



# HUDSON SQUARE / WEST VILLAGE TRANSPORTATION STUDY

Community Board 2: Traffic & Transportation Committee Meeting  
June 3, 2021



# OVERVIEW

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1. Review of Project Background
2. Already Implemented Improvements
3. Early-Action Improvements (2021)
4. Longer-Term Improvements (2022 and beyond)
5. Next Steps



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# Review of Project Background

# 1

# PROJECT BACKGROUND AND STUDY GOALS

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- Requested by Council Speaker Corey Johnson, CB 2, and Hudson Square Connection to conduct a **comprehensive Transportation Study**
- **Improve safety** for all street users
- Access, connectivity and circulation to **major pedestrian generators/attractions**
- **Safer crossing and access to Hudson River Park**
- **Address congestion and queue spillback along major roadways** leading to the **Holland Tunnel**
- **Enhanced quality of life** for area residents and businesses

# STUDY AREA

## Eastern Boundary

- 6<sup>th</sup> Av
- Greene St
- Church St

## Western Boundary

- West St

## Northern Boundary

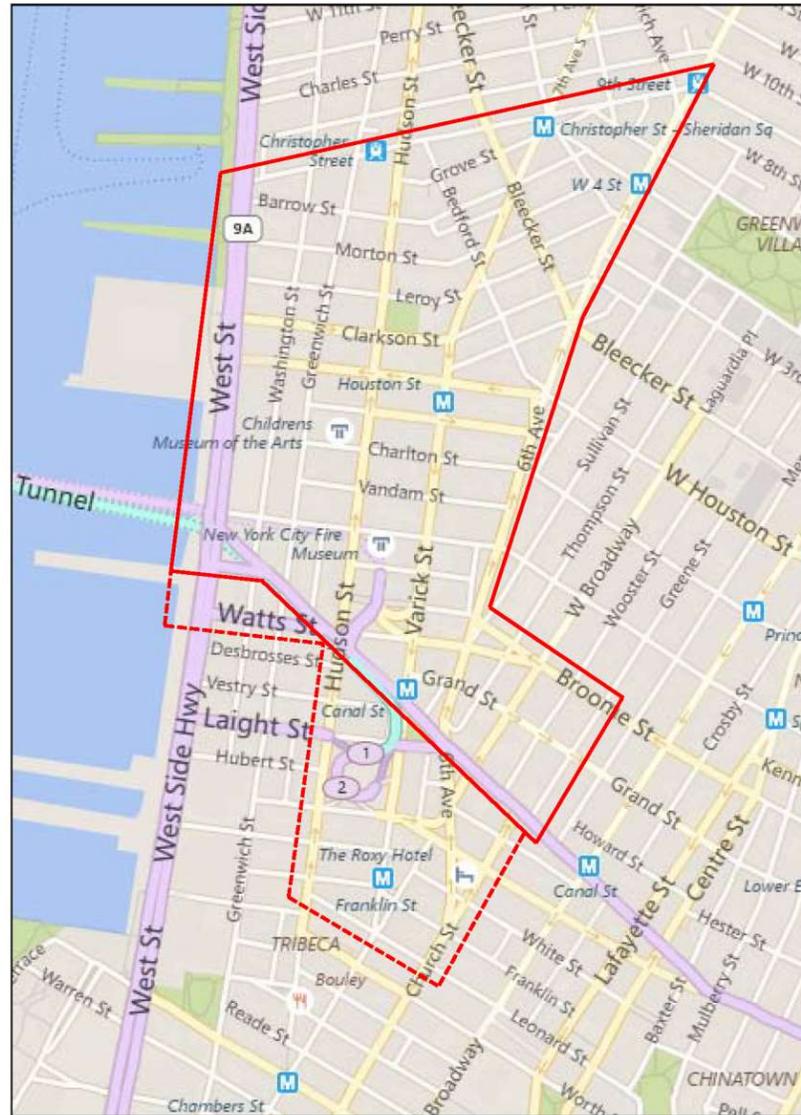
- Christopher St

## Primary Southern Boundary

- Canal St

## Secondary Southern Boundary

- Watts St
- Leonard St



— Primary Study Area

- - - Secondary Study Area

# TECHNICAL ADVISORY COMMITTEE: LIST OF PARTICIPANTS

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## **Agency Partners**

- Fire Department of the City of New York (FDNY)
- New York City Department of City Planning (NYCDCP)
- New York City Police Department (NYPD)
- New York State Department of Transportation (NYSDOT)
- New York City Transit (NYCT)
- Office of the Deputy Mayor for Housing and Economic Development
- The Port Authority of New York & New Jersey (PANYNJ)

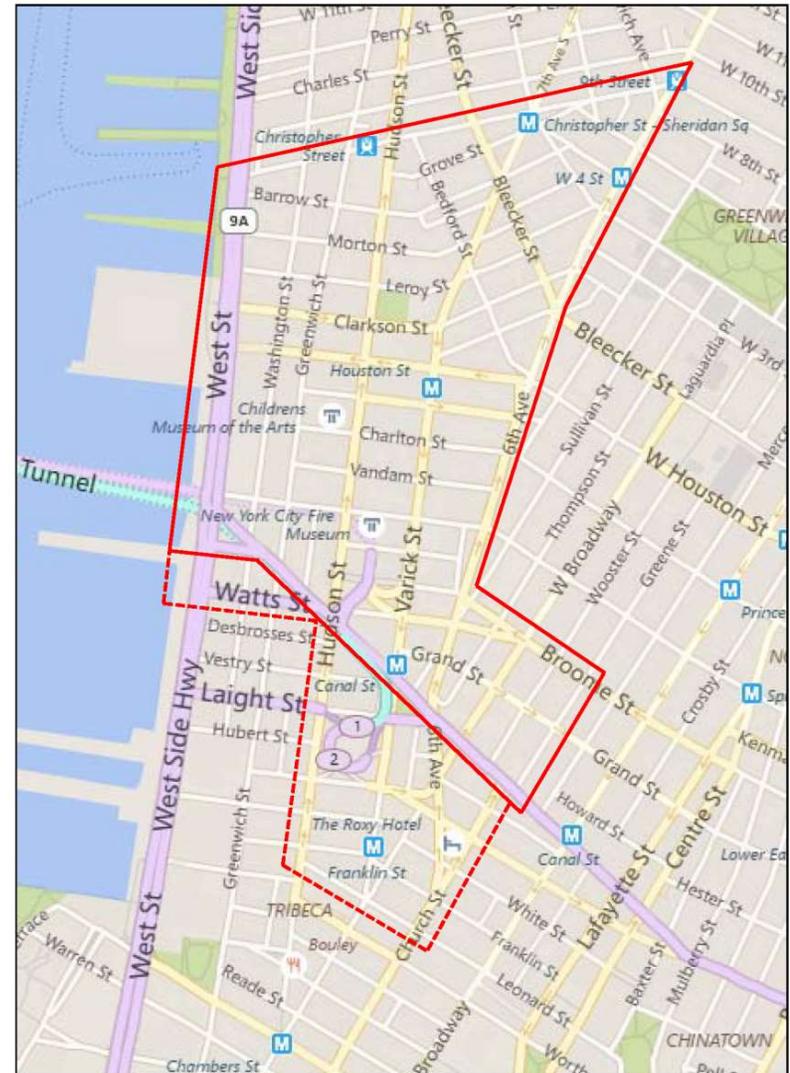
## **Community Partners**

- Community Board 2 (CB2)
- Hudson River Park Trust (HRPT)
- Hudson Square Connection
- Office of the Manhattan Borough President (MBPO)
- Office of New York City Council Speaker Corey Johnson
- Office of New York State Senator Brad Hoylman

# OVERVIEW OF IMPROVEMENTS

## 3 Categories:

- **Already Implemented Improvements**
- **Early Action Improvements**  
Scheduled for 2020, but postponed to 2021 due to COVID-19
- **Longer-Term Improvements**  
2022 and beyond



— Primary Study Area      - - - Secondary Study Area

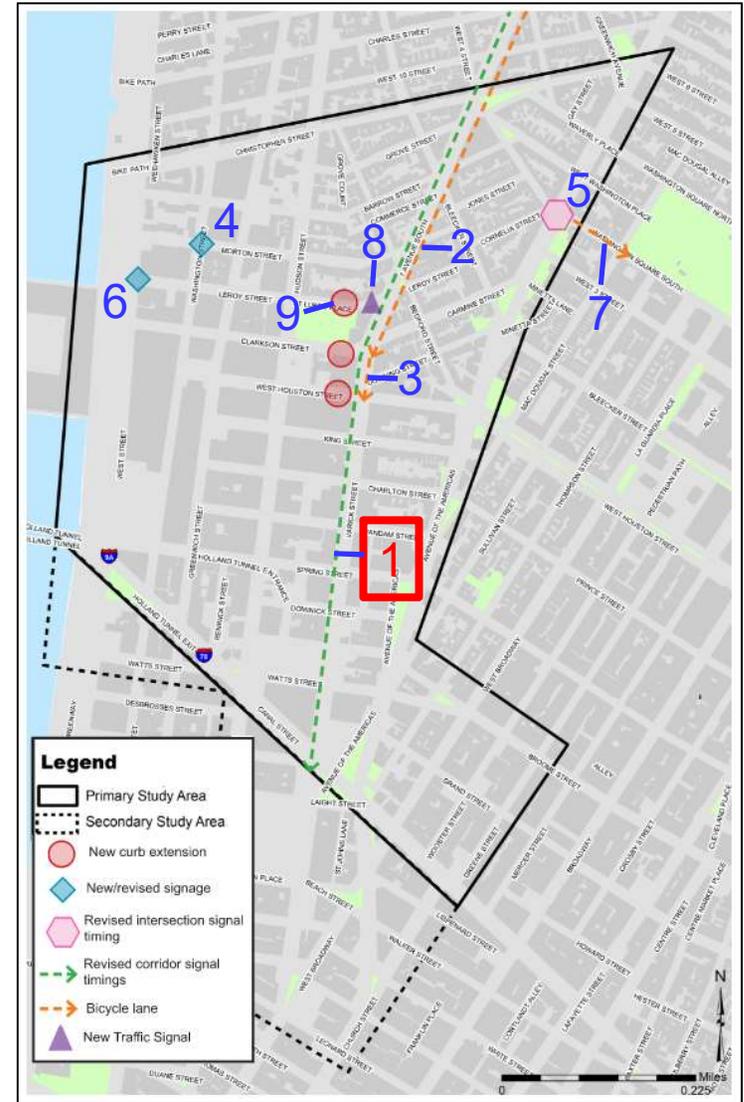
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## Already Implemented Improvements

# 2

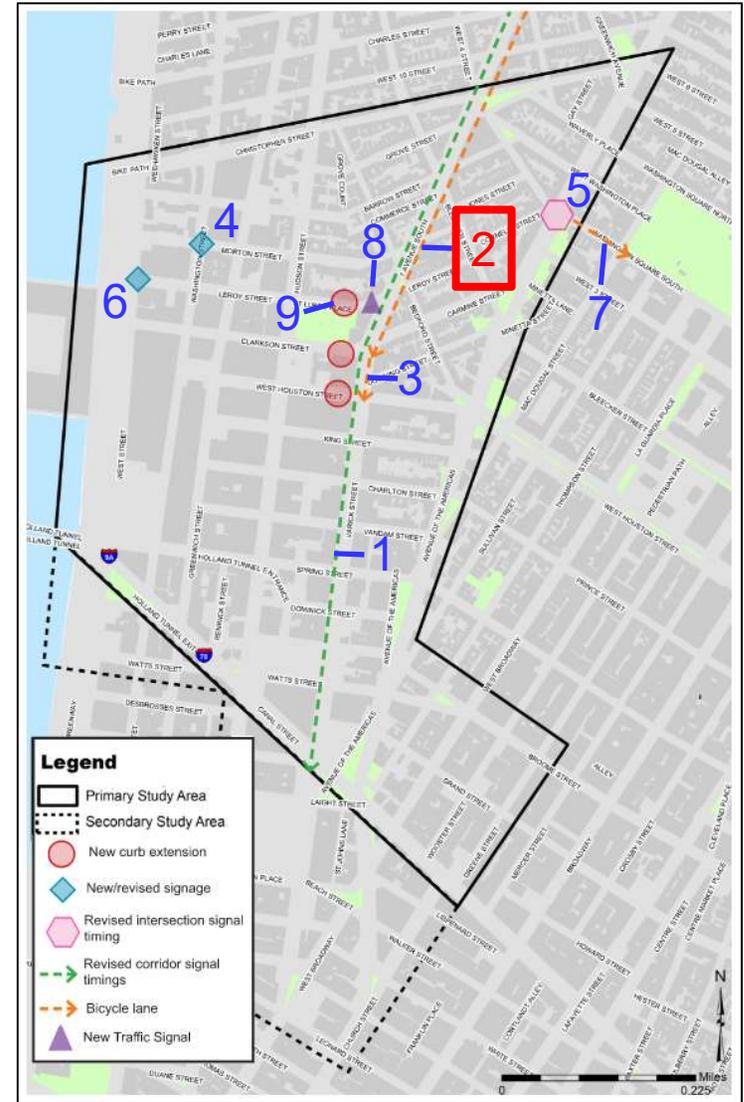
# ALREADY IMPLEMENTED IMPROVEMENTS

1. **Adjustment of signal timing at 15 intersections along 7 Av South and Varick St**
2. Construction of protected bicycle lane on 7 Av South from West 30 St to West Houston St
3. Extension of protected bicycle lane on Varick St from Clarkson St to West Houston St, and provision of pedestrian islands and curb extensions from Clarkson St to W. Houston St
4. Installation of All-Way-Stop Control signs at Washington St / Morton St
5. Provision of Leading Pedestrian Interval (LPI) for north crosswalk at 6 Av/West 4 St/ Cornelia St
6. Installation of wayfinding signage to direct pedestrians to cross West St at Clarkson St or at Morton St, rather than at Leroy St
7. Extension of the conventional bicycle lane on West 4th St between 6th Avenue and MacDougal St / Washington Sq West
8. Installation of new traffic signal at 7 Av South/Leroy St
9. Installation of curb extension on northwest corner of 7 Av South/Leroy St
10. Revise peg-a-trak markings along Hudson St approach to Holland Tunnel



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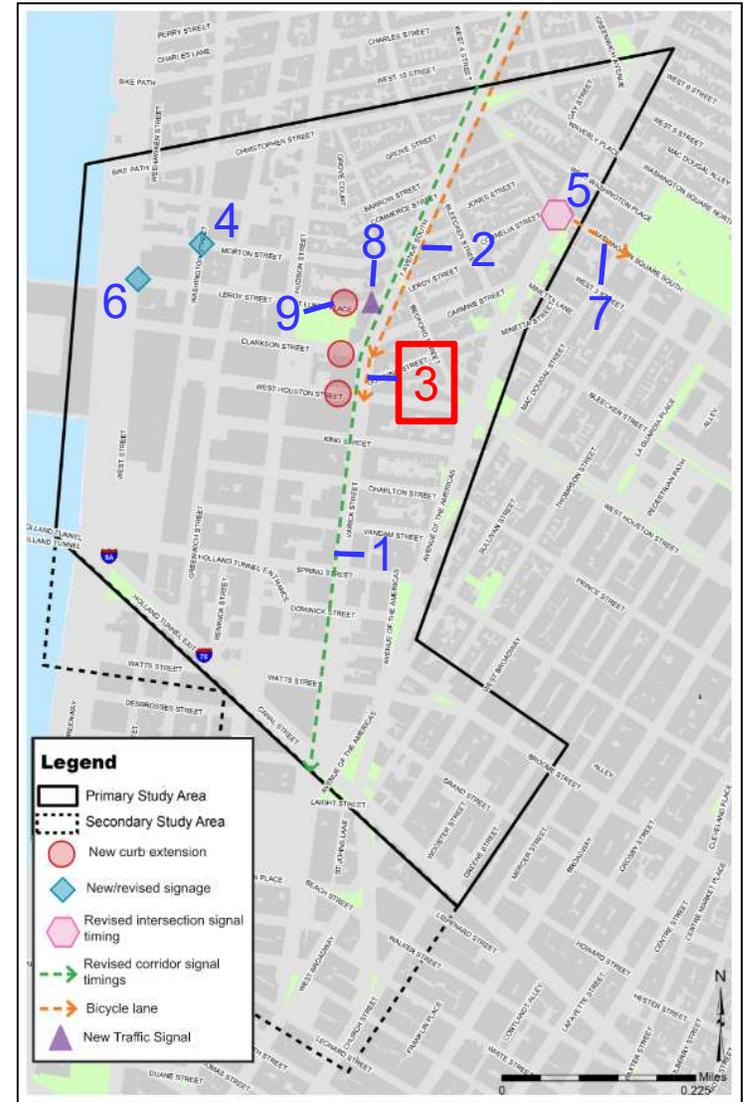
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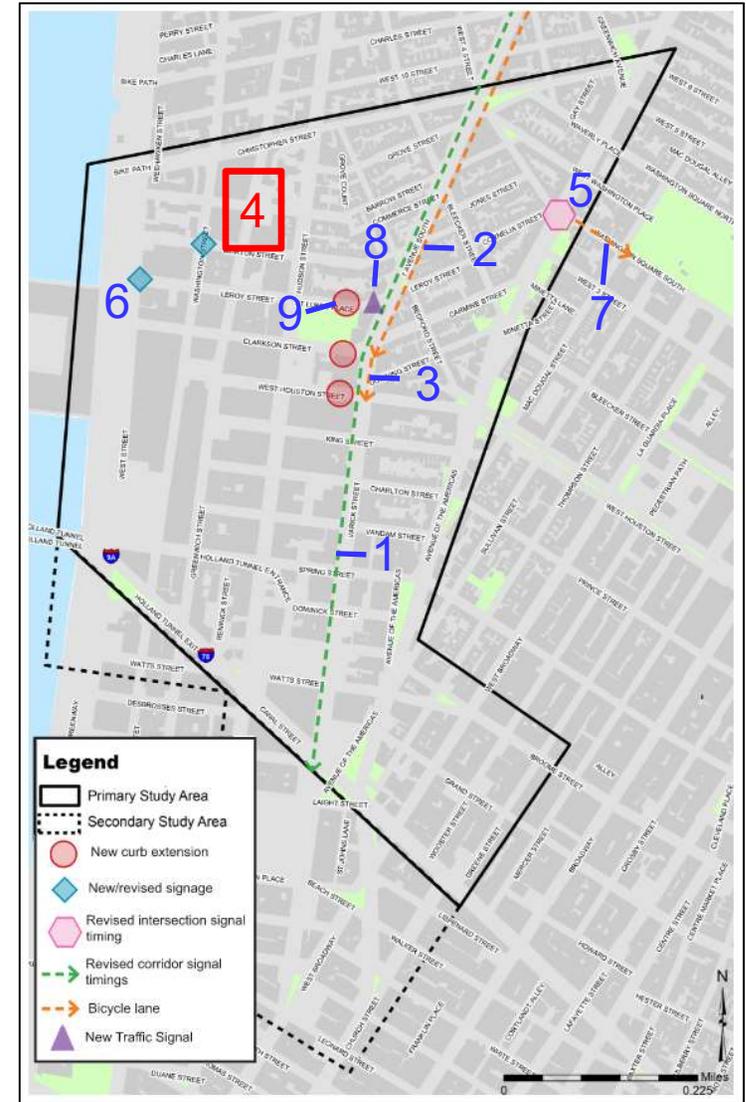


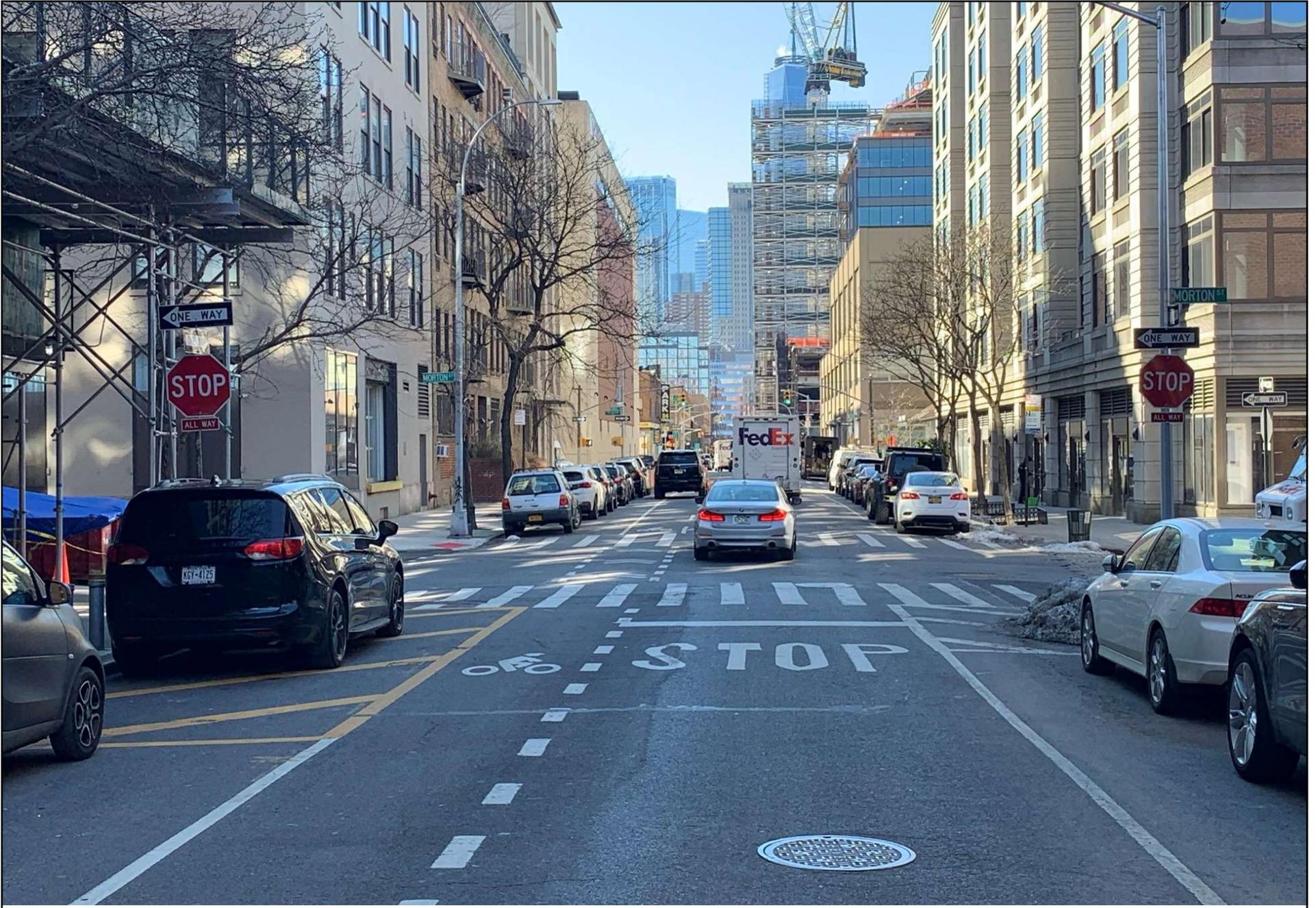
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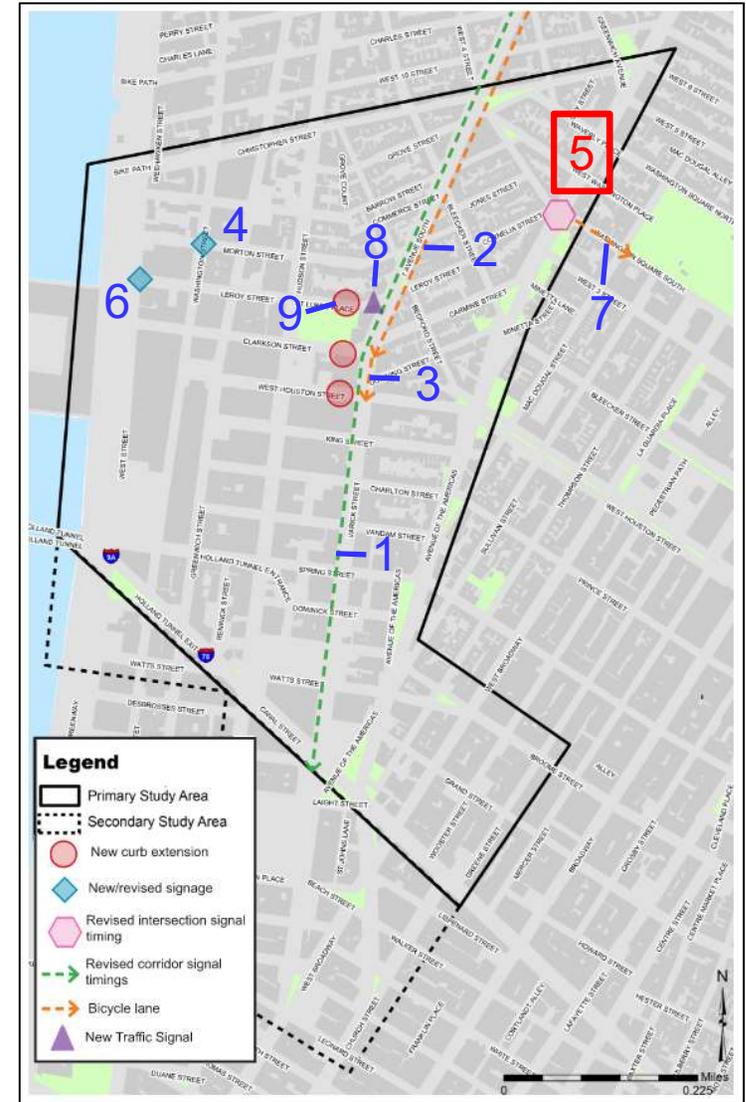
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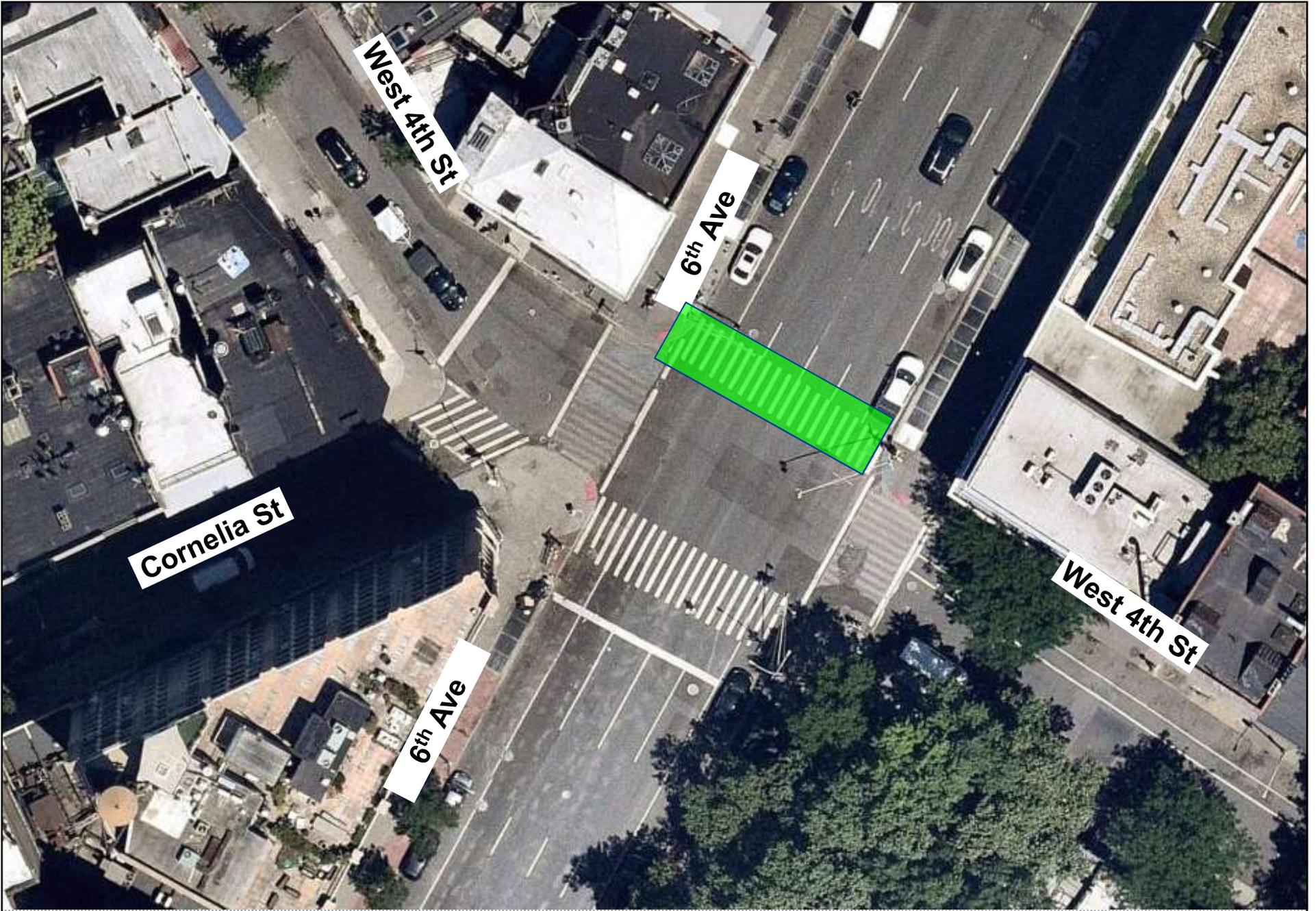




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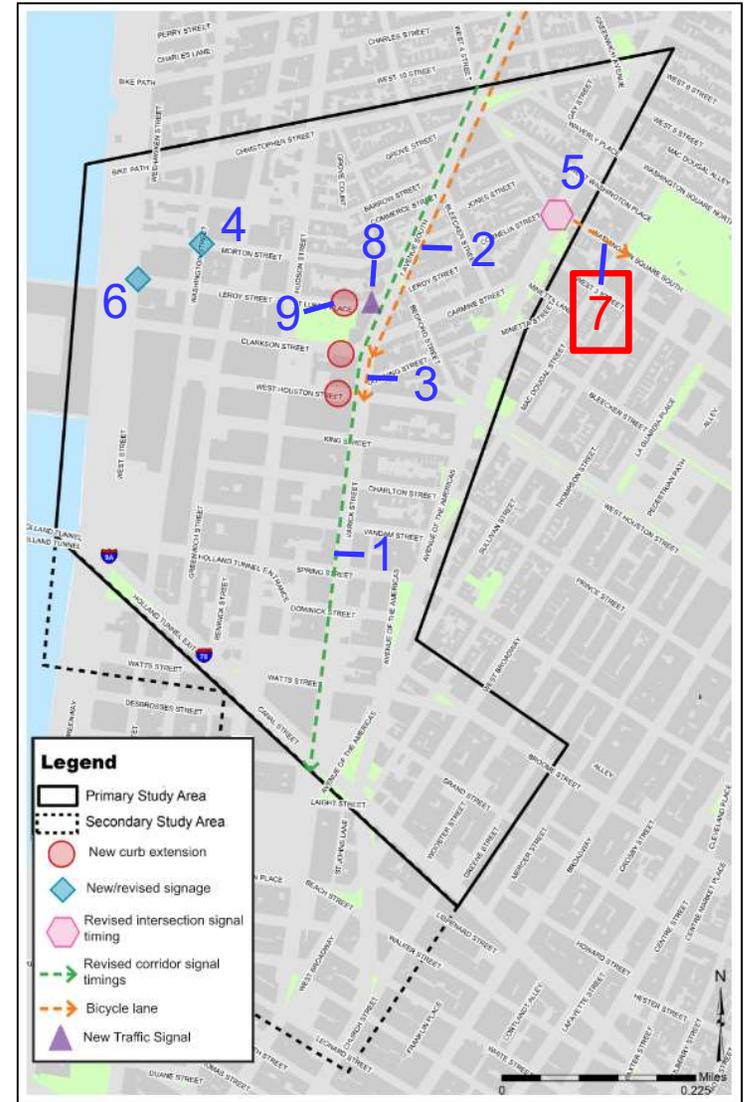
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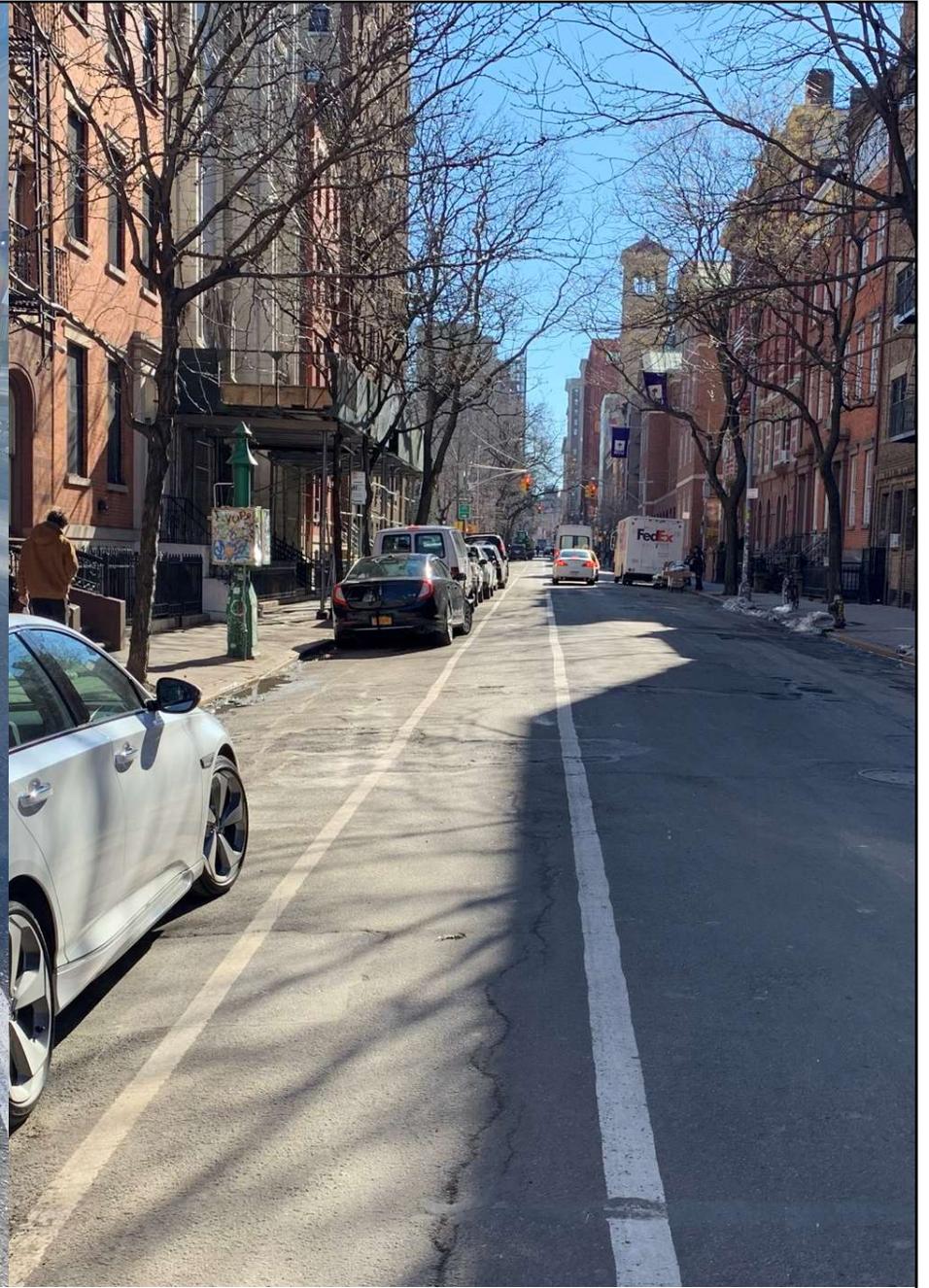




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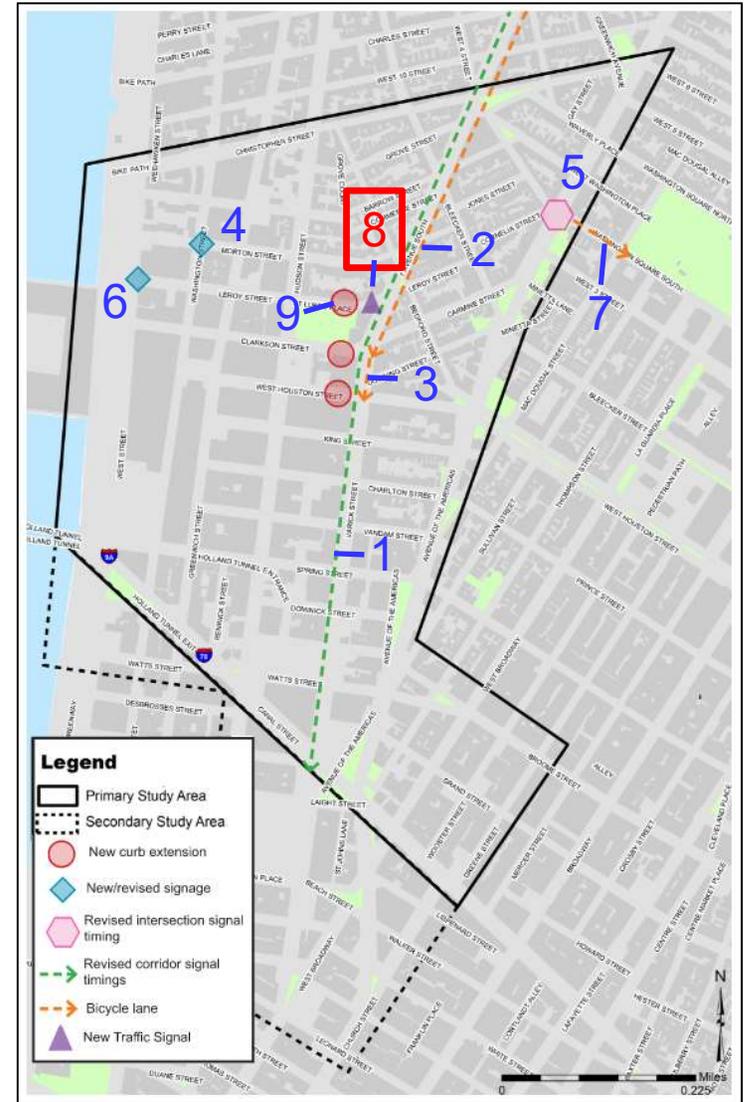
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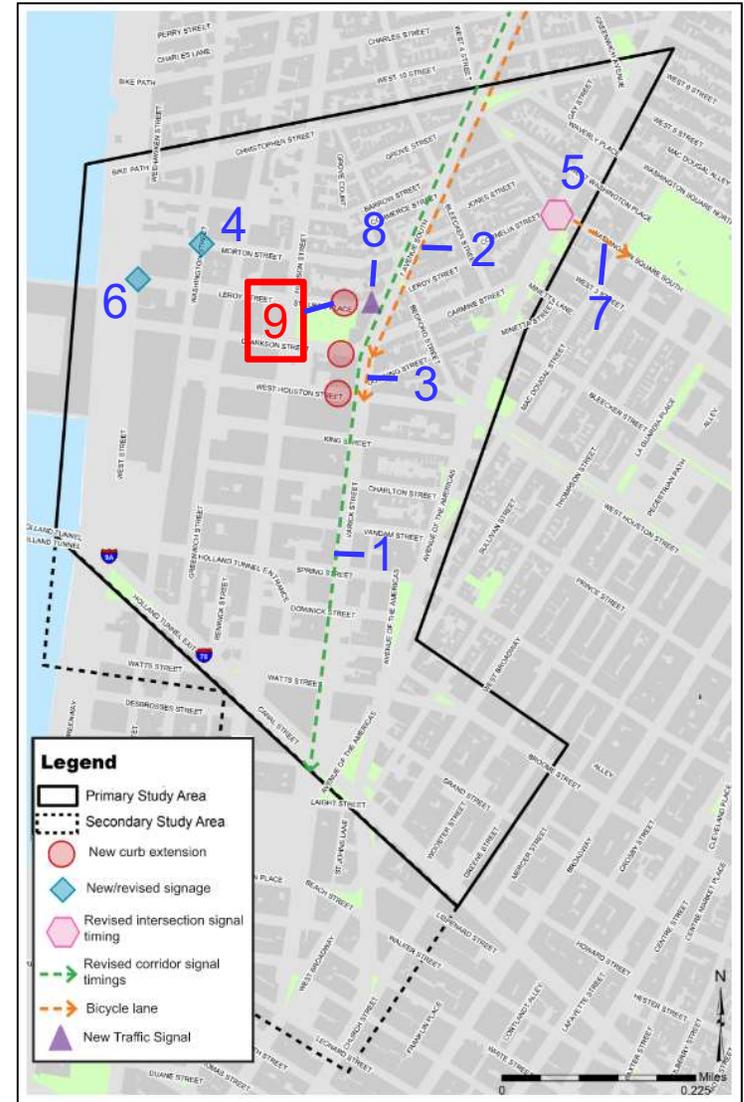
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**Before (2017)**



**After (2018)**



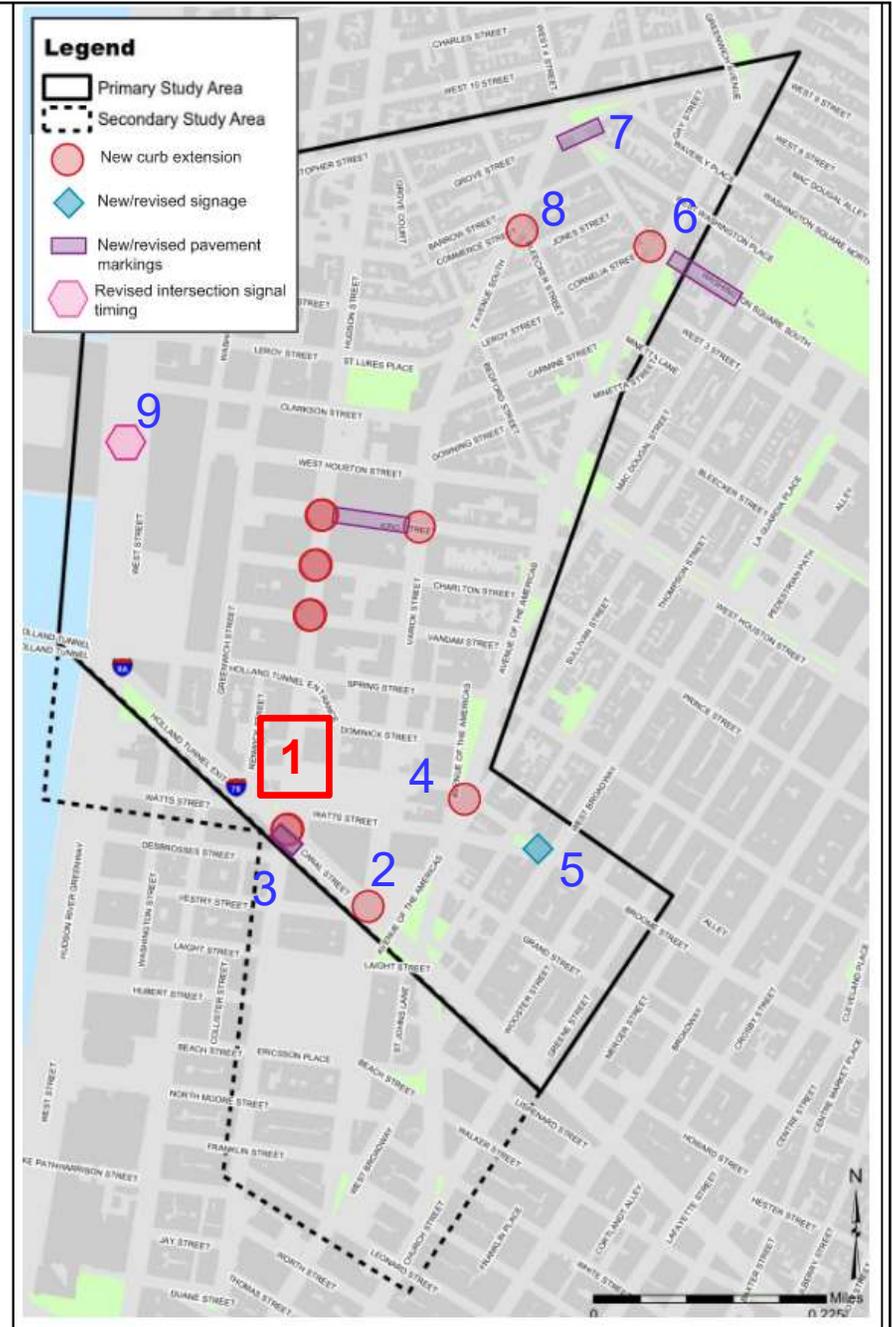
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## Early-Action Improvements (2021)

# 3

# EARLY ACTION IMPROVEMENTS (TO BE IMPLEMENTED IN 2021)

1. Canal St/Hudson St
2. Canal St/Varick St
3. Canal St, Hudson St to 6<sup>th</sup> Av (Bus Access to Holland Tunnel)
4. 6<sup>th</sup> Av/Broome St
5. Broome St/Watts St/West Broadway
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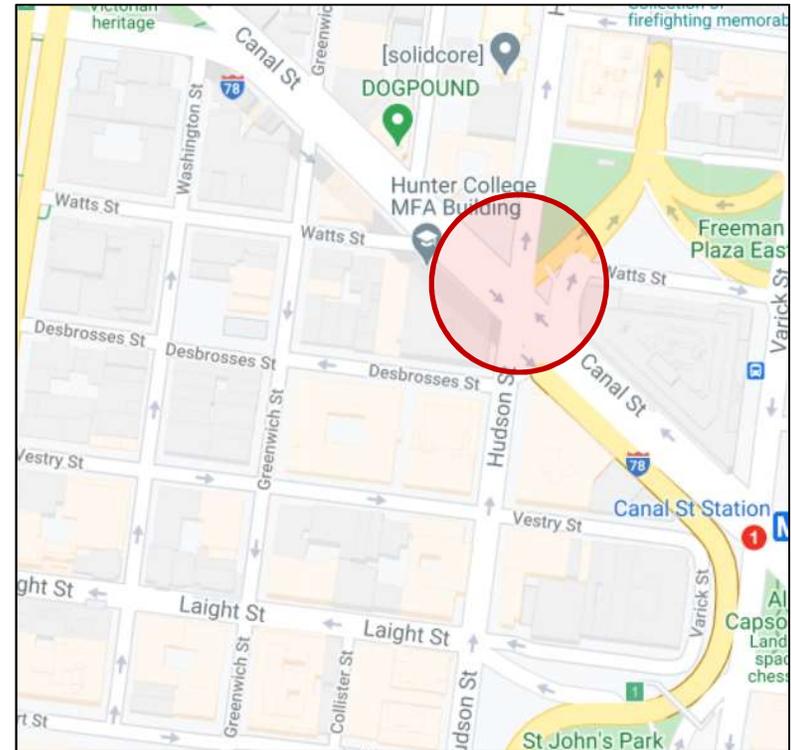


# CANAL ST / HUDSON ST

**ISSUE:** Long pedestrian crossing distances across Canal St



Looking south on Hudson Street from north of Canal Street



Source: Google Maps.

## CANAL ST / HUDSON ST (Cont'd)

### PROPOSED IMPROVEMENT:

- Install one curb extension at northwest corner of Hudson St and Canal St intersection.

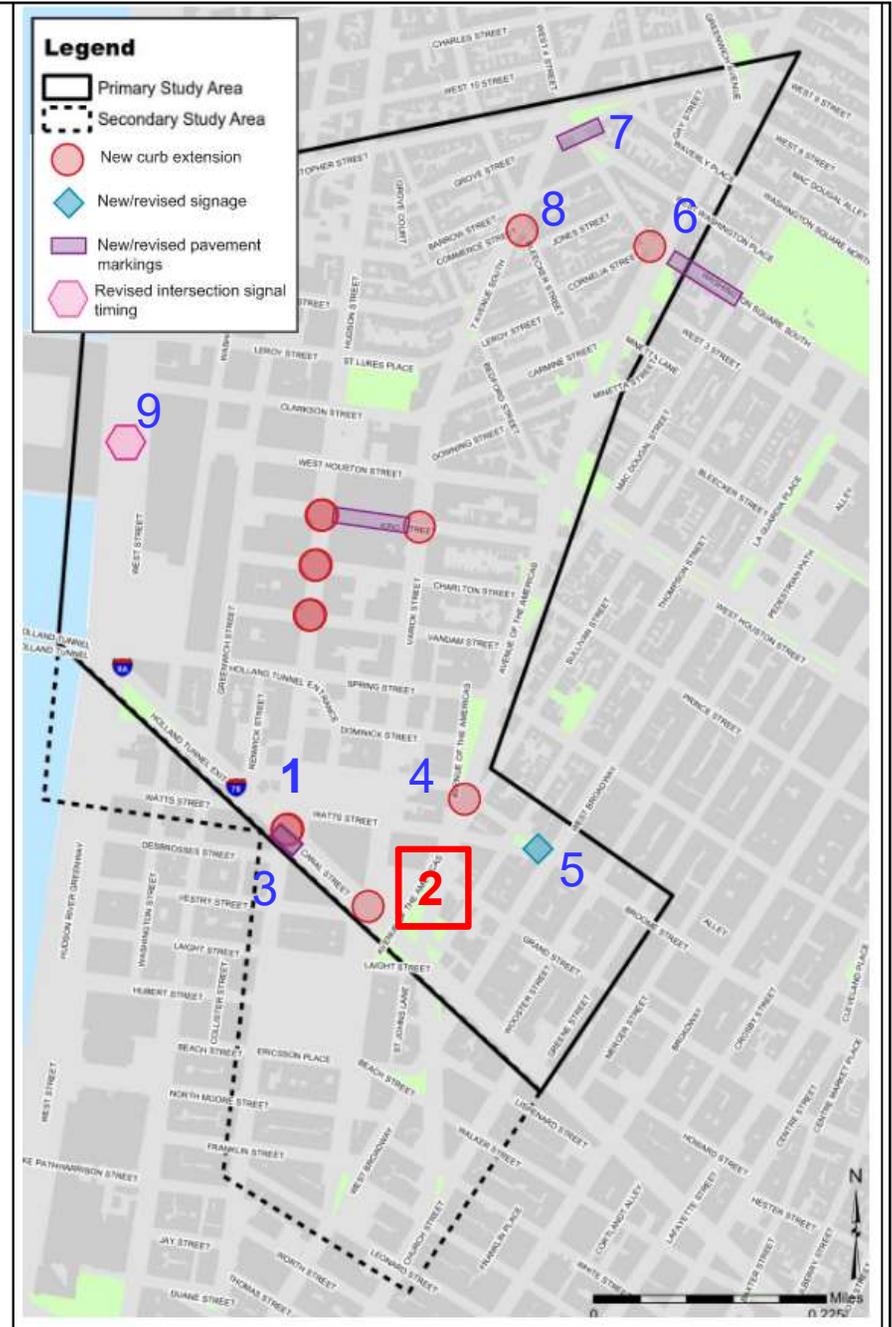


\*Curb extensions under 11 ft wide require maintenance partner

\*\* The temporary curb extensions will be made permanent as part of a future improvement

# EARLY ACTION IMPROVEMENTS (TO BE IMPLEMENTED IN 2021)

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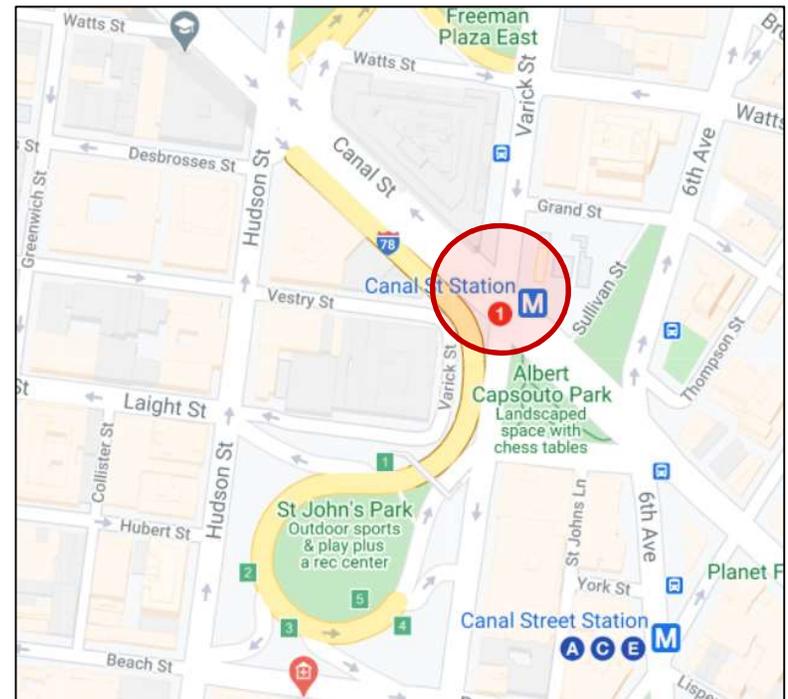


# CANAL ST / VARICK ST

**ISSUE:** Existing curb extension on northwest corner creates challenging right-turn movement for trucks due to intersection angle



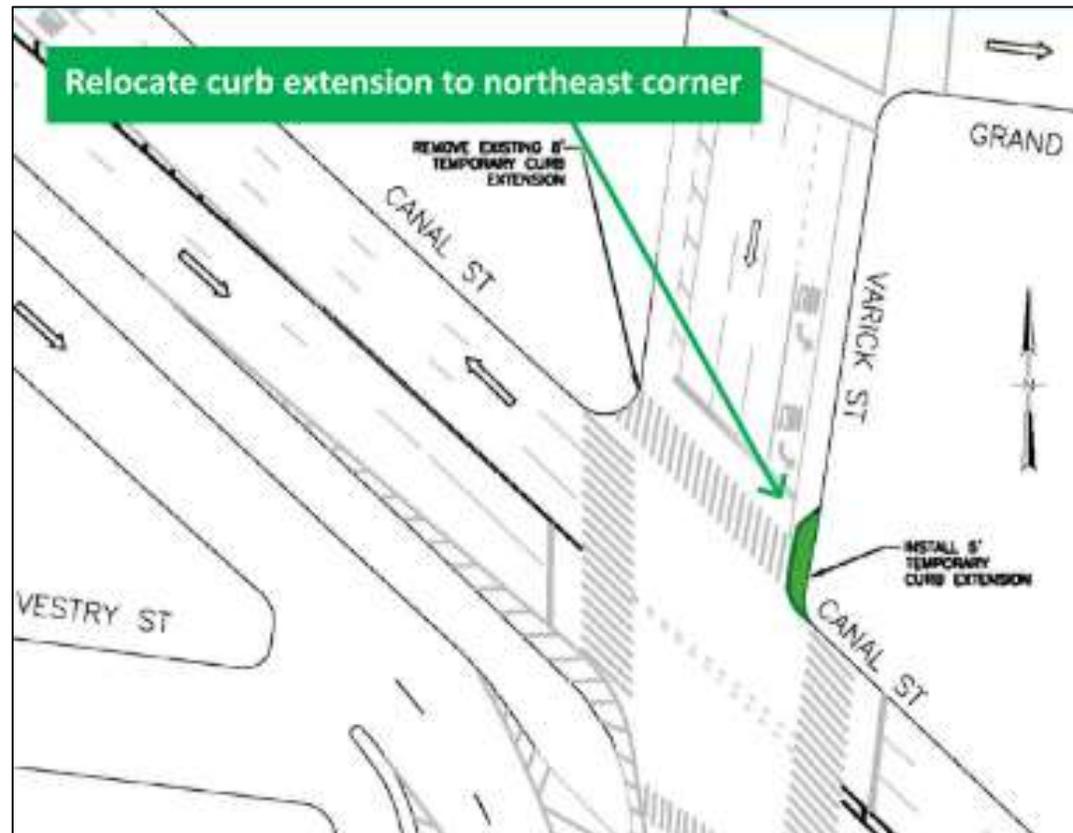
Looking north on Varick St on Canal St



Source: Google Maps.

## CANAL ST / VARICK AV (Cont'd)

**PROPOSED IMPROVEMENT:** Remove existing painted curb extension on the northwest corner and install a new painted curb extension on the northeast corner

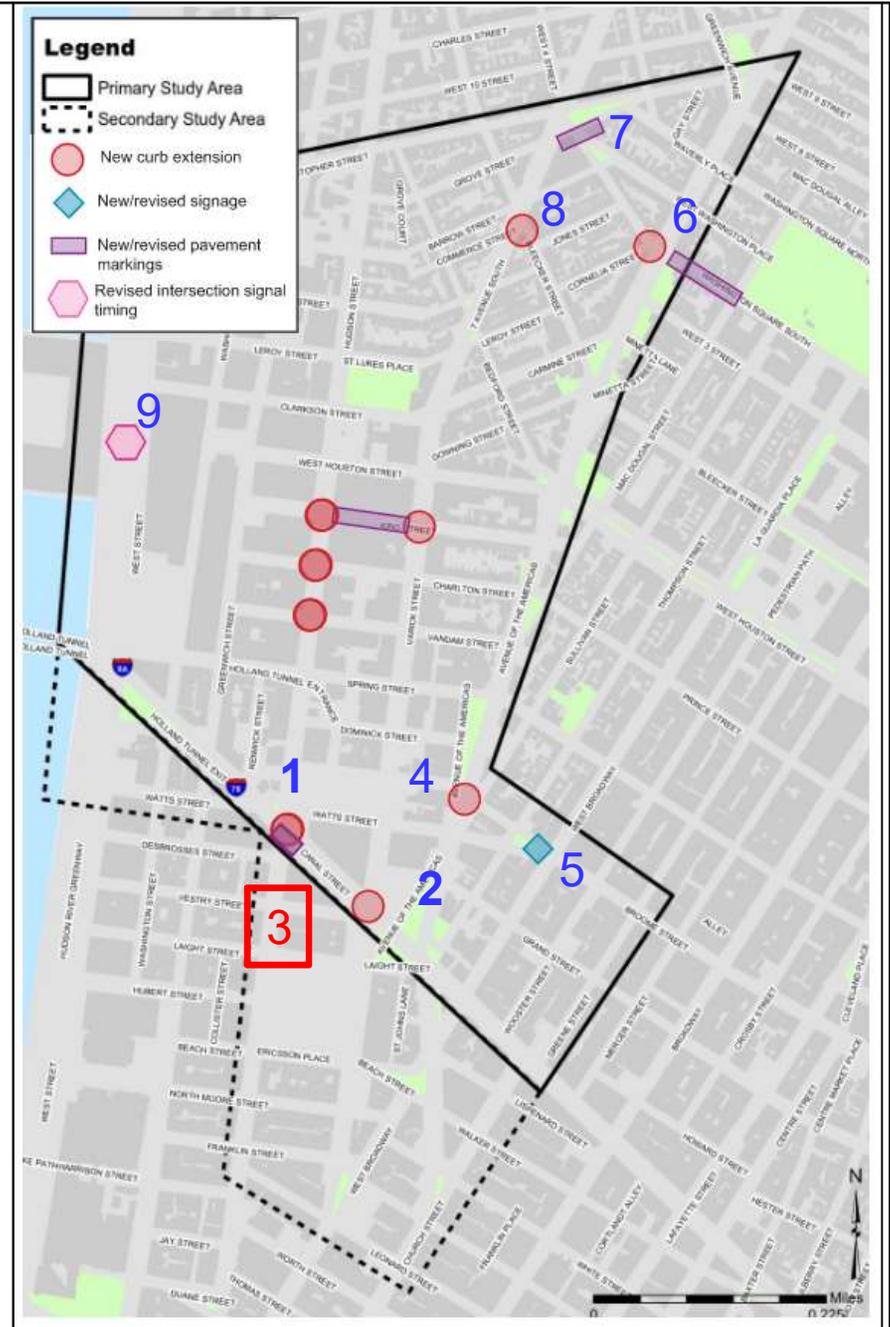


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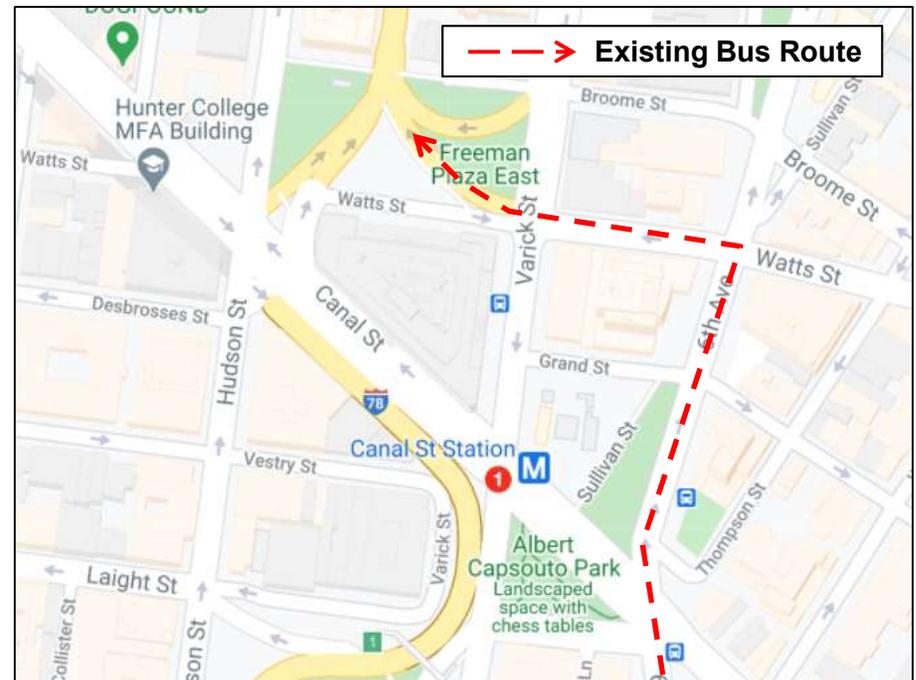


# CANAL ST / HUDSON ST / 6<sup>TH</sup> AV (BUS ACCESS TO HOLLAND TUNNEL)

**ISSUES:** Buses turning left from 6<sup>th</sup> Av to Watts St make a difficult, sweeping turn that obstructs other vehicular and pedestrian movements. Buses experience delays due to congestion on Watts St.



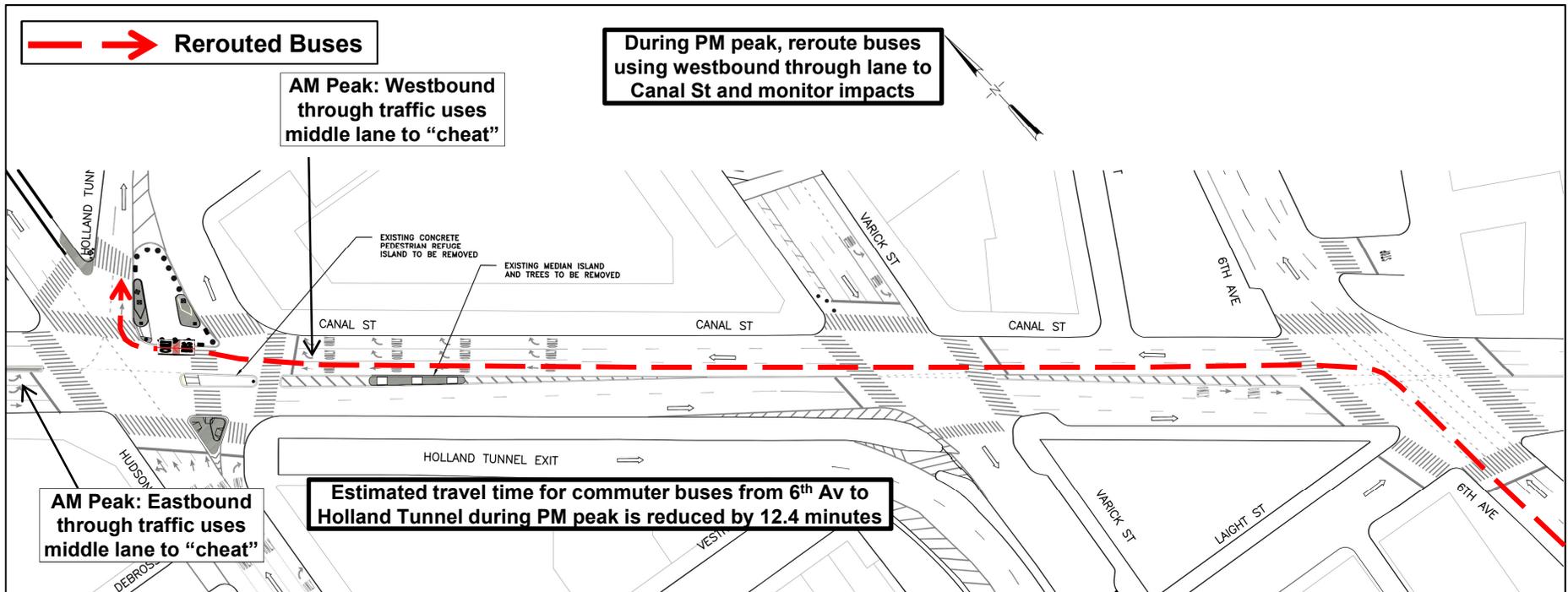
Looking northeast from SW corner of Watts St/ 6<sup>th</sup> Av



Source: Google Maps.

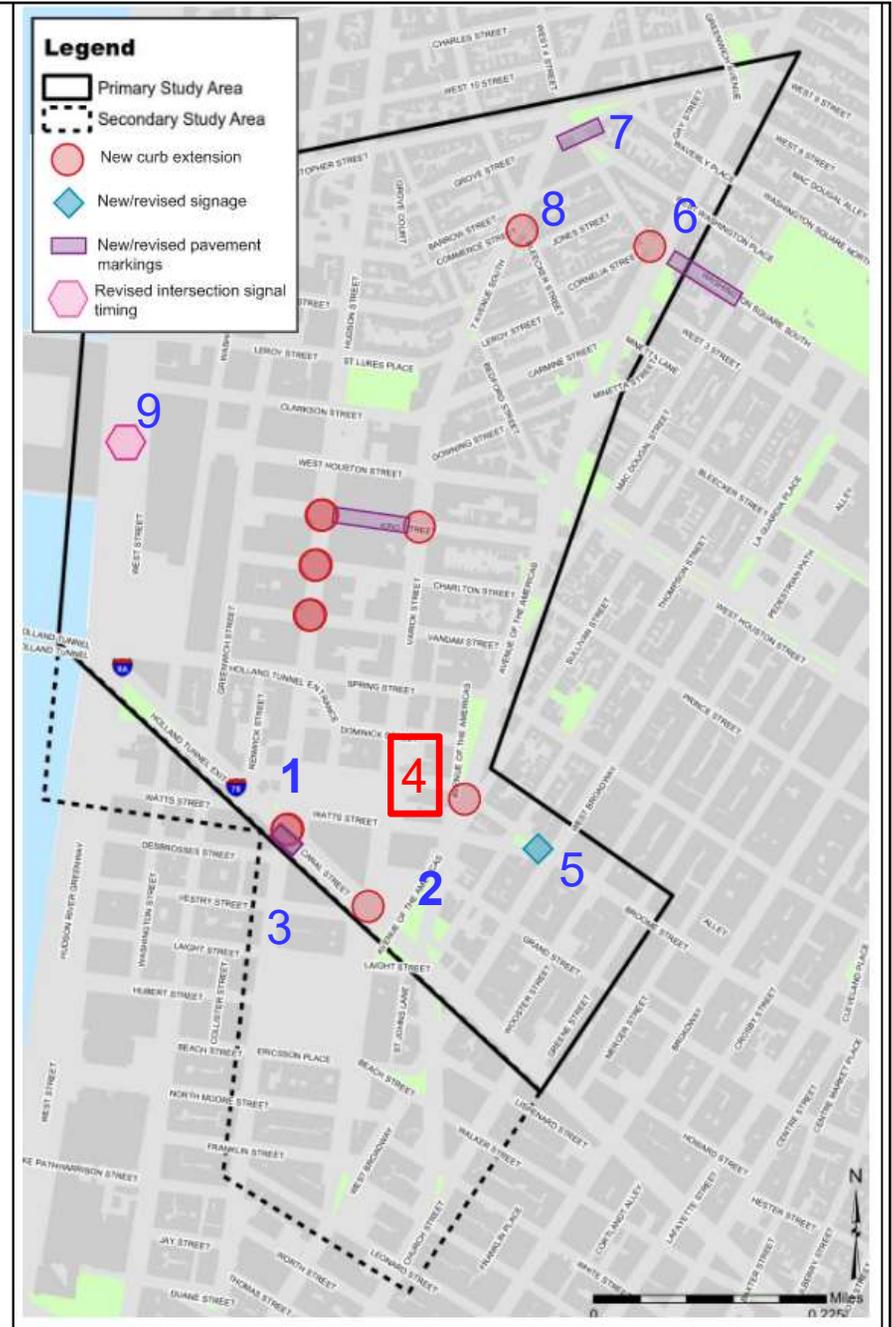
# CANAL ST / HUDSON ST / 6<sup>TH</sup> AV (BUS ACCESS TO HOLLAND TUNNEL) (Cont'd)

**PROPOSED IMPROVEMENT:** Reroute buses to Holland Tunnel via Canal St during the weekday PM peak period.



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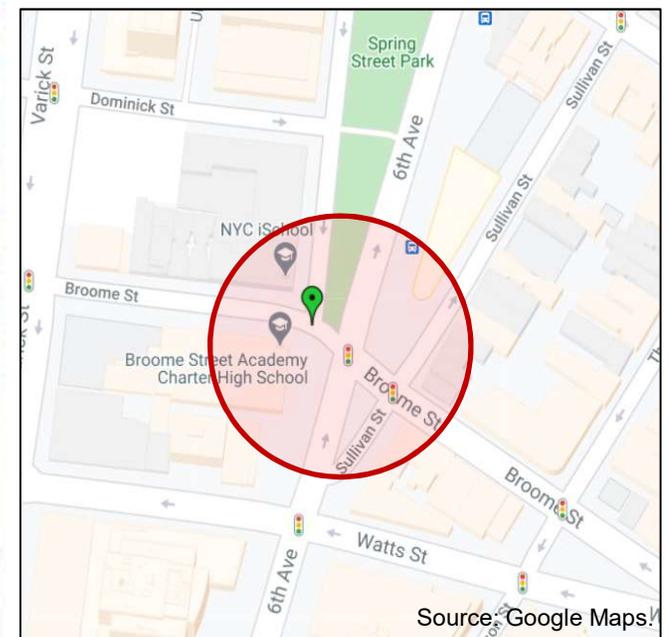


## 6<sup>TH</sup> AV / BROOME ST

**ISSUE:** The 70 foot wide pedestrian crossing distance of 6<sup>th</sup> Av at Broome St exposes crosswalk users to long crossing times and multiple conflict points with vehicles



Source: Google Maps.



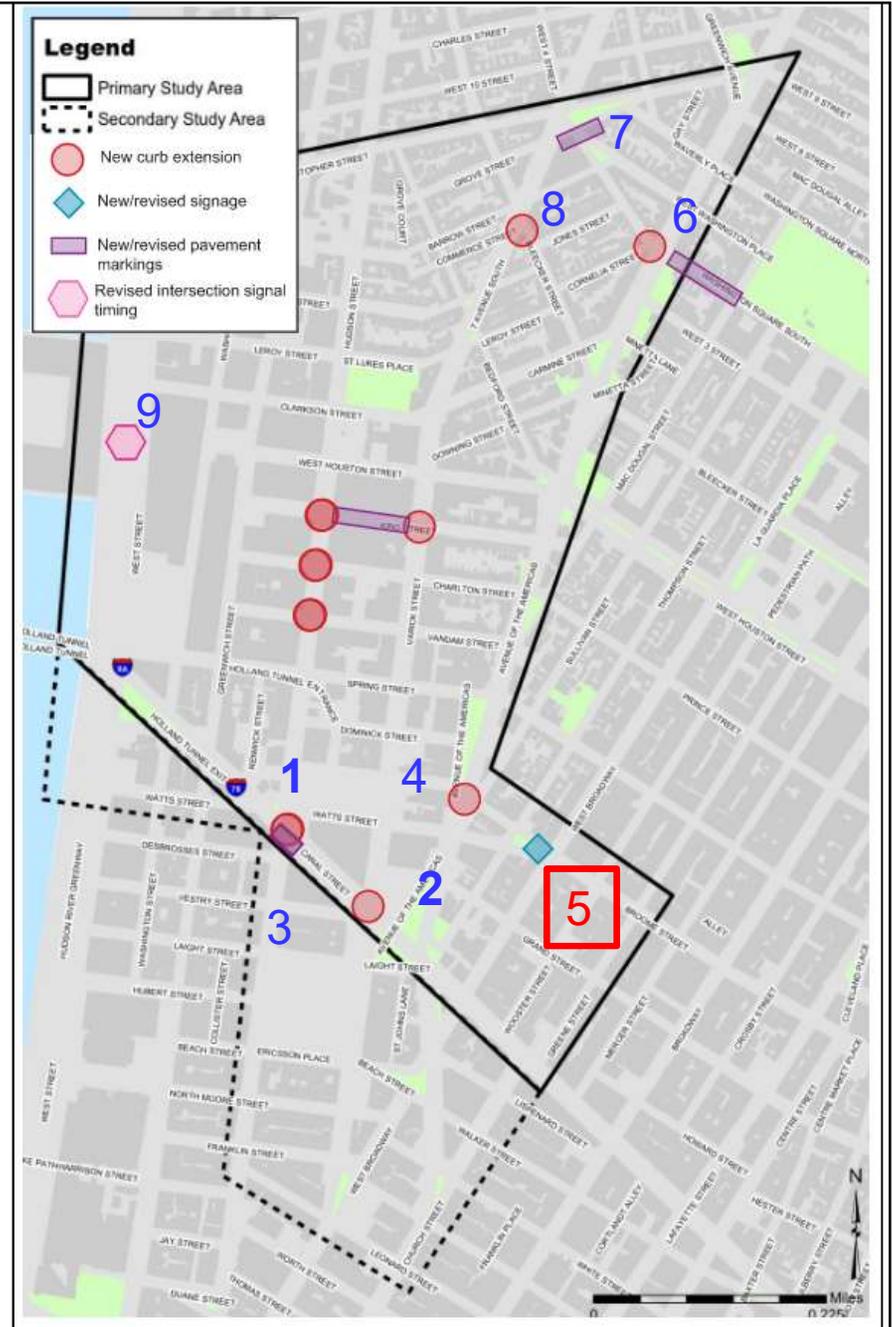
Source: Google Maps.

Looking north on 6<sup>th</sup> Av from the south side of Broome St



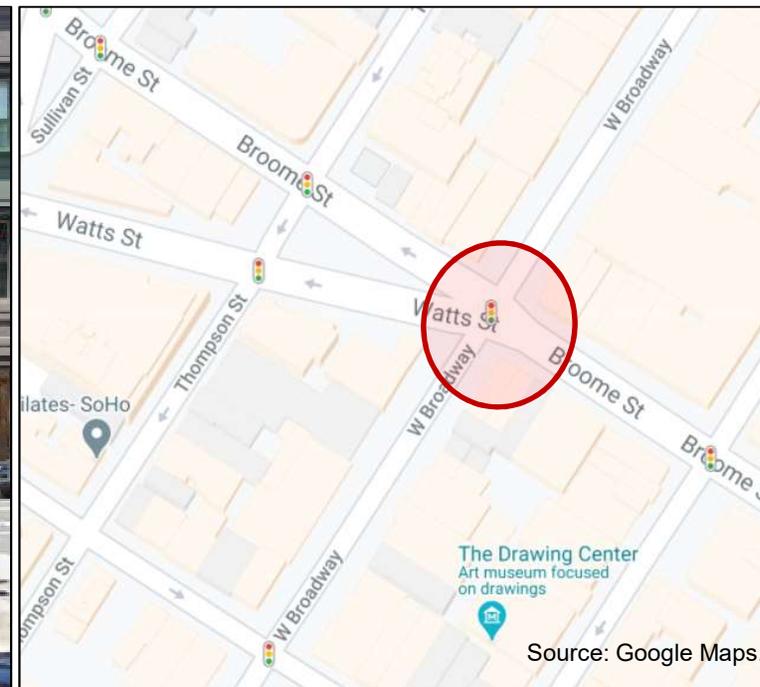
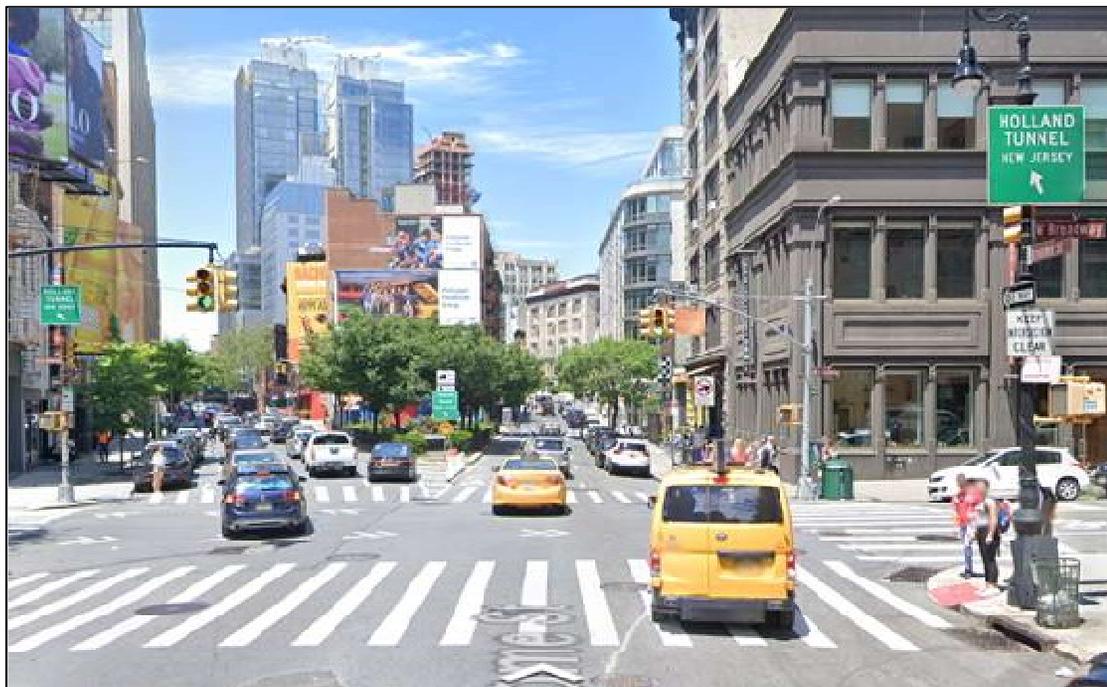
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# BROOME ST / WATTS ST / WEST BROADWAY

**ISSUE:** Existing signs are confusing to drivers at the diverge between westbound Watts St and Broome St at West Broadway.

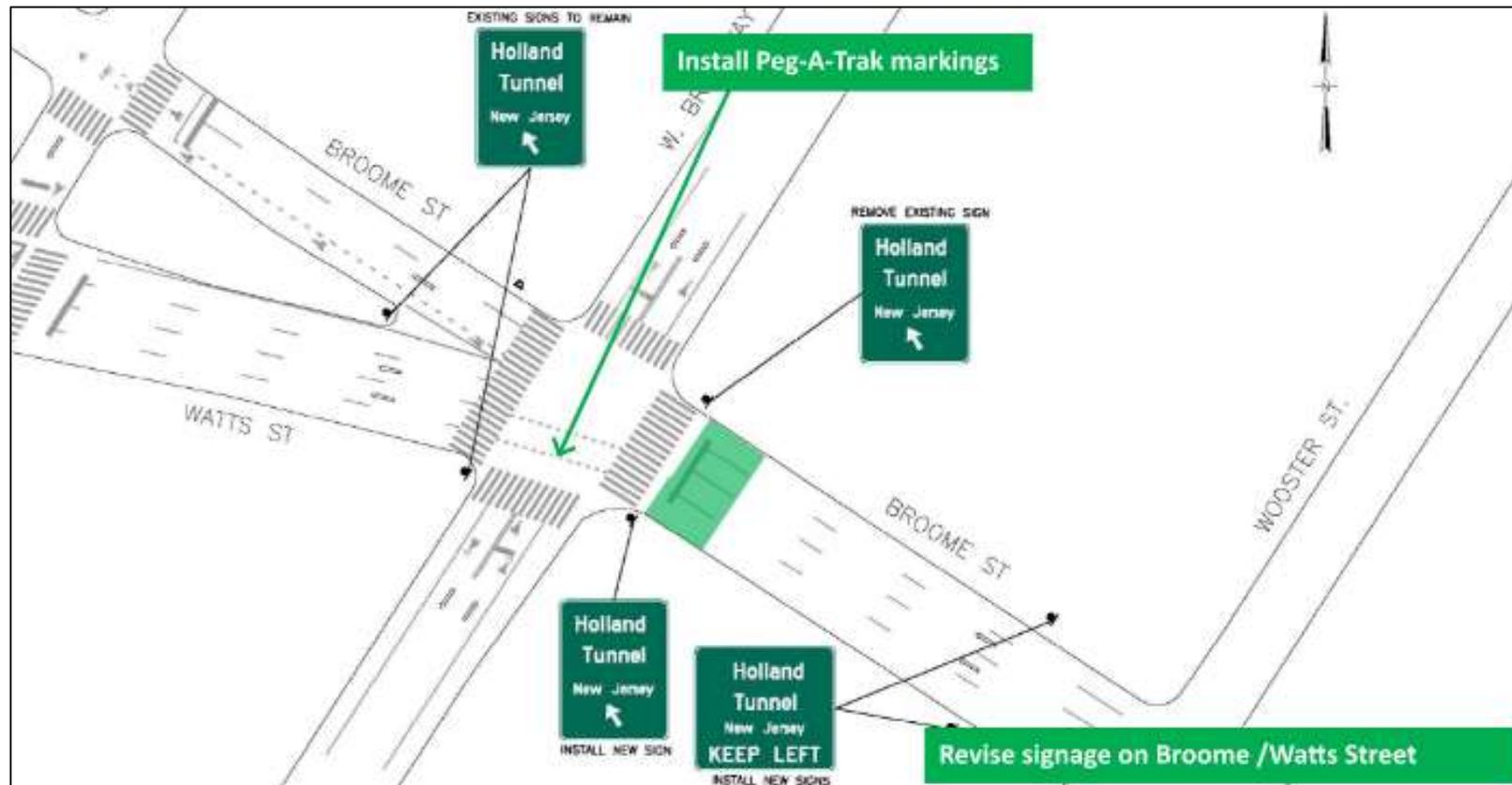


Looking west at the intersection of Broome St/ Watts St/ West Broadway

## BROOME ST / WATTS ST / WEST BROADWAY (Cont'd)

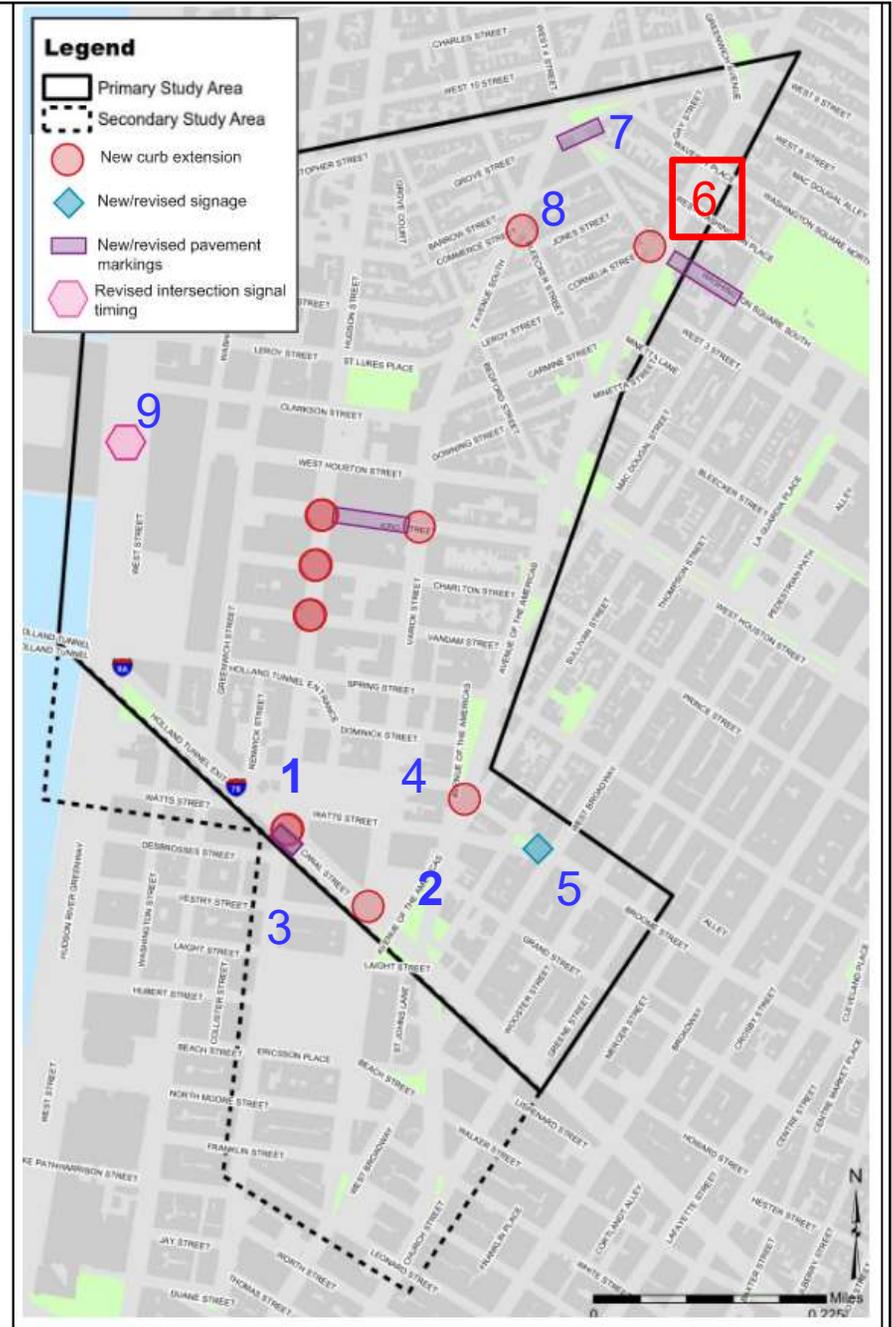
### PROPOSED IMPROVEMENTS:

- Revise signs on Broome St approaching diverge for greater clarity.
- Add Peg-A-Trak markings to improve guidance for motorists.



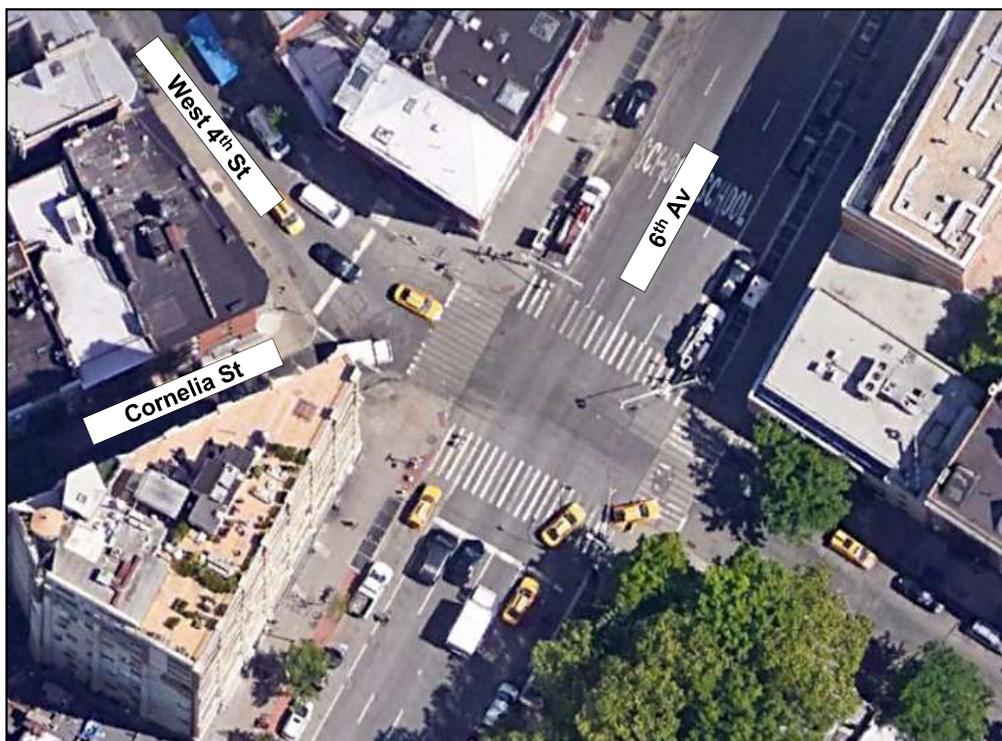
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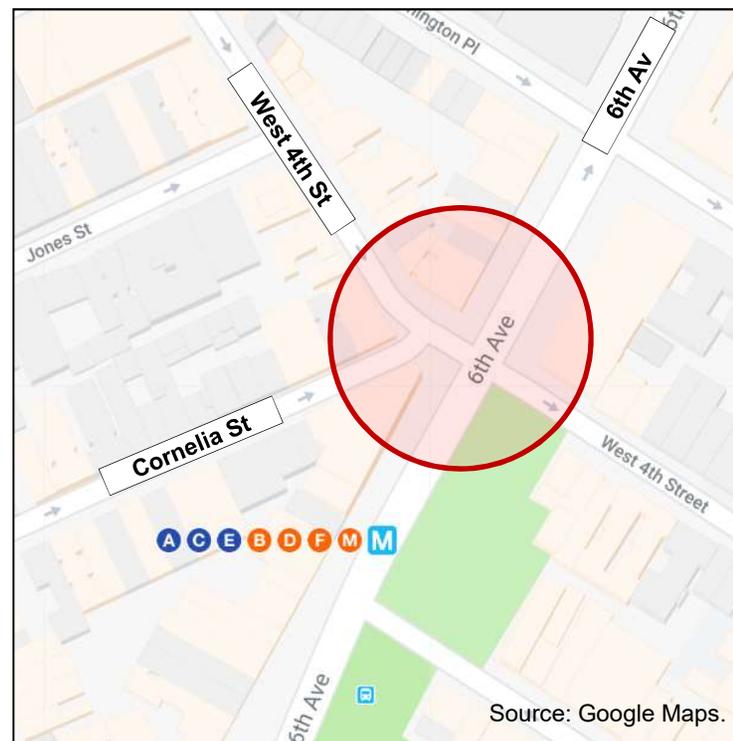
# 6<sup>TH</sup> AV / WEST 4<sup>TH</sup> ST / CORNELIA ST

**ISSUE:** Proximity of Cornelia St to West 4<sup>th</sup> St/ 6<sup>th</sup> Av intersection poses safety issues for vehicles and pedestrians.



Source: Google Maps.

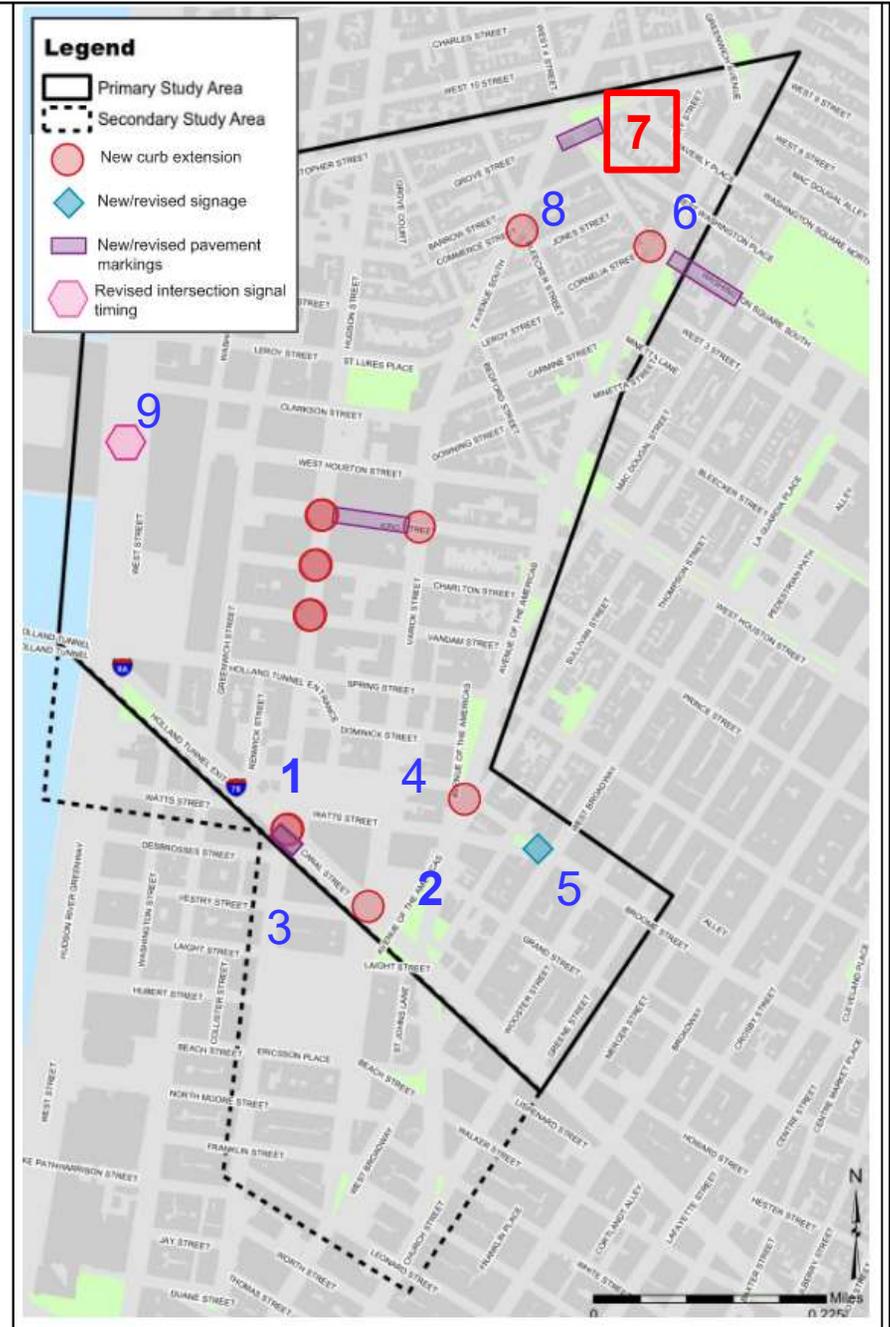
Aerial view of 6th Av, West 4th St and Cornelia St intersection





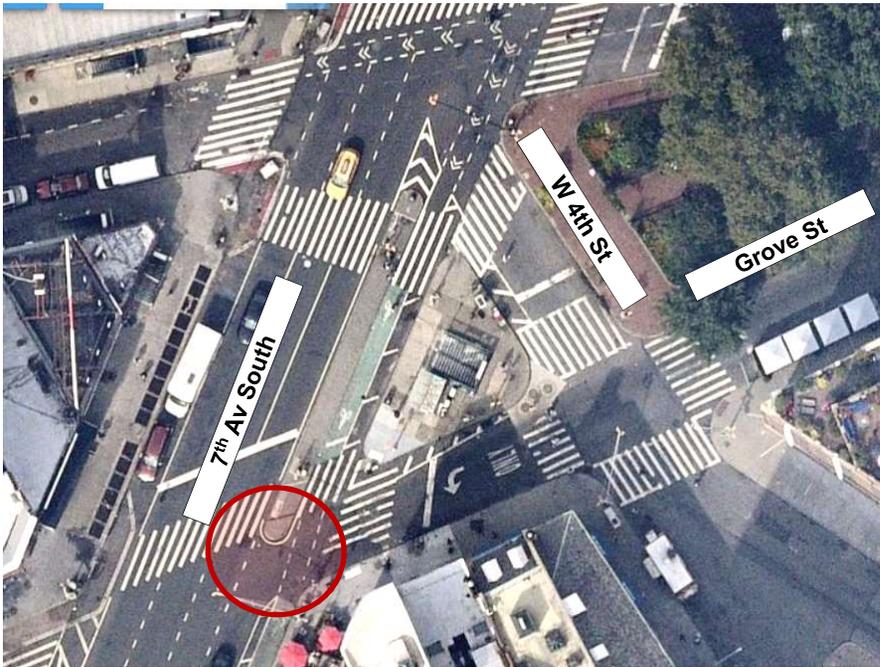
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- 7. West 4<sup>th</sup> St /7<sup>th</sup> Av/Grove St**
8. 7<sup>th</sup> Av South/Commerce St
9. West St/West Houston St

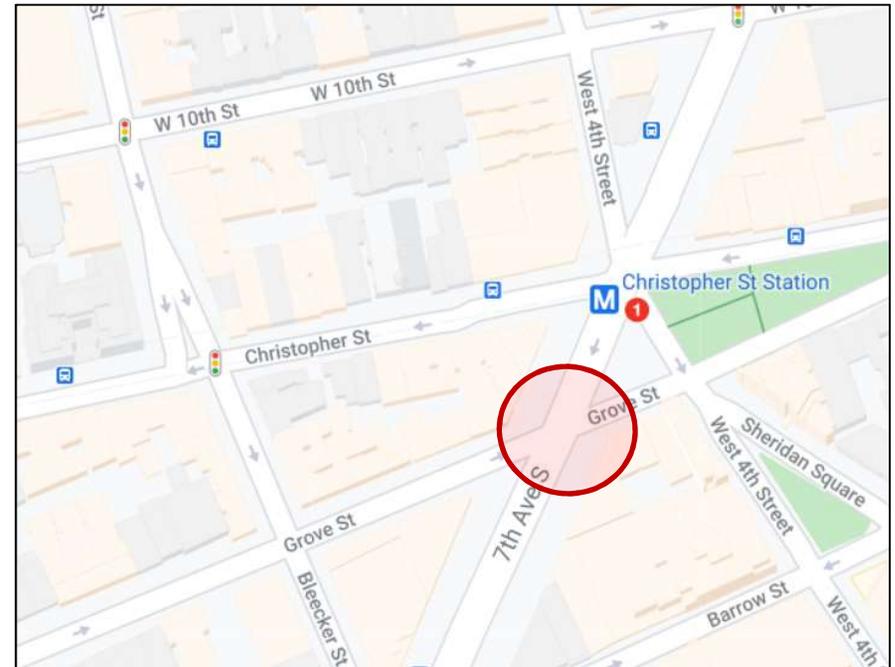


# WEST 4<sup>TH</sup> ST / 7<sup>TH</sup> AV / GROVE ST

**ISSUE:** The median tip on 7<sup>th</sup> Av extends into Grove St travel lane, making left-turns difficult and guiding vehicles toward the pedestrian cut-through in the median.



Intersections of 7<sup>th</sup> Av/ W 4<sup>th</sup> St/ Grove St

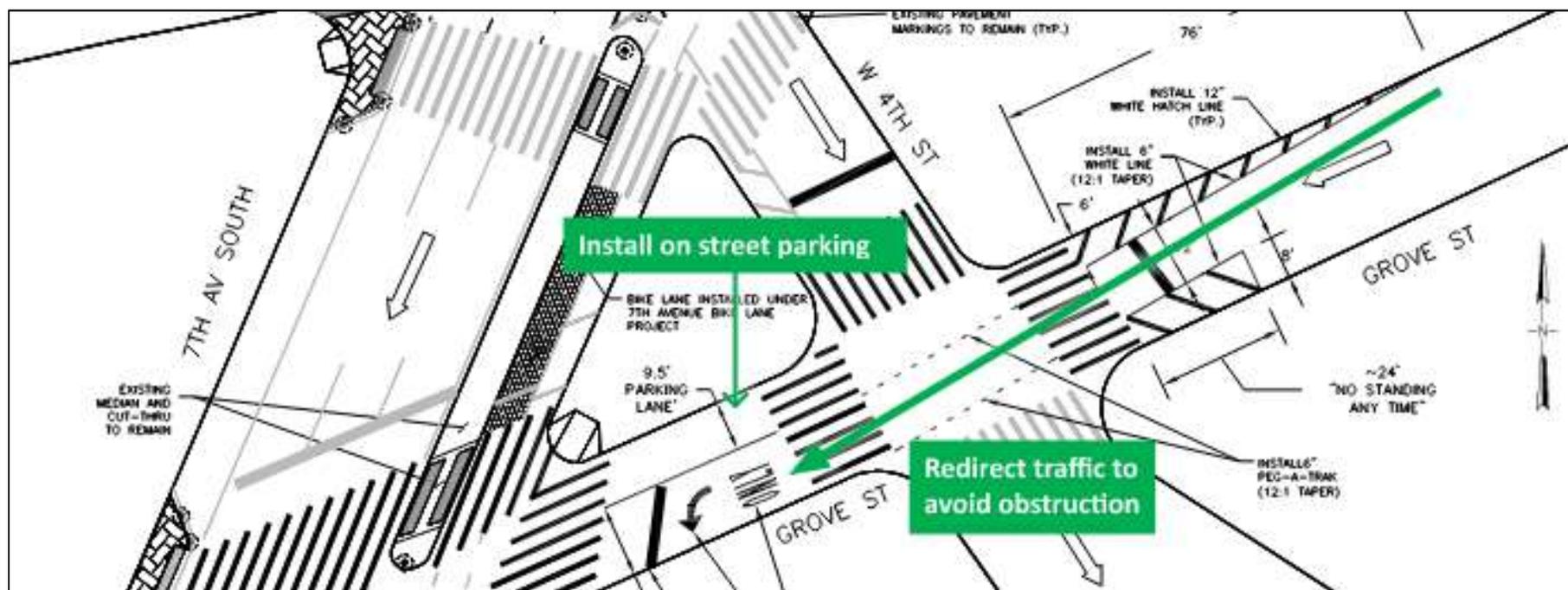


Source: Google Maps.

## WEST 4<sup>TH</sup> ST / 7<sup>TH</sup> AV / GROVE ST (Cont'd)

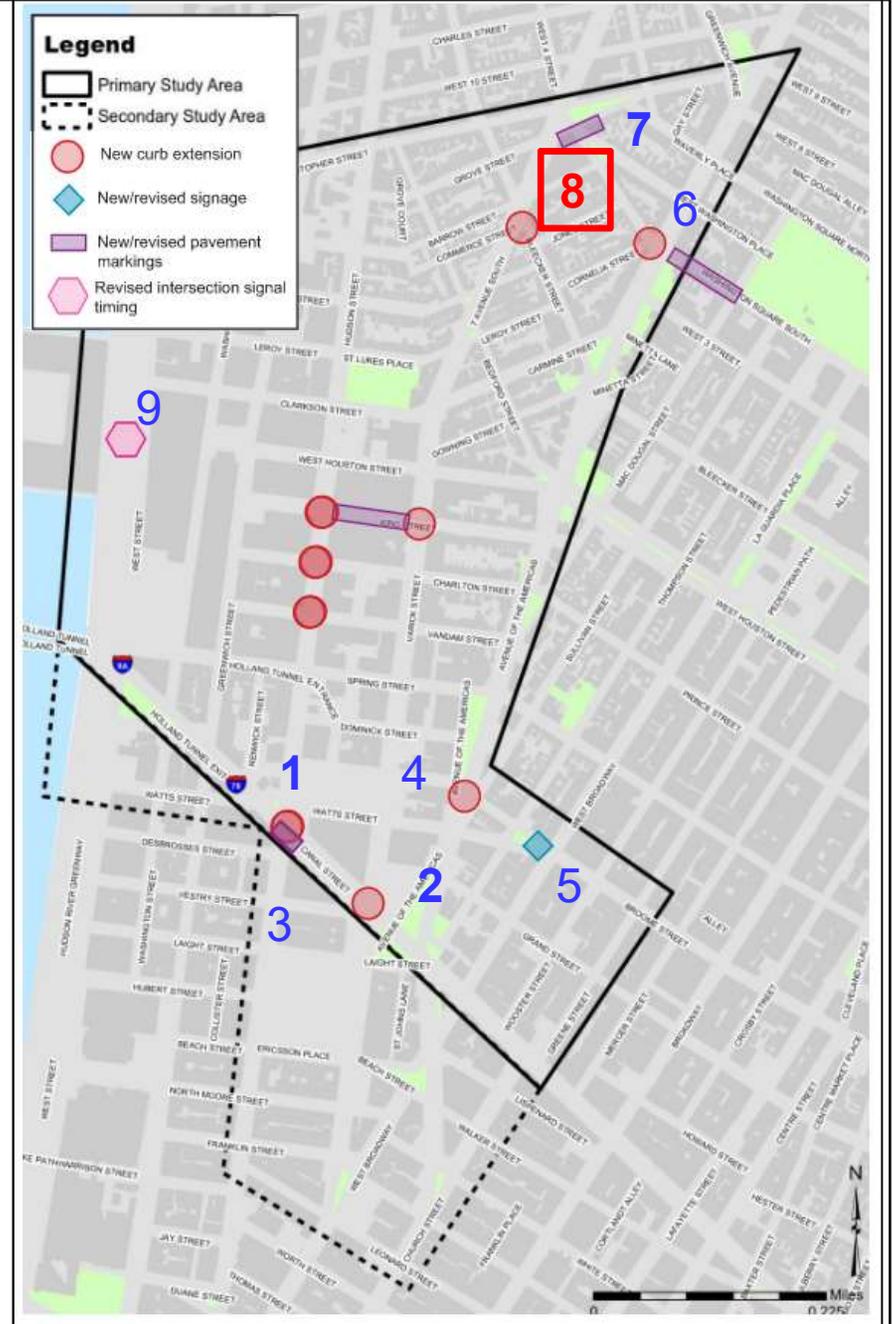
### PROPOSED IMPROVEMENTS:

- Restripe westbound Grove St to direct traffic away from median tip.
- Provide on-street parking (1 car space) on the north side of Grove St between West 4<sup>th</sup> St and 7<sup>th</sup> Av South.



# EARLY ACTION IMPROVEMENTS (TO BE IMPLEMENTED IN 2021)

1. Canal St/Hudson St
2. Canal St/Varick St
3. Canal St, Hudson St to 6<sup>th</sup> Av (Bus Access to Holland Tunnel)
4. 6<sup>th</sup> Av/Broome St
5. Broome St/Watts St/West Broadway
6. West 4<sup>th</sup> St /6<sup>th</sup> Av/Cornelia St
7. West 4<sup>th</sup> St /7<sup>th</sup> Av/Grove St
- 8. 7<sup>th</sup> Av South/Commerce St**
9. West St/West Houston St

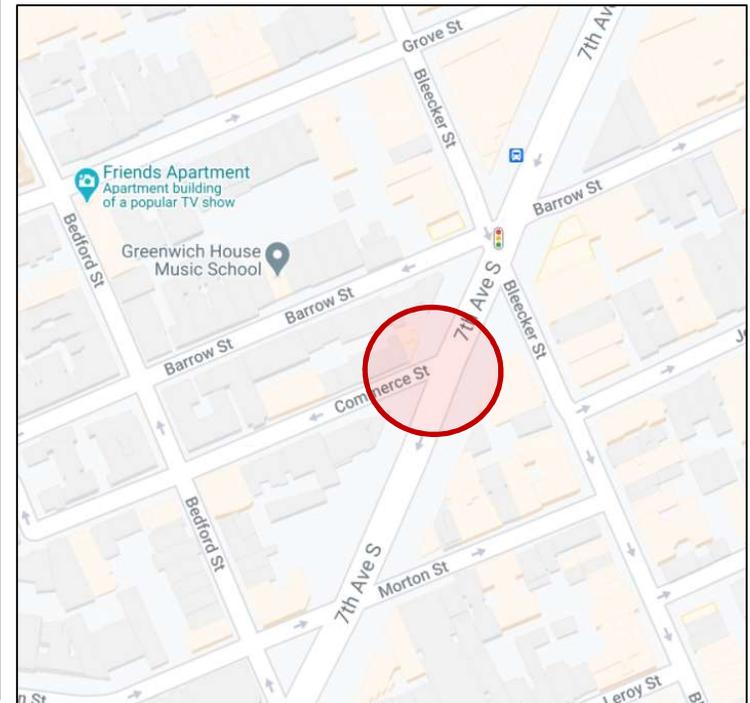


## 7<sup>TH</sup> AV SOUTH / COMMERCE ST

**ISSUE:** Intersection geometry encourages right-turning vehicles to turn at high speeds through west crosswalk.



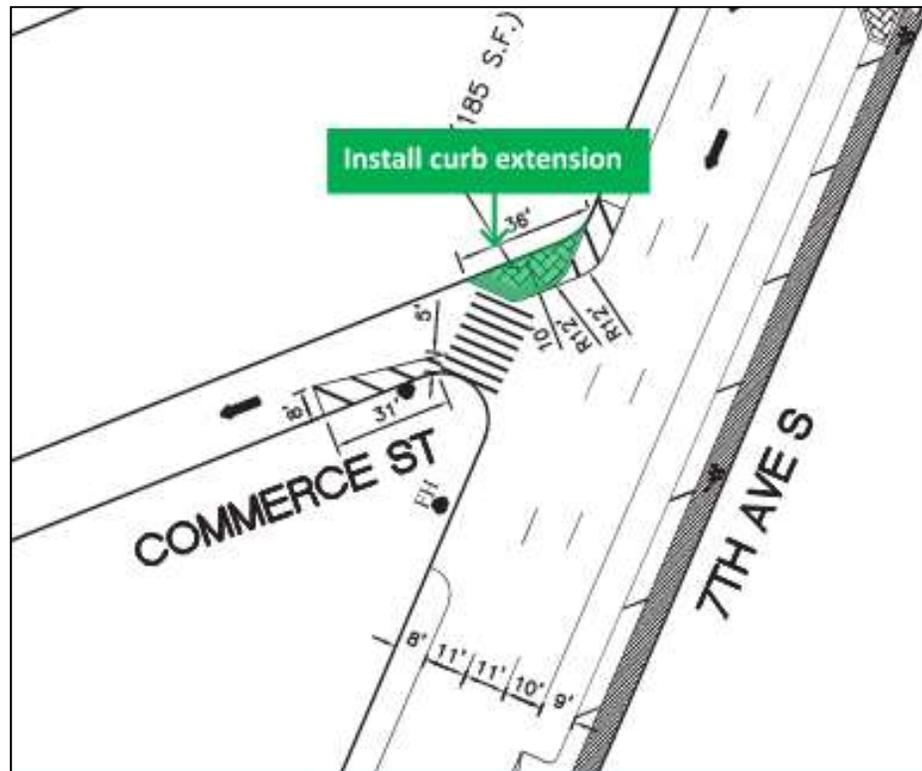
Looming south on 7<sup>th</sup> Av South at Commerce St,  
to west crosswalk



Source: Google Maps.

## 7<sup>TH</sup> AV SOUTH / COMMERCE ST (Cont'd)

**PROPOSED IMPROVEMENT:** Install curb extension on northwest corner to ensure slower-speed turns through west crosswalk.

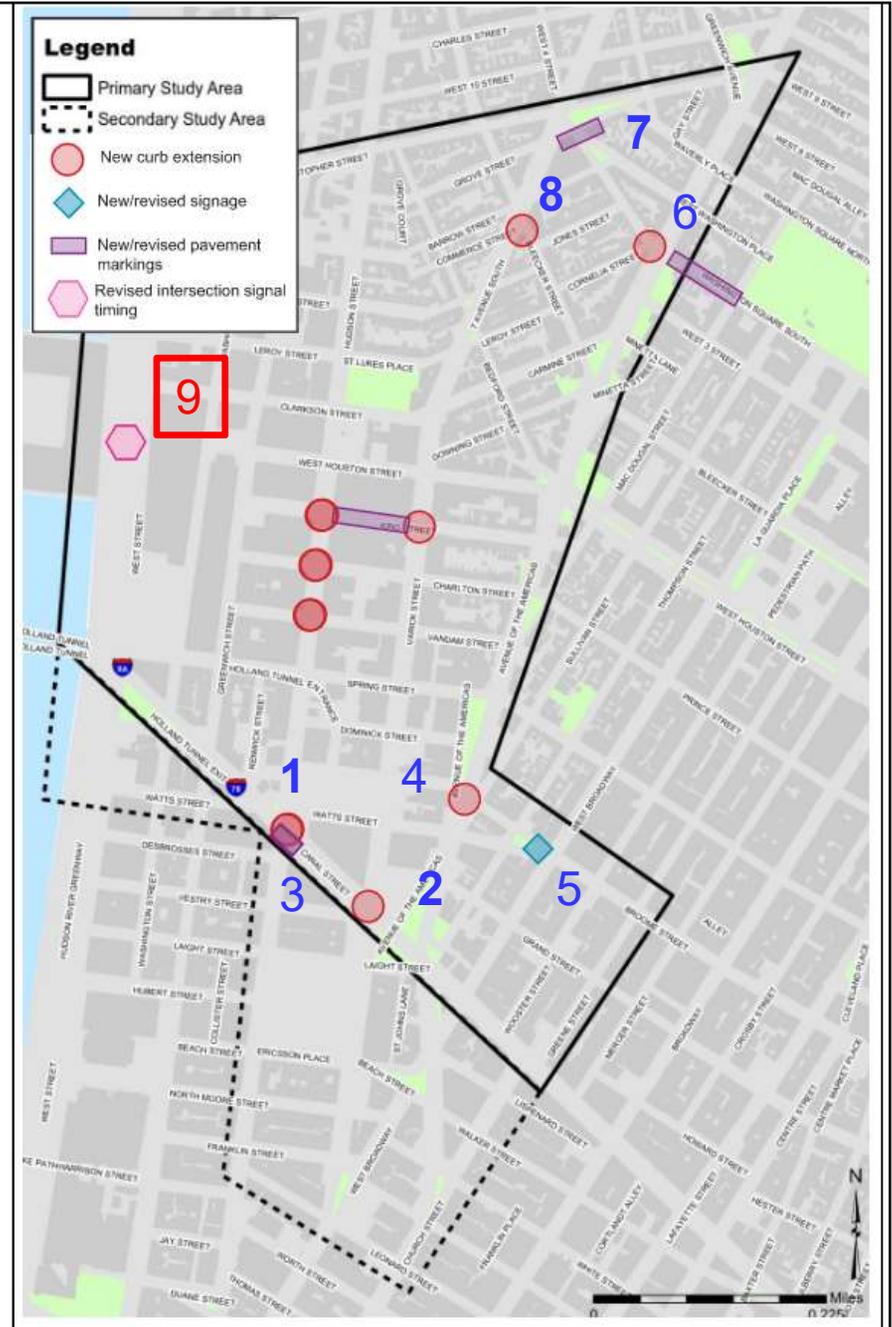


\*Curb extensions under 11 ft wide require maintenance partner

\*\* The temporary curb extensions will be made permanent as part of a future improvement

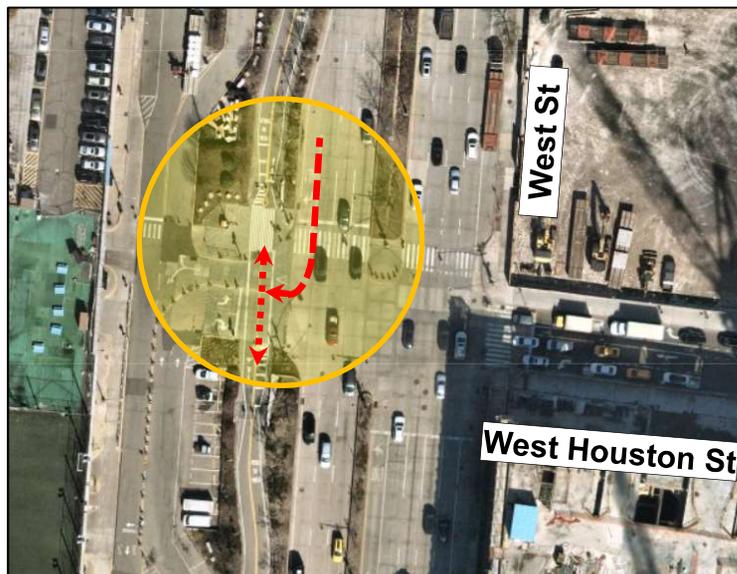
# EARLY ACTION IMPROVEMENTS (TO BE IMPLEMENTED IN 2021)

1. Canal St/Hudson St
2. Canal St/Varick St
3. Canal St, Hudson St to 6<sup>th</sup> Av (Bus Access to Holland Tunnel)
4. 6<sup>th</sup> Av/Broome St
5. Broome St/Watts St/West Broadway
6. West 4<sup>th</sup> St /6<sup>th</sup> Av/Cornelia St
7. West 4<sup>th</sup> St /7<sup>th</sup> Av/Grove St
8. 7<sup>th</sup> Av South/Commerce St
9. **West St/West Houston St**

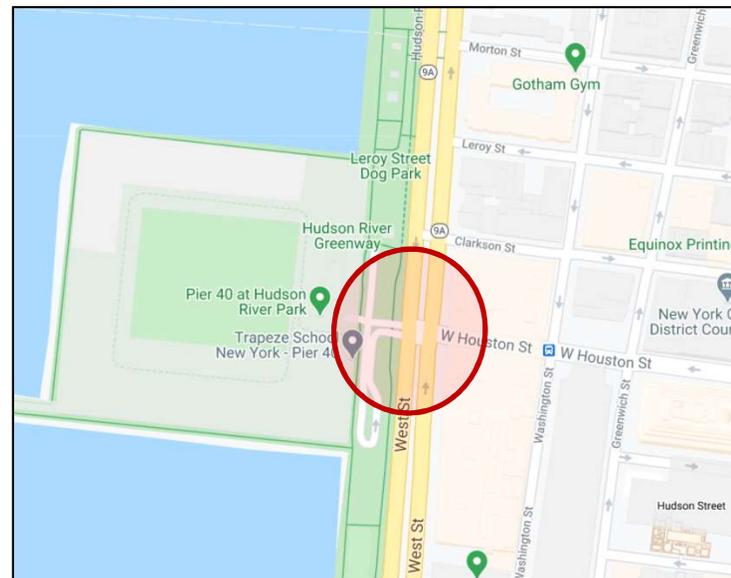


# WEST ST / WEST HOUSTON ST

**ISSUE:** Concerns about high volume of turning vehicles conflicting with people walking in the west crosswalk by Hudson River Park/ Pier 40.



Aerial view of West Houston St and West St



Source: Google Maps.

**PROPOSED IMPROVEMENT:** Install a new pedestrian-only phase for the west crosswalk at Pier 40 Driveway/West Houston St

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## Longer-Term Improvements (2022 and beyond)

# 4

# CHARLTON ST AND VANDAM ST ALONG HUDSON ST

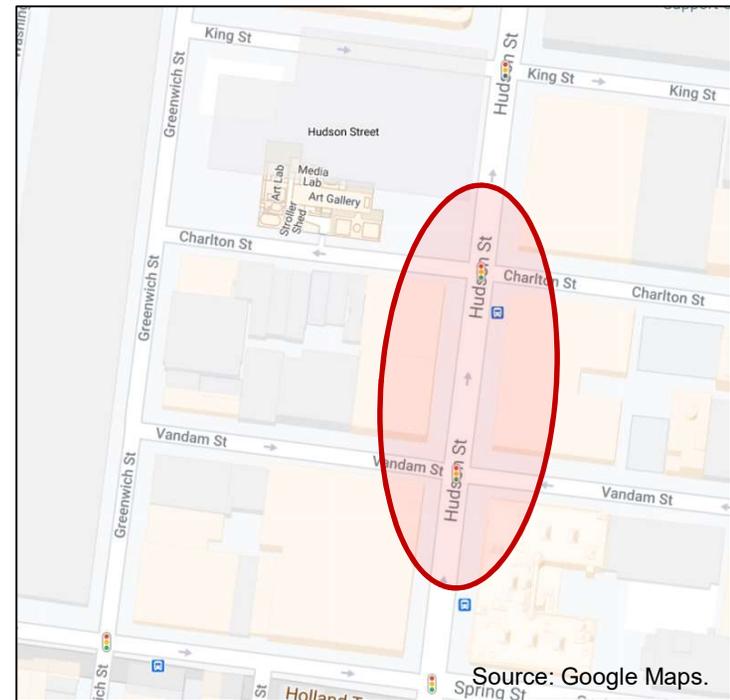
**ISSUE:** Long pedestrian crossing distances at Charlton St and Vandam St along Hudson St



Looking north at Hudson Street on Charlton Street



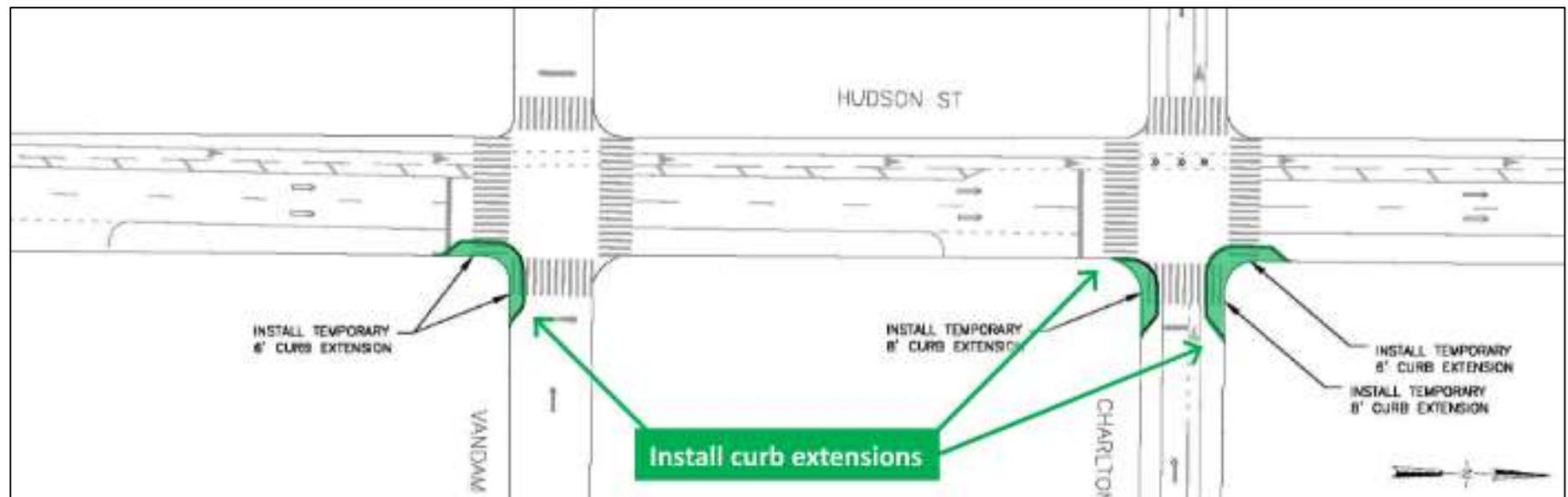
Looking north at Hudson Street on Vandam Street



# CHARLTON ST AND VANDAM ST ALONG HUDSON ST (Cont'd)

## PROPOSED IMPROVEMENTS:

- Install one curb extension at Hudson St/Vandam St (SE corner).
- Install two curb extensions at Hudson St/Charlton St intersection (NE and SE corners).

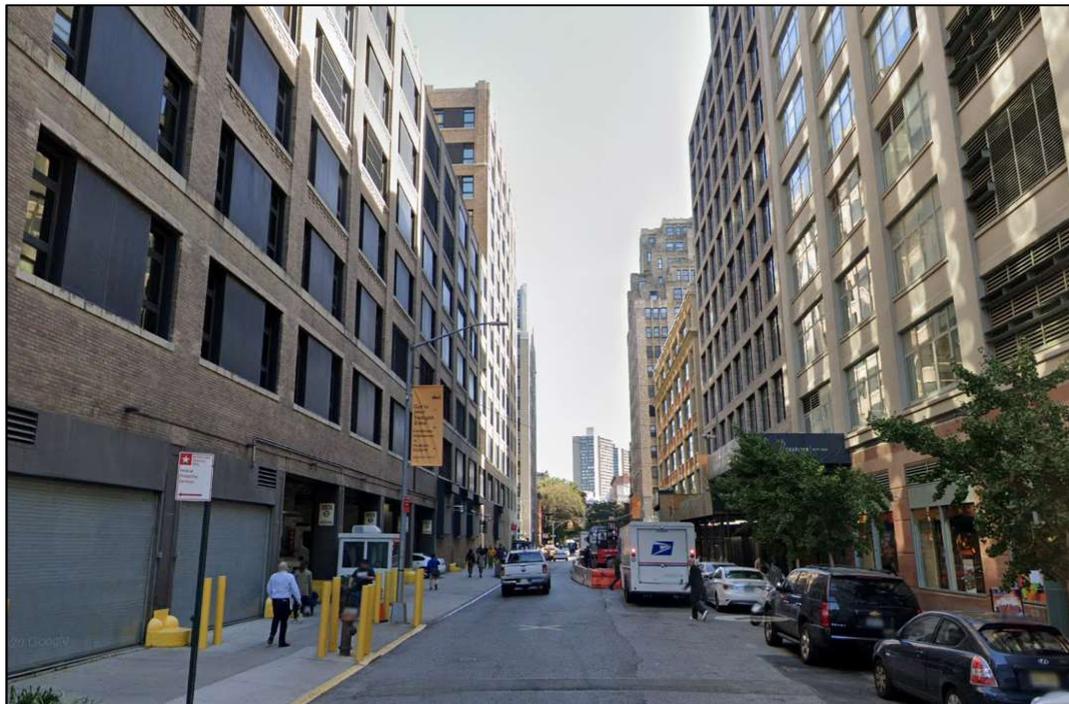


\*Curb extensions under 11 ft wide require maintenance partner

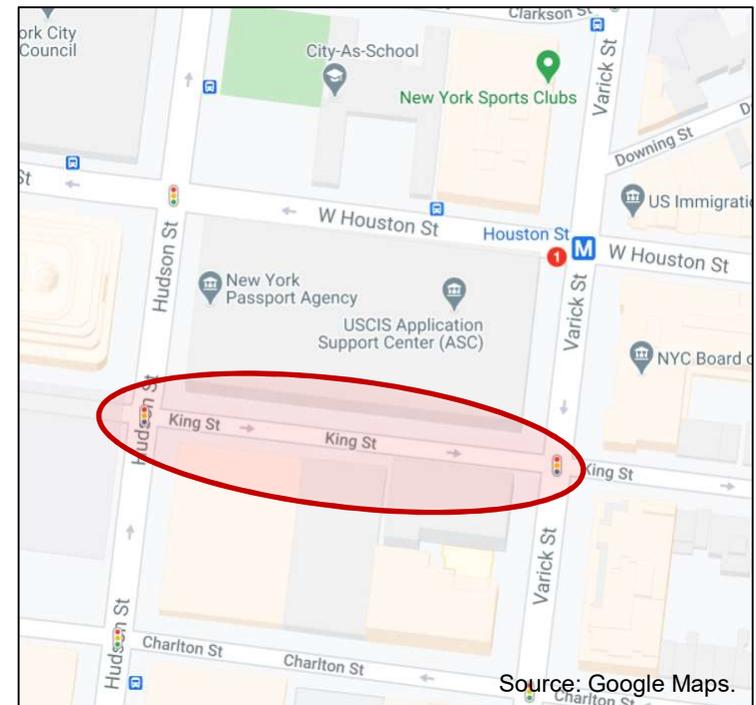
\*\* The temporary curb extension will be made permanent as part of a future improvement

# KING ST BETWEEN HUDSON ST AND VARICK ST

**ISSUE:** Unmarked loading docks interfering with moving traffic and crossing pedestrians.



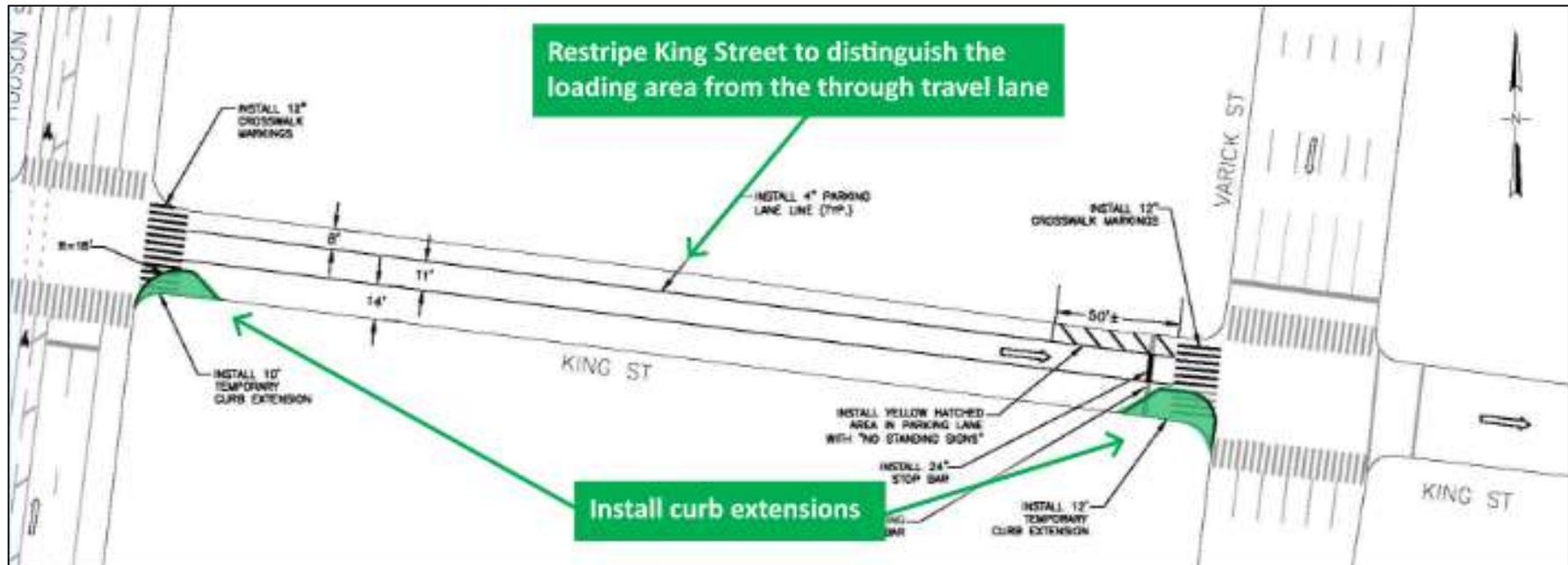
Looking east on King St from Hudson St



# KING ST BETWEEN HUDSON ST AND VARICK ST (Cont'd)

## PROPOSED IMPROVEMENTS:

- Restripe King St to separate moving traffic from loading area along south curb.
- Install curb extension on SE corner at Hudson St.
- Install curb extension on SW corner at Varick St.



\*Curb extensions under 11 ft wide require maintenance partner

\*\* The temporary curb extension will be made permanent as part of a future improvement

# 6<sup>TH</sup> AV BETWEEN WEST HOUSTON ST AND KING ST

**ISSUES:** Traffic and safety issues at 6<sup>th</sup> Av and Houston St, particularly on the northbound 6<sup>th</sup> Av approach. Difficulty accessing eastbound West Houston St from eastbound King St along 6<sup>th</sup> Av.



Cars from King St merging into the right-turn lane on 6<sup>th</sup> Av towards West Houston St



Source: Google Maps.

# 6<sup>TH</sup> AV BETWEEN WEST HOUSTON ST AND KING ST (Cont'd)

## PROPOSED IMPROVEMENTS:

- Reverse direction of King St between 6th Av and Macdougall St
- Install new STOP control sign on the reconfigured, eastbound King St approach to Macdougall St

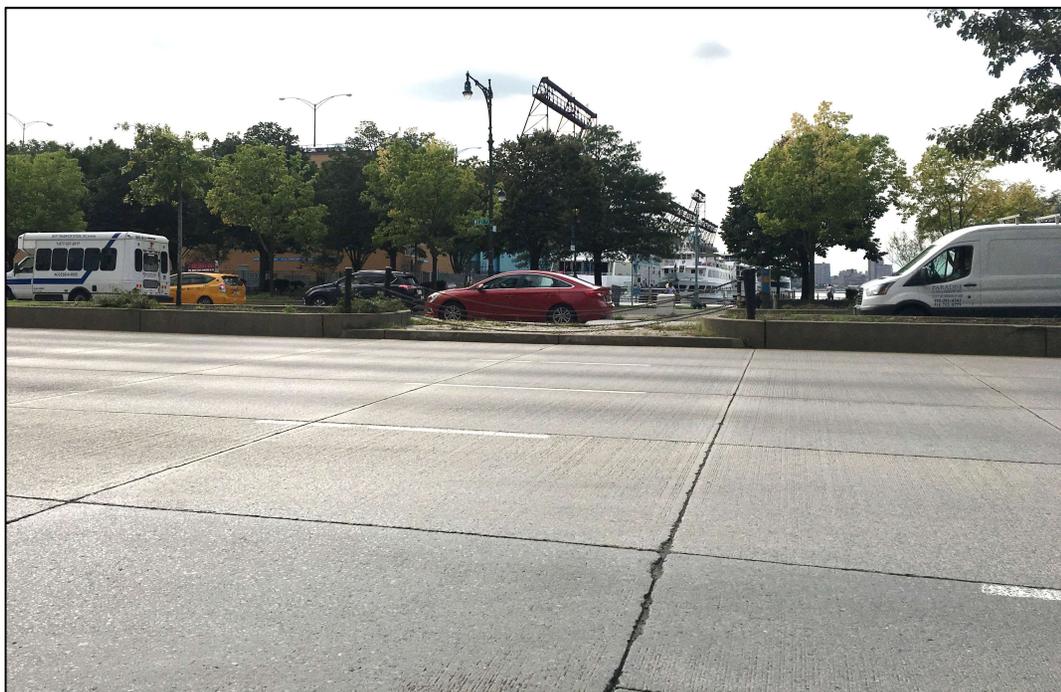


Aerial view of intersection

Source: Google Maps.

# WEST ST/LEROY ST

**ISSUE:** Unauthorized pedestrian crossings of West St at Leroy St through low median opening (no crosswalks or traffic signal).



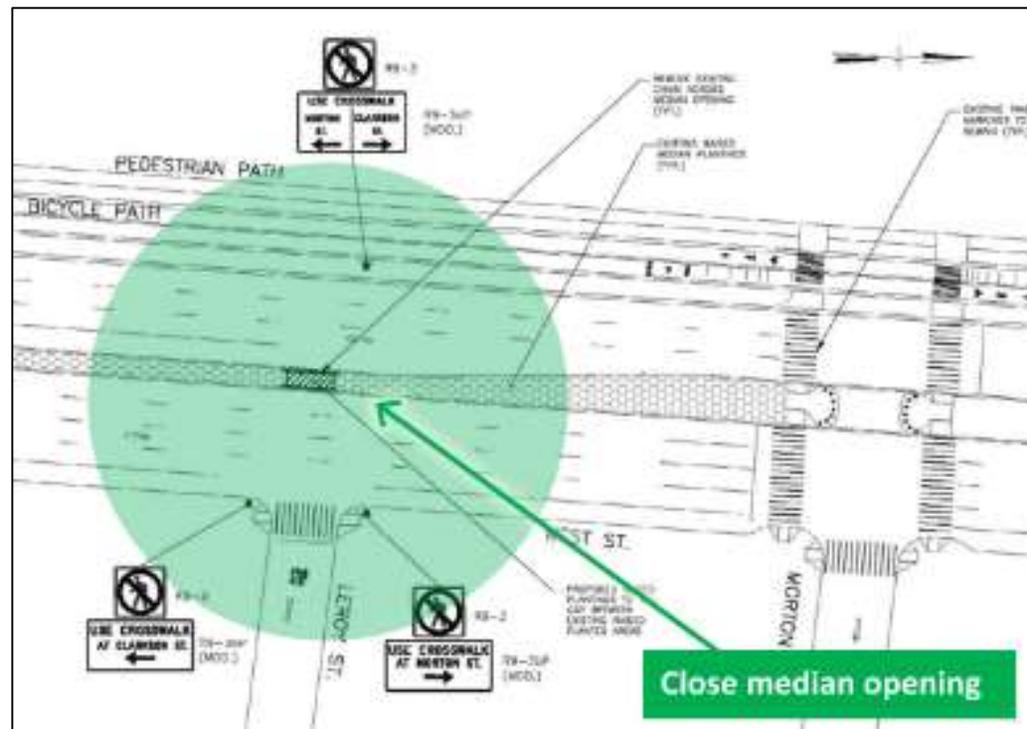
Facing west across West St from Leroy St



## WEST ST/LEROY ST (Cont'd)

**PROPOSED IMPROVEMENT:** Close median opening to guide pedestrians toward signalized crosswalks at Morton St (to the north) or Clarkson St (to the south).

*Note: NYPD, FDNY and NYSDOT expressed support for median closure.*

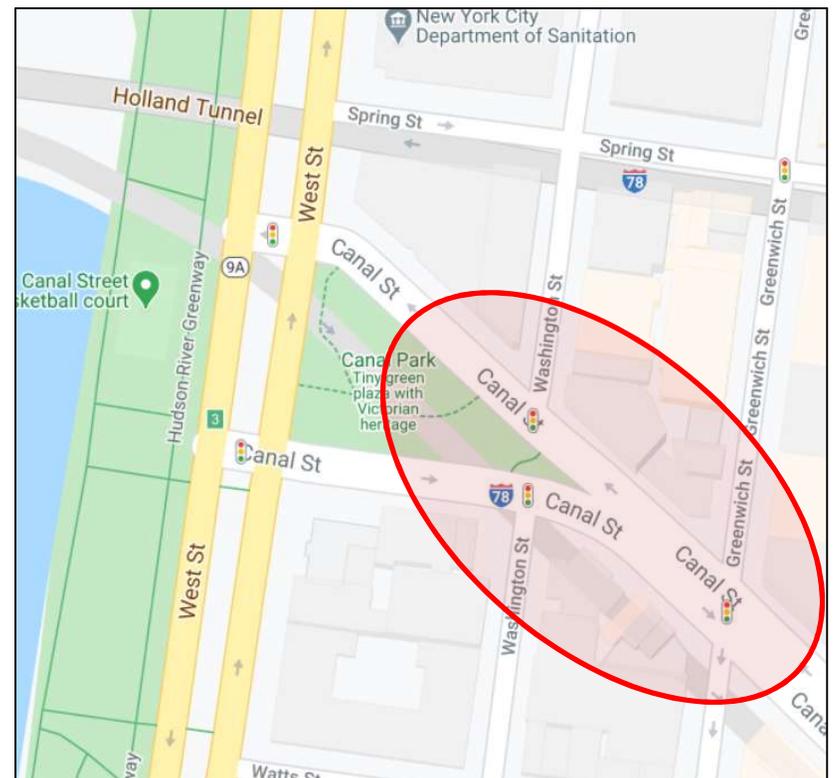


# CANAL ST BETWEEN WASHINGTON ST AND GREENWICH ST

**ISSUE:** Need to improve pedestrian environment near west end of Canal St in the vicinity of Canal Park



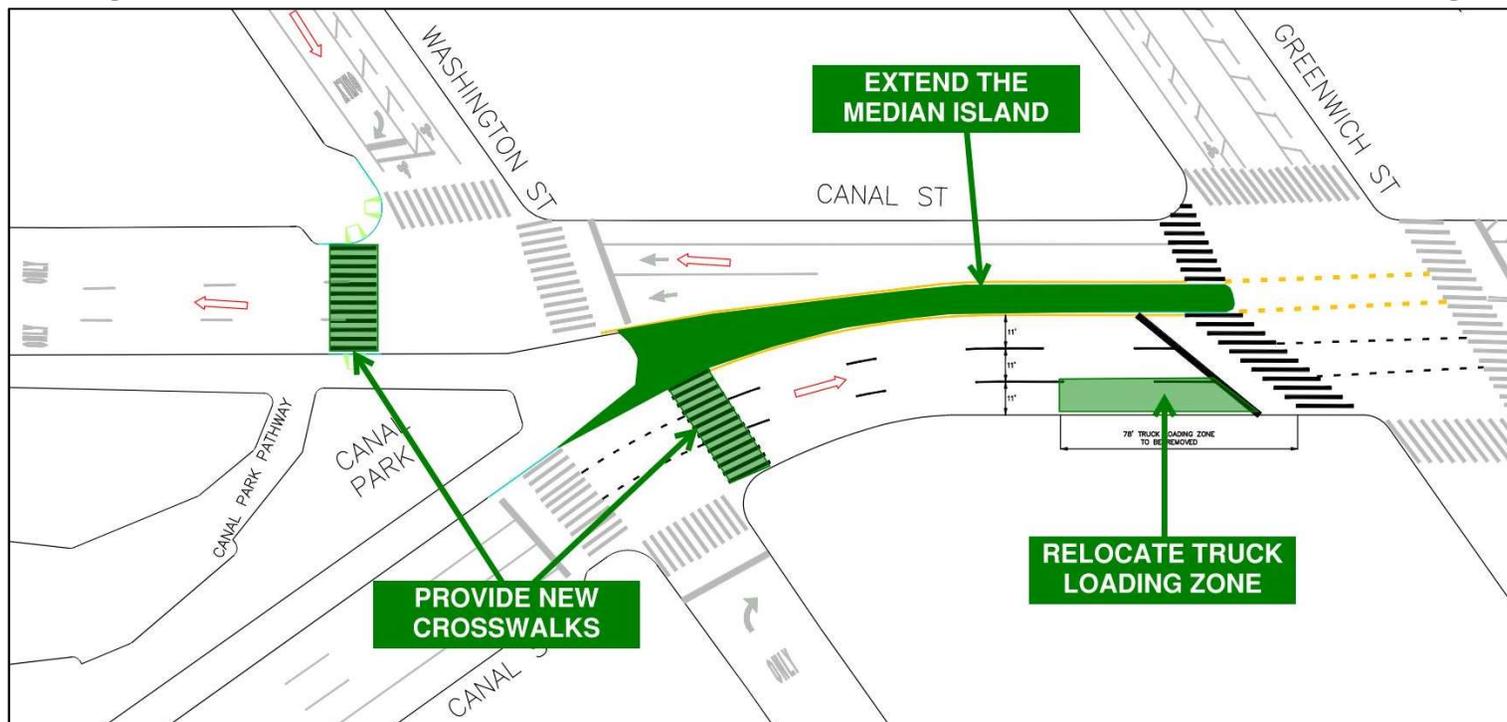
Facing west on Canal St at Washington St



# CANAL ST BETWEEN WASHINGTON ST AND GREENWICH ST (Cont'd)

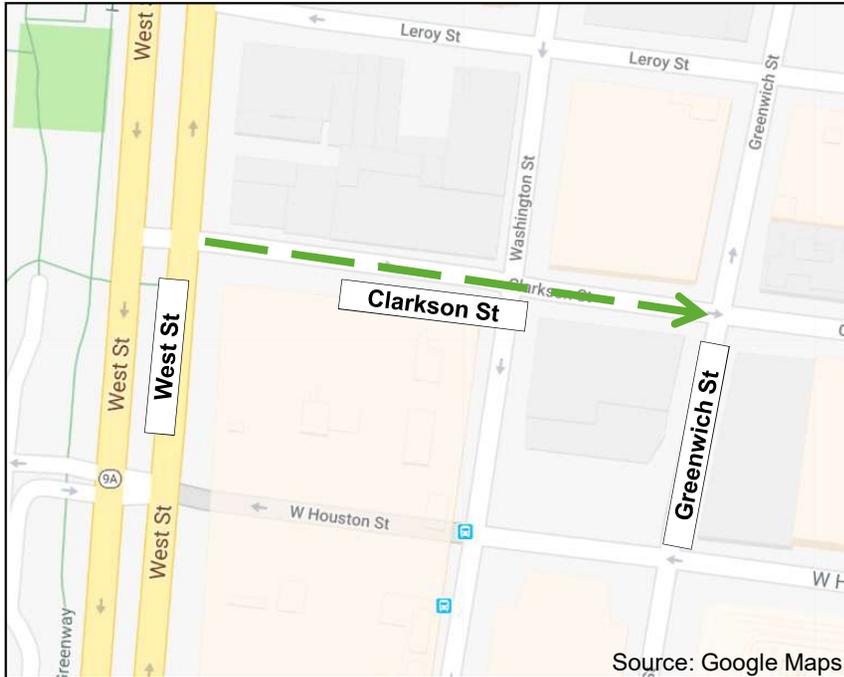
**PROPOSED IMPROVEMENTS:** Improve pedestrian accessibility in the vicinity of Canal Park by:

- Extending concrete median island on Canal St to Greenwich St.
- Providing new crosswalk on eastbound Canal St, east of Washington St.
- Providing new crosswalk on westbound Canal St, west of Washington St.



# CLARKSON ST BETWEEN WEST ST AND GREENWICH ST

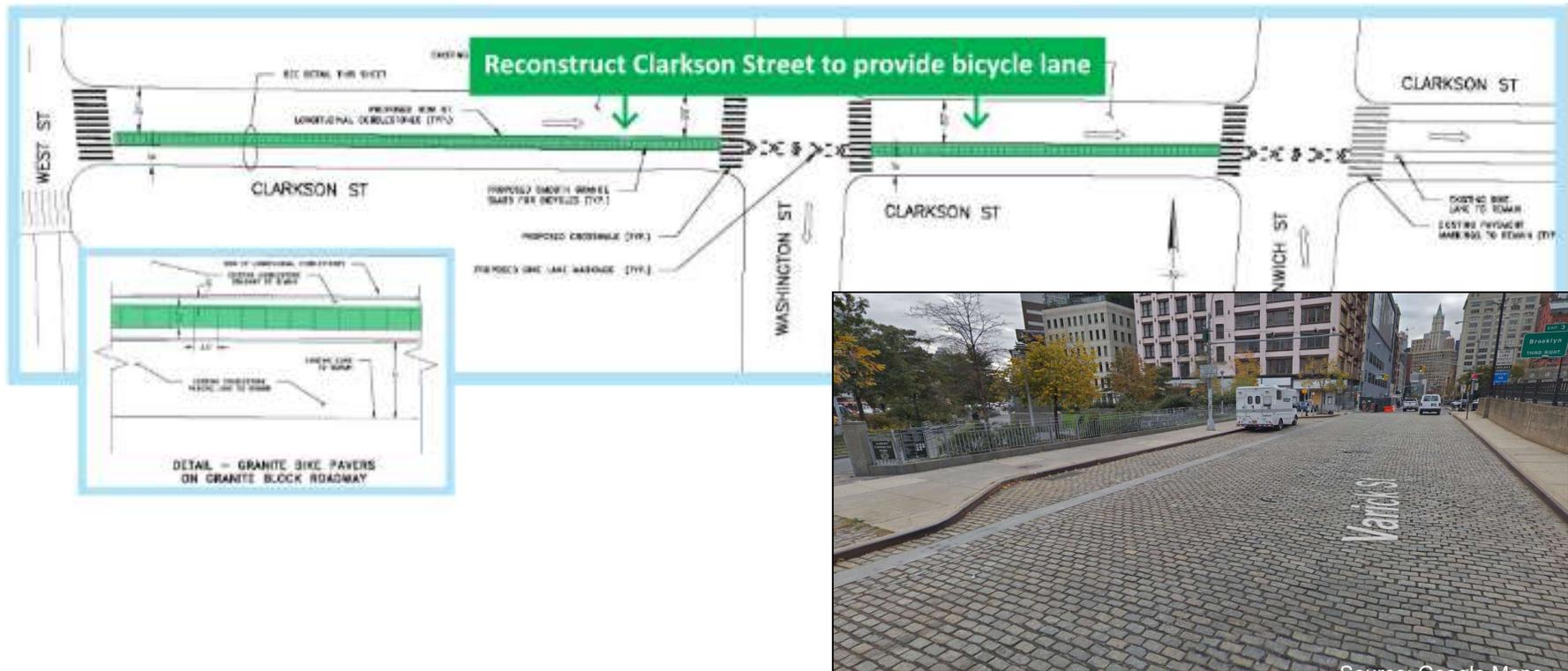
**ISSUE:** Bicycle network connectivity issues due to cobblestones along Clarkson St between West Street and Greenwich Street



Looking east on Clarkson St

# CLARKSON ST FROM WEST ST AND GREENWICH ST (Cont'd)

**PROPOSED IMPROVEMENT:** Extend the existing eastbound bicycle lane on Clarkson St from Greenwich St to West St, including granite slabs for bicycle lane



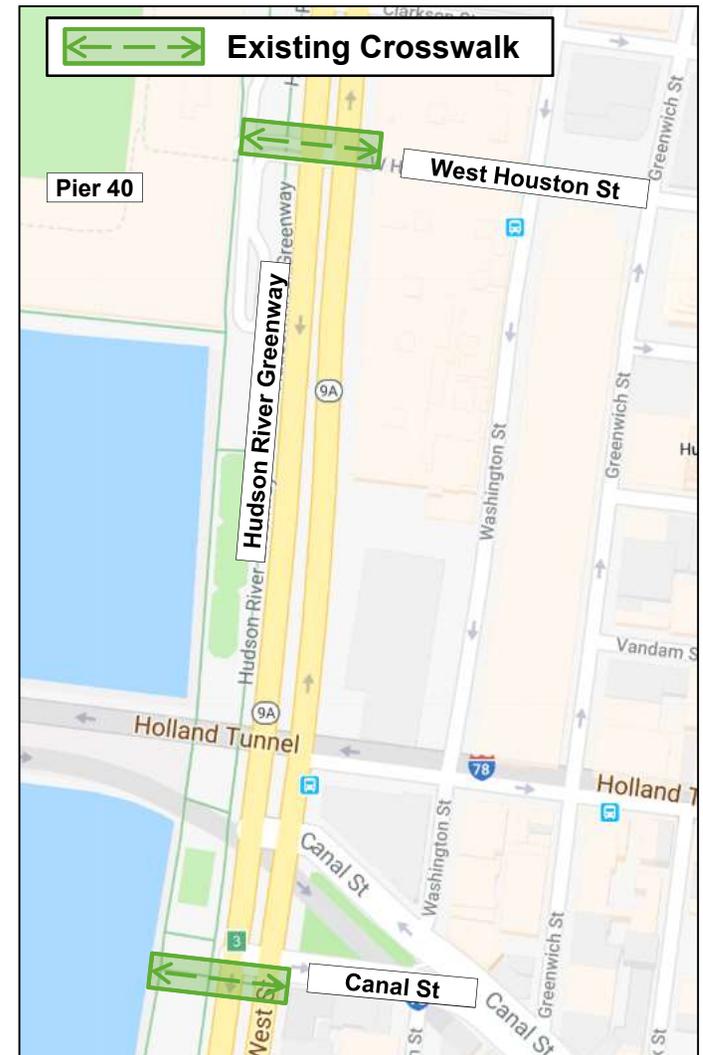
Example treatment: granite "bike strip"  
Looking south on Varick St from Canal St

# WEST ST BETWEEN WEST HOUSTON ST AND CANAL ST

**ISSUE:** Additional pedestrian access to the Hudson River Greenway is needed between Canal St and West Houston St/Pier 40



Facing north from Spring St along West St



## WEST ST BETWEEN WEST HOUSTON ST AND CANAL ST (Cont'd)

**PROPOSED IMPROVEMENT:** Provide additional signalized pedestrian crossing on West St between Charlton St and West Houston St.

### Notes:

- *Meets signal warrant with future development of 550 Washington St.*
- *Signal currently undergoing NYC DOT design reviews/ approvals.*



# BROOME/WATTS ST BETWEEN WEST BROADWAY AND VARICK ST

**ISSUES:** Congestion and confusion at the intersections along Broome/Watts St approaching the Holland Tunnel.

A lane imbalance issue occurs along several blocks from east of the Broome/Watts Sts split to the Holland Tunnel entrance on Varick St.



Looking west on Watts St, approaching 6<sup>th</sup> Ave

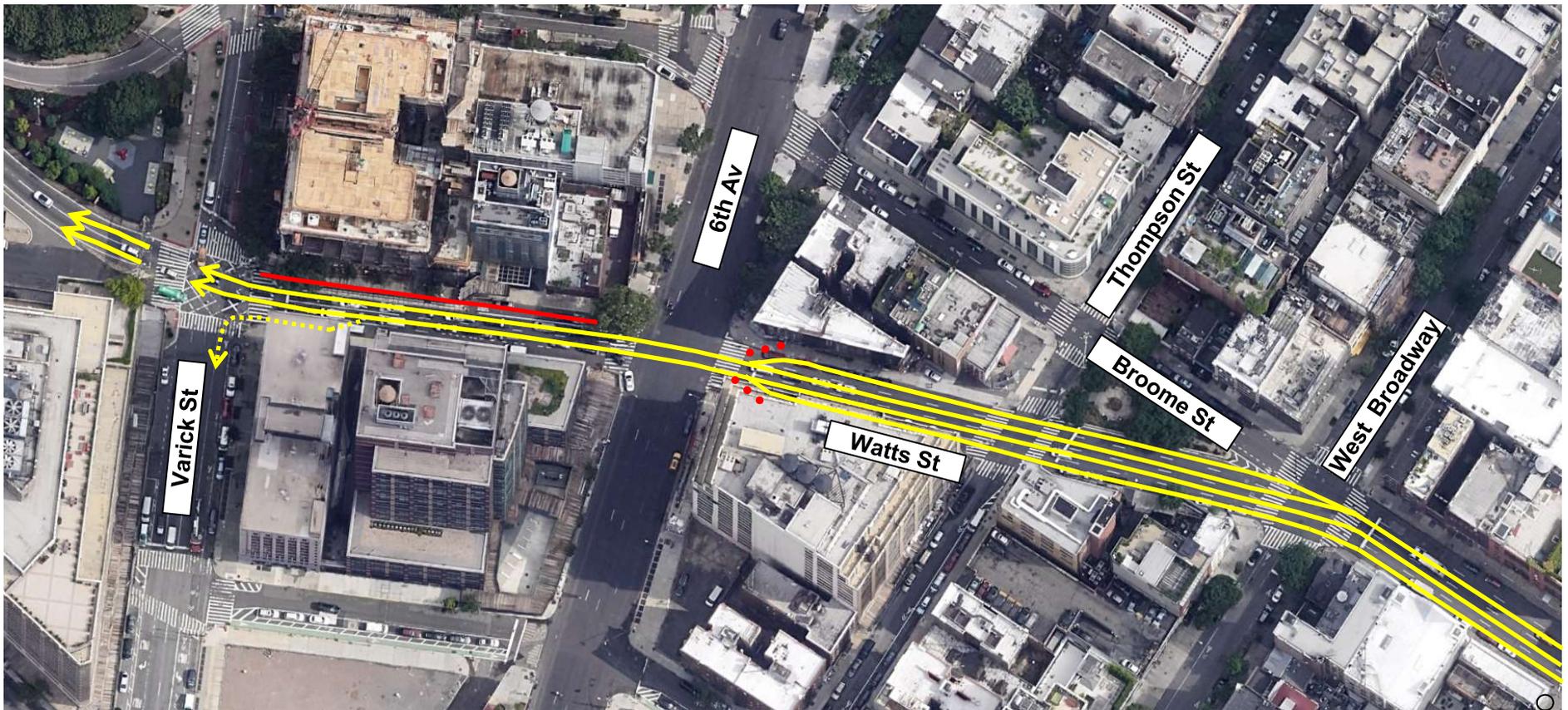
Source: Google Maps.



# BROOME/WATTS ST BETWEEN WEST BROADWAY AND VARICK ST (Cont'd)

**ISSUE:** Congestion and confusion at the intersections along Broome St/Watts St approaching the Holland Tunnel

*Existing Condition Weekday PM Peak – Primary Traffic Flow*

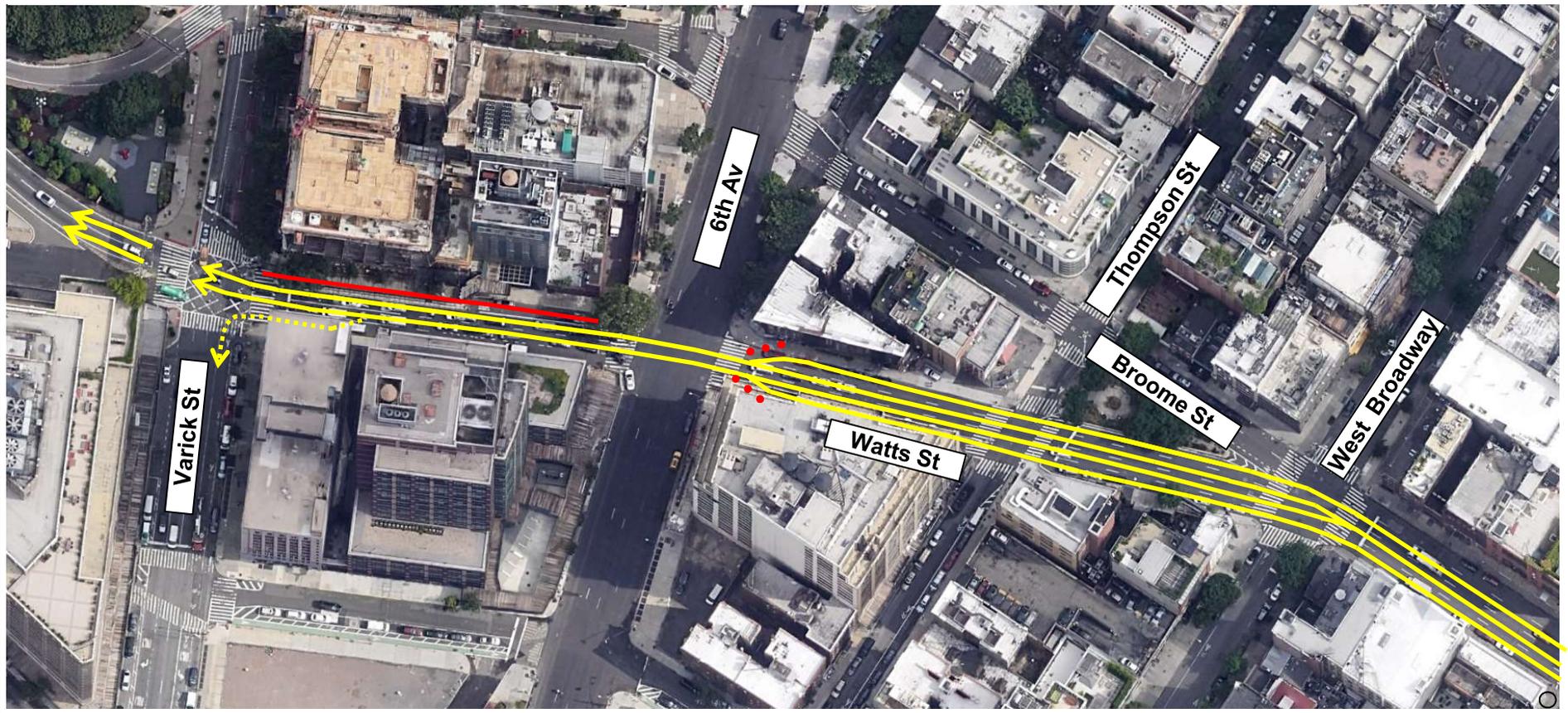


Source: Google Maps

# BROOME/WATTS ST BETWEEN WEST BROADWAY AND VARICK ST (Cont'd)

**ISSUE:** Congestion and confusion at the intersections along Broome St/ Watts St approaching the Holland Tunnel

*Existing Condition Weekday PM Peak – Alternate Traffic Flow*



Source: Google Maps.

# BROOME/WATTS ST BETWEEN WEST BROADWAY AND VARICK ST (Cont'd)

**PROPOSED IMPROVEMENT, OPTION #1:** Construct concrete curb extensions along Watts St at NE corner of Varick St & SE corner of 6<sup>th</sup> Av

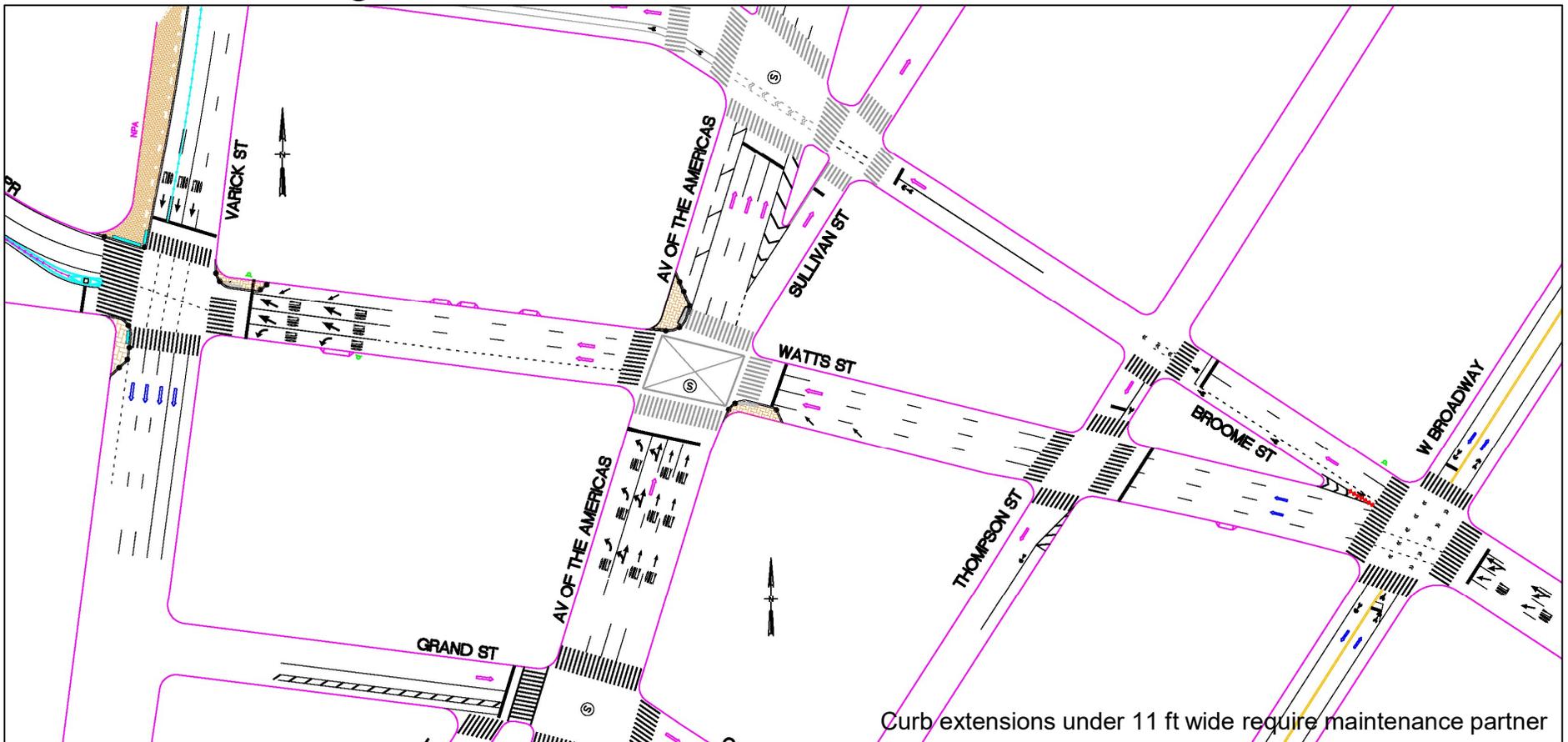


Source: Google Maps.

Source: Google Maps.

# BROOME/WATTS ST BETWEEN WEST BROADWAY AND VARICK ST (Cont'd)

**PROPOSED IMPROVEMENT, OPTION #1:** Construct concrete curb extensions along Watts St at NE corner of Varick St & SE corner of 6<sup>th</sup> Av



# BROOME/WATTS ST BETWEEN WEST BROADWAY AND VARICK ST (Cont'd)

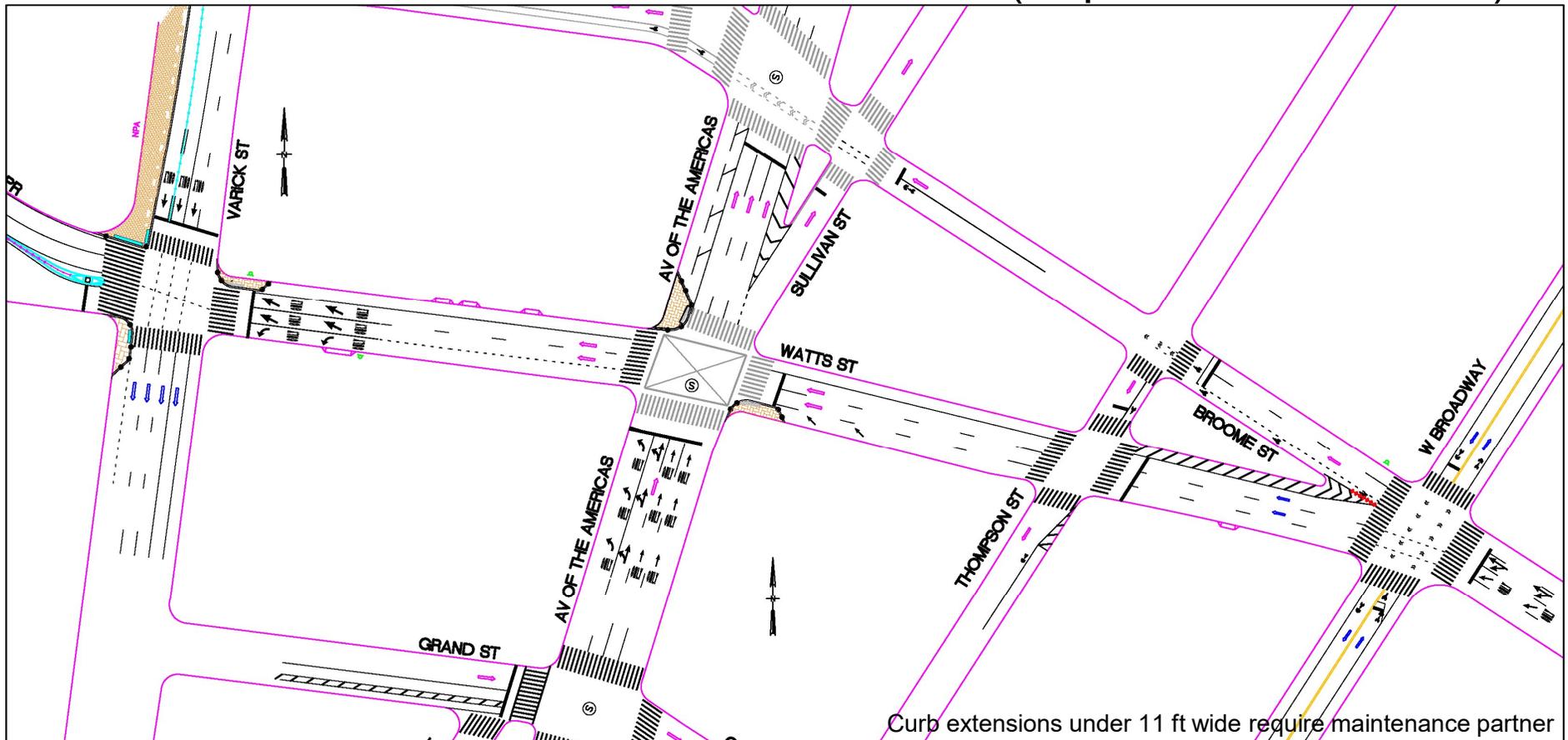
**PROPOSED IMPROVEMENT, OPTION #2:** Same as Option #1, plus traffic cones to streamline traffic flow to tunnel (requires NYPD action).



Source: Google Maps.

# BROOME/WATTS ST BETWEEN WEST BROADWAY AND VARICK ST (Cont'd)

**PROPOSED IMPROVEMENT, OPTION #2:** Same as Option #1, plus traffic cones to streamline traffic flow to tunnel (requires NYPD action).

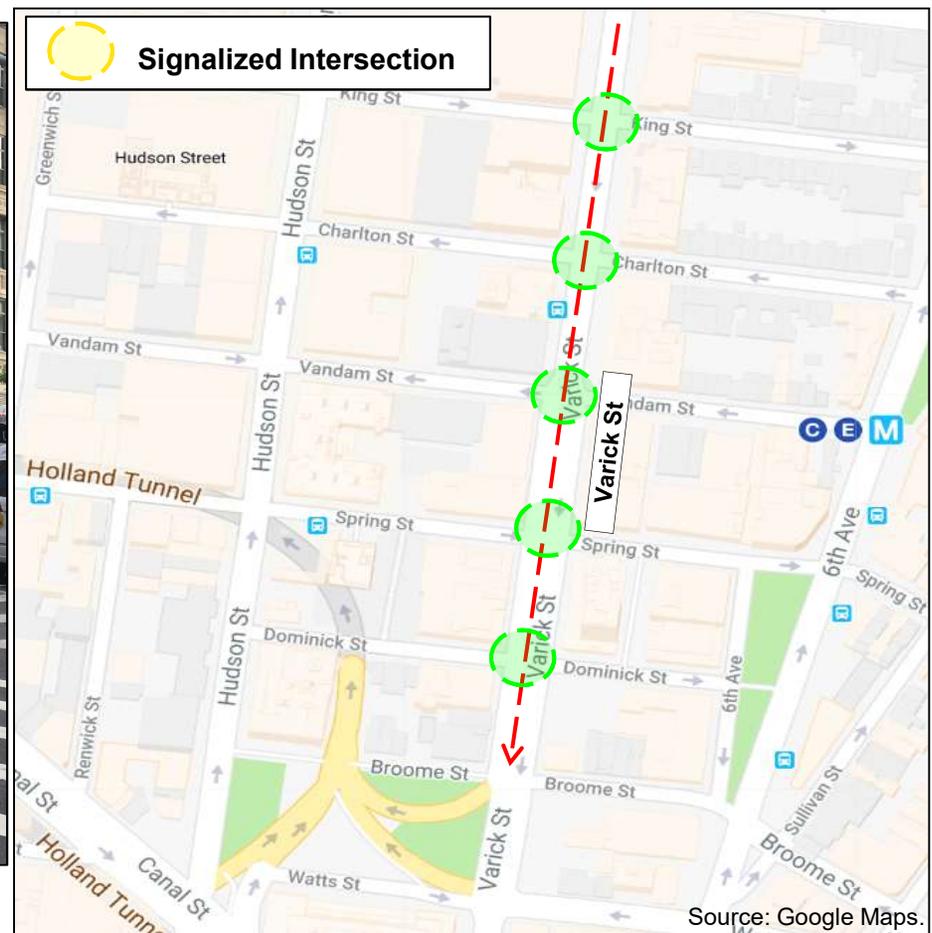


# VARICK ST BETWEEN KING ST AND SPRING ST

**ISSUE:** Improve safety for pedestrian crossings of Varick St approaching Holland Tunnel.



Looking south along Varick St from Charlton St



## VARICK ST BETWEEN KING ST AND SPRING ST (Cont'd)

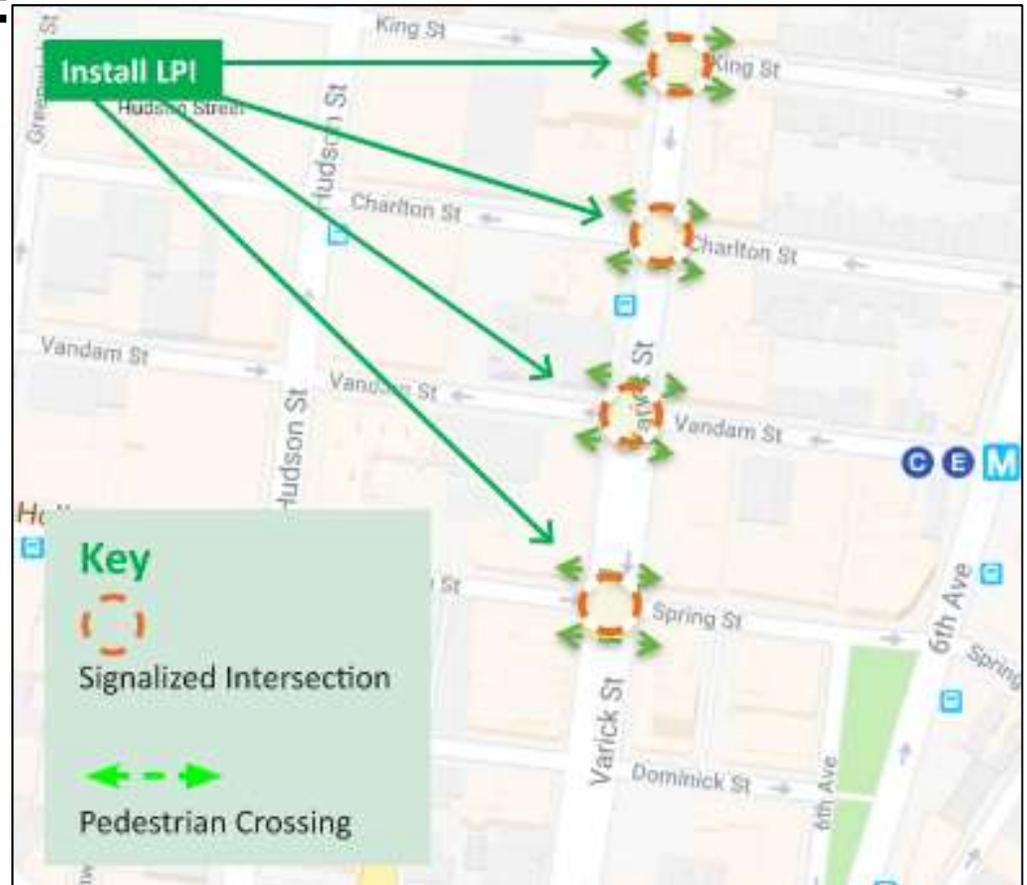
### PROPOSED IMPROVEMENTS:

Provide Leading Pedestrian Intervals (LPIs) at the following locations along Varick St:

- King St
- Charlton St
- Vandam St
- Spring St

#### Notes:

- *LPIs provide pedestrians with a head-start, without any vehicle conflicts, when entering an intersection.*
- *Primary benefit expected during the off-peak periods.*



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Next Steps

5

# NEXT STEPS

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- Solicit CB2 T&T Committee approval
- DOT to proceed with Early-Action Improvements in 2021
- Finalize study report



# THANK YOU!

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## Questions?



NYC DOT



NYC DOT



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