



2014 ANNUAL REPORT

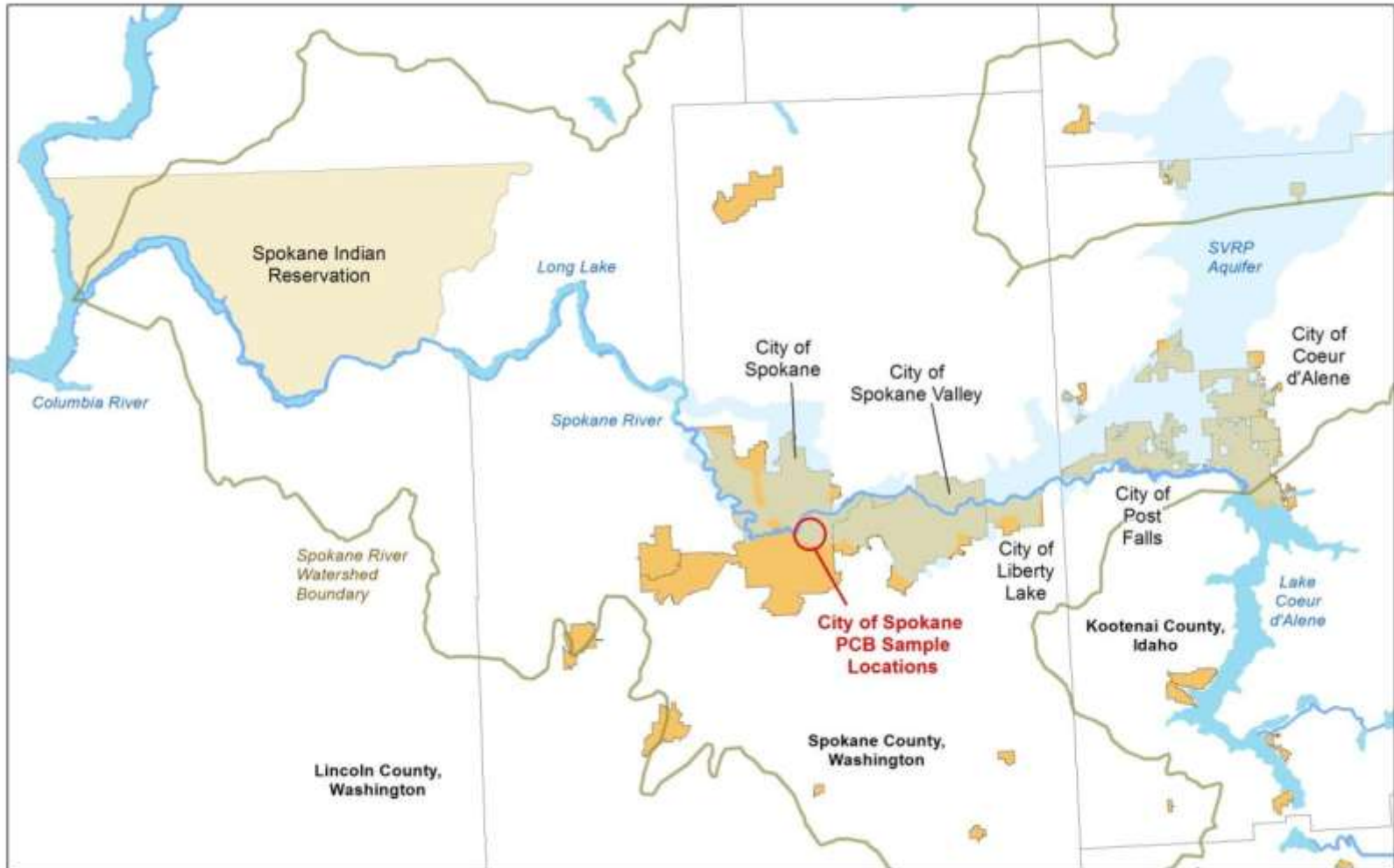
ADAPTIVE MANAGEMENT PLAN FOR REDUCING PCB_s IN STORMWATER DISCHARGES

SRRTTF JULY 23, 2014

City of Spokane Wastewater Management

Study Area

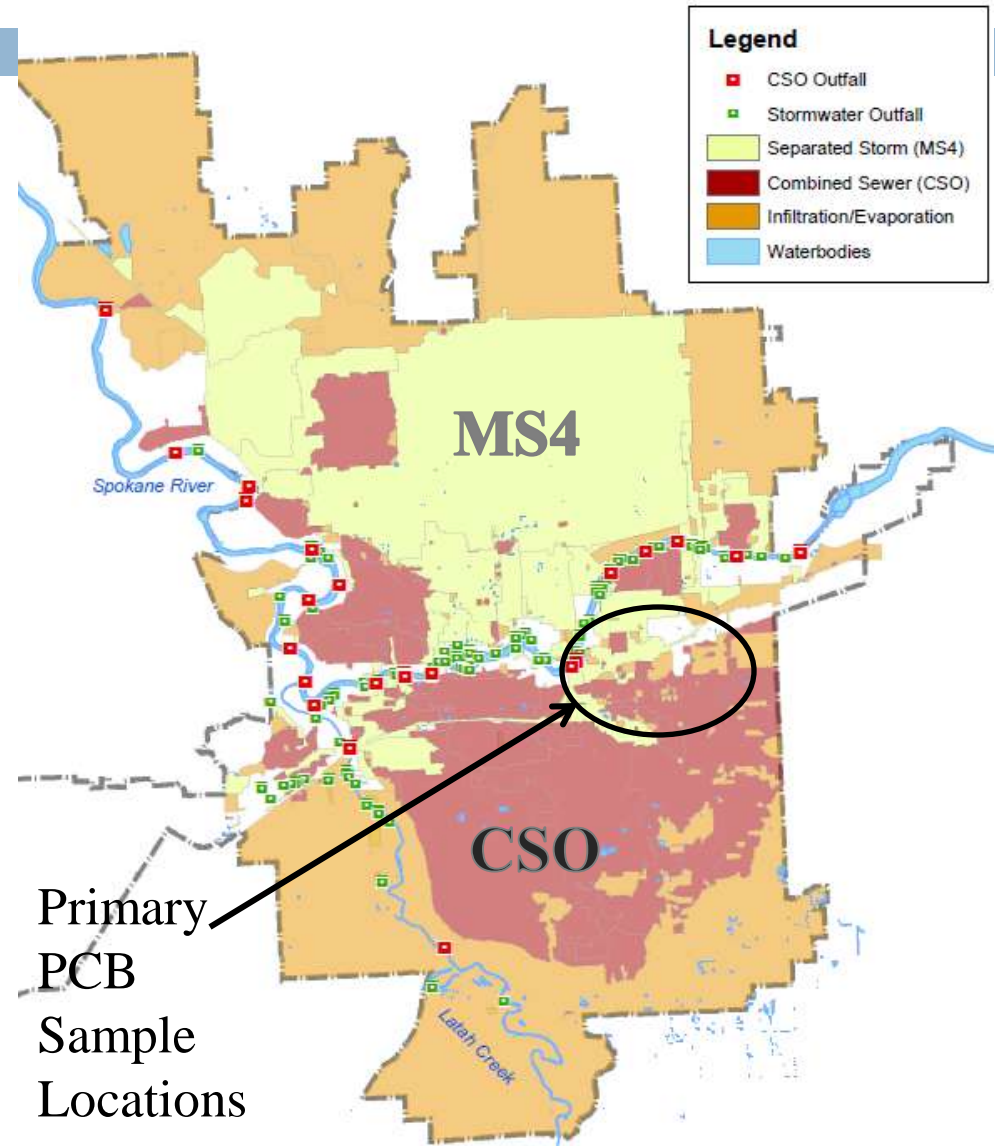
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Stormwater Management in Spokane


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- Pathway for PCBs to enter the Spokane River
 - ▣ MS4: Municipal Separate Storm Sewer System
 - ▣ CSO: Combined Sewer Overflow (less frequent)



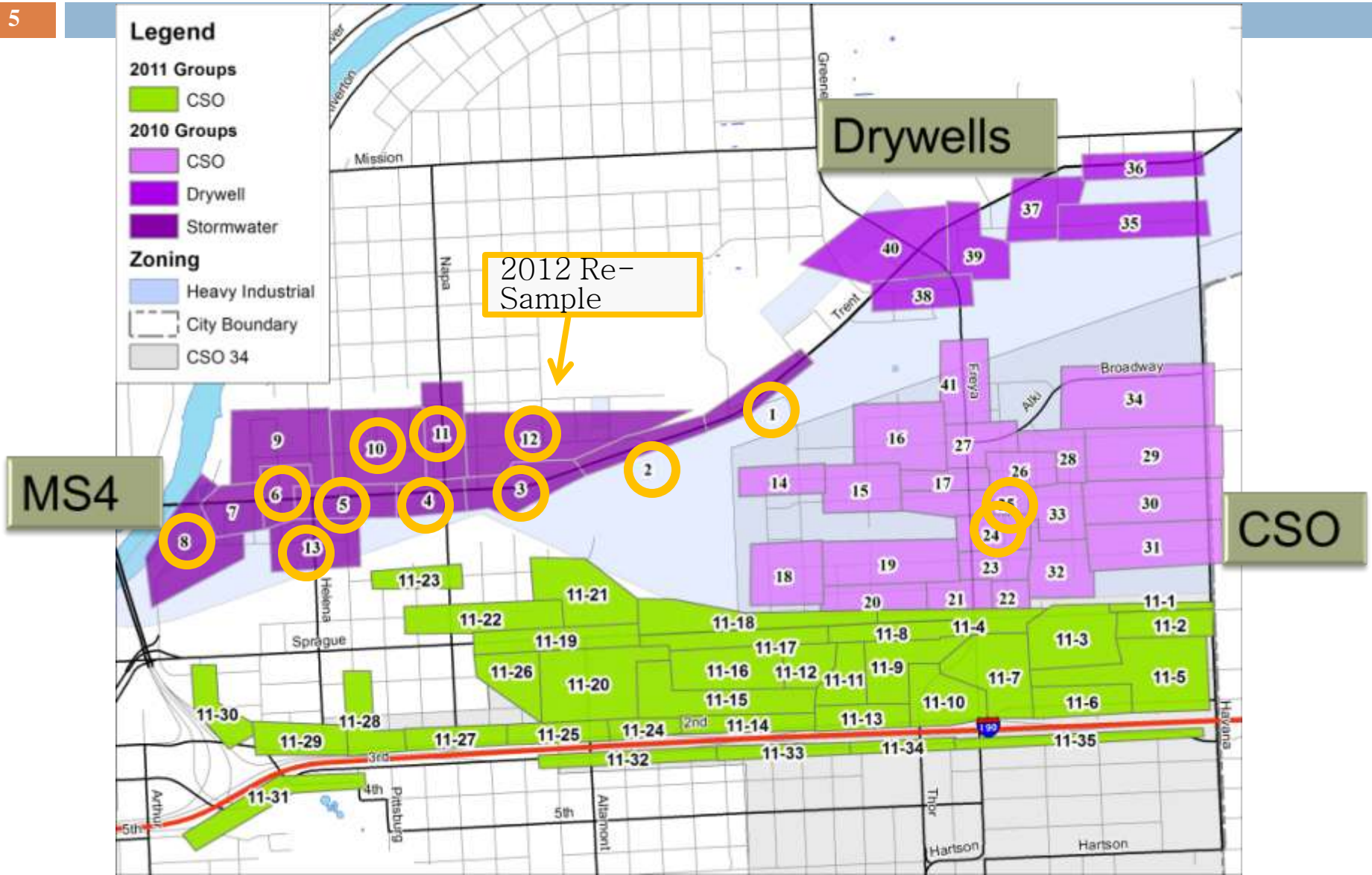
Adaptive Management Plan

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- Reduce PCBs in stormwater and CSO discharges
 - 1) Analyze and interpret existing data
 - 2) Identify likely sources of PCBs.
 - Design and implement remedial actions and BMPs.
 - 3) Adaptive approach – further data collection and remedial action
- 

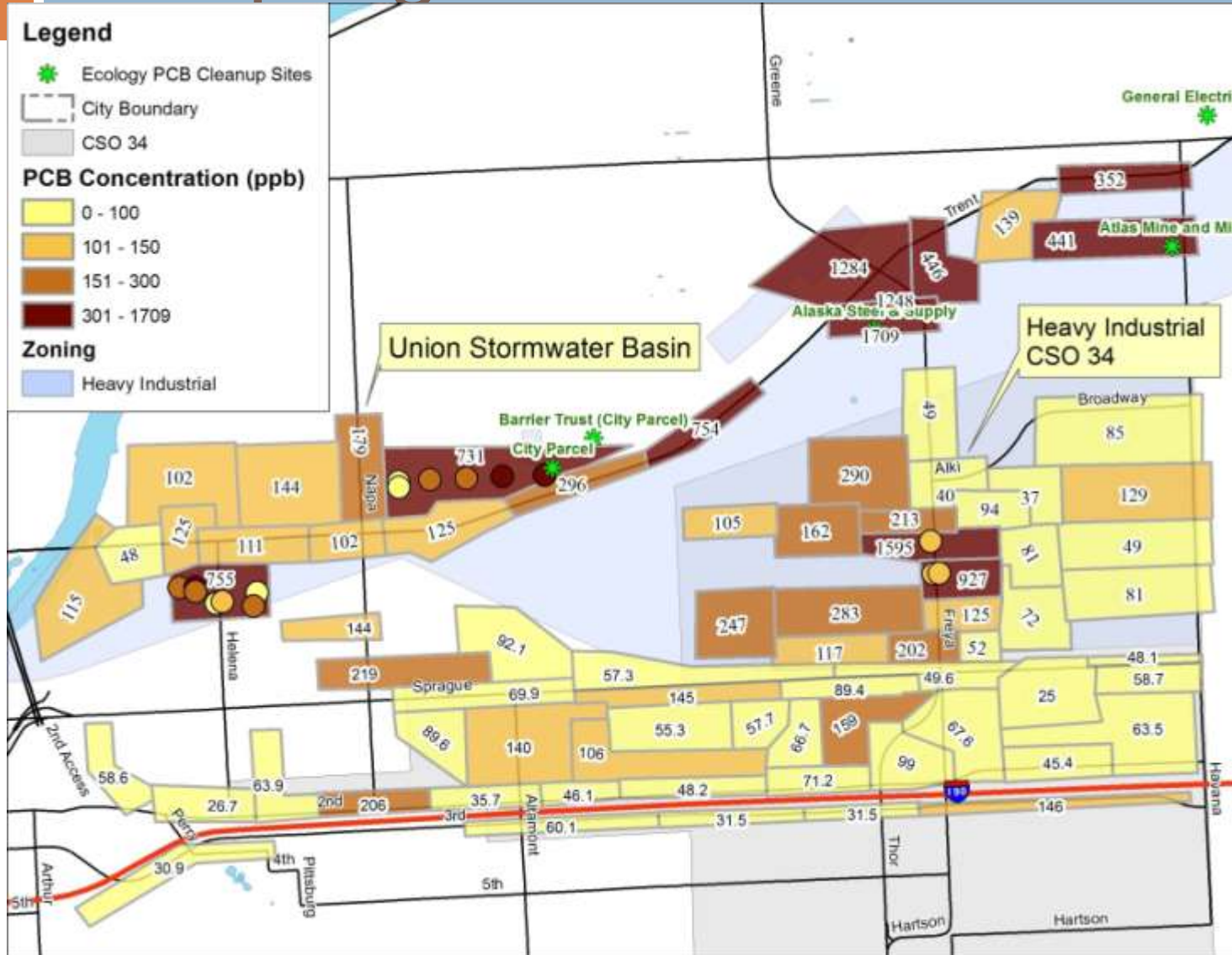
Catch Basin Investigation Areas

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2010 and 2011 Catch Basin Sampling

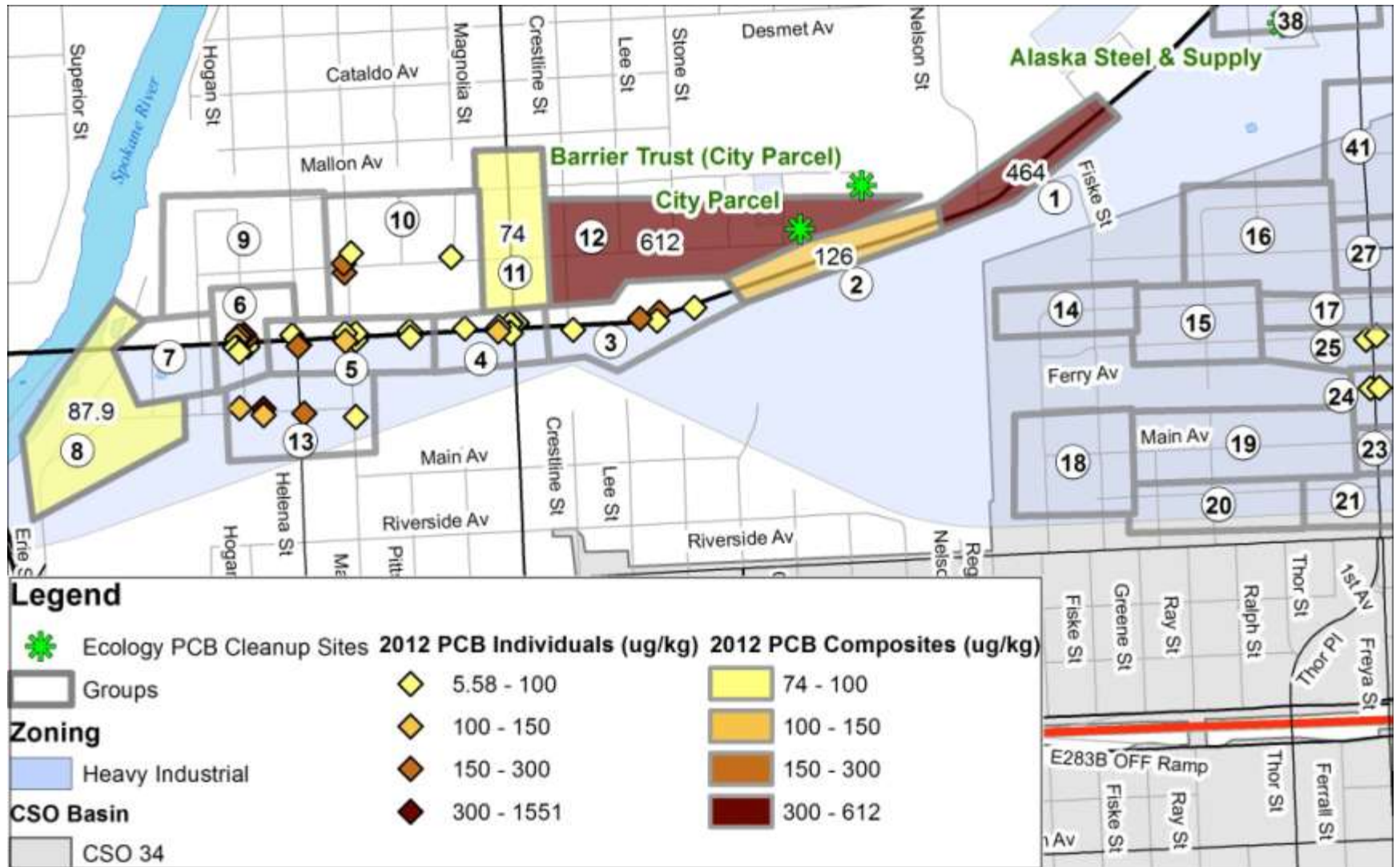
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Highest in Heavy Industrial Zone = Re-sample in 2012

2012 Catch Basin Sampling

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Remedial Maintenance

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- ❑ Review Aroclor analysis results
 - ❑ Residential cleanup standard: 1.0 mg/kg
- ❑ Remove all sediments from catch basins
- ❑ Dump on separate pad, mix with sawdust
- ❑ Haul to lined cell at landfill



Curb Markers

625-7999

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- Install markers at each basin after cleaning



Installation in progress
throughout City on normal
maintenance routes
•Over 7,000 Installed

2010 – 2012 Sampling Recap

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2010 - 2012 Catch Basin Samples

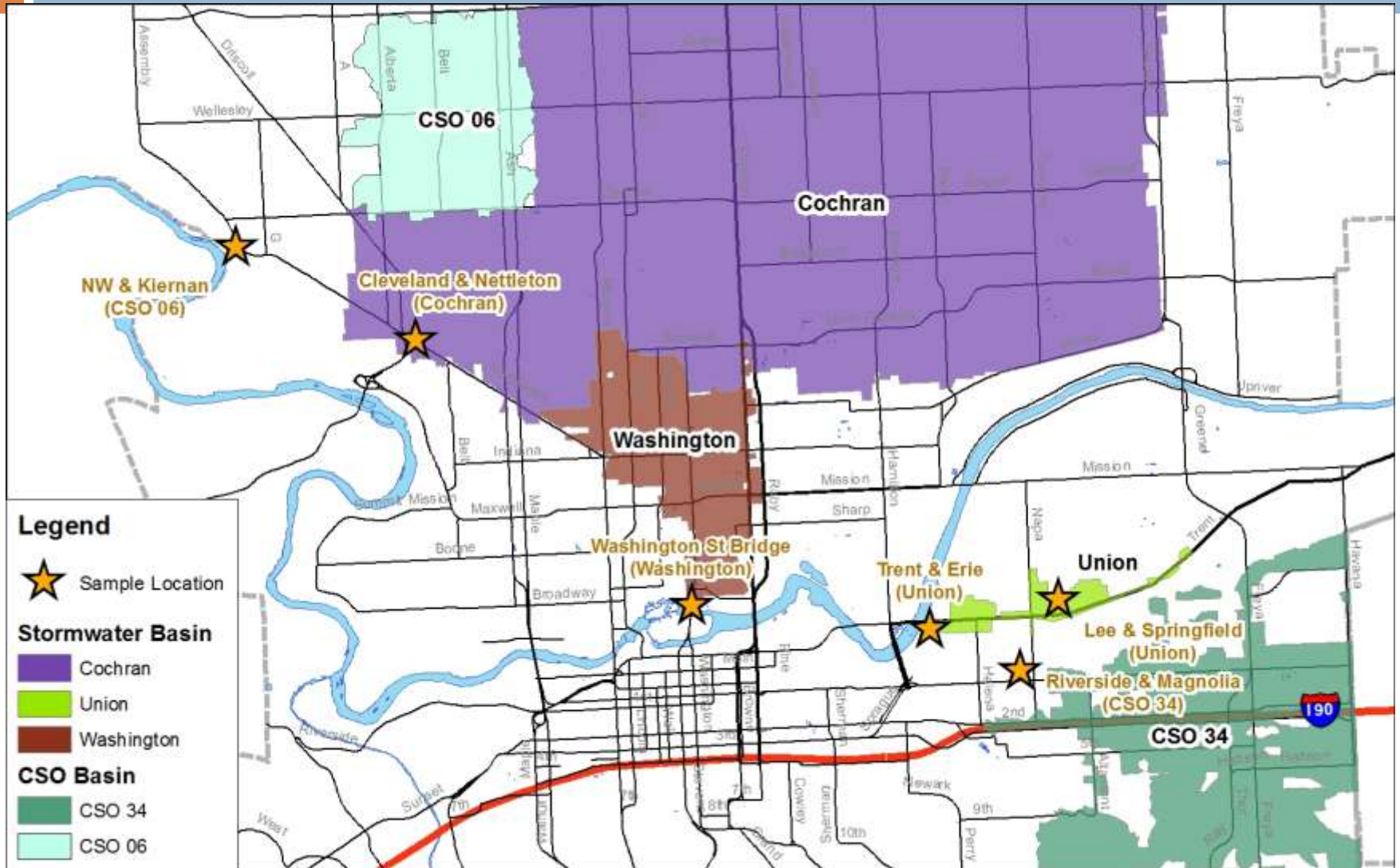
- 765 Catch Basins – broken into 76 Groups + individual basin re-samples
- 590,000 lbs sediments removed
- **32.4 grams** PCBs removed

Individual Samples

- Helped identify contaminated CB near City Parcel
 - Disconnected from MS4
- PCBs still found in CBs after thorough cleaning in 2010 = continual PCB source in area
 - Average ~ 30% reduction in re-sampled CBs
 - Multiple older industrial sources: wind-blown and track-off
- **Ecology re-evaluating City Parcel** site to investigate residual contamination off property

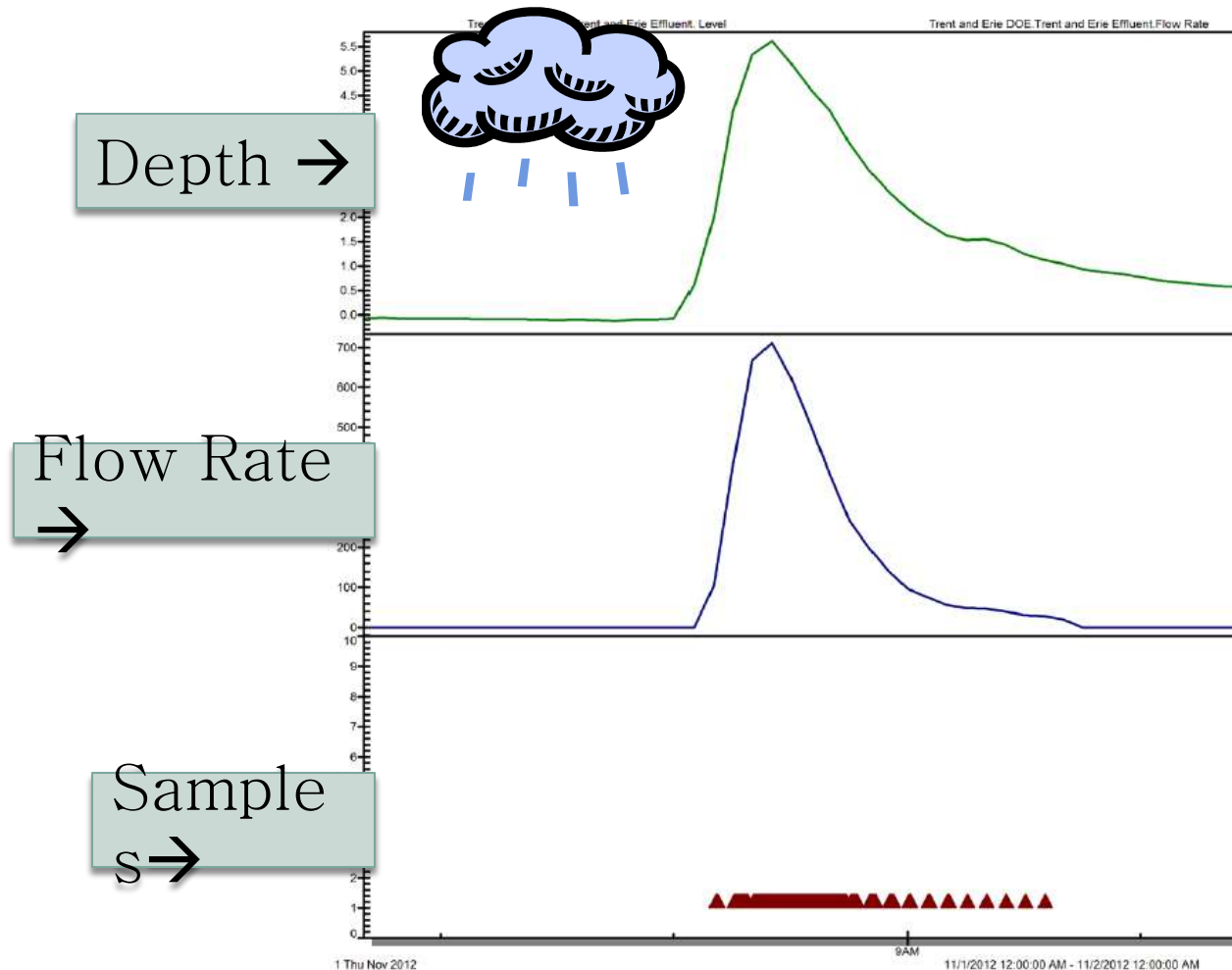
Stormwater Sampling: 2012-2014

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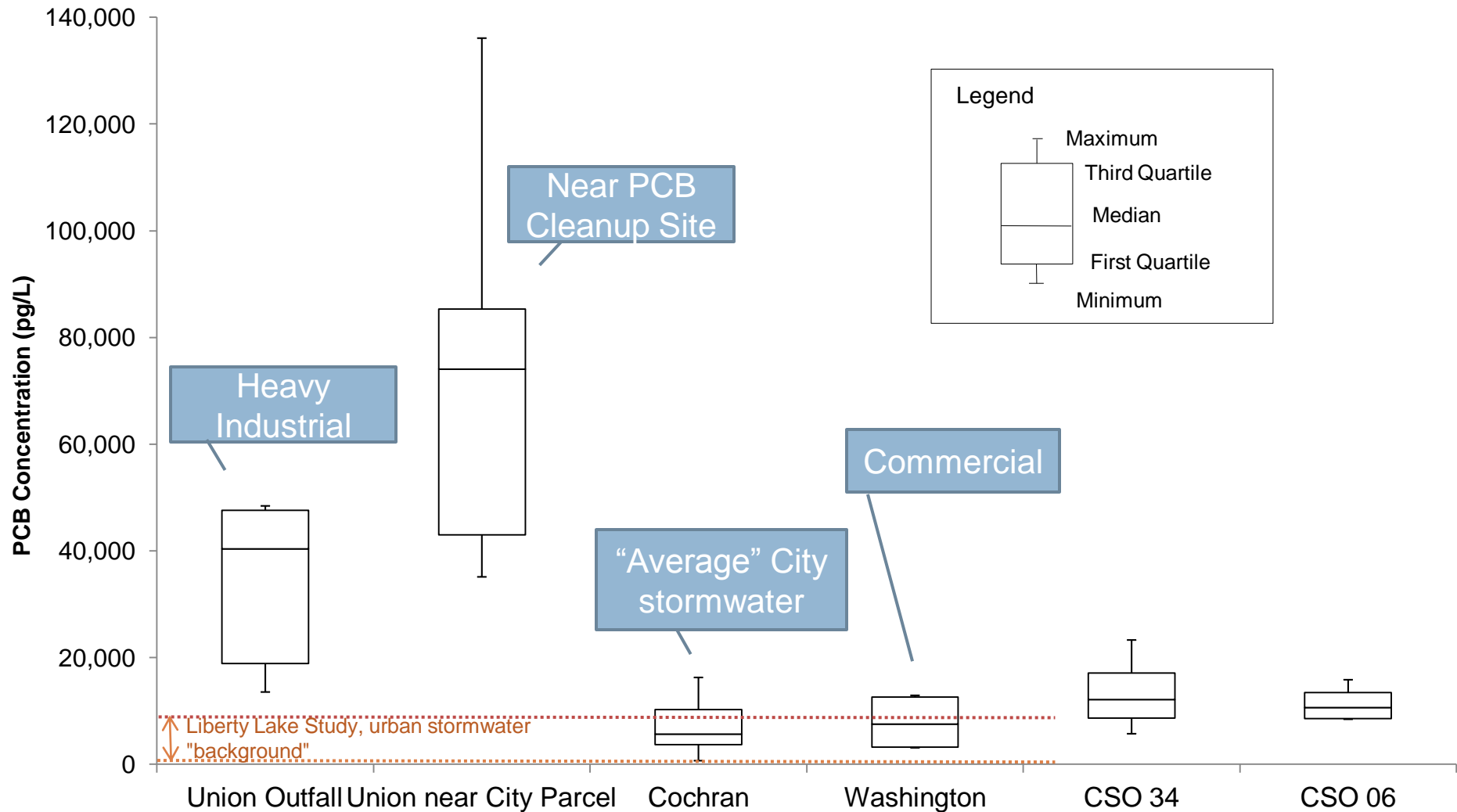
Stormwater Sampling

□ Automatic composite samplers



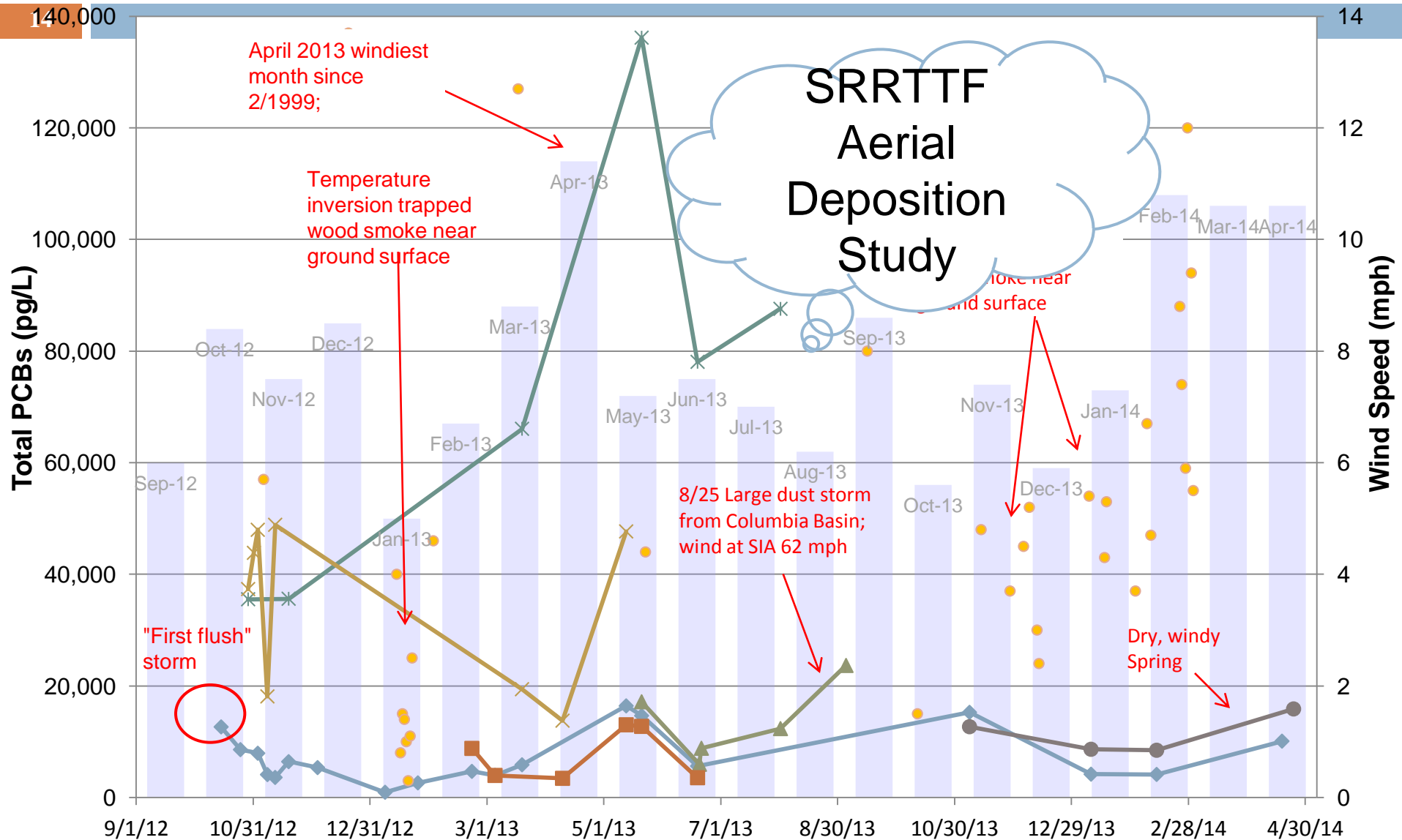
Stormwater Sampling

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Correlation

- Monthly Average Wind Speed
- Cochran
- CSO 34
- Union @ City Parcel
- Washington
- CSO 06
- Union Outfall



Union Basin Disconnection

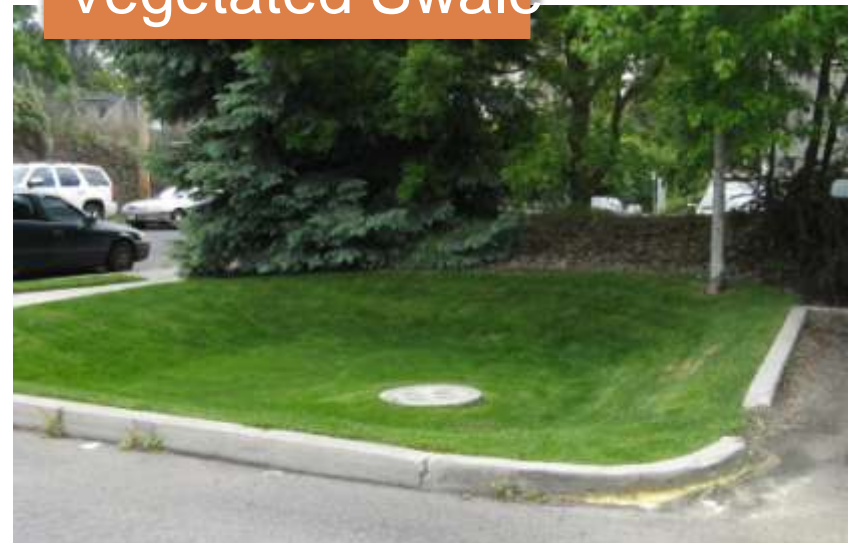
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- PCBs ubiquitous
 - ▣ Sources too numerous to track down individually
- Solution: treat and infiltrate stormwater
 - ▣ San Francisco Estuary Institute BMP Toolbox for reducing PCBs in stormwater

Tree Box Filter



Vegetated Swale



Product Sampling

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- PCBs are still incidentally produced in manufacturing processes. City is sampling products in summer 2014:
 - Road paint: Yellow and white
 - Liquid and dried
 - Thermoplastic tape
 - Hydrant Paint (Aluminum)
 - Utility locate paint (green)
 - Firefighting foam
 - Deicer
 - Vehicle wash soap
 - Pesticide/herbicide
 - Motor oil (new and used)
 - Diesel and gasoline
 - Dust suppressant
 - Antifreeze
 - Lubricant
 - Asphalt sealer
 - Crack sealer
 - Asphalt release agent
 - Hydroseed
 - PVC pipe
 - CIPP liner and Shortliner

Product Sampling

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□ Backup Samples

- DEF
- Brake Fluid
- Hydraulic Fluid
- Motor oil (other brands)
- Utility locate paint (other)
- Windshield fluid
- Vehicle wax

□ Additional wastewater-related samples

- Hand soap
- Laundry soap
- Dish soap
- Shampoo
- Toothpaste



Decant Facility



Ordinance (SMC 7.06.172)

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- City shall provide preference for products and packaging that do not contain PCBs
- No City department may knowingly purchase products containing PCBs above the PQL unless it is not cost-effective (increasing the purchase price more than 25%) or feasible to do so.
 - PQL = practical quantification limit, the lowest concentration that can be reliably measured using EPA 1668
- Testing results may be requested from suppliers
- Ordinance effective 7/16/2014

Conclusions

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- Individual sources difficult to identify
- Widespread, diffuse source of PCBs
 - ▣ Legacy sources from historic industrial activity
 - ▣ PCBs found in everyday items (motor oil, hydraulic fluid, etc.)
- Designing treatment and infiltration in Union basin (disconnect MS4 from river)
- Integrated Clean Water Plan
 - Treat and infiltrate Cochran basin stormwater (and others)
 - CSO controls installed by 2017
 - NLT operating year-round