

E&M Engineers and Surveyors, PC

Spring 2004

Springville, New York 14141
(716) 592-2851

Bradford, Pennsylvania 16701
(814) 362-5546

www.emengineers.com

Zoning - A Tool for Community Development

by: Roy Pedersen, PE

Many of us live in communities with zoning ordinances. These ordinances are in place to regulate land use and to keep similar uses grouped together. They also are often used as a way to prevent a property owner from using his or her property in a way which is a nuisance or actually harmful to neighboring property owners.

Zoning is also used to control development in areas subject to flooding, to preserve natural features such as wetlands, forests, aquifers, and to save farmland. Examples of land uses that could be considered by some people as nuisances are race tracks, adult bookstores, hunting preserves, outdoor concert arenas, and cell tower sites.

In McKean County, PA, 11 of the 15 Townships do not have zoning. In Warren County, 14 of the 27 municipalities do not have zoning. In Allegany and Cattaraugus Counties, NY, many do not have zoning.

The reason that these communities are unzoned is primarily due to the low population density and the low incidence of complaints due to land use. Also, people in rural areas often resist the idea of more governmental control over the use of their property.

A zoning law is composed of two parts - the text and the zoning map. The map can be amended by the Municipality as required to address new needs in the community. Zoning needs to be proceeded by a comprehensive plan which will provide guidance in the preparation of the zoning

ordinance. In many communities that have zoning, development of the community had already occurred before the zoning ordinance was adopted. This leaves certain land uses "grandfathered". Usually these uses which are not in conformance with the provisions of the zoning district are allowed to continue. If the non conforming use stops, it may not be permitted to resume. This may be a question that is brought before the zoning hearing board.

The zoning hearing board is a 3-5 member board which can make rulings over zoning questions. The board (made up of community minded volunteers) has the power to grant variances to allow certain land uses which are not in strict compliance with the zoning ordinance. The board must take care not to issue improper variances which could be harmful to the district and could set a precedent for future problems.

When zoning is set up, there are several alternative approaches, such as conventional, lot averaging, clustering, and conservation subdivision, which are different ways of laying out subdivisions and still satisfying the density requirements of the ordinance. Performance zoning can be used to make two different types of land uses able to co-exist by controlling such aspects as light, noise, dust, and water runoff.

With forethought in its preparation, a zoning ordinance can be a useful tool in controlling development in your community. If your community is considering zoning, you should consult with your County Planning office for assistance.

ASCE: Ignoring infrastructure needs is a "dangerous trend"

Reported by: Glenn D. Cooley, PE

RESTON, Va.(October 2003) - On the heels of the worst recorded blackout in US history, the American Society of Civil Engineers (ASCE) reported last month that little progress has been made toward improving the nation's infrastructure since the Regan administration.

The group reported that to bring our infrastructure back up to acceptable levels, state and federal governments will need to invest \$1.6 trillion during the next five years. Further, the ASCE said this "dangerous trend" of ignoring or under-funding our nation's infrastructure - from road and bridges to dams to energy - continues to put the health and safety of Americans, as well as the health of the economy, at risk.

"It's clear that we must adopt a coordinated, national approach to the development and maintenance of our infrastructure, and that the choices and decisions we must make will affect the health, safety, and prosperity of every citizen of this country," said ASCE President Thomas L. Jackson, P.E., FASCE, in a released statement.

In re-evaluating 12 areas of the nation's infrastructure, as last "graded" in the ASCE's 2001 Report Card for America's Infrastructure the organization found that seven sections (Roads, Transit, Drinking Water, Wastewater, Dams, Navigable Waterways, and Energy) actually appear to be in worse shape and the remaining five (Bridges, Aviation, Schools, Solid Waste, and Hazardous Waste), while not deteriorating any faster, have not improved either.

"Since we graded the infrastructure in 2001, our roads are more congested than ever, the number of unsafe and hazardous dams has increased, and our schools are unable to accommodate the mandated reductions in class size," said Jackson.

For example, the group said that because of downstream development the number of "high-hazard potential dams" (structures that could lead to a great loss of life if they fail) has increased since 2001 from 9,921 to 10,049.

Additionally, the ASCE questioned how states, most of which are in the midst of budget crises, can continue to pay for dam safety programs.

The chances for increased federal funding are slim as well since the government is dealing with a projected 2004 deficit of \$480 billion. However, the ASCE is encouraging Congress to pass legislation to provide hundreds of billions of dollars for infrastructure improvements. And the ASCE suggested that some of this money could come from security budgets. "Americans' concerns about security threats are real, but so are the threats posed by crumbling infrastructure," Jackson said. "It doesn't matter if the dam fails because cracks have never been repaired or it fails at the hands of a terrorist. The towns below the dam will still be devastated."

Note from Glenn D. Cooley: For a complete copy of the ASCE's 2003 Progress Report go to our web site under "[News and Information](#)".

DON'T PUT OFF PAINTING THAT OLD TANK

by: Garrett Hacker, Project Engineer

When is the last time you took a good look at the interior of your water storage tank? Its condition might surprise you.

In recent years E&M provided painting specifications and bid documents for a 150,000 gallon ground level water storage reservoir in the Village of Wyoming and a 100,000 gallon elevated reservoir in the Town of Portland. Both tanks were constructed of steel and last coated nearly 30 years ago.

For a relatively small investment both tanks were inspected by a company specializing in underwater diving of storage facilities. This form of inspection did not require the tanks to be drained, just taken off-line temporarily. The inspection included a written report, colored photos and video. These inspections were extremely valuable for us in preparing painting specifications and for the contractors bidding the project. We were also able to provide our clients with an accurate construction cost estimate

including items such as steel patch plate repairs, seam welds and cathodic protection improvements.

Prior to preparing contract documents and paint specifications, both municipalities were advised to have paint chips scraped and obtain Toxicity Characteristic Leaching Procedure and Total Lead Content of the primer. It is very common for tanks coated prior to 1985 to contain lead based primers. This information was included in the contract documents to inform bidders of lead based paints and associated cost of containment and disposal of blast sand.

Since the interior coating systems on both tanks had failed years prior and contained lead based primers it was recommended that the interior surface preparation be SSPC-SP10 near white blast cleaning. Necessary repair welds and patch plates were installed in all damaged areas.



Interior coating systems on both tanks were chosen from a list of acceptable non-toxic coatings as approved by the New York State Department of Health. A “Hi-Build” epoxy system was applied to the interior of the tanks. This system consisted of a primer coat, a pit filler and surfacer, a stripe coat applied on all welded seams and edges and a finish coat. Upon completion of the interior coating, an impressed current cathodic protection system was installed in the Portland tank.

An exterior epoxy coating systems was applied to the Portland tank (shown in photo). Surface treatment included degreasing and pressure washing with a biodegradable detergent and SSPC-SP11 power tool cleaning to bare metal where required. The exterior system included an epoxy coating consisting of a spot primer coat full intermediate coat and a full finish coat.

E&M was onsite to inspect each phase of the project including surface preparation and paint thickness. Coating thickness was tested with a non destructive magnetic thickness gauge. Holiday testing (detection for the presence of pinholes) was performed with a non-destructive holiday detector. Both projects were completed within budget.

Our Land - The “Grand Survey” of the Genesee Lands

By James A. Nearhood, PLS

In my previous two articles, I described the beginnings of what is now New York State and its problems with Massachusetts, the Robert Morris purchase and then the Holland Land Company purchase of what is now Western New York. I also told of the Company’s hiring of Joseph Ellicott as their chief surveyor and his start of the Grand Survey.

Joseph Ellicott, in the beginning, had two masters as Robert Morris still owned the land and so he had to make his survey arrangements in cooperation with Morris’s surveyor, Major Adam Hoops. Major Hoops then hired Augustus Porter, an experienced, well qualified surveyor who began his part of the “Grand Survey” in September, 1797.

One Surveyor hired by Joseph Ellicott was his brother Benjamin, who was a Transit Astronomical Engineer, Assistant Surveyor and Draftsman. Others were Richard M. Stoddard, George Burgess, Ebenezer Carey, Amzi Atwater, Warnham Shepard, John Thompson, John Smedley and George Eggleston. There are many listings in the area telephone books with these last names and I would assume that many of them could trace their heritage back to these 1798

surveyors.

The company agent in Philadelphia, Cazenove, then sent two French cartographers (mappers), Haudecour de Jaumeville and Alexandre Autrechy to help Ellicott. They both started working in the woods in May 1798. Then in July 1798 Major Adam Hoops hired an experienced surveyor Seth Pease to aid in the “Grand Survey”. Pease then surveyed and mapped from then to January 1800. He then held the position of company land agent with an office in Mayville. More on the “Grand Survey” next time.

