

VIRGINIA'S BRIDGE PROGRAM UNDER THE INFRASTRUCTURE INVESTMENT AND JOBS ACT

 Kendal R. Walus, PE December 2021

Infrastructure Investment and Jobs Act (IIJA)

- **Signed into Law on November 15, 2021**
 - Federal rulemaking (formal requirements) expected in Spring 2022
 - Coordinating with FHWA now to initiate work as soon as possible
- **~\$107M/Year for 5 Years for Virginia's Bridges (~\$535M Total)**
 - VDOT has been working on plan development since May
 - Law allows preservation activities for existing Fair condition bridges
 - Set-aside required for bridges on non-federal aid routes (off-system)
- **Year 1 Funds Must Be Obligated by September 30, 2022**
 - Short time frame requires immediate action
 - Will present first year projects for Board approval in January

IIJA Bridge Funding: Virginia's Proposed Plan

- **Focus to restore condition and extend service life**
- **Emphasizes bridges on Interstates and High Volume Primaries**
- **Must still meet the bill's "off-system" funding requirements**
- **Goal: 75% to Preserving Fair Bridges & 25% to Poor Bridges**
 - **Aligns with findings of the *2019 Comprehensive Review***
 - **Preservation focus for VDOT bridges**
 - **Funding for localities to address poor bridges**
 - **Invests funds where needed most – fair and poor bridges**
 - **Provides the best long term return on investment (life cycle value)**

5 Year Bridge Plan: Distribution of Funds by Year

		Funding By District Per Year (Millions)							
		District	Year of Plan					Total	% of Total
			1	2	3	4	5		
Funding for VDOT Bridges	1-Bristol	\$9	\$7	\$9	\$7	\$8	\$40	10%	
	2-Salem	\$0*	\$0	\$21	\$16	\$0	\$37	9%	
	3-Lynchburg	\$7	\$1	\$2	\$4	\$5	\$19	5%	
	4-Richmond	\$42	\$6	\$0	\$18	\$4	\$70	17%	
	5-Hampton Roads	\$8	\$23	\$14	\$10	\$16	\$71	18%	
	6-Fredericksburg	\$1*	\$14	\$6	\$0	\$0	\$21	5%	
	7-Culpeper	\$1*	\$0	\$0	\$0	\$24	\$25	6%	
	8-Staunton	\$26	\$10	\$13	\$8	\$2	\$59	15%	
	9-Northern Virginia	\$13	\$14	\$8	\$10	\$15	\$60	15%	
		VDOT Total	\$107	\$75	\$74	\$73	\$74	\$403	75%
Locality Bridge Funding	Statewide	\$0**	\$33	\$33	\$33	\$33	\$132	25%	
Total IJA Bridge Funding		\$107	\$108	\$107	\$106	\$107	\$535	100%	

* Fredericksburg, Culpeper, and Salem Districts - 1st year focused on preliminary engineering

** Localities – 1st year focused on preliminary engineering

Types of Work: Deck Overlays



Decks: Improves Bridge Condition Rating and Extends Service Life

- Rigid Overlays (35 Years Additional Service Life)
- Epoxy Overlays (15 Years Additional Service Life)
- Deck Replacement (50 Years Additional Service Life)

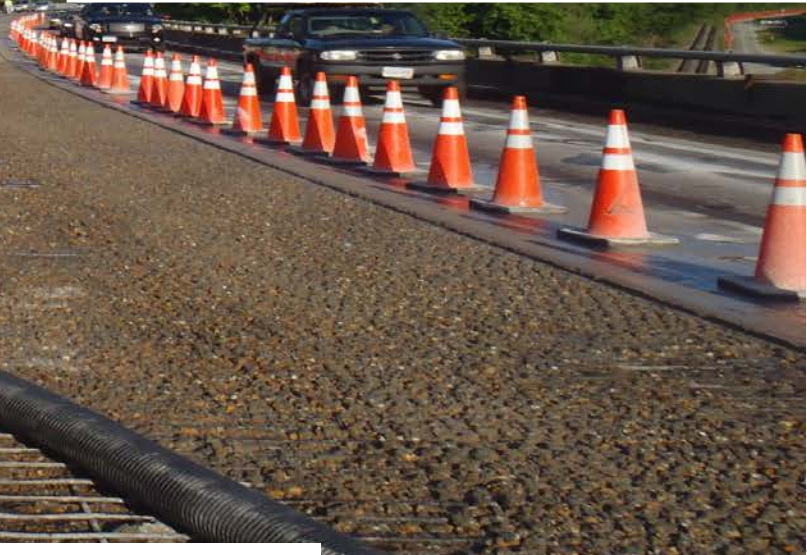
Types of Work: Bridge Resurfacing and Deck Rehabilitation



Hydrodemolition uses Very High Pressure Water to remove damaged concrete

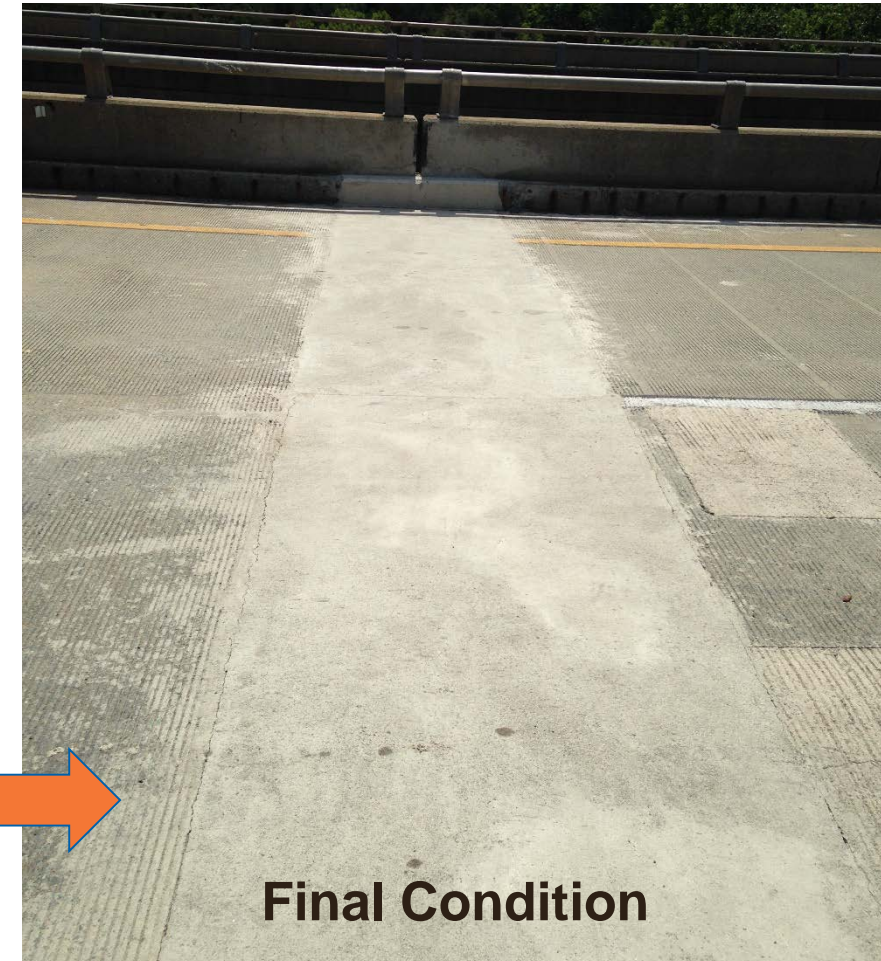


Placement of New Deck Surface



Types of Work: Elimination of Leaking Deck Joints

Leaking Joint Allows Salt & Water Under Bridge



Protects Girders and Bridge Supports from Chlorides and Water
35 to 50 years additional service life for protected elements

Types of Work: Pier and Column Rehabilitation



Improves Condition Rating and Extends Service Life

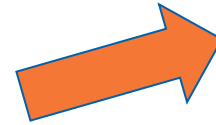
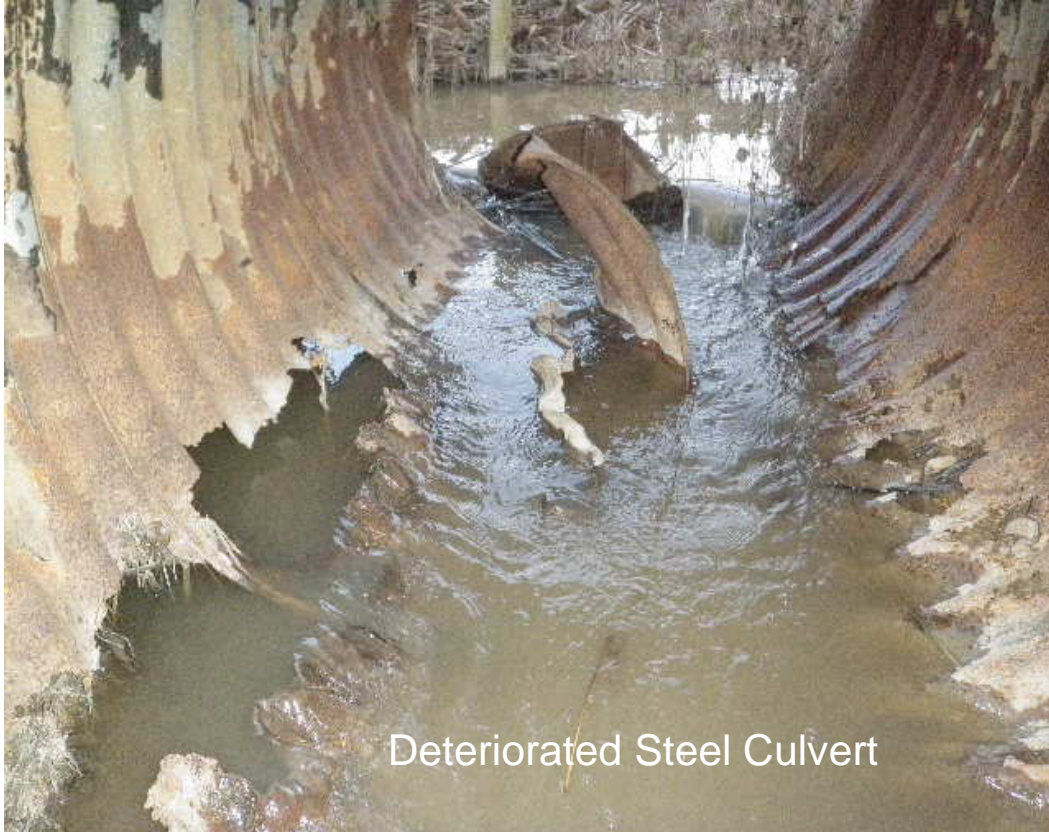
- **35 years additional service life when joints are properly addressed**
 - Removes chloride-contaminated concrete and replaces with high performance concrete

Types of Work: Repairing Corroded Beam Ends



- **50 Years of additional service life when joints are properly addressed**
- **Rehab is approximately 10% of replacement cost**
- **Must be performed before too much corrosion has occurred**

Types of Work: Rehabilitating Culverts



Or



Culverts

May receive flow liner or full liner depending on condition (20 years additional service life)

Types of Work: Painting



Much More Than an Aesthetic Treatment: Extends Service Life

- Serves as the primary protective element against corrosion
- Corrosion of steel girders is the leading cause of bridge replacement
- Paint can extend service lives of steel elements by 15 to 20 years

Virginia's IJA Bridge Plan: Year 1

VDOT Planned Activities

- Deck Overlays
- Resurfacing and Deck Rehabilitation
- Elimination of Leaking Deck Joints
- Pier and Column Rehabilitation
- Repairing Corroded Beam Ends
- Rehabilitating Culverts
- Painting
- Preliminary Engineering

Locality Planned Activities

- Preliminary engineering and planning for Years 2 – 5
- Coordinate with districts & jurisdictions to finalize estimates

Virginia's IIJA Bridge Plan: Years 2 - 5

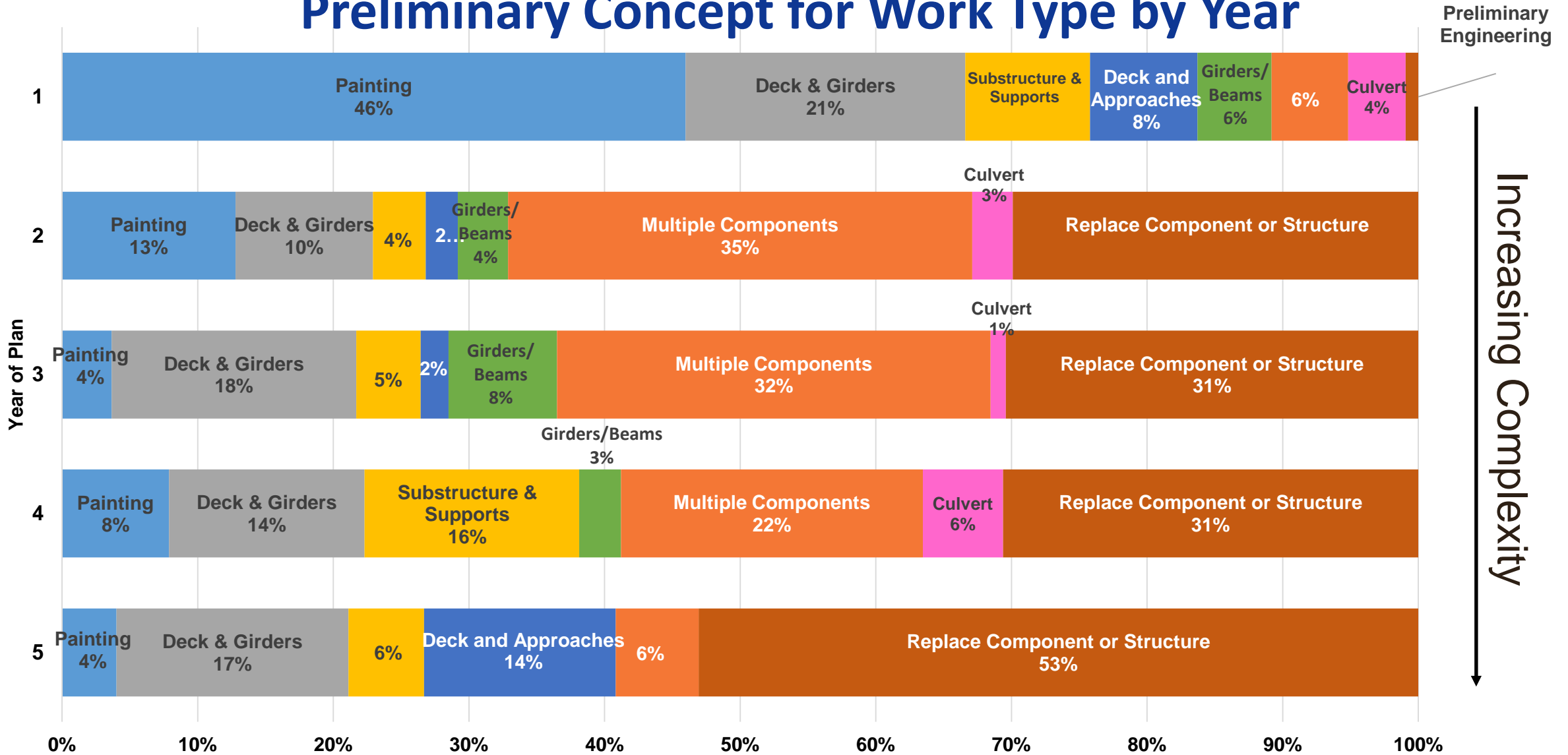
VDOT Planned Activities

- ~\$403M for bridges in fair condition (75% of total program)
- Continue emphasis on preservation of bridges in fair condition
- Bridge and major component replacements

Locality Planned Activities

- ~\$132M for bridges in poor condition (25% of total program)
- Supplements State of Good Repair funds to address poor bridges
- Will reduce the number of locality-owned poor condition bridges

Preliminary Concept for Work Type by Year



Work Activities and Approximate Percentages by Plan Year

- Painting
- Deck & Girders
- Substructure & Supports
- Deck and Approaches
- Girders/Beams
- Multiple Components
- Culvert
- Replace Component or Structure

Summary

Planning for Approximately \$535M in IIJA Bridge Funding

- **~75% for VDOT-Owned Bridges**
 - **Emphasis on preservation on interstates and high volume primaries**
 - **Off-system requirement for Non-Federal Aid Routes**
- **~25% for Locality-Owned Bridges**
 - **Focus on poor bridges**
 - **Will be finalized when estimates are complete**
- **Service lives of over 500 bridges will be improved**
- **Equates to approximately 20% of the interstate inventory**