Photo Credit: WSDOT

Catch Basin Effectiveness Study

Jenée Colton, King County

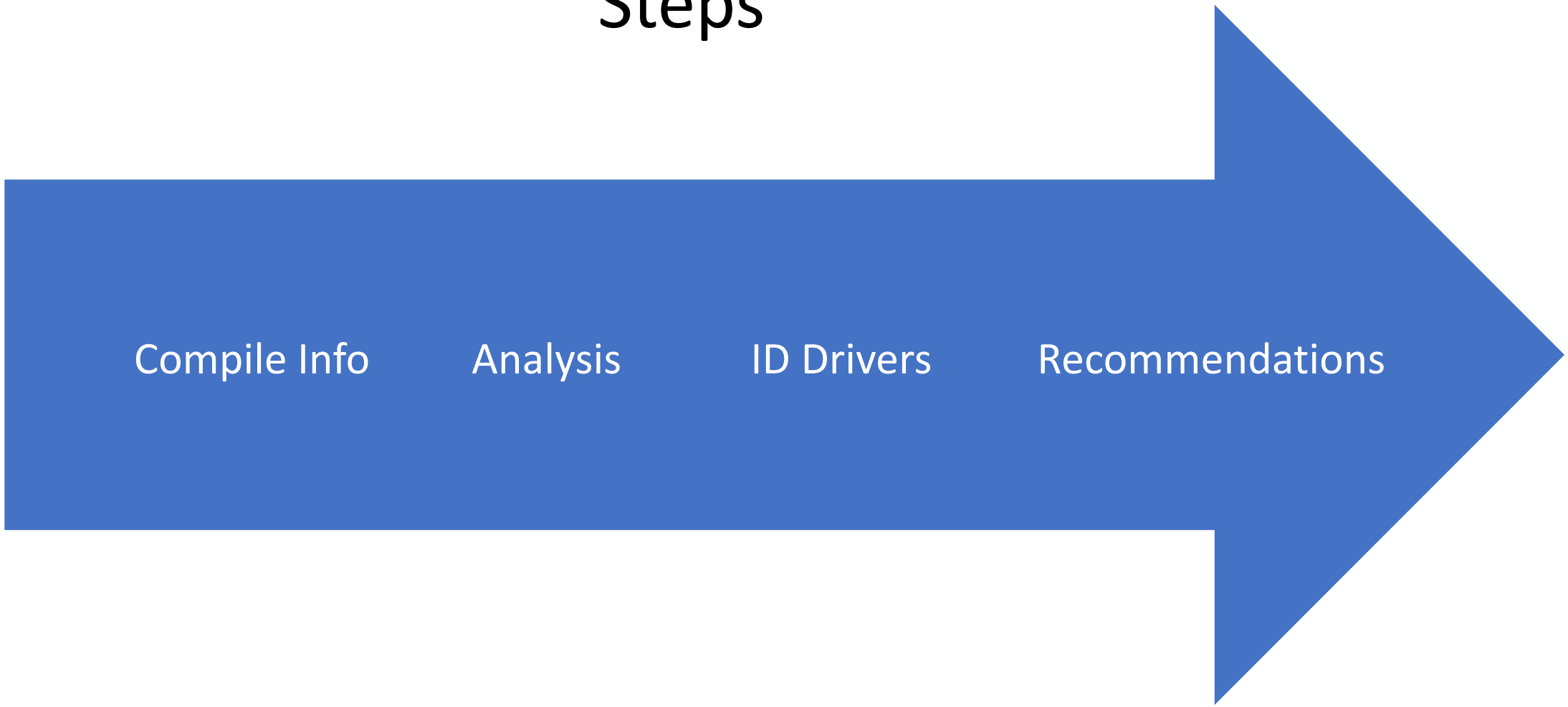
Stormwater Work Group meeting

November 14, 2018

King County
Department of
Natural Resources and Parks
Water and Land Resources Division

How can we use WW catch basin I&M records to inform inspection frequency needs?

Steps

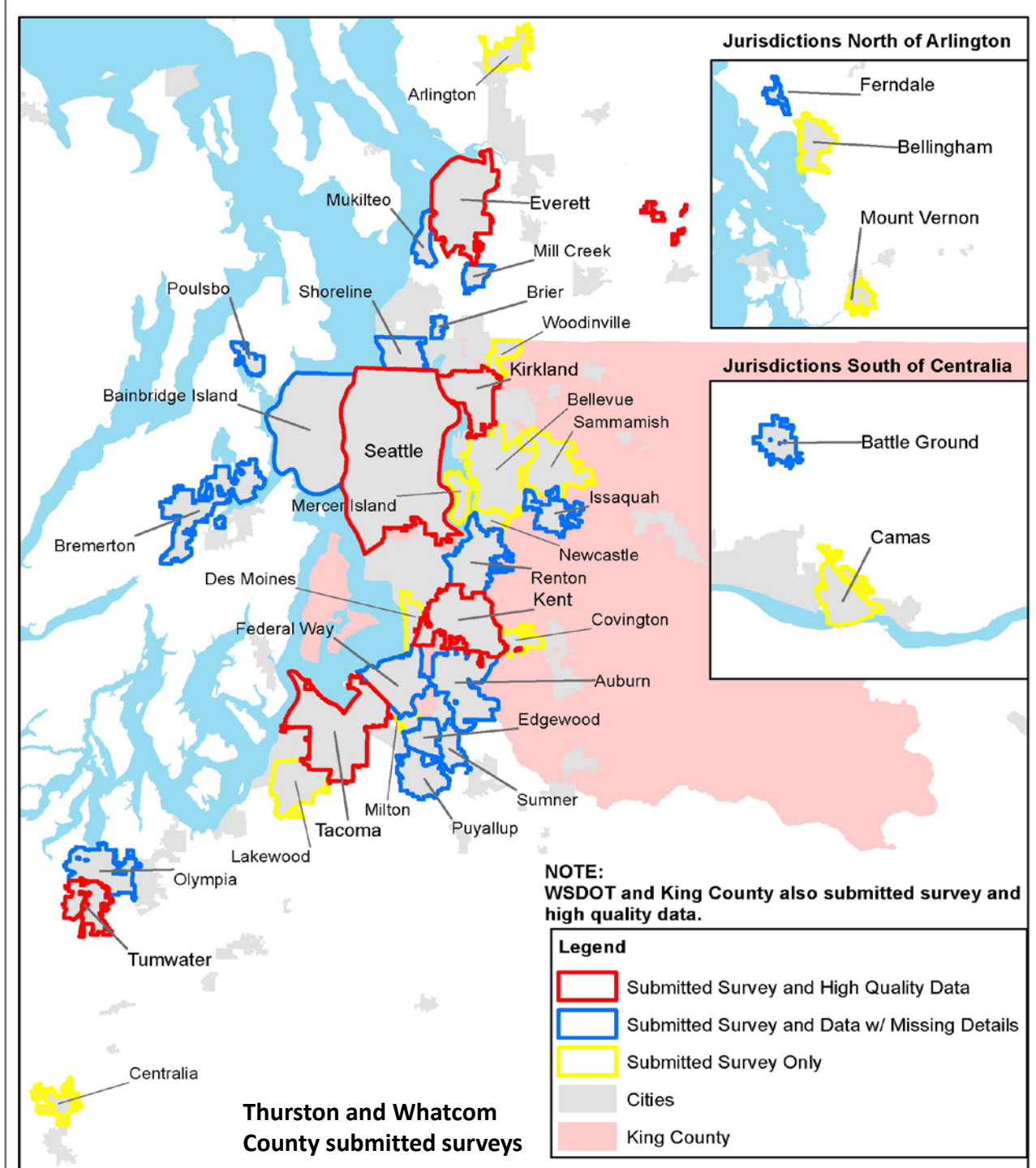


127 Surveys

48 Answered

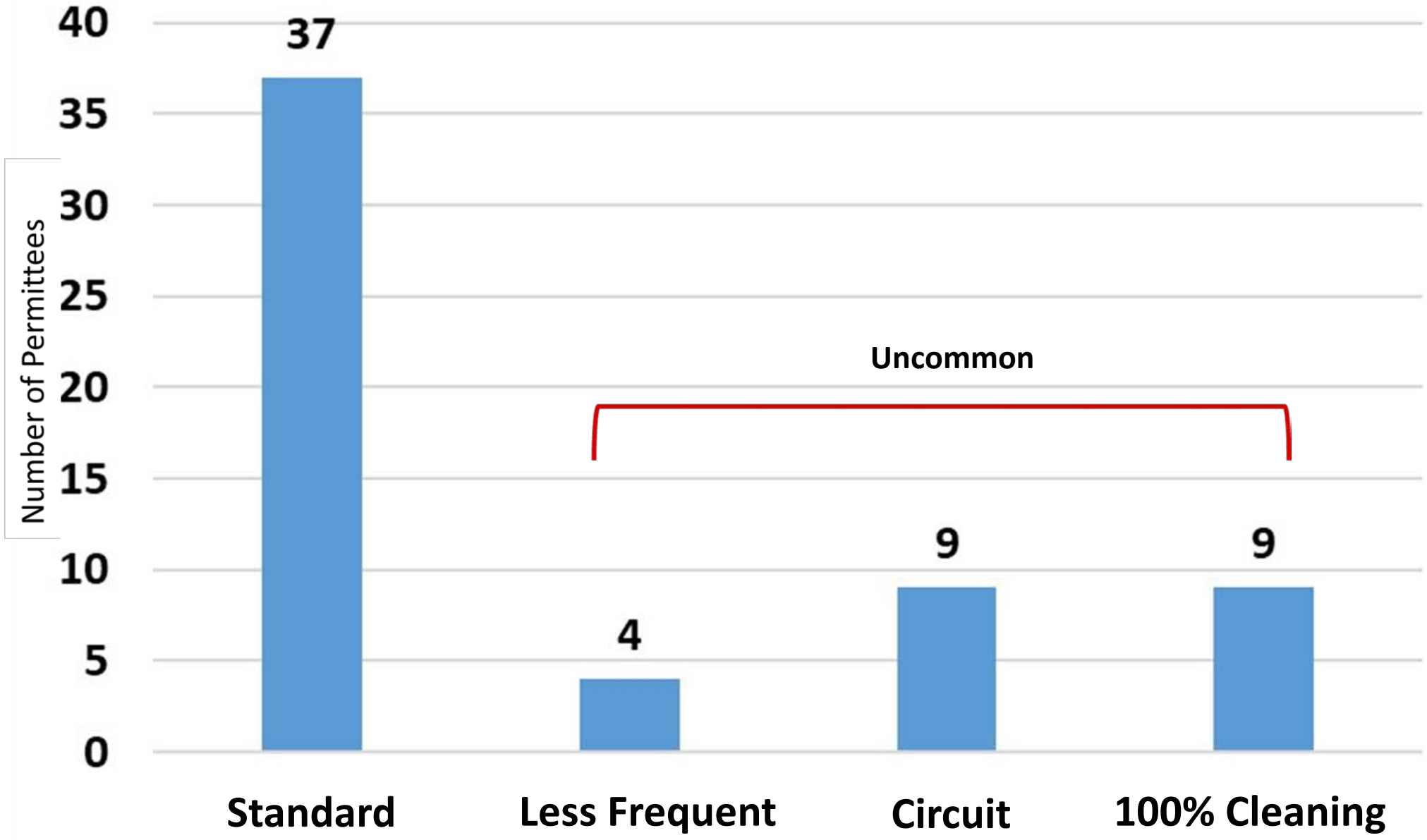
31 Supplied Data

8 Loaded in Database

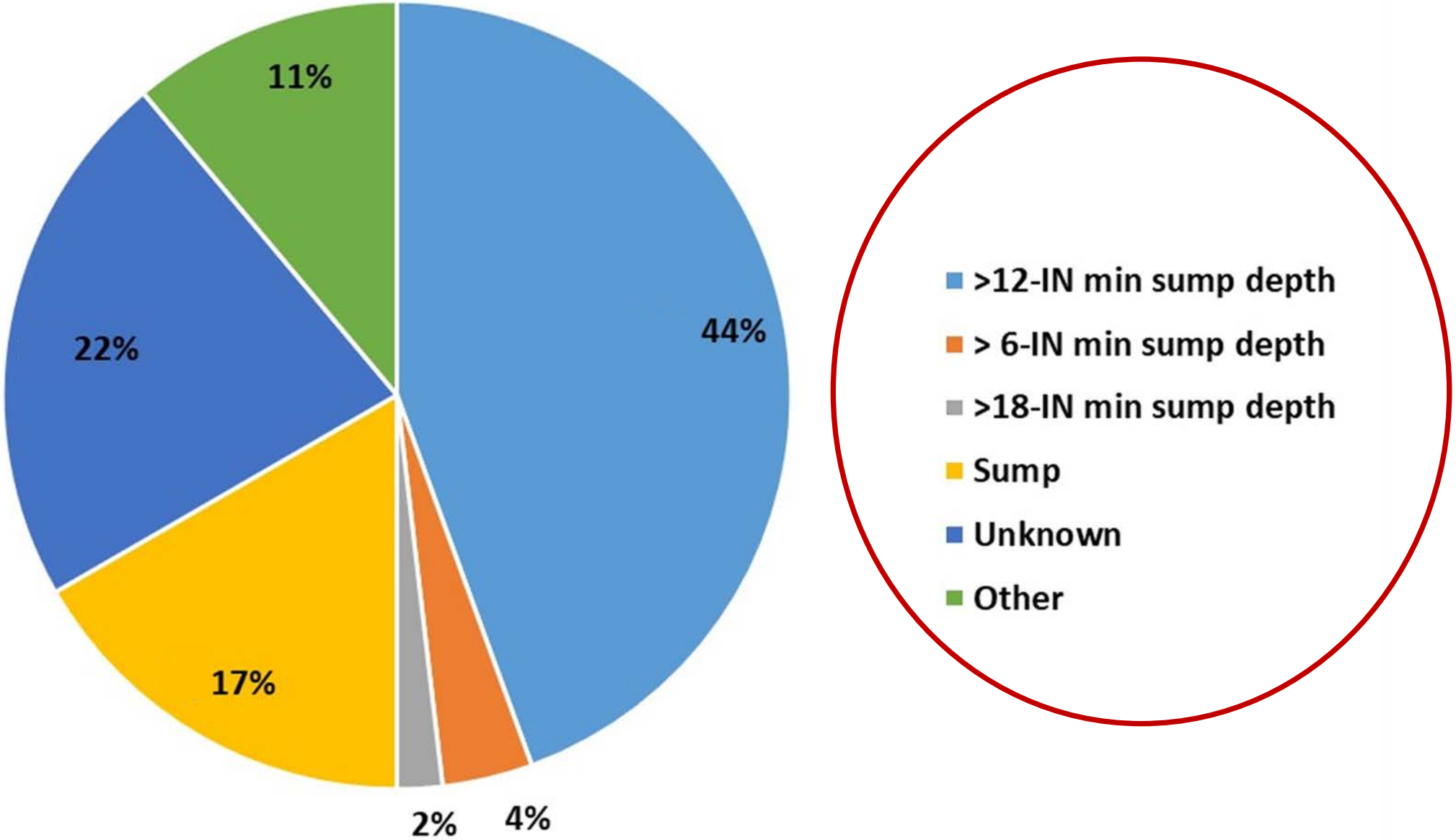


Survey Highlights

Catch Basin Inspection Schedules



Catch Basin Definitions

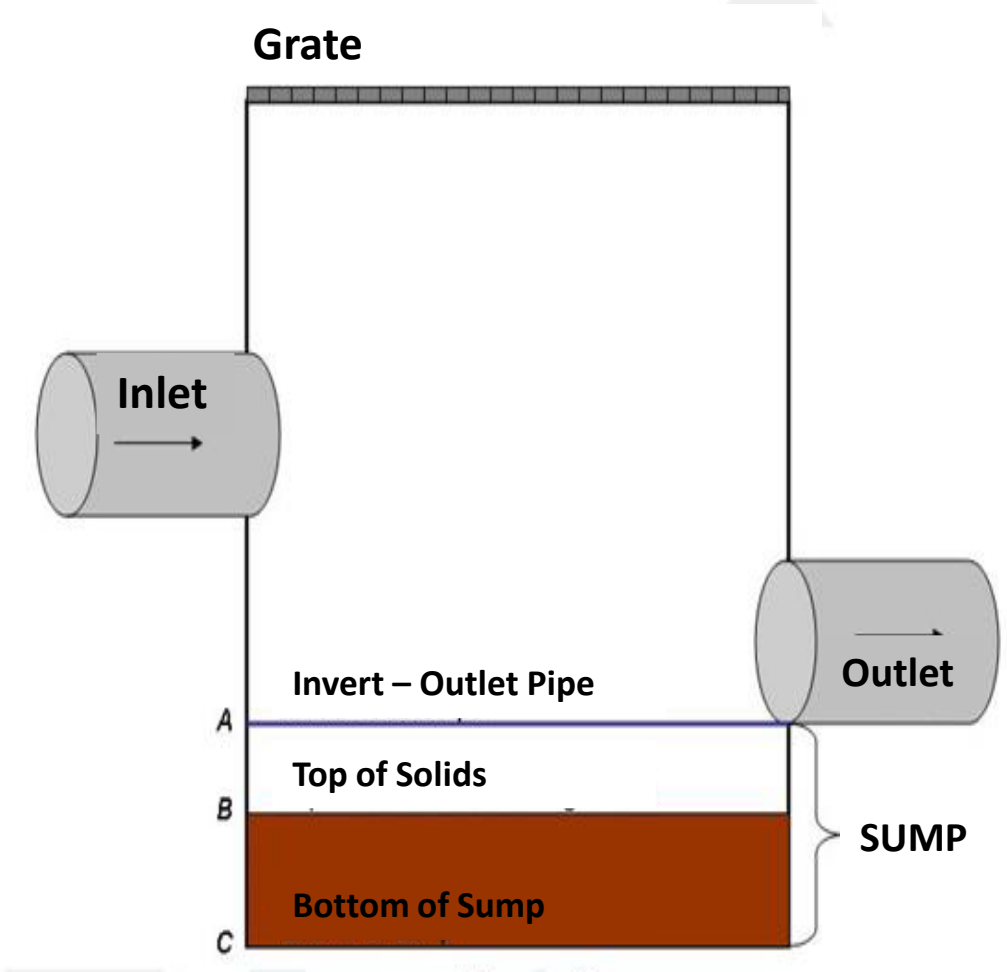


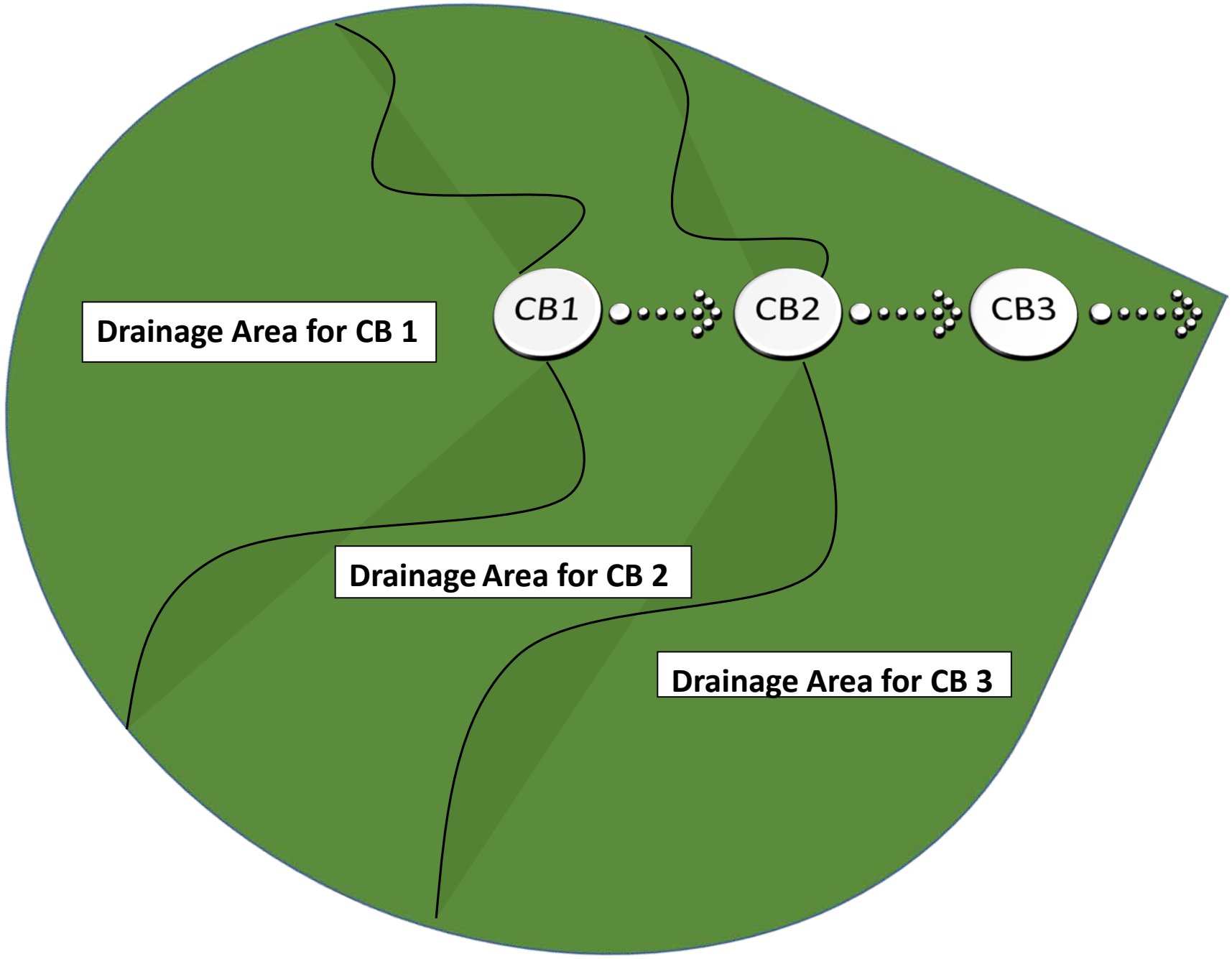
Data Analysis

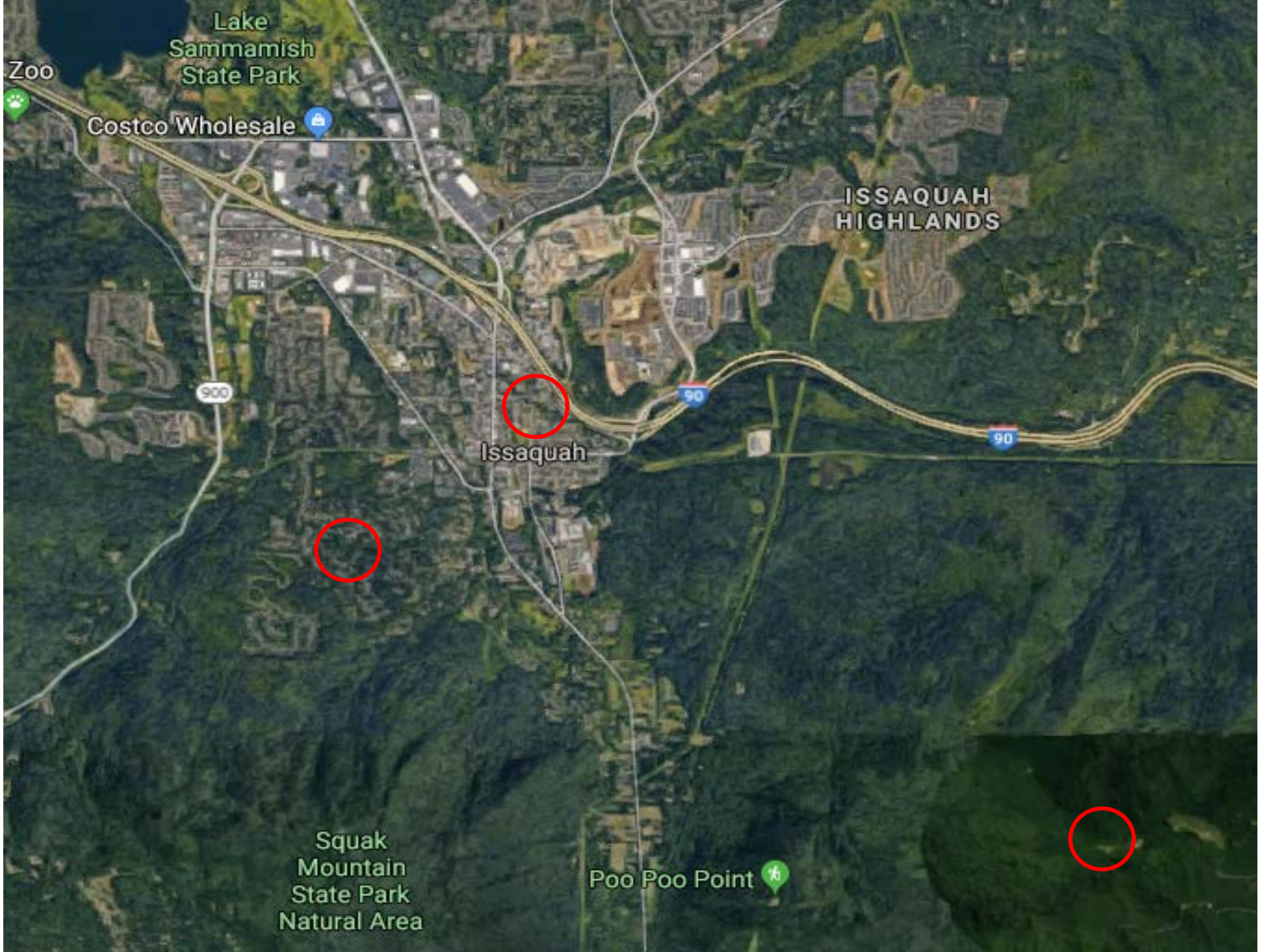
Kalama, WA
Photo Credit: Joe Mabel

Missing

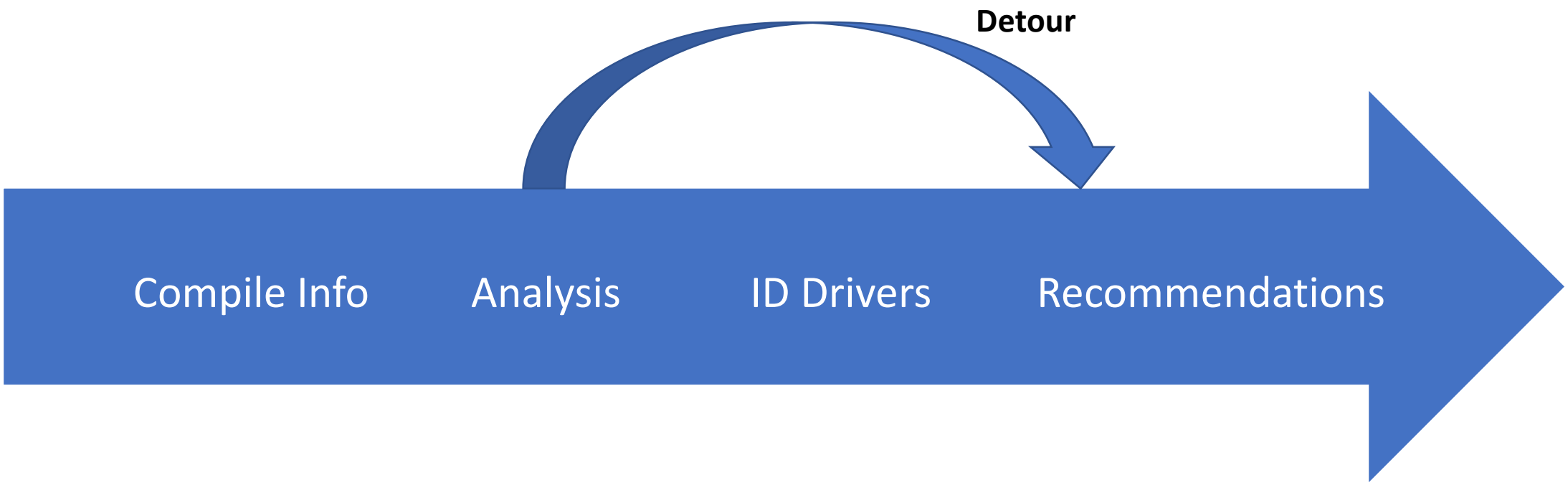
- Sump dimensions
- Contributing areas
  - GIS delineation
  - Land acreage




Drainage Area for CB 1
CB1
CB2
CB3
Drainage Area for CB 2
Drainage Area for CB 3

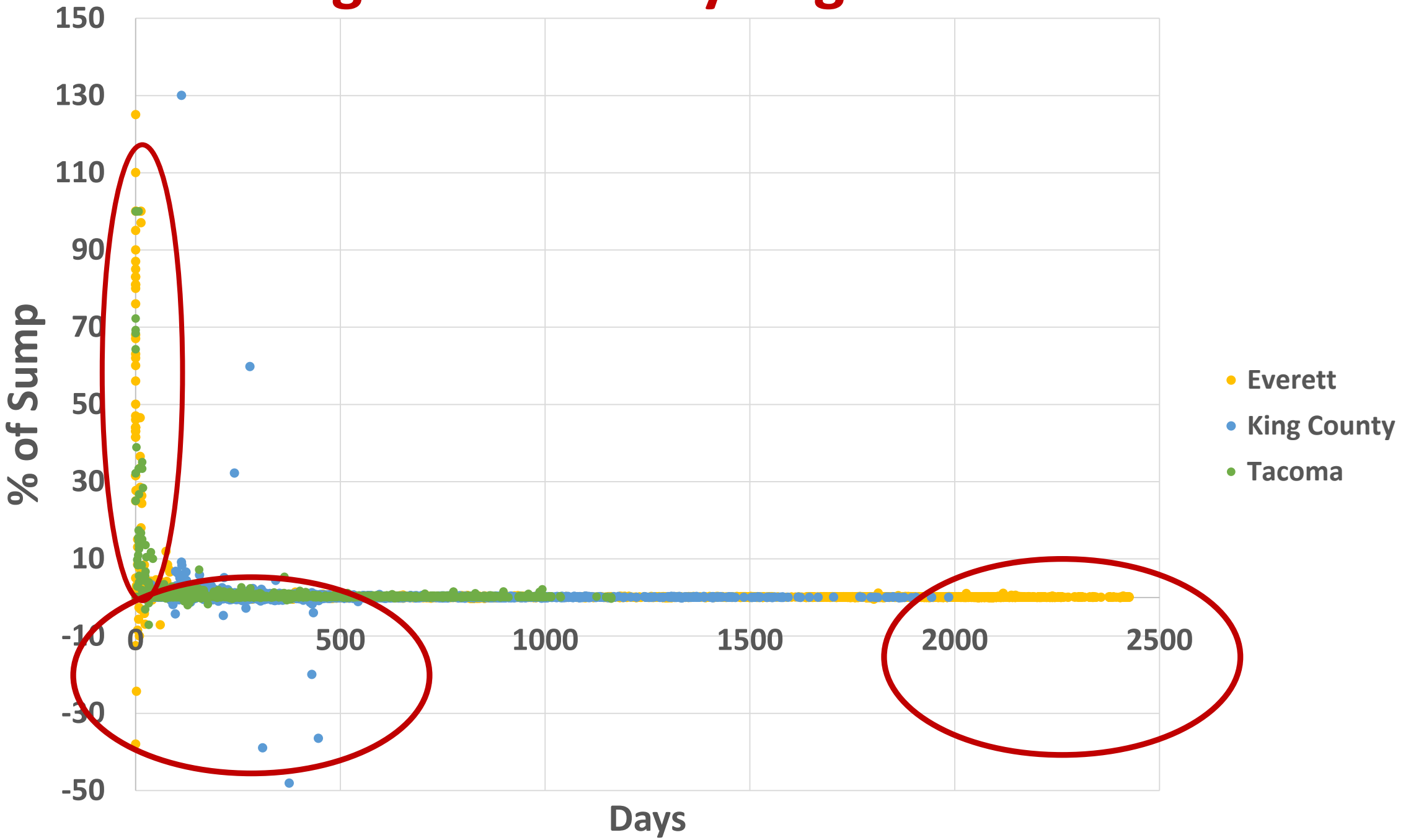

Lake
Sammamish
State Park
Zoo
Costco Wholesale
ISSAQUAH
HIGHLANDS
900
90
90
Issaquah
Squak
Mountain
State Park
Natural Area
Poo Poo Point

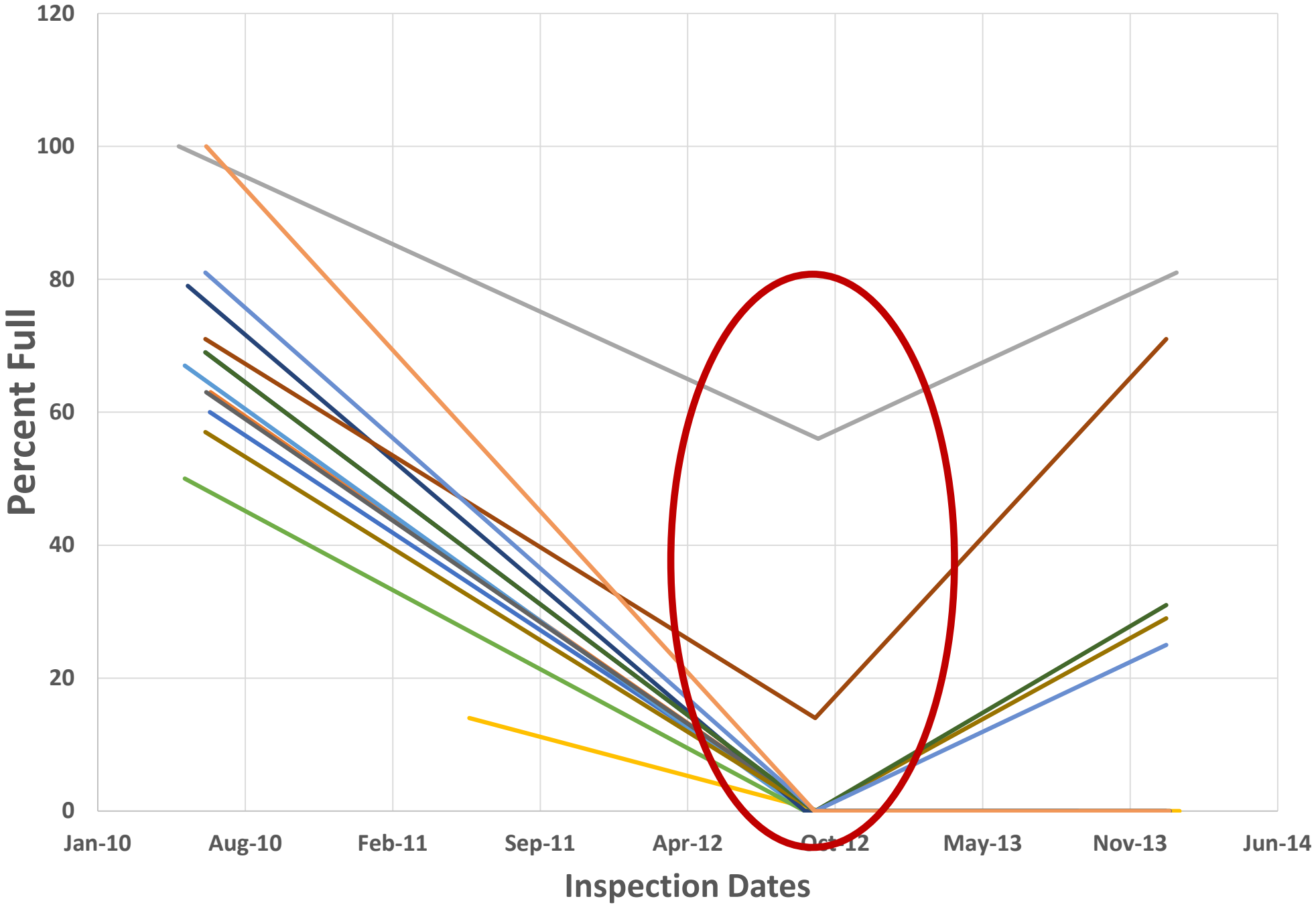
Steps



Data Quality Issues

Things that make you go hmmm…..





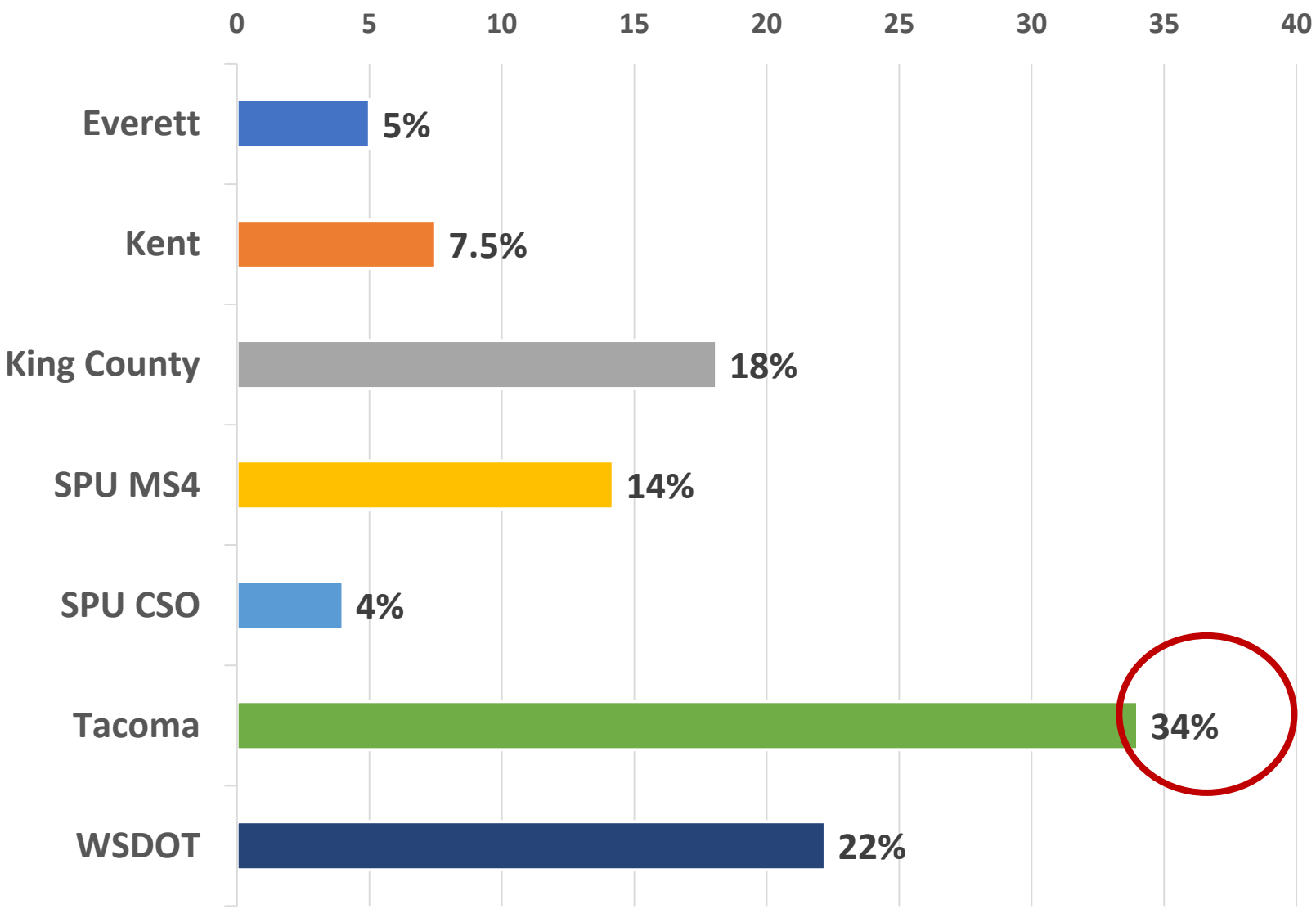
Each color is different CB

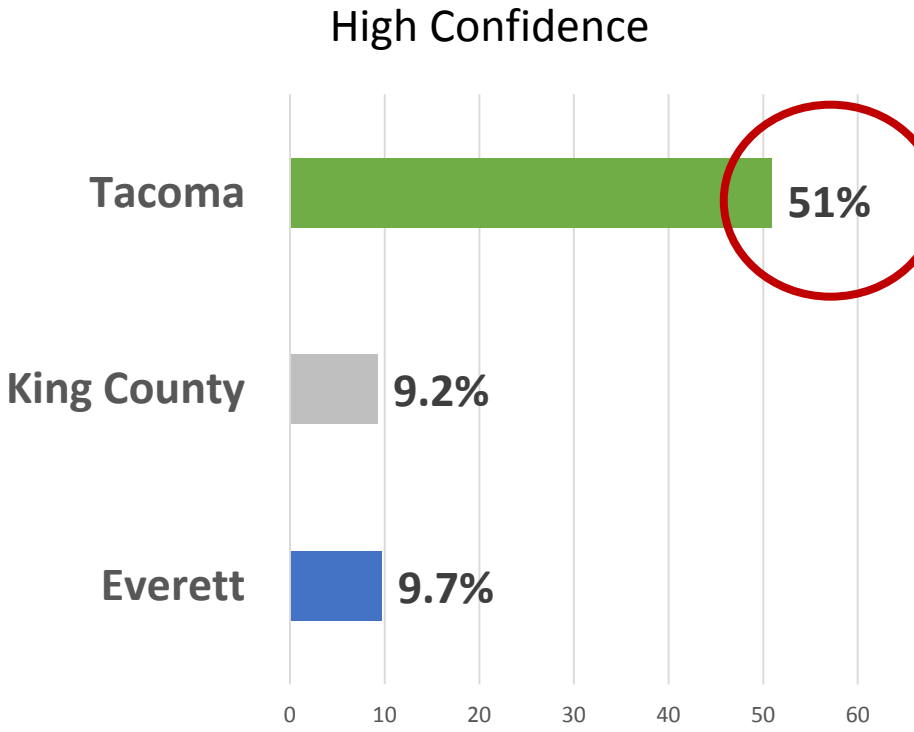
Confidence Tiers

Low – less confidence

High – more confidence

Percent of CBs Failing Within 2 Years: Low Confidence Tier Data



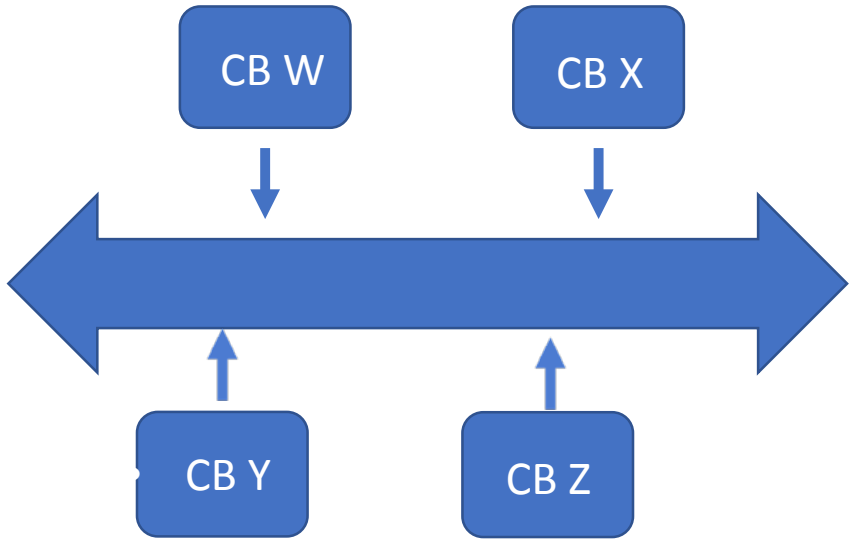


Clarifications on Alternative Schedules

Definition of a Circuit

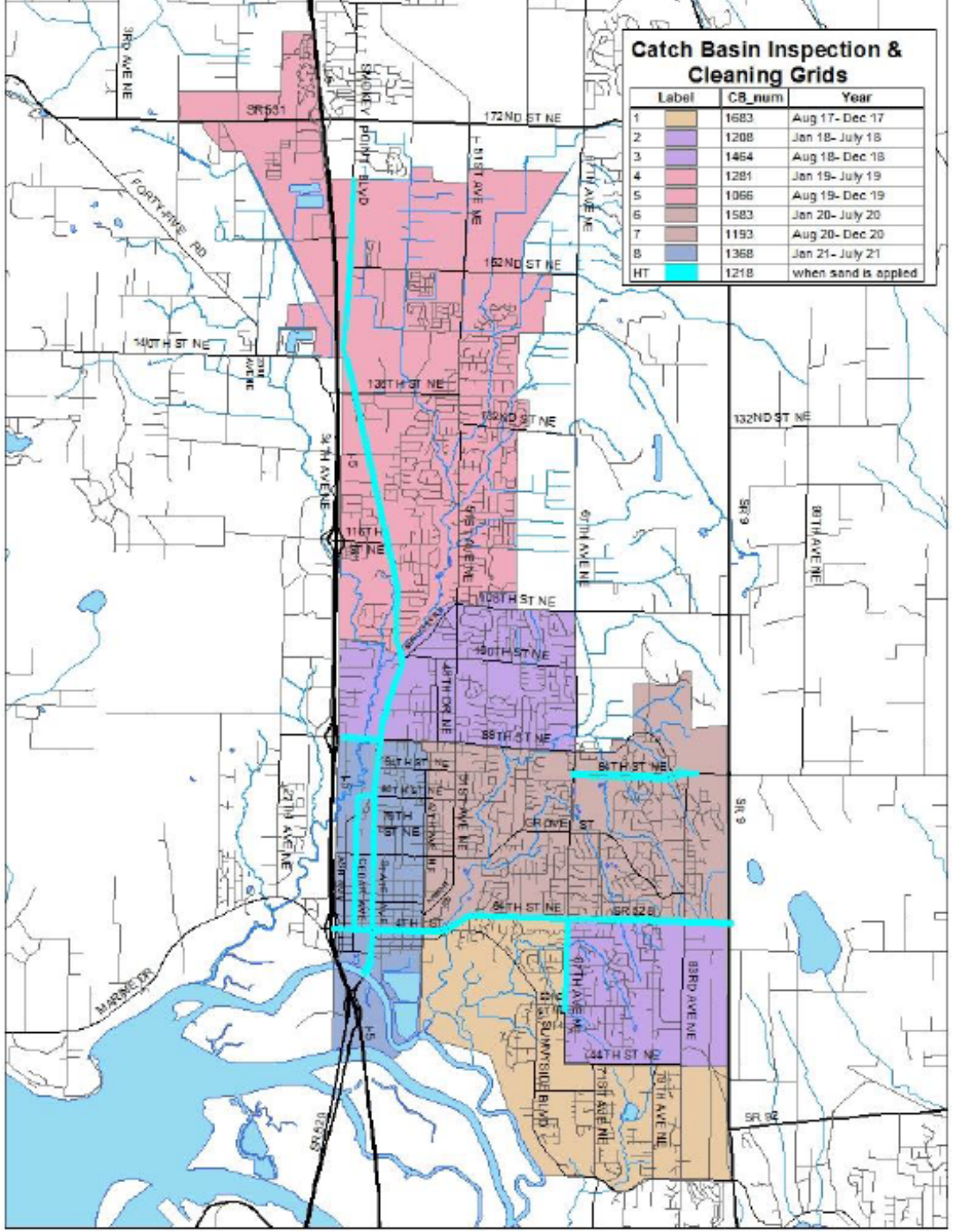
100% Cleaning

Less Frequent and Circuit Approach



Less Frequent

- No Ecology approval necessary
- Documentation of proposed schedule based on 2 x # years
- Circuits based on land use, traffic density, etc…similar maintenance needs



Marysville Circuits

Recommendations to Permittees

- Implement/tighten data quality control (QC) protocols

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- Migrate data collection and management to integrated digital system.
- Consider less frequent inspection schedule with inspection data.
- Revisit the definitions of a circuit.

Recommendations to Ecology and SWG

- Standardize the definition of a catch basin to improve use of inspection data.

Recommendations to Ecology and SWG

- Standardize the definition of a catch basin to improve use of inspection data.
- Conduct field study of CB dynamics to allow for long-term, science-based prediction of CB sediment accumulation.

Acknowledgements

King County

Blair Scott
Mark Preszler
Nick Hetrick
Brent Dhoore
Doug Navetski

Osborn Consulting Inc.

Diana Hasegan
Laura Ruppert

SAM Coordinator

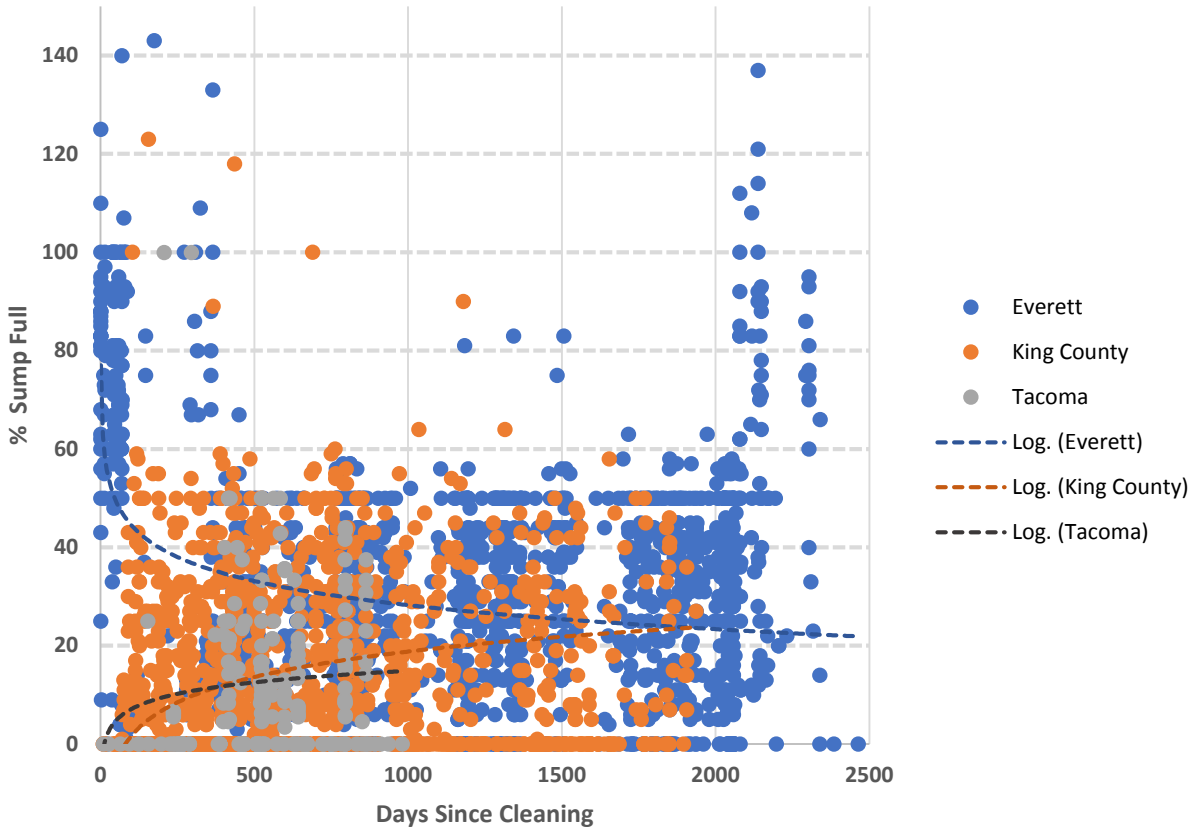
Brandi Lubliner

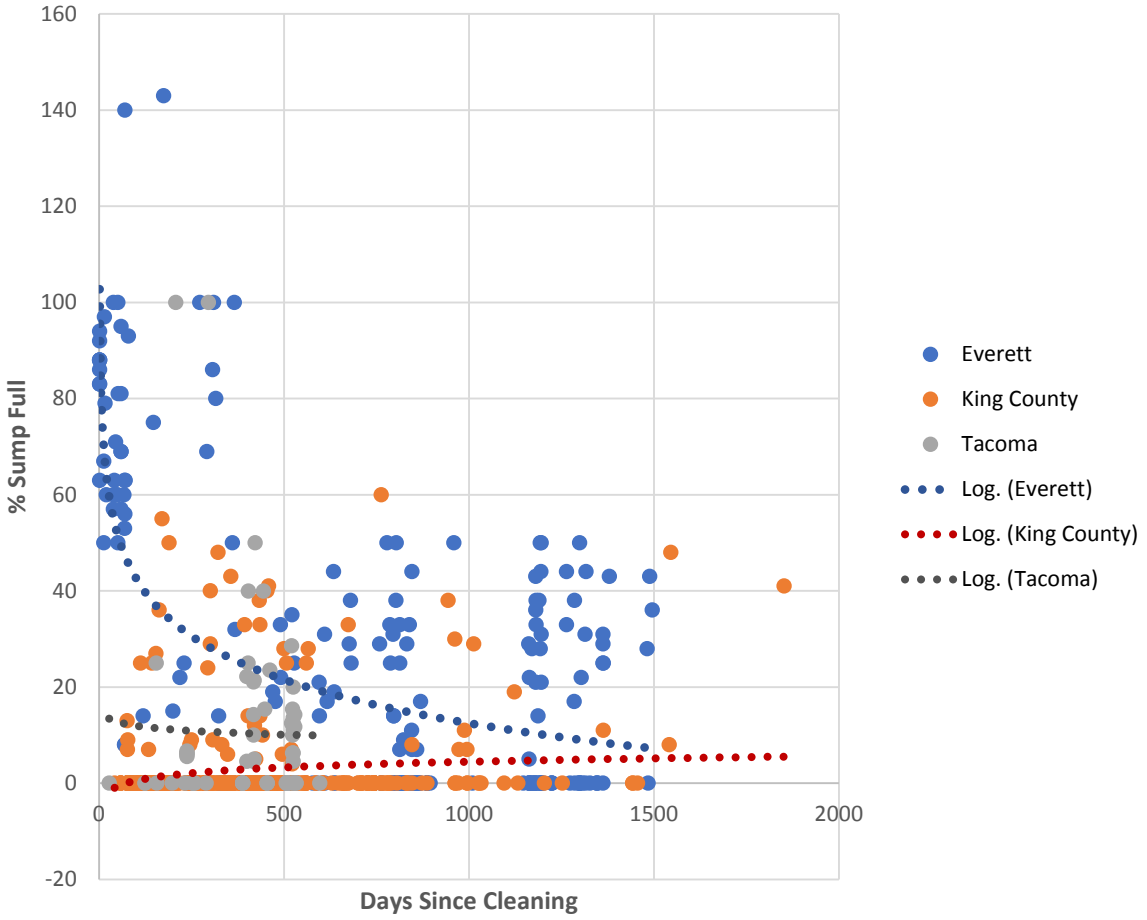
Technical Advisory Committee

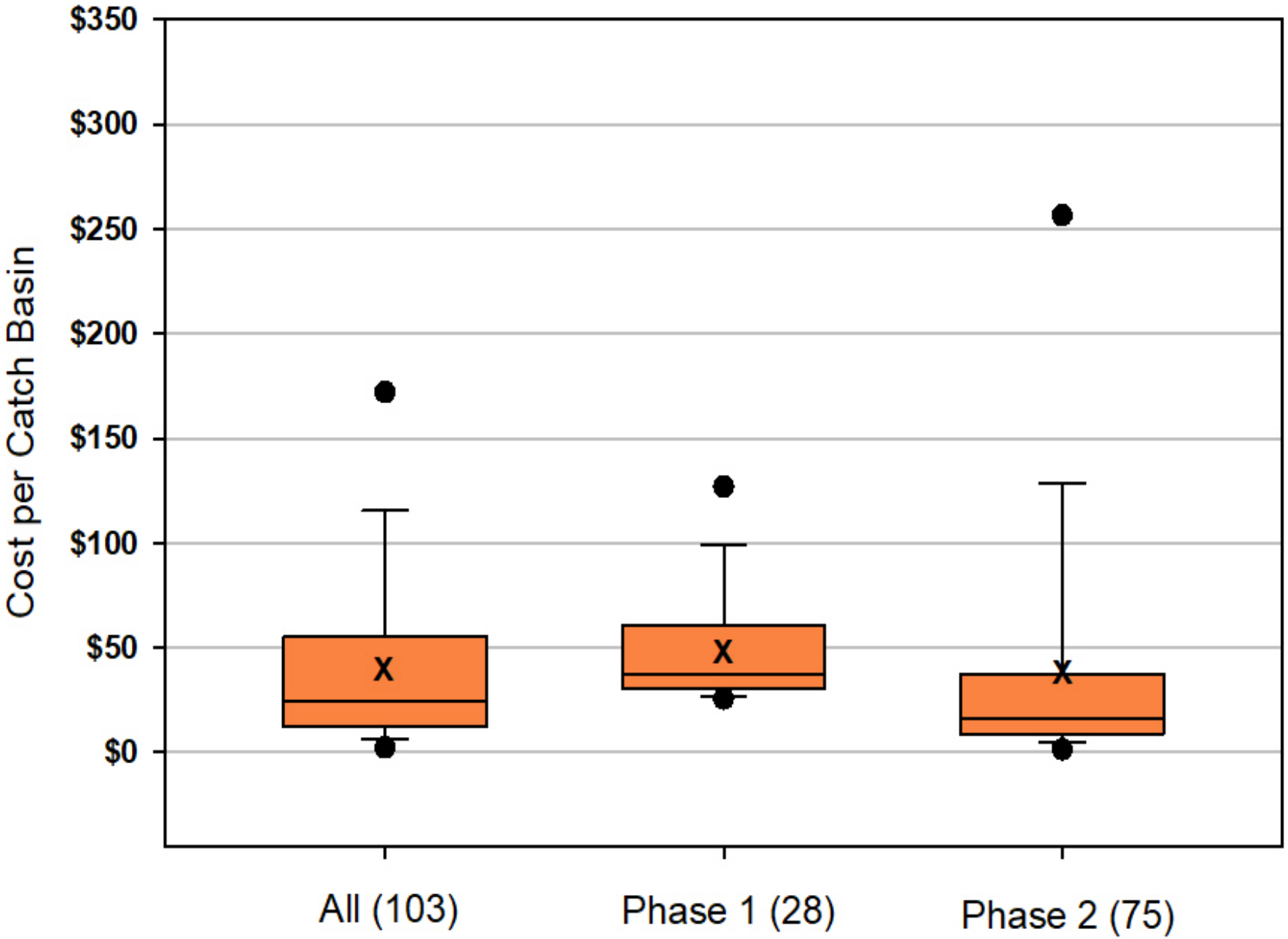
Angela Gallardo (Kitsap County)
Laura Haren (City of Kent)
Grant Moen (City of Everett)
Kate Rhoads (City of Seattle)

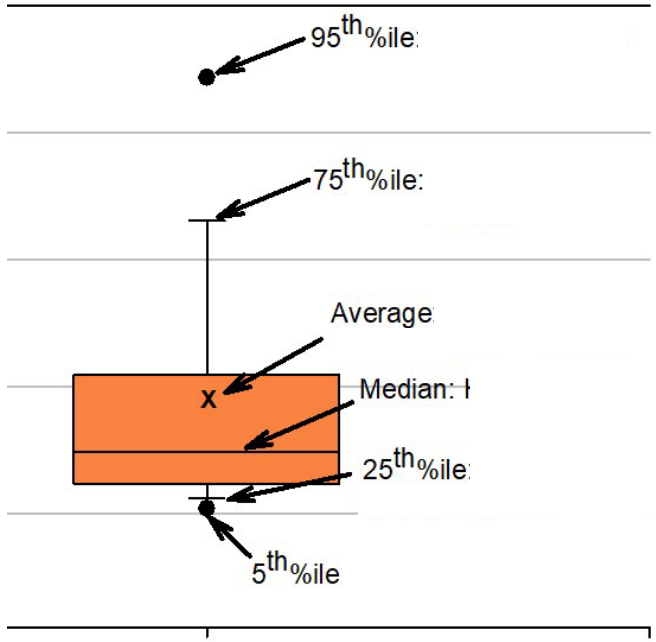
Cardno

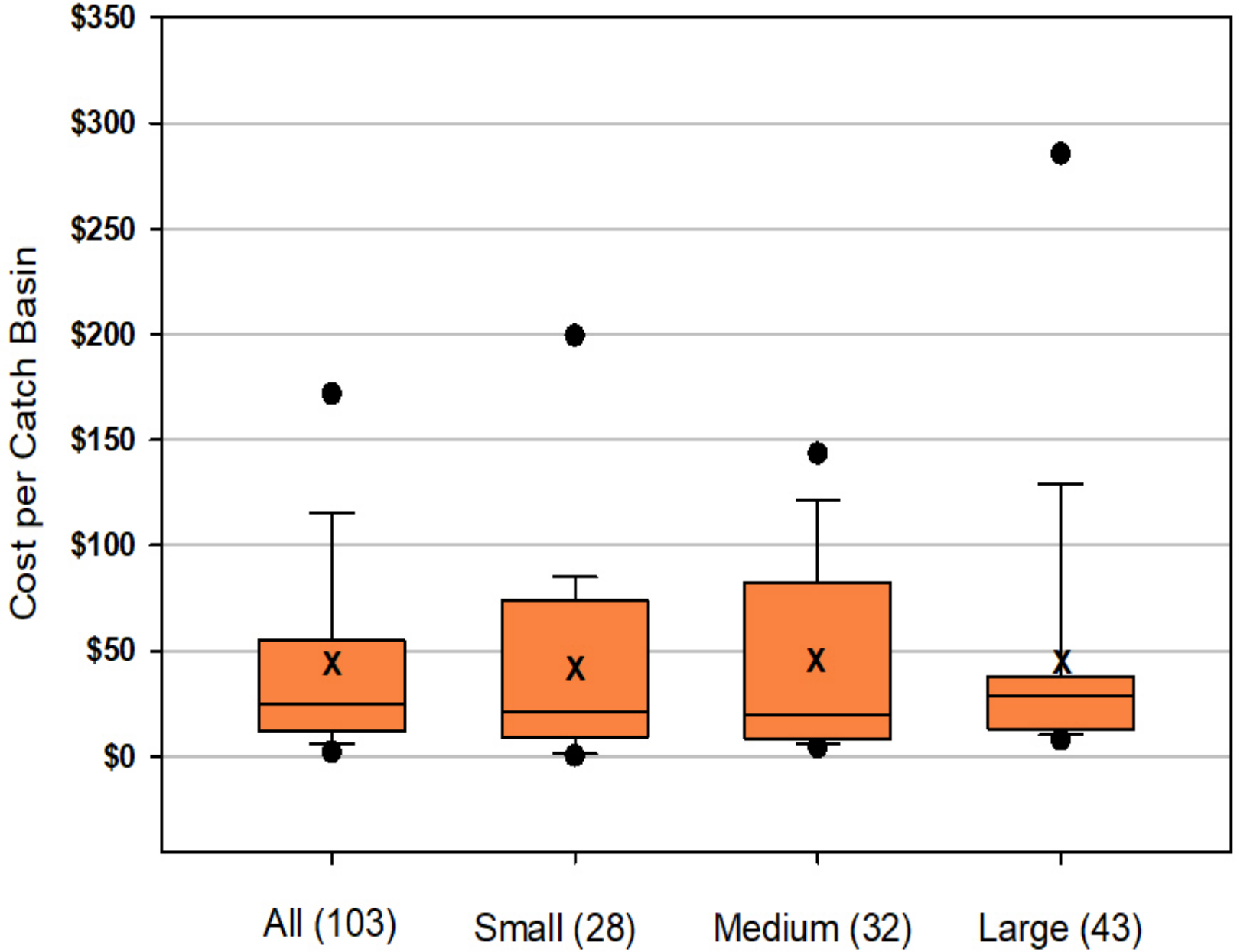
Jonathan Ambrose

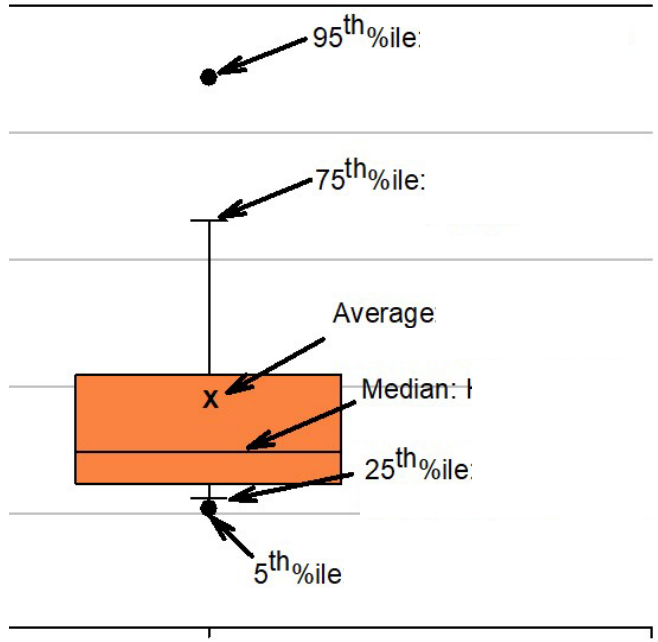

% Sump Full
Days Since Cleaning
0
20
40
60
80
100
120
140
0
500
1000
1500
2000
2500
Everett
King County
Tacoma
Log. (Everett)
Log. (King County)
Log. (Tacoma)


% Sump Full
Days Since Cleaning
-20
0
20
40
60
80
100
120
140
160
0
500
1000
1500
2000
Everett
King County
Tacoma
Log. (Everett)
Log. (King County)
Log. (Tacoma)


$350
$300
$250
$200
$150
$100
$50
$0
Cost per Catch Basin
All (103)
Phase 1 (28)
Phase 2 (75)


95th%ile:
75th%ile:
Average:
Median:
25th%ile:
5th%ile


$350
$300
$250
$200
$150
$100
$50
$0
Cost per Catch Basin
All (103)
Small (28)
Medium (32)
Large (43)


95th%ile:
75th%ile:
Average:
Median:
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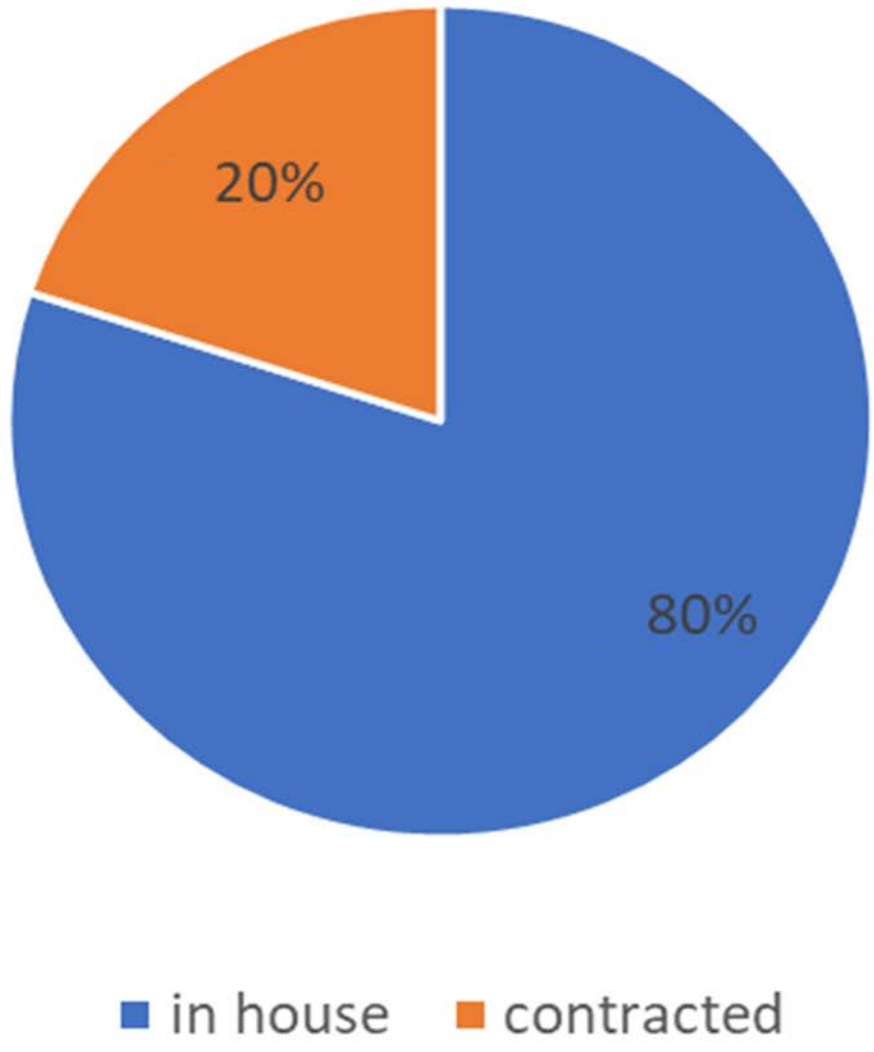
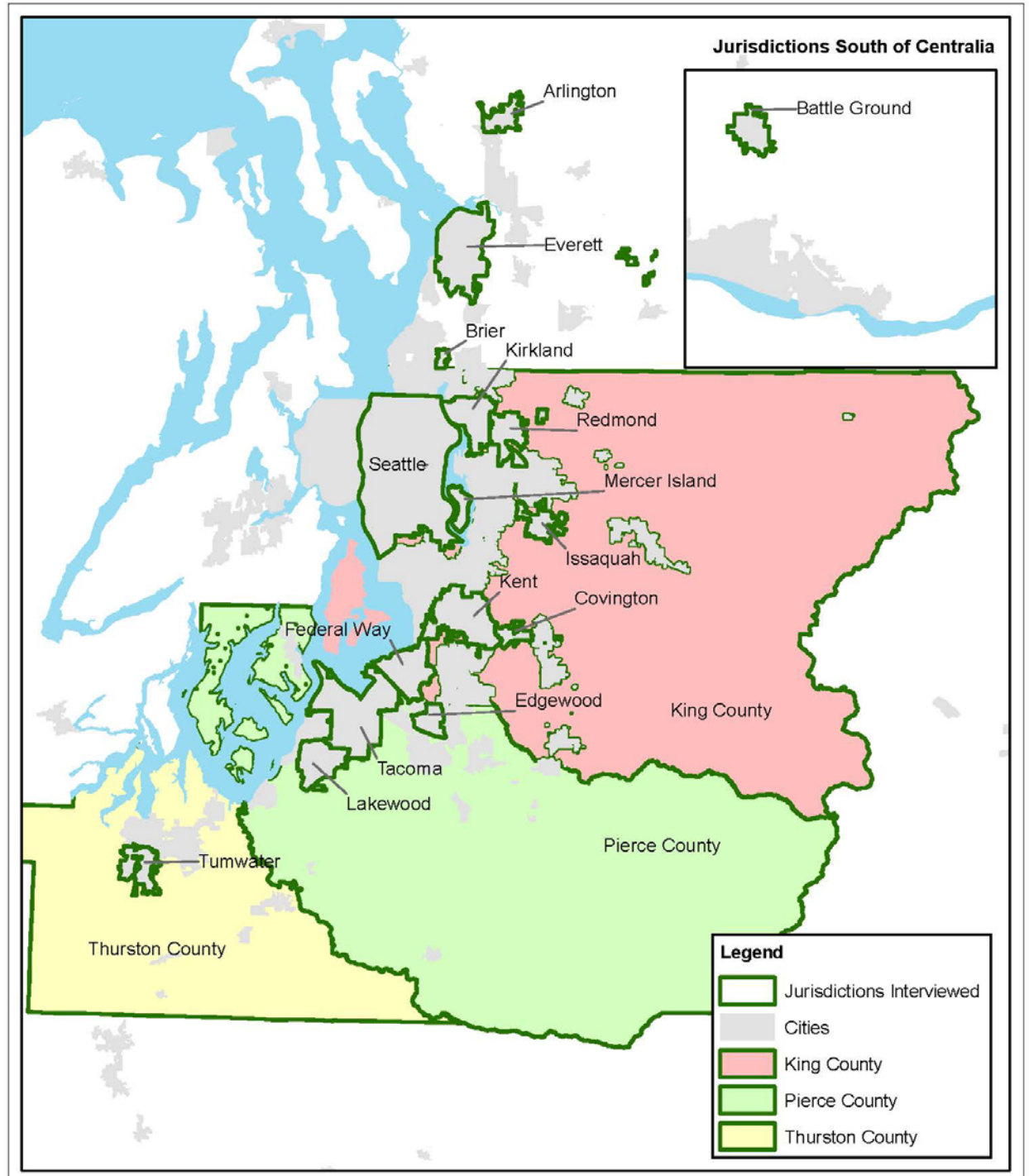
5th%ile

Program Implementation




Jurisdictions South of Centralia
Arlington
Battle Ground
Everett
Brier
Kirkland
Redmond
Seattle
Mercer Island
Issaquah
Kent
Covington
Federal Way
Edgewood
King County
Tacoma
Lakewood
Pierce County
Tumwater
Thurston County
Legend
Jurisdictions Interviewed
Cities
King County
Pierce County
Thurston County