

TRANSPORTATION PROJECT REPORT

DRAFT DESIGN REPORT / DRAFT ENVIRONMENTAL IMPACT STATEMENT / DRAFT 4(f) EVALUATION

VOLUME 11

Appendix D - F:

D – Pavement Information E – Structures Information F – Non-Standard Feature Justifications

November 2016

PIN 5470.22
NYS Route 198 (Scajaquada Expressway) Corridor
Grant Street Interchange to Parkside Avenue Intersection
City of Buffalo
Erie County



ANDREW M. CUOMO
Governor

**Department of
Transportation**

MATTHEW J. DRISCOLL
Commissioner



**U.S. Department of Transportation
Federal Highway Administration**

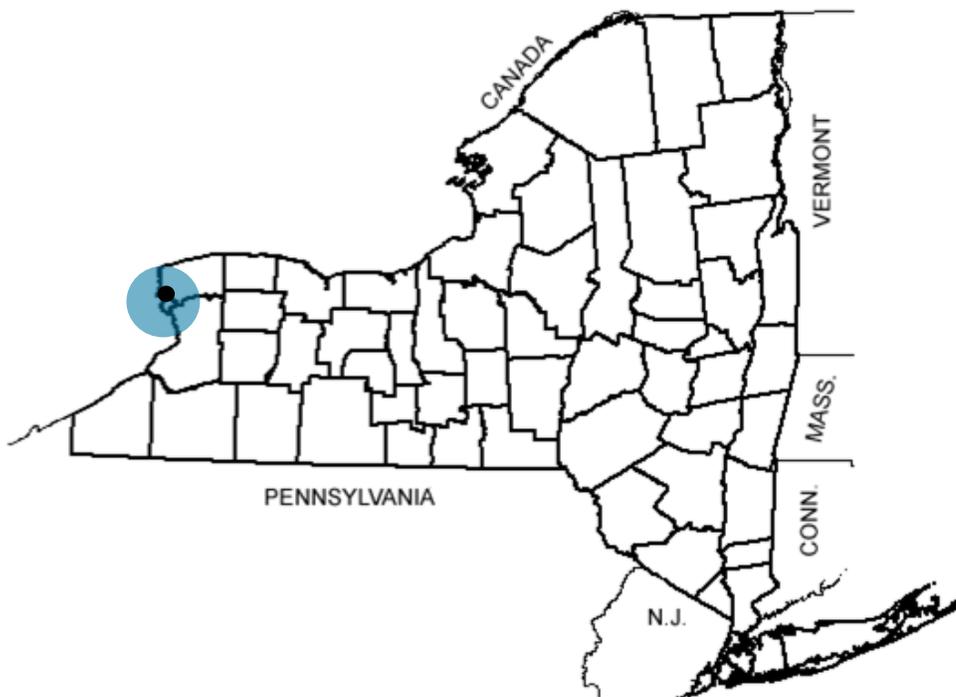
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APPENDIX D Pavement Information

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BACKGROUND

This segment of NY Route 198 Scajauada Expressway is classified as an Urban Principal Arterial Expressway on the National Highway System, connecting Interstate I-190 with NY Route 33 with traffic volumes ranging from 33,140 to 62,220 with 10% trucks. The original four lane divided highway was constructed with a composite pavement in the late 1950's and early 1960's consisting of an 8" PC Concrete Foundation with 3" of Hot Mix Asphalt "HMA" (1½" Binder Course, 1½" Top Course). In 1981 the HMA was removed to the concrete and replaced with a two course HMA overlay (1½" Top and 2" Binder). The next cycle of resurfacing was progressed in separate contracts for years 1996 and 1997. The 1996 contract resurfaced the EB lanes and the 1997 contract resurfaced the WB lanes. This was an interim resurfacing consisting of milling and paving with 1½" HMA top course. Separate resurfacing contracts were also progressed in 2007 and 2008. In 2007 the contract limits were from Delaware Ave. to Main Street; in 2008, the contract limits were from I-190 to Delaware Ave. and Main St. to the Kensington Expressway. These contracts also consisted of milling and paving 1½" HMA top course.

EXISTING CONDITION

The initial drive through of the proposed project indicates a pavement with good rideability. The recent 1½" mill and resurfacing projects are holding up well, but are exhibiting some minor distress, mainly reflective cracks after 1-2 years, as expected. A distress survey was performed and the extent of these distresses are as follows:

Wheel Path Cracking

The surveyed area exhibits no wheel path cracking.

Full Width Transverse Cracking

In the surveyed area, 8 single cracks and 1 multiple crack were present. This is consistent with a recently overlaid pavement with a concrete foundation.

Longitudinal Cracking

Only 1% of the surveyed pavement exhibited single cracks and 99% had no visible longitudinal cracking whatsoever.

Cracking (other)

7% of the surveyed pavement exhibited single cracks and 93% had no visible 'other' cracking.

Slippage Cracks

No slippage cracks were noted in the surveyed area.

Raveling

No raveling was present in the surveyed area.

Wheel Path Rutting

There is one instance of Medium severity wheel path rutting and corrugation which comprise 9% of the surveyed area. This distress is limited to the intersection with Parkside and is most severe in the WB direction. It should be noted this was the WB lane in the traffic storage area for the Parkside intersection and was noted as an area that had to be opened to traffic while the HMA was still warm immediately after paving.

Widening Drop-off

There was no widening drop-off noted in the surveyed area.

Shoulder Condition:

Shoulder Deterioration – None

Lane/Shoulder Separation – None

Lane/Shoulder Drop-off – None

Shoulder Deformation – None

Geotechnical Information:

This report is based on a review of available soils information along the corridor of the project and As-Built Typical Sections from the original construction of the existing facility. The in situ soils are basically fine grained with internal drainage that ranges from moderately good to well draining. Depending on the topography crossed, a drainage system to provide positive outlets for subsurface water from the pavement section will increase the stability of the foundation soils. Cleaning or replacing the existing underdrain system will prove beneficial and help extend the service life of the existing pavement section under any resurfacing option. Should a more extensive rehabilitation or reconstruction option be chosen, a foundation recommendation will have to be based on the terrain any segment will be crossing. This is based on the fact some areas have a seasonal high water table and/or a perched water table that could impact subgrade areas. Any foundation recommendation will be made during the design phase after design parameters have been determined.

POSSIBLE ALTERNATIVES

A. Reconstruction - ESL: 50 years

This alternative involves the removal of the existing pavement section and constructing new hot mix asphalt "HMA" or Portland cement concrete pavement "PCCP", in accordance with "The New York State Comprehensive Pavement Design Manual", should provide the appropriate estimated service life with proper maintenance procedures.

B. Cold Milling with a Single Course HMA overlay - ESL: 8 years

This alternative is appropriate when low to medium severity levels of distress are exhibited within the surface courses. The pavement may have corrugations, infrequent settlements, heaves, slippage cracks, raveling, and low to medium severity wheel path rutting, medium and/or high severity cracking. This alternative is appropriate when vertical clearance problems

exist, or when the existing grade line must be maintained or lowered such as considerations for drainage structures, curb reveal and other appurtenances.

C. Cold Milling with a Two Course HMA overlay - ESL: 15 years

This alternative is appropriate when medium to high severity levels of distress are exhibited within the surface courses. It is also useful when the existing distress is so severe that the integrity of the new asphalt concrete overlay could be compromised. This alternative is also appropriate for low vertical clearance problems, when grade line must be maintained, or when drainage structures curb reveal and other appurtenances must be considered.

D. Null

While doing nothing to preserve the life of this pavement is an option, it will become the least cost effective option in the future. This is because pavement distresses if not addressed, will propagate deep into the pavements structure and result in much higher rehabilitation or reconstruction costs in the future.

DISCUSSION/RECOMMENDATION

Alternative "A", Reconstruction - Although this alternative is viable, reconstruction within the existing alignment and utilizing the current highway section is not warranted at this time. This pavement appears to be functioning as originally constructed with the exception of a few failed or failing drainage structures and one intersection with rutted and corrugated approaches. Utilizing the current strategy of cyclical milling and paving one or two courses HMA, this pavement will continue to function for many years. If reconstruction is necessary because of realignment or grade changes, the existing subbase could be fine graded and incorporated into the new pavement where changes to alignment or grade do not occur.

Alternative "B", Cold milling with a two course HMA overlay - is the most appropriate treatment for this project if there is no change in the highway section and alignment. The pavement is cold milled to the underlying PCC pavement which exposes any underlying deficiencies. Repairs can be made to the pavement and drainage structures prior to the two course overlay. This will increase the life of this pavement treatment and ensure the pavement functions as originally designed. Aside from small isolated pavement deficiencies and drainage structures, the underlying PCC pavement and HMA binder course appear intact and therefore, it is not necessary to do full depth cold milling and a two course HMA overlay at this time.

Alternative "C", Cold milling with a single Course HMA overlay - This pavement treatment has been used successfully in the past and will work in the future provided the underlying binder course is replaced when it begins to fail. Based on the history of this pavement, the last HMA paving treatment is an interim treatment between full depth milling to the PCC foundation course. Based on this assumption, this treatment will not be used for the next paving cycle. However, the single course treatment has exceeded life cycle expectations of 8 years which

indicates the underlying binder course is also in good condition. This suggests a single course mill and overlay remains a viable option to maintain this pavement.

D. Null

This alternative does not address keeping a good pavement in a state of good preservation and will cost more to maintain in the future.

Recommendation:

Most appropriate treatment for this pavement at this time is to continue the mill and pave cycle single course HMA overlays and to apply other preventative maintenance treatments when necessary. We estimate the current single course milling and HMA paving cycle to be 10 or more years with interim crack sealing and surface treatments as necessary.