Determining Strategies for Removing Barriers to Green Infrastructure Implementation 17 May 2019

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Acknowledgments

Michigan Sea Grant helps to foster economic growth and protect Michigan's coastal, Great Lakes resources through research, education and outreach.

Integrated Assessment Methodology

- Task 1 – Refine the policy-relevant research question of barriers to GI
- Task 2 – Clarify history, causes, and consequence
  - Synthesis of existing regional and local information
  - Host focus groups
- Task 3 – Identify and evaluate potential options
  - Online survey
  - Community GI Visioning Workshops
- Task 4 – Develop and disseminate tools and tactics that can guide decisions and assist in implementation

Core Research Question

- What are the long-term sustainable strategies that will enable Michigan communities to begin the wide-spread implementation of green infrastructure and reap triple bottom line benefits?

- If green infrastructure is actually superior, why is it not utilized more?

Barriers

Outreach Strategies

- Focus Groups
- Survey
- Community Visioning Sessions

Focus Group

- Hosted at five state-wide or regional meetings of stakeholder groups
- Between 30 and 90 minutes in length
- Explored three themes
  - Familiarity with GI
  - Barriers to GI
  - Cost/Benefit Ratio GI
- Survey completed in person before focus group discussions

Focus Groups

- Michigan Municipal League (MML)
  - Elected officials & municipal staff
- Michigan Association of Planners (MAP)
- Michigan Water Environment Association (MWEA)
- Michigan Association of County Drain Commissioners (MACDC)
- Macatawa Area Coordinating Council (MACC)
  - Regional planning group

Theme 1: Familiarity

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have a high degree of familiarity with green infrastructure (GI).			MML MWEA	MAP MACC MACDC	
GI is very prevalent in the communities I serve.		MACDC	MML MAP MWEA MACC		
I have plenty of resources at my disposal to implement GI.			MML MAP MWEA MACC MACDC		
I am interested in using more GI instead of traditional SW management tech.				MAP	MML MWEA MACC MACDC

Theme 2: Barriers

	Not A Barrier	Minor Barrier	Moderate Barrier	Serious Barrier
Maintenance		MML	MAP MWEA MACC MACDC	
Lack of Finance			MML MAP MWEA	MACC MACDC
Lack of Design Tools		MML MAP MACDC	MWEA MACC	
Lack of Community Acceptance		MML	MAP MWEA MACC MACDC	
Lack of Trust		MML MWEA	MAP MACC MACDC	

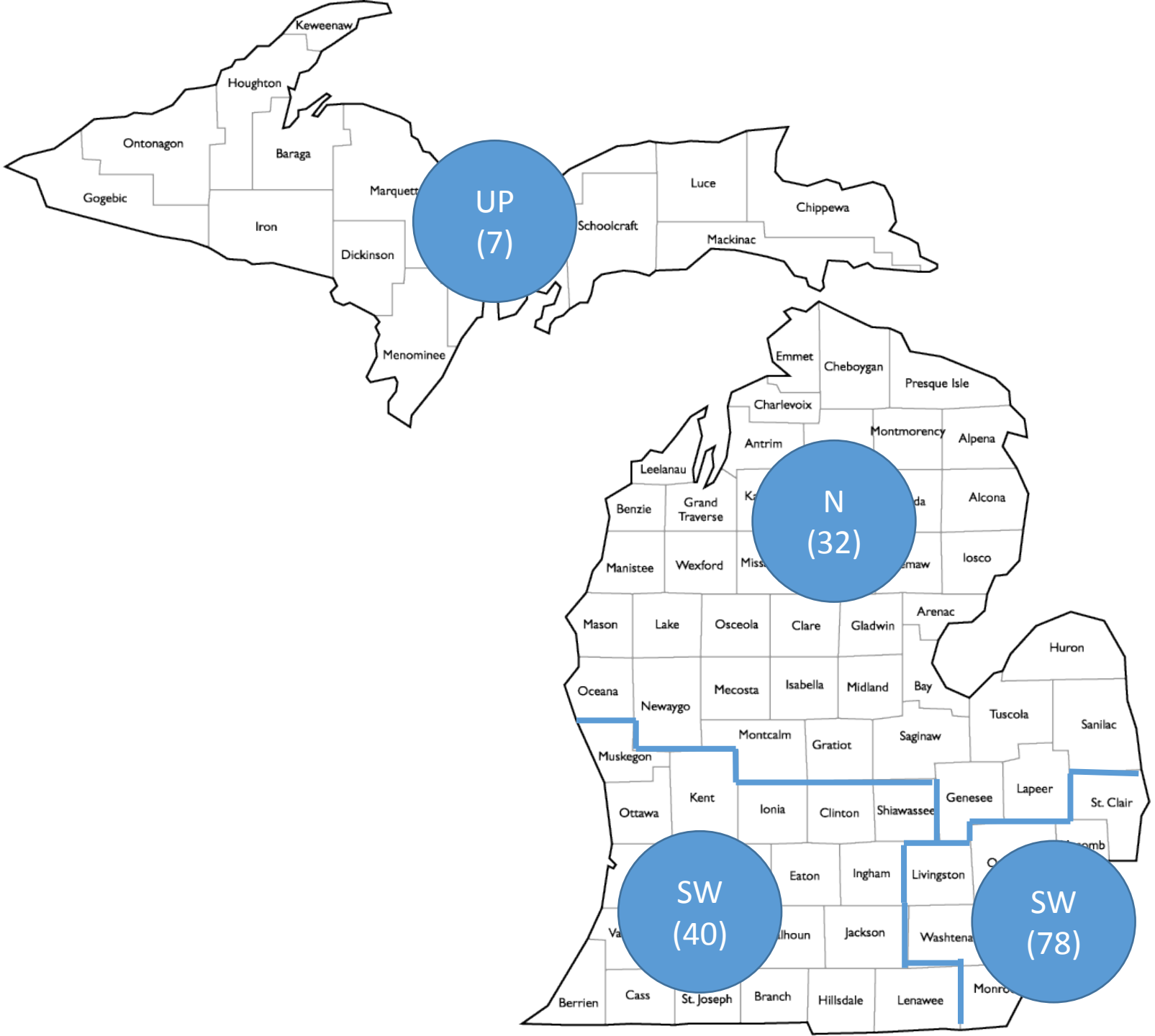
Barriers - Others

Theme 3: Ordinances

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My community has specific ordinances that assist with green infrastructure (GI) implementation.		MACC	MML MWEA MAP MACDC		
GI is appropriate for my community.			MWEA	MML MAP MACDC	MACC

Survey

- Web-based Survey & Wide Distribution of List serves
- Sections
  - Respondent Demographics
  - Community Infrastructure & Regulations
  - Familiarity with Stormwater Management and GI
  - GI Prevalence in Community
  - Barriers to GI
  - Effective Approaches for Implementing GI


Keweenaw
Houghton
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Baraga
Gogebic
Iron
Marquett
Dickinson
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UP
(7)
Schoolcraft
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Chippewa
Mackinac
Emmet
Cheboygan
Presque Isle
Charlevoix
Antrim
Montmorency
Alpena
Leelanau
Benzie
Grand
Traverse
N
(32)
Alcona
Manistee
Wexford
Iosco
Mason
Lake
Osceola
Clare
Gladwin
Arenac
Huron
Oceana
Newaygo
Mecosta
Isabella
Midland
Bay
Tuscola
Sanilac
Montcalm
Gratiot
Saginaw
Muskegon
Kent
Ionia
Clinton
Shiawassee
Genesee
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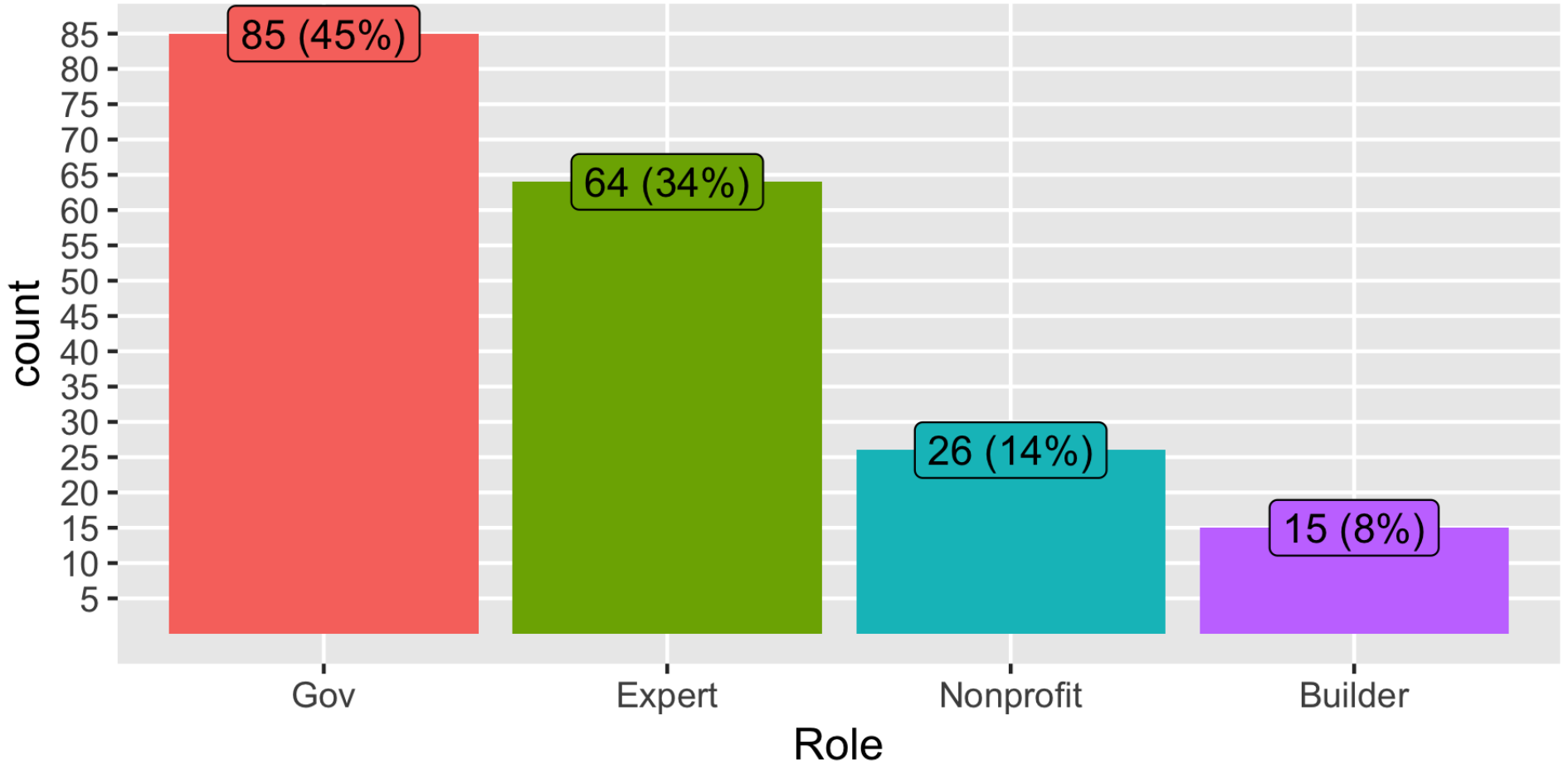
Lenawee

Roles


85 (45%)
64 (34%)
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15 (8%)
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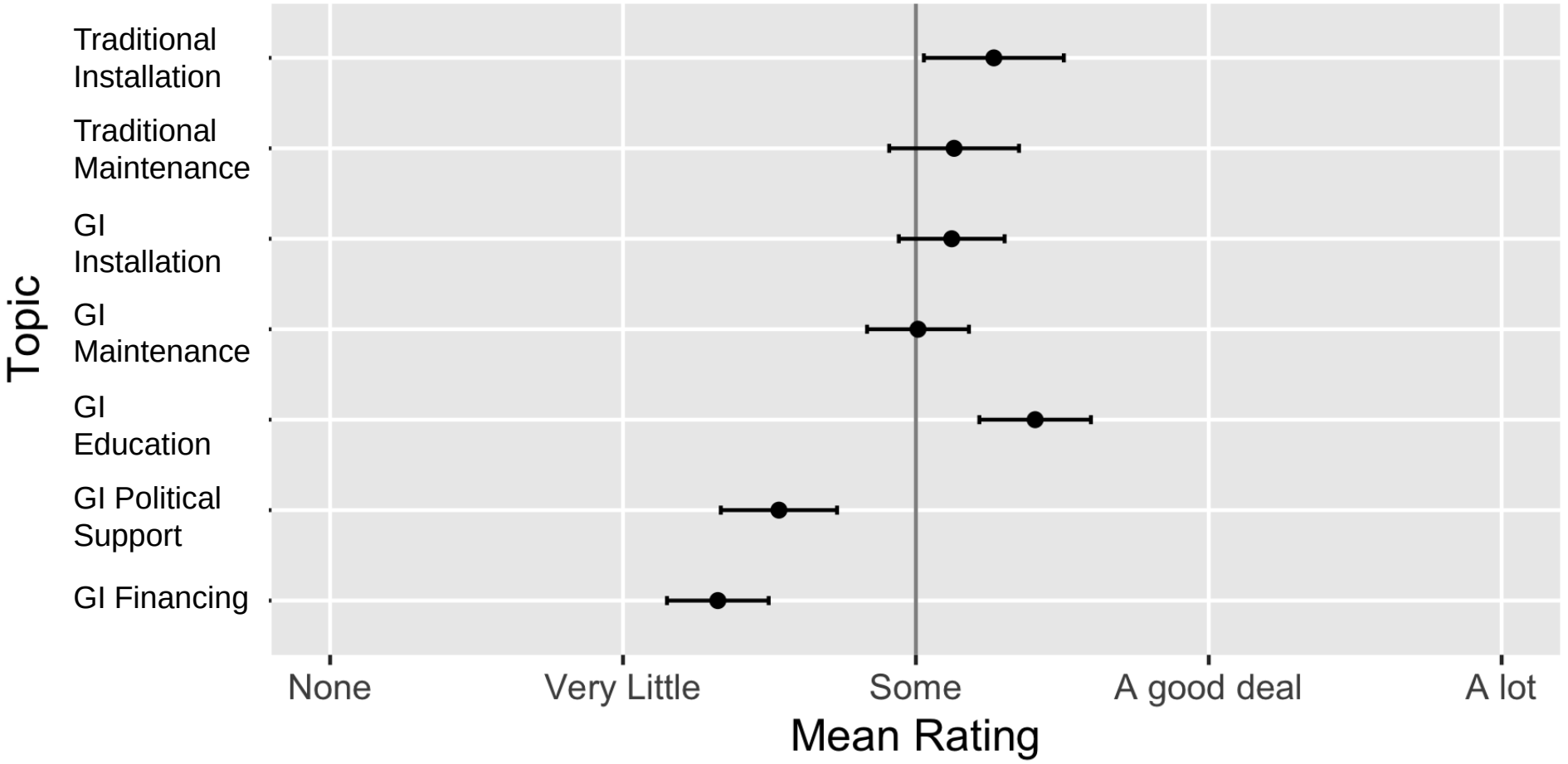
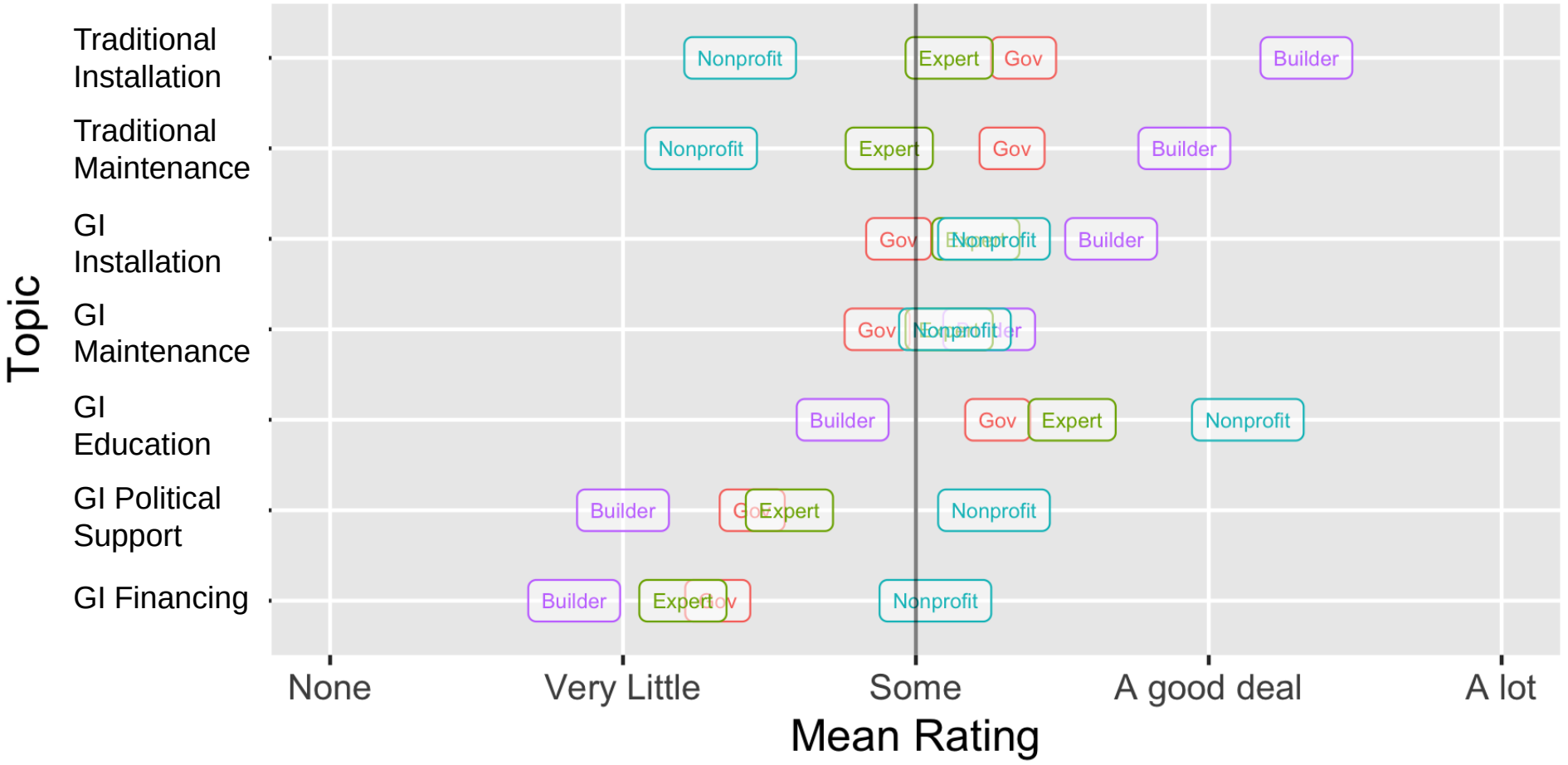
Gov
Expert
Nonprofit
Builder
Role

Stormwater Management Experience

Stormwater Management Experience

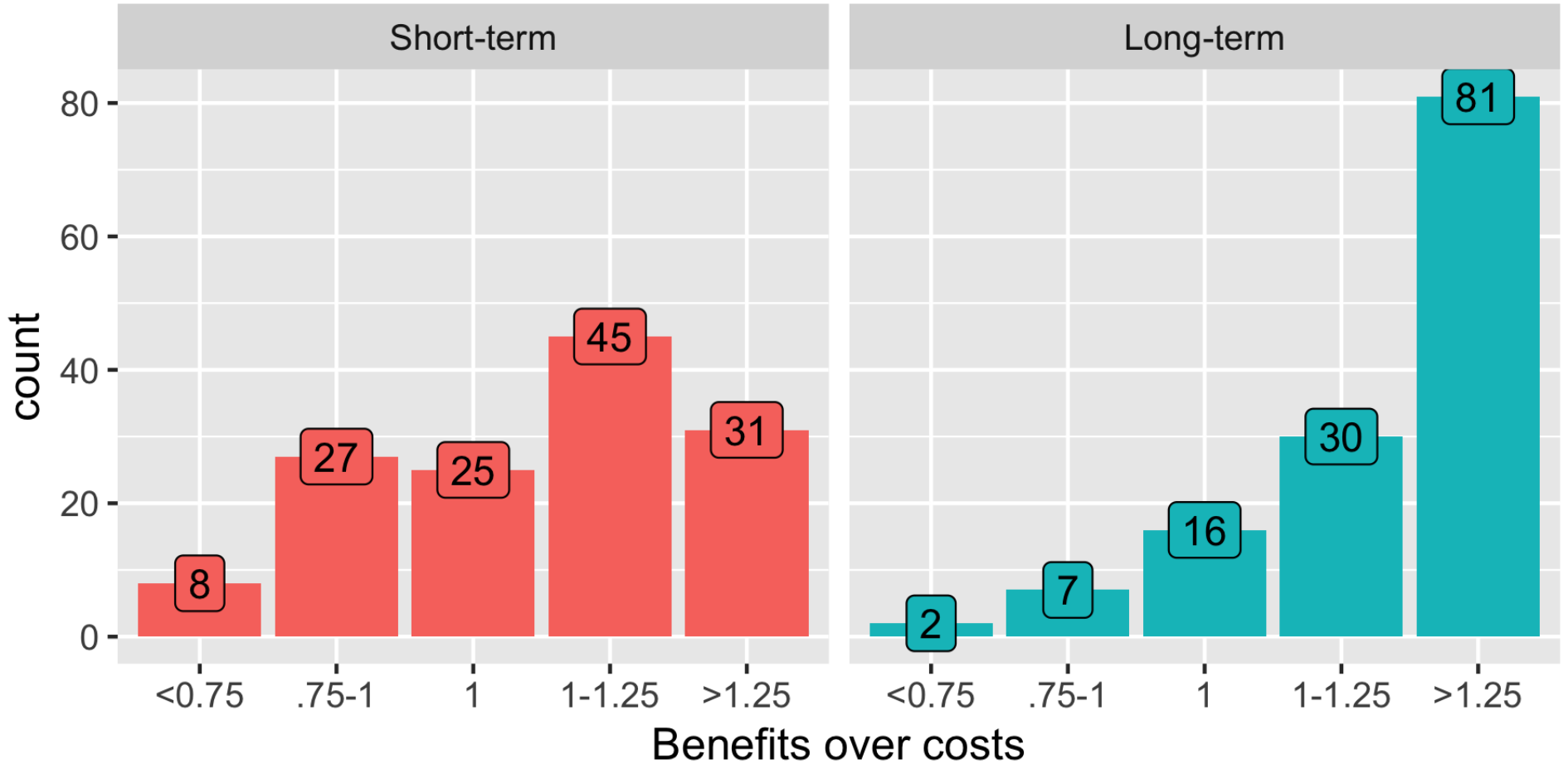


Stormwater Management Experience



Benefit / Cost Ratio of GI

Benefit/Cost Ratio of GI



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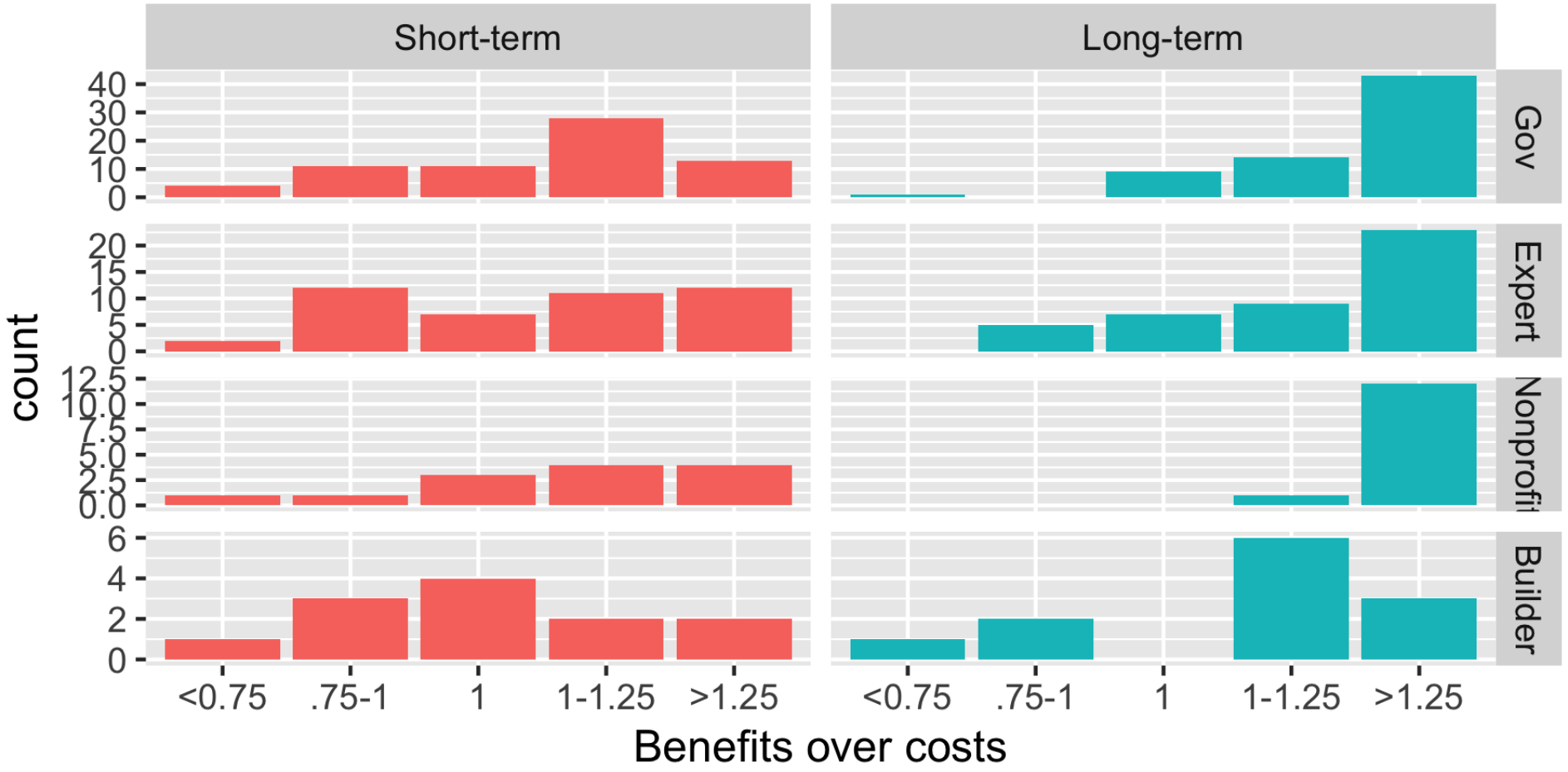
Benefit/Cost Ratio of GI (by role)



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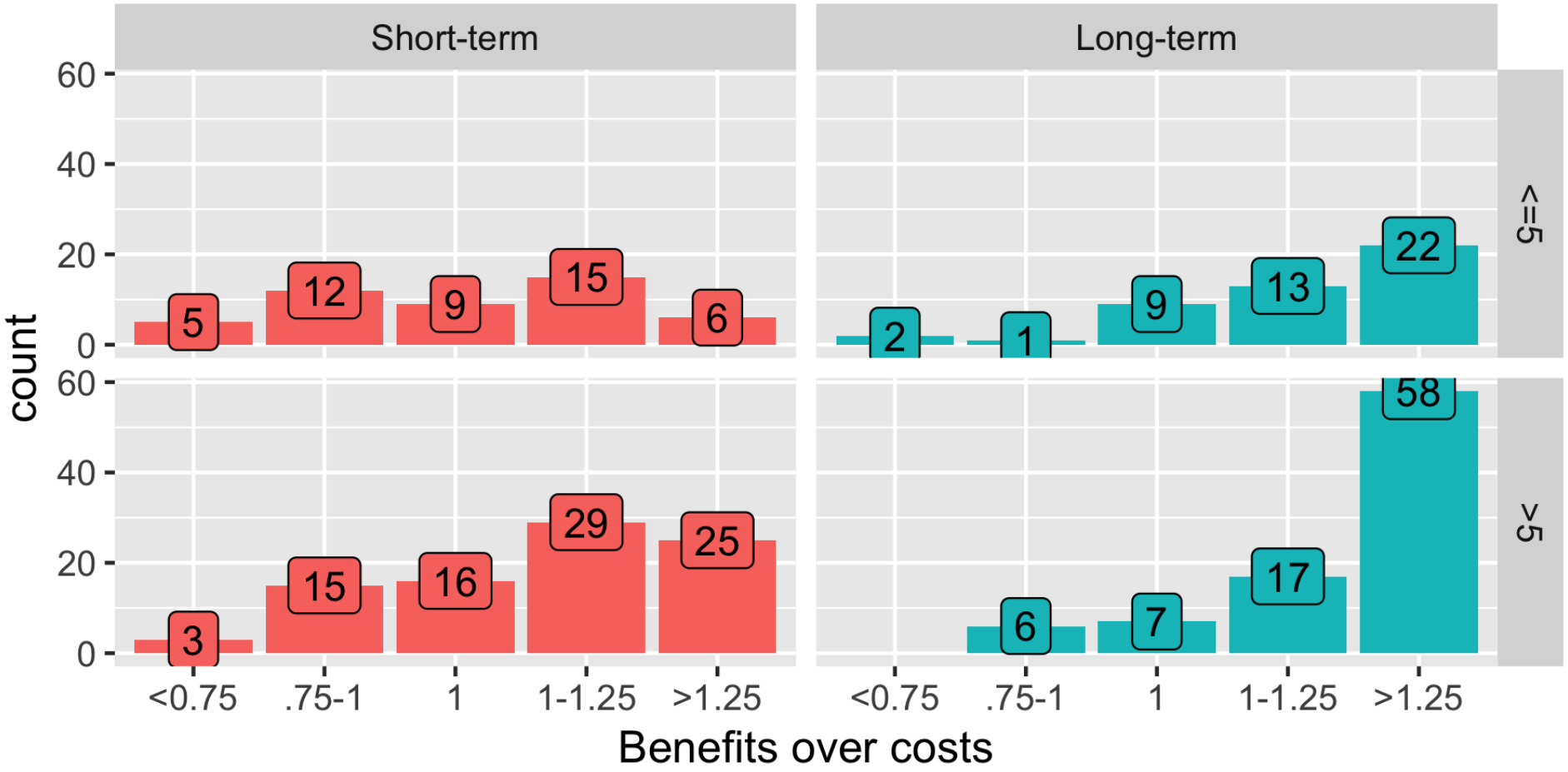
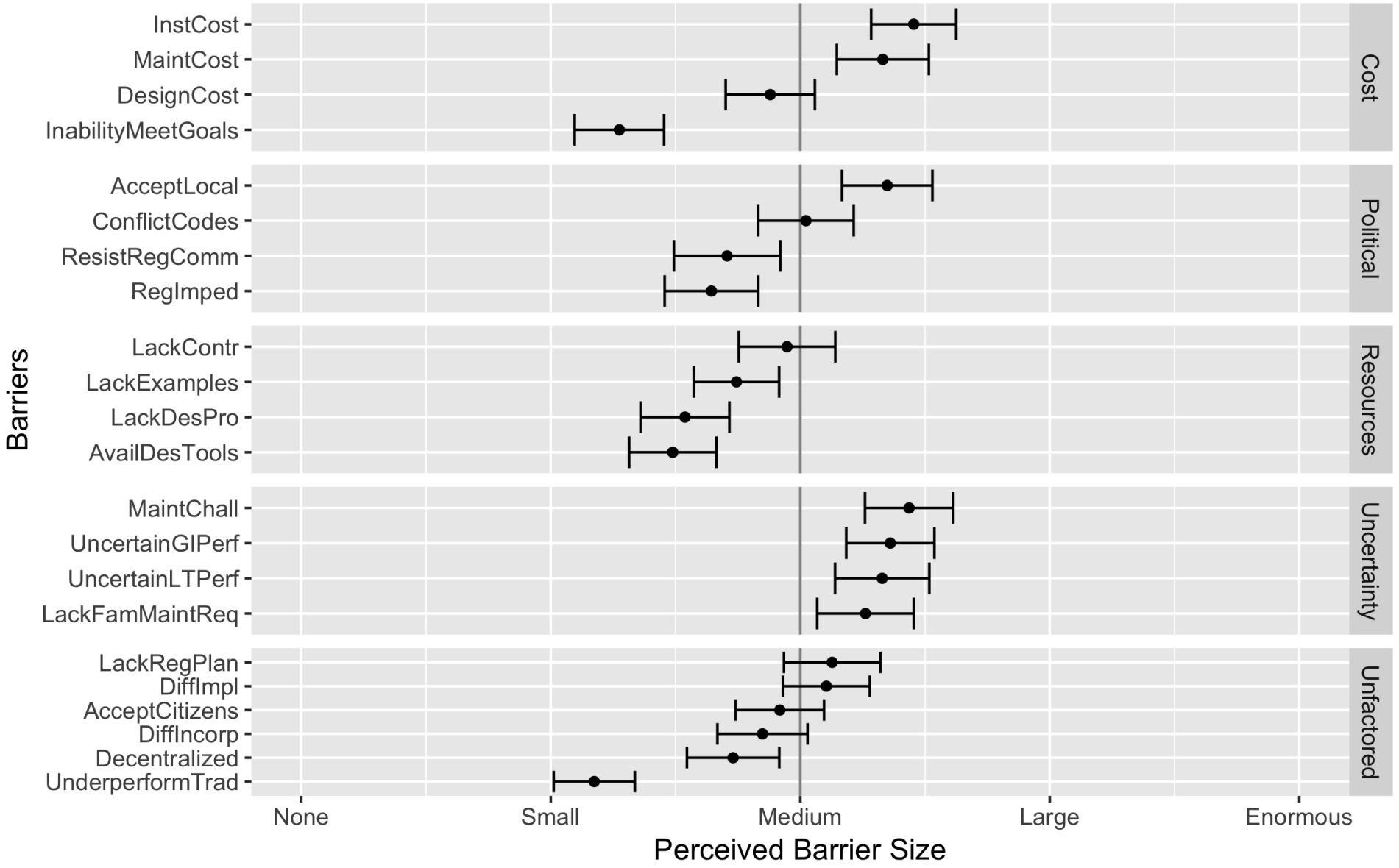
Benefit/Cost Ratio of GI (by familiarity)

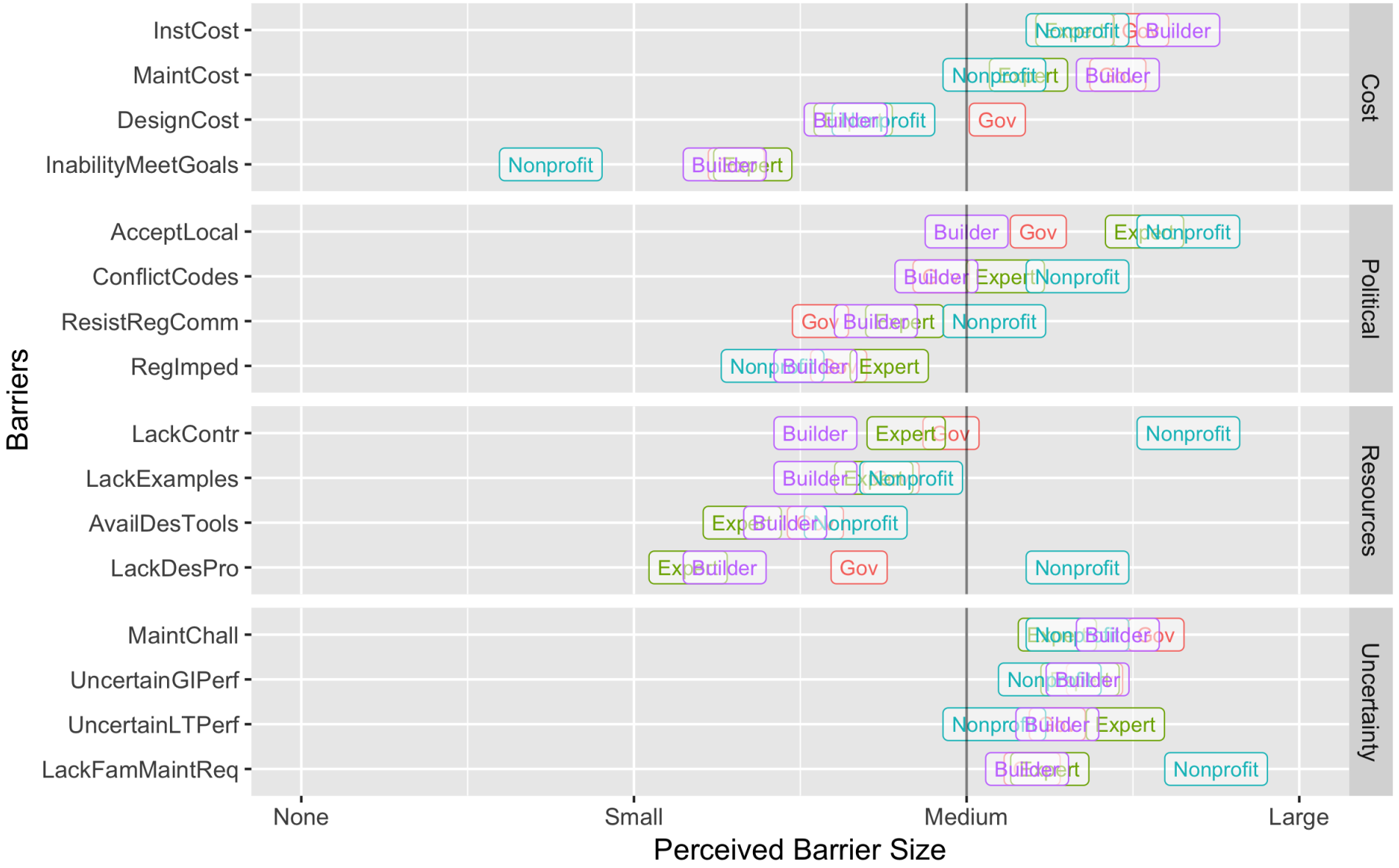


Barriers to GI

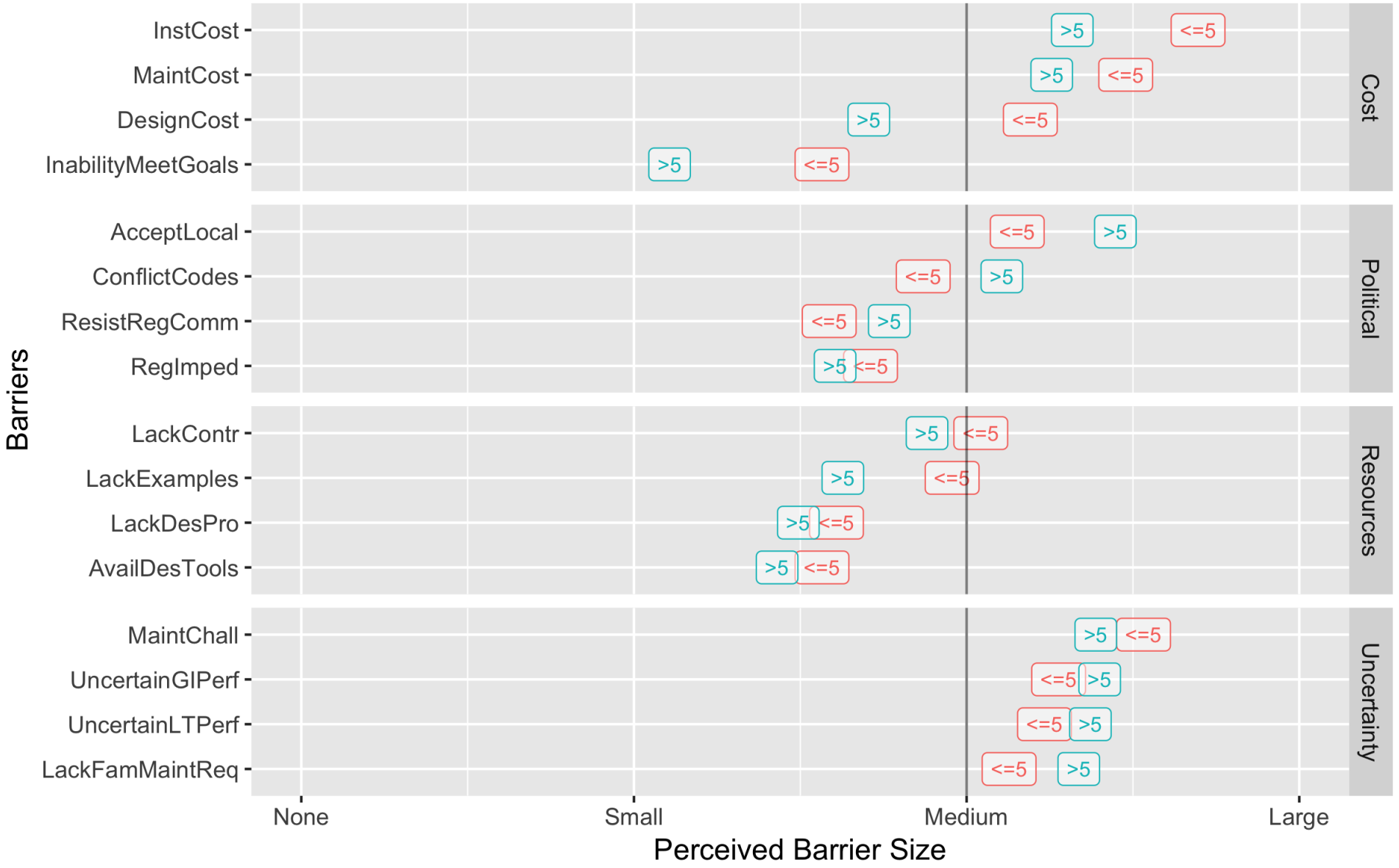
Barriers (items factored)



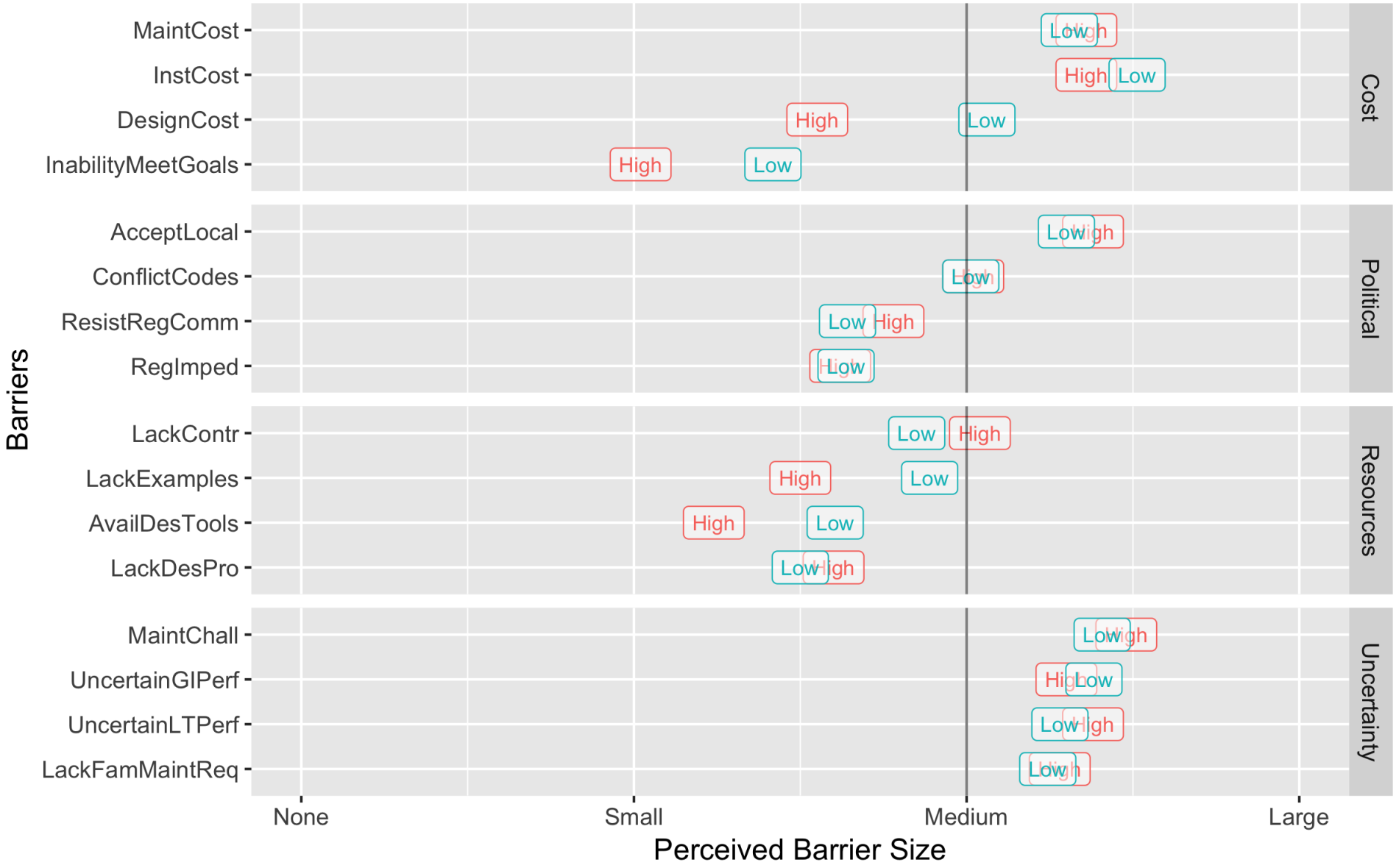
Barriers (by role)



Barriers (by familiarity)

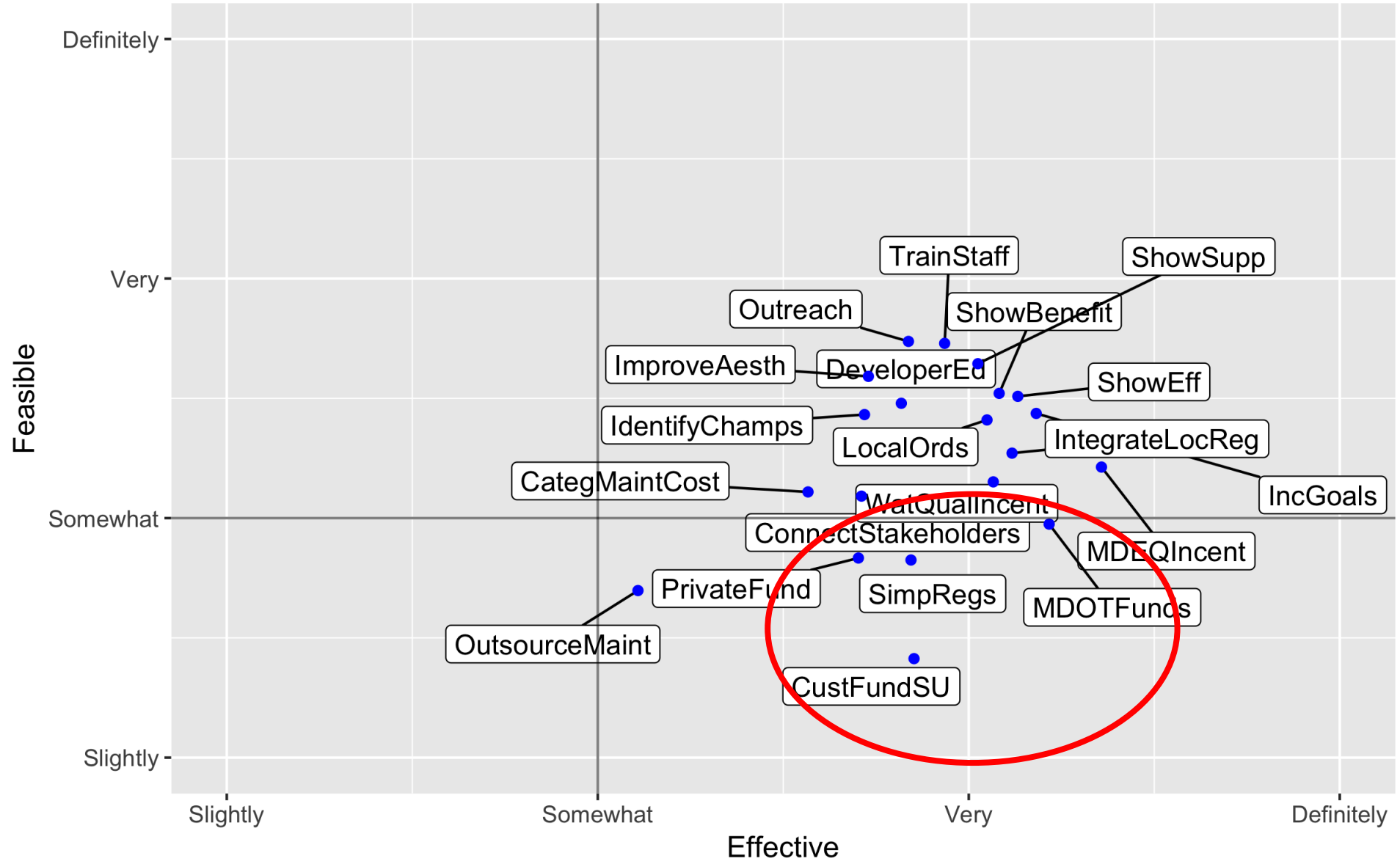


Barriers (by GI experience)

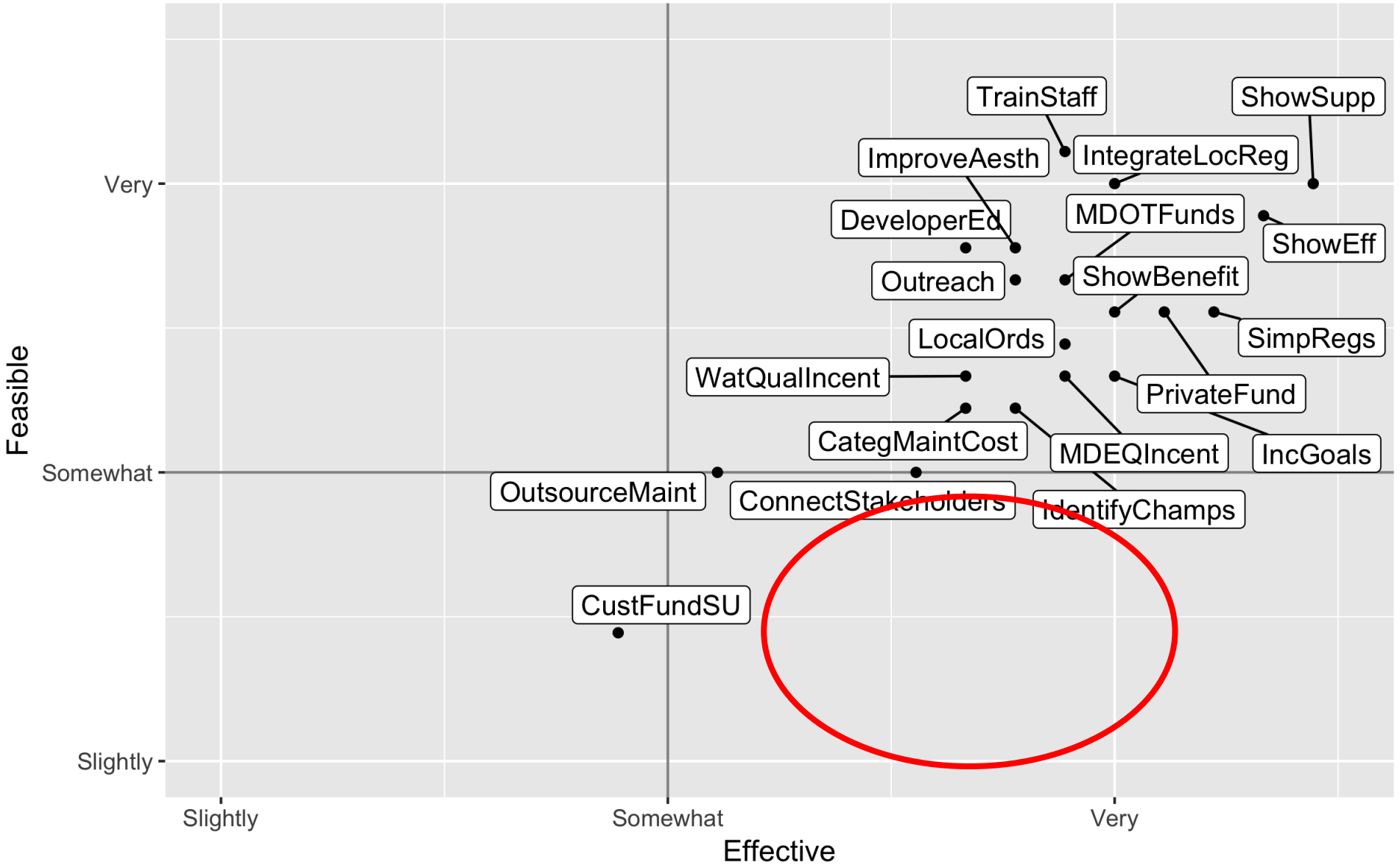


Stormwater Management Approaches

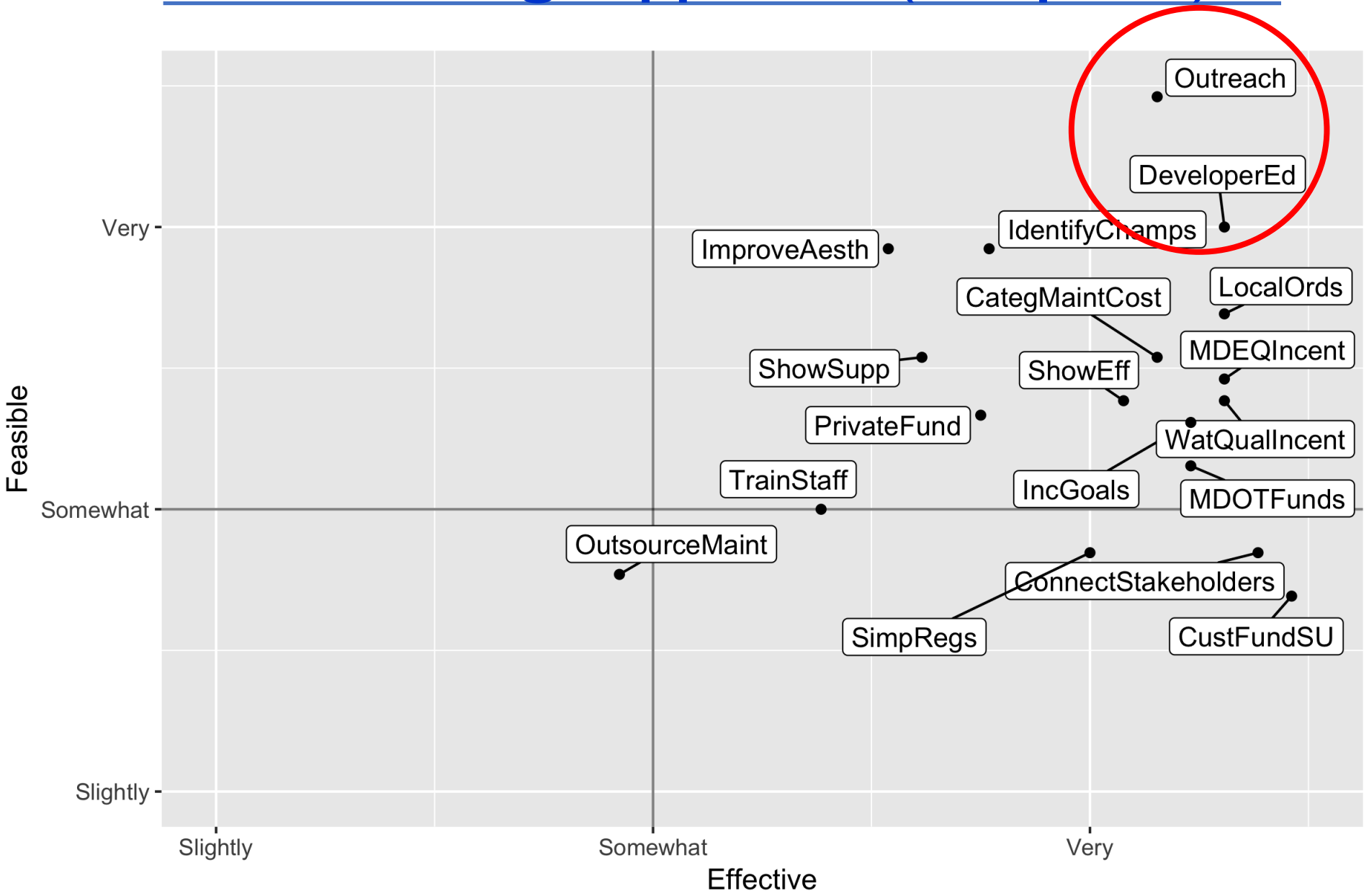
Approaches to Remove GI Barriers



Stormwater Mgt Approach (Builder)



Stormwater Mgt Approach (Nonprofit)



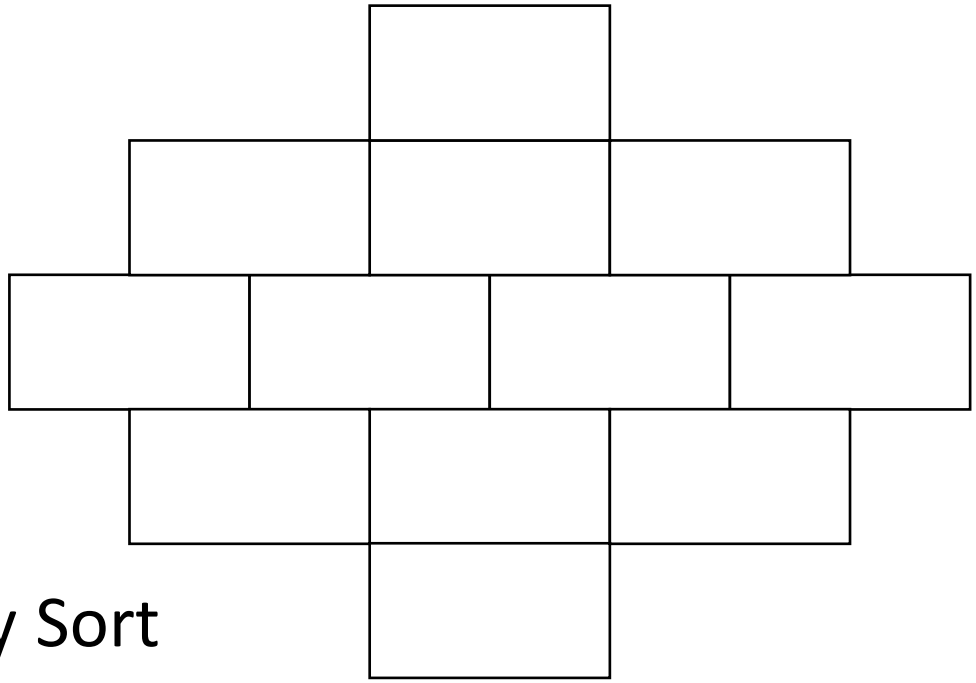
Community Visioning Sessions

- Elk Rapids and Royal Oak
  - Kalamazoo
- Benton Harbor, St. Joseph, Northport, and Zeeland
- Clinton River Watershed Center

Royal Visioning

Value Sort Methodology

- Task 1 – Individual Sort
  - Beauty, Economics, Ecosystem Services, Education, Mental Health, Physical Health, Recreation, Sense of Place, Social, Tourism, and Wildlife Habitat

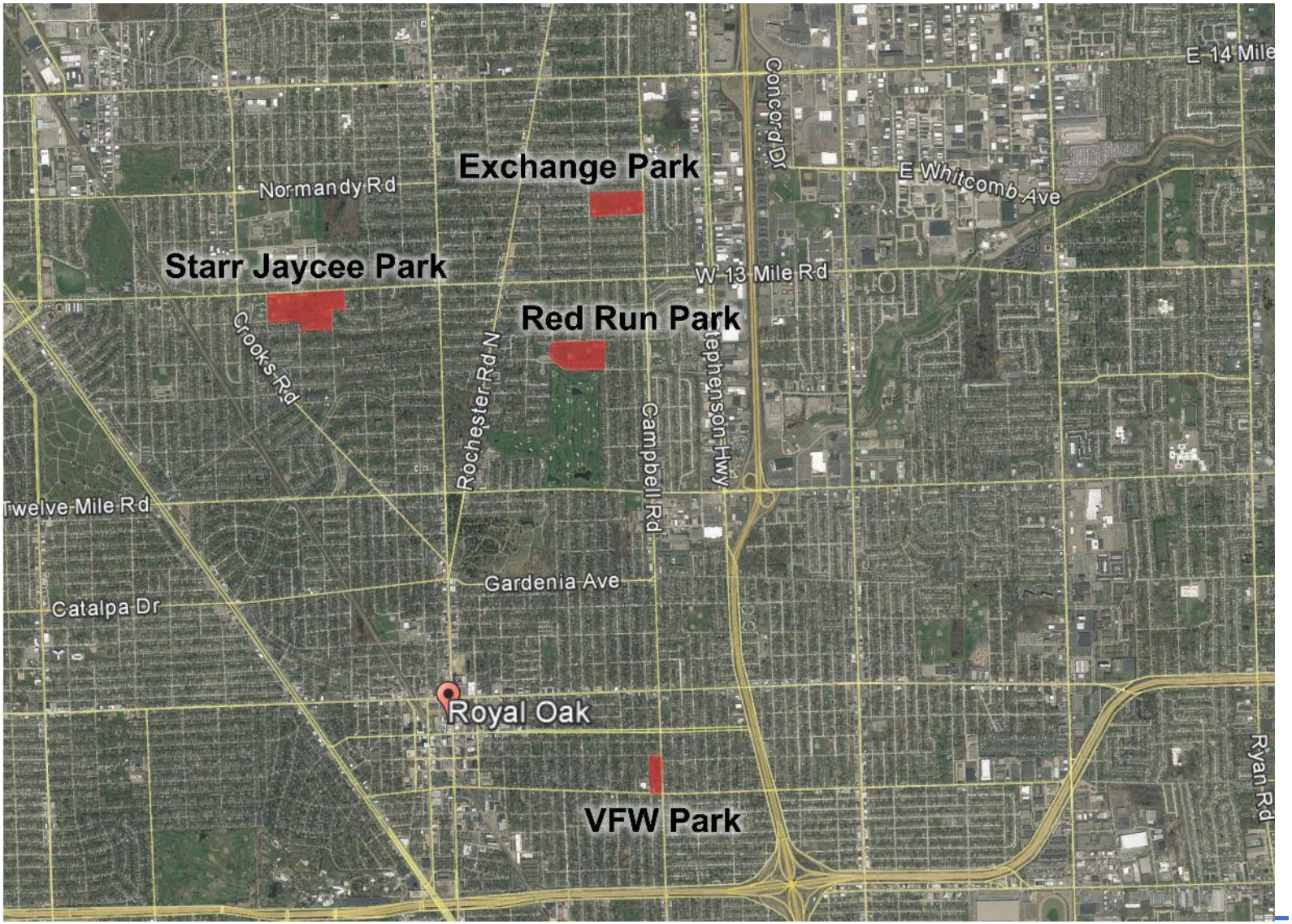


- Task 2 – Community Sort

Mapping Exercise

- Community Strengths
  - Why?
- Improvements
  - Why?
- Most Natural or “Green” Areas
- Benefit from Nature (be more “Green”)

Royal Oak – GSI Visioning



NATIVE PLANTS

RAIN GARDEN

Royal Oak

Sea Grant Michigan

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Exchange Park
Barriers to Green Infrastructure Implementation
Community Visioning Session
November 28, 2018
Royal Oak, MI

N


Royal Oak
EXCHANGE PARK
RON PARENT MEMORIAL PLAYGROUND


Royal Oak
EXCHANGE PARK
RON PARENT MEMORIAL PLAYGROUND

NATIVE PLANTS

RAIN GARDEN

RAIN GARDEN

Red Run Park

Barriers to Green Infrastructure Implementation
Community Visioning Session
November 28, 2018
Royal Oak, MI

N


Girard
Vermont


Girard
Vermont

Royal Oak

Sea Grant Michigan

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Starr Jaycee Park
Barriers to Green Infrastructure Implementation
Community Visioning Session
November 28, 2018
Royal Oak, MI

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Starr Jaycee Park


Starr Jaycee Park

POROUS PAVERS

BIORETENTION

VFW Park
Barriers to Green Infrastructure Implementation
Community Visioning Session
November 28, 2018
Royal Oak, MI

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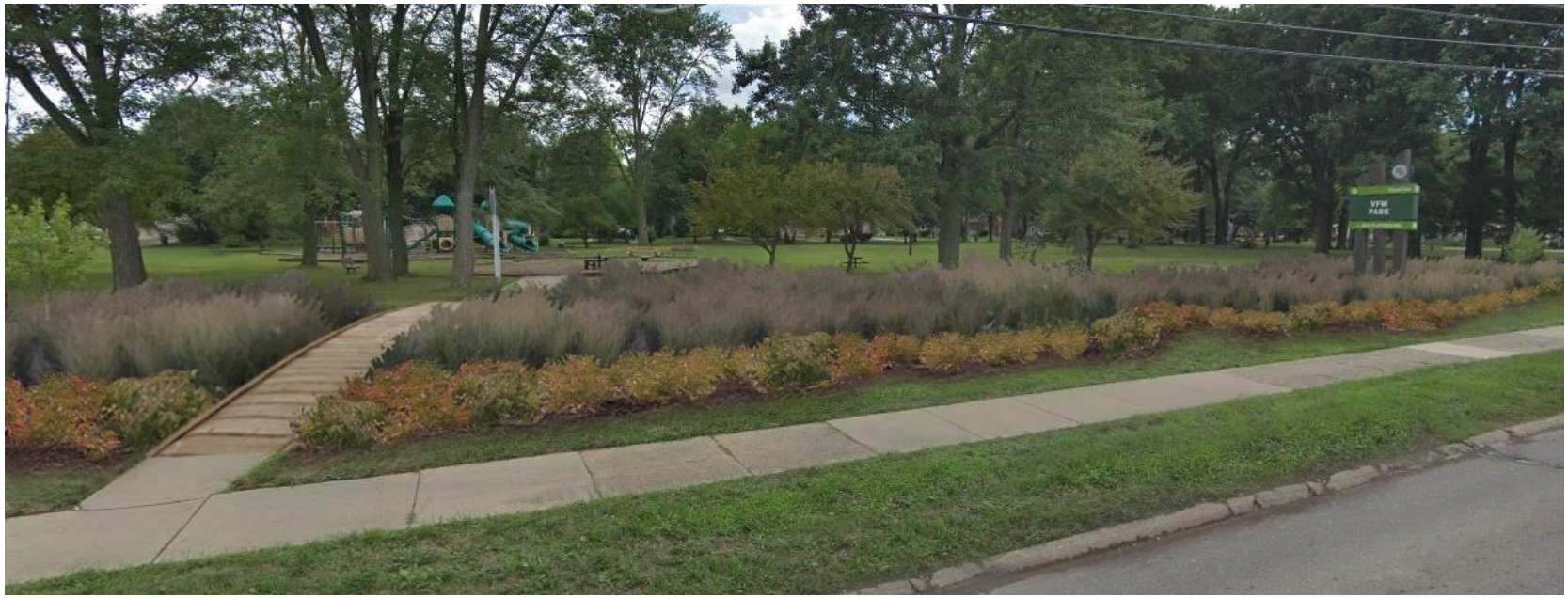
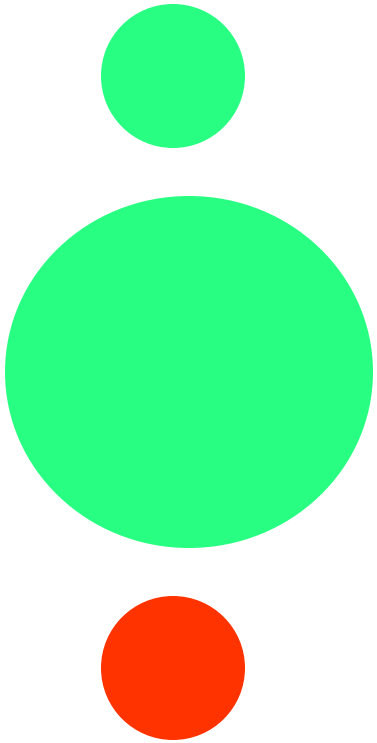
VFW
PARK


VFW
PARK

Dot Voting



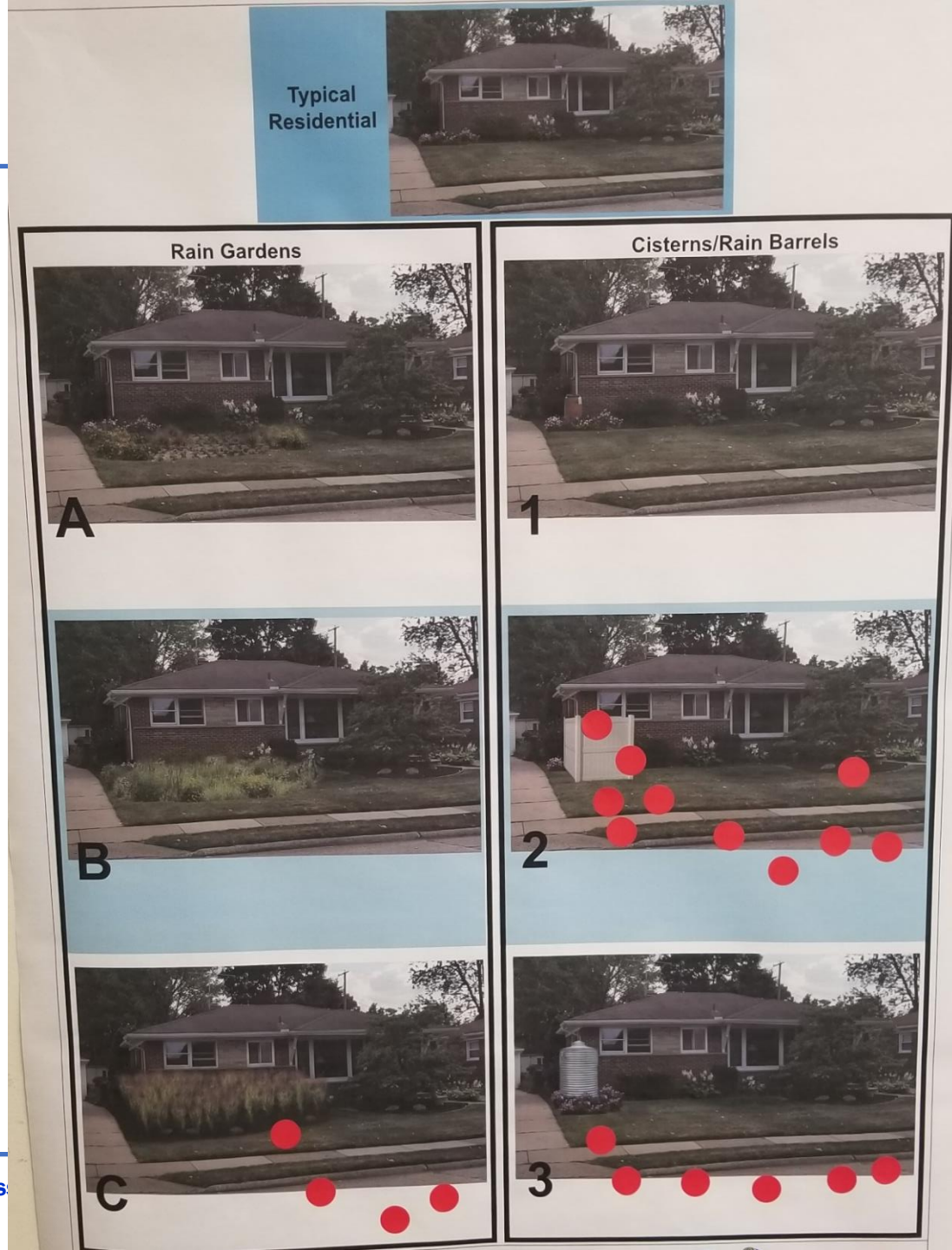
- Small green dot = Like this component of the vision
- Large green dot = Priority project based on values
- Red dot = Uncomfortable with this component of the vision

Dot Voting

Red dot = Uncomfortable with this component of the vision

Dot Voting

Red dot = Uncomfortable with this component of the vision



Summary of Findings

- Stakeholder focus groups had an overwhelming desire to use GI more
- Uncertainty in Performance, Installation/Maintenance Costs, Financing, Ordinances, and Public Acceptance highest perceived barriers
- Financing, Simplifying Codes/Ordinances, and garnering Political Support are considered effective but respondents not familiar
- Long-term benefits are perceived to be better than short-term benefits
- Demonstrating how GI can be effectively integrated into existing stormwater systems is seen as effective and feasible

Summary of Findings

- Educating people about GI may not be most effective approach but it is what participants are most comfortable doing
- Nonprofits have less experience with traditional stormwater management which might make it difficult to make arguments for and transitions to green infrastructure
- Community visioning is critical for building consensus and selling a vision