Exit 63 Interchange
Gray, Maine

INTRODUCTION

The project is located at the Maine Turnpike Exit 63 interchange in Gray, Maine. This interchange provides access to Maine Turnpike, Route 202 and the other nearby roadways such as Route 26, Route 26A (Gray Bypass) and several local Gray roadways. The current ramp configuration conveys all northbound (NB) and southbound (SB) ramp traffic through the single toll plaza on the east side of the Turnpike with a SB ramps bridge over the Turnpike, south of Route 202.

VHB has developed the proposed 30% design based on the selection of Alternative 3 Tangent that was developed based on additional study following the completion of the Feasibility Study and coordination with the US Army Corps of Engineers.

The project area includes the Exit 63 interchange as well as Route 202 from west of its intersection with the Gray Bypass, easterly to the intersection of Routes 26, 100, and 115 in downtown Gray.

The proposed project includes the following;

- Relocation of the SB ramps to the west side of the Maine Turnpike to form a four legged intersection with the Gray Bypass.
- Removal of the existing SB ramps bridge and the existing ramp pavement.
- Reconstruction and pavement rehabilitation of the NB ramps.
- Provide parallel acceleration lanes for the proposed SB and existing NB on ramps.
- Provide improvements at the Route 202 intersections with the Gray Bypass and at the existing ramps intersection.
- Provide minor bridge repairs to the Route 202 Bridge over Maine Turnpike.
- Signalization improvements along Route 202 from the Gray Bypass to the downtown intersection at Brown Street.
- Relocation and expansion of the existing park and ride to the parcel of property along the Gray Bypass – this work is being broken out as a separate project
- New three lane Toll Plaza along the relocated SB on ramp.
- Removal of the existing toll plaza.

Exit 63 Interchange
Gray, Maine

PROPOSED DESIGN

Route 202 and Route 26A

The existing alignments and profiles for Route 202 and Route 26A will be retained with step box widening occurring in the following locations:

- Eastbound and westbound approaches of Route 202 at the intersection with Route 26A
- Westbound approach of Route 202 at the intersection with the NB ramps
- Southbound approach of Route 26A at the intersection with Route 202

Northbound Ramps

The NB ramps will be reconstructed from the intersection with Route 202 to where the ramps split from one another. The remainder of the ramps will receive a pavement rehabilitation with minor reconstruction occurring at the on ramp nose to provide for a parallel acceleration lane. The profiles of the ramps will generally remain close to the existing profiles.

The existing toll plaza structure will be removed after the SB ramp traffic is shifted to the proposed SB ramps on the west side of the interchange. A new toll gantry will be constructed over the proposed ramps with the existing administration building being retained.

Southbound Ramps

The SB ramps will be new construction based on the 26' MaineDOT ramp typical. The proposed off ramp nose and on ramp nose are shifted several hundred feet south of their current locations. The SB on ramp acceleration lane will be reconstructed into a parallel acceleration lane that will traverse beneath the Center Road overpass bridge before tapering into the mainline.

The proposed toll plaza will consist of three lanes for the on ramp and a single lane for the off ramp. The three on ramp lanes will be reduced to a single lane prior to the on ramp nose. A new administration building and parking area will be constructed along with the toll plaza.

Drainage

The existing and proposed drainage areas will remain essentially the same with the general flow path running in the southwesterly direction. The subcatchment areas outlet into Thayer Brook which ultimately outlets into the Pleasant River. A few

additional culverts will be constructed to accommodate the proposed southbound ramps.

Utilities

The utility coordination process is currently underway with the 30% plans to be distributed to the various utilities for verification of existing location, type, and sizes. There are anticipated utility relocations expected along Route 202 with the associated roadway widening.

Geotechnical

The geotechnical program borings and preliminary engineering for the project have been completed. The preliminary results indicate that the underlying soils where the proposed SB ramps will be located are compressible and will require a preload and settlement period prior to the completion of the ramp construction. There are also localized pockets of unsuitable soils that will be removed beneath the proposed SB ramps before acceptable embankment is placed.

Traffic Signals, Signs and ITS

The traffic analysis was completed for the 2032 future design year such that the roadway design and layout could be advanced to the 30% stage. The proposed LOS ranges from B to D for the four signalized intersections in the future year depending on the intersection and whether it is the morning or evening peak traffic hour. The maximum queue lengths were used as the desired design criteria in establishing the roadway layout, however in certain locations the average queue lengths were utilized to minimize impacts along the corridor.

The proposed design includes the upgrade of the two existing traffic signal control systems at the US Route 202 intersections with the Maine Turnpike ramps. The design also includes minor modifications to two existing town traffic signals at US Route 202 and Route 115/Route 100 and at US Route 202 and Route 26/Brown Street. All four traffic signals are proposed to be interconnected via fiber optic communications system using underground and overhead fiber optic cables.

The proposed design includes new guide signs on overhead sign structures, and new intelligent transportation system (ITS) elements. The new ITS equipment, comprised on four dynamic message signs (DMS) include a fiber optic communication system connecting the DMS to the toll plaza building.

Structures

There are three existing bridges located within the Gray Interchange Project area. The northern bridge carries Route 202 over the Maine Turnpike NB & SB. The middle bridge carries the Exit 63 southbound ramps over the Maine Turnpike NB & SB and the southbound on ramp acceleration lane. The southern bridge carries Center Road over the Maine Turnpike NB & SB.

The Route 202 bridge is in good shape with proposed improvements consisting of minor concrete repairs to the piers and abutments, bridge rail replacement, and minor slope erosion corrections in front of the abutments. The SB ramps bridge will be removed as it is no longer required. The Center Road bridge is in good shape and will not be impacted by this project. However, a concrete barrier will be constructed adjacent to the pier next to the SB acceleration lane.

A retaining wall along Route 202 adjacent to the MTA maintenance facility may be required to preserve parking, drainage, and the emergency generator. This will be studied further as the project advances.

PERMITTING

The environmental resources within the project area have been identified for evaluation and permitting purposes. Coordination efforts with various federal and state agencies have occurred throughout the project development. The design of the project has utilized these environmental resources as a design control with avoidance and minimization of impacts a priority.

The project impacts approximately 1.1 acres of wetlands and therefore is eligible for authorization under Category 2 of the US Army Corps of Engineers Maine General Permit, with the requirement of compensatory mitigation.

Based on the 30% design, an individual Natural Resources Protection Act (NRPA) permit from the Maine DEP will be required to construct the project. Compensatory mitigation will be required. MTA has indicated that the "In Lieu Fee" program is their preferred mitigation option. The proposed project will result in the disturbance of more than one acre of land. As such, MTA will need to prepare and submit a Maine Construction General Permit Notice of Intent to the Maine DEP at least 14 days prior to the start of construction.

The permitting applications are anticipated to be submitted following the public meeting on March 17, 2015.

CONSTRUCTION

The construction of the project is anticipated to begin in the spring of 2016 with completion in the summer of 2017. The construction of the SB ramps and the toll plaza area will be concentrated on initially to allow for the preload and settlement period to occur before the completion of the ramps can be completed. Once the environmental permits are issued, the work required to place the preloads is anticipated to be included in the park and ride construction contract to allow for the 8 month settlement period to occur over the fall of 2015 and winter and spring of 2016.

The completion of the SB off ramp, the majority of the SB on ramp, a temporary SB on ramp connection, the intersection improvements at Route 202 and Route 26A, and the proposed toll plaza allows for the SB ramp traffic to be shifted to the west side of the interchange. Following this shift in the SB ramp traffic, the SB ramps bridge can be removed and the proposed SB on ramp can be completed.

Once the SB ramps are completed, the existing toll plaza can be removed and the NB ramps reconstruction can occur along with the remaining Route 202 roadwork and signal interconnection.