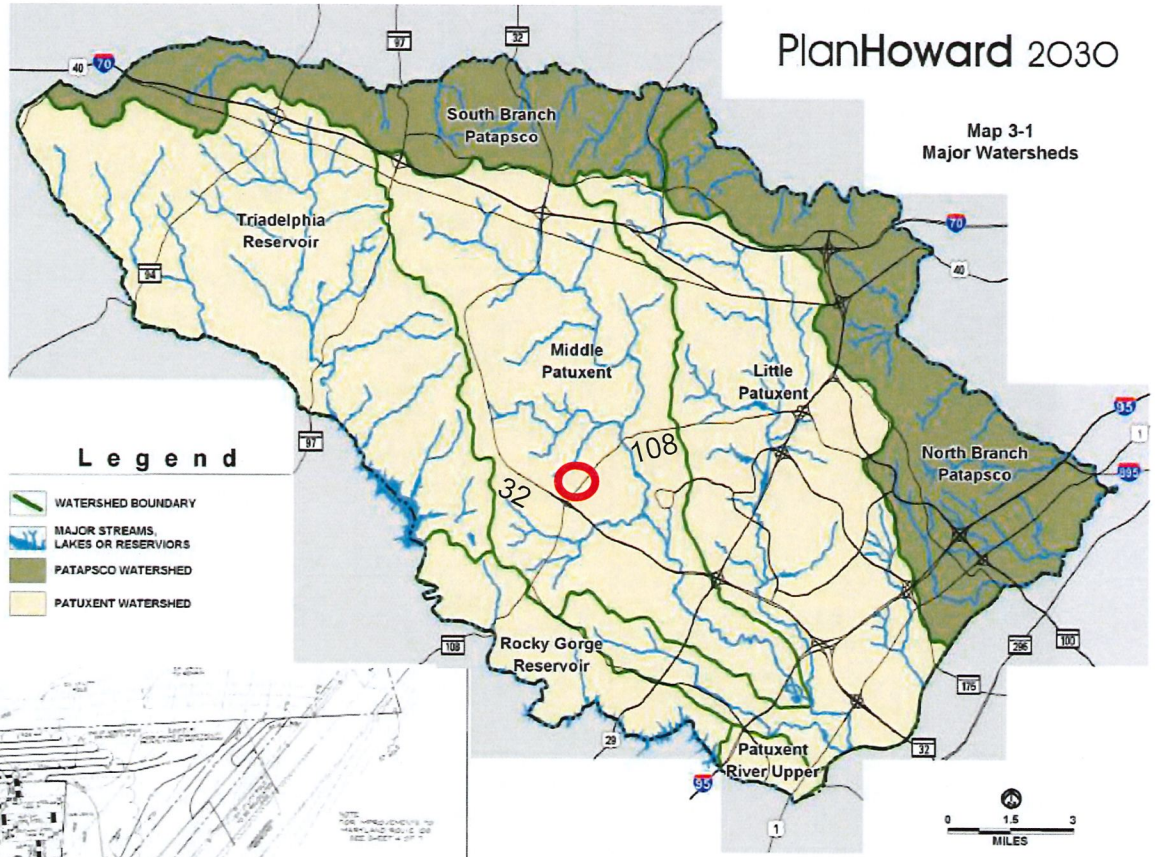
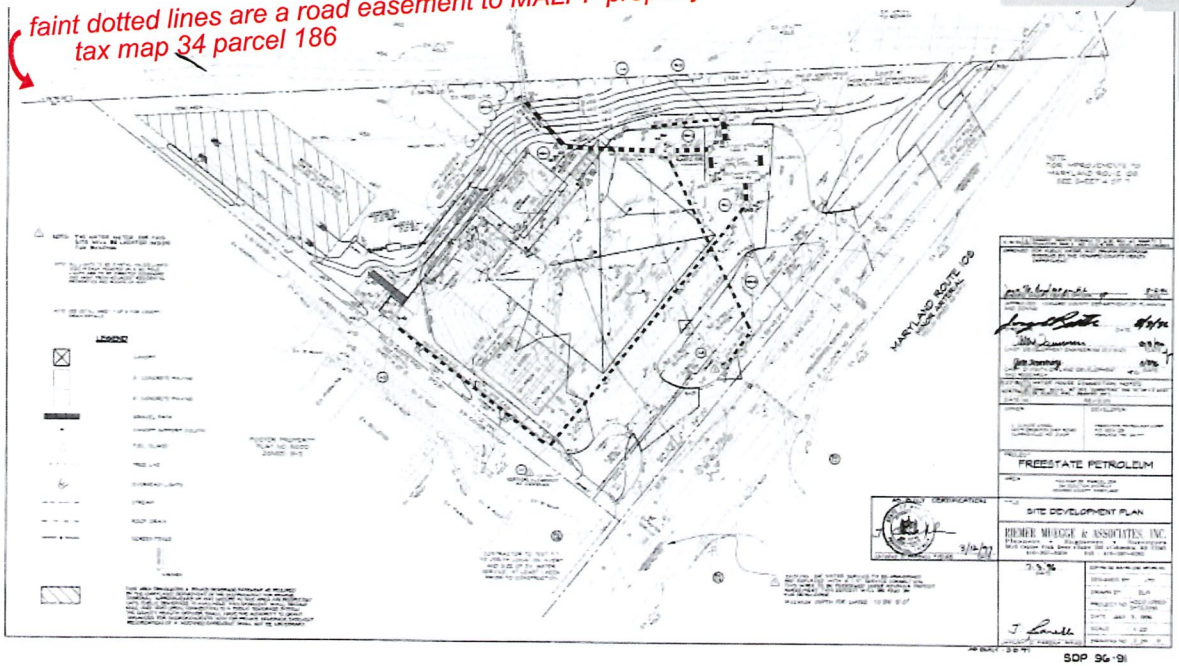
Example of Howard County's "environmental stewardship" in land development:

a 1996 approved development that channels the headwaters of the Middle Patuxent through pipes under a then-proposed (now existing) gas station



the black and white dotted lines show the pipes that carry the headwaters of the Middle Patuxent under Rt 108 and the gas station

faint dotted lines are a road easement to MALPF property tax map 34 parcel 186



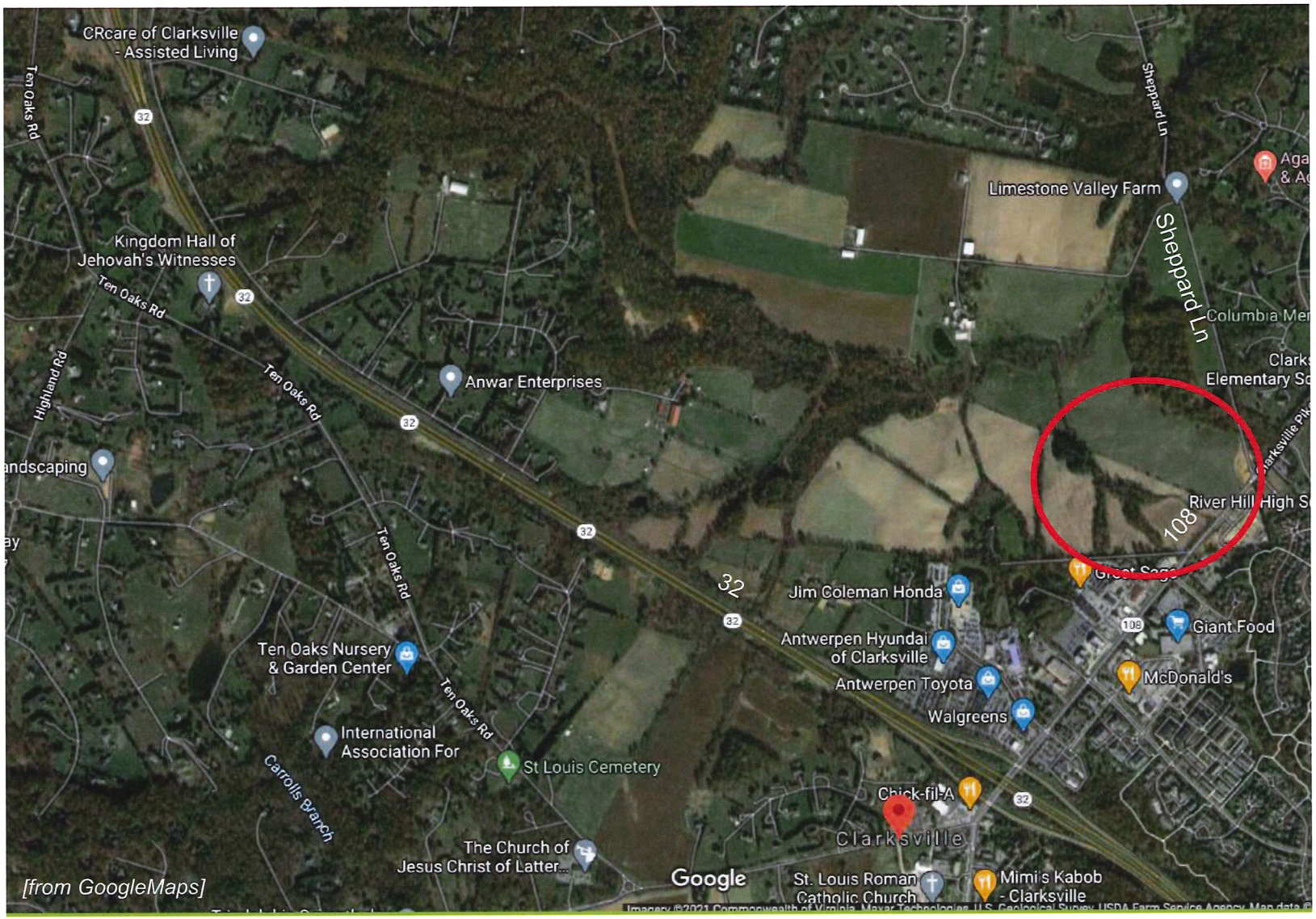
Zoning Case 1118 M - Erichson

Applicant/Protestant

Exhibit # 21 Date 4/7/21

An expansion/rebuilding of that gas station and a large abutting new senior living community, "Erickson Living at Limestone Valley" –1440 residential units on 62 Acres – is proposed

[Basically all the undeveloped land in this screen outside that in the red circle is in "Ag preservation", which the county has publicly portrayed as being in "Ag preservation" in perpetuity.]



"Erickson Living at Limestone Valley" is:

BIG buildings

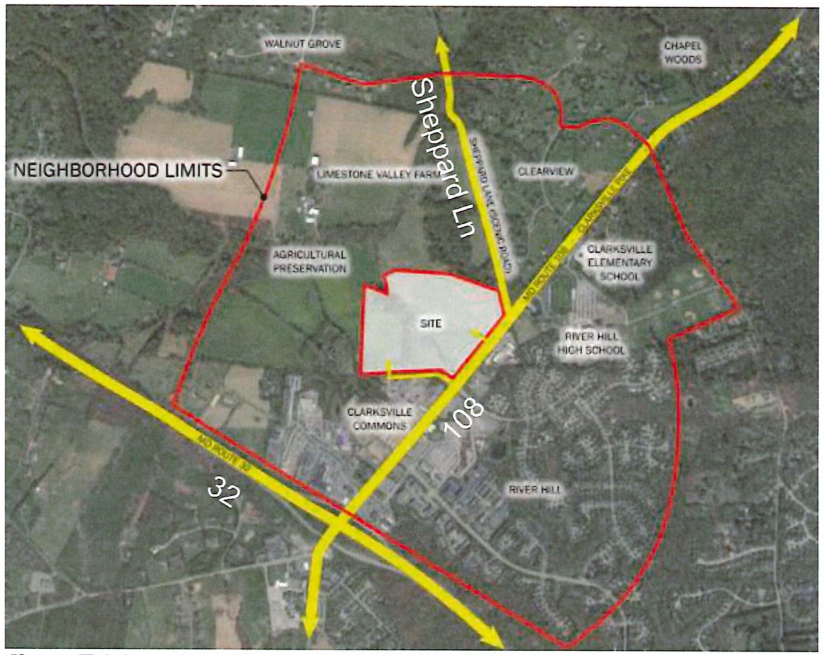
closely located
(and with lots of connecting roads, making lots of impervious surface)

on steep slopes

[these three from Erickson's, Moseley Architect's presentation]

[from Bohler // Mosley Architects' "Erickson Living at Limestone Valley" 6/9/20]

* - new 60-ft right-of-way into the "Ag Preserve"

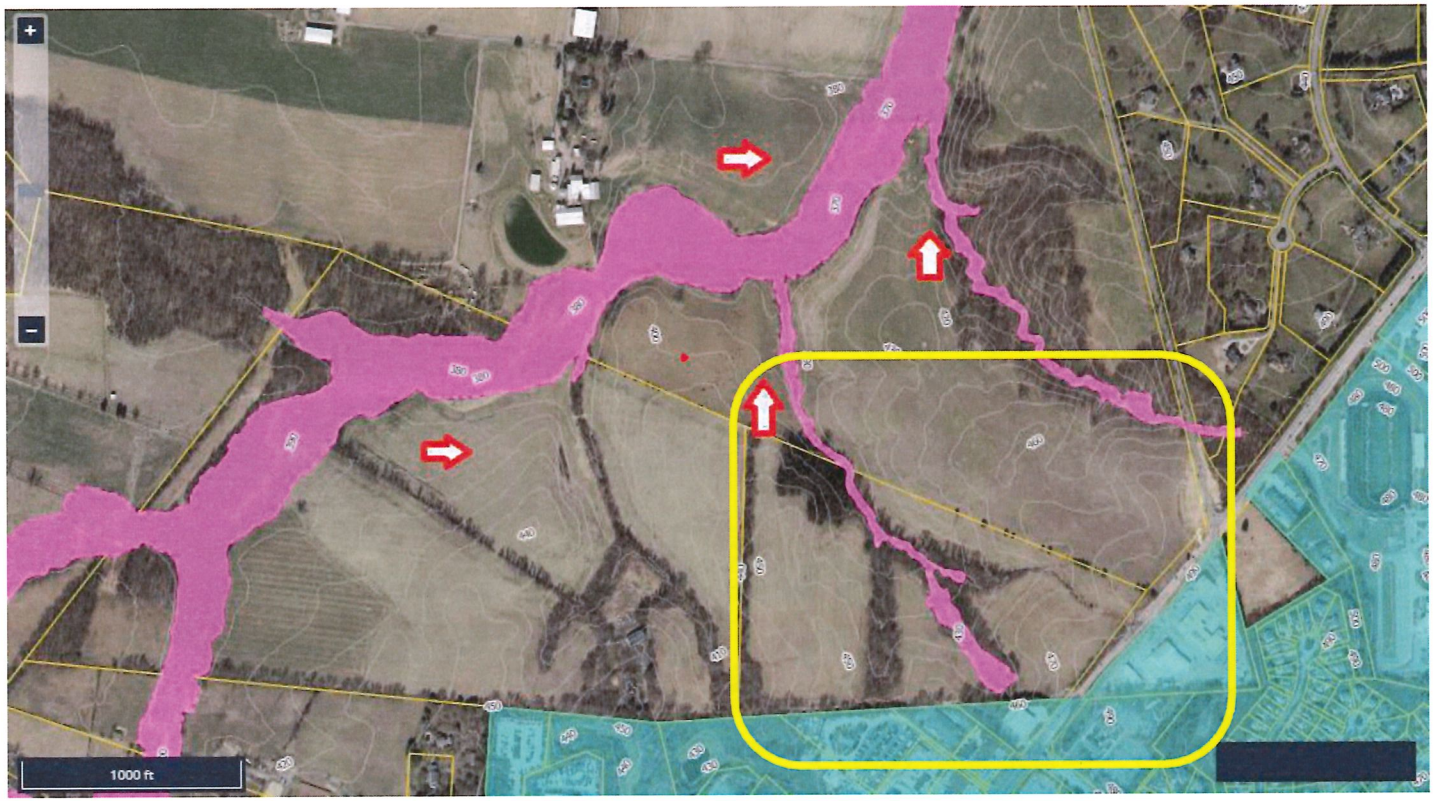


[from Erickson's, Moseley Architect's presentation]

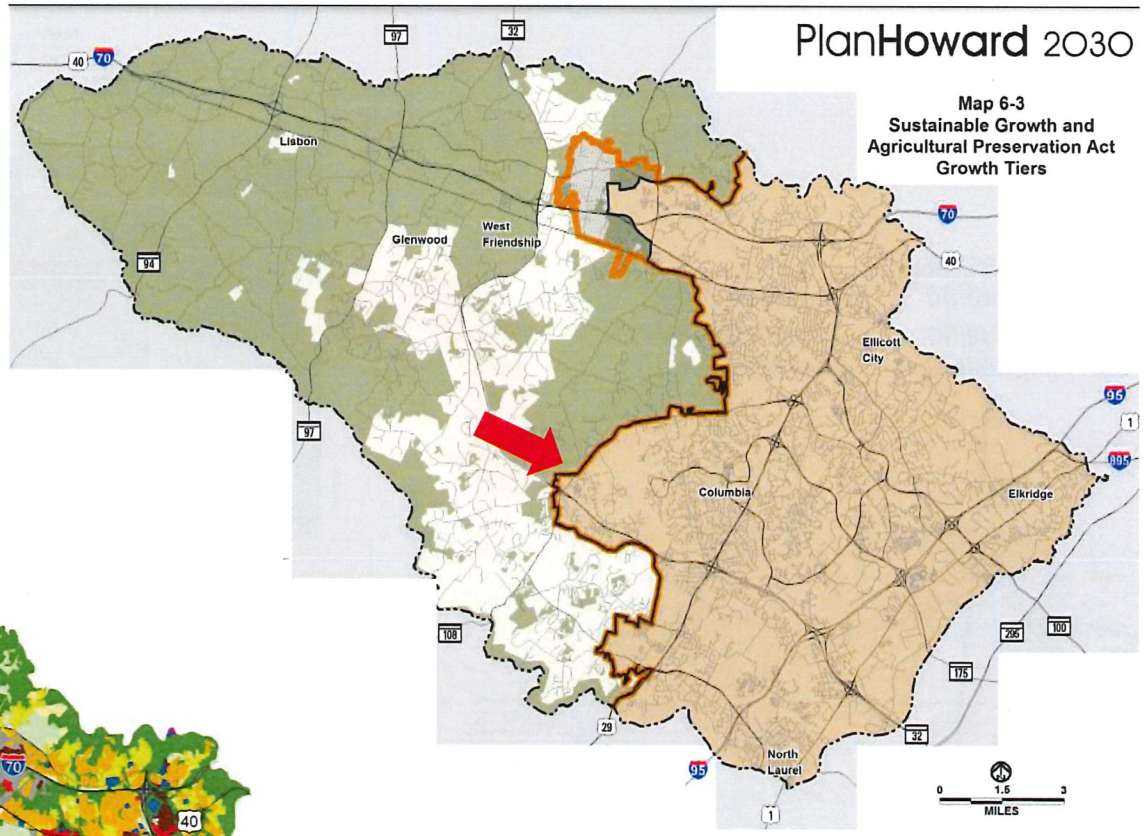
those stream valleys into which the run-off from Erickson's impervious surface will flow are the headwaters of the Middle Patuxent

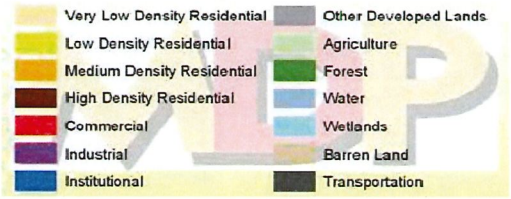
[area shown in yellow box below]

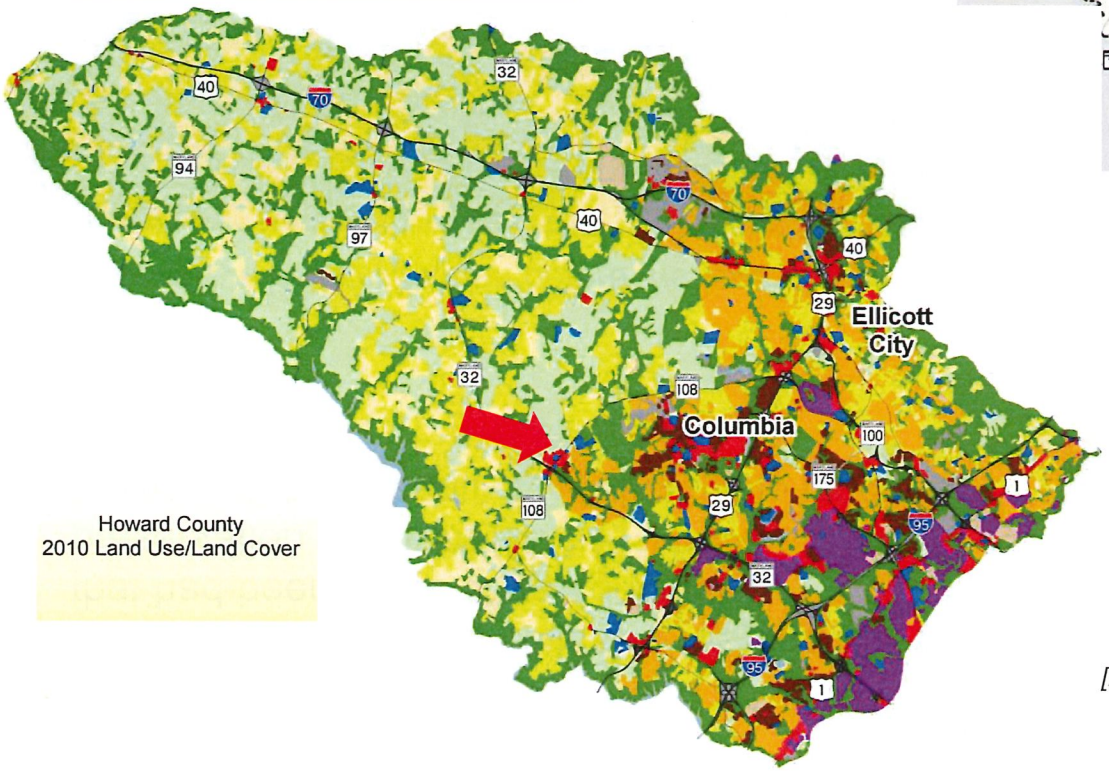
[from Erickson's, Moseley Architect's presentation]



Erickson is right at the boundary between supposedly "preserved" properties in tier 4 and the developing (tier 1) land





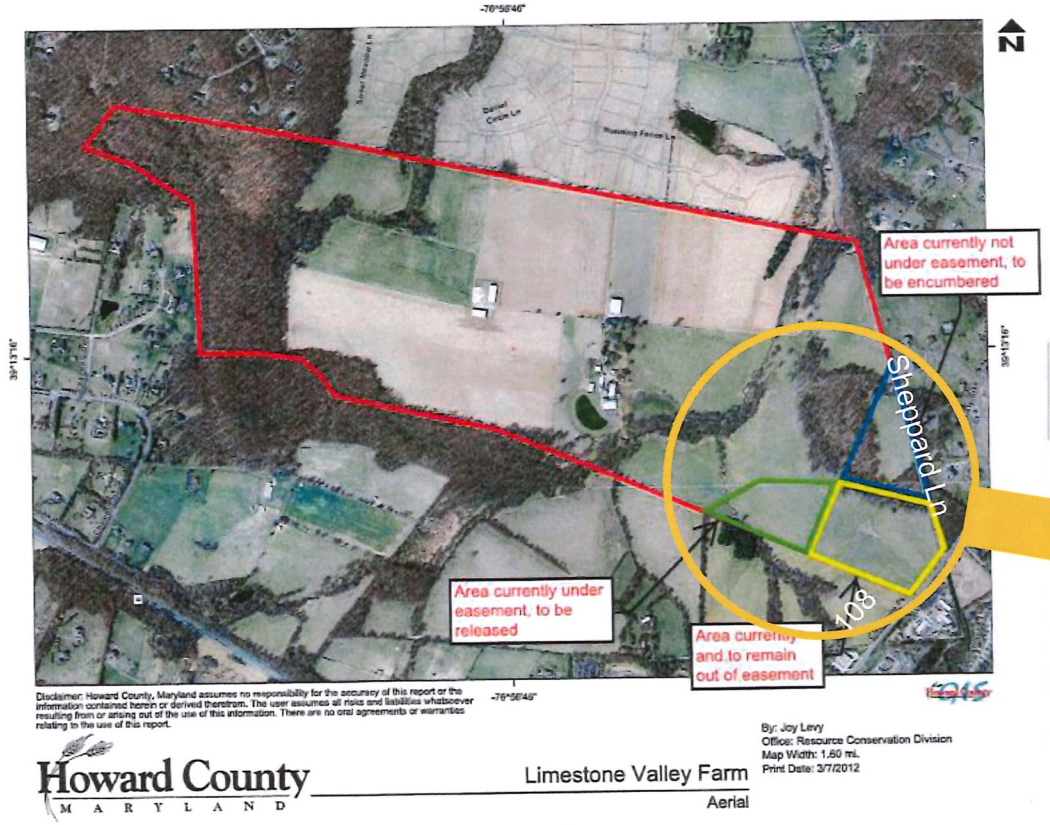


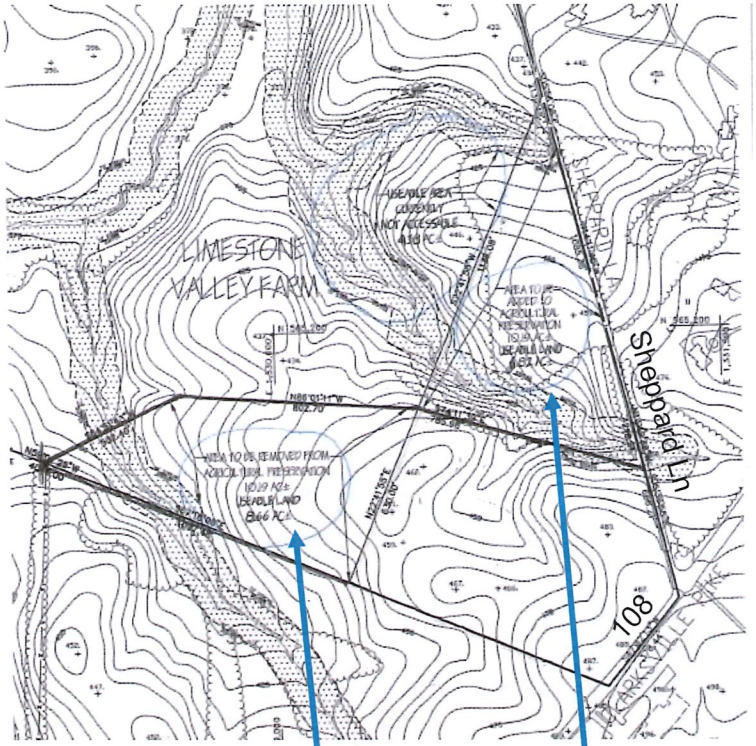
Howard County
2010 Land Use/Land Cover

[both from PlanHoward 2030]

Erickson, in fact, uses buildable Ag land that had been in the state agricultural preservation program (MALPF) but was "swapped" for essentially un-buildable land

[labeling refers to situation before the land swap]



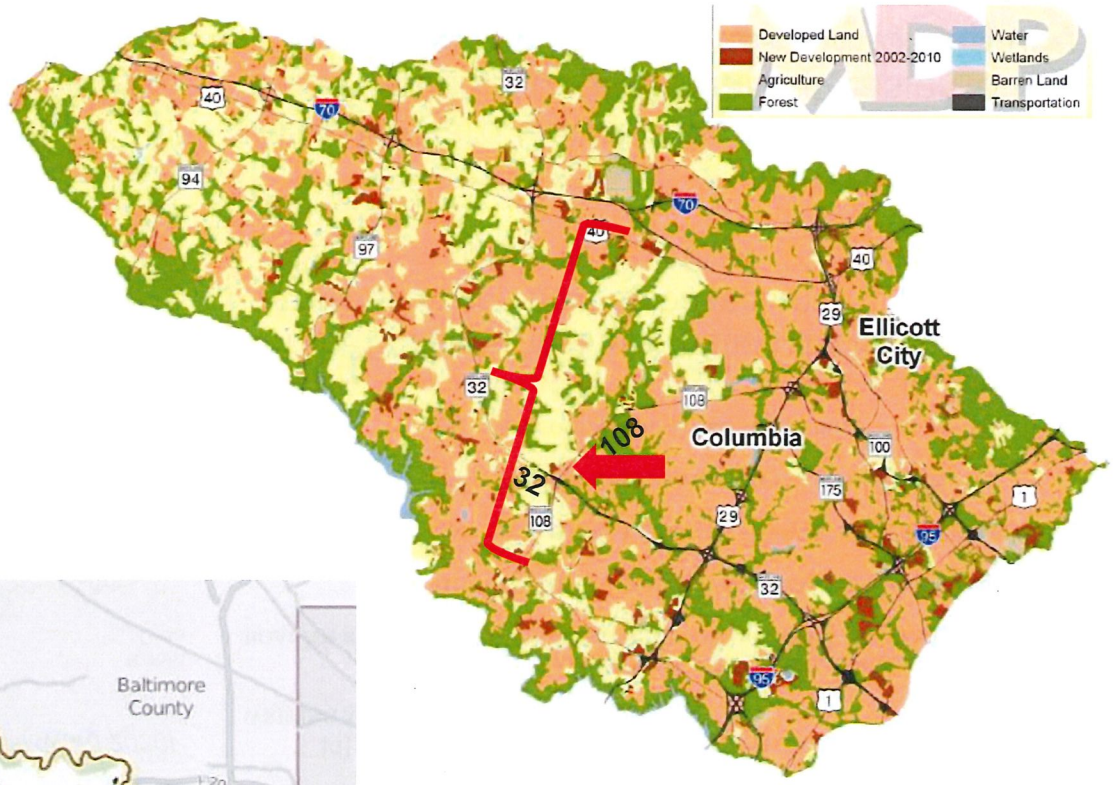


[buildable land removed from Ag preserve]

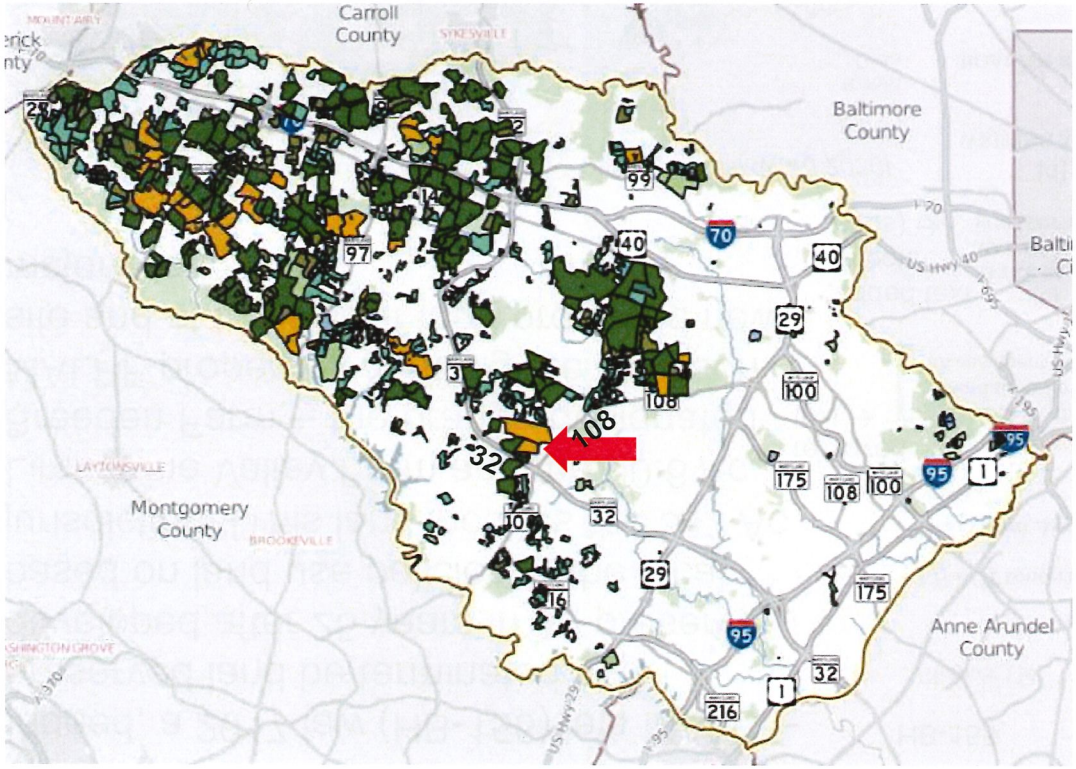
[essentially un-buildable land added to Ag preserve]

[both from a 3/8/12 staff report by Joy Levy (Howard County Agricultural Preservation Program) on Limestone Valley Farm's proposed land swap]

Is this an entrance to future development in what is shown as the Ag and forest greenway/Ag preserve (shown by the red bracket)?



the two kinds of Ag preservation:
green – county Ag preserve
orange – state Ag preserve ("MALPF")



Much of the "preserved land" in this general area is owned by a few major land developers and their associates – suggesting the Ag preserve is being used as "land-banking".

[both from PlanHoward 2030]

Indeed, a 2017 law (HB-155) lets MALPF-preserved land be terminated and developed after 25 years in Ag preserve, based on land use policies of the local jurisdiction! [This land incudes the 342 Ac Limestone Valley Farm and the 90.6 Ac Breeden Farm -- the orange-designated MALPF properties abutting the Erickson site and at the end of their proposed new major road.]

HB-155 LAWRENCE J. HOGAN, JR., Governor Ch. 114

Chapter 114

(House Bill 155)

AN ACT concerning

Maryland Agricultural Land Preservation Foundation – Easement Termination

2–514.

removed text → [[(a) It is the intent of the General Assembly that any easement whose purchase is approved by the Board of Public Works on or before September 30, 2004, be held by the Foundation for as long as profitable farming is feasible on the land under easement, and an easement may be terminated only in the manner and at the time specified in this section.]] ...

added text in bold caps) → (C) (1) EXCEPT AS PROVIDED IN PARAGRAPH (2) OF THIS SUBSECTION, AFTER 25 YEARS FROM THE DATE OF PURCHASE OF AN EASEMENT, A LANDOWNER MAY REQUEST THAT THE EASEMENT BE REVIEWED FOR POSSIBLE TERMINATION, SUBJECT TO THE REQUIREMENTS OF THIS SECTION. . . .

[d] (3) THE DECISION OF THE COUNTY GOVERNING BODY SHALL BE IN WRITING AND MAY BE BASED ON:

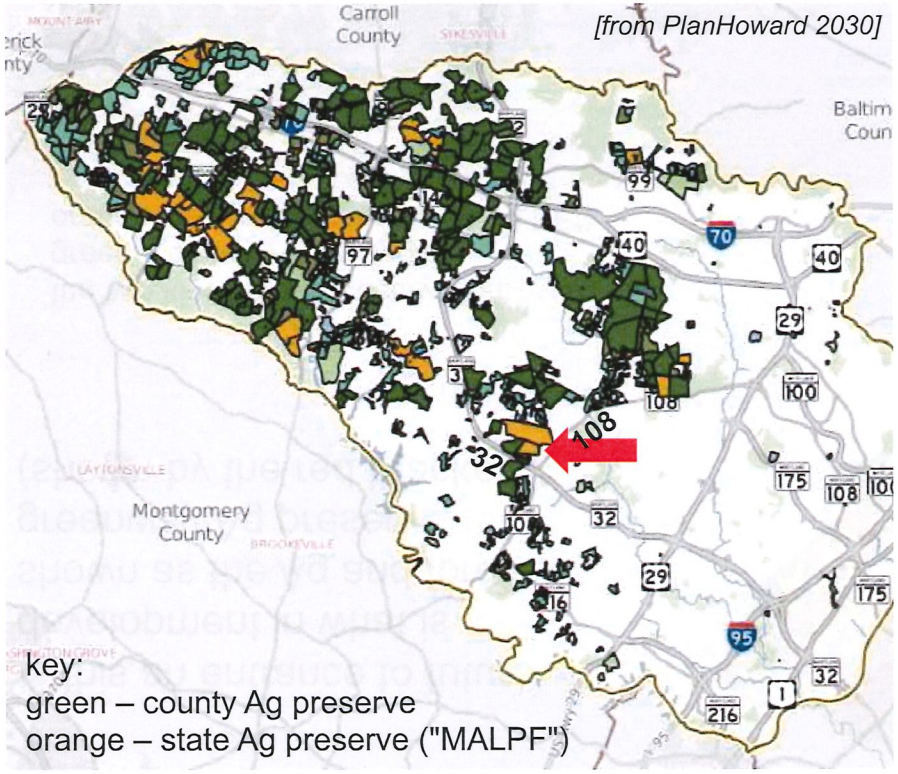
(I) THE COUNTY AGRICULTURAL PRESERVATION ADVISORY BOARD'S RECOMMENDATION TO APPROVE OR DENY THE TERMINATION REQUEST;

(II) LOCAL COMPREHENSIVE PLANNING AND ZONING;

(III) LOCAL PRIORITIES TO PRESERVE AGRICULTURAL LAND;

(IV) LOCAL PATTERNS OF DEVELOPMENT; AND

(V) ANY OTHER LAND USE MATTERS. . . .



[from PlanHoward 2030]

MALPF makes final termination decision; termination can now be based on "the effect of any non-agricultural development adjacent to the land…"

Also, Howard County has changed its easement language to make it easier to use county-preserved properties for non-Ag use

HUB

JOHNS HOPKINS UNIVERSITY

MORE PAVEMENT, MORE PROBLEMS

Study finds that for every percentage point increase in pavement and impervious surfaces, annual floods increase by 3.3%

A new Johns Hopkins study has found that for every percentage point increase of roads, parking lots, and other impervious surfaces, annual floods increase on average by 3.3%. This means that if an undeveloped river basin increases the amount of impervious surfaces from zero to 10%, scientists would expect, on average, a 33% increase in annual flooding.

The study was published today in *Geophysical Research Letters*.

"With recent major floods in heavily urbanized cities like Houston and Ellicott City, Maryland, we wanted to better understand how much urbanization is increasing flood flows," says Annalise Blum, a former postdoctoral fellow in Johns Hopkins University's Department of Earth and Planetary Sciences and the paper's first author. Blum, who received a Howard L. Pim

[summary in Johns Hopkins' HUB]

[original research article]

AGU100 ADVANCING EARTH AND SPACE SCIENCE

Geophysical Research Letters

RESEARCH LETTER
10.1029/2019GL086480

Key Points:

- We estimate that annual floods increase by 3.3%, on average, for each percentage point increase in impervious basin cover
- This is the first study to apply a panel regression design to estimate the causal effect of impervious cover on floods
- Our approach demonstrates how to leverage temporal and spatial variation to isolate a causal effect, separate from other drivers of change

Supporting Information:

- Supporting Information S1

Correspondence to:
A. G. Blum,

Causal Effect of Impervious Cover on Annual Flood Magnitude for the United States

Annalise G. Blum[1], Paul J. Ferraro[2], Stacey A. Archfield[3], and Karen R. Ryberg[4]

[1]Department of Earth and Planetary Sciences, Johns Hopkins University, Baltimore, MD, USA, [2]Department of Environmental Health and Engineering and the Carey Business School, Johns Hopkins University, Baltimore, MD, USA, [3]U.S. Geological Survey, Reston, VA, USA, [4]Dakota Water Science Center, U.S. Geological Survey, Bismarck, ND, USA

Abstract Despite consensus that impervious surfaces increase flooding, the magnitude of the increase remains uncertain. This uncertainty largely stems from the challenge of isolating the effect of changes in impervious cover separate from other factors that also affect flooding. To control for these factors, prior study designs rely on either temporal or spatial variation in impervious cover. We leverage both temporal and spatial variation in a panel data regression design to isolate the effect of impervious cover on floods. With 39 years of data from 280 U.S. streamgages, we estimate that a one percentage point increase in impervious basin cover causes a 3.3% increase in annual flood magnitude (95%CI: 1.9%, 4.7%) on average. Using 2,109 streamgages, some of which have upstream regulation and/or overlapping basins, we estimate a larger effect: 4.6% (CI: 3.5%, 5.6%). The approach introduced here can be extended to estimate the causal effects of other drivers of hydrologic change.