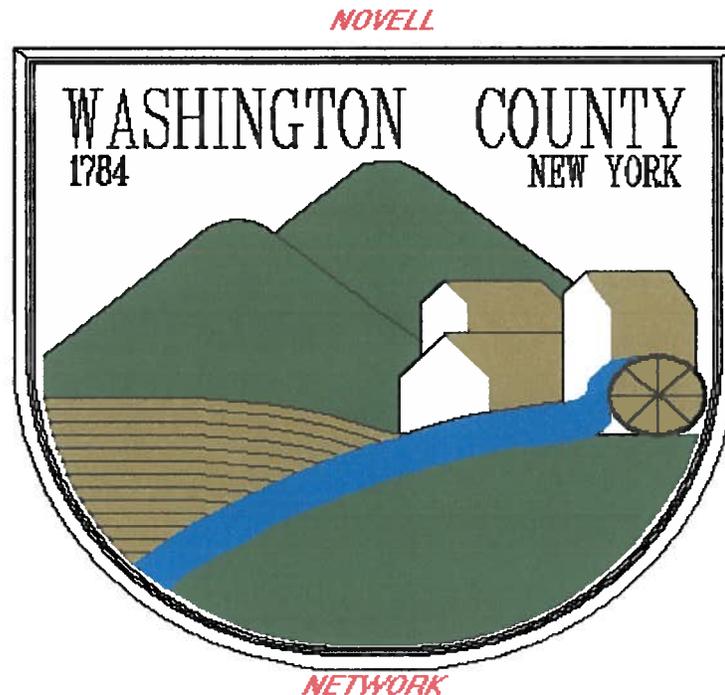


2016

ANNUAL REPORT



Washington County

Department of Public Works

Steven D. Haskins
County Superintendent of Public Works



Department of Public Works

Highways • Engineering

Steven D. Haskins, Superintendent

March, 2017

The Honorable Board of Supervisors
Washington County Municipal Center
383 Broadway
Fort Edward, NY 12828

Members of the Board:

It is with great pleasure that I present you with the 2016 Department of Public Works Annual Report.

This report summarizes the operations of the department, and associated financial data for your reference.

Thank you for your continued support of the Department of Public Works.

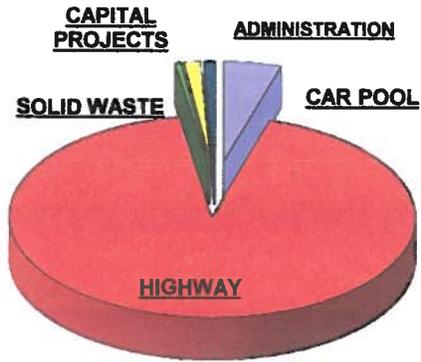
Respectfully submitted,

A handwritten signature in black ink, appearing to read "Haskins".

Steven D. Haskins
Superintendent

SH:lp

**2016
EXPENDITURES OVERSEEN BY DPW**



**2016 EXPENDITURES
(OVERSEEN BY THE DPW)**

ACCOUNT NAME	EXPENDITURES	% OF TOTAL
CAR POOL	\$817,113.07	4.61%
HIGHWAY	\$16,431,565.21	92.79%
SOLID WASTE	\$84,335.75	0.48%
CAPITAL PROJECTS	\$233,887.77	1.32%
ADMINISTRATION	\$140,846.91	0.80%
TOTAL	\$17,707,748.71	100.00%

**2016 EXPENDITURES
ALL FUNDS**

ACCOUNT NUMBER	ACCOUNT NAME	EXPENDITURE	% OF TOTAL
A1490	DPW - ADMINISTRATION	\$140,846.91	0.88%
	<i>SUB-TOTAL</i>	\$140,846.91	0.88%
CM5135	POOL CAR	\$791,660.39	2.75%
	BENEFITS (CM)	\$25,452.68	0.26%
	<i>SUB-TOTAL</i>	\$817,113.07	3.01%
D3310	TRAFFIC CONTROL	\$273,204.38	1.88%
D5010	ADMINISTRATION	\$130,699.66	0.85%
D5020	ENGINEERING	\$221,220.15	1.32%
D5110	MAINTENANCE OF HIGHWAYS & BRIDGES	\$3,514,148.83	22.87%
D5142	COUNTY SNOW & ICE CONTROL	\$1,295,541.25	9.11%
D5144	STATE SNOW & ICE CONTROL	\$399,434.01	4.76%
D5149	WORK FOR OTHER DEPARTMENTS	\$0.00	0.03%
D5112	HIGHWAY PROJECTS (CHIPS)	\$4,550,283.50	15.31%
D5120	BRIDGE PROJECTS	\$1,458,507.55	4.13%
DM5130	ROAD MACHINERY	\$2,484,803.97	19.63%
	BENEFITS (D,DM)	\$2,103,721.91	11.46%
	<i>SUB-TOTAL DIV. OF HIGHWAYS</i>	\$16,431,565.21	91.36%
CLB8160	DPW - SOLID WASTE MANAGEMENT	\$15,116.80	3.27%
	BENEFITS (CLB)	\$69,218.95	1.49%
	<i>SUB-TOTAL DIV. OF SOLID WASTE</i>	\$84,335.75	4.76%
	TOTAL EXPENDITURES FOR 2016	\$17,473,860.94	100.00%

*Figures may vary slightly from County Treasurer's final reconciliation.

2016 DPW GENERAL FUND

	APPROPRIATIONS	EXPENDED	BALANCE
A1490			
DPW ADMINISTRATION			
PERSONAL SERVICES	\$148,149.00	\$128,263.45	\$19,885.55
EQUIPMENT	\$0.00	\$0.00	\$0.00
CONTRACTUAL SERVICES	\$16,900.00	\$12,583.46	\$4,316.54
	\$165,049.00	\$140,846.91	\$24,202.09

***Figures may vary slightly from County Treasurer's final reconciliation*

2016 COUNTY ROAD FUND

	APPROPRIATIONS	EXPENDED	BALANCE	ENCUMBERED <i>to 2017</i>
D3310 TRAFFIC				
PERSONAL SERVICES	\$51,842.00	\$49,050.24	\$2,791.76	
CONTRACTUAL SERVICES	\$259,392.00	\$224,154.14	\$35,237.86	\$ 2,695.00
	\$311,234.00	\$273,204.38	\$38,029.62	
D5010 ADMINISTRATION				
PERSONAL SERVICES	\$117,698.00	\$117,697.56	\$0.44	
EQUIPMENT	\$600.00	\$489.97	\$110.03	
CONTRACTUAL SERVICES	\$17,300.00	\$12,512.13	\$4,787.87	
	\$135,598.00	\$130,699.66	\$4,898.34	
D5020 ENGINEERING				
PERSONAL SERVICES	\$198,281.00	\$198,280.31	\$0.69	
EQUIPMENT	\$5,000.00	\$567.00	\$4,433.00	
CONTRACTUAL SERVICES	\$48,000.00	\$22,372.84	\$25,627.16	
	\$251,281.00	\$221,220.15	\$30,060.85	
D5110 MAINTENANCE HIGHWAYS & BRIDGES				
PERSONAL SERVICES	\$1,750,067.00	\$1,750,065.23	\$1.77	
EQUIPMENT	\$8,400.00	\$389.98	\$8,010.02	
CONTRACTUAL SERVICES	\$1,603,857.00	\$1,763,693.62	(\$159,836.62)	**Equip. Rentals
	\$3,362,324.00	\$3,514,148.83	(\$151,824.83)	

**Figures may vary slightly from County Treasurer's final reconciliation

2016 COUNTY ROAD FUND

	APPROPRIATIONS	EXPENDED	BALANCE	ENCUMBERED TO 2017
D5142 COUNTY SNOW				
PERSONAL SERVICES	\$230,914.00	\$216,262.89	\$14,651.11	
CONTRACTUAL SERVICES	\$1,304,337.00	\$1,079,278.36	\$225,058.64	
	\$1,535,251.00	\$1,295,541.25	\$239,709.75	
D5144 STATE SNOW				
PERSONAL SERVICES	\$160,000.00	\$66,093.77	\$93,906.23	
CONTRACTUAL SERVICES	\$664,720.00	\$333,340.24	\$331,379.76	
	\$824,720.00	\$399,434.01	\$425,285.99	
D5149 WORK-OTHER DEPTS.				
PERSONAL SERVICES	\$10,000.00	\$0.00	\$10,000.00	
CONTRACTUAL SERVICES	\$2,000.00	\$0.00	\$2,000.00	
	\$12,000.00	\$0.00	\$12,000.00	
D5112 - CONSTRUCTION & CHIPS PROJECTS	\$4,920,562.00	\$4,550,283.50	\$370,278.50	
D5120 - BRIDGE PROJECTS	\$1,370,115.35	\$1,458,507.55	(\$88,392.20)	**Equip. Rentals
	\$6,290,677.35	\$6,008,791.05	\$281,886.30	
D9010-D9060 BENEFITS	\$1,926,083.00	\$1,882,809.29	\$43,273.71	
GRAND TOTAL-ROAD FUND	\$14,649,168.35	\$13,725,848.62	\$923,319.73	
COUNTY ROAD				
Cash Balance as of 12/31/16:	D200		\$2,267,719.04	

***Figures may vary slightly from County Treasurer's final reconciliation*

2016 COUNTY ROAD MACHINERY FUND

	APPROPRIATIONS	EXPENDED	BALANCE	ENCUMBERED to 2017
DM5130 ROAD MACHINERY				
PERSONAL SERVICES	\$446,846.00	\$406,691.24	\$40,154.76	
EQUIPMENT	\$839,290.00	\$610,638.87	\$228,651.13	\$ 184,988.90
CONTRACTUAL SERVICES	\$2,203,679.89	\$1,467,473.86	\$736,206.03	\$ 2,253.55
	\$3,489,815.89	\$2,484,803.97	\$1,005,011.92	
DM9010-DM9060				
BENEFITS	\$485,725.00	\$220,912.62	\$264,812.38	
CO. ROAD. MACH.				
Cash Balance as of 12/31/16: DM200			\$1,217,782.38	

***Figures may vary slightly from County Treasurer's final reconciliation*

2016 POOL CAR FUND

	APPROPRIATIONS	EXPENDED	BALANCE	ENCUMBERED TO 2017
CM5135 POOL CAR PERSONAL SERVICES EQUIPMENT CONTRACTUAL SERVICES	\$80,654.00	\$80,299.80	\$354.20	\$23,666.00
	\$389,799.00	\$365,489.50	\$24,309.50	
	\$398,750.00	\$345,871.09	\$52,878.91	
	\$869,203.00	\$791,660.39	\$77,542.61	
CM9010-CM9060 BENEFITS	\$27,197.00	\$25,452.68	\$1,744.32	
POOL CAR FUND Cash Balance as of 12/31/16:	Cash 200		\$514,993.49	

***Figures may vary slightly from County Treasurer's final reconciliation*

2016 SOLID WASTE MGMT. FUND

	APPROPRIATIONS	EXPENDED	BALANCE
CLB8160			
DPW SOLID WASTE			
PERSONAL SERVICES	\$0.00	\$0.00	\$0.00
EQUIPMENT	\$0.00	\$0.00	\$0.00
CONTRACTUAL SERVICES	\$23,750.00	\$15,116.80	\$8,633.20
	\$23,750.00	\$15,116.80	\$8,633.20
CLB9010-CLB9060			
BENEFITS	\$76,000.00	\$69,218.95	\$6,781.05
SOLID WASTE MGMT.			
Cash Balance as of 12/31/16:	Cash 200		\$404,876.01

**Figures may vary slightly from County Treasurer's final reconciliation*

2016

HIGHWAY & BRIDGE

CONSTRUCTION & MAINTENANCE

The highway department is responsible for the maintenance of 284 miles of County highways and 123 County bridges. By contract, an additional 100 miles of state highways are maintained during the winter month for snow and ice control. The combination of County and State maintenance provides an overall balance that allows for efficient plow beats and reasonable response times keeping the travel lanes reasonably safe and passable.

In addition to the normal highway and bridge maintenance our crews also completed a variety of other tasks. The department is re-focusing on getting back to the basics of a good maintenance program including roadside brush cutting, ditching and mowing.

Our Sign Maintenance Supervisor is responsible for manufacturing and installing traffic control signs and overseeing our pavement marking subcontractor on our County highway system. During 2016, 284 miles of center lines were striped, along with over 300 miles of edge lines by a contracted firm. The County purchases all paint and beads and the contracted firm applies those materials. The firm also painted centerline markings on several miles for various Townships here in Washington County. In order to stay compliant with MUTCD (Manual of Uniform Traffic Control Devices, our sign Maintenance Supervisor as well as injured employees returning to work on light duty fabricated needed signs in the Sign shop. These employees also made numerous signs for various Townships and Villages. Our Sign Maintenance Supervisor was also responsible for signing detours for various road (paving) and small bridge projects and their associated closures. Due to vandalism, accidents, and the elements deteriorating the sign facings, it is an important task to keep up with the maintenance of over 6800 hundred highway signs. New rules from 2012 required that each municipality develop a plan to deal with loss of reflectivity in the sign faces, after checking with the state and learning that we would not be able to share their reflectivity meter we purchased one and can now begin to check our sign inventory for compliance.

During 2016 our bridge program was very aggressive with four pre-fabricated deck bridges, three large multi-plate culverts, and phase II of the Church Street bridge rehabilitation. The work of which was completed under daily lane closures. The prefabricated decks we formed and placed the concrete in March inside of one of our satellite buildings getting the season off to an early start. We undertook the replacement of two bridges on CR 30 in the Town of Hartford at the same time detouring traffic one time for both structures and the raising

of the roadway in between the structures 18 inches. Two of the multi-plate culverts we were assisted on by an excavation contractor, the depth of the culverts were more than we could safely self-perform and required special equipment and experience. With the depths we also needed a Crane Service safely to set the preassembled culverts to line and grade. The CR 18, 21, & 45 multi-plate culverts also had guide rail installed after the blacktop was completed.

Our Construction crews were busy in 2016 with our 2 Gradalls, a wheel excavator and the rental of 2 track excavators, installing over 3400' of cross culverts, reconstructing CR18 &21, and ditching some of our paving projects.

The paving crew paved over 23 miles of road with the help of contractors hauling the material to our paving crew. We placed seven miles of top course on binder placed in 2015 after applying tack coat, installed binder course after completing eleven and a half miles of full depth reclamation (8"-12"). We also had to resurface approximately five miles of fully reconstructed road in order to protect the Fiber Mat seal from premature wear. The shoulders were then backed up with gravel, top soil, and millings which we got from some of our milling projects.

Our three road side mowers were out mowing from early May to November and our two over the rail mowers were out all year long mowing grass and brush in spring, summer, and fall, and brush in the winter. Throughout the year the crews patched potholes, cut trees and took care of any "requests for service" that came into the main office. Employees also performed preventive maintenance on the equipment and barns they are assigned to.

**2016
MILES OF HIGHWAYS IN TOWNS***

TOWN	STATE MILEAGE	COUNTY MILEAGE OUTSIDE VILLAGE	COUNTY MILEAGE INSIDE VILLAGE	TOWN MILEAGE	VILLAGE** MILEAGE	TOTAL MILEAGE
ARGYLE	14.13	23.47		95.20	0.95	133.75
CAMBRIDGE	5.34	19.38	0.14	62.66	1.79	89.31
DRESDEN	10.51	9.04		34.27		53.82
EASTON	16.70	23.67	0.68	86.14	0.73	127.92
FORT ANN	18.14	14.49	0.54	73.51	1.82	108.50
FORT EDWARD	13.04	13.67	0.37	34.53	13.74	75.35
GRANVILLE	25.82	18.64	1.77	68.85	9.98	125.06
GREENWICH	17.13	15.95		76.54	7.09	116.71
HAMPTON	7.40	8.51		17.64		33.55
HARTFORD	20.26	10.34		49.38		79.98
HEBRON	9.06	21.26		68.19		98.51
JACKSON	13.70	11.91		56.96		82.57
KINGSBURY	21.39	19.16	2.28	52.57	21.57	116.97
PUTNAM	8.36	10.35		32.74		51.45
SALEM***	10.35	19.97		71.62		101.94
WHITE CREEK	9.74	10.78	0.62	53.60	8.49	83.23
WHITEHALL	13.08	26.74	0.36	35.29	13.35	88.82
TOTAL	234.15	277.33	6.76	969.69	79.51	1567.44

STATE MILEAGE	234.15
COUNTY MILEAGE	284.09
TOWN MILEAGE	969.69
VILLAGE MILEAGE	79.51
TOTAL MILEAGE IN COUNTY	1567.44

* Figures based on reported mileages as of 12/31/2016, and in many cases are reflective of adjustments to Local (County, Town, & Village) mileages made by New York State Department of Transportation (NYSDOT) using Global Positioning System (GPS) technology

** Village mileage figures do not include State & County mileages inside villages

*** Town of Salem assumed jurisdiction of streets and roads (+5.07 miles) in former Village of Salem per Order of Dissolution, effective May 1, 2016

WASHINGTON COUNTY DEPARTMENT OF PUBLIC WORKS 2016 COUNTY ROAD PROJECTS

- 1. County Route 10** **Town of Whitehall**
 CR 9 to 0.3 mi past East Bay Road (0.86miles) Roadway FDR (Full Depth Reclamation) at a depth of 8"-12" with calcium added, work performed by Gorman Bros. Inc.. Roadway re-graded, then repaved with 3" type 3 HMA (Hot Mixed Asphalt) binder course x 22'± wide. Installed screened gravel (topsoil & compost mix in front of residence) 3'- 4' wide. Work performed by County Forces. CHIPs Project.
0.86 miles **\$161,678.30** (\$187,998/mi)

- 2. County Route 16** **Town/Village of Fort Ann**
 Catherine Street to West Rd(s) (1.1 miles) and Evans Lane to 1.3 mi south of West Rd(n) (1.3 miles) Roadway FDR (Full Depth Reclamation) at a depth of 8"-12" with calcium added, work performed by Gorman Bros. Inc.. Roadway re-graded, then repaved with 3" type 3 HMA (Hot Mixed Asphalt) binder course x 22'± wide. Installed screened gravel (topsoil & compost mix in front of residence) shoulders, 3'- 4' wide. Work performed by County Forces. CHIPs Project.
2.40 miles **\$339,511.42** (\$141,463/mi)

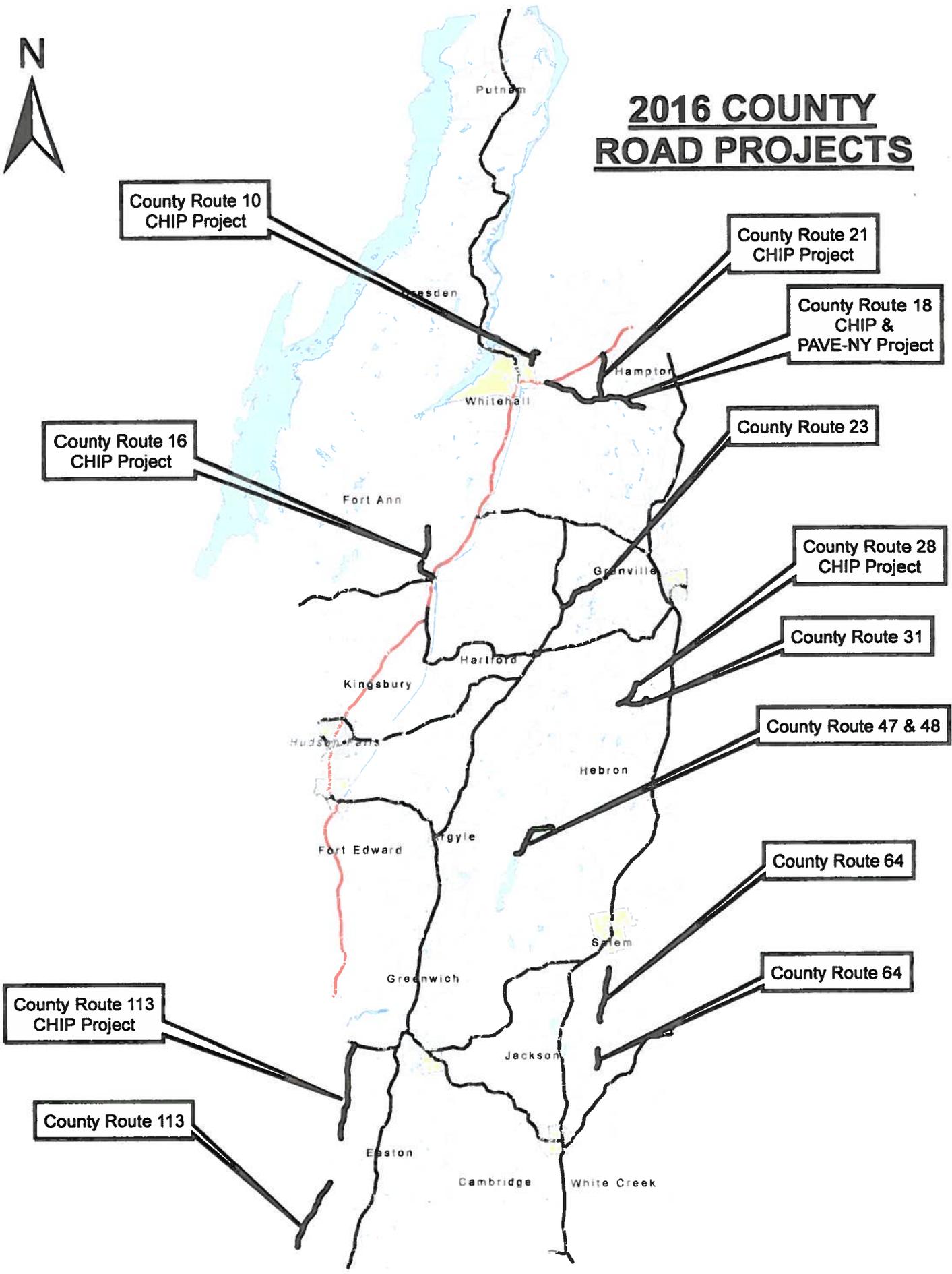
- 3. County Route 18** **Town of Hampton/Whitehall**
 CR 21 to Hickey Road (2.26 miles) Roadway FDR (Full Depth Reclamation) at a depth of 8"-12" with calcium added, work performed by Gorman Bros. Inc.. Roadway re-graded, then repaved with 3" type 3 HMA (Hot Mixed Asphalt) binder course x 22'± wide. Installed asphalt millings and screened gravel (topsoil & compost mix in front of residence) shoulders, 3'- 4' wide. Work performed by County Forces. CHIPs Project.
2.26 miles **\$344,802.52** (\$152,567/mi)

- 4. County Route 18** **Town of Whitehall**
 US Route 4 to CR21, Brick Church (2.92 miles) Cold Milling and removal of roadway asphalt down to original concrete roadway, work performed by Peckham Industries. Millings hauled, screened and stored offsite for return use. Crack and Seat process of concrete roadway, performed by Pavilion Drainage. Paver placed installation of asphalt millings & screened gravel subbase, work performed by Peckham Industries. Cold-in-place recycling performed. Roadway then repaved with 2" type 6 HMA (Hot Mixed Asphalt) overlay x 22'± wide. Installed asphalt millings and screened gravel (topsoil & compost mix in front of residence) shoulders, 3'- 4' wide. Work performed by County Forces. CHIPs Project & PAVE-NY Project.
2.92 miles **\$785,090.18** (\$268,866/mi)

- | | |
|---|---|
| 5. County Route 21 | Town of Whitehall |
| CR 18, Brick Church north to US Route 4 (2.26 miles) Cold Milling and removal of roadway asphalt down to original concrete roadway, work performed by Peckham Industries. Millings hauled, screened and stored offsite for return use. Crack and Seal process of concrete roadway, performed by Pavilion Drainage. Paver placed installation of asphalt millings & screened gravel subbase, work performed by Peckham Industries. Cold-in-place recycling performed. Roadway then repaved with 2" type 6 HMA (Hot Mixed Asphalt) overlay x 24'± wide. Installed asphalt millings and screened gravel (topsoil & compost mix in front of residence) shoulders, 3' - 4' wide. Work performed by County Forces. CHIPs Project & PAVE-NY Project. | |
| 2.26 miles | \$596,072.03 (\$263,749/mi) |
| 6. County Route 28 | Town of Hebron |
| CR 31 to Button Road (1.45 miles) Roadway FDR (Full Depth Reclamation) at a depth of 8"-12" with calcium added, work performed by Gorman Bros. Inc.. Roadway re-graded, then repaved with 3" type 3 HMA (Hot Mixed Asphalt) binder course x 22'± wide. Installed screened gravel (topsoil & compost mix in front of residence) shoulders, 3' - 4' wide. Work performed by County Forces. CHIPs Project. | |
| 1.45 miles | \$213,078.03 (\$146,950/mi) |
| 7. County Route 113 | Town of Easton |
| Cheese Factory Rd north to NYS Rte 29 (4.72 miles) Roadway FDR (Full Depth Reclamation) at a depth of 8"-12" with calcium added, work performed by Gorman Bros. Inc.. Roadway re-graded, then repaved with 3" type 3 HMA (Hot Mixed Asphalt) binder course x 22'± wide. Installed screened gravel (topsoil & compost mix in front of residence) shoulders, 3' - 4' wide. Work performed by County Forces. CHIPs Project. | |
| 4.72 miles | \$753,961.19 (\$159,737/mi) |
| 8. County Route 23 (Return to 2015 Roadway Project) | Town of Granville |
| NYS Rte 40 to Guilder Hollow Rd (2.32 miles), Return to install traveling surface top course over binder course. Roadway trued and leveled with paving of 2" type 6 HMA (Hot Mixed Asphalt) overlay x 22'± wide. Installed screened gravel (topsoil & compost mix in front of residence) shoulders, 3' - 4' wide. Work performed by County Forces. | |
| 2.32 miles | \$265,870.59 (\$114,599/mi) |
| <u>Total Road Project Cost ('15 & '16)</u> | |
| | <u>\$674,262.04 (\$290,630/mi)</u> |
| 9. County Route 31 (Return to 2015 Roadway Project) | Town of Hebron |
| Big Burch Rd to Buton Rd (1.45 miles), Return to install traveling surface top course over binder course. Roadway trued and leveled with paving of 2" type 6 HMA (Hot Mixed Asphalt) overlay x 22'± wide. Installed screened gravel (topsoil & compost mix in front of residence) shoulders, 3' - 4' wide. Work performed by County Forces. | |
| 1.45 miles | \$161,207.43 (\$111,178/mi) |
| <u>Total Road Project Cost ('15 & '16)</u> | |
| | <u>\$423,912.49 (\$292,353/mi)</u> |

- | | | |
|---|--|--|
| <p>10. County Route 113 (<i>Return to 2015 Roadway Project</i>)
 CR 54 north to Ferry Lane (3.28 miles), Return to install traveling surface top course over binder course. Roadway trued and leveled with paving of 2" type 6 HMA (Hot Mixed Asphalt) overlay x 22'± wide. Installed screened gravel (topsoil & compost mix in front of residence) shoulders, 3' - 4' wide. Work performed by County Forces.
 3.28 miles</p> | <p>Town of Easton
 \$377,884.10 (\$115,209/mi)</p> | |
| <p><u>Total Road Project Cost ('15 & '16)</u></p> | | <p><u>\$993,047.24 (\$302,758/mi)</u></p> |
| | | |
| <p>11. County Route 47 & 48 (<i>Repair to 2015 Roadway Projects</i>)
 East Lake Rd to CR30 (2.44 miles), Repair traveling surface top course with Paver Placed Surface Treatment work performed by Gorman Bros. Inc. Installed screened gravel (topsoil & compost mix in front of residence) shoulders, 3' - 4' wide. Work performed by County Forces.
 2.44 miles</p> | <p>Town of Hebron
 \$158,760.52 (\$65,065/mi)</p> | |
| <p><u>Total Road Projects Cost ('15 & '16)</u></p> | | <p><u>\$714,244.89 (\$292,723/mi)</u></p> |
| | | |
| <p>12. County Route 64 (<i>Repair to 2015 Roadway Projects</i>)
 Jackson/Salem Town Line to CR61 & 1 mi n of Woodcock Lane to 0.4 mi past Cross R (2.75 miles), Repair traveling surface top course with Microsurfacing Treatment work performed by Gorman Bros. Inc.
 2.75 miles</p> | <p>Town of Salem
 \$129,967.50 (\$47,261/mi)</p> | |
| <p><u>Total Road Projects Cost ('15 & '16)</u></p> | | <p><u>\$843,751.42 (\$306,819/mi)</u></p> |
| | | |
| <p>13. Crack Sealing (<i>Prior Three (3) Years Paving Projects</i>)
 Crack Filling Type II – NYS OGS PC67365; Award #23001, total of 5,243 gallons work performed by Gorman Bros. Inc.
 49.80 miles</p> | <p>Various Locations/Roads
 \$100,141.30 (\$2,011/mi)</p> | |

2016 COUNTY ROAD PROJECTS



WASHINGTON COUNTY DEPARTMENT OF PUBLIC WORKS 2016 COUNTY BRIDGE PROJECTS

1. Hampton Bridge C28 County Route 18 (spans Castle Creek) 10.75' span

Demolished and removed former concrete and steel structure (7.8'± span) originally constructed in 1930. No adjacent detour provided for traveling public, but a detour using several local & roads was signed accordingly. Assembled a new Aluminum Structural Plate Pipe Arch, 10' - 9" x 6' - 10" x 60 lf long, end area 58.4 sq ft. prior to removal of existing structure. Prepared a 12" thick, #2 crushed stone bed for new plate pipe arch to rest on. Backfilled with #2 crushed stone to the level of each haunch, where separation fabric was installed. Continuing backfill with screened item four gravel to a level of 12" above the pipe. Continuing backfill with bank run gravel to the design subbase elevation. Installed single steel box beam guide rail along both sides of structure. Installed medium stone slope protection on both ends of new structure This structure was located within a 2016 Road Project.

Total Cost **\$113,640.66***

- \$68,198.82 of Road Project monies was charged to this project. \$16,784.60 cost of Pipe Arch purchase in 2015 not included.

2. Hebron Bridge C49 County Route 31 (spans Black Creek) 12'span

Demolished and removed former concrete and steel structure (9± span) originally constructed in 1932. No adjacent detour provided for traveling public, but a detour using several local roads was signed accordingly. Constructed new reinforced concrete footings (both 2' thick x 8' wide) set on #2 crushed stone bedding (12" minimum thickness), abutments (both 2' thick x 30' long x 7' - 5" bridge beam seat), and wingwalls (2' thick x 8' long x varying heights). Installed new reinforced precast concrete deck consisting of 4 panels (each approx.. 7' wide x 15' long x 12" thick) secured at the abutments with #8 dowels (3' long each) set into 6" dia sleeves (2 at both ends of each panel = 16 total). Overall deck width 28' @ right angles. Deck panels were cast off site at the Cambridge/Jackson Highway and transported to bridge location prior to installation. They were set into place on abutments by County forces and Rozell Industries Crane Service. In this case, reinforced concrete approach slabs were not constructed. Instead, a type 6 asphalt wearing course was installed directly over the precast slab concrete deck. This bridge is a two lane structure. Installed NYSDOT – approved steel bridge railing (3 rail curbless installation – posts at 6'-3" spacing and 24'-8" between inside face of rails) and boxbeam guiderail at approaches. Installed heavy stone armoring around and in front of wingwalls. Reconstructed roadway approaches in relatively close proximity to bridge including base, binder and top courses of HMA. Roadway profile was altered slightly resulting in extra HMA quantities than normal. Worked performed by County forces. New structure was constructed on a slightly increased skew for better alignment with creek and has 12' clear span and 6' average height.

Total Cost **\$193,728.70**

**3. Hartford Bridge C50 & C141 County Route 30 (spans Big Creek & Trib #10)
12' & 10'span**

Demolished and removed former concrete and steel structures originally constructed in 1932. No adjacent detour provided for traveling public, but a detour using several local roads were signed accordingly. Existing structures are located approximately 300' apart. **Bridge C50:** Constructed new reinforced concrete footings (both 2' thick x 8' wide) set on #2 crushed stone bedding (12" minimum thickness), abutments (both 2' thick x 30' long x 7'-5" bridge beam seat), and wingwalls (2' thick x 8' long x varying heights). Installed new reinforced precast concrete deck consisting of 4 panels (each approx.. 7' wide x 15' long x 12" thick) secured at the abutments with #8 dowels (3' long each) set into 6" dia sleeves (2 at both ends of each panel = 16 total). Deck panels and abutments constructed with superelevation for roadway alignment. Overall deck width 28' @ right angles. Deck panels were cast off site at the Whitehall Highway and transported to bridge location prior to installation. They were set into place on abutments by County forces and Rozell Industries Crane Service. Reinforced concrete approach slabs were constructed on each approach. Approach slab dimension were approximately 15' long x 24' wide x 12" thick cast in place matching the skew of the precast deck panels, but at right angles to the travel way. This bridge is a two lane structure. Installed NYSDOT – approved steel bridge railing (3 rail curbless installation – posts at 6'-3" spacing and 24'-8" between inside face of rails) and boxbeam guiderail at approaches. Installed heavy stone armoring around and in front of wingwalls. New structure was constructed on a slightly increased skew for better alignment with creek and has 12' clear span and 8' average height Worked performed by County forces. **Bridge C141:** Constructed new reinforced concrete footings (both 2' thick x 5' wide) set on #2 crushed stone bedding (12" minimum thickness), abutments (both 2' thick x 30' long x 7'-9" bridge beam seat), and wingwalls (2' thick x 8' long x varying heights). Installed new reinforced precast concrete deck consisting of 4 panels (each approx.. 7' wide x 13' long x 12"± thick) secured at the abutments with #8 dowels (3' long each) set into 6" dia sleeves (2 at both ends of each panel = 16 total). Overall deck width 28' @ right angles. Deck panels were cast off site at the Granville Highway and transported to bridge location prior to installation. They were set into place on abutments by County forces and Rozell Industries Crane Service. Reinforced concrete approach slabs were constructed on each approach. Approach slab dimension were approximately 10' long x 24' wide x 12" thick cast in place at right angles to the travel way. This bridge is a two lane structure. Installed NYSDOT – approved steel bridge railing (3 rail curbless installation – posts at 5'-7" spacing and 24'-8" between inside face of rails) and boxbeam guiderail at approaches. Installed heavy stone armoring around and in front of wingwalls. Worked performed by County forces.

Roadway reconstruction was performed between both structures. Approximately 300 lf of asphalt roadway was removed, installed 12" of new subbase material and new HMA base, binder, and top courses were installed by County forces along with single boxbeam guide rail. Guide rail posts were installed by Town & County Bridge and Rail.

Total Cost

\$329,840.95

4. Dresden Bridge C60 County Route 6B (spans Foster Brook) 11'span

This project was built under stage construction process. Saw cut and removed concrete deck on the upstream side of existing structure originally constructed in 1934. The downstream side was retained and used as access to CR9B and signed accordingly. The existing abutments and wingwalls were the saw cut and removed to an elevation designated in the plans. The remaining portions were doweled into and proceeded to be capped and extended with reinforced, cast in place concrete to accept the wider superstructure. Installed new reinforced precast concrete deck consisting of 3 panels (each approx.. 5' wide x 17' long x 12" thick) secured at the abutments with #8 dowels (3' long each) set into 6" dia sleeves (2 at both ends of each panel = 24 total). Deck panels were cast off site at the Whitehall Highway and transported to bridge location prior to installation. They were set into place on abutments by County forces. In this case, reinforced concrete approach slabs were not constructed. After installation on the upstream side was completed, traffic was detoured over the newly constructed portion and the remainder of the existing deck section was removed. The same procedure was then applied to the downstream side to complete the construction of the concrete structure. In this case, no approach slabs were constructed, instead, a type 6 asphalt wearing course was installed directly over the precast slab concrete deck. This bridge is a two lane structure. Installed NYSDOT – approved steel bridge railing (4 rail curbless installation – posts at 7'-0" spacing) and boxbeam guiderail at approaches. Installed heavy stone armoring around and in front of wingwalls. Reconstructed roadway approaches in relatively close proximity to bridge including base, binder and top courses of HMA. Roadway profile was altered slightly resulting in extra HMA quantities than normal. Worked performed by County forces..

Total Cost \$151,422.24

5. Argyle Bridge C81 County Route 45 (spans Moses Kill) 18.42' span

Demolished and removed former 11' x 5'-9" Structural Steel Plate Pipe Arch on concrete abutments and wingwalls originally constructed in 1970. No adjacent detour provided for traveling public, but a detour using several local & state roads was signed accordingly. Assembled a new Aluminum Structural Plate Pipe Arch, 18'-5" x 11'- 6" x 110 lf long, end area 162 sq ft. prior to removal of existing structure. Ron Jameson Contractor, LLC was hired for demolition, preparation and backfilling operations. Prepared a 12" thick, #2 crushed stone bed for new plate pipe arch to rest on. Rozell Industries Crane Services was hired for lifting and placement of the plate pipe arch. Backfilled with #2 crushed stone to the level of each haunch, where separation fabric was installed. Continuing backfill with screened item four gravel to a level of 12" above the pipe. Continuing backfill with bank run gravel to the design subbase elevation. Installed single steel box beam guide rail along both sides of structure. Guide rail post were installed by Town & County Bridge and Rail. Installed medium stone slope protection on both ends of new structure. Installed new HMA base, binder, and top courses over new structure and approaches. County forces were used for all operations except where noted.

Total Cost \$229,220.86

6. Whitehall Bridge C225 County Route 21 (spans Castle Creek) 13.08' span

Demolished and removed former 95" x 67" Structural Steel Plate Pipe Arch originally constructed in 1982. No adjacent detour provided for traveling public, but a detour using several local roads was signed accordingly. Assembled a new Aluminum Structural Plate Pipe Arch, 13'-1" x 8'-4" x 110 lb long, end area 86.8 sq ft. prior to removal of existing structure. Ron Jameson Contractor, LLC was hired for demolition, preparation and backfilling operations. Prepared a 12" thick, #2 crushed stone bed for new plate pipe arch to rest on. Rozell Industries Crane Services was hired for lifting and placement of the plate pipe arch. Backfilled with #2 crushed stone to the level of each haunch, where separation fabric was installed. Continuing backfill with screened item four gravel to a level of 12" above the pipe. Continuing backfill with bank run gravel to the design subbase elevation. Installed single steel box beam guide rail along both sides of structure. Guide rail post were installed by County forces. Installed medium stone slope protection on both ends of new structure. Installed new HMA base, binder, and top courses over new structure and approaches. County forces were used for all operations except where noted.

Total Cost \$225,361.49

**7. Village of Granville Bridge C245 (BIN 3203660) Church Street
(spans Mettawee River) 80' span**

Return to bridge rehabilitation project originally started in 2015.

Project was contracted with Greenman-Pedersen Inc (GPI) for Professional Engineering Services. The 2016 rehabilitation project consisted of repairs to the concrete arch itself, a labor intensive project considering lack of access and exposure to the river below. Removal of deteriorating concrete by chipping hammers to sound concrete, cleaning any exposed reinforcing rebar and adding necessary rebar and rebar to heavily deteriorated portions. Custom forming had to be constructed to the arch fascia as well as underneath. Work to the fascia and arch was accessed by UBIU (Under Bridge Inspection Unit) rented for the duration of the project. Concrete patching of minor deteriorated areas was performed by hand. Ready mix concrete was used for the larger areas such as the arch fascia and buttress walls. Two brackets were fabricated, in house, to aid in support of the Municipal water line on the east side of the structure. Total cost of project expected to come in under originally budgeted amount of \$435,000

Total Cost (2016) \$170,604.59

Total Cost of Project (2015 & 2016) \$406,296.87

2016 BRIDGE PROGRAM



Bridge C-60
Co Rte 6B
Town of Dresden

Bridge C-28
County Route 18
Town of Hampton

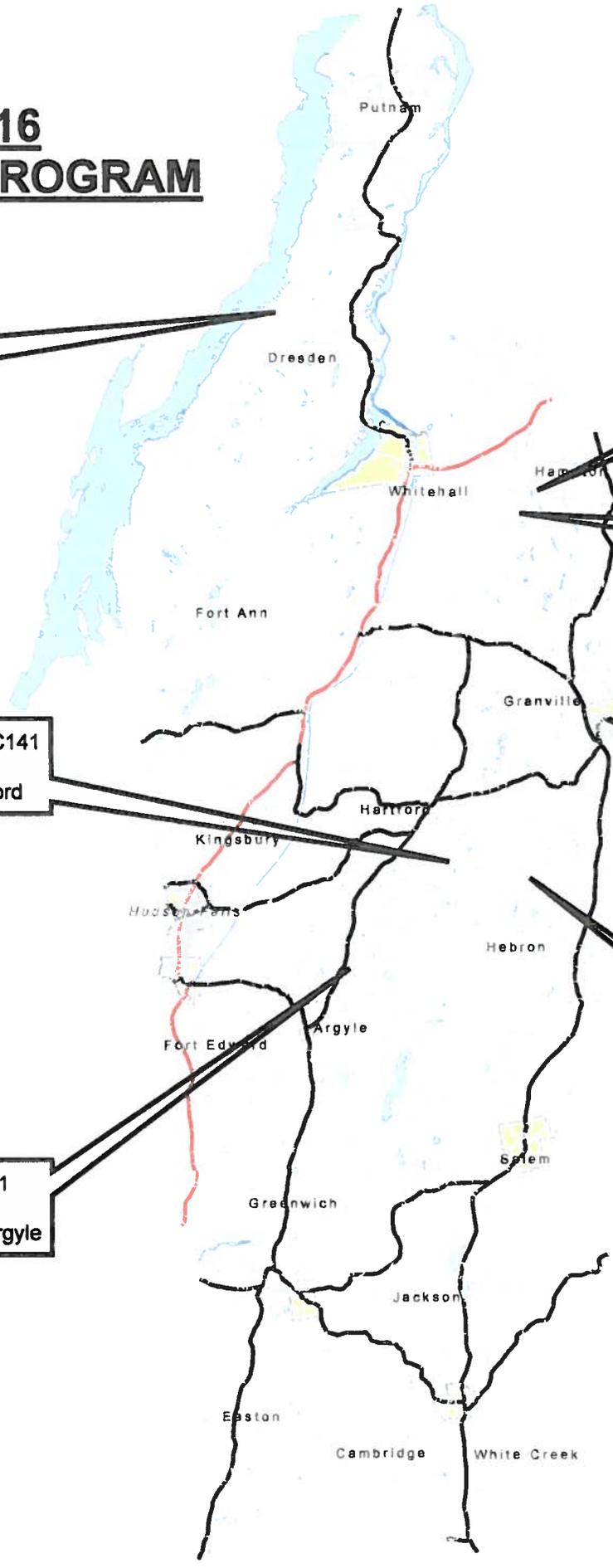
Bridge C-225
County Route 21
Town of Whitehall

Bridges C50/C141
Co Rte 30
Town of Hartford

Bridge C-245
(BIN 3203660)
Church Street
Vill. of Granville

Bridge C-49
County Route 31
Town of Hebron

Bridge C81
Co Rte 45
Town of Argyle



WASHINGTON COUNTY DEPARTMENT OF PUBLIC WORKS 2016 ENGINEERING

During 2016, the Engineering section was involved in various activities related to the improvement of highway and bridge infrastructure throughout Washington County.

Administrative:

- 1) 2015 Annual Report** – summary of expenditures and construction/maintenance-related activities undertaken by the Washington County DPW in 2015.
- 2) Salt stockpiles** in bins at all 8 DPW substations at end of snow removal season – total 3,314.77 tons (as of July 26, 2016) – for documentation of County-incurred expenditures relative to State Snow and Ice Control for 2015-2016 winter season. The amount of salt that can be safely stored in all 8 bins is approximately 4,500 tons.
- 3) Underground Facilities Protective Organization (UFPO) requests** – In 2016, most handled by each district foreman.
- 4) Issued work permits** (under Section 136 of Highway Law) to individuals, businesses, organizations, and other municipalities to perform work on or near County roads inside right-of-way (R-O-W) limits. A total of 39 permits were issued in 2016. These included 2 for National Grid (2 electrical service & pole-related), 2 fundraisers, 24 driveways/field accesses, 1 Verizon and 1 private Utility Poles, 9 Special Hauling Permits.
- 5) “Adopt-a-Highway” requests** – one request from organizations and clubs to perform periodic clean-up activities along County highways dealt with in 2016.
- 6) assistance to general public** with requests for copies of Town, County, and State (the latter prior to 1946) purchased R-O-W and/or abandonment maps. Our office handled approximately 10 such requests in 2016, the majority from private land surveyors and consulting engineers; and also handled numerous highway-related R-o-W and/or abandonment inquiries from the general public and Office of Real Property (Tax Mapping). Addressed miscellaneous inquiries from the public, other municipalities, and organizations as well.
- 7) Phase II of Municipal Separate Storm Sewer Systems (MS4) program** – in 2016, we assisted in the preparation of the 2015-2016 Annual Report (for term from March 10, 2015 to March 9, 2016). We continued to be involved with the inspections of catch basins and quantifying amounts of sediment removed from each at the County Municipal and Law Enforcement complex in Fort Edward (County maintenance crew from Fort Edward substation inspected and cleaned these) and along County Routes 32, 35, & 75. Our office performed annual inspection and took outfall photographs for the two outfall watersheds along County Route 37 (Burgoyne Avenue) at McIntyre Street & Fuller Pond and the two outfall watersheds behind the Law Enforcement Center.
- 8) County Highway Inventory** – certification of County highway mileage (284.09 miles) in 2016 along with updated highway related information as required by NYSDOT for Consolidated Highway Improvement Program (CHIP) aid.
- 9) DPW-related Freedom of Information Law (FOIL) requests** – two handled in 2016.
- 10) Plan of Action for Fracture Critical Bridges** – Updated - as result of I-5 bridge collapse in Washington State, being mentioned at the Federal level. Candidates include bridges C2, C20, C29, C54, CL78, C80, C132, C149, C150, & CL157.
- 11) assistance with miscellaneous administrative functions** – such as: a) adjustments to snow plowing routes; b) billing procedures for materials and equipment purchases and/or services rendered; c) snow and ice removal/maintenance contracts with Towns; and d) material bid openings – including culvert pipe,

underdrain, crushed stone, concrete, blacktop, sign blanks, centerline/edgeline paint, structural steel, reinforcing steel, etc.

12) Locally Administered Federal Aid (LAFA) Projects – our office assisted with the administration of current HBRR projects at different levels of development/completion.

13) Greenman-Pedersen, Inc, P.E., on board as per-diem consultant to sign and stamp engineering plans and drawings as required by state and Federal entities, particularly involving “red flag” structural repairs to bridges cited by NYSDOT contracted inspectors.

14) Annual Safety Day @ Lake Lauderdale Park, Town of Jackson.

15) 11th Annual North Country Regional Stormwater Tradeshow & Conference – attended @ Great Escape Lodge, Queensbury, NY

16) 22th Statewide Conference on Local Bridges – attended @ Liverpool, NY – Engineering the Federal Aid Process.

17) 2016 Bid Openings – reviewed submitted bids for miscellaneous bridge materials including multi-plate pipes, reinforcing rods, bridge rail, etc.

Township Assistance in 2016 included the following:

1) annual update of Town Highway Inventory for 2016 – enrollment dates were between October and November, 2014, when Town highway superintendents came to DPW Engineering office to update highway-related information and sign mileage certifications. Inventory updates and mileage certifications were processed and sent along with County inventory and mileage certification to Region 1 headquarters in Albany, NY. In addition, our office maintains a 40+ year old Town road history data base and continually updates addendums in back of certified copies of resolutions that define each Town highway system in effect since 1963. Serves as basis for local highway aid, particularly Consolidated Highway Improvement Plan (CHIP). Emergency Services and Real Property offices are kept informed of the road changes we receive from the towns.

2) Town of Dresden Salt Storage Building – field survey, plans, material list & layout of building pad and beginning rows of precast concrete blocks. Salt barn to be completed in 2016

3) Town of Hartford, Country Lane – field survey, road profile, drainage structure, proposed roadway reconstruction.

4) Town of White Creek, Bridge T25A Waites Hill Rd – survey, design, permits, & bids for replacement structure, aluminum multi-plate pipe arch to be constructed in 2017

5) Town of Easton, Brownell & Harrington Hill Rds – survey, design and layout of drainage issues on Brownell Rd. Survey, design, layout, and Grant monies for drainage issues, stormwater runoff, roadway profile, etc.

6) Town of Greenwich, Anthony Rd – survey, design and layout of cross-culvert failure/road washout, drawings for new structure.

7) Town of Greenwich, Thompson Rd – survey, design and layout of cross-culvert, drawings for new structure.

8) Town of Granville, Dekalb & Middleton Rds, Bridge T1 & T2 – field survey & hydraulic analysis of watershed for replacement of structures.

- 9) **Town of Cambridge, Stump Church Rd, Bridge T6** – field survey & hydraulic analysis of watershed for replacement of structure.
- 10) **Town of Jackson, Murphy Lane & Carney & Cassidy Rd, Bridge T11 & T18** – field survey, design, road profiles & hydraulic analysis of watershed for replacement of structures.
- 11) **Town of Fort Ann, Mattison Rd** – field inspection & Grant monies of roadway/slope failures

County Engineering Projects in 2016:

- 1) **2016 County Bridge Program** – for information relative to major bridge projects completed in 2016, see 2016 Bridge Program and map
- 2) **Br C245 Church St Village of Granville** – construction inspection & quality control on concrete pours.
- 3) **Br C28 CR18 Town of Hampton** – construction inspection, design, layout and quality control on Aluminum Multi-Plate Pipe Arch (10'-9" x 6'-10", 60lf) with roadway profile and guide rail installation.
- 4) **Br C225 CR21 Town of Whitehall** – construction inspection, design, layout and quality control on Aluminum Multi-Plate Pipe Arch (13'-1" x 8'-4", 110 lf) with roadway profile and guide rail installation.
- 5) **Br C81 CR45 Town of Argyle** – construction inspection, design, layout and quality control on Aluminum Multi-Plate Pipe Arch (18'-5" x 11'-6", 110 lf) with roadway profile and guide rail installation.
- 6) **Br C49, CR 31 Town of Hebron**– design, layout, quality control and construction inspection of 12' Precast concrete panels, cast in place reinforced concrete footings, abutments, wingwalls, roadway profile, and guide rail installation.
- 7) **Br C50/C141, CR 30 Town of Hartford**– design, layout, quality control and construction inspection of 12' & 10' Precast concrete panels, cast in place reinforced concrete footings, abutments, wingwalls, roadway profile, road reconstruction and guide rail installation.
- 8) **Br C60, CR 6B Town of Dresden**– design, layout, quality control and construction inspection of rehabilitated bridge work consisting of 17' Precast concrete panels, cast in place reinforced concrete footings, abutments, wingwalls & guide rail installation during stage construction
- 9) **Bridge Design for 2017 Bridges** – inspection, survey design, etc. for Br C104 & Br C105 on CR 74, Town of Easton, Br C62 on CR30, Town of Salem, Br C168 on CR9B, Town of Whitehall, Br C57 on CR23, Town of Granville
- 10) **CR16, Village of Fort Ann – 2016 Paving Projects** – field survey, inspection of drainage issue near Catherine Street
- 11) **CR48, Town of Argyle – 2016 Paving Projects** – field survey, inspection of drainage issue near East Lake Rd.
- 12) **CR 18 & CR21 Intersection – 2016 Paving Projects** - field survey, inspection of drainage issue near Brick Church, Town of Whitehall
- 13) **CR 113 – 2016 Paving Projects** - inspection of roadway failures after FDR/Paving procedures in multiple locations

- 14) Middle Falls & Fort Ann Highway Salt Screens** – layout, survey, design, construction of MF Salt Screen & survey for FT Ann Salt screen rehabilitation
- 15) Huletts Landing Post Office Drainage** – survey, design and construction inspection of drywell installation.
- 16) CR 12 & Upper Turnpike Intersection** – surveyed intersection for possible box beam guide rail installation
- 17) Bridge C149 Shushan (BIN 3-30450-0) Red Flag Repair** – construction repair of 24 hour Prompt Interim Action (PIA) Red Structural Flag regarding floorbeam replacement.
- 18) Misc Roadway Inspection** – Crack seal operations on last three (3) years of paving projects. Work performed by Gorman Bros. Inc.
- 19) 2016 County Road Pavement Ratings** – field survey/inspection of 286 miles of roads using CAMP-RS software
- 20) Lake George/ Lake Champlain Watershed Grant** – meetings, correspondence, info, etc.
- 21) Pipe Lining Demo** – in Halfmoon, NY, training given by Chemung
- 22) Erosion Control Seminar**– at Willard Mountain, training seminar by Washington County Soil & Water Conservation
- 23) AGFTC Pavement Preservation Application** – gathered info and submitted application for 2017 Road Projects