

CENTRAL BUSINESS DISTRICT (CBD) TOLLING PROGRAM

# **Appendix 4A.3, Transportation:** Representative Commuting Costs by Auto and Transit

2023

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#### 4A.3-1 EXISTING/NO ACTION ALTERNATIVE BASELINE

Manhattan's CBD is the anchor of the regional economy and a destination for millions of daily trips. As discussed in many chapters of this EA, the vast majority of these trips are made by public transportation, but there are also tens of thousands of trips made by auto commuters. There are many reasons why a person may opt to drive to Manhattan, but choosing to drive is an expensive undertaking and it does not particularly result in substantial time savings compared to a transit journey.

As discussed in **Subchapter 4B, "Transportation: Highways and Local Intersections,"** the regional highway network carries traffic on a complex web of roads and highways that provide access to the Manhattan CBD through the key portals of the tunnels and bridges that access Manhattan Island. These roads are congested and prone to chronic delays and have associated bridge, tunnel, or turnpike tolls that together create an overall effect of slow travel speeds and expensive driver costs. Travel in Manhattan is on local streets and avenues with typically very slow speeds, and parking is limited and expensive.

To establish perspective, a representational typical commute from throughout the region has been evaluated to estimate the distance, duration, and daily cost of a trip either by auto or by transit.<sup>1</sup> As shown in **Figure 4A.3-1**, this includes locations in New York City (Bronx, Queens, Brooklyn, and Staten Island), on Long Island (Central Islip), in New York communities north of New York City (Spring Valley, Croton-on-Hudson, and Brewster), in New Jersey (Ridgewood to the north, Nutley in the central area, and Princeton to the south), and Connecticut (Fairfield). Trip destinations to both a lower and upper Manhattan CBD location were evaluated because they could reflect different routing and transit options.

As shown on **Figure 4A.3-1** and summarized in **Table 4A.3-1**, driving within New York City to and from the Manhattan CBD logically had the shortest distances travelled (between 9 miles and 16 miles) but also the slowest travel speeds (between 10 miles per hour and 19 miles per hour). Daily costs were generally between \$55 and \$78 per day, with the highest cost being to and from Staten Island with both longer travel distances and more tolls. In comparison, a transit trip costs between \$8 and \$14.

On Long Island, the representational trip from Central Islip to the Manhattan CBD is estimated at about \$100 per day on a roughly 50-mile trip that can be expected to take up to 2 hours under normal conditions with travel speeds of about 27 miles per hour. A transit trip for the same destination would be about \$20 per day and have similar, but somewhat faster, travel times compared to driving.

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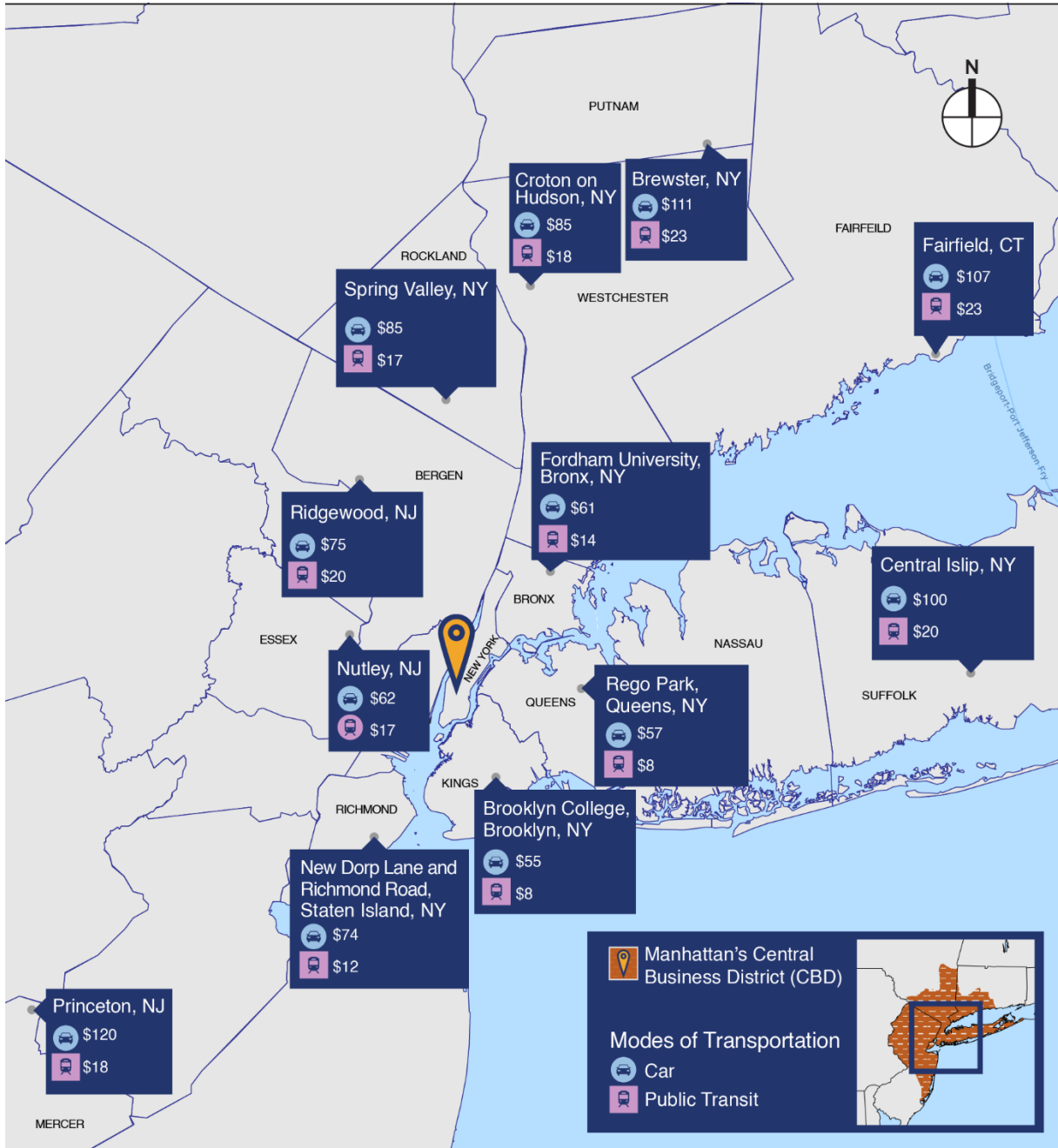
<sup>1</sup> The auto route distance and duration were measured by the Best Practice Model (BPM) travel demand model. (See **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"** for more information on the BPM.) The BPM duration estimates reflect typical levels of congestion and are within the range of total trip times that Google Maps predicts for any given route. A typical driving route and transit route were obtained by reviewing Google Map's recommended directions for an approximately 7:30 a.m. morning commute trip (and were compared for consistency with the BPM results). Costs include the daily round-trip mileage expense using IRS 2022 auto operating rate of 58.5 cents per mile, all applicable tolls, parking, and an added level of local destination travel once parked in Manhattan. For transit, the costs include the single or combination of fares and an added level of origin parking and destination travel.

**Appendix 4A.3, Transportation:** Representative Commuting Costs by Auto and Transit

For the northern suburbs, costs range from \$85 to \$111 per day and reflect more highway travel as average speeds are between 25 miles per hour and 38 miles per hour. Trip lengths are all well over 1 hour. Transit costs for these locations range from \$17 to \$23 per day and have similar travel times to the auto trips when travel to and from the transit origin and destination are added to the total travel time.

From New Jersey, the greater trip lengths from Princeton and Ridgewood combined with tunnel tolls and New Jersey Turnpike tolls result in daily auto trip costs of between \$75 and \$120. While these trips are more highway-oriented, travel speeds are still only 30 miles per hour or less with travel times that can reach or exceed 2 hours in each direction. In comparison, Nutley (located just about 15 miles west of the Lincoln Tunnel) has a cost similar to trips within New York City at about \$62 per day but with slow travel times that result in over 1 hour of travel for the short distance. The transit costs for these locations range from \$18 to \$20 per day.

Figure 4A.3-1. Representative Commuting Costs in the Regional Study Area



Source: WSP, Best Practice Model, Google Maps

Notes: **Table 4A.3-1** summarizes the assumed routes for these representative commutes.

1. Cost based on auto distance as measured by the Best Practice Model (BPM) travel demand model and averaged for two destinations within the CBD (World Trade Center and 42nd Street, Bryant Park).
2. A typical driving route and transit route were obtained by reviewing recommended directions from Google Maps for an approximately 7:30 a.m. commute trip (and were compared for consistency with the BPM results).
3. Costs include the daily round-trip mileage expense using IRS Q1 2022 auto operating rate of 58.5 cents per mile, all applicable tolls, and parking.
4. For transit, the costs include the single or combination of fares and an added level of origin parking and destination travel cost. Fares are calculated based on the per day cost of monthly passes (trip cost assumptions discussed in more detail further on in this appendix)

Table 4A.3-1. Travel Times and Cost

COUNTIES	MORNING COMMUTE TRIP ORIGIN	TRIP DESTINATION	AUTO				TRANSIT		
			BPM ONE-WAY DISTANCE (Miles)	BPM ONE-WAY DRIVE TIME Minutes (plus 10) <sup>1</sup>	AVERAGE SPEED (Miles per Hour)	ROUND TRIP AUTO COST (Total)	GOOGLE MAPS ONE-WAY TRAVEL TIME Minutes (plus 20) <sup>1</sup>	ROUND TRIP TRANSIT COST (Total)	
New York City Counties	<b>The Bronx</b> <b>Fordham University</b>	Lower CBD	14.8	56.6	19.0	\$61.88	60	\$16.49	
		Upper CBD	12.6	54.7	16.9	\$59.33	42	\$11.41	
		AVERAGE	14	56		\$61	51	\$14	
	<b>Kings (Brooklyn)</b> <b>Brooklyn College</b>	Lower CBD	7.8	38.8	16.2	\$53.69	47	\$7.85	
		Upper CBD	9.6	63.3	10.8	\$55.86	56	\$7.85	
		AVERAGE	9	51		\$55	52	\$8	
	<b>Queens</b> <b>Rego Park</b>	Lower CBD	12.3	54.1	16.7	\$58.98	59	\$7.85	
		Upper CBD	8.6	42.7	15.8	\$54.70	49	\$7.85	
		AVERAGE	10	48		\$57	54	\$8	
	<b>Richmond (Staten Island)</b> <b>New Dorp</b>	Lower CBD	14.6	63.8	16.3	<b>[\$67.21]</b>	90	\$15.17	
		Upper CBD	18.4	78.8	16.0	<b>[\$80.52]</b>	79	\$7.85	
		AVERAGE	16	71		<b>[\$74]</b>	85	\$12	
	Long Island Counties	<b>Nassau/Suffolk</b> <b>Central Islip</b>	Lower CBD	49.1	121.2	26.5	\$102.04	106	\$22.45
			Upper CBD	45.3	108.6	27.6	\$97.66	96	\$17.37
			AVERAGE	47	115		\$100	101	\$20
New York Counties North of New York City	<b>Dutchess/Putnam</b> <b>Brewster (Southeast)</b>	Lower CBD	60.8	103.0	39.2	\$115.75	122	\$25.33	
		Upper CBD	58.4	102.0	38.1	\$105.86	101	\$20.25	
		AVERAGE	60	103		\$111	112	\$23	
	<b>Orange/Rockland</b> <b>Spring Valley</b>	Lower CBD	34.7	87.3	27.0	\$85.91	98	\$17.86	
		Upper CBD	32.4	86.3	25.5	\$83.13	90	\$16.09	
		AVERAGE	34	87		\$85	94	\$17	
	<b>Westchester</b> <b>Croton-on-Hudson</b>	Lower CBD	41.8	84.2	33.8	\$86.45	94	\$20.73	
		Upper CBD	39.4	83.2	32.3	\$83.67	73	\$15.65	
		AVERAGE	41	84		\$85	84	\$18	

COUNTIES	MORNING COMMUTE TRIP ORIGIN	TRIP DESTINATION	AUTO				TRANSIT	
			BPM ONE-WAY DISTANCE (Miles)	BPM ONE-WAY DRIVE TIME Minutes (plus 10) <sup>1</sup>	AVERAGE SPEED (Miles per Hour)	ROUND TRIP AUTO COST (Total)	GOOGLE MAPS ONE-WAY TRAVEL TIME Minutes (plus 20) <sup>1</sup>	ROUND TRIP TRANSIT COST (Total)
New Jersey Counties	North New Jersey Ridgewood	Lower CBD	26.4	80.1	22.6	\$76.10	71	\$17.34
		Upper CBD	24.0	79.1	20.8	\$73.32	81	\$23.47
		AVERAGE	25	80		\$75	76	\$20
	Central New Jersey Nutley	Lower CBD	16.1	67.3	16.9	\$64.11	63	\$19.20
		Upper CBD	13.0	62.4	14.9	\$60.51	52	\$14.17
		AVERAGE	15	65		\$62	58	\$17
	South New Jersey Princeton	Lower CBD	50.1	122.2	26.8	\$116.06	82	\$20.22
		Upper CBD	52.4	114.9	30.0	\$124.79	96	\$15.81
		AVERAGE	51	119		\$120	89	\$18
Connecticut Counties	Fairfield Fairfield	Lower CBD	58.5	111.4	34.6	\$113.11	122	\$25.33
		Upper CBD	55.0	114.9	31.5	\$101.83	102	\$20.25
		AVERAGE	57	113		\$107	112	\$23

Source: WSP, BPM, Google Maps

NOTES:

Miles = Route as determined by BPM.

Cost per mile = IRS standard operating costs of 58.5 cents per mile.

Auto and travel routes as established by Google Maps for a typical weekday 7:30 a.m. commute:

<sup>1</sup> All trips include 10 minutes of final destination travel by other mode at Manhattan CBD destination (walk, bus, subway). All transit trips include 20 minutes of travel (10 minutes at origin and 10 minutes at destination)

<sup>2</sup> Destination Parking = 50 percent monthly (\$20/day) and 50 percent daily (\$40/day) or a weighted average cost of \$30.

<sup>3</sup> Origin Parking = 75 percent free (\$0) and 25 percent (\$5) or a weighted average of \$1.25.

<sup>4</sup> Destination Travel Cost: assumes 75 percent walk (\$0 cost), 20 percent bus/subway (\$5.08 assuming 25 days on an unlimited pass, and 5 percent taxi (\$10 per trip) or a weighted average cost of \$1.76.

<sup>5</sup> Daily transit cost set at monthly/unlimited used over 25 days. (e.g., MTA Transit is \$127/25=\$5.08.)

## 4A.3-2 NEW YORK CITY COUNTIES

### *The Bronx (Fordham University)*

#### To/From World Trade Center

- **By Car**
  - Bronx River Parkway
  - RFK Bridge (toll both ways)
  - FDR to Pearl Street Exit
- **By Transit**
  - Metro-North Railroad to Grand Central (Monthly pass used for 25 days:  $216/25 = 8.64$  per day)
  - Nos. 4/5 subway to Fulton Street (30-day unlimited used for 25 days:  $127/25 = 5.08$ )

#### To/From Bryant Park

- **By Car**
  - Bronx River Parkway
  - RFK Bridge (tolls both ways)
  - FDR Drive to East 49th Street Exit
- **By Transit**
  - Metro-North Railroad to Grand Central (Monthly pass used for 25 days:  $216/25 = 8.64$  per day)

### *Kings (Brooklyn College)*

#### To/From World Trade Center

- **By Car**
  - NY 27
  - I-278
  - Hugh L. Carey Tunnel (toll both ways)
- **By Transit**
  - Q/5 subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)

#### To/From Bryant Park

- **By Car**
  - NY 27
  - I-278
  - Hugh L. Carey Tunnel (toll each way)
  - FDR Drive
- **By Transit**
  - Q subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)



***Queens (Rego Park—Queens Boulevard and 65th Avenue)*****To/From World Trade Center**

- **By Car**
  - I-495 Long Island Expressway
  - Queens–Midtown Tunnel (toll both ways)
  - FDR Drive
  - West Side Highway/Route 9A
- **By Transit**
  - M subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)

**To/From Bryant Park**

- **By Car**
  - I-495 Long Island Expressway
  - Queens–Midtown Tunnel (toll each way)
- **By Transit**
  - M subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)

***Richmond (Staten Island—New Dorp Lane and Richmond Road)*****To/From World Trade Center**

- **By Car**
  - I-278
  - Verrazzano Narrows Bridge (toll both directions)
  - Brooklyn–Queens Expressway (I-278)
  - Hugh L. Carey Tunnel (tolls both directions)
- **By Transit**
  - SIM15 (7-day pass used for 5 days:  $62/5 = 12.4$ ; also good for local bus/subway)

**To/From Bryant Park**

- **By Car**
  - I-278
  - Bayonne Bridge (toll southbound only)
  - NJ 440
  - I-78
  - Holland Tunnel (tolls eastbound only)
  - Sixth Avenue
- **By Transit**
  - SIM 15/2 (7-day pass used for 5 days:  $62/5 = 12.4$ ; also good for local bus/subway)
  - SIR—Ferry—2 Subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day; SI Ferry is free)

#### 4A.3-3 LONG ISLAND COUNTIES

##### *Nassau and Suffolk Counties (Central Islip)*

###### To/From World Trade Center

- **By Car**
  - I-495
  - I-278
  - Queens–Midtown Tunnel (tolls both way)
  - FDR Drive
- **By Transit**
  - LIRR Ronkonkoma Branch (365 monthly over 25 days, or 14.60 per day)
  - E subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)

###### To/From Bryant Park

- **By Car**
  - I-495
  - Queens–Midtown Tunnel (tolls both ways)
- **By Transit**
  - LIRR Ronkonkoma Branch (365 monthly over 25 days, or 14.60 per day)

#### 4A.3-4 NEW YORK COUNTIES NORTH OF NEW YORK CITY

##### *Dutchess/Putnam Counties (Brewster)*

###### To/From World Trade Center

- **By Car**
  - I-684
  - Hutchinson River Parkway
  - I-278 Bruckner
  - RFK Bridge (tolls both ways)
  - FDR Drive
  - West Side Highway/Route 9A at West Street
- **By Transit**
  - Metro-North Railroad Harlem Line (437 monthly over 25 days, = 17.48 per day)
  - Nos. 4/5 subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)

**To/From Bryant Park**

- **By Car**
  - I-684
  - Hutchinson River Parkway
  - Cross County Parkway
  - Saw Mill Parkway
  - Henry Hudson Bridge (tolls both ways)
  - West Side Highway/Route 9A
- **By Transit**
  - Metro-North Railroad Harlem Line (437 monthly over 25 days, or 17.48 per day)

***Orange/Rockland Counties (Spring Valley)***

**To/From World Trade Center**

- **By Car**
  - Palisades Interstate Parkway
  - George Washington Bridge (tolls inbound)
  - West Side Highway/Route 9A
- **By Transit**
  - Metro-North Railroad Pascack Valley Train to Hoboken (267 monthly over 25 days, or 10.68 per day)
  - PATH (110.25 unlimited, used for 25 round trips = 4.41 per day)

**To/From Bryant Park**

- **By Car**
  - Palisades Interstate Parkway
  - George Washington Bridge (tolls inbound)
  - West Side Highway/Route 9A
- **By Transit**
  - Rockland Coaches (330 monthly over 25 days, = 13.32 per day)

***Westchester County (Croton-on-Hudson)***

**To/From World Trade Center**

- **By Car**
  - Route 9/9A
  - Saw Mill Parkway
  - Henry Hudson Bridge (tolls both ways)
  - West Side Highway/Route 9A

- **By Transit**
  - Metro-North Railroad Hudson Line (322 monthly over 25 days, or 12.88 per day)
  - Nos. 4/5 subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)

**To/From Bryant Park**

- **By Car**
  - Route 9/9A
  - Saw Mill Parkway
  - Henry Hudson Bridge (tolls both ways)
  - West Side Highway/Route 9A
- **By Transit**
  - Metro-North Railroad Hudson Line (322 monthly over 25 days, or 12.88 per day)

**4A.3-5 NEW JERSEY COUNTIES**

*South Jersey (Princeton)*

**To/From World Trade Center**

- **By Car**
  - Route 1
  - New Jersey Turnpike (toll both directions)
  - I-78
  - Holland Tunnel (inbound tolls)
- **By Transit**
  - NJ TRANSIT Princeton Junction to Newark Penn (326 monthly over 25 days, or 13.04 per day)
  - PATH (110.25 unlimited, used for 25 round trips = 4.41 per day)

**To/From Bryant Park**

- **By Car**
  - Route 1
  - New Jersey Turnpike (tolls both directions)
  - I-495
  - Lincoln Tunnel (tolls inbound)
- **By Transit**
  - NJ TRANSIT Princeton Junction to New York Penn (365 monthly over 25 days, or 13.04 per day)

*Central Jersey (Nutley)*

To/From World Trade Center

- **By Car**
  - Route 3
  - Route 9
  - I-78
  - Holland Tunnel (inbound tolls)
- **By Transit**
  - NJ TRANSIT (15.20 two-way reduced by 25 percent, or 11.40 per day)
  - A/E subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)

To/From Bryant Park

- **By Car**
  - Route 3
  - I-495
  - Lincoln Tunnel (tolls inbound)
  - West Side Highway/Route 9A at West Street
- **By Transit**
  - NJ TRANSIT (15.20 two-way reduced by 25 percent, or 11.40 per day)

*Northern Jersey (Ridgewood)*

To/From World Trade Center

- **By Car**
  - Route 17
  - I-95/New Jersey Turnpike (18/17 north of tolls)
  - Route 1/Tonnelle Avenue
  - Holland Tunnel (inbound tolls)
- **By Transit**
  - NJ TRANSIT train to Hoboken (254 monthly over 25 days, or 10.16 per day)
  - PATH (110.25 unlimited, used for 25 round trips = 4.41 per day)

To/From Bryant Park

- **By Car**
  - Route 17
  - New Jersey Turnpike (toll both ways)
  - I-495
  - Lincoln Tunnel (tolls inbound)

Appendix 4A.3, Transportation: Representative Commuting Costs by Auto and Transit

- **By Transit**
  - NJ TRANSIT train to Hoboken (254 monthly over 25 days, or 10.16 per day)
  - PATH (110.25 unlimited, used for 20 round trips = 5.51 per day)
  - R subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)

#### 4A.3-6 CONNECTICUT COUNTIES

##### *Fairfield County (Fairfield)*

##### To/From World Trade Center

- **By Car**
  - I-95
  - I-278
  - RFK Bridge (tolls both ways)
  - FDR Drive
  - West Side Highway/Route 9A at West Street
- **By Transit**
  - Metro-North Railroad New Haven Line (391 monthly over 25 days, or 15.64 per day)
  - Nos. 4/5 subway (30-day unlimited used for 25 days:  $127/25 = 5.08$  per day)

##### To/From Bryant Park

- **By Car**
  - I-95
  - I-287
  - Hutchinson River Parkway
  - Cross County Parkway
  - Saw Mill Parkway
  - Henry Hudson Bridge (tolls both ways)
  - West Side Highway/Route 9A
- **By Transit**
  - Metro-North Railroad New Haven Line (391 monthly over 25 days, or 15.64 per day)