World Forum on Urban Forests
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PS 2.2 Changing Spaces and Places

Green Infrastructure in Small Communities: Constraints and Catalysts

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Presentation Outline

- Key Green Infrastructure Policies in the US
- Oregon based research and education demonstration project
- Constraints to implementation
- Catalysts that spur innovation

GREEN INFRASTRUCTURE (GI)

Green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier urban environments. **US EPA**

Green Infrastructure and Stormwater Regulation in the US

National Pollution and Discharge Elimination System (NPDES)

- 1972 Clean Water Act
- Authorizes state government to regulate through stormwater programs

Municipal Separate Storm Sewer Systems (MS4s) - Who has to comply?

- **Phase 1** (communities >100,000)
- **Phase 2** (urbanized areas & smaller communities, selected by state)

6 minimum control measures:

1. **Public Education & Outreach**
2. Public Participation & Involvement
3. Illicit Discharge Detection & Elimination
4. Construction Site Runoff Control
5. **Post-Construction Runoff Control (Green Infrastructure Best Management Practices (BMPs))**
6. Pollution Prevention & Good Housekeeping

Constraints to Implementation

Previously Researched Constraints

- Financial (Godwin et al., 2008)
- Local stormwater ordinances (Dochow 2012)
- Previous experience—risk adverse (Carlet, 2015)
- Attitudes of decision makers (Carlet, 2015)

Research Gaps

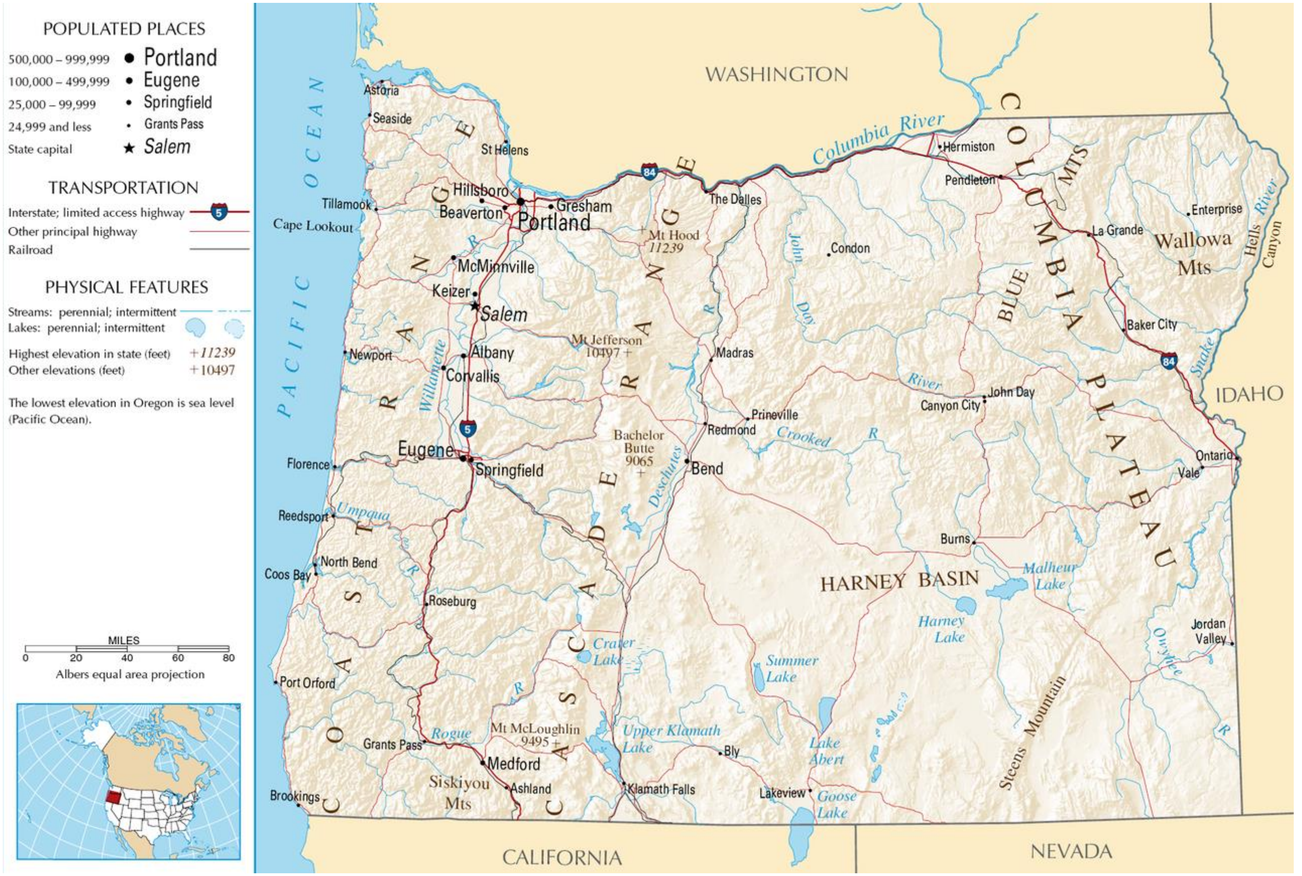
- Case studies on one or two municipalities or surveys of NPDES regulated urban environments
- Lack of comparison between regulatory structures and climatic variation

Research Design

- What are the Constraints and Catalysts for green infrastructure implementation in Oregon?

- How do perceptions of Constraints and Catalysts differ between regulated and non-regulated cities and different climate?

- Semi-structured Interviews with 14 people in 12 jurisdictions



Constraints to Green Infrastructure Implementation

Capacity Constraints

- Lack of financial resources
- Lack of staffing and expertise
- Lack of project sustainability

I think that as far as things from the city, it is financing. We just don't have the funds.

We hire consultants just because we have limited staff here. And the consultants we have locally, they are not trained in designing GI.

Constraints to Green Infrastructure Implementation

Regulatory Constraints

- Lack of local regulations
- Lack of federal or state regulations
- Restrictive federal or state regulations

They're not listening to the permit holders. DEQ believes that the fact that they have a rulebook to implement means that they don't have to listen to anybody… We are definitely far outside the one size fits all model…

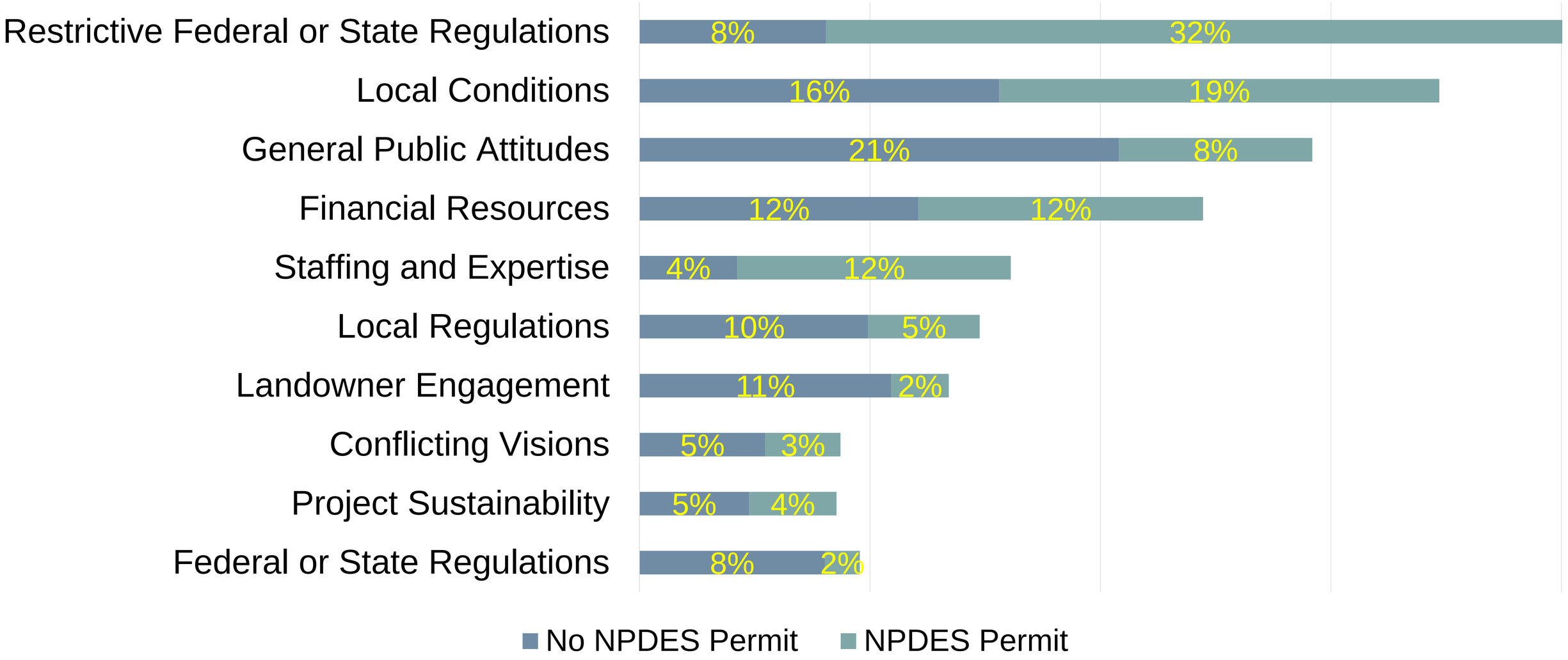
Constraints to Green Infrastructure Implementation

Perception and Attitude Constraints

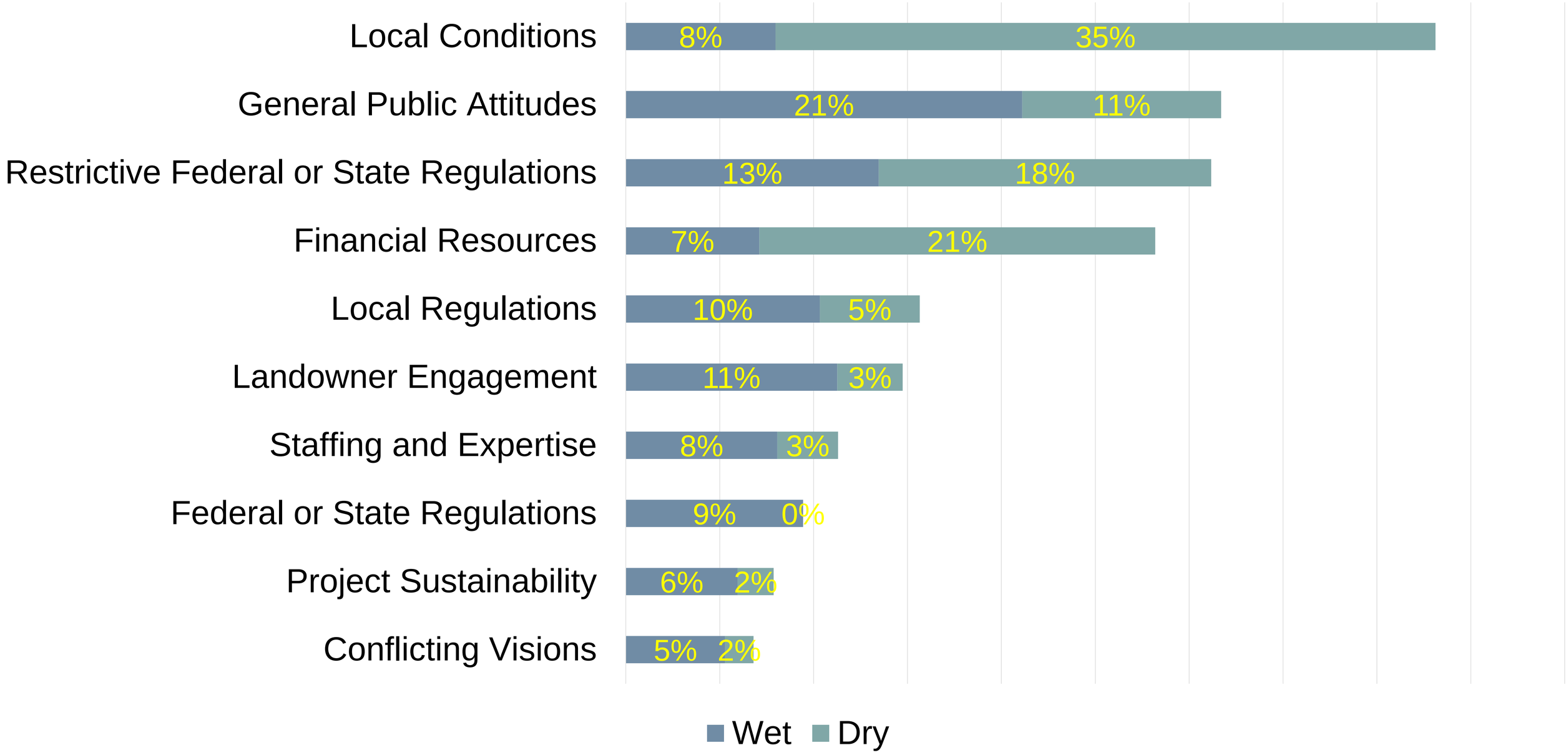
- General public attitudes
- Landowner engagement
- Conflicting visions and risk aversion

We have what we call “wanna-be developers” that are typically local contractors trying to do development work. They are the toughest to educate because they are short term. They are not thinking long term.

Constraints: Regulated vs. non-Regulated Communities



Constraints: Wet vs. Dry Communities



Catalysts for Green Infrastructure Implementation

- Staffing and Expertise
- Receptive Decision Makers
- External Financial Resources
- Internal Financial Resources

I showed that to council and they are like, "Now this GIS stuff is good stuff." These visuals are really hitting home with them. They are understanding we have a need.

The grant, just became an easy opportunity., "Oh we are doing green! That is sexy. I get another five points." And to be honest that is really why it is in there.

Catalysts for Green Infrastructure Implementation

Regulatory Catalysts

- Local Regulations
- Federal & State Regulations

Perception & Attitude Catalysts

- Public Outreach
- Landowner Engagement

We've got the framework set up in our code and in our public works design standards. It is a matter of having the opportunities, the right opportunities to come along for someone to take advantage of them.

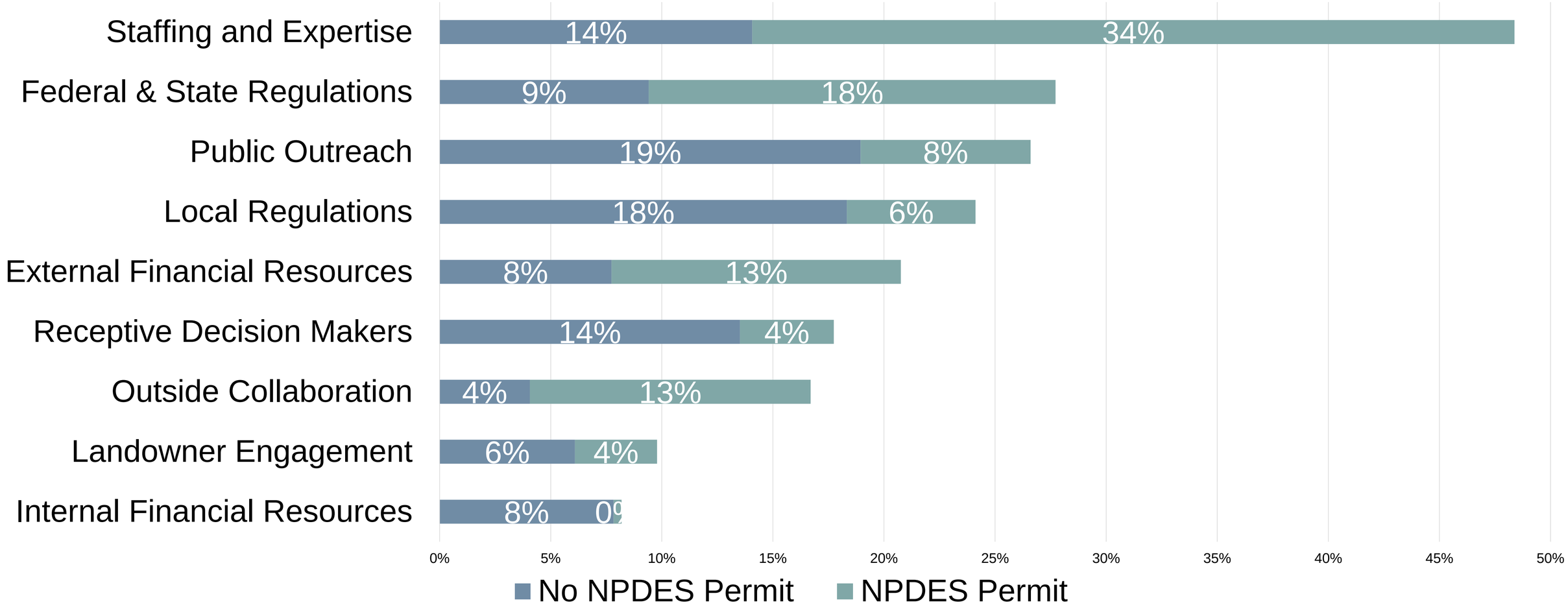
We offer at no-charge pre-application meetings. Some jurisdictions charge for that, but we don't.

Catalysts to Green Infrastructure Implementation

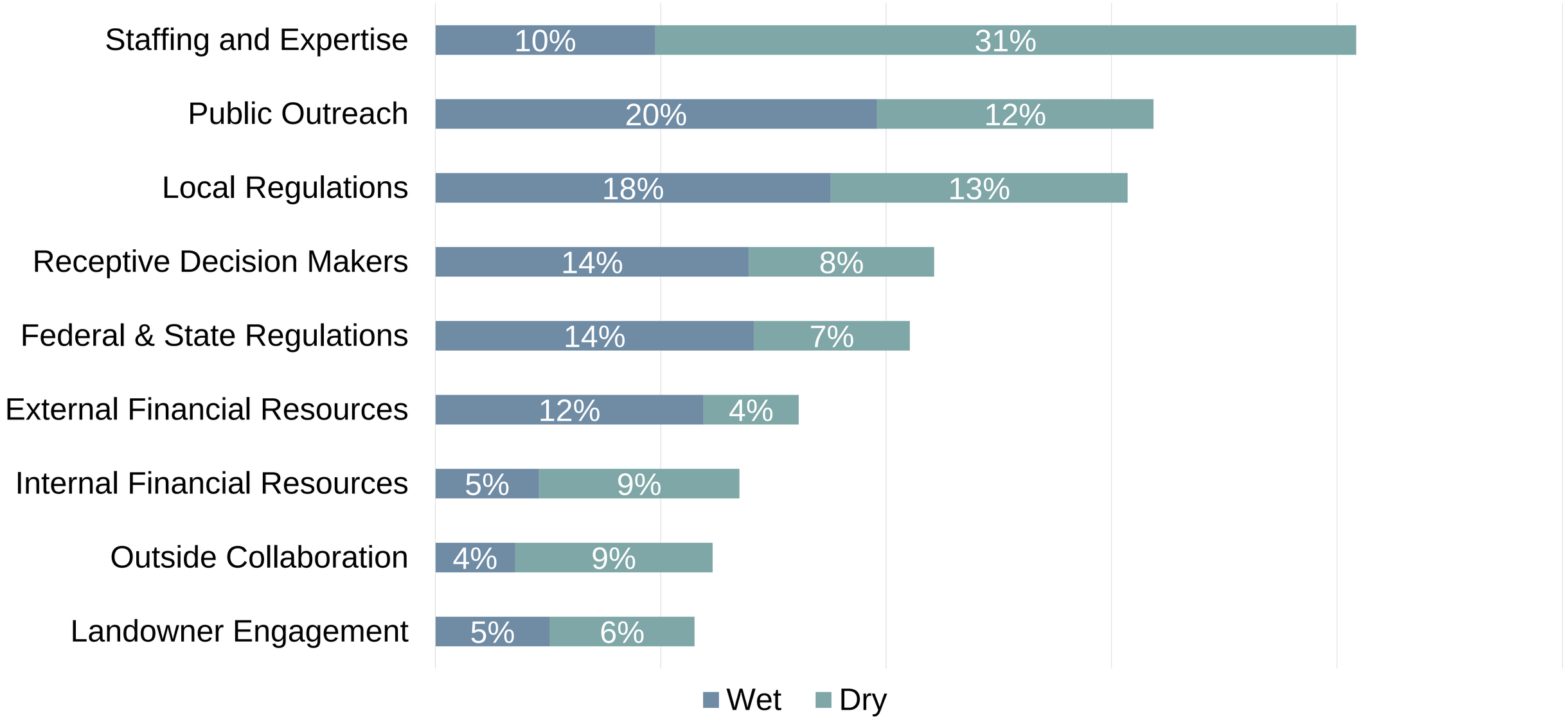
Outside Collaboration

I think we are more active than a lot of cities, probably even than the Valley because we currently work with the [watershed council] on trying to get fish passage, with a fish ladder up the intake. We also work with the Oregon Water Trust.

Catalysts: Regulated vs. non-Regulated Communities



Catalysts: Wet vs. Dry Communities



Discussion

Regulated Cities

- Constrained by federal regulations, yet *typically* have more resources and expertise at hand.

TOP NEEDS

- Clear guidance on regulatory standards, flexibility in approach and timeframes to meet those standards

Non-Regulated Cities

- More flexibility in regulating stormwater that meets community needs, yet fewer resources to implement regulations.

TOP NEEDS

- Recognition via access to resources to continue to build upon emerging programs.

Discussion

Wet

- Constrained by public perceptions and attitudes surrounding green infrastructure practices.

STRATEGY

- Public outreach campaigns and demonstration projects.

TOP NEEDS

- Outreach materials and guidance documents that

Dry

- Uncertainty in how green infrastructure practices function in dry climates. Concerned about being held to the same standard as the wet side.

STRATEGY

- Invest in and rely on local expertise.

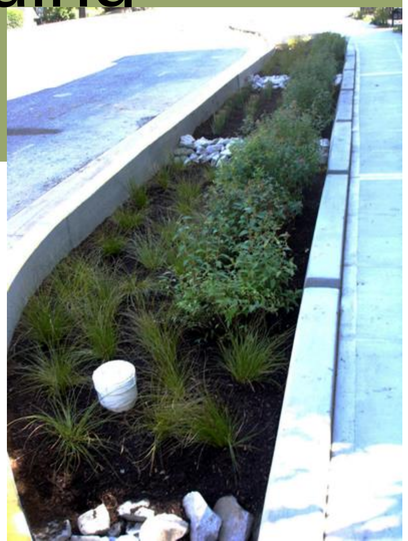
TOP NEEDS

- Greater assistance in developing best management practices for dry

Final Thoughts and Next Steps

Resources are needed to build capacity but the route varies:

1. Regulations mandated → Apply for funding/grants
2. Anticipate regulations → Create program and funding mechanisms
3. “Do nothing” approach → Limited options for funding projects and programs



Thank you.

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