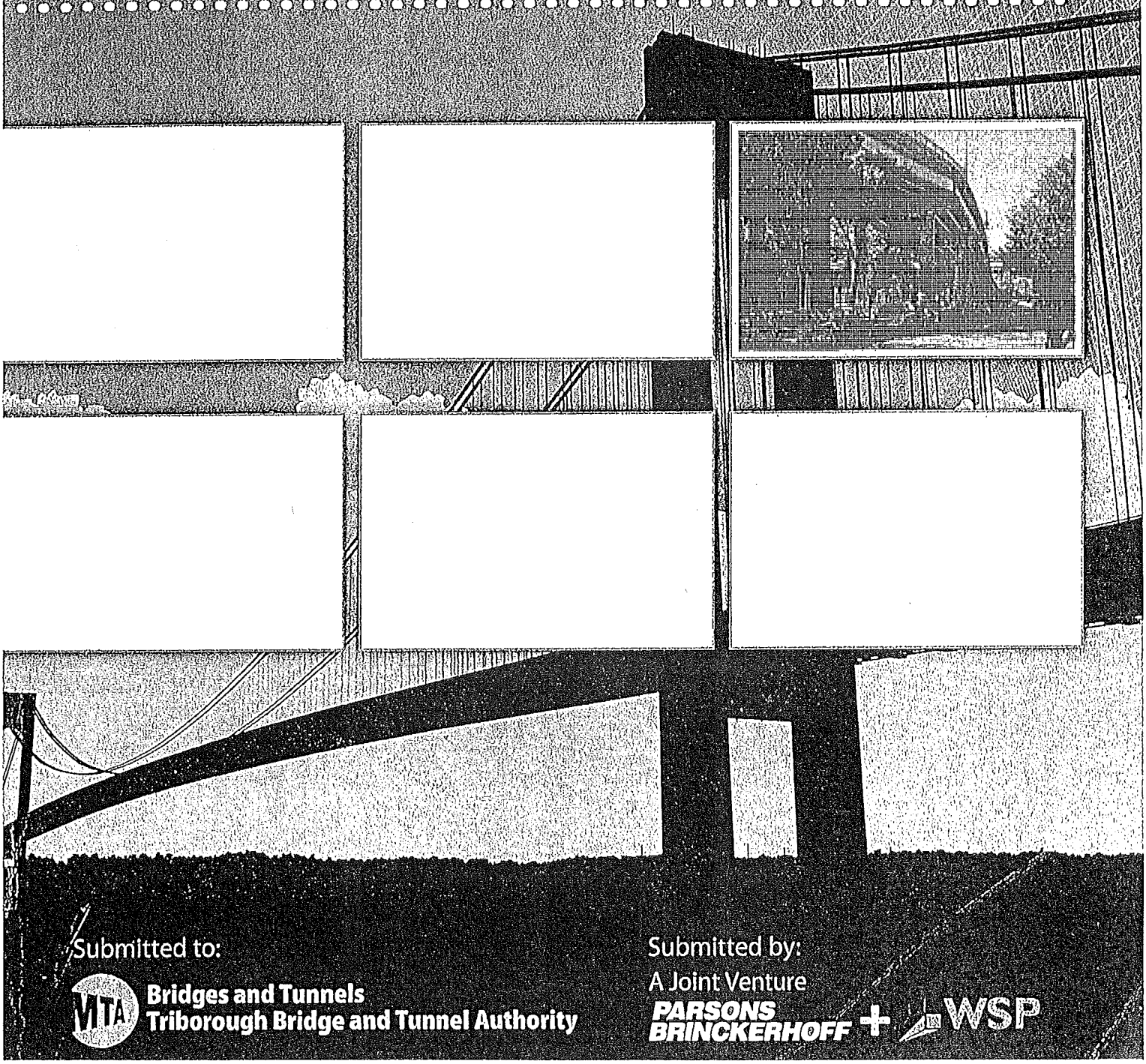
Technical Proposal | RFP No.: PSC-13-2935 | October 2013

Development of Master Plan and Conceptual Design of Upper Level Approaches and Belt Parkway Connector Ramps at Verrazano-Narrows Bridge



Submitted to:

MTA Bridges and Tunnels
Triborough Bridge and Tunnel Authority

Submitted by:

A Joint Venture

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The TBTA has identified new potential construction and rehabilitation projects that need to be evaluated to determine individual and collective feasibility as well as the setting of priorities for each project going forward. The Belt Parkway Ramps Project is the most essential of the seven potential construction projects identified. As an illustration of the issues present on the Brooklyn side, these ramps have narrow to no shoulders on each side, which presents operational difficulties since disabled vehicles cannot pull over and sight distance is restricted around the curves on the ramps. Routine inspection and maintenance often requires that at least one lane be closed. Several of the projects fall outside the TBTA jurisdictional boundaries but will impact future Verrazano Bridge operations if there are constructed.

The end result of this undertaking is a well reasoned Master Plan that, at a minimum, improves the upper level approaches, Belt Parkway ramps and potentially several other reconstruction and/or rehabilitation projects; will be an evolving, living, comprehensive, long-term planning document; and establishes the fundamental framework and key elements of an implementation program for TBTA.

Each of the proposed projects that are to be evaluated and potentially incorporated in the Master Plan is described individually in the sections that follow:

Project 1 – Bike Lane

A bike lane study was performed by the New York City Department of City Planning (NYCDCP) in the mid 1990s to assess the feasibility of a bikeway/walkway linking Brooklyn and Staten Island. The preferred alternative selected was to provide two separate facilities, a bikeway on the south side of the bridge and a walkway on the north side. The proposed bikeway and walkway would be located on the top chord of the stiffening trusses on the Suspended Spans, located between the suspenders, on the 7 foot wide safety walks on the Brooklyn Approach; and on the Staten Island Approach the 2'-6" safety walks would be widened.

Alternatives considered in the study include:

- Construct a new bikeway/walkway on the outside of the Suspended Spans stiffening truss adjacent to the Upper Level;
- Construct a new bikeway/walkway on the outside of the Suspended Spans stiffening truss adjacent to the Lower Level;
- Convert a Lower Level roadway traffic lane to a bikeway/walkway.

Other possibilities include a bikeway/walkway below the Lower Level or above the Upper Level. While these possibilities have significant disadvantages, construction below the Lower Level is likely fatally flawed in that it would reduce the vertical clearance in the navigable channel. Similarly to what was recently done on the Bayonne and the Kosciuszko Bridges, this effort will need to make the study comprehensive by considering all possibilities in this study and systematically eliminate the least favorable, especially in light of the recent push to create a 50 mile bicycle/pedestrian ring around the Metropolitan area. Bikeway/Walkway alternatives will be evaluated for AASHTO geometric conformance, structural impacts, visual impacts, navigational clearance and safety/emergency access/egress.

Task 2: Review Investigations & Design Brief

2.1 – Investigations

1A. Review all available Studies and Reports

Many of the potential projects result from previous studies. The reports produced for these studies will either be the starting point for future investigations or be directly incorporated into the Master Plan itself. Included among the available reports are:

- VN-84 Feasibility Study 2002
- VN-80B Upper Level Deck replacement
- VN-80C New HOV Ramp
- 2012 Biennial Inspection
- VN-17A Lower Level Approaches Design – seismic
- GFM-419A Scoping Study for Upper Level Approaches 2007
- VN-36 Seismic Study
- VN-86 Widen EB Gowanus 2013
- GES-191 Belt Parkway Fourth Lane Study 2012
- NB-12 Brooklyn Approaches Plans 1961
- NB-201 Brooklyn Approach Steel Work 1968
- NB-202 Main Span and Brooklyn Approaches Stage 2 1968
- Various Traffic Counts from TBTA and NYSDOT
- Verrazano Bridge Pedestrian and Bike Path 1997
- Department of Education Report on Denyse Wharf

1B. Development of Projects Not Included in the Investigations Tasks

While not specifically outlined in the investigations section to the RFP several of the potential projects will need to be evaluated based on the information contained in the reports listed above. In some cases additional concepts may need to be developed based on the information gathered as part of the investigations. These studies are outlined in the following sections.

Project 1 Bike Lane

There are a number of significant concerns that need to be addressed regarding locating a new bikeway/walkway, including:

- An Upper Level facility may present security issues for the Suspended Spans;
- Fences and railings may inhibit inspection and maintenance access;
- A new facility may adversely affect the Suspended Spans wind performance;
- A new facility that is not visible from the roadways may present security issues for the bridge and bikeway/walkway users;
- Reduction in vehicular traffic lanes may adversely affect traffic and maintenance operations;
- A new bikeway/walkway may attract persons considering suicide.

A very significant issue is construction and long term maintenance costs. The demand for a bikeway/walkway may be low, determining a reliable estimate of the demand may be difficult. The potential users would include:

- Daily commuters traveling between Brooklyn and Staten Island;
- Recreational users, primarily bicyclists on long distance rides;
- Sightseers and tourists;
- People wishing to view special events such as fireworks, Fleet Week vessels, the Queen Mary II, etc.

One way of approaching an estimate of potential demand would be looking at bikeway/walkways on other major crossing.

Crossing	Approximate Bikeway/Walkway Length
Verrazano-Narrows Bridge	2.2 miles
Brooklyn Bridge	0.9 miles
Manhattan Bridge	1.1 miles
Williamsburg Bridge	1.3 miles
Queensboro Bridge	1.3 miles
RFK Bridge – Queens to Randall's Island	1.8 miles
RFK Bridge – Manhattan to Randall's Island	0.5 miles
RFK Bridge – the Bronx to Randall's Island	0.5 miles
RFK Bridge – Queens to the Bronx	2.6 miles
RFK Bridge – Queens to Manhattan	2.6 miles
RFK Bridge – Manhattan to the Bronx	1.2 miles
George Washington Bridge	1.4 miles

The nature of access, surrounding population, facilities, land use, and connections to the NYC bikeway network varies greatly, but the demand at a number of these crossings can be used, with careful consideration and interpretation for estimating potential demand at the VNB. Commuter demand at the Manhattan Bridge and George Washington, Bridge among other crossings, may be useful, and demand for special event viewing at a number of crossings may provide useful data depending on the type of special events.

There is a reasonable chance that the projected demand will be relatively low, and it is possible that advocacy groups that are pushing for the bikeway/walkway to be built will challenge the projected demand as being low. One possible way to counter this possibility is to engage the groups and see if they have other suggestions for assessing demand, such as surveying their members or other means.

Project 2 Denyse Wharf Access

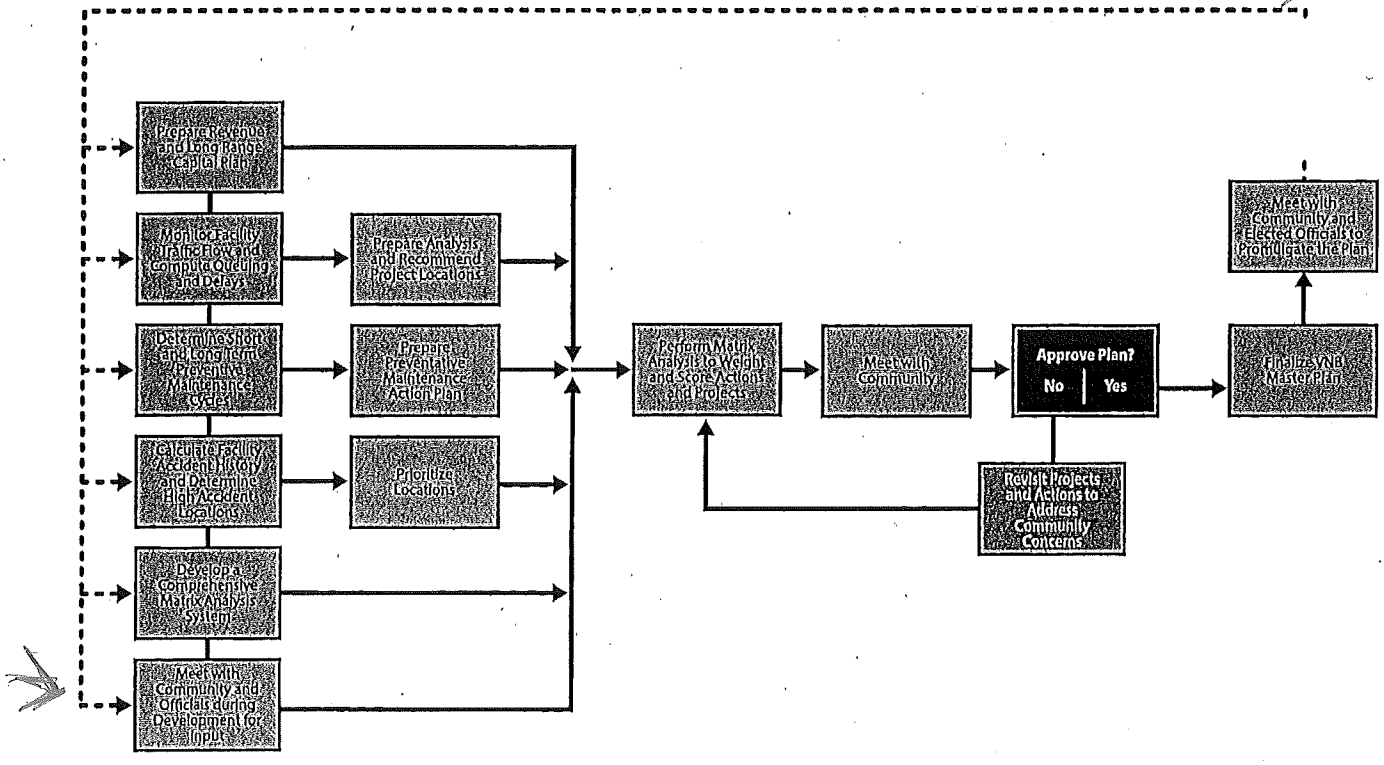
Studies of potential improvements have been developed in a Department of Education Report. Based on the existing proposal, an access scheme involving a ramp connection from the Belt Parkway Ramps will need to be evaluated for its geometric, safety, operational and traffic feasibility as well as from the perspective of impact to an historic site.

2.2 – Master Plan

In its simplest form, a Master Plan uses a "cost-to-benefit" analysis to prepare a capital and maintenance program for future improvements to infrastructure. However a Master Plan should not be just a list of projects, but rather a comprehensive attempt to prioritize capital improvements and maintenance actions while considering many issues specific to a facility. These specifics include:

- project costs & available funding,
- safety deficiencies and accident rates,
- potential risks and liabilities,
- expected project benefits,
- routine maintenance,
- community impacts & political sensitivity, and
- other unnamed components that can influence advancing an individual project or action within the entire program.

For a Master Plan to have credibility, it must at some point involve the users, stakeholders and local communities in its formulation. It must also follow a process that is transparent, inclusive, flexible and updated on a regular basis. The flow chart below shows a sample process that can lead to the development of a master plan. This flow chart can be revisited in the future to revise and update the Master Plan.



Verrazano-Narrows Bridge Facility Master Plan Development and Update Process

In addition to following a repeatable process, a defendable "matrix analysis" model should be developed to score and rank projects and actions that are identified as necessary to a functioning facility. Establishing a scoring and ranking system that has input and acceptance gives a degree of credibility to the process that could not be achieved otherwise. A scoring and ranking system that has some level of community input and a technical basis can help minimize the emotional component of selecting and prioritizing future projects and actions for the facility.

To ensure a consistent approach to the development of future additions to the Master Plan, consistency in establishing and assigning the weighted factors is crucial. Without a consistent and transparent process, trust cannot be established with the facility's customers, the affected communities and elected and local officials.

Another element is a plan that shows the proposed projects and actions over the time frame of the Master Plan. This helps establish a clear path that is easy to follow and helps set the expectations on the timing and cost of implementing the plan. A sample of this is shown in the Figures on the following pages.

The Parsons Brinckerhoff/WSP Team will determine the permits required and evaluate environmental issues associated with each alternative for the Belt Parkway Ramps and Upper Level Approaches to be included in the Master Plan. The discussion will include agency coordination needed to obtain permits and costs associated with needed field surveys, preparation of permit applications, potential mitigation, and agency coordination. All of these factors should become part of the matrix evaluation process.

In summary, developing a Master Plan should eventually become a process that includes all the involved parties, has sufficient data and results that provides clear distinctions between options, and a transparent and repeatable process that can be modified and revised for future updates.