

Green Infrastructure Policy Integration in Puget Sound Municipalities

An Ethnographic Perspective



Green Infrastructure

- Low impact development
- Stormwater management
- Critical area buffers
- Shoreline Master Programs
- Wetlands
- Endangered species
- ... and so forth

The Problem

- Some structures, processes, and practices across local governments may be barriers to green infrastructure
- No known comprehensive examination of these barriers and the extent of their effect on implementation
- Similar barriers may exist in other sectors: state agencies, federal agencies, nonprofit sector, various business sectors

Why start with cities and counties?



- **Cities and counties:** Shellfish protection districts, stormwater management



- **Cities and counties:** Land use, critical areas, salmon planning, shoreline planning, infrastructure



- **Cities and counties:** Stormwater management, Low Impact Development, infrastructure
- Thomas and Scott, 2013, “County governments form the backbone of Puget Sound restoration and recovery efforts”

Solving problems and doing better

- **It's not** about airing dirty laundry
- **It's not** about singling anybody out
- **It's not** about placing blame
- **It is** about identifying common problems
- **It is** about finding equitable solutions
- **It is** about doing our jobs better
- **It is** anonymous

Our Method

- Find a good anthropologist
- Look for patterns of barriers across local governments
- Distinguish common problems from individual one-off problems
- Examine variation in barriers based on:
 - size of jurisdiction
 - cities or counties
 - urban or rural jurisdictions
 - stormwater permittees or not
 - executive, middle management, or line staff
- Look for potential solutions

Why Ethnography?

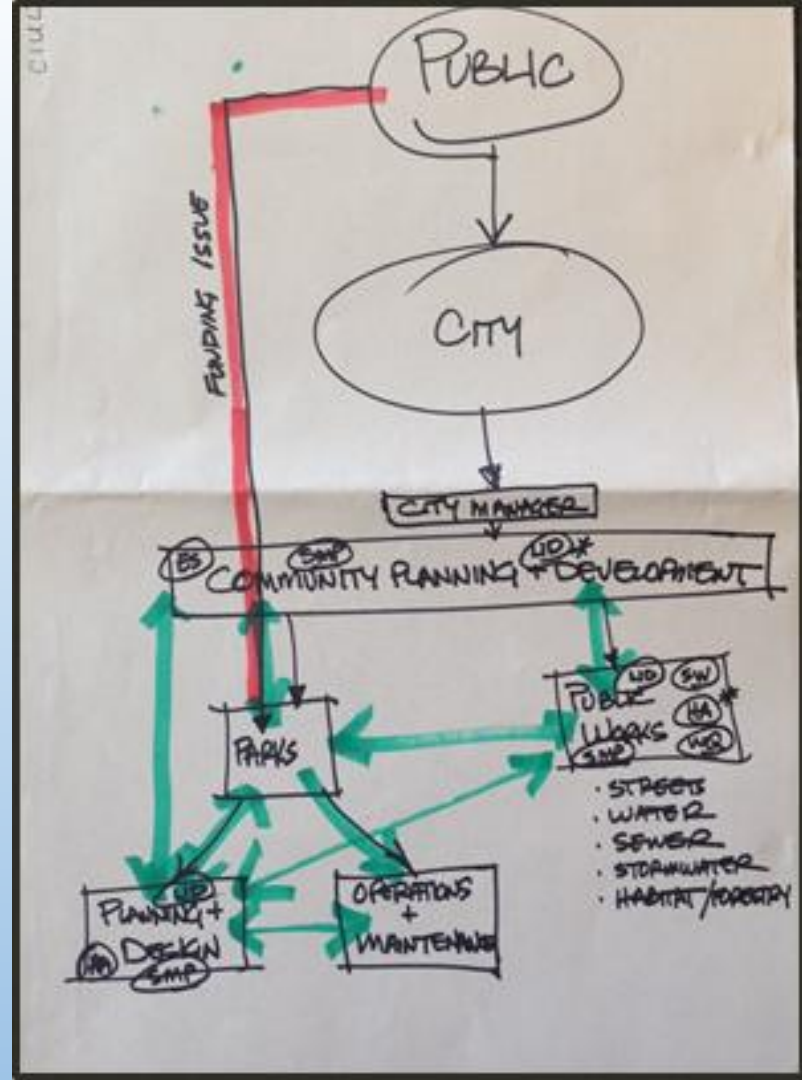
- Puget Sound recovery is a wicked problem
 - Hard to define the problem
 - Large number of people/cultures involved – many interdependencies
 - Hard to define success – no stopping rule
 - Incomplete knowledge - Fuzzy decision-making environment
- Ethnography is a good way to develop definition around broad, ill-defined issues

Why Ethnography?

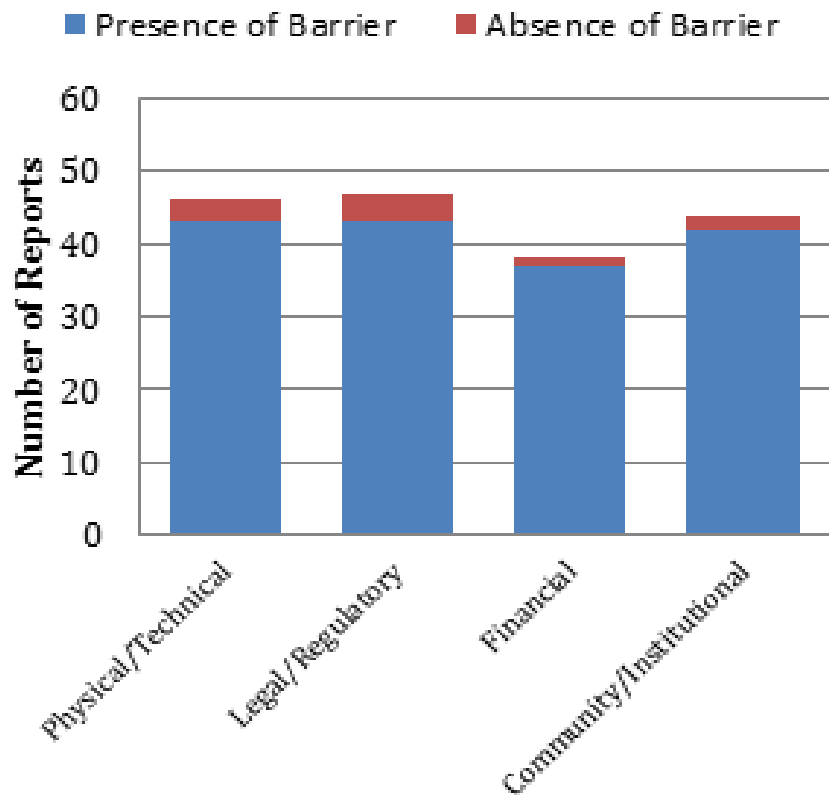
- The trend toward behavioral solutions (e.g., social marketing) demands formative research
 - Requires intensive understanding of motivators, barriers, and perceived benefits
 - Market research techniques are insufficient
- The trend toward collaborative solutions demands formative research
 - Improved awareness and understanding of cultural groups
 - Need to move past ongoing standoffs

Ethnographic Research

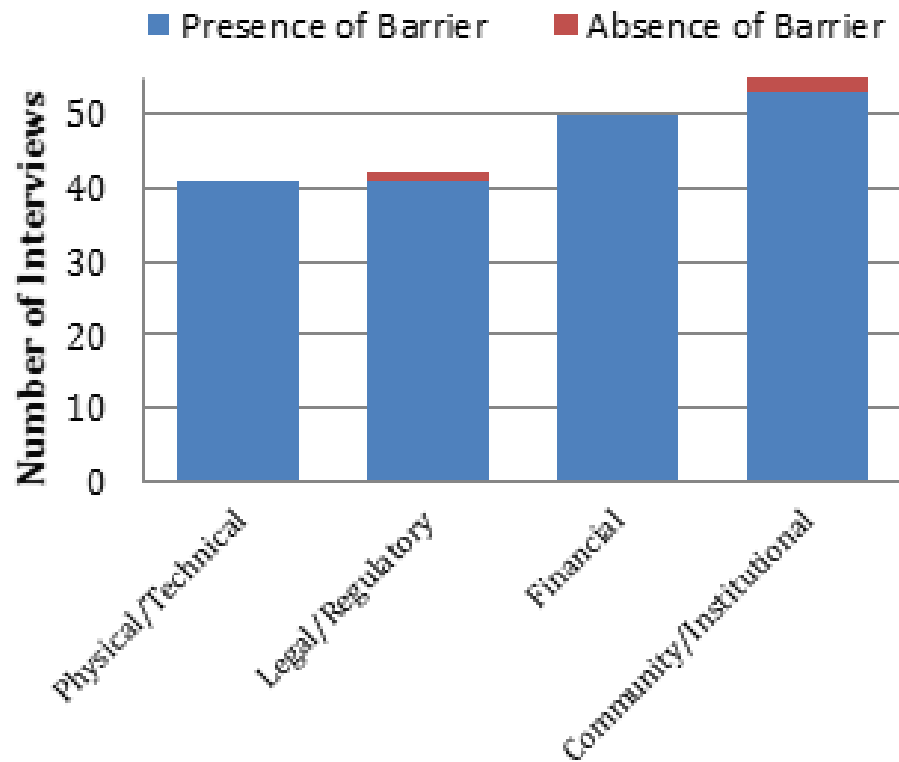
- Literature Review
- Document Analysis
- Participant Observation
- Interviews
- Mapping Exercises
- Online Survey



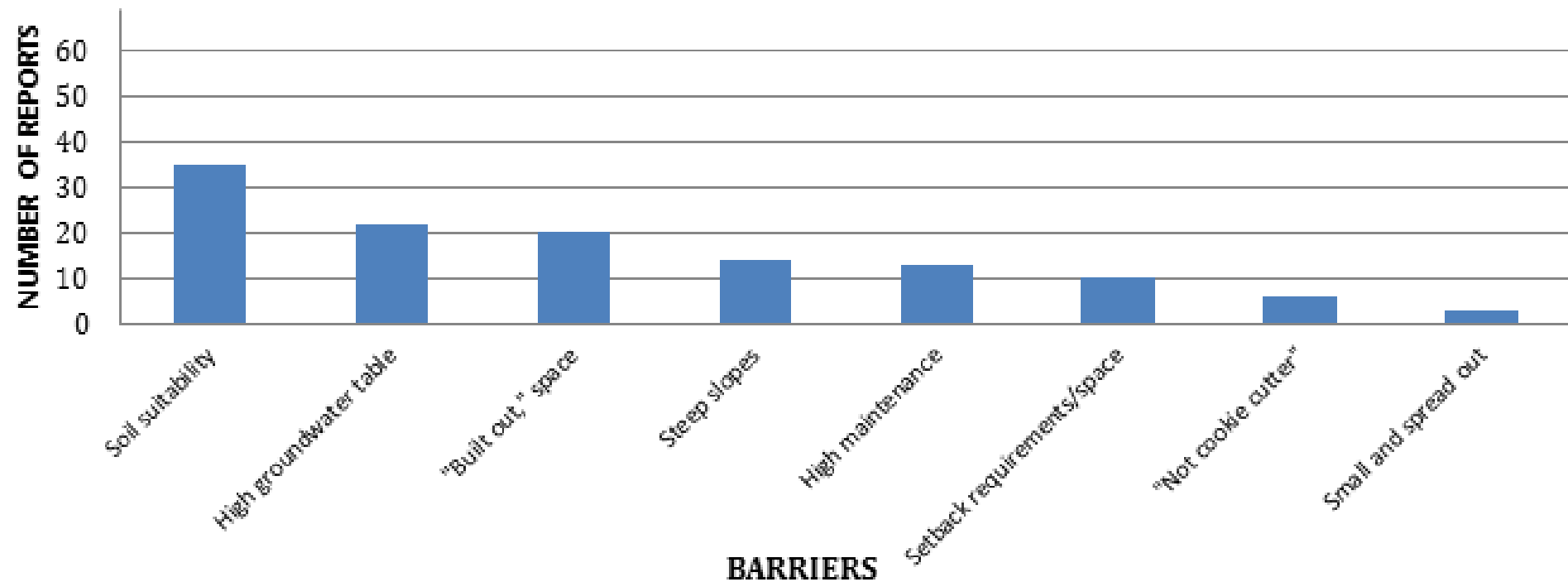
NPDES REPORTS: BARRIER CATEGORIES



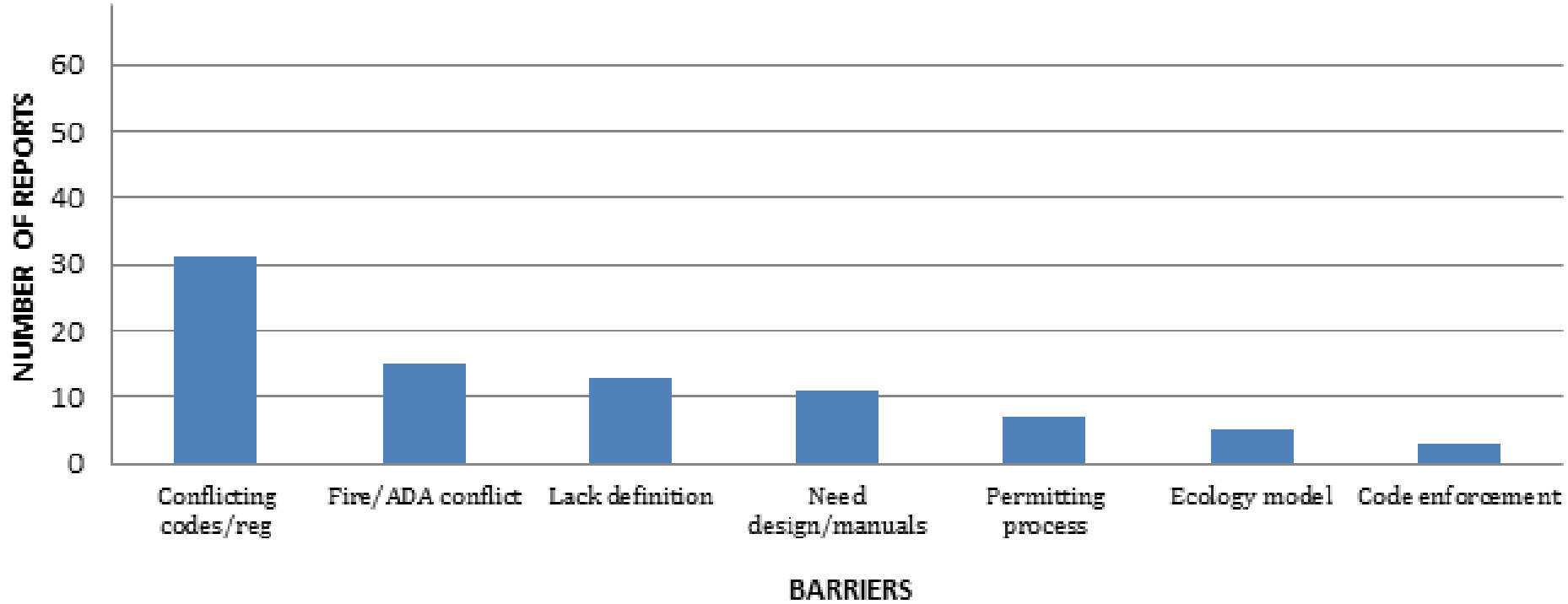
INTERVIEWS: BARRIER CATEGORIES



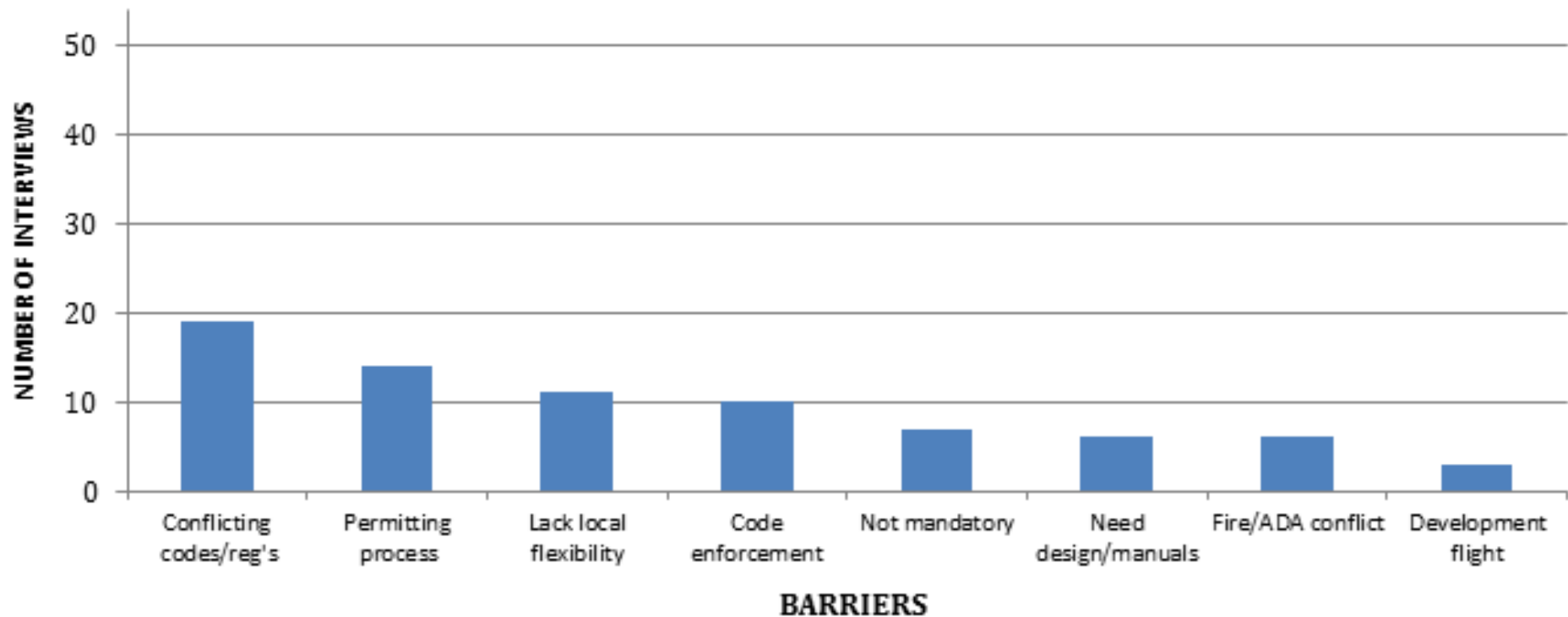
NPDES REPORTS: PHYSICAL & TECHNICAL BARRIERS



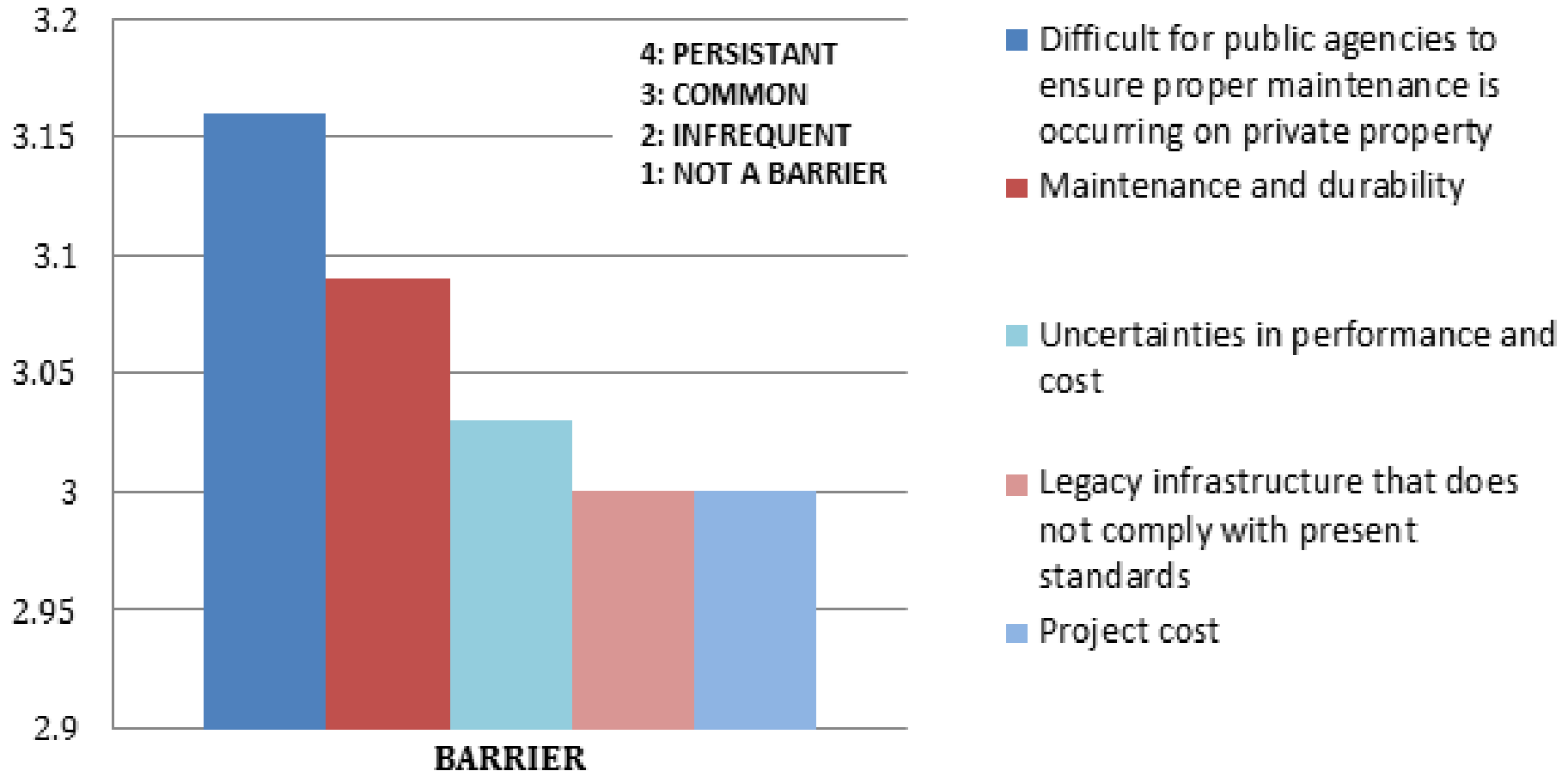
NPDES REPORTS: LEGAL & REGULATORY BARRIERS



INTERVIEWS: LEGAL AND REGULATORY BARRIERS



SURVEY: TOP FIVE BARRIER MEANS FOR CITY & COUNTY



Functional Barriers

- Maintenance - the most persistent barrier
- Risk and uncertainty
- Retrofitting legacy infrastructure
- Soil suitability

Institutional Barriers

- Shifting barriers
- Conflicting priorities
- Communication across municipal divisions
- Segregated responsibilities
- Size of municipality
- Ecosystem services approach
- Training

Inertia

- Habit
- Lack of public demand

“Concern for people or safety risk often will trump the notion of a green idea.”

“And then sometimes with – with some techniques, we're limited to the soils that are actually in the area, so we – I would say more than 50 percent, maybe 75 percent of the time, we can't do infiltration because of the soils. We can't get it to – 'cause they're tilled soils and thin layer.”

“How are we to enforce maintenance of pervious surfaces in backyards?

What about having to install a new utility in an existing pervious asphalt road.

For that matter, how do we maintain a pervious asphalt road over the years?

In the past we've been able to grind and overlay, chip seal, etc. What do we do now? Construct a new street?”

“We’re not sure exactly what those costs are gonna be long-term for us, so that’s very difficult when we’re trying to think about long-term planning, budgets.

How much money do we, as a utility, need to have? What are our rates gonna be to pay for this? What are the failures gonna be for of some of these techniques?

You hope you don’t have failures, but we have had failures in the past of some of the pervious pavements that we’ve done. Then, we have to go and replace them. That’s not fun.”

“I think I can only count on one hand how many projects that I've seen where our county engineer said, ‘Really look at LID for this particular bridge,’ you know?”

Most of the people that have been here a long time, they do what they've always done, you know? And if you try to suggest more innovative ways, you—half may listen, half may not.”

“I think a dedicated team for LID that goes beyond design and planning and gets into maintenance and inspection is needed to make LID successful over time.”