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# Niagara Viaduct Rehabilitation



**Client/Owner:** NYS Thruway Authority  
**Project Location:** Buffalo, NY

Under two separate contracts, and with a construction cost of \$77 million, Greenman-Pedersen, Inc. (GPI) performed an overall in-depth inspection and prepared contract plans for the design of the I-90 Niagara Viaduct in downtown Buffalo.

The first contract involved the southerly 47 mainline spans and 88 spans of elevated interchange ramps (6 ramps total). On this contract GPI performed the in-depth inspection and prepared the Bridge Rehabilitation and Project Report (BRPR), with the overall rehabilitation alternative being selected. GPI then prepared design plans for the overall rehabilitation of this portion of the viaduct, which included complete deck replacement. Included in this work were load rating computations; fatigue analysis; in-depth seismic analysis and retrofit; and detailed maintenance of traffic plans.

The second contract involved the northerly 66 mainline spans and 44 spans of elevated interchange ramps (4 ramps total). This contract involved total deck replacement for 8 mainline spans and deck rehabilitation and minor widening for the remaining spans. Design activities included an in-depth inspection of the existing viaduct and four interchange ramps; preparation of the Bridge Rehabilitation and Project Report (BRPR), investigation of the configuration, adequacy and condition of the existing City of Buffalo storm drainage system, investigation and analysis of the operation of the existing interchange ramps; load rating computations; fatigue analysis; evaluation of the seismic failure vulnerability and preparation of options for seismic retrofit; and detailed maintenance of traffic plans.