

3. Environmental Analysis Framework

3.1 FEDERAL APPROVALS AND CLASS OF ACTION

The CBD Tolling Program is classified as a NEPA Class III EA action in accordance with 23 Code of Federal Regulations (CFR Section 771.115). NEPA Class III actions are those in which the significance of the environmental impact is not clearly established. This EA has been prepared to determine whether the Project is likely to have a significant impact and requires the preparation of an Environmental Impact Statement.

3.2 COORDINATION WITH FEDERAL AND STATE RESOURCE AGENCIES

FHWA and the Project Sponsors have sought the expertise of and/or information from the following Federal and New York State agencies in preparing this EA:

- U.S. Federal Transit Administration (FTA)
- U.S. Environmental Protection Agency (USEPA)
- U.S. National Park Service (NPS)
- New York State Department of Environmental Conservation (NYSDEC)
- New York State Department of State (NYSDOS)
- New York State Historic Preservation Office at the New York State Office of Parks, Recreation and Historic Preservation (OPRHP or SHPO)

FHWA and the Project Sponsors coordinated with these agencies about their areas of expertise with respect to methodologies for documenting environmental conditions and assessing effects. The Project Sponsors also coordinated with New York City agencies about potential effects on resources under their jurisdiction, including the New York City Department of Parks and Recreation, the New York City Department of Environmental Protection, and the New York City Landmarks Preservation Commission. There have been and will continue to be meetings with the agencies during this NEPA review. The recommendations of these agencies have been considered and incorporated into this EA, as appropriate.

FHWA has also coordinated with Federally recognized Native American tribes, and FHWA and the Project Sponsors coordinated with transportation agencies from throughout the New York City region. The Project Sponsors also conducted extensive outreach to environmental justice (minority and low-income) populations in the regional study area. (Refer to **Chapter 18, "Agency Coordination and Public Participation,"** for more information about agency participation in the NEPA process.)

3.3 ANALYSIS FRAMEWORK

This EA describes the potential environmental effects of the CBD Tolling Alternative compared to the No Action Alternative. This environmental analysis complies with FHWA's *Environmental Impact and Related Procedures* (23 CFR Part 771) and applicable Federal guidance and procedures, including FHWA guidance provided in its environmental review toolkit.¹ Although the MTA Reform and Traffic Mobility Act exempts the Project from the environmental review procedures of the New York State Environmental Quality Review Act and New York City Environmental Quality Review, NYSDOT's *The Environmental Manual* and New York City's *City Environmental Quality Review Technical Manual (CEQR Technical Manual)* were used for certain analyses because these are widely accepted methodologies for environmental studies in New York State and New York City, respectively.^{2, 3}

NYSDOT and the New York City Mayor's Office of Environmental Coordination oversee *The Environmental Manual* and the *CEQR Technical Manual*, respectively. Both are updated regularly to reflect changes in regulations or to incorporate new or modified methodologies that reflect experience gained through environmental reviews and real-world conditions. Updates to these documents are undertaken in consultation with other New York State and New York City agencies, including the following:

- New York State Department of Environmental Conservation (NYSDEC)
- OPRHP and SHPO
- MTA
- New York City Department of City Planning (NYCDCP)
- New York City Department of Environmental Protection
- NYCDOT
- New York City Landmarks Preservation Commission

Each chapter of this EA identifies the methodology used for the analysis presented in the chapter.

The 2021 *CEQR Technical Manual*, issued in December 2021, establishes that the lead agency should consider whether supplemental analysis to reflect an updated methodology of the 2021 *CEQR Technical Manual* should be undertaken, taking into account as necessary the scheduled timing of completion of environmental review under the applicable approval process. Based on the timing of completion of analyses and scheduled public and agency review, the 2020 *CEQR Technical Manual* is used as the basis for this EA.

¹ <https://www.environment.fhwa.dot.gov>.

² NYSDOT. *The Environmental Manual*. <https://www.dot.ny.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm>.

³ The 2021 *CEQR Technical Manual*, issued in December 2021, establishes that the lead agency should consider whether supplemental analysis to reflect an updated methodology of the *CEQR Technical Manual* should be undertaken, taking into account as necessary the scheduled timing of completion of environmental review under the applicable approval process. Based on the timing of completion of analyses and scheduled public and agency review, the 2020 *CEQR Technical Manual* is used as the basis for this EA.

3.3.1 Study Areas

A regional study area and multiple local study areas were used to assess the potential effects of the Project. The regional study area was used to examine changes in travel patterns resulting from the CBD Tolling Alternative while different local study areas were used to identify more localized effects like the potential effects of constructing tolling infrastructure and tolling system equipment, changes in roadway traffic and access to transit stations; and social, economic, or environmental effects. **Chapter 1, "Introduction,"** provides an overview of development patterns, demographic characteristics, and commuting patterns within the study areas. The affected environment sections of the subsequent chapters of this EA describe the Project setting within the study areas relevant to, and appropriate for, the technical topic that is the subject of the chapter. The affected environment section provides context for the assessment of the Project's effects presented in the environmental consequences sections that follow in each chapter.

3.3.1.1 Regional Study Area

The regional study area includes 28 counties that are incorporated in the Best Practice Model (BPM), which is the New York City region's primary long-range travel forecasting model (**Figure 3-1**). These 28 counties represent the main catchment area for trips to and from the Manhattan CBD:

- New York City counties (Bronx, Kings [Brooklyn], New York [Manhattan], Queens, and Richmond [Staten Island])
- Long Island counties (Nassau and Suffolk)
- New York counties north of New York City (Dutchess, Orange, Putnam, Rockland, and Westchester)
- New Jersey counties (Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren)
- Connecticut counties (Fairfield and New Haven)

3.3.1.2 Local Study Areas

As previously stated, multiple local study areas were used for the analyses presented in this EA. **Figure 3-2a through Figure 3-2g** show the areas where installation of tolling infrastructure and tolling system equipment associated with the Project is proposed, and this is referred to as the local study area for tolling infrastructure and tolling system equipment. In addition, **Figure 3-3a through Figure 3-3j** show the proposed locations of the tolling infrastructure and tolling system equipment.

The local study area for tolling infrastructure and tolling system equipment includes more locations than the Project Sponsors would need to implement the Project because the ability of the Project Sponsors to locate tolling infrastructure and tolling system equipment on property controlled by the Port Authority of New York and New Jersey (PANYNJ) is uncertain. The Project Sponsors are coordinating with PANYNJ about potentially locating tolling infrastructure and equipment on property associated with the Lincoln and Holland Tunnels. If PANYNJ agrees to locate the tolling infrastructure and equipment on its property, then the Project Sponsors can eliminate several detection points on local streets near the Lincoln and Holland Tunnels. This EA includes the tolling infrastructure and tolling system equipment both on PANYNJ property and at locations nearby that could be eliminated if PANYNJ approves the use of its property by the Project Sponsors.

Figure 3-1. Regional Study Area



Source: ArcGIS Online, <https://www.arcgis.com/index.html>.

3.3.2 Analysis Years

This EA examines future conditions in the opening year of the Project and in a long-term planning horizon year:

- **Estimated Time of Completion (Opening Year 2023):** This EA uses an estimated time of Project completion date of 2023, when the system would be fully operational.
- **Long-Term Planning Horizon Year (2045):** FHWA typically considers the environmental effects of its undertakings for a long-term horizon year, which is 20 to 30 years after a project's estimated time of completion. For this Project, the long-term planning horizon analysis year aligns with the BPM's long-range forecast year, which is 2045.

3.3.3 CBD Tolling Alternative Tolling Scenarios

This EA includes multiple tolling scenarios within the CBD Tolling Alternative to identify the range of potential effects that could occur from implementing the CBD Tolling Alternative. (See **Chapter 2, "Project Alternatives," Section 2.4.2.4** for more information on the tolling scenarios.) The Project Sponsors conducted quantitative modeling of the potential transportation effects of each tolling scenario using the BPM (see **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"**).

The tolling scenarios are relevant to the environmental analyses that quantify the potential benefits or negative effects of changes in traffic and/or transit riders on a particular topic of analysis (e.g., intersection operations, pedestrian circulation, air quality, noise). For each of these topics, this EA describes the effects of the tolling scenario that would result in the greatest potential negative effects for that particular topic of analysis. For example, the analysis of potential impacts on traffic intersection operations is based on the tolling scenario that would result in the greatest increase in vehicle volumes at the intersections in the study area. This methodology results in the most potential negative effects of the CBD Tolling Alternative, and other tolling scenarios would result in lesser or fewer negative effects. This EA identifies the tolling scenario used for the analysis presented in each chapter. In addition, **Chapter 16, "Summary of Effects,"** compares the effects of the tolling scenarios.

3.3.4 Social and Economic Data

The social and economic conditions analysis in this EA incorporates data from two primary sources—the U.S. Census Bureau and the BPM.

The EA incorporates census data to describe existing conditions (also known as the "affected environment"). The data are from multiple census products, including the 2015–2019 American Community Survey (ACS) and the 2012–2016 Census Transportation Planning Package (CTPP). These were the most recent versions of these products available at the time the analysis was prepared. Data from the 2012–2016 CTPP is used when there is not a newer, comparable data set available from the 2015–2019 ACS.

The BPM is a complex transportation model, created by New York Metropolitan Transportation Council (NYMTC), used to project future conditions under the No Action Alternative and the CBD Tolling Alternative. Metropolitan planning organizations (e.g., NYMTC) are responsible for modeling and documenting their region's compliance with the Clean Air Act, and they use transportation models for that purpose. NYMTC's transportation planning model is based on data from the 2010 Census, traffic and transit ridership data, household surveys, and comprehensive projections of social and economic trends for the regional study area to project travel behavior in future years. NYMTC has adjusted and calibrated the model so that it can predict existing as well as future travel patterns. This EA cites the social and economic data from the BPM when describing future conditions based on BPM results (also known as the "environmental consequences" of the Project).

Some data sets from the U.S. Census Bureau and the BPM differ, but they are both valid sources for describing the potential changes anticipated to result from the Project. For example, the census population and household data are available for more recent years; therefore, it is more current than similar data from the BPM. Text, tables, and figures in the chapters of this EA cite the source of the data presented.

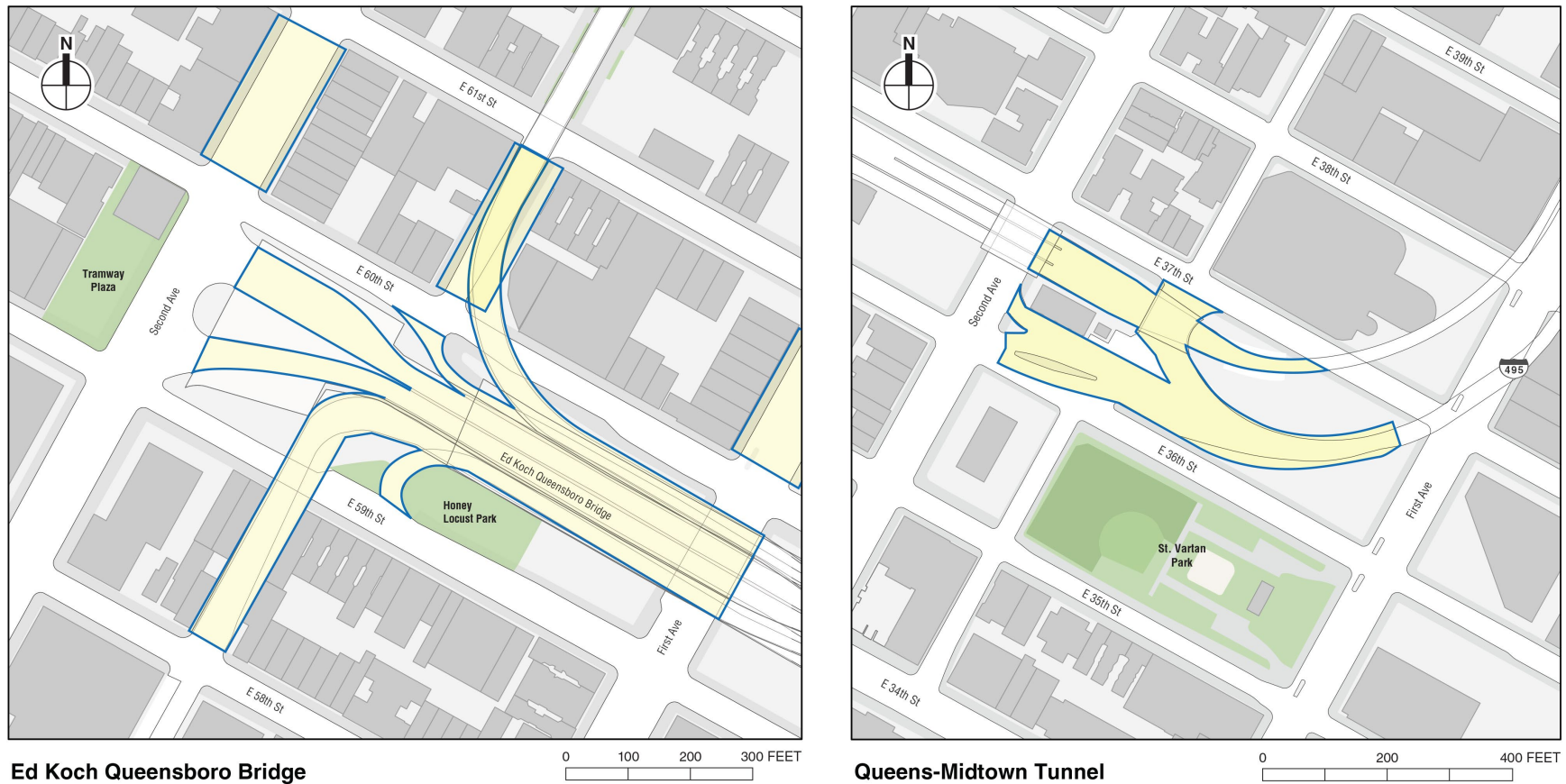
Figure 3-2a. Local Study Areas for Tolling Infrastructure and Tolling System Equipment



- Manhattan CBD (as defined by the MTA Reform and Traffic Mobility Act)
- Local Study Area for Tolling Infrastructure and Tolling System Equipment
- Detail Inset Map (see Figures 3-2b to 3-2g)

Sources: NYC Open Data, NYC Planimetrics, <https://data.cityofnewyork.us/Transportation/NYC-Planimetrics/wt4d-p43d>; New NYCDPCP, BYTES of the BIG APPLE, <https://www1.nyc.gov/site/planning/data-maps/open-data.page>; ArcGIS Online, <https://www.arcgis.com/index.html>.

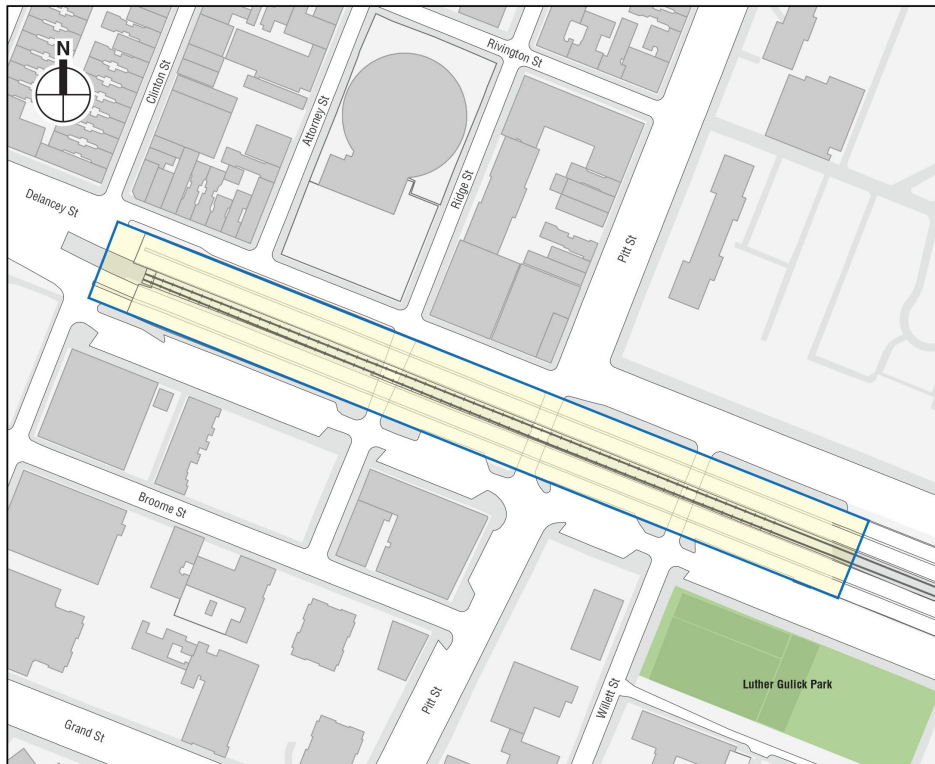
Figure 3-2b. Local Study Area for Tolling Infrastructure and Tolling System Equipment: Ed Koch Queensboro Bridge and Queens-Midtown Tunnel



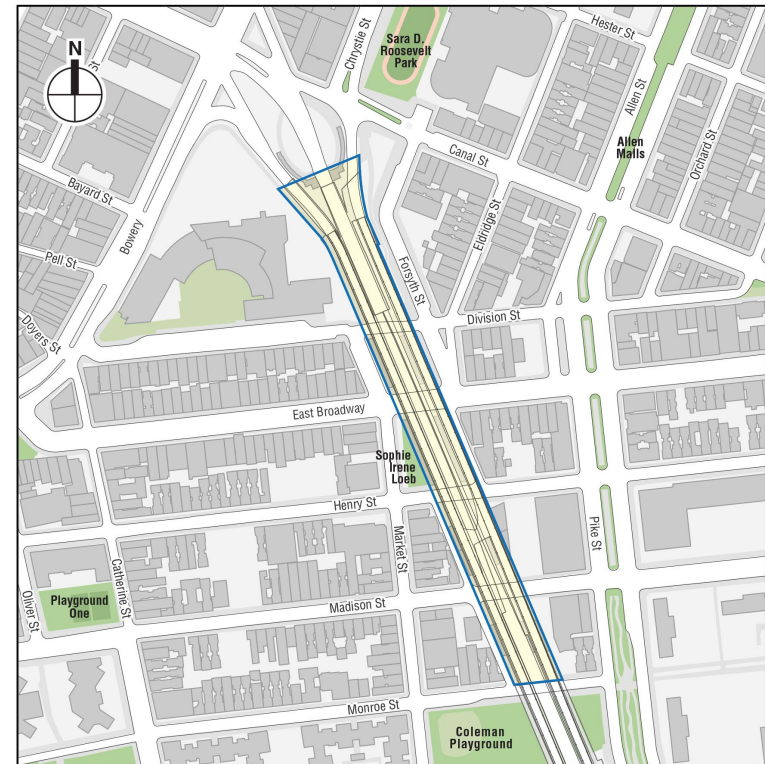
 Local Study Area for Tolling Infrastructure and Tolling System Equipment

Sources: NYC Open Data, NYC Planimetrics, <https://data.cityofnewyork.us/Transportation/NYC-Planimetrics/wt4d-p43d>; NYCDP, BYTES of the BIG APPLE, <https://www1.nyc.gov/site/planning/data-maps/open-data.page>; ArcGIS Online, <https://www.arcgis.com/index.html>.

Figure 3-2c. Local Study Area for Tolling Infrastructure and Tolling System Equipment: Williamsburg Bridge and Manhattan Bridge



Williamsburg Bridge



Manhattan Bridge

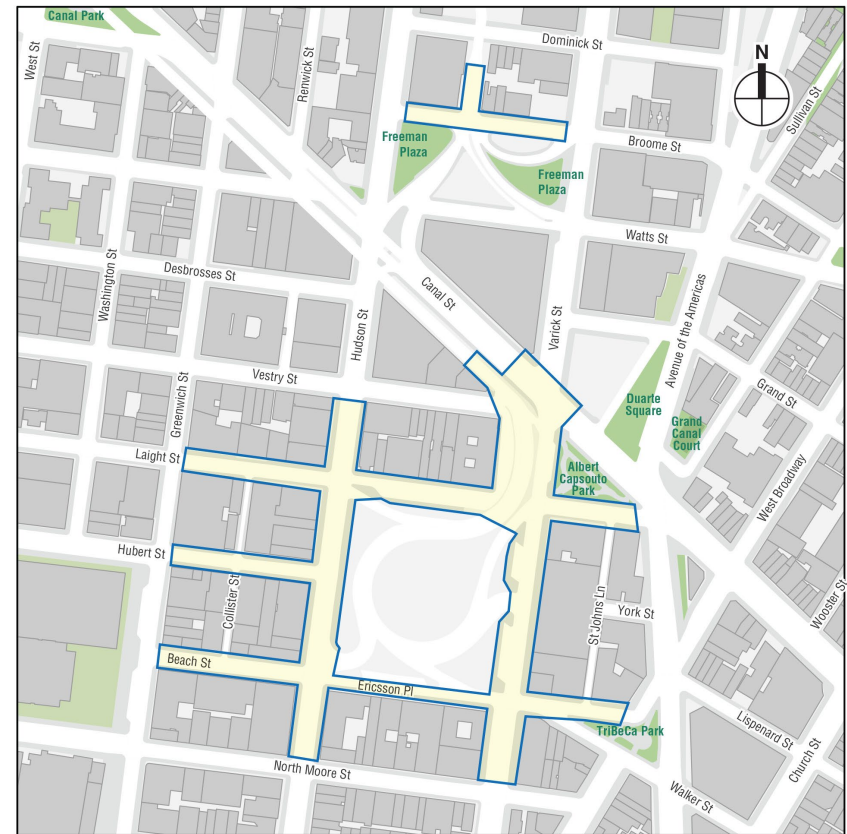
 Local Study Area for Tolling Infrastructure and Tolling System Equipment

Sources: NYC Open Data, NYC Planimetrics, <https://data.cityofnewyork.us/Transportation/NYC-Planimetrics/wt4d-p43d>; NYCDPC, BYTES of the BIG APPLE, <https://www1.nyc.gov/site/planning/data-maps/open-data.page>; ArcGIS Online, <https://www.arcgis.com/index.html>.

Figure 3-2d. Local Study Area for Tolling Infrastructure and Tolling System Equipment: Brooklyn Bridge and Holland Tunnel



Brooklyn Bridge

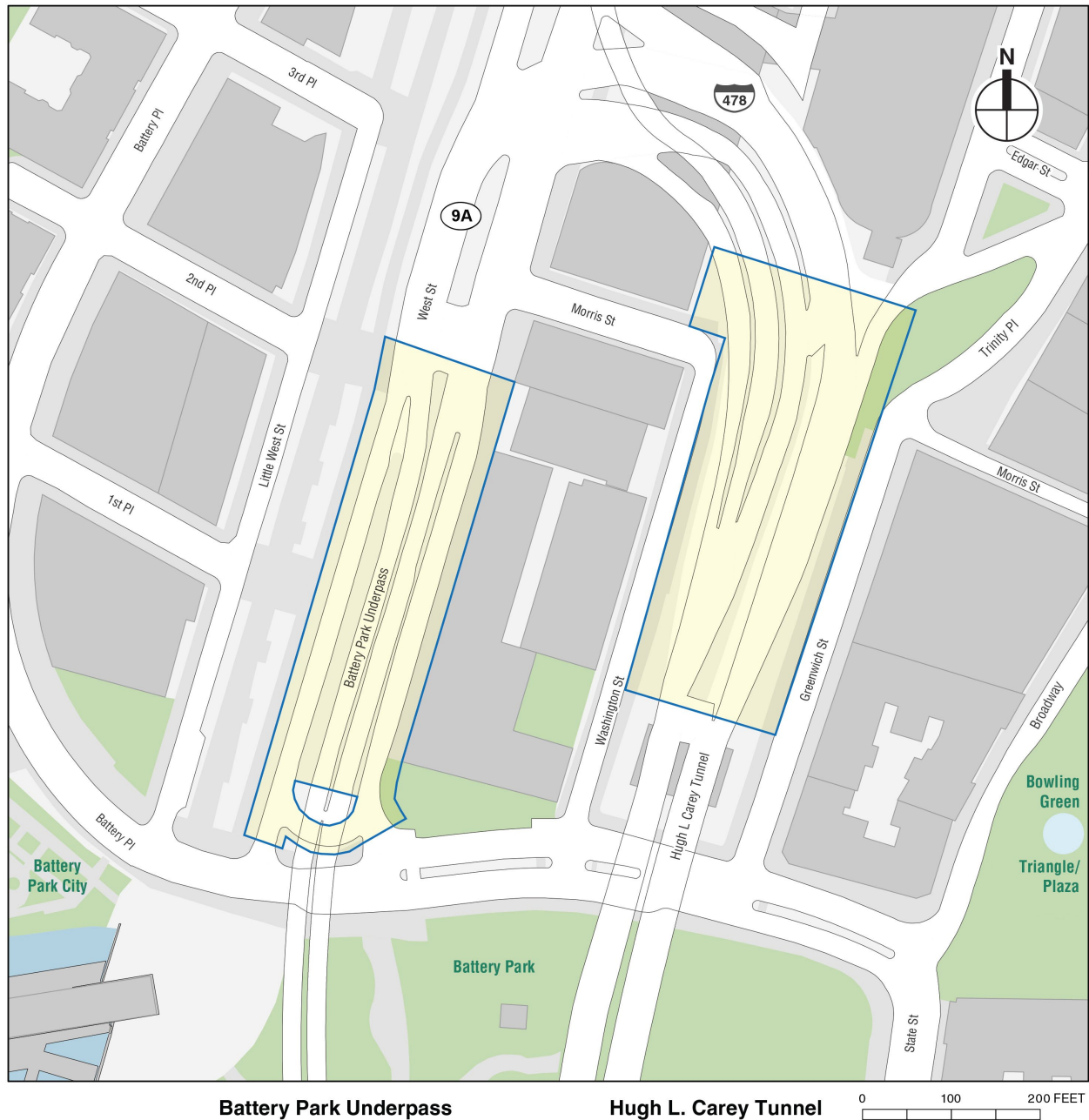


Holland Tunnel

 Local Study Area for Tolling Infrastructure and Tolling System Equipment

Sources: NYC Open Data, NYC Planimetrics, <https://data.cityofnewyork.us/Transportation/NYC-Planimetrics/wt4d-p43d>; NYCDP, BYTES of the BIG APPLE, <https://www1.nyc.gov/site/planning/data-maps/open-data.page>; ArcGIS Online, <https://www.arcgis.com/index.html>.

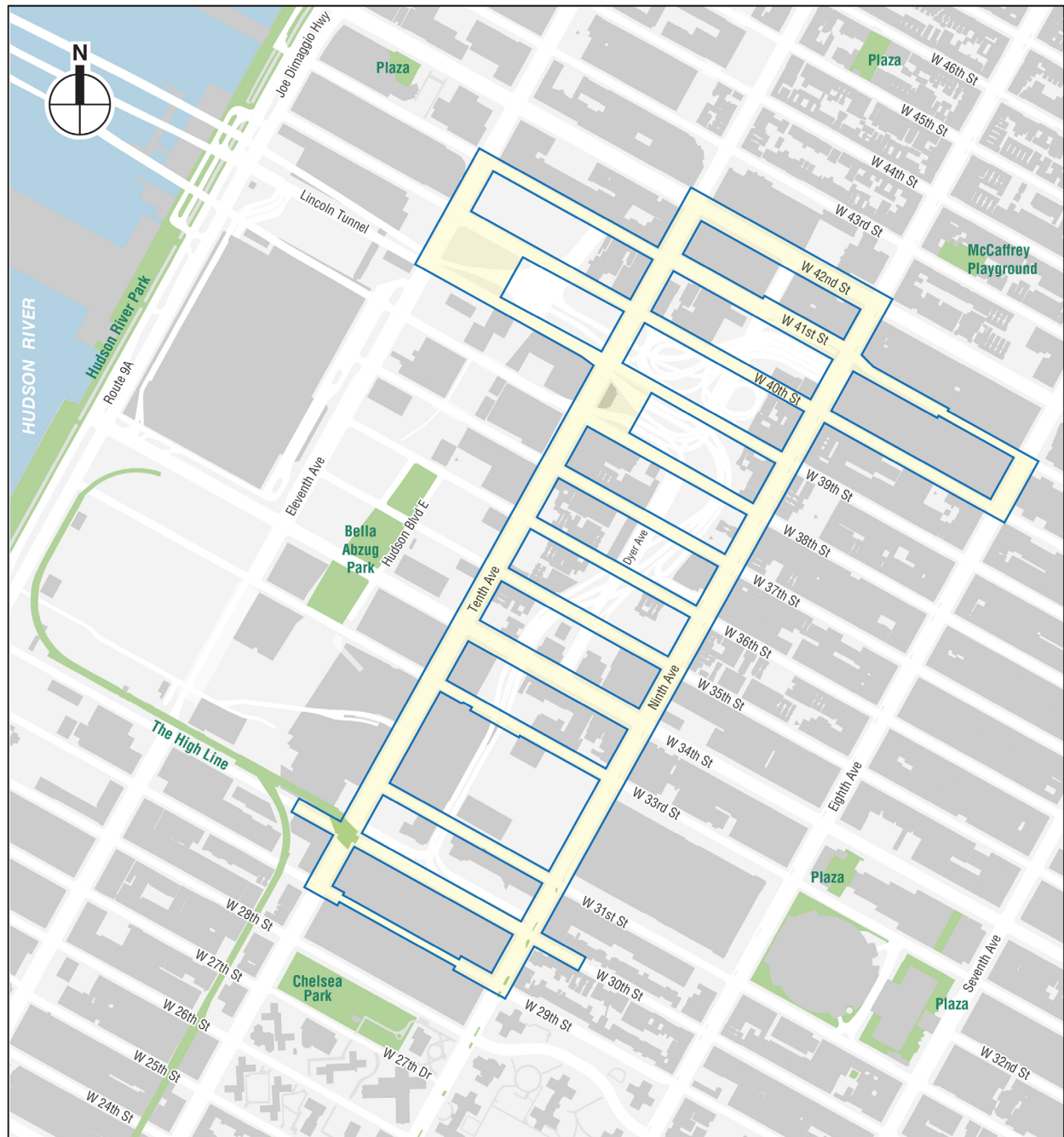
Figure 3-2e. Local Study Area for Tolling Infrastructure and Tolling System Equipment: Battery Park Underpass and Hugh L. Carey Tunnel



 Local Study Area for Tolling Infrastructure and Tolling System Equipment

Sources: NYC Open Data, NYC Planimetrics, <https://data.cityofnewyork.us/Transportation/NYC-Planimetrics/wt4d-p43d>; NYCDOP, BYTES of the BIG APPLE, <https://www1.nyc.gov/site/planning/data-maps/open-data.page>; ArcGIS Online, <https://www.arcgis.com/index.html>.

Figure 3-2f. Local Study Area for Tolling Infrastructure and Tolling System Equipment: Lincoln Tunnel



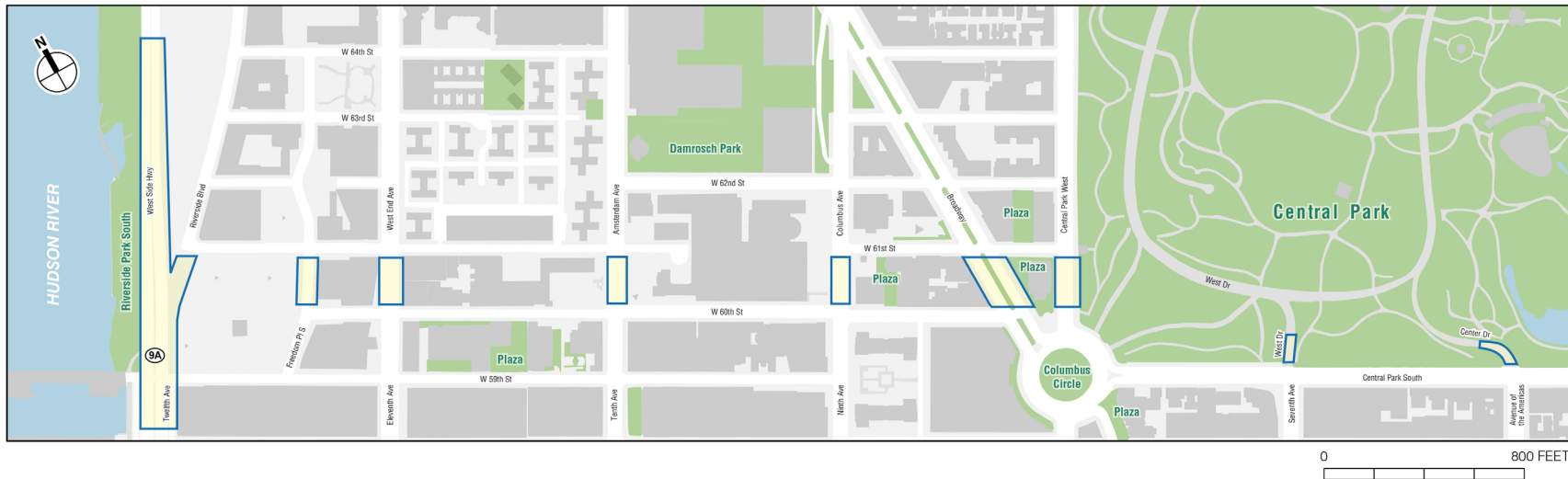
 Local Study Area for Tolling Infrastructure and Tolling System Equipment

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Sources: NYC Open Data, NYC Planimetrics, <https://data.cityofnewyork.us/Transportation/NYC-Planimetrics/wt4d-p43d>; NYCDOP, BYTES of the BIG APPLE, <https://www1.nyc.gov/site/planning/data-maps/open-data.page>; ArcGIS Online, <https://www.arcgis.com/index.html>.

Figure 3-2g. Local Study Area for Tolling Infrastructure and Tolling System Equipment: 60th Street

60th Street - Western Portion



60th Street - Eastern Portion



 Local Study Area for Tolling Infrastructure and Tolling System Equipment

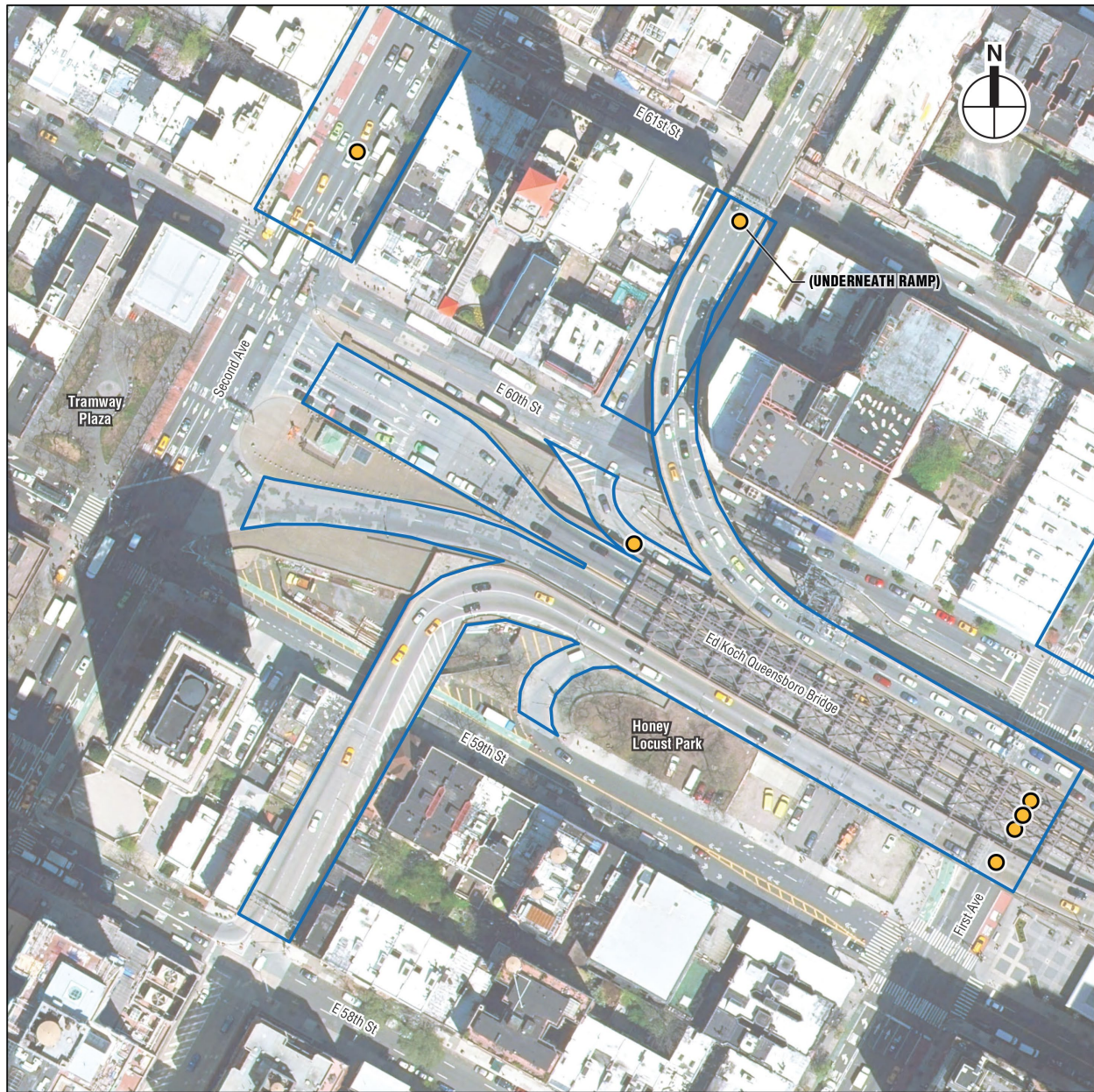
Sources: NYC Open Data, NYC Planimetrics, <https://data.cityofnewyork.us/Transportation/NYC-Planimetrics/wt4d-p43d>; NYCDP, BYTES of the BIG APPLE, <https://www1.nyc.gov/site/planning/data-maps/open-data.page>; ArcGIS Online, <https://www.arcgis.com/index.html>.

Figure 3-3a. Key Map and Proposed Locations of Tolling Infrastructure and Tolling System Equipment Along FDR Drive and West Side Highway/Route 9A



Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: New York Statewide Digital Orthoimagery Program (NYSODP) High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.

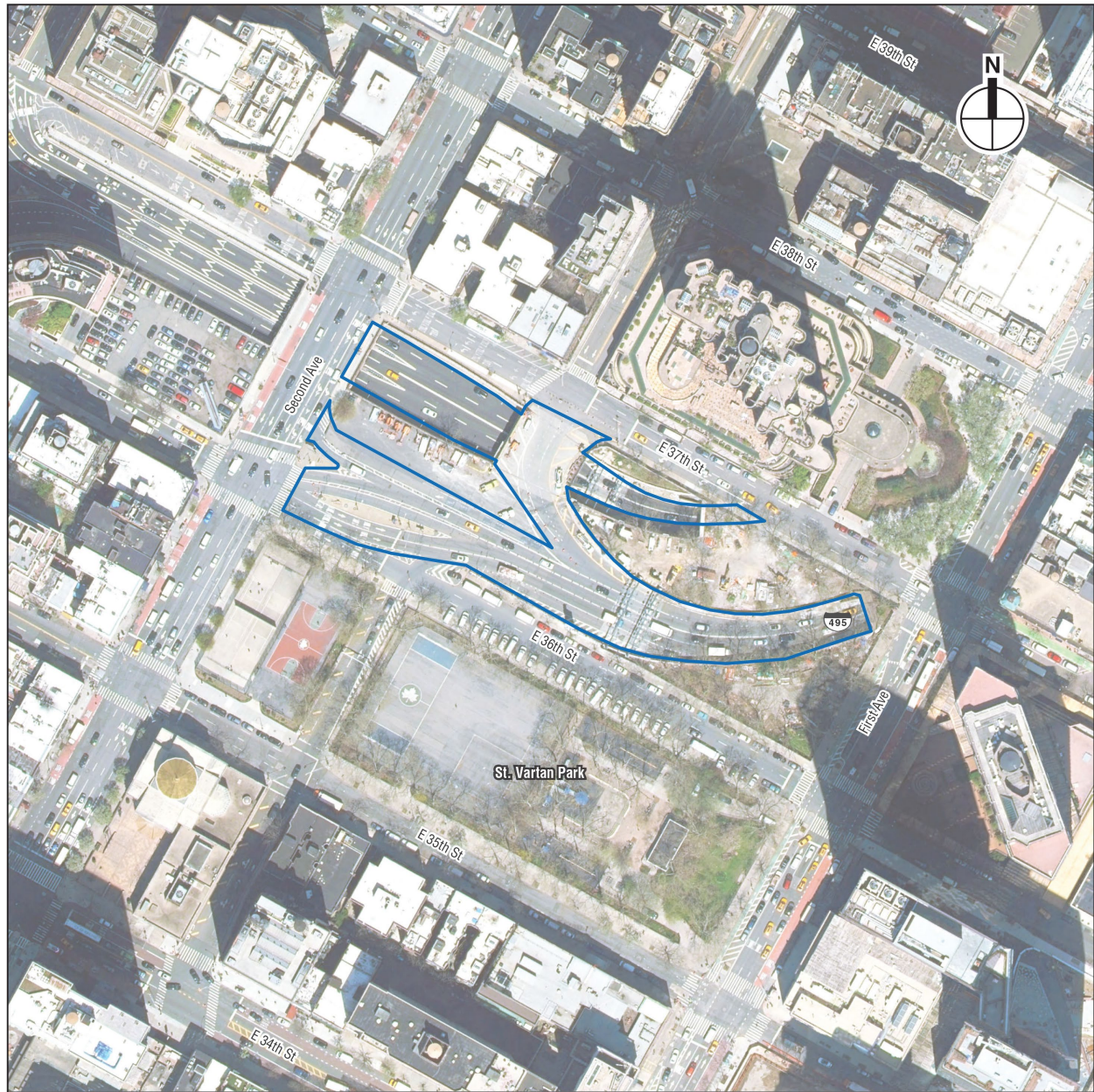
Figure 3-3b. Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Ed Koch Queensboro Bridge



- Local Study Area for Tolling Infrastructure and Tolling System Equipment
- Proposed Location of Tolling Infrastructure and Tolling System Equipment (each circle represents a detection location, which may include one or more new poles or new tolling system equipment mounted on existing infrastructure in that general location)

Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: NYS DOP High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.

Figure 3-3c. Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Queens-Midtown Tunnel



 Local Study Area for Tolling Infrastructure and Tolling System Equipment

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Note: No new tolling infrastructure and tolling system equipment proposed in this local study area (existing open road tolling infrastructure would be used)

Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: NYSDOP High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.

Figure 3-3d. Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Williamsburg Bridge



- Local Study Area for Tolling Infrastructure and Tolling System Equipment
- Proposed Location of Tolling Infrastructure and Tolling System Equipment (each circle represents a detection location, which may include one or more new poles or new tolling system equipment mounted on existing infrastructure in that general location)

Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: NYS DOP High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.

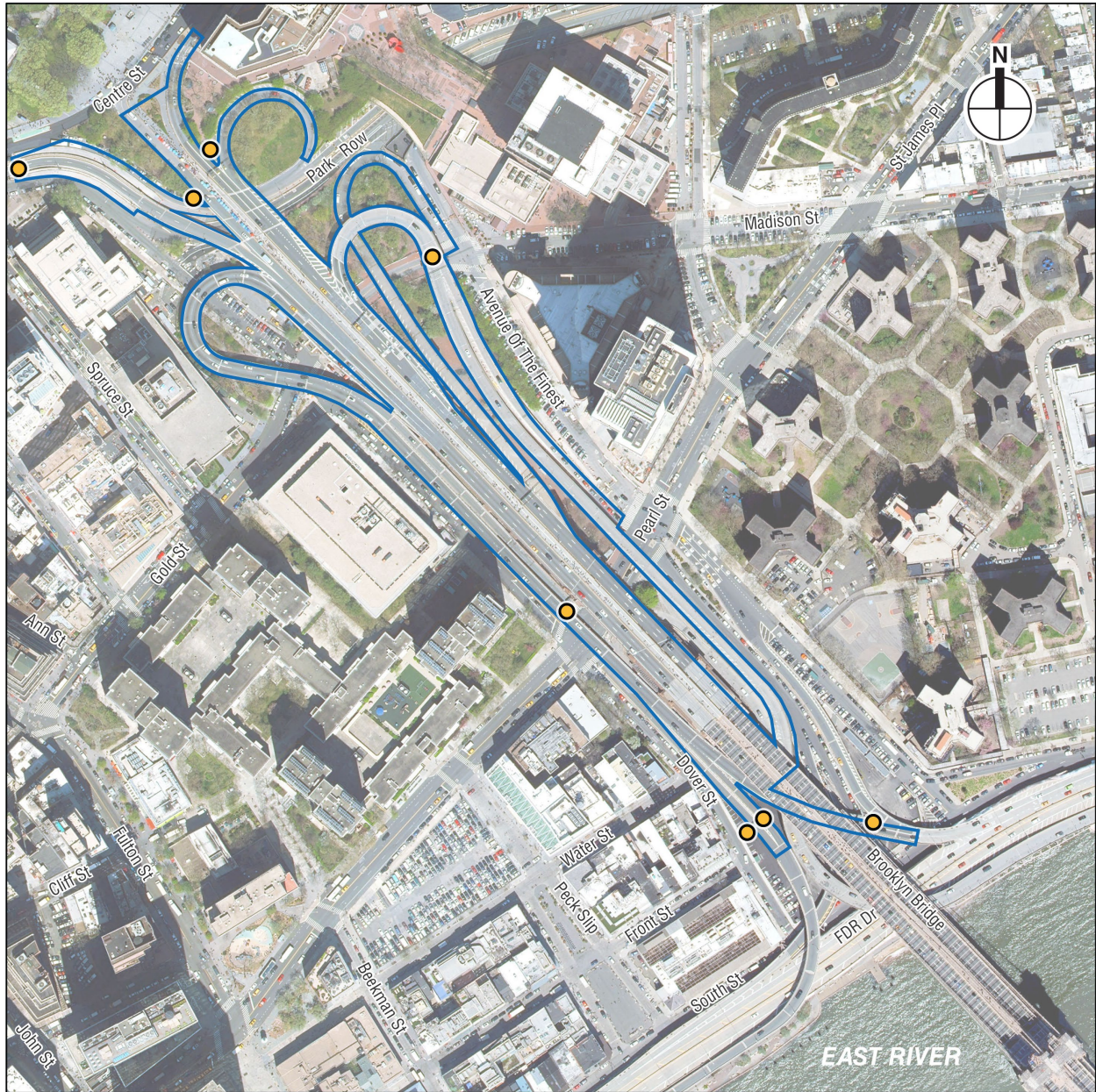
Figure 3-3e. Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Manhattan Bridge



- Local Study Area for Tolling Infrastructure and Tolling System Equipment
- Proposed Location of Tolling Infrastructure and Tolling System Equipment (each circle represents a detection location, which may include one or more new poles or new tolling system equipment mounted on existing infrastructure in that general location)

Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: NYSDOP High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.

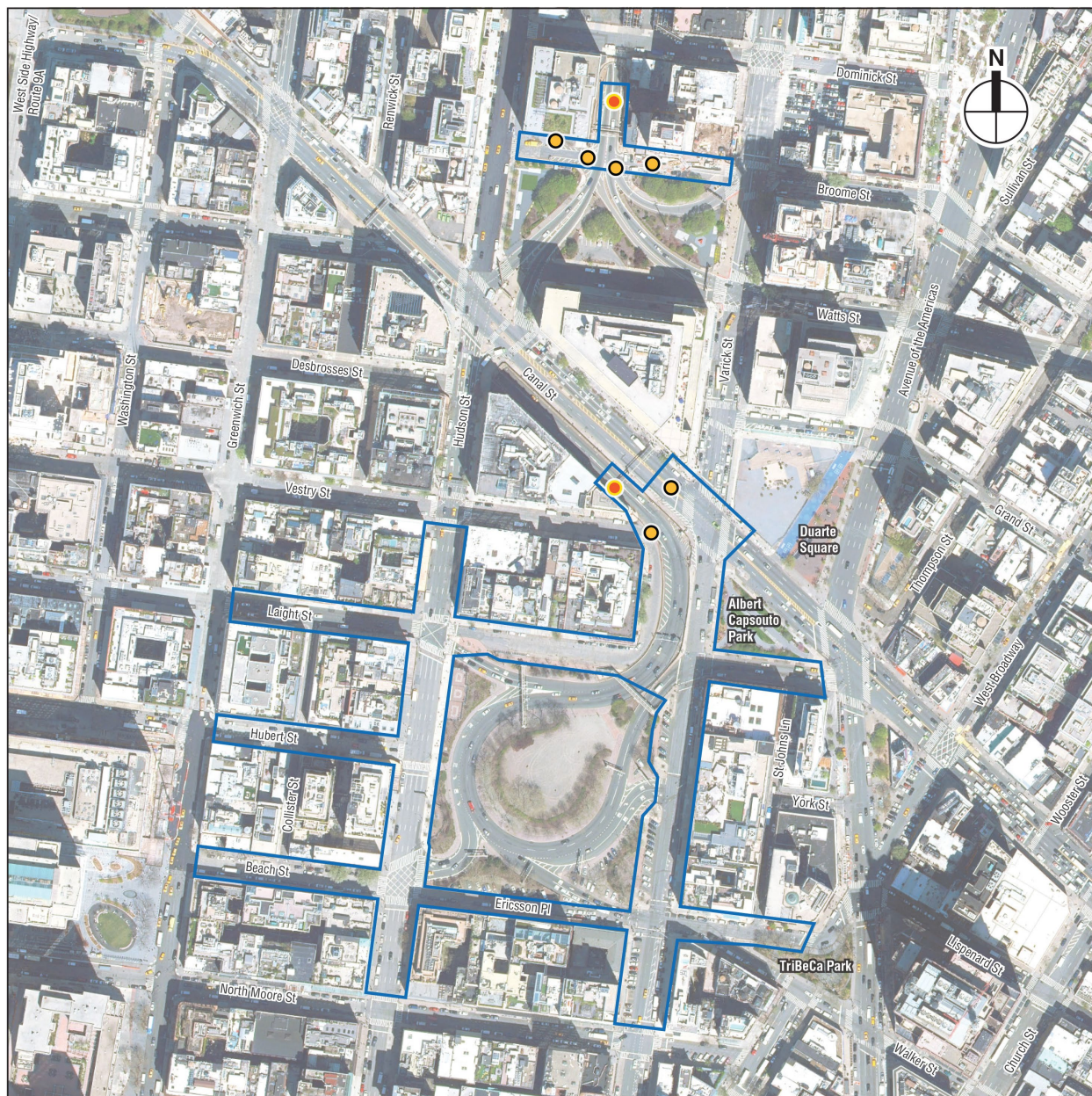
Figure 3-3f. Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Brooklyn Bridge



- Local Study Area for Tolling Infrastructure and Tolling System Equipment
- Proposed Location of Tolling Infrastructure and Tolling System Equipment (each circle represents a detection location, which may include one or more new poles or new tolling system equipment mounted on existing infrastructure in that general location)

Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: NYSDOP High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.

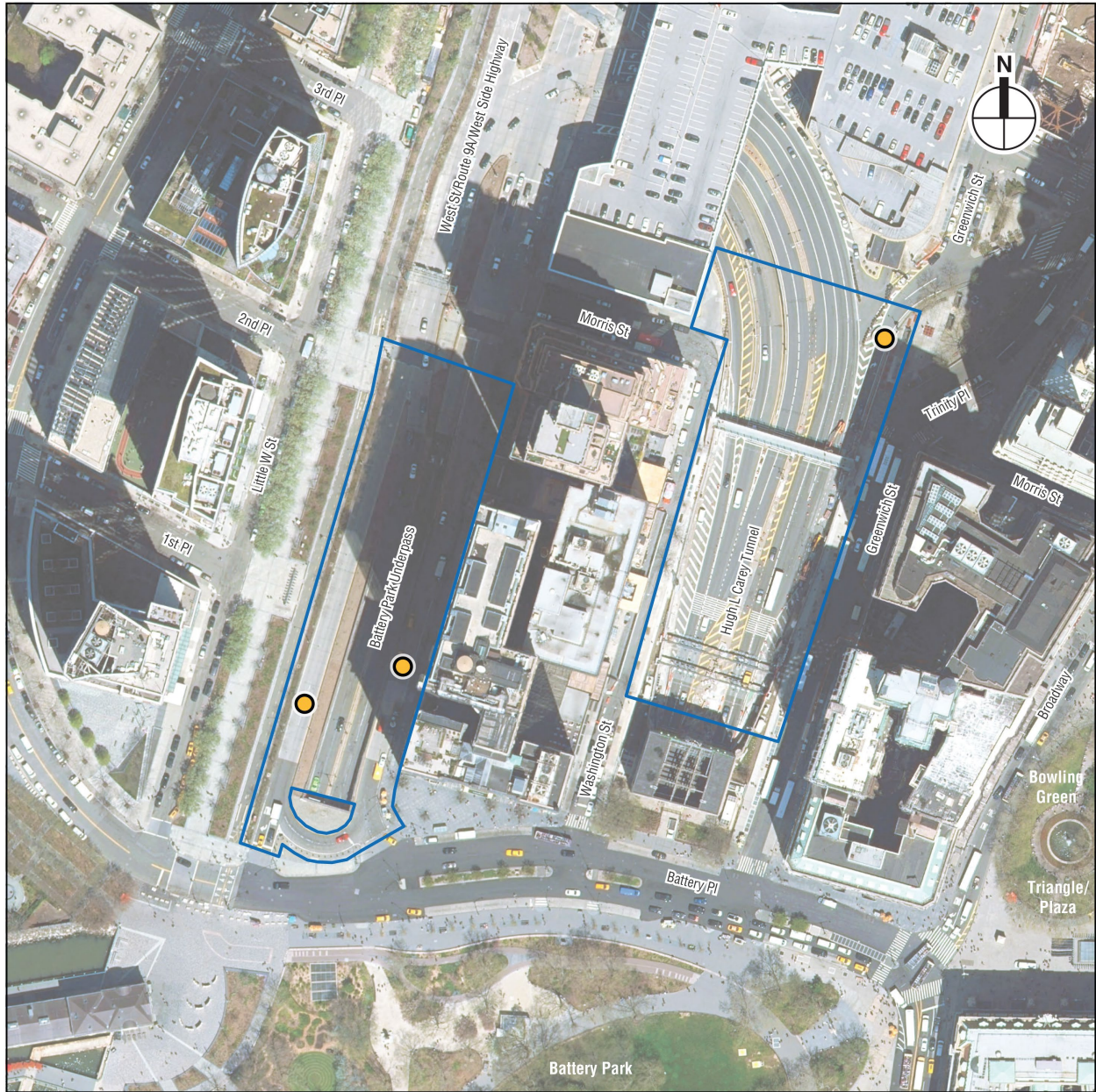
Figure 3-3g. Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Holland Tunnel



- Local Study Area for Tolling Infrastructure and Tolling System Equipment
- Proposed Location of Tolling Infrastructure and Tolling System Equipment (each circle represents a detection location, which may include one or more new poles or new tolling system equipment mounted on existing infrastructure in that general location)
- Potential Location of Tolling Infrastructure and Tolling System Equipment on PANYNJ Property In Place of All Other Detection Points at and Near the Holland Tunnel

Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: NYS DOP High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.

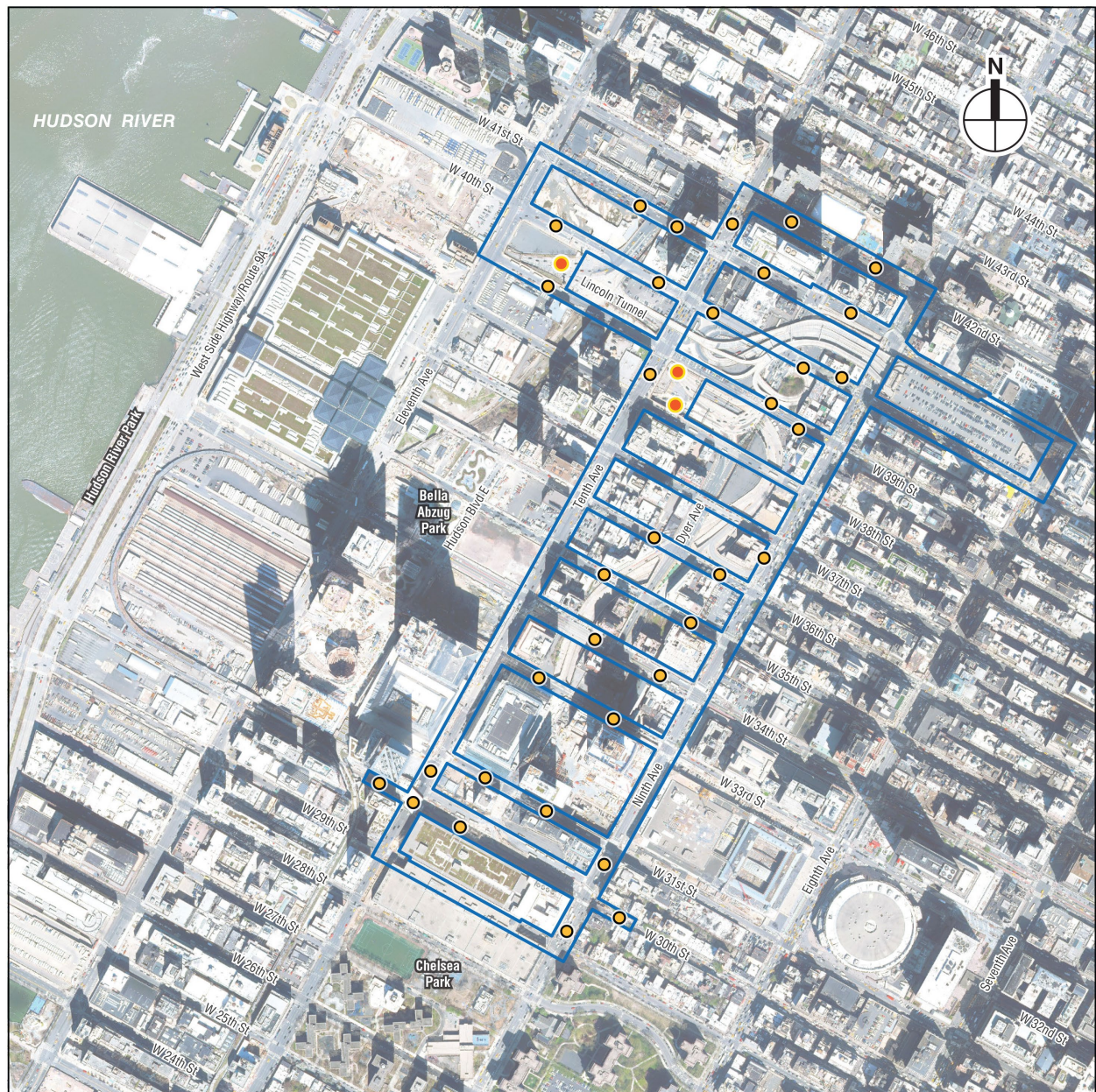
Figure 3-3h. Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Battery Park Underpass and Hugh L. Carey Tunnel






- Local Study Area for Tolling Infrastructure and Tolling System Equipment
- Proposed Location of Tolling Infrastructure and Tolling System Equipment
(each circle represents a detection location, which may include one or more new poles or new tolling system equipment mounted on existing infrastructure in that general location – existing open road tolling infrastructure would be used for the Hugh L. Carey Tunnel)

Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: NYS DOP High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.

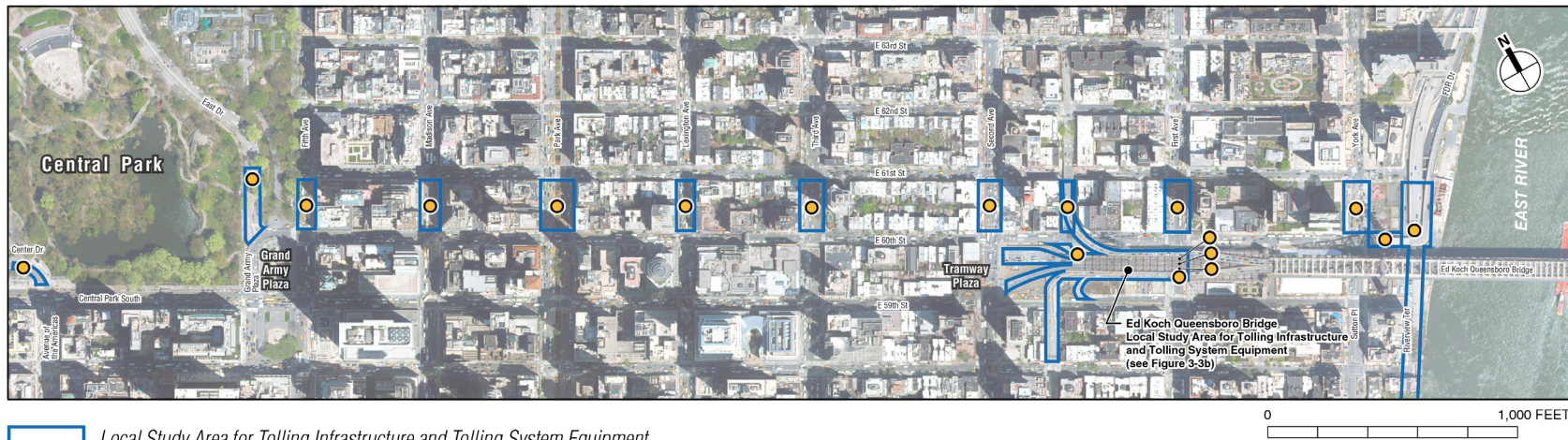
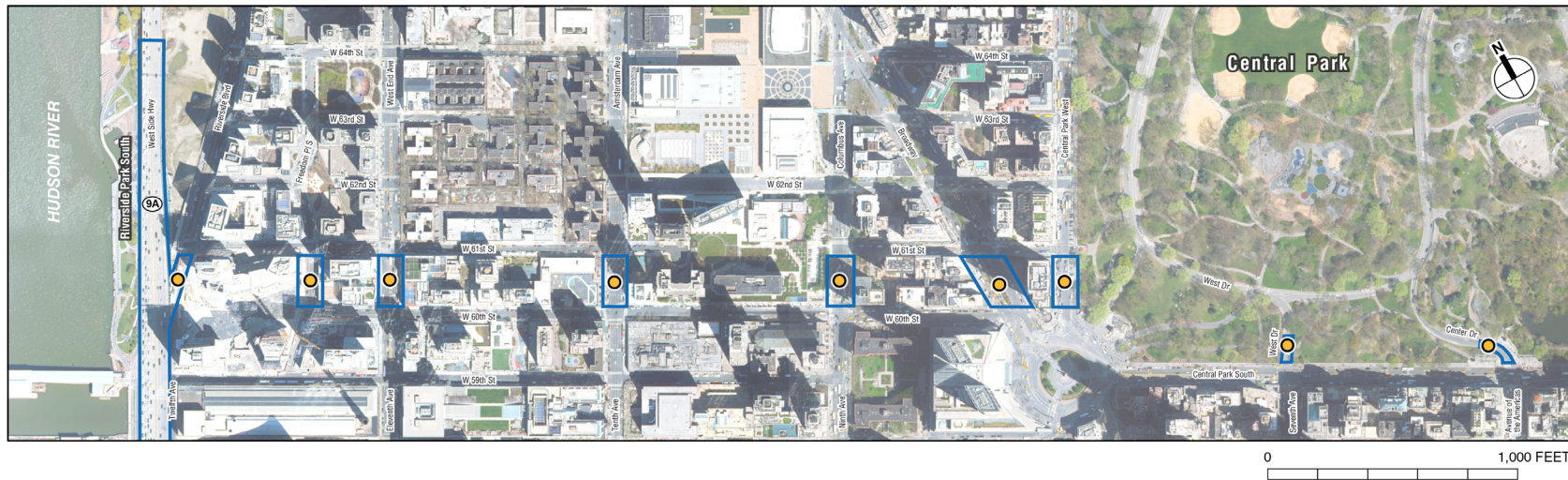
Figure 3-3i. Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Lincoln Tunnel



-  Local Study Area for Tolling Infrastructure and Tolling System Equipment
-  Proposed Location of Tolling Infrastructure and Tolling System Equipment (each circle represents a detection location, which may include one or more new poles or new tolling system equipment mounted on existing infrastructure in that general location)
-  Potential Location of Tolling Infrastructure and Tolling System Equipment on PANYNJ Property In Place of All Other Detection Points at and Near the Lincoln Tunnel

Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: NYS DOP High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.

Figure 3-3j. Proposed Locations of Tolling Infrastructure and Tolling System Equipment: 60th Street



- Local Study Area for Tolling Infrastructure and Tolling System Equipment
- Proposed Location of Tolling Infrastructure and Tolling System Equipment (each circle represents a detection location, which may include one or more new poles or new tolling system equipment mounted on existing infrastructure in that general location)

Sources: TBTA. October 2021. New York State, NYS Interactive Mapping Gateway: NYSODP High Resolution Imagery 2000 – 2018. <http://gis.ny.gov/gateway/mg/index.html>.