Pedestrian Demand Map Methodology

Methodology

The NYC Pedestrian Mobility Plan framework assigns one of five broad street categories to each New York City street. Each of the five categories reflect different levels of pedestrian need on the city's sidewalks. How were these five categories developed? The street categories were determined through a process that considered a range of pedestrian generators including transit, parks, tourist attractions, businesses, and schools. Data determining the location and generation capacity of each of these pedestrian generators was compiled into a model which was in turn used to generate a map illustrating which New York City streets fall into each category.

For Regional Corridors and Global Corridors which are the two categories with the most pedestrian use, generators also included unique destinations. Unique destinations are places that draw visitors from outside of New York City, such as Time Square and the Barclays Center in Brooklyn. For the categories of Neighborhood Corridor, Community Connector and Citywide Baseline, the pedestrian generators considered were offices, parks, local markets, other small businesses, as well as schools, subway lines and bus lines.

The model built from data based on pedestrian generator was developed because it was not possible to take pedestrian counts on each of New York City's over 32,000 streets. (See below for more detail about how different types of pedestrian generators were integrated into and weighted in the model). The model was adjusted for factors such as population density in areas of NYC where more trips are completed by car. Once pedestrian demand was modeled for a given block, each city block was assigned a category. The model and resulting map include the 'Citywide Base Line category' for City streets where there is relatively little pedestrian activity.

In cases where a street was assigned changing categories from block to block the length of the street was assessed as a whole and in some cases smoothed to create greater consistency in category designation along the street's length. The map continues to be evaluated for accuracy by staff at the NYC DOT and will be updated as pedestrian generators across New York City change.

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Data Sets Included in the Model

The following eight data sets were included in the model to simulate pedestrian trip generation and demand.

1. Retail Area Density
2. Office Area Density
3. Residential Density
4. Restaurant Density
5. Parks
6. School Frontages
7. Subway Stations
8. Hospitals

Retail, Residential, and Office Area

The Retail and Office Area data sets used in the Pedestrian Mobility Plan model were created by the NYC Department of City Planning. These data sets use building footprints and land use codes to estimate the square footage of retail and office space per street segment. This field was then divided by street length to estimate a total square footage per mile.

Restaurants

Restaurants were identified using the latest NYC Department of Health and Mental Hygiene Restaurant Grade datasets. The number of restaurants were then classified by street mile. Each corridor category above the Baseline category streets needed to have more than one restaurant per street in addition to the requirements below:

- Community Connectors, greater than 1 restaurant per 100 feet of street
- Neighborhood Corridors, 1 to 2.25 restaurants per 100 feet of street.
- Regional and Global Corridors, more than 2.25 restaurants per 100 feet of street.

Parks

When including data on parks into the Pedestrian Mobility Plan model certain parks that draw regional and international visitors such as Central Park and Prospect Park were hand selected. The model also used data from the NYC Department of Parks & Recreation's "Walk to a Park" initiative which designates each park entrance in New York City as either a "Major" park entrance or a "Minor" park entrance. Blocks adjacent to "Major" park entrances were designated Community Connectors. Street segments that contained parks such as playgrounds and community gardens that were not included in the "Walk to a Park" study were also designated Community Connectors.

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Schools

Given that New York City schools range in size and that one school building can sometimes have entrances on multiple city streets, school frontages were determined. A school frontage is a street that boarders a school site. Schools were ranked into two categories based on combined enrollment. Street segments that fronted schools with enrollment over 4,000 students were designated Neighborhood corridors. Streets segments that fronted schools with under 4,000 students were considered Community Connectors.

Subways

For subways, on every street where there was a subway station identified, the average weekly ridership data from January 2020 was used to determine what type of pedestrian generation the subway station created. Streets segments on which there were subway stations with ridership over 50,000 were designated as Regional Corridors. Streets segments on which there were subway stations with ridership under 50,000 were designated as Neighborhood Corridors.

Hospitals

The Hospital data set used in the Pedestrian Mobility Plan model is from the NYC Department of City Planning's MapPLUTO file. This data set uses building footprints and land use codes to associate the hospital to the adjacent streets. Street segments with hospitals were designated as Neighborhood Corridors.

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