



# 2019 ANNUAL VIRGINIA CONCRETE CONFERENCE

Chief Deputy Commissioner Rob Cary, PE, LS

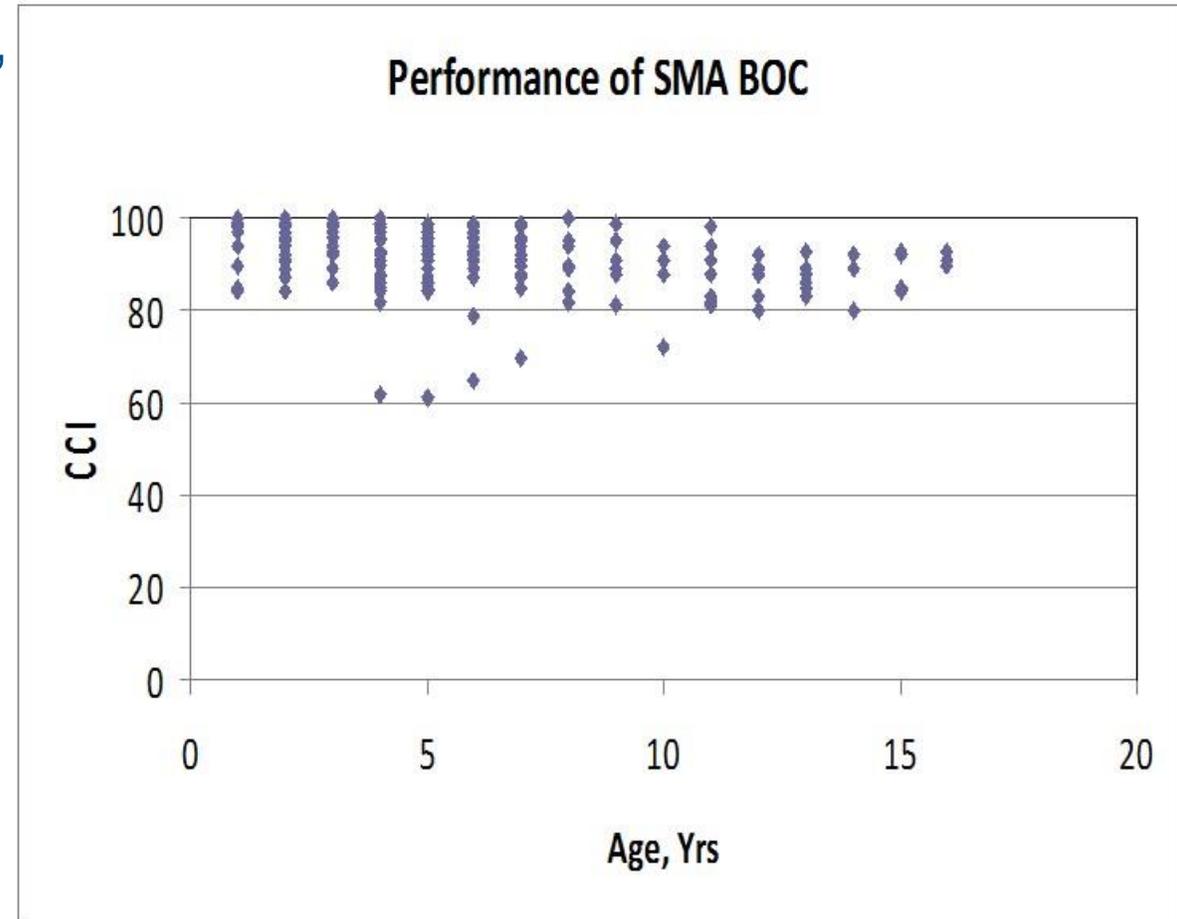
Feb. 28, 2019

# Strategic Highway Research Program (SHRP) 2 – Implementation (Round 6)

- VDOT participated in the implementation for SHRP 2 renewal product R21: **Composite Pavement System**
- **Constructed a section in Oct. 2017**
  - US 60 West in Richmond
  - 8-inch Continuously-Reinforced Concrete Pavement (CRCP)
  - Overlaid immediately with 2-inch Stone Matrix Asphalt (SMA)
- **VDOT and FHWA arranged a Peer Exchange**
  - Several state DOTs and Illinois Tollway
  - Federal Highway Administration
  - American Concrete Pavement Association and Virginia Asphalt Association

# Benefits of Composite Pavement – SHRP 2 Study

- Optimized pavement surface (friction, noise, etc.)
- Renewable (surface mill and fill)
- Designed as composite structure (cost competitive)
- Long service life
- VDOT has good experience
  - Old CRCP overlaid with SMA
  - Pavement Condition Rating
    - Mostly > 80 after 15 years of service



# Construction

Concrete removal



Base stabilization



Reinforcing steel



CRCP– One lane paving



Concrete finishing



2-inch asphalt overlay

# Ride Quality

- International Roughness Index
  - Left lane – 58 in/mile
  - Right lane – 55 in/mile
- Overall roadway received bonus



# One Year In Service

- Performing satisfactorily
- VDOT plans to monitor long-term performance



# Major Projects

# Hampton Roads Bridge-Tunnel Expansion Project

- Settlers Landing in Hampton to Interstate 564 Norfolk (10 miles)
- I-64 improvements include 6 lanes of highway and drivable shoulder, and construction of 4-lane bridge/tunnel
- New HRBT tunnels will serve eastbound traffic
- Two existing HRBT tunnels will serve westbound traffic



# 495 Express Lanes Extension Study

- Three-mile northern extension of Express Lanes from Dulles Toll Road to the American Legion Bridge/Maryland line
- To reduce congestion, improve safety, provide additional travel choices and reliability
- Closely coordinated with Maryland's plans
- Environmental study expected to be complete in Spring 2019
- Public information meeting in Spring 2019 and location public hearing in Fall 2019



# I-95 Auxiliary Lane at Occoquan

- New southbound auxiliary lane in Woodbridge to address bottleneck at the Occoquan Bridge
- Connects the southbound Route 123 ramp to I-95 with the off-ramp to Prince William Parkway
- VDOT to construct under agreement with Transurban
- Under development with construction as early as 2020



# 95 Express Ramp at Opitz Boulevard

- Under agreement with Transurban, adds a new, reversible ramp connecting the existing 95 Express Lanes at Opitz Boulevard
- Will provide improved access to Potomac Mills and Sentara Virginia Medical Center
- Will offer Express Lanes' drivers the option to exit directly onto Opitz Boulevard
- Design and construction to be completed by Transurban, work begins as early as 2020



# I-95 Projects Fredericksburg Area

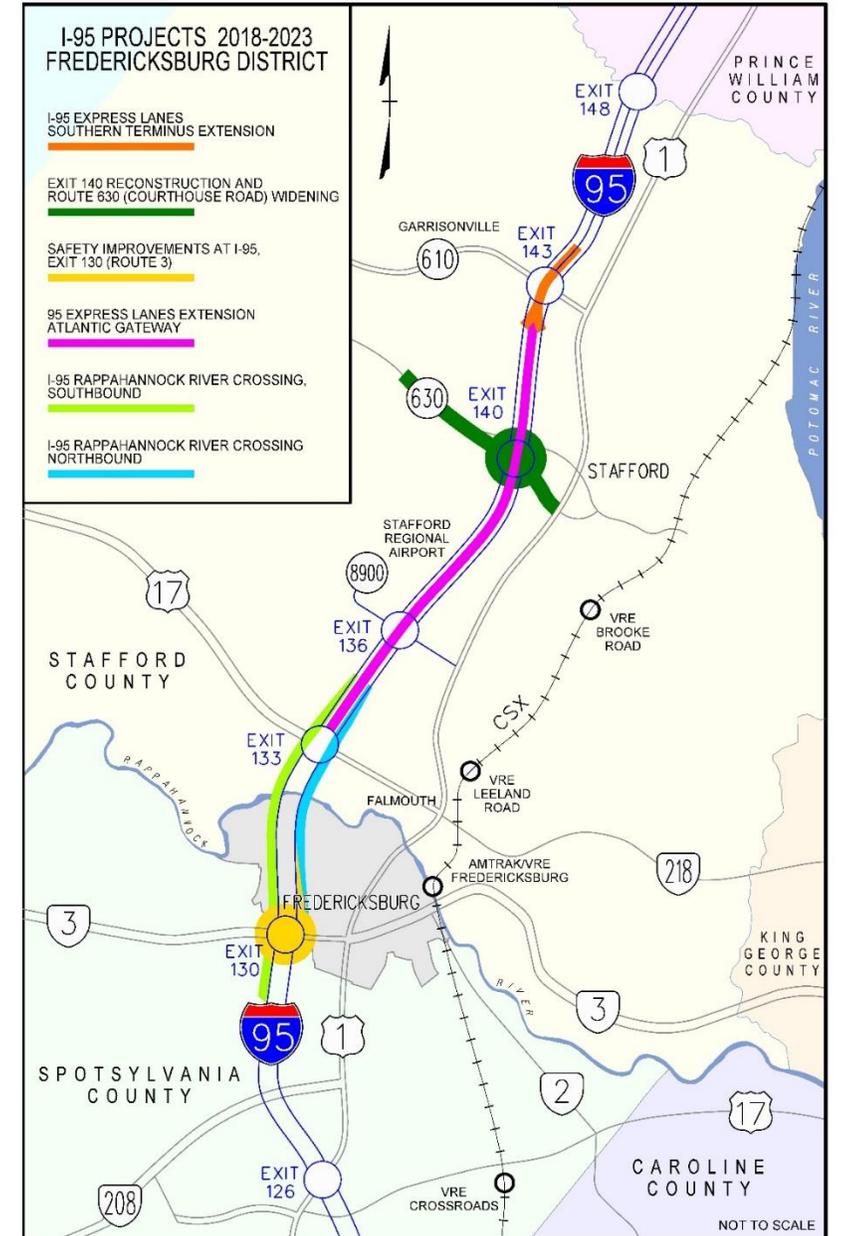
Nearly \$1 billion in highway corridor investment

Major I-95 projects finished by 2023:

- I-95 Express Lanes Fredericksburg Extension
- I-95 Rappahannock River Crossing – NB and SB
- Exit 140 Diverging Diamond Interchange and Widening

Plus:

- New commuter parking
- I-95 overpass replacements
- Virginia Railway Express station improvements



# I-95 Fredericksburg Area Improvements Timeline

2018

2019

2020

2021

2022

2023

2024

Exit 140 –  
Diverging Diamond Interchange

I-95 Express Lanes Fredericksburg Extension  
“FredEx”

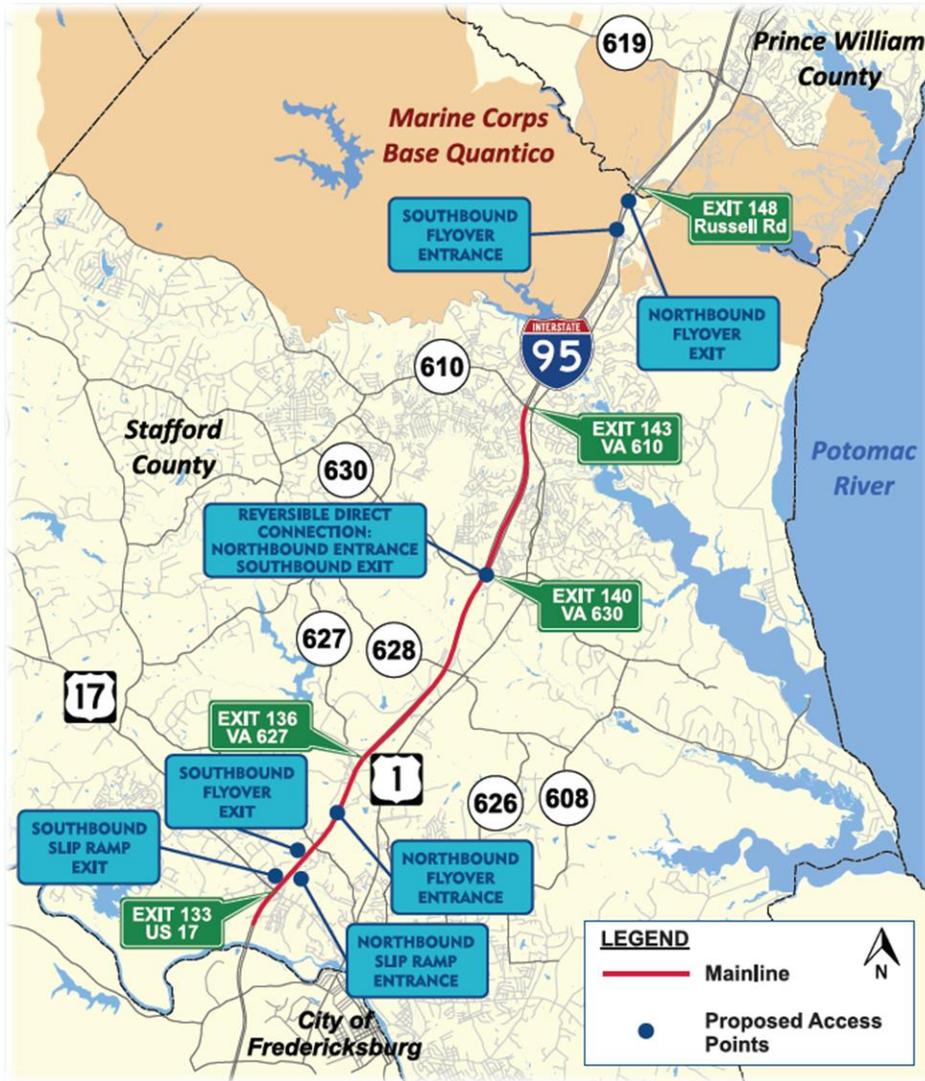
I-95 Southbound Rappahannock River Crossing

I-95 Northbound Rappahannock River Crossing

Exit 118 Interchange at  
Thornburg

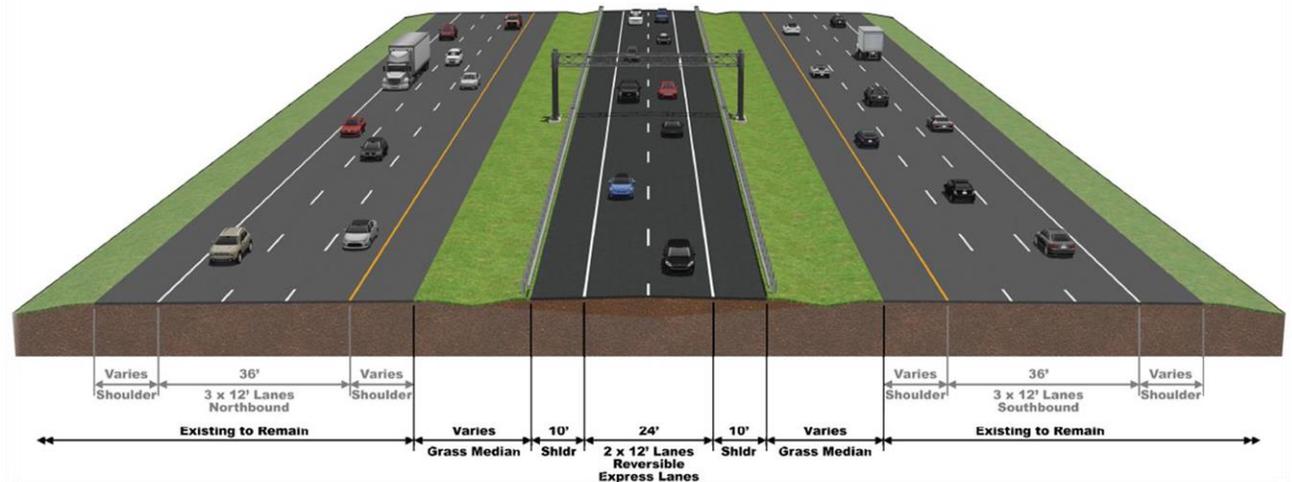
All  
new  
lanes  
open  
to  
traffic

# I-95 Express Lanes Fredericksburg Extension (FredEx)



- Extends I-95 Express Lanes 10 miles south to Route 17 interchange
- Two reversible lanes – tolled facility
- Connects with I-95 Rappahannock River Crossing projects
- Replaces American Legion and Truslow Road overpasses
- New access at Route 17, Courthouse Road and Russell Road at Quantico interchanges

Proposed General Purpose and Express Lanes



# I-95 Rappahannock River Crossings, Northbound and Southbound

- Southbound construction underway by Wagman Heavy Civil, Inc., with design partner JMT, Inc.
- Northbound construction to begin late 2020
- Combined \$264 million total cost – estimated \$132 million for each direction
- Provides 3 new through-traffic lanes on I-95 southbound between Exit 133 in Stafford and Exit 130 in Fredericksburg, and proposes several additional lanes on same segment of I-95 northbound
- New lanes will interface with Express Lanes extension
- New bridges to be built over the Rappahannock River to carry through lanes in the median



*Around 150,000 vehicles a day travel on I-95 between Exit 133 in Stafford County and Exit 130 in Fredericksburg, over the Rappahannock River bridges*

# Performance Measures

# Pavement Statewide Performance Measures

Performance Measure Description	Current Policy (Percent Sufficient)*	Updated Policy (Percent Sufficient)	Current Performance 2018 (Rounded) (Percent Sufficient)
Interstate	82% No Section CCI less than 30	82% <b>No Section CCI less than 35</b>	91%
Primary	82%	82%	85%
Secondary	65%	65%	60%
Current funding sustains interstate and primary condition			
Additional funding required to achieve secondary target			

\*Sufficient means “Fair” or better

**NOTE: Objective is to sustain or improve current performance on the interstate and primary and achieve target on the secondary**

# Bridge Statewide Performance Measures

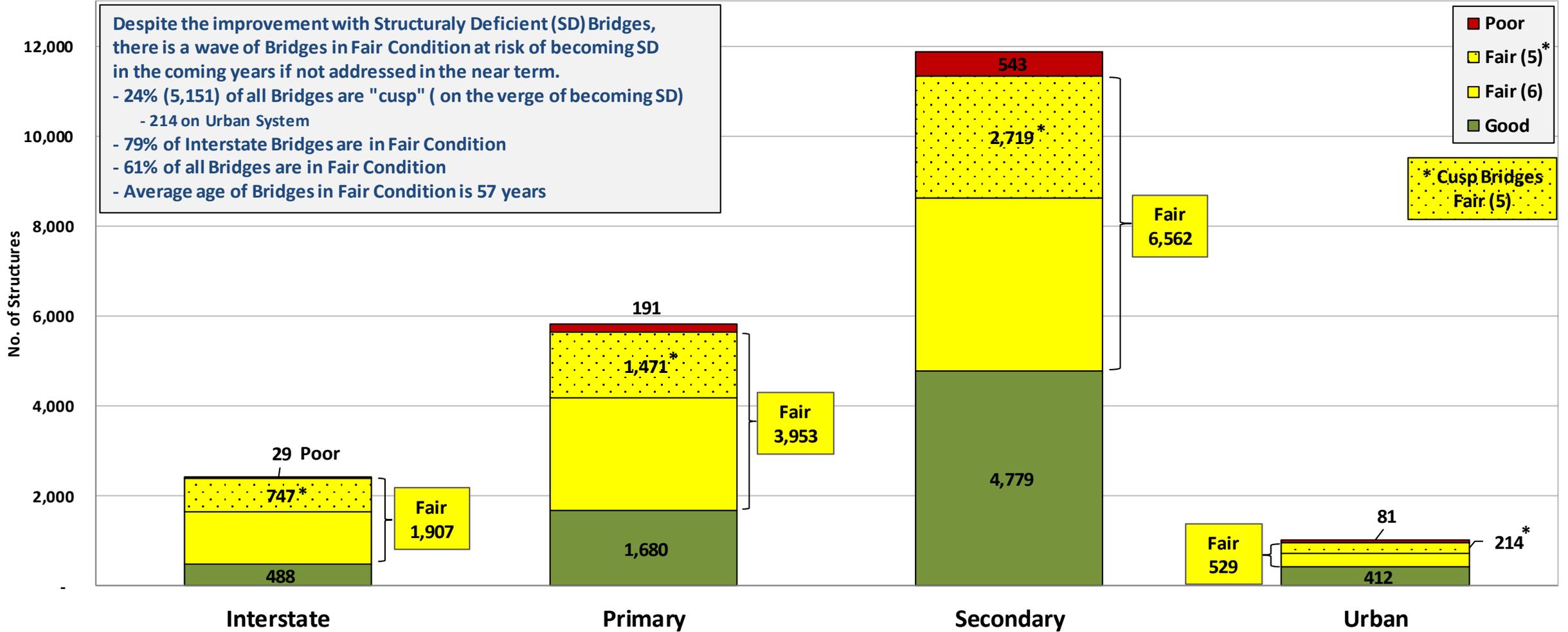
Performance Measure Description	Current Policy (Percentage Not Structurally Deficient)*	Updated Policy (Percentage Not Structurally Deficient)	Current Performance (VDOT and Localities) (Percentage Not Structurally Deficient)
Statewide	92%	<b>95.5%</b>	96.0%
Interstate	97%	<b>99%</b>	98.8%
Primary	94%	<b>96%</b>	96.7%
Secondary	89%	<b>94%</b>	95.4%
Updated Performance Goals are Predicted to be Attained with Current Funding by the End of FY18			

\*Bridges that are not Structurally Deficient are in a “Fair” or “Good” Condition

**NOTE: Objective is to sustain or improve current performance on the interstate and primary and achieve target on the secondary**

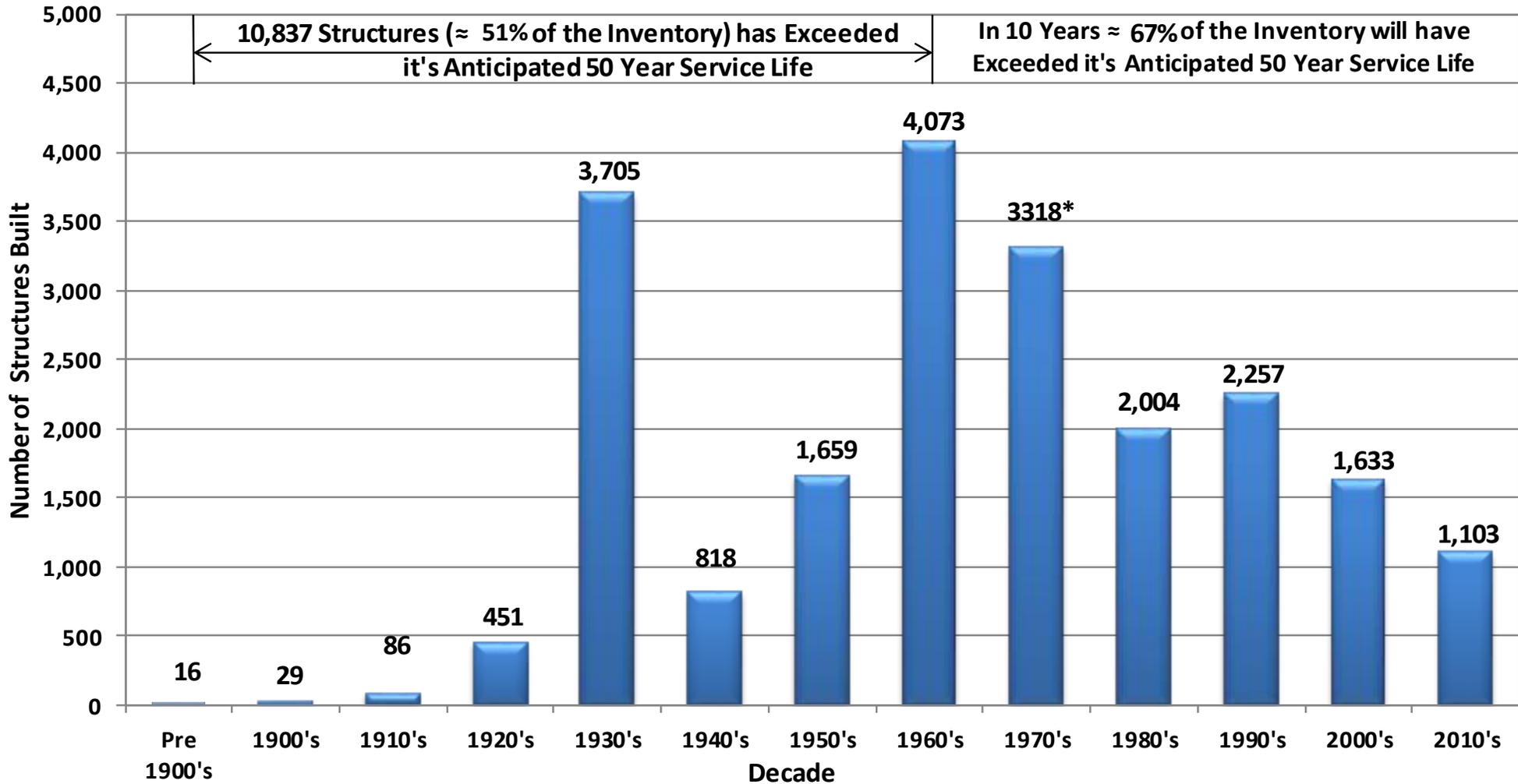
# Bridge Inventory

## Current Conditions and Concerns for the Future



Based on July 1, 2018 Data  
VA Responsible Structures

# Bridge Inventory - Age



Based on July 1, 2018 Data  
VA Responsible Structures

# Budget

# Hurricane and Tropical Storm Expenditures

## Hurricane Florence

- 721 roads closed
- Estimated \$11 million

## Tropical Storm Michael

- 1,200 roads closed
- Estimated \$35 million

**Snow Budget - \$205 million includes \$50 million reserve**

# Organizational Changes

# VDOT Organizational Changes

## Chief Engineer Garrett Moore to retire in fall 2019

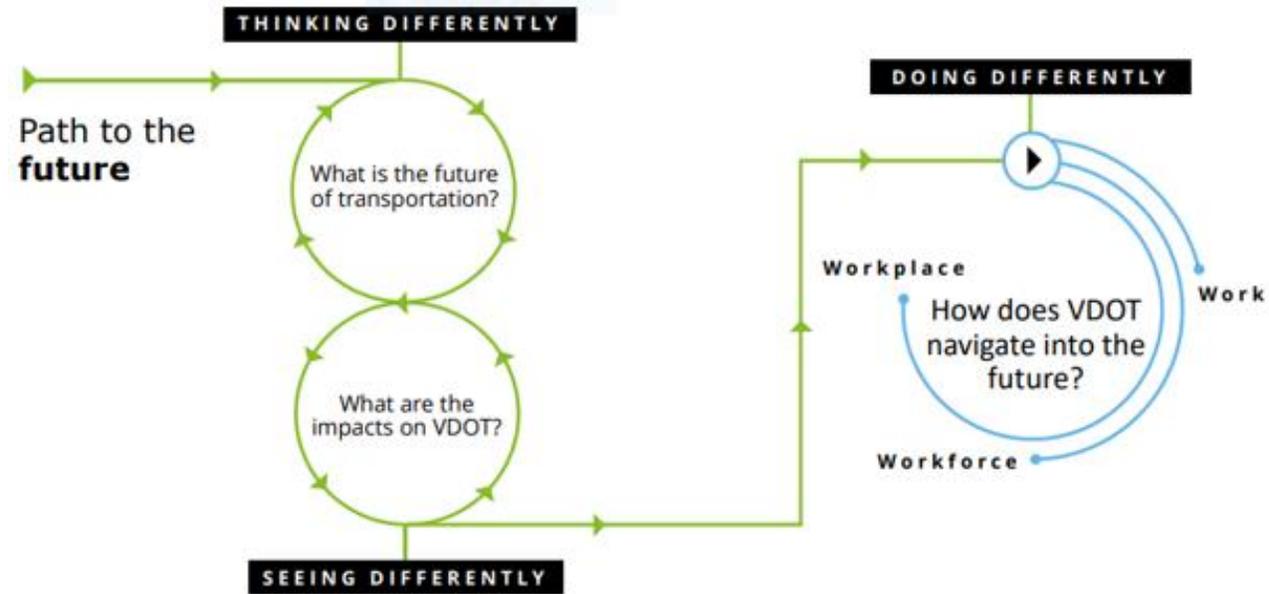
- Has tirelessly served for more than 19 years
- Will leave a lasting legacy

## Creation of Chief of Maintenance and Operations

- Will lead our multibillion-dollar maintenance and operations programs
  - Maintenance
  - Operations and Emergency Management
  - Land Use
  - Asset Management
  - Traffic Engineering
- Continue to focus on project delivery
- Same devoted emphasis on maintaining and operating our transportation infrastructure

# Workforce of Tomorrow

# Core Questions



# VDOT's Path



## WORK

The fundamental nature of the work performed to achieve mission outcomes

- **HOW** is the nature of the work performed changing to achieve new business goals?
- **WHAT** work may be augmented by digital technologies and what are the workforce implications?



## WORKFORCE

The portfolio of talent and skills tapped to perform the work

- **WHO** is best to perform the current and future work and what skills are necessary?
- **HOW** do you close the gap between current and future skills by tapping into alternative talent pools or upskilling the current workforce?



## WORKPLACE

The environment and policies – not just the physical structures or location – utilized to maximize collaboration, productivity, and consistency of the talent experience

- **WHERE** is best to perform the work to maximize return on investment (e.g., HQ vs. virtual)?
- **WHAT** physical design and technology maximizes productivity?

# The Evolution of VDOT's Work

