

US EPA ARCHIVE DOCUMENT



Municipal Green Infrastructure Needs Assessment

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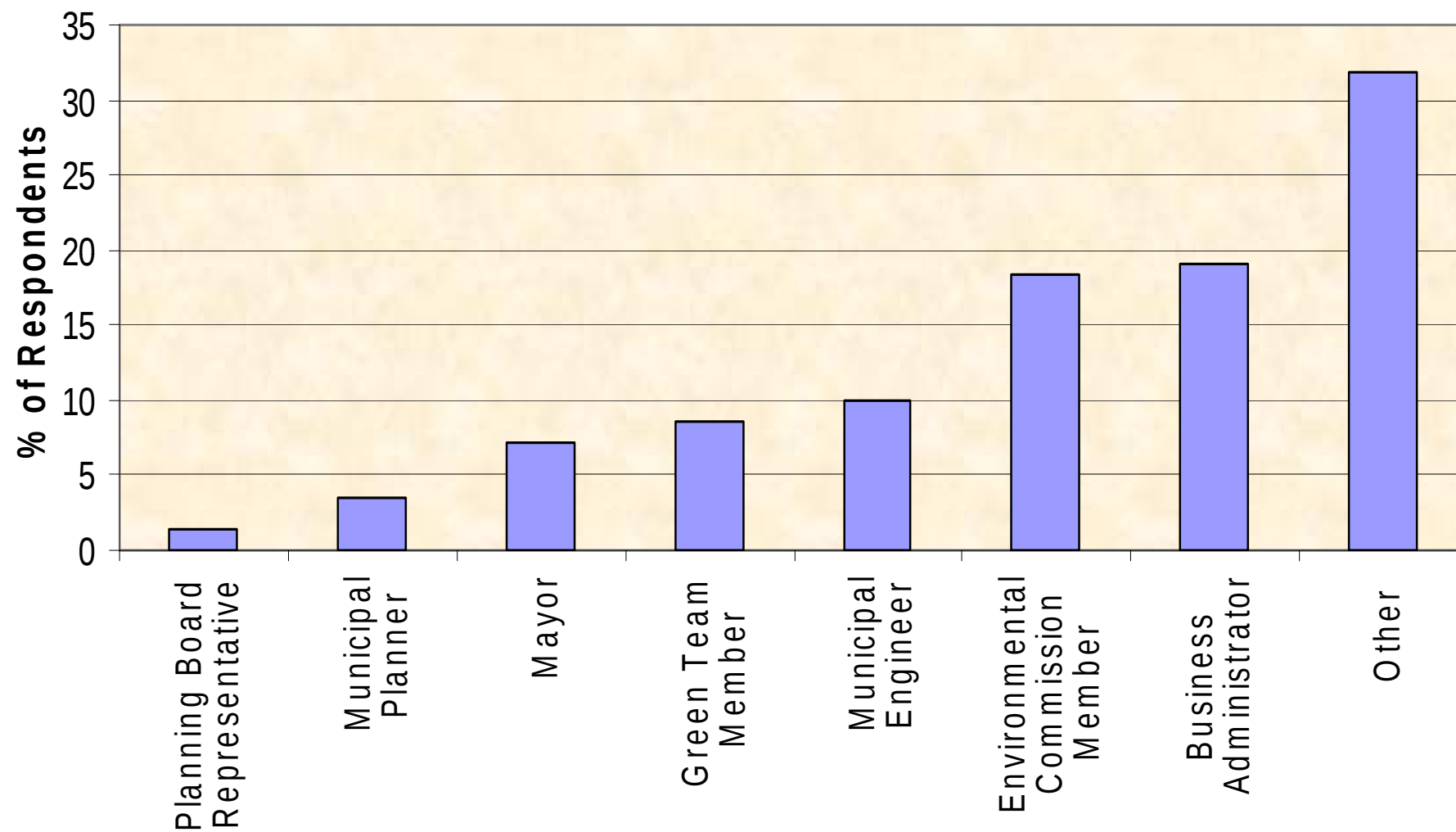
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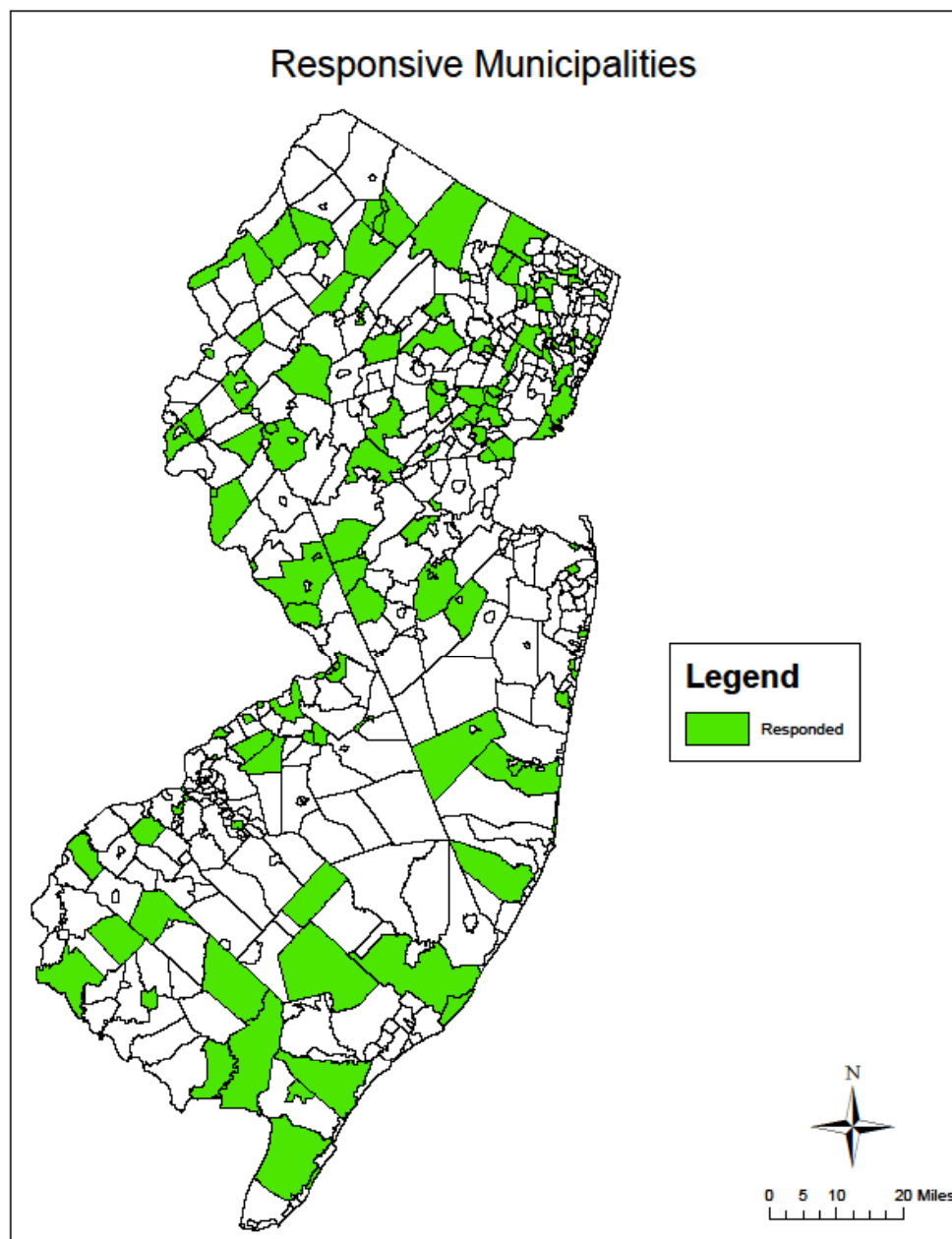
- Funding supplied through a Rutgers University Faculty Research Grant
- Michele Bakacs and Pat Rector Co-Pis
- Document the willingness of municipalities to install GI; funding sources; and whether GI is required for new developments
- Determine the barriers to implementation of GI projects
- Understand what is needed to overcome these barriers by monitoring the actions of municipalities that take part in an annual GI conference.

- Survey was sent via Constant Contacts to every (565) municipality
- NJ Department of Environmental Protection, Sustainable Jersey, and Rutgers Water Resources Program also assisted by sending out e-mail survey to contact lists
- Follow-up email reminders were sent, personal phone calls and emails were included to increase participation
- Response rate 22% of NJ municipalities. Still receiving surveys

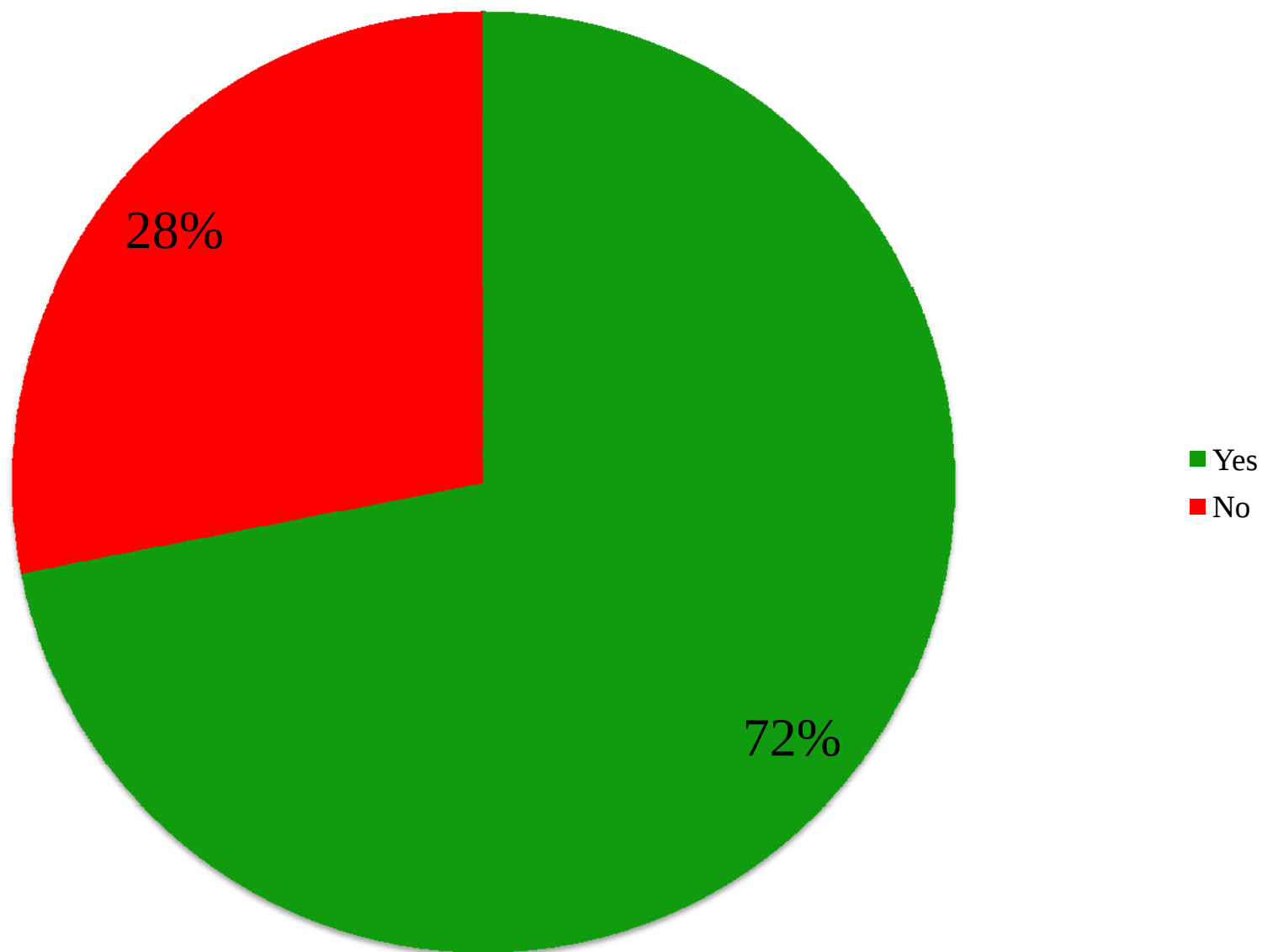
- Questions focused on:
 - Did the municipality install Green infrastructure (GI)?
 - If so, what type? What was the motivation?
 - If so, what type of funding was utilized?
 - What were obstacles to installation?
 - What help is needed for future installation of Green Infrastructure?
 - Are there flooding problems in the municipality?

Respondents





Green Infrastructure in New Jersey



- Rain Gardens
- Rain Barrels
- Green Roofs
- Cisterns
- Vegetated Swales
- Permeable Pavement
- Detention/Infiltration Basins
- Bioretention
- Planters
- Riparian Buffers
- Dry Wells



Photo courtesy of EPA

Shallow, landscaped depression that treats stormwater runoff



A common form of green infrastructure in municipalities



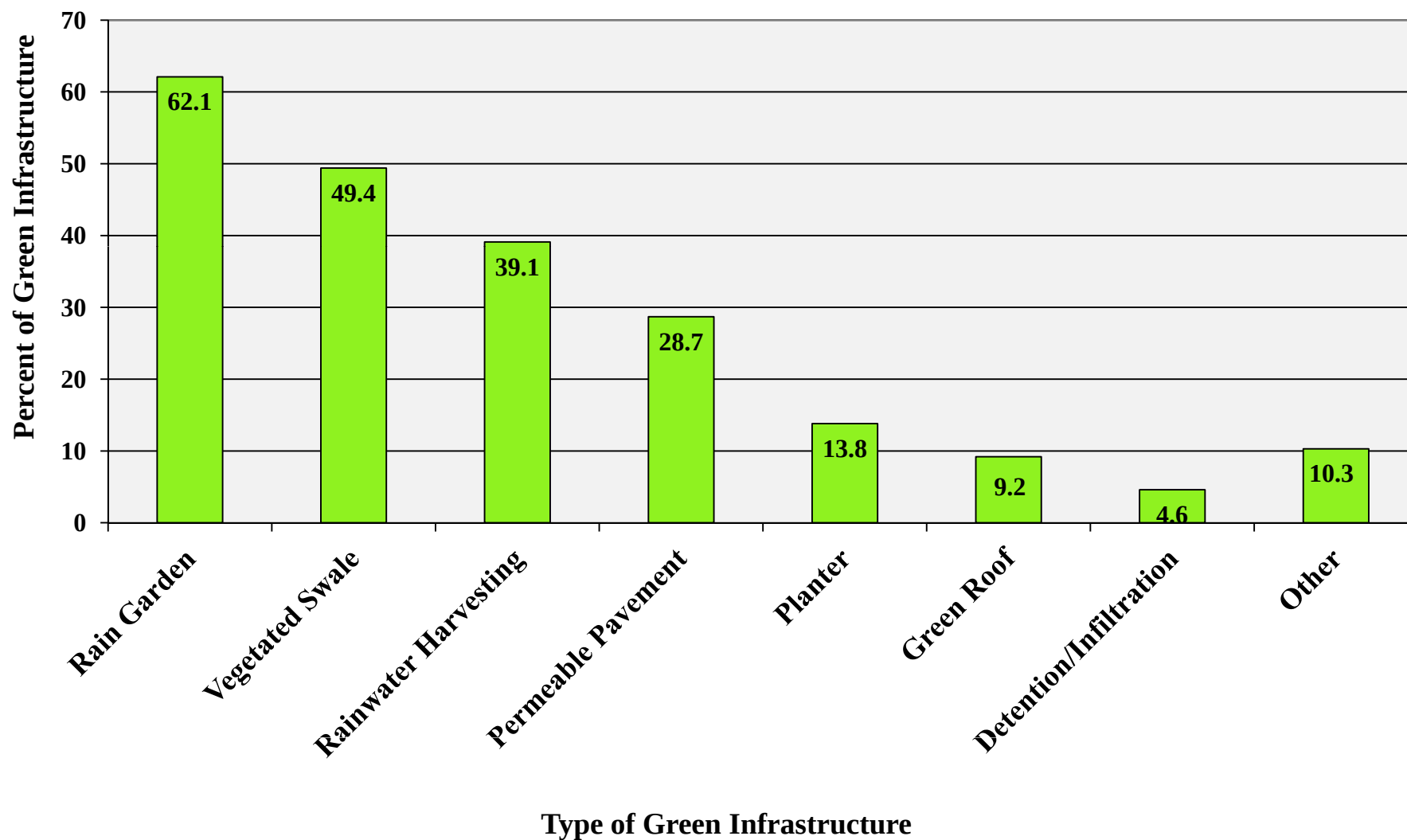
A common form of green infrastructure at schools

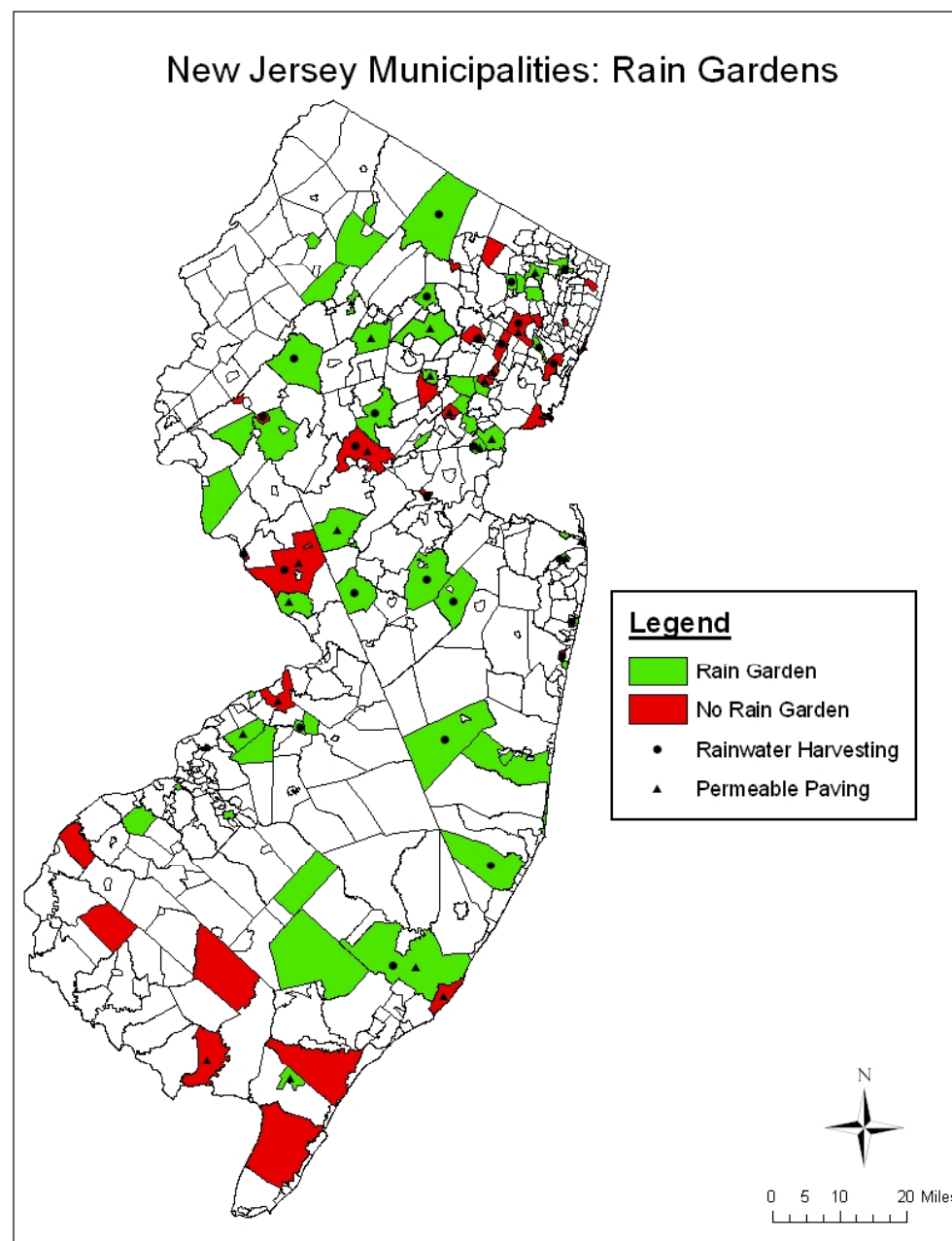


and hospitals



Municipal Green Infrastructure



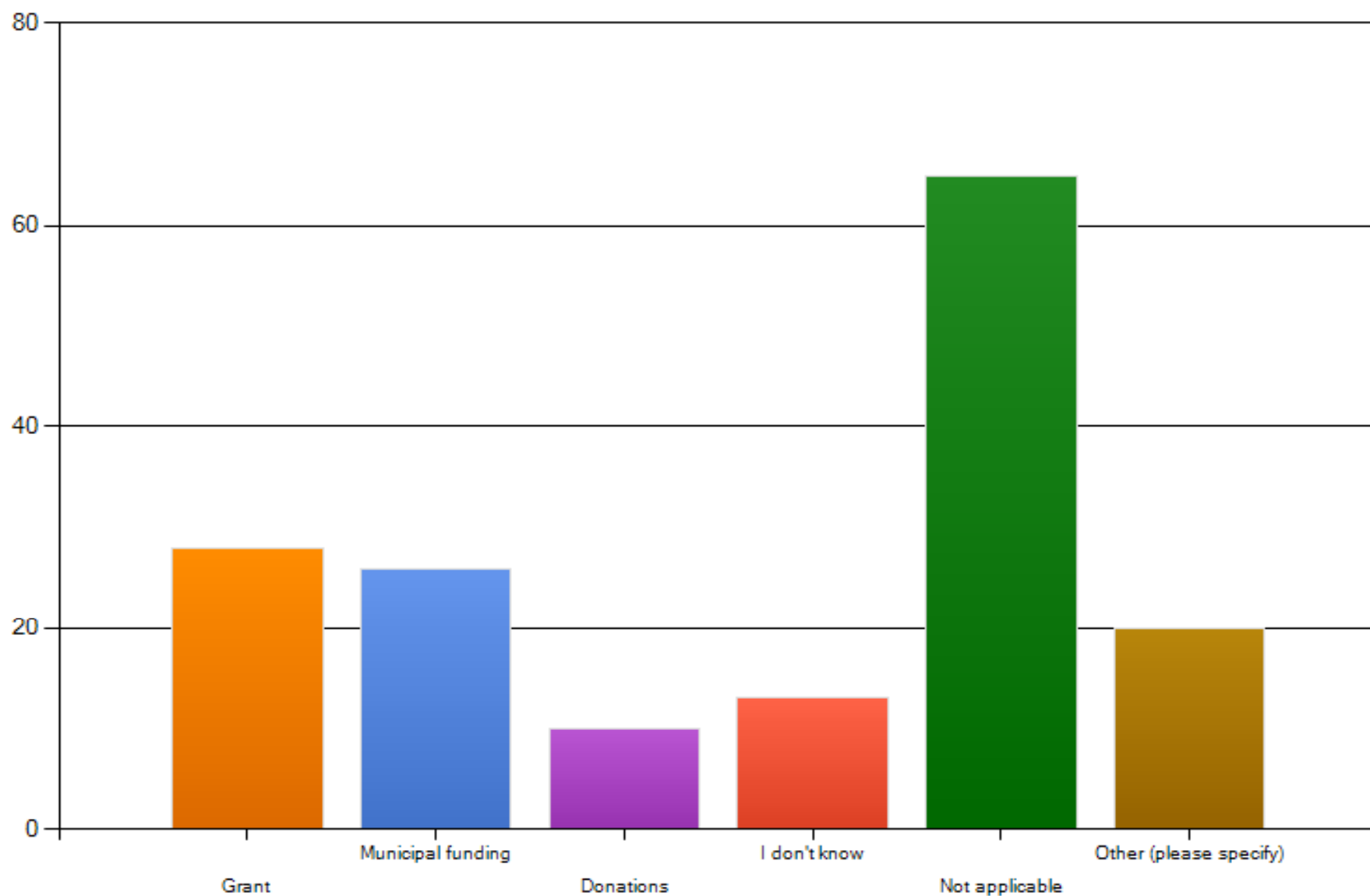


Source: NJDEP Shapefile

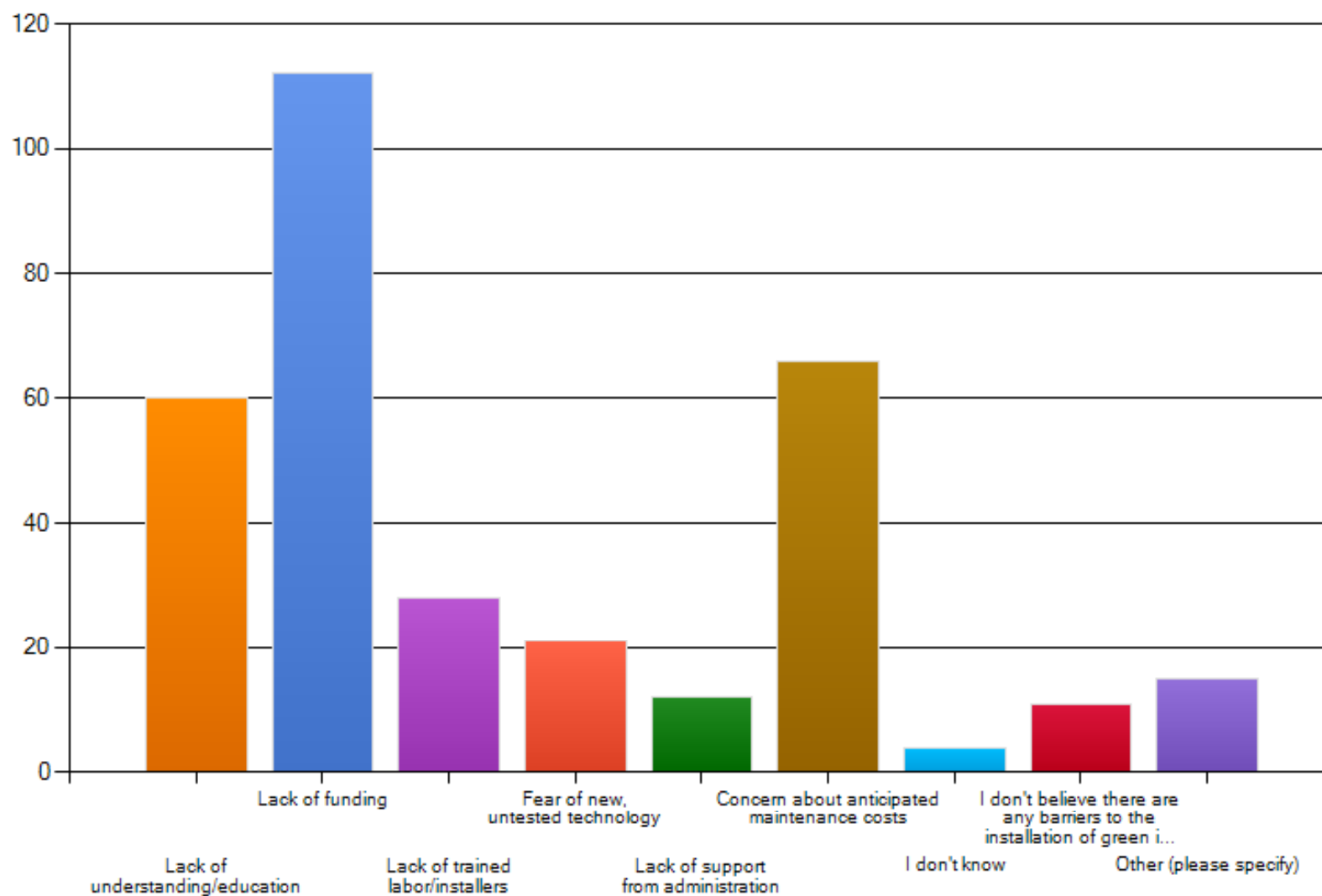
<u>Type of GI</u>	<u>Percent of Municipalities</u>
Rain Garden	62.1
Vegetated Swale	49.4
Rainwater Harvesting	39.1
Permeable Pavement	28.7
Planter	13.8
Green Roof	9.2
Detention/Infiltration	4.6
Other	10.3

Permeable Pavement Demonstration

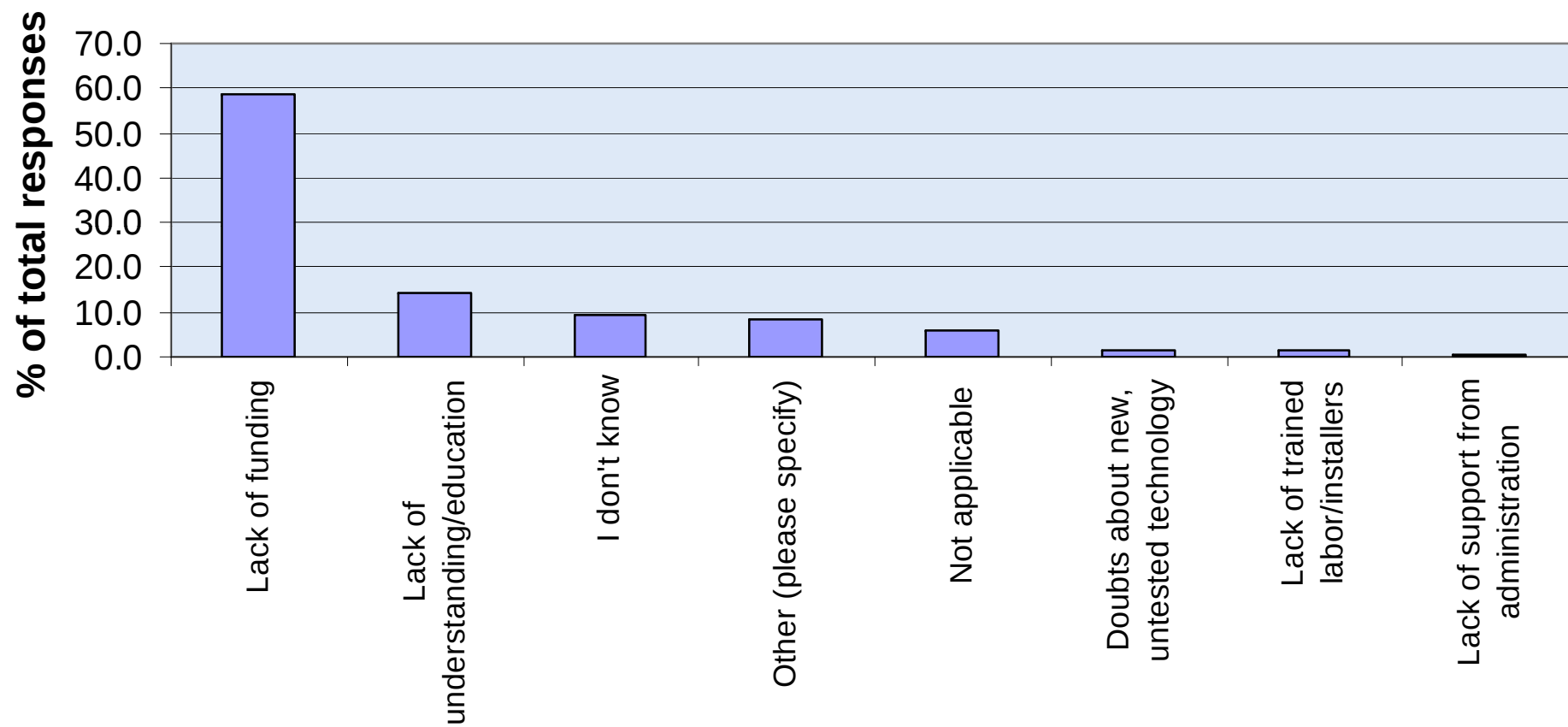
What was the funding source(s) used to install these practices? Check all that apply



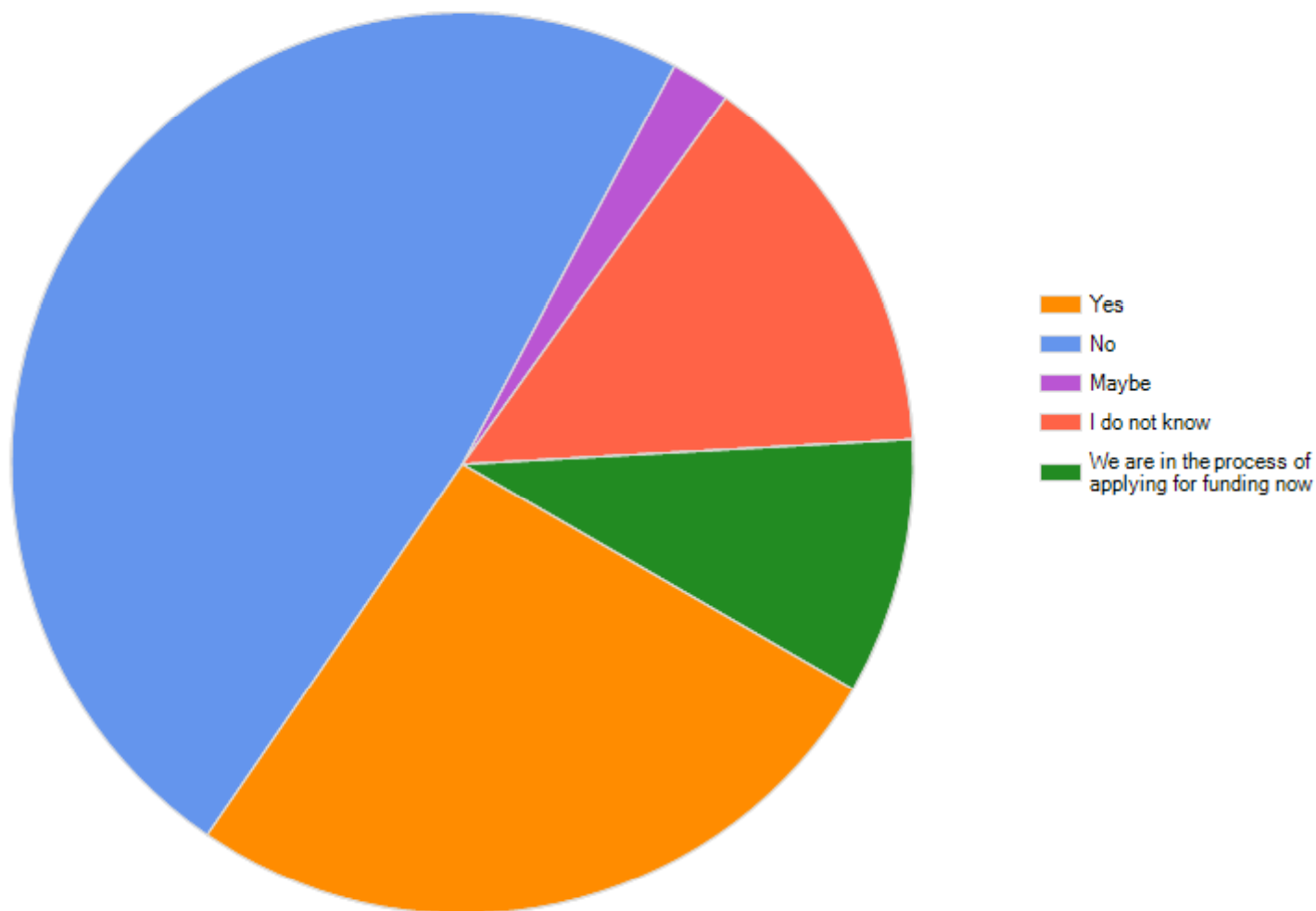
What do you believe are the barriers to the installation of green infrastructure practices in your town? (Check all that apply)



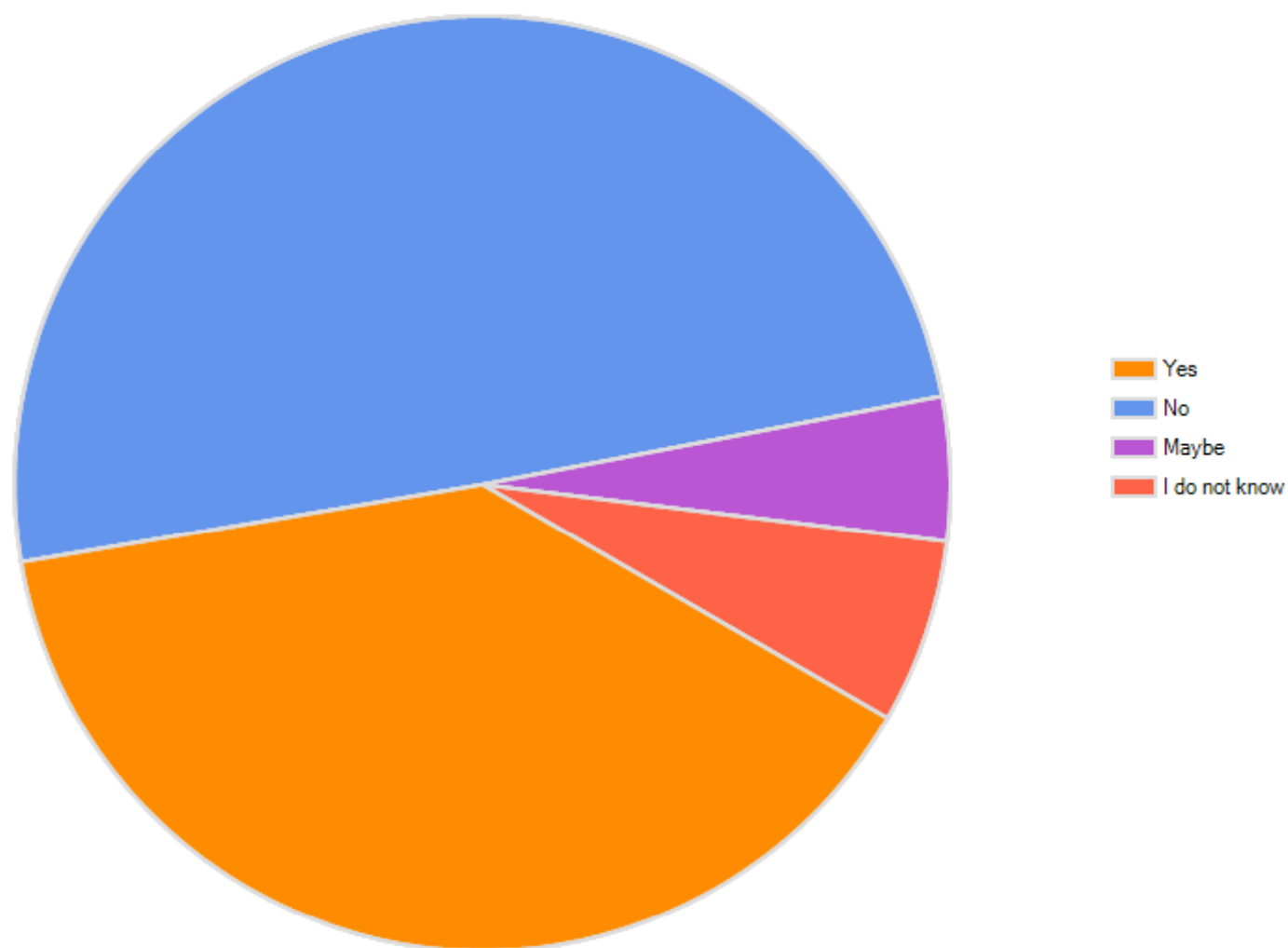
Primary Barrier to installtion of Green Infrastructure



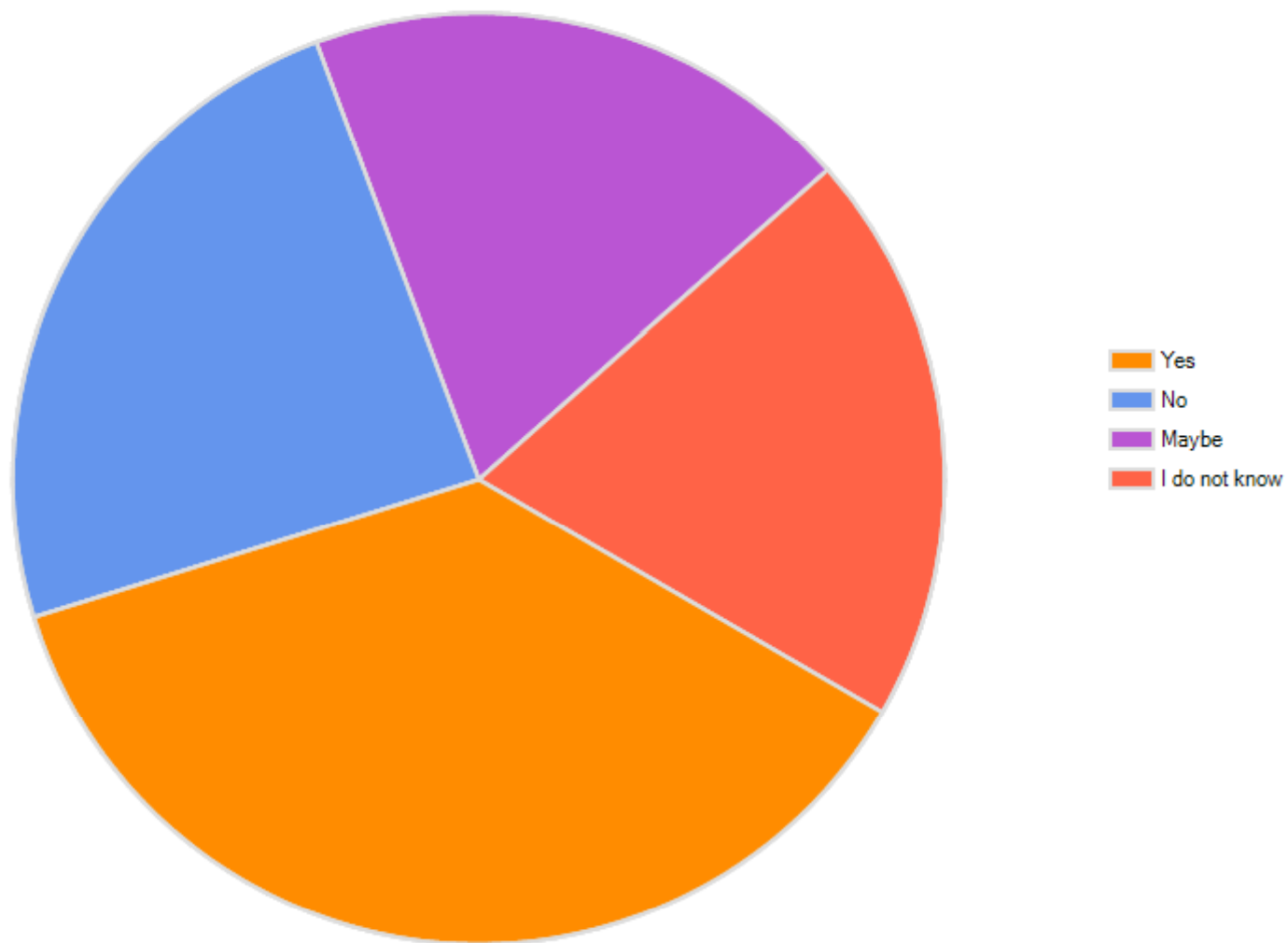
Has your town actively pursued grant funding to install green infrastructure practices to address stormwater runoff and/or conserve rain water?



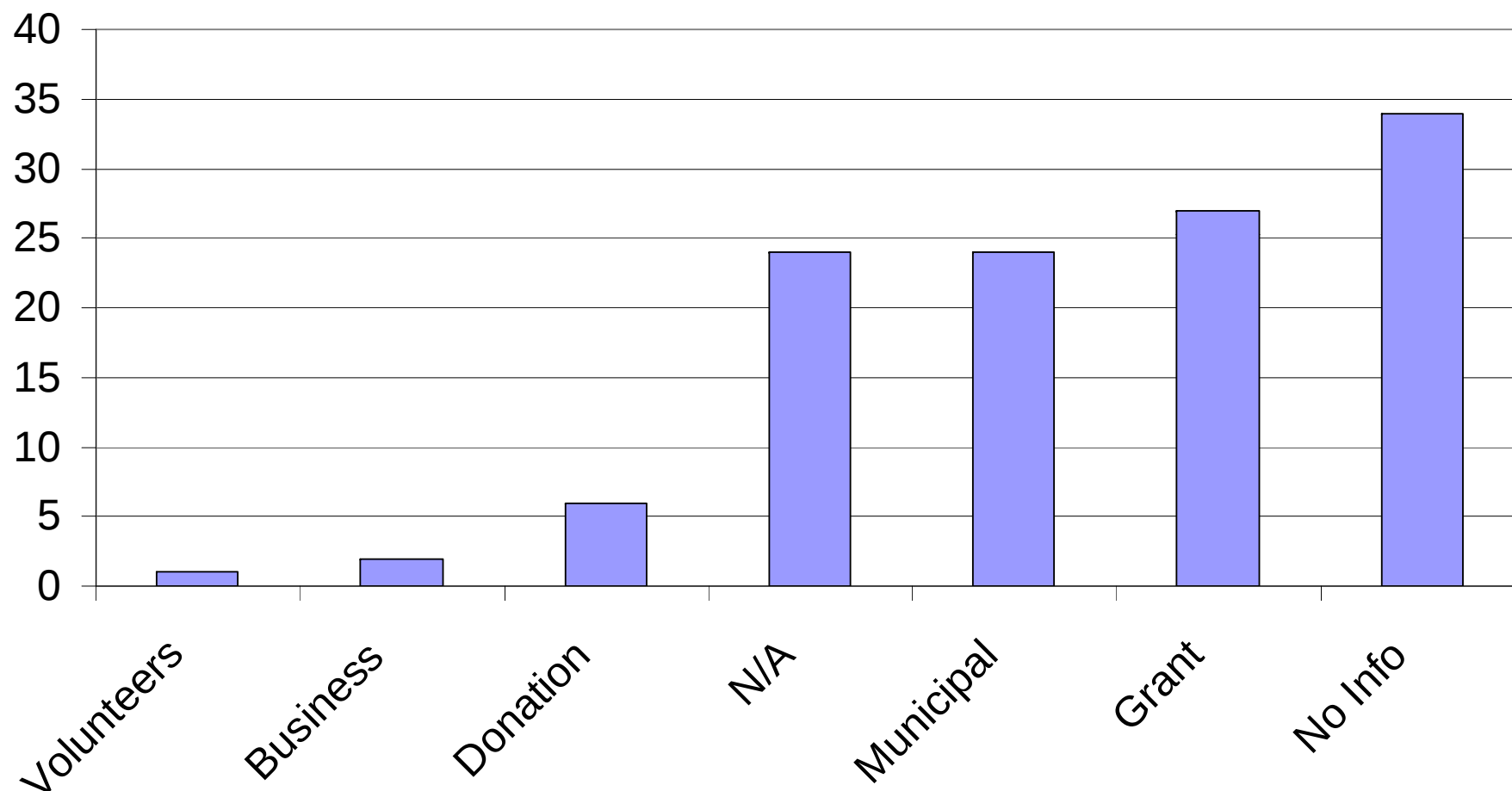
Were you aware of the ability of a Mitigation Plan (as discussed in the paragraph above) to fund green infrastructure projects in your town?



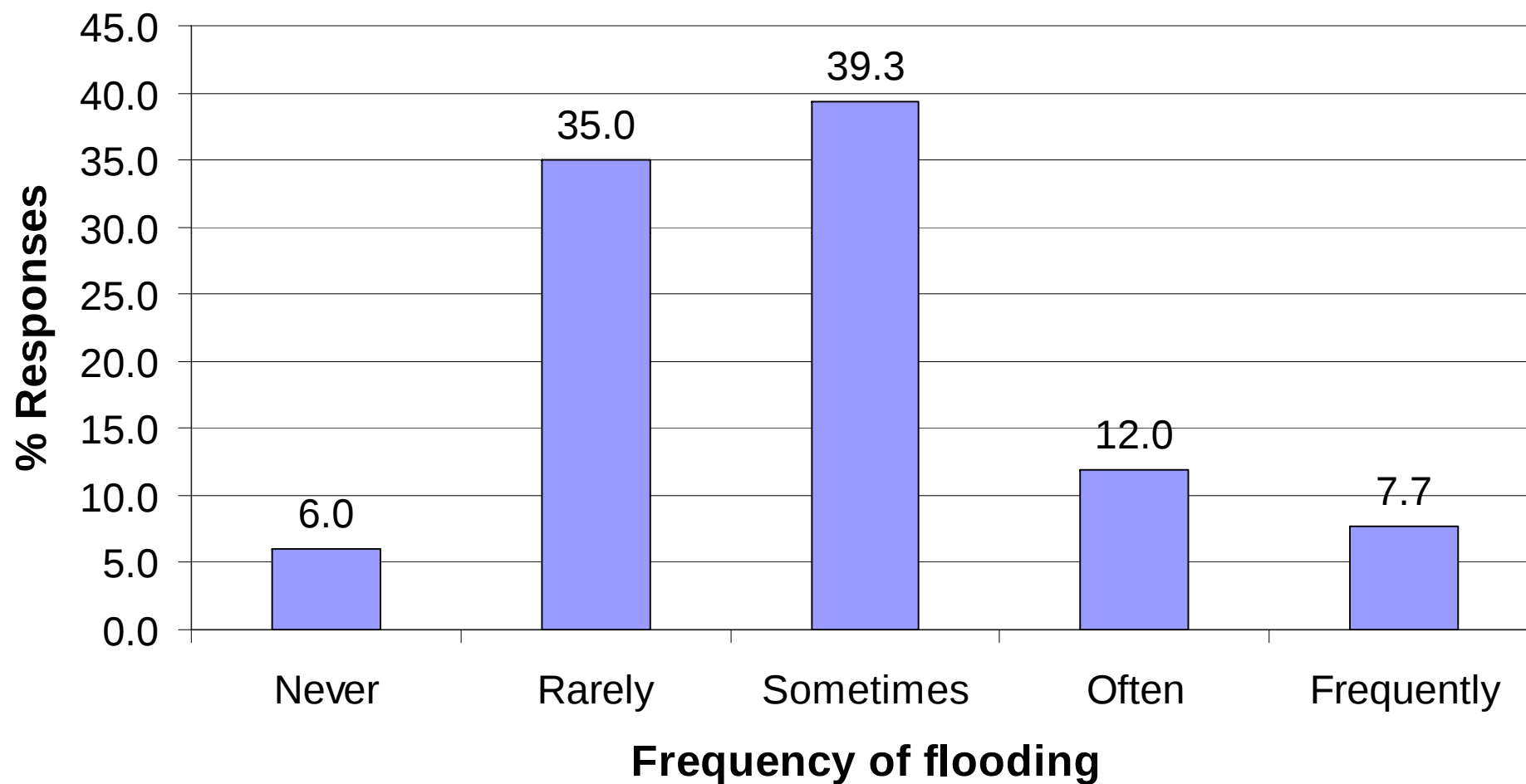
Does your planning board encourage or require green infrastructure for new developments in your town?



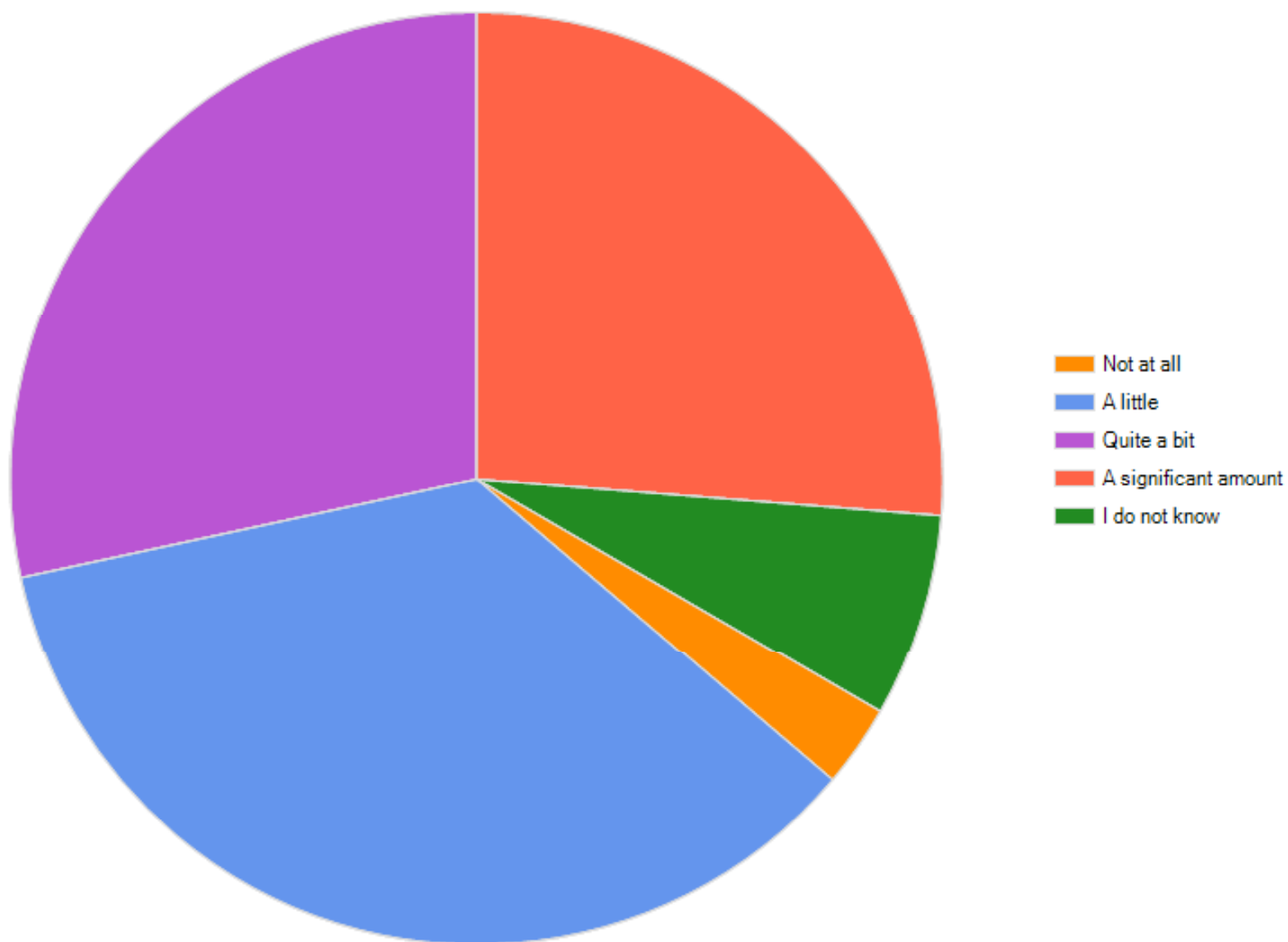
How are projects funded?



Perceived Flooding responses

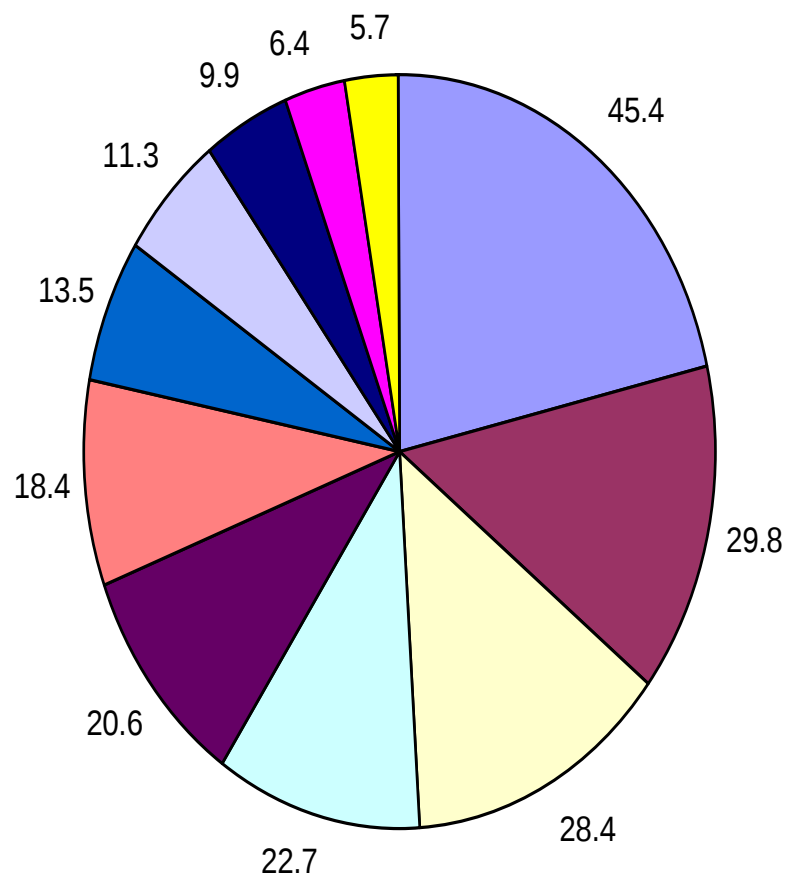


Do you believe that green infrastructure can help reduce flooding?



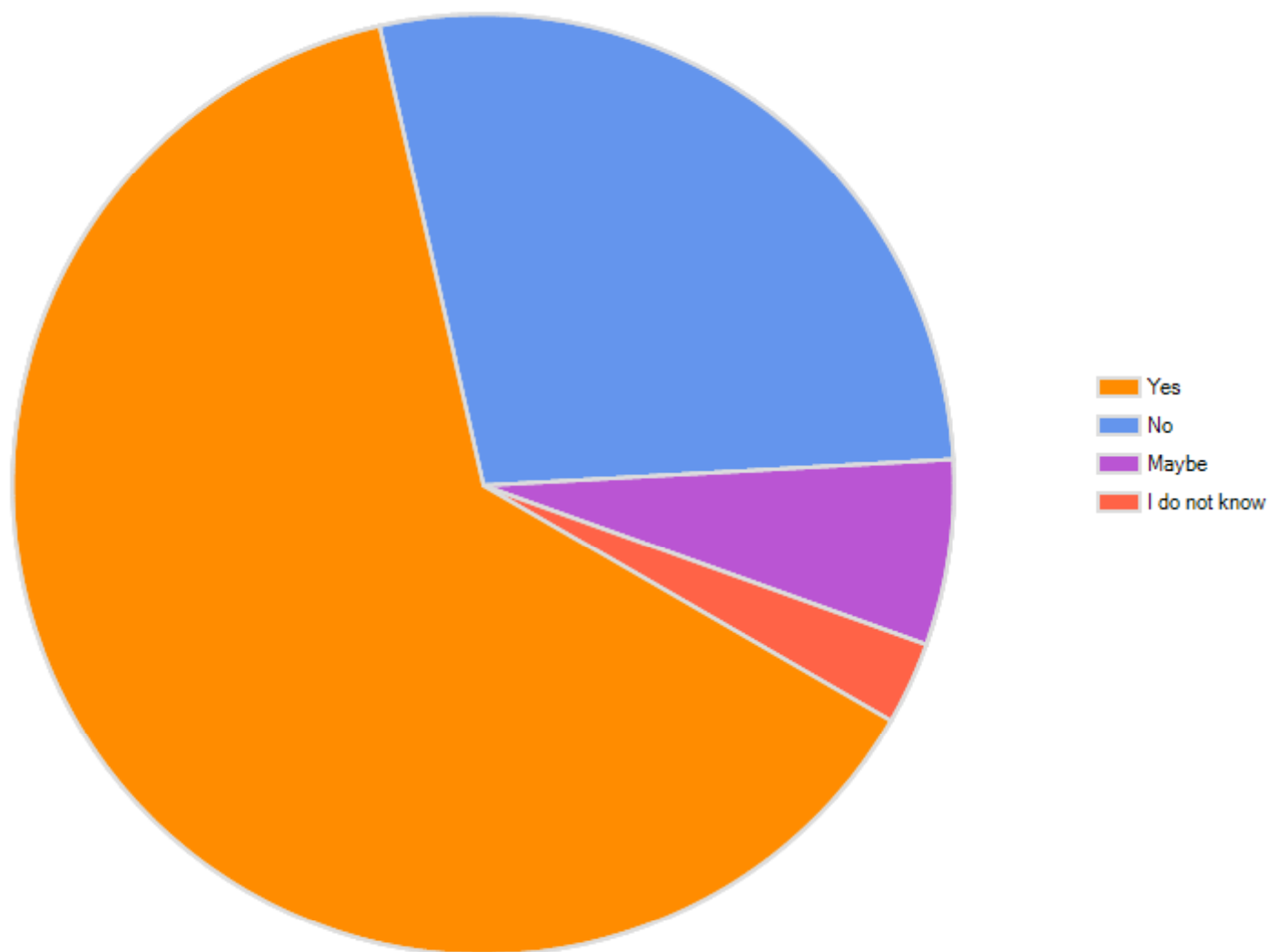
- Of total responses less than 20% felt that flooding in their municipality was a frequent (6-10/year) or often (4-6/year) time occurrence
- 87% have installed GI
- Of total responses 41% felt that flooding in their municipality was a rarely(1/year) time occurrence
- 95% have installed GI
- Of total responses 35% felt that flooding in their municipality was a sometimes (2-3/year) time occurrence
- 24% have installed GI

Motivation to install GI (%)

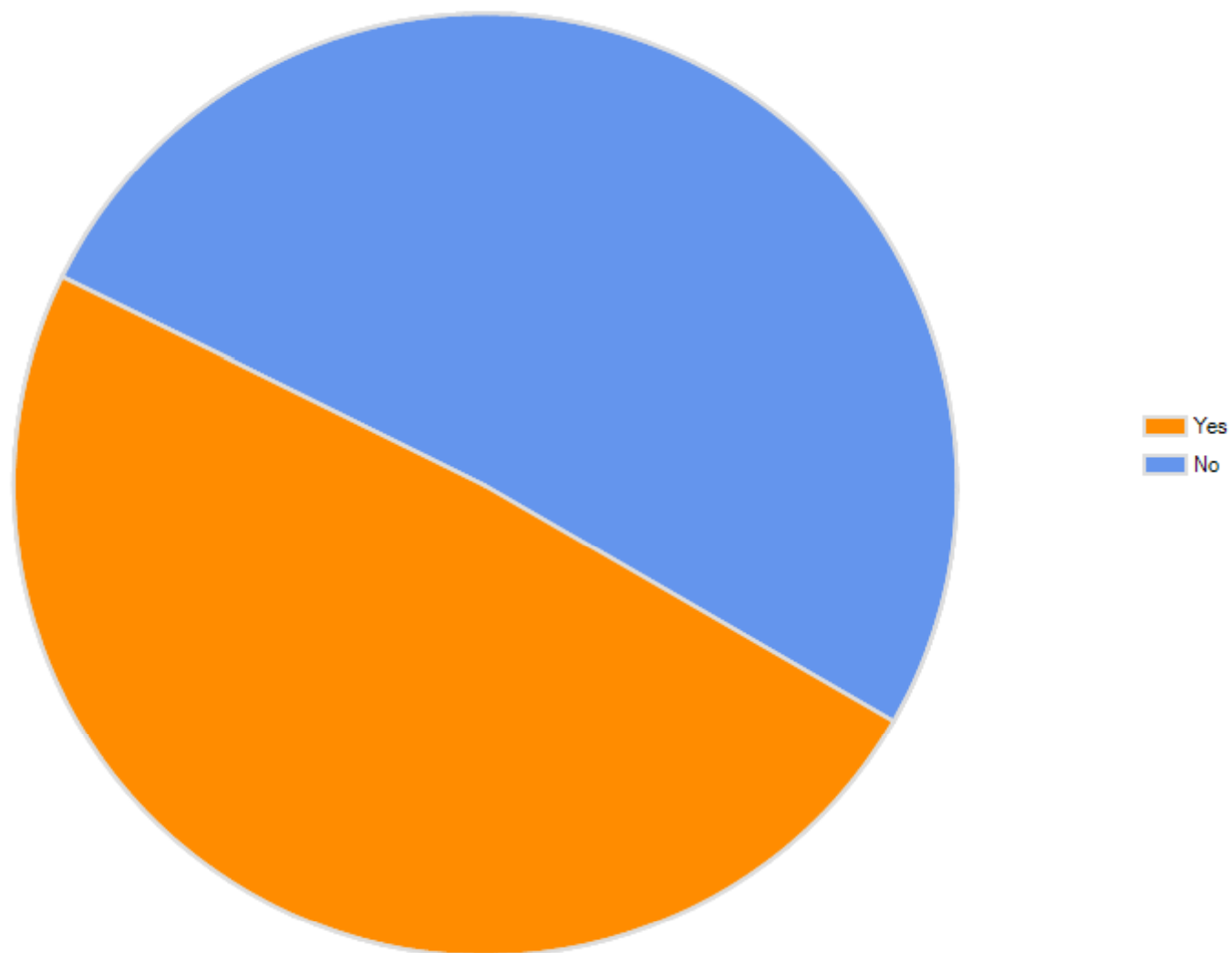


- ☐ Not applicable
- ☐ general sustainability and environmental consciousness
- ☐ reduce stormwater runoff
- ☐ demo purposes
- ☐ conserve water
- ☐ reduce nps pollution
- ☐ acquire Sustainable Jersey certification
- ☐ reduce flooding
- ☐ Other
- ☐ adapt to climate change
- ☐ I don't know

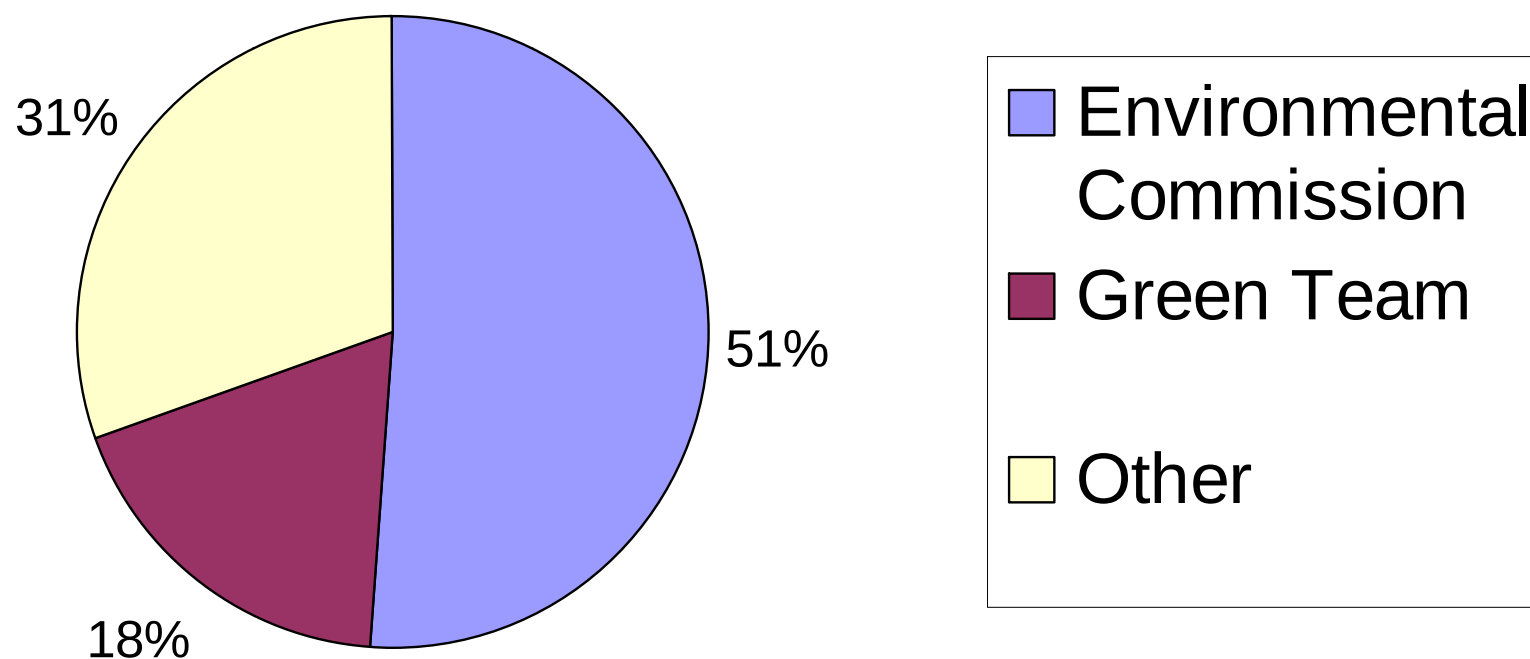
Does your town have a Green Team?



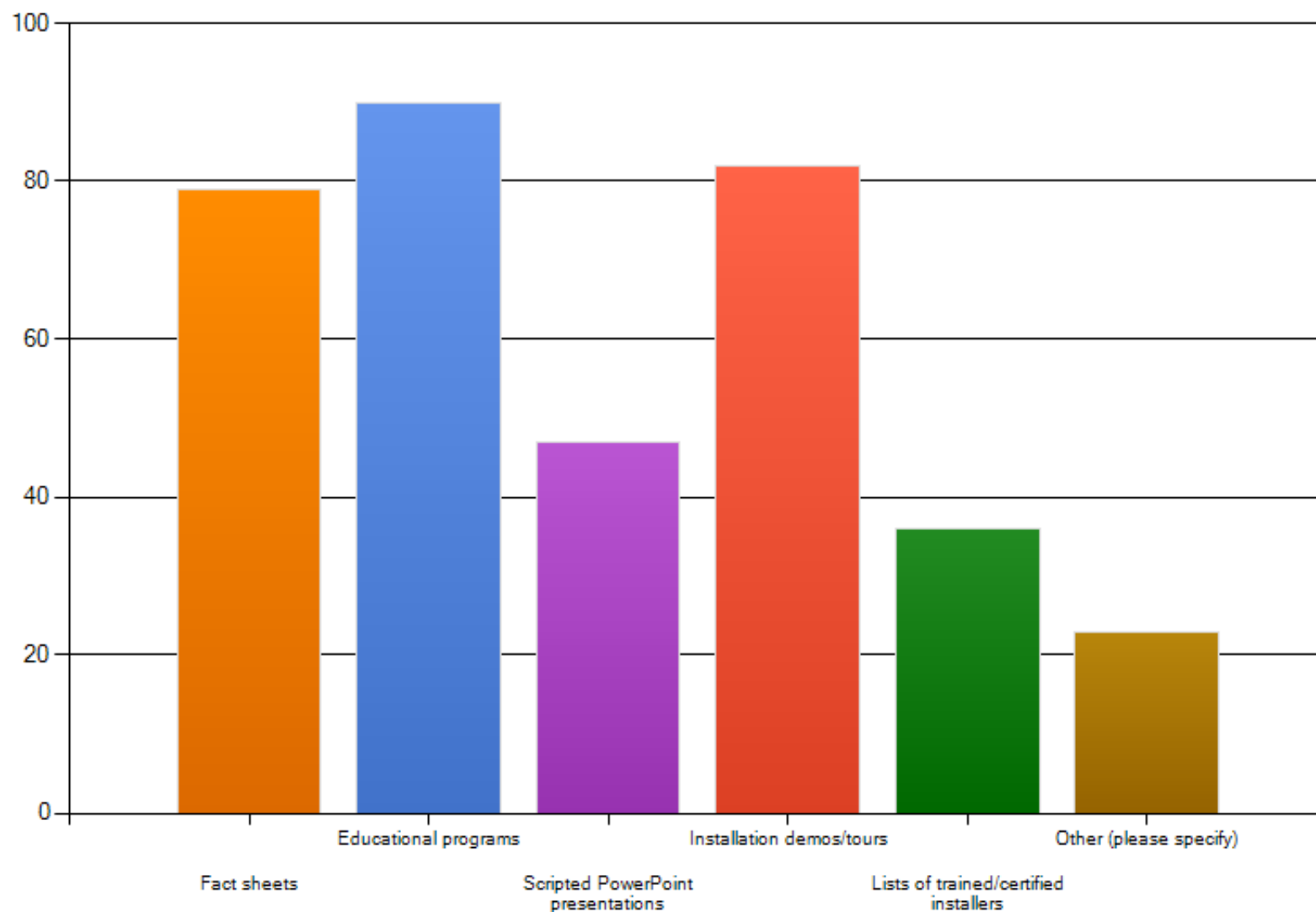
Are you on your town's Green Team?



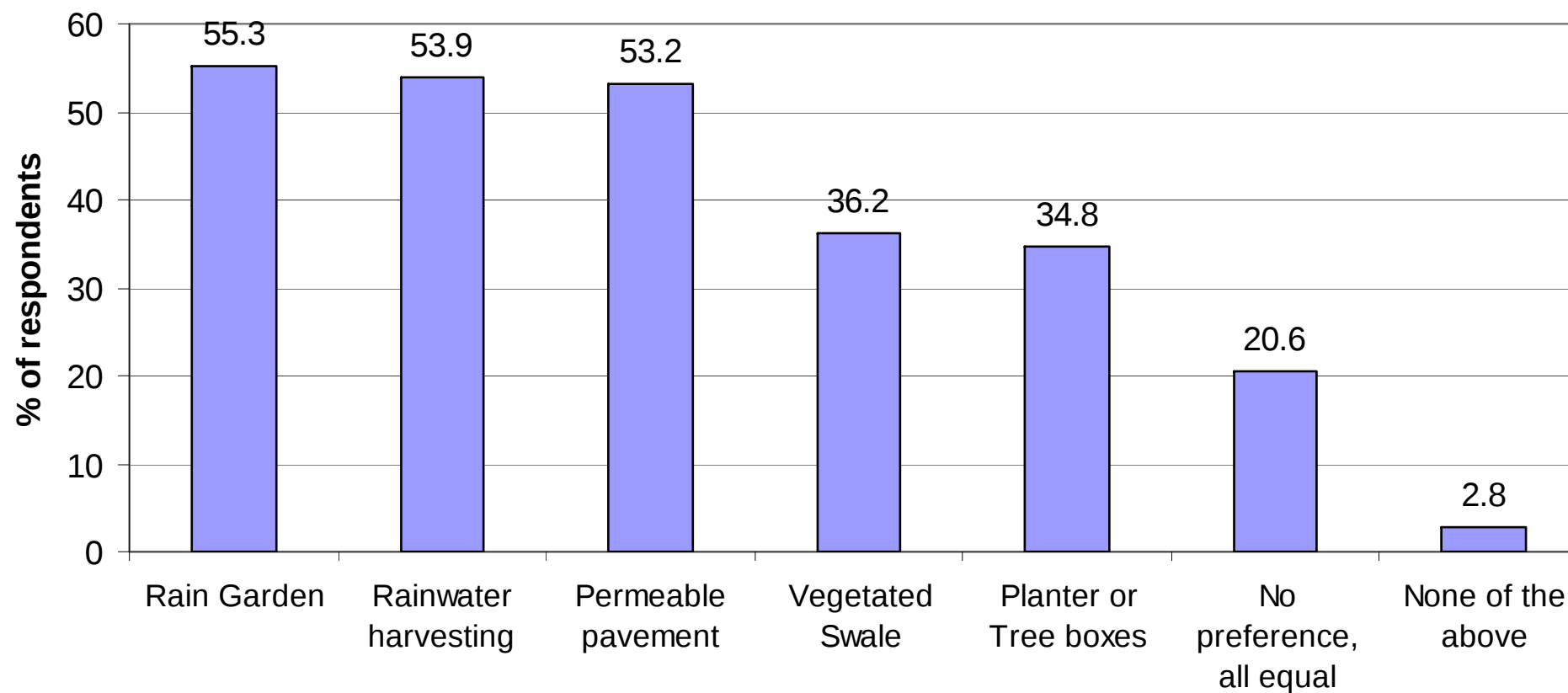
Champion for GI



What Rutgers Cooperative Extension resources do you think could help overcome barriers to the installation of these green infrastructure practices? (select all that apply)



Which type of GI would respondents LIKE to have installed?



- Very hard to draw conclusions because:
 - People who completed survey may not have been the people who “approved” the installation
 - This is preliminary analysis; greater statistical analysis may provide a clearer linkage or show no linkage
 - Politics, people, and economy make drawing conclusions much more difficult than scientific conclusions
 - Still:

- Municipalities are installing GI in NJ
- Rain Gardens are the most common type of GI being installed, followed by vegetated swales
- Municipalities are funding GI themselves
- Flooding does not appear to be a primary driver in the installation of GI
- The two main motivations cited for installation of GI were general environmental consciousness and to reduce stormwater runoff

- Even though GI solutions are typically applied on a municipal basis, municipalities do not seem to be applying for grant funding.
- They are installing GI, they have clearly said that funding is the PRIMARY impediment to installing GI.
- Are they not applying because they do not have sufficient resources to go through application process?
- Are they not applying because granting agencies (NJDEP, USEPA, etc.) do not provide municipality friendly granting applications or requirements?
- Are there opportunities for improvement in the process to increase the ability of municipalities to receive grants to install green infrastructure?
- Do municipalities need greater assistance in applying for grant opportunities?

- Michele Bakacs, Rutgers Cooperative Extension, Environmental and Resource Management Agent
- Pat Rector, Rutgers Cooperative Extension, Environmental and Resource Management Agent
- Michael DiGiulio, Rutgers The State University, Cook College School of Biological and Environmental Science intern, GIS mapping, survey analysis assistance

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