# Special Experimental Project No. 14 (SEP-14)
# Alternative Contracting
# Final Report

Prepared by Pamela M. Thurber, VTrans Manager
Submitted on July 12, 2019

On February 6th, 2009, the Vermont Agency of Transportation (VTrans) SEP-14 work plan for "Utilizing Maintenance Rental Agreements (MRAs) for various Preventative Maintenance (PM), Preservation (PV), and Repair (RP) Contracting Needs" was approved by FHWA.

The work plan had an original three-year duration limited to nine million dollars of federal-aid participation and restricted to three work categories; bridge and/or large culvert rehabilitation and/or repair and maintenance, bridge beam heat straightening, or paving and/or surface treatment.

In response to program successes and benefits as well as a need for swift reaction to infrastructure damage caused by tropical storm Irene, a request to extend the duration to six years, double the limiting threshold amount to $18 million of federal-aid participation, and allow for shallow culvert replacements including several Irene Emergency Response (ER) projects was made and approved.

A request for approval, generated from the Project Delivery Bureau – Highway, Safety, and Design Section, to expand upon and add a work category for slope stabilization and ledge removal was made, considered, and ultimately denied.

The work performed using this alternative contract method included deck replacements; deck, superstructure, and substructure repairs; and culvert repair and replacement projects. A brief summary of these projects and the process used for candidate selection is described below.

This method of contracting, while not directly related to project delivery /highway efforts, was also used for preventive maintenance work on rest areas throughout the State. Those done have been included in the overall list of projects provided in Appendix A.

**Deck Replacement – Selection Process**

The bridges chosen for deck replacements were all deemed structurally deficient solely because of deck condition. The goal of these projects was to remove the structural deficiency with the least impact to the environment /resources in a timely and cost-efficient manner.

For all sites, the work was focused on only the decks with no channel work required. With the exception of minor paint removal and cleaning for attaching shear studs, the structural steel component of the bridge was untouched. The beams were not cleaned or otherwise protected under this project.

Debris, from the removal of the deck and bridge rail system, was not permitted to enter the waterways below. All debris was to be collected and properly disposed of.

Most sites had a short traffic bypass length. For those, the bridges were closed, and all traffic detoured during construction. Contractors were allowed to use the existing roadway for staging. Approximately 25 feet of approach was to be removed in order to access the deck for its removal. Upon completion of the deck cure, the approaches were backfilled and paved to specification, but the new deck were left bare.

For those which could not be closed, either because of an excessive bypass or public need, traffic was maintained on the bridge and construction activities phased.

The focus of these projects being to target and eliminate a structural deficiency while extending the structures service life in an efficiently and economically manner. Even though future maintenance will be required, the decision was made to membrane and pave phased bridges with longitudinal construction joints to inhibit leakage of water and salts.

The following provides bid /award details for one of the deck replacement projects completed.

***Addison BHF ST 032-1(16)***

- Federal funds authorized … July 23rd, 2009
- Bids opened … August 13th, 2009
- Bridge closed to traffic … September 9th, 2009
- Bridge opened to traffic … October 6th, 2009 (26-day closure)▲

| Contractor | Bid Price (A) | Calendar Days (B) | Bid for Award (A+B) | Rank |
|---|---|---|---|---|
| Frank W. Whitcomb Const. | $227,850 | 25 | $327,850 | 1 |
| J. A. McDonald | $281,900 | 35 | $421,900 | 2 |
| Parent Construction | $450,000 | 42 | $618,000 | 3 |

Engineers Construction, Inc. *did not submit bid

- Status – completed … October 16th, 2009
  - preliminary engineering … $13,264 (0% federal & 100% state)
  - right-of-way … $0
  - construction w/E&C … $240,192 (80% federal & 20% state)
- Estimated construction total with 25% contingency and 15% E&C was $240,000.00

▲In agreement with VT FHWA Design and Structures Engineer, the one-day penalty was waived. A combination of slow strength attaining deck concrete (provided by the contractor-selected supplier) along with VTrans' not anticipating the amount of its lab participation in the project was the justification used in not assessing this penalty.

This SEP-14 project, one of the first done, was a learning experience for all involved and notes were added to future projects emphasizing and making it clear that, should the final days of the closure period land of a weekend or state holiday, that the contractor understands that cylinder breaks remain his /her responsibility and if VTrans' staff are not working that they would need to independently hire, at no cost to VTrans, a testing firm to having cylinders broken, tested, and reported on or be willing to accept the penalty.

before

after

before

after

**Culvert Invert Repair – Selection Process**

The culvert chosen for invert repair was considered and tagged as a critical culvert (rated as poor) because of its deteriorating conditions. Despite loss of invert integrity, the shape of the culvert remained solid and had adequate capacity for lining

even with a slightly reduced hydraulic opening /area. There was enough right-of-way to do the work and there was no requirement for providing for aquatic organism passage (AOP).

The following provides bid /award details for one of the culvert lining /rehabilitation projects completed.

***Danville BHF ST 032-1(16)***

▪ Federal funds authorized … September 3rd, 2009 (date updated based on bid award)
▪ Bids opened … August 31st, 2009

| Contractor | | Bid Price | Rank |
|---|---|---|---|
| J. A. McDonald | | $69,759.60 | 1 |
| Winterset Const. | *did not submit bid | | |
| R. C. Contractors | *did not submit bid /could not meet the specified completion date | | |

▪ Notice to proceed issued … September 3rd, 2009
▪ Work completed … September 29th, 2009
▪ Status – completed … October 1st, 2009
  ▪ preliminary engineering … $0 (0% federal & 100% state)
  ▪ right-of-way … $0
  ▪ construction w/E&C … $72,374 (80% federal & 20% state)
▪ Estimated construction total (as developed by district 7 personnel) was $25,000.00

before

during

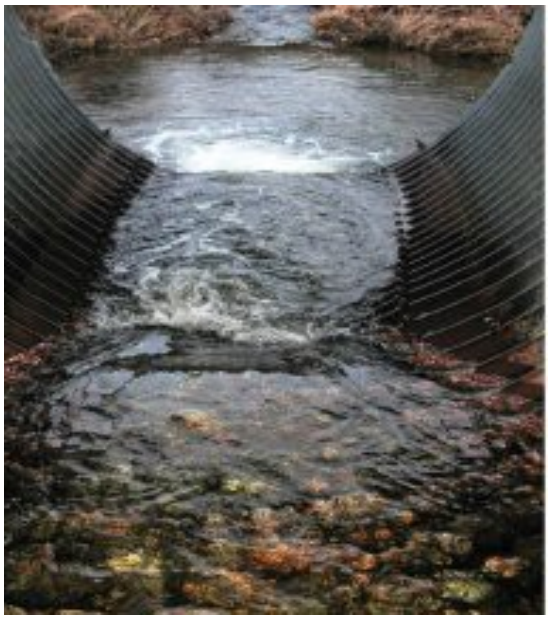
after

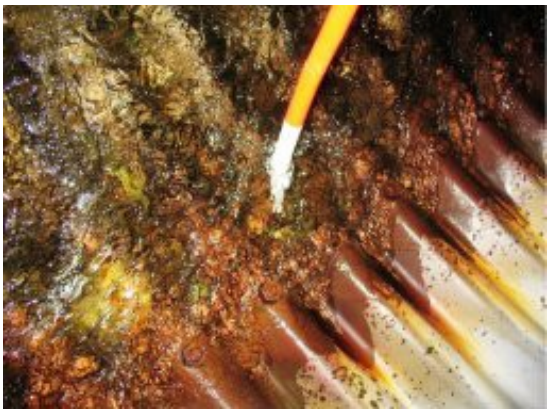
**Culvert Replacement – Selection Process**

The culvert replacements were done primarily in response to the extensive damage created by tropical storm Irene on Vermont's road network and the desire to increase and improve resiliency though replacement with larger structures protecting and matching the stream's flow profile and bank-full width.

Inclusion of shallow culvert replacements under this method of contracting enhanced VTrans' ability to respond to needs. Failures of a metal culvert, particularly those with minimal cover, continue to be a concern as deterioration often with loss of earthen material advances. Using similar selection criteria, such as extent of deterioration, amount of cover, need for aquatic passage, etc., many shallow culverts could be targeted and replaced either with roadway closures or traffic phasing.

before





during

after

**Structure Repair (Preventive / Condition-Based Maintenance) – Selection Process**

The scope of this bridge maintenance project was to repair and create a reinforced encapsulation of its deteriorating piers along with installation of concrete barrier in front of the piers. The existing bridge is a 4-span rolled beam structure with an overall length of 244 feet over Interstate 89 located at exit #10.

The following provides bid /award details for one of the condition-based maintenance /repair projects completed.

***Waterbury IM 089-2(44)***

- Federal funds authorized … June 6th, 2011
- Bids opened … June 22nd, 2011

| Contractor | Traffic Control ($A_1$) | Lump Sum Project (A2) | Bid for Award ($A_1$)+ ($A_1$) | Rank |
|---|---|---|---|---|
| Blow & Cote, Inc. | $119,775 | $972,973 | $1,092,748 | 2 |
| CCS Constructors, LLC | $75,000 | $768,000 | $843,000 | 1 |
| J. P. Sicard, Inc. | $92,000 | $1,395,522 | $1,487,522 | 3 |

S. D. Ireland *did not attend mandatory pre-bid on-site meeting, so could not submit a bid
St. Onge *did not attend mandatory pre-bid on-site meeting, so could not submit a bid
Daniels *did not attend mandatory pre-bid on-site meeting, so could not submit a bid

- Status – in progress/planned for 2011 construction
    - preliminary engineering … $25,000 (expected) and $21,651 (expended) (90% federal & 10% state)
    - right-of-way … $0 (expected and expended to date)
    - construction w/E&C … $700,281 (estimated) (90% federal & 10% state)
- Bridge will remain open during construction. The project will encase the severely deteriorated pier column restoring structural integrity.

Before

after

**Funding**

For a number of the earlier projects, while learning and adjusting the process, the State funded, with 100% state funds, all preliminary engineering and shared funding for construction at an 80% Federal and 20% State split however for those later, all eligible project costs were shared at their respective split.

Careful and proper selection of projects, those targeting a specific need, that could be done within the existing right-of-way, with limited or no need for utility relocation, no

channel work, and traffic control which did not include construction of a temporary detour /bridge, allowed them to be developed efficiently, quickly, and timely and kept costs at a minimum.

In the end, a total of 51 projects, 35 condition-based and 16 emergency response (ER) projects, were completed using the approved SEP-14 / Category 2 MRA method; totaling over $20 million. 11 projects were for replacement of structurally deteriorated decks, 24 related to culvert needs, 5 addressed condition-based bridge needs, and the remaining 11 were for rest area preventive maintenance (see Appendix A).

**Conclusion**

Although there were minor glitches, adjustments, and changes made along the way, the value obtained from this alternative method of contracting experiment proved valuable and a success. Not only was VTrans able to target and treat deficiencies in an efficient, timely and economical manner it also expanded and enhanced the role /knowledge of Maintenance personnel in construction projects providing them insight and skills, learned and obtained from qualified contractors, on techniques and ways to fix and address problems.

Keeping with asset management concepts, this contracting method provided a means for accomplishing not only needs but as a way to reduce structural deficiencies working towards achieving VTrans performance goals with a focus on doing the right treatment, on the right asset, at the right time. Using agreements already in place (Category 2 MRAs) with contractors already prequalified for bridge work and familiar with Agency specifications, quality procedures and federal requirements (e.g. Davis-Bacon reporting) proved to be a win.

Industry response to this contracting method was positive. It provided prequalified contractors with smaller, fill in projects that could be done in conjunction with other work or during slower times to keep staff engaged and active with at least one contractor asking why VTrans wasn't utilizing it more.

As can be seen by the following, internal VTrans response was also positive.

- Northwest Maintenance Region – "As this project began, I was concerned federal requirements might take up more time than I had to give. That was not the case."

- Southeast Maintenance Region – "I feel it could be a valuable tool to get certain work accomplished that cannot/should not wait for a major project but is beyond the normal operations of the district. Beam straightening being a good example, that has to be hired out, we cannot do it. Also, we could probably accomplish much more in terms of deck work and large culvert replacement with the use of contractors than what we are able to accomplish with our own forces. My concerns would be that not all district personnel have construction inspection experience."

- Northeast Maintenance Region – "This contracting mechanism is a great way to get some needed bridge/culvert rehab, repair and maintenance done. In many instances, these type projects are bigger than what a district can do with all of the other work they have on their plates. Having an opportunity to utilize local contractors via Cat 2 MRAs to do this work is a win-win situation for everyone. Our experience for the most part was positive. I did talk to the contractor at the end of the project and they really thought that the process was good – even with the few hiccups."

- Southwest Maintenance Region – "I think we all have a great opportunity to perhaps share people from adjoining districts to tackle this type of work. Throughout the districts, I believe we have the expertise to do some of these projects in conjunction with the MRA contractors. In both of my districts, we have /or will have ACI certified people for concrete testing and we will have the proper bituminous mix designs in place to do SEP-14 work. We also have people who have served as Resident Engineers on projects."

Using this contracting and lump sum bid method, the State was able to control scope and change orders.

All projects were completed on or prior to the dates specified with not one claim. Quality Assurance for all projects was handled in accordance with the local FHWA Division's approved VTrans Quality Assurance Program (QAP).

This model, i.e. abbreviated plan set and "A"+"B" bidding, was used by VTrans to quickly and successful put out complete PS&E (plan, specifications, and estimate) packets for seven, locally-managed deck /superstructure replacement projects funded by American Recovery and Reinvestment Act (ARRA) and a number of rest area preventive maintenance projects.

The "A"+"B" bidding method, where the "A" portion of the bid reflected the actual cost to do the project (that which is paid out) and the "B" portion (days to accomplish the work) used to determine best value (contract award) and a target for incentive /disincentive (i.e. days set by the Agency as a realistic timeframe to accomplish the work) also kept costs in check and the projects moving and on schedule.

The best value (i.e. contract award amount) is A (cost to construct) + B (closure days) * cost per day. As an example, for the Addison and Berkshire deck projects, there was an allowed incentive /disincentive of five working days (max).

For Addison, there was no incentive or disincentive. For Berkshire, a $20,000 incentive /bonus payment (5 days * $4,000) was made because the contractor opened the bridge to traffic on day 32 rather than taking the 38 days bid.

To avoid favoritism or the perception thereof, it was required that all SEP-14 project advertisements went to a minimum of three, if not all, contractors eligible to perform Category 2 MRA bridge work in that region. Contractors were also required to attend mandatory onsite, pre-bid meetings where the work, contracting method, selection

criteria (based on best value rather than low bid, etc.) was described and questions could be asked and answered.

Streamlining the process did inadvertently create potential for problems which we learned from and corrected. As an example, it may not have been fully clear to the contractor that the Agency's 2006 Specifications was to be followed as if this was any other State project. Things such as the erosion control measures were expected via the specifications but not "spelled" out in the plans. When the silt fence installation was brought up to the contractor, they certainly installed it without argument but wondered how they were going to get paid for it or if it would be a claim. In the end, we had no claims, no problems with work performance, quality or completion time.

Overall, this Special Experimental Project No. 14 (SEP-14) Alternative Contracting for "Utilizing Maintenance Rental Agreements (MRA) for various Preventative Maintenance (PM), Preservation (PV), and Repair (RP) Contracting Needs" was, per VTrans, successful.

# Appendix A

**Appendix A – SEP-14 Projects – Final (12July2019)**

| ROUTE | BRIDGE NO. | PROJECT DESCRIPTION | PROJECT STATUS | PIN | PROJECT NAME | PROJECT NUMBER | EXPENDED TO DATE - TOTAL (7/12/2019) | EXPENDED TO DATE - PE | EXPENDED TO DATE - ROW | EXPENDED TO DATE - CONST | EXPENDED TO DATE - OTHER | PROJECT DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VT-17 | 4 | deck replacement | complete 3/25/2010 | 09B166 | ADDISON | BHF ST 032-1(16) | $253,456.99 | $13,264.30 | $0.00 | $240,192.69 | $0.00 | REPLACEMENT OF THE DECK OF BR4 ON VT17 IN ADDISON, OVER DEAD CREEK. |
| US-2 | | Preventative maintenance improvements at the Alburgh Rest Area on US 2. | 10-Nov-18 | 14E243 | ALBURGH | NH REST(2) | $3,718.84 | $888.84 | $0.00 | $2,830.00 | $0.00 | Rest Area - Preventive Maintenance |
| VT-108 | 57 | deck replacement | complete 3/25/2010 | 09C168 | BERKSHIRE | BHF ST 0305(1) | $312,420.72 | $3,491.64 | $0.00 | $308,929.08 | $0.00 | REPLACEMENT OF THE DECK OF BR57 ON VT108 IN BERKSHIRE, OVER THE PIKE RIVER. |
| I-91 | | Preventative maintenance improvements at the Bradford Rest Area on I-91 Northbound | 17-May-19 | 14E244 | BRADFORD | IM REST(3) | $36,948.63 | $1,904.44 | $0.00 | $35,044.19 | $0.00 | Rest Area - Preventive Maintenance |
| US-4 | mm 3.00 | culvert replacement | complete | 12B382 | BRIDGEWATER | ER CULV(41) | $589,102.00 | $50,414.00 | $3,635.00 | $535,003.00 | $50.00 | REPLACE EXISTING 5-FOOT CMP WITH AN 8-BY-6-FOOT HIGH CONCRETE BOX, ON US4 IN BRIDGEWATER. |
| VT-15 | 22 | Maintenance project to replace damaged bridge rail system and fascia concrete of bridge 22 located on VT-15 in Cambridge. | 17-Aug-18 | 16B144 | CAMBRIDGE | BM17080 | $313,645.00 | $0.00 | $0.00 | $313,645.00 | $0.00 | Bridge maintenance project |
| VT-11 | 49 | deck replacement | complete 3/25/2010 | 09C170 | CHESTER | BHF ST 0134(31) | $384,672.71 | $7,151.85 | $0.00 | $377,520.86 | $0.00 | REPLACEMENT OF THE DECK OF BR49 ON VT11 IN CHESTER, OVER THE WILLIAMS RIVER. |
| VT-11 | mm 0.20 | culvert replacement | complete | 12B378 | CHESTER | ER CULV(38) | $495,404.00 | $66,395.00 | $4,531.00 | $424,431.00 | $47.00 | REPLACE EXISTING 4-BY-2-FOOT CONCRETE BOX WITH AN 8-BY-4-FOOT HIGH CONCRETE BOX, ON VT11 IN CHESTER. |
| I-89 | 75-1N | culvert lining | complete 6/14/2017 | 13A092 | COLCHESTER | IM 089-3(71) | $544,279.16 | $15,734.46 | $0.00 | $528,544.70 | $0.00 | LINING OF THE EXISTING CGMP, BR75-1 N&S ON I-89 IN COLCHESTER. |
| US-2 | 97 | culvert repair | complete 3/25/2010 | 09B290 | DANVILLE | NH 028-3(40) | $72,374.86 | $0.00 | $0.00 | $72,374.86 | $0.00 | REPAIR OF BRIDGE NO. 97 (SHORT STRUCTURE) ON US2 IN DANVILLE, OVER WHITEMAN BROOK. |
| VT-14 | 71 | rail replacement | complete 9/8/2016 | 12E244 | EAST MONTPELIER | ST 037-2(13) | $142,305.49 | $12,911.83 | $0.00 | $129,393.66 | $0.00 | REPLACE NON-CONFORMING BRIDGE RAIL WITH A BLACK ANODIZED RAIL, OR COAT THE EXISTING RAIL WITH PRODUCT OF EQUAL QUALITY, ON BRIDGE NO.71 ON VT14 IN EAST MONTPELIER. |
| US-4 | | Preventative maintenance improvements at the Fair Haven Welcome Center on US 4 | complete | 15E134 | FAIR HAVEN | NH REST(11) | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | Rest Area - Preventive Maintenance |
| I-89 | | Preventative maintenance improvements at the Georgia Rest Areas on I-89 Northbound and Southbound. | complete | 14E249 | GEORGIA | IM REST(4) | $120,501.76 | $9,961.18 | $0.00 | $110,540.58 | $0.00 | Rest Area - Preventive Maintenance |
| VT-100 | mm 8.29 | culvert replacement | complete | 12B368 | GRANVILLE | ER CULV(42) | $486,972.00 | $53,257.00 | $4,510.00 | $429,132.00 | $73.00 | REPLACEMENT OF AN EXISTING PLATE ARCH WITH A 12-BY-6-FOOT CONCRETE BOX, ON VT100 IN GRANVILLE. |
| I-91 | | Preventative maintenance improvements at the Guilford Rest Area on I-91 Northbound. | 17-May-19 | 14E245 | GUILFORD | IM REST(5) | $130,968.21 | $5,556.79 | $0.00 | $125,411.42 | $0.00 | Rest Area - Preventive Maintenance |
| US-4 | mm 0.644-0.814 | culvert replacement and slope stabilization | complete 3/20/2017 | 12B480 | HARTFORD | ER NH 020-2(37) | $1,799,734.60 | $107,370.76 | $34,648.88 | $1,656,982.04 | $732.92 | SLOPE STABILIZATION ALONG US4 IN HARTFORD, BEGINNING 0.88 MILE EAST OF THE HARTLAND-HARTFORD TOWN LINE EXTENDING EASTERLY 0.05 MILE. SLOPE FAILURE IS PROGRESSIVELY DESTABILIZING ROADWAY DUE TO HEAVY EROSION CAUSED BY TROPICAL STORM IRENE. |
| I-91 | | Preventative maintenance improvements at the Hartford Rest Area on I-91 Southbound | complete | 15E135 | HARTFORD | IM REST( ) | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | Rest Area - Preventive Maintenance |
| US-7 | 184 | deck replacement | complete 5/21/2015 | 10C136 | HIGHGATE | BHF 0285(15) | $1,194,375.53 | $40,012.11 | $0.00 | $1,154,363.42 | $0.00 | REPLACEMENT OF STRUCTURALLY DEFICIENT DECK ON BRIDGE NO. 184 ON US7 IN HIGHGATE, OVER I-89. |
| VT-30 | 40 | approach slab replacement and abutment scour mitigation | complete 8/24/2015 | 11B328 | JAMAICA | ER BHF 015-1(25) | $579,160.69 | $74,579.64 | $0.00 | $500,345.16 | $4,235.89 | REHABILITATION OF BRIDGE NO. 40 ON VT30 IN JAMAICA, OVER THE WINHALL RIVER. DISASTER #VT11-2. |
| VT-242 | | culvert replacement | complete 12/29/2017 | 13C200 | JAY | ER 0278(4) | $255,892.20 | $0.00 | $9,507.52 | $246,384.68 | $0.00 | REPLACEMENT OF THE EXISTING CULVERT WITH A NEW CONCRETE BOX ON VT242 IN JAY, APPROX. 4.38 MILES EAST OF THE WESTFIELD-JAY TOWN LINE. |

# Appendix A

**Appendix A – SEP-14 Projects – Final (12July2019)**

| ROUTE | BRIDGE NO. | PROJECT DESCRIPTION | PROJECT STATUS | PIN | PROJECT NAME | PROJECT NUMBER | EXPENDED TO DATE - TOTAL (7/12/2019) | EXPENDED TO DATE - PE | EXPENDED TO DATE - ROW | EXPENDED TO DATE - CONST | EXPENDED TO DATE - OTHER | PROJECT DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VT-100 | 118 | short structure replacement | complete 12/15/2017 | 13B150 | KILLINGTON | ER 022-1(27) | $772,141.13 | $56,032.70 | $18,173.77 | $697,934.66 | $0.00 | REPLACEMENT OF BRIDGE NO. 118 (SHORT) ON VT100, DUE TO DAMAGES INCURRED DURING TROPICAL STORM IRENE. |
| I-91 | | Preventative maintenance improvements at the Lyndon Rest Area on I-91 Southbound. | complete | 14E246 | LYNDON | IM REST(6) | $159,189.16 | $17,818.39 | $0.00 | $141,370.77 | $0.00 | Rest Area - Preventive Maintenance |
| VT-102 | 5 | Maintenance project for invert repair at BR5 (CGMPP) located on VT-102 in Maidstone. | 17-Aug-18 | 16B145 | MAIDSTONE | BM17072 | $632,398.00 | $0.00 | $0.00 | $632,398.00 | $0.00 | Bridge maintenance project |
| I-89 | mm 104.15 | UV culvert lining rehabilitation and slope stabilization | complete | 14A124 | MILTON | IM 089-3(75) | $78,872.00 | $14,319.00 | $0.00 | $64,553.00 | $0.00 | REHABILITATION OF AN EXISTING CULVERT, WITH ASSOCIATED EARTHWORKS, SLOPE STABILIZATION AND CHANNEL WORK, ON I-89 IN MILTON. |
| I-89 | mm 99.85 | solid wall insert culvert rehabilitation and slope stabilization | complete | 14A006 | MILTON | IM CULV(50) | $299,664.00 | $49,300.00 | $0.00 | $250,364.00 | $0.00 | REPAIR OR REPLACEMENT OF THE EXISTING CULVERT AT APPROX. MM 99.85 IN THE SOUTHBOUND LANE, INCLUDING ASSOCIATED EARTHWORKS, SLOPE STABILIZATION AND CHANNEL WORK. |
| VT-100B | mm 0.52 | culvert replacement | complete | 12C384 | MORETOWN | ER CULV(43) | $481,761.00 | $57,157.00 | $7,647.00 | $416,917.00 | $40.00 | REPLACE EXISTING 4-BY-4-FOOT CONCRETE BOX WITH A 9-BY-5-FOOT HIGH CONCRETE BOX, ON VT100B IN MORETOWN. |
| VT-114 | 19 | deck replacement | complete 5/13/2014 | 10C138 | NEWARK | BHF 0269(12) | $463,290.49 | $18,653.65 | $0.00 | $444,636.84 | $0.00 | REPLACEMENT OF STRUCTURALLY DEFICIENT DECK ON BRIDGE NO. 19 ON VT114 IN NEWARK, OVER THE EAST BRANCH OF THE PASSUMPSIC RIVER. |
| US-5 | 106 | deck replacement | complete 12/23/2014 | 09C172 | NEWBURY | BHF ST 0113(64) | $498,291.83 | $31,325.23 | $0.00 | $466,966.60 | $0.00 | REPLACEMENT OF THE DECK OF BR106 ON US5 IN NEWBURY, OVER THE WELLS RIVER. |
| US-2 | 7 | culvert replacement | complete 12/2/2013 | 12B358 | NORTH HERO | STP CULV(45) | $168,474.99 | $2,216.53 | $0.00 | $166,258.46 | $0.00 | REPLACEMENT OF DEFICIENT CULVERT (BRIDGE NO. 7) UNDER US2 IN NORTH HERO, OVER LAKE CHAMPLAIN (CARRY BAY). |
| I-89 | | Preventative maintenance improvements at the Randolph Rest Area on I-89 Southbound. | complete | 15E137 | RANDOLPH | IM REST( ) | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | Rest Area - Preventive Maintenance |
| VT-125 | mm 5.75 | culvert replacement | complete 3/21/2019 | 12C386 | RIPTON | ER CULV(44) | $911,146.58 | $54,170.30 | $5,617.98 | $851,306.93 | $51.37 | REPLACE EXISTING 6-FOOT CMP WITH A 13-BY-7-FOOT HIGH CONCRETE BOX, ON VT125 IN RIPTON. |
| VT-73 | mm 3.90 | culvert replacement | complete | 12C374 | ROCHESTER | ER CULV(35) | $444,128.00 | $37,707.00 | $0.00 | $406,373.00 | $48.00 | REPLACE THE EXISTING 60-INCH CMP WITH A 7-BY-4-FOOT HIGH CONCRETE BOX, ON VT73IN ROCHESTER. |
| VT-12A | | culvert replacement | complete 11/9/2018 | 13C312 | ROXBURY | ER 0187(14) | $356,381.93 | $37,719.24 | $7,274.47 | $311,388.22 | $0.00 | REPLACEMENT OF BRIDGE NO. 17 (SHORT, 60" CGMP) ON VT12A IN ROXBURY, DUE TO DAMAGE SUSTAINED DURING TROPICAL STORM IRENE. DISASTER #VT11-2; DDIR #14A-REV. |
| US-4 | | wall; project did not end up being contracted using SEP-14 | | 15B033 | RUTLAND TOWN | NH WALL(3) | $648,759.28 | $72,842.25 | $10,691.76 | $565,225.27 | $0.00 | Replacement of retaining wall (RW0041) adjacent to US-4 in the town of Rutland near the Rockwell Museum. |
| I-91 | 68-4S | culvert replacement | complete 12/27/2018 | 11A262 | RYEGATE | IM CULV(28) | $917,479.46 | $382,651.83 | $0.00 | $534,827.63 | $0.00 | REPLACEMENT OF BR68-4S (SHORT STRUCTURE) ON I-91 IN RYEGATE. |
| I-89 | | Preventative maintenance improvements at the Sharon Rest Area on I-89 Northbound. | complete | 14E247 | SHARON | IM REST(7) | $100,741.21 | $4,562.29 | $0.00 | $96,178.92 | $0.00 | Rest Area - Preventive Maintenance |
| VT-74 | 2 | deck replacement | complete 7/10/2014 | 11C086 | SHOREHAM | BHF ST 0164(2) | $477,112.55 | $7,525.83 | $0.00 | $469,586.72 | $0.00 | REPLACEMENT OF THE STRUCTURALLY DEFICIENT DECKING OF BRIDGE NO. 2 ON VT74 IN SHOREHAM, OVER THE LEMON FAIR RIVER. |
| VT-116 | 15 | deck replacement | complete 3/12/2015 | 10B140 | STARKSBORO | BHF 021-1(30) | $354,661.21 | $30,296.84 | $0.00 | $324,364.37 | $0.00 | REPLACEMENT OF STRUCTURALLY DEFICIENT DECK ON BRIDGE NO. 15 ON VT116 IN STARKSBORO, OVER LEWIS CREEK. |
| VT-100 | mm 0.73 | culvert replacement | complete | 12B366 | STOCKBRIDGE | ER CULV(36) | $374,975.00 | $0.00 | $0.00 | $374,975.00 | $0.00 | REPLACEMENT OF A 4-FOOT PLASTIC PIPE WITH A 7-BY-4-FOOT CONCRETE BOX, ON VT100IN STOCKBRIDGE. |
| I-91 | mm 82.89 | UV culvert lining rehabilitation and slope stabilization | complete | 15D038 | THETFORD | IM 091-2(81) | $148,461.75 | $29,103.74 | $0.00 | $119,358.01 | $0.00 | Slope stability and culvert rehabilitation work of a failure along I-91 Northbound at approximately MM 82.8. |

# Appendix A

**Appendix A – SEP-14 Projects – Final (12July2019)**

| ROUTE | BRIDGE NO. | PROJECT DESCRIPTION | PROJECT STATUS | PIN | PROJECT NAME | PROJECT NUMBER | EXPENDED TO DATE - TOTAL (7/12/2019) | EXPENDED TO DATE - PE | EXPENDED TO DATE - ROW | EXPENDED TO DATE - CONST | EXPENDED TO DATE - OTHER | PROJECT DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| US-7 | mm 2.12 | culvert replacement | complete | 12B380 | WALLINGFORD | ER CULV(39) | $191,635.00 | $187,223.00 | $4,355.00 | $0.00 | $57.00 | REPLACE (2) EXISTING VERTICALLY-STACKED 30-INCH PIPES WITH AN 8-BY-4-FOOT HIGH CONCRETE BOX, ON US7 IN WALLINGFORD. |
| VT-100 | 197 | substructure repair/restoration | complete | 10A360 | WATERBURY | IM 089-2(44) | $871,203.92 | $35,593.07 | $0.00 | $835,610.85 | $0.00 | REPAIR/RESTORATION OF THE SUBSTRUCTURE OF BRIDGE NO. 197 ON VT100 IN WATERBURY, OVER I-89. |
| I-93 | | Preventative maintenance improvements at the Waterford Rest Area on I-93 Northbound. | 28-Sep-18 | 14E248 | WATERFORD | IM REST(8) | $178.20 | $178.20 | $0.00 | $0.00 | $0.00 | Rest Area - Preventive Maintenance |
| VT-44 | 4 | deck replacement | complete 9/8/2016 | 13C010 | WEST WINDSOR | BHF 0148(8) | $471,138.05 | $40,288.81 | $0.00 | $430,849.24 | $0.00 | REPLACEMENT OF THE EXISTING BRIDGE DECK AND RAIL, FOR BRIDGE NO. 4 ON VT44 IN WEST WINDSOR, OVER MILL BROOK. |
| VT-44 | 7 | deck replacement | complete 11/9/2018 | 13C012 | WEST WINDSOR | BHF 0148(9) | $562,490.95 | $33,319.30 | $0.00 | $529,171.65 | $0.00 | REPLACEMENT OF EXISTING BRIDGE DECK AND RAIL, OF BRIDGE NO. 7 ON VT44 IN WEST WINDSOR, OVER MILL BROOK. |
| VT-242 | mm 1.94 | culvert replacement | complete | 12C362 | WESTFIELD | ER CULV(34) | $522,395.00 | $0.00 | $0.00 | $522,395.00 | $0.00 | REPLACEMENT OF A 4-FOOT PLASTIC PIPE WITH A 12-BY-7-FOOT CONCRETE BOX, ON VT242 IN WESTFIELD. |
| VT-242 | mm 1.47 | culvert replacement | complete | 12C364 | WESTFIELD | ER CULV(40) | $548,275.00 | $60,623.00 | $0.00 | $487,349.00 | $303.00 | REPLACEMENT OF A 6-FOOT METAL PIPE WITH A 12-BY-7-FOOT CONCRETE BOX, ON VT242 IN WESTFIELD. |
| I-91 | mm 25.594 | culvert rehabilitation and slope stabilization | complete 11/10/2018 | 16D057 | WESTMINSTER | IM SCRP(20) | $332,089.30 | $54,692.18 | $0.00 | $277,397.12 | $0.00 | 36" CMP culvert rehabilitation and slope repair, on I-91 in Westminster. |
| I-89 | | Preventative maintenance improvements at the Williston Rest Areas on I-89 Northbound and Southbound. | 10-Nov-18 | 14E250 | WILLISTON | IM REST(9) | $13,713.80 | $0.00 | $0.00 | $13,713.80 | $0.00 | Rest Area - Preventive Maintenance |
| VT-11 | mm 0.14 | culvert replacement | complete | 12B376 | WINDHAM | ER CULV(37) | $381,369.00 | $50,098.00 | $2,965.00 | $328,262.00 | $44.00 | REPLACE 48-INCH CMP WITH AN 8-BY-5-FOOT HIGH CONCRETE BOX, ON VT11 IN WINDHAM. |
| VT-106 | 29 | deck replacement | complete 5/14/2015 | 11C320 | WOODSTOCK | BHF 0151(24) | $412,297.66 | $4,696.87 | $0.00 | $407,600.79 | $0.00 | DECK REPLACEMENT ON BRIDGE NO. 29 ON VT106 IN WOODSTOCK, USING PHASED CONSTRUCTION AND THE SEP-14 CONTRACTING METHOD. |

| | |
|---|---|
| Total = | $20,310,648.84 |
| Emergency Relief (ER) Total = | $9,190,473.13 |
| Non-ER SEP-14 Work Total = | $11,120,175.71 |
| ER projects = | 16 |
| Total projects = | 51 |
| Non-ER projects = | 35 |
| Deck projects = | 11 |
| Culvert projects = | 24 |
| Rest area projects = | 11 |
| Other projects = | 5 |