

Chinatown Pedestrian Circulation Study

Prepared for Manhattan Community Board 3
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Project Description

East Broadway is a densely populated shopping destination on the southern edge of Chinatown in Manhattan Community Board 3, attracting a multitude of patrons per day and generating high volumes of pedestrian traffic. While the lively atmosphere on streets like East Broadway is a major part of what makes Chinatown a unique community and an iconic destination, the amount of activity occurring in the area often creates an environment that is difficult to navigate for pedestrians. Commercial outlets, stairwells, basement entryways, street vendors, interstate bus loading and unloading, and street furniture (e.g. newspaper boxes or muni meters) combine to heavily constrict pedestrian movement within the study area. The *Chinatown Pedestrian Circulation Study* analyzes existing conditions within the study area of East Broadway and identifies issues that adversely affect pedestrian circulation. Building upon work by previous FCNY fellows, the study also evaluates accessibility for seniors and mobility-impaired individuals. Following an evaluation of existing conditions and pertinent issues, recommendations for improving pedestrian circulation and enhancing accessibility are proposed.

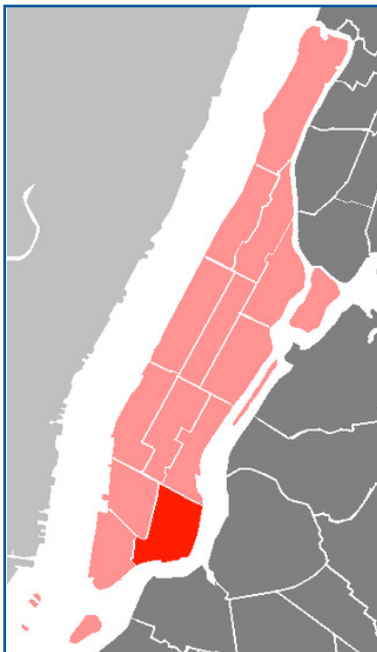


Background

Community Board 3 (CB3) is located in the southeastern portion of Manhattan and encompasses the Lower East Side, East Village and Chinatown neighborhoods. Chinatown and the Lower East Side have traditionally been known as immigrant communities and remain so today, with 36 percent of the population being foreign born. In addition to a strong immigrant presence, CB3 is home to a large senior population. Seniors comprise 15 percent of the population (the third highest concentrations of elderly residents in Manhattan) and 70 percent of seniors in CB3 are foreign born.¹² Additionally, 9 percent of the total population and 33 percent of seniors in CB3 live with a mobility disability.³ These statistics indicate that a large share of residents in CB3 are either mobility impaired or face language barriers. Implications of these findings suggest that accessibility for the mobility impaired and access to bilingual services is a key issue in CB3.



East Broadway, looking west from the Manhattan Bridge



CB3 boundaries, highlighted in red
Source: M. Minderhoud



East Broadway at Catherine St.

1 New York City Department of Health. (2015). Community Health Profiles 2015: Manhattan Community District 3. Retrieved from: <https://www1.nyc.gov/assets/doh/downloads/pdf/data/2015chp-mn3.pdf>

2 NYC Department for the Aging. (2013, November 4). Profile of Older New Yorkers. Retrieved from: http://www.nyc.gov/html/dfta/downloads/pdf/demographic/profile_olderNYRS_0911_newsummaries_update.pdf

3 American Community Survey (ACS). 2008-2012 estimates.

Existing Conditions

The project study area extends along East Broadway between Kimlau Square and Rutgers Street, in the southern portion of Chinatown. This span of East Broadway contains a lively mix of residences, shops and services, comprising everything from food markets, restaurants and pharmacies to beauty salons, hardware stores and medical offices (see appendix for a breakdown of all commercial services within the study area). The abundant mix of retail and services generates heavy volumes of pedestrian-related retail activity and brings many visitors to the area on a daily basis. Additionally, the M9 bus and the F train both operate within the study area, bringing additional foot traffic to the area.

Buildings within the study area are mostly low-rise in character, ranging from one to twelve stories in height. Given the neighborhood's long and storied history, many buildings in the area are walk-ups and contain no elevator, creating accessibility issues for the mobility impaired. The sidewalk environment on East Broadway creates mobility issues as well. Although the standard sidewalk width is 11 feet, numerous objects within the study area obstruct navigable sidewalk space and impede pedestrian circulation. While the constriction of effective sidewalk space is certainly a problem for seniors and the mobility impaired, poor circulation is an issue that adversely affects all pedestrians.



Existing Conditions, East Broadway

Methodology

In order to assess factors that impact pedestrian circulation within the study area, surveying was conducted to develop an inventory of objects that reduce usable sidewalk space. These objects were placed in the following categories:

Street furniture: Trash cans, fire hydrants, muni meters, streets sign / streetlight posts, postal boxes, newspaper stands, pay phones, WalkNYC (way finding) signs, street trees, and planter boxes.

Vendor materials: Vendor stands, sidewalk display tables and/or shelving.

Stairwells: Above- or below-ground entryways that protrude onto the sidewalk.

In addition to inventorying, a ranking system was established to assign a degree of obstruction to sidewalk objects. Based on field observations, sidewalk objects were ranked as follows:

1 (No Obstruction) = Object occupies usable sidewalk space but does not impede pedestrian circulation.

2 (Partial Obstruction) = Object occupies usable sidewalk space and has some adverse impact on pedestrian circulation.

3 (Heavy Obstruction) = Object greatly obstructs usable sidewalk space and severely impacts pedestrian circulation.

After sidewalk obstructions were inventoried and rated, geographic analysis was conducted in order to determine areas where effective sidewalk space is greatly limited. Areas heavily concentrated with obstructions that severely impact pedestrian circulation were assigned into high-priority focus areas for further analysis. Recommendations were then developed to help improve circulation in areas with heavy pedestrian volumes and major sidewalk obstructions.



Building upon work from a previous Community Board 3 FCNY fellow (Rich, 2015), business accessibility for seniors and the mobility impaired was also assessed within the study area. The purpose of this evaluation was to determine gaps in commercial and service accessibility for seniors and the mobility impaired. Using the ranking system developed by Rich, the degree of business accessibility was ranked as follows:

1 (Good Accessibility) = no steps at the entrance, some degree of obstruction is potentially present.

2 (Fair Accessibility) = one or two steps at the entrance and some degree of obstruction is present.

3 (Poor Accessibility) = requires the use of stairs, usually second floor or underground stores.

After inventorying and ranking business accessibility, analysis was conducted to determine which (if any) vital services within the study area are unavailable to seniors and the mobility impaired.

Identified Issues

Vendor Stands & Sidewalk Displays

Many shops within the study area display goods on the sidewalk, protruding and constricting effective sidewalk width. Many of these sidewalk displays qualify as stoop line vendor stands, as they sell fruits, vegetables, confectionery, or flowers from a stand outside or directly adjacent to an existing retail establishment. Additionally, a number of stand-alone street vendor stands are also located within the study area. Both the vendor stands and sidewalk displays inhibit pedestrian circulation by attracting a congregation of customers within a concentrated area. Vendor and sidewalk displays are particularly problematic in areas where adjacent sidewalk furniture creates chokepoints that seriously impede pedestrian circulation. Many (but not all) of the street vendor stands and sidewalk displays were ranked as heavy obstructions to pedestrian circulation (obstruction rating = 3). While vendor stands and sidewalk displays are dispersed around the study area, sidewalk vending activity is heavily concentrated between Market and Catherine Streets.



Vendor, East Broadway at Market St.

Protruding Stairwells

Many above- and below-ground entrances within the study area contain stairwells that protrude into the sidewalk and impede pedestrian circulation. When combined with other sidewalk furniture, the stairwells create chokepoints that greatly inhibit navigable sidewalk space. Similar to vendor stands and sidewalk displays, many stairwells within the study area received an obstruction rating of 3, indicating a significant impediment to pedestrian movement.



Pedestrians walking in parking and bicycle lanes / jaywalking

The standard 11-foot sidewalk in the study area is often too narrow to accommodate the many competing uses on East Broadway. Consequently, frustrated pedestrians often leave the sidewalk and walk in the parking or bicycle lanes, where travel is both faster and more direct, creating potentially hazardous situations for pedestrians, cyclists, and drivers alike. Pedestrian traffic can also become excessively bad on one side of the street. When this situation occurs pedestrians will often cross to the other, less congested side of the street midblock where no crosswalk is present, jaywalking and creating unsafe traffic situations.



Heavy Delivery Volumes

Delivery trucks bring products to the many businesses and vendors of East Broadway on a daily basis. Loading and unloading of goods on the sidewalk restricts navigable sidewalk space, making it very difficult for pedestrians to navigate East Broadway. Deliveries to outdoor vendors are particularly problematic, as boxed goods and vendor tables and shelves combine to make pedestrian space practically non-existent. Delivery vehicles are present at multiple times throughout the day and greatly exacerbate the already chaotic pedestrian environment on East Broadway.



Motor Vehicle-Related Pedestrian Injuries & Fatalities

Between 2010 and 2015 there were a total of 42 motor vehicle-related pedestrian injuries and 1 fatality within the study area. All of these incidents occurred at intersections, with the vast majority occurring at the intersection of East Broadway and Market St. (12 pedestrian injuries), East Broadway and Forsyth St. (14 pedestrian injuries), and East Broadway and Pike St. (10 pedestrian injuries, 1 fatality). Traffic safety is clearly an issue within the study area, especially given the particularly vulnerable senior and mobility-impaired populations living in the surrounding neighborhoods.



Pedestrian injuries and fatalities, 2010-2015
Source: NYC Vision Zero

Entertainment Production Activity

The Lower East Side and Chinatown have served as the backdrop for many major motion pictures, network television shows and commercial advertisements. Although data on film permits is no longer publicly available, observational evidence suggests that filming activity is a regular occurrence within and surrounding the study area. While revenue from film permits is great for New York City, the amount of space occupied by filming crews is often problematic at the neighborhood level. Within the study area, trailers parked along East Broadway during a film shoot greatly constrict effective sidewalk space and impede pedestrian circulation.



Film production trailers,
East Broadway at Catherine St.

Intercity Bus Stops

Intercity bus companies must apply for a permit in order to arrive and depart on New York City streets. Companies apply to the New York City Department of Transportation (DOT) for approval to operate. If awarded the permit, intercity bus companies are granted permission to pick up and drop-off passengers at a designated site. There are three DOT-approved intercity bus stops within the study area. The first is operated by AA Bus, Inc. and is located in front of 160 East Broadway; the second is operated by GD Tour Inc. and located in front of 125 East Broadway; and the third is operated by Rockledge Bus Tour Inc. and located in front of 150 East Broadway (NYC DOT). GD Tour Inc. offers four daily arrivals and nine daily departures, while Rockledge Bus Tour Inc. offers 29 daily arrivals and 32 departures (no information could be found on AA Bus, Inc.; research suggests that they now operate as part of Rockledge Bus Tour Inc.).

Although the addresses mentioned above represent the permitted stop sites, GD Tour Inc. lists its stop location as 127 East Broadway and Rockledge Bus Tour Inc. lists its stop location as 133 East Broadway. While it is unclear if GD Tour and Rockledge are violating the terms of their permits on a daily basis, multiple unmarked buses were seen departing from the parking lot adjacent to 133 East Broadway during one field visit. All of the stop locations – those permitted and unpermitted – are located on a section of East Broadway that is relatively untraveled by pedestrians throughout most of the day. Nonetheless, intercity bus loading and unloading in the study area can pose a problem to pedestrian circulation during peak commute times.

Lack of Bicycle Parking

With only two CityRacks located within the study area (in front of 133 and 162 East Broadway), there is a noticeable lack of sidewalk bicycle parking. Without adequate bike parking facilities, bicycles are instead locked to street signposts or railings, further constricting useable sidewalk space along East Broadway.

Inaccessible Retail, Service and Cultural Facilities

The study area contains many above- and below-ground businesses and cultural facilities. Many of these businesses and cultural facilities are located in buildings that lack elevator access and are thus inaccessible to seniors and mobility-impaired individuals. Fortunately some of the services provided in locations with poor accessibility are offered elsewhere within the study area, but unfortunately others are not.

Difficult to access / inaccessible services and facilities with alternative options located elsewhere within the study area include: accounting offices, acupuncture clinics, beauty supply stores, wedding supply stores, for-hire car services, computer



Intercity Bus Stop, 133 E. Broadway



Lack of Bicycle Parking

stores, cultural facilities, dental offices, florists, hardware stores, medical offices, herbal shops, immigration assistance services, import/export services, insurance brokers, jewelry shops, kitchen supply stores, massage parlors, pharmacies, religious institutions, restaurant supply stores, beauty salons, spas, tailors, tattoo parlors, telecommunications offices, traditional Chinese medicine providers, travel agencies, and vocational schools.

Difficult to access or inaccessible services and facilities with no alternative options in the study area include: driving schools, employment agencies, mailbox rental services, notary publics, supermarkets and sign makers.



Inaccessible above-ground businesses

Best Practices: Improving Pedestrian Circulation

Sidewalk Widening

In areas with high pedestrian volumes, widening the existing sidewalk may help relieve congestion. If appropriate, excess space in the parking, moving or bike lanes can be reallocated to widen the sidewalk. Although a permanent sidewalk widening using concrete or other comparable materials may be desirable, the sidewalk can also be widened in advance of or in place of permanent reconstruction using interim materials such as epoxied gravel, planters or flexible delineators. The use of interim materials provides a low-cost way to assess the impacts of the intended project in real time and realize immediate benefits. Temporary projects can also be reconfigured based on their performance, allowing for improved design if the project is made permanent.



Painted sidewalk extensions, Manhattan
Source: Streetsblog

Curb Extensions

A curb extension (a.k.a. neckdown or bulb-out) is “an expansion of the curb line into the lane of the roadway adjacent to the curb (typically a parking lane) for a portion of a block either at a corner or mid-block.”⁴ Curb extensions physically and visually extend the curb and can greatly improve pedestrian safety by calming traffic, shortening crossing distances, improving driver visibility of pedestrians, and preventing drivers from passing each other in the parking lane. Two curb extensions can also be placed on opposite sides of the street to create a midblock narrowing. In addition to enhancing safety, curb extensions create additional sidewalk space that can be used to alleviate crowding and reducing sidewalk obstructions, or for making streetscape enhancements by adding seating, planting or other street furniture. Moreover, strategically placed curb extensions can help reduce illegal activity by keeping the fire hydrant zone clear when placed in front of fire hydrants and preventing illegal parking in the crosswalk when located at corner crossings. Intermittent curb extensions can be used in areas where some loading, drop-off, or parking access must be maintained. Drawbacks of curb extensions include the loss of curbside parking and potentially complicating delivery access and garbage removal.



Painted curb extension, East Broadway at Pike St.

Street Seats / Parklets

Street seats (a.k.a. parklets) are public seating platforms that replace several on-street parking spaces. Street seats are typically installed where narrow or congested sidewalks prevent the installation of sidewalk cafes or where additional seating and public space is needed. In New York City, street seats are administered through DOT at the request of local businesses, business improvement districts, and non-profits, and temporarily replace on-street parking spaces to provide additional public seating during warm-weather months.



Street Seats - Pearl St., Manhattan
Source: NYC DOT

4. New York City Department of Transportation. (2015). Street Design Manual. Retrieved from: <http://www.nyc.gov/html/dot/downloads/pdf/nycdot-streetdesignmanual-interior-lores.pdf>

Recommendations

Recommendation 1

Install painted curb extensions in the following locations:

1. South side of East Broadway, between Market St. and Catherine St.
2. South side of East Broadway, between Forsyth St. and Market St.

The section of East Broadway between Market St. and Catherine St. contains nine stoop line vendor stands, six stairwells that protrude onto the sidewalk, a multitude of street furniture, and heavy delivery volumes. Additionally, the section of East Broadway between Forsyth and Market contains a problematic chokepoint involving a set of payphones and one of the two stoop line vendors located on the block. In order to better facilitate pedestrian movement, it is recommended that Community Board 3 file a request with NYC DOT to study the feasibility of installing painted curb extensions on the south side of East Broadway between Market St. and Catherine St., and between Market St. and Forsyth St.

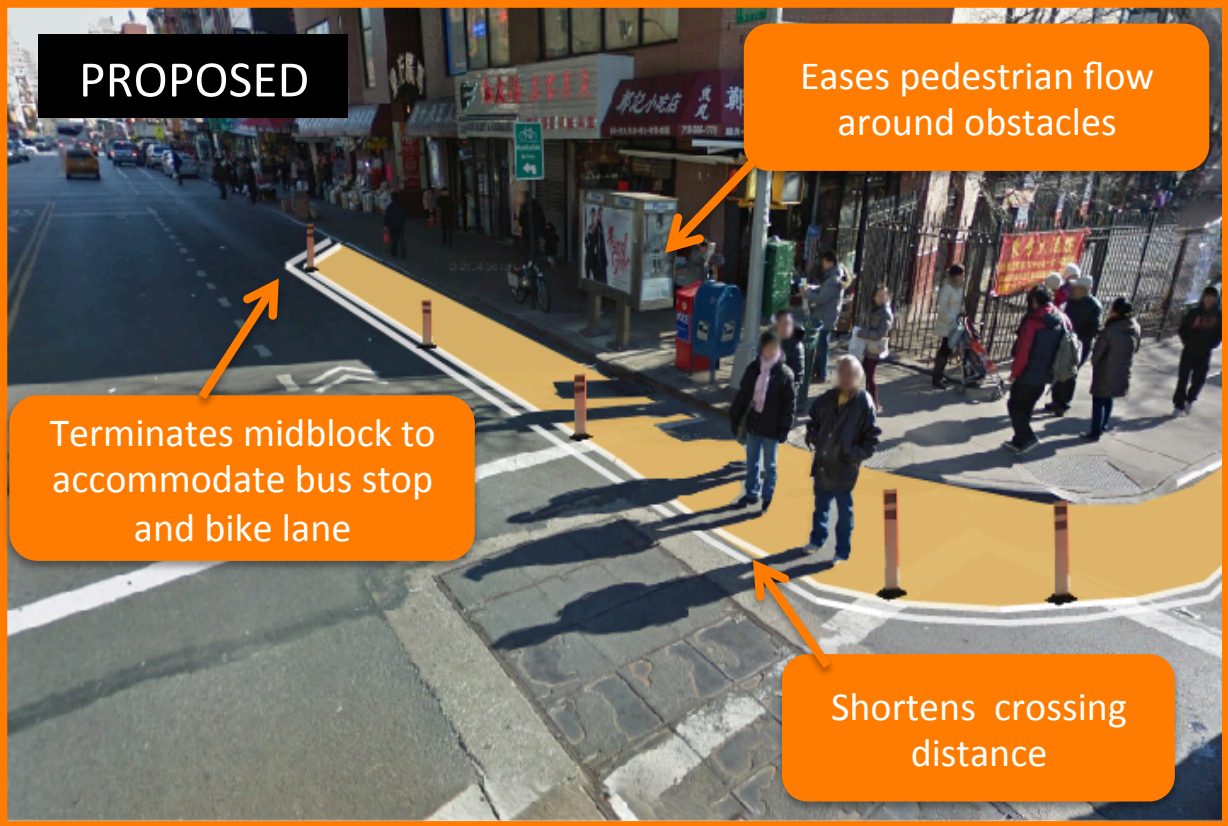
The Market – Forsyth St. curb extension should extend toward Forsyth St. from the southeast corner of Market and East Broadway for approximately half the distance to Forsyth St., long enough to better accommodate pedestrian circulation while still allowing space for the M9 bus to stop at the corner of East Broadway and Forsyth St. without blocking the bicycle lane. The Market – Catherine St. curb extension should be placed in areas with concentrated vendor activity (from the corner of East Broadway and Market to 69 East Broadway and in front of 57 to 49 East Broadway). Curb extensions would not only provide additional space for pedestrian circulation, but would also provide space for seating, planting and other streetscape improvements that are currently lacking along East Broadway. It is recommended that CB3 enlist the assistance of the Chinatown Partnership to help maintain any planting and/or seating that is added along the curb extensions. Combined, the recommended sidewalk extensions would require the loss of only approximately five on-street parking spaces - two spaces for the curb extension spanning from the corner of East Broadway and Market to 69 East Broadway, and three spaces for the curb extension spanning from 57 to 49 East Broadway. In addition to the sidewalk extensions, it is recommended that a mid-block narrowing be installed at the existing mid-block crosswalk located between Market St. and Catherine St. in order to shorten the crossing distance.

In conjunction with the DOT study, it is also recommended that Community Board 3 engage in public outreach to educate area residents about the potential benefits of curb extensions on East Broadway. If installed, the curb extensions will result in the loss of some curbside parking, an issue that could raise concern among segments of the community. A proactive and expansive public outreach campaign could help assuage concerns and garner support for modifications to the existing sidewalk network on East Broadway.

Market St. - Catherine St. Sidewalk Extension



Market St. - Forsyth St. Sidewalk Extension



Recommendation 2

Install painted bulb outs, “Look” pavement markings, and repaint crosswalks at the following intersections:

1. East Broadway & Market St. (all corners)
2. East Broadway & Forsyth St. (all corners, except southwest)

As stated earlier in this report, a significant amount of motor vehicle-related pedestrian injuries have occurred within the study area. Between 2010 and 2015 there were a total of 42 motor vehicle-related pedestrian injuries and 1 fatality. All of these incidents occurred at intersections, with the vast majority occurring at the intersection of East Broadway and Market St. (12 pedestrian injuries), East Broadway and Forsyth St. (14 pedestrian injuries), and East Broadway and Pike St. (10 pedestrian injuries, 1 fatality). Painted corner bulb outs installed at East Broadway and Pike St. have significantly reduced the crossing distance and enhanced pedestrian safety. These improvements should be replicated at other problematic intersections along East Broadway. It is recommended that Community Board 3 file a request with DOT to have painted curb extensions and “Look” pavement markings installed at the corner crossings at East Broadway and Market St. and East Broadway and Forsyth St. The southwest corner of East Broadway and Forsyth should be left unchanged, as this corner serves as a stop location for the M9 bus route and any alterations to the sidewalk could create conflicts between the bus stop and existing bicycle lane. Additionally, CB3 should request that the crosswalks be restriped in order to enhance the visibility of the pedestrian crossing space. Curb extensions would reduce crossing distances, calm traffic by tightening the vehicle turning radius, and allow pedestrians to both see and be seen by oncoming traffic, while the “Look” pavement markings would remind pedestrians to remain alert. Combined, these improvements would serve to greatly enhance pedestrian safety at dangerous intersections.



Recommendation 3

Increase access to bicycle parking

Although bicycle lanes are located on either side of East Broadway, there is currently very few bicycle parking facilities located within the study area. As noted earlier in this report, bicycles chained to signposts, railings and other street furniture often take away from useable sidewalk space, and contribute to pedestrian bottlenecks. Lack of bicycle parking is of particular consequence near restaurants with bicycle delivery service, as delivery drivers are forced to secure their bicycles to whatever street furniture is available, which can adversely impact the sidewalk environment. In order to make better use of available sidewalk space, it is recommended that Community Board 3 petition DOT to request that CityRacks be installed at the following locations:

- 17 East Broadway
- 28 East Broadway
- 33 East Broadway
- 39 East Broadway
- 42-44 East Broadway
- 47 East Broadway
- 54 East Broadway
- 91 East Broadway
- 94 East Broadway
- 120 East Broadway
- 148 East Broadway
- 160 East Broadway

These locations were identified as having unmet demand for bicycle parking during field visits. Installing CityRacks in the recommended locations will encourage cyclists to store their bicycles at locations better suited for bicycle parking, thus making more efficient use of available sidewalk space.



CityRack



Existing demand for bicycle parking:
94 East Broadway (Top)
54 East Broadway (Bottom)

Recommendation 4

Institute parking restrictions for film production trailers

While entertainment production is a vital part of the New York City economy and should definitely be encouraged in Community Board 3, filming activity should not adversely impact local residents and visitors. Allowing bulky film trailers to park along heavily congested areas of East Broadway greatly inhibits pedestrian circulation and should be discouraged. With this in mind, it is recommended that film production trailers be prohibited from parking on the south side of East Broadway between Market St. and Catherine St. Redirecting film trailers to park on less congested sections of East Broadway will help to improve pedestrian circulation. Although film trailer parking may no longer be an issue if the Market-Catherine curb extensions are installed, interim restrictions on film trailer parking will provide relief for pedestrians while the feasibility of curb extensions is being studied by DOT.

Recommendation 5

Investigate potential intercity bus stop violations

As mentioned earlier in this report, the intercity bus stop listed for Rockledge Tour Bus Inc. (133 East Broadway) does not match the address of the stop as designated by the New York City Department of Transportation (150 East Broadway). It is recommended that CB 3 investigate this potential violation of the intercity bus stop terms as designated by NYC DOT in order to ensure that Rockledge Tour Bus Inc. is in compliance. Investigation of potential violations could consist of a survey performed at Rockledge's officially designated bus stop at 150 East Broadway and the observed and listed bus stop location at 133 East Broadway to determine if Rockledge is using its designated stop or is instead using an alternate, undesignated location.

Recommendation 6

Perform outreach about inaccessible services

There are many services within the study area that are either unavailable or difficult to access for people with mobility impairments, due to the inaccessible nature of the building in which the service is located. With this in mind, it is recommended that CB 3 perform outreach to inform senior centers about services within the study area that are inaccessible. Difficult to access or inaccessible services and facilities with no alternative options in the study area include: driving schools, employment agencies, mailbox rental services, notary publics, supermarkets and sign makers. It is recommended that CB 3 inform senior centers near the study area about these missing services, so that the centers can find alternative locations for seniors and disabled residents of CB 3.

Conclusion

If enacted, the six recommendations provided in this report would greatly increase pedestrian circulation and safety, while also increasing awareness about accessibility issues in Chinatown. Installing painted sidewalk extensions at key points along East Broadway will greatly improve circulation along key stretches where pedestrian activity is highly congested due to concentrated vendor activity. Additionally, restricting film trailer parking on the south side of East Broadway between Catherine St. and Market St. will relieve pedestrian congestion along the most crowded block within the study area. Moreover, the installation of CityRacks in areas with existing demand for bike parking will help reduce sidewalk clutter and increase the amount of useable sidewalk space. Investigating and enforcing potential intercity bus stop violations could also help to improve pedestrian circulation by directing bus traffic to areas that are most appropriate for passenger loading and unloading. Repainting crosswalks, and installing painted curb extensions and “look” markings at key intersections will help to improve pedestrian safety at dangerous intersections and improve crossing conditions for seniors and the mobility impaired. Finally, performing outreach to senior centers about inaccessible and difficult to access services within the study area will allow vulnerable populations to more easily locate essential services.





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