Question 188 (Revised Response to Draft RFP Question 54).

Seismic Design Criteria - Part 3, Article 11.3.1.7.C.2: The referenced article stipulates the approach spans outside of 700-ft from the Main Spans may be designed using a multi-modal response spectrum analysis combined with a static inelastic (pushover) analysis. Please provide the response modification factors to be used with the response spectrum analysis for both the 1000-yr and 2500-yr events.

Also, please clarify the limiting criteria for the pushover analysis.

Answer: If used in the design and analysis, Response Modification Factors (R-Factors) shall be per Section 6B.4 – Design and Analysis of the NYSDOT Standard Specifications for Highway Bridges – 2003 Update (Blue Pages). Note that the Kosciuszko Bridge is designated as a Critical Bridge.

Criteria for inelastic static (pushover) analyses shall be per the AASHTO Guide Specifications for LRFD Seismic Bridge Design, 1st Edition with 2010 Interim Revisions and the following:

- Global Displacement Criteria

  The global structure displacement, $\Delta d$, is the total displacement at a particular location within the structure. The global displacement will include components attributed to foundation flexibility (i.e. foundation rotation or translation), flexibility of essentially elastic components such as bent caps, and the flexibility attributed to the elastic response of ductile members. The analytical model for determining the displacement demands shall include as many of the structural characteristics and boundary conditions affecting the structure's global displacements as possible.

  Each bridge unit shall satisfy Equation 1:

  $\Delta d < 0.67 \Delta c \quad \text{(Eq. 1)}$

  where:
  $\Delta d = \text{Displacement demand (in.)}$
  $\Delta c = \text{Displacement capacity (in.)}$

  Displacement demands may be computed from a global multimode response spectrum analysis as described in Section 54.3 – Elastic Dynamic Analysis (EDA) of the AASHTO Guide Specifications for LRFD Seismic Bridge Design. The global analysis shall utilize effective (cracked) section properties, as appropriate, to obtain realistic values for the structure’s period and seismic displacement demands. The effects of foundation stiffness (flexibility) shall also be included if significant.

  When the component model includes degradation of strength with increasing deformation, or when P-Delta effects counteract strain hardening, then the pushover
analysis will show an increasing load with displacement to a maximum load and then the load may decrease with increasing displacement. This behavior can lead to large deformations and concentration of damage in degrading components. The reduction in lateral load may be large before a component reaches its deformation capacity. The maximum displacement shall limited to a point at which 80% of the peak lateral load is reached, and not permit further reduction in lateral load capacity.

- **Substructure Unit Ductility Demand**

Ductility demand is a measure of the imposed plastic deformation on a structure. The ductility demand is a function of the displacement demand and the yield displacement from the pushover analysis. Ductility demand is mathematically defined by Equation 2:

\[
\mu_d = \frac{\Delta d}{\Delta y} \quad \text{(Eq. 2)}
\]

where:

\(\mu_d\) = Ductility demand (dimensionless)
\(\Delta d\) = Displacement demand (in.)
\(\Delta y\) = Yield displacement (in.)

For the purpose of ductility computations, the yield displacement used in Equation 2 shall be the idealized yield displacement. The idealized yield displacement is that displacement which corresponds to the effective or idealized yield moment as obtained from a Moment-Curvature (M-C) analysis of the section.

For conventional ductile design, the ductility shall be limited to the values shown in Table 1, below.

Table 1 – Substructure Unit Quantitative Damage Criteria (Maximum Ductility Demand \(\mu_d\))

<table>
<thead>
<tr>
<th>Bridge System</th>
<th>Design Earthquake</th>
<th>Critical Bridges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superstructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prestressed Concrete Pile</td>
<td>FEE</td>
<td>1.0</td>
</tr>
<tr>
<td>Interior Bents</td>
<td>SEE</td>
<td>1.0</td>
</tr>
<tr>
<td>Prestressed Concrete Pile</td>
<td>FEE</td>
<td>2.0</td>
</tr>
<tr>
<td>End Bents</td>
<td>SEE</td>
<td>4.0</td>
</tr>
<tr>
<td>Single Column Bents</td>
<td>FEE</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>SEE</td>
<td>2.0</td>
</tr>
<tr>
<td>Multi Column Bents</td>
<td>FEE</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>SEE</td>
<td>3.0</td>
</tr>
<tr>
<td>Pier Walls</td>
<td>FEE</td>
<td>2.0</td>
</tr>
<tr>
<td>Weak Axis</td>
<td>SEE</td>
<td>3.0</td>
</tr>
<tr>
<td>Pier Walls</td>
<td>FEE</td>
<td>1.0</td>
</tr>
</tbody>
</table>
• Modeling of material properties, including stress-strain models for mild reinforcing steel, prestressing steel and concrete, shall be per Section 8.4 – Properties and Applications of Reinforcing Steel, Prestressing Steel and Concrete for SDCs B, C and D of AASHTO Guide Specifications for LRFD Seismic Bridge Design.

Question 189.

Reference Addendum #2 Section 4.3 of Part 3 – Project Requirements. Page 42 was amended to say “The Design-Builder shall grade and pave all disturbed areas to match the existing surrounding grounding elevation.” Please clarify the required pavement section in the disturbed areas such that proposers approach to this item is consistent. Variations in pavement thickness will have significant impact in the quality and value of the final product.

Answer: The Design-Builder shall pave all disturbed areas with 3 inches of Asphalt Top and Binder Course on 3 inches of Asphalt Base Course with 12 inches of Sub-base. This will be issued by Addendum.

Question 190.

Reference is made to the Final Contract Documents Part 4 – Utility Requirements. There are several discrepancies and conflicts between the scope of work noted in the narrative sections that pertain to the Design-Builder (D-B) and the tables that summarize the work for National Grid. Please clarify the following:

a. Item 57: The referenced table identifies National Grid being responsible for trench excavation (assumed to include backfilling and site restoration) while the narrative description on page 9 of 21 indicates that the D-B Contractor is responsible for all trenching/excavating utility trenches and site restoration.

Answer: For Item 57, the narrative description should read that National Grid shall perform the excavation, backfilling and site restoration for this location.

b. Item 73B: The referenced table identifies D-B being responsible for trench excavation (assumed to include backfilling and site restoration) while the narrative description on page 9 of 21 indicates that National Grid is responsible for all trenching/excavating utility trenches and site restoration.

Answer: Since this Item (73B) lies outside the NYSDOT Project Limit identified on the National Grid Drawing ID12A-81, SHT 31 of 36, this work shall be performed by National Grid, as stated on page 9 of 21 of the NYSDOT Preliminary Utility Work Agreement.
Also please clarify if our understanding of the work indicated to be performed by National Grid, specifically work identified by items A, B, C, D, E, F and K on page 3 of 21 is correct. Our interpretation is that all work will be performed by National Grid forces without any D-B support (labor, equipment and materials) except coordination where applicable.

Answer:
A. National Grid is responsible for decommissioning Governor 131. However, the Design Build Contractor and National Grid shall coordinate the work effort and schedule to accomplish the gas main installation work necessary to allow the Governor to be decommissioned, as stipulated on page 2 of 21.

B. National Grid shall be responsible for decommissioning the items identified under Item B.

C. National Grid shall install the gas main utilities as indicated under this item. However, the Design Build Contractor shall be responsible for all labor, equipment, and materials necessary to perform the excavation, trenching and site restoration for all work inside the defined project limits. National Grid will perform the excavation, trenching and site restoration outside of the defined NYSDOT project limits.

D. National Grid shall install the gas main utilities as indicated under this item. However, the Design Build Contractor shall be responsible for all labor, equipment, and materials necessary to perform the excavation, trenching and site restoration for all work inside the defined project limits. National Grid will perform the excavation, trenching and site restoration outside of the defined NYSDOT project limits.

E. National Grid shall install the gas main utilities as indicated under this item. However, the Design Build Contractor shall be responsible for all labor, equipment, and materials necessary to perform the excavation, trenching and site restoration for all work inside the defined NYSDOT project limits. National Grid will perform the excavation, trenching and site restoration outside of the defined NYSDOT project limits.

F. National Grid shall install the gas main utilities as indicated under this item. However, the Design Build Contractor shall be responsible for all labor, equipment, and materials necessary to perform the excavation, trenching and site restoration for all work inside the defined project limits. National Grid will perform the excavation, trenching and site restoration outside of the defined NYSDOT project limits.
K. Within the NYSDOT defined project limits, the Design Build Contractor shall perform the necessary trenching, excavation and site restoration for National Grid’s forces to install/transfer the gas service connections. National Grid shall perform all work to provide service connections at locations outside of the defined project limits.

Question 191.

*Technical Proposal* – ITP Appendix B, we note the ITP has no requirements for an Executive Summary in the Technical Proposal. We believe an Executive Summary would be an extremely effective way for Proposers to summarize their Technical Proposal. An Executive Summary would also provide the Department with a comprehensive summary of each Design-Builder’s Proposal.

Design-Builds of this size and scope typically require an Executive Summary of 5 pages or less. Please consider making an Executive Summary part of the Technical Proposal requirements and part of the evaluation.

**Answer:** The Proposal shall include two separate Executive Summaries – one for the Base Project and one for the Base Plus Option. Each Executive Summary shall be limited to two pages in length. Each Executive Summary shall summarize the information contained in the proposal and shall not include any information that is not contained elsewhere in the Proposal. This change will be issued by Addendum.

Question 192.

Part 3, Section 1.3 effectively states that Design-Builder’s scope includes the Preliminary Design of: New West Bound Main Span, New West Bound Brooklyn and Queens Approaches, new Bikeway and Walkway. There is a similar note in the Directive Drawings with no other clarification of scope in the RFP to our findings.

A. Please define “Preliminary Design” so Proposer’s can quantify the work necessary to price, i.e., is this a 30% design with profile and horizontal alignment, foundation, locations and superstructure configurations. Please clarify.

**Answer:** Per Addendum #4, “Preliminary Plans shall follow the Structures Preliminary Plan Checklist in Appendix 3F of the NYSDOT Bridge Manual.

B. Please define a time at which the Preliminary Design is to be completed and turned over to the NYSDOT.

**Answer:** Per Addendum #4, the Preliminary Design Package must be submitted to the Department by April 30, 2015.
C. Please explain how the transition or handoff of the Preliminary Design is expected to work from Design-Builder’s Designer to the Department and/or their Engineer.

**Answer:** The Design-Builder shall submit the Preliminary Design Package per the submission guidelines provided in the Contract Documents.

**Question 193.**
The Deliverables table 11.5.1 shows the Inspection and Maintenance Manual due at Final Design Review. Considering the Inspection and Maintenance Manual includes construction information such as “Permanent Record of Stay Cable Installation”, it would seem more appropriate these manuals be complete and accepted by the Department nearer Final Acceptance. Please investigate and revise accordingly.

**Answer:** The Design-Builder shall submit a 90% complete Inspection and Maintenance Manual 6 months prior to Final Acceptance. This change will be issued by Addendum.

**Question 194.**
As follow-up to Public Question #107 regarding the Department providing background photos for renderings. Please confirm if these photos are available and if already take? When will they be Posted to the website? We note if not provided soon enough, it will require the Proposers to take their own due to schedule constraints.

**Answer:** The background images for use in the renderings were posted as Reference Documents to the Project Website on October 15, 2013.

**Question 195.**
Addenda #3, Part 3, and 11.3.1.4.B struck out the statement, “Steel stay in place forms are not permitted.” The Department’s response to Public Question #109 suggests the Department does not want Steel stay in place forms. Please clarify the intent ofAddenda #3 as it conflicts with the response to Public Question #109.

**Answer:** Per Addendum #3, stay in place forms are permitted. The answer to Question 109 has been revised.

**Question 196.**
Please confirm whether or not As-Built Drawings are Contract Documents. We note they are not listed in Part 7 as such. Considering the amount of reliance Proposer’s must place in these documents in pricing demolition of the existing bridge structures, it would seem appropriate
they be Contract Documents. Please also consider reasonable site investigation of these structures is limited to visual inspection from the ground where structures are over 100 vertical feet above the ground. Please consider and amend the RPF accordingly to clarify. **Answer:** The As-Built Drawings are not Contract Documents. The Design-Build can both visit the site and review the inspection reports to confirm the existing conditions.

**Question 197.**
In reference to Part 4 Utility Requirements, and in regard to the preliminary agreement with National Grid, some of the excavation work listed as to be done by the Design-Build (Item # 57 and a portion of Item #28) is outside the area of paving limits as defined by the NYSDOT.

Is it the intent of the agreement with the National Grid the Design-Build perform this work outside the area of the NYSDOT-defined paving limits? Or will National Grid do the work? Please confirm the Design-Build’s scope.
**Answer:** For Item 57, National Grid shall perform the excavation, backfilling and site restoration for this location.

For Item 28, this work is contained all within the NYSDOT project limits. Please refer to Sht. 12 of 36 & Sht. 16 of 36 of National Grid’s drawings. Therefore, the Design Build Contractor shall perform the work as stipulated on page 14 of 21 of the NYSDOT Preliminary Utility Work Agreement.

**Question 198.**
After meeting with Con Edison on October 16, we were informed that drawings defining the scope of Con Edison’s work were sent to NYSDOT and would be forwarded to the Proposers. Please confirm a date at which these drawings will be available to Proposers, noting time is of the essence.

**Answer:** Con Edison requires that each Design Build team sign a Confidentiality Agreement before their drawings and requirements are provided. The Department will start the release of the Consolidated Edison requirements on Tuesday, November 5th, at 12 noon to all Design-Build Teams that have submitted a signed Confidentiality Agreement.

**Question 199.**
It is our understanding Final Security Requirements will be made available to Proposer’s Representative for Security in late October. This leaves about 4-5 weeks to: design, incorporate any design changes governed by criteria into drawings, develop/finalize the Security portion of Technical Proposal, and price the impacts of the Final Security Requirements.
Four to five weeks is not adequate to properly develop this scope of work without broad contingency and price burden. A more cost-effective and practical approach at this point would be for the Department to cover this item under an Allowance, and then finalize the criteria with the Best-Value Proposer. This would allow the Department and Proposers to focus their efforts on other elements of the Proposal/Procurement and not rush through the details of these extremely important criteria.

Please consider. This approach has been used on numerous Design-Builds with complex signature bridges throughout the US.

**Answer:** The Department believes the Design-Build teams have sufficient time to incorporate the Final Security Requirements into their Proposal within the current schedule, and the Department is not receptive to an “Allowance” component.

**Question 200.**
As follow-up to Public Question #39 and #40, please provide Proposer’s with a current update as to the status of monitoring both at the Laurel Hill Site and the site of the Brooklyn Main Span Pylon locations. When will any data be available to Proposers? Please confirm.

**Answer:** The environmental sampling at the Brooklyn Main Span Pylon location is scheduled to begin November 11th. Results of the sampling will be provided to the selected Design-Builder. The Design-Builder shall not be responsible for any additional costs or schedule impacts associated with any additional requirements beyond what is included in the Contract Documents that may result from the findings of this investigation.

The monitoring equipment is currently being installed on the Laurel Hill Site. Any monitoring results that are obtained before the Proposal due date will be posted to the Project Website. All subsequent monitoring results will be provided to the selected Design-Builder. It is intended that prior to the Design-Build team occupying the Laurel Hill Site, these readings will become the baseline for all readings going forward. It is intended that the determination of the baseline will be a joint effort by the Department, Phelps Dodge and the Design-Builder.

**Question 201.**
Part 3, section 2.2 vs ITP Definitions Appendix F - we note there are inconsistencies between the Key Personnel Definitions in ITP Appendix F and the Part 3, Section 2.2, for example including and not limited to: Environmental Compliance Manager – Appendix F requires a registered PE in NY, Part 3 does
not have this PE requirement for the Environmental Compliance Manager.

It is our understanding the definitions in Appendix F are that only, definitions, i.e., defining the Key Person’s role/ responsibilities on the Project and that Part 3, Section 2.2 are minimum requirements for the positions.

Please revise the Appendix F definitions such that they are definitions of the positions and do not include criteria not included in Part 3, Section 2.2 minimum requirements. This will eliminate further confusion and provide consistent, clear minimum requirements to Proposer’s in one location in the RFP.

**Answer:** Part 3, Section 2.2 are minimum requirements for the Key Personnel. Appendix F definitions will be modified by Addendum.