

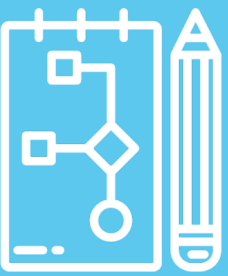
UMD Scenario Planning Workshop

Creswell: Alternative Futures for Preservation and Growth

April 30, 2019

Fiscal Impacts • Environment • Housing & Demographics • Agriculture • Transportation • Land Use • Utilities • Cultural Landscapes





The Study in a Nutshell

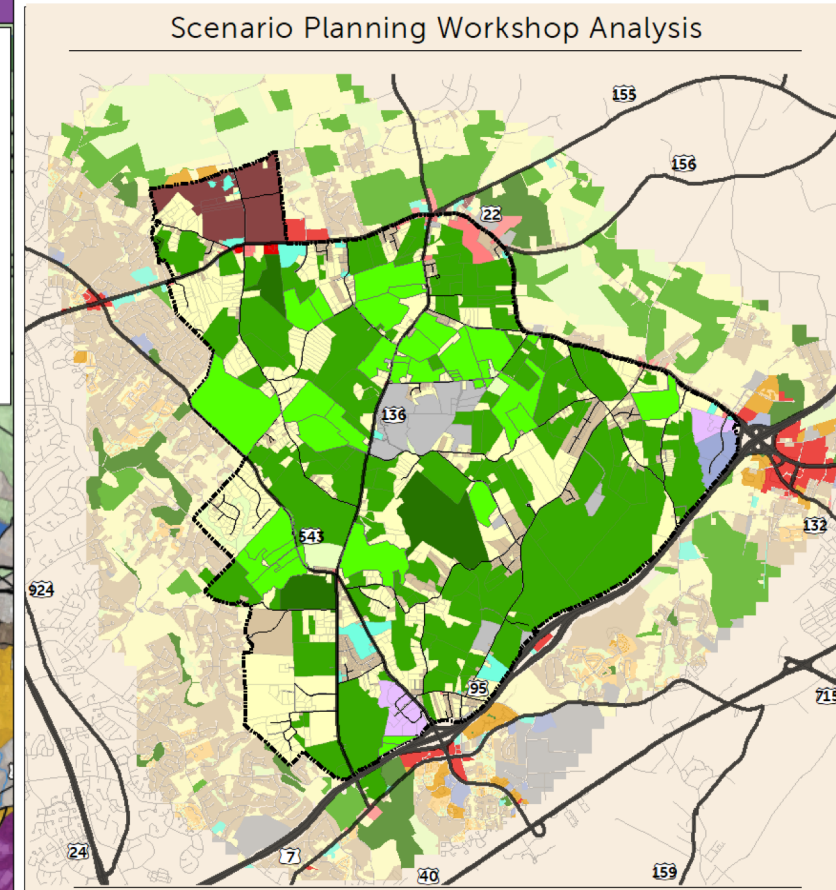
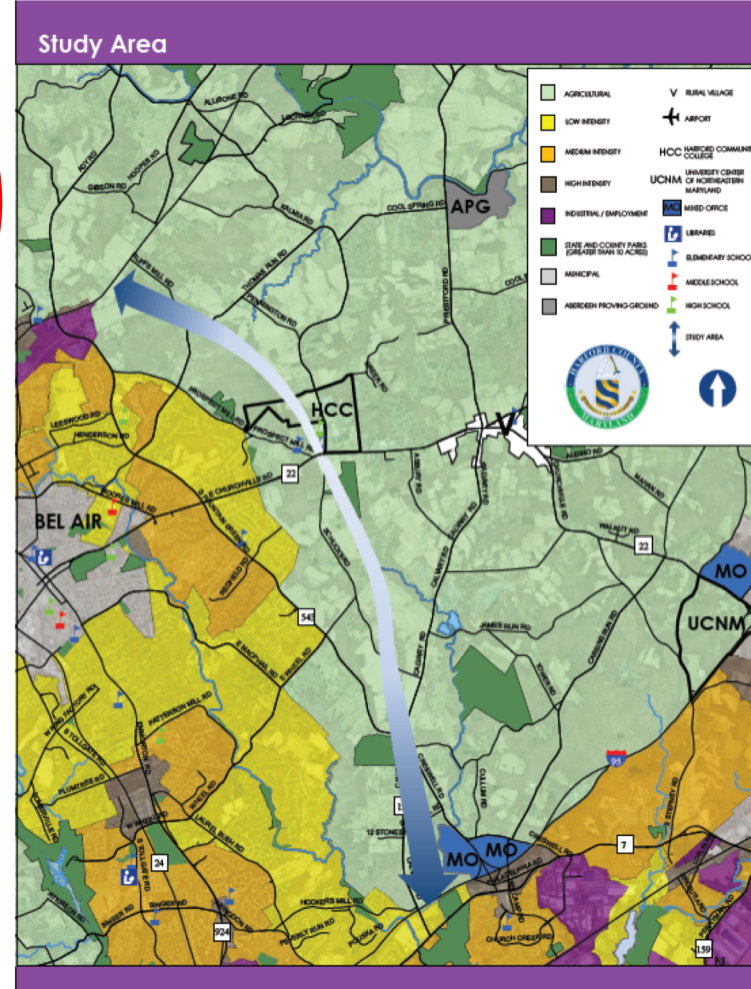
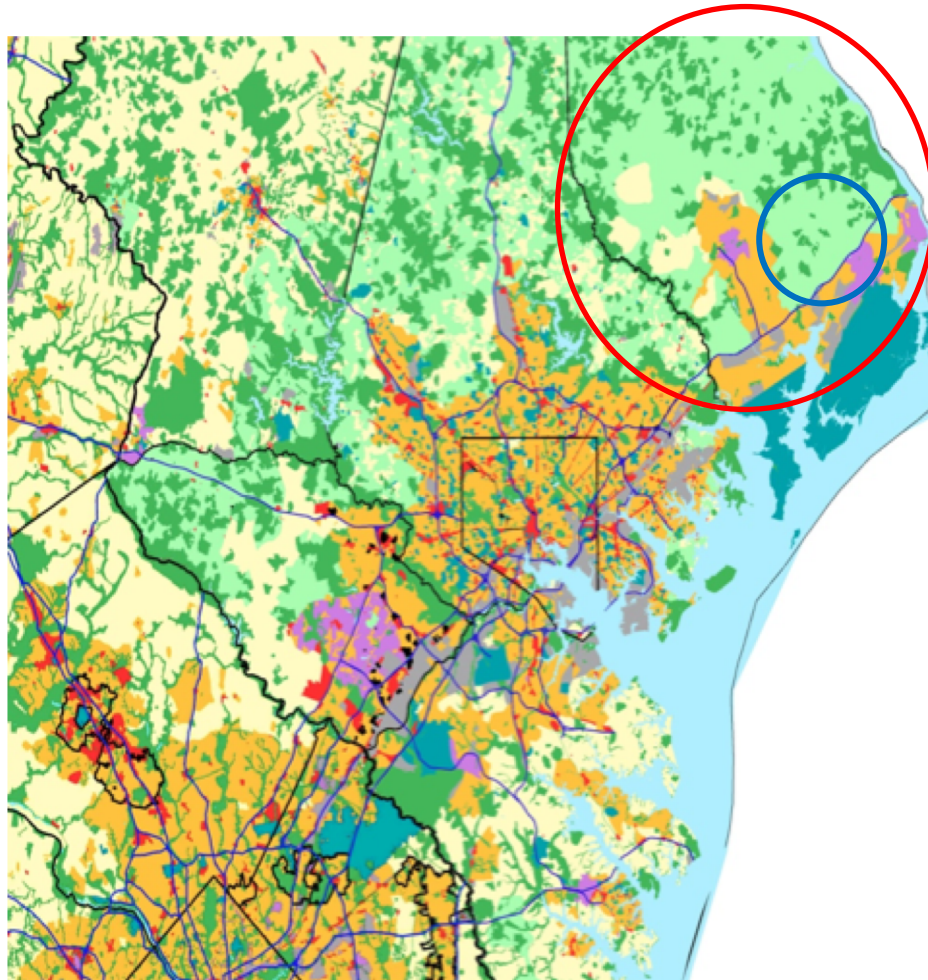
“In order to assess and control the impacts of ongoing growth outside of the Development Envelope, evaluate the integration of already planned or expected development, and evaluate how to serve the current and future needs of residential, business, and institutional uses in the area, the County will initiate a study of the area east of the Development Envelope between US 1 and I-95.”

HarfordNEXT, p.35

Harford Among the Region's Master Plans

Creswell Study Area in the Harford County Master Plan

Creswell's Patchwork of Land uses



Regional, County and Creswell Context

A “no change” future for Creswell is not a “no problem” future

As Development Envelope builds out, housing costs rise, choices diminish

Creswell’s land use patchwork can solve the “grow vs. preserve” riddle

Creswell meets the prerequisites for a successful TDR based-framework

The preservation framework conserves 2/3 to 3/4 of agricultural land

Creswell can profitably manage 10,000 to 16,000 new homes

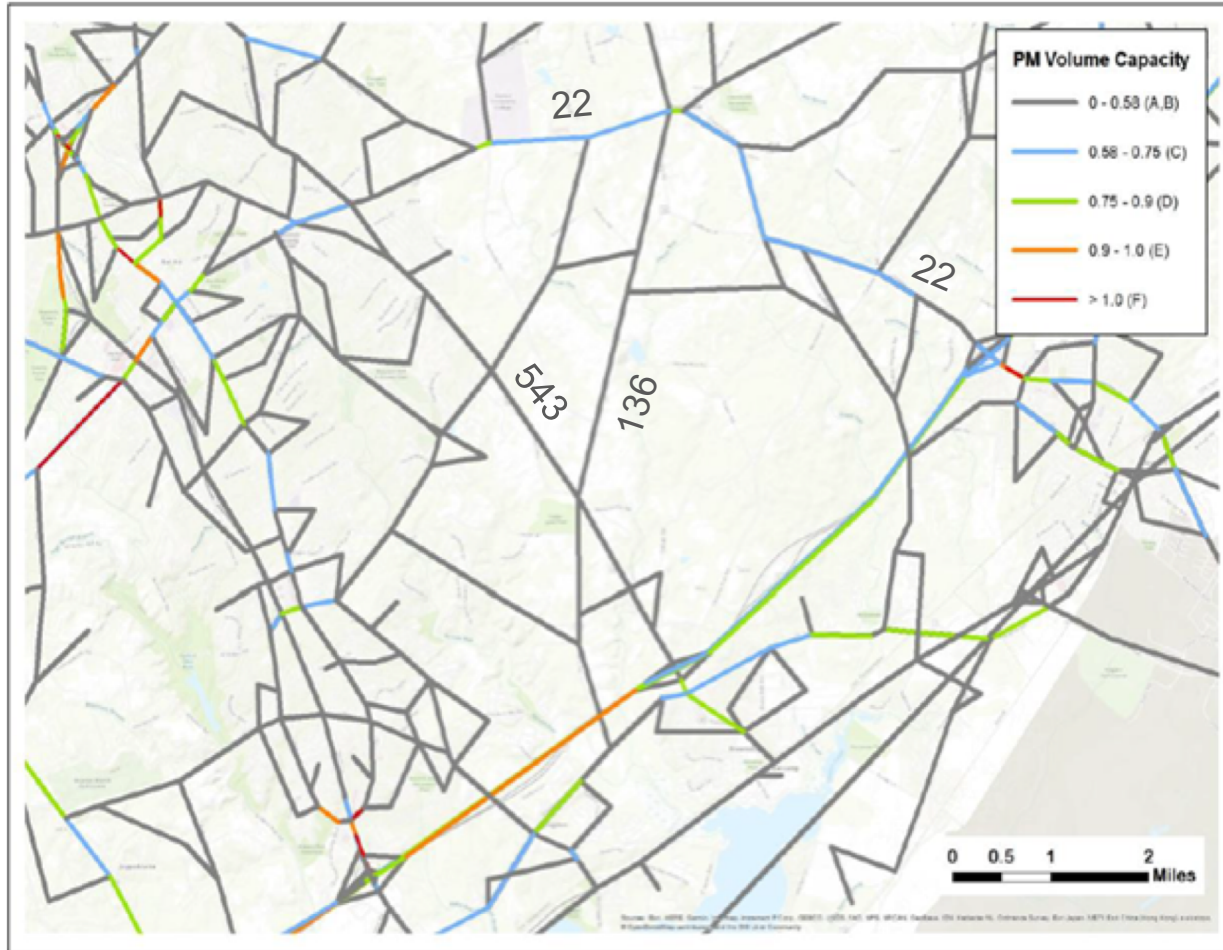
Our Findings in Summary

The Costs of No-Growth

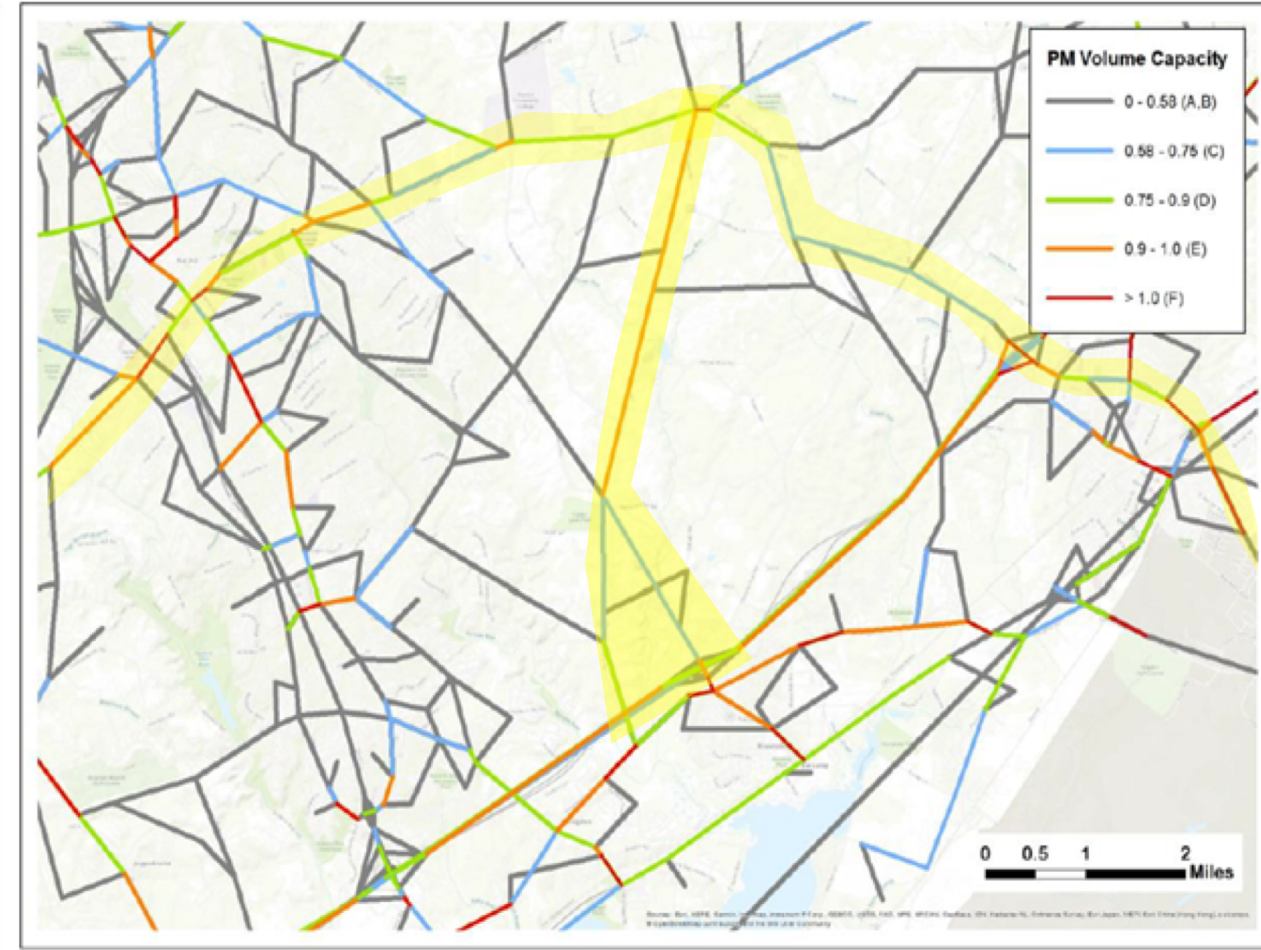


***A ‘no-change’ future for
Creswell is not a ‘no-problem’
future***

Congestion in 2010



Congestion in 2040 - no land use / road change

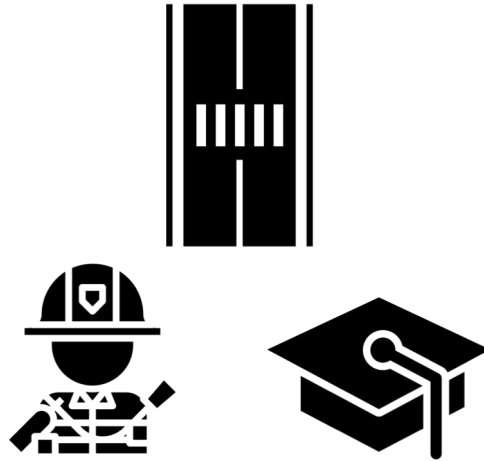


Congestion Worsens Considerably Even with Basic Improvements

Low development potential



Infrastructure still needed



Minimal gains



Total fiscal impact by buildout (2040) is a gain of \$32M

Money left on the table



The impacts for development alternatives that we consider are over 20x this amount

Doing Nothing Sacrifices Economic Growth Given the County's Long-term Spending Needs

Why Grow?

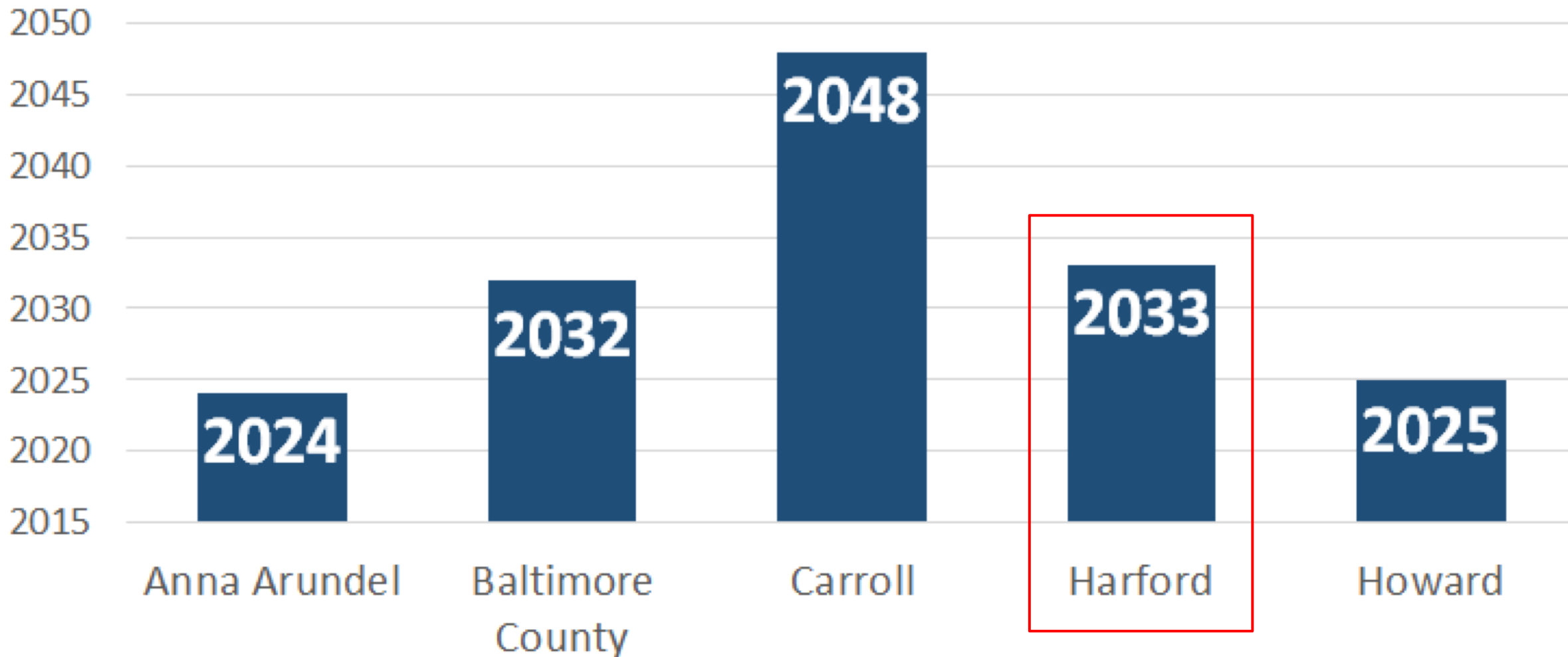


*As Development Envelope
builds out, housing costs rise
and choices diminish*

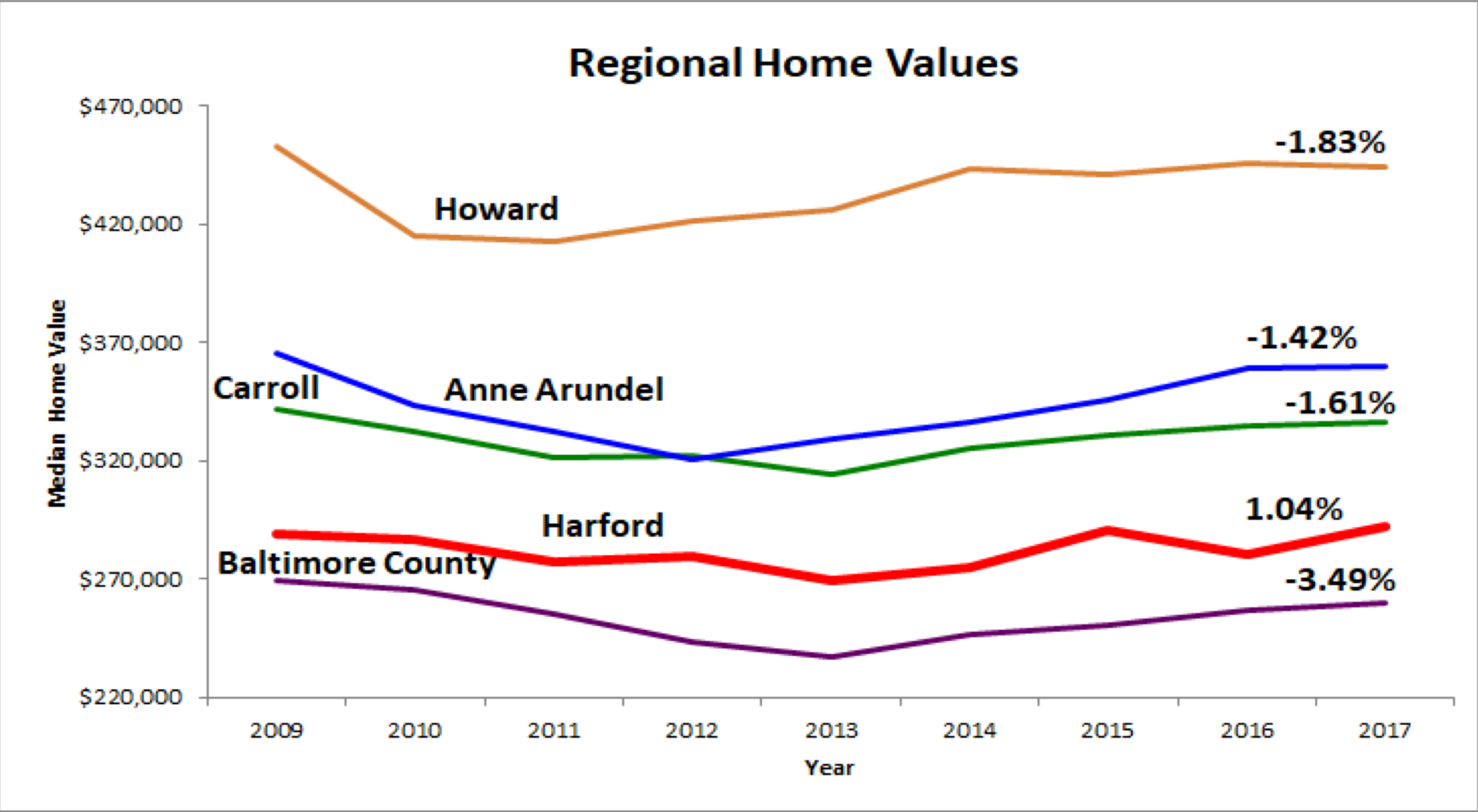


Scenario
Planning
Workshop

Supply will "Run Out" inside Development Envelopes by:

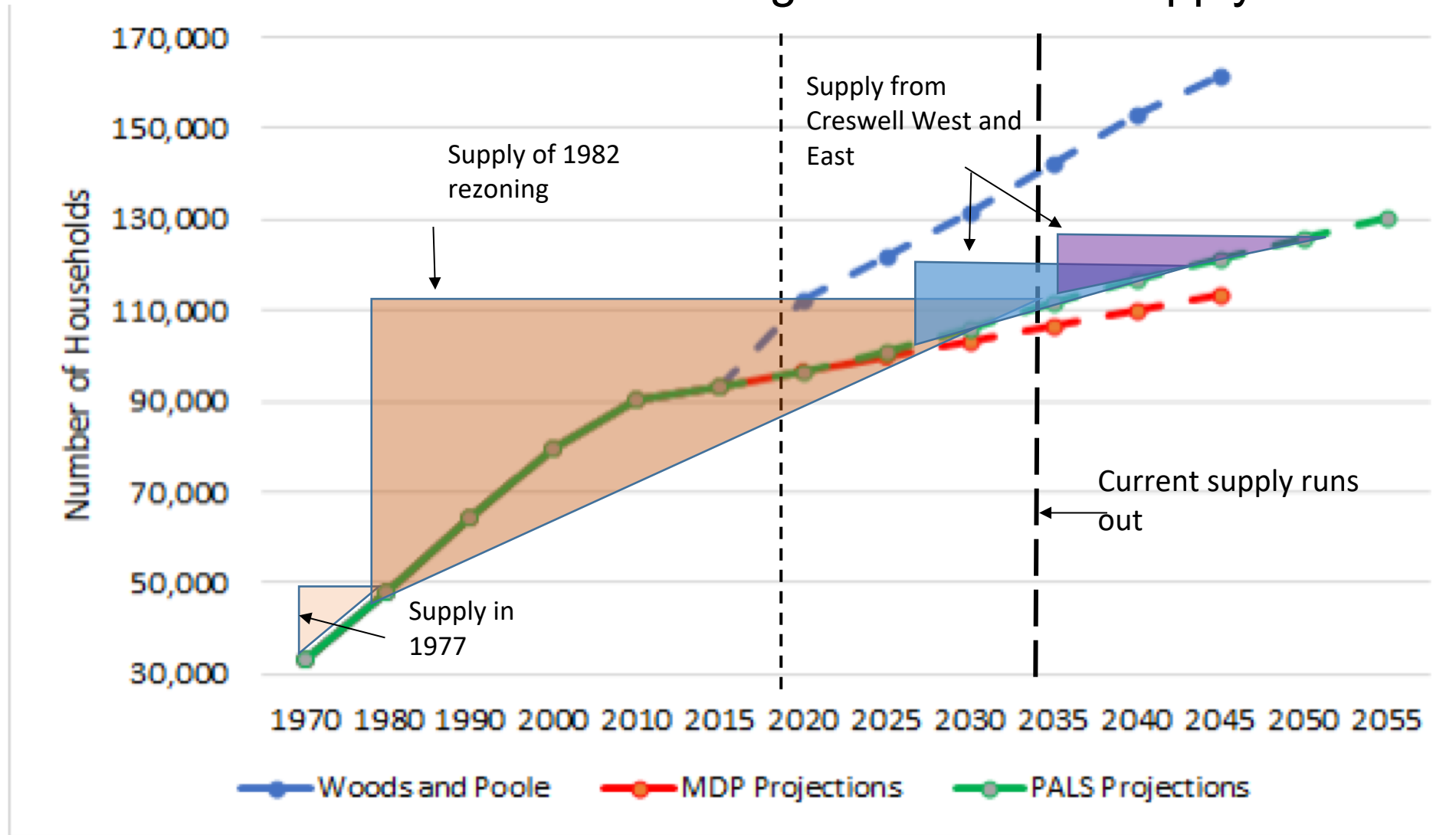


Dwindling regional supply suggests Harford's growth may exceed official projections



Harford's housing costs rising the fastest in the region

Past and Future Housing Demand and Supply



Regional growth shrinkage and Harford's attractiveness = more growth potential

Constraints and Opportunities

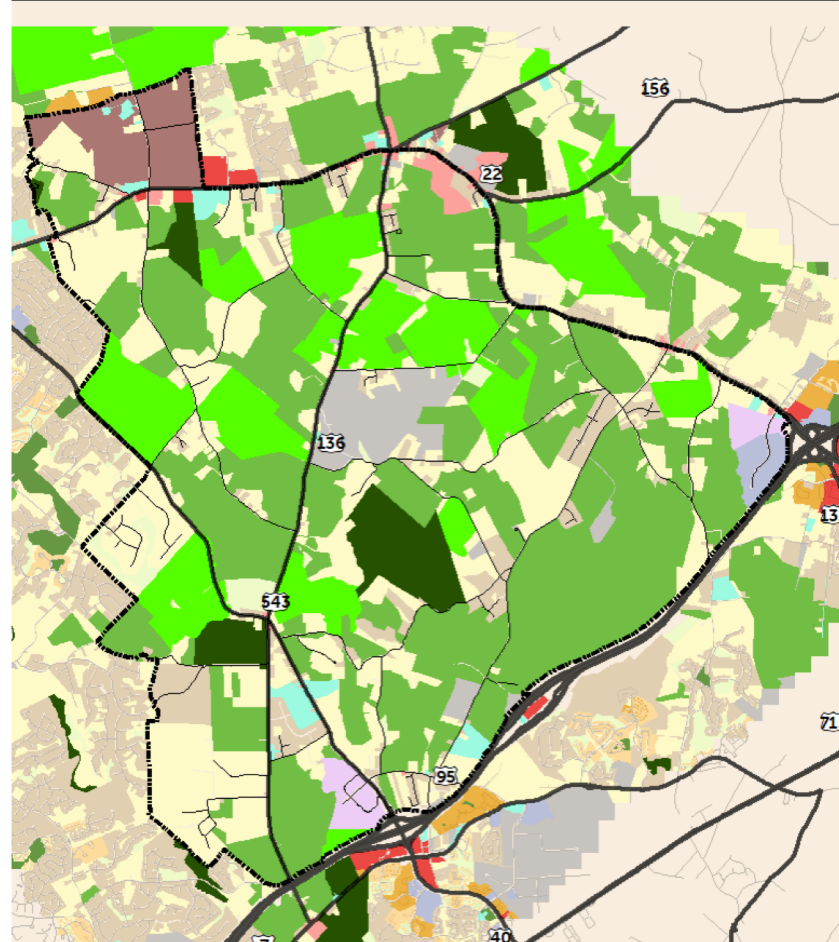


*Creswell's land use patchwork can
solve the growth vs. preservation riddle*

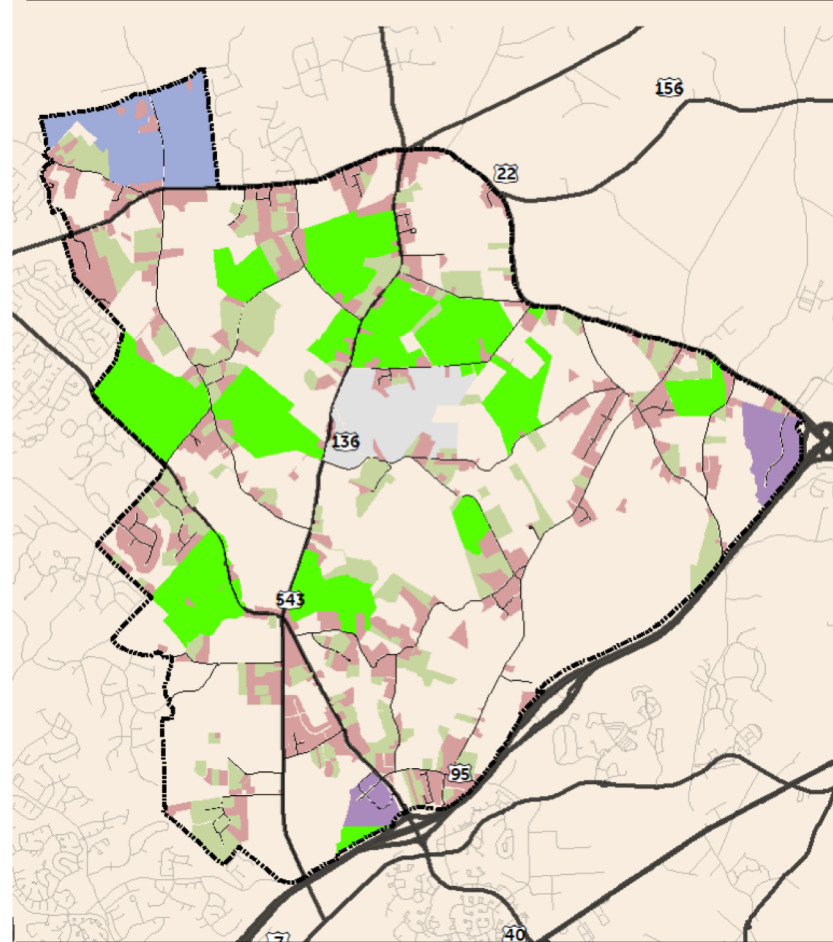


Scenario
Planning
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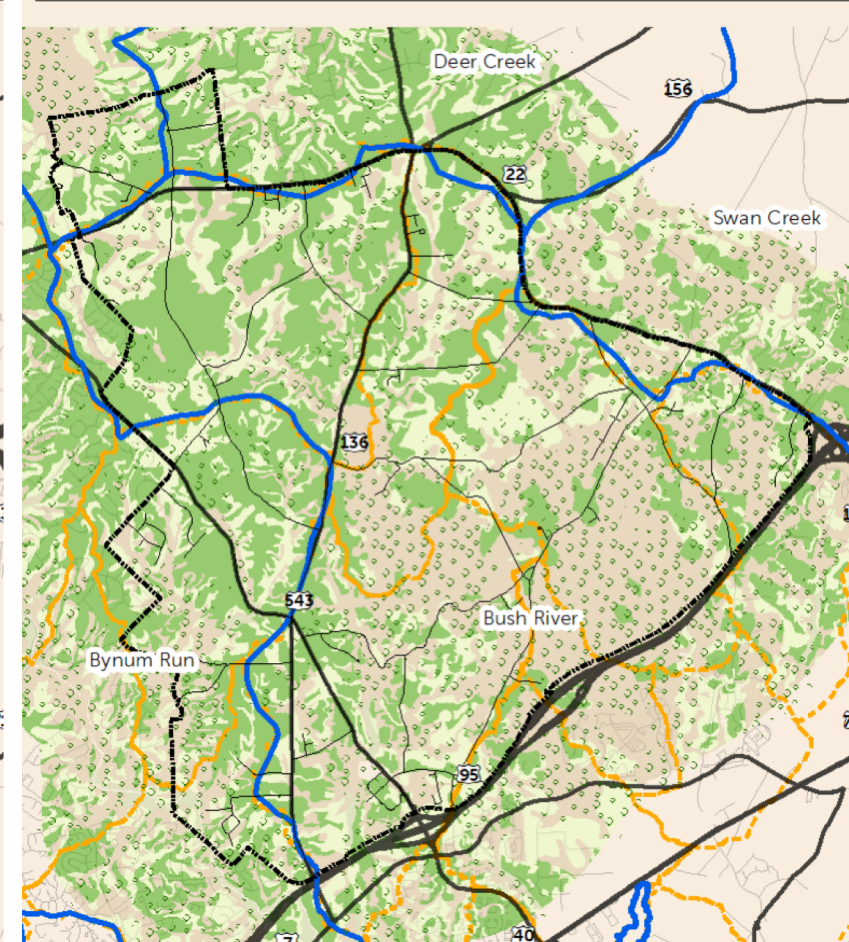
Existing Land Use



Land Use Constraints



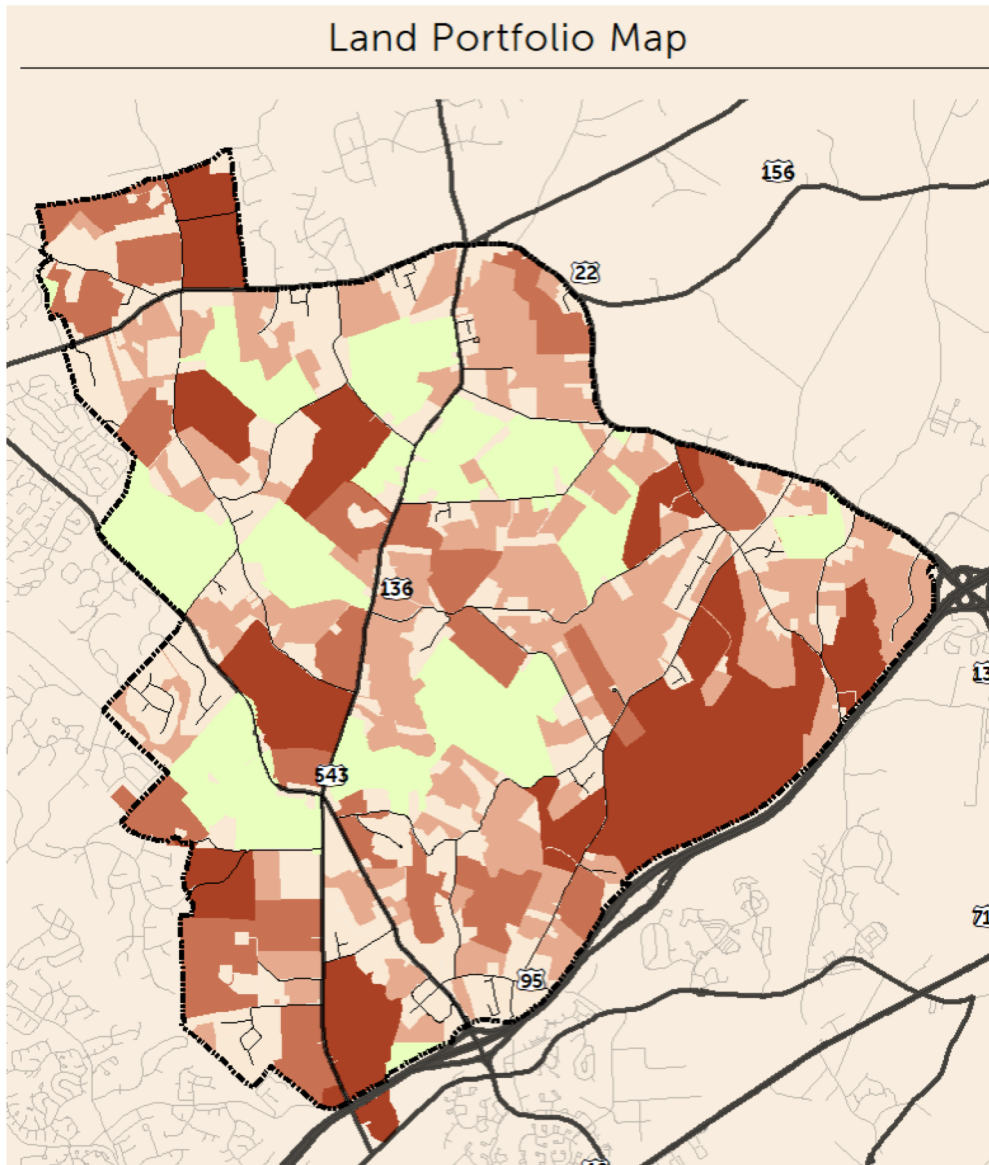
Environmental & Rural Character Constraints



Constraints

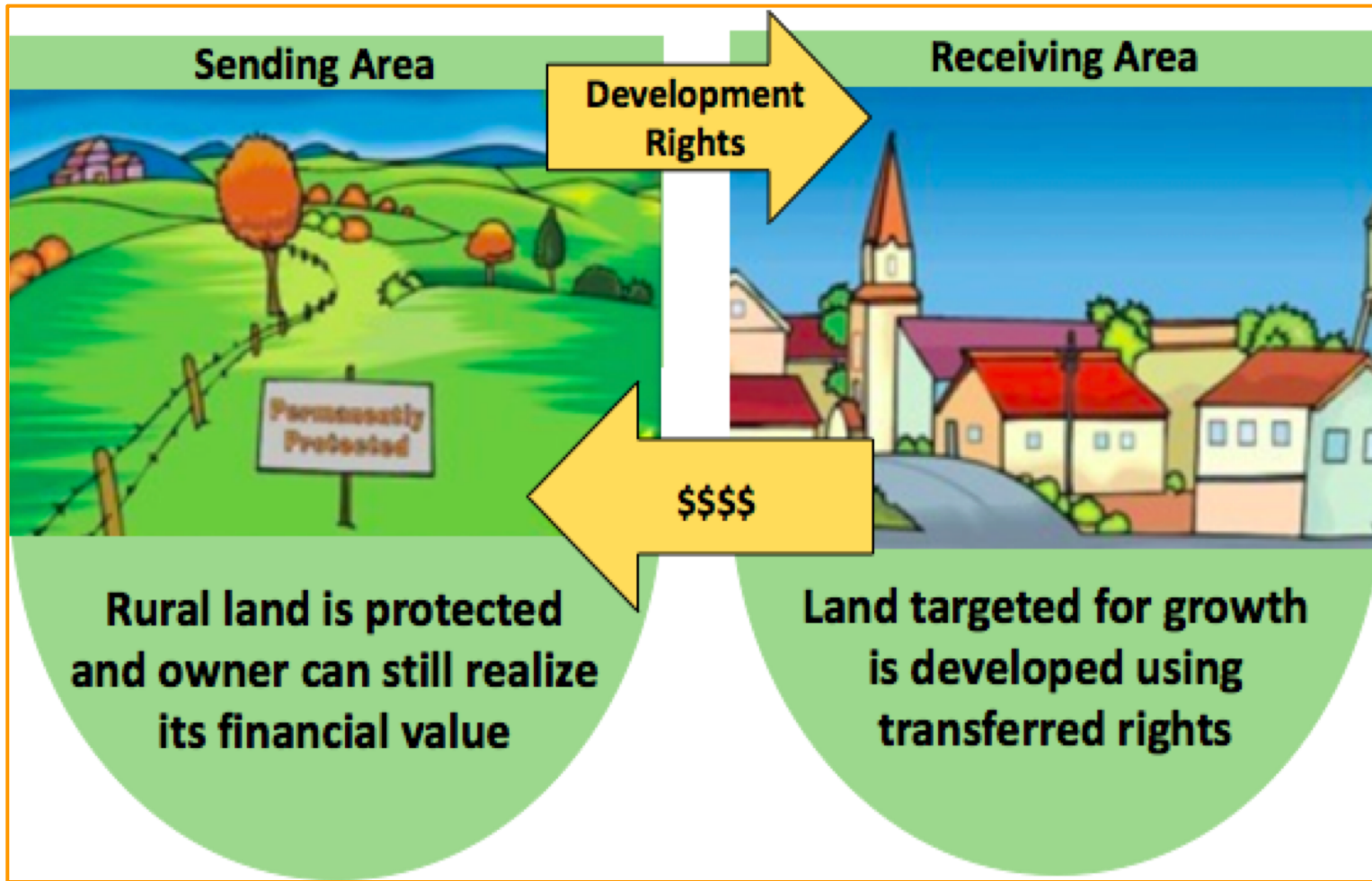
Big Goal: Preserve a stable farmland base, rural character, and environmentally sensitive features, while providing for growth and economic development

Preservation Is at the Core of the Future



- Large parcels best allow integrated planning and environmental conservation
- Large parcels and proliferation of many smaller ones suggest that the Transfer of Development Rights may work here
- It could be a balanced and equitable way of concentrating growth, maintaining farming

Land Portfolio Provides Options



3,000 acres in smaller parcels



Do the numbers work?

2,900 acres in 100+ parcels

Transfer of Development Rights in Concept

Are the sending area regulations strict?

Yes, base density remains at 1 DU/10 acres; rights can be sent at 4 DU/acre.

Are receiving areas customized to fit local conditions?

Yes, demand capacity is set at 2x supply to ensure viable market for rights.

Do market incentives benefit landowners and developers?

Yes, sending rights double in density as receiving rights.

Is there demand for bonus density?

Yes, the housing market is strong and will grow.

Are there few alternatives to TDR for bonus density?

TDR is the only way to increase development in receiving areas

Is there strong public support for preservation?

Clearly, plus the farming community has expressed keen interest in TDR

Source: Rick Pruetz. *What Makes TDR Work?* JAPA (2009).

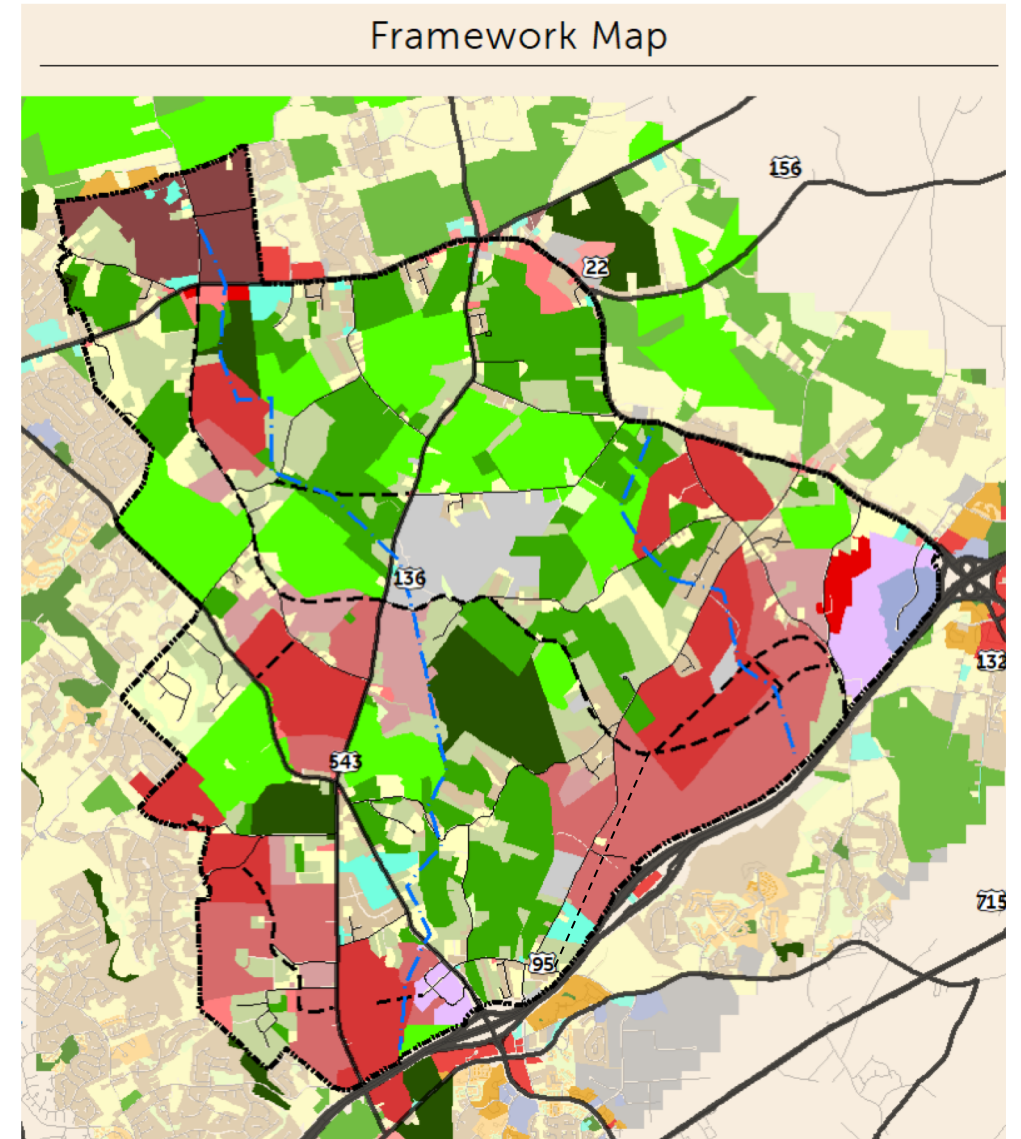
TDR's Proven Success Factors All Apply

Preservation Core

Farmland Base
Rural Character
Environmental Features

Growth in the Wings

10K to 16K New Homes
New Overlay Zone
James Run Sewer to HCC
Grays Run Sewer
Road Improvements



A Framework for Conservation and Growth

Preservation Framework

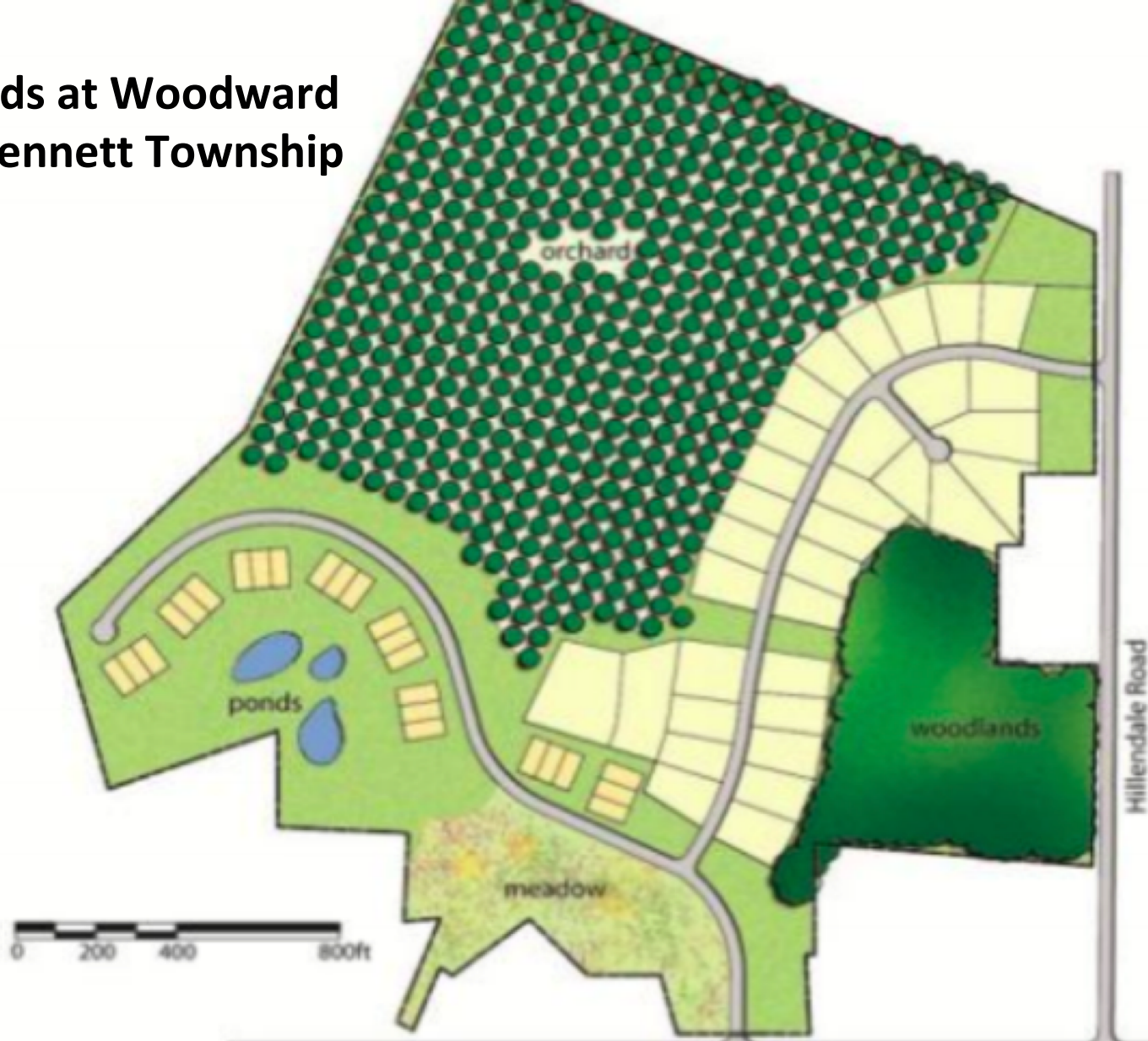


The framework preserves $\frac{2}{3}$ to $\frac{3}{4}$ of the agricultural land in Creswell



Scenario
Planning
Workshop

Ponds at Woodward in Kennett Township










Open Space Development

The Impacts of Growth

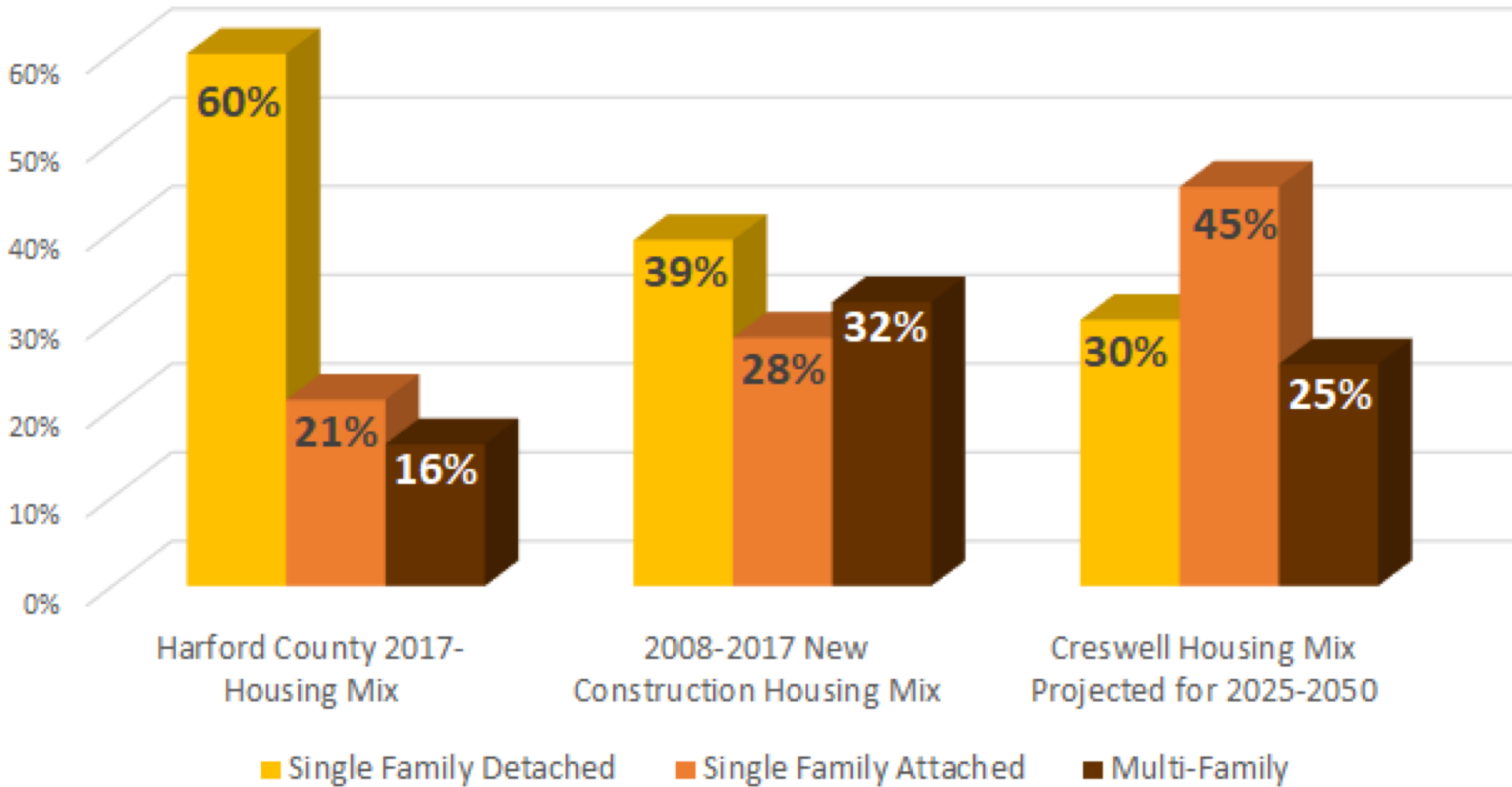


***Creswell can profitably manage
10,000 to 16,000 new homes***

Goals	10,000 Homes	16,000 Homes
Conserve Farming 	77% of agricultural land preserved	67% of agricultural land preserved
Protect the Environment 	74% of forest preserved 1,139 Acres of Impervious Surface Added	65% of forest preserved 1,484 Acres of Impervious Surface Added
Preserve Rural Character 	15% of key Rural Character Acres Impacted	34% of key Rural Character Acres Impacted
Minimize Traffic Impacts 	<i>*Model running</i>	1% difference in congested roadways
Maintain Adequate Infrastructure 	2.6 MGD Water demand 2.2 MGD Sewer demand 5 New Schools +117 Fire/EMS Staff Needed 130 Acres of Parks Needed	4.1 MGD Water demand 3.3 MGD Sewer demand 7 New Schools +188 Fire/EMS Staff Need 600 Acres of Parks Needed
Additional Housing Provided 	11% increase in countywide housing supply	17% increase in countywide housing supply
Ensure Positive Fiscal Impact 	\$51M annual net gain to County by 2040	\$82M annual net gain to County by 2040

Bottom Line: Impacts Are Manageable

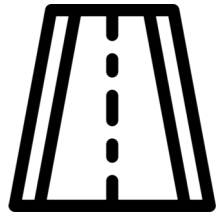
Harford County Housing Mix



Projected Mix Matches Future Need

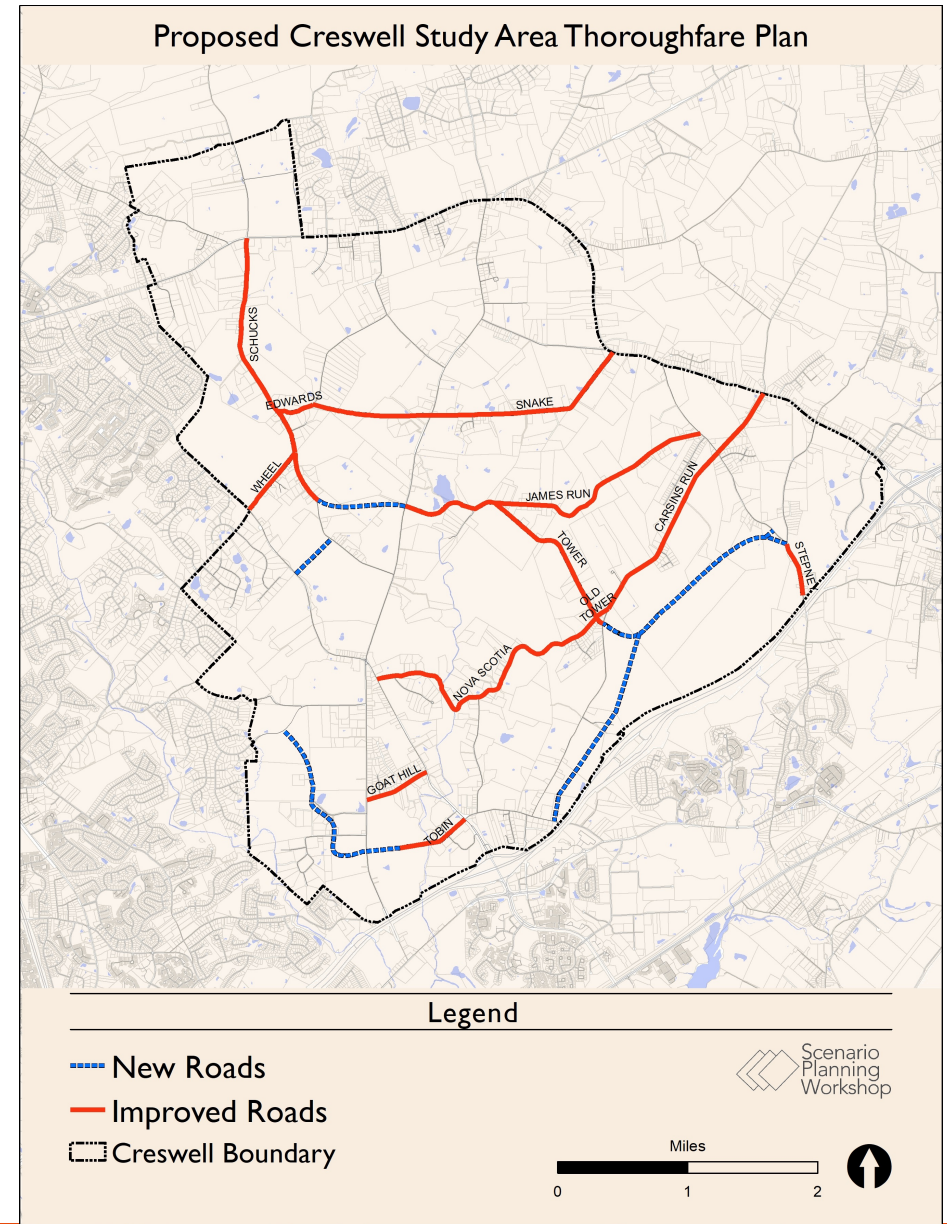
New thoroughfare Plan

- Prioritizes 13 miles of existing roadway
- 6 miles of new roadway
- All improvements costed



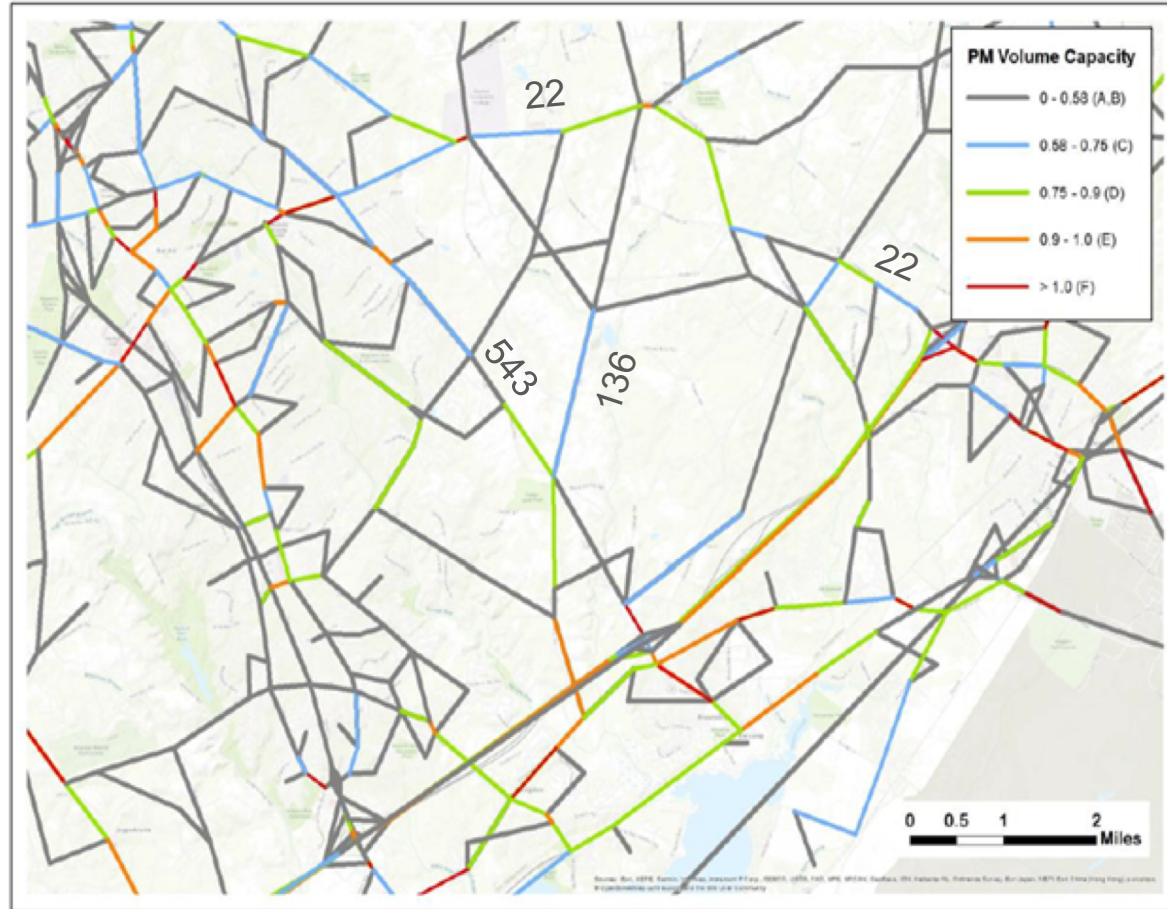
Strengthen Subregulation

- More stringently enforce access controls
- Expand subregulations

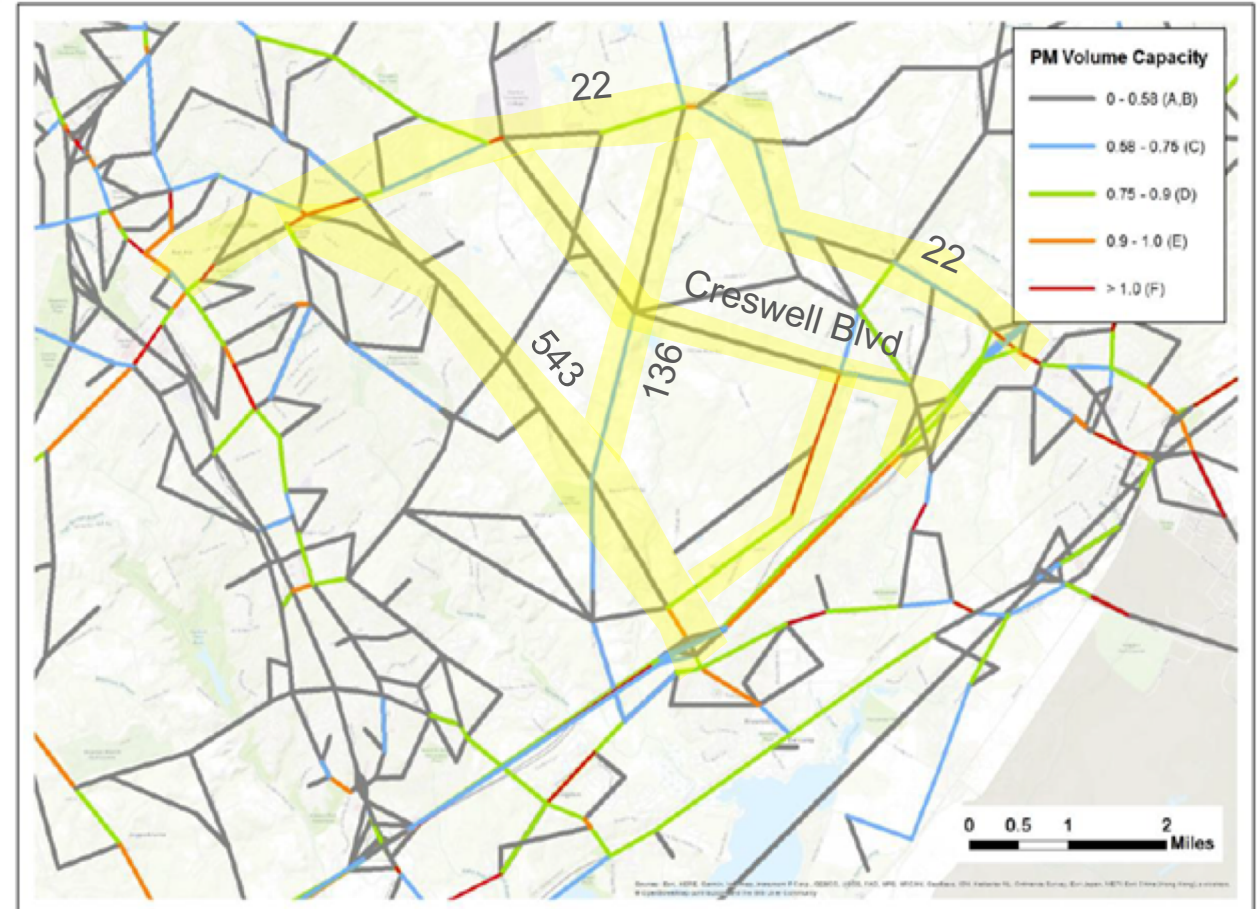


Implementing Transportation Improvements

Congestion in 2040: +16,000 DU, Same Roads

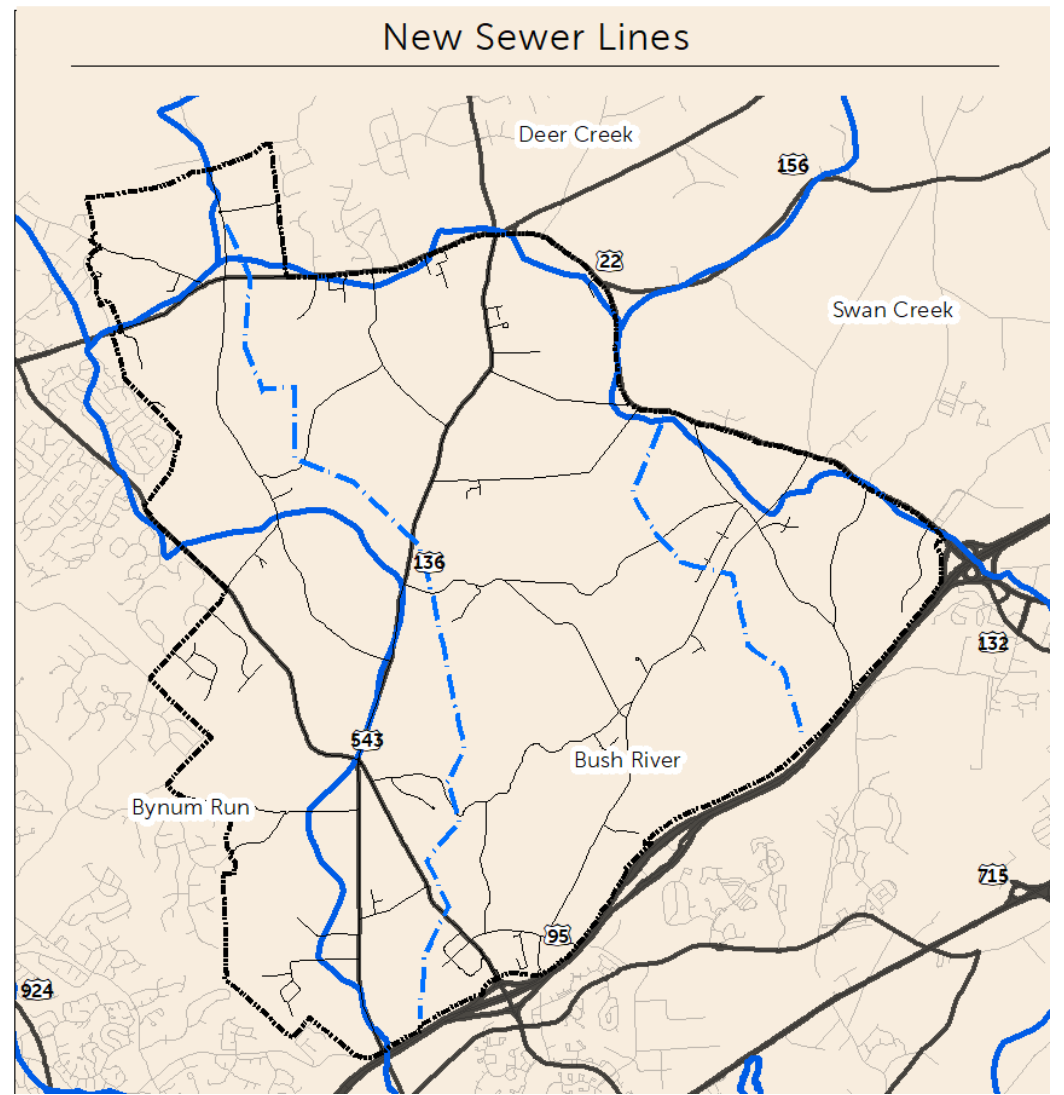
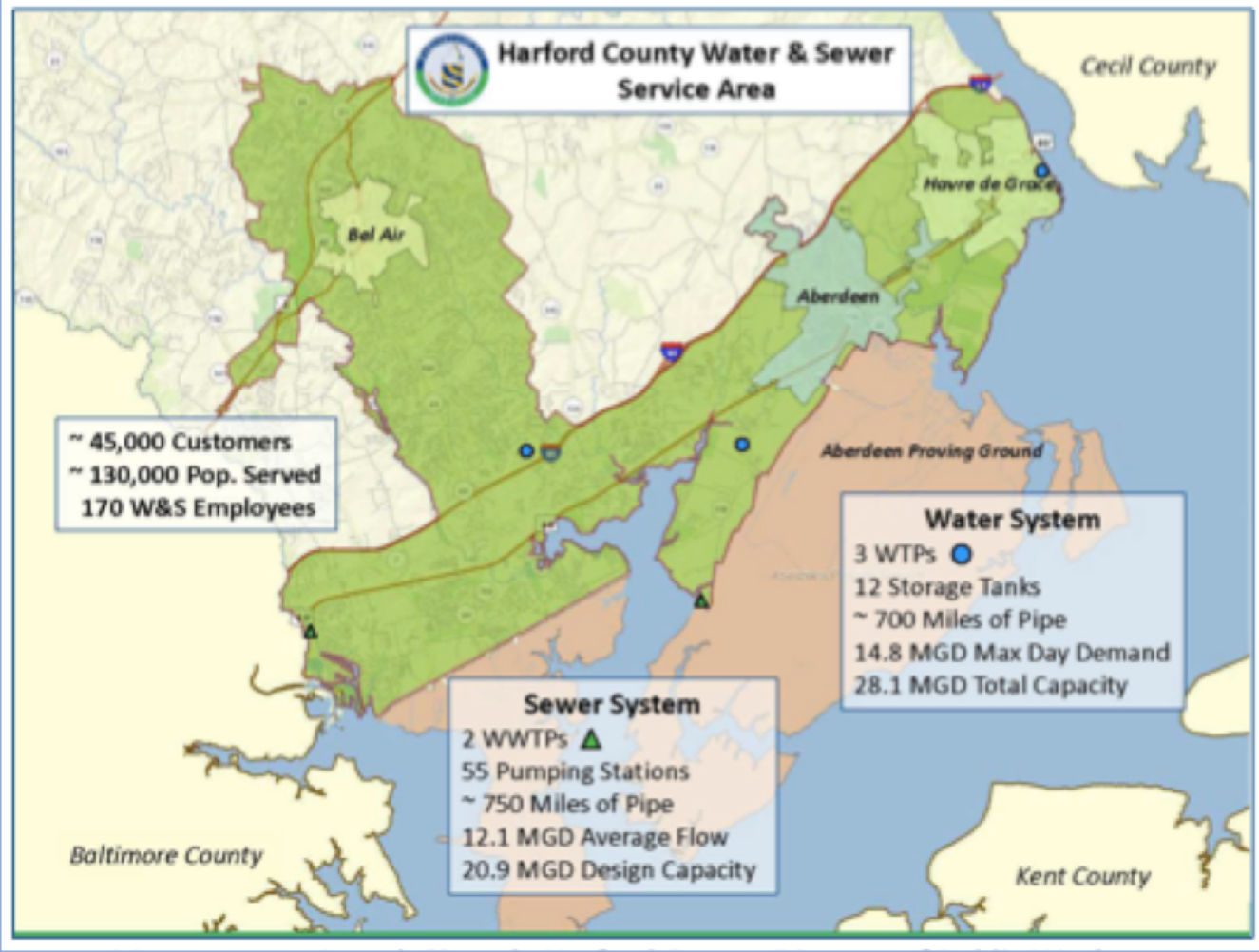


Congestion in 2040: +16,000 DU, Improved Roads

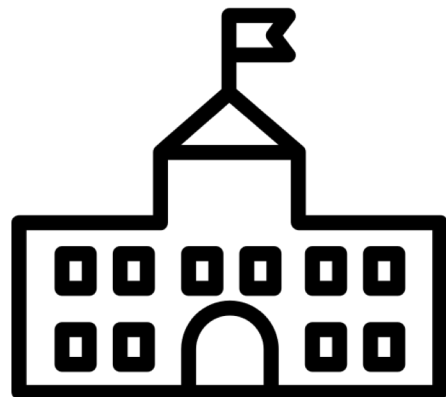


Roadway Improvements Mitigate Trend and New Congestion

CURRENT WATER & WASTEWATER CAPACITY

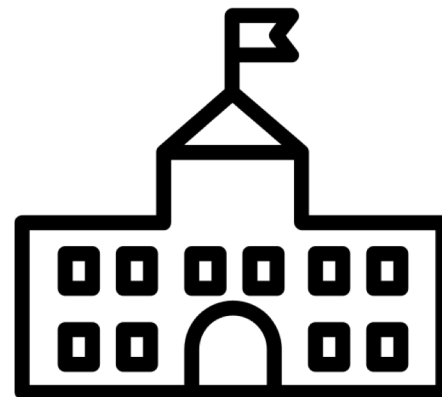
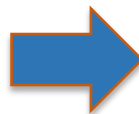


Infrastructure Impacts: Water & Sewer



*at 10,000 new homes,
Harford needs ...*

- +3 elementary schools
- +1 middle school
- +1 high school



*at 16,000 new homes,
Harford needs ...*

- +5 elementary schools
- +1 middle school
- +1 high school

Infrastructure Impacts: Schools

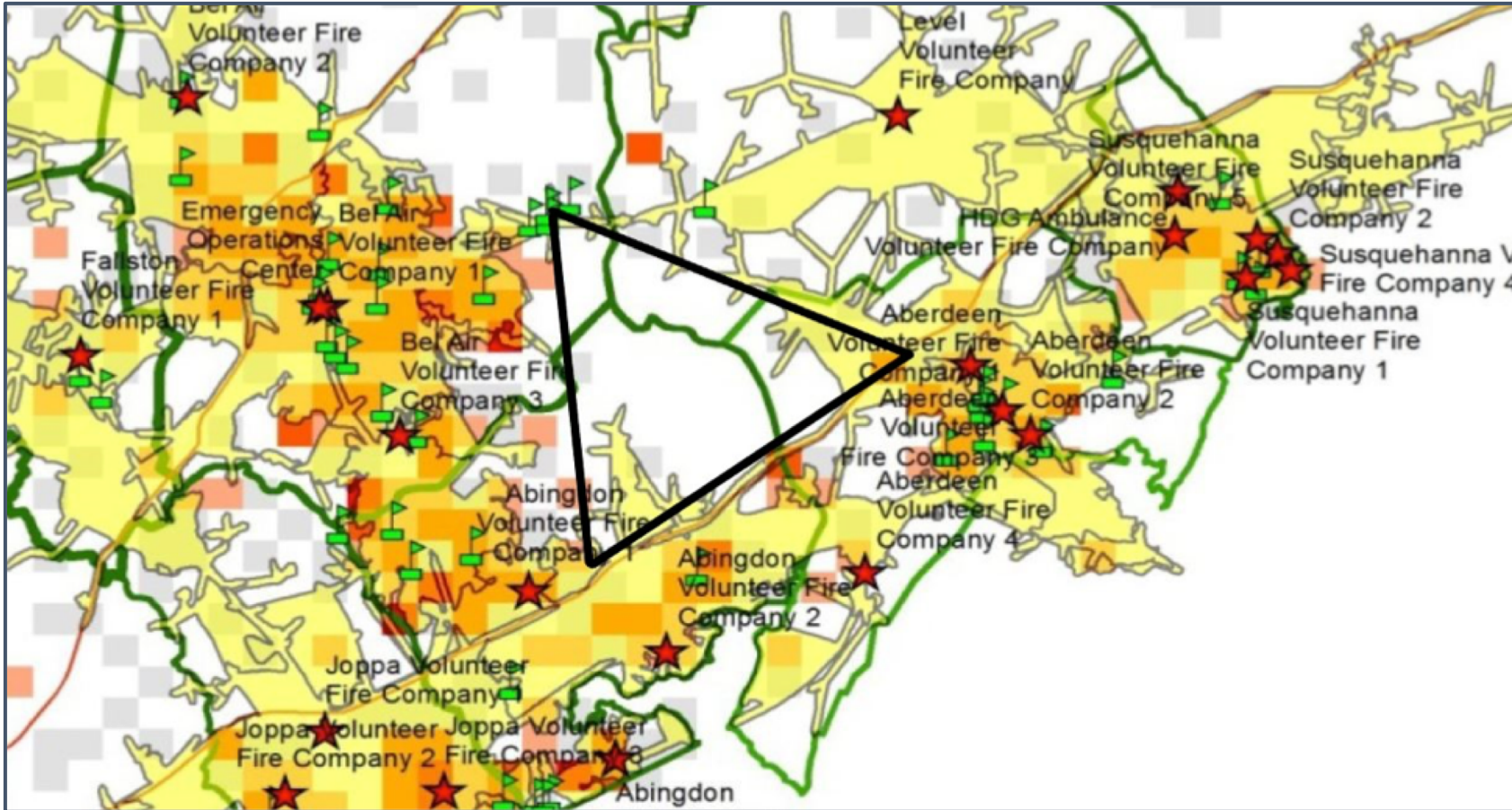
11.7 fire/EMS
staff per 1,000
residents

**10,000 DU
ALTERNATIVE**

+117 fire & EMS staff
+2 low-staffed stations
+1 high-staffed stations

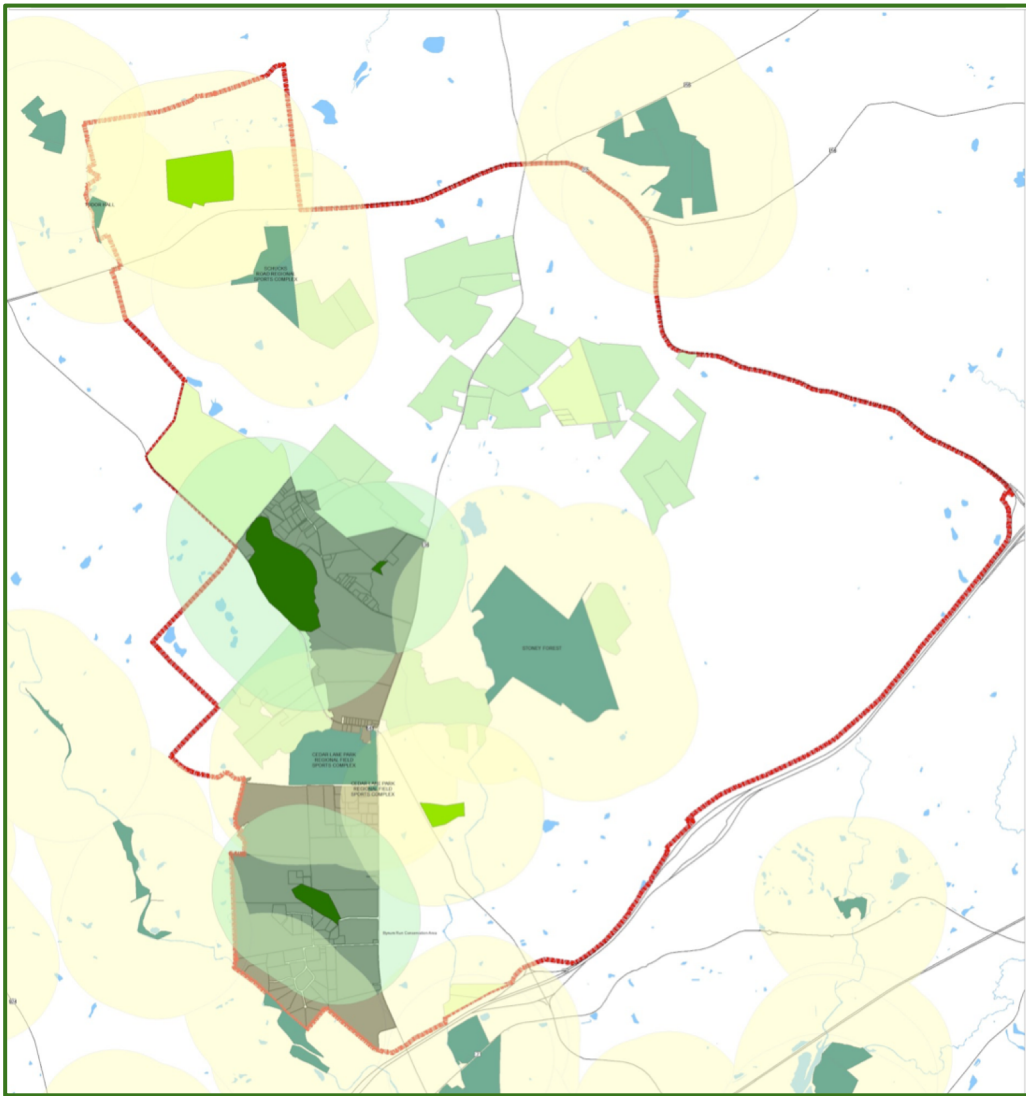
**16,000 DU
ALTERNATIVE**

+188 fire & EMS staff
+2 low-staffed stations
+2 high-staffed stations

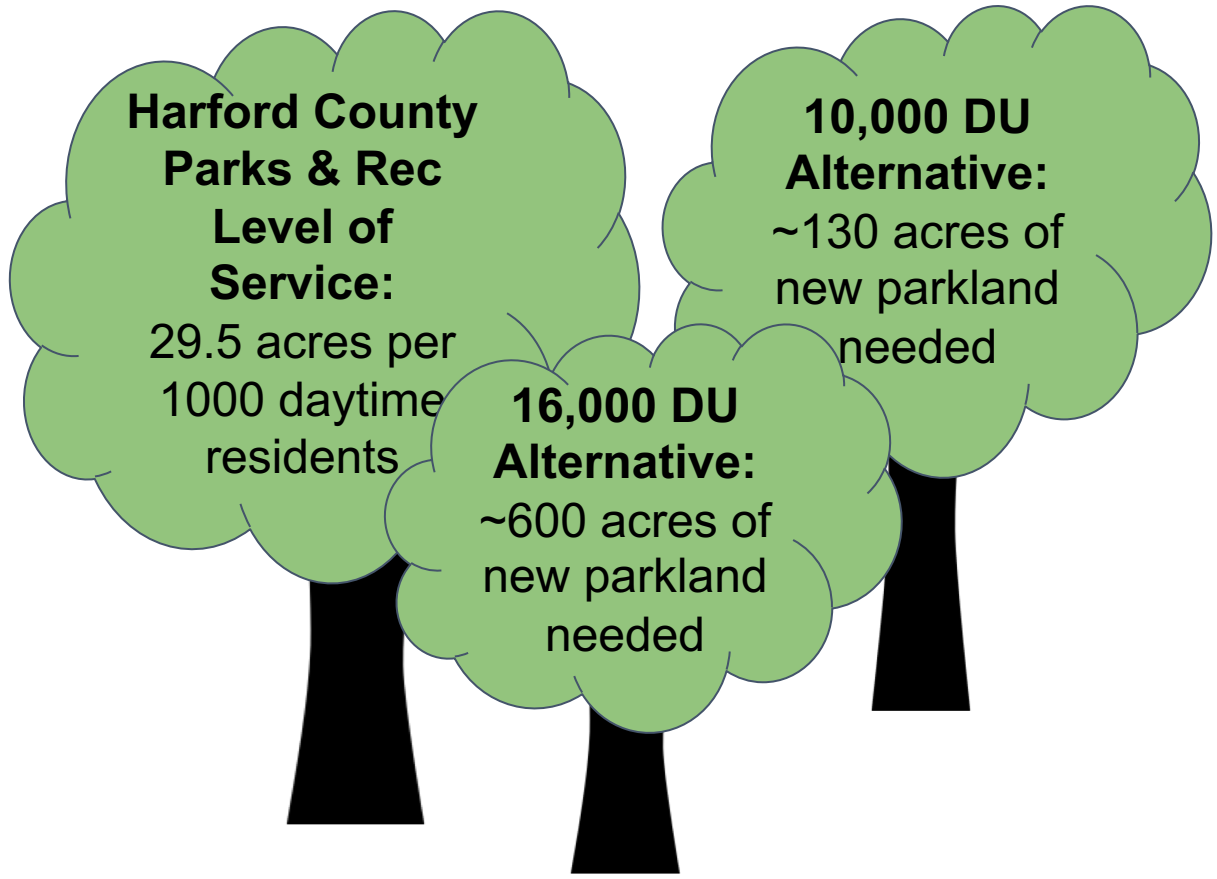


**Harford County Volunteer Fire Company 8-Minute
Catchment Areas**

Infrastructure Impacts: Fire & EMS



Existing Parks & Recreational Spaces with Half-Mile Buffers



Infrastructure Impacts: Parks & Recreation



The Revenues from Growth Outweigh the Costs

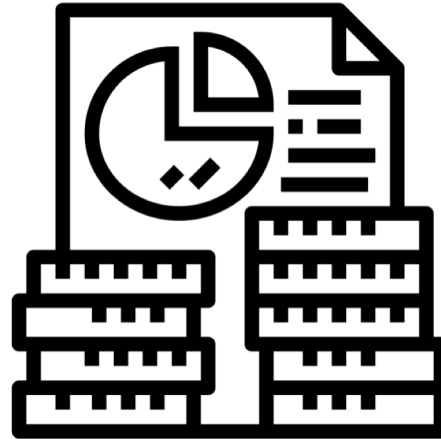
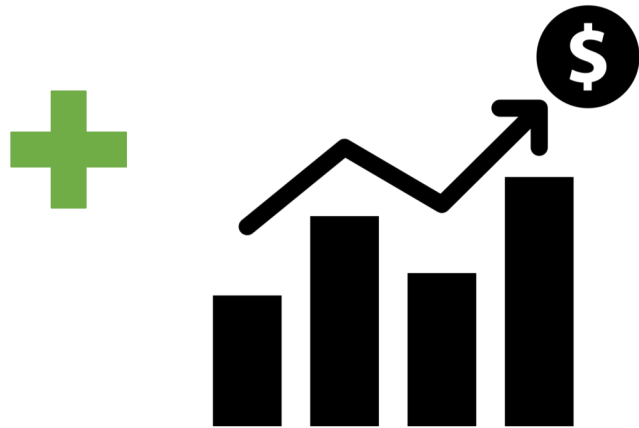
Fiscal Impact Analysis asks:

What is the net gain or loss per new home built in the study area?

Fiscal Impact Calculated per Unit of Land Use

Need to consider:

Revenues
(i.e. taxes,
licensing/permitting,
fines, impact fees)



Operating Costs
(i.e. government, board
of education, public
safety)

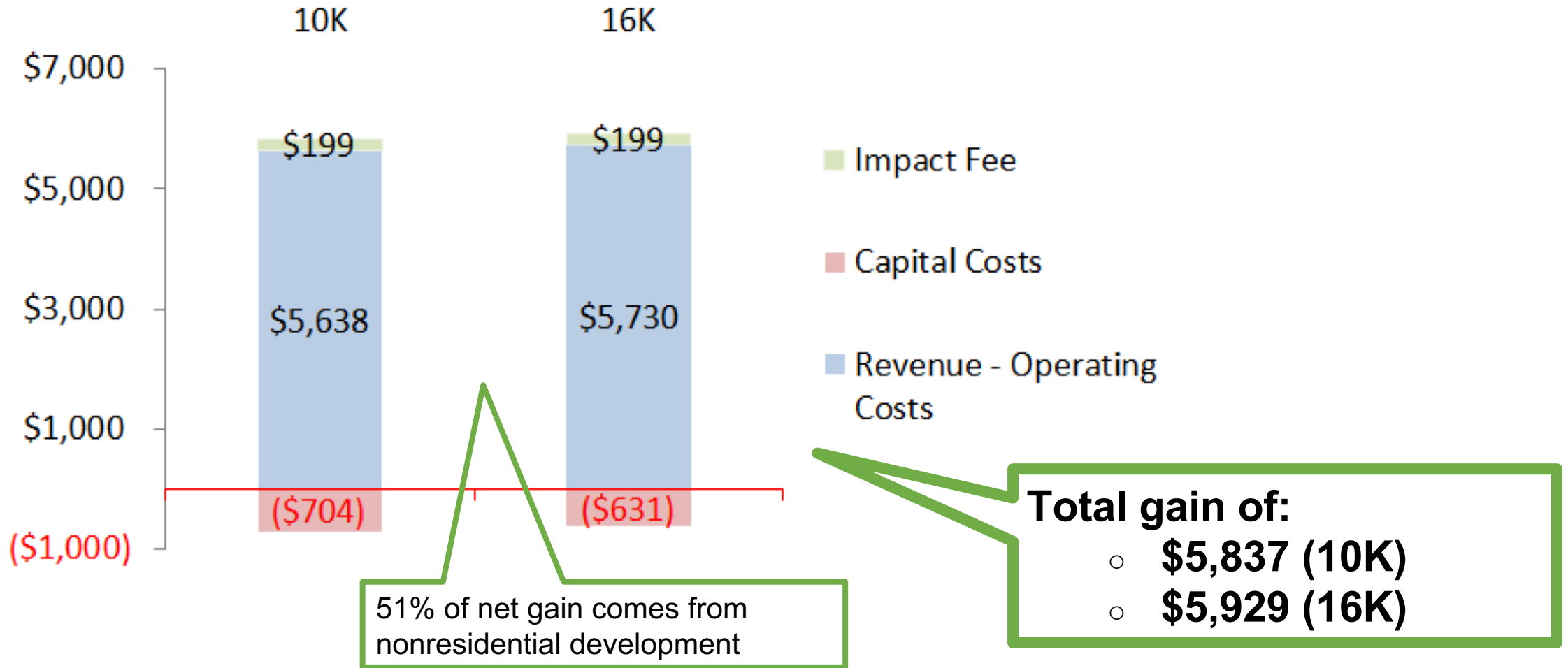


Capital Costs
(required infrastructure
needs for development;
i.e. schools, roads, etc.)



Fiscal Impact = Revenues - Operating Costs - Capital Costs

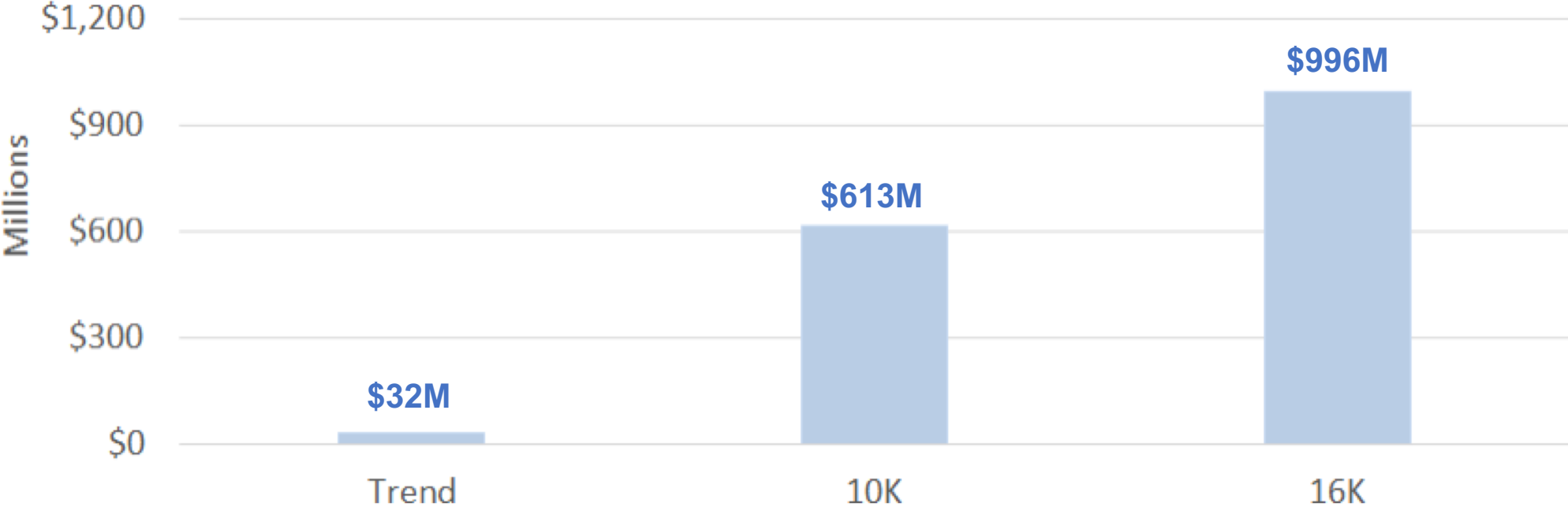
Answer: Each new unit is an annual net gain



Large Net Gain from Property/Income Tax; but Impact Fees Lag Behind Capital Costs

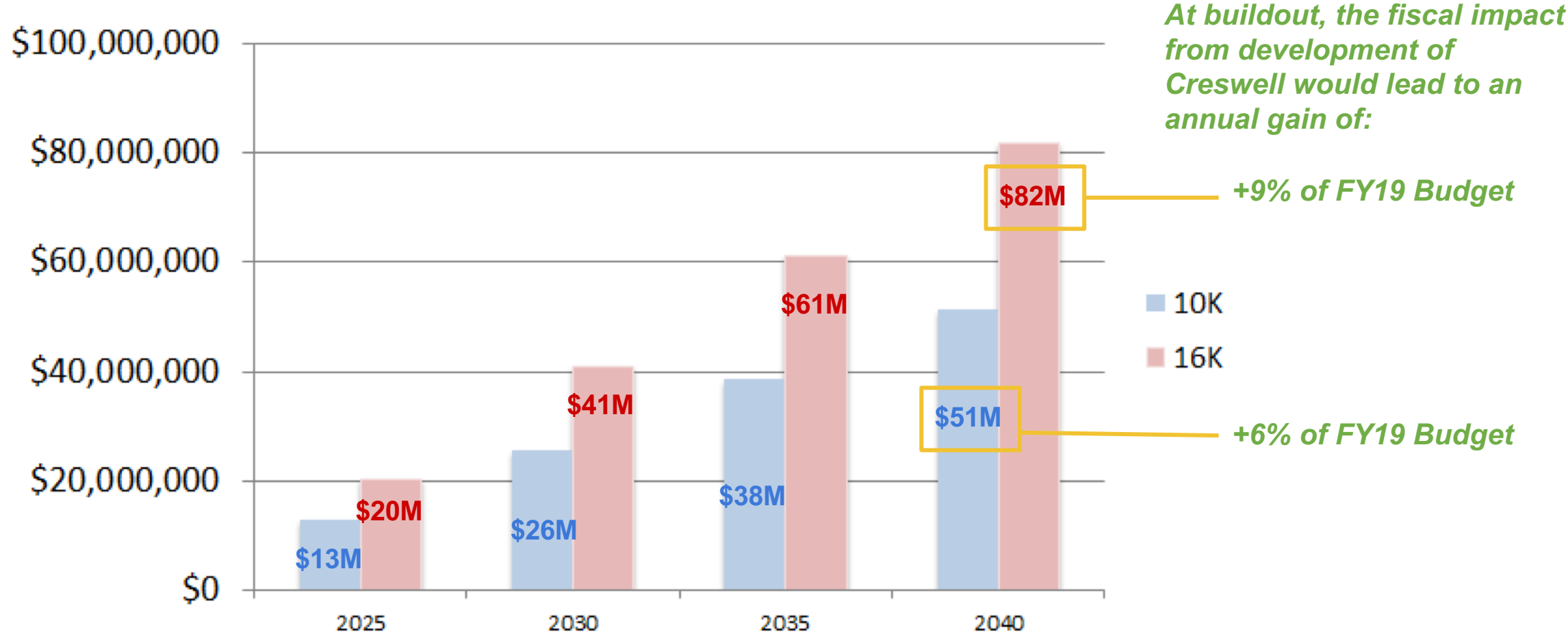
Cumulative Net Gains by Buildout (2040)

[assuming 5% of new homes built every year]



**Development Contributes to Economic Growth;
Trends Would Not**

Annual Gains at Every Five-year Interval Until 2040



Annual Gains Very Significant Given Current Budget

Regional Impact Fees (Single-family detached)

<u>County</u>	<u>FY 17</u>	<u>FY 18</u>	<u>FY 19</u>
Harford	\$6,000	\$6,000	\$6,000
Anne Arundel	\$12,473	\$12,963	\$13,390
Carroll	\$533	\$533	\$533
Frederick	\$14,881	\$15,515	\$15,515
Montgomery	\$40,793	\$45,159	\$45,159
Prince George's	\$23,007	\$23,513	\$24,094

Total Impact Fee Revenue at Buildout:

10K: \$39.8M

16K: \$63.7M

Don't Leave Money on the Table!



The Big Takeaways

Farming, the environment, and rural character can be largely maintained via TDR and OSD

Roughly 2/3 to 3/4 of agricultural land in the area remains undeveloped

The new housing will accommodate necessary growth and choice

Traffic conditions can be mitigated with proposed improvements

The revenues from the new growth will significantly exceed costs, even accounting for all the new infrastructure needed

The Big Takeaways

Special thanks to Harford Staff:

Brad Killian, DPZ

Jenny King, DPZ

Bill Amoss Jr, DPZ

Alex Rawls, DPZ

Bruce Johnson, DPZ

Joe Siemeck, DPW

Bill Bettin, DPW

Missy Valentino, HCPS

Brenda Morrison HCC

Ed Hopkins, Fire/EMS

Robbie Sandlass, Treasurer

Thank you! Questions?

Special thanks to adjuncts and mentors:

Matt Noonkester, CommunityViz/Planning Consultants

Carson Bise, TischlerBise Inc, Fiscal Consultants

Matt Wolniak, JMT, Transportation Consultants

Phil Gottwals, Ag. Preservation Consultant

Randall Arendt, Conservation Subdivision Design

Rick Pruetz, TDR Consultant

Melina Duggal, Real Estate Market Analysts

Jana Vandergoot, Cultural Landscapes

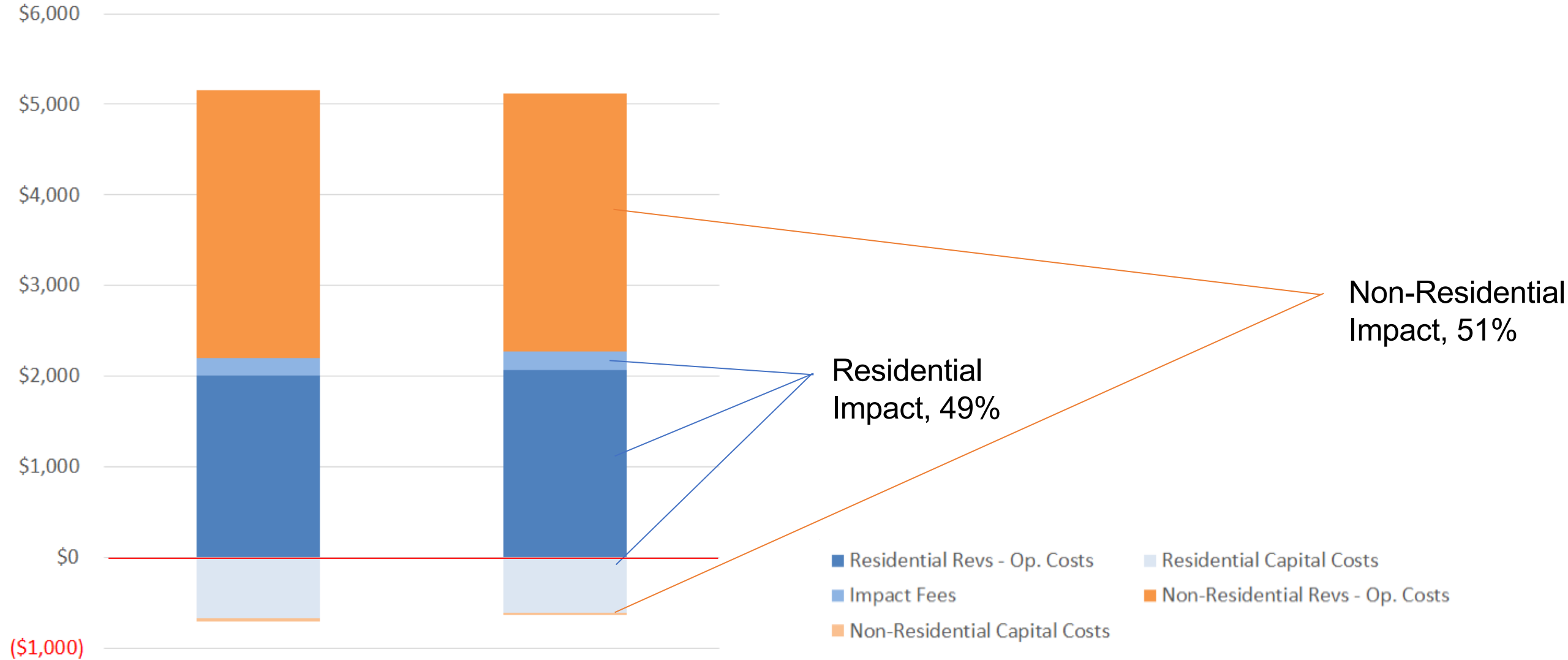
Donna Mennito, Communications and Design



New Housing Unit Fiscal Impact; Res. vs. Non-Res.

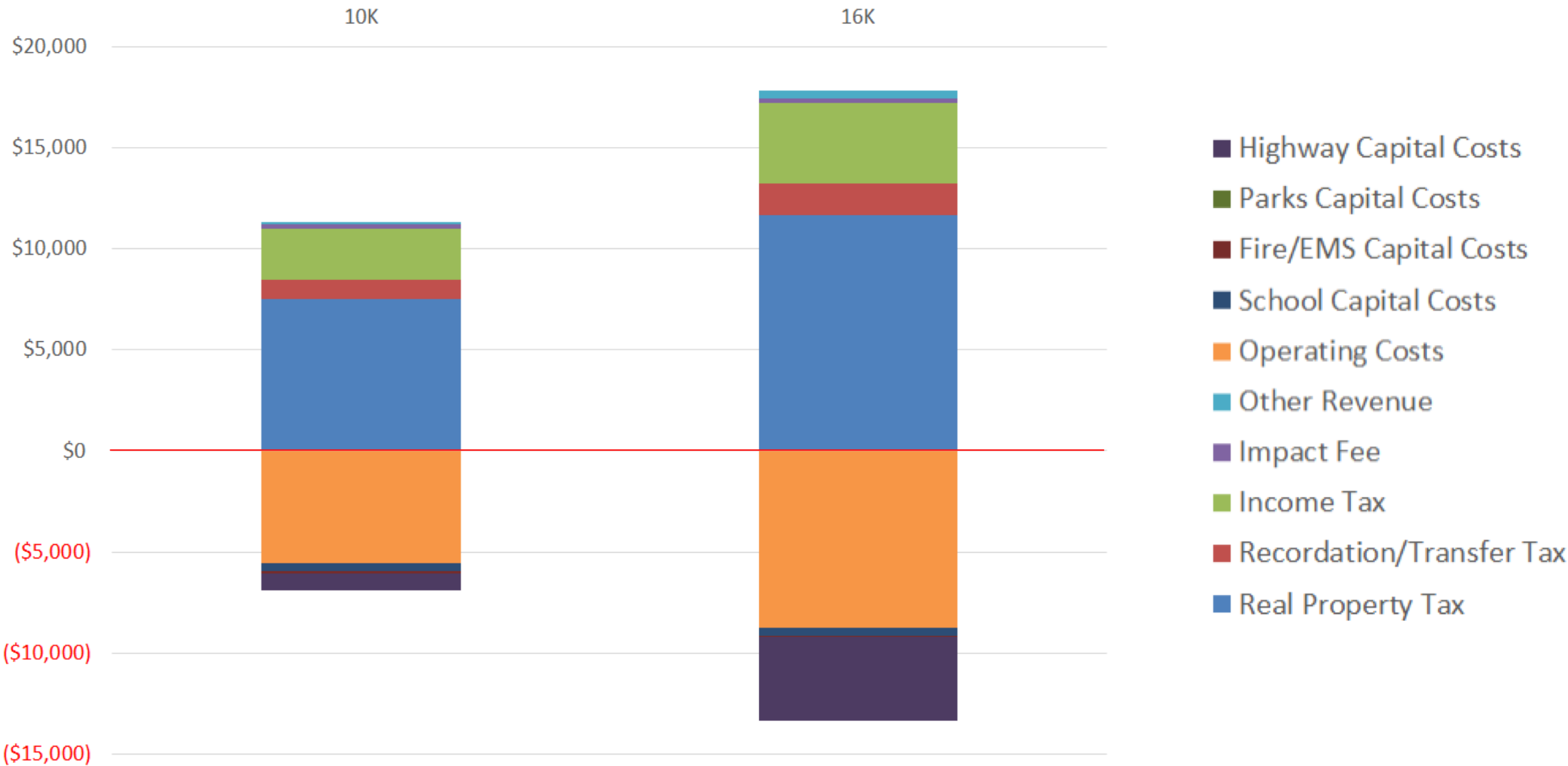
10K

16K



51% of Net Gain Driven by Revenues from Nonresidential Land Uses, Particularly Mixed-Use

New Housing Unit Fiscal Impact; By Component

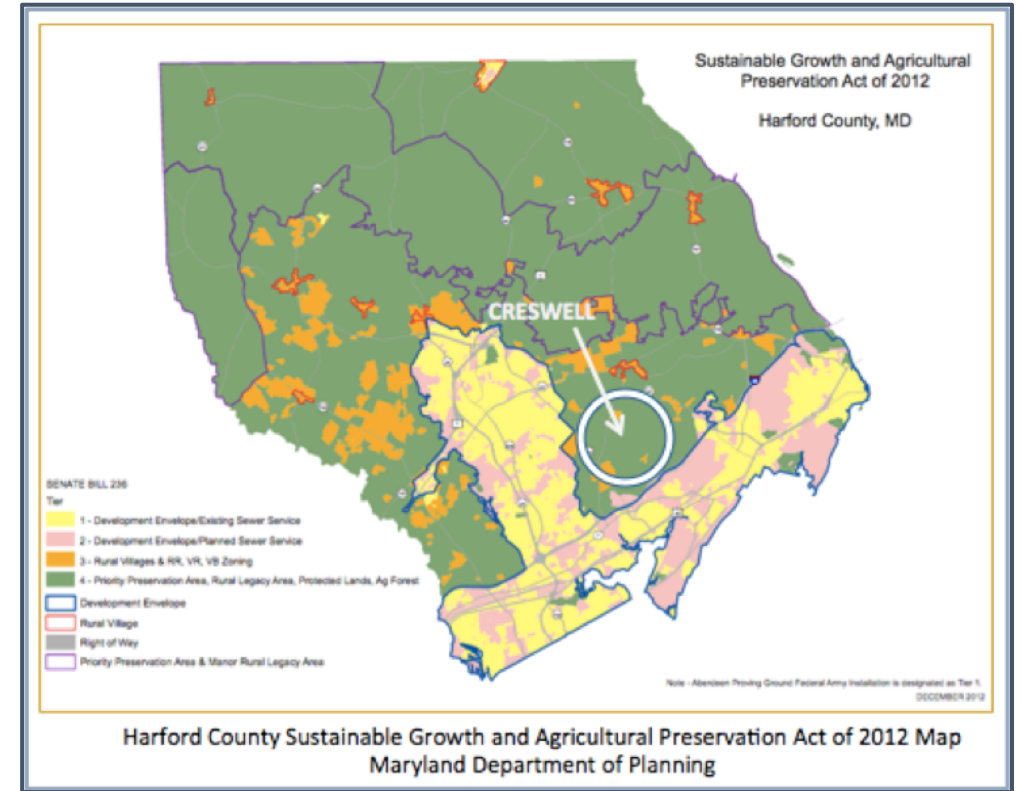
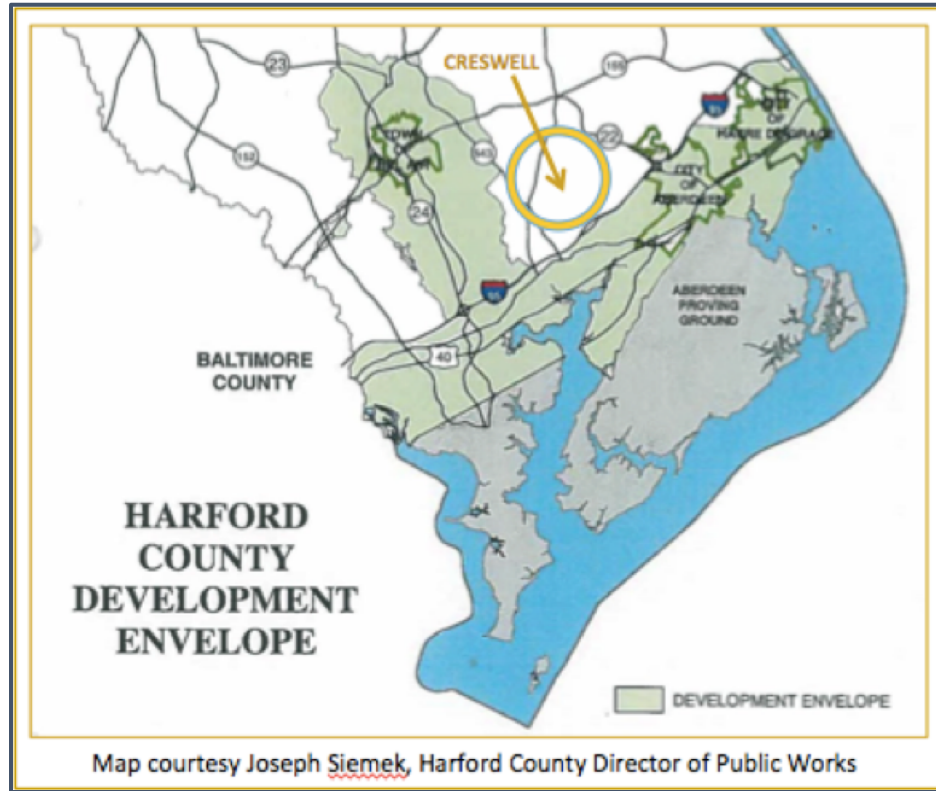


Property and Income Tax Two Largest Sources of Revenue (Based on High Home Value Assumption)

- Amend *HarfordNEXT*
- Amend PFA Boundaries
- Amend Septic Tier map
- Amend Master Sewer & Water Plan
- Adopt Major Thoroughfare Plan
 - Amend Subdivision Regulations accordingly
- Amend zoning code to include OSD Overlay
- Adopt increase in impact fees
- Adopt new Green Infrastructure Plan & Trail Network

Main Changes Needed to Plans & Policies

Implementation – Infrastructure



Change the Harford County Master Plan and change ...

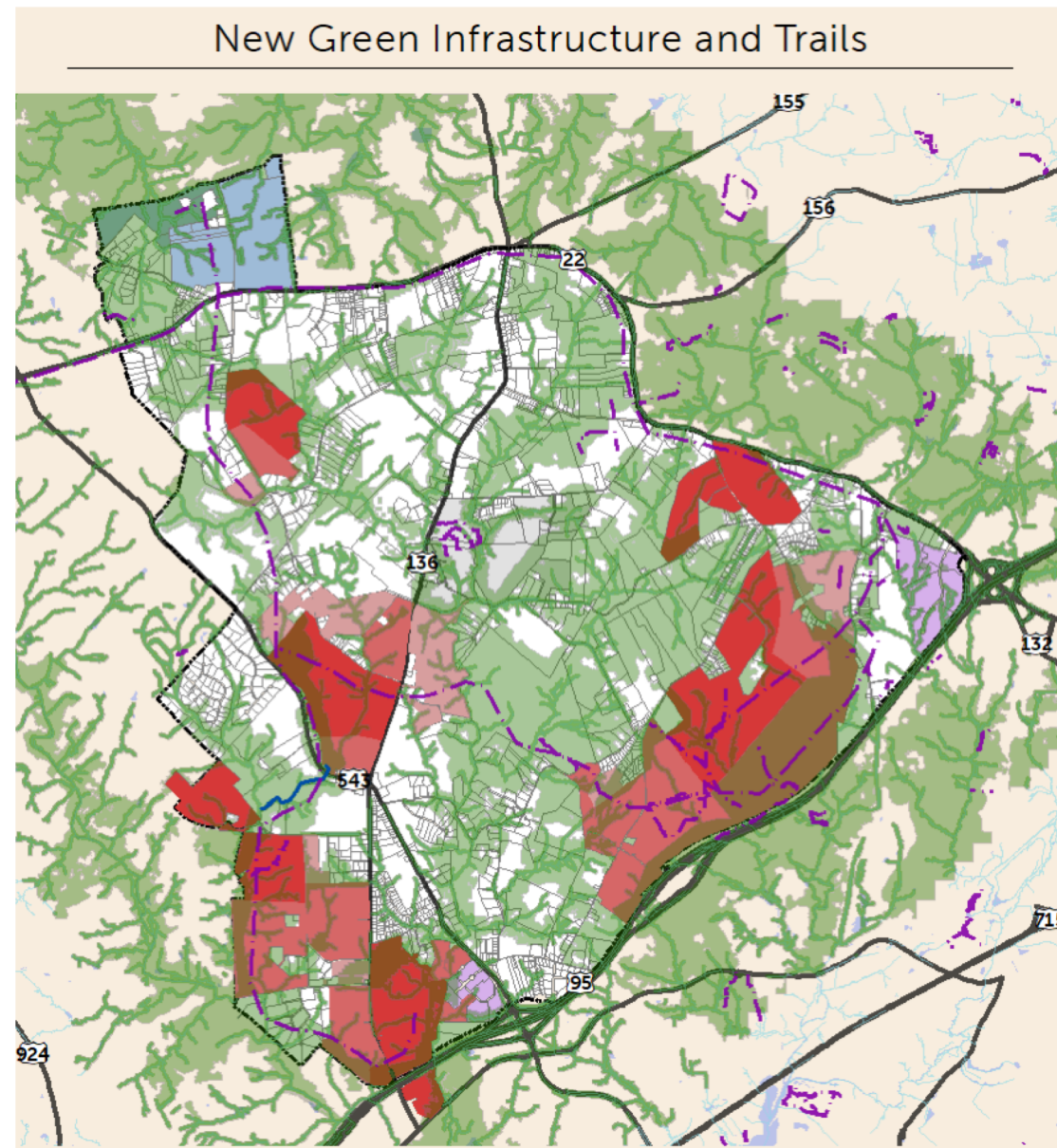
THE DEVELOPMENT ENVELOPE BOUNDARY

THE PFA BOUNDARY

THE WATER & SEWER MASTER PLAN

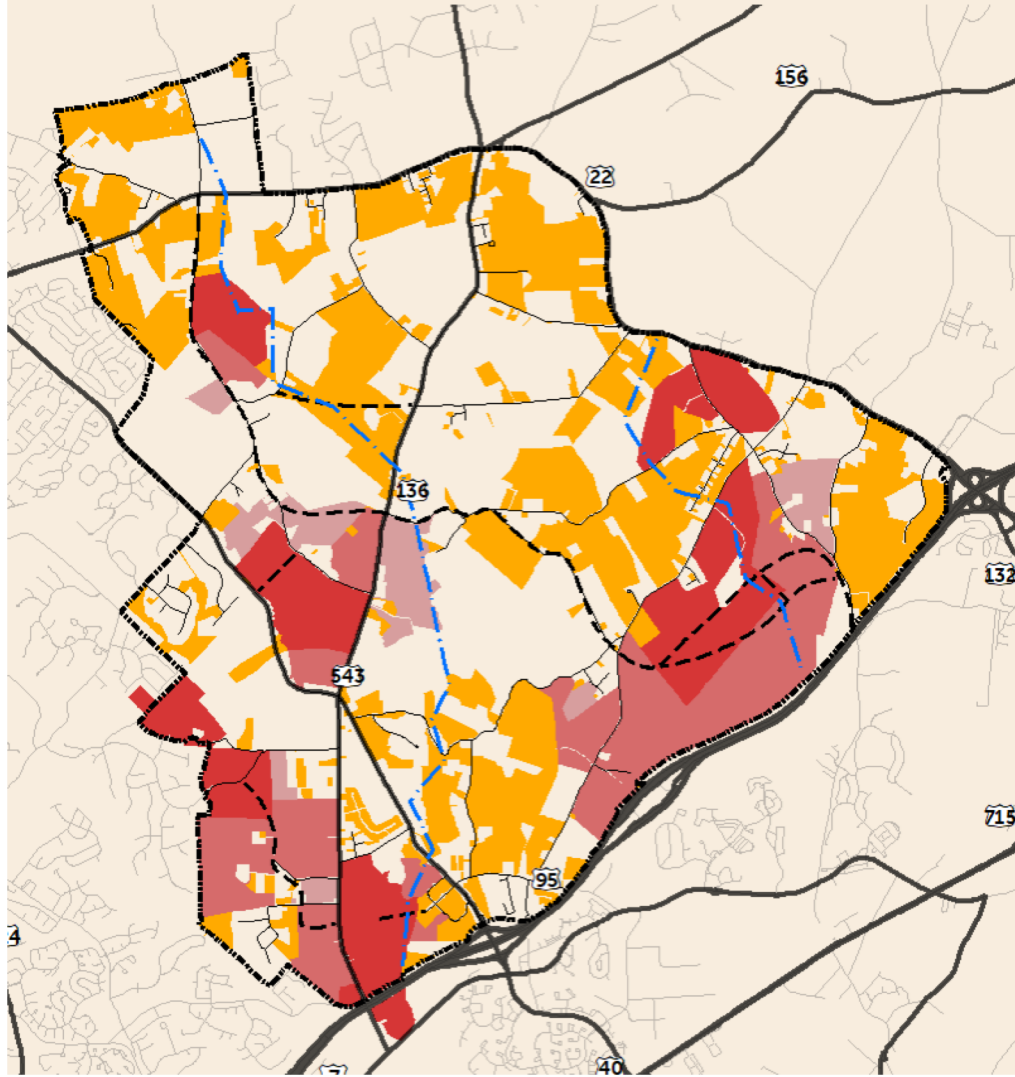
HARFORD COUNTY'S SB 236 SEWER TIERS

- **New Green Infrastructure**
 - Existing Green Infrastructure
 - Interior Forest Percentages
 - BioNet biodiversity
 - Maryland Targeted Ecological Areas
 - Proposed Green Infrastructure
 - Riparian Buffers
 - Maryland DNR Green Infrastructure Gaps
 - Key Corridor Connections
- **New Trails**
 - Connections between
 - Campus
 - Residential
 - Natural areas and Open Space
 - Retail and Employment Areas
 - Transit and Transportation

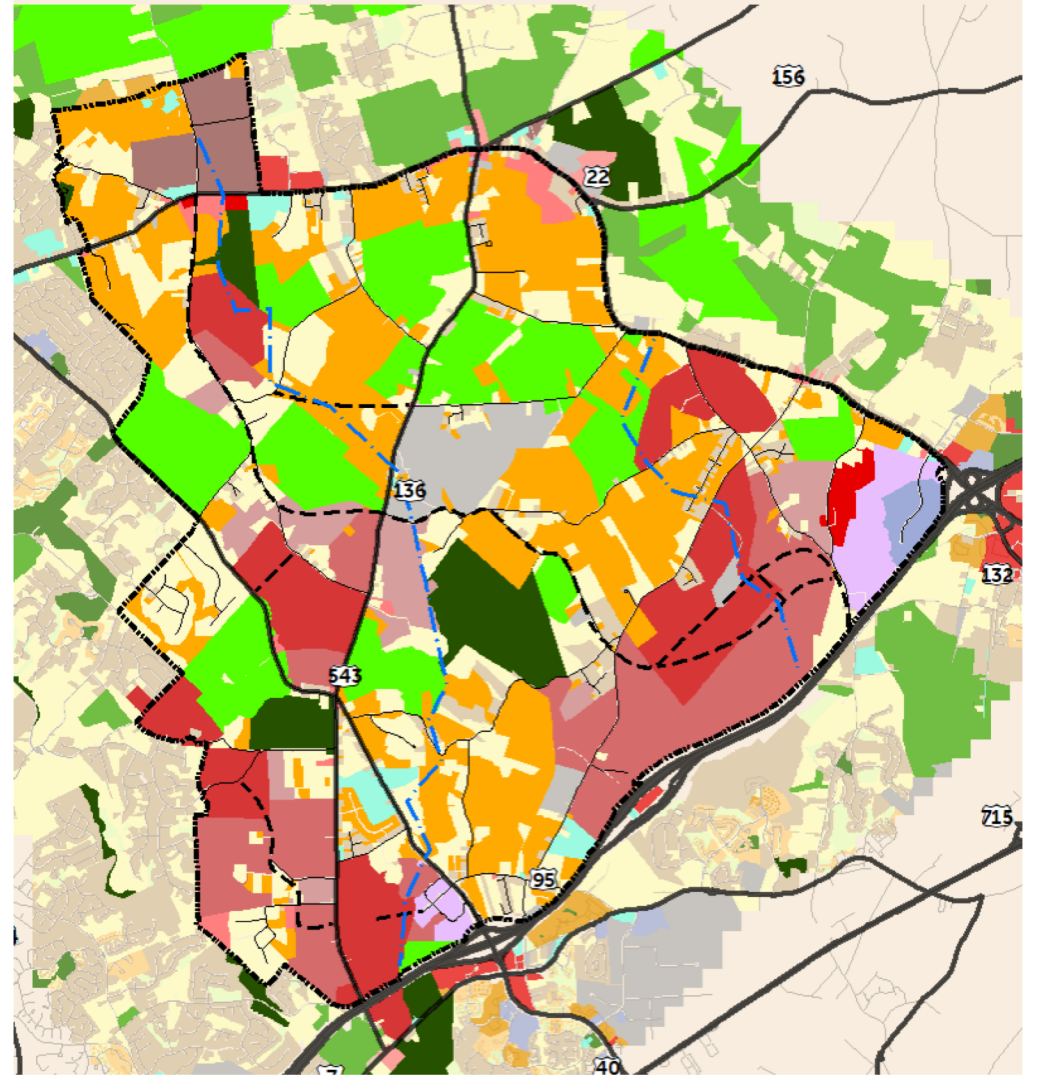


Enhanced Green Infrastructure

Receiving & Sending Areas Map



Receiving & Sending Areas Map



Receiving & Sending Areas

New Overlay Zone Open Space Design (OSD) Standards

District (Unit types permitted)	Conventional			Conventional with Open Space (COS)			Open Space Design (OSD)*		
	DU / Ac	Lot Size (000 sf) SFD - Lot Line	OS %	DU / Ac	Lot Size (000 sf) SFD - Lot Line	OS %	DU / Ac	Lot Size (000 sf) SFD - Lot Line	OS %
R1 (SFD)	1.8	20	-	2.0	15	10	3	10	35
R2 (SFD, TH)	3.5	10	-	4.5	7.5-7	10	6	5	45
R3 (SFD, TH, GA)	5.0	7.5	-	7.0	6-5	15	10	6-4	55
R4 (SFD, TH, GA, HR)	8.0	7.5	-	10.0	6-4	20	12	5-3	60

*Requires subdivision plans be for 100 acres or more

Implementing Open Space Development

Community Viz Analysis: A Bottom Up Approach



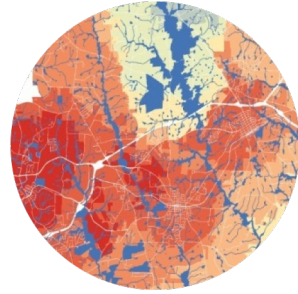
Carrying Capacity Analysis

The area of a parcel identified with one or more development constraints (e.g., SWIM buffers, recorded easements, etc.). These areas are 'off the table' for allocating new growth in subsequent phases of the model.



Development Status Assignments

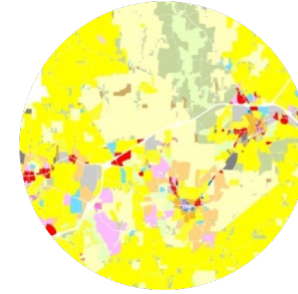
The assignment of development status to parcels in CommunityViz tells the model which set of equations to use for estimating development yield (build-out potential), and whether new growth is allowed in the parcel.



Land Suitability Analysis Calculations

LSA measures the attractiveness of individual parcels to accommodate new development. Physical features prevalent in the study area were layered on a parcel map, and calculations performed to determine either percent overlap or physical proximity (as appropriate) for each of the physical features in relation to the individual parcels.

A numeric score between 0 – 100 was used to rank parcels in the study area from least- to most-suitable for development.

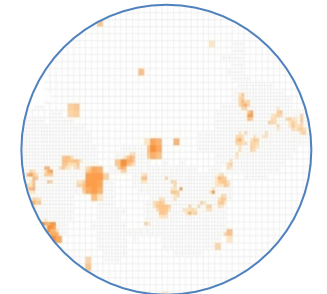


Place Type Assignments & Build-Out Estimates

Place types were used to describe land use and urban form characteristics in the study area.

Build-out potential estimates the development yield for each parcel based on its assigned development status, place type, & values assumed in the general development lookup table.

Values generated for build-out potential become the 'supply' for allocating future year growth in the study area.

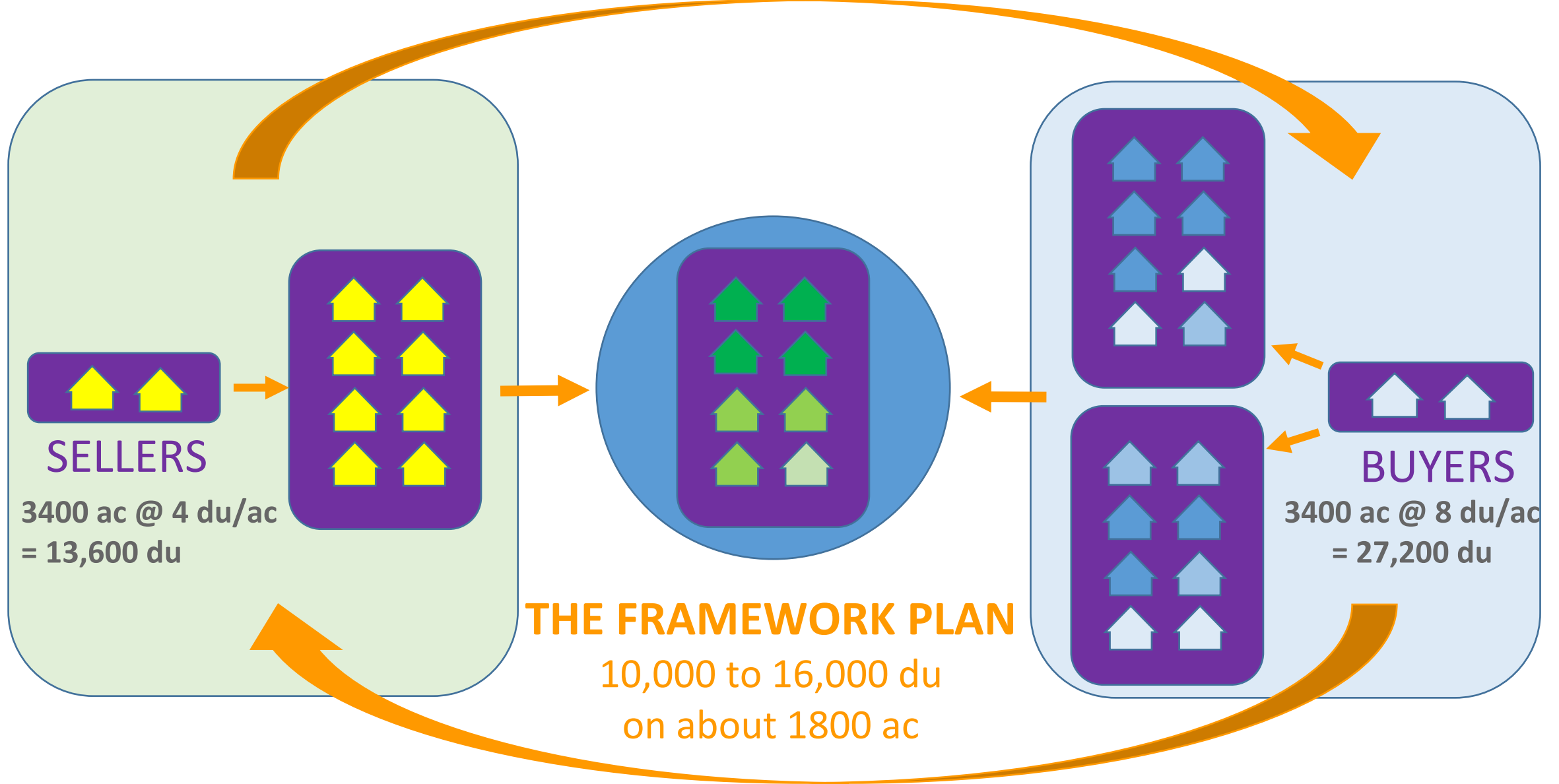


Growth Allocation

Growth allocation was performed using build-out potential and land suitability statistics calculated for parcels in the study area.

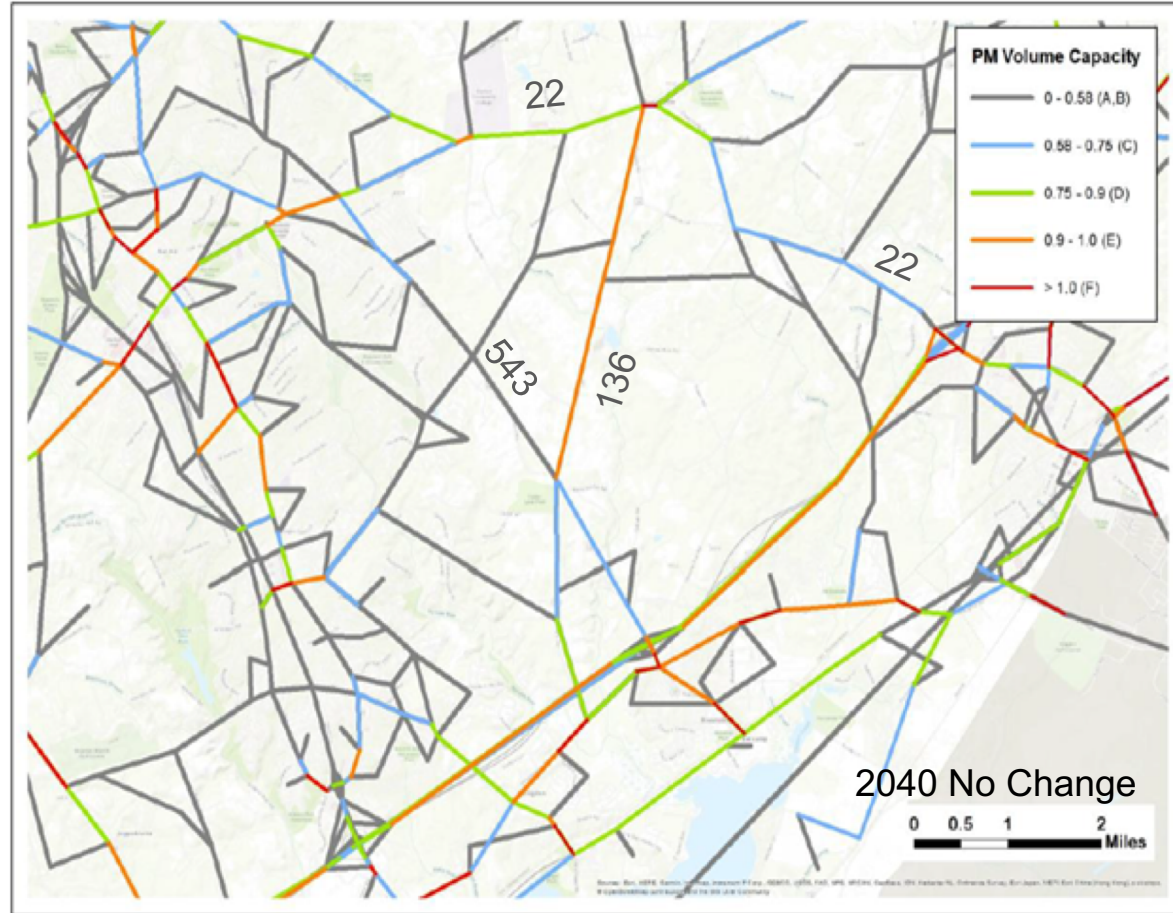
Full Capacity	10,000 Homes	16,000 Homes
<p align="center">3,247 Acres Allocated Growth</p>	<p align="center">2,097 Acres Allocated Growth</p>	<p align="center">2,574 Acres Allocated Growth</p>
<p align="center">Allows for 23,680 Homes</p>	<p align="center">Allows for 10,000 Homes</p>	<p align="center">Allows for 16,000 Homes</p>
<p align="center">Average Density of 8.25 Homes Per Acres</p>	<p align="center">Average Density of 4.77 Homes Per Acres</p>	<p align="center">Average Density of 6.21 Homes Per Acres</p>

Transfer of Development Rights

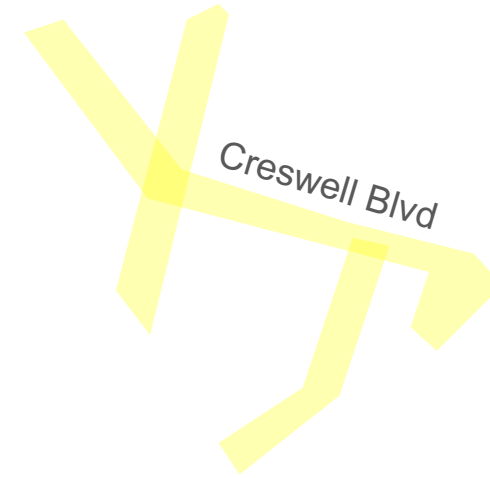


TDR Marketplace in Creswell

Congestion in 2040: +16,000 DU, Same Roads



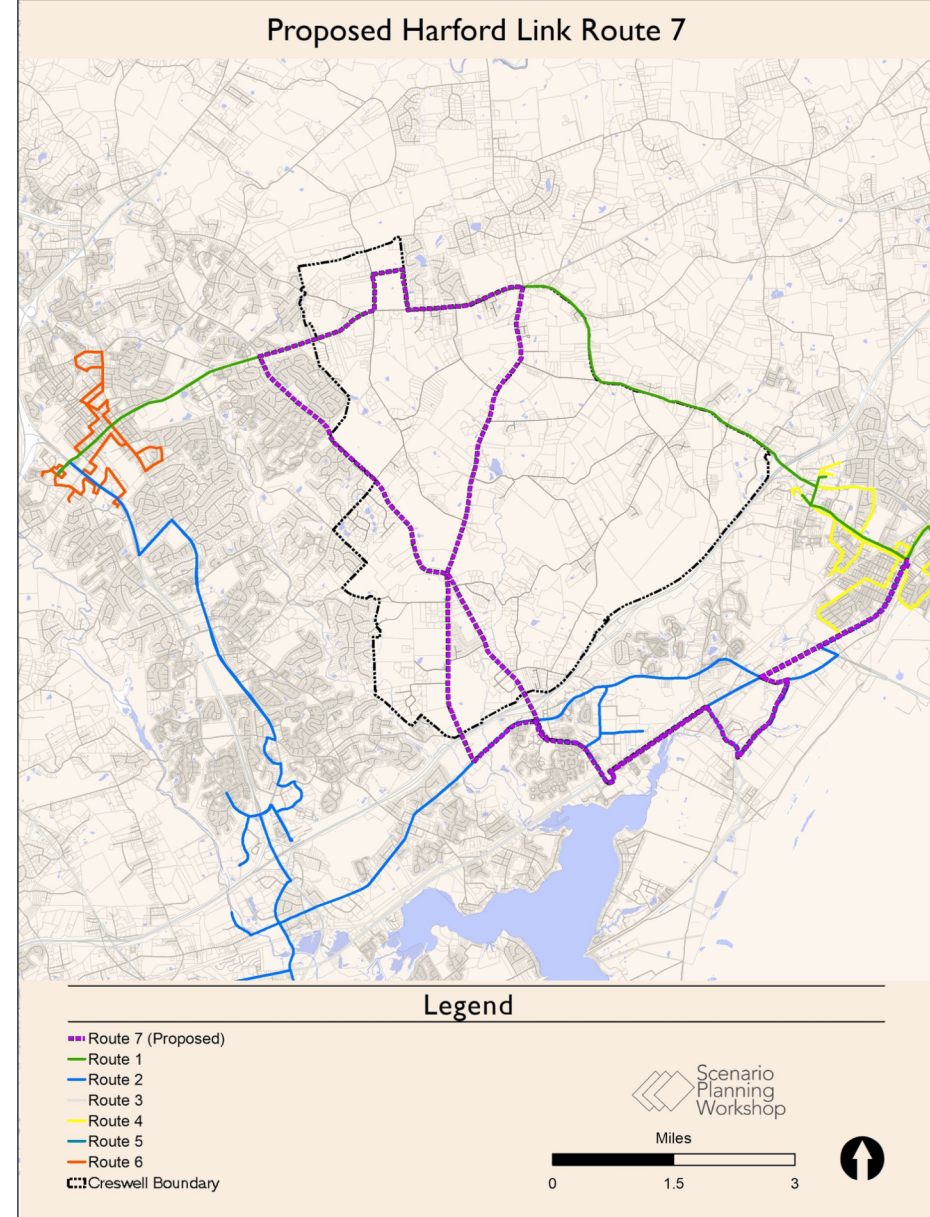
Congestion in 2040: +16,000 DU, Improved Roads



Roadway Improvements Mitigate Trend and New Congestion

Proposed Harford Link Route 7

- Would serve core of Creswell study area, connecting Routes 1, 2, 3 and 4



Implementing Transit Improvements

Conserve Farming, the Environment and Rural Character



HarfordNEXT, p35

"It is essential that the County maintains the public commitment and investment in the agricultural, environmental, and historic easements within the study area.....the study will identify strategies for preserving the agricultural, environmental, and historic heritage of the area to ensure the quality of our cultural and natural resources are maintained and explore innovative mechanisms to preserve additional resources.... to minimize future demand for public services and to protect the economic and practical viability of farming."

Open Space with Development



“Additionally, the study will provide recommendations on the form and function of any future development. The desired outcome is a landscape that conforms to the rural character of Harford County. Any new development should be coordinated such that it maximizes open space through the clustering of residential or commercial uses. Likewise, the study will identify desired amenities that will enhance the quality of life for existing and future residents; trails, parks, and other features that maintain and enrich the sense of place will be prioritized.”

HarfordNEXT, p36



Maintain Adequate Infrastructure, Minimize Traffic Impacts

“The study will include a comprehensive analysis of the community facilities needed to serve this area, including schools, police, fire/EMS, water and sewerage, transportation, parks and recreation, and libraries. A primary outcome will be the formulation of an infrastructure improvement plan to address existing traffic concerns including MD 22 and MD 543.”

HarfordNEXT, p36