Task 5 Summary Report – Harlem River Nav Study: Deauthorization Area Definition

Prepared for

New York City Economic Development Corporation (NYCEDC)

Safety Management Systems, LLC

December 16, 2025

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1.0 Introduction

The New York City Economic Development Corporation (NYCEDC) retained Safety Management Systems, LLC (SMSLLC) during 2024 to conduct a comprehensive Navigational Risk Assessment (NRA) of the Harlem River between approximately 145th Street and 163rd Street. The assessment was undertaken to evaluate the navigational risks of a proposed Manhattan Waterfront Greenway (MWG: North Harlem) segment that would extend outboard into the Harlem River, requiring a partial deauthorization of the existing federal navigation channel on the Manhattan side. The NRA, completed in July 2025, documented physical constraints, vessel traffic patterns, land use trends, historical channel maintenance, and stakeholder perspectives to determine whether partial deauthorization could be pursued without compromising the Harlem River's function as a working waterway.

In October 2025, following completion of the NRA, NYCEDC amended Task 5 of SMSLLC's scope of work. The amendment directed SMSLLC to develop a precise geospatial and legal description of the proposed deauthorization area suitable for inclusion in a Water Resources Development Act (WRDA) 2026 submission. This amended task required SMSLLC to establish a defensible reference line along the shore of the Harlem River (henceforth referred to as the "shoreline reference"), identify an appropriate deauthorization area, generate coordinates for metes-and-bounds descriptions, and compile the results into a concise summary report and supporting deliverables.

This Task 5 Summary Report describes how those objectives were met. It explains the data sources and analytical methods used to establish the shoreline reference, narrates the process of defining the deauthorization area considering navigational and physical constraints, and details the development of coordinate sets and metes-and-bounds descriptions. The report also summarizes stakeholder engagement conducted during this phase and outlines the final deliverables provided to NYCEDC to support WRDA legislative drafting and subsequent design coordination.

1.1 Purpose and Scope

The purpose of this report is to provide a transparent, narrative account of the work completed under Task 5 of the Harlem River Navigational Study. The scope of the report is limited to those activities associated with defining the proposed deauthorization area and preparing supporting documentation for NYCEDC's WRDA 2026 submission. Broader risk assessment findings, including detailed AIS analyses and stakeholder questionnaires, are documented separately in the Harlem River NRA Report and are referenced here where they inform decisions made during Task 5.

1.2 Organization of This Report

The remainder of this report is organized around the subtasks introduced in the Task 5 amendment. Section 2 describes the establishment of the shoreline reference line (Task 5.1.1). Section 3 explains how the deauthorization area was identified and refined (Task 5.1.2). Section 4 details the development of the coordinate set and the associated metes-and-bounds and WRDA language (Task 5.1.3). Section 5 summarizes stakeholder engagement and the final deliverables (Task 5.1.4). Section 6 presents overall conclusions. References are listed in Section 7, and appendices provide supporting figures, coordinate tables, and the complete draft WRDA text.

2.0 Task 5.1.1 – Establishing an Accurate Shoreline Reference Line

2.1 Objective

The first step in the amended Task 5 scope was to establish a consistent and defensible shoreline reference within the study reach on the Manhattan side of the Harlem River. The final shoreline reference served as the geometric basis for applying offset distances, constructing the deauthorization footprint, and ultimately defining the coordinates for use in WRDA legislative language. Because shoreline depictions can vary between data sources and change over time, a careful reconciliation and selection process was required to avoid ambiguity and ensure reproducibility.

2.2 Data Sources

Multiple authoritative datasets were evaluated for use as a shoreline reference. These included NOAA's Continually Updated Shoreline Product (CUSP), NOAA's Composite Shoreline, the City of New York's planimetric shoreline data, and 2024 high-resolution orthophotography. NOAA products benefit from federal pedigree and rigorous quality control, while NYC's planimetric data is closely tied to local control points and infrastructure. The 2024 imagery, with six-inch resolution and approximately two-foot horizontal accuracy, provided a contemporary visual benchmark for verifying the relative position of each shoreline dataset. A visual representation of the comparison of the datasets is provided in Appendix A.

2.3 Methodology

The project's marine geospatial analyst, working with SMSLLC and NYCEDC, overlaid the NOAA and NYC shoreline datasets that are listed in paragraph 2.2 above onto the 2024 orthophotography. The combination of these datasets yielded a shoreline reference, which was then compared with Hydrographic Features from the NYC Planimetric dataset. The hydrographic features were found to align more closely with the imagery dataset. The shoreline reference was then modified to follow the "seaward" boundary of hydrographic features in areas where such features are present within the study area, thereby further refining the shoreline reference's accuracy.

This output was inspected for the alignment at multiple locations along the study reach. Attention was paid to structurally fixed features such as bridge piers, abutments, bulkheads, and over-water trestles, which provide reliable reference points for evaluating shoreline position. The analysis revealed systematic differences between the datasets. These discrepancies were expected given differences in survey year, acquisition methods, and shoreline interpretation rules.

To reconcile these differences and avoid choosing a single dataset that might, in places, overstate the landward extent of the shoreline, the team generated a shoreline reference that included all the described refinements. This shoreline reference was created by selecting, at each segment, the most shoreward candidate shoreline position, thereby minimizing the risk of classifying open water as land. The resulting polyline was then checked against the orthophotography to confirm that it remained closely aligned with the visible land–water interface while remaining conservative regarding riverward encroachment.

2.4 Results and Application

The shoreline reference was presented to NYCEDC in map form, along with comparison figures showing the underlying NOAA and NYC datasets. Following review, NYCEDC accepted the shoreline reference as the official reference line for subsequent Task 5 analyses. From this point forward, all offset distances used to define the deauthorization area were measured orthogonally from this final shoreline reference, which is referred to as the “Shoreline – Blended and Hybrid” in Appendix B, rather than from individual source datasets or from generalized channel lines.

The NYC Orthoimagery used for evaluation has a stated horizontal accuracy of approximately two feet. Accordingly, the final shoreline reference is considered accurate to within approximately three feet horizontally. This approach provides a single, clearly defined shoreline reference that can be referenced in future design documents, GIS products, and regulatory submittals.

3.0 Task 5.1.2 – Identification of the Deauthorization Area

3.1 Objective

With the shoreline reference line established, the next task was to identify a deauthorization area that would provide sufficient horizontal space for the MWG: North Harlem structure while maintaining safe and efficient navigation in the remaining federally authorized channel. The deauthorization footprint needed to reflect the anticipated width of the greenway structure, including fendering and maintenance buffers, and to avoid encroaching into the primary vessel maneuvering corridor documented in the NRA.

3.2 Analytical Inputs

Several inputs informed this step. First, the NRA's analysis of AIS data and vessel routing identified a dominant fairway running closer to the Bronx side of the river, particularly in the vicinity of the Macombs Dam Bridge, where bridge piers and channel width constrain navigation. Second, conceptual design parameters for the MWG indicated a nominal structural width of approximately 40 feet, a fendering zone, an allowance for bulkhead maintenance, and an additional 5-foot margin, which together suggested a required deauthorization offset of approximately 80 feet from the shoreline. Third, physical constraints such as bridge approaches, abutments, and existing over-water features had to be accommodated so that the final deauthorization boundary would be constructible and logically tied to recognizable features.

3.3 Methodology

Using the shoreline reference, the geospatial team generated a buffer of 80-foot offset into the river. This buffer was then examined in detail, both on-screen and in hard-copy map form, to identify locations where minor adjustments would improve consistency with physical features or avoid unnecessary complexity. The presence of the Macombs Dam Bridge and its associated approach structures created a natural division between two zones: a northern deauthorization polygon and a southern polygon. Transition points near the bridge were refined so that the polygons remain clear in plan view and can be described unambiguously in coordinate form.

Throughout this process, the team cross-referenced AIS-derived vessel tracks to confirm that the buffered area did not encroach into the high-density vessel routing corridor, especially near the Macombs Dam and 145th Street Bridges. The objective was to meet NYCEDC's structural requirements while maintaining at least the navigable channel under the bridge of a width of 100 feet requested by key operators during stakeholder outreach.

To ensure a 100-foot horizontal clearance under and around the Macombs Dam Bridge, a circular 120-foot "exclusion zone" was plotted around the center footing. The proposed deauthorization zone, which was contained within the exclusion zone, was removed. The resultant geometry was used to create the angle of return to the shoreline in each of the northern and southern deauthorization zone sections.

3.4 Resulting Deauthorization Footprint

The outcome of this iterative analysis was a proposed deauthorization footprint comprising two closed polygons along the Manhattan shoreline, one north and one south of the Macombs Dam Bridge. Each polygon generally follows the 80-foot offset from the shoreline reference and is tailored locally to respect bridge structures and existing infrastructure. The footprint maintains the navigable fairway identified in the NRA

and is consistent with the operational needs expressed by passenger vessel operators and municipal users. This footprint was documented in a series of figures and delivered to NYCEDC as the basis for coordinate development in Task 5.1.3.

4.0 Task 5.1.3 – Deauthorization Coordinates and Metes-and-Bounds Description

4.1 Objective

The next task was to convert the polygons into a precise coordinate set and to draft a metes-and-bounds description suitable for incorporation into WRDA legislative text. The objective was to describe the deauthorization area in a manner that is legally robust, reproducible from the underlying GIS data, and compatible with typical U.S. Army Corps of Engineers and congressional drafting practices.

4.2 Smoothing and Boundary Preparation

Raw buffered polygons can include many vertices and minor irregularities that offer little practical benefit but complicate legal descriptions. To address this, the shoreline reference was smoothed using a PAEK algorithm with a 25-meter tolerance.

The smoothing resulted in two areas where manual buffers were employed (northern and southern corners of cantilevered Harlem River Drive) to maintain at least 80' of distance. These buffers were transformed into lines. The lines were then simplified using a tolerance of +/- 1 degree of deflection and evaluated in an iterative process using 1' increments, i.e., stations along the deauthorization line, and nearest measurement to the unsmoothed blended hybrid shoreline. This process ensured the buffer was maintained at least 80' (-0/+2 feet) throughout the study area while minimizing deflections and the number of meets required to describe the deauthorization zone.

This process reduced small-scale geometric noise while preserving the overall shape and extent of the deauthorization footprint. The smooth boundaries remained faithful to the design intent and the reference line, yielding a more straightforward, interpretable geometry for coordinate extraction.

4.3 Coordinate System and Extraction

All coordinates to draft metes-and-bounds were generated in the NAD 1983 State Plane New York Long Island FIPS 3104 coordinate system, expressed in U.S. survey feet. This projection was selected because it is widely used for engineering and survey work in New York City and is compatible with existing NYCEDC and USACE datasets. For each of the two polygons, the smoothed boundary was traversed in sequence to identify a series of vertices that could be connected by straight segments. Easting (X) and Northing (Y) values were recorded for each vertex, and segment lengths were checked to confirm closure of the polygons.

4.4 Proposed WRDA Description

Using the coordinate sets, SMSLLC and NYCEDC collaborated to draft proposed WRDA language that describes the deauthorization area in narrative form. The language identifies two separate areas, each defined as a closed polygon formed by straight lines connecting listed coordinate points and extending landward to the physical shoreline.

4.5 Coordinate Tables

Detailed coordinate tables corresponding to each of the vertices listed above are provided in Appendix C. These tables provide the Northing and Easting values for each point in the order described in the WRDA text, enabling independent reconstruction of the deauthorization polygons in GIS or CAD environments. It also includes multiple other coordinate systems for future reference.

5.0 Task 5.1.4 – Summary Report, Stakeholder Engagement, and Final Deliverables

5.1 Stakeholder Engagement

During the Task 5 phase, SMSLLC continued coordination with key Harlem River stakeholders, including commercial passenger vessel operators, municipal agencies, and advocacy organizations previously engaged during the NRA. On December 3rd, 2025, the project team provided a formal presentation to the NY/NJ Harbor Operations Committee, summarizing the navigation study, its results, and the proposed deauthorization area. Feedback from committee members and attending stakeholders was discussed, with no new concerns raised beyond those already captured during the NRA process. Stakeholders generally confirmed that the proposed deauthorization footprint remained outside their primary operating corridors, and the presentation reinforced confidence that the proposed deauthorization is compatible with existing and foreseeable navigational uses in the Harlem River.

5.2 Final Deliverables

At the conclusion of Task 5, SMSLLC provided NYCEDC with a package of deliverables designed to support WRDA 2026 drafting and subsequent design coordination. The package includes this Task 5 Summary Report; GIS shapefiles and geodatabases containing the shoreline reference, deauthorization polygons, and supporting layers; map figures illustrating the reference line and deauthorization zones; detailed coordinate tables; and the proposed WRDA legislative language provided in Appendix C. Collectively, these deliverables establish a clear, transparent record of how the deauthorization area was developed and how it relates to the broader navigational safety analysis.

6.0 Conclusions

The work completed under the amended Task 5 scope translates the conceptual findings of the Harlem River Navigational Risk Assessment into a concrete, spatially defined deauthorization proposal. By blending federal and local shoreline datasets, applying a carefully chosen offset, accounting for physical and operational constraints, and developing detailed coordinates and metes-and-bounds language, the project team has produced a deauthorization description that is both technically robust and practical for legislative use. The resulting boundaries support NYCEDC's MWG: North Harlem objectives while preserving navigational functionality and flexibility within the Harlem River. This report and its appendices provide the necessary foundation for federal review, WRDA consideration, and subsequent engineering design.

7.0 References

- North Harlem River Navigational Study (R-0) 07-JULY-2025

Appendix A: Harlem River Greenway Map Book – Shoreline Dataset Comparison

Appendix A provides a visual representation of the NOAA CUSP, NOAA Composite, and NYC Planimetric shoreline datasets and their comparison against 2024 high-resolution orthophotography, which was used to determine an accurate and defensible shoreline reference for use in Task 5. It shows expected discrepancies among datasets that were later resolved by creating a shoreline reference that selected the most shoreward position from each source, producing a conservative, repeatable baseline aligned with visible physical features.

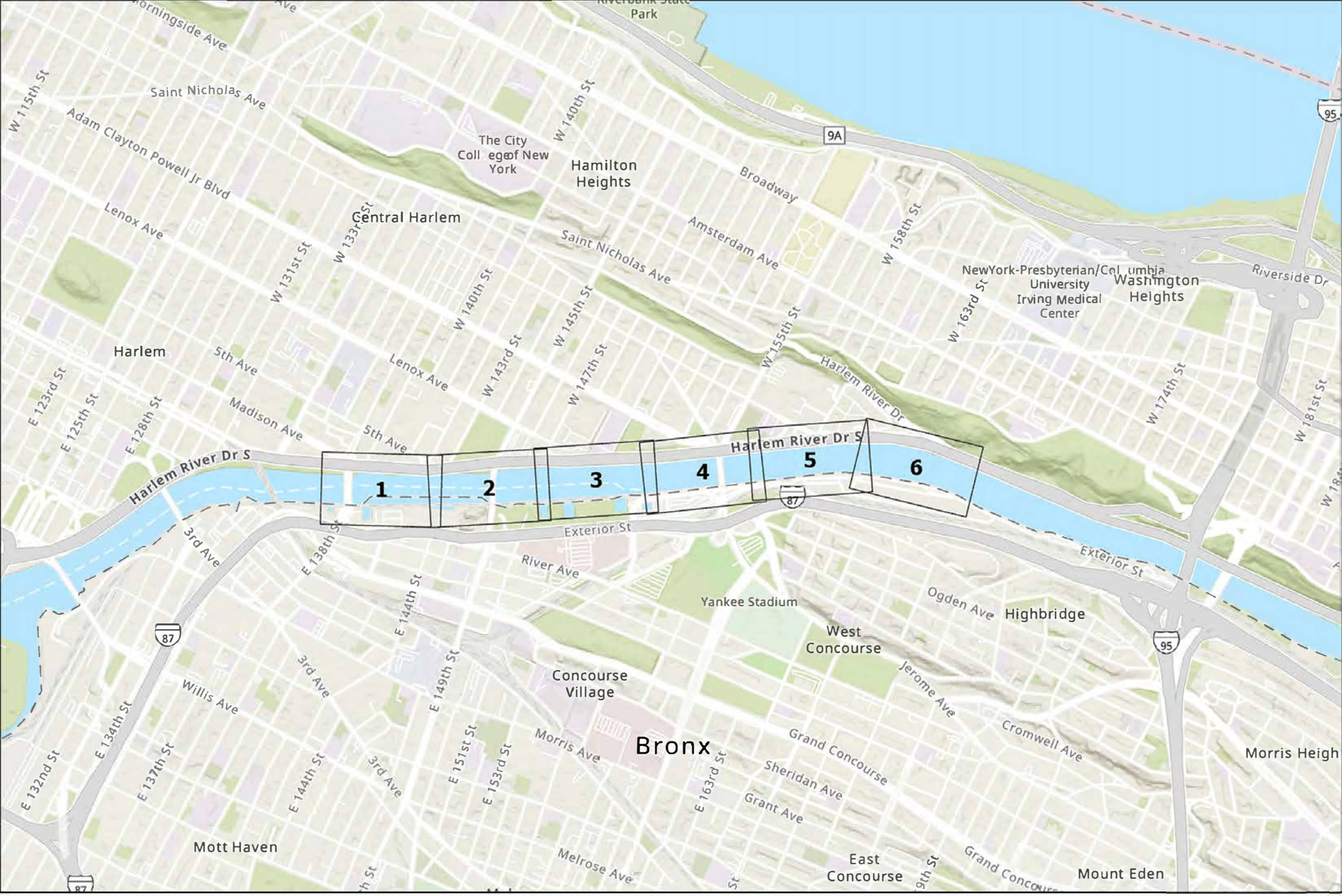
Appendix B – Deauthorization Area Maps

Appendix B includes plan-view maps of the northern and southern deauthorization polygons, showing their relationship to the federal navigation channel, bridge structures, and representative vessel traffic patterns. Figures are provided at both study-area and zoomed-in scales, suitable for briefings and regulatory submittals.

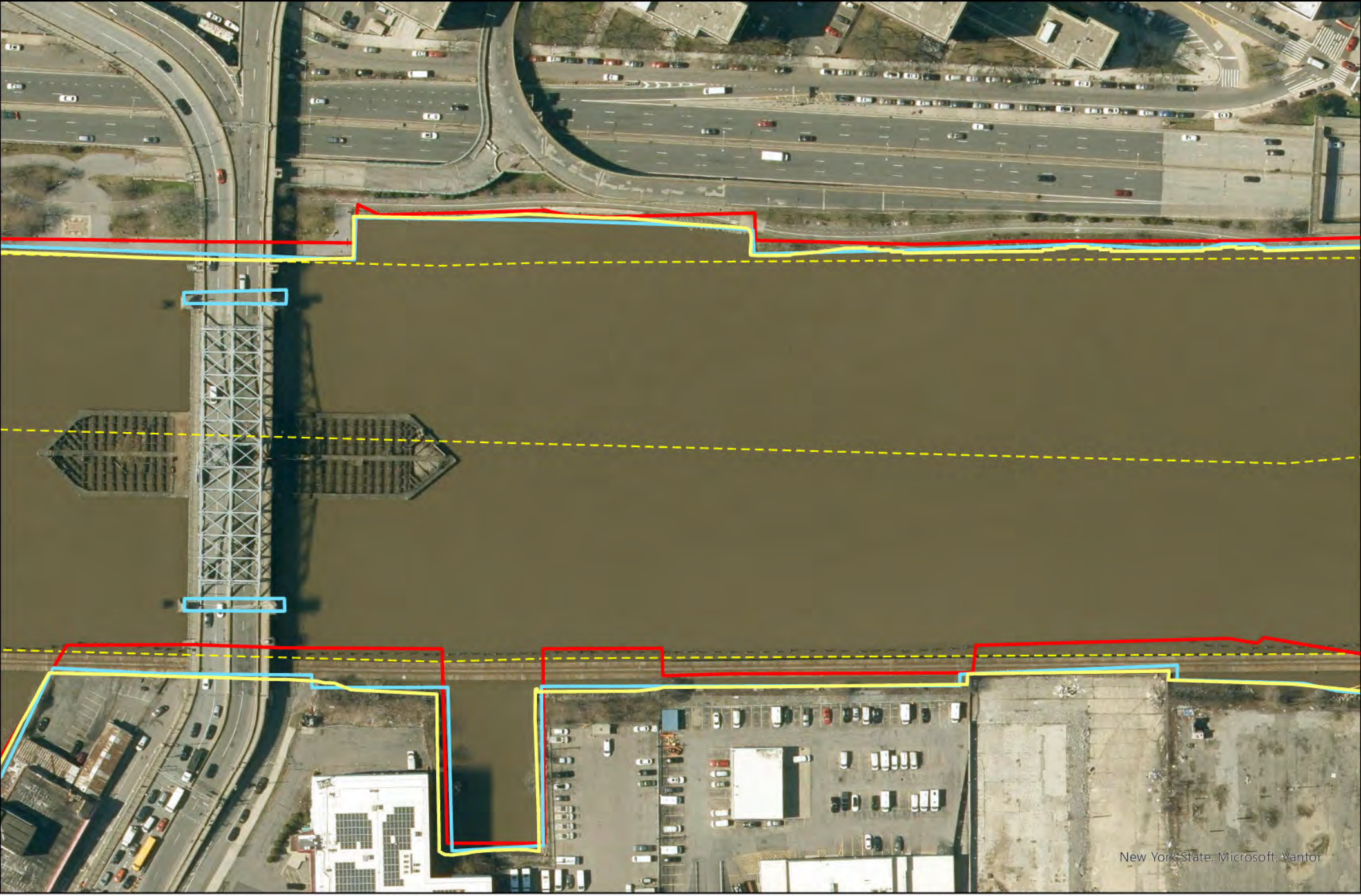
Appendix C – Coordinate Tables and WRDA Text

Appendix C presents tabulated coordinates for each vertex of the deauthorization polygons. The proposed WRDA legislative text, as drafted for NYCEDC's 2026 submission, is provided here for ease of reference.

Appendix A



Harlem River Greenway Map Book
Comparison of Various Shoreline Datasets



Map Number 1 - Comparison of authoritative shorelines

NYC Shoreline 2022
NOAA CUSP Shoreline 03NOV2025
NOAA Composite Shoreline
USACE Channel Line

Scale: 1:1,500
PCS: NAD 1983 StatePlane New York Long Island FIPS 3104 Feet
Projection: Lambert Conformal Conic
Map Units: Foot US
Authority: EPSG
WKID: 2263

N

Feet 0 40 80 120 160 200
Meters 0 10 20 30 40 50 60

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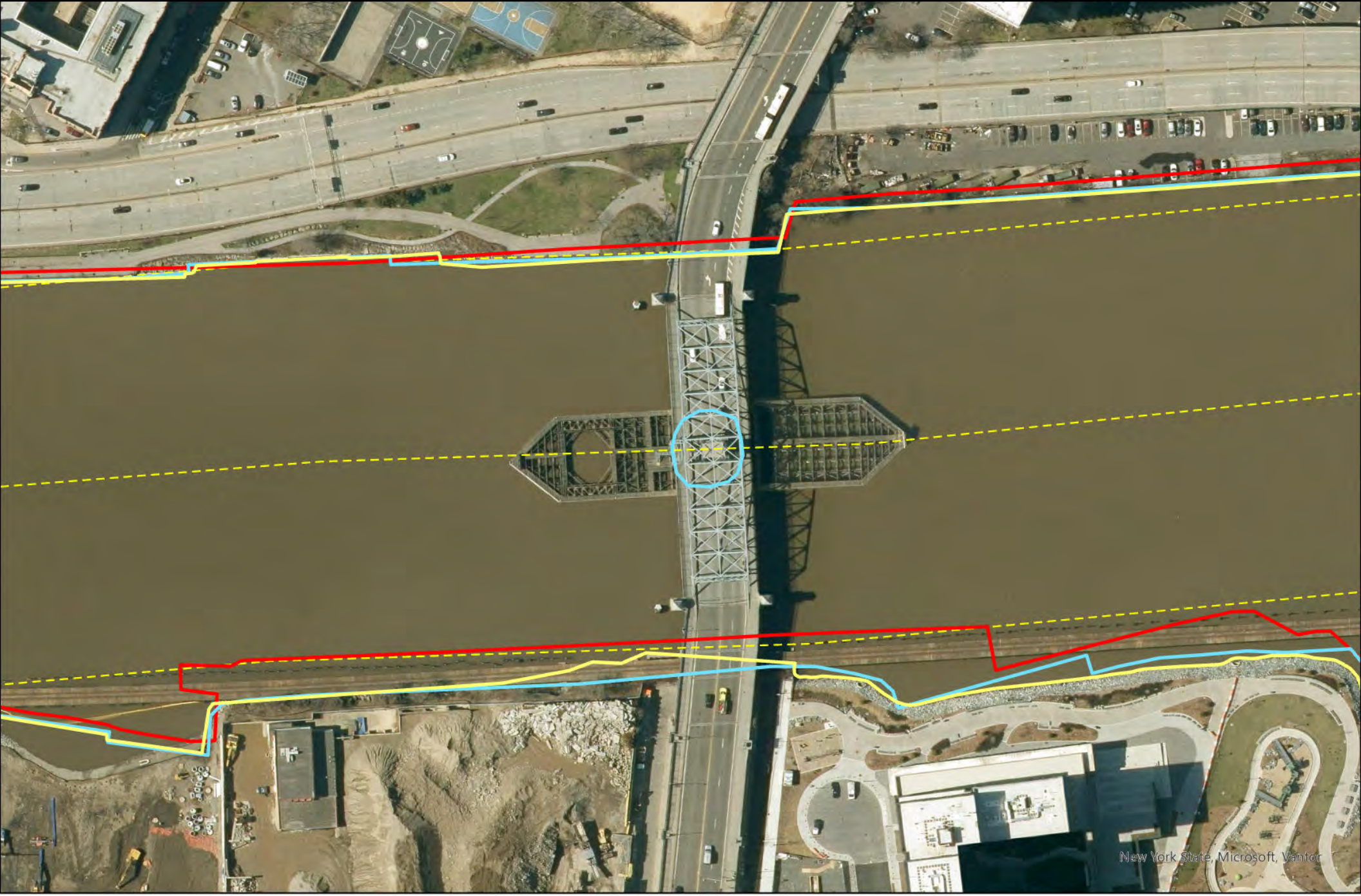

Map Number 2 - Comparison of authoritative shorelines

NYC Shoreline 2022
NOAA CUSP Shoreline 03NOV2025
NOAA Composite Shoreline
USACE Channel Line

Scale: 1:1,500
PCS: NAD 1983 StatePlane New York Long Island FIPS 3104 Feet
Projection: Lambert Conformal Conic
Map Units: Foot US
Authority: EPSG
WKID: 2263

N

Feet 0 40 80 120 160 200
Meters 0 10 20 30 40 50 60

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Map Number 3 - Comparison of authoritative shorelines

NYC Shoreline 2022
NOAA CUSP Shoreline 03NOV2025
NOAA Composite Shoreline
USACE Channel Line

Scale: 1:1,500
PCS: NAD 1983 StatePlane New York Long Island FIPS 3104 Feet
Projection: Lambert Conformal Conic
Map Units: Foot US
Authority: EPSG
WKID: 2263

N

Feet 0 40 80 120 160 200
Meters 0 10 20 30 40 50 60

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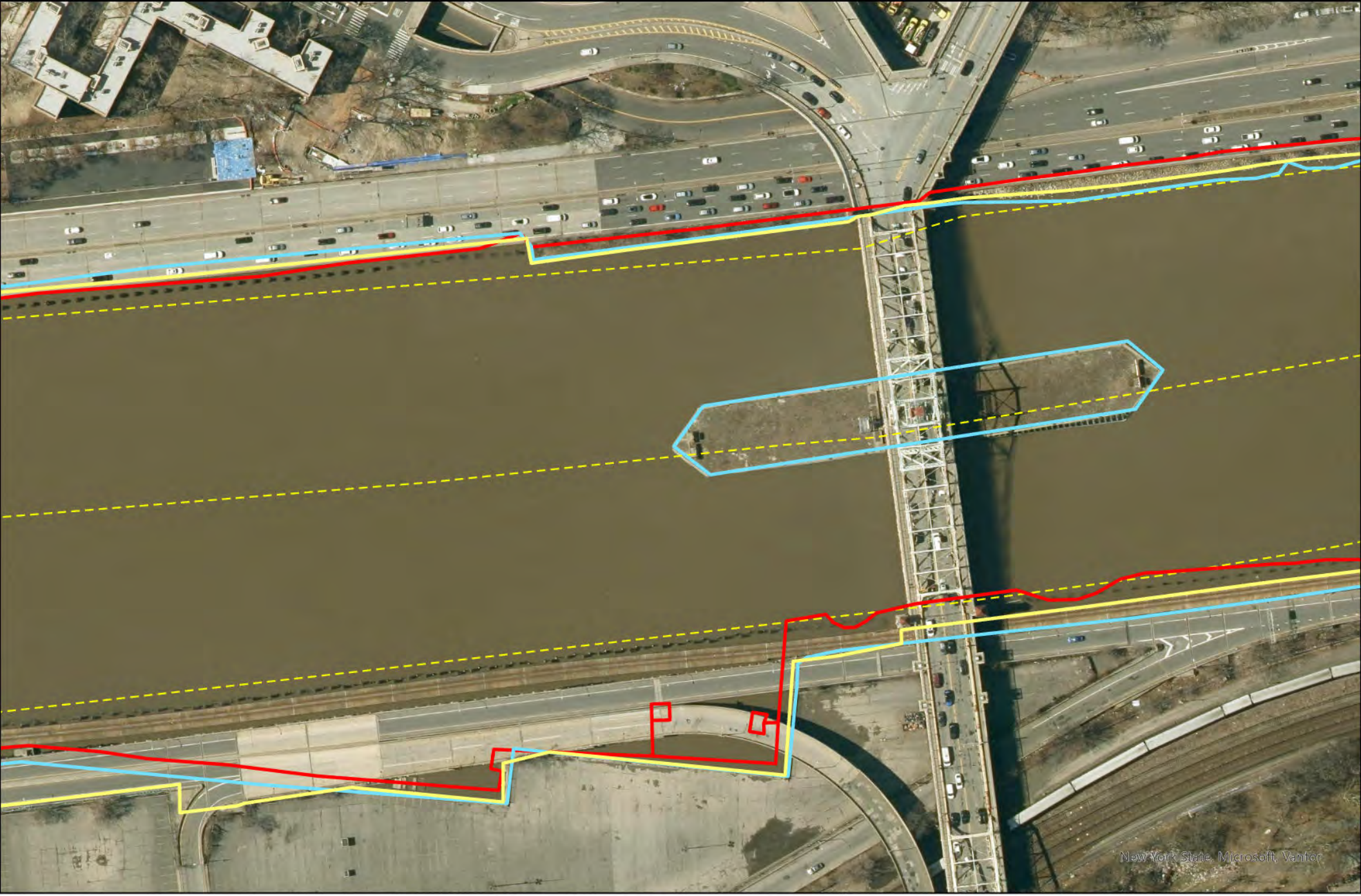

Map Number 4 - Comparison of authoritative shorelines

NYC Shoreline 2022
NOAA CUSP Shoreline 03NOV2025
NOAA Composite Shoreline
USACE Channel Line

Scale: 1:1,500
PCS: NAD 1983 StatePlane New York Long Island FIPS 3104 Feet
Projection: Lambert Conformal Conic
Map Units: Foot US
Authority: EPSG
WKID: 2263

N

Feet 0 40 80 120 160 200
Meters 0 10 20 30 40 50 60

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Map Number 5 - Comparison of authoritative shorelines

NYC Shoreline 2022
NOAA CUSP Shoreline 03NOV2025
NOAA Composite Shoreline
USACE Channel Line

Scale: 1:1,500
PCS: NAD 1983 StatePlane New York Long Island FIPS 3104 Feet
Projection: Lambert Conformal Conic
Map Units: Foot US
Authority: EPSG
WKID: 2263

N

Feet 0 40 80 120 160 200
Meters 0 10 20 30 40 50 60

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Map Number 6 - Comparison of authoritative shorelines

NYC Shoreline 2022
NOAA CUSP Shoreline 03NOV2025
NOAA Composite Shoreline
USACE Channel Line

Scale: 1:1,500
PCS: NAD 1983 StatePlane New York Long Island FIPS 3104 Feet
Projection: Lambert Conformal Conic
Map Units: Foot US
Authority: EPSG
WKID: 2263

N

Feet 0 40 80 120 160 200
Meters 0 10 20 30 40 50 60

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Appendix B

Simplified Proposed Deauthorization Boundary

- Simplified Deauthorization Boundary
- Shoreline - Blended Hybrid
- USACE Channel Lines
- 80-foot Buffer from Baseline
- Deauthorization Line Points

W S N E

0 150300 Feet

0 50 100 Meters

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Map Number 5 - Comparison of authoritative shorelines

- Deauthorization Line Points
- Simplified Deauthorization Boundary
- Shoreline - Blended Hybrid
- USACE Channel Lines
- 80-foot Buffer from Baseline

W S N E

0 150 300 Feet

0 50 100 Meters

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Map Number 4 - Comparison of authoritative shorelines

- Deauthorization Line Points
- Simplified Deauthorization Boundary
- Shoreline - Blended Hybrid
- USACE Channel Lines
- 80-foot Buffer from Baseline

W S N E

0 150 300 Feet

0 50 100 Meters

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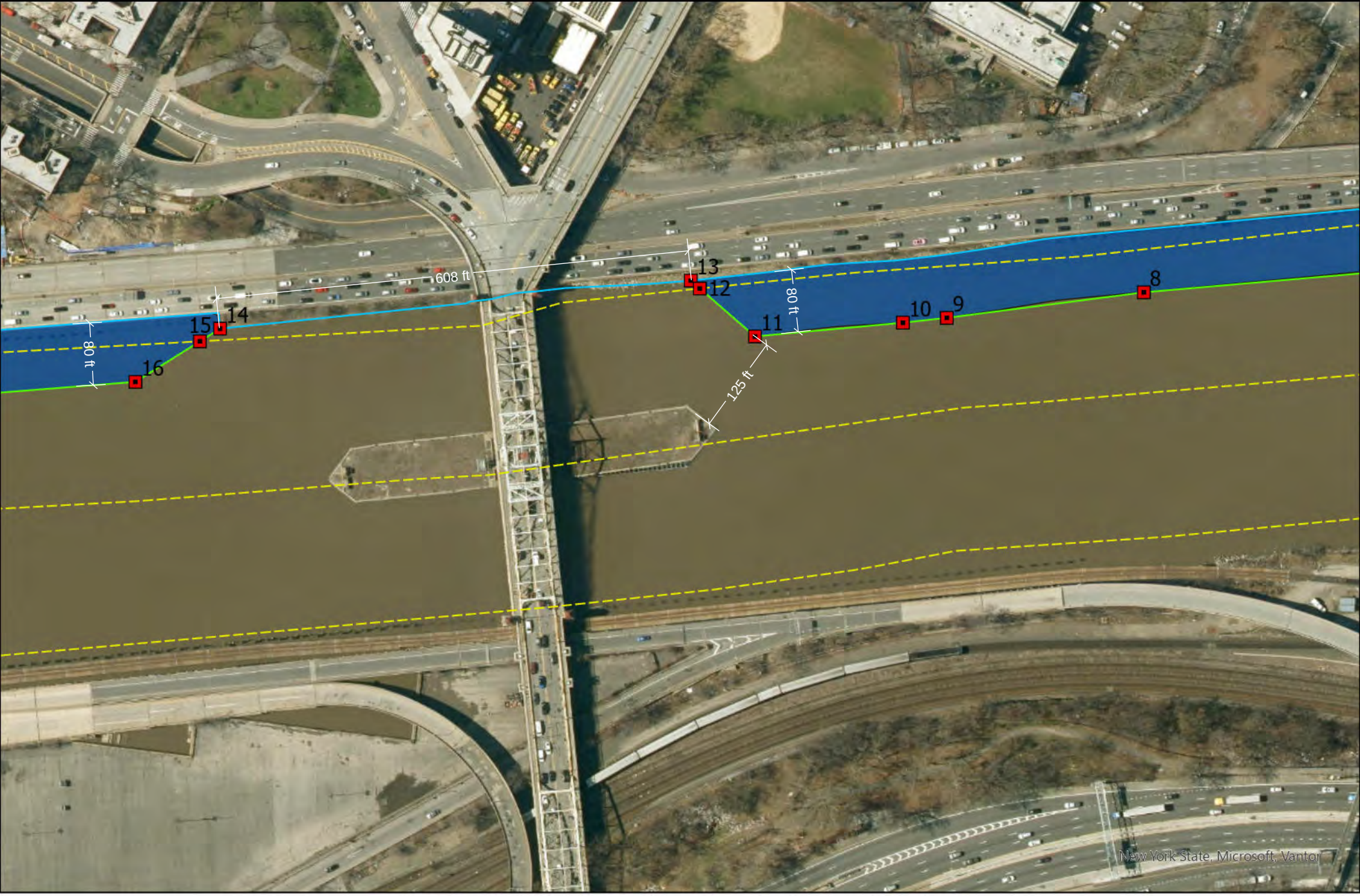

Map Number 3 - Comparison of authoritative shorelines

- Deauthorization Line Points
- Simplified Deauthorization Boundary
- Shoreline - Blended Hybrid
- USACE Channel Lines
- 80-foot Buffer from Baseline

W S N E

0 150 300 Feet

0 50 100 Meters

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Map Number 2 - Comparison of authoritative shorelines

- Deauthorization Line Points
- Simplified Deauthorization Boundary
- Shoreline - Blended Hybrid
- USACE Channel Lines
- 80-foot Buffer from Baseline

W S N E

0 150 300 Feet

0 50 100 Meters

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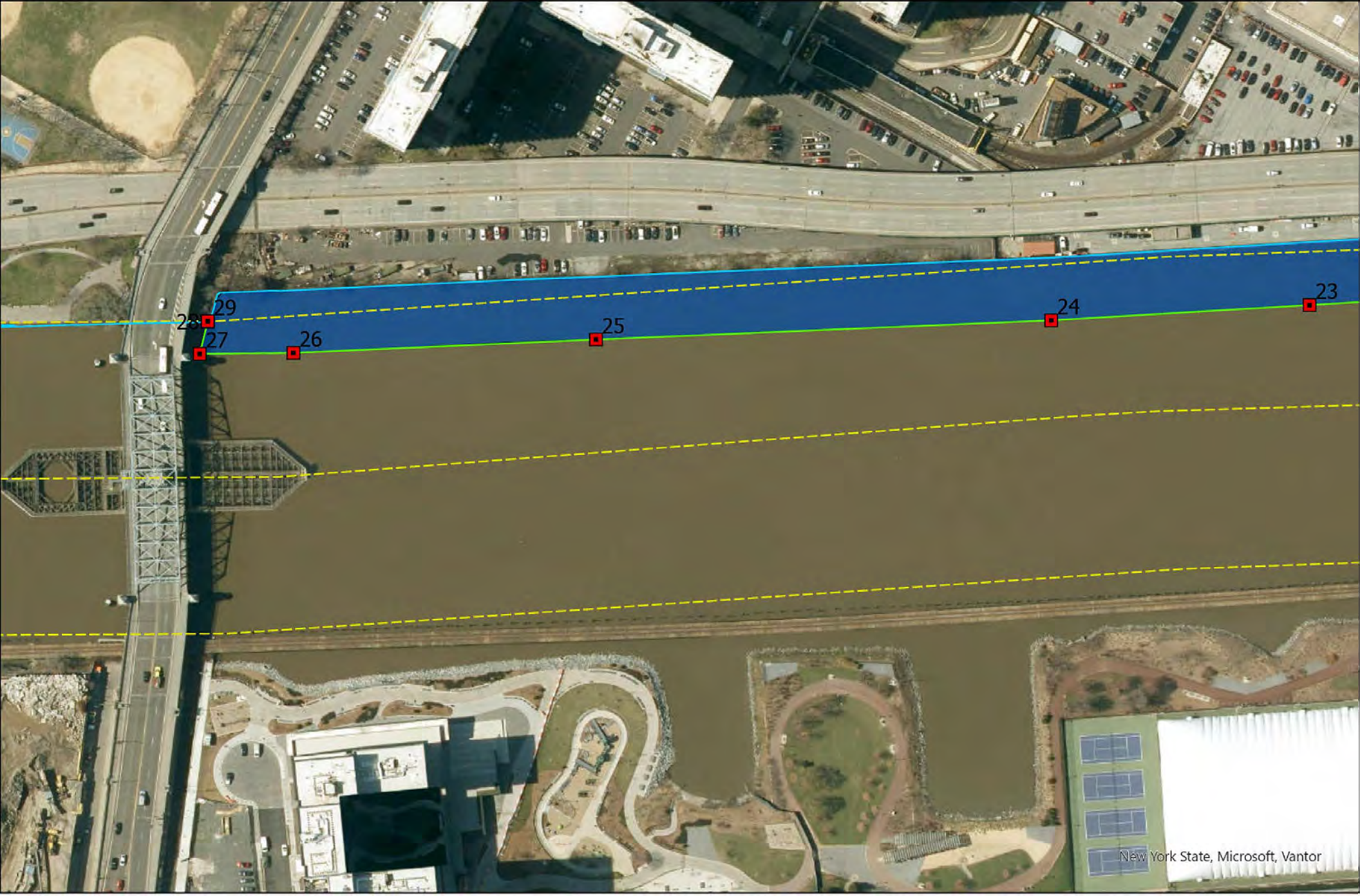

Map Number 1 - Comparison of authoritative shorelines

- Deauthorization Line Points
- Simplified Deauthorization Boundary
- Shoreline - Blended Hybrid
- USACE Channel Lines
- 80-foot Buffer from Baseline

W N S E

0 150 300 Feet

0 50 100 Meters

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Appendix C

Point	Letter	fips_3104_x_ Easting	fips_3104_y_ Northing	To Point	Bearing	Direction	Distance	lat_dd	lon_dd	lat_dms	lon_dms	lat_ddm	lon_ddm	Description
1	A	1002503.69	244191.72	B	194.0°	south-southwesterly	59.5 feet	40.8369064	-73.9340363	40° 50' 12.86" N	073° 56' 2.53" W	40° 50.214' N	073° 56.042' W	Northernmost position, located on shoreline.
2	B	1002489.25	244133.98	C	194.5°	south-southwesterly	579.8 feet	40.8367462	-73.934082	40° 50' 12.29" N	073° 56' 2.71" W	40° 50.205' N	073° 56.045' W	Position located on existing USACE channel line
3	C	1002344.44	243572.61	D	185.9°	southerly	173.9 feet	40.8352089	-73.9346085	40° 50' 6.75" N	073° 56' 4.6" W	40° 50.112' N	073° 56.077' W	Start of full 80' buffer.
4	D	1002326.56	243399.67	E	187.0°	southerly	189.0 feet	40.8347321	-73.9346771	40° 50' 5.04" N	073° 56' 4.83" W	40° 50.084' N	073° 56.081' W	
5	E	1002302.50	243212.20	F	184.1°	southerly	354.4 feet	40.8342171	-73.934761	40° 50' 3.19" N	073° 56' 5.15" W	40° 50.053' N	073° 56.086' W	
6	F	1002277.63	242858.69	G	179.6°	southerly	292.3 feet	40.8332481	-73.9348526	40° 49' 59.69" N	073° 56' 5.47" W	40° 49.995' N	073° 56.091' W	
7	G	1002281.31	242566.45	H	175.0°	southerly	791.2 feet	40.8324471	-73.934845	40° 49' 56.8" N	073° 56' 5.43" W	40° 49.947' N	073° 56.09' W	
8	H	1002350.13	241778.27	I	172.9°	southerly	254.5 feet	40.8302841	-73.9345932	40° 49' 49.02" N	073° 56' 4.54" W	40° 49.817' N	073° 56.076' W	
9	I	1002382.88	241525.84	J	173.7°	southerly	56.6 feet	40.8295898	-73.9344788	40° 49' 46.52" N	073° 56' 4.12" W	40° 49.775' N	073° 56.069' W	
10	J	1002389.06	241469.61	K	174.9°	southerly	190.2 feet	40.8294334	-73.9344559	40° 49' 45.97" N	073° 56' 4.04" W	40° 49.766' N	073° 56.067' W	
11	K	1002406.69	241280.22	L	220.7°	southwesterly	93.6 feet	40.8289146	-73.9343948	40° 49' 44.09" N	073° 56' 3.81" W	40° 49.735' N	073° 56.064' W	Last point in full 80' buffer IVO Macombs Dam Bridge
12	L	1002345.25	241209.59	M	221.0°	southwesterly	15.4 feet	40.8287201	-73.9346161	40° 49' 43.4" N	073° 56' 4.61" W	40° 49.723' N	073° 56.077' W	Intersection with channel line on return to shore
13	M	1002335.13	241197.95	Terminus	-	-	-	40.8286896	-73.9346542	40° 49' 43.28" N	073° 56' 4.76" W	40° 49.721' N	073° 56.079' W	Finish point for northern deauthorization zone
14	N	1002396.69	240595.14	O	147.8°	south-southeasterly	30.5 feet	40.827034	-73.934433	40° 49' 37.32" N	073° 56' 3.96" W	40° 49.622' N	073° 56.07' W	Start of deauthorization line south of Macombs Dam Bridge
15	O	1002412.94	240569.30	P	147.8°	south-southeasterly	97.5 feet	40.8269653	-73.9343719	40° 49' 37.08" N	073° 56' 3.74" W	40° 49.618' N	073° 56.06' W	Intersection with existing USACE Channel Line
16	P	1002464.88	240486.75	Q	175.4°	southerly	477.6 feet	40.8267365	-73.9341812	40° 49' 36.25" N	073° 56' 3.06" W	40° 49.604' N	073° 56.051' W	Start of full 80' buffer.
17	Q	1002502.81	240010.61	R	176.8°	southerly	60.4 feet	40.8254318	-73.9340515	40° 49' 31.55" N	073° 56' 2.57" W	40° 49.526' N	073° 56.043' W	
18	R	1002506.19	239950.33	S	178.8°	southerly	39.5 feet	40.825264	-73.9340363	40° 49' 30.95" N	073° 56' 2.53" W	40° 49.516' N	073° 56.042' W	
19	S	1002506.94	239910.88	T	179.1°	southerly	137.3 feet	40.8251572	-73.9340363	40° 49' 30.56" N	073° 56' 2.52" W	40° 49.509' N	073° 56.042' W	
20	T	1002509.38	239773.63	U	171.9°	southerly	97.9 feet	40.8247795	-73.9340286	40° 49' 29.21" N	073° 56' 2.49" W	40° 49.487' N	073° 56.041' W	
21	U	1002523.13	239676.67	V	178.9°	southerly	58.1 feet	40.8245125	-73.9339752	40° 49' 28.25" N	073° 56' 2.31" W	40° 49.471' N	073° 56.039' W	
22	V	1002524.19	239618.58	W	176.7°	southerly	289.1 feet	40.8243561	-73.9339752	40° 49' 27.68" N	073° 56' 2.3" W	40° 49.461' N	073° 56.038' W	
23	W	1002541.31	239330.02	X	176.4°	southerly	331.3 feet	40.8235626	-73.9339142	40° 49' 24.82" N	073° 56' 2.08" W	40° 49.414' N	073° 56.035' W	
24	X	1002560.94	238999.31	Y	177.7°	southerly	583.2 feet	40.8226547	-73.9338379	40° 49' 21.56" N	073° 56' 1.83" W	40° 49.359' N	073° 56.03' W	
25	Y	1002585.50	238416.61	Z	177.5°	southerly	387.8 feet	40.8210564	-73.933754	40° 49' 15.8" N	073° 56' 1.51" W	40° 49.263' N	073° 56.025' W	
26	Z	1002602.56	238029.20	AA	179.0°	southerly	120.0 feet	40.8199921	-73.9336929	40° 49' 11.97" N	073° 56' 1.29" W	40° 49.199' N	073° 56.022' W	
27	AA	1002603.81	237909.23	BB	284.0°	west-northwesterly	42 feet	40.819664	-73.9336853	40° 49' 10.78" N	073° 56' 1.28" W	40° 49.18' N	073° 56.021' W	End of 80' buffer IVO W 145th Street Bridge
28	BB	1002563.06	237919.38	CC	284.0°	west-northwesterly	1 foot	40.81969035	-73.93383602	40° 49' 10.89" N	073° 56' 1.81" W	40° 49.181' N	073° 56.03' W	Intersection with shoreline
29	CC	1002562.06	237919.63	Terminus	-	-	-	40.81969104	-73.93383964	40° 49' 10.89" N	073° 56' 1.82" W	40° 49.181' N	073° 56.03' W	Intersection with channel line, which is shoreward

*****The following coordinates are expressed in NAD 1983, State Plane New York Long Island FIPS 3104, U.S. Feet, using (Y, X) to indicate Northing first, then Easting.*****

(a) HARLEM RIVER, NEW YORK.—

(1) IN GENERAL.—Beginning on the date of the enactment of this Act, [...] consisting of the area described in paragraph (2), is no longer authorized.

(2) AREA DESCRIBED.—The boundary of the area deauthorized under this subsection consists of two separate areas that are closed polygons formed by straight lines connecting, in the order listed, the following points, and thence extending landward to the existing physical shoreline—

(A) the first area begins at a point on the shoreline north of the Macombs Dam Bridge at N244191.72, E1002503.69;
(B) running south-southwesterly approximately 59.5 feet to a point at N244133.98, E1002489.25;
(C) running south-southwesterly approximately 579.8 feet to a point at N243572.61, E1002344.44;
(D) running southerly approximately 173.9 feet to a point at N243399.67, E1002326.56;
(E) running southerly approximately 189.0 feet to a point at N243212.20, E1002302.50;
(F) running southerly approximately 354.4 feet to a point at N242858.69, E1002277.63;
(G) running southerly approximately 292.3 feet to a point at N242566.45, E1002281.31;
(H) running southerly approximately 791.2 feet to a point at N241778.27, E1002350.13;
(I) running southerly approximately 254.5 feet to a point at N241525.84, E1002382.88;
(J) running southerly approximately 56.6 feet to a point at N241469.61, E1002389.06;
(K) running southerly approximately 190.2 feet to a point at N241280.22, E1002406.69;
(L) running southwesterly approximately 93.6 feet to a point at N241209.59, E1002345.25; and
(M) running southwesterly approximately 15.4 feet terminating at a point on the shoreline at N241197.95, E1002335.13;

(N) the second area begins at a point on the shoreline south of the Macombs Dam Bridge at N240595.14, E1002396.69;
(O) running south-southeasterly approximately 30.5 feet to a point at N240569.30, E1002412.94;
(P) running south-southeasterly approximately 97.5 feet to a point at N240486.75, E1002464.88;
(Q) running southerly approximately 477.6 feet to a point at N240010.61, E1002502.81;
(R) running southerly approximately 60.4 feet to a point at N239950.33, E1002506.19;
(S) running southerly approximately 39.5 feet to a point at N239910.88, E1002506.94;
(T) running southerly approximately 137.3 feet to a point at N239773.63, E1002509.38;
(U) running southerly approximately 97.9 feet to a point at N239676.67, E1002523.13;
(V) running southerly approximately 58.1 feet to a point at N239618.58, E1002524.19;
(W) running southerly approximately 289.1 feet to a point at N239330.02, E1002541.31;
(X) running southerly approximately 331.3 feet to a point at N238999.31, E1002560.94;
(Y) running southerly approximately 583.2 feet to a point at N238416.61, E1002585.50;
(Z) running southerly approximately 387.8 feet to a point at N238029.20, E1002602.56;
(AA) running southerly approximately 120.0 feet to a point at N237909.23, E1002603.81;
(BB) running west-northwesterly approximately 42 feet to a point at N237919.38, E1002563.06; and
(CC) running west-northwesterly approximately 1 foot to a point on the shoreline at N237919.63, E1002562.06.

(3) Shoreline Reference.—For purposes of this section, the term “physical shoreline” means the land–water interface delineated by the most current shoreline datasets used by the U.S. Army Corps of Engineers, including NOAA’s Continually Updated Shoreline Product and applicable state and local planimetric shoreline

datasets. All waters, submerged lands, and tidally influenced areas lying between this boundary and the physical shoreline are included in the deauthorized area.