

## LDA 2.0 Program for Single Family Homes

April 2021

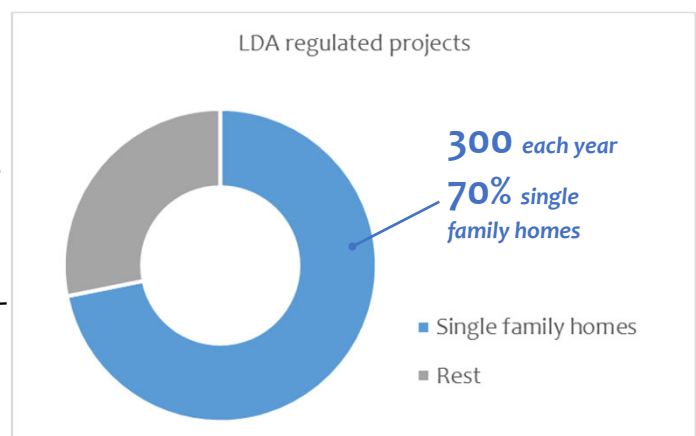
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### What is the LDA program?

- Applies to 'land disturbing activities' that exceed 2,500 square feet\*
- Board chose State option in 2014 to continue to regulate single family homes
- Regulates construction and post-construction runoff

\*minimum State threshold



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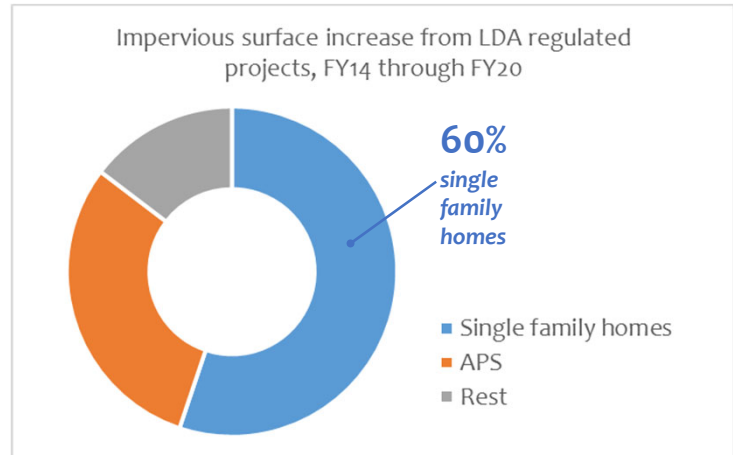
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## Why do we have an LDA program for single family homes?

- Majority source of stormwater impacts from urbanization

### Mitigate:

- Lot-to-lot runoff
- Cumulative runoff impacts to downhill properties
- Cumulative runoff and water quality impacts to stormwater system and streams



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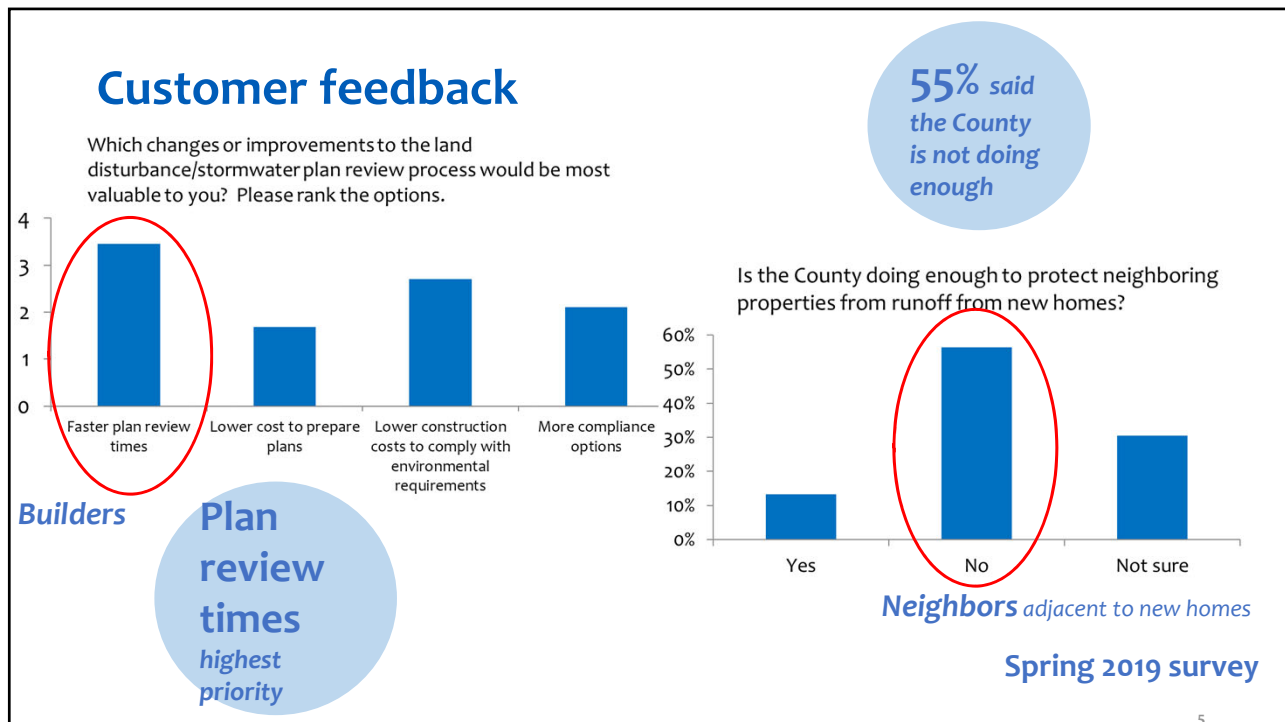
## What does the LDA SFH program do?

- Applies State tools to mitigate water quality impacts
  - Prioritizes tools that reduce runoff at the source
- Does not apply State requirements to mitigate water quantity
  - Not intended for individual single family home lots
- Also includes tree canopy requirements

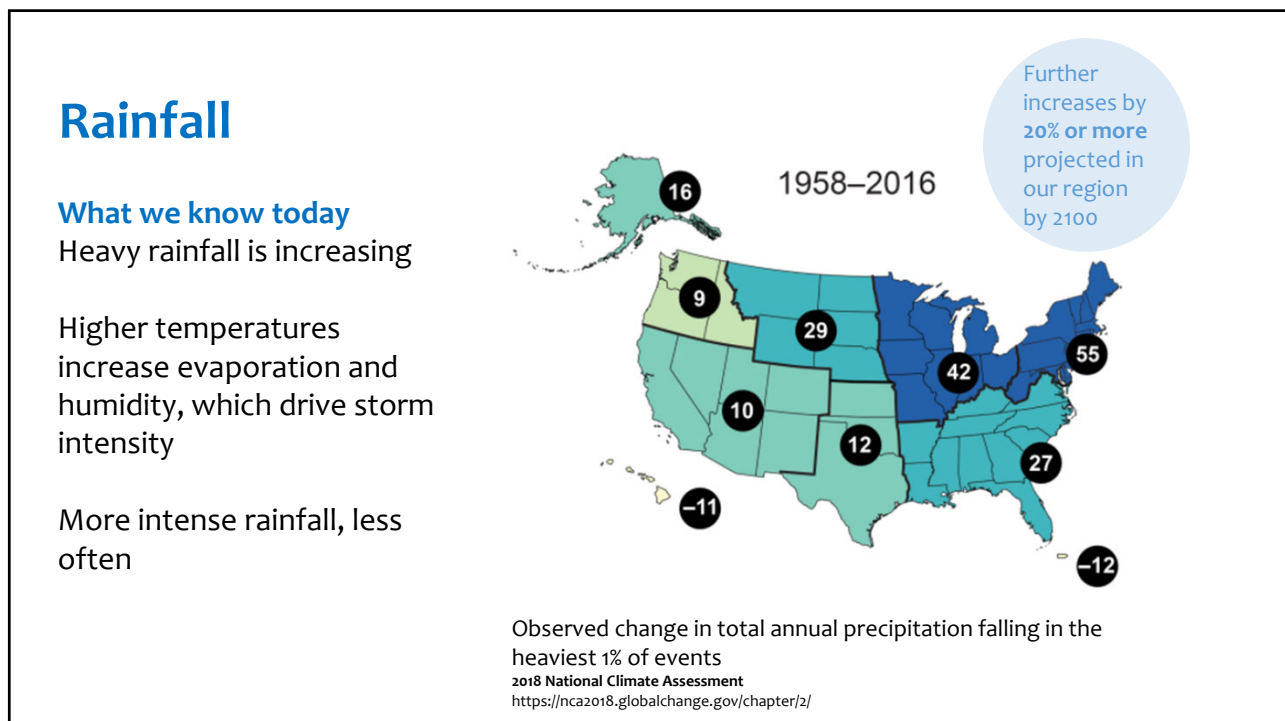


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## What will LDA 2.0 do better?

- Manage more water
  - Emphasis on heavy rainfall and protecting downhill properties
  - More reliability
- Standardize plans for preparation and review efficiency
  - Target reduced plan approval time
- Maintain feasibility to build and maintain stormwater facilities
- Within existing regulatory authority

*"The specific compliance requirements for these single-family residences shall be set forth in the Stormwater Manual."*

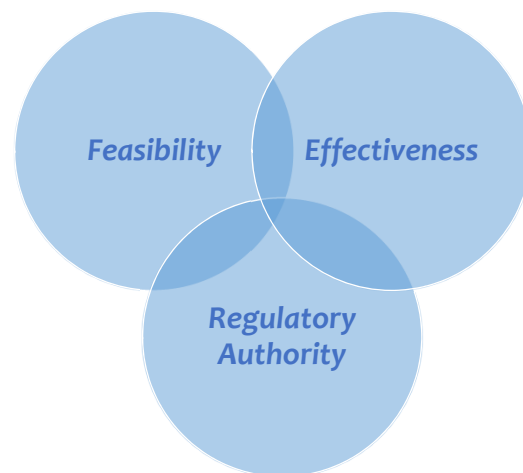


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## Chapter 60 provides authority and flexibility to implement LDA 2.0

- **Add** State water quantity requirements
- **Offer** a simpler, more feasible **Alternative compliance option**
- No code changes required
- Carrot and stick

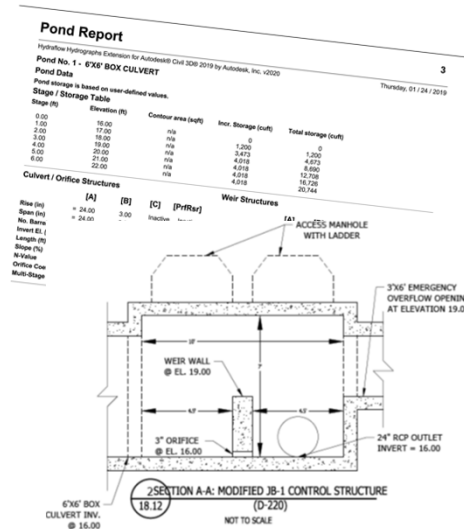


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## State water quantity requirements are not feasible for most single family homes

- Complicated engineering and detention system design
- Gravity outflow from detention system often not feasible – pumps?
- Conflicts with trees, other landscaping, utilities, etc.
- Homeowner maintenance burden



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## Alternative compliance option provides robust, feasible, and reliable performance

- Quantitative detention requirement
  - 3" of runoff from increased impervious surfaces
- Use of gravity detention tank
  - Captures heavy rainfall
  - Releases slowly over hours
- Less 'official' water quality credit required\*

\*Detention and slow release does benefit water quality (not currently credited in State toolbox)



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## Why the Alternative compliance option benefits builders, neighbors, and future owners

### Builders

- **Streamlined** plan templates and faster review
- **Lower** design and construction costs
- **Easier sell** to prospective buyers

### Neighbors

- **More water managed** uphill
- **More reliable** tools

### Owners

- **Simple and visible** tools rather than **complex and underground**

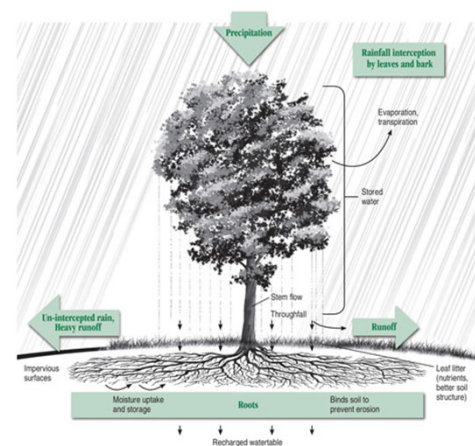
Multiple incentives to choose this option

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## Trees

- Trees provide many long-term benefits, but only minimal runoff reduction during intense rainfall
- Offering 'right-sized' quantity credits under alternative compliance option
- Also, count existing trees during 2-year window prior to LDA application
  - Balances well with range of policies for building community (e.g., 5-year window for counting existing impervious surfaces)



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## Soils

- Excavated soils typically used on-site
  - Compacted by heavy equipment
  - Data suggest nearly impervious
  - Poor conditions for trees and other plants
- “Soil profile rebuilding”: Require amendment and de-compaction
- Goal: Maximize absorptive capacity to minimize off-lot impacts

New home soils

**10x** more compacted  
than existing home soils



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## Retaining walls

- Performance based option:
  - Locate retaining walls away from lot lines and setbacks
- Otherwise:
  - More analysis and plan review required to look at off-lot impacts
- Goal: Contain the impacts from retaining walls to the property being developed.



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## LDA 2.0 summary

- Incentive-based program for more robust, reliable management of lot-based runoff
- Balanced responsiveness to diverse customers: builders, neighbors, owners
- Adaptive to a changing climate
- Complements, but cannot replace, system-scale flood resiliency investments through the CIP



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## Input, review, and feedback to date

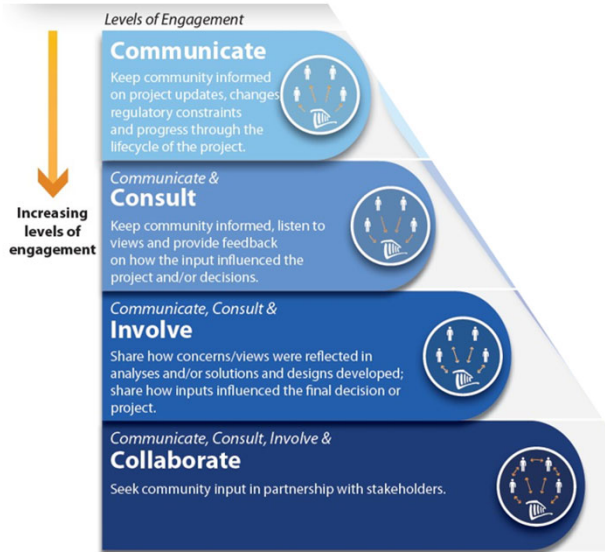
- Engineers that prepare a large volume of single family home plans in Arlington
  - Made a number of adjustments to increase flexibility, feasibility, and clarity
- Technical review by Center for Watershed Protection
  - Have worked extensively on Virginia and DC stormwater regulations
- LDA 2.0 internal team as well as Inter-departmental Stormwater Workgroup

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## Builder engagement recommendation: Communicate, with targeted Consult



- Communicate, because this is enhancement of an existing regulatory program, with Board-direction to increase performance
- Consult about specific details –e.g., tank placement/aesthetics and soil profile re-building

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## LDA 2.0 launch framework

- Six (6) month delayed effective date to account for projects already in planning and design. Target: September 2021
- Continue with engagement
  - Engineering community
  - Builders
  - Commissions/public
- Customer-intensive approach during early implementation, frequent touchpoints to work through project-specific questions and challenges.
- Review after 12 to 18 months, including gathering customer and other stakeholder (e.g., adjacent property owners) feedback, and identify whether to recommend any modifications to the program.

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