

The Franconia Notch Parkway



A Unique Highway Through A Unique Location

Lincoln – Franconia 15603

Interstate Resurfacing, Restoration, Rehabilitation, and
Reconstruction Project



Brief History of the Franconia Notch Parkway

Agreements between the State of NH and the White Mountain Council

- 1977 (Original) Agreement - Calls for interstate to be built similar to today, except no curb and no median rail.
- 1983 - Amendment of 1977 Agreement resulting in the curbed roadway we see today but without any median rail. Granite “logs” were put into the project’s design to deter drivers from entering into the opposing lane.
- 1993 – Amendment of 1983 Agreement to place CorTen (rusty) double faced thrie beam median guardrail in median.

Since the Parkway was opened in 1988

- Snow, sleet, freezing rain, strong wind, rain, sun, and earth movement.
- Based on the average daily traffic, over 50 million vehicles have passed through.
- 15 % are trucks.
- Median barrier installed due to crossover incidents resulting in multiple fatalities

Summary of Reported Accidents

- From Jan. 1993 (median barrier installed) to Dec. 2008
- 91 reported accidents
- 60 had snow or ice on road
- 54 were with fixed objects (39 guardrail, 6 ditch/curb, 9 other)
- 39 guardrail impacts, all were single vehicle crashes, all but one indicated snow/ice/wet conditions
- 15 collisions with animals
- No fatalities in the records but 2 fatalities noted by NHDOT District personnel.

Scope of Project

- Restore Aging Facility in a Challenging Environment
- Rehabilitate Pavement
- Address Curbing Issues
- Rehabilitate/Replace Aging Drainage
- Rehabilitate Bridges
- Replace Aging/Poor Functioning Guardrail
- Other Miscellaneous Small Improvements/Repairs

Pavement Condition



Pavement Condition Continued



Pavement Rehabilitation

- Cold Plane (Grind Off) Existing Pavement 2 inches deep
- Pave New Pavement 3 ½ inches deep except for short section in Southbound that will be 4 inches deep

Curbed Panel



Curbed Panel



Curbing Options Considered

- Remove the Curb
- Reset Granite Slope Curb (3" Reveal)
- Set Granite Curb in a Concrete Base
- Precast Concrete Curb

Approximate Length = 72,000 feet

Existing curb pushed down , water overtops and erodes panel



Rendering of Removal of Curb



Curbed – one lane segment



Rendering of Removal of Curb – one lane segment



Lincoln-Franconia 15603 Single Lane Curb Removal - proposed

Removal of Curb

- Animal friendly – amphibians and other small animals would have less obstruction
- Pavement joint problem solved
- Better opportunity to establish grass
- Enhance Water Quality by sheet flow over grass
- Cost Savings
- Easier plowing while not scuffing off topsoil

Proposed Drainage Work

- Corrugated metal culverts – replace, slipline, pave culvert bottoms, approximately 21 of 31
- Reinforced concrete culverts - replace, slipline, regROUT joints approximately 16 of 32
- Replace Underdrain
- Replace Slope Pipes
- Rehabilitate approx. 280 Catch Basins and Drop Inlets (Grated Drainage Structures)
- Repair/Reconstruct Mortared Stone Headwalls at Beginning and Ends of Culverts

Sunken Drainage Basin



Invert (Bottom) of CMP Gone



Slipline Exist CMP's



Dam at bike path underpass has cracks and missing stones



Light Pole Bases Deteriorated, Direct Buried Wires Broken



Concrete at Islands Broken and Worn



Retaining Wall at Echo Lake Needs Snow Fence to Protect Path Users



Snow Fence



The bridge at Lafayette Brook Needs Snow Fence to Protect those below



Under cut retaining wall on outside bend of Pemigewasset River
at station 297+75



Deteriorated retaining wall



Bridges at Exit 34B

- Repair joints
- Do “spot” repairs of decks as necessary

Existing Guardrail Quantity & Maintenance

- W-Beam Guardrail (on outside edge of parkway)
- Approximate Length = 20,000 feet
- Double Faced Thrie Beam Guardrail (median)
- Approximate Length = 27,000 feet
- Annual Replacement = 800 feet
- Existing Rail is Cor Ten and deteriorates quickly. Hardware and joints weld together.
- Maintenance efforts severely impact traffic and pose significant risk to workers.

Cor Ten (aka “Rusty”) Guardrail



Existing Median Guardrail With Very Little Offset to Lane



Cor Ten Median Thrie Beam



Thrie Beam beginning to deteriorate



Median Rail Truck Lug Nut Tearing



Aesthetic Guardrail/Barrier Options

- Cor-Ten Guardrail
- Painted Galvanized
- Powder Coated Over Galvanized
- Acid Etched Galvanized
- Cable Guardrail
- Steel Backed Timber Rail
- Concrete Barrier
- Stone Faced Concrete Barrier

Different Rail Proposals at Echo Lake

Nu-Guard 31



Thrie Beam



Maintaining Traffic

- Put traffic into one lane alternating one way at night when traffic volumes are much lower. This will be done to remove some of the median guardrail and fill the holes from the guardrail posts.
- Use the width that is gained from removing the median guardrail to keep two single opposing lanes of traffic adjacent to each other during the day while doing work such as drainage, curbing removal, replacement of the guardrail on the outside of the pavement. Then restore to normal lanes at night.



ACCOMPLISH PAVING AND GUARDRAIL WORK AT NIGHT WITH NORMAL PATTERN RETURNED DURING THE DAY.
COMPLETING 1-2 MILE SEGMENTS AT A TIME

- PHASE I -
- * SHIFT TRAFFIC, ALTERNATING ONE-WAY
 - * REMOVE MEDIAN RAIL, FILLING IN AND PAVING POST HOLES
 - * REMOVE EXISTING CURB



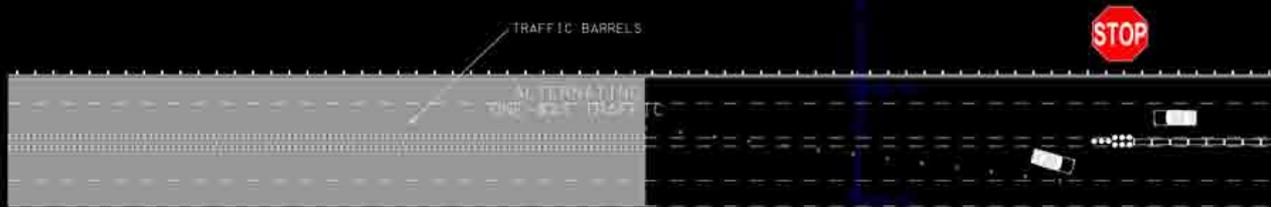
- PHASE II -
- * COLD PLANE (GRIND OFF PAVEMENT) 2 INCH DEPTH TRAVELWAY, SHOULDER & 1/2 OF MEDIAN
 - * CATCH BASIN REHABILITATION AND HEIGHT ADJUSTMENT, DURING DAY



- PHASE III - *
- * PAVE 1/2 INCH LEVELING COURSE (7/8 INCH DEPTH IN SHOULDER WHEN EXTENDING TRAVELWAY GRADE 1 FOOT)
 - * PLACE GRID ON LEVELING COURSE OVER TRAVELWAY/SHOULDER JOINT



- PHASE IV - *
- * PAVE BINDER COURSE, 2 INCH DEPTH
 - * SHIFT TRAFFIC TO OTHER SIDE AND REPEAT STEPS TO BINDER
 - * PAVE WEARING COURSE



- PHASE V - *
- * SHIFT TRAFFIC AND PAVE WEARING OTHER SIDE
 - * CONSTRUCT RUMBLE STRIPS MEDIAN SIDE OF YELLOW LINE
 - * INSTALL MEDIAN GUARDRAIL



- PHASE VI *
- * PAINT NEW LANE CONFIGURATION

Thank you for your attention.
Any Questions or Comments?

