NTSB Scope of Work with Modjeski and Masters for the collapse of the Fern Hollow bridge

Pittsburgh, PA

HWY22MH003

(3 pages)

Background:

As part of the National Transportation Safety Board (NTSB) investigation into the January 28, 2022, collapse of the Fern Hollow Bridge in Pittsburgh, Pennsylvania, the Pennsylvania Department of Transportation (PennDOT) has hired Modjeski and Masters (M&M) to develop a finite element model of the structure to determine the point(s) of initiation and sequence of the collapse. As a party to the NTSB investigation, PennDOT will be providing the results of the M&M modeling to the NTSB.

Description of Work:

NTSB would like to hire M&M to perform the following additional tasks:

- provide specific, numerical results of the following loading scenarios of the bridge:
    - deck wearing surface with a thickness equal to that specified in the design plans, absent the presence of corrosion of the superstructure
    - deck wearing surface with a thickness equal to twice that specified in the design plans, absent the presence of corrosion of the superstructure
    - deck wearing surface with a thickness equal to that specified in the design plans, including the presence of superstructure corrosion observed at the time of the collapse
    - deck wearing surface with a thickness equal to twice that specified in the design plans, including the presence of superstructure corrosion observed at the time of the collapse
- results should include:
    - factored total load/demand on the bridge
    - calculated capacity of the bridge superstructure

Contracting will require signing a non-disclosure agreement

To be Provided by NTSB:

Preliminary results:

- Data from mechanical testing of the Fern Hollow Bridge components
- 3D scanning factual report of the section loss/corrosion
- Tie plate fractography and cross-sectional weld evaluation images

Deliverables:

- Briefing
    - Summary presentation of the results for each scenario
- Report
    - Explanation of four loading scenarios in finite element model
    - Total load on the bridge in each scenario (expressed in pounds and kips)
    - Capacity of the bridge in each scenario (including the percent under capacity or percent over capacity)

Time Frame:

- Presentation: As soon as possible after contract signed, no later than 4 weeks
- Report + Images: 4-6 weeks