

Maryland Association of Counties
and
Maryland Municipal League

Symposium on Practical Stormwater Solutions for
Maryland Local and Municipal Governments

March 4, 2013

Christine A. Romans
Anne Arundel County Department of Public Works



Introduction

Goals and Objectives

- Compliance with Maryland Environmental Code Section 4-202.1 (EA §4-202.1)
- System of Fees that are Fair & Equitable for both the Residential and Business Communities
- Watershed Protection and Restoration Program that provides opportunity for:
 - Appeal
 - Exemptions
 - Substantial Hardship
 - Reduction of Fees/Credit Program
- Watershed Protection & Restoration Program and Special Revenue Fund that ensures Regulatory Compliance with:
 - MS4 Stormwater NPDES Permit
 - Chesapeake Bay TMDL

Stormwater Committee

- Committee met over 6 months
- Provided recommendations for compliance with EA §4-202.1 and to ensure that the fund and the program are fair and equitable and sufficient to meet the cost to comply with the associated regulatory obligations

Committee Member	Affiliation	Committee Member	Affiliation
Joanne Throwe	University of Maryland Environmental Finance Center	Dan Nees	University of Maryland Environmental Finance Center
Bob Burdon	Annapolis & Anne Arundel County Chamber of Commerce (AAACCC)	Sue Ford (alternate)	AAACCC
Tom Ballentine	National Association of Industrial and Office Properties (NAIOP)	Tom Pilon (alternate)	NAIOP
Eliot Powell	Anne Arundel County Homebuilders Association	Michael Harrison (alternate)	Anne Arundel County Homebuilders Association
Jerry Pesterfield	Community Representative	Suzanne Etgen	Anne Arundel Watershed Stewards Academy
Erik Michelsen	South River Federation	Susan Zellers	Marine Trades Association of Maryland
Doug Lashley	Greenvest	Eric DeVito	Land Use Attorney
Chris Trumbauer	Anne Arundel County Council	Dick Ladd	Anne Arundel County Council
Ron Bowen	Anne Arundel County Dept of Public Works		

Impervious Area Distribution

- **Countywide Data Analysis**
- **Four Primary Sources of Data**
 - Consolidated Property File (CPF)
 - Countywide Impervious GIS layer
 - County GIS Parcel Map
 - County Zoning Map

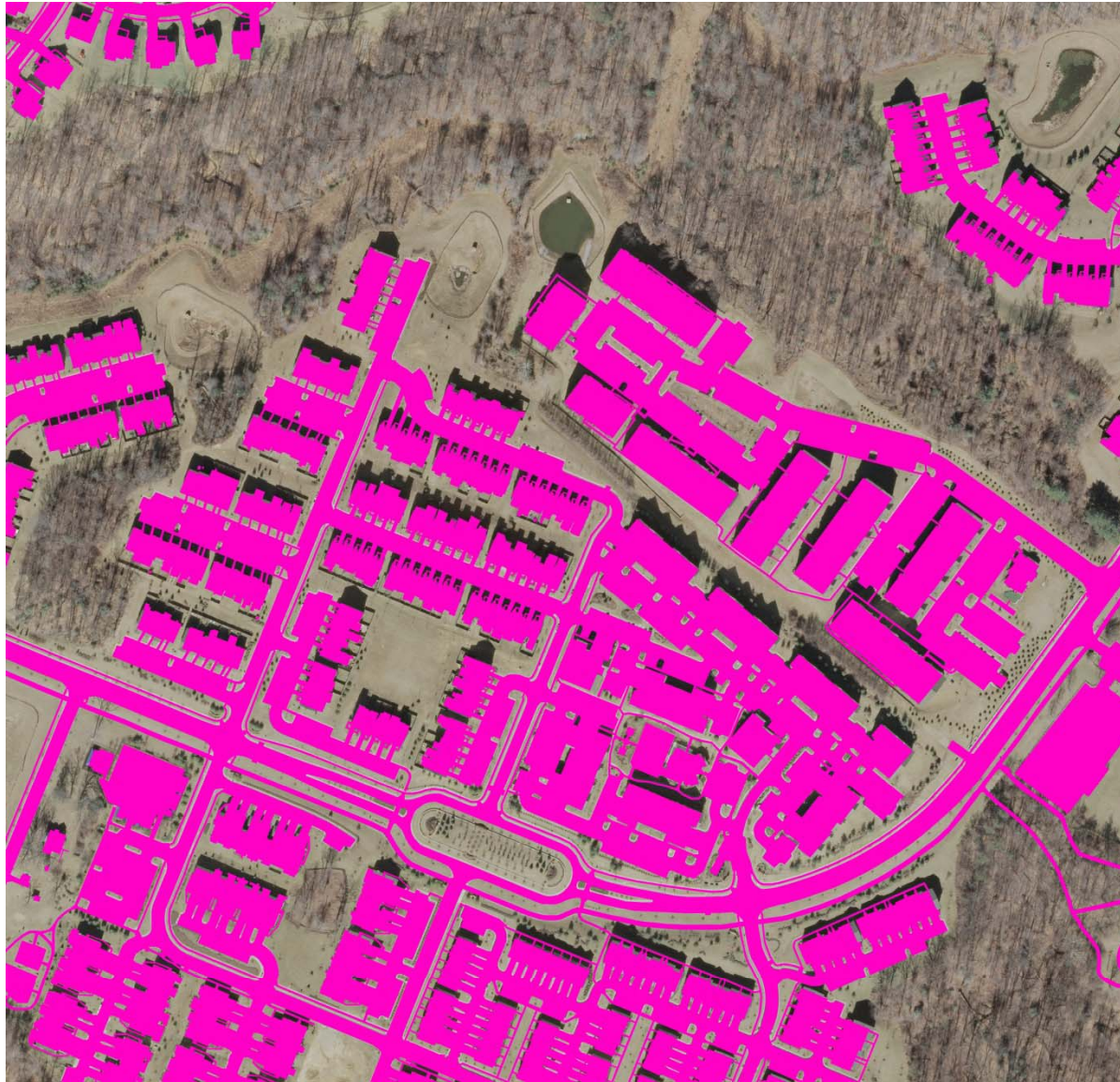
Impervious Surfaces GIS Map Layer

- Derived from the High Resolution 2011 Maryland Statewide Aerial Photography Project Imagery
- Imagery acquisition flyover was conducted between March 7, 2011 and April 15, 2011
- Imagery meets American Society for Photogrammetry and Remote Sensing Class 1 industry standards at map scale 1:1200 (1" = 100')

Example: Impervious Area Distribution Aerial Photo



Example: Impervious Areas



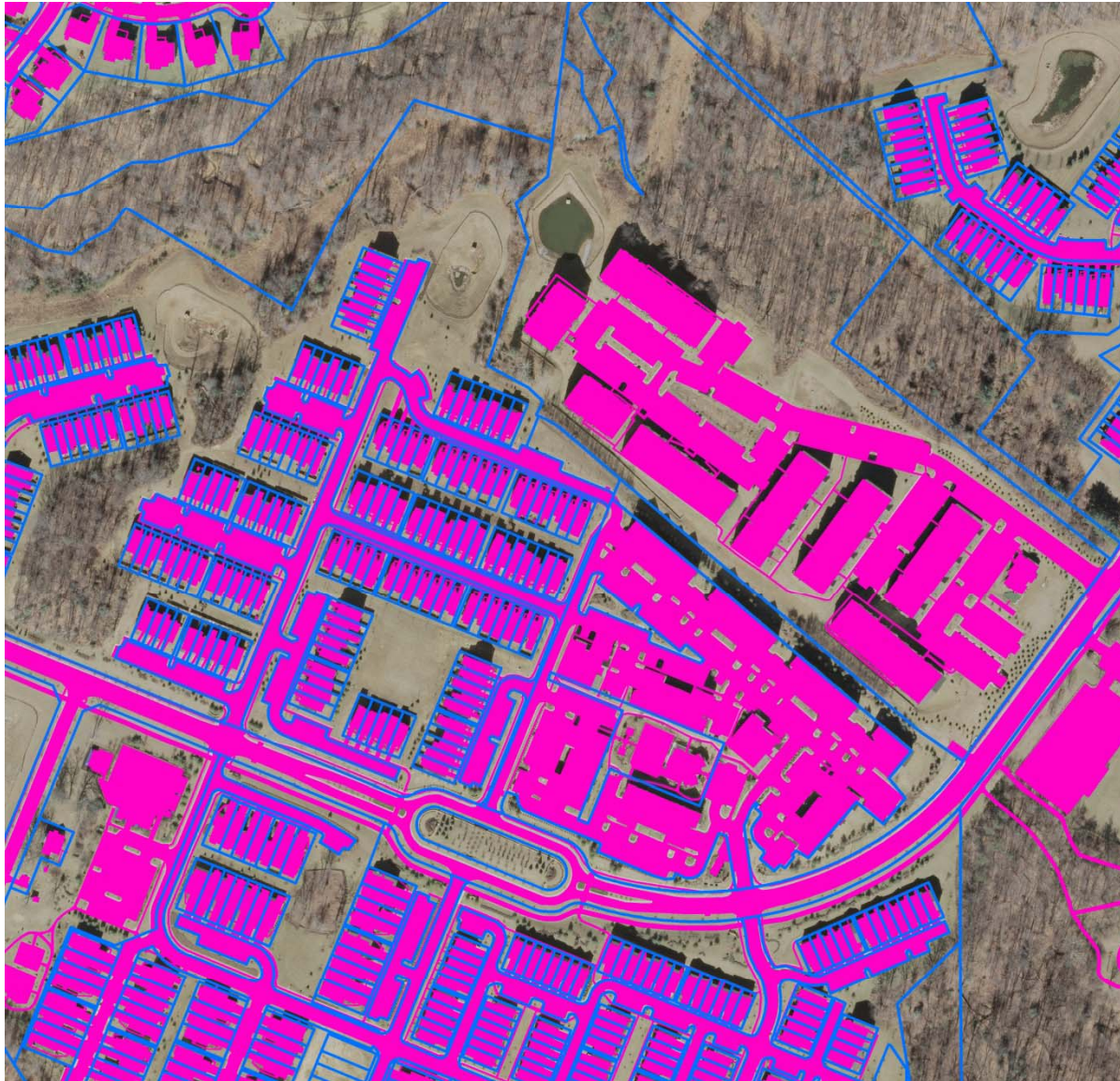
Countywide GIS Parcel Map

- Depiction of Parcel and Lot Lines
- Maintained by Office of Planning and Zoning
- Originally created from State Tax Maps and DPW Utility Maps
- New subdivisions are digitally captured and added daily

Example: Parcel Lines



Example: Superimpose Parcels on Impervious



Categorize CPF Properties

120,206 - Single Family Detached Residential (SFR)

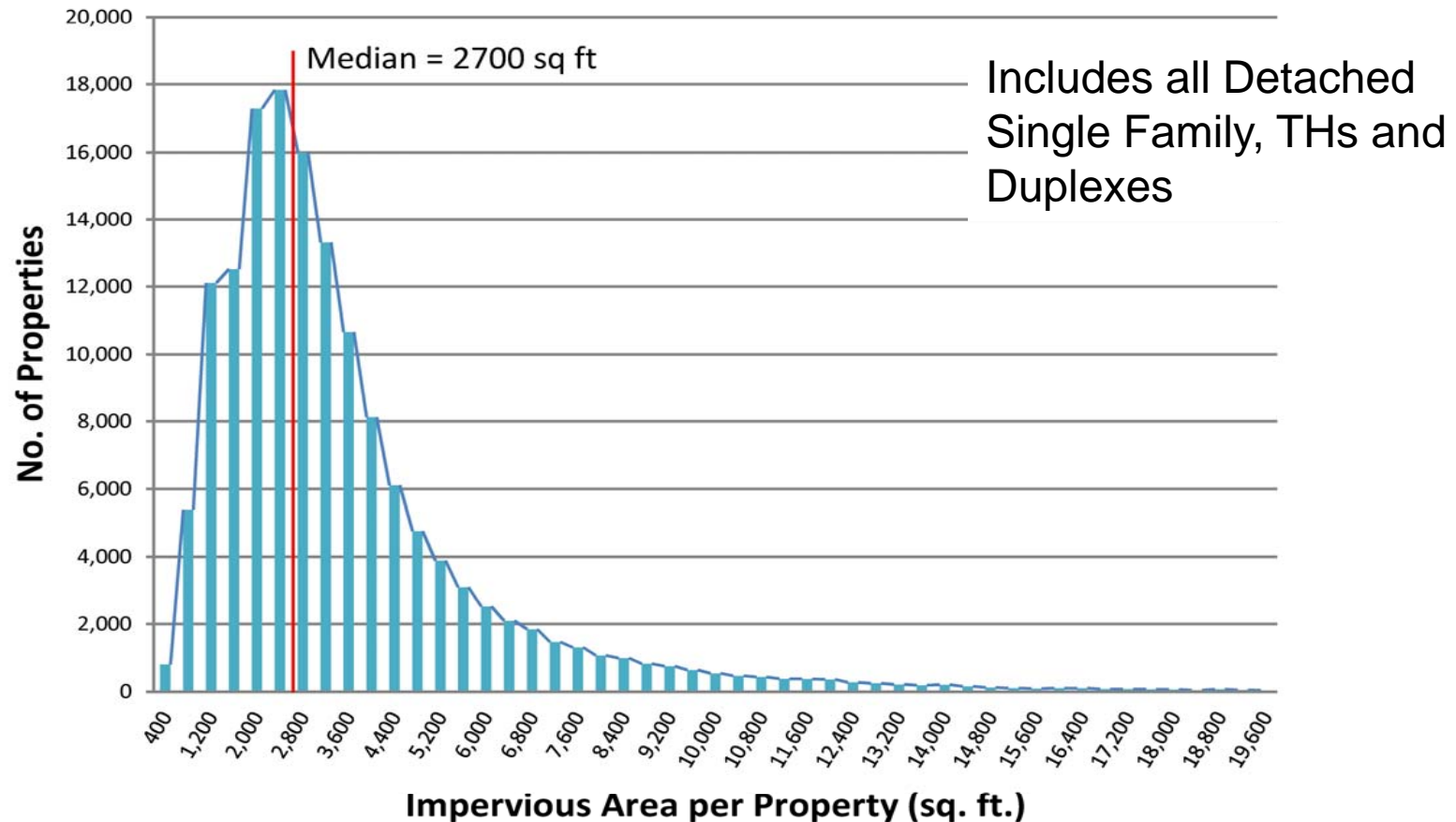
31,980 - Townhomes (TH), Rowhouses, Duplexes

7,151 - Garden and High-Rise Condos, Mobile Homes

28,132 - Non-Residential Uses

187,469 - Total Billable Properties

Residential Impervious Area Distribution



- Not an even distribution
- More properties clustered at low end
- Larger properties subsidized by smaller properties
- One size does not fit all

Single Family Residential Housing
Impervious Area Distribution by Zoning¹

	ZONING	% OF TOTAL HOUSES	MEDIAN IMP. AREA (sq ft)
S i n g l e F a m i l y	RLD	1.70%	6,979
	RA	4.74%	7,033
	R1	6.94%	5,161
	R2	22.13%	3,525
	R5	42.73%	2,549
	R10	0.17%	2,527
	R15	0.34%	2,097
	R22	0.01%	4,643
A t t a c h e d	THs, Duplexes, Rowhouses	21.2%	1,186

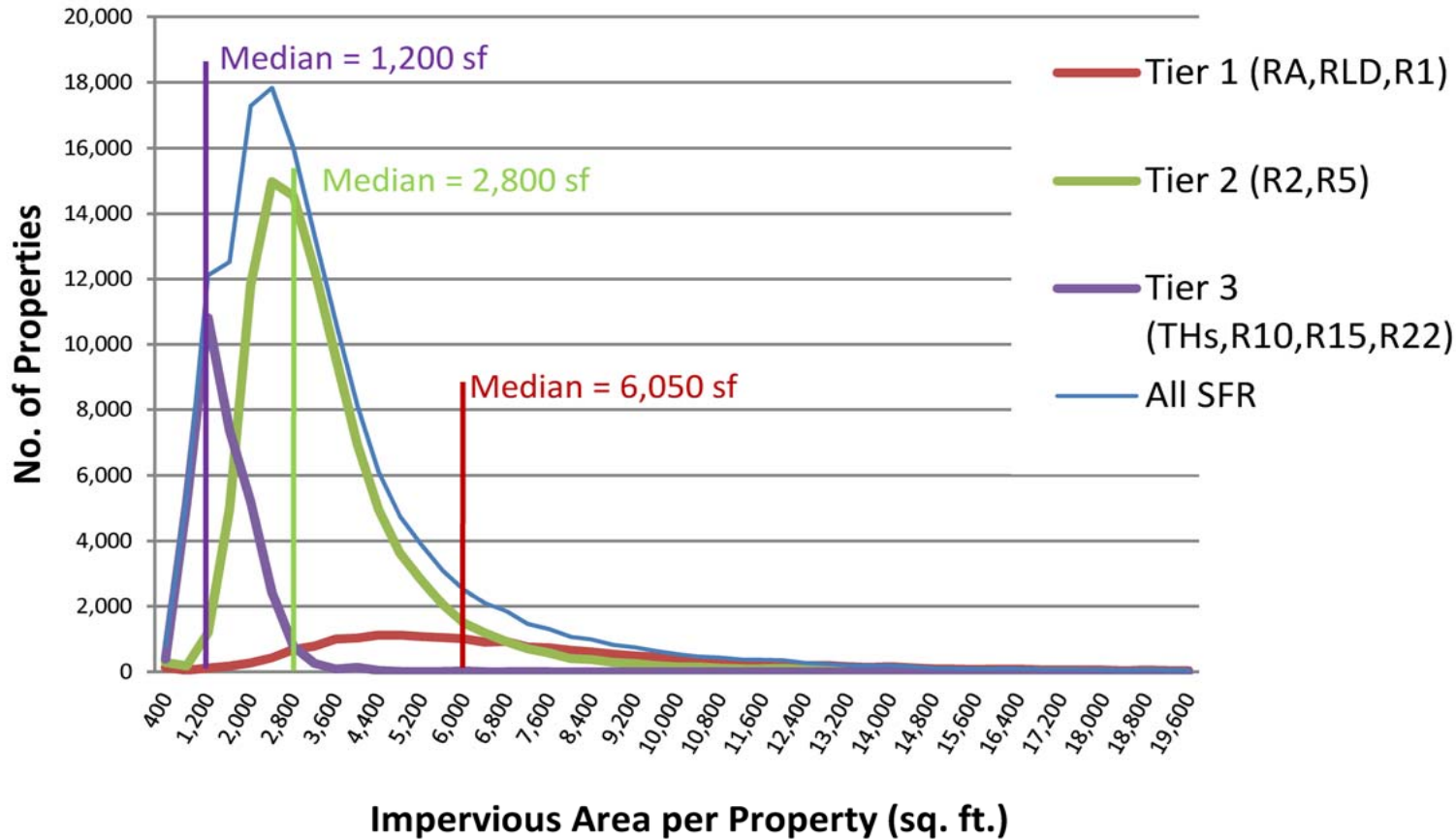
1 - Based on OPZ Adopted Zoning Layer

Single Family Residential Housing
Impervious Area Distribution by Zoning¹

	ZONING	% OF TOTAL HOUSES	MEDIAN IMP. AREA (sq ft)	
Single Detached Family	RLD	1.70%	6,979	Tier 3
	RA	4.74%	7,033	
	R1	6.94%	5,161	
	R2	22.13%	3,525	Tier 2
	R5	42.73%	2,549	
	R10	0.17%	2,527	Tier 1
	R15	0.34%	2,097	
	R22	0.01%	4,643	
Attached	THs, Duplexes, Rowhouses	21.2%	1,186	

1 - Based on OPZ Adopted Zoning Layer

3 – Tier Residential Distribution



- Tighter Distribution – Less variability within Tier
- Higher percentage of properties close to median within each Tier
- Less subsidization
- Median of Tier 2 selected as the value of 1 ERU (2,800 sq. ft.)

Calculation of Residential Equivalent⁽¹⁾ Residential Units (ERU's)

<u>Tier</u>	<u>Zoning District</u>	<u>No. of Properties</u>		<u>Median Impervious (sf)</u>	<u>ERU Multiplier</u>	<u>No. of ERU's</u>
		<u>Count</u>	<u>(%)</u>			
1	RA,RLD, R1	20,254	13.4 %	6,054	2.0	40,508
2	R2, R5	97,843	64.9 %	2,827 ⁽³⁾	1.0	97,843
3 ⁽²⁾	R10, R15, R22	32,747	21.7 %	1,200	0.4	<u>13,099</u>
Total Residential ERUs						151,450

(1) Properties within Residential Zoning Districts Improved with a Single Family Residence: includes: Single Family Houses, Townhomes, Rowhouses, Duplexes

(2) Includes All Single Family Houses in R10, R15 and R22 zoning districts and all Townhomes, Rowhouses and Duplexes

(3) Rounded to 2,800 sf/ERU

Calculation of Non-Residential Equivalent Runoff Units (ERU's) ⁽¹⁾

<u>Category</u>	<u>No. of Properties</u>	<u>Total Impervious (acres)</u>	<u>ERU's</u> ⁽²⁾
Non-Residential Uses	28,132	9,990	155,416
Houses in Non-Residential Zoning	1,342	140	2,178
Garden/High Rise Condos	7,151	160	<u>2,489</u>
Total Non-Residential ERUs			160,083

(1) Includes Commercial, Industrial, Agricultural, Institutional (Religious Orgs., Schools, Not-for-Profits, etc.) as well as non-residential properties within residential subdivisions (common areas, open spaces, rec areas, parking areas, etc.)

(2) No. of acres x 43,560 sf/acre ÷ 2,800 sf/ERU = ERU's

SW Fee Category Assignment
Logic Diagram
Oct 5, 2012

(based on 2,800 sf/ERU)

