Low Residential Study (LRS)

Phase 2: Evaluating Options for Impervious Area Limits

Forestry and Natural Resources Commission

September 24, 2026





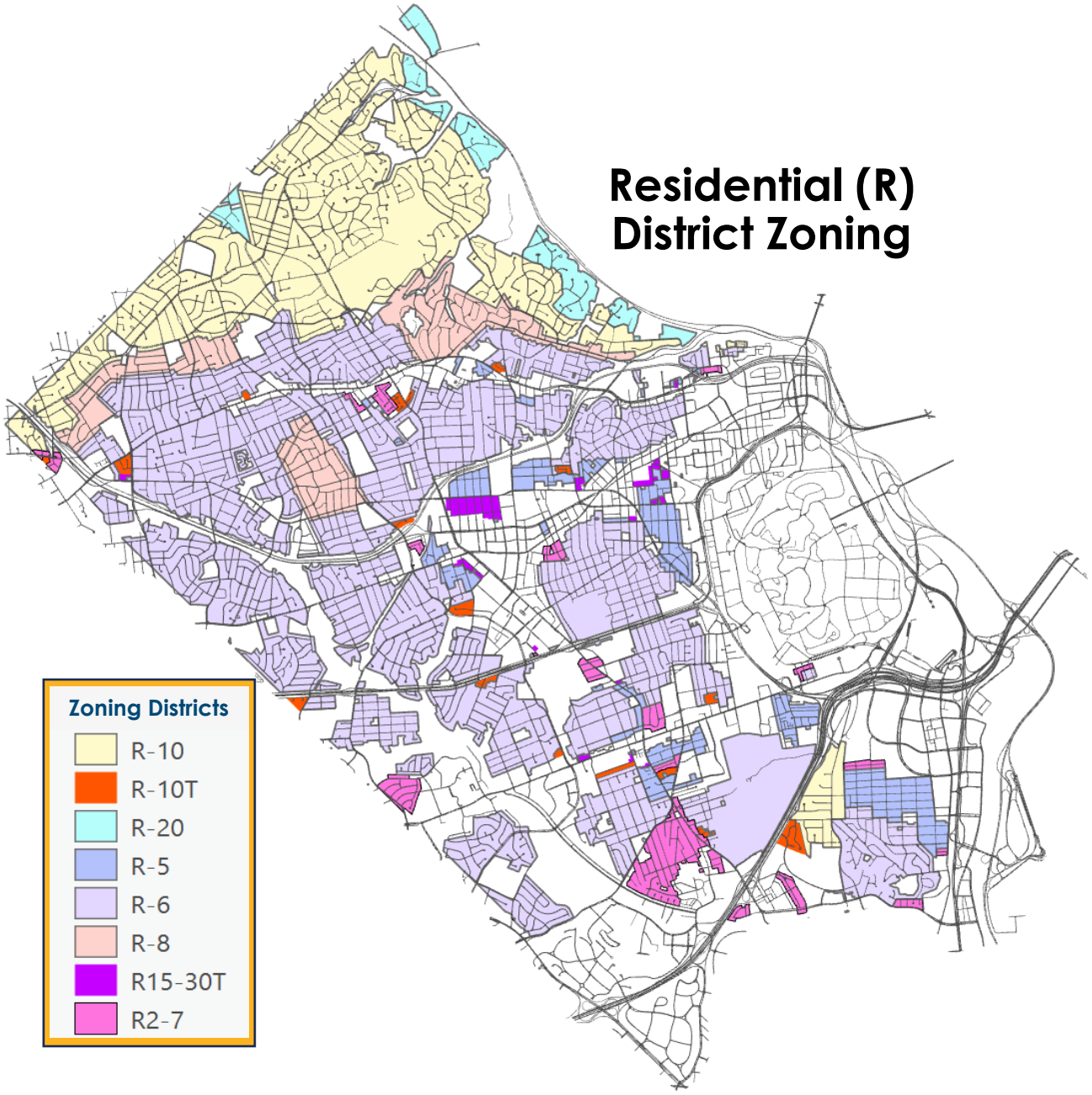


Tonight's presentation

- Data analysis & findings
- Impervious area limit options
- Policy considerations
- Phase 2 public engagement
- Next steps

Why is the County doing the Low Residential Study?

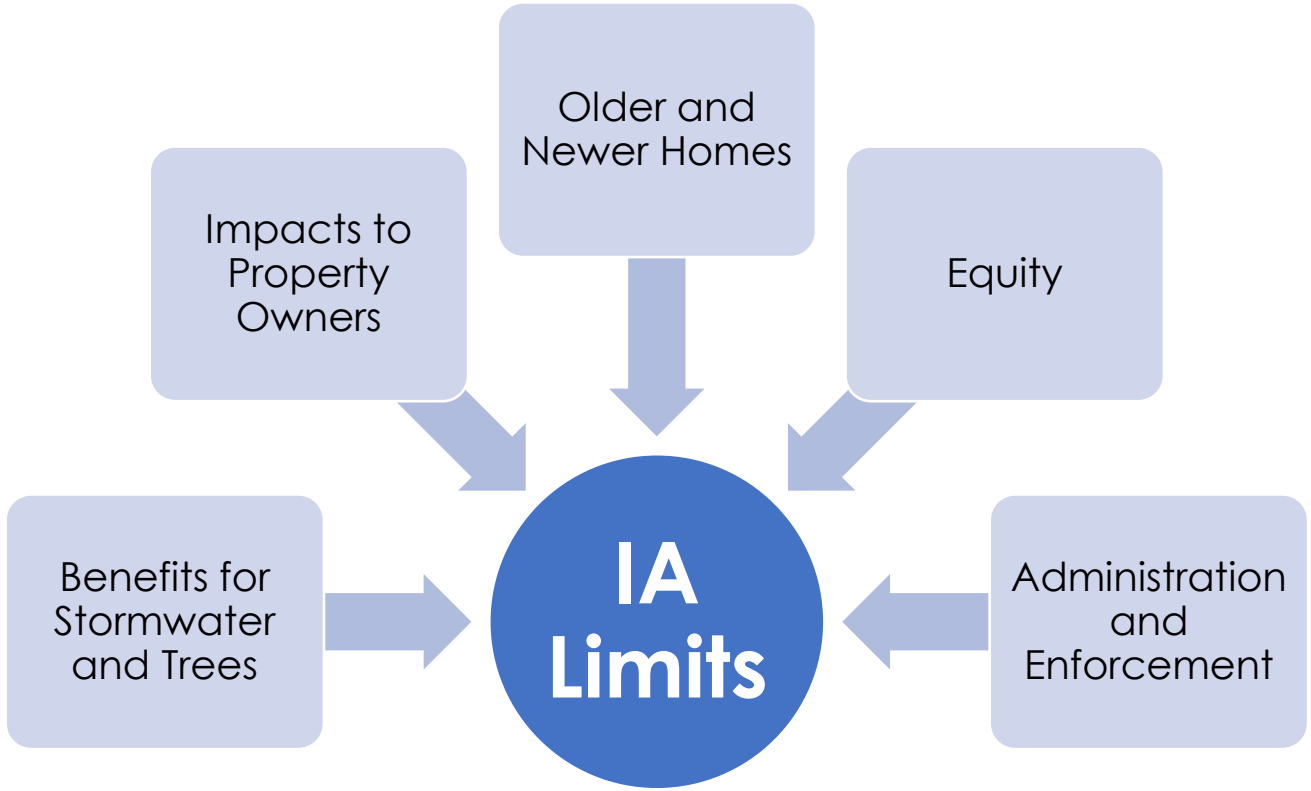
1. Implement the 2023 Forestry and Natural Resources Plan (FNRP)
2. Existing regulations do not effectively limit new impervious area
3. Lot owners have experienced stormwater damage and tree canopy loss
4. Impervious area increasing <u>mostly</u> in low density residential areas areas
   - **10%** increase (160 ac) from 2009-2025



Low Residential Study
Board Charge - February 25, 2025

Charge/Scope: Recommend limits for maximum impervious area on individual lots

Objective: Support better stormwater and tree canopy outcomes



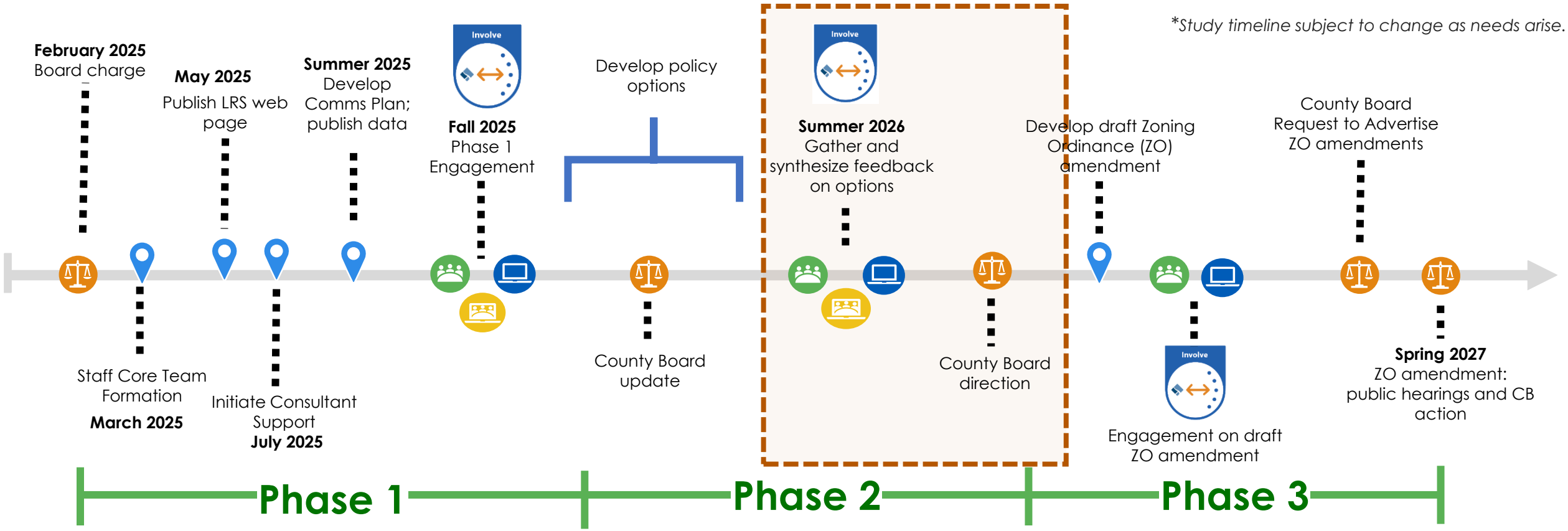
The study shall not:

- Recommend changes to:
  - Maximum main building footprint limits
  - Maximum building height limits
- Set absolute total square footage limits for lot coverage
- Consider any potential changes to the ACZO's definition of lot coverage

Read the LRS Study Charge

Low Residential Study Timeline

*Study timeline subject to change as needs arise.



ARLINGTON VIRGINIA

Online Feedback (e.g, questionnaire, feedback form, etc.)

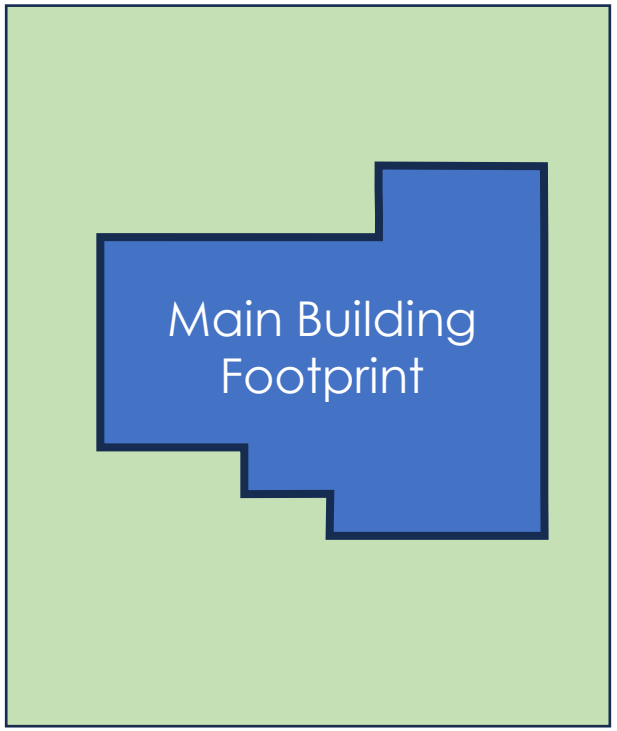
In-Person Engagement and Pop-Ups (e.g, community meeting, roundtable, tabling, walking/bus tour, deliberative dialogue, etc.)

Virtual Meeting (e.g., TEAMS, TEAMS live, Zoom, etc.)

County Board Engagement (e.g, public hearing, Board work session, open door Monday, commission meeting etc.)

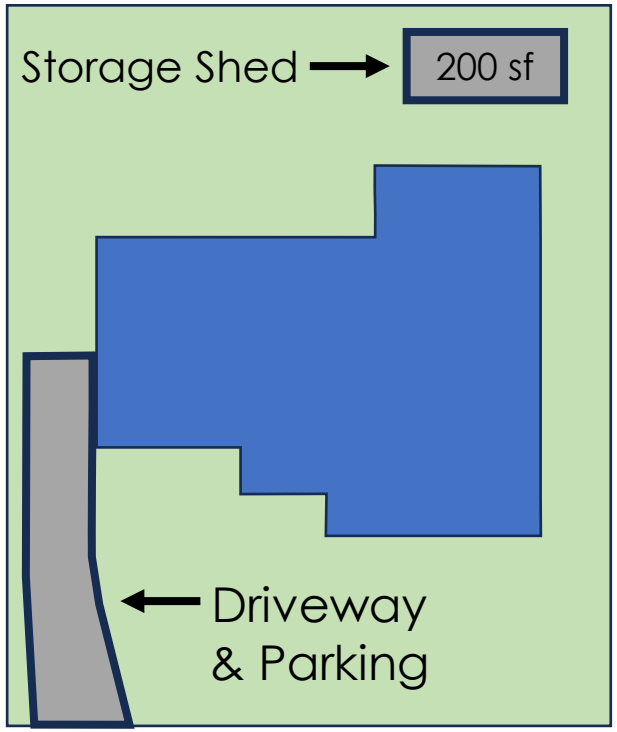
Key Milestone

Key Terms



Main Building Footprint (sf)

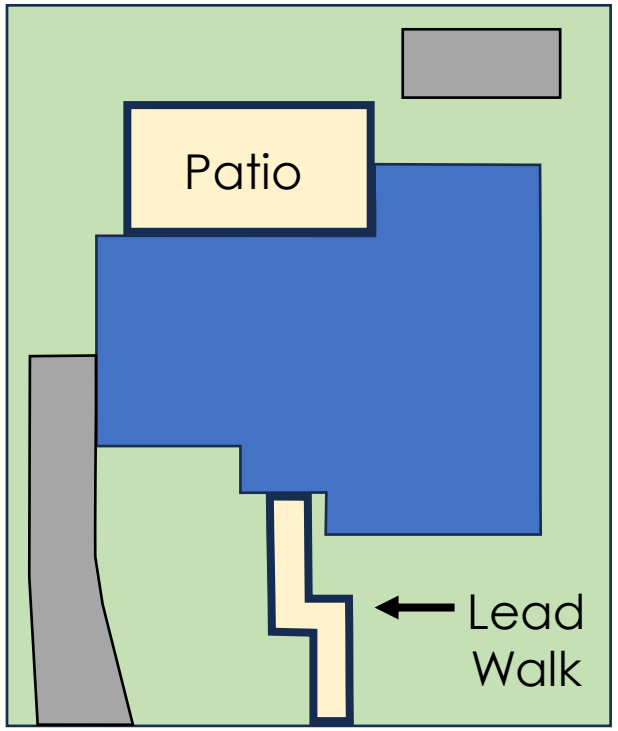
A zoning regulation which limits how much of a lot can be covered by a house or building, including all parts that rest on the ground listed in ACZO §3.1.4.C.



Lot Coverage (%)

A zoning regulation which limits how much of a lot can be covered by these structures and surfaces:

- Main building footprint
- Accessory buildings over 150 sq ft
- Driveways and parking pads
- Other features listed in ACZO §3.1.4.A.



Impervious Area

Any surface material that significantly impedes or prevents the ground from absorbing water.

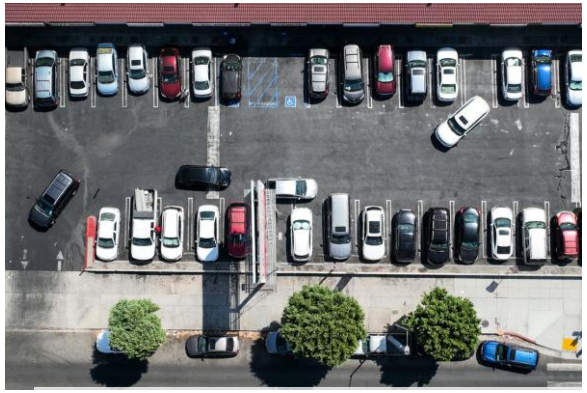


Photo Source: Qian Weizhong/VCG/Getty Images

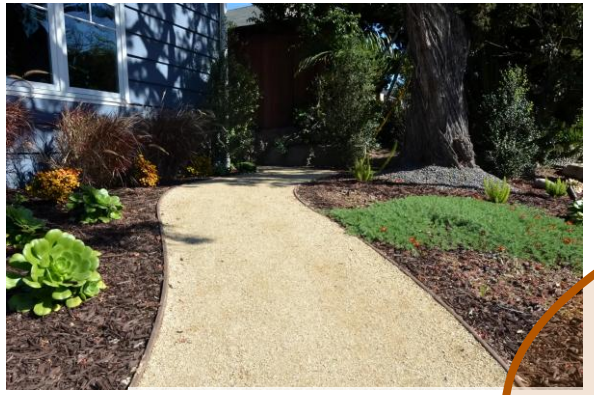


Photo Source: Southwest Boulder & Stone

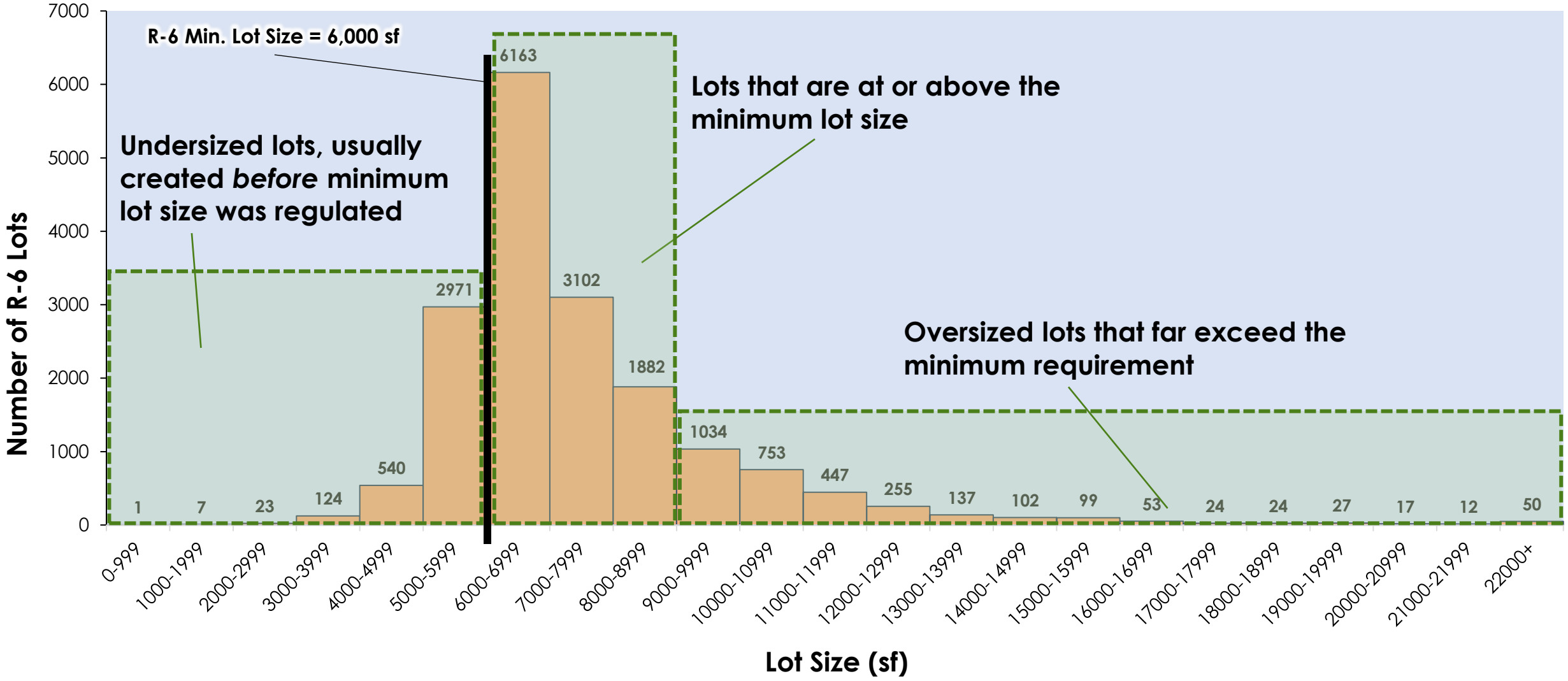
What is impervious surface/area?

- *Any* surface material that significantly **impedes or prevents** the ground from absorbing water*
- Examples:
  - roofs
  - buildings
  - streets
  - parking areas
  - concrete
  - asphalt
  - compacted gravel
  - compacted dirt

*__Pervious paving materials__ are
- Regulated as impervious area under Arlington County Code Ch. 60
- Counted towards impervious area for the Stormwater Utility Fee
- Eligible for credits available under both programs when certain requirements/standards are met

Photo Source: cbreim.com

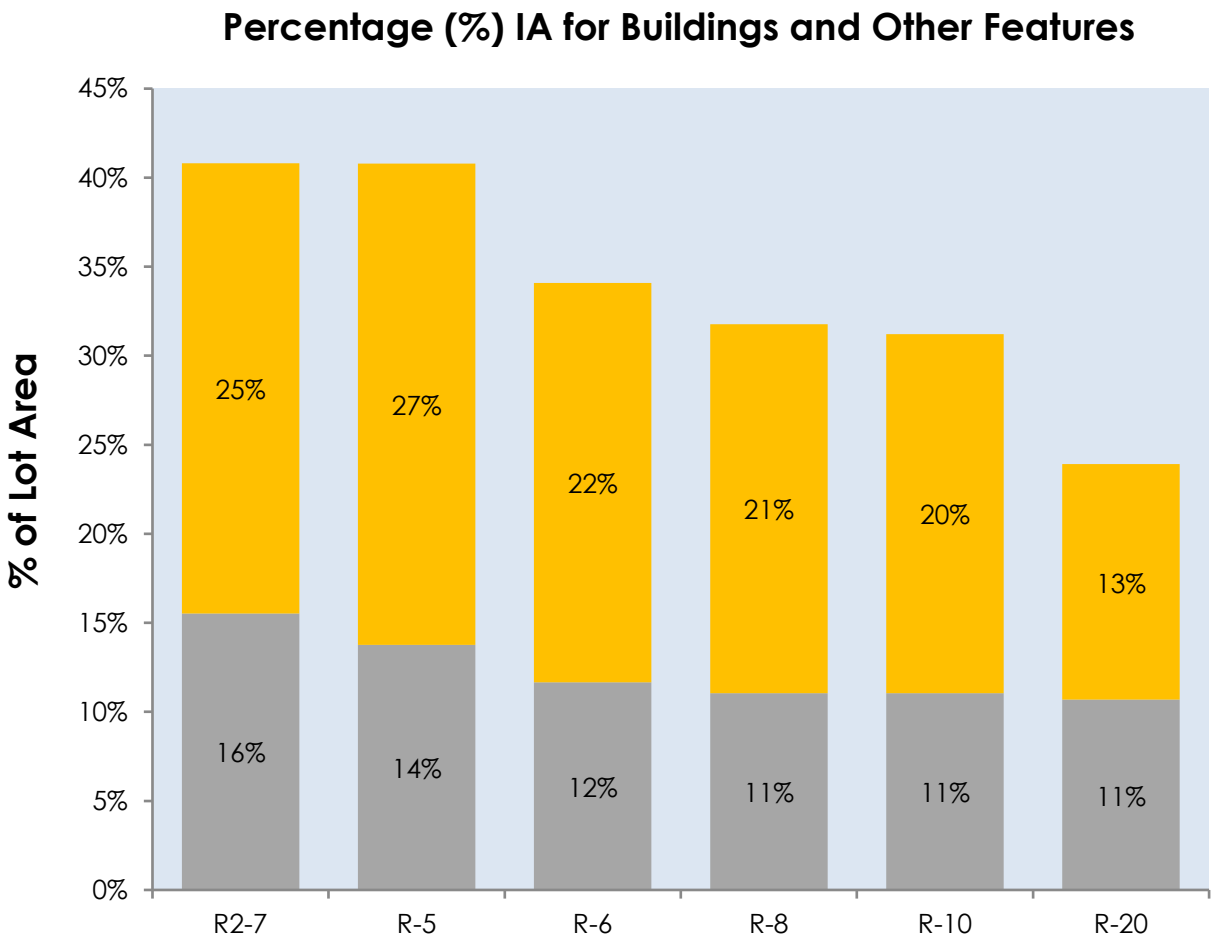
Same Zoning, Different Size
Lots with One-Family Dwellings (R-6 District)

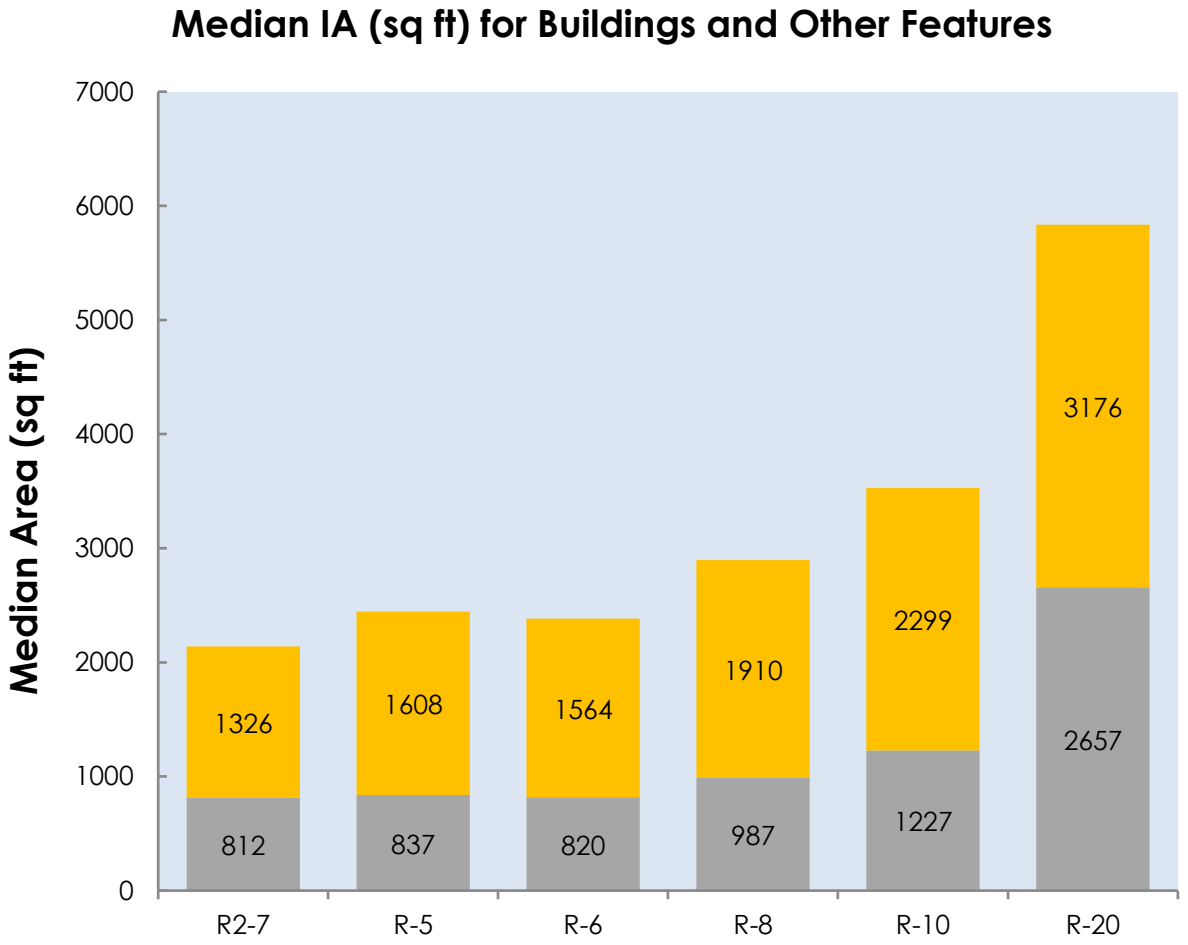


Phase 2 Data Analysis
Impervious Area Breakdown

Buildings include:
- Main buildings
- Accessory structures

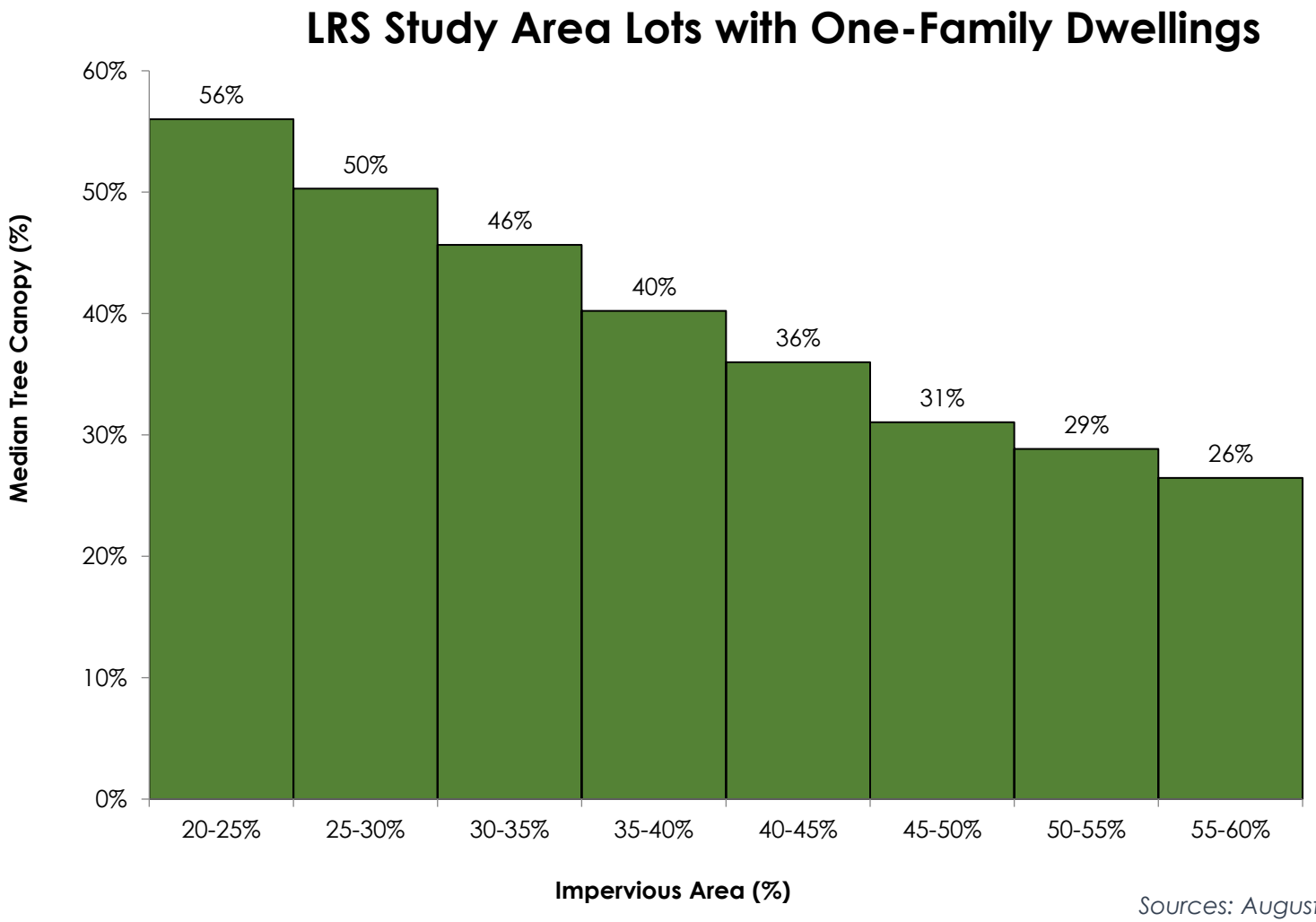
Other features include:
- Driveways
- Patios & Lead Walkways
- Sidewalks
- Swimming Pools





Source: August 2025 Stormwater Utility GIS Data

Phase 2 Data Analysis
Relationships between Tree Canopy and Impervious Area



In general, tree canopy is higher when impervious area is lower.

40% - Forestry and Natural Resources Plan (FNRP) Countywide Tree Canopy Goal

50-55% - MWCOG tree canopy targets in lower density residential areas to balance canopy in less dense areas

Sources: August 2025 Stormwater Utility GIS Data, 2023 Tree Canopy Data

100% Tree Canopy Lots Are Not Impossible



R-6
Lot Size: 6,500 sf
%IA: 25%
%TC: 100%



R-10
Lot Size: 10,000 sf
%IA: 23%
%TC: 100%



R-20
Lot Size: 24,237 sf
%IA: 19%
%TC: 100%

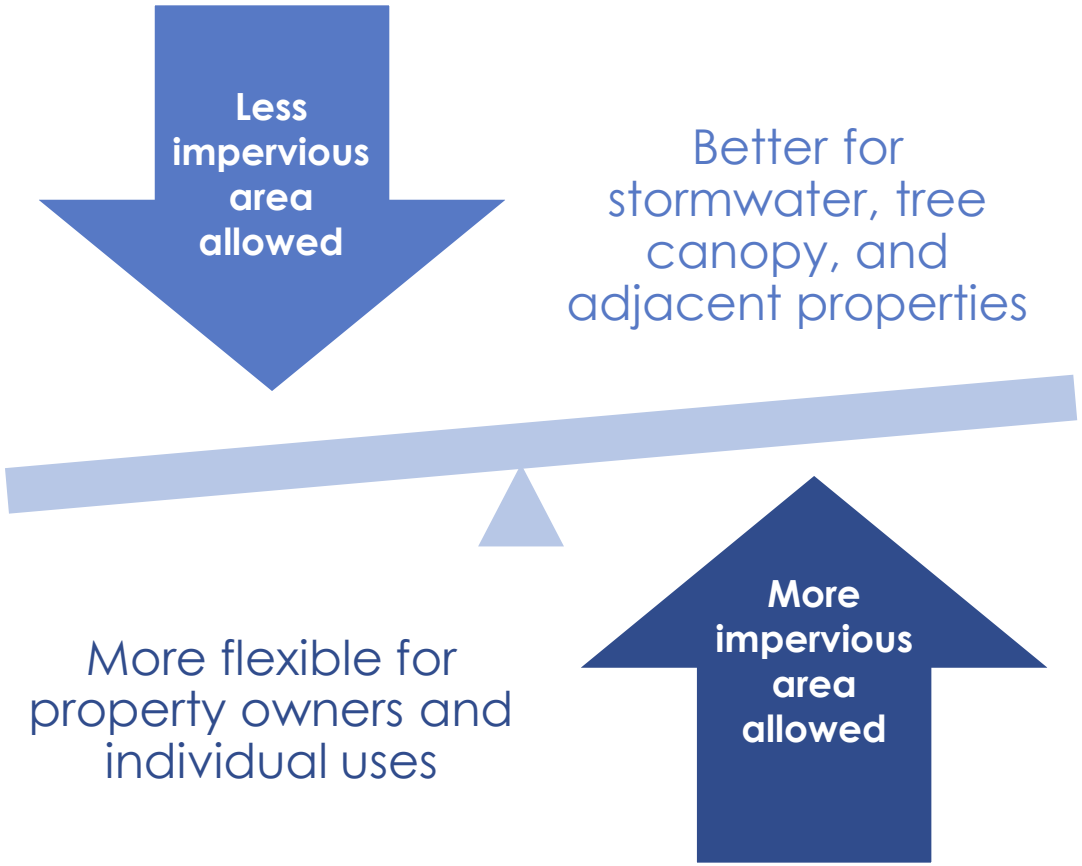
Questions thus far?



Next:
Methodology, Impervious Area Options, and Hybrid Approach Benefits

Methodology/Approach to Selecting Options
Navigating Tradeoffs in Board's Charge

- Account for lots with older *and* newer homes
- Allow enough impervious area for a dwelling + other features
- Create space for trees
- Create space to absorb rainfall and manage stormwater
- Uniform standards for each zoning district
- Use benchmarking research for reference
- Consider the number of lots that would have impervious area above the limit
- Use standard increments for simplicity



Impervious Area Options
Lots with One-Family Detached Dwellings

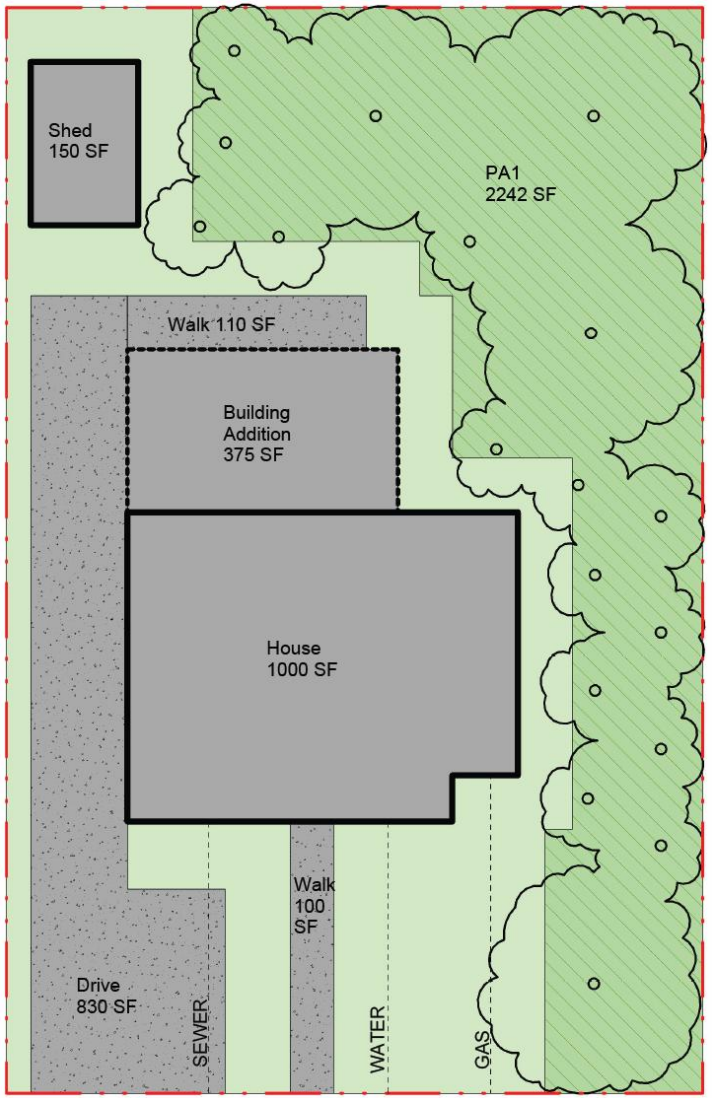
Options for Standard-Sized Lots						
Options	**R-20**	**R-10 R-10T**	**R-8**	**R-6**	**R-5 R15-30T**	**R2-7**
Lower	**25%**	**30%**	**35%**	**40%**	**45%**	**45%**
Middle	**30%**	**35%**	**40%**	**45%**	**50%**	**50%**
Upper	**35%**	**40%**	**45%**	**50%**	**55%**	**55%**
Minimum req. lot size	20,000 sf	10,000 sf	8,000 sf	6,000 sf	5,000 sf	5,000 sf
Existing lot coverage maximums (§3.2.5)	25-33%	32-40%	35-43%	40-48%	45-53%	40-48%
Median IA* (%)	24%	33%	33%	35%	41%	43%

- Standard-sized lots would have a percentage (**%**) limit
- Under/oversized lots would have a square footage (**sf**) limit

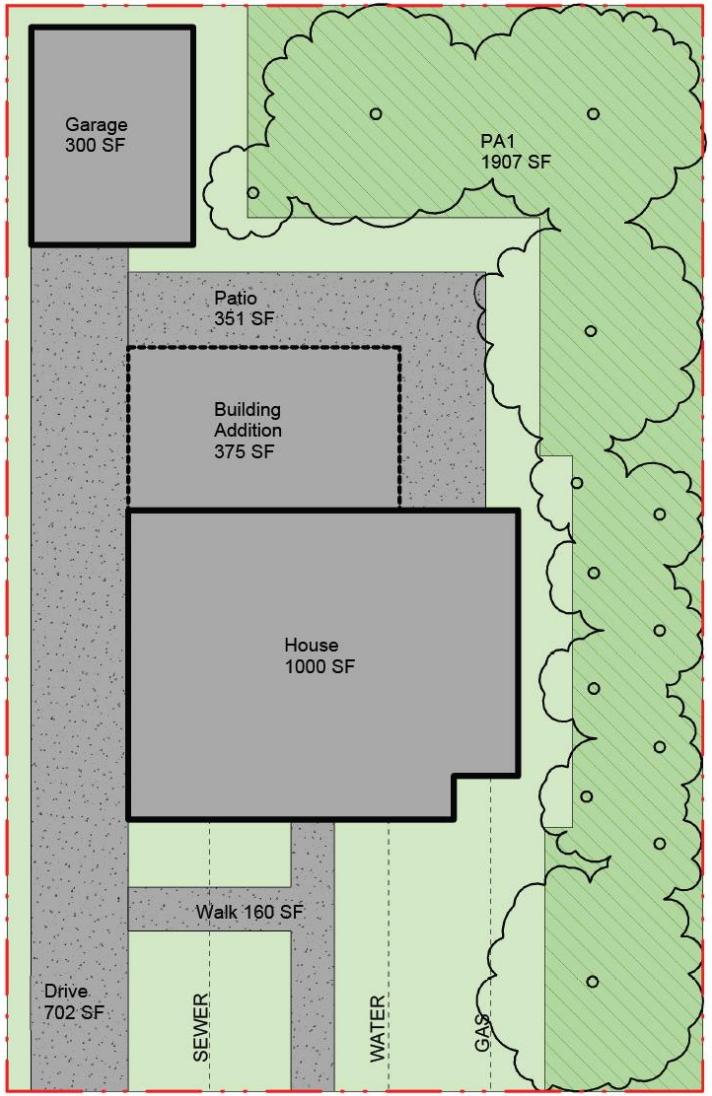
* *Source*: August 2025 Stormwater Utility GIS Data - LRS Study Area lots with one-family dwellings

Visualizing Lower/Middle/Upper Options

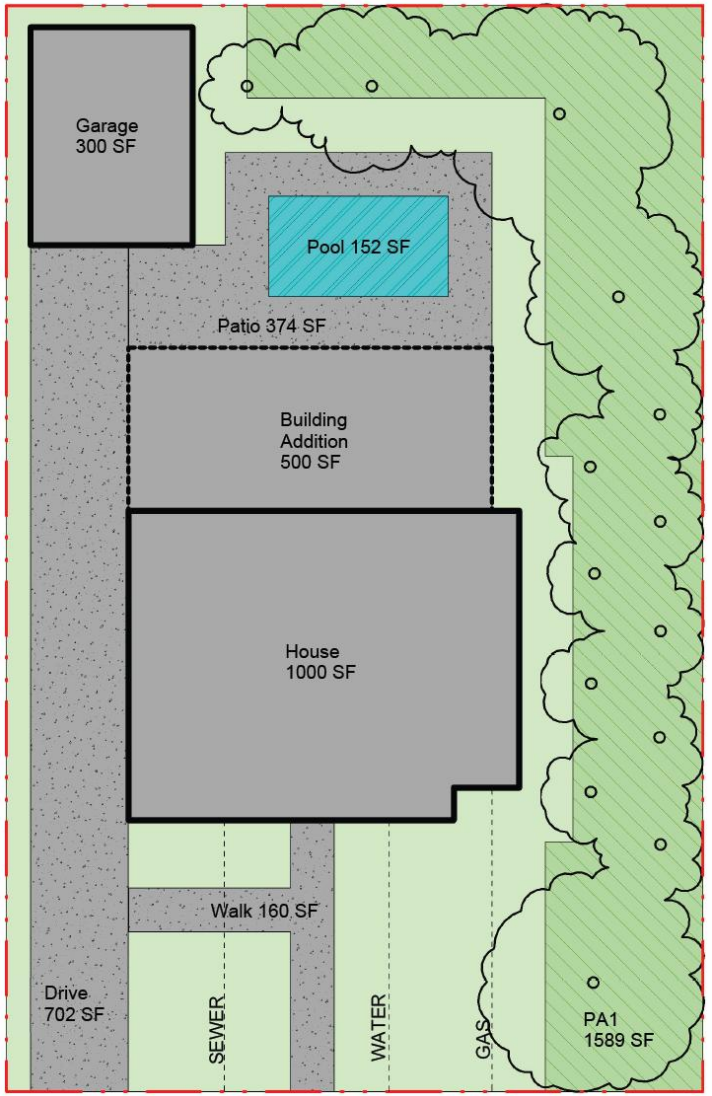
Illustrative Lot Diagrams (R-6 District)



40%



45%



50%

Percentage *and* Area account for lot size differences



Undersized Lots

*Set an impervious area allowance (**sf**)*

- Treat undersized lots as if they have the min. req. lot size
- Same solution used for main building footprint



Standard-sized Lots

Set a maximum impervious percent (%)

- Apply to lots at or above the min. req. lot size
- Include the majority of lots within the zoning district

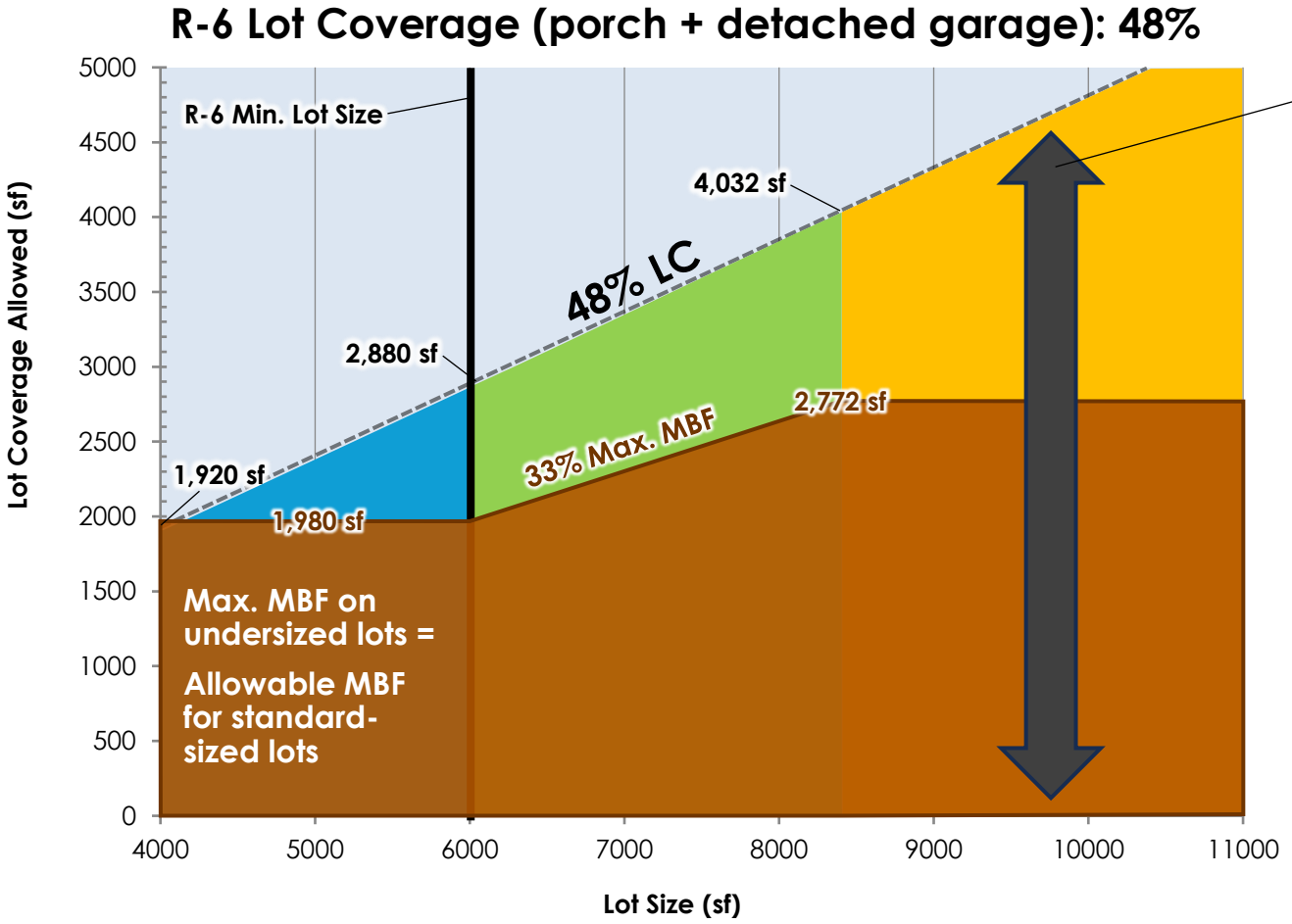


Oversized Lots

*Set a maximum impervious area (**sf**) cap*

- Curb excessive impervious area
- Allows space for trees
- Provides more area for water to infiltrate the ground

Lot Coverage
Implications for Undersized/Oversized Lots



Regulated as lot coverage

- Accessory buildings with either:
  - Footprints ≥ 150 sq. ft.; *or,*
  - Two or more stories
- Paved driveways and parking pads
- Patios ≥ 8" above finished grade
- Decks which are:
  - ≥ 4' above finished grade; *and,*
  - Unattached from main building
- Gazebos & pergolas
- Stoops/landings ≥ 4' above finished grade
- In-ground swimming pools

❖ **Main building footprint is included in allowed lot coverage**

Legend

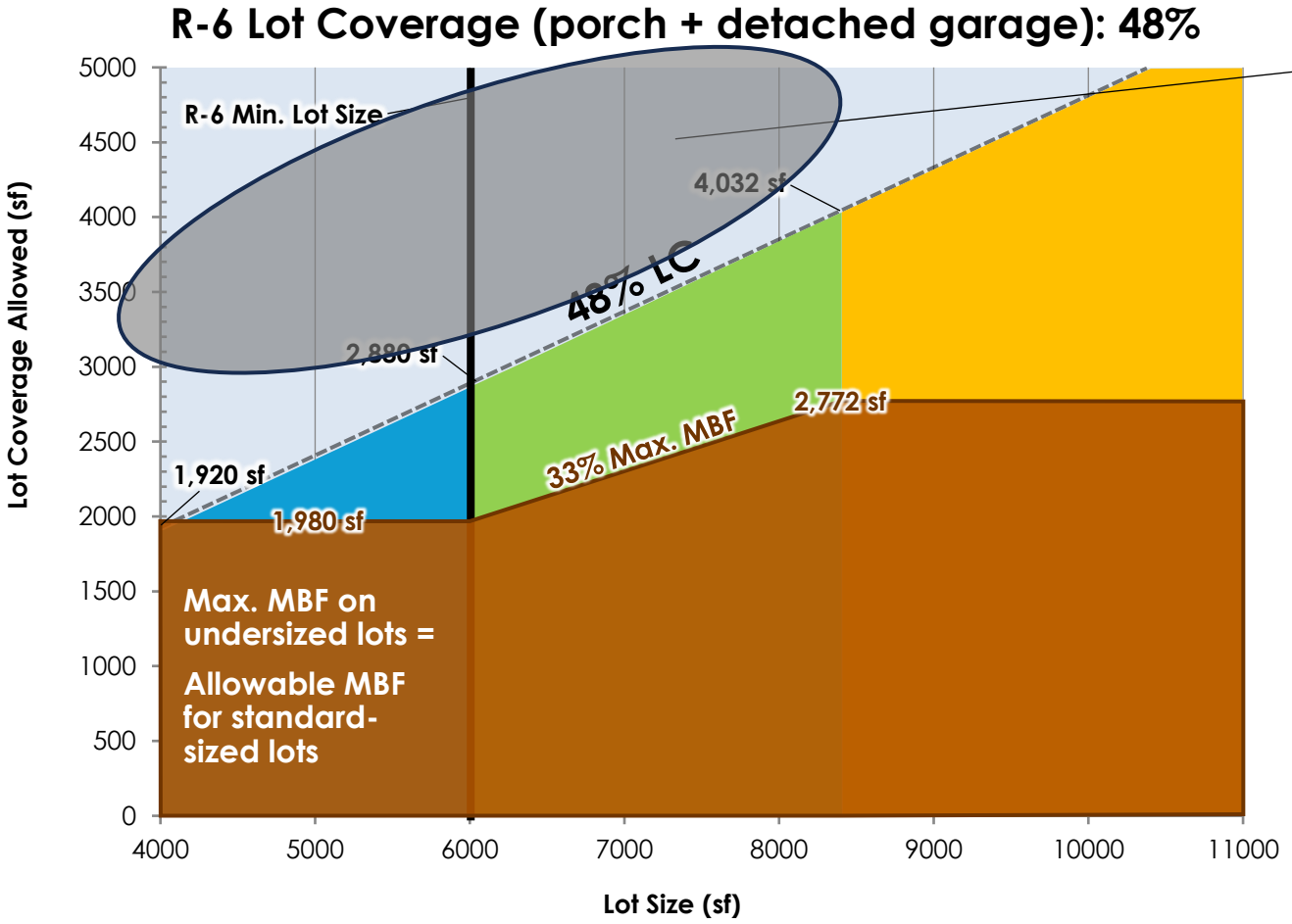
- Undersized Lots
- Standard-sized Lots
- Oversized Lots
- Max. Main Building Footprint Allowed







Lot Coverage
Implications for Undersized/Oversized Lots



Unregulated by lot coverage

- Decks < 4' above finished grade
- **Patios < 8" above finished grade**
- Accessory buildings with footprints less than 150 sq. ft. or less than two stories
- Air conditioners
- Compressors
- Generators
- Stormwater planters
- Above-ground swimming pools
- **Sidewalks and other walkways**
- Exterior basement steps
- Areaways
- Window wells
- Tents and other temporary structures
- Play equipment, such as swing sets
- Outdoor furniture
- Barbecues & grills
- Hot tubs

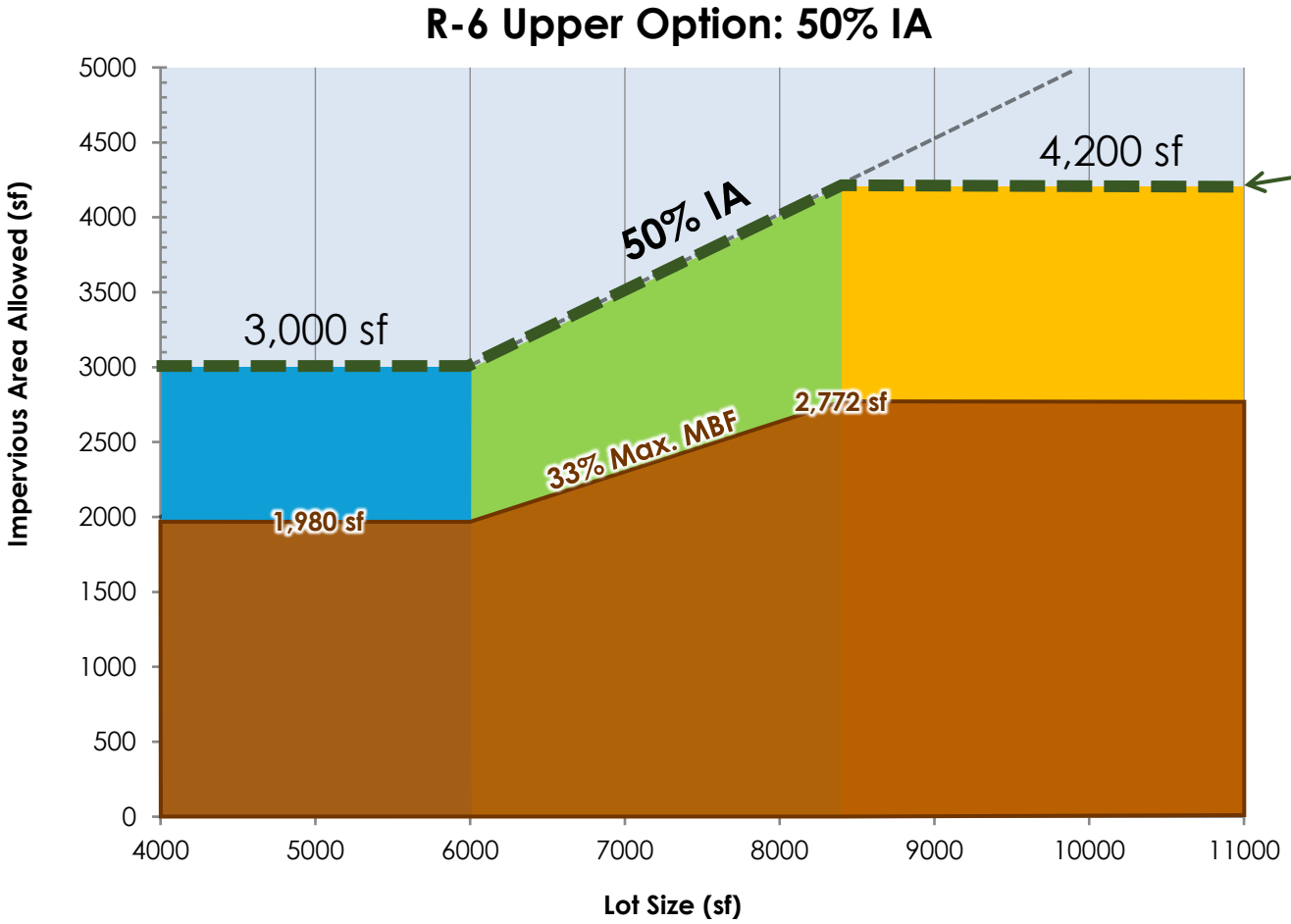
Legend

- Undersized Lots
- Standard-sized Lots
- Oversized Lots
- Max. Main Building Footprint Allowed



Proposed Impervious Area Options

How Limits Can Work for Undersized Lots



Impervious Area Cap

No impervious area allowed above the green line

Undersized Lot Allowance

Minimum req. lot size **X** IA limit **=** Allowable IA

Example: R-6 Upper Option

6,000 sf **X** 50% **=** 3,000 sf

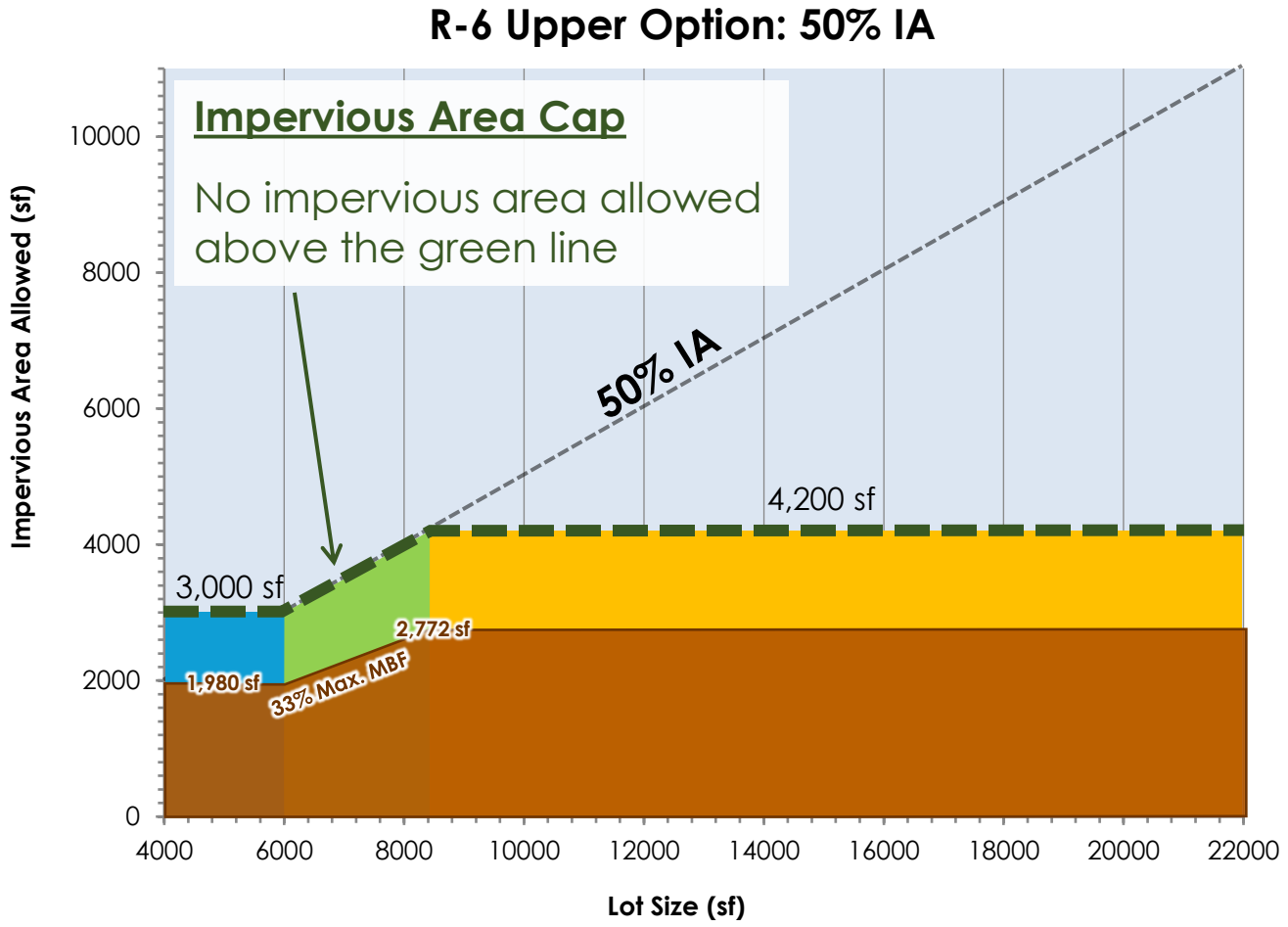
Legend

- Undersized Lots
- Standard-sized Lots
- Oversized Lots
- Max. Main Building Footprint Allowed

Standard-sized Lot IA Limit = **50%**

Proposed Impervious Area Options

How Limits Can Work for Oversized Lots



Standard-sized Lot IA Limit = **50%**

Oversized Lot Cap

6,000 sf	X	140%	=	8,400 sf
8,400 sf	X	50%	=	4,200 sf

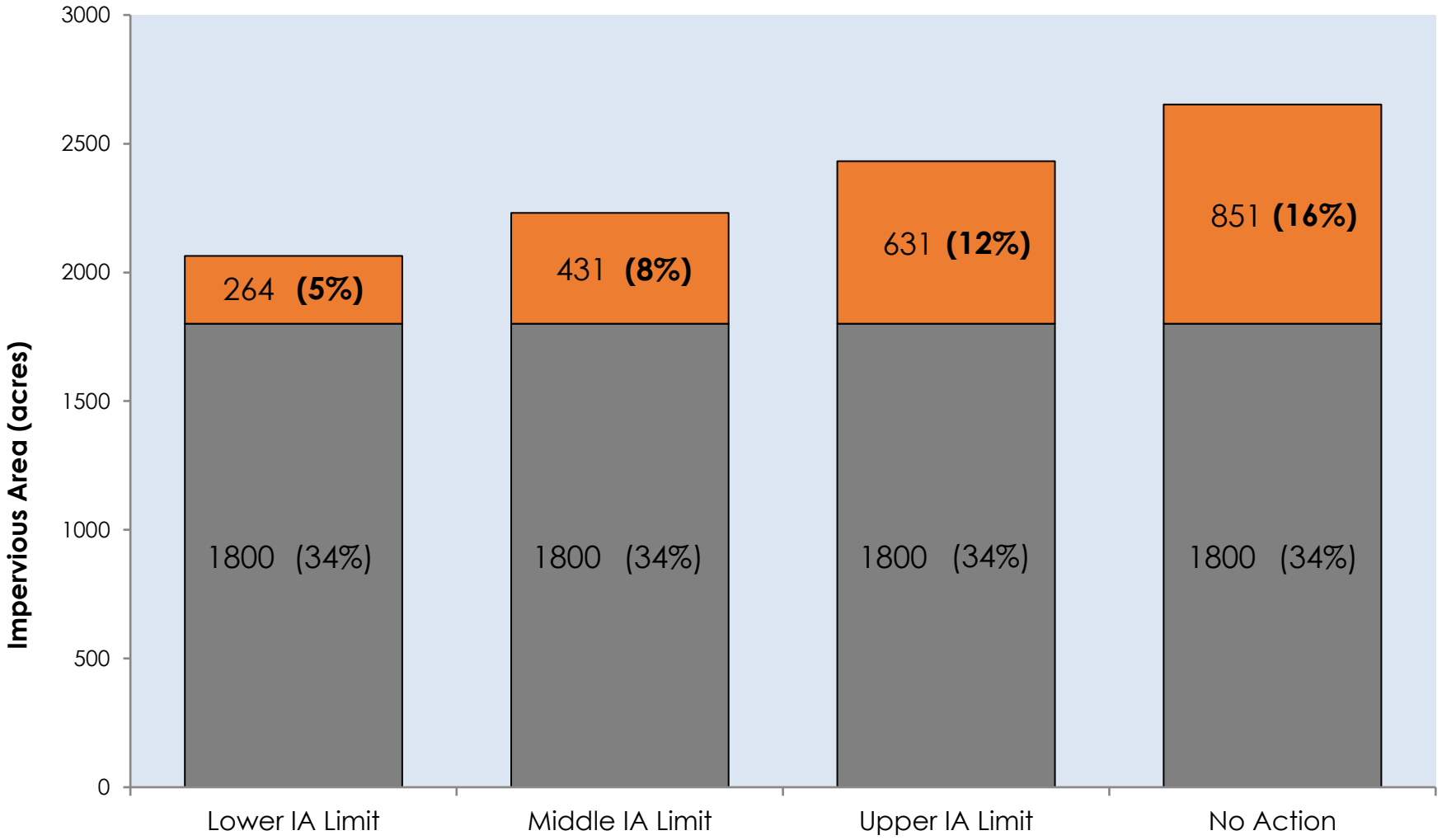
Example: R-6 Upper Option

Minimum req. lot size	X	140%	=	Oversized lot size
Oversized lot size	X	IA limit	=	Allowable IA

Legend

- Undersized Lots
- Standard-sized Lots
- Oversized Lots
- Max. Main Building Footprint Allowed

Proposed Impervious Area Options
Anticipated Outcomes



More acres for trees and other plants

More open areas for absorption of rainwater

Protected acreage estimates:

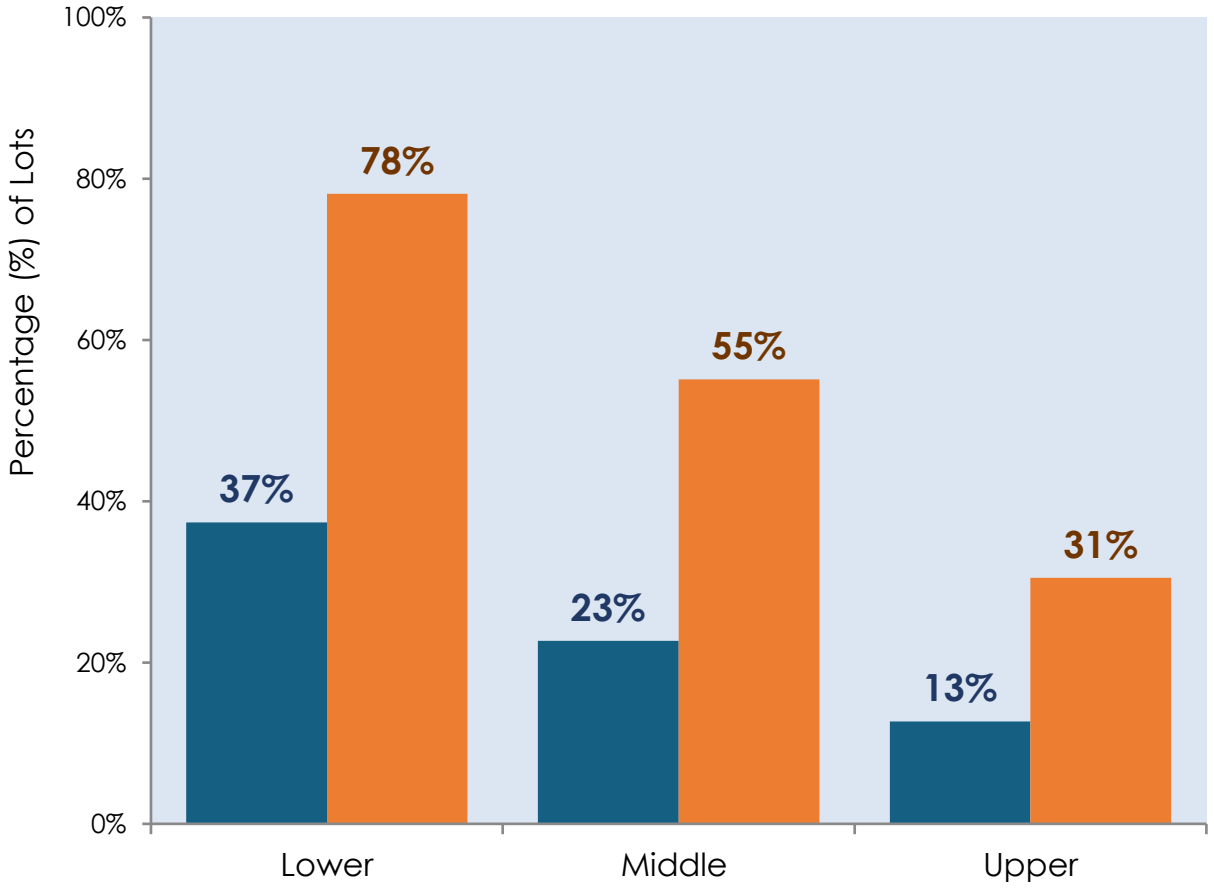
- Upper: 220 ac.
- Middle: 420 ac.
- Lower: 587 ac.

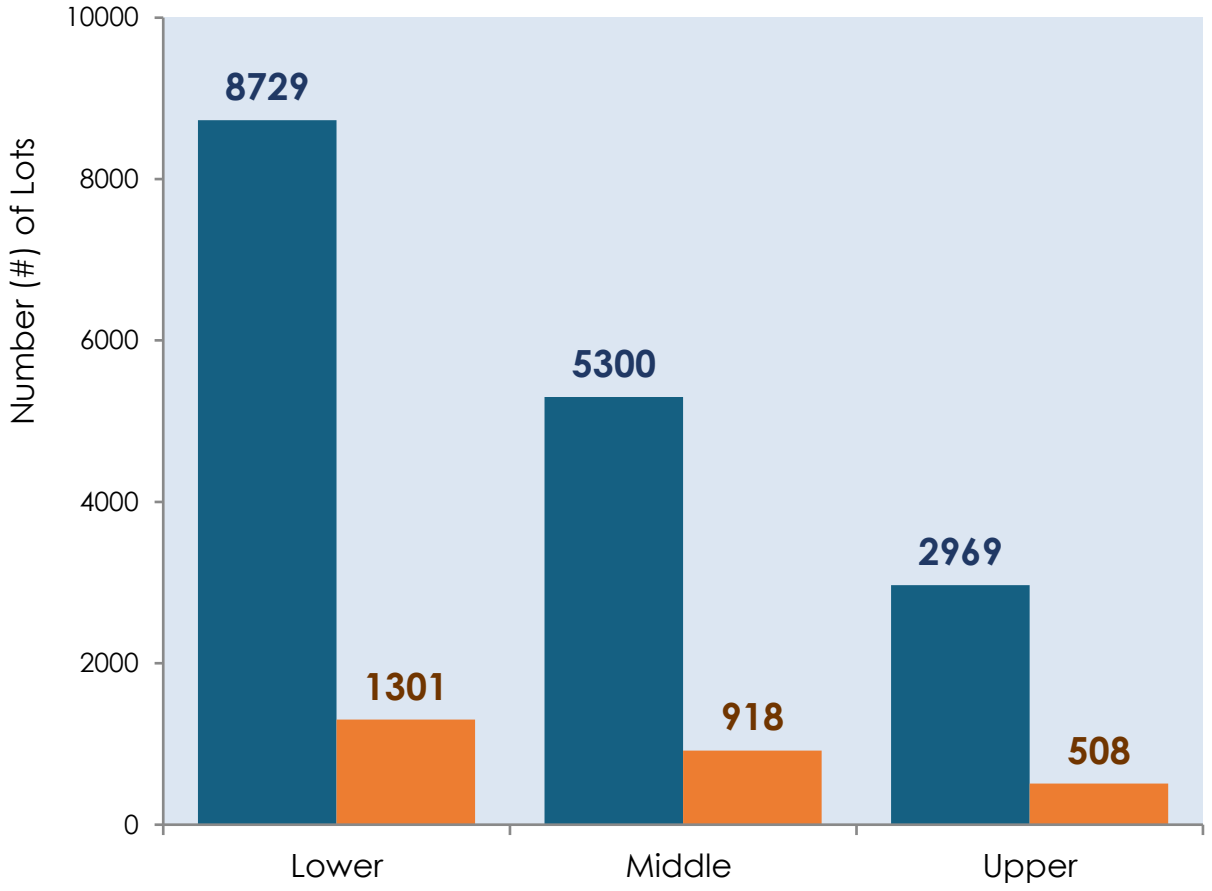
Maximum potential IA

Existing IA in LRS Study Area

Lots With Older and Newer Homes

Estimated Number Above the IA Limits





Old (Before 2015) New (2015-2024)

Questions thus far?



then:
Policy Considerations, Phase 2 Engagement, and Next Steps

Policy Consideration #1
Keep lot coverage req. alongside new imp. area limits

- Lot coverage requirements must remain in the Zoning Ordinance

- *Possible options:*
  a. Uses with impervious area limits must meet existing lot coverage ***and*** new limits
  b. Replace lot coverage standards ***only*** for uses with new impervious area limits

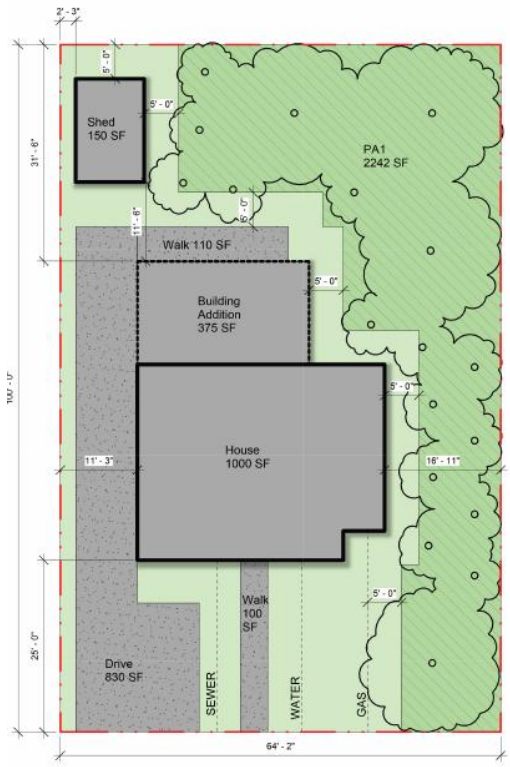
Maximum Coverage Limits - One-Family Dwellings (§3.2.5.A.)	R-5 R15-30T	R-6 | R2-7 RA | C | M	R-8	R-10 R-10T	R-20
No porch, no detached garage	45%	40%	35%	32%	25%
Has a ≥60 sq. ft. porch on the front elevation (exclusive of any wrap around or side portion)	48%	43%	38%	35%	28%
Has a detached garage in the rear yard	50%	45%	40%	37%	30%
Has both a porch *and* detached garage	53%	48%	43%	40%	33%
Main building footprint - No porch	34% -or- 2,380 sq. ft.	30% -or- 2,520 sq.ft.	25% -or- 2,800 sq. ft.	25% -or- 3,500 sq. ft.	16% -or- 4,480 sq. ft.
Main building footprint - Has a ≥60 sq. ft. porch on the front elevation (exclusive of any wrap around or side portion)	37% -or- 2,590 sq. ft.	33% -or- 2,772 sq. ft.	28% -or- 3,136 sq. ft.	28% -or- 3,920 sq. ft.	19% -or- 5,320 sq. ft.

County Board's LRS Charge (February 2025:
The study shall not recommend changes to maximum main building footprint limits.

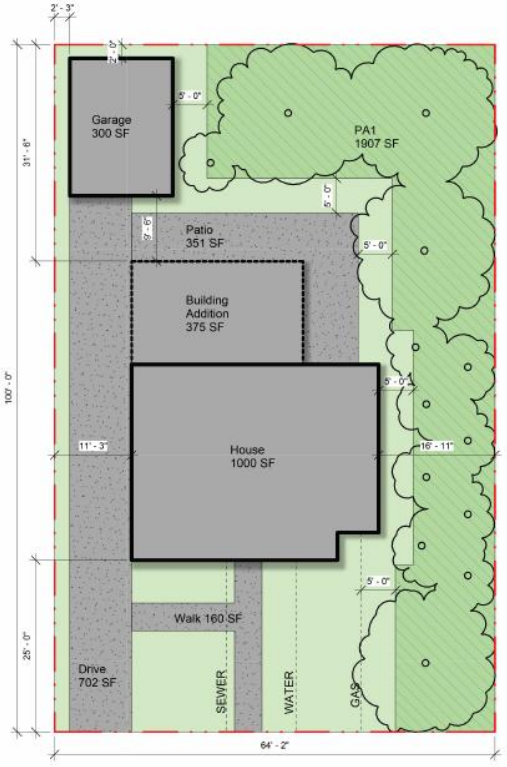
Policy Consideration #2
Include minimum (contiguous) plantable area requirements

- No explicit enabling authority in Code of Virginia
- Impervious area limit would create space for trees
- *Preliminary recommendation* - <u>Do not adopt</u> a minimum plantable area requirement

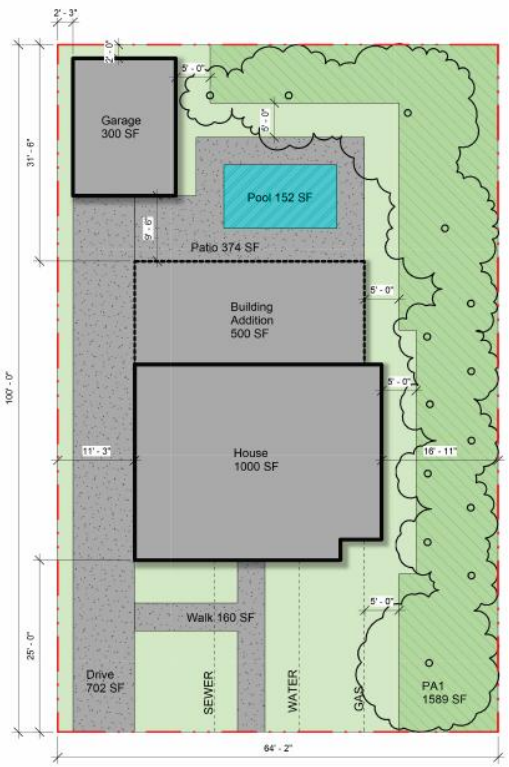
LOWER IA - 40%



MIDDLE IA - 45%



UPPER IA - 50%



Lot Features

Impervious Area

Plantable Area for Trees

Remaining Lot Area

Policy Consideration #3

Adjust yard and setback requirements to allow for increased tree conservation and planting

- Would not guarantee increased tree canopy
- Zoning's purpose is consistency within a given area
  - Allowing case-by-case adjustments creates inconsistency
- More appropriate for targeted locations to conserve identified natural areas
- *Preliminary recommendation* -

  <u>Do not adjust</u> yard/setback requirements







Policy Consideration #4
Establish impervious area limits based on lot size or zoning district

- ✓ Impervious area options account for both lot size ***and*** zoning

Maximum impervious area - **Middle** option		
Applies to lots that are...	**Unit of Meas.**	**R-6**
Undersized • i.e. Lots with less area than required by their zoning district	Square feet (sf) • Min. lot size **X** IA% for standard sized lot	**2700**
Standard sized • i.e. Lots between 100-140% of the min. req. lot area	Percent of lot area (%)	**45%**
Oversized • i.e. Lots larger than 140% of their zoning's min. lot area	Square feet (sf) • Min. lot size **X** 140%	**3780**
Existing lot coverage maximums (§3.2.5)	Percent of lot area (%)	40-48%
Minimum lot size	Square feet (sf)	6,000
Median impervious area*	Percent of lot area (%)	35%

* *Source*: August 2025 Stormwater Utility GIS Data - LRS Study Area lots with one-family dwellings

Forestry and Natural Resources Plan (FNRP)
Action Step Implementation

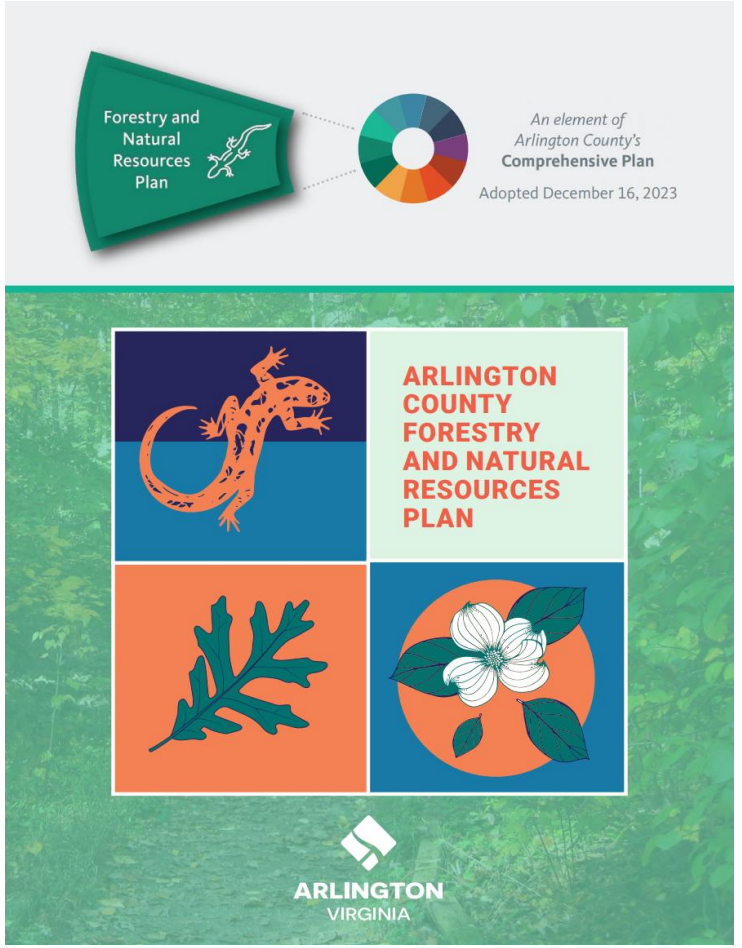
Strategic Direction 1 - Conservation

Increase/ protect tree canopy, natural areas and biophilic features by:

- Expanding space for trees and natural areas
- Enhancing development standards

Phase 2 IA limit options would:

- Account for all impervious surface materials
- Set a maximum IA square footage cap
- Regulate IA based on lot size *and* zoning district
- Create plantable area for trees and other vegetation



Next Steps

- Conduct engagement through Sept
- Summarize feedback
- Prepare staff recommendation
- Obtain feedback from LRPC
- County Board provides staff direction for Phase 3

Phase 2

- Draft zoning text
- Administrative/permitting process
- ZOCO
- RTA
- Adoption

Phase 3

Public participation objectives for Phase 2:

- **Understand** the tradeoffs between different options
- **Assess** the anticipated outcomes for each option
- **Express** preferences and rationales to the project team