

Vermont Agency of Transportation

Highway Division Overview

WAYNE SYMONDS, PE CHIEF ENGINEER AND DIRECTOR

ANN GAMMELL, PE DEPUTY CHIEF ENGINEER AND DEPUTY DIRECTOR

JANUARY 14, 2021





Agency of Transportation

Joe Flynn
Secretary of Transportation
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Vacant
Deputy Secretary
@vermont.gov

Leslie Welts
Legal Section
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Harriet Johnson
Private Secretary
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VTrans Functional Chart

John Zicconi
Transportation Board & New
Mtr Veh Arbitration Board
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Wanda Minoli
Department of Motor Vehicles
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- Vehicle Registration / Titling
- Driver License Exams / Issue
- Tax Collection Services
- Oversize / Overweight Permits
- Driver Improvement
- Branch Offices / Mobile Vans
- Driver Training
- Motor Carrier Safety
- Dealer and Inspection Stations
- Criminal investigations
- Pupil Transport Oversight
- Commercial Vehicle Enforcement
- Vermont Rider Education Program (Motorcycle Training)
- IFTA/IRP/Motor Fuel Tax

Wayne Symonds
Highway Division
wayne.symonds@vermont.gov

- Engineering
- Roadway Program
- Structures Program
- Construction
- Pavement Program
- Highway Safety & Design
- Municipal Assistance
- Environmental Permitting & Hydraulics
- Materials Testing & Certification
- Traffic Research
- Geotechnical Engineering
- ROW / Utilities / Survey
- Asset Management
- Better Back Roads
- Maintenance Districts / Traffic Shop
- Central Garage
- Technical Services
- Governors Highway Safety Program
- Water Quality / Stormwater
- Hazardous Materials & Waste Management

Michele Boomhower
Policy, Planning and Intermodal
Development Division
michele.boomhower@vermont.gov

- Policy, Planning, & Research Bureau
- Transportation Mapping
- Development Review & Permitting Services
- Public Outreach
- Public Transit Program
- Rail / Aviation Bureau

Wayne Gammell
Finance & Administration Division
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- Information Technology
- Contract Administration
- Audit
- Budget Operations
- Financial Operations
- Civil Rights & Labor Compliance
- Performance
- VT Transportation Training Center (VTTC)
- Safety
- Hearings
- Vermont Local Roads
- Facilities Management





Agency of Transportation

Wayne Symonds
Highway Division
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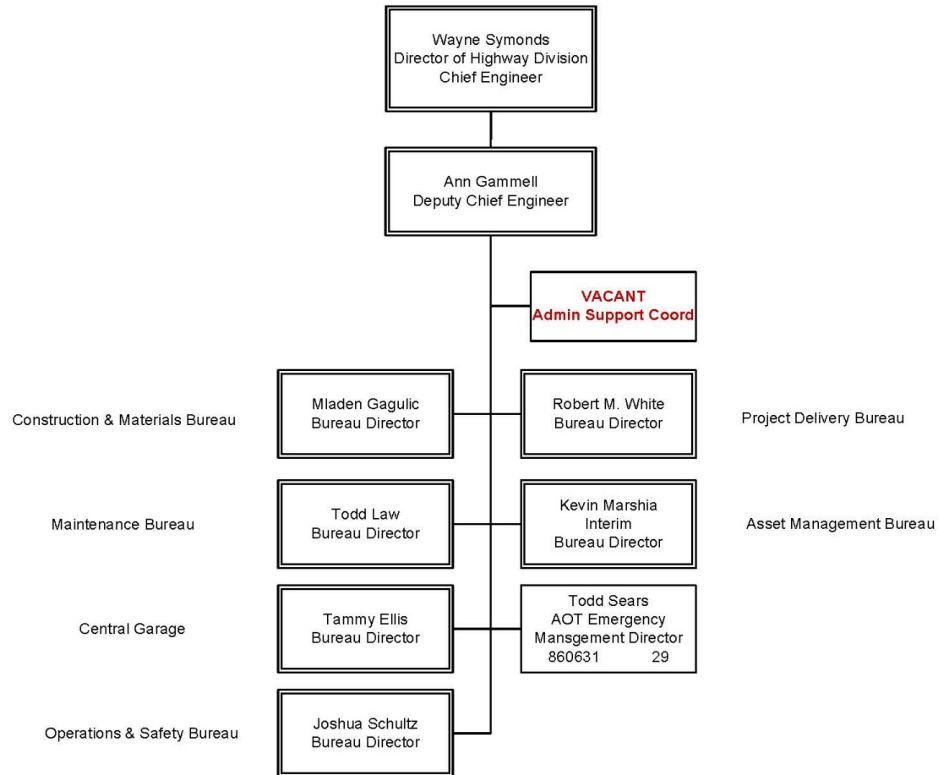
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VTrans Functional Chart



Highway Division – Organizational Structure

Wayne Symonds, Division Director
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 (802) 279-8745



AOT Mission and Vision

MISSION

Through Excellent **customer service**, provide for the **safe** and **efficient movement** of people and goods.

Customer Service
Efficiency
Safety
Mobility

VISION

A safe, efficient and **multimodal** transportation system that promotes Vermont's **quality of life** and **economic well being**

Multimodal
Quality of Life
Economy

Asset Management Bureau

Bureau Overview

KEVIN MARSHIA, PE - INTERIM BUREAU DIRECTOR

JANUARY 2021



VTrans Definition of Asset Management

Right Investment
Right Asset
Right Time

Asset Management Staff

Who are we?

- 33 Professionals
 - Engineers
 - Technicians
 - GIS Professionals

What do we do?

- Inspect Bridges
- Manage Data
- Build Systems
- Create & Manage Budgets
- Manage Risk
- Measure Performance
- Financial Planning
- Project Programming
- Partners in all stages of an Assets Life Cycle

Planning & Programming

Design

Data Inventory

Data Quality

Asset Life Cycle

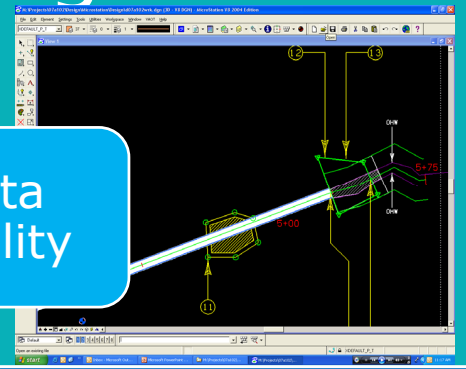
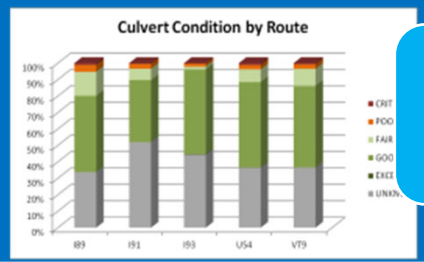
Data Reporting

Data Systems

Data Efficiency

Maintenance

Construction



Asset Facts

- 3,200+ miles of **pavements**
- Over 4,000 **structures** (bridges and culverts greater than 6 feet in diameter)
- 49,465 **small culverts** (less than 6 feet diameter)
- 67,144 **traffic signs**
- 160 **traffic signals**
- ~900 miles of **guardrail**
- 105 **Park and Rides** (state and municipal)
- 890 miles of Highway Use/Priority **On Road Bicycle Corridors**
- 111 **Rail Trail Bridges**

History of Asset Management at VTrans

- 1990's -Legislation directed VTrans to institute asset management principles
- 1995 - Establishment of Pavement Management System
- 2002 – First Asset Management Work Plan
- 2006 – “Road to Affordability” focused on preservation and financial sustainability
- 2014 – Established Asset Management Bureau
- 2018 – First Transportation Asset Management Plan (TAMP)
- 2019 – Began development of VTrans Asset Management Information System (VAMIS)

Current Initiatives

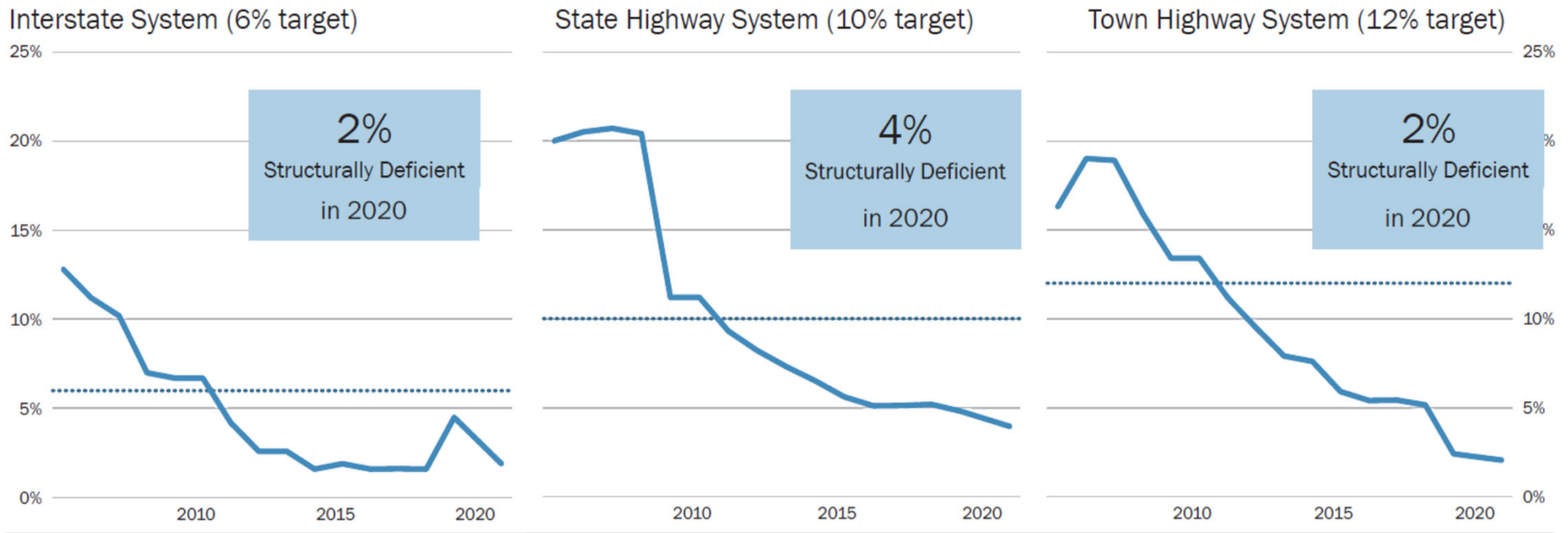
- Leading Development of the new **VTrans Project Selection and Project Prioritization Process (VPSP2)**
- Currently developing and implementing **VTrans Asset Management Information System (VAMIS)** – a multi-year process
- Standardizing budget development and monitoring
- Strengthening **Corridor Management** principles through project programming and identification
- Modernizing bridge inspection and bridge management processes
- Establishing processes for increased integration of small culverts
- Financial planning and performance management of all assets

Preservation

- **Definition:** Preservation consists of work that is planned and performed to **improve or sustain the condition** of the transportation facility in a **state of good repair**.
- A \$100,000 investment in a culvert under 20 feet of fill on the Interstate today saves over \$1 million in traffic impacts and replacement costs in the future
- A \$100,000 investment in a new bridge membrane today saves over \$1 million in deck replacement costs in the future.

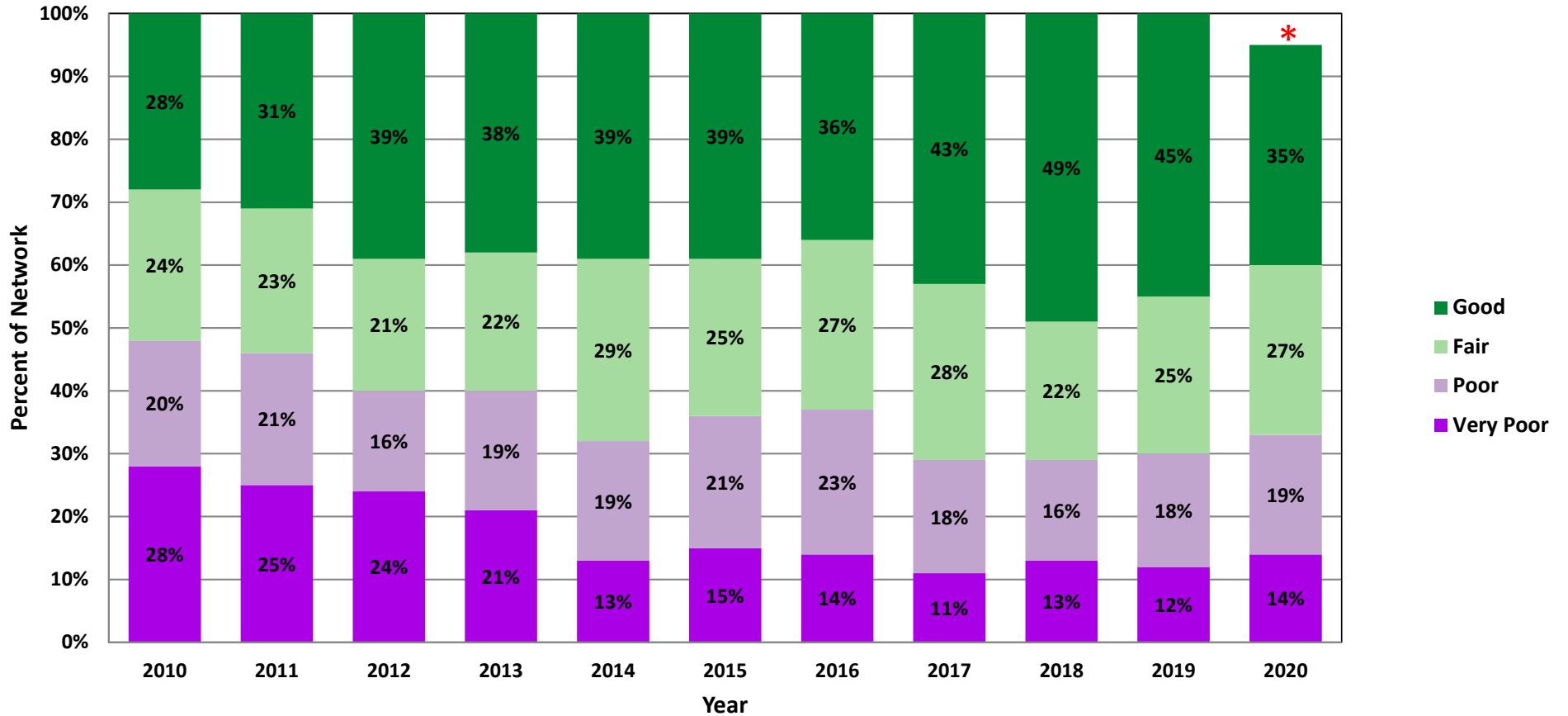
Project Delivery Performance: Structurally Deficient Bridges

Percent Structural Deficiency Over Time by System



Pavement Condition

Historic Pavement Condition Distribution – Unweighted*



* AOT experienced an equipment breakdown in 2020 which affected data collection for new paving, resulting in about 5% missing data for the network.

The Future

- Integrated management of asset life cycle utilizing VAMIS
- Optimized investments across asset classes
- Instituted Corridor Management planning and implementation
- Reduced Investment in Emergent Needs/Emergency Repairs
- Greater Return on Investment across the network

Questions?

Kevin Marshia, PE

Interim Director – Asset Management Bureau

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802-279-3594

Vermont Agency of Transportation

Project Delivery Bureau Overview

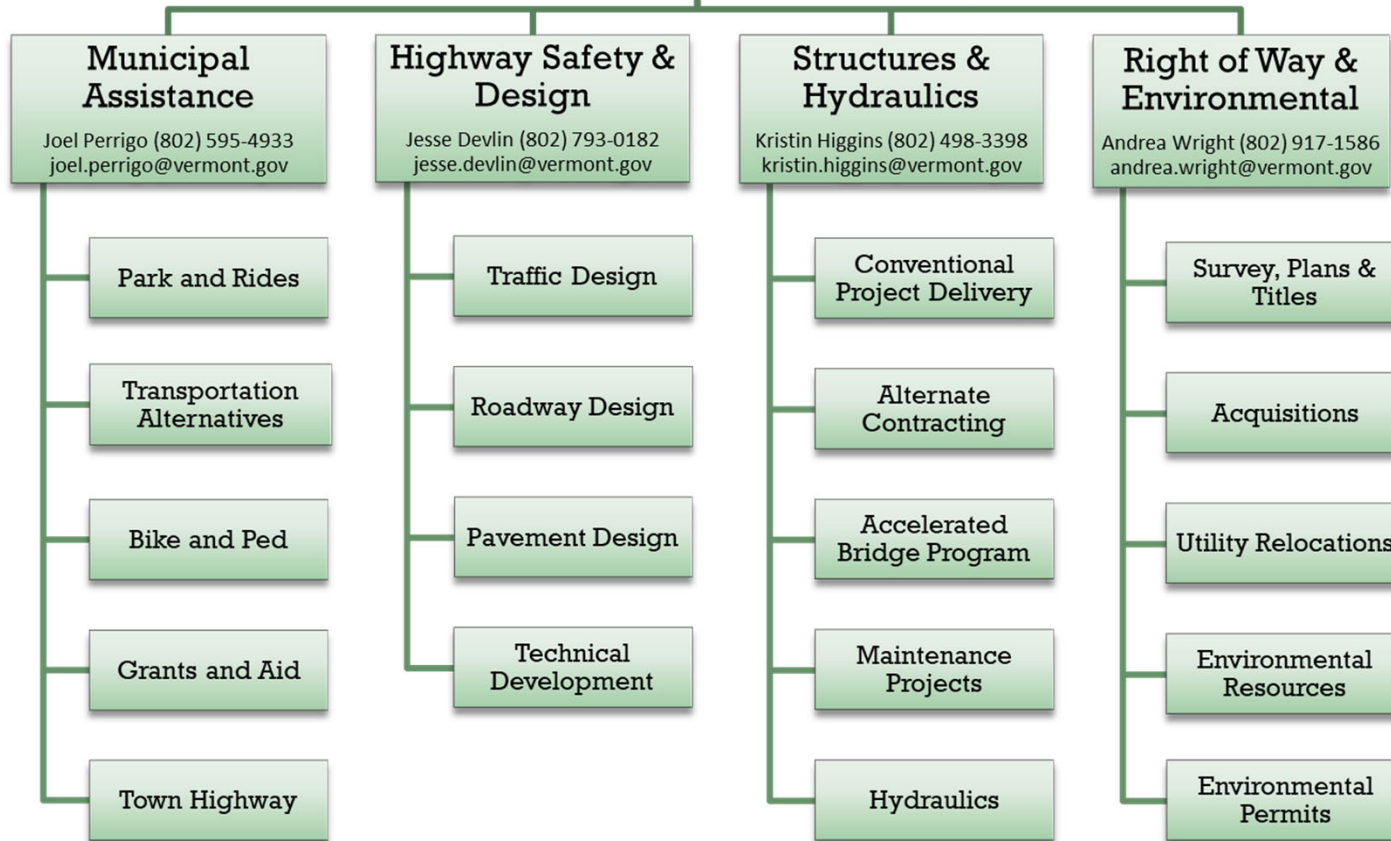
ROBERT M. WHITE, PROJECT DELIVERY BUREAU DIRECTOR

2021



VTrans Highway Division
Project Delivery Bureau

Robert M. White (802) 224-6592
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Highway Safety & Design

29 employees

Project Management and Design Engineering for Highway improvement projects

Roadway Reconstruction

Paving

Intersection Improvements

Slope and Ledge Stabilization

Small Culvert Replacement (<6' diameter)



Structures

42 Employees

Project Management and Design Engineering for Bridges and Large Culverts projects

State Bridges

Town Highway Bridges

Large Culverts (>6' diameter)

Hydraulic Design



Right of Way & Environmental

55 Employees

Permit Acquisition and Regulatory Compliance

Technical Expertise

- Wetlands
- Wildlife Habitat
- Stormwater & Water Quality
- Archeology and Historic Properties
- National Environmental Policy Act (NEPA) Documentation
- ACT 250
- Landscape Architecture



Right of Way & Environmental

Continued

Geodetic and Route Survey

Plans and Title

Legal Documents

Appraisals

Negotiations

Utility Relocations



Municipal Assistance

16 Employees

Municipally Managed Projects

Bicycle and Pedestrian

Better Back Roads/Grants and Aid

Transportation Alternatives

Town Highway

Park and Rides







Construction & Materials Bureau

MLADEN GAGULIC, DIRECTOR

- Construction Section
- Materials Section
- Geotechnical Section
- e-Construction Section



Construction & Materials Bureau - Overview

Construction Section - Jeremy Reed, PE., Construction Engineer

- **Provide construction oversight** for most capital improvement projects for the Agency
 - 60-90 Contracts per year (70 –110 projects)
 - Road & Bridge, Railroad, Park and Rides, Bike Paths
 - Oversee different types of contracts such as: DBB, DB, CMGC, ID/IQ, etc.
 - \$180 - \$200 Million in Contractor payments
- **Construction Oversight**
 - Quality Construction
 - Regulatory Compliance
 - Public Concerns

Construction & Materials Bureau - Overview

Construction Section - Jeremy Reed, PE., Construction Engineer

- **Partnerships:**

- Association of General Contractors
- Paving Industry
- Northern New England Concrete Association
- American Council of Engineering Companies
- Federal Highway Administration

- **Resources**

- 70 FT VTrans employees
- 5 – 10 Temporary employees
- 75 – 110 Consultants seasonal (April to November)

Construction & Materials Bureau - Overview

Materials & Certification Section - Nick Van Den Berg, P.E., Materials Manager

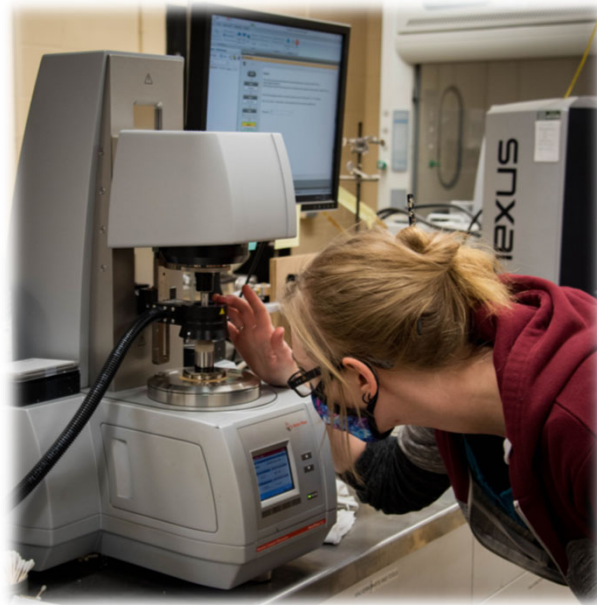
- **To ensure only quality** materials are incorporated into the work.
 - Majority of acceptance testing is performed at our **AASHTO accredited** laboratory in Berlin, VT.
 - Maintain the Agency **Quality Assurance Program (QAP)** in accordance with 23 CFR 637, including the Material Acceptance Program
 - The Independent Assurance Program provides an independent, **unbiased** evaluation of the Material Acceptance Program
 - There are **20 asphalt** plants, **17 concrete** plants and **5 precast** plants approved to supply materials to our projects
 - About **130 pits** are approved to supply unbound materials



Construction & Materials Bureau - Overview

Materials & Certification Section - Nick Van Den Berg, P.E., Materials Manager

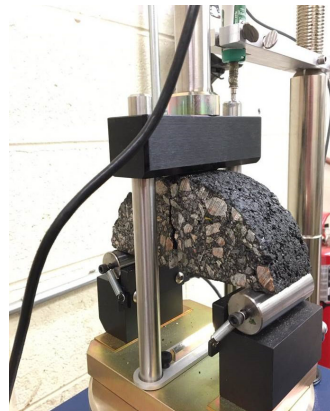
- In **2020** we:
 - Performed Acceptance testing of materials representing **353,000 Tons** of Hot Mix Asphalt
 - Used **56,000 Tons** of Recycled Asphalt Pavement
 - Inspected **1300** pieces of pre-cast concrete elements



Construction & Materials Bureau - Overview

Materials & Certification Section - Nick Van Den Berg, P.E., Materials Manager

- **We are moving towards performance-related** specifications and test methods;
 - **Hamburg Wheel Tester** – rutting performance of asphalt
 - **Semi-Circular Bend Test** – cracking resistance of asphalt
 - **IDEAL-CT** – cracking resistance of asphalt
 - **Surface Resistivity Meter** – concrete resistance to chloride intrusion



Construction & Materials Bureau - Overview

Geotechnical Section – Callie Ewald, P.E., Geotechnical Manager

- To provide **geotechnical foundation recommendations** for all transportation infrastructure
 - **Site characterization** through field subsurface investigations, field testing, and laboratory soil and rock testing.
 - Shallow and deep bridge foundation design, **slope stability** analysis and design
 - Manage **approved aggregate source** program
 - Manage the Agency's **rock slope program**
 - Oversee and manage **two AASHTO accredited central** and **three regional** soil and aggregate laboratories that provide **quality assurance** testing on all **aggregates** used in Construction

Construction & Materials Bureau - Overview

Geotechnical Section – Callie Ewald, P.E., Geotechnical Manager

- To provide **emergency response** to **voids** in the roadway and soil/rock **slope instabilities**
 - **Our drilling** crew performs subsurface borings and probes and installs instrumentation to enable monitoring
 - Our **Engineers and Geologists** provide real time assessments and recommendations when **rockfalls** and **landslides** occur

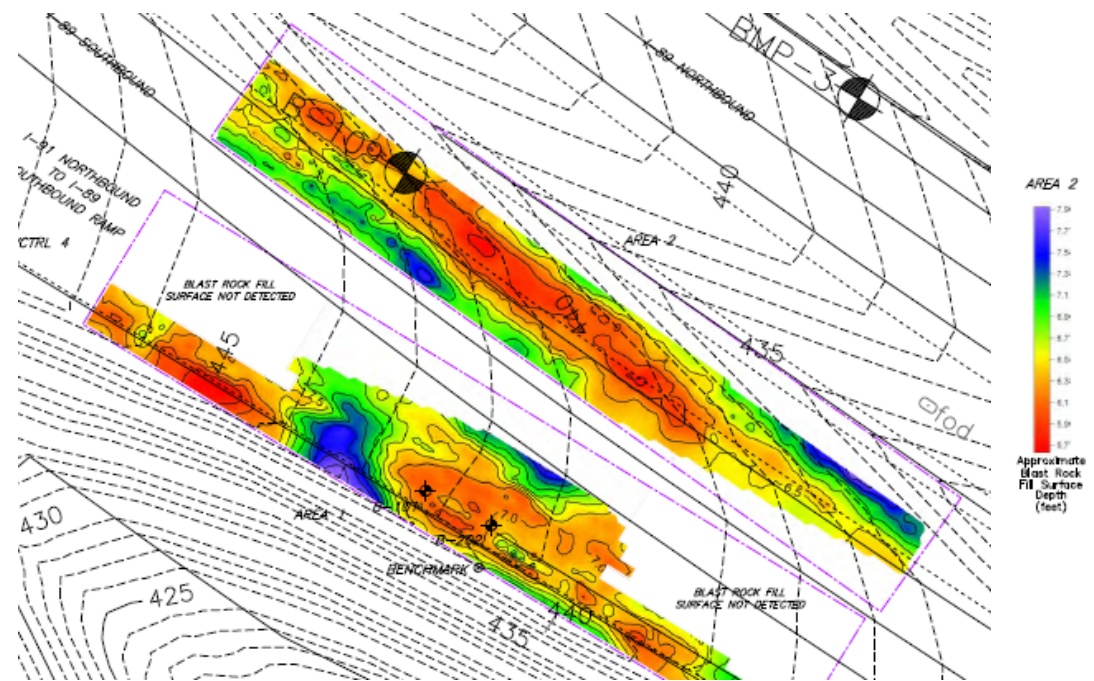


Both photos on I-89 NB in Sharon (left) and Georgia (right)

Construction & Materials Bureau - Overview

Geotechnical Section – Callie Ewald, P.E., Geotechnical Manager

- **Innovation and Improvement**
 - The use of **A-Game** on projects
 - A-Game: Advanced Geotechnical Methods in Exploration**
 - Methods that use investigation to explore and interpret subsurface conditions.
 - Non-Invasive
 - Improve Reliability & Quality
 - Mitigate Risk
 - Accelerated Project Delivery



Construction & Materials Bureau - Overview

e - Construction Section – Molly Perrigo, MPA, e-Construction Manager

- **Supporting** existing Agency practice, programs, and applications, while continuing to pursue and implement **new technologies** that align with the overall e-Construction effort, foster collaboration and create more **efficient** business process.
 - **Electronically** capturing construction data, **electronic** submission of all construction documentation
 - Increased use of **mobile devices**
 - Increased **automation** of document review & approval
 - Essential use of **electronic signatures** by all parties, **secure** document and workflow management accessible to **all stakeholders on any device**

Construction & Materials Bureau - Overview

e - Construction Section - Molly Perrigo, MPA, e-Construction Manager

- **In 2020 we:**
 - **Continue to** make assessment of the existing tools and resources that are supporting **e-Construction mission**
 - Assess current business process for areas of **efficiency** with use of **cutting-edge technology**
 - Investigate and propose **innovative technologies**, as well as assist with implementation
 - Most noteworthy is the development and upcoming implementation of the new **Construction Management System (CMS)**

Construction & Materials Bureau - Overview

e - Construction Section - Molly Perrigo, MPA, e-Construction Manager

- The new **Construction Management System (CMS)** will replace the no longer supported AASHTOWare client/server software used by VTrans today.
- In 2020, **major milestones** have been reached and in spring of 2021, **training** and the **first deploy** will take place.
- **Anticipated Deploy Schedule:**
 - 03/01/2021 - Estimation
 - 04/21/2021 - eContracting
 - 01/22/2024 - Materials, Construction & Civil Rights

VTRANS HIGHWAY DIVISION

MAINTENANCE BUREAU OVERVIEW

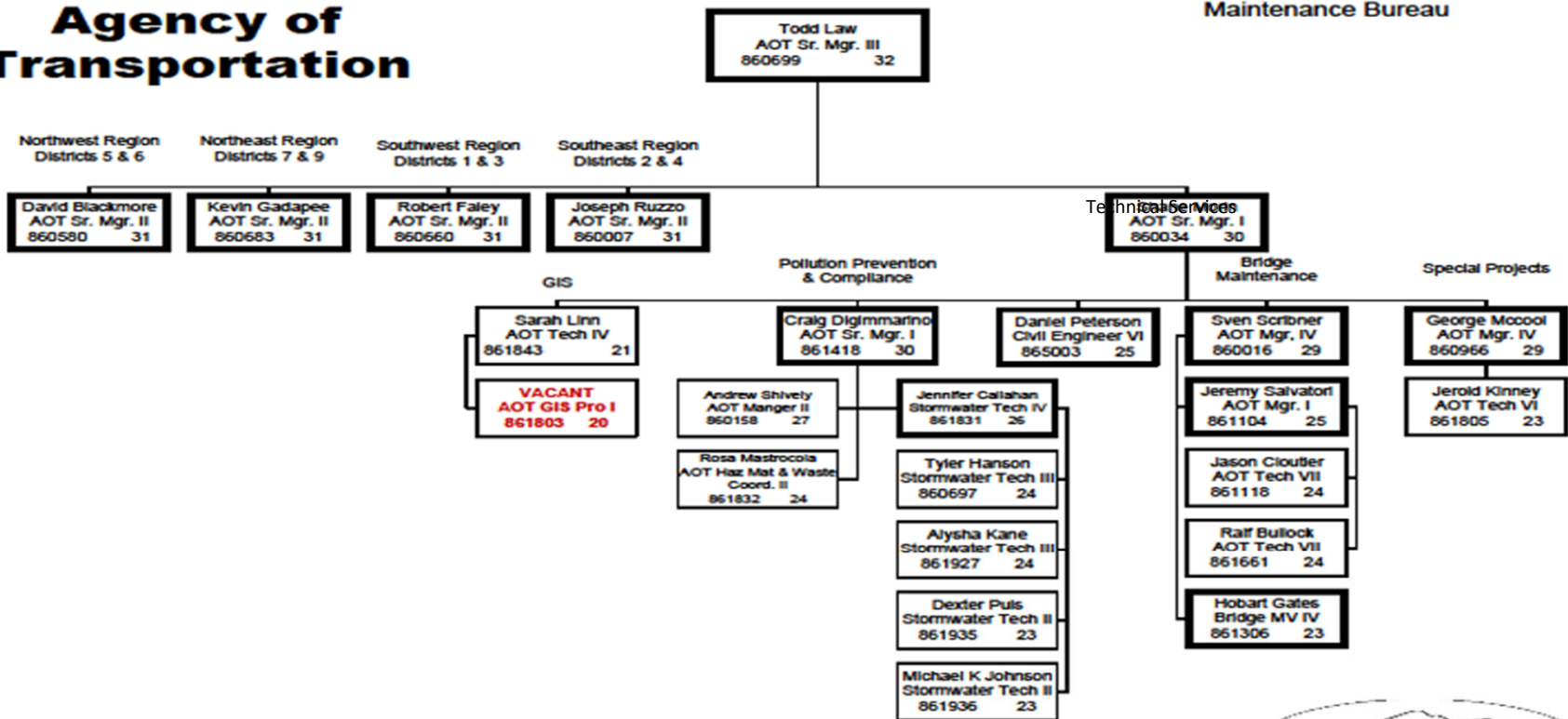
TODD C. LAW, PE, DIRECTOR, MAINTENANCE BUREAU

2021 LEGISLATIVE SESSION



Agency of Transportation

Highway Division Maintenance Bureau



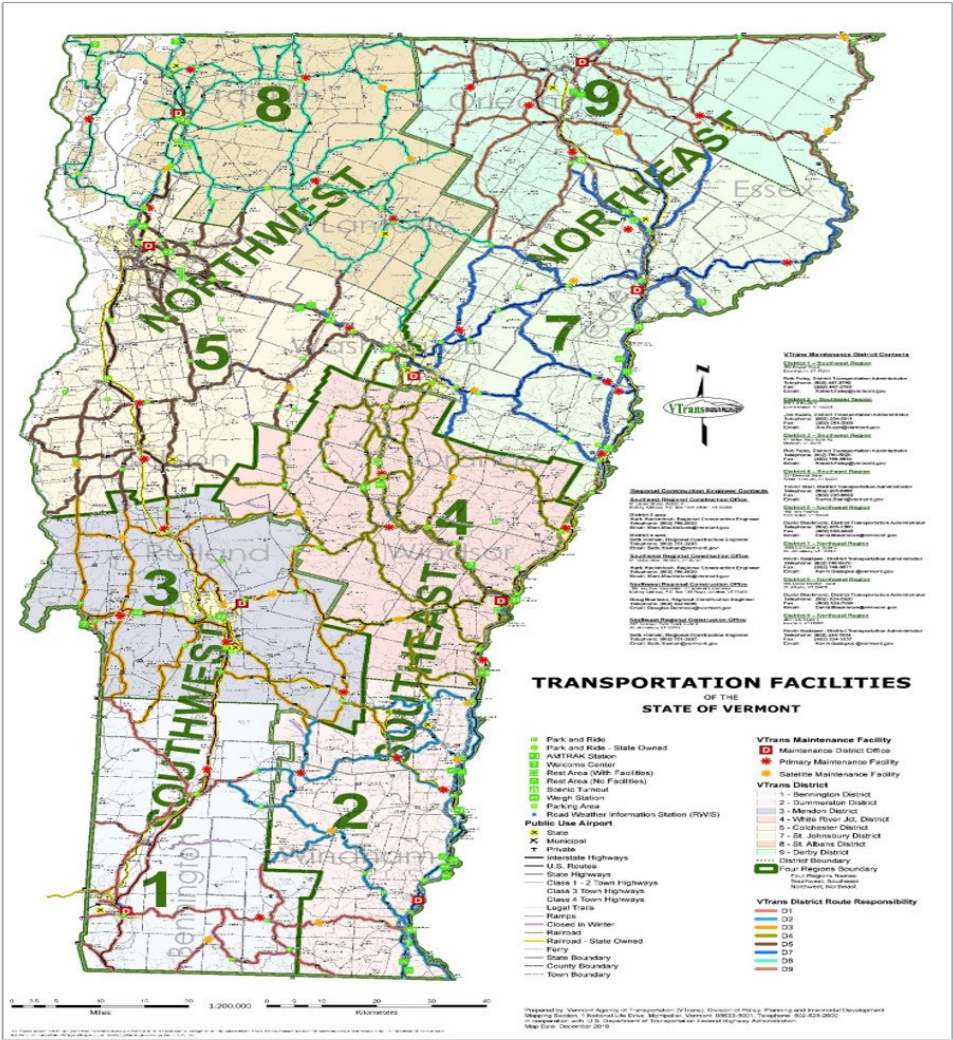
FY21
12 22 2020

MAINTENANCE BUREAU

The **Agency of Transportation (VTrans)** has a significant public investment in its transportation infrastructure. The **Maintenance Bureau** – with over 450 employees – maintains that infrastructure for the benefit of the traveling public. Our workforce is dedicated, hard working, and proud of what they do.

- **Maintenance Districts-** 8 Districts perform the activities that preserve the highway assets and provide for the safe and efficient movement of the customers who utilize our roadways. Winter maintenance, pothole patching, tree cutting, technical assistance and roadside mowing are some of the major maintenance activities that the District employees perform.
 - The District technical staff take pride in providing technical assistance to municipalities across the state with items such as road and ditch repairs and applications for the many grants that pertain to municipal roadway infrastructure.
 - During emergency events, the technical staff help to provide damage assessments and capture the damages incurred by municipalities to determine if the applicable thresholds are met for federal agency funding for mitigation.

MAINTENANCE LEADERSHIP



Northwest Region
 David Blackmore
 District Transportation Administrator
 Phone: [\(802\) 655-1580](tel:802-655-1580)
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Northeast Region
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 District Transportation Administrator
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 Fax: [\(802\) 748-6671](tel:802-748-6671)
 E-mail: Kevin.Gadapee@vermont.gov

Todd Law
 Director, Maintenance Bureau
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 Email: todd.law@vermont.gov

Shane Morin,
 State Maintenance Engineer
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 Email: shane.morin@vermont.gov

Southwest Region
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 E-mail: Robert.Faley@vermont.gov

Southeast Region
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 District Transportation Administrator
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 E-mail to: Joseph.Ruzzo@vermont.gov

MAINTENANCE BUREAU CONTINUED

Technical Services- Bridge Maintenance, Pollution Prevention and Compliance, Geographic Information Systems, Emergency Recovery Programs and Special Projects are all captured in the Technical Services section and provides a great deal of support to the District Maintenance staff to meet the maintenance needs.

- Bridge Maintenance- Provides technical assistance and design of highway structures including bridges and large culverts. They also provide some guidance and assistance to towns on the structures that they are responsible to maintain.
- Pollution Prevention & Compliance - Provides administration over environmental regulatory compliance and natural resource protection for the Agency. The Section ensures compliance under various federal and state environmental regulatory programs including stormwater, hazardous materials, hazardous waste, and vegetation management.
- GIS- Provides asset inventories and disaster tracking by use of geo-spatial means to provide insight into the performance measures of our highway assets and to provide timely information to the Agency leadership during emergency situations where damages occur on highway systems.
- Special Projects- Provides assistance to the Districts and other Agency groups.
- Emergency Response & Recovery Programs - for both State and Municipal Highways
 - FHWA Emergency Response (ER)
 - FEMA Public Assistance (PA)
- Indefinite Delivery Indefinite Quantity (IDIQ) & Job Order Contract (JOC) Projects - These are largely Bridge Maintenance, small culvert, and light paving/leveling projects.
- Performance Management Programs – Relative to Maintenance Bureau activities.

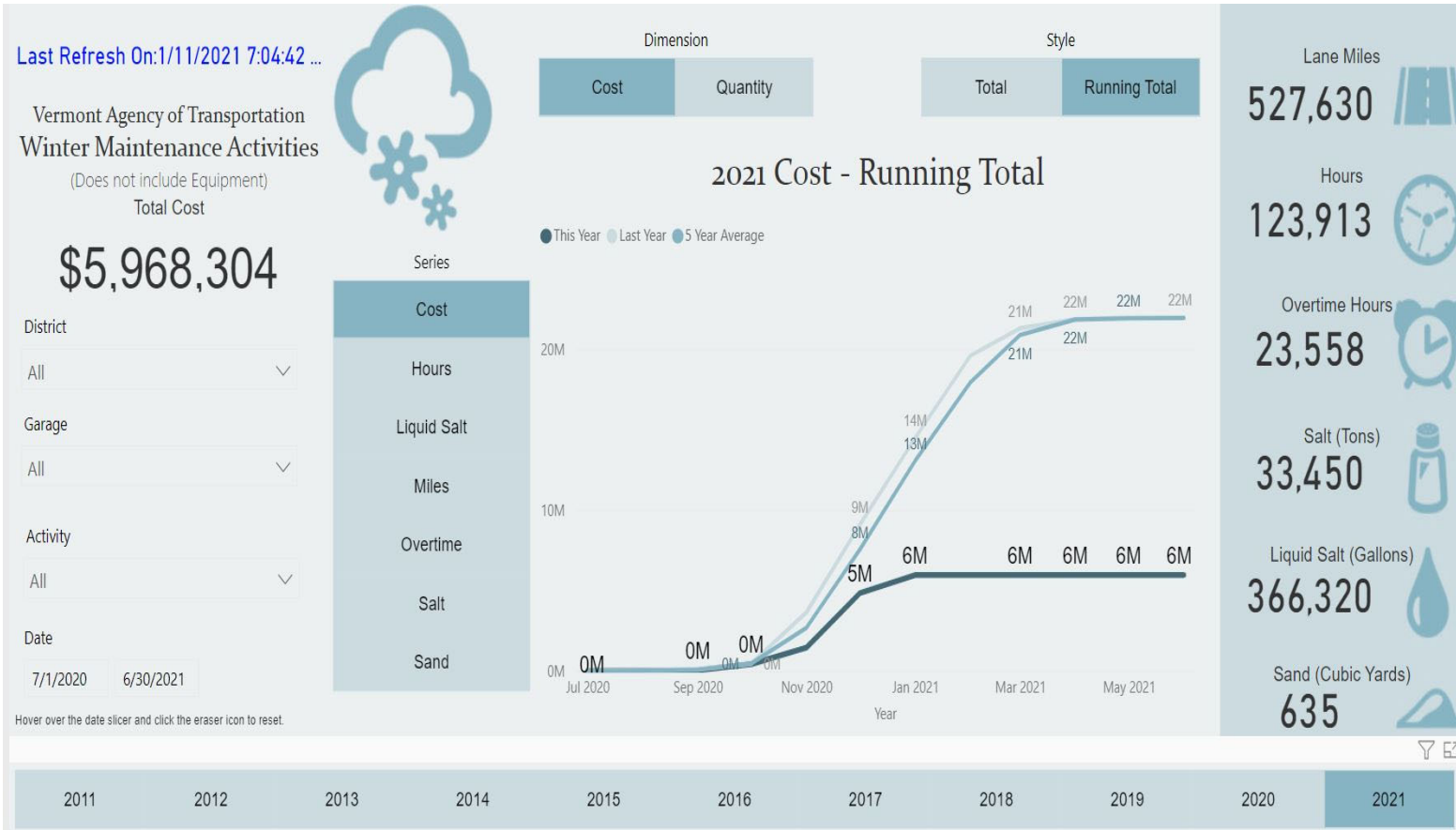
WHAT DO WE DO?

- SOME OF THE SIGNIFICANT ACTIVITIES WE PERFORM:

- WINTER MAINTENANCE
- EMERGENCY RESPONSE/ MITIGATION
- PICKING LITTER
- SWEEPING
- MOWING
- POTHOLE PATCHING
- DITCHING
- SIGN INSTALLATION AND REPAIRS
- BRIDGE WASHING, REPAIRS AND PROJECTS
- GUARDRAIL REPAIRS
- TREE AND BRUSH CUTTING
- CULVERT MAINTENANCE, REPAIR AND REHABILITATION
- TECHNICAL ASSISTANCE TO TOWNS



MAINTENANCE DISTRICT LABOR AND EQUIPMENT NUMBERS



- 452 Employees
- 274 Dump Trucks with Plows and Wings
 - 72 Pickups with Plows
- 374 Licensed CDL Drivers
 - 64 Garages

Bridge Maintenance Program

The Bridge Maintenance Program strives to preserve, maintain, and operate a bridge maintenance program in conjunction with our transportation system in the most cost effective and efficient manner. To have and maintain a successful bridge maintenance program seeking a balanced approach to preservation and rehabilitation/replacement.

- **38 Bridge Inspection Findings were issued in 2018**
- **11 Bridge Inspection Findings were issued in 2019**
- **11 Bridge Inspection Findings were issued in 2020**
- **The Bridge Maintenance Unit designs, advertises project using IDIQ and provides construction oversight for projects generated from the Bridge Inspection Findings, District Findings or other assigned projects (Structures, Roadway, Emergency Relief and Municipal Assistance Bureau)**
- **The Bridge Maintenance Unit maintains the Temporary Bridge Inventory and provides technical guidance for assembly and disassembly**

Year	Number of Projects	Cost
2018	21	\$1,869,945.40
2019	20	\$3,840,146.75
2020	22	\$5,615,985.51

Temporary Bridge

- The Agency uses both the Acrow 700XS Modular Bridging System and Mabey Compact 200 Bridge System.
- These systems are not interchangeable so they are housed in different locations. Acrow inventory is located at the District Garages in Springfield and Dorset. Mabey inventory is located at the District Garage in Middlesex.
- Currently there are 13 temporary bridges in service totaling 1220 lineal feet. Many of those have been in service for five or more years and will require repair or replacement of parts.



Bridge Maintenance

Fayston BM20506

Description of Work: Removal of existing bridge pavement, concrete deck repair, installing membrane and paving deck with associated approach work

Contractor: Engineers Construction, Inc.

Contact Amount: \$199,000.00

Funding Source: State Highway Bridge



Before



After

District 5 BM20502 C/2

Description of Work: Shoring and reinforcing superstructure

Contractor: Engineers Construction, Inc.

Contact Amount: \$457,600.00

Funding Source: Interstate Bridge



Reinforcement After



Shoring After

Sheffield BM19702

Description of Work: Lining of existing culvert with new headwall and AOP improvements

Contractor: Cold River Bridges

Contact Amount: \$461,461.00

Funding Source: Interstate Bridge



Before



After

Tinmouth ER 0139(5)

Description of Work: Replacement of existing culvert with a precast concrete box with related approach and channel work

Contractor: Weaver Excavation

Contact Amount: \$467,481.00

Funding Source: Emergency Relief



After

POLLUTION PREVENTION AND COMPLIANCE

The Water Quality Unit continued its work as stewards of water quality across all projects and sections, with significant achievements in meeting our stormwater regulatory obligations during the past year:

- 10 new projects incorporating new stormwater treatment practices constructed
- 86 previously constructed projects with stormwater treatment practices were inspected and maintained
- 58 practices identified, 20 designed, and 17 constructed to meet the agency's Flow Restoration Reduction Targets across 10 stormwater impaired watersheds
- 5 new Stormwater Pollution Prevention Plans (SWPPPs) for maintenance facilities adding to an existing 35 SWPPPs covering other district facilities, airports, and gravel pits
- \$4.4 million (estimated) expenditures in supporting clean water program and compliance across many VTrans Divisions

The HazMat Unit continued its work managing hazardous materials and waste, fuel tanks, hazardous sites, water supplies, and pollution prevention in support of project delivery and maintenance activities.

Thank You! – Any Questions?



Todd Law, Director,
todd.law@vermont.gov or 802-839-0274.

Central Garage

Overview

TAMMY J. ELLIS, SUPERINTENDENT

JANUARY 2021





Central Garage Mission and Areas of Priority

Mission

To maintain a safe and reliable fleet of highway maintenance equipment that supports the Agency mission of safe and efficient movement of people and goods.

Areas of Priority

- Procurement of Vtrans Equipment for Highway Operations
- Providing Major Maintenance & Repair
- Monitoring/Managing Life-Cycle Fleet Costs

Equipment Procurement

- Identification & Prioritization of Customer / Agency Needs
- Writing of Equipment Specification
- Collaboration w/ BGS Purchasing for Bidding and Best Value Determination

Vtrans maintains a variety of equipment from a fairly standardized fleet of heavy-duty plow trucks to a wide array of specialty equipment such as drill rigs, boom trucks, excavators, loaders and everything in between.



Equipment Procurement

Future Goals:

- Electric / Electric-Hybrid DMV Enforcement Vehicles
- Electric Hybrid ½ ton pick-ups where applications allow
- Electric specialty equipment
- Technology for electric trucks technology is improving and nearing viability for practical application



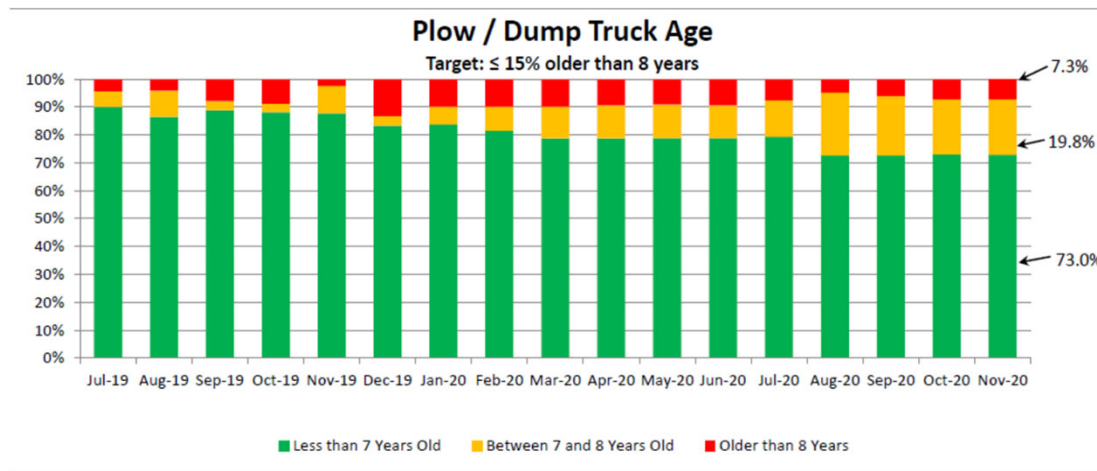
Fleet Management

The Central Garage has 660 pieces of equipment which includes Winter Maintenance Equipment of:

249 Dump Truck (108 Tandem axle, 131 Single Axle and 10 Baby Dump)

135 4WD Heavy duty pickups w/ plows

55 Bucket Loaders



Major Maintenance & Repair

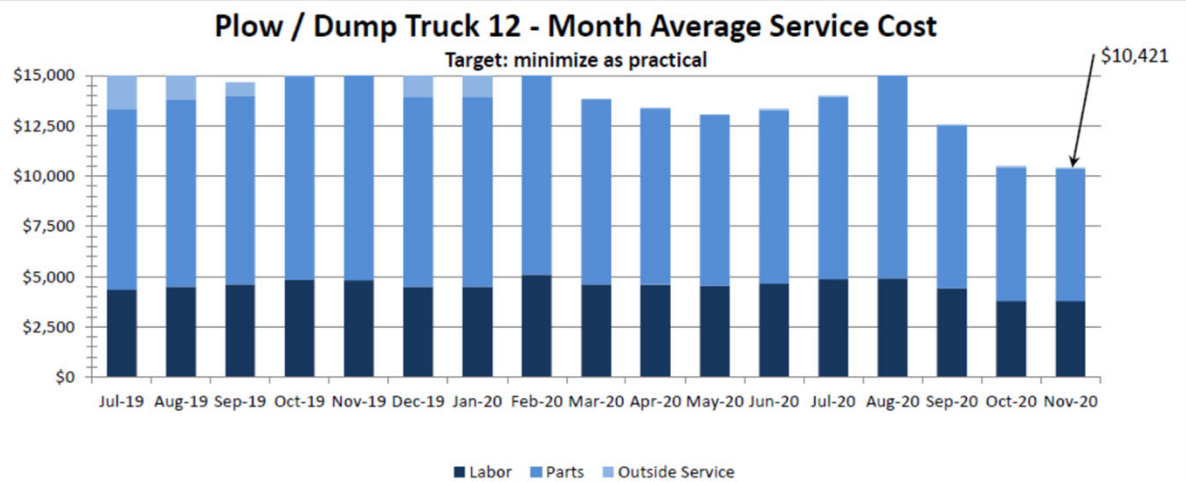
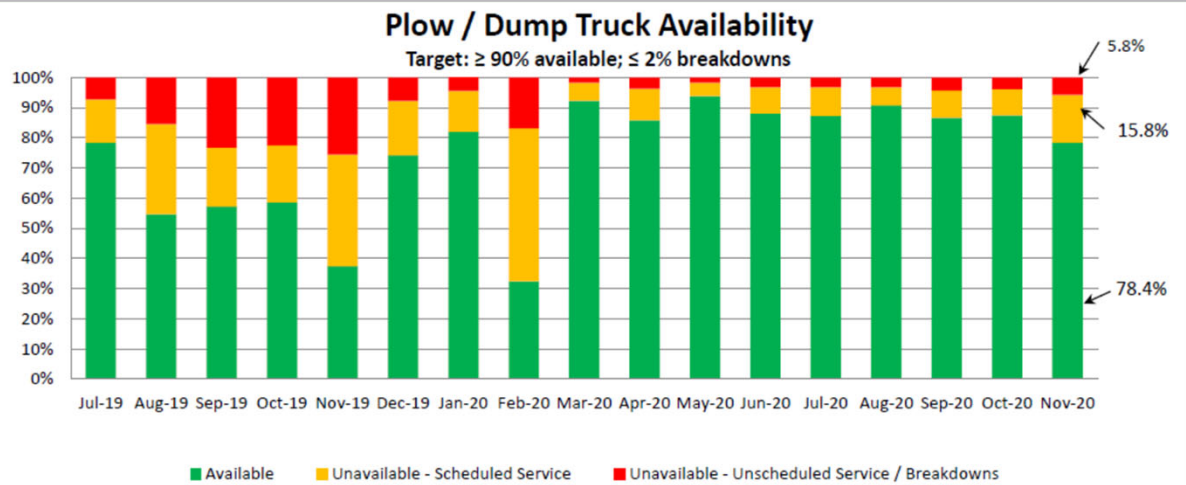


Central Garage is an authorized by International Truck and General Motors Corporation to perform warranty repair for Vtrans Fleet vehicles

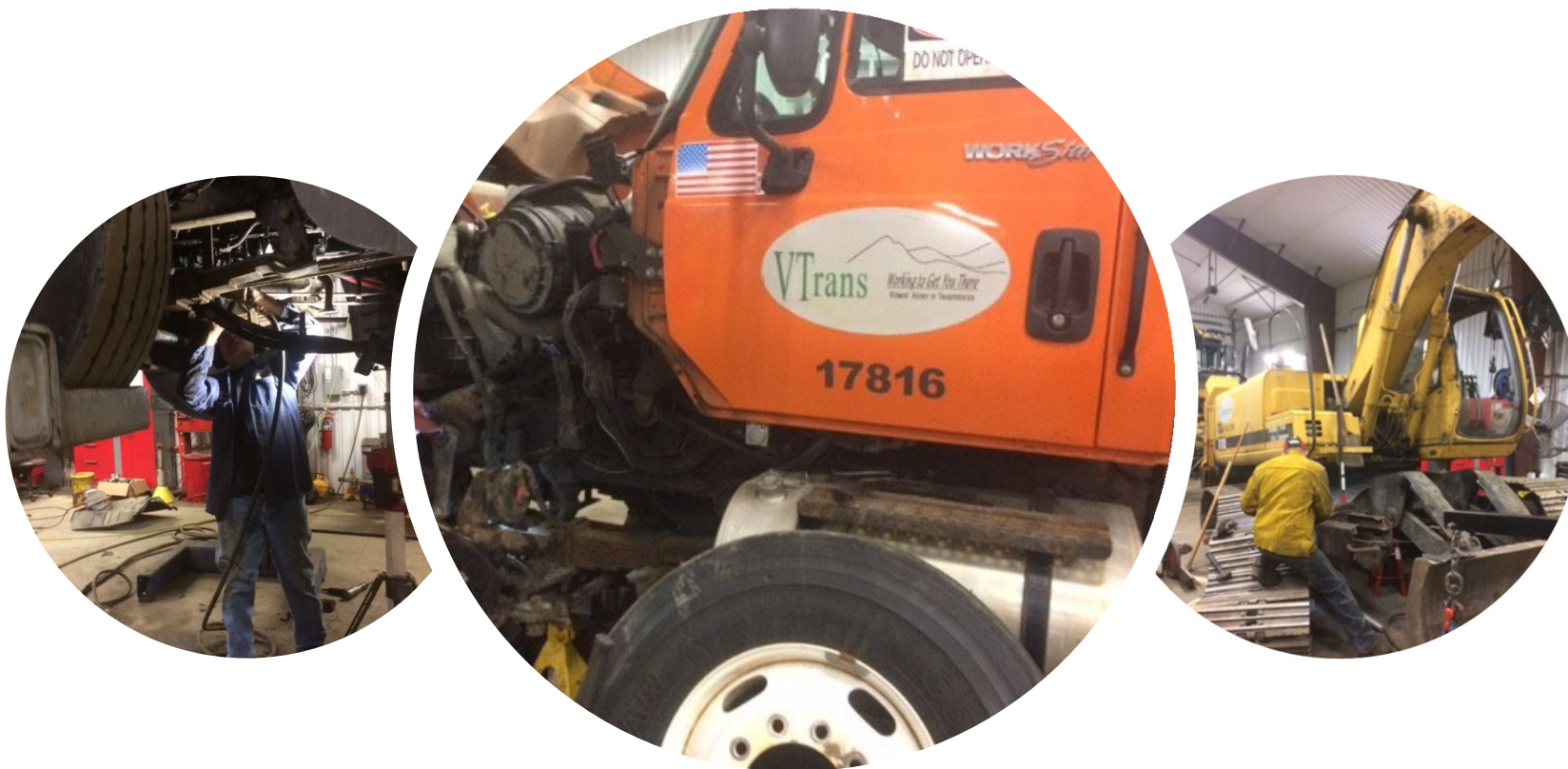
Preventative Maintenance

Preventative Maintenance (PM) focuses on equipment PM programs that involve a systematic and proactive schedule for inspection, detection, and correction of potential issues. PM programs are the key element in supporting a cost-effective fleet operation.

Central Garage maintains approximately \$1.5 Million worth of on-hand inventory for service and repair of vehicles and equipment located between 5 regional locations statewide.



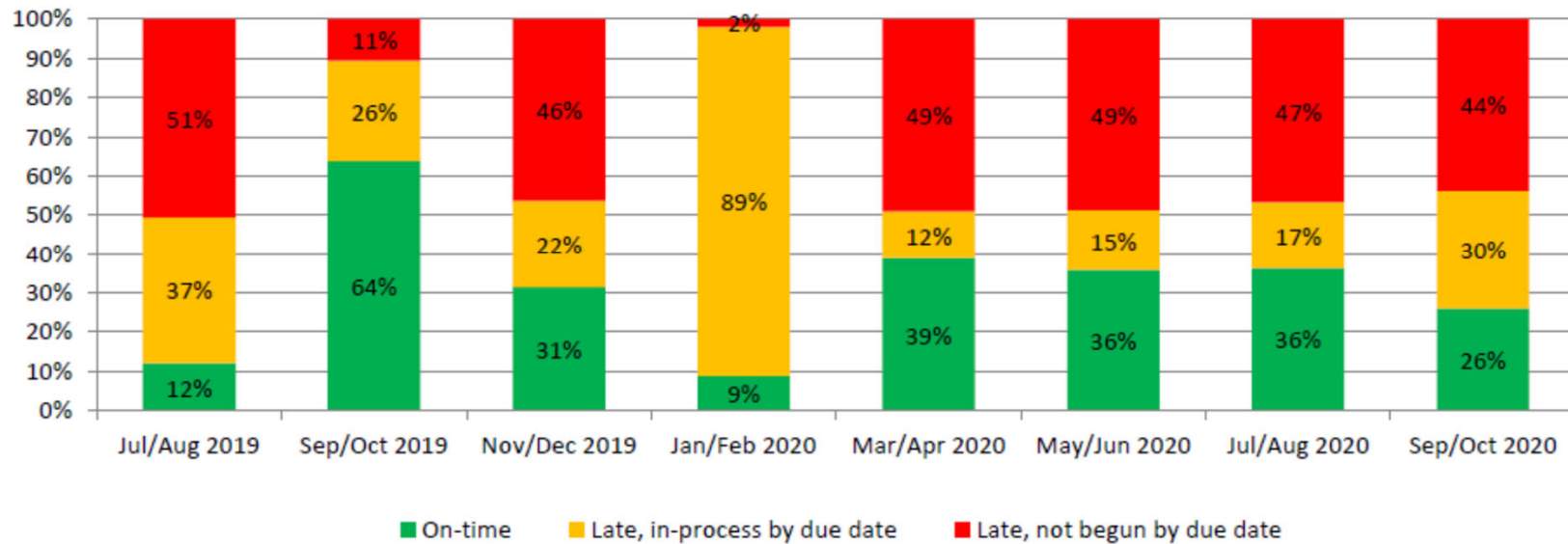
Major Maintenance & Repair



In the past 2 years, Central Garage has processed over 5500 Work Orders totaling over \$15 Million

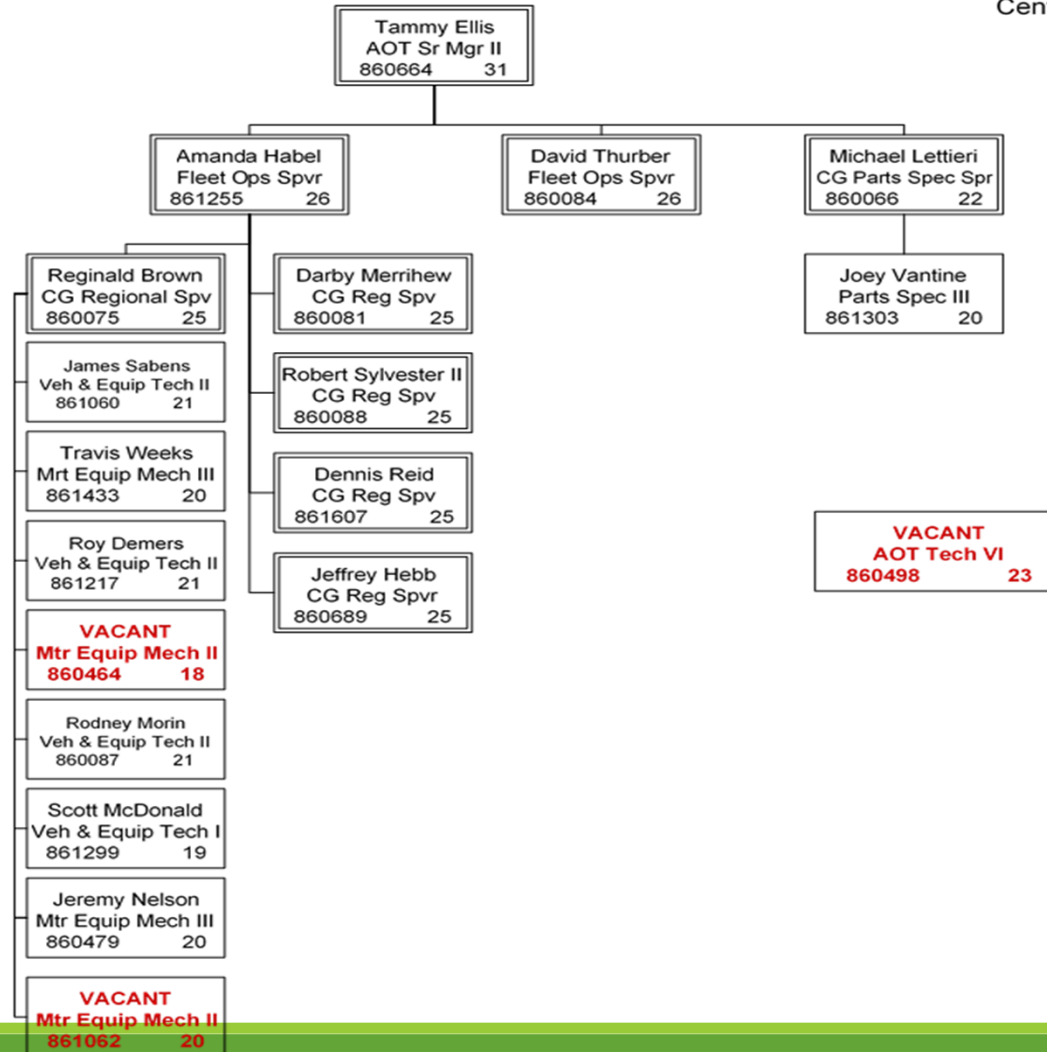
Annual Preventive Maintenance Service / Inspection Compliance

Target: $\geq 95\%$ on-time



Agency of Transportation

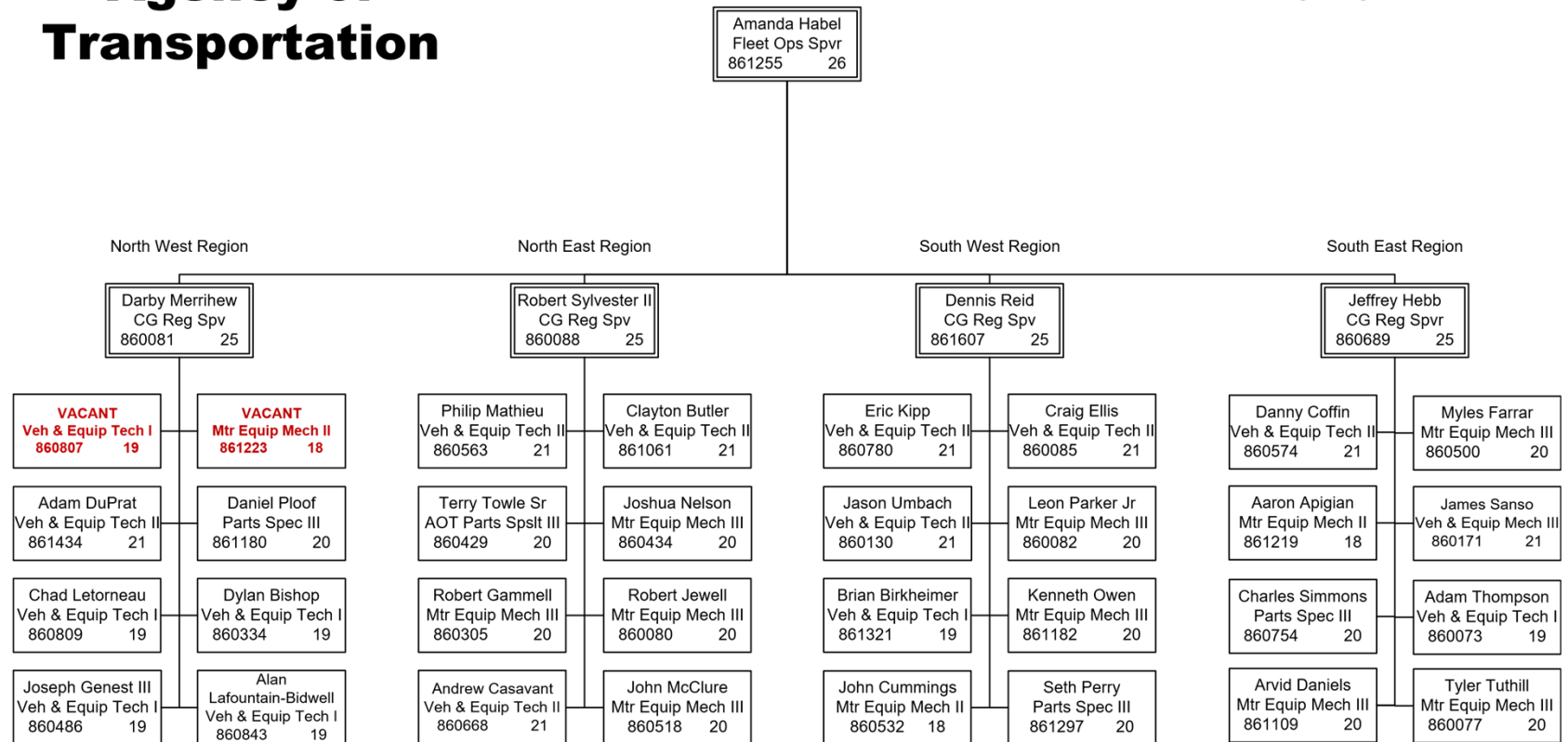
Central Garage, Berlin



Agency of Transportation

Highway Division

Central Garage, Regions



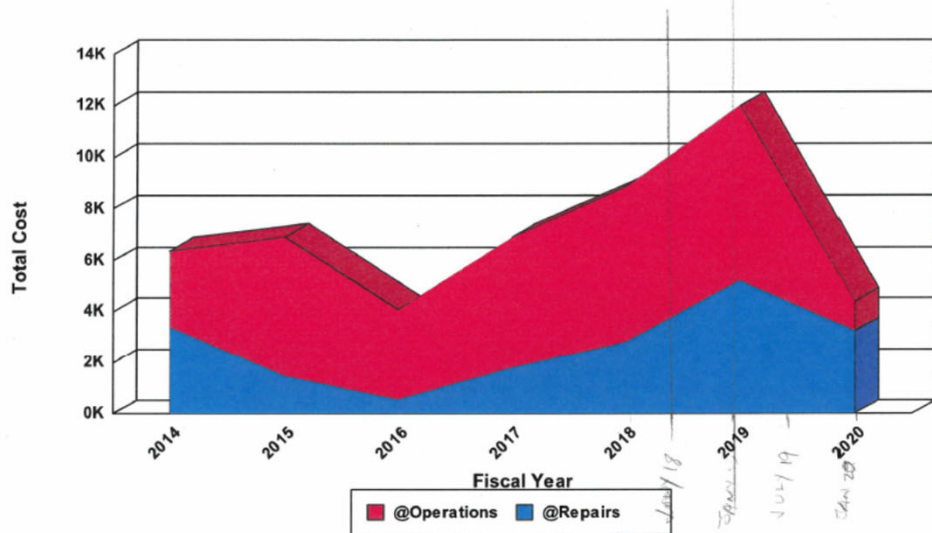
Unit Operating Cost History

Transp - Central Garage

Report Printed: 02/10/2020 09:35:57 By User: AHABEL

Fiscal Period	Usage	Total Operating Costs							Quantity		
		Labor	Parts	Comm	Total Repair	Fuel	Oil	Misc.	Total Costs	Fuel	Oil
Unit No: 24089 - 2014 CHEVROLET 2500											
Selection-To-Date:	156,082	5,594.40	12,777.96	134.82	18,507.18	30,969.32	0.00	0.00	49,476.50	11,640.97	0.00

Annual Operating Cost



Monitoring Fleet Costs

Monitoring Fleet Costs

Unit Cost/Use History

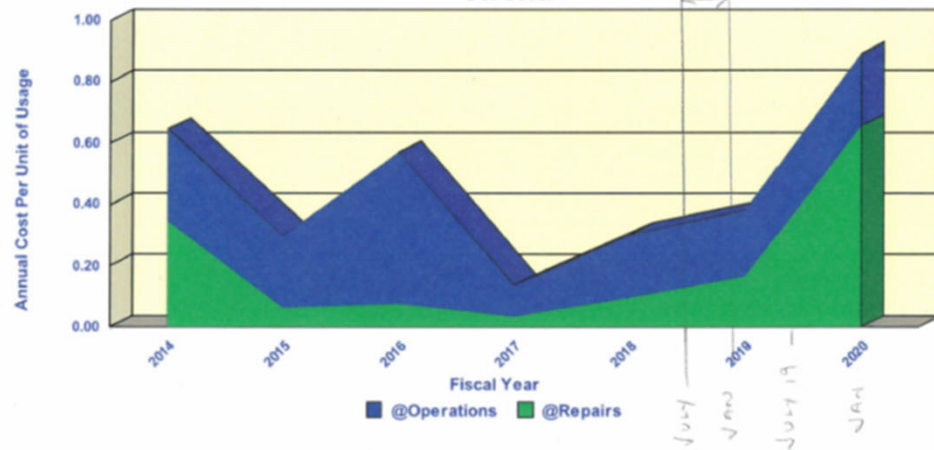
Transp - Central Garage

Report Printed: 02/18/2020 10:36:43 By User: AHAREL

Fiscal Period	Usage-M	Total Cost Per Mile							Qty/MI		
		Labor	Parts	Comm.	Total Repair	Fuel	Oil	Misc.	Total Cost	Fuel	Oil
Unit No: 24089 - 2014 CHEVROLET 2500											
Life-To-Date:	156,082	0.036	0.082	0.001	0.119	0.198	0.000	0.000	0.317	0.075	0.000

Annual Operating Cost Per Use

For 24089



Vermont Agency of Transportation

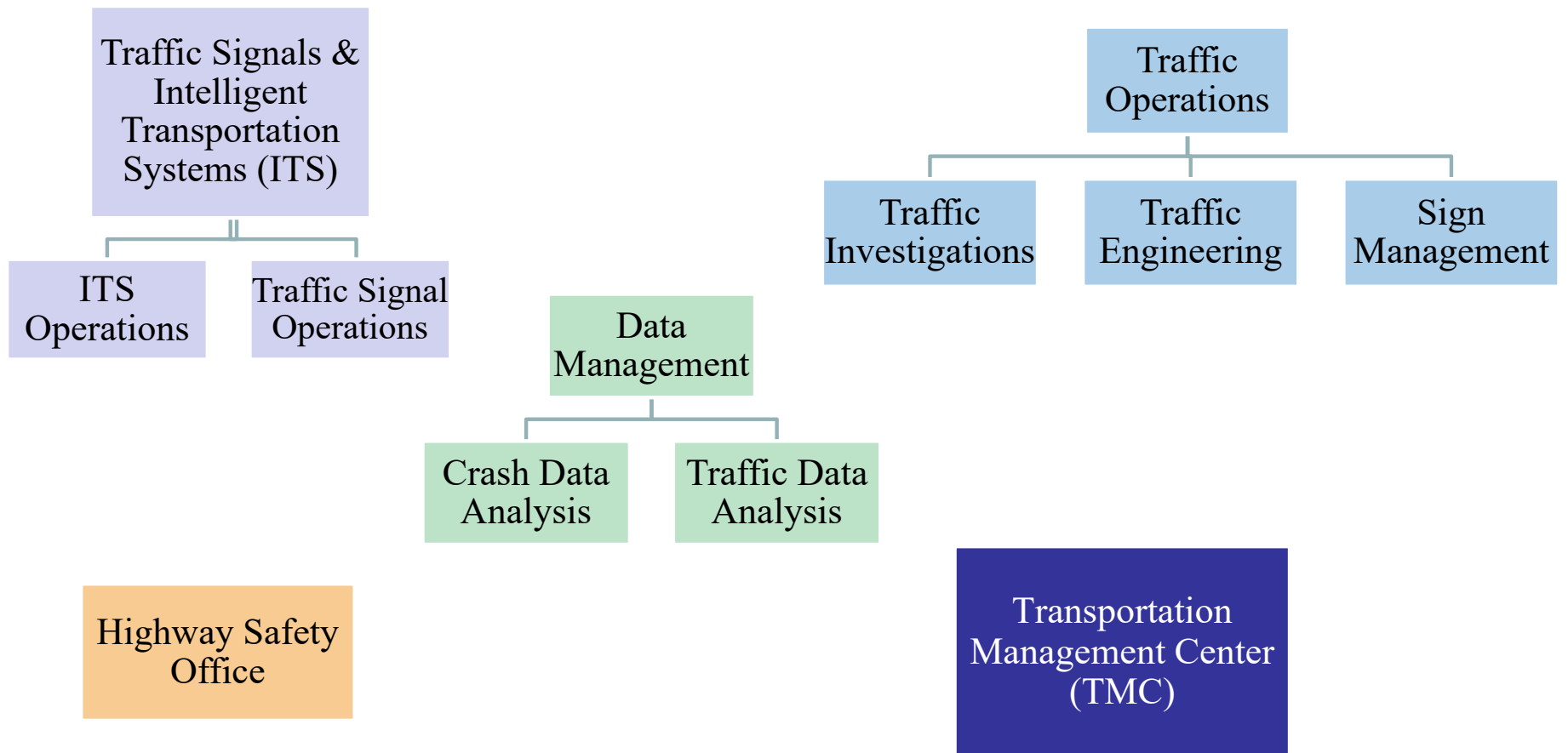
Operations & Safety Bureau (OSB)

JOSHUA SCHULTZ, OSB DIRECTOR

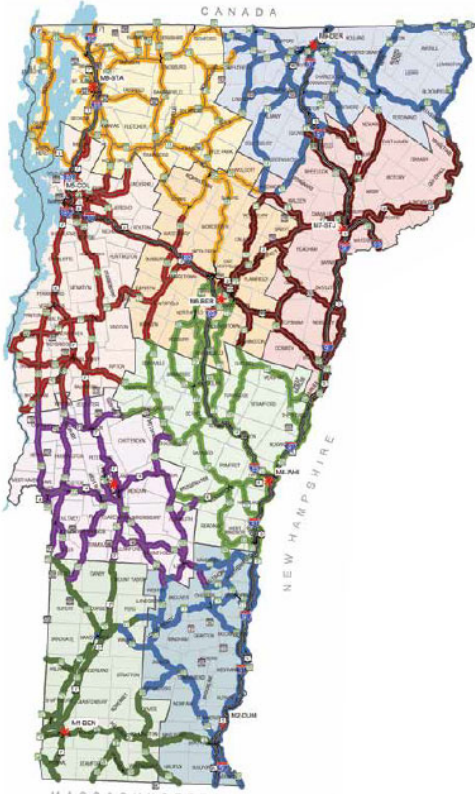
JANUARY 2021



OSB Organization

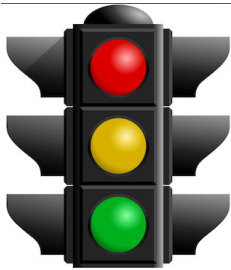


Key OSB Principles



- Customer focused
- Data Driven
- Utilize existing foot print
 - Efficiency
 - Preserving capacity
- Safety
- Multimodal
- Cross-jurisdictional

Objectives for Typical Operating Conditions



- **Every Day**

- Provide timely and accurate traveler information
- Optimize the operation of existing traffic controls (signals, signs, lines) to reduce delay



- **Challenging Weather**

- Use technology to better manage snow and ice control



Objectives for Anticipated Travel Disruptions



- **Work Zone & Special Events**

- Provide timely and accurate traveler information
- Minimize delay increase from a network/corridor perspective
- Prevent crashes
- Traffic Management Plans will accommodate bike, pedestrians, transit and commercial vehicles

- **Special Event Specific**

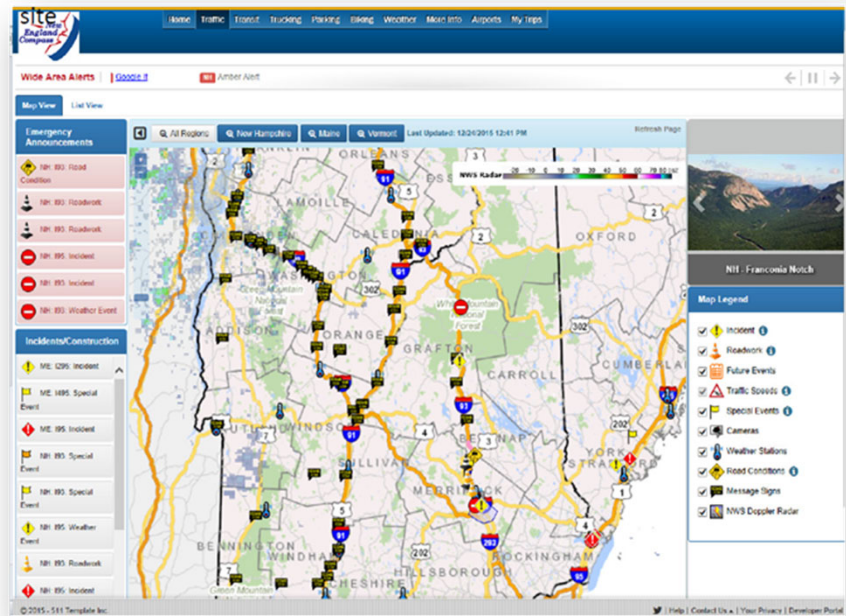
- Plan for all events affecting state system
 - Minimize the cost to the public/VTrans

Objectives for Unanticipated Travel Disruptions

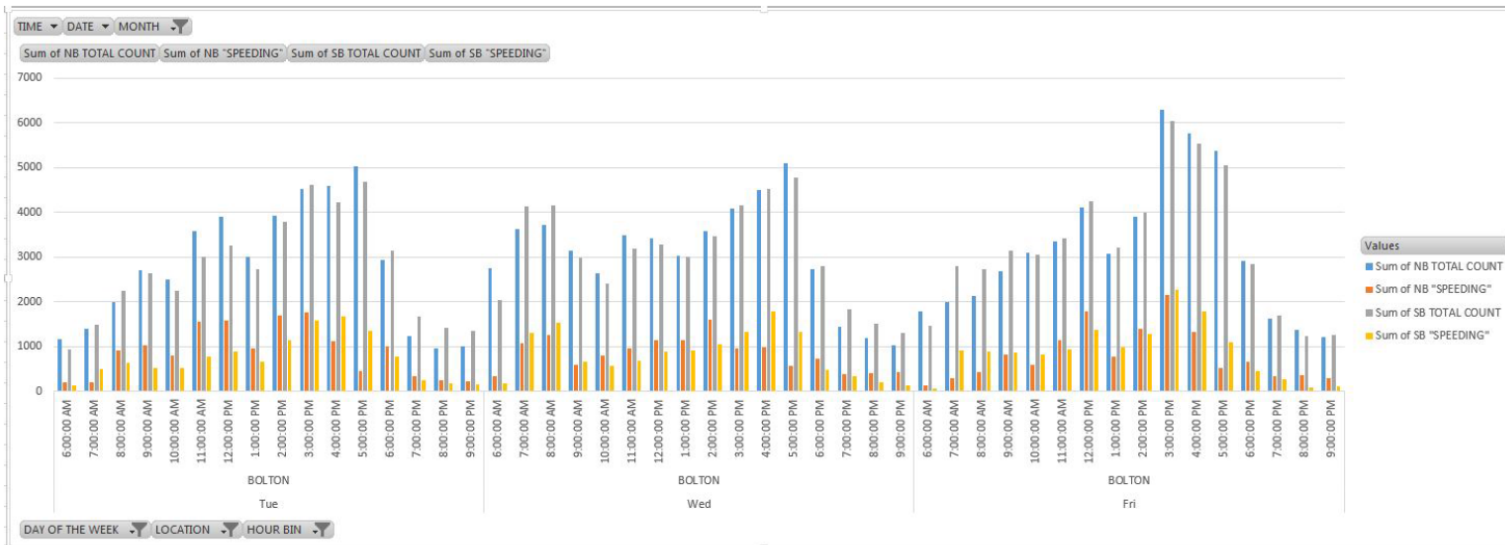


- **Short Term** (crash, sink hole)
& Long Term Incidents (flood, unexpected bridge closure, etc.)
 - Provide timely and accurate traveler information
 - Develop/improve situational awareness of real time operating conditions
 - Quickly deploy response/mitigation
 - Minimize duration of travel restrictions and closures
 - Reduce potential for secondary crashes

Transportation Management Center & ATMS/511

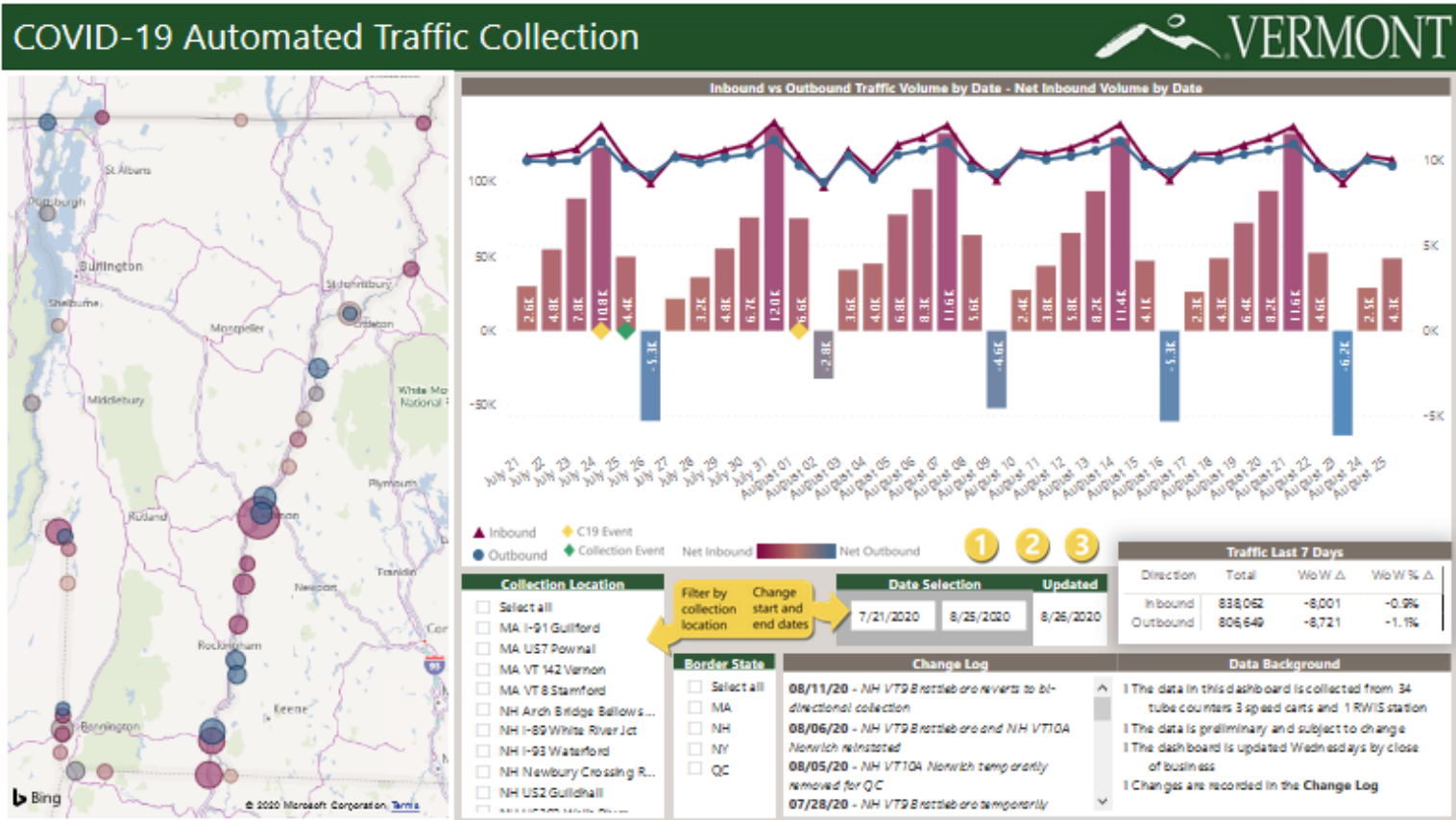


Speed & Volume Data

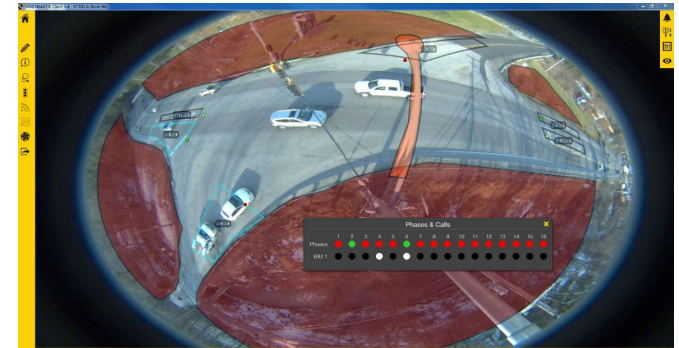


2 Highest Hours of Day 1 (Tuesday)	2 Highest Hours of Day 2 (Wednesday)	2 Highest Hours of Day 3 (Friday)
1. 3-4 PM	1. 4-5 PM	1. 3-4 PM
2. 2-3 PM	2. 8-9 AM	2. 4-5 PM

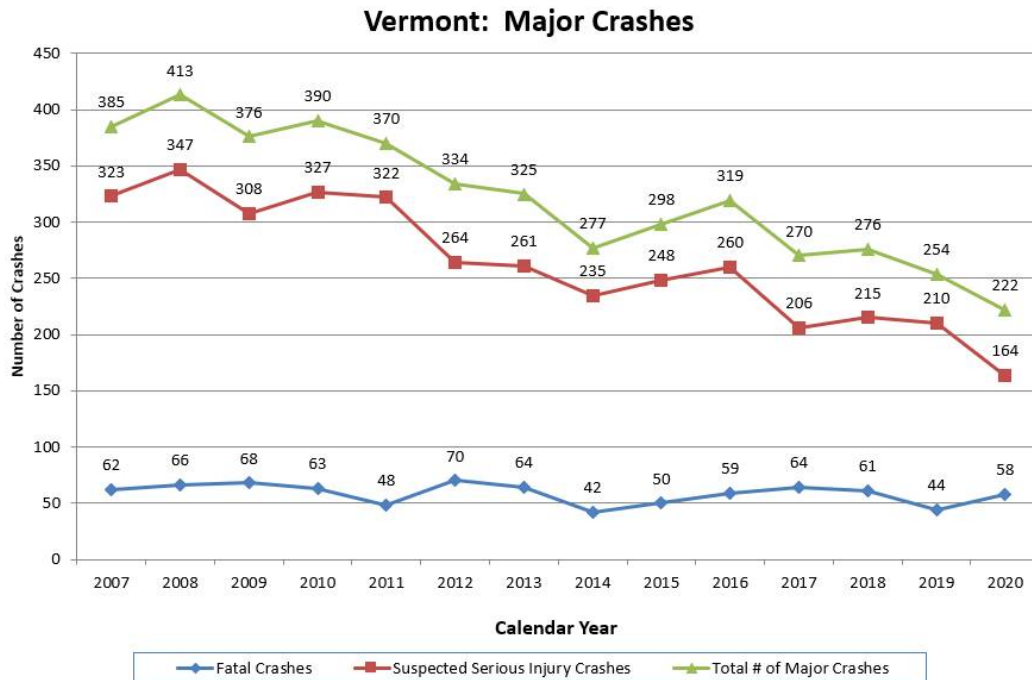
Traffic Volume Collection & Analysis During COVID-19



Traffic Signals & ITS



State Highway Safety Office



Data Source: VTrans in-house VCSG dbase and FARS. Data reflected as submitted by law enforcement. Major Crash involves Fatality and/or Suspected Serious Injury.

- Media Campaigns
- Law Enforcement Liaisons, Impaired Driving
- Coordinator, Traffic Safety Resource Prosecutors
- Drug Recognition Expert (DRE) program
- Vermont Forensic Laboratory Program
- Education
- Distracted Driving
- Data

Questions?

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