



OFF-STREET BICYCLE PATHS

DATA ANALYSIS

The Manhattan Waterfront Greenway is a 32-mile off-street path that circumnavigates the island of Manhattan. It is generally located directly on the waterfront, reclaiming the shoreline for pedestrians, bicyclists, rollerbladers, and other forms of non-motorized transportation. Some greenway sections have multiple paths—one for wheeled transportation modes and another for walkers and joggers—in order to minimize conflicts between different types of use. The greenways have transformed the Manhattan waterfront. In particular, it has renovated the industrial waterfronts of the West Village and Chelsea into Hudson River Park and has opened up the previously inaccessible Harlem River Speedway.

The Manhattan Waterfront Greenway is divided into three sections, the Hudson River Greenway (Route 9A), the East River Greenway, and the Harlem River Greenway. The Hudson River Greenway runs uninterrupted along the west side waterfront from Battery Park to Dyckman Street. The East River Greenway travels along the east side waterfront from Battery Park to East 124th Street, except between East 25th Street and East 29th Street, where it is interrupted by Bellevue Hospital Center, and between East 38th Street and East 59th Street, where it is interrupted by the United Nations Complex. The greenway connection route linking the greenway segments to the north and south of the United Nations runs on-street north on First Avenue and south on Second Avenue; both streets have heavy vehicular traffic. The Harlem River Greenway extends uninterrupted from East 155th Street to Dyckman Street.

Bicycle counts were conducted on the Harlem River Greenway in the year 2004, when it first opened, but were not included in this study. In the future, other surveys will be done in order to assess its usage by cyclists.

Seven locations along the greenway were selected and surveyed in total:

- Route 9A Greenway at Chambers Street
- Route 9A Greenway at 11th Street
- Route 9A Greenway at 34th Street
- Route 9A Greenway at 80th Street
- Route 9A Greenway at 125th Street
- East River Park Greenway at Houston Street
- East River Greenway North of 85th Street

Each greenway location profile has two subsections: one for weekday counts and one for weekend counts. The weekday analysis will cover the years 2002 through 2008, while the weekend analysis will compare the data collected in 2002 with the data collected in 2008. Any particular count location featuring a separate pedestrian and jogging path will note whether or not those users were included in the data.

ROUTE 9A AT CHAMBERS STREET

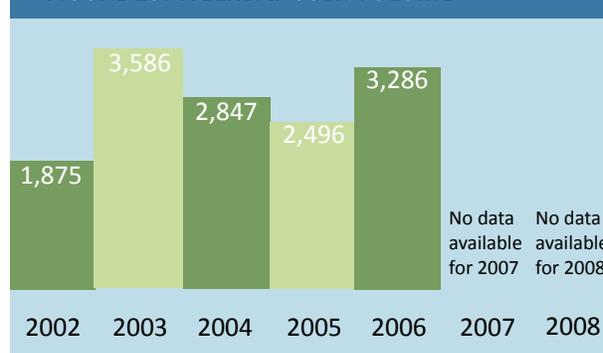


The Route 9A Greenway at Chambers Street connects the West Village and Battery Park, and is located on the western edge of Tribeca near various attractions, including the World Financial Center, Stuyvesant High School, CUNY Manhattan Community College and the Washington Market Park.

Weekday Analysis

Data regarding the Route 9A Greenway at Chambers Street is available from 2002 to 2006. The total number of users at this location jumped dramatically between 2002 and 2003, which is due to the extension of the greenway path south of Chambers Street and the opening of the Hudson River Park in the area of Greenwich Village. Weekday volumes from 2002 to 2003 nearly doubled. Volumes from 2004 to 2006 range from 2,496 to 3,286; these volumes are consistent with the average daily weekday volume which, over the study period, is approximately 2,818 users/day. This location has the highest average volume of weekday users despite the

FIGURE 23: WEEKDAY USER VOLUME

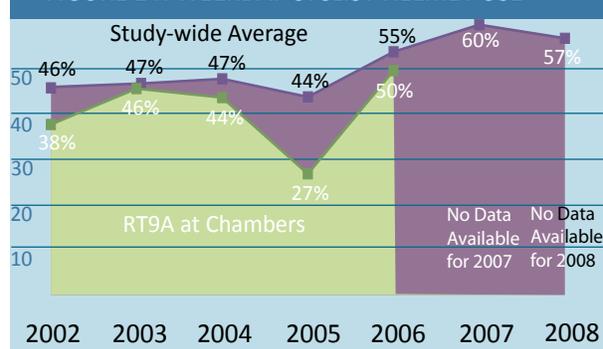


volume of users dropping between 2003 and 2004 and never recovering to 2003 levels (Figure 23).

Cyclists represented an average of 37 percent of the total users at this location (see Appendix A.II, pg.64) which is 13 percentage points lower than the study-wide average of 50 percent. However the year 2005 had the highest percentage of cyclists to total users: 66 percent.

Cyclists on the greenway at Chambers Street were observed wearing a helmet only 40 percent of the time, compared to the study-wide average of 51 percent helmet usage on greenway facilities (Figure 24). The percentage of cyclists observed using helmets stayed fairly steady from 2002 to 2004, ranging from 38 to 46 percent, but dropped sharply in 2005 to a mere 27 percent. The percentage recovered in 2006, with 50 percent of cyclists observed using helmets.

FIGURE 24: WEEKDAY CYCLIST HELMET USE



WEEKDAYS

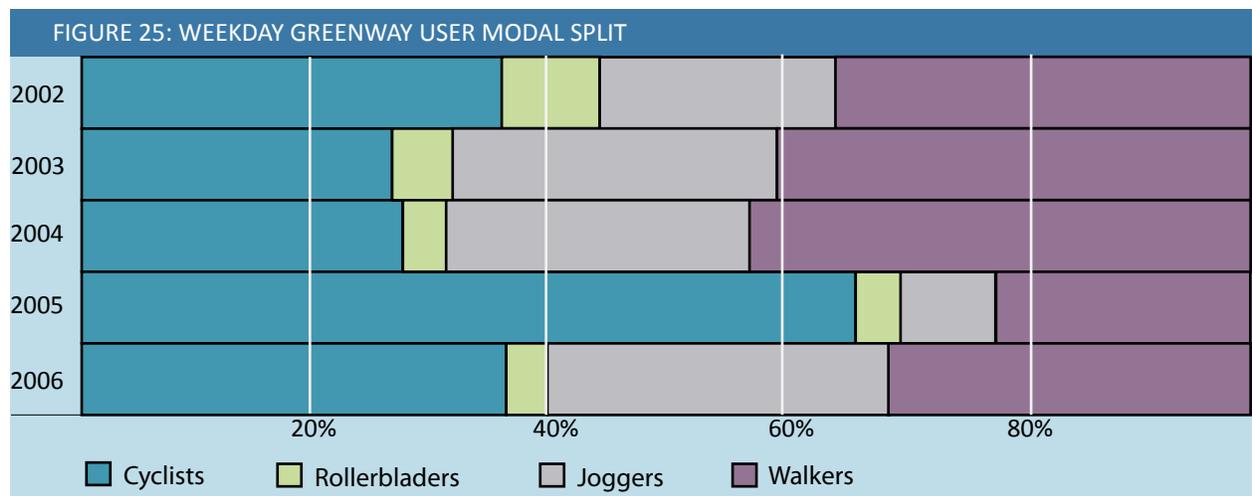
The percentage of rollerbladers to total users has declined every year during the week, from eight percent in 2002 to four percent in 2006 (Figure 25). Even so, Route 9A at Chambers Street has the second highest average percentage of users rollerblading, and is higher than the study-wide average of four percent.

The percentage of joggers as total users has remained fairly constant during the week—averaging 23 percent—and only straying from that range in 2005, when the percentage dropped to eight percent (see Figure 25). This percentage is consistent with the study-wide average of 23 percent of weekday greenway users jogging.

During the week, 35 percent of users walk. The percentage of users walking during the week has remained fairly steady throughout the study period of 2002 to 2006—the notable exception is 2005, when only 22 percent of users were walking (see Figure 25). The average percentage of users who are walking on Route 9A at Chambers Street is higher than the study-wide average of 24 percent during the week.



Route 9A at Chambers Street



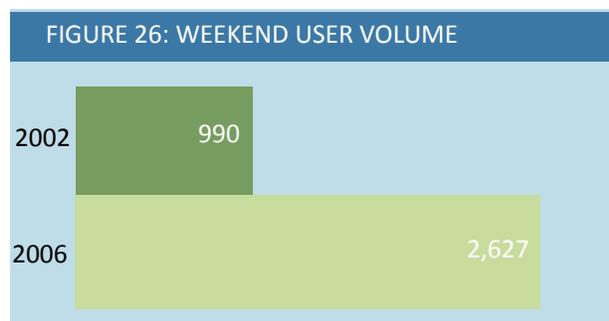
ROUTE 9A AT CHAMBERS STREET



Weekend Analysis

For this location, the year 2002 is compared with the year 2006, the last year that Route 9A at Chambers Street was surveyed. The volume of users at this location increased more than two and a half times from 2002 to 2006 (Figure 26). However weekend volumes were much lower than weekday volumes.

Cycling increased at this location between 2002 and 2006. On the weekends, cyclists represent 54 percent of total users on average — thirteen percent



more than the average of 37 percent during the week at this location. The helmet usage percentage also increased on the weekends from 50 percent in 2002 to 55 percent in 2006 (Figure 27).

Rollerblading was most popular at this study location and the percentage of users rollerblading was almost double the study-wide average of 7 percent in 2002 and 4 percent in 2006. Mirroring the study-

FIGURE 27: CYCLISTS AND HELMET USE

	2002	2006
Cyclists using Helmets	25%	31%
Cyclists not using Helmets	25%	24%

wide trend, both the volume and percentage of rollerbladers declined from 2002 to 2006 (Figure 28).

Jogging as a percentage of total greenway use at this location decreased between 2002 and 2006, from 24 percent to 13 percent. Furthermore, the average percentage of users jogging at this location is 19 percent—8 percentage points lower than the study-wide average of 27 percent.

The percentage of walkers at this location varied from 12 percent in 2002 to 23 percent in 2006. On average the percentage of walkers on Route 9A at Chambers Street (18 percent) is lower on the weekends than during the week (35 percent).

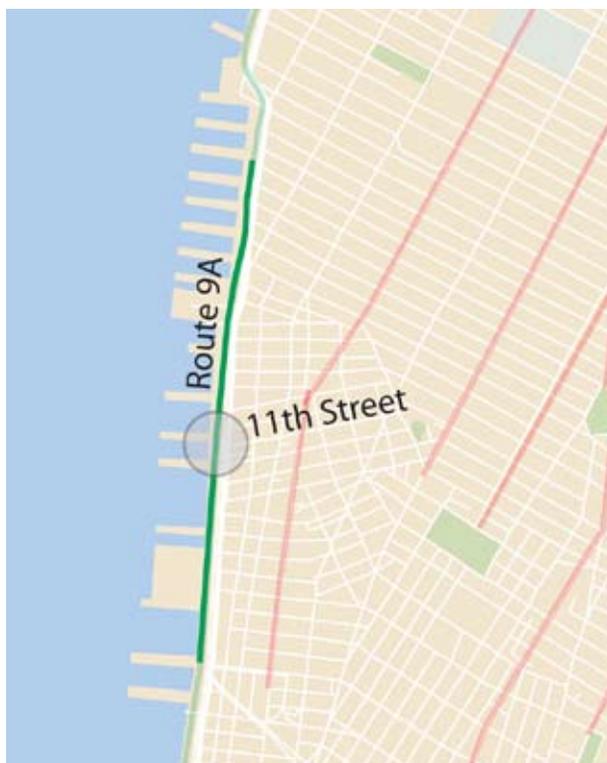
FIGURE 28: ROLLERBLADERS AS A PERCENTAGE OF USERS



This section of the greenway is adjacent to a high density residential location and boasts a wide bicycle way. Moreover, the nearby Battery Park City esplanade with landscaped areas make it a destination for recreational users.



ROUTE 9A AT 11TH STREET



Weekday Analysis

Data regarding the Route 9A Greenway at 11th Street is available from 2002 to 2008 for weekday counts. In 2003, the Hudson River Park segment of Greenwich Village opened to the public. Since then, cyclists have continued to use the greenway path, while walkers and joggers mainly use the esplanade. Data regarding the esplanade has been included with the greenway data. However, due to limited resources, counts on the esplanade were not done from 2004 to 2006.

The average weekday volume at this location is 2,659 users, close to 42 percent higher than the study-wide average of 1,874 weekday users. The volume of weekday users increased from 2002 to 2003, but fell to almost half the 2003 total in 2005 and 2006, which is during the period when volumes on the esplanade were not collected. In 2007 and in 2008, the esplanade volumes were counted and in comparison to the year 2003 the volume of users more than doubled to reach 3,328

FIGURE 29: WEEKDAY USER VOLUME



in 2007 and 4,291 in 2008, (see Figure 29).

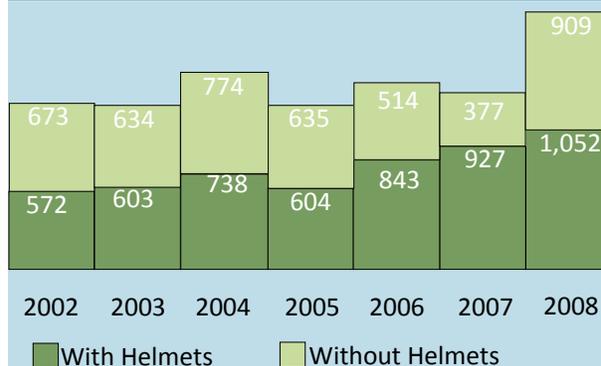
The percentage of users who were observed riding bicycles at this location—53 percent— is similar to the study-wide average, which is 50 percent, but as indicated in Figure 30 the percentage of users on bicycles has fluctuated through the years.

The average percentage of cyclists observed using a helmet is 54. This percentage is slightly higher than the study-wide average of 51 percent.

The average of six percent of weekday greenway users on rollerblades is the highest of the study locations. The percentage of users on rollerblades has decreased steadily from one year to the next since the study began in 2002. Overall, the percentage has decreased in 2008 to two percent—less than a third of its 2002 high of ten percent.

The percentage of users observed jogging is about

FIGURE 30: WEEKDAY CYCLIST VOLUME



WEEKDAYS & WEEKENDS

the same as the study-wide average: 24 percent. The yearly percentage of users jogging has spanned from 14 to 30 percent. However, in 2004 - 2006, as mentioned before the esplanade users were not included in the study, meaning that those years are artificially low compared to the other years.

The percentage of users observed walking on this

section of the greenway is consistently lower than the study-wide average of 24 percent. The percentage of users walking during the week was 15 and 25 percent in 2002 and 2003, respectively. It dropped to three to five percent from 2004 to 2006 (period where no counts were collected for the esplanade), then multiplied to 27 percent in 2007, and 24 percent in 2008.



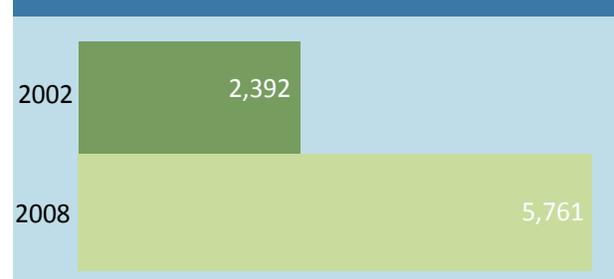
Weekend Analysis

Between 2002 and 2008, the volume of users has increased by more than 200 percent (Figure 31). In general, the weekend volume at this location averaged higher than the weekday volumes.

Both the volume and percentage of users riding bicycles at this location has increased dramatically. The volume has more than tripled, while the percentage has increased from 36 to 52 percent. The average percentage of cyclists observed using a helmet on weekends, 51 percent, is slightly lower than the study-wide average of 53 percent. Cyclists were more likely to be observed using helmets in 2008 than in 2002 by seven percentage points.

The second highest average of weekend rollerbladers was observed at this location. At seven percent, the average percentage of users rollerblading is nearly double the study-wide average of four percent. However, like the study-wide trend, the percentage of users who rollerblade has decreased at this location between 2002 and 2008.

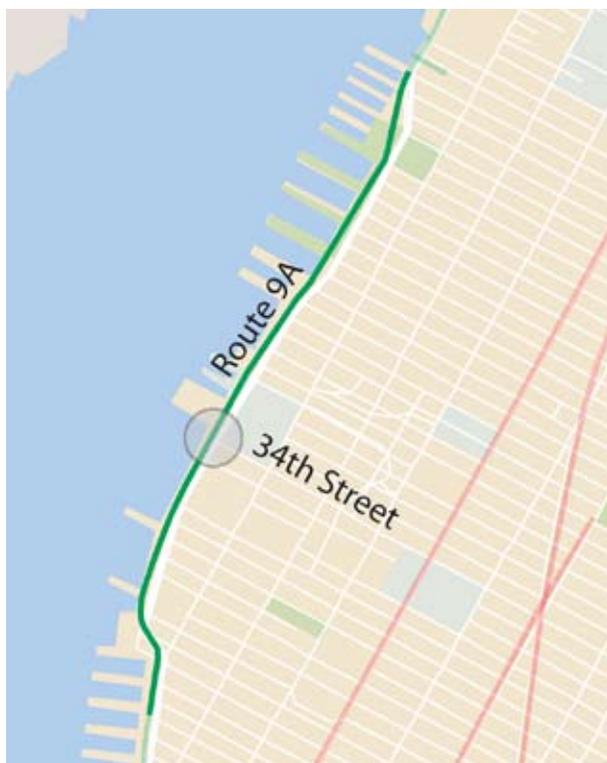
FIGURE 31: WEEKEND USER VOLUME



The percentage of users observed jogging has decreased between 2002 and 2008. However, the average of 31 percent of users jogging at this location is still close to the study-wide average of 27 percent.

In 2002, the percentage of walkers remained the same as in 2008 with 20 percent. This location is comparable to the study-wide trend, where the percentage of users walking between 2002 and 2008 did not change significantly—hovering at 22 to 25 percent.

ROUTE 9A AT 34TH STREET



Thirty-Fourth Street is a major east-west corridor that connects the greenway to the south end of Midtown, the Jacob K. Javits Convention Center, and to Penn Station/Madison Square Garden. Route 9A at 34th Street features a separate pedestrian and jogging path; those users have been included in the data and analysis of this location.

Weekday Analysis

The volume of weekday users at this location has generally been stable (Figure 32). From 2002 to 2006, the number of weekday users ranged from 1,790 to 2,095, with a 305 person difference between the lowest volume year (2006) and the highest volume year (2004). Since 2006, the daily volume has been rising, to 2,483 in 2007 and 2,617 in 2008.

During the week, the percentage of total users on bicycles is much higher than the study wide average. Sixty-five to 76 percent of users were observed

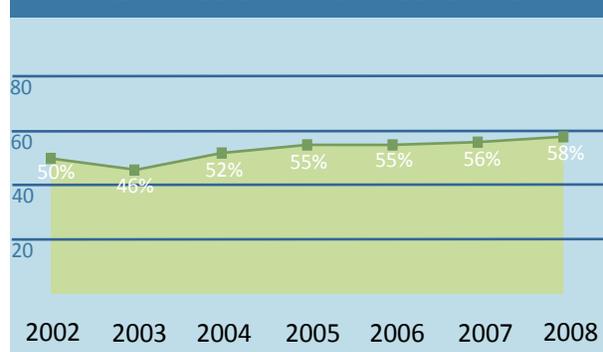
FIGURE 32: WEEKDAY USER VOLUME



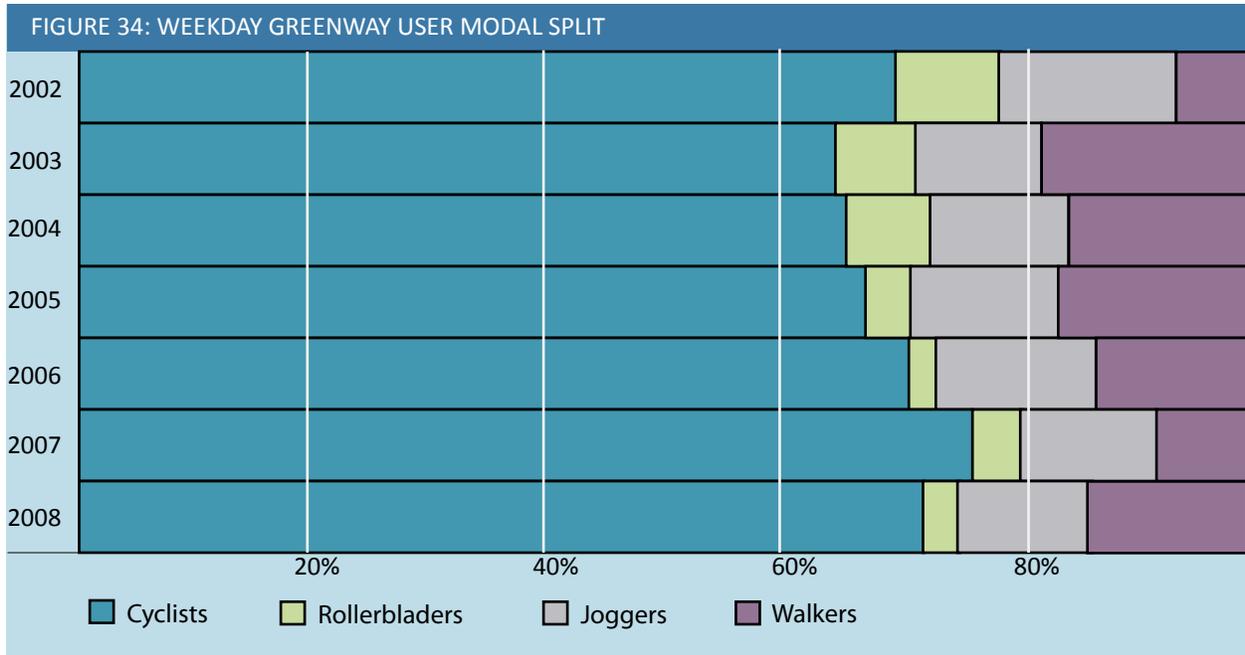
on bicycles from 2002 to 2008, compared with the study-wide average of 50 percent (see Figure 34).

At least half of cyclists were observed wearing a helmet (Figure 33). The only exception was in 2003, when only 46 percent were observed using a helmet. Moreover, the average percentage of cyclists observed using helmets at this location is higher than the study-wide average. Fifty-four percent of cyclists used helmets, compared to the study-wide average of 51 percent of greenway weekday cyclists using helmets.

FIGURE 33: WEEKDAY CYCLIST HELMET USE



Yearly, the percentage of users rollerblading is generally slightly higher at this location than the study-wide averages. The trend, however, has been a decreasing percentage of users observed rollerblading each year at this location, falling from nine percent to three percent between 2002 and 2008 (see Figure 34). The decreasing trend persists at all study

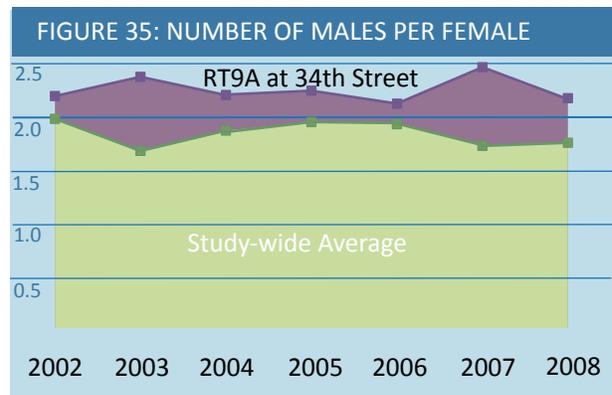


locations.

At 12 percent, the average percentage of weekday users observed jogging at this location is about half the study-wide average of 23 percent of users who were jogging. The percentage of users jogging has remained fairly constant from 2002 to 2008, oscillating from 11 percent to 15 percent (see Figure 34).

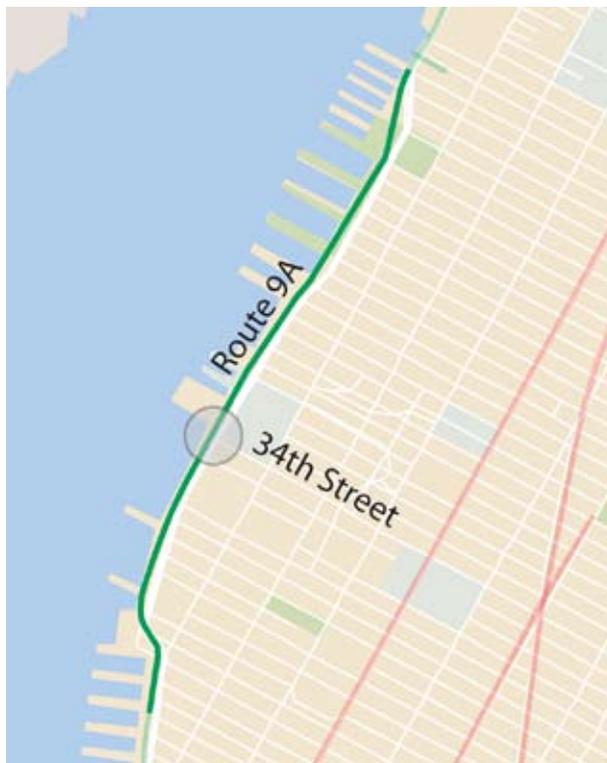
During the week, an average of only 13 percent of users were observed walking at this location, compared to the study-wide average of 24 percent. The percentage of users walking is significantly lower than the study-wide averages.

The 34th Street location has more male users and fewer female users than the study-wide average (Figure 35). During the week, 69 percent of users are males, compared with an average of 64 percent throughout the study locations. Conversely, 31 percent of users are females, compared with the study-wide average of 36 percent. These percentages have remained steady from 2002 to 2008, only



fluctuating by a percentage point here and there.

ROUTE 9A AT 34TH STREET



Weekend Analysis

The weekend volume at this location has risen steadily, nearly quadrupling between 2002 and 2008 (Figure 36). Moreover, Route 9A at 34th Street has the second highest average weekend volume of all the study locations.

Bicycle usage at this location has almost doubled from a low of 43 percent in 2002 to 66 percent in 2008 (Figure 37). Bicycle usage at this location is higher than the study-wide trend, averaging 55

FIGURE 36: WEEKEND USER VOLUME

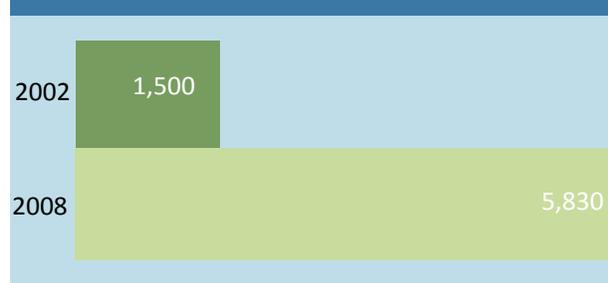
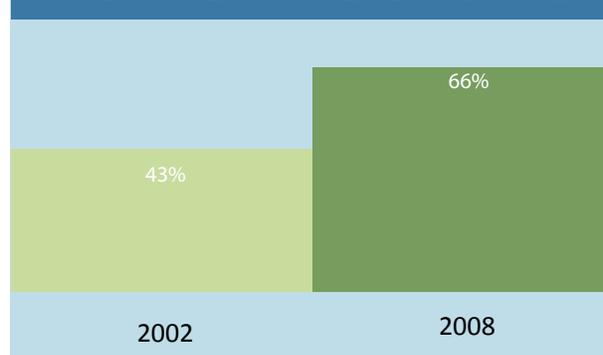


FIGURE 37: CYCLISTS AS A PERCENTAGE OF USERS



percent of users compared with the study-wide average of 45 percent. Helmet usage at this location averaged 56 percent. However, the percentage actually varied slightly between 2002 and 2008 from 54 to 58 percent.

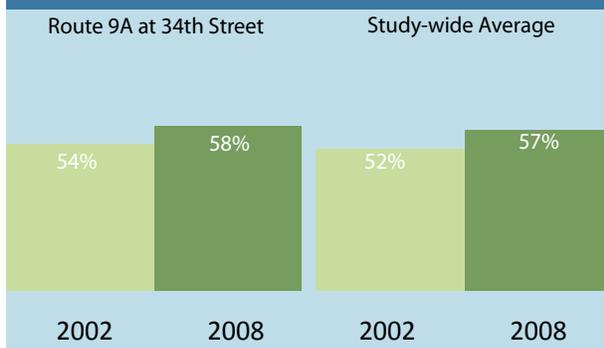
Rollerblading at this location on weekends has decreased from nine percent of users in 2002 to four percent of users in 2008. This decline follows the study-wide trend. However, the percentage of users rollerblading at this location is higher than the study-wide average (see Appendix A.II, pg. 71 for details).

Though averaging 24 percent—comparable to the study-wide average—the percentage of users jogging has decreased between 2002 and 2008. A higher percentage of users jog at this location on weekends than during the week.

The ratio of males to females is lower on weekends than during the week, mirroring the study-wide trend, and has not changed significantly from 2002 to 2008 at this location.

WEEKENDS

FIGURE 38: WEEKEND CYCLIST HELMET USE



Route 9A at 34th Street



ROUTE 9A AT 80TH STREET



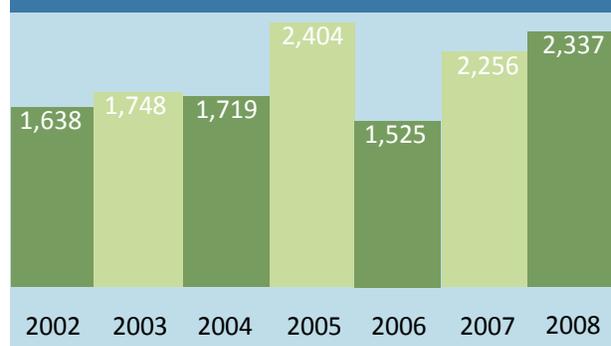
The bicycle and pedestrian greenway at West 80th Street runs through Riverside Park. The pedestrian and bicycle path in this area travels directly along the waterfront, while the Route 9A Highway/Henry Hudson Parkway is elevated further inland. The two are not only physically separated, but also visually separated by the foliage in Riverside Park.

Weekday Analysis

The volume of users at this location remained constant from 2002 to 2004, ranging from 1,638 users to 1,748 users, with one spike in 2005 (Figure 39). The number of users increased in 2007 and 2008, but did not surpass the number of users in 2005.

The percentage of users observed riding a bicycle has been fairly constant from 2002 to 2008, wavering between 46 and 57 percent (Figure 40). The location's average of 52 percent of users on bicycles is within range of the study-wide average of 50 percent. The percentage of cyclists using helmets has risen steadily, from 52 percent in 2002 to 62 percent

FIGURE 39: WEEKDAY USER VOLUME



in 2008. The average of 57 percent is slightly higher than the study-wide average of 51 percent.

On average, three percent of users were observed using rollerblades, which is similar to the study-wide average of four percent. The percentage of greenway users observed rollerblading has declined from 2002 to 2008, keeping in line with the greater study-wide trends.

The percentage of weekday users observed jogging at this location has remained fairly constant, ranging from 18 percent in 2007 to 23 percent in 2003 and 2005. The average percentage of users observed jogging at this location is 21 percent — lower than the study-wide average of 23 percent.

The percentage of users walking at this location during the week has remained steady, ranging from 21 percent to 27 percent.

FIGURE 40: CYCLISTS AS A PERCENTAGE OF USERS



WEEKDAYS & WEEKENDS

Weekend Analysis

Between 2002 and 2008, the number of users at this location on weekends has more than tripled (Figure 41).

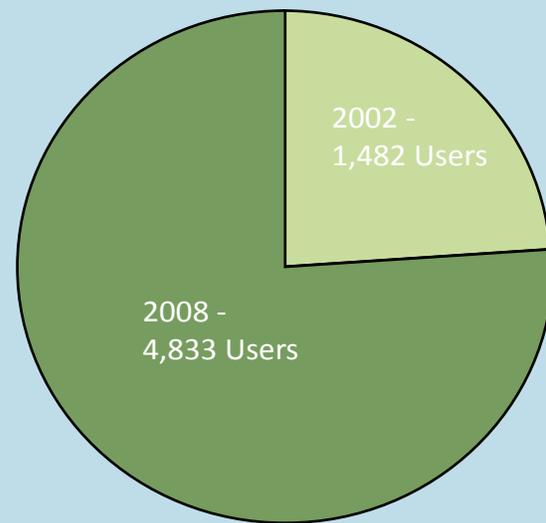
The percentage of users riding a bicycle has increased by fivefold in volume from 515 in 2002 to 2,588 in 2008. This increase mirrors the study-wide trend. The percentage observed using helmets has, likewise, increased, averaging 62 percent of users. This percentage is higher than the study-wide average of 53 percent of users observed using helmets on weekends.

The percentage of users rollerblading has declined from 2002 to 2008, from five percent to two percent. The decline in rollerblade usage is a trend study-wide.

The percentage of users who jog has declined between 2002 and 2008 by six percentage points. The percentage of users who jog on weekends is slightly higher than the percentage during the week.

Walking, as a percentage of total uses has decreased by a third, from 34 percent in 2002 to 23 percent in 2008, but is still higher at this location than the study-wide average of 24 percent.

FIGURE 41: WEEKEND USER VOLUME



Route 9A travels through Riverside Park

ROUTE 9A AT 125TH STREET



Route 9A at 125th Street is just north of Riverside Park in Manhattanville. The bicycle and pedestrian path runs adjacent to the elevated Henry Hudson Parkway.

Weekday Analysis

Route 9A at 125th Street has the lowest user volume in the study during the week, with an average of 563 users (Figure 42).

Seventy-six percent of weekday users were observed on bicycles. Cyclist volumes swung between 310 and 595 users, representing 66 to 82 percent of the total volume (see Figure 43). The percentage of users observed riding bicycles is significantly higher at this location than the study-wide average of 50 percent. Overall, the percentage of cyclists using helmets averages 52 percent, just a point more than the study-wide average of 51 percent. However, the percentage of weekday cyclists using helmets has been several percentage points or higher than the study-wide averages each year surveyed except

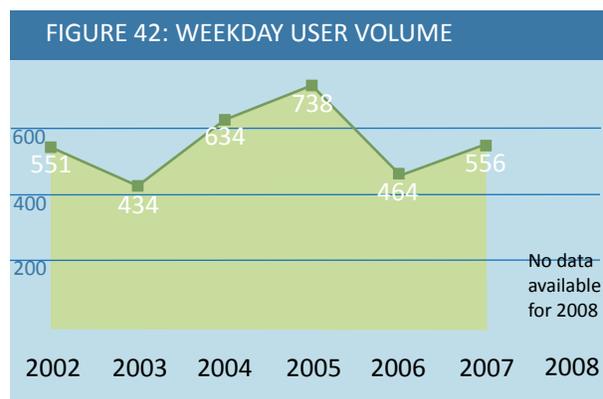
2004, which lowered the overall helmet usage.

The number of weekday users observed rollerblading has decreased each year, from 30 users in 2002 to 5 in 2007 (see Figure 43). This location averages two percent of users rollerblading compared to the study-wide average of four percent. In keeping with the study-wide trend, the percentage has also decreased each year, from five percent to one percent over the study period.

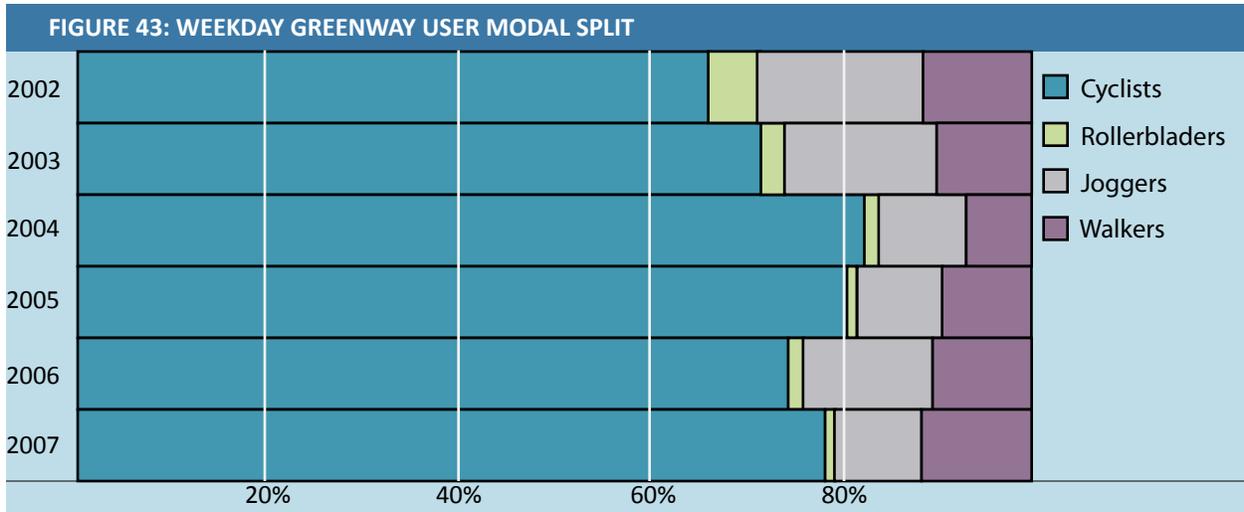
From 2002 to 2007, the percentage of users jogging dropped from 17 percent to 8 percent, and averaged 12 percent (Figure 43). The percentage of users jogging is much lower at this location than the study-wide average of 24 percent.

The percentage of users walking has remained steady—between 10 and 12 percent—every year except 2004, when it was particularly low (Figure 43). Similar to the jogging trend, the walkers represent less than half the study-wide average of 24 percent.

The percentage of male users is higher at this location than the study-wide average; conversely, the percentage of female users is lower. This difference is most pronounced during the week, when an average of 74 percent of users are male, and 26 percent are female. This location has 10 percent more males and 10 percent fewer females than the study-wide weekday averages.



WEEKDAYS & WEEKENDS



Weekend Analysis

Weekend counts at this location will be compared for the years 2002 and 2006 due to the construction of the West Harlem waterfront area and of the greenway path at this location in 2008. Unlike other study-locations, which generally doubled in volume, there was just a modest 54 percent increase in users at this location between 2002 and 2006 (Figure 44). The volume of users on weekends is, on average, double the weekday volume, implying that this segment of the greenway is used mostly for recreational purpose.

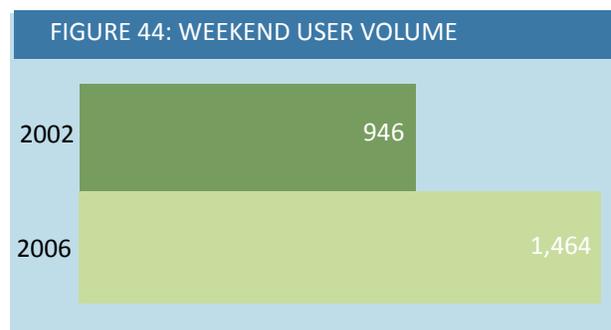
The percentage of users observed riding a bicycle is especially high at this location—an average of 75 percent of weekend users are cyclists. In general the percentage of users riding a bicycle did not change significantly from 2002 to 2006. The percentage of bicycle riders at this location is much higher than the study-wide average of 45 percent. Helmet usage rose about 20 percent between 2002 and 2006. It averaged 71 percent at this location, compared to the study-wide average of 53 percent.

The volume of users rollerblading remained steady between 2002 and 2006—with 35 and 36 rollerbladers, respectively—but the percentage of use that this number represents has decreased with the larger volume of total users. The percentage of

users rollerblading averages lower than the study-wide average of four percent.

The percentage of users jogging at this location increased from 11 percent to 15 percent between 2002 and 2006. At 13 percent, this location averages the lowest percentage of joggers in the study. The average at this location is 14 percentage points below the study-wide average of 27 percent.

Like the study-wide trend, the percentage of users who walk has remained stable. However, the percentage of users who walk is less than half the study-wide average in both 2002 and 2006, at just nine and eight percent, respectively. For comparison, the study-wide average was 22 percent in 2002 and 25 percent in 2006.



EAST RIVER AT HOUSTON STREET

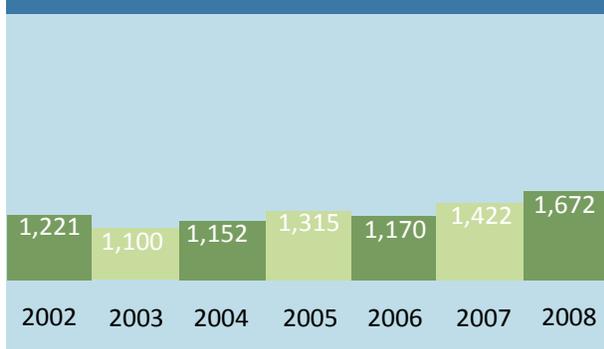


The East River Greenway at Houston Street runs adjacent to East River Park, which features many recreational amenities such as baseball diamonds, tennis courts, an outdoor amphitheatre, and a soccer field.

Weekday Analysis

The volume of users was steady from 2002 to 2008, ranging from 1,100 to 1,672 (see Figure 45). An average of 29 percent of users were observed on bicy-

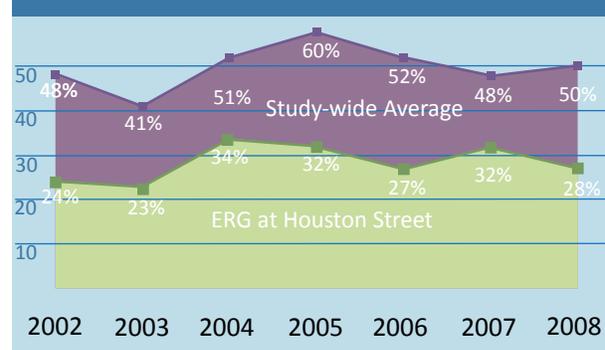
FIGURE 45: WEEKDAY USER VOLUME



cles during the week, compared to the study-wide average of 50 percent. The average percentage of users observed riding bicycles at this location is about half the study-wide average (see Figure 46). From 2002 to 2008, the percentage ranged from 23 to 34. This trend is prevalent at each location along the East River compared to the count locations along the Hudson River where more than 50 percent of the users on average are cyclists.

The average percentage of cyclists observed using helmets at this location was just 37 percent—the second lowest average of the greenway weekday counts. The usage at this location averages 13 percentage points lower than the study-wide average. From 2002 to 2005, the percentage of cyclists using helmets was steady, fluctuating from 29 to 31 percent. Since 2006, the percentage has increased each year, from 37 percent in 2006 to 43 percent in 2007, and to 53 percent in 2008.

FIGURE 46: CYCLISTS AS A PERCENTAGE OF USERS



The percentage of users rollerblading at this location averages just one to two percent of total users each year. During the week, the volume of rollerbladers was steady from 2002 to 2004, ranging from 18 to 20. From 2006 to 2008, however, the volume of rollerbladers dropped to 10 - 12 users a day. In 2008, these 10 rollerbladers represented less than one percent of total users. Rollerblade use at this location averages a fourth of the study-wide average—one percent compared to four percent.

WEEKDAYS & WEEKENDS

From 2002 to 2008, 38 to 48 percent of users jogged; The percentage of users jogging at this location has been consistently higher than the study-wide average of 23 percent.

From 2002 to 2008, the percentage of users walk-

ing during the week ranged from 23 to 32 percent. During the week, the percentage of users observed walking is close to the study-wide average of 24 percent.



Weekend Analysis

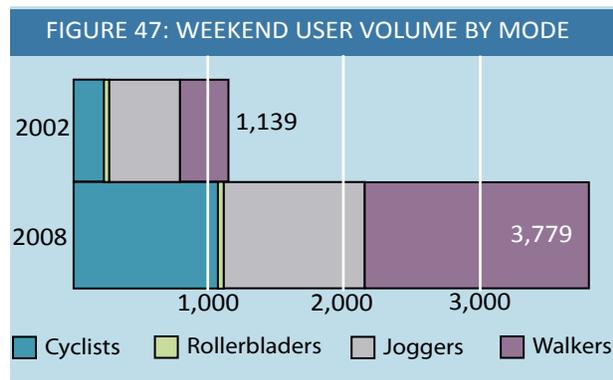
Weekend volumes at this location more than tripled between 2002 and 2008 (Figure 47).

This location shows one of the lowest percentages of users cycling. An average of only 25 percent of weekend users were observed riding bicycles (see Figure 47), compared to the study-wide average of 45 percent. On average, just 42 percent of cyclists were observed using helmets. By contrast, 53 percent of weekend cyclists were observed using helmets study-wide.

One percent of users rollerbladed at this location in both 2002 and 2008. Though this percentage is lower than the study-wide average of four percent, it breaks from the trend of decreasing rollerblade use.

The percentage of users jogging at this location mirrored the trend at nearly all locations, decreasing 15 percentage points from 47 percent in 2002 to 32 percent in 2008. Nevertheless, the percentage of users jogging is much higher at this location than at other study locations. It averaged 40 percent compared to the study-wide average of 27 percent.

On weekends, the percentage of users walking increased from 31 percent to 38 percent along this stretch of the greenway (see Figure 47). This trend, along the East River at Houston Street is consistently higher than the study-wide averages of 22 percent in 2002 and 25 percent in 2008.



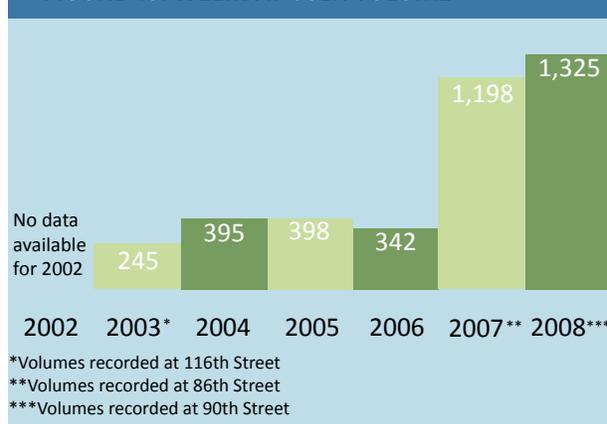
EAST RIVER NORTH OF 85TH STREET



The East River Greenway north of 85th Street is adjacent to numerous parks and playgrounds, including Thomas Jefferson Park and Carl Schurz Park. This stretch of the East River Greenway also connects to a pedestrian- and cyclist-only bridge to Randall’s and Ward’s Island. The bridge is open April through November and connects recreational greenway users to the amenities of Ward’s Island Park, such as picnic tables and athletic fields.

Counts on the East River Greenway north of 85th Street were completed in four locations within a 20 block distance from 2003 to 2008: at 116th Street (2003), 106th Street (2004-2006), at 86th Street (2007) and at 90th Street (2008). The locations from 2003 to 2006 were situated close to the end of the segment of the East River Greenway across from Randall’s Island. In 2007 and 2008, the count location was moved further south in order to collect data at the midpoint of this segment of the bicycle path, as it was done for the other count locations in Manhattan.

FIGURE 48: WEEKDAY USER VOLUME

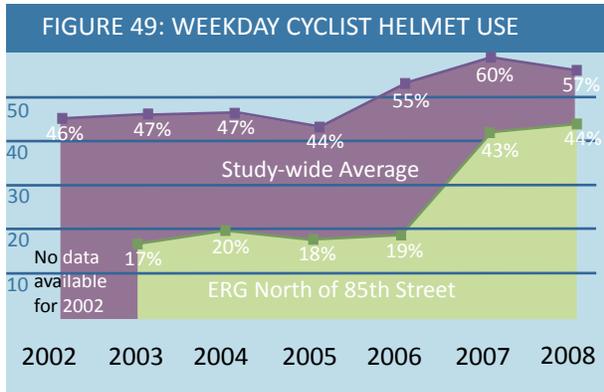


Weekday Analysis

The East River Greenway north of 85th Street boasts the largest increase in user volume from 2003 to 2008. No data was collected for the year 2002 during the weekday (Figure 48). The volume of users during the week remained fairly constant—starting at 245 in 2003, rising to about 400 from 2004 to 2006 (with an exception in 2006, when it dropped by 56 users)—before surging in 2007 and 2008 to more than triple its previous volumes. This is due mainly to the new count location which is at midpoint of the segment, near the East 90th Street Pier.

This location has the lowest percentage of users bicycling in the study (see Figure 50). It is generally less than half the study-wide average, with an average of 16 percent of users, compared to study-wide average of 50 percent. This trend is prevalent at each location along the East River compared to the count locations along the Hudson River where more than 50 percent of the users on average are cyclists.

Also the volume of cyclists did not increase as dramatically as it was observed from 2007 to 2008 for the user volume (Appendix A.II, pg 64). Though the volume of cyclists increased slightly each year, it was not proportionate to the spike in user volume of the last two years and remained generally between 75



and 125 in volume from 2003 to 2008.

The East River Greenway north of 85th Street also has the lowest percentages of helmet usage (Figure 49). Only 17 to 20 percent of weekday cyclists were observed using helmets from 2003 to 2006, though this percentage increased to 43 in 2007 and to 44 in 2008. Twenty-nine percent of cyclists were observed using helmets on average. Study-wide, this average is almost double, at 51 percent.

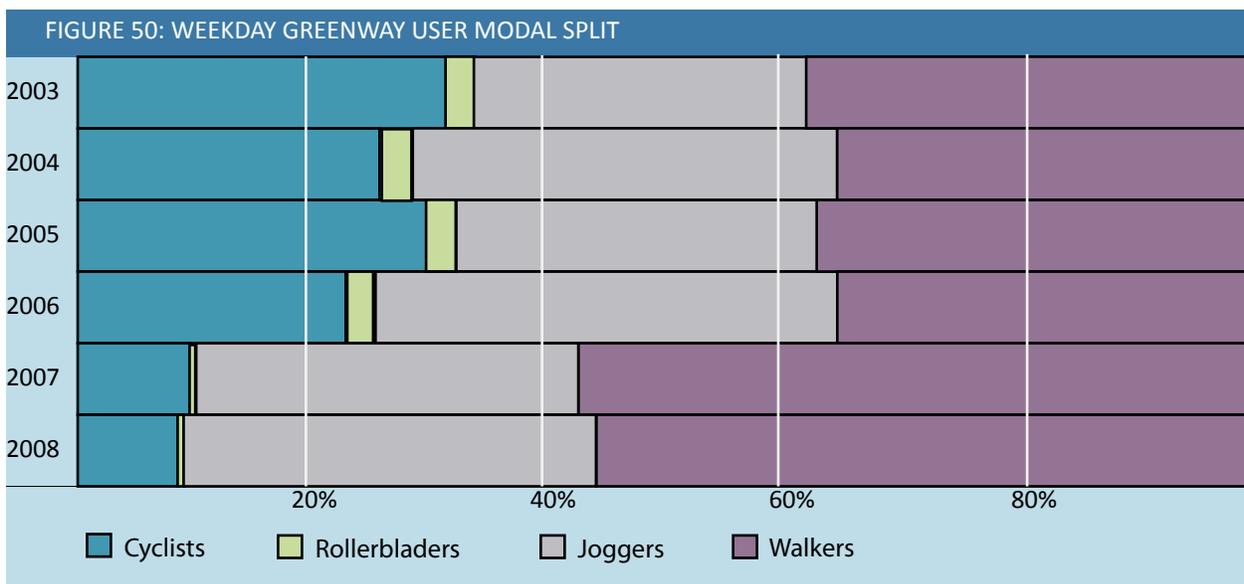
Rollerblader use is low at this location, averaging about one percent of use annually compared to the study-wide use of four percent. Less than 10 rollerbladers were counted in any given year. The 2008

counts marked just four rollerbladers—less than one percent of the users (see Figure 50).

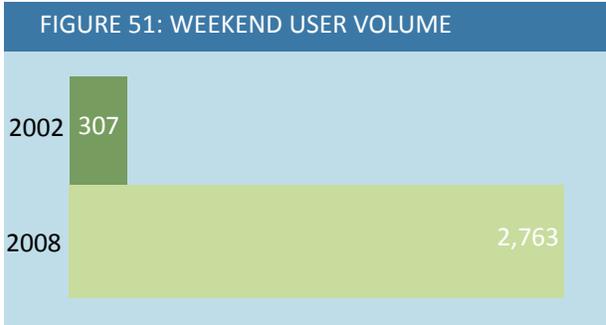
Similar to the East River Greenway at Houston Street, this location has a higher than average percentage of users observed jogging: an average of 34 percent. The average at this location is 11 percentage points higher than the study-wide average of 23 percent.

This location features the highest percentage of users observed walking: 49 percent compared to study-wide average of 24 percent. In 2008, the percentage of walkers increased to 56—more than double the 2008 study-wide average of 26 percent. The bicycling and walking tables show opposite trends for the greenway path along the Hudson River compared to the one along the East River demonstrating their inverse relationship. (See Appendix A.II)

The highest percentage of female users and lowest percentage of male users were observed at this location. During the week, an average of 46 percent of users were female and an average of 54 percent were male. Study-wide, the average percentage of female users is 36 percent, while it is 64 percent for male users.



EAST RIVER NORTH OF 85TH STREET



Rollerblade use was lowest at this location. In 2002, rollerbladers represented two percent of users, while in 2008, they represented less than a percent.

Joggers reached the highest average weekend users with 39 percent. This occurs even though the percentage of joggers decreased at this location from 43 percent in 2002 to 34 percent in 2008.

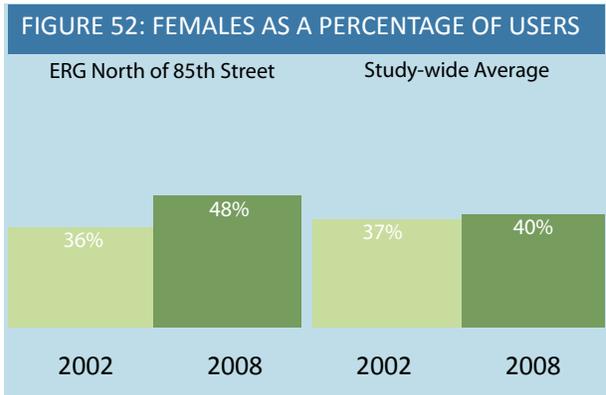
Walkers averaged 42 percent of weekend users, the highest in the study. While the percentage of walkers increased, the bicycling chart shows the opposite trend, demonstrating that the two share an inverse relationship.

Weekend Analysis

Weekend volumes have risen, from 307 in 2002 to 2,763 in 2008—a nine-fold increase in six years (Figure 51). However, this is mainly due to changing the count location from the northern end of the East River Greenway to the midpoint of this segment.

The percentage of users observed on bicycles averages just 18 percent, the lowest study-wide. By contrast, study-wide, cyclists average 45 percent of users. Moreover, it is one of only two locations where cyclists as a percentage of total users decreased between 2002 and 2008. The other location is on Route 9A at 125th Street. Weekend cyclists were more likely to be observed using helmets than weekday cyclists in 2002, mirroring the study-wide trend. In 2008, however, weekend cyclists were as likely observed to be wearing a helmet as their weekday counterparts (Appendix A.II).

Females represented 48 percent of weekend users in 2008, up from 36 percent in 2002. The increase at this location is especially significant when compared to the study-wide average growth rate of 3 percent, from an average of 37 percent in 2002 to an average of 40 percent in 2008 (Figure 52).



WEEKENDS



East River Greenway
At 116th Street



CONCLUSION

The bicycle ridership data that have been collected since 2001 indicate a great deal about bicycle riders and bicycle facilities in Manhattan. The number of on-street cyclists has increased 30 percent, while the number of off-street cyclists has increased by 22 percent since 2002. The exact reason for this increase in ridership is difficult to determine, however, one reason may be that since the year 2001 approximately 65* additional miles of on-street and off-street bicycle facilities have been built in Manhattan alone.

The data indicate that the number of riders in Manhattan is increasing in both genders. Furthermore, the ratio of male to female cyclists is becoming smaller for all bicycle facilities, suggesting that the number of female riders is increasing more than male riders. The ratio of male to female cyclists using on-street bicycle lanes decreased from 6.08:1 in 2001 to 4.92:1 in 2008. On the greenways during the week the ratio decreased from 1.92:1 in 2002 to 1.73:1 in 2008. During the weekends the ratio decreased from 1.71:1 in 2002 to 1.52:1 in 2008.

Helmet usage has also increased over the years. In 2001 the recorded percentage of on-street bicycle lane users wearing helmets was 22 percent, while in 2008 the recorded number of cyclists wearing helmets was 40 percent, an increase of 18 percentage points. The recorded percentage of greenway cyclists during the week wearing helmets increased from 46 percent in 2002 to 57 percent in 2008, also an increase of 11 percentage points. For the weekend counts, the percentage of cyclists on the greenway paths with a helmet went from 52% in 2002 to 58% in 2008, another increase in helmet usage.

Specific trends that the data indicate include increased ridership among both men and women, and increased helmet usage. The reasons for these positive trends could be an increase in the number of lanes striped and greenways built in order to improve the connectivity of the network. Other contributing factors could be increased education and awareness about biking in the City and improved dissemination of maps and information about the network. The Transportation Division of the New York City Department of City Planning will continue to collect bicycle user data annually and is committed to studying cycling trends in the City as new bicycle facilities are built and the dissemination of cycling information expands.

*According to the New York City Department of Transportation (NYCDOT) records the number of miles is much higher. On-street bicycle facilities with two lanes of bicycle traffic are measured once from start to end point by the NYC Department of City Planning while NYCDOT doubles the number of miles for streets with two-way bike traffic.

