

# Nashua Complete Streets plan

[Nashua Strong Towns](#) is proud to announce our comprehensive Complete Streets plan.

Complete streets are urban design principles that prioritize the safety and accessibility of all road users, including pedestrians, cyclists, and public transit, in addition to motor vehicles. These streets are designed to accommodate diverse modes of transportation, promote community well-being, and enhance the overall urban environment.

By fostering a more inclusive and sustainable transportation infrastructure, complete streets contribute to economic prosperity in cities. They stimulate local economies by encouraging walking and cycling, which can boost retail activity, create a sense of place, and improve overall public health. Additionally, the increased accessibility and connectivity provided by complete streets can attract businesses and residents, ultimately fostering a more vibrant and economically resilient urban landscape.

Nashua New Hampshire is taking necessary steps forward to move in the right direction - making its streets safer for more modes of active transit, as well as to push for a more sustainable future using the [Imagine Nashua Master Plan](#). However it lacks a concrete, specific policy to attain this future.

The Nashua Complete Streets plan attempts to provide a concrete set of goals as well as policies to ensure that we are able to reach the ambitious goals of the Nashua Master Plan. This policy provides both an explicit set of goals, and classification of major street types with specific, actionable steps to improve road safety and efficiency of both motorists and non-motorists alike.

## Goals

- **Accommodate residents of all ages and abilities who travel by foot, bicycle, public transportation or automobile**
- *Increase year over year pedestrian foot traffic*
- *Increase year over year micromobility miles traveled (bikes, scooters, etc.)*
- *Decrease year over year Vehicle Miles Traveled (VMT)*
- *Decrease year over year number of car crashes and pedestrian deaths to zero (Vision Zero)*
- *Decrease year over year total carbon emissions from transportation in Nashua*

## Methodology

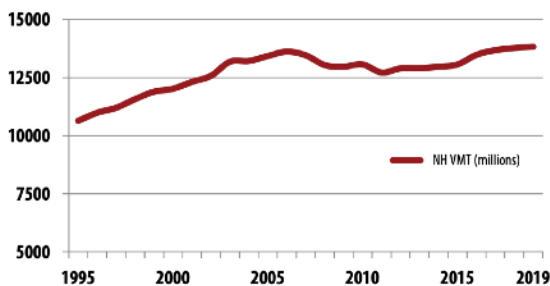
Currently Nashua's streets by default prioritize only one mode of transit, the private automobile. Many streets do not even have sidewalks, let alone adequate sized sidewalks. This has become such a problem that some city officials such as the new member of the Board of Public Works ran on [adding sidewalks to more streets](#). This is the sign of a city that has provided infrastructure for private automobiles at the expense of more vulnerable road users (pedestrians, cyclists, those taking transit) much to the city's detriment.

As a way of tracking progress on ensuring all road users are provided an adequate amount of infrastructure to get around, we have done our best to model these needs in concrete, specific, goals to hit every year. With the general trend of goals is to increase alternative modes of transport and to decrease private automobile transport.

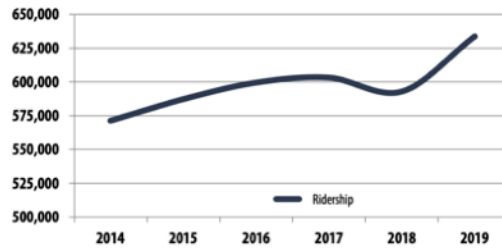
We believe these changes will not only make Nashua a more pleasant and safer place to live, but also be a boon to small business owners alike. In some studies, a fully pedestrianized street increased business to retail areas by as much as 83% and neighboring non-pedestrianized streets saw as much as a 25% increase in business.<sup>1</sup>

In New Hampshire, VMT have been on a steady incline since around 2010, while public transit ridership as a whole has been on the decline. Boston Express is one of the few transit agencies which has seen an increase.<sup>2</sup>

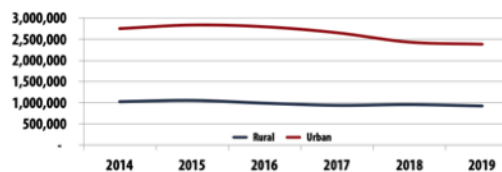
Overall VMT by Year



Boston Express Ridership



Public Transit System Ridership



Showing that while transit ridership in the general area has decreased, desire to go to places with good transit ridership in an effective and cost-efficient way has increased. It is important we prioritize similar goals of creating places that people want to go to ensure a safe and prosperous city.

<sup>1</sup> Impact of pedestrianization and traffic calming on retailing [https://www.academia.edu/download/67814539/0967-070X\\_2893\\_2990004-720210630-1737-1hcrxh4.pdf](https://www.academia.edu/download/67814539/0967-070X_2893_2990004-720210630-1737-1hcrxh4.pdf)

<sup>2</sup> NH DoT FactBook (2021) <https://mm.nh.gov/files/uploads/dot/remote-docs/2021-nhdot-fact-book.pdf>

# Complete Streets

When it comes to implementing Complete Streets, there are many potential methodologies; everything from a points system<sup>3</sup> to well meaning but soft ideas that are left up to the interpretation of the implementor.<sup>4</sup> If there is a system you can imagine for implementing Complete Streets, it has probably been made before.

For Nashua's Complete Streets plan, we have opted to take inspiration from Howard County Maryland - named as having one of the most complete and strongest complete streets policies in America by Smart Growth America.<sup>5</sup> A full list of America's most complete streets policies as of 2023 is included in the footnotes.<sup>6</sup>

Howard County has some of the strongest policies using a number of metrics - but it is at its strongest when it breaks down the major street types and provides concrete examples of how they must be laid out.<sup>7</sup>

Figure included from volume 3 of Howard County's Complete Streets design manual.<sup>8</sup> We have opted to do the same for Nashua's Complete Streets plan.

Figure 1-3. Town Center Connector.



TABLE 1-2. TOWN CENTER CONNECTOR DIMENSIONS AND CHARACTERISTICS

Street Type	Right of Way Width	Center Turn Lane/Median	Inside Travel Lane*	Outside Travel Lane	Shoulder/Offset from Curb	Parallel Parking	On-Street Bike Lane	Buffer Zone**	Separate Bike Lane	Sidewalk	Shoulder/Use Path	Target Speed	Carrying Capacity
Town Center Connector	88'	11'	N/A	11'	N/A	8' **	N/A	6'	6.5'	5' min (2 sides)	N/A	25 mph	<20k
Town Center Connector No Parking	72'	11'	N/A	11' **	N/A	N/A	N/A	6'	6.5'	5' min (2 sides)	N/A	25 mph	<20k

\*Aggregated center intersection; \*\* Includes 1' gutter pan; \*\*\* Dimension measured from back of curb to sidewalk/separated bike lane/shoulder use path

<sup>3</sup> Northampton Complete Streets Plan [https://northamptonma.gov/DocumentCenter/View/19849/Northampton-CSPP-Summary-Memo-Final\\_20220419](https://northamptonma.gov/DocumentCenter/View/19849/Northampton-CSPP-Summary-Memo-Final_20220419)

<sup>4</sup> <http://www.concordnh.gov/1327/Traffic-and-Transportation>

<sup>5</sup> <https://www.howardcountymd.gov/News051823>

<sup>6</sup> <https://smartgrowthamerica.org/resources/the-best-complete-streets-policies-2023/>

<sup>7</sup> <https://www.howardcountymd.gov/DM-updates>

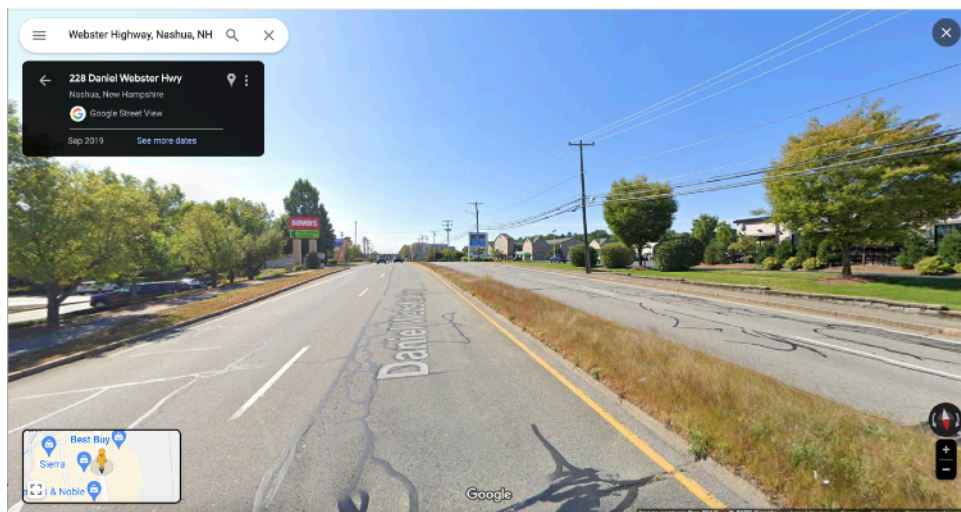
<sup>8</sup> <https://www.howardcountymd.gov/public-works/resource/howard-county-design-manual-volume-iii>

# Major Street types

Across Nashua there are a number of different street types, ranging from small alleys like 8 Eldridge Street near Bagel Alley to wide stroad type roads like Daniel Webster Highway.



*8 Eldridge Street*



*228 Daniel Webster Highway*

The goal of this document is not to categorize every single street type and to lay out how they need to be improved, but to try and define the categories most major street types in Nashua and document how they can be improved. The plan may not be comprehensive of every single type of street, but our goal is to cover +90% of streets in Nashua.

Any edge cases can be handled in a followup policy.

To fully realize these plans, **we need thinner lanes for automobiles** (9-10 foot as recommended by John Hopkins University<sup>9</sup> - full study here<sup>10</sup>, or in some cases even slimmer) and **removal of center turning lanes**. This is consistent across all street type classifications. Current lane width at +12ft wide even in our most pedestrian centered places such as Main Street are not conducive to having complete streets.

## Rolling out street changes

Many of the proposed road changes are wide and sweeping. When it comes to making road design changes, at Nashua Strong Towns we are well aware of the cost of making changes. In order to ensure low cost to the town while still prioritizing other road users, we propose making road changes in two steps. First to “high priority roads” followed by all other roads as they need regular repair and maintenance.

We are classifying high priority roads as roads generally with high pedestrian traffic (Main Street especially), or roads with high levels of pedestrian/cyclist fatalities and injuries. Updating these roads as soon as possible is critical to pedestrian safety and so we recommend updating as soon as possible.

For every other road, we recommend making road changes during regular road maintenance and repair. As the updated spec will be built into the road maintenance, the cost of the changes will remain low or negligible compared to the cost of the regular road maintenance. This also provides an iterative rollout to road changes, allowing the town to make changes to the policy as needed if there are any changes the town wishes to address while updating roads.

---

<sup>9</sup> <https://www.cnu.org/publicsquare/2023/11/08/johns-hopkins-study-recommends-narrow-travel-lanes>

<sup>10</sup> <https://narrowlanes.americanhealth.jhu.edu/report/JHU-2023-Narrowing-Travel-Lanes-Report.pdf>

# Classifying major street types

For a street to be complete, let's make sure it is clearly understood what features are needed and which types of streets we are classifying. Streetmix links with additional information are included for each type of street/road. A summary of key features is included at the beginning of each street type. **Streetmix images are intended to be illustrative, not exact.**

## Boulevard<sup>11</sup>

*Key features include:*

- Wide comfortable sidewalks for pedestrians to walk or wait for transit
- Protected one way cycle lanes on each side of the road wide enough for two cyclists to ride side-by-side
- Two lanes for automobile traffic on each side of the road, one of which could later be converted to a bus or tram lane
- Concrete island with trees or planters separating automobile lanes
- No on-street parking is provided
- Significant bicycle parking provided at sections near major businesses

The Boulevard street type is intended for high volume, higher density mixed-use areas. Volumes of people walking and riding bicycles and other micro-mobility devices like scooters are anticipated to be high due to dense residential and commercial development. Therefore, separate walking and bicycling facilities are required instead of a shared use path. Due to anticipated high motor vehicle volumes, a separated bike lane is recommended instead of an unprotected on-street bike lane.

This boulevard is the reimagining of what one type of Stroad could be.



## Main Street<sup>12</sup>

*Key features include:*

- Speeds limited to 20mph for automobiles
- Extra wide sidewalks to accommodate both pedestrians and on-street dining

<sup>11</sup> <https://streetmix.net/darrienglasser/1/boulevard-prev-stroad>

<sup>12</sup> <https://streetmix.net/darrienglasser/2/main-st>

- Protected one way cycle lanes on each side of the road wide enough for two cyclists to ride side-by-side
- A single lane for automobile traffic on each side of the road
- Pedestrian island included for both traffic calming and pedestrian convenience
- On-street automobile parking is strongly not recommended
- Bicycle parking provided in place of some of the on-street automobile parking

The Main Street Street type is intended for moderate volume, higher density mixed-use areas. Volumes of people walking and riding bicycles and other micro-mobility devices like scooters are anticipated to be high due to dense residential and commercial development. Therefore, separate walking and bicycling facilities are required instead of a shared use path.

Wide sidewalks are provided to ensure pedestrian comfort as well as on-street amenities like restaurant seating within a publicly owned and leased frontage zone. When midblock pedestrian crossings are provided, curb extensions and median refuges should be provided to enhance pedestrian safety. On street parking is not recommended as this is intended to be a pedestrian first environment.

**The Main Street street type - while initially intended for just Main Street can and should be used for new medium-high density mixed use areas as the zoning permits it.**



## Neighborhood Street<sup>13</sup>

*Key features include:*

- Speeds limited to 20mph for automobiles
- Relatively large sidewalks to ensure folks are able to comfortably walk
- Protected one way cycle lanes on each side of the road wide enough for two cyclists to ride side-by-side
- One traffic lane in each direction for automobiles
  - Yellow paint is not provided in the median of the road to calm traffic
- On-street bicycle and automobile parking on one or both sides of the road depending on width in a 1:25 ratio (bicycle:automobile)

The Neighborhood Streets are intended for medium to lower density suburban areas. Large sidewalks are provided for pedestrians on both sides of the street. Buffered bike lanes are

<sup>13</sup> <https://streetmix.net/darrienglasse/4/neighborhood-street-1>

provided for folks not in automobiles. Given lower density, parking lanes are included on both sides of the street. These are best used in suburban neighborhoods with exceptionally wide roads. Many examples of these can be seen in ward 9, but can be found throughout Nashua.



## Neighborhood Yield Street<sup>14</sup>

*Key features include:*

- Speeds limited to 20mph for automobiles
- Relatively large sidewalks to ensure a comfortable walking environment
- Naturally narrow roads to calm traffic
- Optional on-street bicycle or automobile parking to additionally narrow the roads and provide additional traffic calming in a 1:25 ratio (bicycle:automobile)

The Neighborhood Yield Street type is a local street type intended for lower-medium density residential areas. When the street is wide enough, on-street parking effectively narrows the roadway, which requires vehicles to yield to oncoming traffic and slows vehicular speeds. Many roads that could benefit from the Neighborhood yield street are adequately small and will not fit on-street parking.

Additionally, decreased car traffic, narrow roads, and increased street complexity means cars will naturally move more slowly down these streets, allowing cyclists to safely share the streets with cars. Sidewalks on both sides of the street provide adequate space for people walking, and for young children to ride bicycles. These types of streets can be found most commonly in areas like French Hill in ward 3, but exist across Nashua.



<sup>14</sup> <https://streetmix.net/darrienglasser/5/neighborhood-yield-street>



## Intersections

No street would be complete without an intersection, and it is critical intersection design is done well. Prioritizing all modes of transport at intersections isn't always done well in the United States, but there is past precedent.

### A better intersection

To ensure vulnerable road users are provided with proper safety while crossing the road, the design needs to be built into **all** intersections. When designed properly, entrances and exits of intersections are narrowed and curb cutouts are added ensuring drivers must take wide turns that force them to slow down and looking at both vulnerable road users making it more difficult to miss them when doing a tight, high speed turn that is so common in Nashua.

This type of intersection additionally provides more protection for vulnerable road users by ensuring there are fewer points of conflict along the way.



Cambridge MA recently added an intersection like this at Inman square<sup>15</sup>, ensuring the intersection is provided equitably to all users of the road.

Proper guidance on protected intersections can be found on the National Association of City Transportation Officials - Protected Intersections<sup>16</sup>.

### Widely used intersection designs we should definitely not use

As the concept of walkability continues to become more popular across America a number of different designs have been trialed. Some even in Nashua. As these are exceptionally common in America, it was imperative we call out their design and the importance of not using them.

---

<sup>15</sup> <https://www.boston.com/news/the-boston-globe/2023/09/01/video-new-bike-lane-infrastructure-netherlands-inman-square-redesign/>

<sup>16</sup> <https://nacto.org/publication/dont-give-up-at-the-intersection/protected-intersections/>

---

## The combined bike/turn lane<sup>17</sup>

This configuration is exceptionally common and particularly dangerous. The design begins with a bike lane on the side of the road, only for it to move towards the middle of the road as a turning lane appears on the right. This configuration is particularly dangerous in that it puts the cyclists in-between two high speed motor vehicles. In order to ensure we are properly protecting all modes of transit, we cannot consider this design.



---

<sup>17</sup> <https://nacto.org/publication/urban-bikeway-design-guide/intersection-treatments/combined-bike-laneturn-lane/>