer (shows LTS designations of all roads and bike paths):

http://njtpa.maps.arcgis.com/apps/View/index.html?appid=1c0d4e47c8a34556bb3e26c65d654f79

Potential use-case scenarios and future analyses

The development of the map and its associated data lays the groundwork for many different types of analysis and planning exercises. Some of these ideas could be pursued by NJTPA staff. Other use-case scenarios could be performed by planners and engineers at the subregional level.

1. **Examine connectivity to regional destinations such as train stations, schools, downtowns.** As part of this analysis, examine network connectivity and the role of barrier roads to understand how well cyclists may use LBC 1 and 2 to commute throughout the region. Be sure to assess connectivity through an equity lens to understand how potentially disadvantaged communities may be impacted by limited mobility or access to safer LBC 1 and 2 facilities. Previous studies such as the Assessment of System Connectivity on Northern New Jersey and the Regional Active Transportation Plan may assist in connectivity examinations. The findings from local examinations could be useful in the creation of local bike master plans, master plan transportation elements, Vision Zero plans and project coordination when considering capital recommendations. Below are some examples of what a local examination could look like.

   Figure A shows a highly urban area in Newark around Penn Station, a major connection for residents in the region. It serves residents within and outside Newark who rely on access to major destinations such as Jersey

City and NYC. The arrival of the e-scooter sharing program in Newark provides evidence of demand for Penn Station as a major attraction and the need for last mile service to transit. Unfortunately, bicycling around the station is hazardous with moderate to high traffic stress levels on the surrounding roads. Figure A shows a screenshot of the LTS/LBC for the Newark Penn Station area. Figure B shows a street-level view of one of the LBC 4 road Raymond Boulevard leading to the station. The roadway is approximately 90-feet with 8 lanes.

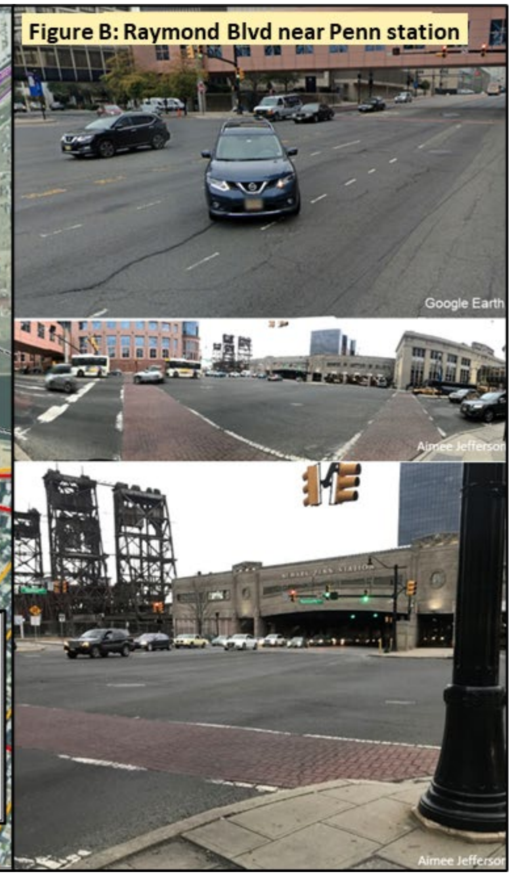


Figure C of Raritan Township provides a suburban example of how barrier roads can cause disconnections for walking and biking. Most of the roads in Raritan Township in Somerset County are identified as being comfortable for most adult cyclists at LBC 2. However, the town is split by US-202, a busy 4-6 lane road with a physical barrier in spots and infrequent intersections that inhibit crossing the road by foot or bike. One of the few crossings is at CR-567 (1st Avenue) which has an LBC of 3. The Raritan train station is south of US-202. Since US-202 has infrequent crossings, residents who would like to bike to the station in the north part of Raritan need to, first, bike to 1st Avenue and then cross US-202. This adds distance and stress to the bike trip. Residents in the southern section of town face similar issues biking to the shopping area north of US-202 or visit the park.

2. **Relate LBC to measures of destination proximity that are relevant to bicycle use, such as adjacent land uses (and land use mix), origin-to-destination (OD) trip distances and purposes, place types, and activity densities.** This is similar to the use case #1 but is slightly broader and more specificity may be achieved when popular OD trips are identified. Since LBC levels are more granular and show specific streets, it may make more sense to identify OD trips as they related to LBC on a more local level than regionally.
3. **Explore the impact of crossing treatments (lead pedestrian intervals, cross-section geometry etc.) across higher-level LBC roads.** Safer crossing treatments may provide opportunities to cross barrier roads and bridge disconnected LBC 1 or 2 "islands," which could significantly expand network reach for cyclists.

4. **Explore how to incorporate the geography and topography of the roads in the measure (curvature and elevation).** Topography was not considered in the LBC analysis and has not been found in any known LTS analysis, hilly roadways may make it more difficult for novice bicycle users and could increase an LBC 1 roadway to LBC 2 or 3.
5. **Improve data collection to include better sourcing of bike lanes, on-street parking, traffic volumes.** The recently released DEP trails dataset compiles trail data from across the state into a single platform. Trails data within this dataset could be reviewed and incorporated into the LBC analysis as potential LBC 1 segments. Integrating bus data and verifying SLD data elements like presence of parking and cross sectional widths could also improve the LBC analysis methods. Verifying and collecting such data is an intensive task and is typically done on a project-by-project basis. As data is improved, it can be integrated into the LBC data to improve the analysis.
6. **Assess the benefits and disadvantages of modifying the LBC criteria, such as truck thresholds.** Truck thresholds were not considered in other LTS analyses but were requested as an LBC criterion in the 2021 study.
7. **Consider additional criteria such as street network density or segment lengths** (often applied to pedestrian friendliness analyses).
8. **Explore the applicability of the LBC analysis for scooter riders and other micromobility modes.** Users of scooters and other micromobility modes may find their roadway-use comfort reflected in the LBC levels, though further thought would need to be given to the similarities and differences on how roadway comfort is experienced in comparison with bicycle users.

References

1. Mekuria, M.C., et al., *Low-Stress Bicycling and Network Connectivity*. 2012. p. 84p.
2. Burrows, M., *May 17 is National Bike to Work Day*. 2019, United States Census Bureau.
3. Dill, J., T. Carr, and B. Transportation Research, *BICYCLE COMMUTING AND FACILITIES IN MAJOR U.S. CITIES: IF YOU BUILD THEM, COMMUTERS WILL USE THEM.* Transportation Research Record, 2003(1828): p. p. 116-123.
4. Buehler, R., J. Pucher, and S. Congressional Research, *Cycling to work in 90 large American cities: new evidence on the role of bike paths and lanes.* 2017: p. pp 409-432.
5. Villamagna, A., et al., *Active Transportation Accounting: Developing Metrics for Project Prioritization*. 2019. p. 311p.
6. Wasserman, D., et al., *Evaluating OpenStreetMap's Performance Potential for Level of Traffic Stress Analysis.* Transportation Research Record: Journal of the Transportation Research Board, 2019. **2673**(4): p. pp 284-294.
7. Bearn, C., C. Mingus, and K. Watkins, *An adaption of the level of traffic stress based on evidence from the literature and widely available data.* Research in Transportation Business & Management, 2018. **29**: p. pp 50-62.
8. Semler, C., et al., *Low-Stress Bicycle Network Mapping: The District of Columbia's Innovative Approach to Applying Level of Traffic Stress.* Transportation Research Record: Journal of the Transportation Research Board, 2017(2662): p. pp 31–40.
9. WSP, P.B., New Jersey Departemnt of Transportation, *Bike Ironbound*. 2016.10. Patriots Path. Morris County Parks Commission. Oct 2015. https://www.morrisparks.net/index.php/parks/patriots-path/