

H O U R G L A S S



F O U N D A T I O N

“Water – the Indispensable Infrastructure”

Delivered to The Hourglass Foundation

By

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“Without water, Lancaster County has no future” declared Lancaster County’s Planning Director, Ronald Bailey, to members of The Hourglass Foundation at its February 24th meeting.

The basic problem is while Lancaster is blessed with an abundance of resources, the county’s most important resource – water – is also its most overlooked.

Last year, Lancaster County consumed 66 million gallons of water each day, an amount equal to 157 gallons per person per day. What’s more, by the year 2000 it is projected the county will use 85 million gallons each day.

All of that water is not consumed by the two sectors that may spring immediately to mind – individual users and farmers. Water is needed for economic development, manufacturing, construction, and the service and retail industries – they all rely on a clean and abundant supply of water.

Taken together it is easy to see why “water is absolutely critical.”

There are three main issues involving water.

(1) The Hydrologic Cycle

The hydrologic cycle is the term used for the cycle of evaporation and rainfall that resupplies the groundwater levels. The problem occurs when man interferes with that natural cycle.

IN TERMS OF THE HYDROLOGIC CYCLE AND THE COUNTY’S ABILITY TO STORE GROUNDWATER, LANCASTER COUNTY’S GEOLOGY CAN BE TERMED AS “THE GOOD, THE BAD AND THE UGLY.”

The good involves the bulk of Lancaster County, comprised of a wide swath across its middle, where folded carbonates geology forms an excellent natural reservoir. The “bad” includes a strip across northern Lancaster County comprised of sedimentary and igneous rock, which provides what he termed as a “spotty” water supply. The “ugly” lies in a strip across southern Lancaster County where metamorphic rocks prevent the creation of a large groundwater supply.

(2) Threats to the water supply.

(a) Originally, Lancaster County was a forest that served as an almost perfect water filtration and storage system. Settlers were the first to interfere with that natural system by cutting down large numbers of trees. Continued growth, (Lancaster County experienced a whopping 63 percent growth in its population between 1960 and 1994) poses an even greater threat to the system.

That growth has brought land-use issues to the forefront. Urban sprawl leads to the creation of more impervious surfaces that interfere with the hydrologic cycle by not allowing water to run off into streams and replenish that county’s groundwater supply.

WE MUST TAKE CARE OF OUR WATER SUPPLY.

Overall, it is not just Lancaster County's water that is threatened. On a national level the water delivered by 160,000 municipal systems does not meet current federal clean water standards. It has been estimated that it will cost the U. S. \$368 billion to fix the deficiencies in these systems.

(b) The second greatest threat comes from "point sources of pollution" where material is released directly into streams and waterways. While industrial pre-treatment requirements keep much of this problem under control, there are still wastes, sediments and toxins creeping into the water supply.

(c) Another threat comes from "non-point sources of pollution" that could include anything from, soil erosion where prime Lancaster County farmland is sent on its way to the Chesapeake Bay, to the over-application of nutrients to plants. The excess nitrates and phosphates penetrate the county's groundwater.

While farmers often bear the brunt of publicity for the runoff problem, homeowners are also responsible for the pollution problem.

Effluent derived from septic systems that penetrate the groundwater (It's not a question if the system will fail, but when.) are one source, as are the herbicides, pesticides and fertilizers applied to lawns.

The septic issue can be dealt with through On Lot Disposal of Sewage (OLDS) management systems. But people need to remember that suburbia is a major source of pollution. Lawns and golf courses all receive fertilizer that can eventually contaminate our groundwater.

Bio-solids which are spread over large land areas as a form of disposal also represent a source of pollution. This application of bio-solids such as sewage from treatment plants must be carefully monitored.

CITIZENS NEED TO BE AWARE OF PROBLEMS CAUSED BY THE USE OF CHEMICALS AND PESTICIDES IN HOMES THROUGHOUT THE COUNTY. LITTLE SPILLS OCCUR ALL THE TIME, AND EACH ONE INDIVIDUALLY MAY NOT SEEM LIKE MUCH, BUT WHEN THEY ALL END UP ON OUR GROUNDWATER SUPPLY, IT CAUSES PROBLEMS.

(3) A final and often-overlooked source of pollution is the air.

Research has shown that the largest source of contamination to the Chesapeake Bay is air-borne. Power plants to the West and automobiles surrounding the area – they all contribute.

In Lancaster County, for instance, 351,951 automobiles were registered in 1993, an increase of 19 percent from 1960. So when you're sitting there in traffic idling, you're not only getting frustrated but you're also contributing to the pollution of our water supply.

The crucial question of how to protect our resources and what needs to done:

- The adoption of Urban and Village Growth boundaries. These establish lines to determine which areas of Lancaster County are most appropriate for development.

“We need to protect agricultural land which serves as a ‘sponge’ to re-charge our groundwater supply.” Currently 64 percent of Lancaster County is farmland and agriculture remains the county’s number one industry.

The county also needs to:

- Implement effective agricultural zoning.
- Concentrate on establishing agricultural security areas.
- Work with farmers to help them with land management issues.

Other crucial issues are:

- The protection of wetlands, which also serve to re-charge county groundwater supplies.
- The regulation of wells
- Wellhead protection is critical for two reasons: One, to protect the water supply of those using the wells: and two, keeping the wellheads themselves free of pollution in order to protect the groundwater supply.

Municipalities drill their wells at the bottom of a valley in order to find the most water, but unfortunately that also means everything runs down the ridge and flows into the well.

Each well punched into the groundwater is a hole that can pass pollutants into the supply itself. It’s been estimated that the cost of wellhead cleanup is between 30 and 40 times the cost of protecting that well in the first place.

- Another issue facing the county involves storm water runoff management.

Most of the contamination from impervious surfaces occurs during storms. This has presented a ‘good news – bad news’ scenario for Lancaster.

The “good” news is that countywide plans are being developed for municipalities to enact and enforce to deal with storm water runoff. The “bad” news is that these plans are controversial because the place restrictions on land use and sometimes people don’t understand why they are necessary.

BASIC PROBLEMS UNDERLYING OUR WATER SUPPLY

One problem regarding Lancaster county government's efforts to control the effects of development stems from the type of government established in Pennsylvania.

COUNTY GOVERNMENT IN PENNSYLVANIA IS THE WEAKEST IN THE UNITED STATES. THE BULK OF THE POWER TO CONTROL LAND USE RESTS IN THE HANDS OF THE 60 MUNICIPALITIES IN LANCASTER COUNTY. THEY ARE THE ONES WHO HAVE THE AUTHORITY TO DEAL WITH STORM AND FLOODWATER ISSUES.

While the County has developed a Water Resource Plan (available for viewing on the Lancaster County web page: www.co.lancaster.pa.us), to protect the quality and quantity of the county's water supply, individual residents need to be made aware of the importance of coordinating growth management among municipalities.

A prime example of this need or coordination can be seen in the danger posed by a toxic spill along the highway. Research shows that a toxic spill along that stretch of Route 283 will appear in the Mount Joy Water Supply within three days.

IN CONCLUSION MR. BAILEY EMPHASIZED TWO BASIC POINTS:

- 1) WATER KNOWS NO BOUNDARIES AND IT IS ABSOLUTELY CRUCIAL FOR THE FUTURE OF LANCASTER COUNTY.
- 2) IF LANCASTER COUNTY IS TO BE A HEALTHY, PRODUCTIVE COUNTY FOR ITS CITIZENS, FOR ITS FARMING AND ITS INDUSTRY – IT MUST BEGIN TO WORK TOGETHER AND TO PARTICIPATE IN SEEKING SOLUTIONS FOR THE WHOLE COMMUNITY.