# Chapter 22: Mitigation

## A. INTRODUCTION

This chapter considers mitigation measures to address significant adverse impacts generated by the proposed actions. As described in Chapter 1, "Project Description," the applicants, the New York City Department of City Planning (DCP) and SJC 33 Owner 2015 LLC, are proposing a series of discretionary actions (the proposed actions) that would facilitate the redevelopment of St. John's Terminal Building at 550 Washington Street (Block 596, Lot 1) (the development site) with a mix of residential and commercial uses, and public open space (the proposed project) in Manhattan Community District 2.

The proposed actions have the potential to result in significant adverse impacts to open space, traffic, and construction-period air quality and noise. Potential mitigation measures for each of these technical areas are identified below.

### PRINCIPAL CONCLUSIONS

*OPEN SPACE*

With the proposed project, the study area's total open space ratio would decrease by 5.66 percent, and the active open space ratio would decrease by 6.96 percent. According to the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, these reductions in the total and active open space ratios would result in a significant adverse open space impact based on quantitative analysis of indirect effects.

Potential partial mitigation measures for these significant adverse impacts are currently being explored by the private applicant in consultation with the lead agency, DCP, and the New York City Department of Parks and Recreation (DPR) and will be refined between the Draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS). The *CEQR Technical Manual* lists potential mitigation measures for open space impacts. These measures may include, but are not limited to, creating new open space within the study area; funding for improvements, renovation, or maintenance at existing local parks; or improving existing open spaces to increase their utility or capacity to meet identified open space needs in the area, such as through the provision of additional active open space facilities. If feasible mitigation is found, the impacts will be considered partially mitigated. As the significant adverse impact on open space would not be fully mitigated, the proposed actions would result in an unavoidable adverse impact on open space.

*TRANSPORTATION*

The proposed actions would result in significant adverse impacts with respect to traffic. The proposed actions would not result in significant adverse impacts with respect to subway, buses and pedestrians. As discussed in Chapter 14, "Transportation," traffic conditions were evaluated at 18 intersections for the weekday AM, midday, PM, and Saturday peak hours. In the 2024

With Action condition (the proposed project), there would be the potential for significant adverse traffic impacts at seven intersections during the weekday AM peak hour, two intersections during the weekday midday peak hour, six intersections during the weekday PM peak hour, and four intersections during the Saturday peak hour, as summarized in **Table 22-1**. In the 2024 With Action condition (the proposed project with big box retail), there would be the potential for significant adverse traffic impacts at five intersections during the weekday AM peak hour, six intersections during the weekday midday peak hour, nine intersections during the weekday PM peak hour, and five intersections during the Saturday peak hour, as summarized in **Table 22-2**.

**Table 22-1**
**Summary of Significant Adverse Traffic Impacts**
**Proposed Project**

| Intersection | | Weekday AM Peak Hour | Weekday Midday Peak Hour | Weekday PM Peak Hour | Saturday Peak Hour |
|---|---|---|---|---|---|
| **EB/WB Street** | **NB/SB Street** | | | | |
| Clarkson Street | Washington Street | SB-LT | | SB-LT | |
| West Houston Street | Washington Street | SB-TR | | SB-TR | SB-TR |
| West Houston Street | Varick Street | | | SB-TR (West Lanes) | |
| Clarkson Street | West Street | SB-L | SB-L | SB-L | SB-L |
| West Houston Street | West Street | EB-L | WB-R | WB-R | WB-R |
| Canal Street (North) | West Street | WB-L | | | |
| Canal Street | Hudson Street | | | NB-LT (West Lanes) | |
| Clarkson Street | Hudson Street | EB-LT | | | EB-LT |
| Clarkson Street | Varick Street | EB-TR | | | |
| **Total Impacted Intersections/Lane Groups** | | **7/7** | **2/2** | **6/6** | **4/4** |

**Notes:** L = Left Turn, T = Through, R = Right Turn, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound.

**Table 22-2**
**Summary of Significant Adverse Traffic Impacts**
**Proposed Project with Big Box Retail**

| Intersection | | Weekday AM Peak Hour | Weekday Midday Peak Hour | Weekday PM Peak Hour | Saturday Peak Hour |
|---|---|---|---|---|---|
| **EB/WB Street** | **NB/SB Street** | | | | |
| Clarkson Street | Washington Street | SB-LT | | SB-LT | |
| West Houston Street | Washington Street | SB-TR | SB-TR | WB-LT<br>SB-TR | SB-TR |
| West Houston Street | Varick Street | | | SB-TR (West Lanes) | |
| Clarkson Street | West Street | | SB-L | SB-L | SB-L |
| West Houston Street | West Street | EB-L | WB-R | WB-R | WB-R |
| Canal Street (North) | West Street | | WB-LR<br>WB-R | | WB-LR<br>WB-R |
| Canal Street | Hudson Street | | NB-LT (West Lanes) | NB-LT (West Lanes) | |
| Clarkson Street | Hudson Street | EB-LT | EB-LT | EB-LT | EB-LT |
| Clarkson Street | Varick Street | EB-TR | | | |
| Spring Street | West Street | | | WB-R | |
| Spring Street | Washington Street | | | SB-LTR | |
| **Total Impacted Intersections/Lane Groups** | | **5/5** | **6/7** | **9/10** | **5/6** |

**Notes:** L = Left Turn, T = Through, R = Right Turn, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound.

The majority of the locations where significant adverse traffic impacts are predicted to occur could be fully mitigated with the implementation of standard traffic mitigation measures (e.g., signal timing changes, approach daylighting, and lane restriping), which are described below. However, for the proposed project, the significant adverse impacts at the intersection of West Houston Street at Varick Street and at the intersection of Canal Street at Hudson Street could not be fully mitigated during the weekday PM peak hour. For the proposed project with big box

retail, the significant adverse impacts at the intersections of West Houston Street at Varick Street, West Houston Street at West Street, Canal Street at Hudson Street, Spring Street at West Street, and Spring Street at Washington Street could not be fully mitigated during one or more analysis peak hours. No significant adverse impacts were identified for transit, pedestrians, vehicular and pedestrian safety, and parking.

As noted in Chapter 1, "Project Description," the South Site could contain either hotel or office use. The EIS analyses are generally based on hotel use as a more conservative assumption and the transportation analyses presented in Chapter 14, "Transportation" assumed a 229,700-gsf hotel use. However, because of different travel patterns between the hotel and office uses, developing the South Site with office instead of a hotel could have the potential to result in additional significant adverse transportation impacts which will be explored between the DEIS and FEIS. Mitigation measures will be explored in coordination with the New York City Department of Transportation (NYCDOT) to mitigate any additional significant adverse transportation impacts. The proposed mitigation measures are subject to review and approval by the NYCDOT, and if certain proposed mitigation measures are deemed infeasible by NYCDOT, alternate measures will be explored. If no other alternate mitigation is identified, the impacted locations would be unmitigated.

Between Draft and Final of this EIS, additional measures will be explored, where feasible, to further mitigate the impacts identified above. If additional feasible measures can be identified, certain projected impacts may become mitigated. If no additional feasible measures can be identified, the projected impacts would remain unmitigated, and would therefore be considered unavoidable adverse impacts (see Chapter 23, "Unavoidable Adverse Impacts").

*CONSTRUCTION*

As described in Chapter 20, "Construction," there is a potential for temporary construction-period air quality and noise impacts. Between the DEIS and FEIS, a detailed modeling analysis will be conducted to quantify the levels of construction air quality concentrations and noise levels that may occur at project elements and/or at existing tenants should they be completed and occupied during construction on one or more of the other project buildings. Mitigation measures will be explored to reduce or eliminate any potential impacts.

## B. OPEN SPACE

With the proposed project, the study area's total open space ratio would decrease by 5.66 percent, and the active open space ratio would decrease by 6.96 percent. According to the *CEQR Technical Manual*, an action may result in a significant adverse open space impact if it would reduce the open space ratio by more than 5 percent in areas that are currently below the City's median community district open space ratio of 1.5 acres per 1,000 residents. Therefore, these reductions in the total and active open space ratios would result in a significant adverse open space impact based on quantitative analysis of indirect effects as set forth in the *CEQR Technical Manual*.

Potential partial mitigation measures for these significant adverse impacts are currently being explored by the private applicant in consultation with the lead agency, DCP, and DPR and will be refined between the DEIS and FEIS. The *CEQR Technical Manual* lists potential mitigation measures for open space impacts. These measures may include, but are not limited to, creating new open space within the study area; funding for improvements, renovation, or maintenance at existing local parks; or improving existing open spaces to increase their utility or capacity to

meet identified open space needs in the area, such as through the provision of additional active open space facilities. If feasible mitigation is found, the impacts will be considered partially mitigated. As the significant adverse impact on open space would not be fully mitigated, the proposed actions would result in an unavoidable adverse impact on open space.

# C. TRANSPORTATION

## TRAFFIC

As discussed in Chapter 14, "Transportation," traffic conditions were evaluated at 18 intersections for the weekday AM, midday, PM, and Saturday peak hours for both the proposed project and the proposed project with big box retail. The 2024 With Action condition analysis identified the potential for significant adverse traffic impacts at multiple analysis intersections during one or more analysis peak hours under the proposed project and the proposed project with big box retail. The potential significant adverse traffic impacts and their recommended mitigation measures under both proposed development programs are discussed below.

As described in Chapter 14, "Transportation," traffic levels of service (LOS) at signalized and unsignalized intersections are evaluated using average stop control delay, in seconds per vehicle, for individual lane groups (grouping of movements in one or more travel lanes), the approaches, and the overall intersection. According to the criteria presented in the 2014 *CEQR Technical Manual*, impacts are considered significant and require examination of mitigation if they result in an increase in the With Action condition of five or more seconds of delay in a lane group over No Action levels beyond mid-LOS D. For No Action LOS E, a four-second increase in delay is considered significant. For No Action LOS F, a three-second increase in delay is considered significant. In addition, impacts are considered significant if levels of service deteriorate from acceptable A, B, or C in the No Action condition to marginally unacceptable LOS D (a delay in excess of 45 and 30 seconds, the midpoint of LOS D, for signalized and unsignalized intersections, respectively), or unacceptable LOS E or F in the With Action condition. For unsignalized intersections, for the minor street to trigger significant impacts, at least 90 passenger car equivalents (PCEs) must be identified in the With Action condition in any peak hour. A traffic impact is considered fully mitigated when the resulting degradation in the average control delay per vehicle under the Action-with-Mitigation condition compared to the No Action condition is no longer deemed significant following the impact criteria described above.

*PROPOSED PROJECT*

**Tables 22-3 to 22-6** itemize the recommended mitigation measures that address the identified impacts under the proposed project. With the implementation of these standard traffic mitigation measures (including primarily signal timing changes, approach daylighting, and lane restriping), which are subject to review and approval by the New York City Department of Transportation (NYCDOT), the significant adverse traffic impacts identified above could be fully mitigated except for the intersection of West Houston Street at Varick Street and the intersection of Canal Street at Hudson Street, during the weekday PM peak hour.

## Table 22-3
## Recommended Mitigation Measures: Proposed Project
## Weekday AM Peak Hour

| Intersection | No Action Signal Timing | Recommended Mitigation Measures | Recommended Signal Timing |
|---|---|---|---|
| Clarkson Street and Washington Street | EB: Green = 40 s<br>SB: Green = 40 s | Shift 1 second of green time from the EB phase to the SB phase. | EB: Green = 39 s<br>SB: Green = 41 s |
| West Houston Street and Washington Street | WB: Green = 40 s<br>SB: Green = 40 s | 1) Restripe the SB approach from one 8-foot parking lane, one 11-foot moving lane, one 5-foot bike lane, and one 8-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one 8-foot parking lane.<br>2) Install "No Standing Anytime" for 100-feet at the SB approach to create an additional right-turn lane. | No change from No Action |
| Clarkson Street and West Street | SB-L: Green = 34 s<br>NB/SB: Green = 104 s | Shift 1 second of green time from the NB/SB phase to the SB left-turn phase. | SB-L: Green = 35 s<br>NB/SB: Green = 103 s |
| West Houston Street and West Street | EB/WB: Green = 33 s<br>NB/SB: Green = 90 s<br>NB-L: Green = 10 s | Shift 1 second of green time from the NB/SB phase to the EB/WB phase. | EB/WB: Green = 34 s<br>NB/SB: Green = 89 s<br>NB-L: Green = 10 s |
| Canal Street (North) and West Street | WB: Green = 25 s<br>NB/SB: Green = 99 s | Shift 1 second of green time from the NB/SB phase to the WB phase. | WB: Green = 26 s<br>NB/SB: Green = 98 s |
| Clarkson Street and Hudson Street | EB: Green = 31 s<br>NB: Green = 49 s | Shift 3 seconds of green time from the NB phase to the EB phase. | EB: Green = 34 s<br>NB: Green = 46 s |
| Clarkson Street and Varick Street | EB/WB: Green = 40 s<br>SB: Green = 40 s | Shift 2 seconds of green time from the SB phase to the EB/WB phase. | EB/WB: Green = 42s<br>SB: Green = 38 s |

**Notes:** EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right.

## Table 22-4
## Recommended Mitigation Measures: Proposed Project
## Weekday Midday Peak Hour

| Intersection | No Action Signal Timing | Recommended Mitigation Measures | Recommended Signal Timing |
|---|---|---|---|
| Clarkson Street and West Street | SB-L: Green = 34 s<br>NB/SB: Green = 74 s | Shift 1 second of green time from the NB/SB phase to the SB left-turn phase. | SB-L: Green = 35 s<br>NB/SB: Green = 73 s |
| West Houston Street and West Street | EB/WB: Green = 33 s<br>NB/SB: Green = 60 s<br>NB-L: Green = 10 s | Shift 2 seconds of green time from the NB left-turn phase to the EB/WB phase. | EB/WB: Green = 35 s<br>NB/SB: Green = 60 s<br>NB-L: Green = 8 s |

**Notes:** EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right.

## Table 22-5
## Recommended Mitigation Measures: Proposed Project
## Weekday PM Peak Hour

| Intersection | No Action Signal Timing | Recommended Mitigation Measures | Recommended Signal Timing |
|---|---|---|---|
| Clarkson Street and Washington Street | EB: Green = 40 s<br>SB: Green = 40 s | Shift 1 second of green time from the EB phase to the SB phase. | EB: Green = 39 s<br>SB: Green = 41 s |
| West Houston Street and Washington Street | WB: Green = 39 s<br>SB: Green = 41 s | 1) Restripe the SB approach from one 8-foot parking lane, one 11-foot moving lane, one 5-foot bike lane, and one 8-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one 8-foot parking lane.<br>2) Install "No Standing Anytime" for 100-feet at the SB approach to create an additional right-turn lane. | No change from No Action |
| West Houston Street and Varick Street | WB-T: Green = 7 s<br>WB: Green = 33 s<br>SB: Green = 40 s | Unmitigated | No change from No Action |
| Clarkson Street and West Street | SB-L: Green = 34 s<br>NB/SB: Green = 104 s | Shift 3 seconds of green time from the NB/SB phase to the SB left-turn phase. | SB-L: Green = 37 s<br>NB/SB: Green = 101 s |
| West Houston Street and West Street | EB/WB: Green = 33 s<br>NB/SB: Green = 90 s<br>NB-L: Green = 10 s | Shift 3 seconds of green time from the NB/SB phase to the EB/WB phase. | EB/WB: Green = 36 s<br>NB/SB: Green = 87 s<br>NB-L: Green = 10 s |
| Canal Street and Hudson Street | EB/EB-L/WB-R: Green = 21 s<br>EB-T/WB-T/WB-R: Green = 25 s<br>NB: Green = 26 s | Unmitigated | No change from No Action |

**Notes:** EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right.

## Table 22-6
## Recommended Mitigation Measures: Proposed Project
## Saturday Peak Hour

| Intersection | No Action Signal Timing | Recommended Mitigation Measures | Recommended Signal Timing |
|---|---|---|---|
| West Houston Street and Washington Street | WB: Green = 40 s<br>SB: Green = 40 s | 1) Restripe the SB approach from one 8-foot parking lane, one 11-foot moving lane, one 5-foot bike lane, and one 8-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one 8-foot parking lane.<br>2) Install "No Standing Anytime" for 100-feet at the SB approach to create an additional right-turn lane. | No change from No Action |
| Clarkson Street and West Street | SB-L: Green = 34 s<br>NB/SB: Green = 74 s | Shift 2 seconds of green time from the NB/SB phase to the SB left-turn phase. | SB-L: Green = 36 s<br>NB/SB: Green = 72 s |
| West Houston Street and West Street | EB/WB: Green = 33 s<br>NB/SB: Green = 60 s<br>NB-L: Green = 10 s | Shift 2 seconds of green time from the NB left-turn phase to the EB/WB phase. | EB/WB: Green = 35 s<br>NB/SB: Green = 60 s<br>NB-L: Green = 8 s |
| Clarkson Street and Hudson Street | EB: Green = 31 s<br>NB: Green = 49 s | Shift 1 second of green time from the NB phase to the EB phase. | EB: Green = 32 s<br>NB: Green = 48 s |

**Notes:** EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right.

A discussion of the recommended mitigation measures is provided below. **Tables 22-7 to 22-10** compare the levels of service (LOS) and lane group delays for the impacted intersections under the 2024 No Action, With Action (the proposed project), and Mitigation conditions for the four analysis peak hours.

*Clarkson Street and Washington Street*

The significant adverse impacts at the southbound approach of this intersection during the weekday AM and PM peak hour could be fully mitigated by shifting 1 second of green time from the eastbound phase to the southbound phase. As shown in **Tables 22-7 and 22-9**, the significant adverse impacts could be fully mitigated.

*West Houston Street and Washington Street*

The significant adverse impacts at the southbound approach of this intersection during the weekday AM, PM, and Saturday peak hours could be fully mitigated by restriping the southbound approach from one eight-foot parking lane, one 11-foot moving lane, one five-foot bike lane, and one eight-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one eight-foot parking lane; and prohibiting parking (installing "No Standing Anytime" sign) on the west curbside of the southbound approach for approximately 100 feet from the intersection. As shown in **Tables 22-7, 22-9, and 22-10**, the significant adverse impacts could be fully mitigated.

*West Houston Street and Varick Street*

The significant adverse impact at the southbound (west lanes) approach of this intersection during the weekday PM peak hour could not be mitigated (see **Table 22-9).**

*Clarkson Street and West Street*

The significant adverse impacts at the southbound left-turn lane group of this intersection during the weekday AM and midday peak hours could be fully mitigated by shifting one second of green time from the northbound/southbound phase to the southbound left-turn phase.

The significant adverse impact at the southbound left-turn lane group of this intersection during the weekday PM peak hour could be fully mitigated by shifting three seconds of green time from the northbound/southbound phase to the southbound left-turn phase.

The significant adverse impact at the southbound left-turn lane group of this intersection during the Saturday peak hour could be fully mitigated by shifting two seconds of green time from the northbound/southbound phase to the southbound left-turn phase.

As shown in **Tables 22-7 to 22-10**, the significant adverse impacts could be fully mitigated.

## Table 22-7
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project
## Weekday AM Peak Hour - Signalized Intersections

| | Weekday AM | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **Clarkson Street and Washington Street** | | | | | | | | | | | | |
| EB | TR | 0.80 | 28.7 | C | TR | 0.88 | 33.8 | C | TR | 0.90 | 37.2 | D |
| SB | LT | 0.99 | 60.9 | E | LT | 1.02 | 69.5 | E + | LT | 1.00 | 62.1 | E |
| | Int. | | 42.4 | D | Int. | | 48.2 | D | Int. | | 47.3 | D |
| **West Houston Street and Washington Street** | | | | | | | | | | | | |
| WB | LT | 0.69 | 23.3 | C | LT | 0.67 | 22.9 | C | LT | 0.67 | 22.9 | C |
| | - | - | - | - | - | - | - | - | T | 0.58 | 22.8 | C |
| SB | TR | 1.31 | 177.6 | F | TR | 1.38 | 208.7 | F + | - | - | - | - |
| | - | - | - | - | - | - | - | - | R | 0.77 | 35.8 | D |
| | Int. | | 91.7 | F | Int. | | 106.2 | F | Int. | | 25.4 | C |
| **Clarkson Street and West Street** | | | | | | | | | | | | |
| NB | TR | 0.89 | 22.1 | C | TR | 0.93 | 25.6 | C | TR | 0.94 | 27.2 | C |
| SB | L | 1.34 | 228.5 | F | L | 1.35 | 232.2 | F + | L | 1.31 | 213.8 | F |
| | T | 0.81 | 18.8 | B | T | 0.81 | 18.8 | B | T | 0.82 | 19.6 | B |
| | Int. | | 36.3 | D | Int. | | 38.2 | D | Int. | | 38.1 | D |
| **West Houston Street and West Street** | | | | | | | | | | | | |
| EB | L | 0.71 | 90.0 | F | L | 0.75 | 97.3 | F + | L | 0.71 | 89.4 | F |
| | R | 0.09 | 47.1 | D | R | 0.09 | 47.1 | D | R | 0.08 | 46.3 | D |
| WB | L | 0.70 | 66.2 | E | L | 0.71 | 66.8 | E | L | 0.69 | 64.4 | E |
| | LT | 0.82 | 76.6 | E | LT | 0.83 | 78.1 | E | LT | 0.81 | 74.1 | E |
| | R | 1.37 | 248.5 | F | R | 1.37 | 245.2 | F | R | 1.33 | 228.9 | F |
| NB | L | 0.34 | 76.2 | E | L | 0.34 | 76.2 | E | L | 0.34 | 76.2 | E |
| | T | 0.92 | 32.9 | C | T | 0.95 | 35.6 | D | T | 0.96 | 37.7 | D |
| SB | T | 0.95 | 37.2 | D | T | 0.95 | 37.2 | D | T | 0.96 | 39.5 | D |
| | R | 0.03 | 12.3 | B | R | 0.03 | 12.3 | B | R | 0.03 | 12.7 | B |
| | Int. | | 50.1 | D | Int. | | 51.2 | D | Int. | | 51.8 | D |
| **Canal Street (North) and West Street** | | | | | | | | | | | | |
| WB | L | 0.82 | 79.3 | E | L | 0.85 | 84.0 | F + | L | 0.08 | 78.3 | E |
| | LR | 1.22 | 187.6 | F | LR | 1.21 | 185.9 | F | LR | 1.17 | 166.5 | F |
| | R | 1.22 | 187.7 | F | R | 1.21 | 184.1 | F | R | 1.16 | 164.4 | F |
| NB | T | 0.69 | 10.8 | B | T | 0.69 | 10.8 | B | T | 0.70 | 11.4 | B |
| SB | T | 0.55 | 8.4 | A | T | 0.55 | 8.5 | A | T | 0.55 | 8.9 | A |
| | Int. | | 26.4 | C | Int. | | 26.4 | C | Int. | | 25.0 | C |
| **Clarkson Street and Hudson Street** | | | | | | | | | | | | |
| EB | LT | 1.19 | 135.8 | F | LT | 1.31 | 183.2 | F + | LT | 1.19 | 132.8 | F |
| NB | TR | 0.74 | 19.5 | B | TR | 0.74 | 19.5 | B | TR | 0.79 | 23.3 | C |
| | Int. | | 59.6 | E | Int. | | 79.4 | E | Int. | | 63.4 | E |
| **Clarkson Street and Varick Street** | | | | | | | | | | | | |
| EB | TR | 1.06 | 81.5 | F | TR | 1.10 | 95.2 | F + | TR | 1.05 | 75.3 | E |
| WB | L | 0.18 | 17.8 | B | L | 0.19 | 18.1 | B | L | 0.17 | 16.2 | B |
| SB | LT | 0.71 | 22.3 | C | LT | 0.71 | 22.3 | C | LT | 0.75 | 24.4 | C |
| | Int. | | 37.7 | D | Int. | | 42.1 | D | Int. | | 38.2 | D |

**Notes:** L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection.
+ Denotes a significant adverse traffic impact.

## Table 22-8
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project
## Weekday Midday Peak Hour - Signalized Intersections

| | Weekday Midday | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **West Houston Street and Washington Street[1]** | | | | | | | | | | | | |
| WB | LT | 0.63 | 21.9 | C | LT | 0.60 | 21.2 | C | LT | 0.60 | 21.2 | C |
| SB | - | - | - | - | - | - | - | - | T | 0.57 | 22.1 | C |
| | TR | 1.14 | 109.8 | F | TR | 1.11 | 98.0 | F | - | - | - | - |
| | - | - | - | - | - | - | - | - | R | 0.55 | 24.9 | C |
| | Int. | | 61.1 | E | Int. | | 55.3 | E | Int. | | 22.0 | C |
| **Clarkson Street and West Street** | | | | | | | | | | | | |
| NB | TR | 0.88 | 23.1 | C | TR | 0.88 | 22.9 | C | TR | 0.89 | 24.2 | C |
| SB | L | 1.27 | 182.0 | F | L | 1.28 | 187.1 | F + | L | 1.24 | 171.1 | F |
| | T | 0.78 | 19.3 | B | T | 0.78 | 19.3 | B | T | 0.79 | 20.2 | C |
| | Int. | | 36.7 | D | Int. | | 37.3 | D | Int. | | 36.8 | D |
| **West Houston Street and West Street** | | | | | | | | | | | | |
| EB | L | 0.24 | 36.2 | D | L | 0.25 | 36.5 | D | L | 0.23 | 34.5 | C |
| | R | 0.06 | 32.3 | C | R | 0.06 | 32.3 | C | R | 0.05 | 30.8 | C |
| WB | L | 0.37 | 37.7 | D | L | 0.37 | 37.7 | D | L | 0.35 | 35.8 | D |
| | LT | 0.40 | 38.5 | D | LT | 0.40 | 38.4 | D | LT | 0.38 | 36.4 | D |
| | R | 1.44 | 262.6 | F | R | 1.52 | 294.9 | F + | R | 1.41 | 248.9 | F |
| NB | L | 0.13 | 53.3 | D | L | 0.13 | 53.3 | D | L | 0.17 | 56.6 | E |
| | T | 0.93 | 35.7 | D | T | 0.93 | 35.0 | C | T | 0.93 | 35.0 | C |
| SB | T | 1.02 | 54.5 | D | T | 1.02 | 54.5 | D | T | 1.02 | 54.5 | D |
| | R | 0.04 | 15.4 | B | R | 0.04 | 15.4 | B | R | 0.04 | 15.4 | B |
| | Int. | | 59.1 | E | Int. | | 60.9 | E | Int. | | 57.6 | E |

**Notes:** L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection.
+ Denotes a significant adverse traffic impact.
[1] Intersection not impacted during the weekday midday peak hour; analysis presented to demonstrate the proposed lane restriping mitigation measures would not result in additional significant adverse traffic impacts.

## Table 22-9
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project
## Weekday PM Peak Hour - Signalized Intersections

| | Weekday PM | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **Clarkson Street and Washington Street** | | | | | | | | | | | | |
| EB | TR | 0.85 | 32.0 | C | TR | 0.82 | 30.0 | C | TR | 0.84 | 32.3 | C |
| SB | LT | 1.00 | 61.4 | E | LT | 1.04 | 72.5 | E + | LT | 1.01 | 64.5 | E |
| | Int. | | 45.0 | D | Int. | | 49.3 | D | Int. | | 46.9 | D |
| **West Houston Street and Washington Street** | | | | | | | | | | | | |
| WB | LT | 0.91 | 42.0 | D | LT | 0.94 | 46.2 | D | LT | 0.94 | 46.2 | D |
| SB | - | - | - | - | - | - | - | - | T | 0.77 | 28.9 | C |
| | TR | 1.49 | 254.9 | F | TR | 1.58 | 294.1 | F + | - | - | - | - |
| | - | - | - | - | - | - | - | - | R | 0.89 | 53.2 | D |
| | Int. | | 143.8 | F | Int. | | 164.2 | F | Int. | | 41.9 | D |
| **West Houston Street and Varick Street** | | | | | | | | | | | | |
| WB | L | 0.94 | 68.9 | E | L | 0.89 | 58.3 | E | Unmitigated | | | |
| | T | 0.87 | 36.3 | D | T | 0.91 | 41.1 | D | | | | |
| SB (East Lanes) | T | 0.71 | 23.8 | C | T | 0.71 | 23.8 | C | | | | |
| SB (West Lanes) | - | - | - | - | - | - | - | - | | | | |
| | TR | 1.11 | 260.7 | F | TR | 1.12 | 267.9 | F + | | | | |
| | - | - | - | - | - | - | - | - | | | | |
| | Int. | | 89.1 | F | Int. | | 91.0 | F | | | | |
| **Clarkson Street and West Street** | | | | | | | | | | | | |
| NB | TR | 0.94 | 25.8 | C | TR | 0.92 | 24.2 | C | TR | 0.95 | 28.9 | C |
| SB | L | 1.35 | 234.2 | F | L | 1.46 | 281.3 | F + | L | 1.34 | 228.9 | F |
| | T | 0.67 | 14.4 | B | T | 0.67 | 14.4 | B | T | 0.69 | 16.3 | B |
| | Int. | | 37.3 | D | Int. | | 41.4 | D | Int. | | 40.6 | D |
| **West Houston Street and West Street** | | | | | | | | | | | | |
| EB | L | 0.64 | 75.2 | E | L | 0.66 | 77.8 | E | L | 0.57 | 65.1 | E |
| | R | 0.06 | 46.5 | D | R | 0.06 | 46.5 | D | R | 0.05 | 44.1 | D |
| WB | L | 0.64 | 62.2 | E | L | 0.64 | 62.1 | E | L | 0.58 | 57.1 | E |
| | LT | 0.73 | 67.3 | E | LT | 0.72 | 67.1 | E | LT | 0.66 | 60.7 | E |
| | R | 1.35 | 235.5 | F | R | 1.43 | 272.6 | F + | R | 1.32 | 222.7 | F |
| NB | L | 0.42 | 79.3 | E | L | 0.42 | 79.3 | E | L | 0.42 | 79.3 | E |
| | T | 0.95 | 35.3 | D | T | 0.93 | 33.3 | C | T | 0.96 | 39.3 | D |
| SB | T | 0.78 | 25.0 | C | T | 0.78 | 25.0 | C | T | 0.81 | 27.9 | C |
| | R | 0.02 | 12.2 | B | R | 0.02 | 12.2 | B | R | 0.02 | 13.5 | B |
| | Int. | | 46.8 | D | Int. | | 48.9 | D | Int. | | 49.2 | D |

## Table 22-9 (cont'd)
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project
## Weekday PM Peak Hour - Signalized Intersections

| | Weekday PM | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **Canal Street and Hudson Street** | | | | | | | | | | | | |
| EB | L | 0.75 | 103.2 | F | L | 0.75 | 103.2 | F | Unmitigated | | | |
| | T | 0.71 | 18.8 | B | T | 0.71 | 18.8 | B | | | | |
| WB | T | 0.73 | 109.8 | F | T | 0.72 | 104.7 | F | | | | |
| | R | 1.07 | 88.7 | F | R | 1.07 | 88.7 | F | | | | |
| NB (East Lanes) | T | 0.69 | 87.8 | F | T | 0.69 | 87.8 | F | | | | |
| | R | 0.06 | 23.5 | C | R | 0.06 | 23.5 | C | | | | |
| NB (West Lanes) | LT | 1.11 | 97.8 | F | LT | 1.12 | 102.9 | F + | | | | |
| | Int. | | 81.3 | F | Int. | | 82.2 | F | | | | |

**Notes:** L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection.
+ Denotes a significant adverse traffic impact.

## Table 22-10
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project
## Saturday Peak Hour - Signalized Intersections

| | Saturday | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **West Houston Street and Washington Street** | | | | | | | | | | | | |
| WB | LT | 0.61 | 21.1 | C | LT | 0.62 | 21.4 | C | LT | 0.62 | 21.4 | C |
| | - | - | - | - | - | - | - | - | T | 0.47 | 19.9 | B |
| SB | TR | 0.96 | 56.3 | E | TR | 1.04 | 76.3 | E + | - | - | - | - |
| | - | - | - | - | - | - | - | - | R | 0.59 | 26.1 | C |
| | Int. | | 34.6 | C | Int. | | 42.8 | D | Int. | | 21.7 | C |
| **Clarkson Street and West Street** | | | | | | | | | | | | |
| NB | TR | 0.77 | 18.5 | B | TR | 0.79 | 19.0 | B | TR | 0.81 | 20.8 | C |
| SB | L | 0.82 | 56.3 | E | L | 0.89 | 64.8 | E + | L | 0.84 | 56.5 | E |
| | T | 0.79 | 19.6 | B | T | 0.79 | 19.6 | B | T | 0.81 | 21.5 | C |
| | Int. | | 21.4 | C | Int. | | 22.5 | C | Int. | | 23.6 | C |
| **West Houston Street and West Street** | | | | | | | | | | | | |
| EB | L | 0.17 | 34.8 | C | L | 0.18 | 35.0 | C | L | 0.16 | 33.2 | C |
| | R | 0.03 | 31.9 | C | R | 0.03 | 31.9 | C | R | 0.03 | 30.4 | C |
| WB | L | 0.44 | 39.3 | D | L | 0.45 | 39.4 | D | L | 0.42 | 37.2 | D |
| | LT | 0.48 | 40.1 | D | LT | 0.48 | 40.2 | D | LT | 0.45 | 38.0 | D |
| | R | 1.29 | 193.5 | F | R | 1.36 | 223.3 | F + | R | 1.29 | 191.2 | F |
| NB | L | 0.13 | 53.0 | D | L | 0.13 | 53.0 | D | L | 0.16 | 56.1 | E |
| | T | 0.81 | 27.7 | C | T | 0.81 | 27.8 | C | T | 0.81 | 27.8 | C |
| SB | T | 1.01 | 52.4 | D | T | 1.01 | 52.4 | D | T | 1.01 | 52.4 | D |
| | R | 0.04 | 15.4 | B | R | 0.04 | 15.4 | B | R | 0.04 | 15.4 | B |
| | Int. | | 51.5 | D | Int. | | 54.5 | D | Int. | | 51.7 | D |
| **Clarkson Street and Hudson Street** | | | | | | | | | | | | |
| EB | LT | 0.92 | 53.5 | D | LT | 0.96 | 61.8 | E + | LT | 0.93 | 54.5 | D |
| NB | TR | 0.48 | 13.7 | B | TR | 0.48 | 13.7 | B | TR | 0.49 | 14.4 | B |
| | Int. | | 28.9 | C | Int. | | 32.6 | C | Int. | | 30.1 | C |

**Notes:** L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection.
+ Denotes a significant adverse traffic impact.

*West Houston Street and West Street*

The significant adverse impact at the eastbound left-turn lane group of this intersection during the weekday AM peak hour could be fully mitigated by shifting one second of green time from the from the northbound/southbound phase to the eastbound/westbound phase.

The significant adverse impacts at the westbound right-turn lane group of this intersection during the weekday midday and Saturday peak hours could be fully mitigated by shifting two seconds of green time from the northbound left-turn phase to the eastbound/westbound phase.

The significant adverse impact at the westbound right-turn lane group of this intersection during the weekday PM peak hour could be fully mitigated by shifting three seconds of green time from the northbound/southbound phase to the eastbound/westbound phase.

As shown in **Tables 22-7 to 22-10**, the significant adverse impacts could be fully mitigated.

*Canal Street (North) and West Street*

The significant adverse impact at the westbound left-turn lane group of this intersection during the weekday AM peak hour could be fully mitigated by shifting one second of green time from the northbound/southbound phase to the westbound phase. As shown in **Table 22-7**, the significant adverse impact could be fully mitigated.

*Canal Street and Hudson Street*

The significant adverse impact at the northbound (west lanes) approach of this intersection during the weekday PM peak hour could not be mitigated (see **Table 22-9**).

*Clarkson Street and Hudson Street*

The significant adverse impact at the eastbound approach of this intersection during the weekday AM peak hour could be fully mitigated by shifting three seconds of green time from the northbound phase to the eastbound phase.

The significant adverse impact at the eastbound approach of this intersection during the Saturday peak hour could be fully mitigated by shifting one second of green time from the northbound phase to the eastbound phase.

As shown in **Tables 22-7 and 22-10**, the significant adverse impacts could be fully mitigated.

*Clarkson Street and Varick Street*

The significant adverse impact at the eastbound approach of this intersection during the weekday AM peak hour could be fully mitigated by shifting two seconds of green time from the southbound phase to the eastbound/westbound phase. As shown in **Table 22-7**, the significant adverse impact could be fully mitigated.

*PROPOSED PROJECT WITH BIG BOX RETAIL*

**Tables 22-11 to 22-14** itemize the recommended mitigation measures that address the identified impacts under the proposed project with big box retail. With the implementation of these standard traffic mitigation measures (including primarily signal timing changes, approach daylighting, and lane restriping), which are subject to review and approval by NYCDOT, the significant adverse traffic impacts identified above could be fully mitigated except for the intersections of West Houston Street at Varick Street (weekday PM peak hour), West Houston

Street at West Street (Saturday peak hour), Canal Street at Hudson Street (weekday midday and PM peak hours) , Spring Street at West Street (weekday PM peak hour), and Spring Street at Washington Street (weekday PM peak hour).

**Table 22-11**
**Recommended Mitigation Measures: Proposed Project with Big Box Retail**
**Weekday AM Peak Hour**

| Intersection | No Action Signal Timing | Recommended Mitigation Measures | Recommended Signal Timing |
|---|---|---|---|
| Clarkson Street and Washington Street | EB: Green = 40 s<br>SB: Green = 40 s | Shift 2 seconds of green time from the EB phase to the SB phase. | EB: Green = 38 s<br>SB: Green = 42 s |
| West Houston Street and Washington Street | WB: Green = 40 s<br>SB: Green = 40 s | 1) Restripe the SB approach from one 8-foot parking lane, one 11-foot moving lane, one 5-foot bike lane, and one 8-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one 8-foot parking lane.<br>2) Install "No Standing Anytime" for 100-feet at the SB approach to create an additional right-turn lane. | No change from No Action |
| West Houston Street and West Street | EB/WB: Green = 33 s<br>NB/SB: Green = 90 s<br>NB-L: Green = 10 s | Shift 1 second of green time from the NB/SB phase to the EB/WB phase. | EB/WB: Green = 34 s<br>NB/SB: Green = 89 s<br>NB-L: Green = 10 s |
| Clarkson Street and Hudson Street | EB: Green = 31 s<br>NB: Green = 49 s | Shift 3 seconds of green time from the NB phase to the EB phase. | EB: Green = 34 s<br>NB: Green = 46 s |
| Clarkson Street and Varick Street | EB/WB: Green = 40 s<br>SB: Green = 40 s | Shift 1 second of green time from the SB phase to the EB/WB phase. | EB/WB: Green = 41 s<br>SB: Green = 39 s |
| **Notes:** EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right. | | | |

**Table 22-12**
**Recommended Mitigation Measures: Proposed Project with Big Box Retail**
**Weekday Midday Peak Hour**

| Intersection | No Action Signal Timing | Recommended Mitigation Measures | Recommended Signal Timing |
|---|---|---|---|
| West Houston Street and Washington Street | WB: Green = 40 s<br>SB: Green = 40 s | 1) Restripe the SB approach from one 8-foot parking lane, one 11-foot moving lane, one 5-foot bike lane, and one 8-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one 8-foot parking lane.<br>2) Install "No Standing Anytime" for 100-feet at the SB approach to create an additional right-turn lane. | No change from No Action |
| Clarkson Street and West Street | SB-L: Green = 34 s<br>NB/SB: Green = 74 s | Shift 2 seconds of green time from the NB/SB phase to the SB left-turn phase. | SB-L: Green = 36 s<br>NB/SB: Green = 72 s |
| West Houston Street and West Street | EB/WB: Green = 33 s<br>NB/SB: Green = 60 s<br>NB-L: Green = 10 s | Shift 2 seconds of green time from the NB left-turn phase to the EB/WB phase. | EB/WB: Green = 35 s<br>NB/SB: Green = 60 s<br>NB-L: Green = 8 s |
| Canal Street (North) and West Street | WB: Green = 25 s<br>NB/SB: Green = 84 s | Shift 1 second of green time from the NB/SB phase to the WB phase. | WB: Green = 26 s<br>NB/SB: Green = 83 s |
| Canal Street and Hudson Street | EB/EB-L/WB-R: Green = 20 s<br>EB-T/WB-T/WB-R: Green = 26 s<br>NB: Green = 26 s | Unmitigated | No change from No Action |
| Clarkson Street and Hudson Street | EB: Green = 31 s<br>NB: Green = 49 s | Shift 2 seconds of green time from the NB phase to the EB phase. | EB: Green = 33 s<br>NB: Green = 47 s |
| **Notes:** EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right. | | | |

## Table 22-13
## Recommended Mitigation Measures: Proposed Project with Big Box Retail
## Weekday PM Peak Hour

| Intersection | No Action Signal Timing | Recommended Mitigation Measures | Recommended Signal Timing |
|---|---|---|---|
| Clarkson Street and Washington Street | EB: Green = 40 s<br>SB: Green = 40 s | Shift 2 seconds of green time from the EB phase to the SB phase. | EB: Green = 38 s<br>SB: Green = 42 s |
| West Houston Street and Washington Street | WB: Green = 39 s<br>SB: Green = 41 s | 1) Restripe the SB approach from one 8-foot parking lane, one 11-foot moving lane, one 5-foot bike lane, and one 8-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one 8-foot parking lane;<br>2) Install "No Standing Anytime" for 100-feet at the SB approach to create an additional right-turn lane;<br>3) Shift 1 second of green time from the SB phase to the WB phase. | WB: Green = 40 s<br>SB: Green = 40 s |
| West Houston Street and Varick Street | WB-T: Green = 7 s<br>WB: Green = 33 s<br>SB: Green = 40 s | Unmitigated | No change from No Action |
| Clarkson Street and West Street | SB-L: Green = 34 s<br>NB/SB: Green = 104 s | Shift 3 seconds of green time from the NB/SB phase to the SB left-turn phase. | SB-L: Green = 37 s<br>NB/SB: Green = 101 s |
| West Houston Street and West Street | EB/WB: Green = 33 s<br>NB/SB: Green = 90 s<br>NB-L: Green = 10 s | Shift 3 seconds of green time from the NB/SB phase to the EB/WB phase. | EB/WB: Green = 36 s<br>NB/SB: Green = 87 s<br>NB-L: Green = 10 s |
| Canal Street and Hudson Street | EB/EB-L/WB-R: Green = 21 s<br>EB-T/WB-T/WB-R: Green = 25 s<br>NB: Green = 26 s | Unmitigated | No change from No Action |
| Clarkson Street and Hudson Street | EB: Green = 31 s<br>NB: Green = 49 s | Shift 1 second of green time from the NB phase to the EB phase. | EB: Green = 32 s<br>NB: Green = 48 s |
| Spring Street and West Street | Unsignalized | Unmitigated | Unsignalized |
| Spring Street and Washington Street | Unsignalized | Unmitigated | Unsignalized |

**Notes:** EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right.

## Table 22-14
## Recommended Mitigation Measures: Proposed Project with Big Box Retail
## Saturday Peak Hour

| Intersection | No Action Signal Timing | Recommended Mitigation Measures | Recommended Signal Timing |
|---|---|---|---|
| West Houston Street and Washington Street | WB: Green = 40 s<br>SB: Green = 40 s | 1) Restripe the SB approach from one 8-foot parking lane, one 11-foot moving lane, one 5-foot bike lane, and one 8-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one 8-foot parking lane.<br>2) Install "No Standing Anytime" for 100-feet at the SB approach to create an additional right-turn lane. | No change from No Action |
| Clarkson Street and West Street | SB-L: Green = 34 s<br>NB/SB: Green = 74 s | Shift 3 seconds of green time from the NB/SB phase to the SB left-turn phase. | SB-L: Green = 37 s<br>NB/SB: Green = 71 s |
| West Houston Street and West Street | EB/WB: Green = 33 s<br>NB/SB: Green = 60 s<br>NB-L: Green = 10 s | Unmitigated | No change from No Action |
| Canal Street (North) and West Street | WB: Green = 25 s<br>NB/SB: Green = 84 s | Shift 1 second of green time from the NB/SB phase to the WB phase. | WB: Green = 26 s<br>NB/SB: Green = 83 s |
| Clarkson Street and Hudson Street | EB: Green = 31 s<br>NB: Green = 49 s | Shift 3 seconds of green time from the NB phase to the EB phase. | EB: Green = 34 s<br>NB: Green = 46 s |

**Notes:** EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right.

A discussion of the recommended mitigation measures is provided below. **Tables 22-15 to 22-18** compare the levels of service (LOS) and lane group delays for the impacted intersections under the 2024 No Action, With Action (the proposed project with big box retail), and Mitigation conditions for the four analysis peak hours.

*Clarkson Street and Washington Street*

The significant adverse impacts at the southbound approach of this intersection during the weekday AM and PM peak hours could be fully mitigated by shifting two seconds of green time from the eastbound phase to the southbound phase. As shown in **Tables 22-15 and 22-17**, the significant adverse impacts could be fully mitigated.

*West Houston Street and Washington Street*

The significant adverse impacts at the southbound approach of this intersection during the weekday AM, midday, and Saturday peak hours could be fully mitigated by restriping the southbound approach from one eight-foot parking lane, one 11-foot moving lane, one five-foot bike lane, and one eight-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one eight-foot parking lane; and prohibiting parking (installing "No Standing Anytime" sign) on the west curbside of the southbound approach for approximately 100 feet from the intersection.

The significant adverse impacts at the westbound and southbound approaches of this intersection during the weekday PM peak hour could be fully mitigated by restriping the southbound approach from one eight-foot parking lane, one 11-foot moving lane, one five-foot bike lane, and one eight-foot parking lane to one 11-foot right-turn lane, one 13-foot shared moving/bike lane, and one eight-foot parking lane; prohibiting parking (installing "No Standing Anytime" sign) on the west curbside of the southbound approach for approximately 100 feet from the intersection; and shifting one second of green time from the southbound phase to the westbound phase.

As shown in **Tables 22-15 to 22-19**, the significant adverse impacts could be fully mitigated.

*West Houston Street and Varick Street*

The significant adverse impact at the southbound (west lanes) approach of this intersection during the weekday PM peak hour could not be mitigated (see **Table 22-17).**

*Clarkson Street and West Street*

The significant adverse impacts at the southbound left-turn lane group of this intersection during the weekday midday peak hour could be fully mitigated by shifting two seconds of green time from the northbound/southbound phase to the southbound left-turn phase.

The significant adverse impact at the southbound left-turn lane group of this intersection during the weekday PM and Saturday peak hours could be fully mitigated by shifting three seconds of green time from the northbound/southbound phase to the southbound left-turn phase.

As shown in **Tables 22-16 to 22-19**, the significant adverse impacts could be fully mitigated.

## Table 22-15
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project with Big Box Retail
## Weekday AM Peak Hour - Signalized Intersections

| | Weekday AM | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **Clarkson Street and Washington Street** | | | | | | | | | | | | |
| EB | TR | 0.80 | 28.7 | C | TR | 0.86 | 32.2 | C | TR | 0.91 | 38.9 | D |
| SB | LT | 0.99 | 60.9 | E | LT | 1.04 | 73.1 | E + | LT | 0.99 | 57.6 | E |
| | Int. | | 42.4 | D | Int. | | 49.1 | D | Int. | | 46.6 | D |
| **West Houston Street and Washington Street** | | | | | | | | | | | | |
| WB | LT | 0.69 | 23.3 | C | LT | 0.67 | 22.9 | C | LT | 0.67 | 22.9 | C |
| | - | - | - | - | - | - | - | - | T | 0.58 | 22.7 | C |
| SB | TR | 1.31 | 177.6 | F | TR | 1.39 | 212.7 | F + | - | - | - | - |
| | - | - | - | - | - | - | - | - | R | 0.78 | 37.2 | D |
| | Int. | | 91.7 | F | Int. | | 108.1 | F | Int. | | 25.6 | C |
| **West Houston Street and West Street** | | | | | | | | | | | | |
| EB | L | 0.71 | 90.0 | F | L | 0.75 | 97.3 | F + | L | 0.71 | 89.4 | F |
| | R | 0.09 | 47.1 | D | R | 0.09 | 47.1 | D | R | 0.08 | 46.3 | D |
| WB | L | 0.70 | 66.2 | E | L | 0.71 | 66.8 | E | L | 0.69 | 64.4 | E |
| | LT | 0.82 | 76.6 | E | LT | 0.83 | 78.1 | E | LT | 0.81 | 74.1 | E |
| | R | 1.37 | 248.5 | F | R | 1.38 | 250.1 | F | R | 1.34 | 233.6 | F |
| NB | L | 0.34 | 76.2 | E | L | 0.34 | 76.2 | E | L | 0.34 | 76.2 | E |
| | T | 0.92 | 32.9 | C | T | 0.94 | 34.6 | C | T | 0.95 | 36.6 | D |
| SB | T | 0.95 | 37.2 | D | T | 0.95 | 37.2 | D | T | 0.96 | 39.5 | D |
| | R | 0.03 | 12.3 | B | R | 0.03 | 12.3 | B | R | 0.03 | 12.7 | B |
| | Int. | | 50.1 | D | Int. | | 51.1 | D | Int. | | 51.7 | D |
| **Clarkson Street and Hudson Street** | | | | | | | | | | | | |
| EB | LT | 1.19 | 135.8 | F | LT | 1.29 | 177.8 | F + | LT | 1.18 | 128.1 | F |
| NB | TR | 0.74 | 19.5 | B | TR | 0.74 | 19.5 | B | TR | 0.79 | 23.3 | C |
| | Int. | | 59.6 | E | Int. | | 77.0 | E | Int. | | 61.4 | E |
| **Clarkson Street and Varick Street** | | | | | | | | | | | | |
| EB | TR | 1.06 | 81.5 | F | TR | 1.09 | 90.4 | F + | TR | 1.06 | 80.3 | F |
| WB | L | 0.18 | 17.8 | B | L | 0.18 | 18.0 | B | L | 0.17 | 17.0 | B |
| SB | LT | 0.71 | 22.3 | C | LT | 0.71 | 22.3 | C | LT | 0.73 | 23.3 | C |
| | Int. | | 37.7 | D | Int. | | 40.5 | D | Int. | | 38.5 | D |

**Notes:** L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection.
+ Denotes a significant adverse traffic impact.

## Table 22-16
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project with Big Box Retail
## Weekday Midday Peak Hour - Signalized Intersections

| | Weekday Midday | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **West Houston Street and Washington Street** | | | | | | | | | | | | |
| WB | LT | 0.63 | 21.9 | C | LT | 0.65 | 22.4 | C | LT | 0.65 | 22.4 | C |
| | - | - | - | - | - | - | - | - | T | 0.63 | 23.8 | C |
| SB | TR | 1.14 | 109.8 | F | TR | 1.20 | 133.8 | F + | - | - | - | - |
| | - | - | - | - | - | - | - | - | R | 0.59 | 26.8 | C |
| | Int. | | 61.1 | E | Int. | | 72.8 | E | Int. | | 23.5 | C |
| **Clarkson Street and West Street** | | | | | | | | | | | | |
| NB | TR | 0.88 | 23.1 | C | TR | 0.90 | 24.3 | C | TR | 0.93 | 27.5 | C |
| SB | L | 1.27 | 182.0 | F | L | 1.33 | 206.6 | F + | L | 1.25 | 174.0 | F |
| | T | 0.78 | 19.3 | B | T | 0.78 | 19.3 | B | T | 0.80 | 21.2 | C |
| | Int. | | 36.7 | D | Int. | | 40.3 | D | Int. | | 39.5 | D |
| **West Houston Street and West Street** | | | | | | | | | | | | |
| EB | L | 0.24 | 36.2 | D | L | 0.25 | 36.6 | D | L | 0.23 | 34.6 | C |
| | R | 0.06 | 32.3 | C | R | 0.06 | 32.3 | C | R | 0.05 | 30.8 | C |
| WB | L | 0.37 | 37.7 | D | L | 0.37 | 37.8 | D | L | 0.35 | 35.9 | D |
| | LT | 0.40 | 38.5 | D | LT | 0.41 | 38.6 | D | LT | 0.38 | 36.5 | D |
| | R | 1.44 | 262.6 | F | R | 1.54 | 303.6 | F + | R | 1.43 | 256.8 | F |
| NB | L | 0.13 | 53.3 | D | L | 0.13 | 53.3 | D | L | 0.17 | 56.6 | E |
| | T | 0.93 | 35.7 | D | T | 0.95 | 37.3 | D | T | 0.95 | 37.3 | D |
| SB | T | 1.02 | 54.5 | D | T | 1.02 | 54.5 | D | T | 1.02 | 54.5 | D |
| | R | 0.04 | 15.4 | B | R | 0.04 | 15.4 | B | R | 0.04 | 15.4 | B |
| | Int. | | 59.1 | E | Int. | | 62.6 | E | Int. | | 59.2 | E |
| **Canal Street (North) and West Street** | | | | | | | | | | | | |
| WB | L | 0.44 | 46.9 | D | L | 0.45 | 47.2 | D | L | 0.43 | 45.7 | D |
| | LR | 1.08 | 127.6 | F | LR | 1.11 | 139.9 | F + | LR | 1.07 | 125.1 | F |
| | R | 1.07 | 131.1 | F | R | 1.12 | 145.3 | F + | R | 1.08 | 130.0 | F |
| NB | T | 0.58 | 9.7 | A | T | 0.58 | 9.7 | A | T | 0.59 | 10.3 | B |
| SB | T | 0.47 | 8.4 | A | T | 0.47 | 8.4 | A | T | 0.48 | 8.9 | A |
| | Int. | | 21.0 | C | Int. | | 22.7 | C | Int. | | 21.7 | C |
| **Canal Street and Hudson Street** | | | | | | | | | | | | |
| EB | L | 0.87 | 49.4 | D | L | 0.87 | 49.4 | D | Unmitigated | | | |
| | T | 0.68 | 18.1 | B | T | 0.68 | 18.1 | B | | | | |
| WB | T | 1.28 | 171.9 | F | T | 1.27 | 167.7 | F | | | | |
| | R | 0.52 | 13.6 | B | R | 0.52 | 13.6 | B | | | | |
| NB (East Lanes) | T | 0.16 | 24.3 | C | T | 0.16 | 24.3 | C | | | | |
| | R | 0.19 | 25.2 | C | R | 0.19 | 25.2 | C | | | | |
| NB (West Lanes) | LT | 1.08 | 88.8 | F | LT | 1.11 | 97.6 | F + | | | | |
| | Int. | | 69.6 | E | Int. | | 70.9 | E | | | | |
| **Clarkson Street and Hudson Street** | | | | | | | | | | | | |
| EB | LT | 1.24 | 156.0 | F | LT | 1.31 | 184.4 | F + | LT | 1.23 | 148.3 | F |
| | TR | 0.75 | 19.5 | B | TR | 0.75 | 19.5 | B | TR | 0.78 | 22.0 | C |
| | Int. | | 66.6 | E | Int. | | 78.3 | E | Int. | | 67.0 | E |

**Notes:** L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection.
+ Denotes a significant adverse traffic impact.

## Table 22-17
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project with Big Box Retail
## Weekday PM Peak Hour - Signalized Intersections

| | Weekday PM | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **Clarkson Street and Washington Street** | | | | | | | | | | | | |
| EB | TR | 0.85 | 32.0 | C | TR | 0.88 | 34.2 | C | TR | 0.93 | 41.8 | D |
| SB | LT | 1.00 | 61.4 | E | LT | 1.07 | 81.9 | F + | LT | 1.02 | 64.7 | E |
| | Int. | | 45.0 | D | Int. | | 55.3 | E | Int. | | 52.0 | D |
| **West Houston Street and Washington Street** | | | | | | | | | | | | |
| WB | LT | 0.91 | 42.0 | D | LT | 0.97 | 53.0 | D + | LT | 0.94 | 46.2 | D |
| SB | - | - | - | - | - | - | - | - | T | 0.82 | 33.0 | C |
| | TR | 1.49 | 254.9 | F | TR | 1.64 | 321.7 | F + | - | - | - | - |
| | - | - | - | - | - | - | - | - | R | 0.99 | 75.5 | E |
| | Int. | | 143.8 | F | Int. | | 181.7 | F | Int. | | 46.7 | D |
| **West Houston Street and Varick Street** | | | | | | | | | | | | |
| WB | L | 0.94 | 68.9 | E | L | 0.90 | 60.1 | E | Unmitigated | | | |
| | T | 0.87 | 36.3 | D | T | 0.91 | 40.7 | D | | | | |
| SB (East Lanes) | T | 0.71 | 23.8 | C | T | 0.71 | 23.8 | C | | | | |
| SB (West Lanes) | - | - | - | - | - | - | - | - | | | | |
| | TR | 1.11 | 260.7 | F | TR | 1.18 | 293.0 | F + | | | | |
| | - | - | - | - | - | - | - | - | | | | |
| | Int. | | 89.1 | F | Int. | | 98.9 | F | | | | |
| **Clarkson Street and West Street** | | | | | | | | | | | | |
| NB | TR | 0.94 | 25.8 | C | TR | 0.94 | 26.2 | C | TR | 0.97 | 31.9 | C |
| SB | L | 1.35 | 234.2 | F | L | 1.48 | 290.4 | F + | L | 1.36 | 237.0 | F |
| | T | 0.67 | 14.4 | B | T | 0.67 | 14.4 | B | T | 0.69 | 16.3 | B |
| | Int. | | 37.3 | D | Int. | | 43.4 | D | Int. | | 43.2 | D |
| **West Houston Street and West Street** | | | | | | | | | | | | |
| EB | L | 0.64 | 75.2 | E | L | 0.67 | 78.5 | E | L | 0.57 | 65.5 | E |
| | R | 0.06 | 46.5 | D | R | 0.06 | 46.5 | D | R | 0.05 | 44.1 | D |
| WB | L | 0.64 | 62.2 | E | L | 0.64 | 62.2 | E | L | 0.58 | 57.2 | E |
| | LT | 0.73 | 67.3 | E | LT | 0.73 | 67.5 | E | LT | 0.67 | 61.0 | E |
| | R | 1.35 | 235.5 | F | R | 1.45 | 278.8 | F + | R | 1.34 | 228.3 | F |
| NB | L | 0.42 | 79.3 | E | L | 0.42 | 79.3 | E | L | 0.42 | 79.3 | E |
| | T | 0.95 | 35.3 | D | T | 0.95 | 35.4 | D | T | 0.98 | 42.9 | D |
| SB | T | 0.78 | 25.0 | C | T | 0.78 | 25.0 | C | T | 0.81 | 27.9 | C |
| | R | 0.02 | 12.2 | B | R | 0.02 | 12.2 | B | R | 0.02 | 13.5 | B |
| | Int. | | 46.8 | D | Int. | | 50.5 | D | Int. | | 51.4 | D |

## Table 22-17 (cont'd)
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project with Big Box Retail
## Weekday PM Peak Hour - Signalized Intersections

| | Weekday PM | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **Canal Street and Hudson Street** | | | | | | | | | | | | |
| EB | L | 0.75 | 103.2 | F | L | 0.75 | 103.2 | F | Unmitigated | | | |
| | T | 0.71 | 18.8 | B | T | 0.71 | 18.8 | B | | | | |
| WB | T | 0.73 | 109.8 | F | T | 0.73 | 109.0 | F | | | | |
| | R | 1.07 | 88.7 | F | R | 1.07 | 88.7 | F | | | | |
| NB (East Lanes) | T | 0.69 | 87.8 | F | T | 0.69 | 87.8 | F | | | | |
| | R | 0.06 | 23.5 | C | R | 0.06 | 23.5 | C | | | | |
| NB (West Lanes) | LT | 1.11 | 97.8 | F | LT | 1.14 | 110.1 | F + | | | | |
| | Int. | | 81.3 | F | Int. | | 84.8 | F | | | | |
| **Clarkson Street and Hudson Street** | | | | | | | | | | | | |
| EB | LT | 1.19 | 136.9 | F | LT | 1.22 | 146.3 | F + | LT | 1.18 | 129.5 | F |
| NB | TR | 0.51 | 14.2 | B | TR | 0.51 | 14.2 | B | TR | 0.52 | 14.9 | B |
| | Int. | | 65.3 | E | Int. | | 69.7 | E | Int. | | 63.1 | E |

**Notes:** L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection.
+ Denotes a significant adverse traffic impact.

## Table 22-18
## 2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis
## Proposed Project with Big Box Retail
## Weekday PM Peak Hour - Unsignalized Intersections

| | Weekday PM | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| Spring Street and West Street | | | | | | | | | | | | |
| WB | R | 0.02 | 17.0 | C | R | 0.65 | 36.5 | E + | Unmitigated | | | |
| Spring Street and Washington Street | | | | | | | | | | | | |
| EB | TR | 0.49 | 14.3 | B | TR | 0.49 | 14.2 | B | Unmitigated | | | |
| SB | LTR | 0.99 | 53.2 | F | LTR | 1.19 | 116.1 | F + | | | | |

**Notes:** L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection, + Denote a significant adverse traffic impact.

**Table 22-19**
**2024 No Action, With Action, and Mitigation Conditions Level of Service Analysis**
**Proposed Project with Big Box Retail**
**Saturday Peak Hour - Signalized Intersections**

| | Saturday | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 No Action | | | | 2024 With Action | | | | 2024 Mitigation | | | |
| Intersection | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS |
| **West Houston Street and Washington Street** | | | | | | | | | | | | |
| WB | LT | 0.61 | 21.1 | C | LT | 0.67 | 22.6 | C | LT | 0.67 | 22.6 | C |
| | - | - | - | - | - | - | - | - | T | 0.54 | 21.4 | C |
| SB | TR | 0.96 | 56.3 | E | TR | 1.16 | 115.7 | F + | - | - | - | - |
| | - | - | - | - | - | - | - | - | R | 0.65 | 29.2 | C |
| | Int. | | 34.6 | C | Int. | | 60.1 | E | Int. | | 23.3 | C |
| **Clarkson Street and West Street** | | | | | | | | | | | | |
| NB | TR | 0.77 | 18.5 | B | TR | 0.82 | 20.0 | C | TR | 0.85 | 23.1 | C |
| SB | L | 0.82 | 56.3 | E | L | 0.94 | 73.2 | E + | L | 0.86 | 58.2 | E |
| | T | 0.79 | 19.6 | B | T | 0.79 | 19.6 | B | T | 0.82 | 22.5 | C |
| | Int. | | 21.4 | C | Int. | | 23.7 | C | Int. | | 25.5 | C |
| **West Houston Street and West Street** | | | | | | | | | | | | |
| EB | L | 0.17 | 34.8 | C | L | 0.18 | 35.0 | D | Unmitigated | | | |
| | R | 0.03 | 31.9 | C | R | 0.03 | 31.9 | C | | | | |
| WB | L | 0.44 | 39.3 | D | L | 0.45 | 39.5 | D | | | | |
| | LT | 0.48 | 40.1 | D | LT | 0.49 | 40.4 | D | | | | |
| | R | 1.29 | 193.5 | F | R | 1.39 | 235.1 | F + | | | | |
| NB | L | 0.13 | 53.0 | D | L | 0.13 | 53.0 | D | | | | |
| | T | 0.81 | 27.7 | C | T | 0.84 | 28.9 | C | | | | |
| SB | T | 1.01 | 52.4 | D | T | 1.01 | 52.4 | D | | | | |
| | R | 0.04 | 15.4 | B | R | 0.04 | 15.4 | B | | | | |
| | Int. | | 51.5 | D | Int. | | 55.8 | E | | | | |
| **Canal Street (North) and West Street** | | | | | | | | | | | | |
| WB | L | 0.43 | 45.6 | D | L | 0.46 | 46.5 | D | L | 0.44 | 45.2 | D |
| | LR | 0.69 | 56.7 | E | LR | 0.74 | 60.8 | E + | LR | 0.71 | 57.5 | E |
| | R | 0.77 | 65.4 | E | R | 0.83 | 73.0 | E + | R | 0.80 | 67.5 | E |
| NB | T | 0.54 | 9.1 | A | T | 0.54 | 9.2 | A | T | 0.55 | 9.7 | A |
| SB | T | 0.47 | 8.4 | A | T | 0.48 | 8.4 | A | T | 0.48 | 8.9 | A |
| | Int. | | 13.5 | B | Int. | | 14.4 | B | Int. | | 14.4 | B |
| **Clarkson Street and Hudson Street** | | | | | | | | | | | | |
| EB | LT | 0.92 | 53.5 | D | LT | 1.06 | 86.8 | F + | LT | 0.96 | 58.4 | E |
| NB | TR | 0.48 | 13.7 | B | TR | 0.48 | 13.7 | B | TR | 0.51 | 15.9 | B |
| | Int. | | 28.9 | C | Int. | | 43.9 | D | Int. | | 33.4 | C |

**Notes:** L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection.
+ Denotes a significant adverse traffic impact.

*West Houston Street and West Street*

The significant adverse impact at the eastbound left-turn lane group of this intersection during the weekday AM peak hour could be fully mitigated by shifting one second of green time from the from the northbound/southbound phase to the eastbound/westbound phase. As shown in **Table 22-15**, the significant adverse impact could be fully mitigated.

The significant adverse impact at the westbound right-turn lane group of this intersection during the weekday midday peak hour could be fully mitigated by shifting two seconds of green time from the northbound left-turn phase to the eastbound/westbound phase. As shown in **Table 22-16**, the significant adverse impact could be fully mitigated.

The significant adverse impact at the westbound right-turn lane group of this intersection during the weekday PM peak hour could be fully mitigated by shifting three seconds of green time from

the northbound/southbound phase to the eastbound/westbound phase. As shown in **Table 22-17**, the significant adverse impact could be fully mitigated.

The significant adverse impact at the westbound right-turn lane group of this intersection during the Saturday peak hour could not be mitigated (see **Table 22-19**).

*Canal Street (North) and West Street*

The significant adverse impacts at the westbound left-turn/right-turn and right-turn lane groups of this intersection during the weekday midday and Saturday peak hours could be fully mitigated by shifting one second of green time from the northbound/southbound phase to the westbound phase. As shown in **Tables 22-16 and 22-19**, the significant adverse impacts could be fully mitigated.

*Canal Street and Hudson Street*

The significant adverse impact at the northbound (west lanes) approach of this intersection during the weekday midday and PM peak hours could not be mitigated (see **Table 22-17**).

*Clarkson Street and Hudson Street*

The significant adverse impacts at the eastbound approach of this intersection during the weekday AM and Saturday peak hours could be fully mitigated by shifting three seconds of green time from the northbound phase to the eastbound phase.

The significant adverse impact at the eastbound approach of this intersection during the weekday midday peak hour could be fully mitigated by shifting two seconds of green time from the northbound phase to the eastbound phase.

The significant adverse impact at the eastbound approach of this intersection during the weekday PM peak hour could be fully mitigated by shifting one second of green time from the northbound phase to the eastbound phase.

As shown in **Tables 22-15 to 22-19**, the significant adverse impacts could be fully mitigated.

*Clarkson Street and Varick Street*

The significant adverse impact at the eastbound approach of this intersection during the weekday AM peak hour could be fully mitigated by shifting one second of green time from the southbound phase to the eastbound/westbound phase. As shown in **Table 22-15**, the significant adverse impact could be fully mitigated.

*Spring Street and West Street*

The significant adverse impact at the westbound approach of this intersection during the weekday PM peak hour could not be mitigated (see **Table 22-18**). Installation of a traffic signal at this intersection was determined to be infeasible due to its close proximity to the Canal Street intersection.

*Spring Street and Washington Street*

The significant adverse impact southbound approach of this intersection during the weekday PM peak hour could not be mitigated using standard mitigation measures, such as signal timing, roadway widenings, daylighting, etc. (see **Table 22-18**). There is potential for this impact to be mitigated by installation of a traffic signal. Between the DEIS and FEIS, this will be explored in consultation with NYCDOT.

## EFFECTS OF TRAFFIC MITIGATION ON PEDESTRIAN OPERATIONS

As described above, intersection operations would improve overall with the implementation of the recommended traffic mitigation measures, which include changes to existing signal timings and lane utilizations. A review of the effects of these changes on pedestrian circulation and service levels at intersection corners and crosswalks showed that they would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

## MITIGATION IMPLEMENTATION

Subject to the approvals of NYCDOT, the above recommended mitigation measures would be implemented to mitigate the projected significant adverse traffic impacts at the completion of the proposed project's and the proposed project with big box retail's full build-out in 2024. Because the development of the proposed project and the proposed project with big box retail could be built all at once or may be phased, and development of the three development sites may take place in any order, an "interim impact assessment" was conducted to determine the impacts that could occur prior to the 2024 full build-out and the mitigation measures that could be advanced to address these impacts.

Under the No Action, the North Site is assumed to be redeveloped with approximately 137,000 gross square feet (gsf) of office space, 66,000 gsf of destination retail space, 18,500 gsf of local retail space, and 285,000 gsf of hotel use (438 rooms). Under the With Action, the North Site is assumed to be redeveloped with approximately 593 residential units, 71,000 gsf of destination retail space, and 29,000 gsf of local retail space for either the proposed project or the proposed project with big box retail. Should the North Site be completed first, based on the travel demand assumptions presented in Chapter 14, "Transportation," the resulting incremental trips under the proposed project and the proposed project with big box retail, when compared to the No Action development, would be below the *CEQR Technical Manual* analysis thresholds of 50 peak hour vehicle trips and 200 peak hour pedestrian trips requiring a detailed traffic and pedestrian analysis. Therefore, completion of the North Site is not expected to result in any significant adverse traffic or pedestrian impacts and no mitigation would be needed.

For the Center and South Sites, under the No Action, they would have to be constructed concurrently and is assumed to be redeveloped with approximately 290,000 gsf of office space, 194,500 gsf of destination retail space, 43,000 gsf of local retail space, and 50,000 gsf of event space. Under the With Action, redevelopment of the Center and South Sites could take place in any order. The Center Site is assumed to be redeveloped with approximately 993 residential units, 52,000 gsf of destination retail use, and 8,000 gsf of local retail use for the proposed project and approximately 993 residential units, 42,200 gsf of destination retail use, 104,800 gsf of big box retail use, and 8,000 gsf of local retail use for the proposed project with big box retail. The South Site is assumed to be redeveloped with approximately 229,700 gsf of hotel use (353 rooms) and 41,400 gsf of event space for either the proposed project or the proposed project with big box retail. Similarly, should the South Site be completed first, the resulting incremental vehicle and pedestrian trips under the proposed project and the proposed project with big box retail, when compared to the No Action development, would be below the *CEQR Technical Manual* analysis thresholds of 50 peak hour vehicle trips and 200 peak hour pedestrian trips requiring a detailed traffic and pedestrian analysis. Therefore, completion of the South Site is not expected to result in any significant adverse traffic or pedestrian impacts and no mitigation would be needed.

Should the Center Site be completed first, based on the travel demand assumptions presented in Chapter 14, "Transportation," the resulting incremental vehicle and pedestrian trips under the proposed project and the proposed project with big box retail, when compared to the No Action development, would be comparable to those under the full build-out of the proposed project and the proposed project with big box retail. Therefore, it can be expected that the potential significant adverse impacts associated with the completion of the Center Site would also be comparable to those under the full build-out of the proposed project and the proposed project with big box retail. All of the 2024 full build-out mitigation measures (including signal timing changes, approaching daylighting, and lane restriping) could be advanced upon completion of the Center Site to mitigate the significant adverse impacts that would be anticipated for that time.

## D. CONSTRUCTION

As described in Chapter 20, "Construction," there is a potential for temporary construction-period air quality and noise impacts.

Between the DEIS and FEIS, a detailed modeling analysis will be conducted to quantify the levels of construction air quality concentrations that may occur at project elements and/or at existing tenants should they be completed and occupied during construction on one or more of the other project buildings. If any potential exceedances of the National Ambient Air Quality Standards (NAAQS), or applicable *de minimis* criteria are identified, the analysis will examine the practicability and feasibility of implementing additional control measures as necessary to reduce or eliminate the impacts.

Between the DEIS and the FEIS, a detailed modeling analysis will be conducted to quantify the levels of construction noise that may occur at project elements and/or at existing tenants should they be completed and occupied during construction on one or more of the other project buildings. The proposed project buildings would be newly introduced sensitive receptors subject to *CEQR Technical Manual* noise exposure guidelines (requiring interior $L_{10(1)}$ noise levels less than or equal to 45 dBA for residential and hotel guest room spaces or 50 dBA for commercial spaces). Based on the results of this analysis, noise control measures beyond those specified in Chapter 20, "Construction," and/or window/wall attenuation levels beyond those specified in Chapter 17, "Noise," may be identified to reduce or eliminate the impacts.

In the event of phased construction, at the proposed outdoor publicly accessible open space on a platform spanning West Houston Street, construction activities occurring at the Center Site or the North Site would produce noise levels in the high 70s to low 80s dBA, which would exceed the levels recommended by CEQR for passive open spaces (55 dBA $L_{10}$). While this is not desirable, noise levels in many parks and open space areas throughout the city (which are located near heavily trafficked roadways and/or near construction sites) experience comparable—and sometimes higher—noise levels. Nonetheless, noise levels in this range at the project-generated publicly accessible open space could constitute a significant adverse noise impact. The predicted level of construction noise that would occur at this publicly accessible open space under a phased construction schedule will be examined further in the detailed noise modeling analysis to be conducted between the DEIS and FEIS. As warranted, the FEIS will include a consideration of practicable and feasible mitigation measures to reduce or eliminate the impacts. ✷