



**VERMONT
AGENCY OF TRANSPORTATION
Structures Section**

FY2020 Budget Presentation

***Kristin Higgins, P. E.
Structures Program Manager***

***Pamela Maza Thurber, P.E.
Bridge Inspection & Budget Program Manager***



Structures Presentation Overview

Structures Program Overview

Funding Break down

Vermont's bridge population

Prioritization structures for Programming

Candidates vs Pre-Candidates

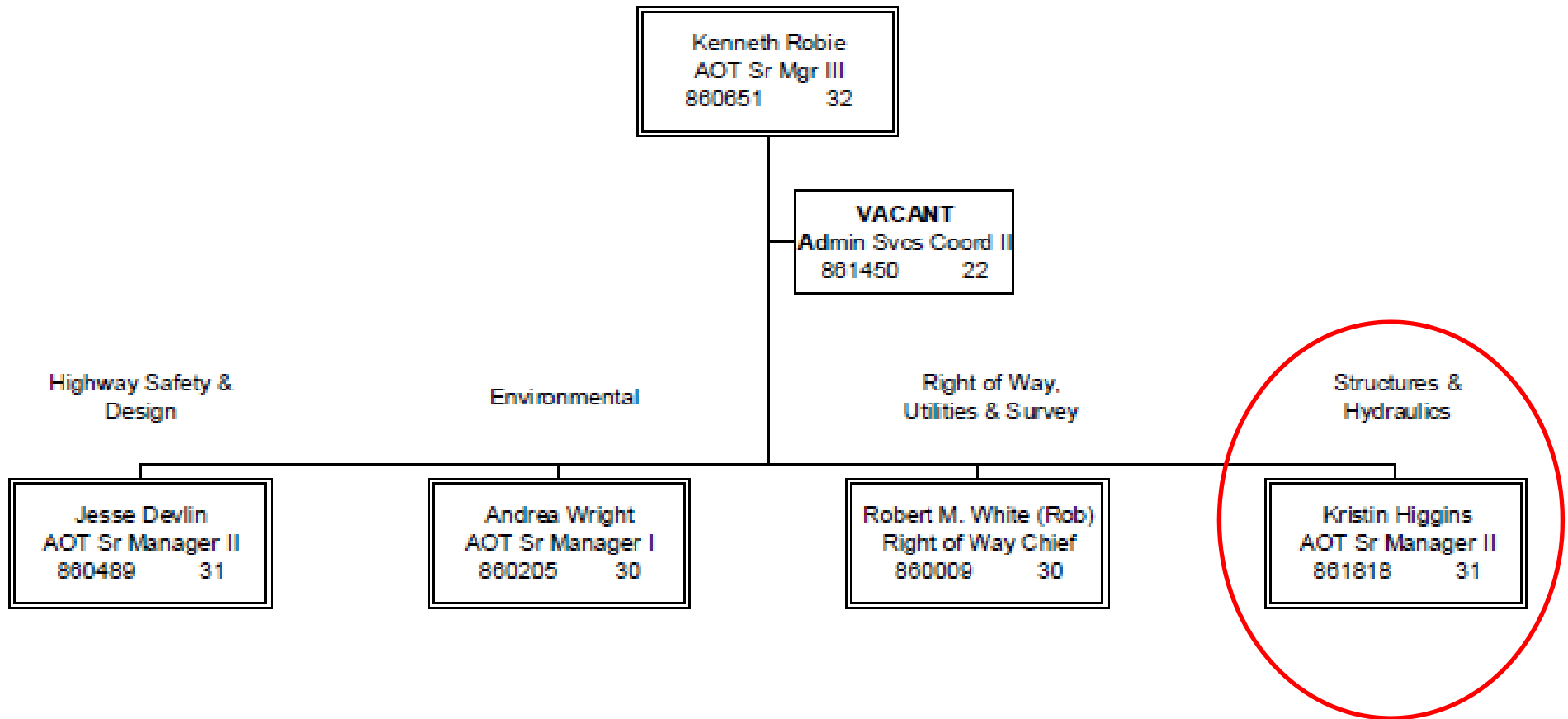
Structures SFY2020 Budget

- Interstate Bridge Program
- State Highway Bridge Program
- Town Highway Bridge Program

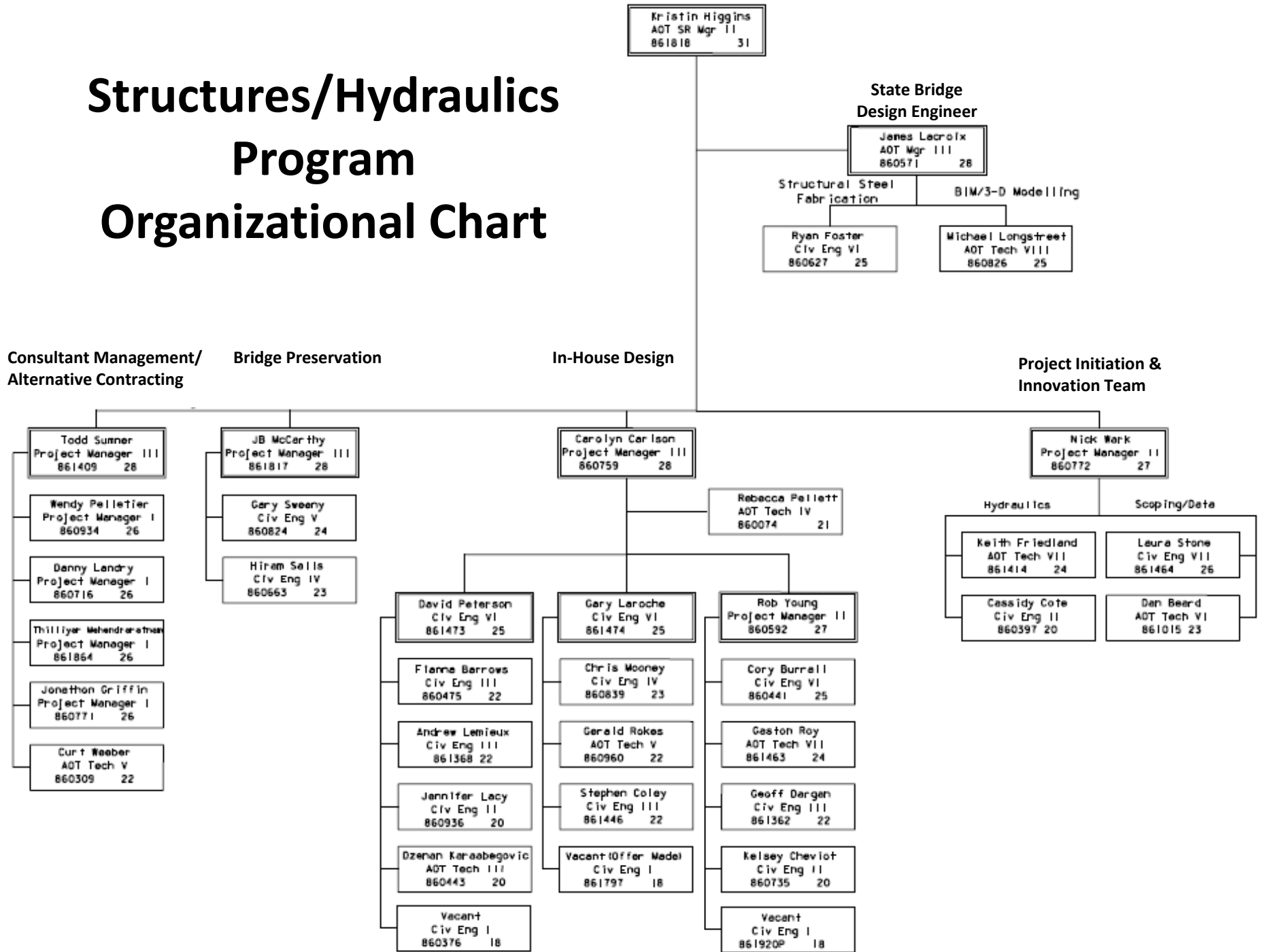
2019 Program Performance

Accelerated Bridge Program update

Project Delivery Bureau



Structures/Hydraulics Program Organizational Chart



Funded Programs within Structures

Interstate Bridge – Funds bridges and culverts on Vermont's Interstate System. Includes bridges crossing over the Interstate like Richmond bridge 29 on US2 over I-89 and the new Middlesex bridge.

- Funded at 90% Federal/10% State

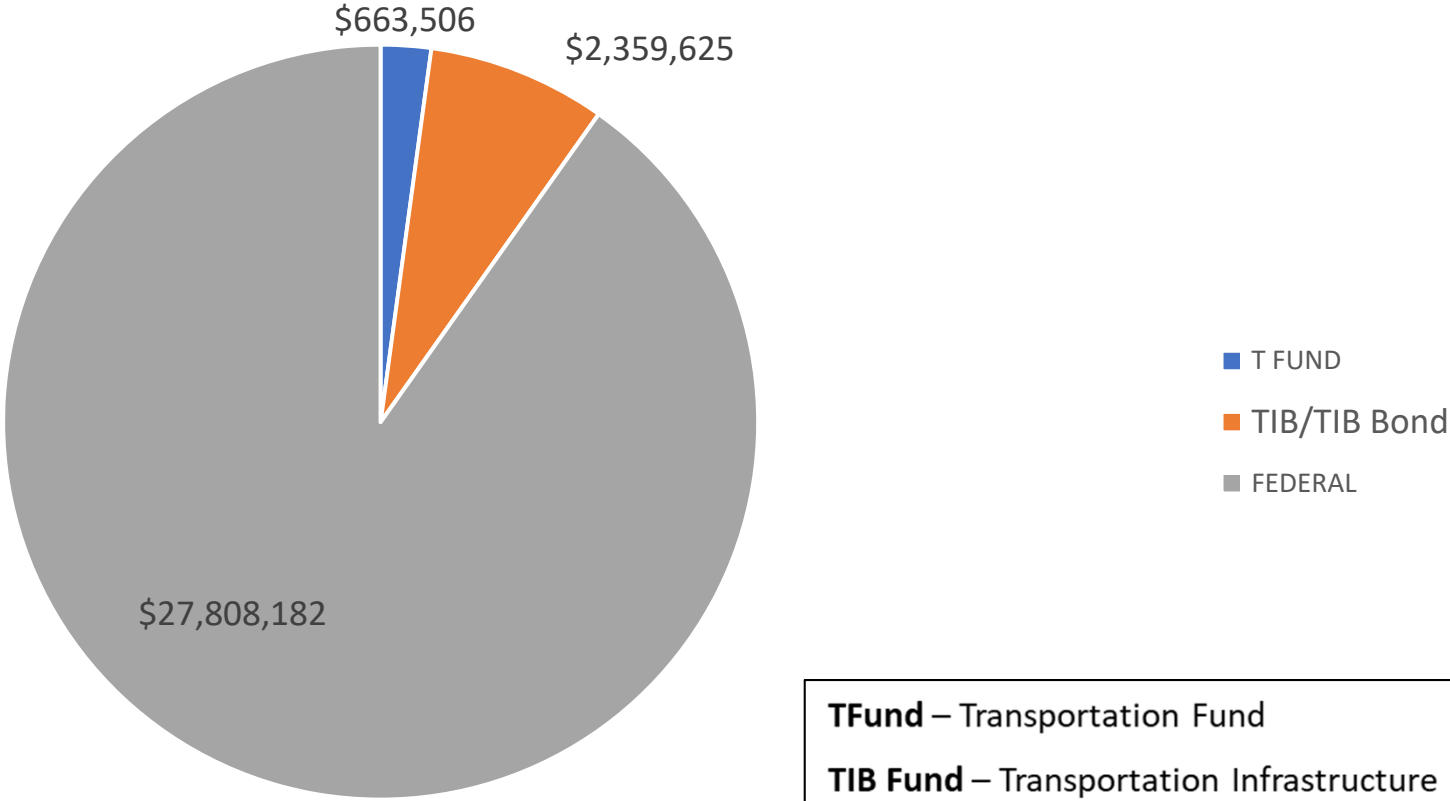
State Highway Bridge – Funds bridges, culverts and walls on Vermont's State Highway system.

- Funded at 80% Federal/20% State

Town Highway Bridge Program – Appropriation specific to local bridges on the Town Highway system.

- Funded at 80% Federal/10% State/10% Local or
- Funded at 80% Federal/15% State/5% Local (Road Closures)

INTERSTATE BRIDGE - \$30.83 M

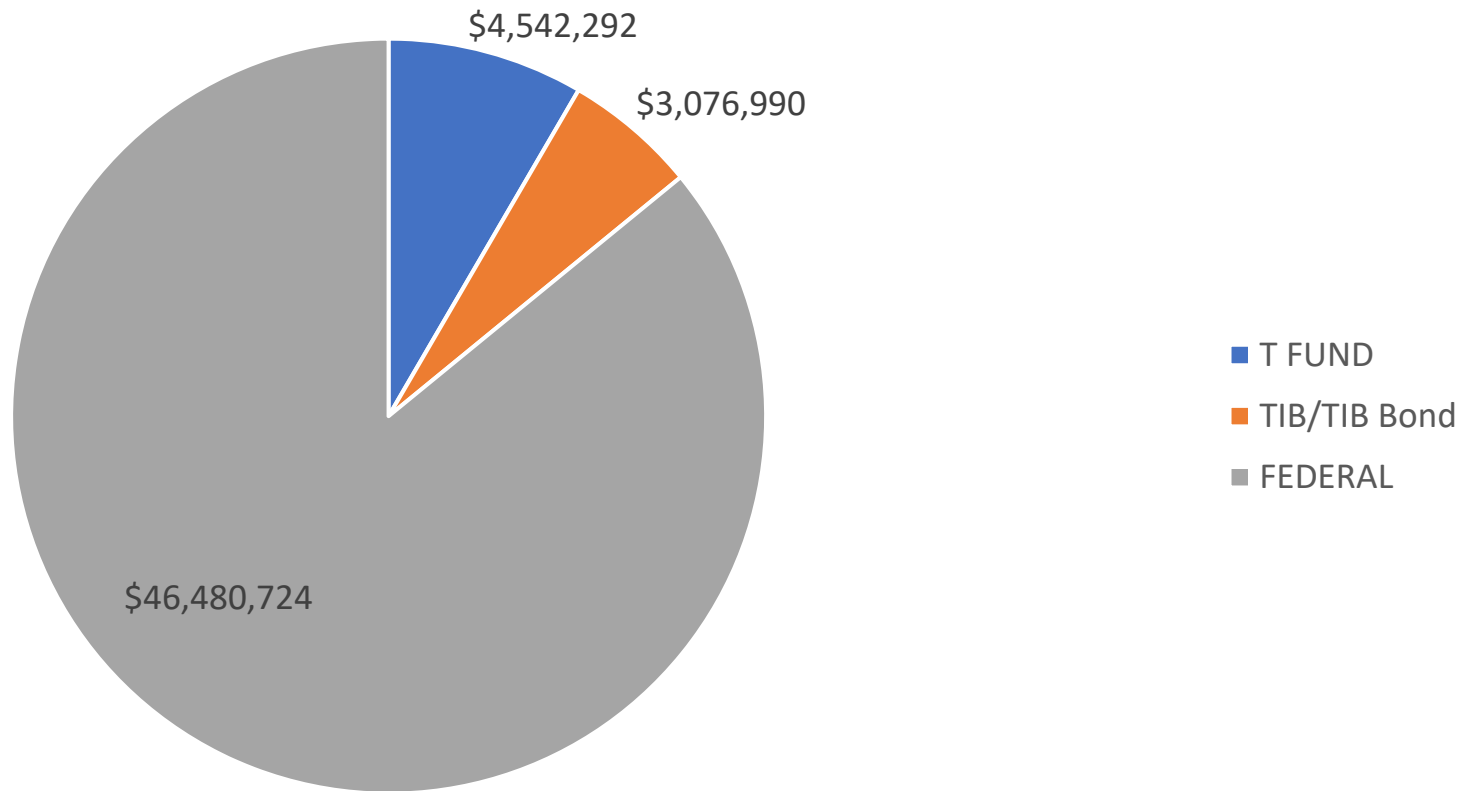


TFund – Transportation Fund
TIB Fund – Transportation Infrastructure Bond Fund

FY2020 Budget Breakdown for Interstate Bridge Program by Funding



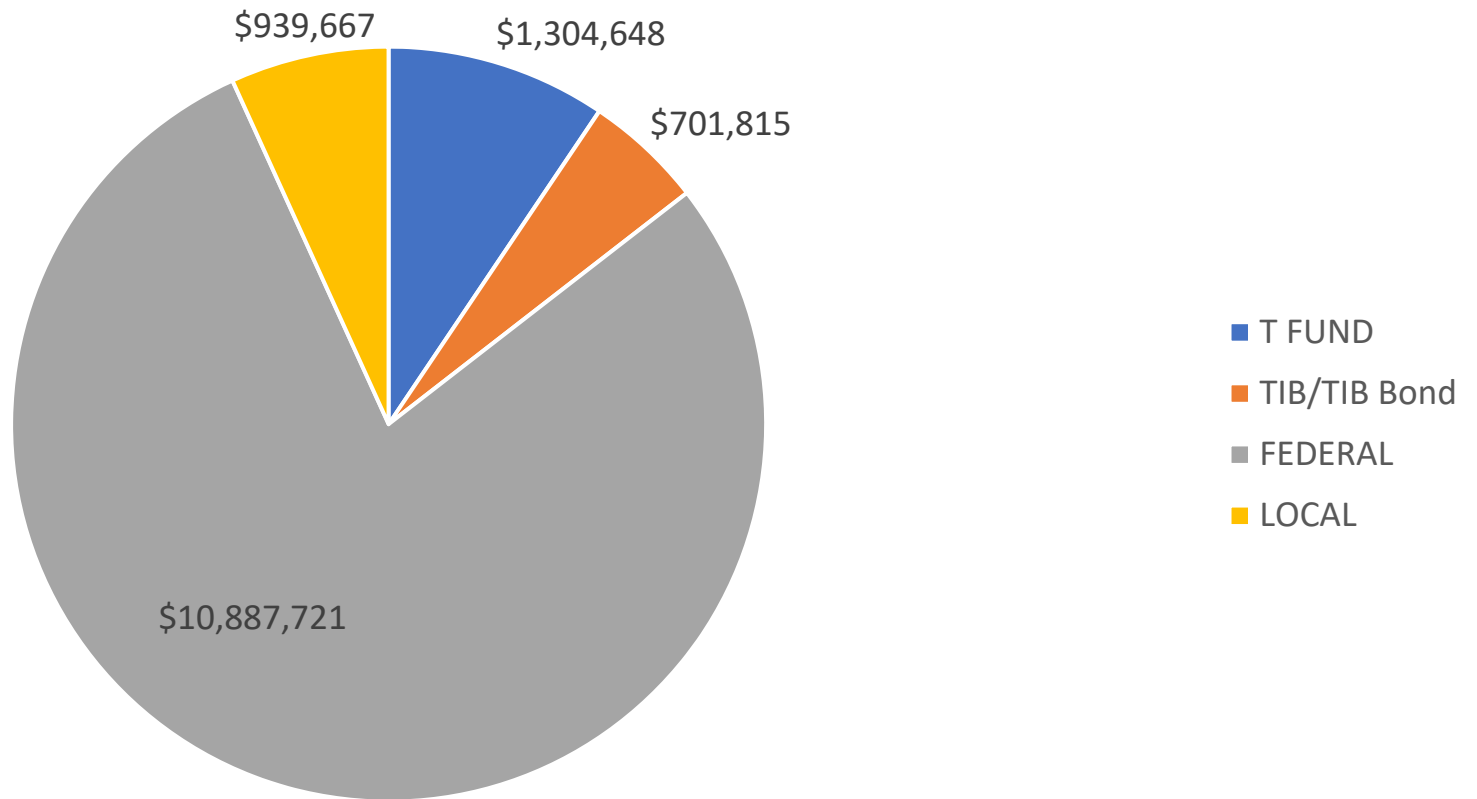
STATE HIGHWAY BRIDGE - \$54.10 M



FY2020 Budget Breakdown for State Highway Bridge Program by Funding

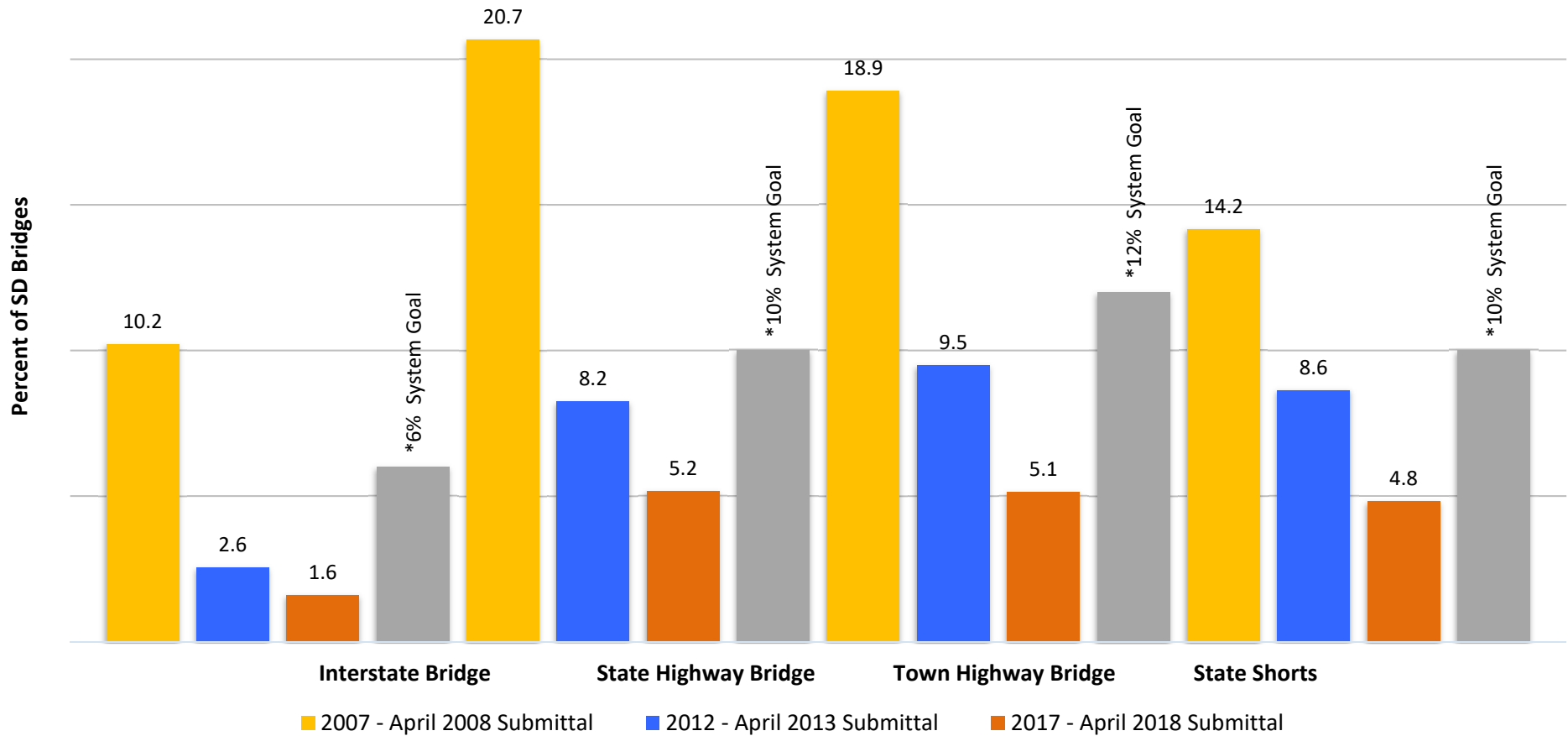


TOWN HIGHWAY BRIDGE - \$13.83 M



FY2020 Budget Breakdown for Town Highway Bridge Program by Funding





Structural Deficiency 10 Year Trend by Program



Vermont's "Highway" Structure Population

(as submitted to FHWA in March 2018)

^2018 data includes border bridge information

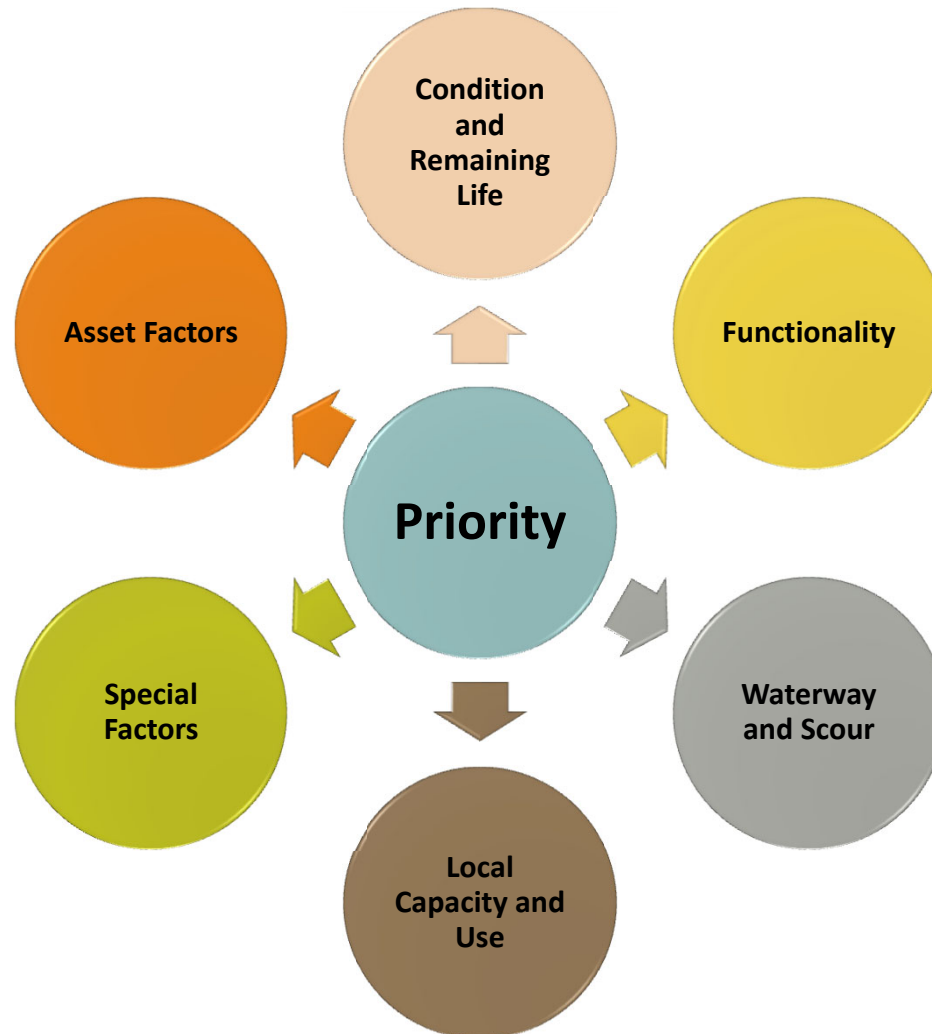
Structure Type	Interstate	State Highway	Town Highway	Other	Total
Long Structures (span length > 20 feet)	313 (47 buried structures)**	811 (72 buried structures)	1,652 (123 buried structures)	7 (1 buried structures)	2,783[^] (243 buried structures)
Short Structures (span > 6 ft & ≤ 20 ft)	211 (211 buried structures)	1,056 (884 buried structures)	*** (see note)	*** (see note)	1,267 (1,095 buried structures)
Totals	524	1,867	1,652	7	4,050
Structurally Deficient "Longs"	5 -1.60%	42 -5.18%	85 -5.15%	1 -14.29%	133[^] -4.78%
Functionally Obsolete "Longs"	95 -30.35%	95 -11.71%	360 -21.80%	4 -57.14%	554 -19.91%

**Buried structures include metal culverts, concrete box culverts, frames, masonry arches, and concrete arches.

***Note: VTrans does not maintain an inventory of town highway or other short structures

2018 Structure Population and Deficiency Status





Project Prioritization for Bridge Programs

Bridge Condition and Remaining Life – 40 points

Deck life = 35 years

Superstructure and substructure life = 70 years

Culvert life = 40 years

Functionality – 5 points

Width and alignment as compared to Vermont State Standards rather than Federal (AASHTO) Standards

Load Capacity and Use – 15 points

Posting status, bypass length, and average daily traffic use

Project Prioritization for Bridge Programs



Project Momentum – 5 points

Regional Priority – 15 points

Importance and need for the community

Fire safety and rescue

Waterway Adequacy – 10 points

Scour critical, adequacy, and protection

Asset Factor – 10 points

Benefit / cost

Benefit is avoiding user cost expenditures (time, fuel, etc.)

Project Prioritization for Bridge
Programs



Candidate

Candidates are unfunded projects in the budget book with authority to spend that may or may not advance

Elimination of candidates would remove unrealistic expectations

Not really a project until a finance and maintenance agreement is signed

Pre-Candidate

These are the top, non-asset-related regional needs to be considered for candidate or advanced status

Project Prioritization for Bridge Programs – Definitions

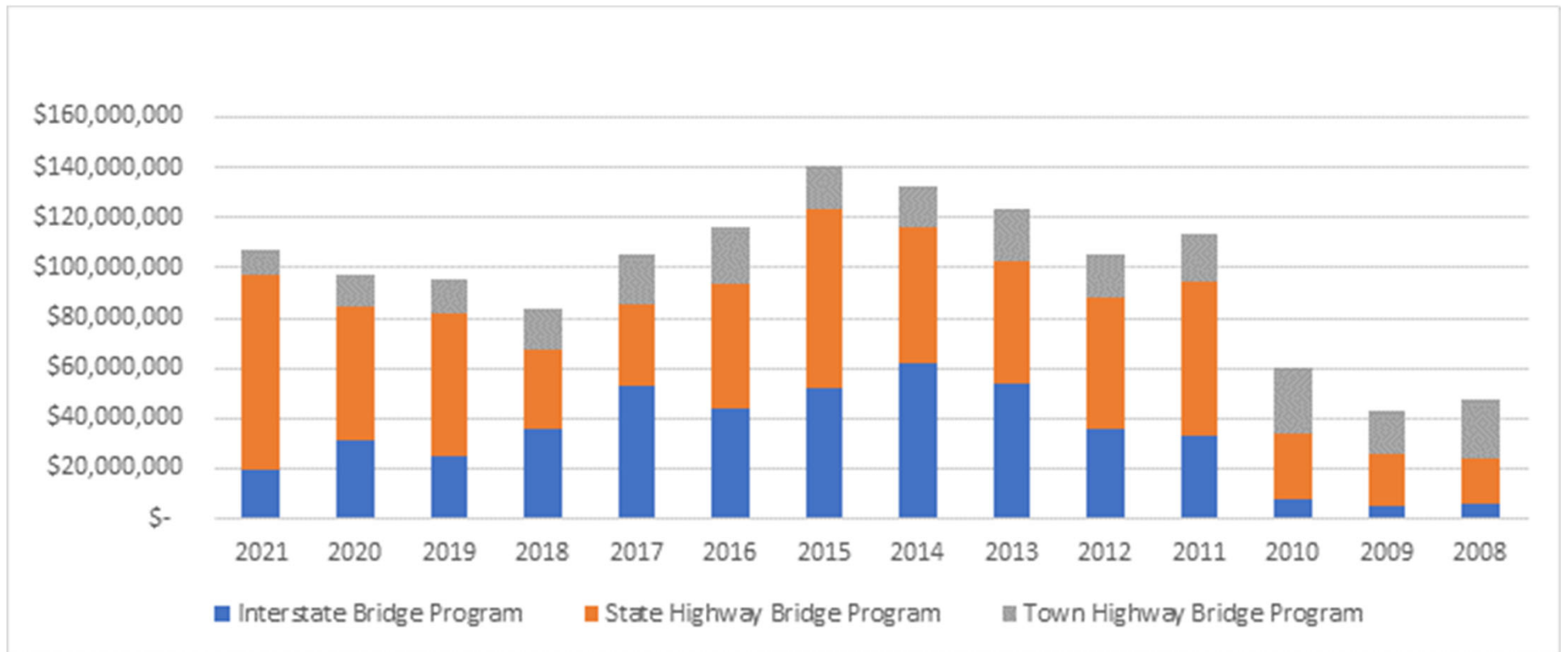


Structures Program Budget FY2020

- \$98.8 million for bridges:
 - 41 Projects funded for Construction
 - 52 Projects Funded for Development and Evaluation
 - Spending increased \$3.3M (3%)



Program Funding Trends



Interstate Bridge Program FY2020

\$ 30.83 Million

8	Projects funded for Construction
7	Projects funded for Development and Scoping
1	Design Build project in progress
1	Construction Manager/General Contractor (CMGC) project – Utilizing ABC Technology to replace four bridge decks

Interstate Bridge Program Summary:

- Spending up \$6.3 million from last year
- Rockingham Design Build to spend \$12.5M in FY20
- Colchester Bridges 76 N & S and 77 N & to spend \$11M in FY20
 - Four bridge decks replaced using Accelerated Bridge Construction
 - Alternative contracting (CM/GC) Used for innovation
- Four Bridge deck replacements on I-89 in Berlin
- Lebanon NH – Hartford VT bridge on I-89

Rockingham IM091-1(66) Design Build - Update

Project Spending:

- Through 2019 = \$37.2 Million
- Projected 2020 = \$12.5 Million
- Projected 2021 = \$1.3 Million
- Total Costs \$51 Million

Project Progress:

- North bound bridge complete and scheduled to open this spring
 - Final Paving and line striping
- Construct crossover to Northbound lane this spring
- Start Southbound bridge Demolition
- Begin constructing New southbound bridge this summer
- Project scheduled to be complete in summer or fall of 2020

Rockingham IM091-1(66)



State Highway Bridge Program FY2020

\$54.10 Million

21	Projects Funded for Construction
27	Projects Funded for Development and Scoping
5	Large culvert replacement or rehabilitation funded for construction
1	VT-NH Project funded for construction (Lancaster-Guildhall Rte. 2)
2	Construction funding for Alternative Contracting – Construction Manager/General Contractor (CM/GC) Projects

State Highway Bridge Program Summary:

- Down \$3.5 million from last year
- Middlebury and NH-GI spending \$35 Million in SFY20
- Middlebury and NH-GI spending \$63.5 Million over SFY21 & 22
- Bethel BR 38 on Route 12
- Pittsfield BR 126 on VT 100
- Dover BR 59 on VT 100
- Brunswick BR 6 on VT 102

North Hero – Grand Isle Construction Update

- \$70 million (Includes Construction Oversight)
- Temporary Bypass with Movable bridge – Complete May 2019
- Construction of new movable bridge
 - Starting construction Summer 2019
 - New bridge opened to traffic May 2021
- Removal of Temporary Bridge completed by November 2021
- Final Clean up and De-mobilization by June 2022



NORTH HERO-GRAND ISLE BHF 028-1(26)



Middlebury WCRS(23) - Tunnel



Middlebury Tunnel Project Update

Early Work Package 2 – Drainage Structures/Access Roads:

- Completed Drilling three large shafts
 - 1 Launch shaft and 2 receiving shafts
- Completed tunneling for drainage system
- Completed the drainage outfall structure at Otter Creek
- Completed construction of temporary access roads
- Installed Utility Vaults

Rail Detour Support Projects:

- Two projects in Construction
 - Restoring the Leicester Wye
 - Building the Rutland Siding and Middlebury switches
- Restoring the Rutland Wye is in Design
 - Construction Next this fall
- Upgrades to the Green Mountain Line and NECR for increased loading
- Upgrades to Global loading facility

40' Diameter x 40' Deep Launch Shaft



Middlebury Tunnel Project Update

Main Project – Construct Tunnel:

- Right of Way Acquisition
 - 30 Parcels total
 - 6 remaining
- Cost Negotiations with Contractor underway
 - Final cost reconciliation Scheduled for February 13
 - Signed contract in Early March
- 2019 (SFY20) Construction
 - Support of excavation along the railway to allow for installation of new structure
 - Sewer and Waterline construction
 - Power and telecommunication relocation
- 2020 (SFY21) Construction
 - 10 Week Rail shutdown at Middlebury (VRS detoured to Eastern corridor)
 - 10 Week closure of VT Rt. 30 and Merchants Row
 - Excavate and Install Precast tunnel sections

Quechee Gorge Bridge Update



HARTFORD (QUECHEE) NH 020-2(45) Quechee Gorge

Temporary Barrier Update:

- Means restricting temporary barrier – Fence installed Fall 2018
- Two calls to the Gorge since the fences was installed
- December 7, 2018 – Young man removed from Fence by an off duty police officer proving effectiveness in allowing time for intervention
- Center section of fence can be removed for access

Main Project Update:

- Project being designed by Gill Engineering
- Conceptual Plans presented publicly on November 29, 2018
- Presented on but discounted nets for means restricting barrier
 - High installation and lifecycle costs (camera's and sensors required)
- Presented vertical barriers and will seek public input
- Project will use phased construction and will not restrict traffic during foliage season
- Construction Contract Fall 2020 with construction starting in 2021

Means Restricting Temporary Safety Barrier



Town Highway Bridge Program FY2019

\$13.83 Million

11	Projects Funded for Construction
17	Projects funded for Development and Scoping
2	VT-NH Border Projects funded for Construction
1	VT-NY Border Project funded for Construction

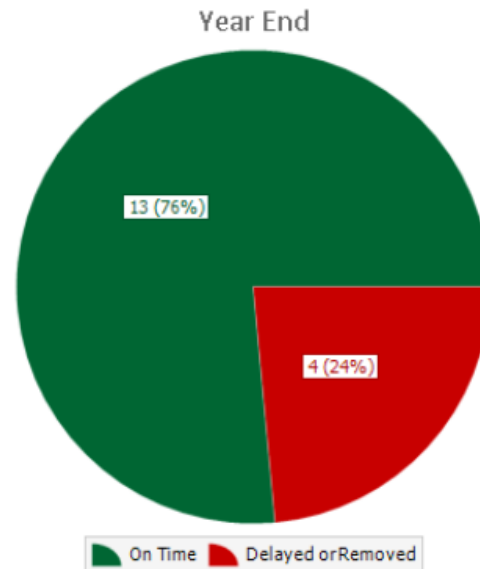
Town Highway Bridge Program Summary:

- Up \$0.5M from last year
- Brattleboro – Hinsdale Construction spending starts in FY20 and is expected to spend \$15 Million over the next 5 years
- Windsor – Cornish Covered bridge Rehabilitation funded in FY20
- Montpelier Bridge 13 on Cummings Street
- Cavendish Bridge 58 on Depot Street
- Orleans Bridge 10 on Main Street
- Poultney Bridge 2 on Route 140

2018 Performance Measures

Goal: 80% within 30 days

Current Content on Display: Advertisement (110.02), All Structures, Contract Admin, 01/01/2019 vs. 01/01/2018.



	Program	On-Time	Delayed	% On - Time
➔	Interstate Bridges	0	0	0%
➔	State Highway Bridges	8	2	80%
➔	Town Highway Bridges	5	2	71%
➔	VTrans Program Totals	13	4	76%

Town Highway Bridge:

- Cavendish – 7 week delay due to Right of Way complications
- West Haven/White Hall, NY – 8 week delay due to project administration oversight

State Highway Bridge:

- Montgomery Bridge Deck Replacement Bridge #19 - 1 Year delay for Funding
- Montgomery Bridge Deck Replacement Bridge #20 – 1 year Delay for Funding

Accelerated Bridge Program



90 ABC projects

Delivered since 2012

49% of all Projects

In Structures

\$117 Million

In Construction

98% on time

Bridge openings



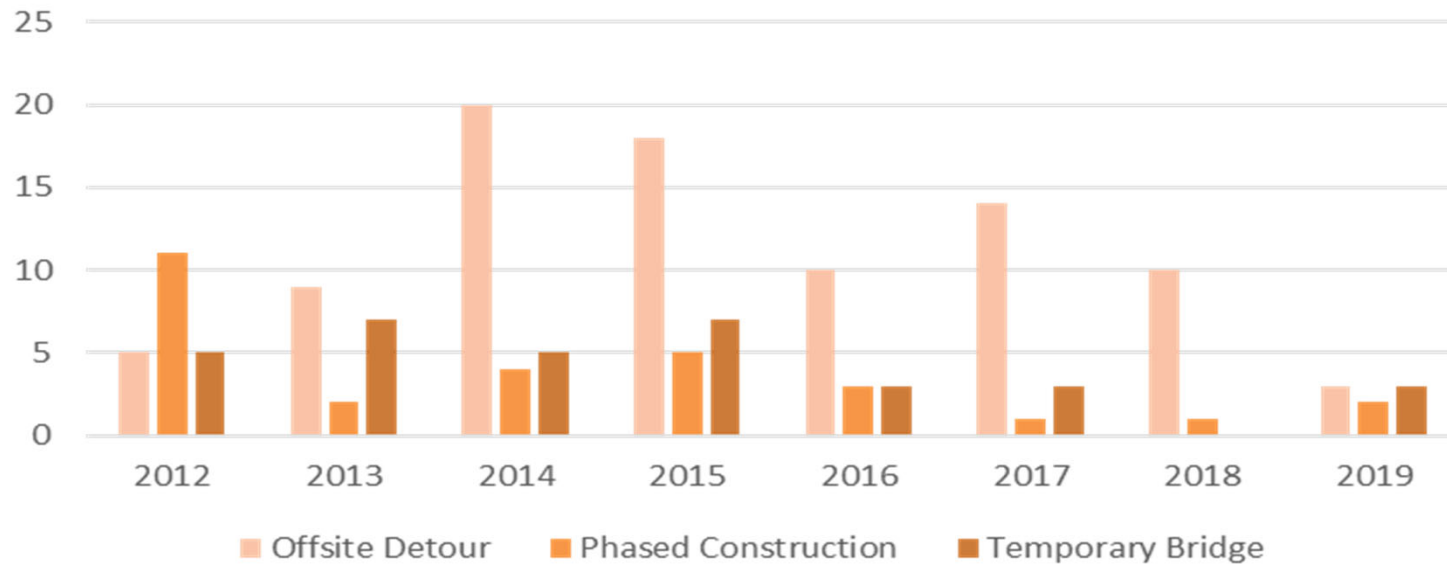
Accelerated
Bridge
Program
VTRANS

Accelerated Bridge Construction

	Accelerated Bridge Construction	Conventional Construction	% ABC	% Conventional Construction
2012	7	9	44%	56%
2013	8	13	38%	62%
2014	18	8	69%	31%
2015	23	8	74%	26%
2016	8	8	50%	50%
2017	13	8	62%	38%
2018	5	8	38%	62%
2019	2	12	14%	86%
TOTAL (2012-2019)	84	74	53%	47%

Short Term Road Closures 2019

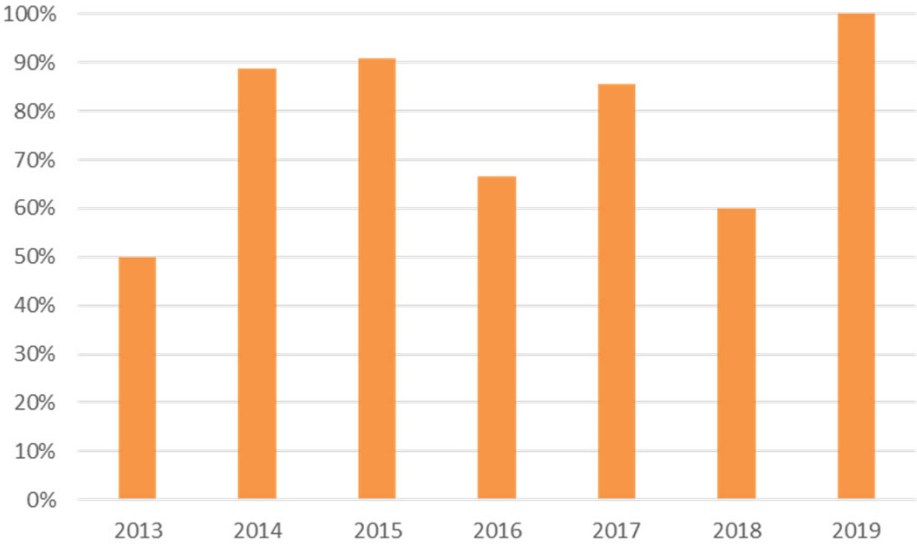
Number of Project Utilizing Maintenance of Traffic Option



	PROJECT NAME	PROJECT NUMBER	ROUTE	Construction	Duration	Scope
2019	POULTNEY	BF 0138(12)	Route 140	Accelerated	4 weeks	Full Bridge Replacement
2019	CAVENDISH	BO 1442(38)	Depot St	Conventional	Full	Full Bridge Replacement
2019	WEST HAVEN-WHITEHALL, NY	BO 1443(51)	Book Road	Conventional	8 weeks	Full Bridge Replacement
2019	HIGHGATE	BO 1448(43)	Machia Road	Conventional	Short Duration	Full Bridge Replacement

Act 153

	Number of Towns
2012	Act 153 is passed
2013	3
2014	8
2015	10
2016	8
2017	6
2018	4
2019	2



Innovation



Woodstock Village Before

Woodstock Village After



Johnson Village Before

Johnson Village After

Kristin M. Higgins, P.E.
Structures Program Manager

Project Delivery
Bureau/Structures
Vermont Agency of Transportation -
Highway Division
One National Life Drive
Montpelier, VT 05633 - 50001

e-mail: Kristin.higgins@Vermont.gov
phone number: 802-498-3398

Pamela Maza Thurber, P.E.
Bridge Inspection & Budget
Program Manager

Asset Management & Performance
Bureau
Vermont Agency of Transportation -
Highway Division
219 North Main Street | Suite 201
Barre, VT 05641

e-mail: pam.thurber@vermont.gov
phone number: 802-595-2270

Questions?

