RESOLVED by the Board of Directors of the Roosevelt Island Operating Corporation of the State of New York (“RIOC”), as follows:

Section 1. that RIOC is hereby authorized to place the Bike Ramp within the Helix ramp, substantially as set forth in the Memorandum from Prince R. Shah to RIOC Board of Directors / Shelton J. Haynes, dated December 9, 2020, attached hereto;

Section 2. that the Acting President/Chief Executive Officer or his designee shall take such actions and/or execute such instruments as necessary to effectuate the foregoing;

Section 3. that this resolution shall take effect immediately.
MEMO

TO: RIOC Board of Directors / Shelton J. Haynes
FROM: Prince R. Shah, Senior Project Manager, CPP
DATE: December 9, 2020
RE: Request for approval of the bike ramp layout within the Helix

Background:

The increasing popularity of the Roosevelt Island outdoor spaces, including Four Freedoms Park and awareness of sustainable transportation methods, virtually guarantees an increasing presence of bicycles on the Island. Currently, there are separated bike paths across the Roosevelt Island Bridge (city-owned) that connect to a two-way separated bike lane on Vernon Boulevard in Queens. However, the vehicular helix ramp (RIOC owned) connecting the Roosevelt Island Bridge to Main Street does not have any bicycle infrastructure and cyclists must share the road, which presents a safety hazard for bikers and motorists.

To that end, RIOC procured Dewberry Engineers in 2018 to provide services for the design of a new elevated concrete Bike Ramp; and a two-way bicycle lane for Roosevelt Island, designed to the prevailing local and national transportation standards.

RIOC is requesting that the Board of Directors approve and authorize the Corporation to place the bike ramp within the central void at the Helix.
Feasibility & Geometric studies:

Intending to design a safe bike ramp that meets AASHTO and SDOT guidelines, Dewberry performed numerous geometric studies. The following is a summary of the studies that met the TAP grant criteria and project goal:

1. 2015 Cornell Tech study: Dewberry reviewed the 2014 Queens transportation study conducted by the NYC Department of City Planning and a bike ramp feasibility study created in 2015 by Cornell Tech’s engineering firm. The 2015 study was based on preliminary site surveys and limited existing drawings. This study proposed a bike ramp with a waterside connection which was 560 feet long after the first ramp turn.

2. East Waterfront Layout#1: Dewberry conducted in-depth site surveys and with the help of RIOC, received and reviewed the full set of existing Helix drawings. Dewberry then laid out a ramp configuration on the waterside based on the AASHTO and SDOT requirements. To meet SDOT and AASHTO requirements the ramp would: extend 600 linear feet and travel past the Capobianco Field, require pier supports throughout the Motorgate Plaza area, and restrict emergency vehicle access along East Promenade. Maintaining emergency access is a requirement per the General Development Plan. Due to these requirements, east waterfront layout#1 based on the existing 2015 study is not feasible.

3. East Waterfront Layout #2: Another layout study placed the bike ramp on the waterside above the Motorgate Plaza. This geometric layout requires multiple code variances from SDOT and AASHTO. It would require a low design speed. Low design speed limit/warning signs will need to be posted because of steeper grades and turning radii. Low speed is hard to maintain for bicyclists going down the ramp. The ramp layout will also highly impact pedestrian experience at Motorgate Plaza and impact all eastern entrances at the Motorgate Atrium. Due to these challenges, east waterfront layout#2 is not feasible.

Preferred layout:

Bike ramp within the Helix (Preferred layout): A bike ramp within the existing Helix void meets SDOT and AASHTO standards on radii and slope requirements. The proposed geometric layout will provide a safer and pleasant biking experience up and down the ramp. Part of the structure will be covered by the existing Helix Ramp, prolonging the life of the structure. The structure will have a low impact on the surrounding areas, and it will utilize a space currently not used.

The existing retaining wall at the light pole base will need to be demolished to accommodate the columns of the new bike ramp. This demolition will lead to a usable area within the void that will be further planted. There is a net gain of a usable area with this layout. Existing crab apple trees within the void will be lost. An arborist study was conducted to determine the health of these trees. All six trees suffer from exposed roots and various levels of trunk and tree rot. Due to their age, transplanting of these trees is not recommended as their survival is not guaranteed. New trees and shrubbery will be planted within the area that can grow under shaded conditions.
This preferred layout also provides an opportunity to improve the top of the Helix deck creating an inviting introduction to the island. Planters can be installed at the top of the helix to soften the concrete-only structure. These planters can potentially have trees that are pink flowering in the Spring which will introduce bikers to the pink flowering trees of the island. This layout has no impact on existing emergency access and service roads on the East promenade. Furthermore, traffic studies performed on the ramp level support a clear traffic pattern that protects bicyclists and clarifies vehicular ramp access.

As bikers approach Roosevelt Island from the Roosevelt Island bridge, they will be able to make a left towards the bike ramp. This path will be clearly marked with special paint and wayfinding signs to guide bikers towards the entrance. As bikers descend the ramp, they will experience the landscape within the void and get glimpses of Main Street as well as the proposed East promenade bike lane. After descending two loops, the proposed bike ramp will have a subtle grade through the existing helix column allowing bikers to exit on to the proposed East promenade bike lane. RIOC and Dewberry are further exploring placemaking ideas to create a grand sense of arrival where the ramp will meet the proposed bike lane.

**Recommendation:**

Based on the above, I recommend, that the Board of Directors authorize and approve placing the Roosevelt Island bike ramp within the existing helix void and proceed with the project design and SDOT submissions.
Bike Ramp Project - Background

- **2014**: NYC DCP’s Queens transportation study proposed a dedicated bike ramp to the Roosevelt Island.
- **2015**: Cornell Tech hired AKRF Inc. to conduct a feasibility study for a bike ramp on the island.
- Study concluded that a bike ramp is feasible, and it showed a conceptual ramp layout on the East waterfront side of the Motorgate Garage.
- **2017**: RIOC applied for and received State DOT’s transportation Alternatives Program (TAP) grant of $2.96M in 2016 to construct a Bike Ramp on Roosevelt Island.
- **2018**: RIOC procured Dewberry Engineers to design a Bike Ramp and a Bike Lane.
Bike Ramp Project Budget & Goals

• Project Budget: $4M
  TAP Grant Funds: $2.96M
  RIOC funds: $1.04M

• Goals:
  • Meet State Department of Transportation (SDOT) requirements and American Association of State Highway and Transportation (AASHTO) standards.
  • Create a safe connection across the Roosevelt Island bridge that eliminates the vehicular/bike conflicts on the Helix ramp.
  • Provide a solution that enhances pedestrian and bicyclist experience.
Ramp Configuration Study – East Waterfront Layout 1

- AKRF’s feasibility study proposed a water side connection which was 560’ long after the first turn.
- Upon in-depth site survey and review of existing conditions Dewberry laid out a ramp configuration on the water side.
- To meet SDOT and AASHTO requirements the ramp would:
  - Extend 600 linear feet and travel past the Capobianco Field
  - Pier supports will need to be installed throughout the Motorgate Plaza area and east road.
  - Restrict Emergency vehicle access along East Promenade (access required per the General Development Plan)
Ramp Configuration Study – other layouts

- Does not meet project or grant goals due to stairs
- Does not meet AASHTO slope guidelines for Bike Ramp
- Does not meet project or grant goals due to stairs
- Does not meet project budget, requires cantilever above water & foundations on steam tunnel
- Does not meet AASHTO slope guidelines for Bike Ramp
- Does not meet project goals, loss of open space
Ramp Configuration Study – East Waterfront Layout 2

- Requires multiple code variances from SDOT and AASHTO.
- Low design speed: speed limit/ warning signs need to be posted as a result of steeper grade and turning radii.
- Low speed is hard to maintain for bicyclist going down the ramp.
- Ramp layout will impact pedestrian experience at Motorgate Plaza
- Ramp layout will impact eastern entrance at the Motorgate Atrium.

Layout showing portion of bike ramp in between Helix ramp columns
Ramp Configuration Study – Ramp Within The Helix Layout

- Meets SDOT and AASHTO standards on radii and slope requirements.
- Part of the structure will be covered by the existing helix ramp, prolonging the life of the structure.
- The structure has a low impact on the surround areas and utilizing space not currently used.
- Provides an opportunity to improve the top of helix deck.
- Has no impacts on existing emergency access and service roads on the East promenade.
- Requires relocation of existing Crabapple trees in the center of the Helix.

Layout showing bike ramp within unused space at the center of the Helix ramp.
Ramp Within The Helix Layout – Traffic Study

- Proposed Bike Ramp Sign and Marking Schematic based on Traffic data collected in April 2019.
Ramp Within The Helix Layout – Existing Conditions
BIKE RAMP AT GRADE
WITHIN THE NESTED HELIX
PROPOSED PLAN VIEW

- GRADE SUPPORTED BY RIP RAP EDGE
- REMOVE 6 EXISTING TREES
- INTERNAL HELIX FITS 5 NEW TREES, ADDITIONAL TREE PLANTED OUTSIDE OF HELIX
- SHADE TOLERANT UNDERSTORY PLANTING
- PLANTS SELECTED FOR SEASONAL CHARACTER

Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
BIKE RAMP AT GRADE
WITHIN THE NESTED HELIX
PROPOSED SECTION

ATRIUM-LIKE LANDSCAPE: FOR VIEWING IN
- GRADE SUPPORTED BY RIP RAP EDGE
- SHADE TOLERANT PLANTING
- PLANTS SELECTED FOR SEASONAL CHARACTER

SAMPLE SCHEMATIC PLANT PALETTE
PRUNUS SPP.
CLETHRA ALNIFOLIA
"RUBY SPICE"
SCILLA CAMPANULATA
CAREX PENSVLANICA

Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
BIRDS EYE VIEW

BRIDGE CONNECTION
OPEN CANOPY
COVERED CANOPY
WATERFRONT CONNECTION
ISLAND CONNECTION

Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
JOURNEY VIEW: BRIDGE CONNECTION

Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
JOURNEY VIEW: OPEN CANOPY LEVEL

Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
JOURNEY VIEW: COVERED CANOPY LEVEL

Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
JOURNEY VIEW: ISLAND CONNECTION

Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
MAIN STREET: LOOKING NORTHEAST

Landscape & Waterfront connection TBD - shown for conceptual rendering only

Bike Ramp - Board Presentation
MAIN STREET: LOOKING SOUTHEAST
Current Status & Next Steps

There are four submission requirements per the SDOT specifications:

1. Section 106 Analysis (National Historic Preservation Act) - under review by SDOT
2. Draft Design Report – Approval of layout needed for this submission
3. Advance Detail Plans
4. Final Design