

National Association of Home Builders

After Green Infrastructure: What's Next?

East Tennessee Development Symposium 2019

Tuesday, March 12, 2019



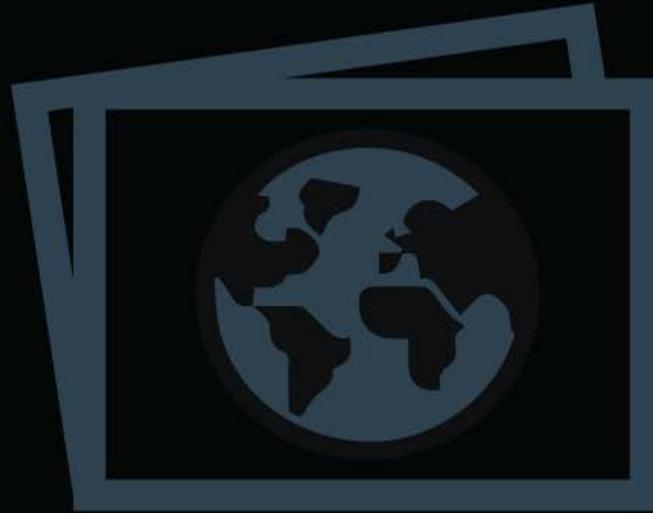
Today I'll talk about...

- Home builders and green building
- Update on green infrastructure requirements nationally
- New legal/regulatory issues impacting green infrastructure
- Emerging issues impacting green infrastructure



About the National Association of Home Builders (NAHB)

- With over 140,000 members, NAHB is the largest national trade association representing residential and light commercial construction
- Represent 700 local home building associations, including the Home Builder Association of Greater Knoxville and the Home Builder Association of Tennessee
- Median builder constructs 5 or fewer homes per year
- Over 90% of builder members classified as small businesses by U.S. Small Business Administration



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Housing Affordability a Nationwide Crisis

Nov. 2018 survey of 2,200 adults found:

- 73% - lack of affordable housing is a problem in the U.S.
- 68% - lack of affordable housing is a problem in their state
- 54% - lack of affordable housing is a problem in their neighborhood

To improve lack of affordable housing:

- 55% - lower development/construction fees
- 53% - increase government subsidies to builders to produce more affordable units

Source: <http://nahbnow.com/2018/12/most-americans-cite-a-housing-affordability-crisis-nationwide-and-close-to-home/>

Government regulations account for 24% of the final price of a new single-family home

Regulatory costs for average single-family home = \$84,671

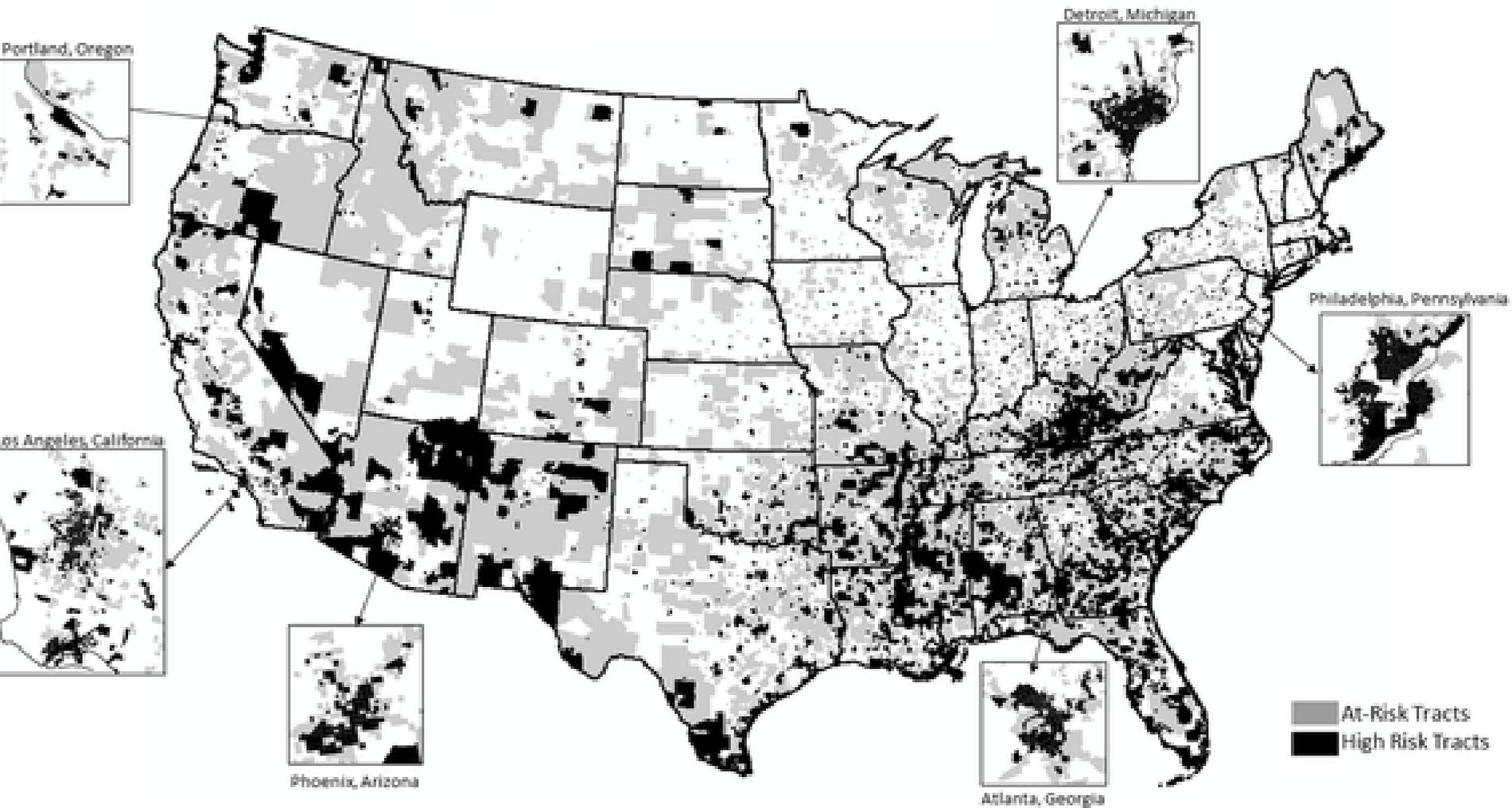
- 3/5 of regulatory costs during lot's development
- 2/5 of regulatory costs by builder after purchase of finished lot

Costs include:

- Delay cost (~6.6 months on average)
- Zoning/subdivision approval costs
- Permit, impact, hook-up fees
- Changes in codes/standards

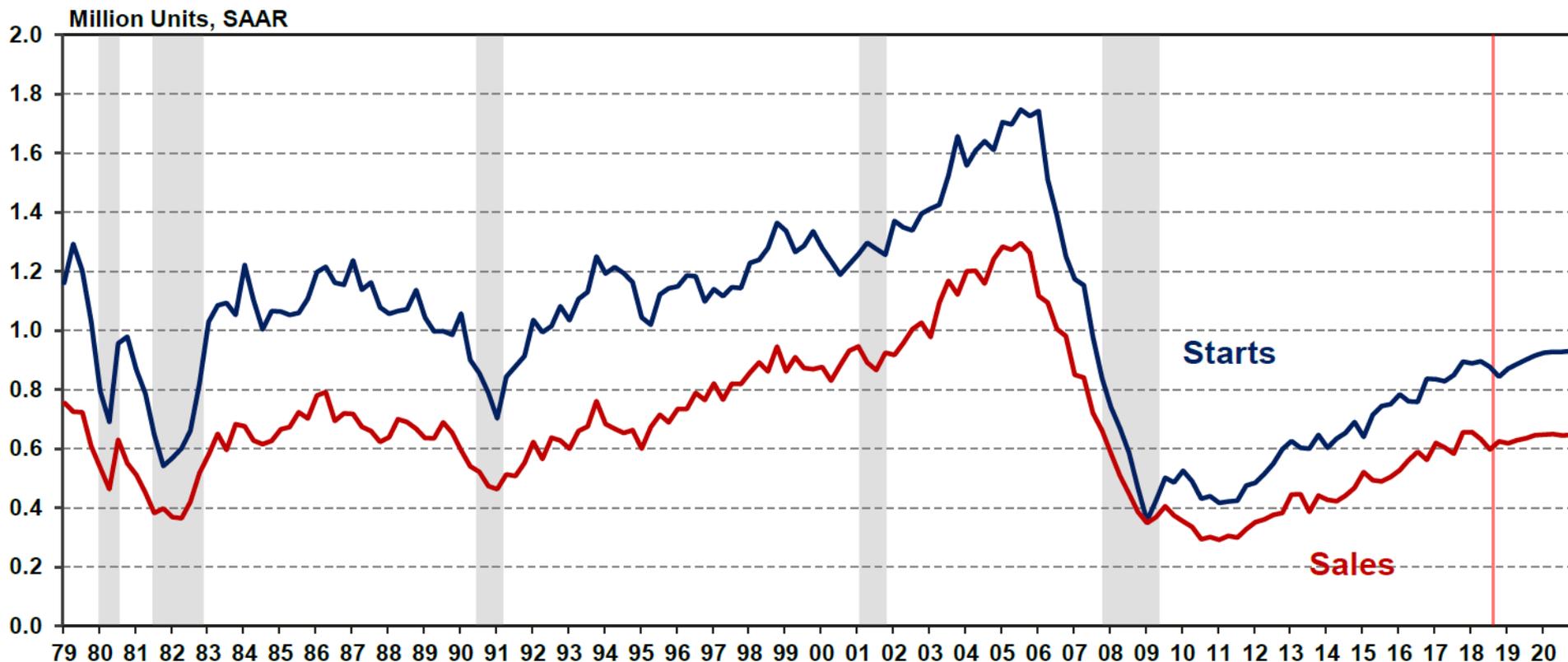
Source: <http://nahbnow.com/2016/05/regulations-add-a-whopping-84671-to-new-home-prices/>

Water affordability becoming a bigger issue



Single-family housing starts growing but still less than half of pre-recession peak

Single-Family Housing Starts and Sales



Source: Jan. 2019 National Update from HousingEconomics.com

What Home Buyers Really Want: 2019 Edition



- Surveyed nearly 4,000 home buyers
- Ranking 175 features
- 64% of buyers prefer suburbs, 24% rural and 11% a central city location
- Important preferences:
 - 86% prefer open kitchen/dining room
 - 70% prefer washer/dryer on 1st floor
 - 48% prefer a 2-car garage

<http://nahbnow.com/2019/02/what-home-buyers-want-in-2019/>

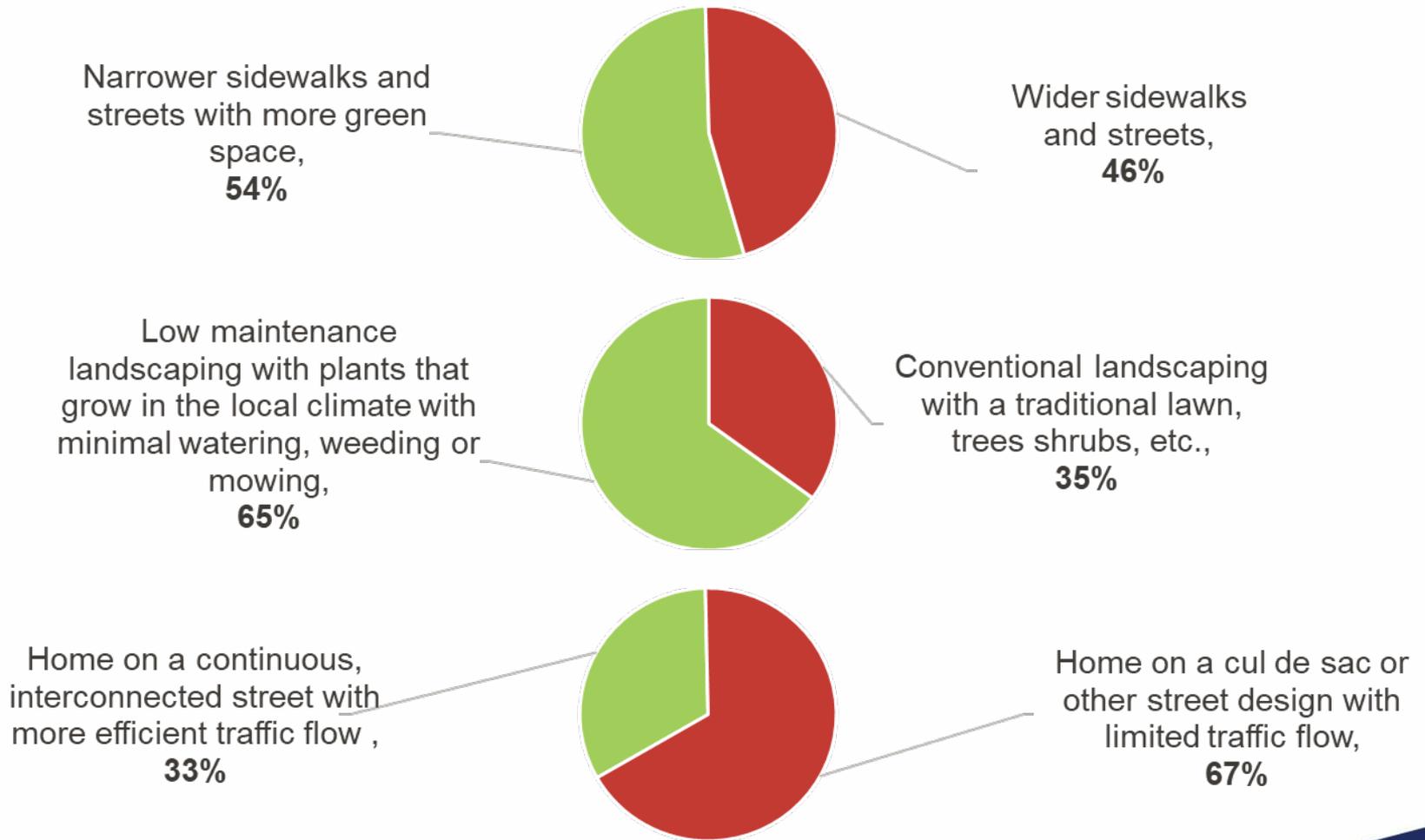
What Home Buyers Really Want...

Percentage of respondents who rate a feature as essential/must have or desirable:

Energy Savings Features	Outdoor Environmental Features
89% ENERGY STAR windows	40% Barrels/cisterns collecting rainwater for irrigation (only 9% essential)
86% ENERGY STAR appliances	36% Electricity generating wind turbine
85% Ceiling fan	24% Green Roof (only 7% essential)
81% ENERGY STAR – whole home	

Source: *What Home Buyers Really Want, 2019 Edition.*

Most Buyers Choose the **Green** Alternative When Given the Option



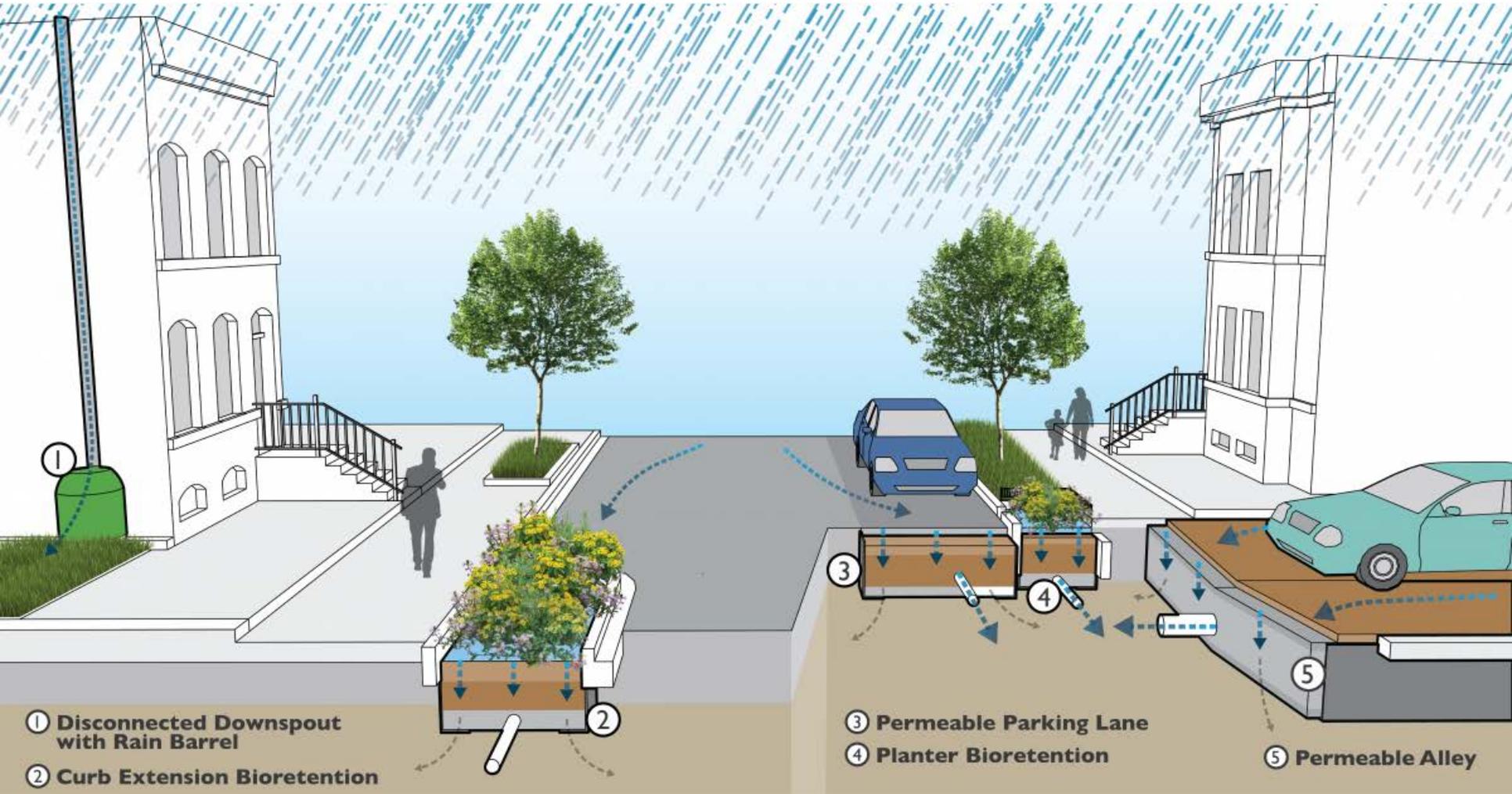
Source: *What Home Buyers Really Want, 2019 Edition.*

Green Building is growing

- Green residential construction rising from 2% of market in 2005 to 33% in 2017
- National Green Building Standard (NGBS)
- Green construction practices include:
 - Green infrastructure (50% of homes surveyed)
 - Energy-Star and WaterSense appliance and fixtures
 - Insulation/high-performance windows and doors
 - Low/no-VOC paints, adhesives and sealants
 - Regional/recycled content materials
 - Irrigation controls

Source: <http://nahbnow.com/2019/01/green-building-becoming-the-standard-for-new-homes/>

Green Infrastructure

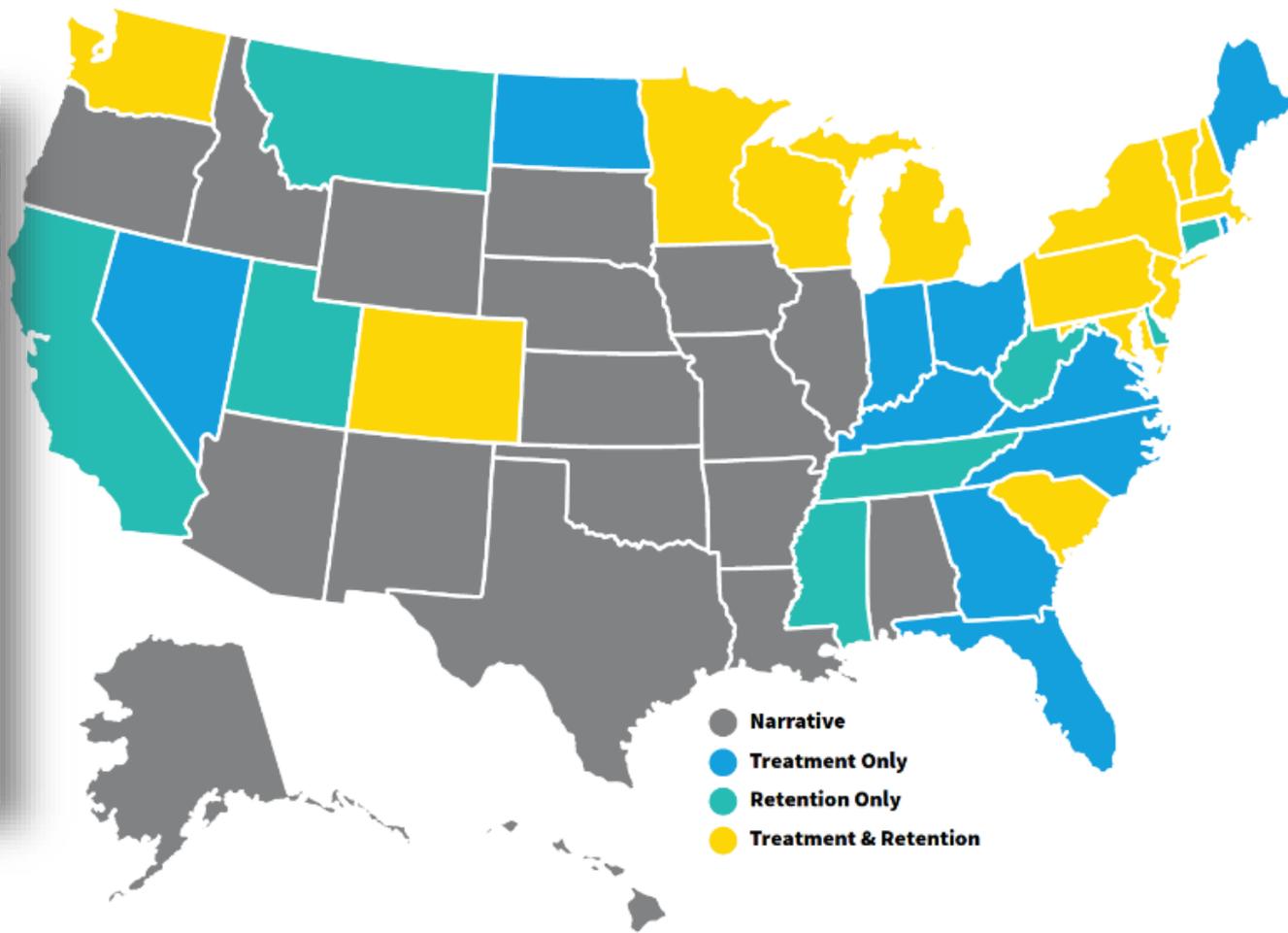


Credit: DC Water – Green Infrastructure Plan

States with post-construction standards

Figure 4. Geographic Distribution of Post-construction Standard Approaches (2017)

Note: This assessment does not account for state regulation or legislative changes after June 2016.



A Developer's Guide
to Post-construction
Stormwater Regulation



<http://www.nahb.org/stormwater>

2015 NAHB survey of GI in 50 municipalities

- 82% of municipalities had either mandatory or voluntary LID requirements
 - Roughly half are voluntary, half are mandatory
- 24% of municipalities offer some form of incentive for LID implementation
 - Fee reductions/credits, setback reductions or density increases, low-rate loans
- Most municipalities either require maintenance or specify a recommended maintenance schedule



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Water Infrastructure Improvement Act

- Signed into Law on January 14, 2019
- Allows municipalities to create an “integrated plan” to address stormwater and wastewater requirements
 - Schedule of compliance that addresses the most serious water quality issues in a cost-effective manner.
 - Allows plan to stretch over more than one permit term.
- Establishes an Office of the Municipal Ombudsman at EPA to provide technical assistance to municipalities

Water Inf. Improvement Act (cont.)

- Creates a new CWA Section 519 “Green Infrastructure Promotion” that requires EPA to increase the use of GI through “permitting and other regulatory programs, codes, and ordinance development”

New definition of “green infrastructure”

“the range of measures that use plant or soil systems, permeable pavement, or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters.”

NEW LEGAL/REGULATORY GREEN INFRASTRUCTURE ISSUES



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WOTUS Proposed Rule Differs Significantly from 2015 Rule

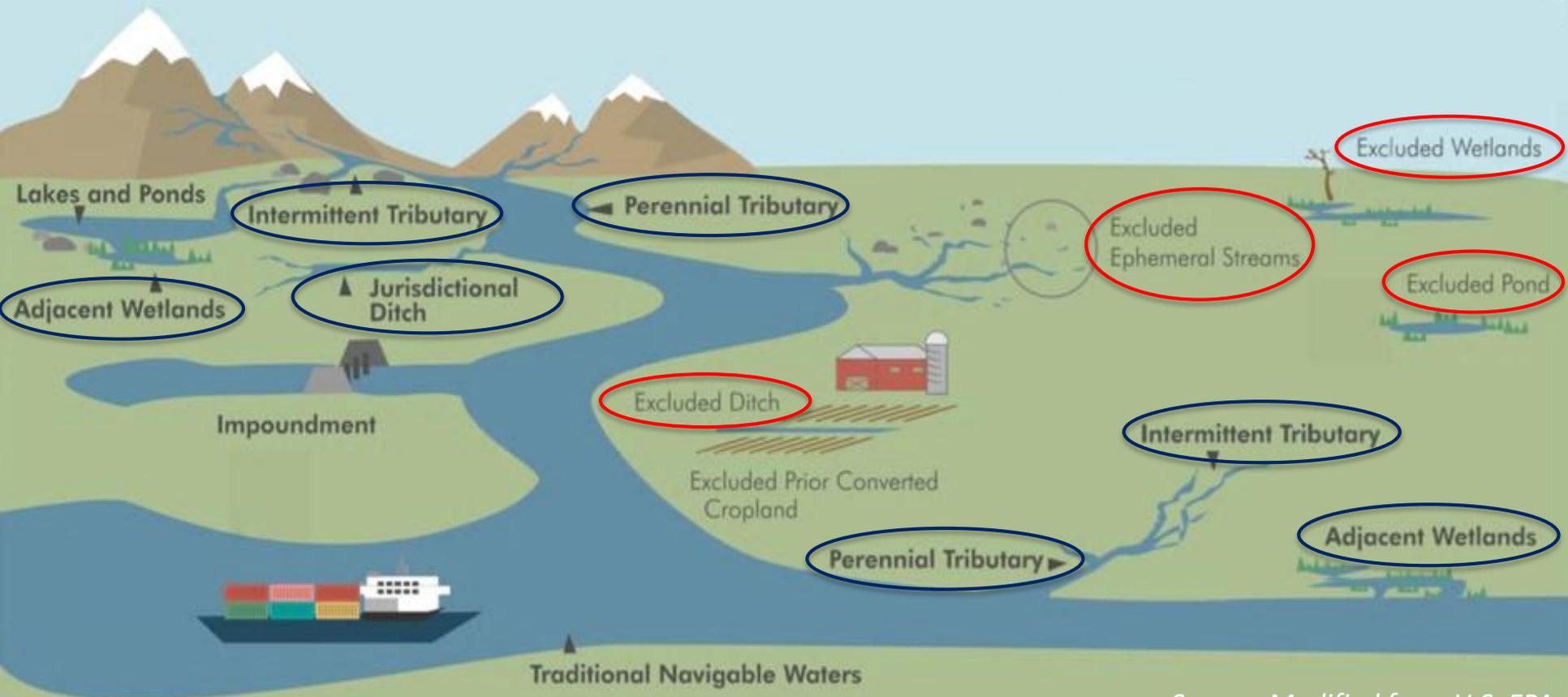
2015 Rule	In, Out, or Different?	Proposed Rule
•Traditional Navigable Waters	In	•TNWs & the territorial seas
•Interstate waters & wetlands	Out	•Tributaries
•The territorial seas	In	•Certain Ditches
•Impoundments	In	•Certain Lakes and ponds
•Tributaries	Different	•Impoundments
•Adjacent waters	Different	•Adjacent wetlands
•Significant nexus	Out	
•100-yr floodplain •¼ mile of water & significant nexus	Out	

Proposed Rule Differs Significantly from 2015 Rule (cont'd)

- New exclusions
 - Ditches
 - Ephemeral features
- Existing exclusions
 - Stormwater control features
 - Prior converted cropland
 - Wastewater recycling structures
 - Water-filled depressions
- New definitions
 - Intermittent — surface water flowing continuously during certain times of a typical year and more than in direct response to precipitation
 - Typical year — w/in normal range of precipitation over rolling 30-year period
 - Upland — land area that does not satisfy all three delineation criteria

Major benefits of the proposed WOTUS definition

- Easier to understand — supports observable jurisdiction
- Predictable and consistent — eliminates significant nexus test
- Reduces regulated area — ends regulation based on geographic area and narrows regulated ditches



Residual Designation Authority (RDA)

- A request for EPA/State to designate for NPDES permit coverage unregulated stormwater discharges from commercial, industrial and institutional (CII) sites in specific watersheds (under CWA Section 402(p)(2)(e))
- Two EPA Regions (9 and 3) received RDA petitions
- EPA received RDA for CII sites in specific watersheds in LA
- Aug. 2018 – EPA loses first RDA case
 - Court found that after EPA determines source contributes to a violation of water quality standards, it must either require a permit or enforce total prohibition of source.
- Decision was not appealed by EPA

Groundwater and NPDES Permits

Hawaii Wildlife Fund v. County of Maui – 9th Circuit Court of Appeals

- County's four wells inject wastewater into groundwater, some of which enters the Pacific Ocean via submarine seeps
- 9th Circuit held County liable for CWA violations
- Federal suits in three Circuit Courts – conflicting opinions
- EPA asked for comments in Feb. 2018; expects to “take action” in early 2019
- Supreme Court accepted case to decide: Whether the CWA requires a permit when pollutants originate from a point source but are conveyed to navigable waters through groundwater.
- Supreme Court is expected to hear the case in the Oct. 2019 term

EMERGING ISSUES: GREEN INFRASTRUCTURE

- Additional flexibility from EPA and States
- Alternative compliance options for post-construction
- Innovative stormwater/GI financing programs
- Emerging contaminants
- Green Jobs

Increased flexibility from EPA for States/MS4s

New EPA policies and guidance memos provide additional flexibility:

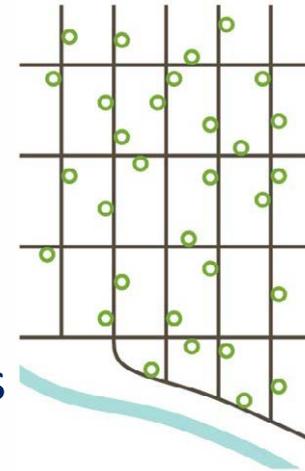
- EPA policy on water quality trading provides **incentives to use market-based pollutant reduction programs**
- EPA memo tells enforcement staff to focus on **compliance assistance** activities before enforcement
- EPA memo says it will **defer to authorized states** on most inspection and enforcement issues in that state
- EPA-State memo says “**find and fix**” could be an effective tool to remedy minor violations

On-site vs. Off-site compliance

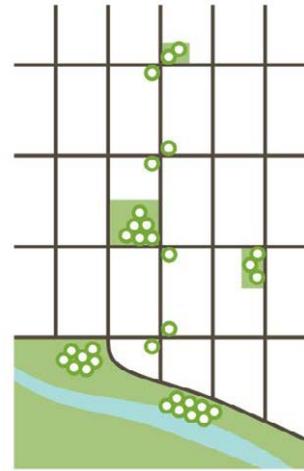
Many MS4 permits require on-site retention of stormwater using green infrastructure controls.

There are many reasons to allow off-site compliance:

- Cost-effective
- Consolidated maintenance
- Higher probability of maintenance
- Potential integration with flood control
- More effective treatment for difficult sites



Compliance
Business as Usual



Alternative Compliance
Public Benefit

Some sites cannot retain stormwater onsite:

- High groundwater, karst, contaminated soils, pollutants on-site, etc.

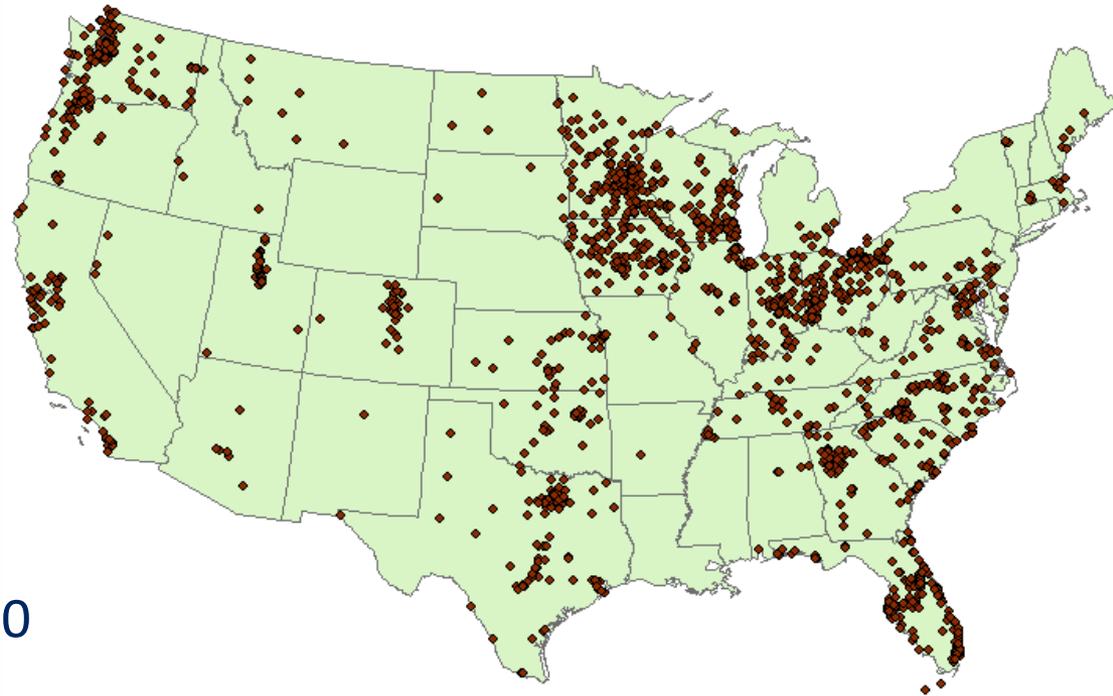
Alternative Compliance Options

- Off-site mitigation – controls are installed at another location in the same watershed, usually by the same permittee
- Payment in Lieu – funds are used later for a public stormwater project
- Regional BMP credit system – developers can “buy-in” to a regional facility if available
- Credit trading – “extra” stormwater is controlled at a site which can then sell the credit to another site that cannot control stormwater on-site

Stormwater Financing – Moving beyond stormwater utilities

- 1,680+ stormwater utilities
- Avg. monthly fee is \$5.34
- Max. monthly fee is \$69.25
- TN has 25 stormwater utilities
- Average population is 69,300
- Median population is 18,400

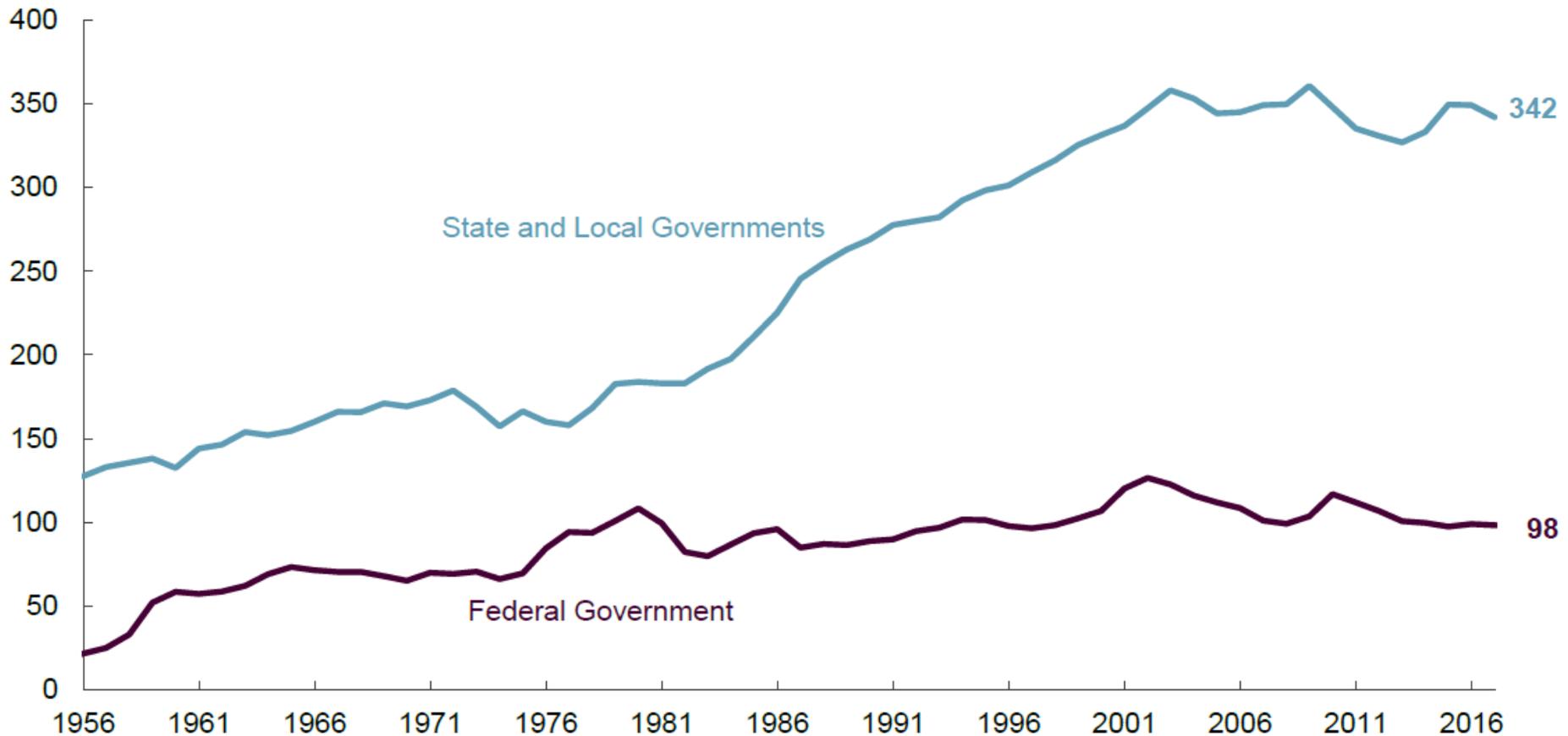
Stormwater Utilities 2018



Credit: Western Kentucky Stormwater Utility Survey

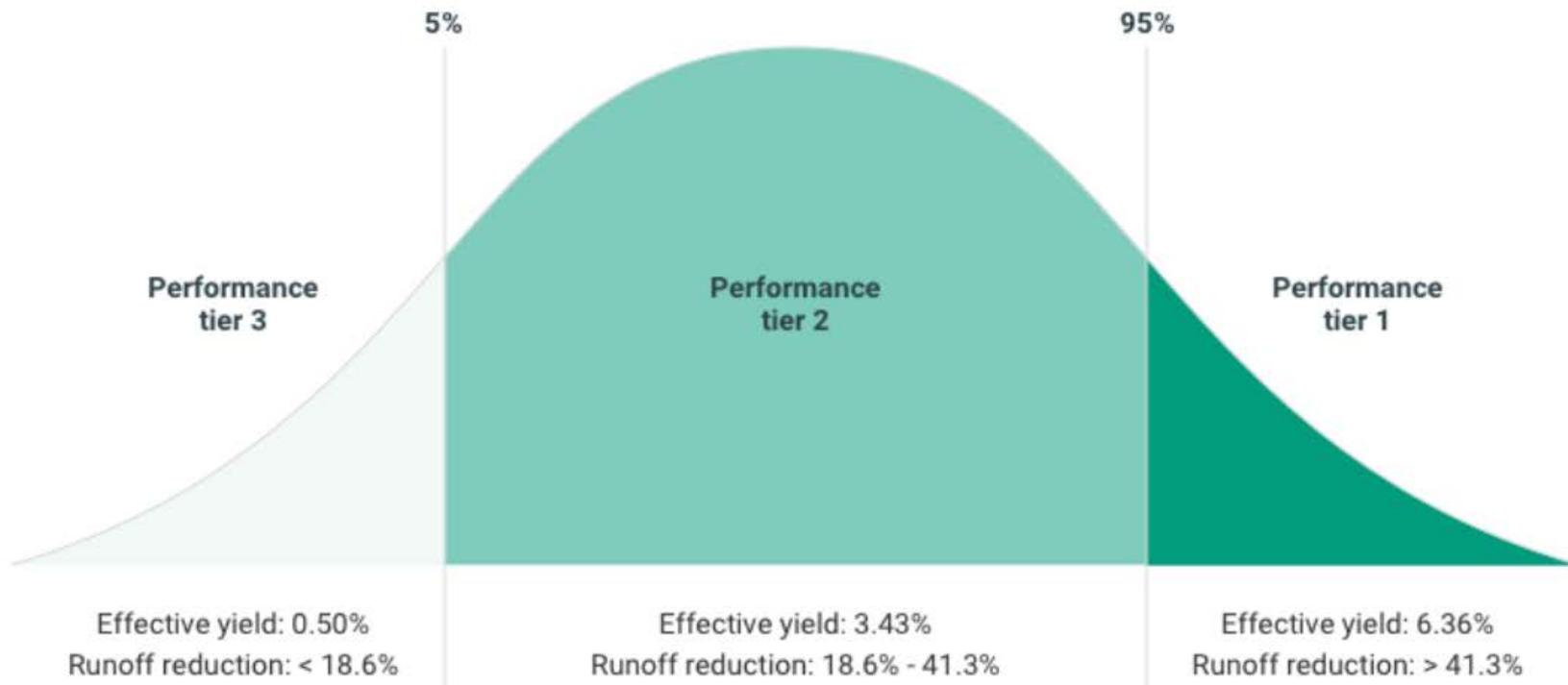
Transportation and Water Infrastructure money is not coming from the Federal Government ³¹

Billions of 2017 Dollars



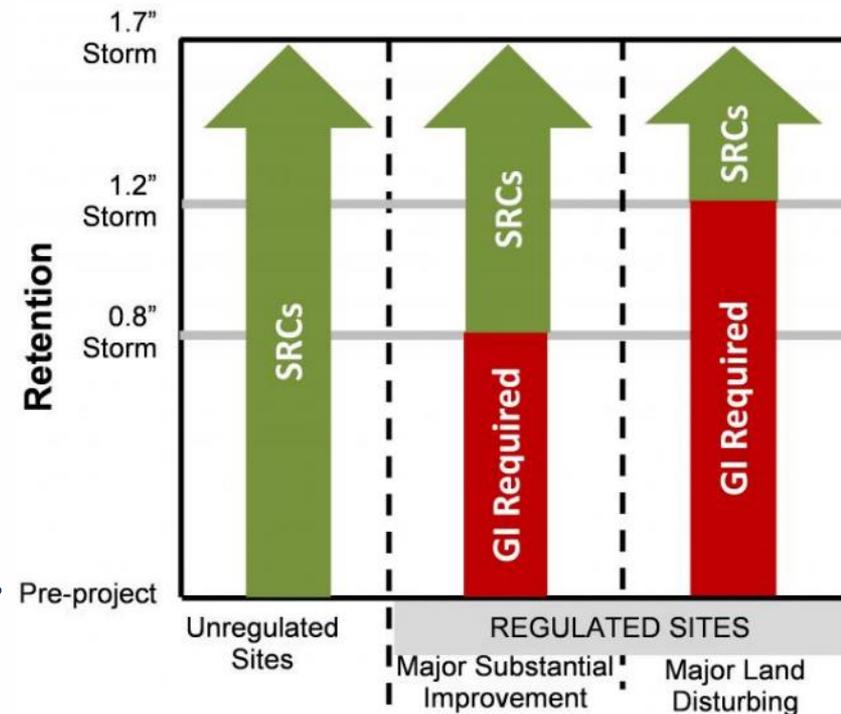
Washington DC Environmental Impact Bond

- \$25 M; 30-year tax-exempt municipal bond; initial rate 3.43%
- Proceeds from EIB used to construct GI practices
- No additional payment due if GI performs as expected
- EIB allows DC Water to better manage or hedge a portion of the risk associated with green infrastructure



Washington DC Stormwater Retention Credit Trading Program

- DC requires 1.2 inches retention for most sites
- Stormwater Retention Credits (SRCs) available for up to 1.7 inch retention
- 1 gallon of retention capacity for 1 year equals 1 SRC
- Only half of a project's stormwater obligation can be met with SRCs. The remainder must be addressed on-site.
- So far, 30 trades to date. 187,991 gallons traded for \$388,713.25
- Average price of \$2.07/credit.



Community Based Public-Private-Partnership (CBP3)

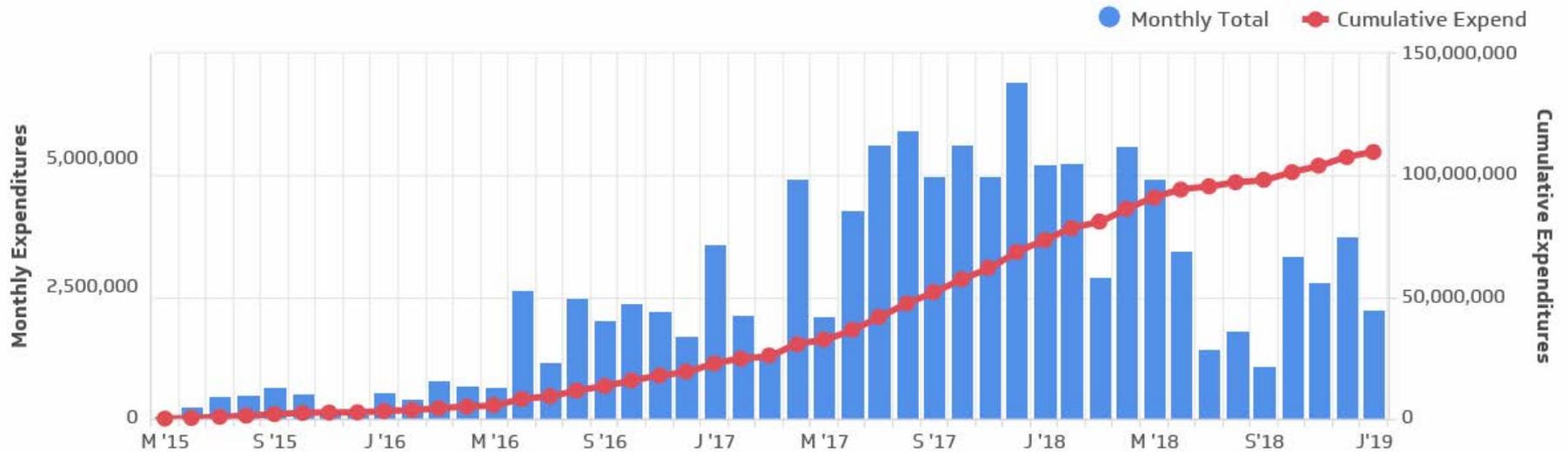
- Design-Build-Operate-Maintain community-based public-private partnership (CBP3) business model contract between County and a private partner
- Private partner is responsible for design, construction and maintenance of GI practices over 30 year lifecycle
- County uses stormwater utility fee funds
- MS4 permit requires county to treat 20% of its currently untreated impervious area
- Private partner provides management responsibilities and greater risk
- Public agency maintains oversight and provides payment

<https://thecleanwaterpartnership.com>

Prince George's County Community Based Public-Private-Partnership (CBP3)

Phase	Project Count	Total Impervious Acres
<u>PLANNING</u>	16	538.08
<u>DESIGN</u>	86	1,120.94
<u>CONSTRUCTION</u>	23	279.45
<u>COMPLETED</u>	96	2,137.21
	221	4,075.68

Program Expenditures by Class through Phase 1

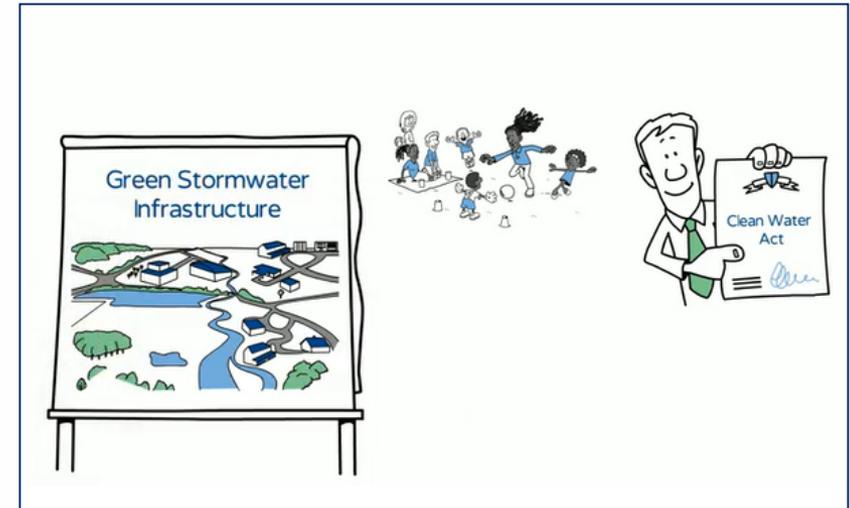


Total Expenditures

Video animations on alternative stormwater financing

Videos on:

- Community-based public-private partnerships 101
- Environmental impact bonds 101
- Stormwater credit trading 101



WEF Stormwater Report, Jan. 31, 2019 news:

<https://stormwater.wef.org/2019/01/video-animations-depict-market-based-options-for-stormwater-infrastructure-and-finance/>

Emerging contaminants

PFAS – Per- and polyfluoroalkyl substances

- very persistent in the environment and in the human body
- PFOA and PFOS can cause reproductive and developmental, liver and kidney, and immunological effects
- contamination from where PFAS chemical was manufactured, or where PFAS was used for firefighting (oil refinery, air field)

EPA Issued a PFAS Action Plan in Feb. 2019

- moving forward with drinking water MCL for PFOA and PFOS
- clean up strategies, monitoring for PFAS, and future research



Green Jobs

National Green Infrastructure Certification Program (NGICP)

- National certification of green infrastructure (GI) construction, inspection, and maintenance workers
- Participate in a training course, take certification exam and receive passing grade
- 400+ certified individuals through Jan. 2019
- Existing workforce is relatively small
- Good entry-level jobs
- Will grow as employers and municipalities set goals for employees with green infrastructure certification





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Thank You.

John Kosco, PE, CPESC

Environmental Policy

National Association of Home Builders

jkosco@nahb.org

202-266-8124