

# E&M Engineers and Surveyors, PC

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## Springville Spray Park

By: Glenn D. Cooley, P.E.

This year the Village of Springville renovated its 1940's vintage wading pool into a 21<sup>st</sup> century spray park. Current Health Department standards require a wading pool to be operated in the same manner as a swimming pool. Water must be circulated with filtration and chemical disinfection. Additionally, the old pool would need skimmers and gutters added.

A committee comprised of Village and resident representatives, headed up by Trustee William Krebs, investigated alternatives to the wading pool. Alternatives included rehabilitation of the pool, build a new pool meeting State requirements, or construct a spray park. The committee decided upon a spray park with a flow through water system. This system takes water from a water main and runs it through the water features and drains the water to a sanitary sewer. Another style system filters, disinfects, and recirculates water. This type conserves water and delivers it at a higher temperature, but is more complicated to operate.

The pool was converted to a spray pad facility by filling it with sand and installing a water supply and drain piping in the old pool. Concrete pads were placed to support the water feature bases and then a broom finish concrete slab was placed over the entire 75' x 45' area. The various water features were then installed along with a valve controller system. The water features spray at random and are turned on when a child presses an activation post.

Finished in early July, the park was enjoyed by over 5000 children (some many times) by season's end. The project was completed for a

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total cost of \$90,000. Contact: Karl Lux,  
Superintendent of Public Works, (716) 592-3790.



## *Springville Spray Park*

### **Northern PA Wilds**

by: Roy Pedersen, P.E.

Pennsylvania Governor Ed Rendell has launched a "Wilds" task force to spur economic development in the 12 County area in Northern Pennsylvania by focusing on the area's natural beauty and numerous scenic outdoor opportunities.

The effort was precipitated by a visit to Elk County during Governor Rendell's campaign for the Governors seat. He saw the 800 head elk herd in Bennezette Township, and realized the area had much to offer, including wildlife, rivers, trout streams, hiking and biking trails.

Two of the first concrete efforts to develop the potential of the area are the creation of a 127 mile user friendly Elk Scenic Drive through Cameron, Centre, Clearfield, Clinton, and Elk

Counties, and the construction of a “gateway center” in S.B. Elliott State Park, near Rt. 80 in Clearfield County.



### ***Pennsylvania Elk***

While this initiative is exciting for this portion of PA, there are many challenges. There is a shortage of hotel rooms considering the 12 County area is larger than Connecticut and Rhode Island combined. There also is the fear that commercialization will ruin the rural pristine area and it will become over commercialized.

The Pennsylvania Wilds encompasses 12 counties - Cameron, Clarion, Clearfield, Clinton, Elk, Forest, Jefferson, Lycoming, McKean, Potter, Tioga and Warren - in the northern part of the state. Here's a glimpse of just a few things it has to offer:

- more than 1.6 million acres of state forest and gamelands;
- 27 state parks;
- the 500,000-acre Allegheny National Forest;
- eight wild areas and 24 natural areas that cover almost 150,000 acres;
- the largest elk herd in the Northeast;
- hundreds of miles of backpacking trails, bike paths, and trout fishing streams, and
- the darkest skies in the East at Cherry Springs State Park, Potter County.

For more information about the Wilds initiative, go to [www.dcnr.state.pa.us](http://www.dcnr.state.pa.us) and click on “Pa Wilds” under “Hot Topics.”

Information for and parts of this article were excerpted from PA Township News, October 2005, Jill Ercolino, Assistant Editor.

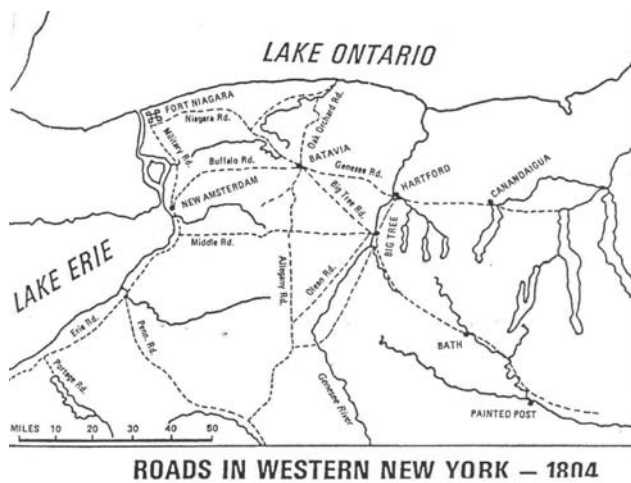
### **Our Land - Joseph Ellicott and the Ground Survey**

By: Jim Nearhood, P.L.S.

In my last article I discussed the beginning of the Land Survey of the “Holland Purchase”, all of Western New York, by Joseph Ellicott, a well respected early American surveyor. The survey had progressed slowly, starting in the fall of 1797 and progressing to the fall of 1798. Joseph realized this survey of primeval forest, swampy river valley, and steep mountain foothills would take several years to complete.

Joseph Ellicott had a supervisory role as Chief Surveyor. Although he did travel almost continually he had to delegate the actual field work to his able staff and crews, totaling at times 150 men. His instructions to his staff surveyors took the form of notes and letters, sometimes the text of notes found upon completion of one task were to go to another section and find a letter of further instructions.

Managing the logistics for such a large and difficult project must have been very aggravating. How do you get provisions and equipment to your men forty miles away when there are no roads to travel, no navigable rivers to use, and no UPS trucks. This sometimes left the survey parties to live off the land, drinking foul water or sometimes none at all. Unsanitary conditions, insects, and lack of sleep caused a continual turnover of men and horses due to fever, dysentery, injury, and some just got tired of it and went home.



### **1804 Roads**

The responsibilities Ellicott had covered were not only the Holland Purchase but also included other adjoining tracts of land Robert Morris had sold to other land speculators. Their names are familiar to me as I have done much surveying along the eastern meridian line. Some of them were Andrew Craigie, Samuel Ogden, Garrett Cotringer, Thomas Morris, and even the well known Alexander Hamilton.

In addition to land boundaries Joseph had his crew survey the many Indian reservations in and off the Holland Purchase. Many of the larger streams had to have their courses surveyed and the Genesee River was surveyed twice as the first time contained an error and it had to be found. A level run of elevations was run between Chautauqua Lake and Lake Erie, the Niagara waterfalls were located and elevations taken, and the volume of water in Chautauqua Lake was calculated.

As the survey progressed villages were laid out. Places like Buffalo Creek (New Amsterdam), Niagara, Lewiston, Batavia, Big Tree, and Fort Niagara became organized and the start of what we know as Western New York began.

The fieldwork was performed from March through October. Computations and mapping were performed in the winter. Ellicott started this task in the winter of 1798-1799. It is said

that he spent that winter alone in a log cabin somewhere in Western New York.

## **ASCE 2005 Report Card for U.S. Infrastructure**

by: Garrett M. Hacker, Project Engineer

In a previous article we discussed the state of our nation's infrastructure based on a 2001 assessment of 12 categories of the nation's infrastructure (roads, bridges, transit, aviation, schools, drinking water, wastewater, dams, solid waste, hazardous waste, navigable waterways and energy) published by the American Society of Civil Engineers (ASCE). This article will report on ASCE's 2005 evaluation of the same 12 categories and three new categories (public parks and recreation, rail and security).

On March 9, 2005, William Henry, P.E., F. ASCE and President of the American Society of Civil Engineers held a press conference to issue "ASCE's Report Card for America's Infrastructure."

In the past four years, nearly all categories of our nation's infrastructure have either remained in mediocre to poor condition or worsened with the exception of aviation and schools. This is largely due to the attention given to airport security after "911" and the creation of the "No Child Left Behind Act."

ASCE President William Henry states "Both drinking water and wastewater declined from a D to a D- in the past four years. The nation's drinking water systems face a staggering need to replace aging facilities and to comply with safe drinking water regulations. Every day, six billion gallons of clean, treated drinking water disappear, mostly due to old, leaky pipes and water mains. That's enough water to serve the population of a state the size of California. And the problem isn't just leaky pipes. Surgeons in Franklin, New Hampshire, had to use bottled water to scrub for surgery after contaminants in the water triggered a boil water alert."

What can be done? ASCE encourages support of legislation to extend programs like the Transportation Equity Act for the 21<sup>st</sup> Century

(TEA-21). TEA-21 was signed into law in June of 1998 authorizing federal funds for roads, bridges and mass transit systems. The program was authorized for six years. On August 10, 2005, TEA-21 was extended for an additional 5 years. ASCE also encourages support to continue authorization for the “Safe Drinking Water Act” and the “Clean Water Act” providing funding through the State Revolving Fund (SRF) for water and wastewater projects. The Safe Drinking Water Act expired in 1991 and the Clean Water Act expired in 1994. Both programs continue to be funded through annual appropriations.

It is expected that future construction costs will continue to rise while State and Federal funds will become less available. Therefore we at E&M feel there is no better time for municipalities to invest in their infrastructure than the present.

ASCE 2005 Report Card:  
America’s Infrastructure G.P.A. = D

CATEGORY	2005	2001	1998	1988
Aviation	D+	D	C-	B-
Bridges	C	C	C-	C+
Dams	D	D	D	n/a
Drinking Water	D-	D	D	B-
Energy	D	D+	n/a	n/a
Hazardous Waste	D	D+	D-	D
Navigable Waterways	D-	D+	n/a	n/a
Public Parks and Recreation	C-	n/a	n/a	n/a
Rail	C-	n/a	n/a	n/a
Roads	D	D+	D-	C+
Schools	D	D-	F	n/a
Security	I	n/a	n/a	n/a
Solid Waste	C+	C+	C-	C-
Transit	D+	C-	C	C-
Wastewater	D-	D	D+	C

A= Exceptional, B= Good, C=Mediocre, D=Poor, F=Failing, I=Incomplete

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