Mattawoman Watershed Society

Protecting and conserving Mattawoman Creek for the enjoyment of all.

Charles County Commissioners
200 Baltimore Street
La Plata, MD 20646

May 30, 2017

Re: In support of the Watershed Conservation District:
Zoning Text Amendment (ZTA) 16-142 & Zoning Map Amendment 16-54

Dear Commissioners:

Thank you for considering these comments from the Mattawoman Watershed Society (MWS) in strong support of the Watershed Conservation District (WCD). The MWS has more than 2000 supporters, the overwhelming majority of whom reside in Charles County. These written comments augment oral testimony delivered at the May 24, 2017 hearing on the WCD. We also endorse the comments submitted by the Smarter Growth Alliance for Charles County, of which we are a member.

These comments summarize the case for the WCD, discuss its benefits to the environment and to the populace at large, endorse aspects of the ZTA, and raise concerns over the amount of impervious surface that may result despite the welcome limits. *As an appendix, we note several places in the ZTA where clarifications appear to be in order.*

Background: The WCD grew out of a recognition that over-development was degrading Mattawoman Creek, one of the county's most iconic waterways. At stake are values of importance in defining Charles County's character, both within the county and beyond. The 1 unit per 20 acre zoning of the WCD ensures that many of these values will be maintained. Without the WCD, science shows that it is certain these values will not be maintained. Among these values are:

-Mattawoman provides an unusual degree of shore access among Maryland's waters, and thus provides fishing opportunities to low income residents. Growth-induced damage to fish populations (see below) is inequitable.
-As recently as 2005, fisheries managers termed Mattawoman "the best, most productive tributary to the Bay."
-Mattawoman is a centerpiece of the Potomac River's famous largemouth bass fishery, hosting more bass tournaments than any site in Maryland.
-The economic activity generated by bass tournaments alone is comparable to the market value of the all the county's agricultural products.
-Mattawoman itself is famous on the east coast as a bass fishery.

Shore fishing at Mattingly Park.

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-It is a recreational centerpiece, hosting pleasure craft, water and jet skiing, fishing boats, canoes, kayaks, paddle boards.
-Unusual among Maryland waters, it offers quiet boating in Maryland Wildlands.
-Despite declines, it still supports a vibrant anadromous fish spawning and nursery ground.

Terrestrial resources associated with the watershed are also remarkable:

-Approximately 16,500 acres of Important Bird Area designated by the MD-DC chapter of the Audubon society.

-One of best coastal plain systems in Maryland for reptiles and amphibians, including the most diverse sentinel site for these species, according to MD Dept. of Natural Resources (DNR).

-A hotspot of rare birds, and reptiles and amphibians, according the U.S. Fish and Wildlife Service.

Signs of stress at the tipping point: That these values are threatened by past growth policies is clear. Based on long-term monitoring by DNR, it is well known that Mattawoman has gone from "near to ideal conditions" around 1990, when the parent of the 2006 comprehensive plan was born, to the "tipping point" for irreversible degradation today. As one approaches the tipping point, ecological decline becomes apparent. Long-term monitoring finds:

-The abundance of fish in Mattawoman's freshwater tidal estuary has declined since annual surveys began prior to 1990.

-Similarly, species richness has declined in the estuary.

-Dissolved oxygen levels in the upper tidal estuary are declining.

-Dissolved oxygen levels can reach low levels lethal to fish in dense SAV beds burdened by algae.

-The abundance of anadromous-fish eggs in the non-tidal river is exhibiting a long-term decline.

-The specific electrical conductance of the non-tidal river is rising as a result of increasing amounts of road salt. Data from the Maryland Biological Stream Survey shows that increasing conductance correlates with a decline in the index of biotic integrity for fish; hence loss of stream health is predicted.

-The hydrology of the non-tidal river has transititioned from that of a forested watershed (dominated by groundwater) to the flashier regime of an urbanizing watershed.

Low dissolved oxygen reading in a bed of submerged aquatic vegetation burdened by macro-algae, summer of 2011. The value of 2.21 mg/liter is well below the minimum standard of 5 mg/liter, and lethal to many fish species.

Excessive algae coating submerged aquatic vegetation, fall of 2016.

The WCD benefits residents in addition to guarding the health of Mattawoman Creek and the Port Tobacco River. It also alleviates stresses to quality of life from growth.

Watershed conservation can be expected to alleviate problems experienced by Charles County residents. Of all counties in Maryland, residents are subjected to:

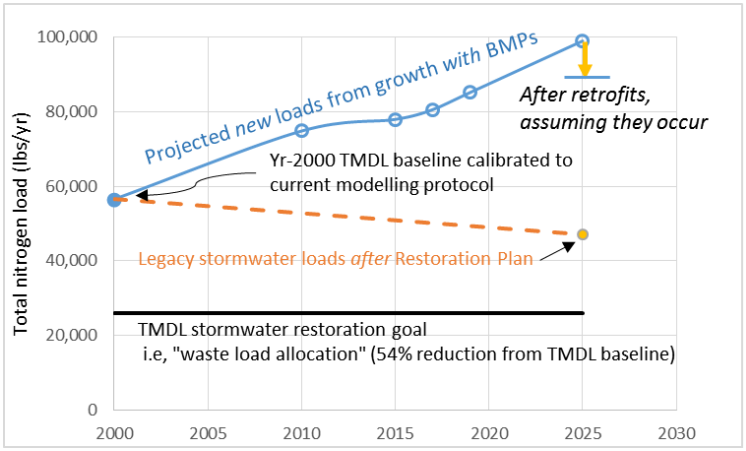
> -the worst commute times. Tempering the growth rate, as the WCD does, will reduce the rate-of-rise of new commuters congesting highways.
>
> -the greatest per-capita use of trailers as classrooms. Tempering the growth rate will significantly relieve growth pressure on school capacity.
>
> -the highest property tax rates. Many studies find that tax revenues are stressed from sprawl development because residential development does not contribute to the tax base what it withdraws to fund services.

The comprehensive plan's Water Resources Element (WRE), with a 2040 horizon, finds that sources of potable water have not been identified to maintain growth at a business-as-usual rate (e.g. Table 4-4). However, the deficiency in groundwater allocations for Bryans Road and Waldorf essentially disappear in the present plan with the WCD.

The WCD has direct and indirect financial benefits to the county. Consider the cost of meeting Mattawoman's Total Maximum Daily Load (TMDL). The TMDL calls for reducing the total-nitrogen load from stormwater by 54% from the baseline year of 2000 (not counting new growth since then). Using stormwater retrofits, the *Charles County Municipal Stormwater Restoration Plan* [1]was unable to meet the reduction goal by 2035. To meet the goal would require $200 million, and would require identifying 275 additional retrofit projects, which the Restoration Plan states may not be feasible.

[1] *Charles County Municipal Stormwater Restoration Plan*, https://www.charlescountymd.gov/sites/default/files/pgm/planning/Watershed/cc_restoration_plan_6-27-16.pdf

By moderating new growth, the WCD will help alleviate the environmental costs caused by the inability to control nutrient pollution. After accounting for use of best management practices (BMPs) in new development, *the Restoration Plan finds that new growth would overwhelm any reduction achieved through stormwater retrofits* (see figure to right). These calculations assumed the zoning in place prior to the Comprehensive Plan of July of 2016. The WCD will clearly reduce future stormwater pollution to the Mattawoman, and future restoration costs, not to mention the lost value from polluted recreational waters.



Mattawoman's watershed provides valuable ecosystem services in the form of treating stormwater, cooling and purifying air, reducing flooding, and sustaining recreational and tourism businesses. The Watershed Resources Registry maps show widespread stormwater treatment by forest land in the watershed. An ongoing study by DNR, reported to the Planning Commission, assigns financial value to a portion of the ecosystem services that are amenable to computation. Based on these values for forested land, and state statistics for forest cover, forests in the Mattawoman watershed provide about $93 million per year in services. The WCD will do much to maintain these services by reducing forest loss.

It is widely reported that health benefits also accrue when forests remove air pollution, lower temperature, and provide a place to relieve stress. Consider a recent study by the U.S. Dept. of Agriculture. It found a significant uptick in mortality caused by cardiovascular and respiratory illness in those counties experiencing loss of ash trees killed by the emerald ash borer. As reported in PubMed,[2]

> "Across the 15 states in the study area, the borer was associated with an additional 6113 deaths related to illness of the lower respiratory system, and 15,080 cardiovascular-related deaths."

[2] https://www.ncbi.nlm.nih.gov/pubmed/23332329

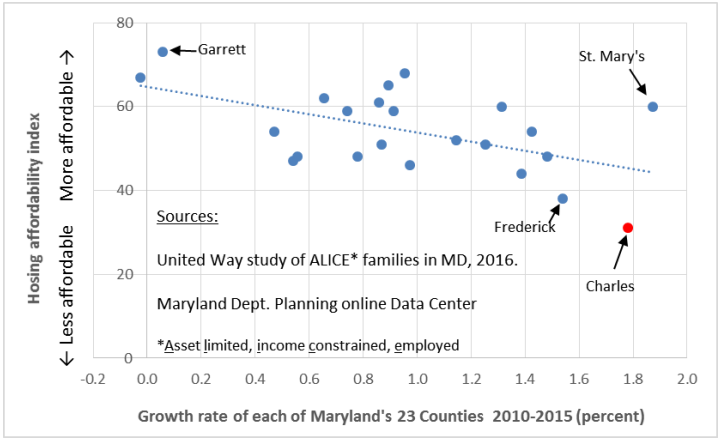
The WCD will lower the county's growth rate, which can be expected to improve aspects of overall socioeconomic health.

As noted above, a healthy fish population benefits those without boats who are constrained to fish from the above-average number of access points along Mattawoman's shores. Prior to the 2012 moratorium on possessing River Herring, Mattawoman anglers would preserve these fish for food, and today anglers keep other fish for consumption. This illustrates a value of sustaining a healthy fish population in addition to recreational value. By reducing pollution from future development, the WCD will help maintain the fish population. It will also reduce the loss of forest that provides opportunities for hunting.

A lower growth rate also correlates with improved prosperity. For example, one extensive study finds:[3]

> "… that faster growth rates are associated with lower incomes, greater income declines, and higher poverty rates… The 25 slowest growing metro areas outperformed the 25 fastest growing in every category and averaged $8,455 more in per capita personal income in 2009."

Turning to affordable housing in Maryland, consider a recent report by the United Way of households characterized as "asset limited, income constrained, employed" (ALICE). The report determined a housing affordability index for each of Maryland's counties. Plotting the affordability index against the annual growth rate of each county from 2000-2015 as reported by the Maryland Dept. of Planning (MDP), one finds a downward trend (figure to right). The dotted trend-line is a least-squares linear fit with a slope of -10.9 ±3.8 index-points per percent-growth-rate. Evidently, it appears harder for a county to overcome poor affordability at higher growth rates such as Charles County's. The WCD will likely reduce the growth rate, and could free resources to better address housing affordability.



The impervious surface cap may not satisfy the intended goal.

We endorse the attention to impervious surface, and understand that a sliding scale is needed. We note that the impervious-cap per parcel in the ZTA, by itself, will not likely satisfy the goal of keeping the Mattawoman watershed from experiencing a substantial increase in impervious cover. Consider first the consequences if developable land in the WCD were covered with 8% impervious surface. In the WCD, roughly 16,000 acres are developable if one subtracts preserved land, and assumes all land designated by MDP as "developed" (at all levels of density) will not be further subdivided. If 16,000 developable acres were covered at 8% impervious, about 1,200 impervious acres would result. Adding this to the present

[3] *Relationship Between Growth and Prosperity in the 100 Largest U.S. Metropolitan Areas*, Economic Development Quarterly **26**, 220 (2012) http://journals.sagepub.com/doi/pdf/10.1177/0891242412452782

coverage of 4,300 acres[1] increases the overall coverage by about 30%, an unacceptable result given that the Mattawoman is now at the "tipping point" and already showing predictable signs of stress from development.

Furthermore, as written, the *ordinance appears to allow impervious fraction to increase without limit* if development satisfies three conditions (i) BMPs are utilized to treat the impervious area; (ii) undefined mitigation is implemented; (iii) a maintenance and inspection agreement is executed. [p. 21 of ZTA #16-142, lines 22-26].

We emphasize that the Mattawoman system is exhibiting signs of stress at the current level of impervious surface. This is consistent with ongoing research that finds a significant decline in benthic communities at 8% impervious cover.

The potential ineffectiveness of the impervious cap underscores the importance of the 1:20 zoning in the WCD because larger parcels have historically yielded impervious fractions less than 8%. For example, one structure in a 20 acre parcel tends to yield about 3% impervious cover, according to an empirical formula determined by DNR comparing structures per unit area to impervious cover.[4]

Intrafamily transfers: MWS encouraged the Planning Commission to examine the feasibility of adding a provision to the ZTA for allowing a family to create lots for children in a manner that forecloses the abuse experienced by so many other counties. It appears that staff has made a serious effort in this direction with the intrafamily transfer provision recommended by the Planning Commission.

Mining removal endorsed: MWS strongly endorses the removal of mining as a permitted use by special exception that had been in an earlier draft of the ZTA. As we noted in written comments to the Planning Commission, MDE presently records no active mines in the WCD. Mining of gravel clears wide swaths of forest, and exposes large areas of soil. Mattawoman Creek already is exposed to the impacts of hundreds of acres of mining in Prince George's Rural Tier, as illustrated by the operations with the yellow boundary in the aerial view to the right (other large forested acreages owned by aggregate interests are not outlined).

Sincerely,

Laurie Snow
Vice President
Mattawoman Watershed Society

[4] Performance Report for Federal Aid Grant F-63-R, Segment 6, (2016)
http://dnr2.maryland.gov/fisheries/Documents/2015_FHEP_Annual_Report.pdf

Places in ZTA #16-142 that may benefit from clarified wording.

297-98 C.2.a (p. 21, lines 16-20):

> As worded, it is not clear that new accessory uses are subject to the 25% limitation.
>
> If additions and accessary uses satisfy the conditions of C.2.b (BMPs etc., see next), are they allowed to exceed the 25% limitation?

297-98 C.2.b (p. 21, lines 22-26):

> It is unclear what measure or measures "mitigates impervious surface coverage."
>
> As noted in the body of our comments, this clause appears to permit impervious coverage without limit. Is this the intention?