Route 7 Westbound over Sugarland Run
Bridge Rehabilitation

PROJECT OVERVIEW

- Replace bridge concrete deck & beams, repair pier and abutments
- Temporary Shoulder Widening for Staged Maintenance of Traffic Shift
Route 7 Westbound over Sugarland Run
Bridge Rehabilitation

BRIDGE PLAN AND ELEVATION

Bridge Plan

Elevation

June 23, 2018

June 20, 2019
Route 7 Westbound over Sugarland Run Bridge Rehabilitation

PROPOSED SUPERSTRUCTURE REPLACEMENT

EXISTING BRIDGE

STAGE 1 - THREE LANES SHIFTED LEFT
- Shift three existing WB Route 7 through lanes left during normal operating hours.

STAGE 1 - WEEKEND LANE CLOSURE
- Close right lane during weekend construction.

Remove and Replace Concrete Voidsed Slab Beams

June 20, 2019
Route 7 Westbound over Sugarland Run Bridge Rehabilitation

PROPOSED SUPERSTRUCTURE REPLACEMENT

STAGE 2 - THREE LANES SHIFTED RIGHT
- Shift three existing WB Route 7 through lanes right during normal operating hours.

STAGE 2 - WEEKEND LANE CLOSURE
- Close left lane during weekend construction.

PROPOSED BRIDGE

June 20, 2019
Route 7 Westbound over Sugarland Run Bridge Rehabilitation

PROPOSED MAINTENANCE OF TRAFFIC

Stage 1 – Replace Right Half of Bridge Deck
- Shift three traffic lanes south towards the median
- Close right lane and maintain two WB Rte 7 lanes during weekend construction
- Three WB Rte 7 lanes maintained at all other times

Stage 2 – Replace Left Half of Bridge Deck
- Shift three traffic lanes north away from median
- Close left lane and maintain two WB Rte 7 lanes during weekend construction
- Three WB Rte 7 lanes maintained at all other times

Approximate weekend work area (north of Route 7 westbound)
Replace right half of bridge over two weekends

Replace left half of bridge over two weekends
Approximate weekend work area (south of Route 7 westbound)

June 20, 2019
ROUTE 7 WESTBOUND OVER SUGARLAND RUN BRIDGE REHABILITATION
FAIRFAX COUNTY
PROJECT NO. 0007-029-113; UPC 104556

www.virginiadot.org/projects

Shahrad Behboodi, PE – Project Manager, Structure & Bridge

Tuesday, 28th May, 2019
PROJECT LOCATION

Begin Project

End Project

Dranesville Road

Sugarland Run

PROJECT LOCATION
PROJECT OVERVIEW

- Replace bridge concrete deck & beams, repair pier and abutments
- Temporary Shoulder Widening for Staged Maintenance of Traffic Shift
EXISTING BRIDGE DESCRIPTION

- Bridge length 82’ (two spans), Bridge width 60’-1”
• Roadway Classification: Urban Principal Arterial
• Posted Speed Limit 45 mph
• Average Daily Traffic = 38,000 vehicles (includes 620 trucks) on Westbound Route 7
EXISTING CONDITION & PROPOSED WORK
BRIDGE DECK AND BEAMS

Deterioration on underside of prestressed concrete beams
Spalling concrete and broken prestressing (steel reinforcement) strands
Condition Rating 4 of 9 (Poor, Structurally Deficient)

- Proposed work: Replace Prestressed Concrete Voided Slab Beams and asphalt overlay in-kind. Use Carbon Fiber Strands for improved corrosion resistance.
Drain pipes in sidewalk drain water from low point on bridge
Debris clogging drain pipes cause ponding water on roadway and deterioration and staining of bridge concrete

- Proposed work: Replace drain pipes in sidewalk with scuppers through deck. Install new drainage inlets beyond both ends of the bridge to reduce runoff reaching bridge.
Abutment and pier walls are in satisfactory condition (Condition Rating 6 of 9) with minor spalls, cracks, delaminated concrete areas and graffiti.

- **Proposed:** Bridge abutments and pier will be repaired and receive waterproofing coating.
Existing drainage inlets will be relocated during temporary widening of the right shoulder for the Staged Maintenance of Traffic Shift, and reinstalled when the Traffic Shift is completed.
BRIDGE PLAN AND ELEVATION

Bridge Plan

Elevation

Sidewalk

Merge Lane

Westbound Route 7 Lanes

Bridge Superstructure Replacement

60'-1"

85'-5"
PROPOSED SUPERSTRUCTURE REPLACEMENT

EXISTING BRIDGE

15 - 4'-0" x 21" Prestressed concrete slabs = 60'-1" ±
PROPOSED SUPERSTRUCTURE REPLACEMENT

STAGE I - THREE LANES SHIFTED LEFT

• Shift three existing WB Route 7 through lanes left during normal operating hours.

STAGE I - WEEKEND LANE CLOSURE

• Close right lane during weekend construction.

Remove existing prestressed concrete voided slab beams
Install new prestressed concrete voided slab beams
PROPOSED SUPERSTRUCTURE REPLACEMENT

**STAGE II - THREE LANES SHIFTED RIGHT**

- Shift three existing WB Route 7 through lanes right during normal operating hours.

**STAGE II - WEEKEND LANE CLOSURE**

- Close left lane during weekend construction.

Demolish existing prestressed concrete voided slab beams

Install new prestressed concrete voided slab beams
PROPOSED SUPERSTRUCTURE REPLACEMENT

PROPOSED BRIDGE

15 - 4'-0" x 21' Prestressed concrete slabs = 60'-1"

CPSR-1 barrier

Asphalt overlay varies 2" to 3"

Lane

Merge varies

3'-5% to 6'-9% to 12'-4%*

Varies

9'-0% to 12'-4%*

Conc. sidewalk

WB Rte. 7

5'-11"

Shoulder

12'-0"

Lane

12'-0"

Lane

1'-'0"

60'-1"

41'-2"

18'-11"

1'-'4"
PROPOSED MAINTENANCE OF TRAFFIC

Stage 1 – Replace Right Half of Bridge Deck

- Shift three traffic lanes south towards the median
- Close right lane and maintain two WB Rte 7 lanes during weekend construction
- Three WB Rte 7 lanes maintained at all other times

Stage 2 – Replace Left Half of Bridge Deck

- Shift three traffic lanes north away from median
- Close left lane and maintain two WB Rte 7 lanes during weekend construction
- Three WB Rte 7 lanes maintained at all other times

Approximate weekend work area (north side of Route 7 westbound)

Approximate weekend work area (south side of Route 7 westbound)
ANTICIPATED SCHEDULE AND COST

Anticipated Schedule:

Construction

Advertisement for Construction: December 2020
Begin Construction: Spring 2021
Construction Completion: Fall 2021

Estimated Project Cost: (State of Good Repair [SGR] Funded)

Total Cost: $6.2 million (PE and Construction)
  Preliminary Engineering . . . . . $ 1.2 million
  Construction . . . . . . . . . . . $ 5.0 million (SGR Funds)
THANK YOU

QUESTIONS & COMMENTS
Send comments via email or comment form until May 30th to:

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