



CHESAPEAKE ENVIRONMENTAL PROTECTION ASSOCIATION, INC.
P.O. Box 117, Galesville, Maryland 20765

NEWSLETTER

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PRESIDENT'S MESSAGE

By Al Tucker



Forests, like the oceans, are the heart and lungs of the planet; they provide untold resources enabling a way of life that we have come to expect. We now realize that preserving existing forests is critical to the survival of the planet, and that we can no longer treat them as an infinite resource. Some call trees a renewable resource, but

this is only the case if appropriate and adequate areas of land are conserved.

At the local level, forest resources are dwindling rapidly. Development not only destroys forests, but it also fragments remaining forests and thereby leads to an increased loss of ecosystem services. For Anne Arundel County, these services include air quality improvement, carbon sequestration, groundwater recharge, nutrient uptake, wildlife habitat and biodiversity, and stormwater mitigation. Each of these services has an economic value. At the 2016 CEPA Forum¹, the annual estimated value of ecosystem services for Anne Arundel County was \$287.6 M per year, representing a natural capital asset of \$4.6 billion. From a revenue point of view, this represents about 17% of current county revenue.

The forest conservation bill before the Anne Arundel County Council pits two views about the future quality of life against each other. One views economic well-being through residential and commercial development with the unvoiced implication that Anne Arundel has sufficient forest resources and adequate regulations to protect the environment. The other sees land preservation and forest conservation as a bulwark against further degradation of quality of life and anticipated impacts of climate change. The central question in this debate that's not being asked is: Does Anne Arundel County have adequate forest cover to provide ecosystem services for maintaining the status quo in the face of climate change?

Two studies help bring the question into sharper focus: first, a study by Rand Corporation for NOAA² of the Patuxent River

watershed looked at development practices and environmental best management practices under population change and expected climate change scenarios. The inescapable conclusion was that current policies and strategies resulted in insufficient land to implement affordable best management practices to meet future environmental requirements. To put it bluntly, the Patuxent watershed will be over-developed using current building technology and land-use patterns. The second study by Anne Arundel Planning & Zoning³ provides some insight into how much land, including forests, will be lost to sea level rise alone. It states:

- Nearly 2,200 acres of land are vulnerable under a 0-2 foot sea level rise. Almost two-thirds of this area (62%) [1394 acres] consists of woodlands and open wetlands.
- When the inundation area is expanded under a 0-5 foot scenario, over 6,900 acres of land are potentially impacted. In this scenario, 42 percent of the vulnerable area is woodlands [2898 acres].

In the Chesapeake Bay, NOAA estimates an intermediate rate of sea level rise will result in the 2ft. inundation being reached by approximately 2060 and 2100+ for the 5ft. level. If the high rate of rise materializes, the 2 ft. level will occur in 2040 and the 5 ft. level in 2070. The recent tidal flooding events of 2.5 ft. or more indicate forest degradation in the critical area has started.

These studies do not answer the question I posed; however, the question is answerable. High resolution land-use data exists, and the assessment technique developed by Rand Corporation would provide valuable insight concerning current development practices when applied to the entire county. It would provide a guide for the types of development that would conserve environmental services. It is imperative that studies like that outlined by Rand be performed. Without these assessments, individuals cannot evaluate the risk that the combination of population growth and climate change present.

The analysis of the Patuxent watershed is a wake-up-call. To the unaided eye it would appear that it is covered with sufficient forest, but the analysis shows that it is not. The watershed actually is urban. Furthermore, the analysis shows that it will not provide the ecosystem services needed to meet future environmental requirements, if current development practices continue in the face of anticipated climate change. New building technology will be required to have zero run-off and zero increase in ancillary impervious surface, such as roads and parking lots. But any development results in forest loss.

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The public needs to know how much will be lost. And the answer starts with knowing if the existing forests in Anne Arundel County are adequate to meet the anticipated growth and the effects of climate change. Otherwise the public cannot make an informed assessment of the risks posed by loss of forests.

¹CEPA Forum 2016

(<https://cepaonline.org/presentations/CEPA%202016%20ECampbell.pdf>)

² Fischbach, Jordan R., Robert J. Lempert, Edmundo Molina-Perez, Abdul Ahad Tariq, Melissa L. Finucane, and Frauke Hoss, *Managing Water Quality in the Face of Uncertainty: A Robust Decision Making Demonstration for EPA's National Water Program*. Santa Monica, CA: RAND Corporation, 2015. https://www.rand.org/pubs/research_reports/RR720.html

³ Sea Level Rise Strategic Plan Anne Arundel County, Nov 2011, prepared by AA County Office of Planning & Zoning, (https://dnr.maryland.gov/ccs/Publication/AASLRStrategicPlan_final.pdf)

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ANNE ARUNDEL ALLIANCE FOR LIVABLE COMMUNITIES

By Mike Lofton



CEPA is a founding member of the **Anne Arundel Alliance for Livable Communities (ALC)**. The Alliance, born out of ideas generated at the CEPA Forum on Sustainable Growth in 2016, is a coalition of local and state organizations advocating for sustainable growth and environmental protections to safeguard and enhance residents' quality of life. The Alliance, comprised of dozens of organizations whose members and supporters

include thousands of Anne Arundel County residents is engaged in the current General Development Plan update process. ALC submitted eight policy recommendations to be included in "Plan2040."

Concerning Management of growth and establishment of development limits: Table 3-2 in the 2009 GDP shows that in 2008 the development and redevelopment capacity of lots with RA – R15 zoning was about 26,000 housing units. This

corresponds to about 10% of the constructed housing units in the County. A current estimate of new development capacity in RA – R22, solely based on lot availability and zoning density, suggests that only about 12,000 new housing units may be developed in these areas. Therefore, in the aggregate, residentially zoned properties in the County are almost built out. Carrying capacity, which considers natural resource and infrastructure limitations, is less than capacity based on zoning in most communities. Areas where undeveloped residential parcels exist but infrastructure and/or natural resource limits have been reached should be identified. In these communities, planning efforts should focus on maintaining a stable population and enhancing quality of life for current residents. The recommendations:

1. Areas with infrastructure or natural resource limits should not be targeted for new growth.

The availability of development opportunities should also be strongly influenced by the desires of community residents. The Plan2040 Small Area Visioning sessions have clearly demonstrated that residents are concerned with current overdevelopment, sprawl development, and loss of open space. Without changes in zoning of RA – R15 lots to increase density, it appears likely that development on these types of properties will be self-limiting in the aggregate, but there may be downzoning needed to meet local objectives.

2. Policies that discourage rezoning and modifications to allow more dense development of RA – R15 parcels should be included in Plan2040.

Maintaining current zoning on RA – R15 properties is likely to have the added benefit of directing future development to town centers and mixed-use areas, in accordance with smart growth. It will be necessary, however, to assure that the boundaries of these population centers do not expand substantially into surrounding residential, open space, or environmentally sensitive parcels.

3. Policies that encourage upward development and redevelopment rather than outward expansion of population centers should be included in Plan2040.

Currently, new developments are charged impact fees for costs associated with roads, schools, and public safety required by the new development. These fees are approximately 80% of County costs.

4. Impact fees should be raised to 100% of costs and the fee should be expanded to include costs associated with parks, libraries, and detention facilities.

Concerning Empowerment of Small Area Plans: Following the last GDP, comprehensive rezoning began. Hundreds of proposed rezonings were considered. The entire rezoning process took over a year. Ultimately, three bills were introduced to address the County's seven legislative districts. Throughout the process, most recommendations were made by persons who did not live near the community affected by the proposed

rezoning. Frederick County is pursuing a planning and zoning sequence that is more responsive to local community perspectives. Frederick has developed a new comprehensive plan, Livable Frederick, which is a broad policy document. Its adoption will not be followed by comprehensive rezoning. Rather, small area plans will be developed to address land use and zoning at the parcel level in a manner that is consistent with the broad comprehensive plan. This approach allows local communities to fully engage in the planning and rezoning process and yields results that are consistent with the communities' vision for their future.

5. Rather than after adoption of Plan2040, rezoning should follow the adoption of Small Area Plans. This sequence should be specified in the Plan2040.

Concerning Improved protection of Green Infrastructure: Scattered development consumes an extensive amount of land and fragments the landscape, converting what was a once near-continuous stretch of forests and wetlands to small, isolated islands of habitat in a sea of developed land. In recent years, Anne Arundel County has been shown to be the most egregious practitioner of forest clearing among all Maryland counties. The Maryland Department of Natural Resources (DNR) has mapped the most ecologically important lands remaining in the State and identified them as Green Infrastructure. Green Infrastructure (GI) is a network of large blocks of intact forest and wetlands, called "hubs," linked together by linear features such as forested stream valleys, ridgelines, or other natural areas, called "corridors." An essential characteristic of Green Infrastructure is the interconnection of its features. Much of the Green Infrastructure in Anne Arundel County lies in its western and southern portions, as identified on DNR's GIS maps. Only about half of the County's Green Infrastructure lands are protected from development by various kinds of easements or inclusion in the Critical Area. These ecologically important areas and the flora and fauna living there warrant protection.

6. A zoning overlay for Green Infrastructure areas should be included in Plan2040 to:

- Limit the disturbed area on each developed lot;
- Prohibit construction near streams and wetlands; and
- Minimize total impervious surface coverage, including access roads.

Concerning Increased agricultural preservation funding: Agricultural land in Anne Arundel County continues to be lost to residential development. Our rich history, natural beauty, and agrarian bounty – things that are appreciated by all County residents – are disappearing. The farm population is aging and often a farmer's net worth is in his land. Farming of commodity crops has become less economically attractive, and younger generations are frequently inclined to pursue employment in urban areas.

Agricultural Preservation Programs allow a farmer to capture some of the economic value of the land while retaining

ownership. The Agricultural Preservation Program budget for Anne Arundel County will be unfunded in 2020, although a funding level of about \$2.2M per year is projected for following years. In a county with a \$1.5B annual budget, this amount is almost insignificant. A county that truly values its agricultural heritage should dedicate a portion of its budget to preservation.

7. Plan2040 should include a policy that a specified percentage of the annual County budget be dedicated to the Agricultural Preservation Program.

Concerning Establishment of a Planning Commission: Most Maryland counties have a Planning Commission that serves as an interface between the citizens of the county and the county government on land use issues. Members of the Planning Commission are typically appointed by the County Executive. Anne Arundel County does not have a Planning Commission but would benefit from the citizen accessibility and transparency of process that would be provided by one.

8. Plan2040 should recommend the establishment of a Planning Commission with the responsibility and authority to:

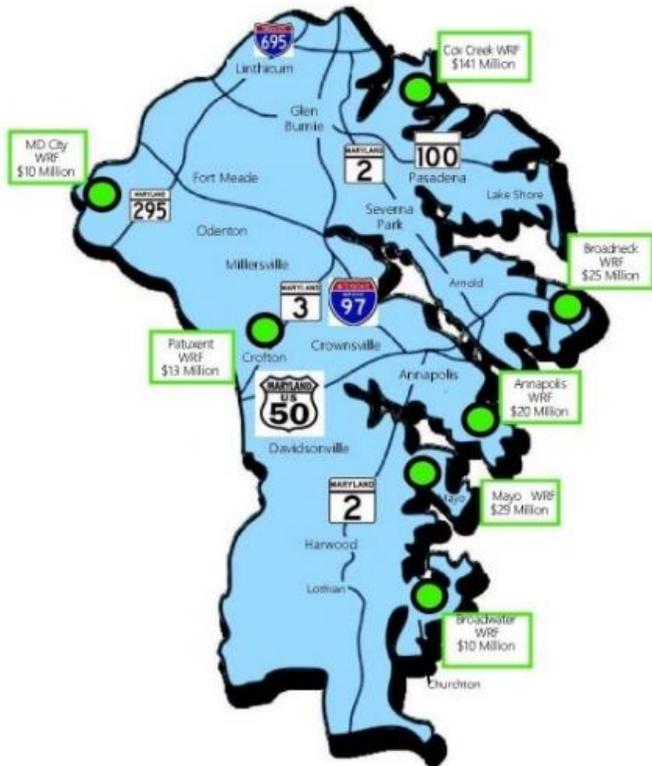
- Monitor implementation of the General Development Plan and Small Area Plans;
- Consider rezoning requests and make a recommendation to the elected officials;
- Approve subdivisions plans and site development plans; and
- Review land use legislation and amendments to ordinances concerning development and make a recommendation to the County Council.

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ENHANCED NUTRIENT REMOVAL (ENR) IN AAC *By Bill Klepczynski*



Effluent from wastewater treatment plants is one of the top three contributors of damaging nutrients entering the Bay (urban and agricultural runoffs are the other two). Excess nutrients like nitrogen and phosphorous are two of the leading causes of our waterways' poor health. In 2013, we had 677K lbs. (7.09 mg/l) of Total Nitrogen (TN) from the seven wastewater treatment plants (see Figure) from Anne Arundel County (AAC) going into the Bay. In 2018, we had 207K lbs. (2.06 mg/l) of TN. This is a dramatic reduction. How did AAC Public Works Department do this?



In 2004, the Bay Restoration Fund of 2004 was created to upgrade Maryland's wastewater treatment plants with enhanced nutrient removal (ENR) technology. This fund was financed by wastewater treatment plant users. The goal was to achieve wastewater effluent quality of 3 mg/l total nitrogen and 0.3 mg/l total phosphorus.

Wastewater is treated through several physical, chemical and biological processes that remove the solids and separate the water. A biological nutrient removal process in combination with extended anoxic zones and biological filters is where high concentrations of nutrients like nitrogen and phosphorus are removed from the wastewater. The removal is usually done through a three-step treatment process:

1: Primary Treatment

At first, wastewater treatment plants had to only achieve a 45% to 50% reduction of pollutants by removing settleable and other easily removable materials using screens and grit removal units and settling tanks (primary clarifiers).

2: Secondary Treatment

Secondary treatment introduced a biological process such as activated sludge, trickling filter, rotating biological contractor, or other biological treatment technologies. Biological treatment systems are living systems that rely on mixed biological cultures to break down waste (that could not be removed by the physical treatment) and allow it to settle in the final clarifier achieving 85 to 90% reduction in pollutants. As early as 1957, communities in Maryland received federal and state grants to upgrade their facilities with secondary treatment systems. However, secondary treatment was not required for most plants until the inception of the National Pollutant Discharge Elimination (NPDES) permit in 1972.

3: Biological Nutrient Removal (BNR)

The Chesapeake Bay has experienced a decline in water quality due to the over enrichment of nutrients (mainly phosphorus and nitrogen). The Maryland Department of the Environment, in support of Maryland's commitment to reduce the amount of nutrients being discharged to the Bay, developed a strategy for achieving the desired reduction by the upgrade of the major 66 wastewater treatment plants to remove nitrogen through a process known as biological nutrient removal (BNR). Using the BNR process, more than 90% of pollutants are removed, while achieving nitrogen concentration below 8 mg/l total nitrogen.

4: Enhanced Nutrient Removal (ENR):

Recognizing that more needs to be done, the Chesapeake Bay 2000 Agreement required further reduction in nitrogen and phosphorus entering the Bay by about 20 million pounds and 1 million pounds per year respectively. Thus, a fourth step was added to the removal of nutrients from wastewater called "Enhanced Nutrient Removal".

The Maryland Department of the Environment is using the Bay Restoration Fund to upgrade the 66 major wastewater treatment plants within the State that discharge to the Chesapeake Bay with enhanced nutrient removal (ENR) technologies. Once upgraded, these plants are expected to reduce nitrogen and phosphorus in the wastewater down to 3 mg/l total nitrogen and 0.3 mg/l total phosphorus, achieving approximately one-third of the needed reduction under the Chesapeake Bay 2000 Agreement. Other pollutants will continue to be reduced by more than 90%.

Anne Arundel County (AAC) currently operates 7 of the 66 Water Reclamation Facilities (WRF), see Figure. They are: Maryland City; Cox Creek; Broadneck; Annapolis; Piney Orchard; Broadwater; and Patuxent WRFs. As a part of the ENR Upgrade Program the Mayo WRF was closed and converted to a pumping station. This pump station transfers sewage from the Mayo Service Area to the Annapolis WRF. Anne Arundel County Public Works division has completed the upgrades on their seven WRFs.

Their work in this area has been recognized by the *National Association of Clean Water Associations (NACWA)* in 2018 by bestowing a GOLD Award for Perfect NDPS Permit Compliance at all WRF plants and received a PLATINUM Award for 5 consecutive years of compliance at the Broadwater and Maryland City WRFs. In fact, the Broadwater WRF had 22 consecutive years of perfect compliance and Maryland City had a PLATINUM Award for 6 consecutive years of compliance. AAC Dept. of Public Works has and continues to do an exemplary job in helping to maintain the health of the Bay.

For more info, do a Google search on:

1. The Evolution to Enhanced Nutrient Removal Technology
2. Bay Restoration Fund
3. Anne Arundel County Earns National Award for Wastewater Treatment Excellence

**IN MEMORIAM
PEG BURROUGHS**



CEPA is saddened to learn of the passing of Peg Burroughs, who was a Trustee for many years and once served as our President.

From The Capital Gazette, 8/4/19:
Margaret Mary Wohlgemuth Burroughs of Annapolis passed away peacefully on July 31, 2019. Margaret, known as Peg, was born on February 15, 1928, in Annapolis to the late George Fringer Wohlgemuth

and Veronica Ernestine Fitzgerald Wohlgemuth. Her mother was a nurse at the original Annapolis Emergency Hospital. Peg was raised in Washington, D.C. and New York City, where her father, an Army colonel, worked for the War Department and Columbia University. She spent her summers at her parent's cottage on Bembe Beach in Annapolis.

Peg attended St. Anne's Elementary School and Immaculata Preparatory School in Washington, DC and graduated from Notre Dame College in Baltimore with a degree in art. After graduation, Peg worked as a first-grade teacher in Baltimore, and then moved to Washington and joined the Army Special Services. Her career with ASS took her to Germany and other countries in Europe. After several years abroad, she returned to Washington and worked in recruitment for the ASS, and then joined VISTA – Volunteers in Service to America -- as director of college recruitment.

In 1971, Peg married the late Henry "Hank" Dashiell Burroughs, Jr., an award-winning Associated Press photographer. After their retirement, Peg and Hank settled full time into their home in West River, Maryland, and continued their love of the arts, Hank through photography and Peg through oil painting, and travel, with trips to China, Egypt, and Europe. They continued to attend AP events, including those at the National Press Club, and national presidential conventions. Avid sailors, they enjoyed countless cruises and adventures on their magnificent 30 foot Cheoy Lee, the Carina. Twice they cruised the inland waterways to Bermuda and the Florida coast, and, in a freak Labor Day storm, survived the harrowing sinking of Carina off Greenbury Point, from which they were rescued and their boat later salvaged. In 2007, Peg published "Close-Ups in History", a biography and pictorial collection of her late husband's career as an AP photographer, beginning in post-war Germany and France and continuing as a White House photographer during the presidencies of Harry S. Truman through Gerald Ford.

Peg later moved to the Baywoods of Annapolis, just down the beach from her family's cottage. At Baywoods, she served on the Board of Directors of the Residents Association and as chairman of the Activities and Arts Committee. She coordinated an oyster restoration project in conjunction with the Chesapeake Bay Foundation on the Baywoods pier, led a group of intrepid residents for regular swims in the Chesapeake, and organized full moon soirees on the putting green.

In addition to her contributions to Baywoods, Peg was an active community volunteer in Anne Arundel County, particularly interested in environmental and historical projects. She served on the Board of Directors at Historic Lodontown and Gardens, including serving as Chairman of the 300th Anniversary Celebration of Lodontown. She was president of the Chesapeake Environmental Protection Association, president of the Maryland Chapter of Save our Streams, and a member of the Jabez Branch Study Group, the Shady Side Rural Heritage Society, the West River Federation and the South County Creeks Commission. She also served as president of the Owensville Medical Center Board and volunteered in the Head Start reading program for elementary school students.

Peg was a former member of our Lady of Sorrows Catholic Church, in West River, where she will be buried beside her husband, and the West River Sailing Club. Peg is survived by two brothers and their wives, George and Honora Wohlgemuth of Annapolis and Bill and Pat Wohlgemuth of West Chester, Pennsylvania, 13 nieces and nephews and 26 great and great great nieces and nephews. In addition to her parents and husband, she is predeceased by a brother and his wife, Tom and Anne Wohlgemuth. A funeral mass was held at St. John Neumann Church on August 8. In lieu of flowers, it was suggested that donations be made to The Henry D. Burroughs Memorial Fund at Anne Arundel Community College.

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