CSN CLIMATE CHANGE AND STORMWATER SURVEY

USWG – DECEMBER 17, 2019

TASK 1 OBJECTIVES

- Identify Key Stormwater Stakeholders Interested in the Effort
- Better Understand Current Engineering and Management Responses to Climate Change in the Watershed
- Get Feedback on Priority Issues and Needs

ENGAGEMENT

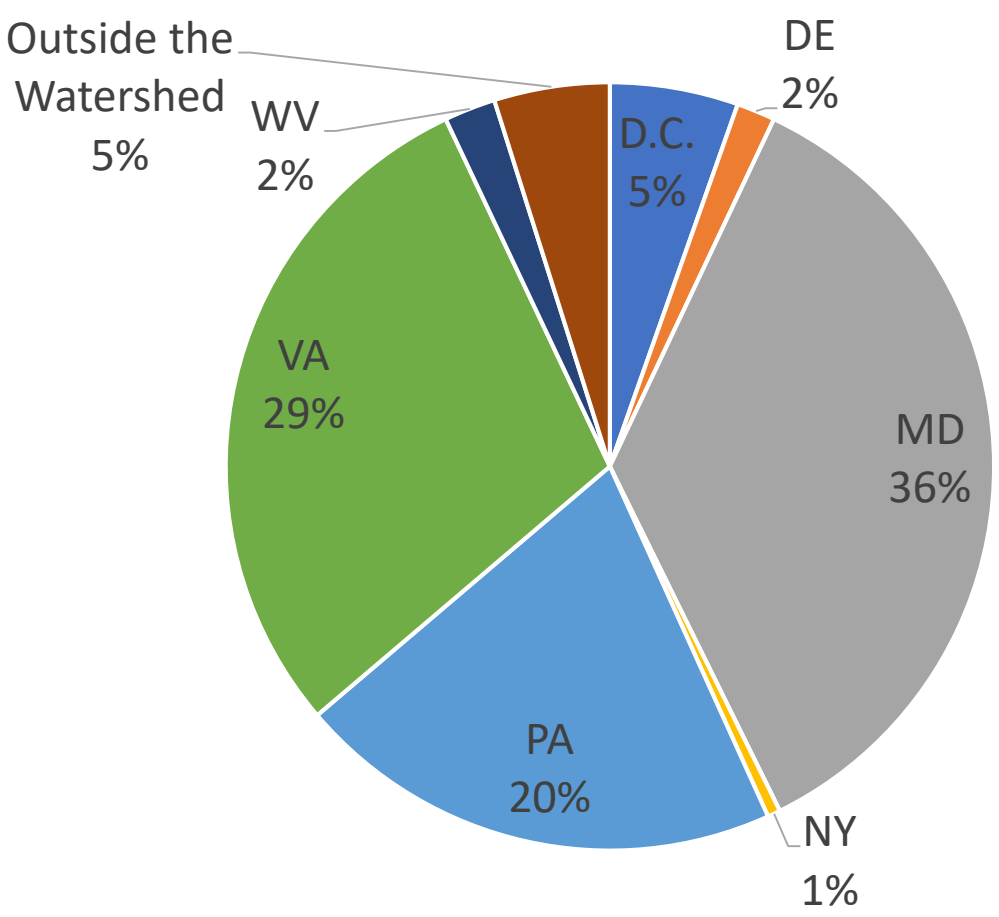
- Direct Outreach to 90+ key stakeholders – 5 "sectors" and 7 jurisdictions
  - Each state stormwater agency and DOT
  - 25 local stormwater managers – Phase I and Phase II communities
  - 10 researchers from 6 universities
  - 20 NGO and private sector stormwater and climate change professionals
- Broad Outreach to CRWG, USWG, CSN Network

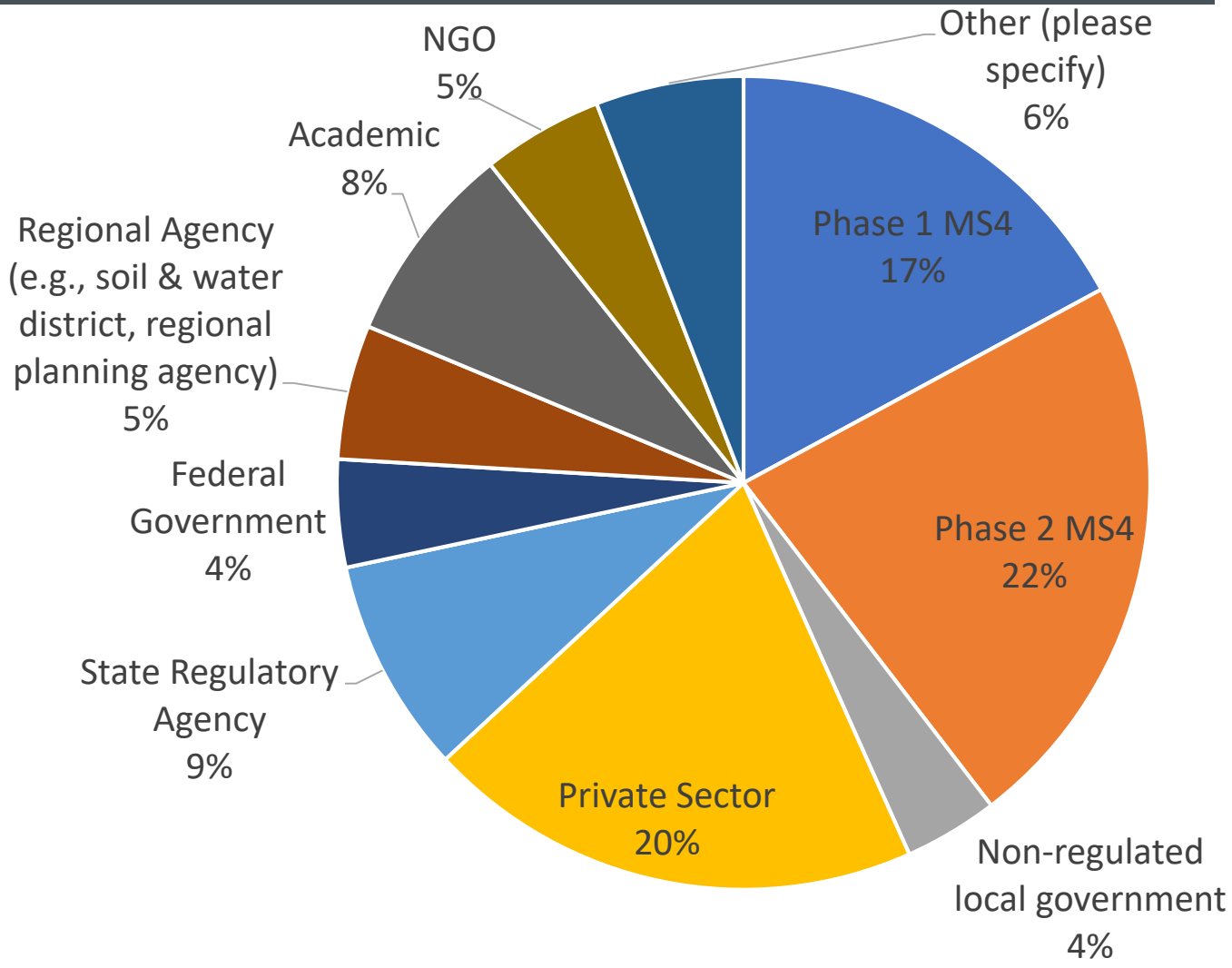
SURVEY

- Section 1: Describing Risks and Concerns
- Section 2: Current Management Approaches
- Section 3: Moving Forward

RESPONSE DEMOGRAPHICS

188 TOTAL RESPONSES





SECTION 1

DESCRIBING RISKS AND CONCERNS

SECTION 1: CONCERNS

Top Concerns:

- #1: Damage to Public and Private Infrastructure During Extreme Floods
- #2: Declining Performance of stormwater management systems (quantity and quality)

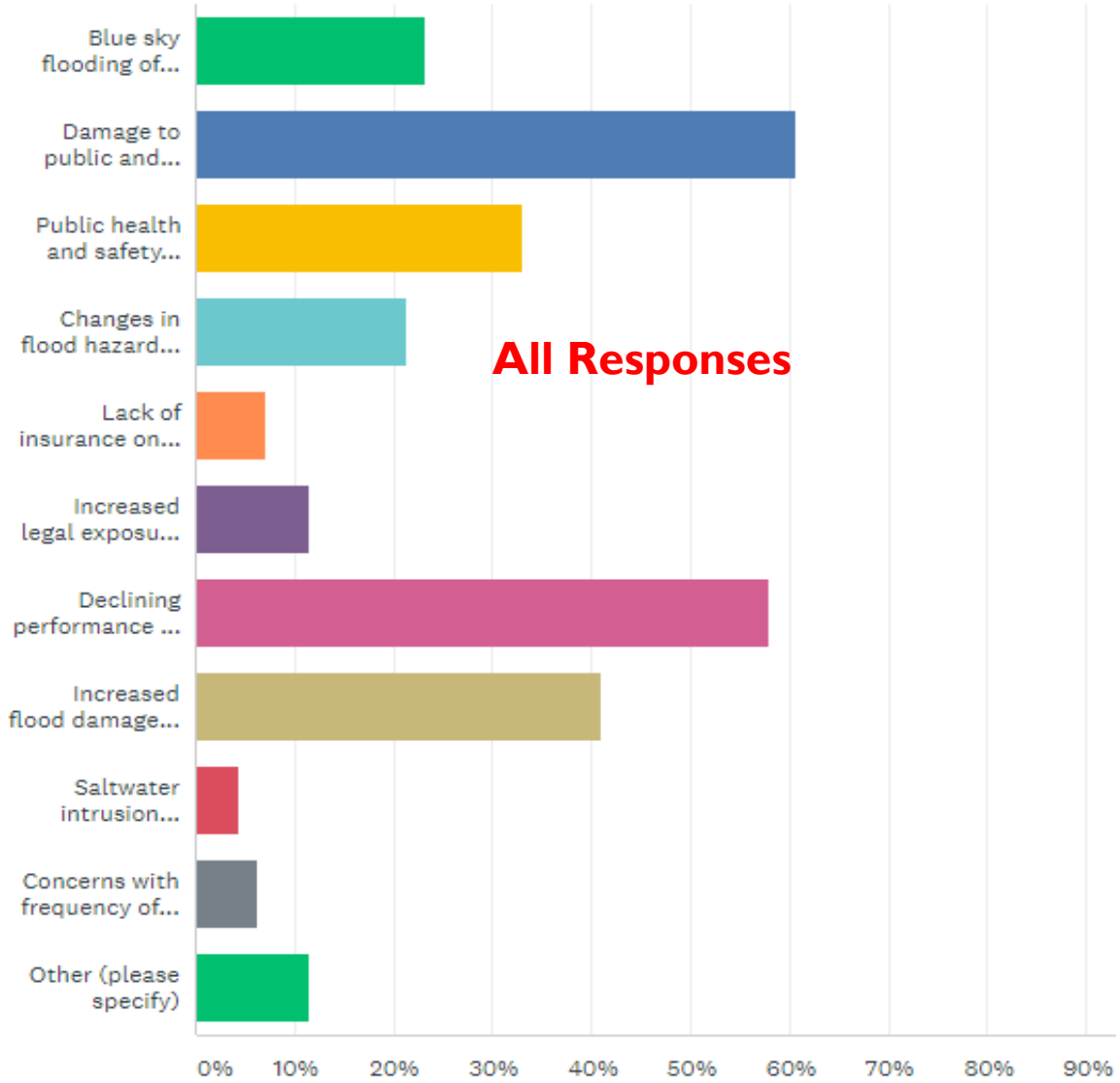
Most vulnerable Infrastructure:

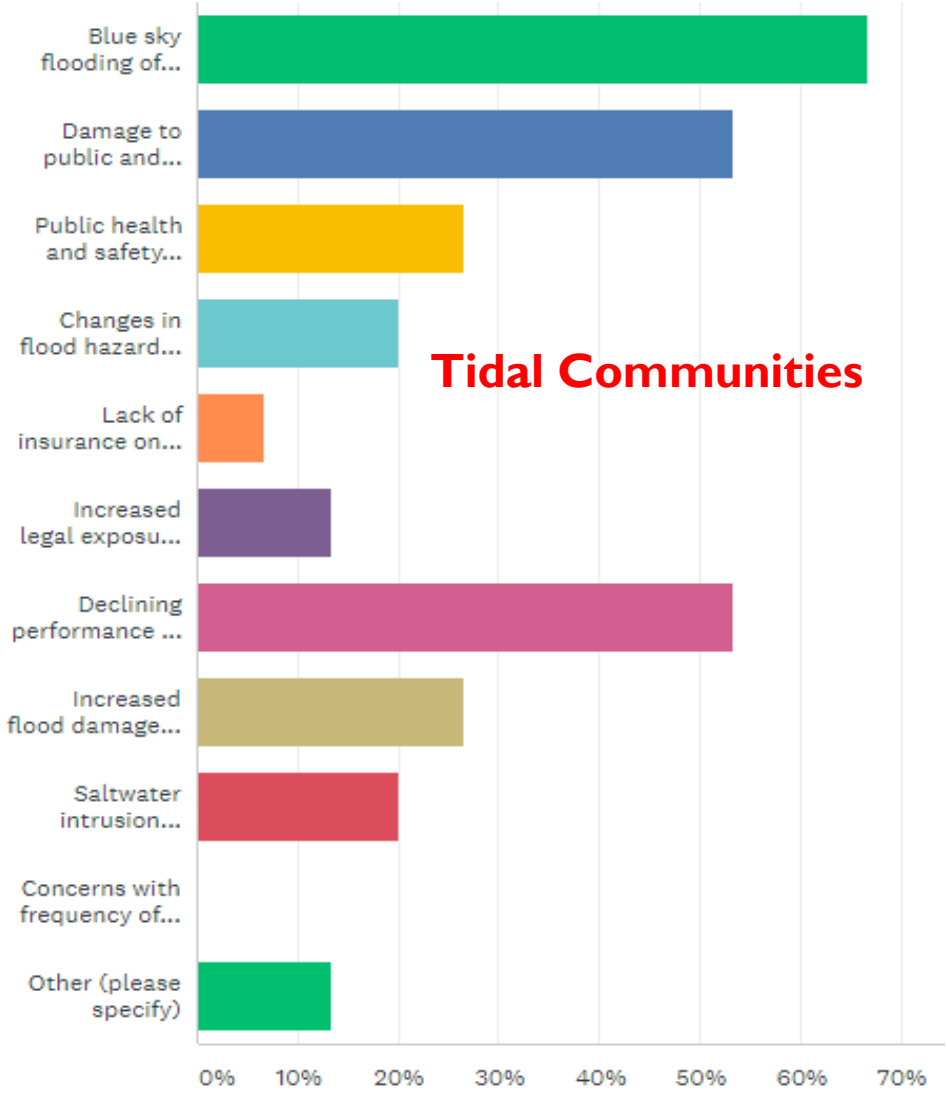
- #1: Roads, streets and stormdrains
- #2: Stormwater and Flood Control BMPs
- #3: Bridges and Culverts

Concerns about impacts:

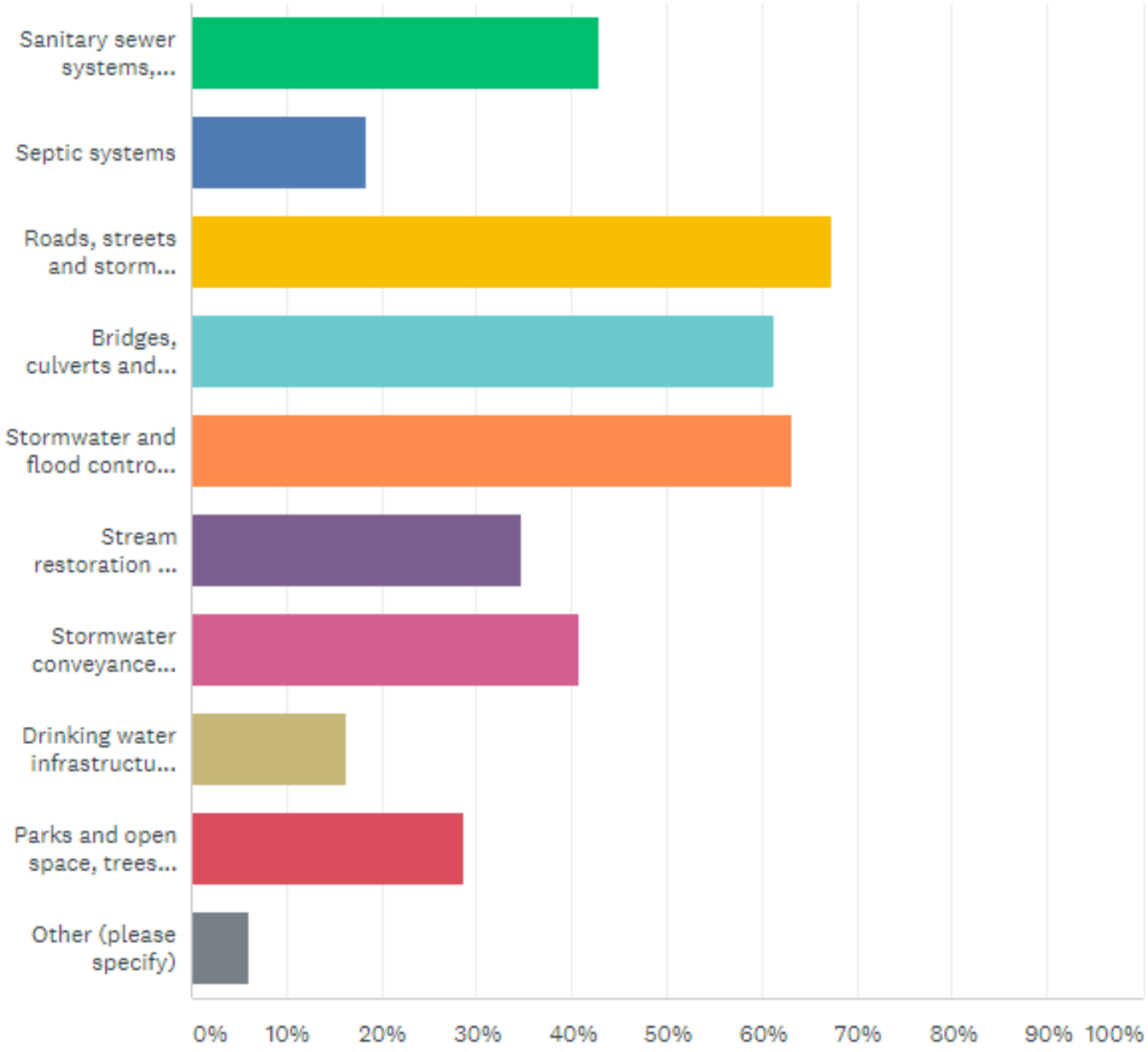
- #1: Increased costs of maintenance (non-routine and routine)
- #2: Loss of hydraulic capacity in conveyance systems leading to road flooding during small storm events (1-10 year)
- #3: Imperative to achieve pollutant removal and flood control with BMPs

Of these climate-change related risks, what would you consider the greatest concern in your community?

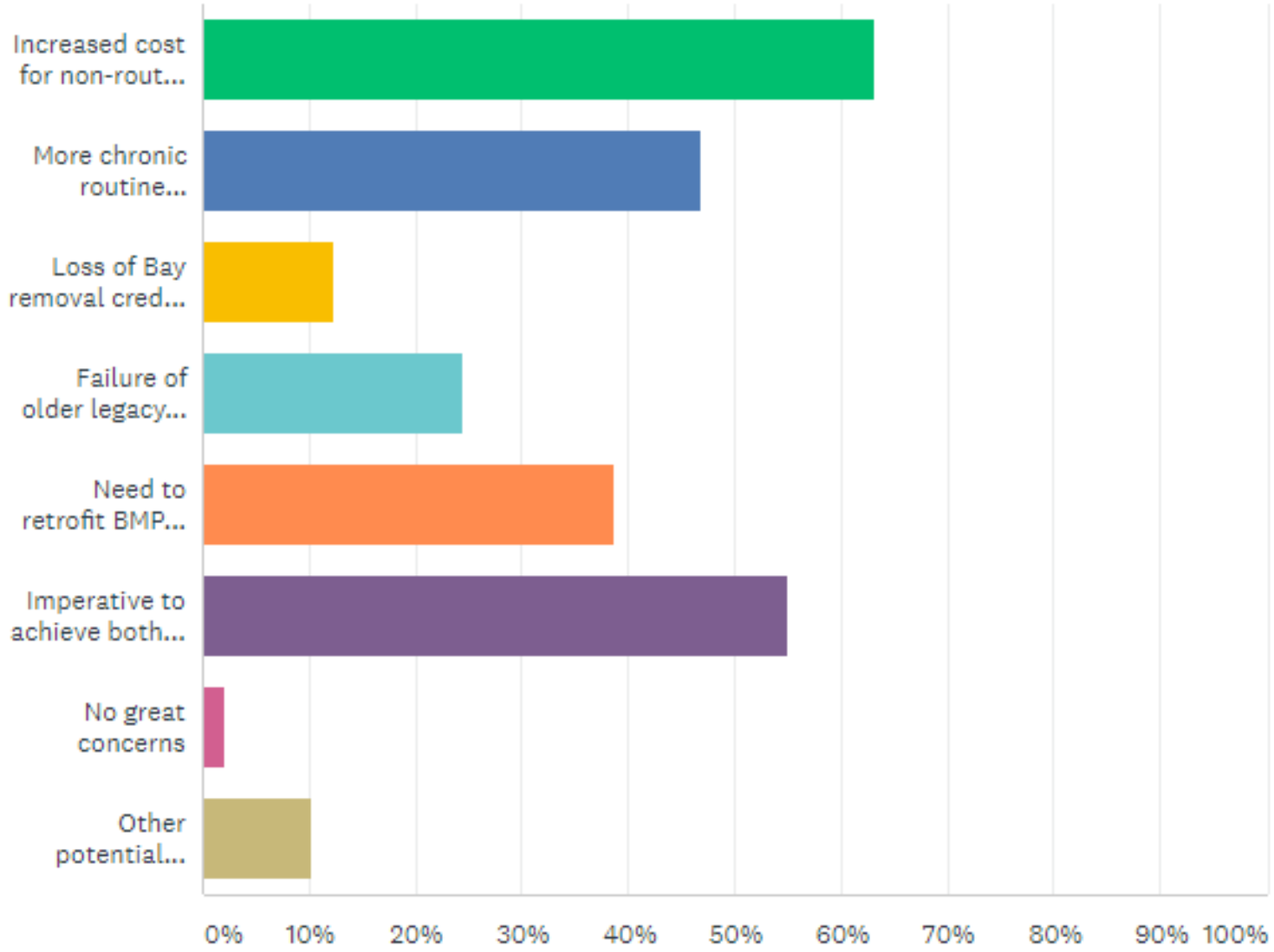




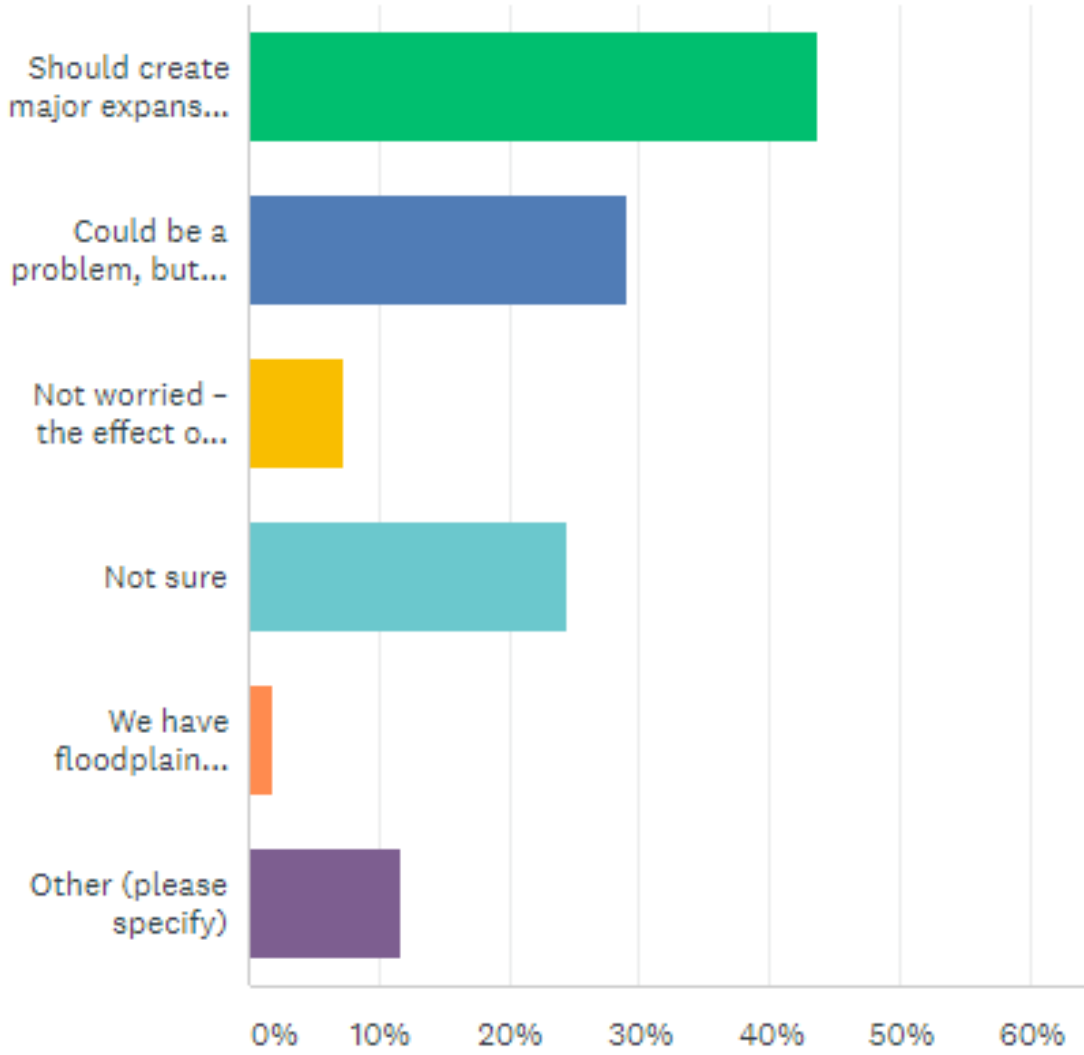
What elements of your public or private infrastructure do you feel are most vulnerable to climate change? (check all that apply)



What are your greatest concerns about the effect of increased rainfall intensity on publicly or privately-owned stormwater practices in your community?



What are your main concerns about how climate will impact current and future floodplain boundaries in your community? Check all that apply:



SECTION 2: CURRENT MANAGEMENT

Funding:

- Few are prepared to respond to climate change impacts
- Fewer have funding to plan for resiliency

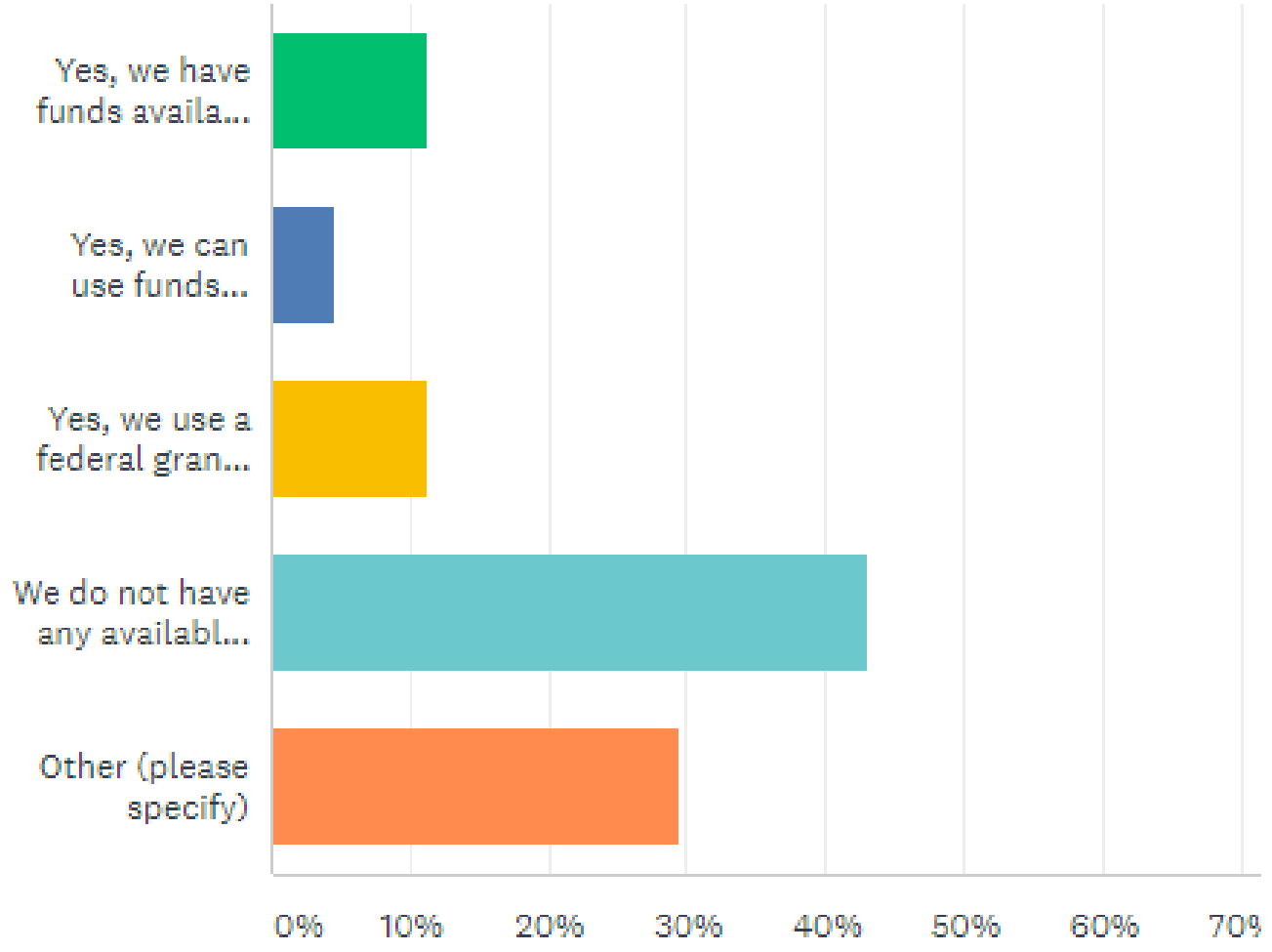
Planning:

- Very few have asset management systems that look at risk/vulnerability
- Less than 10% are comfortable with current engineering design criteria provided by states/feds
- About 50% are mitigating climate change risk in some way or another

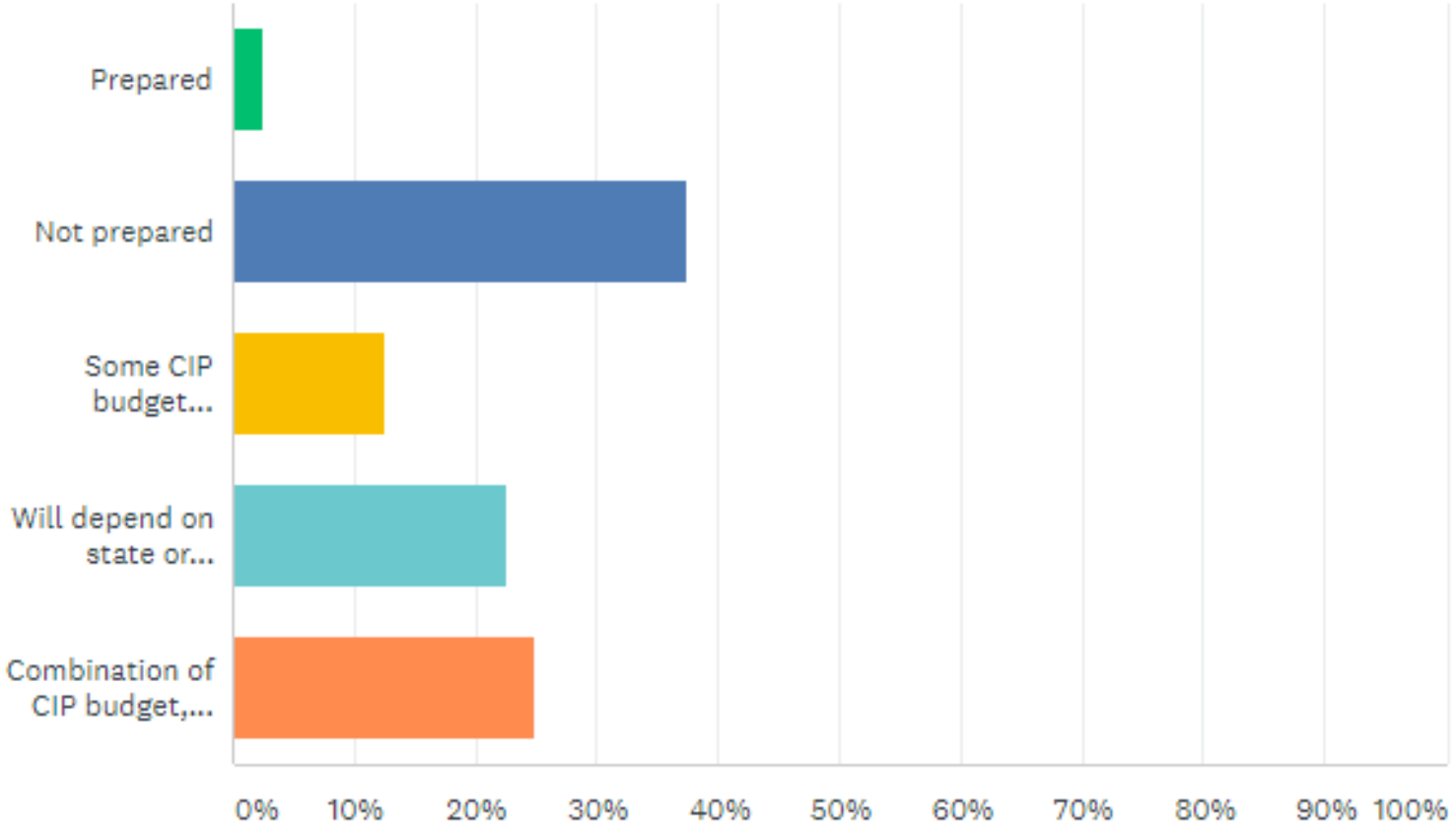
Design:

- Design storms are highly variable – more work to come on this
- IDF curves come equally from Atlas 14, NRCS and state guidance docs
- Planned design life for key infrastructure range from 10 years (BMPs) to 50 years (Roads, bridges and culverts)

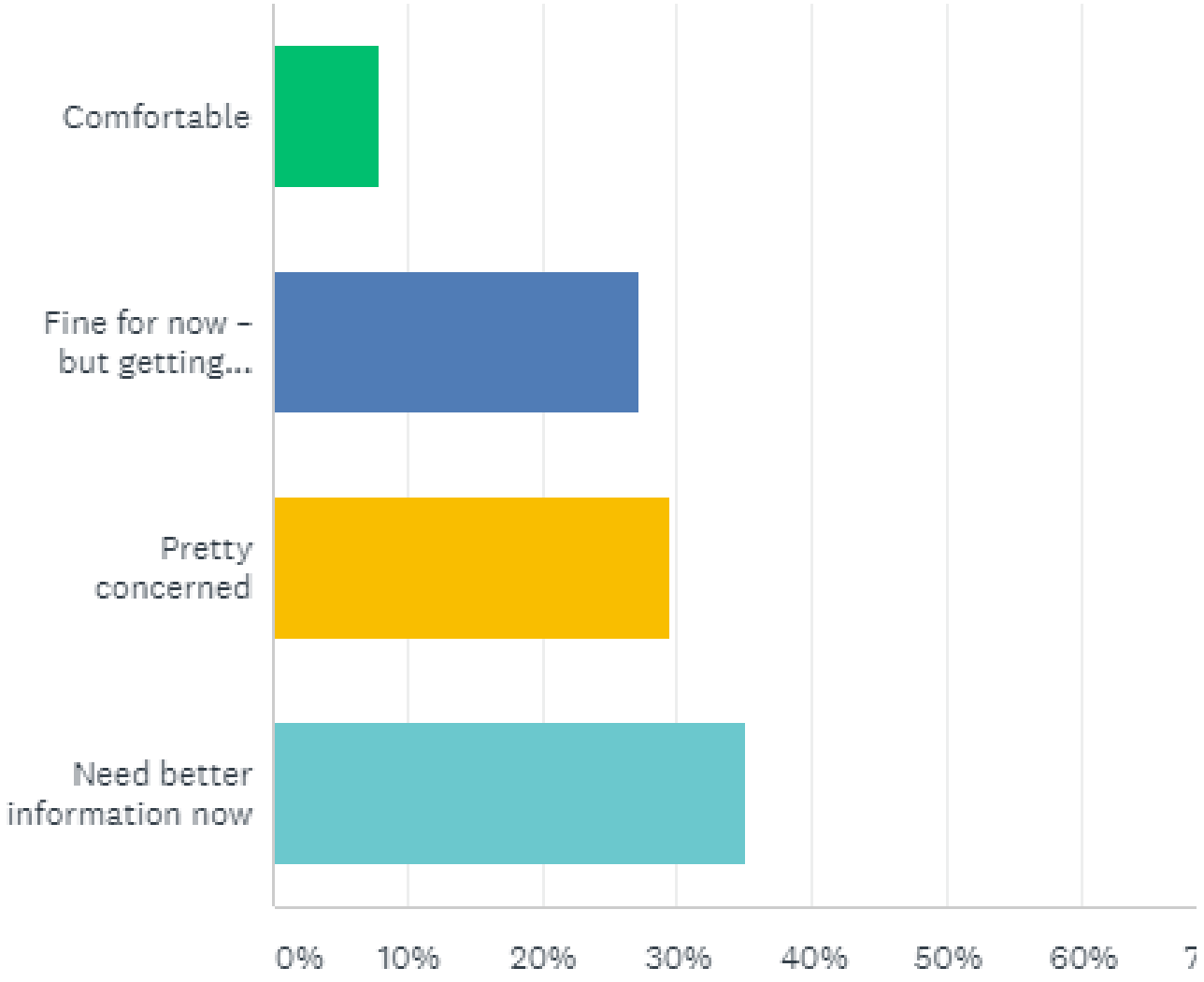
Do you have funding available for climate resiliency planning?



How prepared are you for the future costs/impacts of climate change to your public infrastructure?



How comfortable are you with the quality and utility of engineering design criteria on future rainfall intensity provided to you by state and/or federal authorities in your community?



Do you currently manage your stormwater assets to mitigate risk from future climate change? (Check all that apply)

▾	Yes, by adjusting the sizing of our stormwater infrastructure to account for increased storm intensity.	8.43%
▾	Yes, by planning the location and distribution of stormwater BMPs to protect critical infrastructure and address high flood risk areas	10.84%
▾	Yes, by prioritizing maintenance and capital improvement projects based on their risk of failure due to changing climate	4.82%
▾	Yes, by participating in the Community Rating System for floodplain management	13.25%
▾	We do not currently account for climate change in our stormwater management but have plans to	10.84%
▾	We do not currently account for climate change in our stormwater management and do not have a plan for how to do that	45.78%
▾	Other (please describe in the box below) Responses	30.12%

SECTION 3: MOVING FORWARD

All tools would be useful… but the top 3:

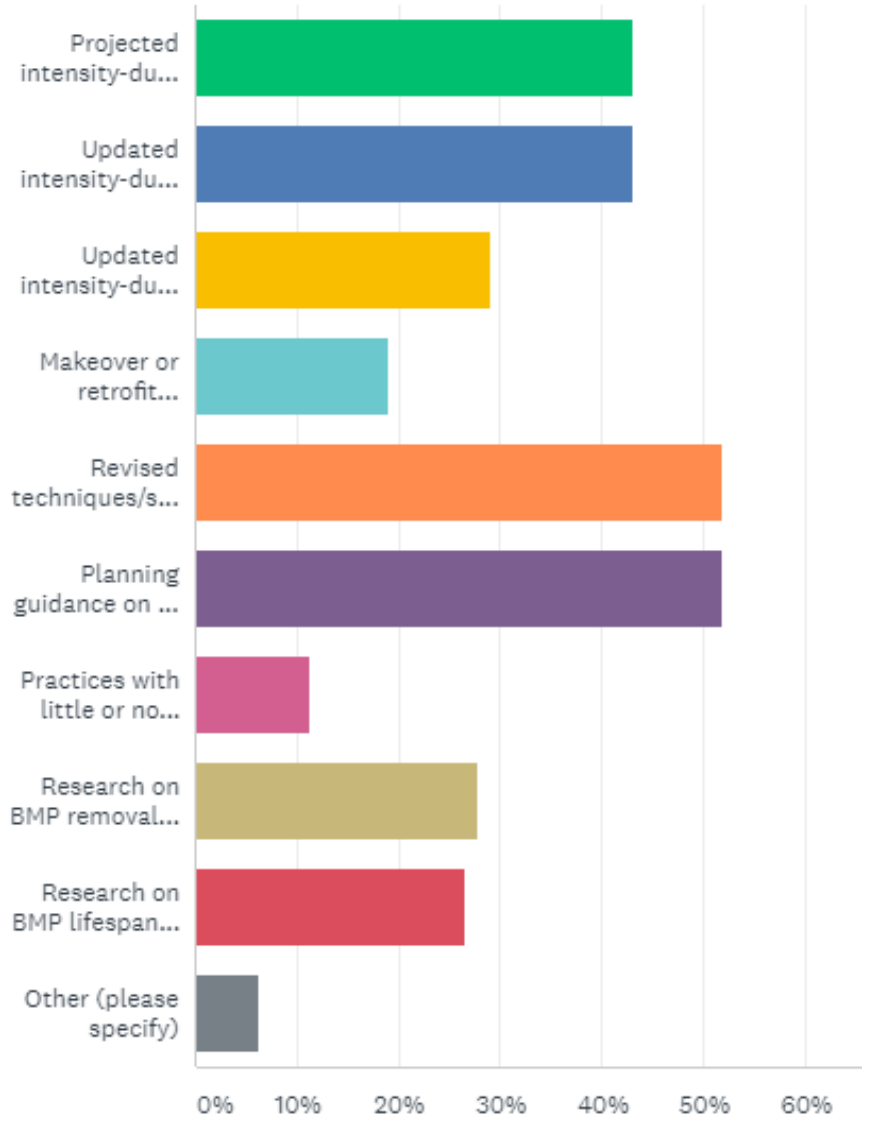
1. Revised BMP design specifications
2. Planning guidance on how BMPs, floodplain management, and conveyance systems can work together
3. Updated IDF curves for frequent storm events (1-10 year)

- Likely to consider any future options… but adjusting sizing and implementing new retrofits that are more resilient are most popular

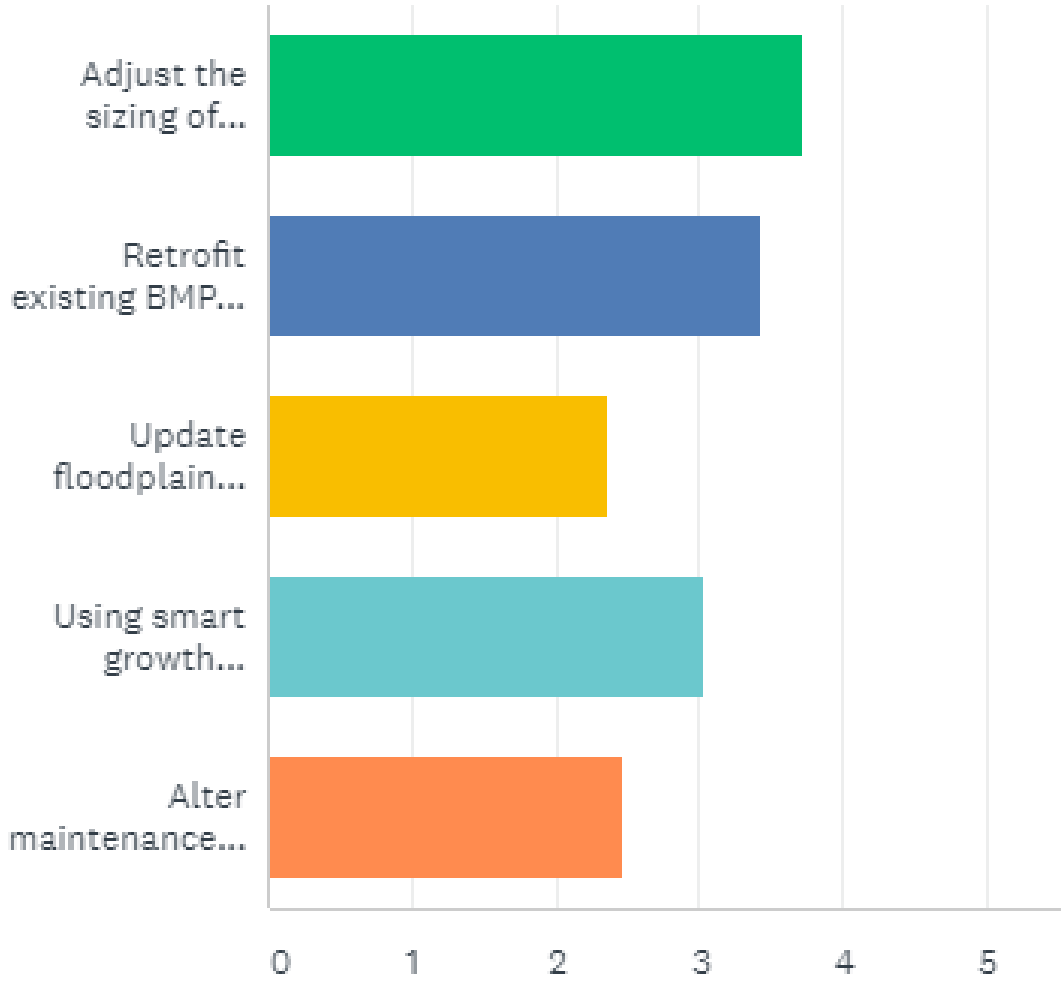
Barriers:

1. Funding
2. Political will/development pressure/public perception
3. Lag times implementing new design guidance or regulations

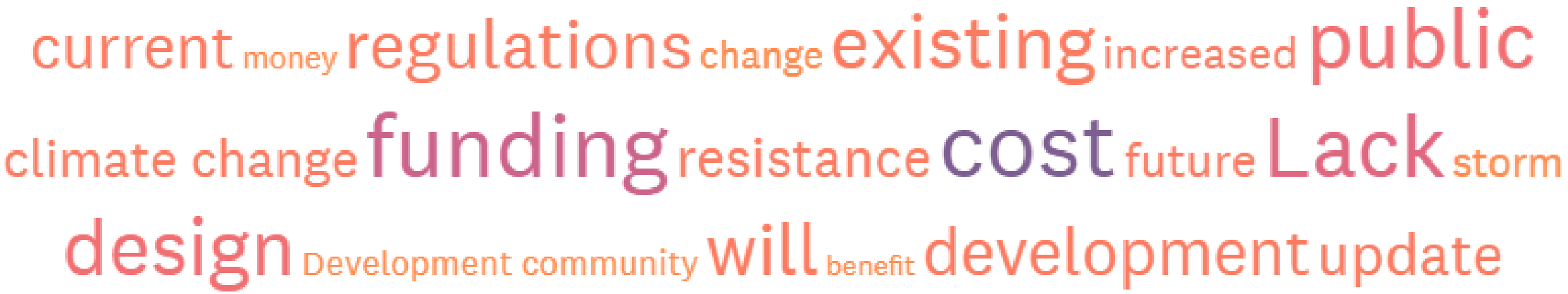
Of the following information, please indicate what how useful the following tools would be to you if you have a need for better stormwater design specs:



What potential strategies for reducing risk to stormwater infrastructure would you be most likely to consider (please rank them).



What do you see as the greatest barrier to incorporating climate resilience into stormwater management?



SUMMARY

- Biggest concern is damage to infrastructure caused by major (and frequent minor) storms – particularly roads and bridges
- Respondents are worried about tradeoffs under the current model of trying to treat quality and quantity together
- There is little funding for planning or increased maintenance costs - but they're trying!
- The preferred new tools are more "straight out of the box" -- design specs, resilient watershed planning guidance
- They are open to any tools/solutions but they need to be incorporated in the state and federal guidance.

NEXT STEPS

- Some more demographic splits -- any you'd like to see?
- Follow-up discussions with several respondents
- Start of current research/management synthesis

QUESTIONS?