

ANNUAL REPORT
OF THE
HIGHWAY DEPARTMENT AND
DEPARTMENT OF ENGINEERING
FOR THE FISCAL YEAR
JANUARY 1, 2010 to DECEMBER 31, 2010
COUNTY EXECUTIVE - KATHLEEN M. JIMINO



County Work Crews Replace Bridge on South Road in Grafton, August 2010

COUNTY LEGISLATURE
PLANNING AND PUBLIC WORKS COMMITTEE
KEN HERRINGTON, CHAIRMAN
JUDY BRESELOR, MARK FLEMING - MEMBERS

February 2011

ANNUAL REPORT – 2010
HIGHWAY DEPARTMENT
and
DEPARTMENT OF ENGINEERING

I. INTRODUCTION

Article 7 of the County Charter establishes the Department of Engineering. The County Engineer directs the Department of Engineering, the Highway Department and the Building Department. The County Engineer is charged with all of the powers, duties, and responsibilities enumerated in the County Charter, including specifically those of County Superintendent of Highways as proscribed by NYS Highway Law and other NYS Statutes.

II. HIGHWAY DEPARTMENT

The major portion of the Department's effort relates to the construction, operation and maintenance of the County Highway system. The system is 330 miles in length and includes 60 bridges (>20 Ft Span) and hundreds of culverts. A portion of the highway mileage is found within each of the County's 14 Towns.

A breakdown of the County Highway system mileage by Town is:

<u>Town</u>	<u>Miles of Road</u>	<u>No. of Bridges</u>
BERLIN	18.57	5
BRUNSWICK	31.88	2
E. GREENBUSH	15.75	0
GRAFTON	18.79	0
HOOSICK	29.07	1
NASSAU	20.37	8
N. GREENBUSH	21.94	1
PETERSBURG	15.46	4
PITTSTOWN	36.84	10
POESTENKILL	19.29	9
SAND LAKE	21.46	4
SCHAGHTICOKE	25.46	4
SCHODACK	28.28	6
STEPHENTOWN	27.25	6
TOTALS	330.41	60

The Highway Department has maintenance facilities in 5 locations around the County. Each is staffed and equipped to maintain the county highway system in that area. Each is led and supervised by a Highway Supervisor II who is responsible for day-by-day area highway maintenance operations. The Supervisor II's duties include: insuring snow removal and ice control needs are met; coordinating routine maintenance efforts such as pothole patching, roadside mowing; and for participating in the planning and implementation of construction season efforts.

These area facilities are:

MAIN GARAGE, Bloomingrove Drive, North Greenbush (maintains highways in Towns of North Greenbush, part of Sand Lake, part of Brunswick, and Poestenkill)

This location includes the engineering and administrative offices. The office has a staff of 7 employees including the County Engineer, Deputy County Engineer (Transportation Planning), Highway Superintendent (Highway Maintenance and Operations), Deputy County Engineer (Buildings and Code Enforcement), Deputy County Engineer (Administration), Secretary to the County Engineer and a Principal Clerk. The engineering and administrative office coordinates, provides guidance, resources, and operational planning to the five maintenance facilities. This vehicle and equipment maintenance facility is home base for 11 highway workers and 7 mechanics. The facility has covered storage for 2,000 tons of salt and sand/salt mixtures. In addition to area maintenance responsibility, personnel assigned to this garage have countywide responsibility for maintenance and installation of traffic signs and painted traffic lines.

Five snow plow/salter units operate out of this garage. During construction season, its crews were responsible for preparing road projects for paving or surface treatment. Preparation work includes ditching, bank trimming, lowering of shoulders and replacement or installation of culverts.

Department mechanics work from this location. Heavy maintenance and roadside/jobsite equipment mechanical repair service is provided for the entire county. Vendor provided machinery maintenance, repair, and overhaul is coordinated from this location. As required, we provide machinery and truck repair to other departments including Emergency Services and the Van Rensselaer Manor.

SCHODACK GARAGE, Route 9, Schodack (maintains highways in Towns of Schodack, Nassau, and East Greenbush)

This facility, formerly a building supply store and warehouse, was purchased by the County in 1985. It houses a crew of 8 workers and appropriate equipment. A 4,000-ton capacity salt storage building was erected at this location in 2006.

Four snow plow/salter units operate out of this garage. During the construction season, the crew from this garage had responsibility for preparing road projects for paving or surface treatment. In addition, this garage has countywide responsibility for installing new or replacing existing damaged guiderailing.

SPICER ROAD GARAGE, Spicer Road, Hoosick (maintains highways in Towns of Hoosick, Pittstown, Schaghticoke, part of Petersburg and part of Brunswick)

This facility was built in 1980 and houses a crew of 9 workers and appropriate equipment. In 1998 two adjacent acres were acquired to provide additional area for the storage of materials and equipment. A 4,000-ton capacity salt storage facility was erected here in 2002, which allows all salt and salt/sand loading, and unloading operations to take place under cover.

Five snow plow/salter units operate out of this garage. During construction season, crews from this garage had responsibility for preparing road projects for paving and surface treatment.

CENTER BERLIN GARAGE, Sand Bank Road, Berlin (maintains highways in Stephentown, Berlin, part of Petersburg)

Built at the same time as the Spicer Road Garage in 1980, this facility houses a crew of 9 workers and their equipment. There is a 500-ton capacity covered salt storage building on this site.

Four snow plow/salter units operate out of this garage. During construction season, its crews had responsibility for preparing road projects for paving and sealing. In addition to work in their own area, this garage provides the “special teams” for unusual and challenging projects on the county highway system and at other county facilities. These projects may include bridge rehabilitation/replacement or large culvert replacement.

GRAFTON GARAGE, Route 2, Cropseyville (maintains highways in Grafton, part of Petersburg, and part of Brunswick)

This facility houses a crew of 8 workers with appropriate equipment. There is a 4,000-ton capacity salt/sand storage shed that was constructed in 1994. A mobile home on this site serves as the highway crew office.

Four snow plow/salter units operate out of this garage. During construction season, its crews were responsible for preparing road projects for paving or surface treatment. In addition, people assigned here make up the cadre for the department’s in-house paving crew.

The in-house paving crew worked collaboratively with several of the towns using combined town and county forces. Generally, the Towns did most of the trucking, while the County provided the asphalt spreading and compaction equipment. Projects were completed on both the County highway system and the various Town highway systems.

III. HIGHWAY SYSTEM IMPROVEMENTS

31.4 % of the total recorded highway department expenditures are discussed in this section. System improvements included below generally are the CHIPS eligible projects.

A. Highways

In 2010, eighteen (18) highway improvement projects were undertaken. Generally, county workers did the ditching, culvert replacement, tree removal, and general preparation work needed prior to surface improvement. Subsequent paving work was done mostly by private contractor, although on Taborton Road (CR-41) and East-Schodack-Nassau Road (CR-7) the county paving crew installed the asphalt for the true & leveling course. On these projects, it was more cost effective to pave using county forces with asphalt delivered to the county paving train by a combination of county and town dump trucks.

Chip seals were accomplished using a combination of private contractor and municipal forces. Taking advantage of price spreads in NY SOGS contract, trucks and drivers from the County and various towns that the County shares resources with were used to bring the stone chips to the chip spreader. The estimated cost savings to the county taxpayers resulting from this program was approximately \$100,000.

The projects below are funded primarily through the Consolidated Highway Improvement Program (CHIPs), administered by NYSDOT. CHIPs provide financial resources to local governments for capital improvements to highways and bridges.

The following is a listing of the year 2010 projects:

Highway Construction			
County Route/Road Name	Town(s)	Activity	Cost
CR 7 East Schodack-Nassau Road	Schodack	T&L, Chip Seal	\$ 208,105
CR 15 Nassau/Averill Park Road	Nassau	Drainage, T&L	\$ 14,130
CR 21 Dunham Hollow Road	Nassau	Drainage, T&L, Chip Seal	\$ 226,622
CR 26 Garfield- East Nassau Road	Stephentown	Drainage, T&L, Chip Seal	\$ 144,720
CR 27 South Stephentown Road	Stephentown	Drainage	\$ 82,159
CR 37 Cold Springs/Jones Hollow Road	Berlin/Petersburg	Drainage, T&L, Chip Seal	\$ 397,295
CR 41 Dutch Church Road	Berlin	Drainage, T&L, Chip Seal	\$ 81,045
CR 42 Taborton Road	Sand Lake	Trees, Drainage, T&L	\$ 565,017
CR 66 Lape Road	North Greenbush	Drainage, T&L	\$ 18,404
CR 80 Madonna Lake Road	Grafton	Drainage, T&L	\$ 18,291
CR 85 South Road	Grafton	Drainage, Prep for T&L	\$ 305,113
CR 91 East Hollow Road	Petersburg	Prep for T&L	\$ 5,441
CR 98 Rabbit College Road	Petersburg	Drainage, Prep for T&L	\$ 188,348
CR 100 Breeze Hollow Road	Hoosick	Chip Seal	\$ 255,767
CR 102 Mapletown Road	Hoosick	Trees, Drainage	\$ 85,738
CR 104 Clay Hill Road	Hoosick	Drainage, Prep for T&L	\$ 10,875

CR 117 Melrose-Valley Falls Road	Pittstown/Schaghticoke	Trees, Drainage, T&L, Chip Seal	\$ 315,434
CR 145 Oakwood Avenue	Brunswick	Drainage, Recycle, HMA Overlay	\$ 751,804
Construction Total			\$ 3,674,308

B. Bridges

Several bridges were reconstructed or repaired during the year. While replacement or rehabilitation of larger bridges is done through the Federal HBRR program (see CR 111 et al in Department of Engineering section), the smaller projects listed below are undertaken using county or state (CHIPs) funding.

County Route/Stream Name	Town(s)	Activity
CR 1 over RR	Schodack	Repair Protective Fencing
CR 15 over Valatie Kill	Nassau	Deck Repairs
CR 32 over Little Hoosic	Berlin	Red Flag Repairs (Beams)
CR 85 over Quackenkill Creek	Grafton	Replace Short Bridge with Box Culvert
CR 94 over Dill Brook	Petersburg	Repairs to Bridge Railing
CR 111 over Hoosick River	Schaghticoke/ Pittstown	Repair North Abutment
Bridge Construction Total		\$ 93,167

IV. HIGHWAY MAINTENANCE ACTIVITIES

A. General Maintenance Activities

31.2 % of the total reported expenditures for the Department are discussed in this section.

The nature of the activities listed in the table below is self-explanatory.

Activity	Cost	% Maintenance Effort
Supervision	\$ 224,593	7.7%
Safety Training	\$ 32,675	1.1%
Answering Complaints	\$ 72,882	2.5%
Dead Deer	\$ 4,707	0.2%
Guide Rail	\$ 8,811	0.3%
Mowing	\$ 205,758	7.1%

Road Maintenance	\$ 1,114,584	38.3%
Potholes	\$ 303,860	10.4%
Signs	\$ 101,696	3.5%
Lines	\$ 152,306	5.2%
Traffic Counts	\$ 11,364	0.4%
Highway Buildings	\$ 248,544	8.5%
Machinery Related	\$ 309,003	10.6%
Other County Facilities	\$ 5,483	0.2%
Shared work to towns	\$ 114,358	3.9%
Maintenance Total	\$ 2,910,624	

The shared work that was done with various towns included providing a paver and roller with operator on town paving projects, moving equipment for the towns on the county tractor/lowbed trailer, and assisting with manpower, equipment, and engineering support on town bridge repair and replacement projects.

B. Snow Removal and Ice Control

24.0 % of the total reported expenditures for the Department are discussed in this section.

Total Albany snowfall for the 2009 – 2010 winter period ranked 81 out of 126 - which reflects the number of years that snowfall records have been kept for the Albany area. The annual snowfall amount of 45.4” was generally considered a mild winter. Most of this snow fell from the period of January 1st thru February 15th, 2010, then the storms tapered off considerably.

Snow and Ice	Cost	Percentage
Period		
January	\$ 774,297	35%
February	\$ 814,940	36%
March	\$ 75,615	3.5%
November	\$ 9,926	.5%
December	\$ 562,579	25%
Total Snow and Ice	\$ 2,237,356	

In 2010, the County continued formal cooperative snow removal agreements with the Towns of Brunswick, Poestenkill, Petersburg, East Greenbush, Schaghticoke and the City of Troy.

The following is a list summarizing the 2010 snow agreement costs.

<u>Municipality</u>	<u>Road Miles</u>	<u>2010 Costs</u>
City of Troy	1.32	\$ 10,066 (1)
Brunswick	4.80	\$ 22,121
East Greenbush	3.44	\$ 13,267
Petersburg	4.93	\$ 4,512
Poestenkill	1.65	\$ 8,887
Schaghticoke	1.65	\$ 6,958
Schodack	1.50	\$ 1,840
TOTALS	21.76	\$ 67,651

(1) This amount represents an exchange of services. The City provided snow removal services on Oakwood Avenue (CR#145) in exchange the County providing pavement striping on some city streets.

C. Debt Service

13.43 % of the total reported expenditures for the Department are discussed in this section.

Debt service, both principal and interest, accounted for a portion of the departmental expenditure. The bond issues that are being amortized relate primarily to the Rebuild Rensselaer County initiatives in 2000 and 2001. It is fortunate that this work was done in that time frame, as asphalt and steel prices have skyrocketed in recent years. The annual bond and interest payments on these bonds jump considerably by nearly \$700,000 annually during fiscal year 2012 and 2013. To offset this increase, a recommendation was forwarded to the Finance Director to re-bond in the form of a Tax Anticipation Notice (TAN) and/or a limited Bond Anticipation Notice (BAN).

V. DEPARTMENT OF ENGINEERING ACTIVITIES

The Department of Engineering was reestablished as a separate budgetary entity in 2004. The County Engineer, Deputy County Engineer - Buildings, and Deputy County Engineer - Transportation Planning forms this Department.

A. Highway Department

The Department of Engineering updates the highway priority rating system to allow rational choices for highway restoration and preservation projects as well as providing data for future funding opportunities as they become available.

The Department of Engineering manages other highway data such as traffic count information, sign inventory, bridge and highway inventory and, culvert inventory; provides construction cost estimates and construction monitoring of in-house highway and bridge construction projects; responds to “red and yellow structural and safety flags” issued by NYSDOT during biennial bridge inspections; provides planning and coordination of the capital improvement program; and provides oversight of Highway Department operations.

A total of thirty (30) bridge flags were issued by the NYSDOT between January 1, 2010 and December 31, 2010. A breakdown of the issued bridge flags is as follows:

- Red Flags: Eight (8) red flags were issued. All eight (8) red flags were resolved during 2010.
- Yellow Flags: Twelve (12) yellow flags were issued. None of the yellow flags were resolved during 2010.
- Safety Flags: Ten (10) safety flags were issued. None of the safety flags were resolved during 2010.

Thirteen (13) of the thirty (30) bridge flags that were issued in 2010 involve bridges scheduled to be replaced in 2011. Twenty three (23) of the thirty (30) bridge flags issued in 2010 involve bridges that are programmed to receive Federal Aid to repair or replace within the next five (5) years.

The highway department has implemented a program utilizing GIS mapping and databases to gather and maintain data such as the location of traffic signs and traffic counts using GPS technology. We anticipate utilizing GIS mapping to manage data on bridges and culverts in the foreseeable future.

B. County Buildings

The Department of Engineering provides design consultant management and construction oversight of various capital building projects for the County. Projects in 2010 included:

1. Ned Pattison Government Center
 - Accessibility Project – This project was funded with American Recovery and Reinvestment Act Funds administered by HUD and NYSOCR. Work included upgrades to both elevators and new door openers.
 - Siemens Energy Performance Project – This project included installation of an Energy Management System, New Boilers, New Rooftop Air Handling Unit and Fan Wall, a New Emergency Generator and upgrades to the lighting.

- Other work included a new alarm system for the elevators, new circulator pumps for the boilers and glycol system recharge for the HVAC system.
2. Hudson Valley Community College
 - McDonough/Hudson Hall Roof Replacement
 - Siek Campus Center Roof Replacement
 - Ice Rink Dasher Boards – McDonough Center
 - New Gym Floor - McDonough Center
 - Marvin Library Restroom Renovations
 - Hudson Hall Locker Room Renovations
 - New Parking Garage
 - Courtyard Renovations
 - Parking and Circulation
 3. Office of the Sheriff
 - The Jail Expansion Project was completed in 2010
 4. Unified Family Services - Aging
 - Troy Senior Center – Upgrades to elevator and installation of Door Openers
 - Schodack Senior Center – Planning and design for upgrades to the HVAC System, Water Supply and Septic System
 - Hoosick Falls Center – Building inspection and engineering report of findings.

C. Health Department

The Department of Engineering provides assistance in the review of subdivision proposals involving on site water and sewerage; assistance with the evaluation of certain commercial development proposals involving on site sewerage; and assistance in certain enforcement activities requiring a professional engineer.

D. Dyken Pond Dam

The Department of Engineering is responsible for regulation of water levels of Dyken Pond on a seasonal basis. Responsible for the inspection and maintenance of the dam, which is classified as Class B – Intermediate Hazard.

E. Municipal Separate Storm Sewer System (MS4)

The Department of Engineering is responsible for developing and implementing a pollution prevention/good housekeeping program for County Highway Department operations and facilities that:

- Address highway department operations and facilities that contribute or potentially contribute pollutants of concern to the MS4 system;
- Includes the performance of a self assessment of highway department operations once every 3 years;
- Determines management practices, policies, procedures that will be developed and implemented to reduce or prevent the discharge of potential pollutants;
- Prioritizes pollution prevention and good housekeeping efforts;

- Addresses pollution prevention and good housekeeping priorities;
- Includes employee training;
- Develops, records, assesses and modifies as needed, measurable goals
- Selects appropriate pollution prevention and good housekeeping BMPs and measurable goals to ensure reduction of all pollutants of concern in storm water discharges to the maximum extent practicable.

F. Various Rensselaer County Local Governments

The Engineering Department provides occasional assistance in evaluating highway and bridge conditions on Town highway systems; evaluation and processing of requests for speed zone regulation on Town and County roads; coordination of approval efforts with NYSDOT; informal collaboration on projects where equipment and manpower resources are shared to provide more economical, efficient services to the local taxpayer. Specific projects included providing certified welding support to repair the First Dike Bridge belonging to the Town of Sand Lake, as well as providing technical and construction support to the Town of Sand Lake on fairly extensive repairs to the Thais Road Bridge. Additionally, support in the form of design assistance, obtaining NYS DEC permits and construction support was provided to the Town of Berlin during the replacement of a failing bridge on Southeast Hollow Road with a large culvert. Savings to the Town over the cost of reconstructing the existing bridge was estimated at \$450,000.

G. Consultants

The Engineering Department manages and coordinates the work of Consultant Engineers and Architects. Consultants were used on the following projects:

Design of CR 111 bridge replacement;
Design of CR 26 Bridge Replacement;
Design of CR 49 Bridge Replacement;
Construction Inspection of CR 145 – Oakwood Avenue ARRA Project
Design of the Jail Expansion.
Siemens Energy Performance Project
Red flag resolution of CR 32 Bridge

H. Miscellaneous

- Investigated and provided documentation for a several liability claims against the county.
- Issued permits for special uses and construction of new driveways on the county road system.

I. Municipal Code Enforcement Program

The Department of Engineering is responsible for enforcement of the New York State Uniform Fire Prevention and Building Code as outlined in Part 444 - Municipal Code Enforcement Program. David Kelly, the Deputy County Engineer – Buildings, is a Certified Building Official and is designated by the County Engineer to administer the program.

The Department has responsibility for the administration and enforcement of the Uniform Code for all county owned buildings.

A building permit is issued for any work that must conform to Uniform Code provisions. Building permits issued in 2010 include:

- Roof Replacement Siek Campus Center, HVCC
- Ice Rink Dasherboard Replacement – McDonough Athletic Center, HVCC
- New Science Building, HVCC
- Accessibility Project – Elevators and Door Openers, RCOB
- Siemens Energy Performance Project, RCOB
- Third Floor Lobby Ceiling, RCOB
- Elevator Fire Alarm, RCOB
- Sewer Pump Station Buildings Re-roofing, Various Locations

A certificate of occupancy or a certificate of compliance is required for any building where work requiring a building permit has taken place.

Fire safety inspections are required in certain circumstances. The buildings requiring fire inspections are:

- Ned Pattison Government Center (County Office Building)
- Youth Detention
- Ag/Life Science Building
- Third Street Senior Center
- Hoosick Falls Senior Center
- Hudson Valley Community College
- Schodack Senior Center
- Family Courthouse Building
- County Courthouse Building

Elevator inspections are required and performed at the following county buildings:

- Ned Pattison Government Center (County Office Building)
- Ag/Life Science Building
- Third Street Senior Center
- Family Courthouse Building
- County Courthouse Building

J. Weights and Measures

A part of the Department of Engineering, the Rensselaer County Director of Weights and Measures operates under the authority of the Commissioner of Agriculture and Markets in the enforcement of the provisions of Article 16 of the New York State Agriculture and Markets Law and Chapter V of the Rules and Regulations pursuant to Article 16. The NYS Bureau of Weights and Measures certify all standards used by the department according to NIST standards.

The Director of Weights & Measures verifies the accuracy of measurements, promotes fair competition, and facilitates economic growth and trade utilizing the most efficient, practical and cost effective approach while maintaining strict compliance with federal, state and local weights and measures law.

Weights and Measures provides the following services:

- Enforce the laws and regulations
- Regulate commercial weighing and measuring practices used by vendors
- Inspection and testing of commercial weighing and measuring devices in stores, markets, warehouses, gas stations and other establishments. Devices found to comply with NYS laws and regulations and NIST specifications and tolerances.
- Weigh, measure and inspect packaged commodities to determine the accuracy of labeling practices.
- Investigate consumer and business complaints
- Inspection and testing of non-commercial devices as per request. A nominal fee is charged for initial inspections of devices.
- Operates a Petroleum Quality Program that sample gasoline and diesel fuels and enforces labeling, octane, and quality requirements of petroleum products used by motor vehicles.

VI. EQUIPMENT AND HIGHWAY BUILDING MAINTENANCE

The Road Machinery Fund (Fund - DM) is supported by revenues generated from the rental of machinery to the Road Fund (Fund – D) and sale of fuel to other county departments. The fund garages, fuels, maintains and replaces the highway department motorized equipment fleet.

The DM fund experienced slight increases in personnel and fuel expense categories. Labor related costs increased slightly due to the snow and ice related overtime that was marginally higher than the prior year, while a personnel vacancy remains unfilled. Repair parts and maintenance costs dropped significantly from the prior year. In house routine maintenance, fabrication, and overhaul was done in house to the maximum extent possible to control costs, while still outsourcing work for which department employees are not properly trained or equipped. Diesel and gasoline fuel expenses were trending upwards as the year proceeded. Stable utility prices also helped to lower overhead costs throughout the department. Equipment replacement was modest as expenditures on new equipment was less than the prior year. Debt service remains unchanged.

Description	Actual Expenditure	Change over Prior Year
Employee Related	\$ 506,263	7.65%
Diesel and Gasoline	320,577	16.23%
Repair Parts and Contract Repair and Maintenance	570,210	-22.50%
Equipment Replacement	122,046	-11.46%
DM Overhead (includes debt service)	505,293	-6.99%
Total	\$2,024,389	-6.41%

The following new equipment was purchased during the year:

- One 2010 utility trailer.
- One 2010 asphalt roller.
- Installation of underground fuel leak detection system at Main Garage facility
- Stainless steel salt/sander for Ford pickup truck
- Vibratory plate tampers and jumping jack trench tamper
- Disc Belt Sander
- 40' by 8' metal storage container

Appendix A

Annual Vehicle and Equipment Inventory and Condition Report