

# Draft

Not for wide circulation or quoting

# Topline data from the BREE Municipal Survey

Dr. Richard Clark & Dr. Stephanie Hurley

PTAC Meeting

Burlington, Vermont

November 28, 2017



**Castleton**

Polling Institute



The University of Vermont

# Survey Design. BREE Vermont Municipal Survey on Stormwater Management

**WHAT:** NSF-EPSCoR Basin Resilience to Extreme Events (BREE) survey on stormwater management (first of two surveys), Online LimeSurvey, 63 questions

**WHERE:** State of Vermont municipalities

**WHO:** All municipal officials in Vermont (including, but not limited to, mayor, town manager, town clerk, select board chair/member, town/city council chair/member, public works director/employee, wastewater treatment director, town planner, town zoning administrator, city/town stormwater manager, town planning commission chair/member, and conservation commission chair)

**WHEN:** Disseminated Summer 2017 via Castleton Polling Institute, Data collection ends by November 2017, Data Analysis Winter 2017-2018



# Final Valid Response Rate

	Count	Percent	
Number of total all respondents	240	25%	of sample frame
Number of <u>valid</u> respondents	198	21%	of sample frame
Number of municipalities covered	121	48%	of VT municipalities
Number of counties covered	14	100%	of VT counties
Amount of land area (sq.miles) covered	4069.8	44%	of VT area
Amount of population covered	345,781	55%	of VT population



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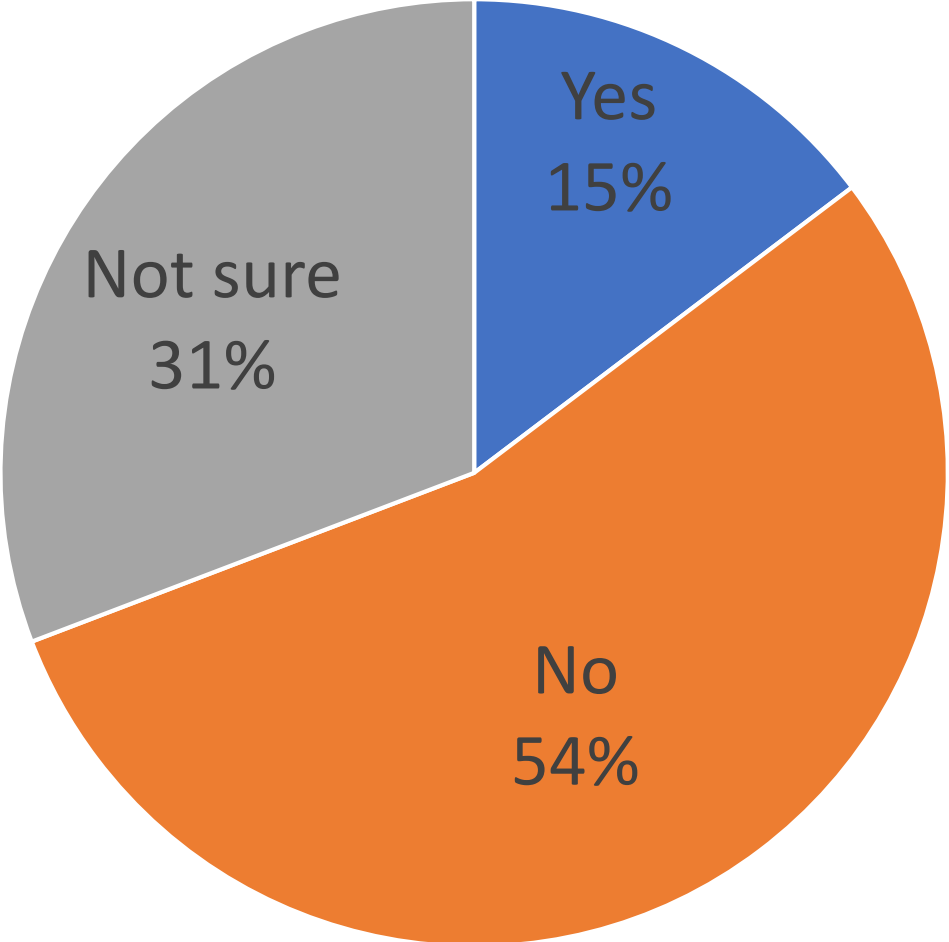
# Final Valid Response Rate

## Respondents' Primary Roles in government

- Town Clerk (43) (22%)
- Town Manager (31) (16%)
- Town Zoning Administrator (27) (14%)
- Select Board Chair (18) (9%)
- Town Planner (12) (6%)
- Public Works Director (7) (4%)



# Does your municipality have a Stormwater Master Plan?



n = 156

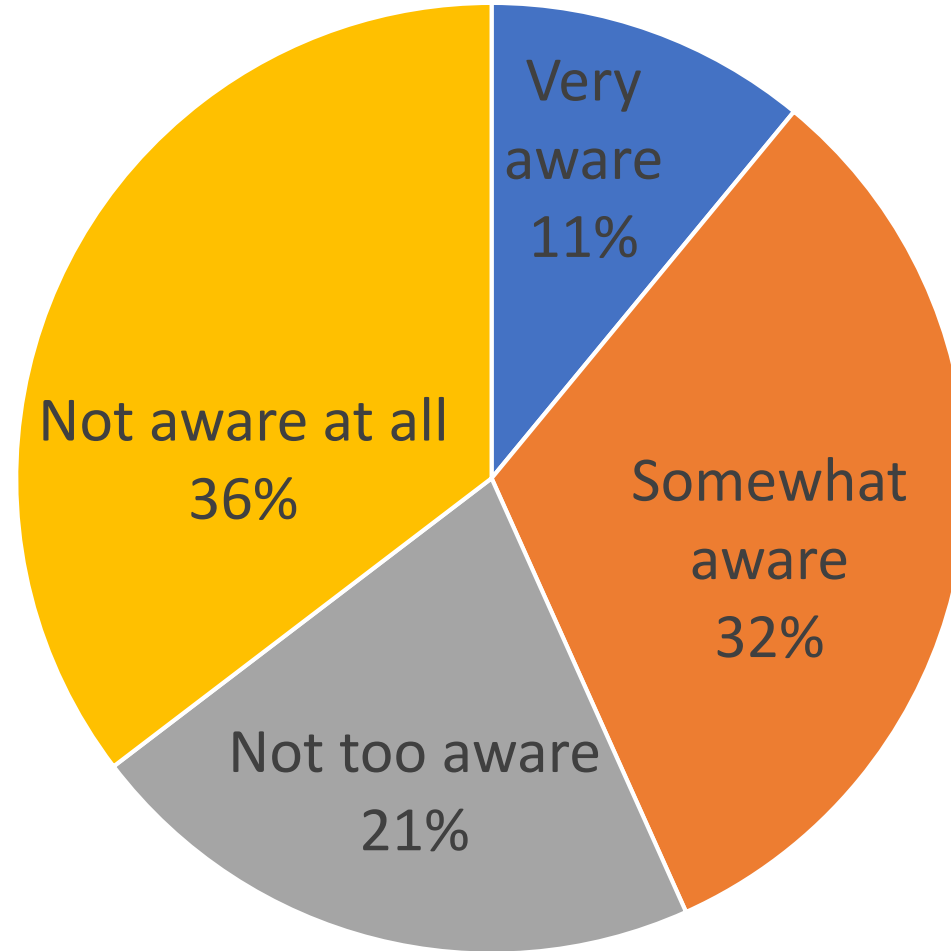


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# To what extent are you aware of the Agency of Natural Resources' Tactical Basin Planning process?



n = 164

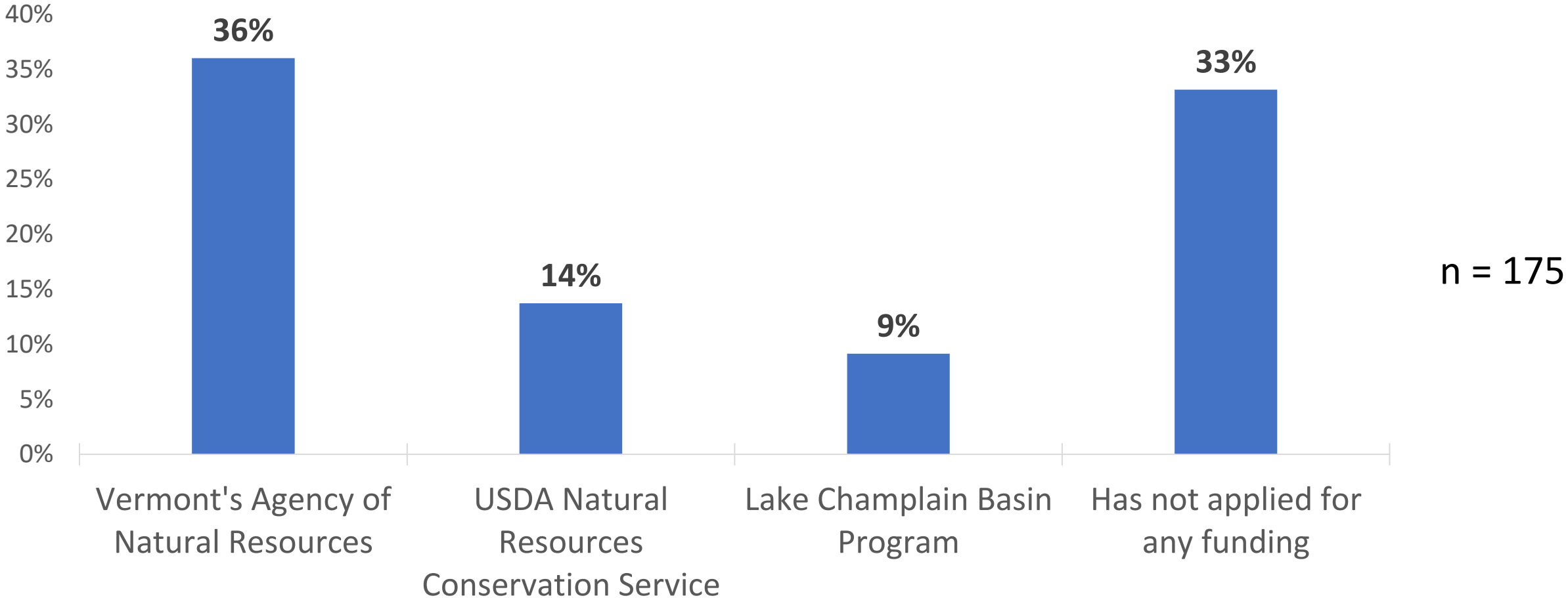


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# From where has your town/city applied for funding?



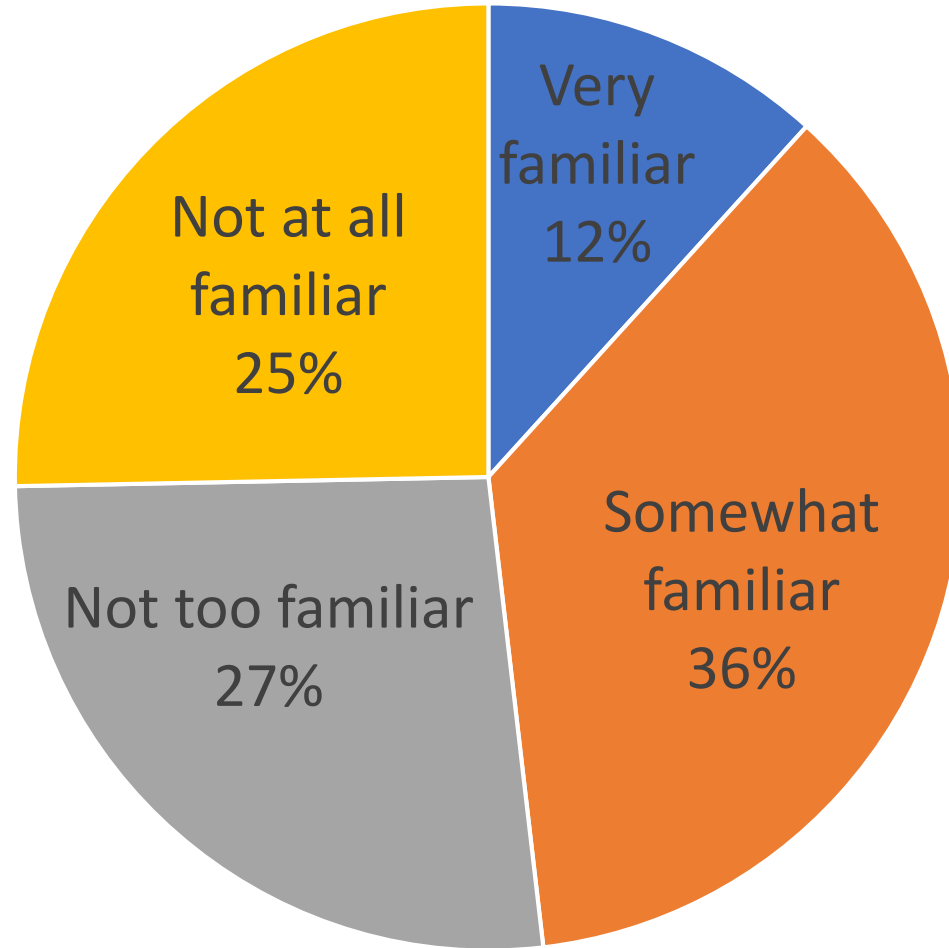
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# How familiar are you with the Clean Water Fund?



n = 162

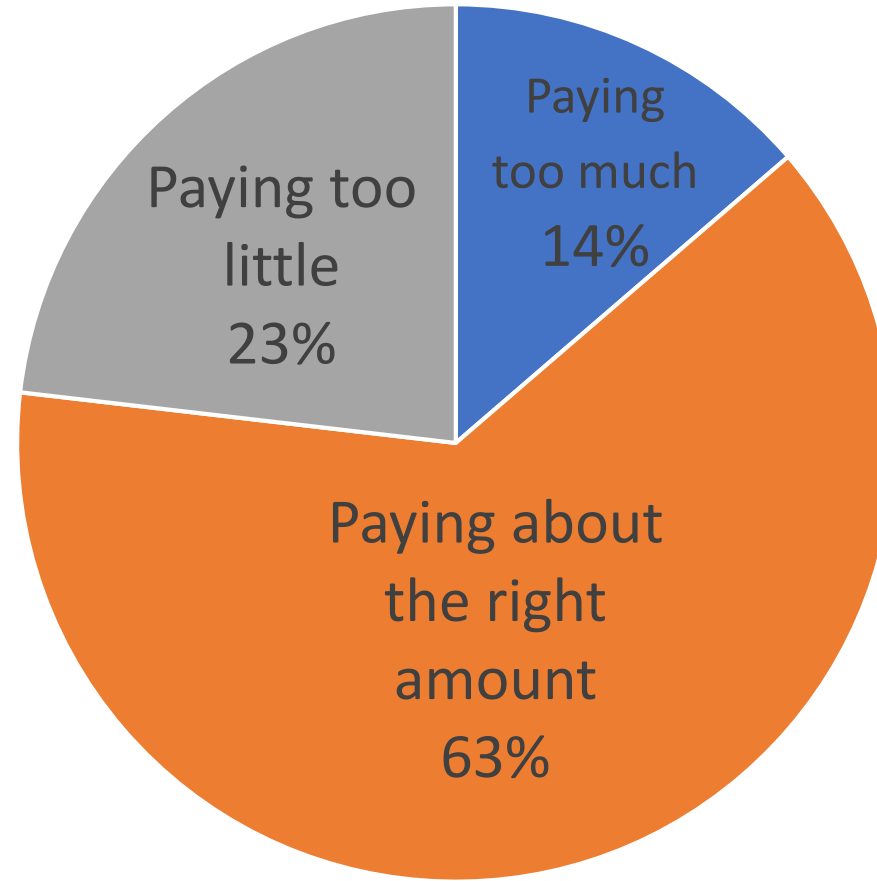


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# Do you believe that your town/city is paying too much, too little, or about the right amount for addressing clean water concerns?



n = 95



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# Holly Greenleaf Master's Thesis, UVM Plant & Soil Science

“Visualizing bioretention to understand maintenance capacities of Vermont towns and aesthetic preferences of Vermont’s municipal officials”

## Research Questions

1. What are the current stormwater infrastructure maintenance capacities of Vermont towns?
2. Based on landscape visualizations of conventional and bioretention design scenarios, what are Vermont municipal officials’ aesthetic preferences and perceived ability for their town to maintain GSI?

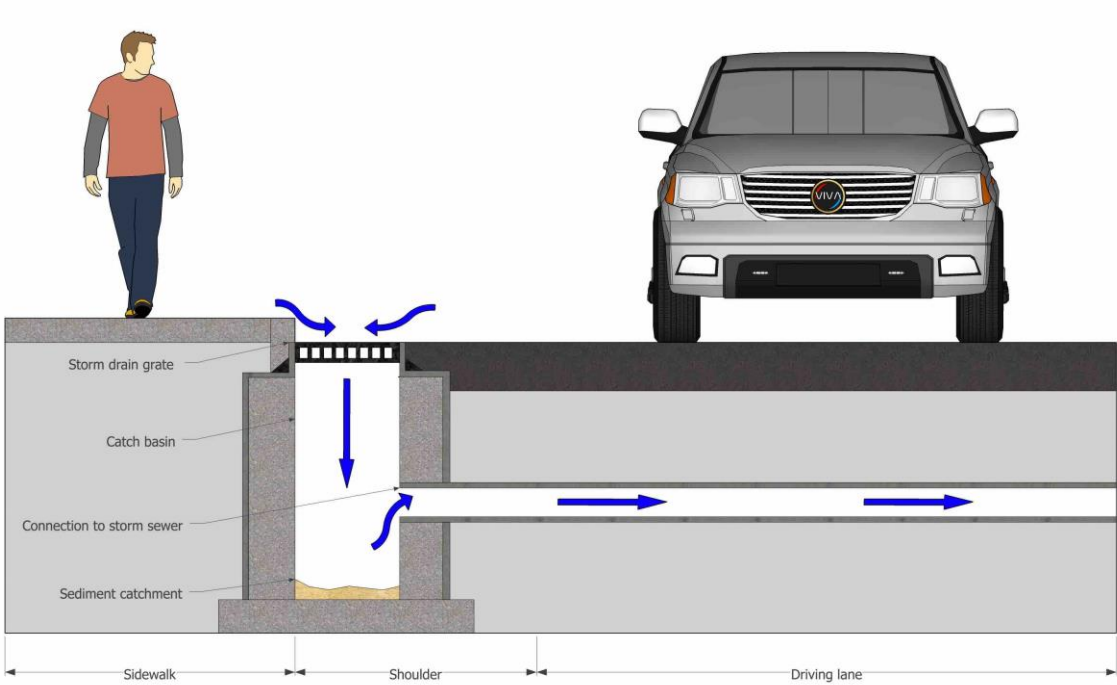




# Visual Appeal & Ability to Maintain



A.1. Conventional stormwater infrastructure with drainage grate, catch basin, and storm pipe directing runoff to storm sewer.



A.2. Underground infrastructure of a conventional stormwater drainage system.

*Rate the image pairs displayed as to their...*

Visual Appeal

- 3. Very appealing**
- 2. Appealing**
- 1. Somewhat appealing**
- 0. Neutral**
- 1. Somewhat unappealing**
- 2. Unappealing**
- 3. Very Unappealing**
- x. I don't know**

Ability of your town to maintain

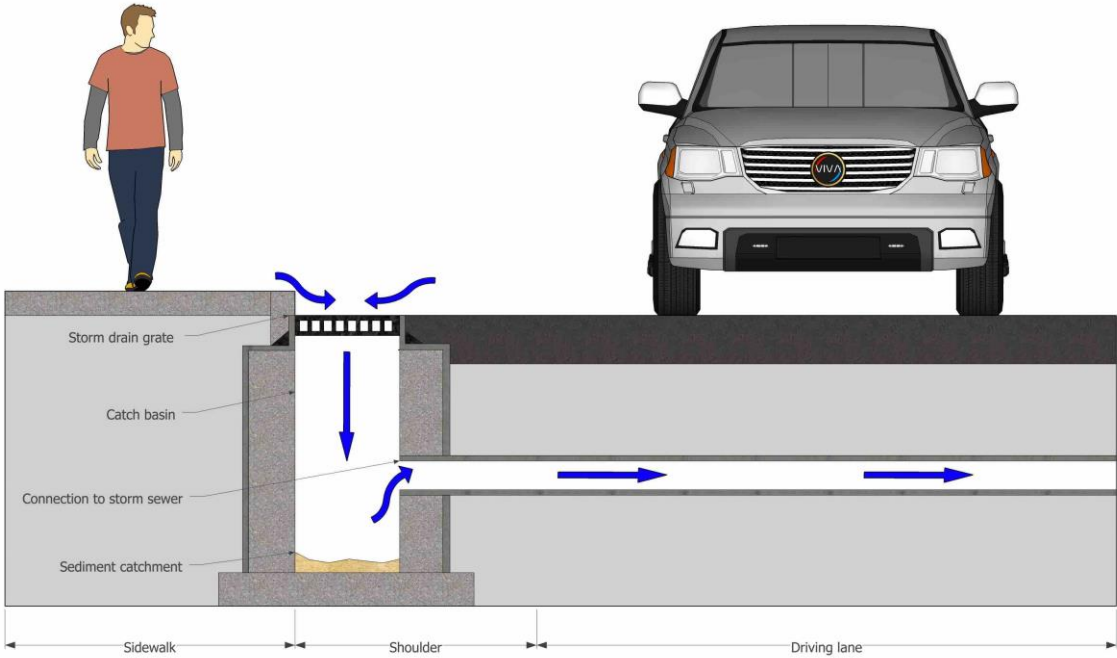
- 3. Very able to maintain**
- 2. Able to maintain**
- 1. Somewhat able to maintain**
- 0. Neutral**
- 1. Somewhat unable to maintain**
- 2. unable to maintain**
- 3. Very unable to maintain**
- x. I don't know**

# Visual Appeal & Ability to Maintain



A.1. Conventional stormwater infrastructure with drainage grate, catch basin, and storm pipe directing runoff to storm sewer.

	Mean score	n size
Visual appeal?	.06	145
Maintainable?	.87	138



A.2. Underground infrastructure of a conventional stormwater drainage system.

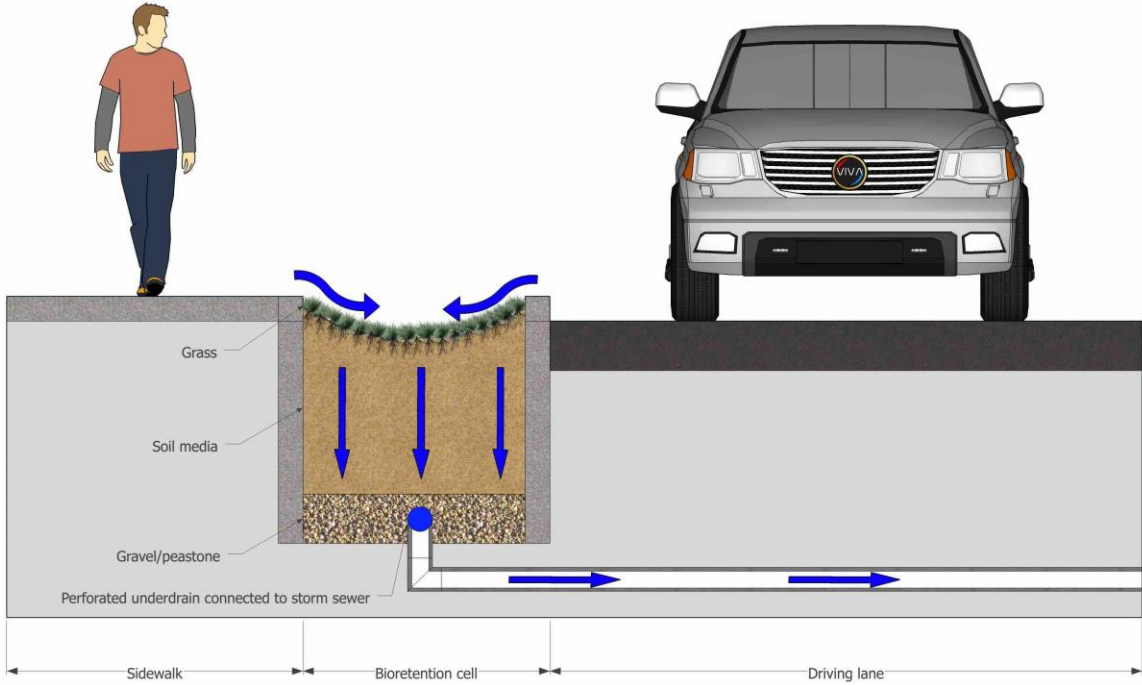


# Visual Appeal & Ability to Maintain



B.1. Grass-vegetated bioretention cell with curb cuts to capture and filter stormwater using plants and soil.

	Mean score	n size
Visual appeal?	1.43	145
Maintainable?	.14	139



B.2. Underground infrastructure of a grass bioretention system.

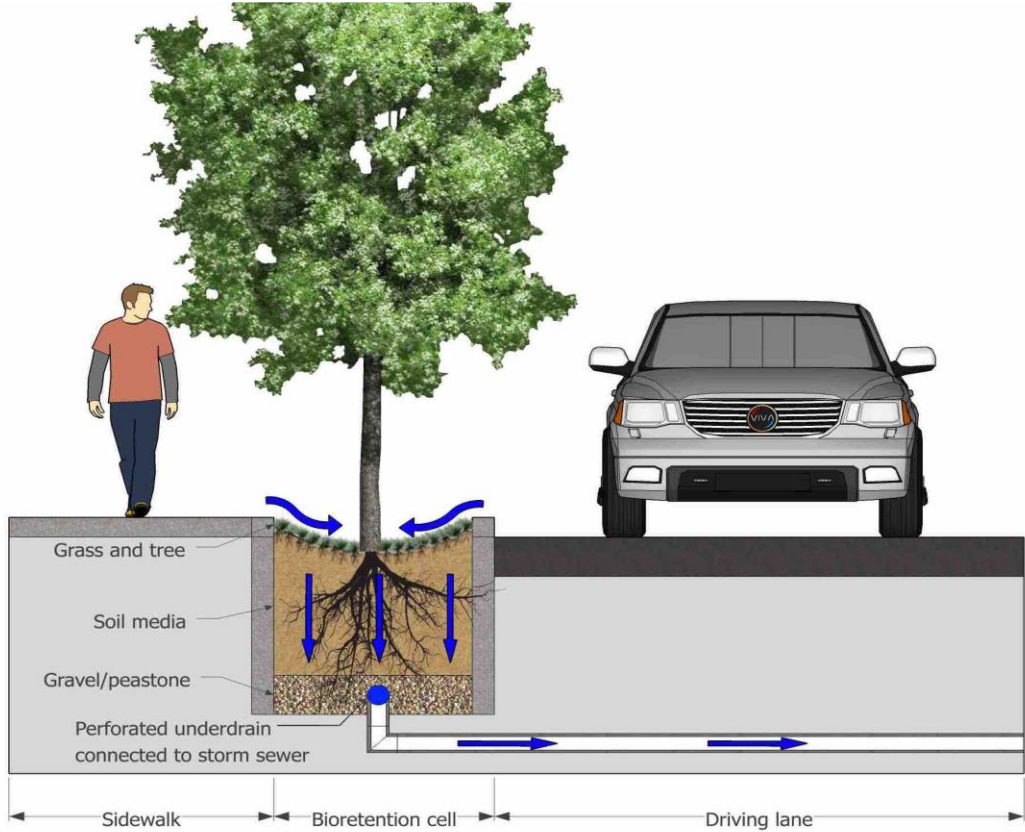


# Visual Appeal & Ability to Maintain



C.1. Grass-and-tree vegetated bioretention cell with curb cuts to capture and filter stormwater using plants and soil.

	Mean score	n size
Visual appeal?	2.21	147
Maintainable?	.13	138



C.2. Underground infrastructure of a grass and tree bioretention system

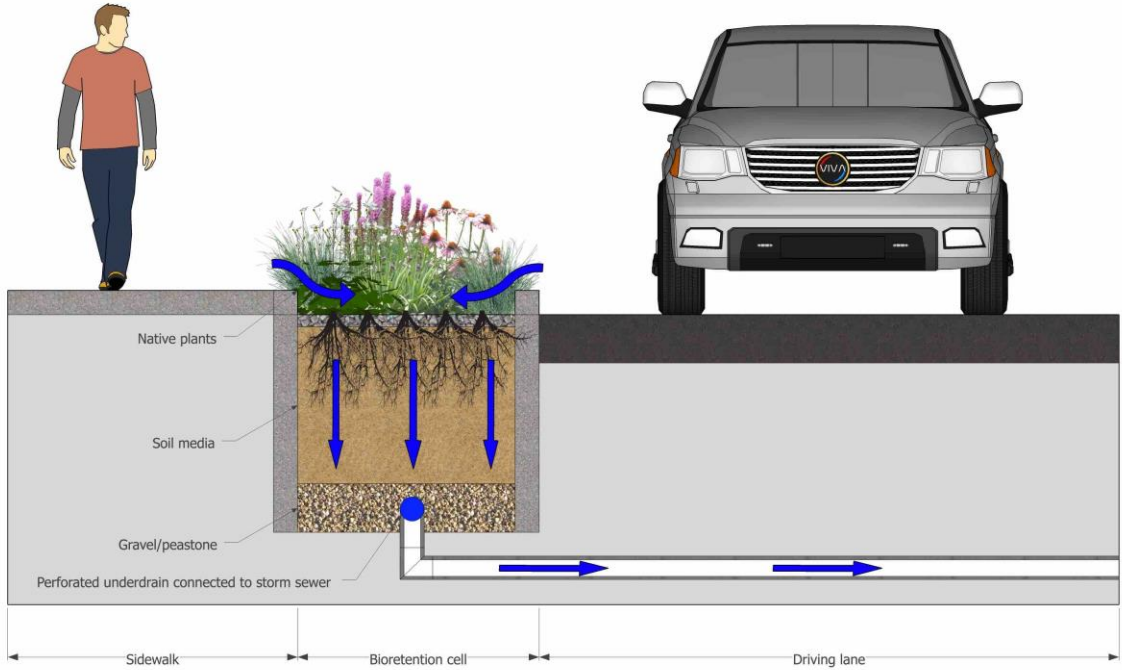


# Visual Appeal & Ability to Maintain



D.1. Perennial species-vegetated bioretention cell with curb cuts to capture and filter stormwater using plants and soil.

	Mean score	n size
Visual appeal?	2.08	147
Maintainable?	<b>-.08</b>	139



D.2. Underground infrastructure of a perennial species bioretention system.

Questions?

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