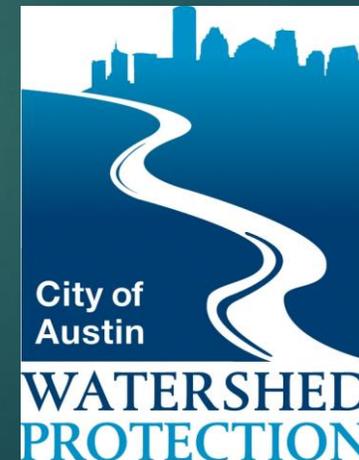


Spatially Displaying Water Quality Compliance Pollution Data

Thain Maurer

Environmental Compliance Supervisor

Watershed Protection Department

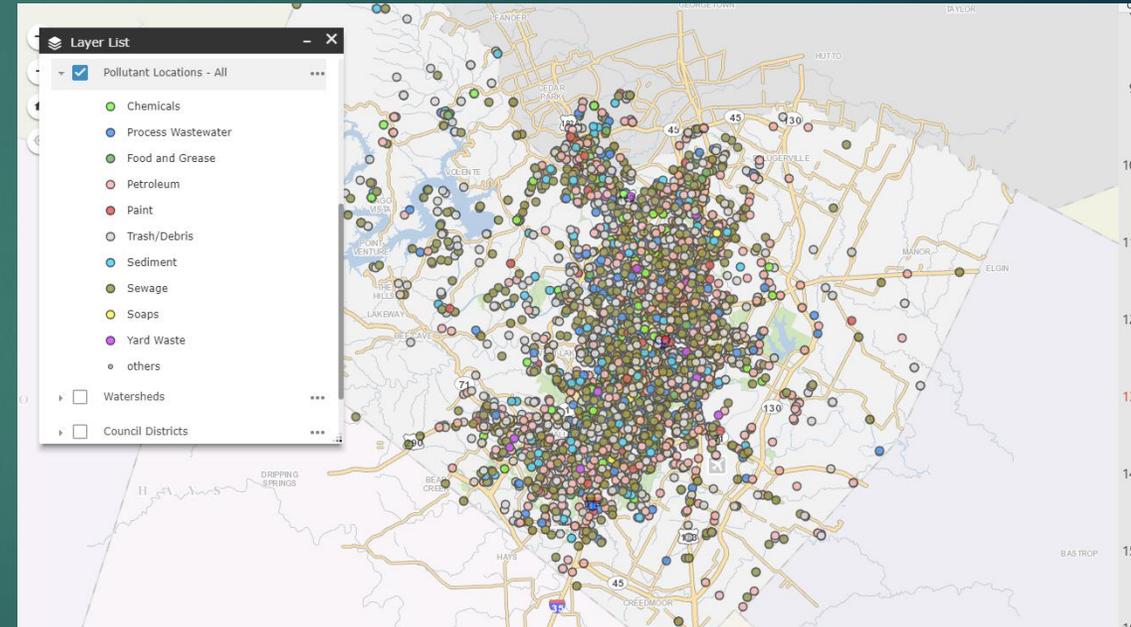


“Pollutant Locations” GIS Viewer

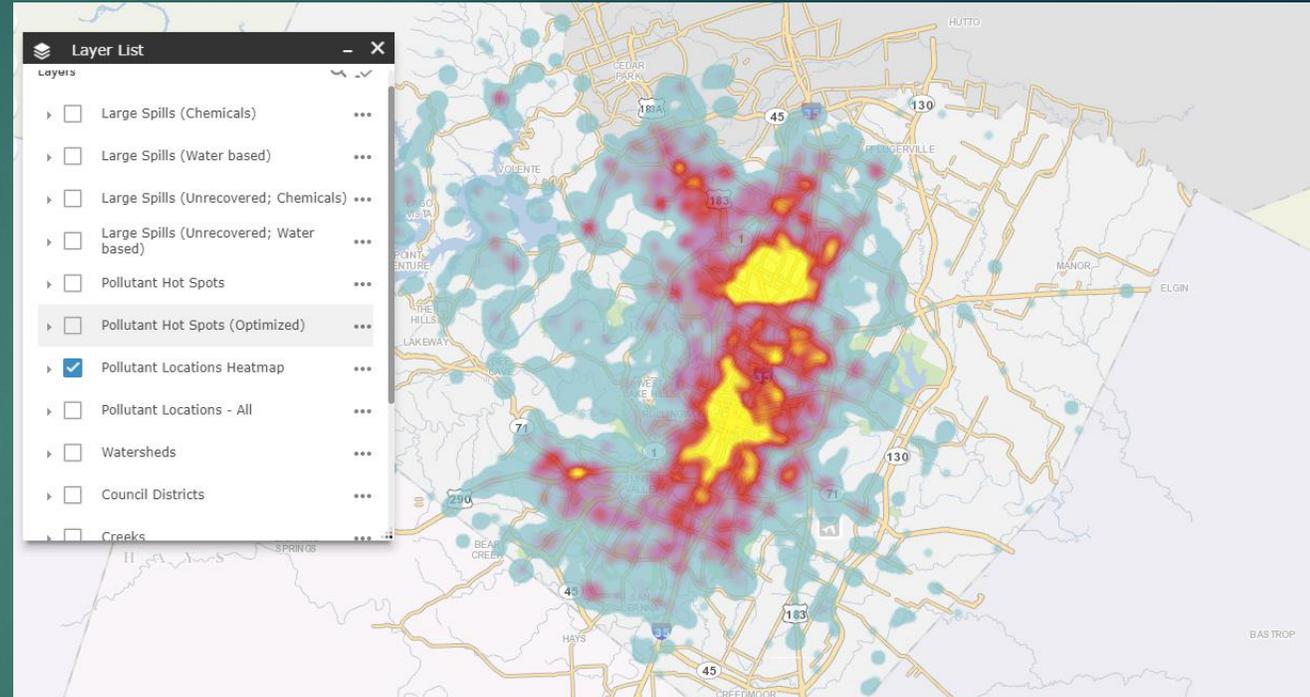
- ▶ Why am I presenting here today?
- ▶ Why did we create this tool?
- ▶ What does this new tool do?
- ▶ Context and cautions.
- ▶ Some ideas for future applications.

Why am I Presenting Here Today?

- ▶ WQC is starting to use this viewer for reports
- ▶ Intro on interpreting data
- ▶ Ideas for other applications

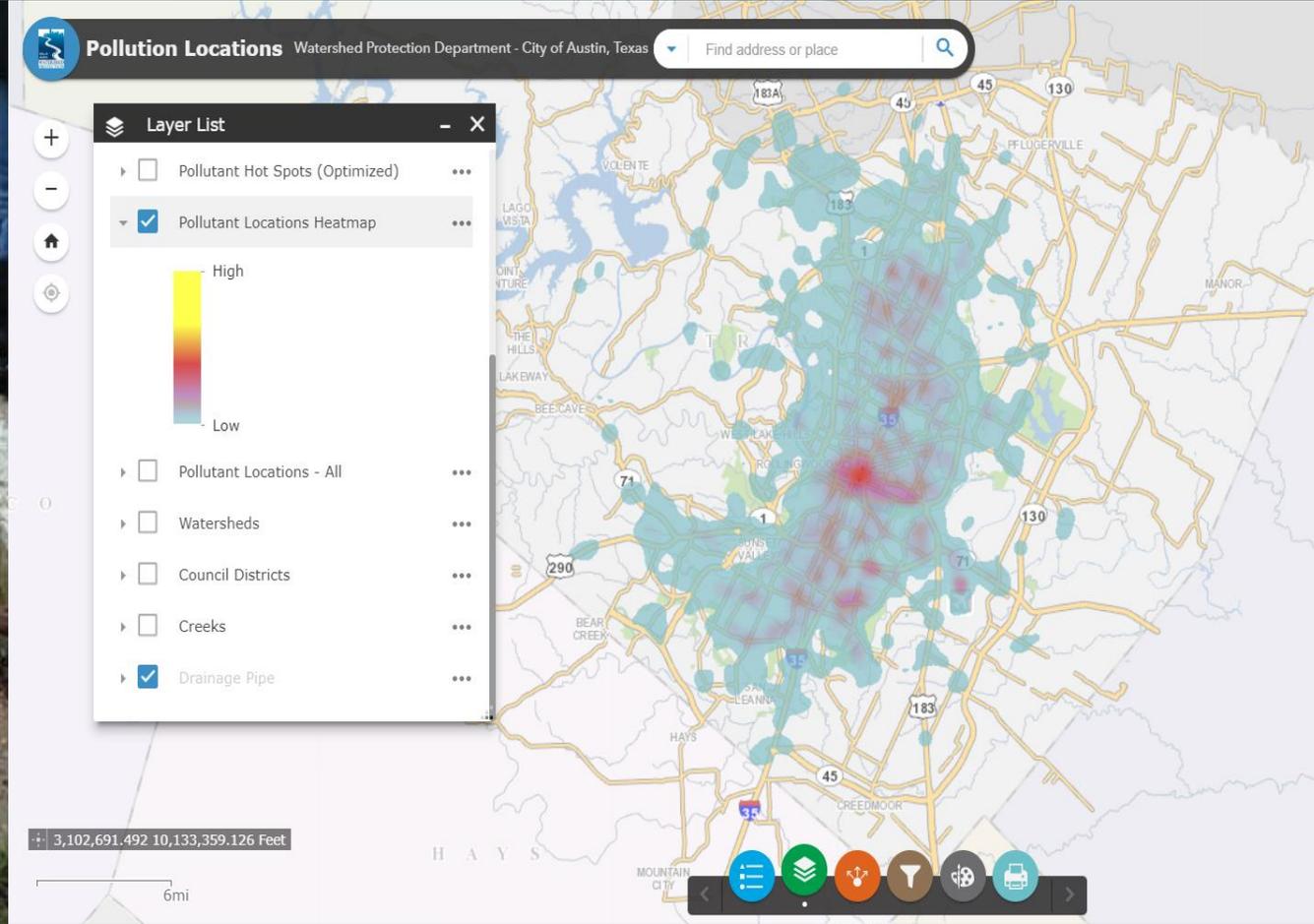


Why Create This Viewer? Educational Outreach



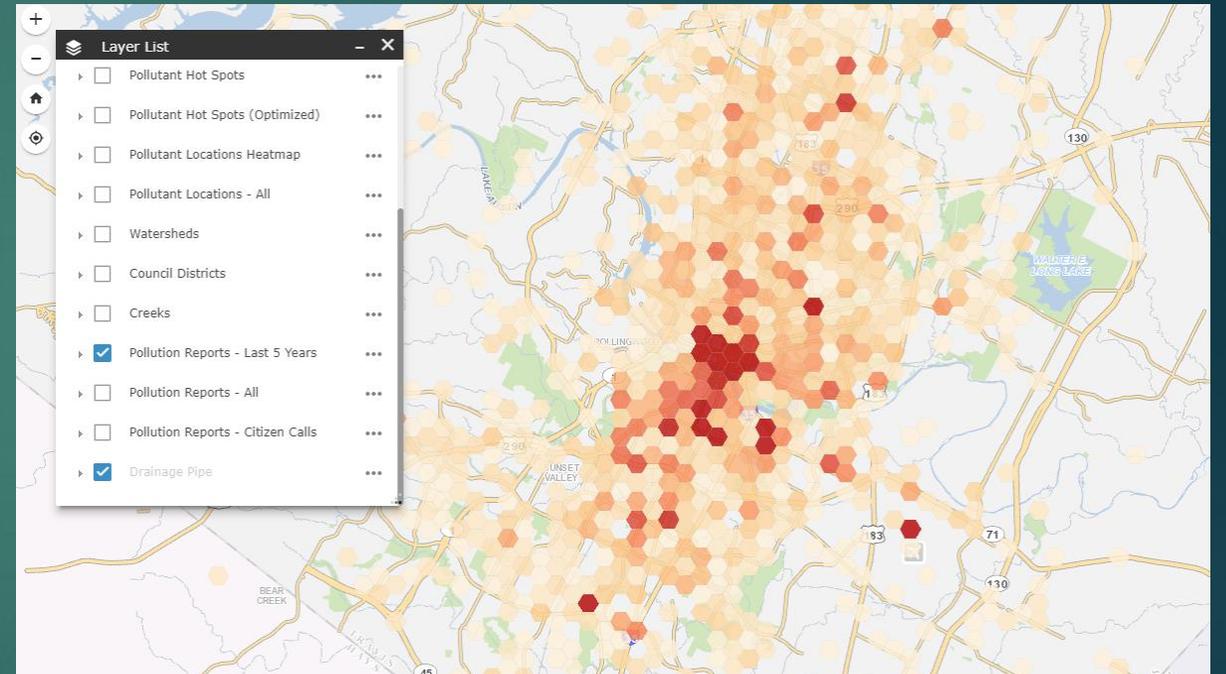
Why Create This Viewer?

Problem Areas by Pollutant Category



Why Create This Viewer?

Can We Correlate EII and Spills?



What Does This Viewer Show?

- ▶ <https://arcg.is/e0Pbe>
- ▶ Spatially displays WQC pollutant data
- ▶ Has various statistical analyses of pollution data
- ▶ Allows sorting by pollutant group and date range
- ▶ Can display large spills and unrecovered volumes of pollutants

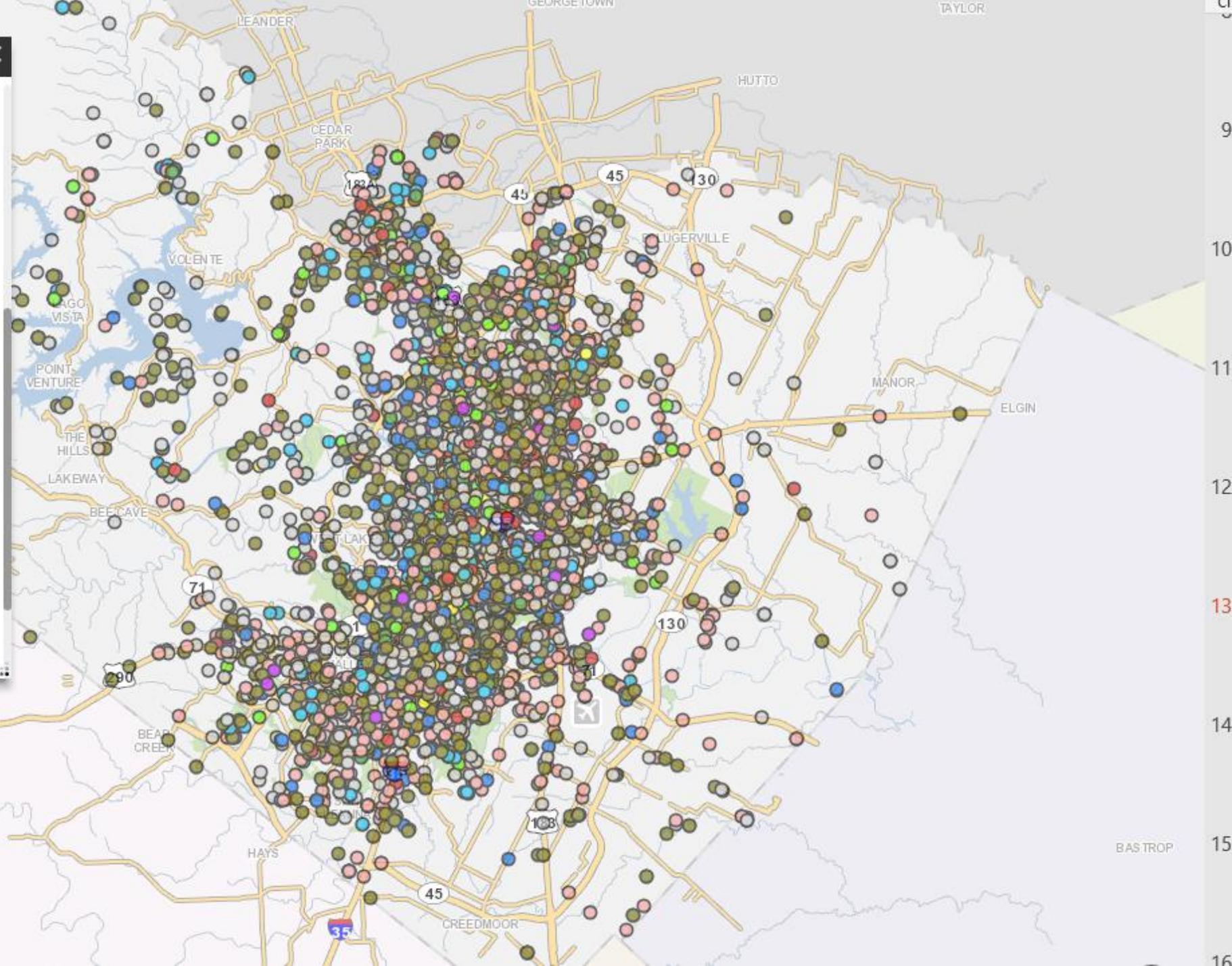
Layer List

Pollutant Locations - All

- Chemicals
- Process Wastewater
- Food and Grease
- Petroleum
- Paint
- Trash/Debris
- Sediment
- Sewage
- Soaps
- Yard Waste
- others

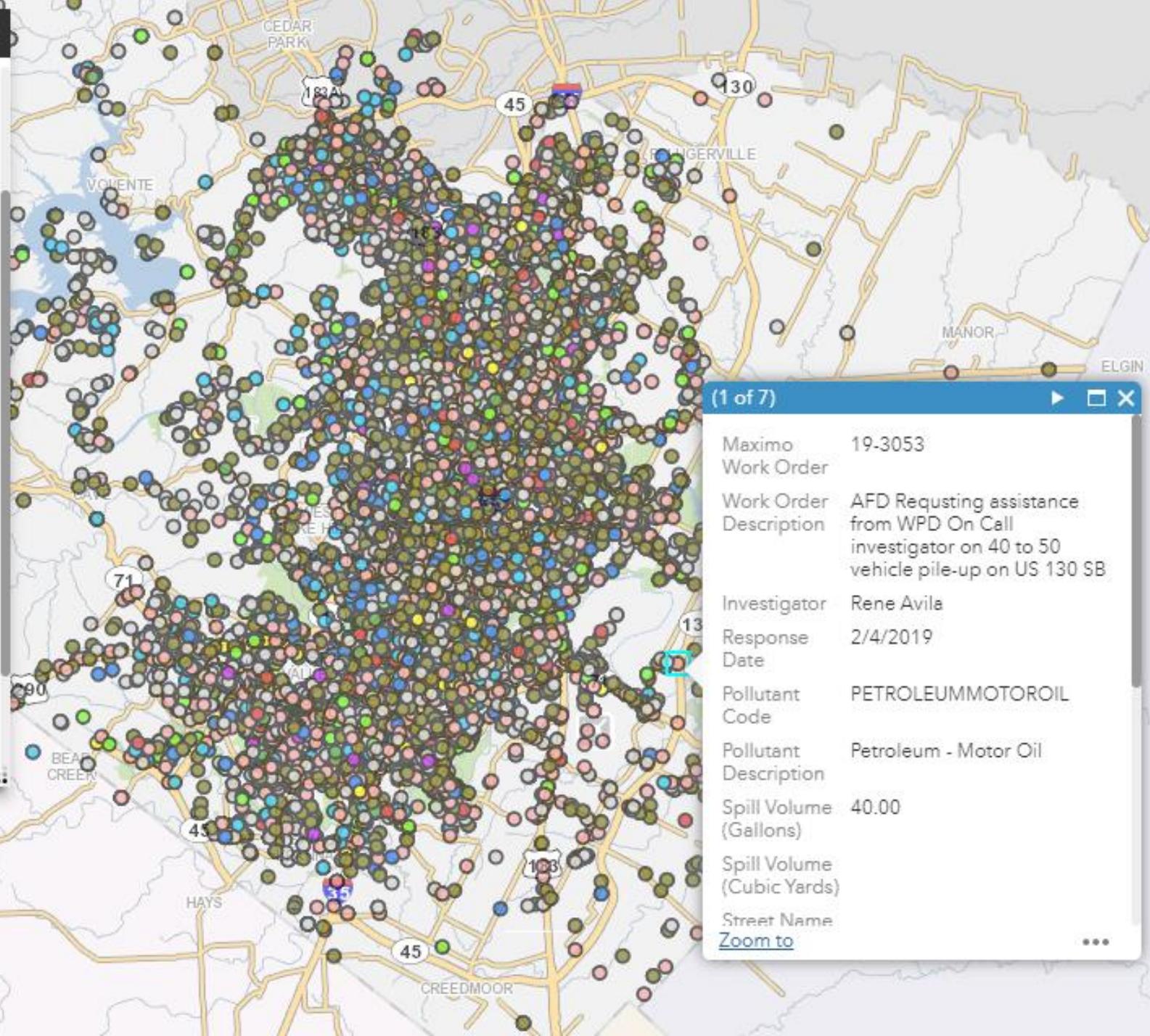
Watersheds

Council Districts



Layer List

- Large Spills (Unrecovered; Chemicals) ...
- Large Spills (Unrecovered; Water based) ...
- Pollutant Hot Spots ...
- Pollutant Hot Spots (Optimized) ...
- Pollutant Locations Heatmap ...
- Pollutant Locations - All ...
- Watersheds ...
- Council Districts ...
- Creeks ...
- Pollution Reports - Last 5 Years ...
- Pollution Reports - All ...



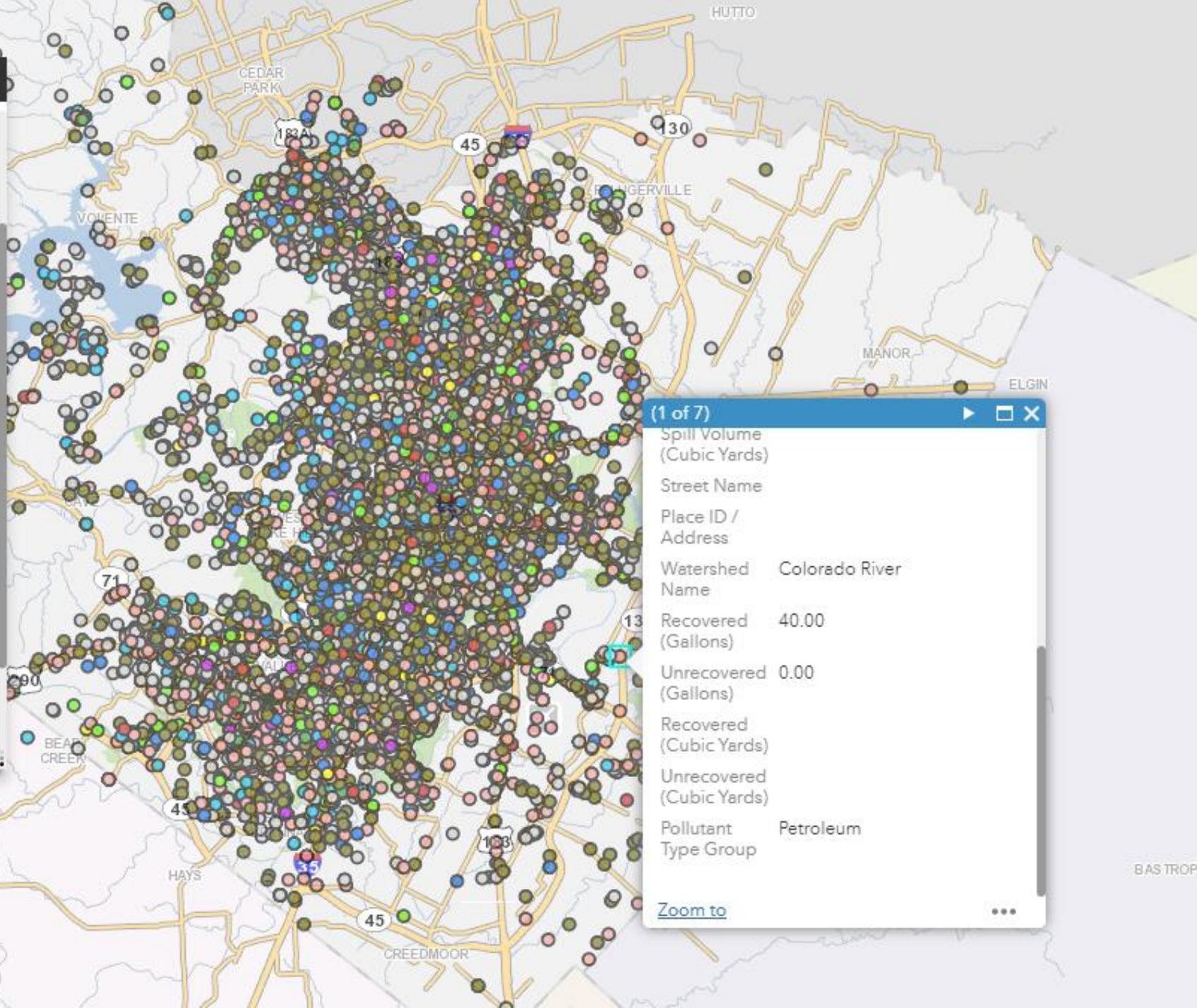
(1 of 7)

Maximo Work Order	19-3053
Work Order Description	AFD Requesting assistance from WPD On Call investigator on 40 to 50 vehicle pile-up on US 130 SB
Investigator	Rene Avila
Response Date	2/4/2019
Pollutant Code	PETROLEUMMOTOROIL
Pollutant Description	Petroleum - Motor Oil
Spill Volume (Gallons)	40.00
Spill Volume (Cubic Yards)	
Street Name	
Zoom to	



Layer List

- Large Spills (Unrecovered; Chemicals) ...
- Large Spills (Unrecovered; Water based) ...
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- Pollutant Hot Spots (Optimized) ...
- Pollutant Locations Heatmap ...
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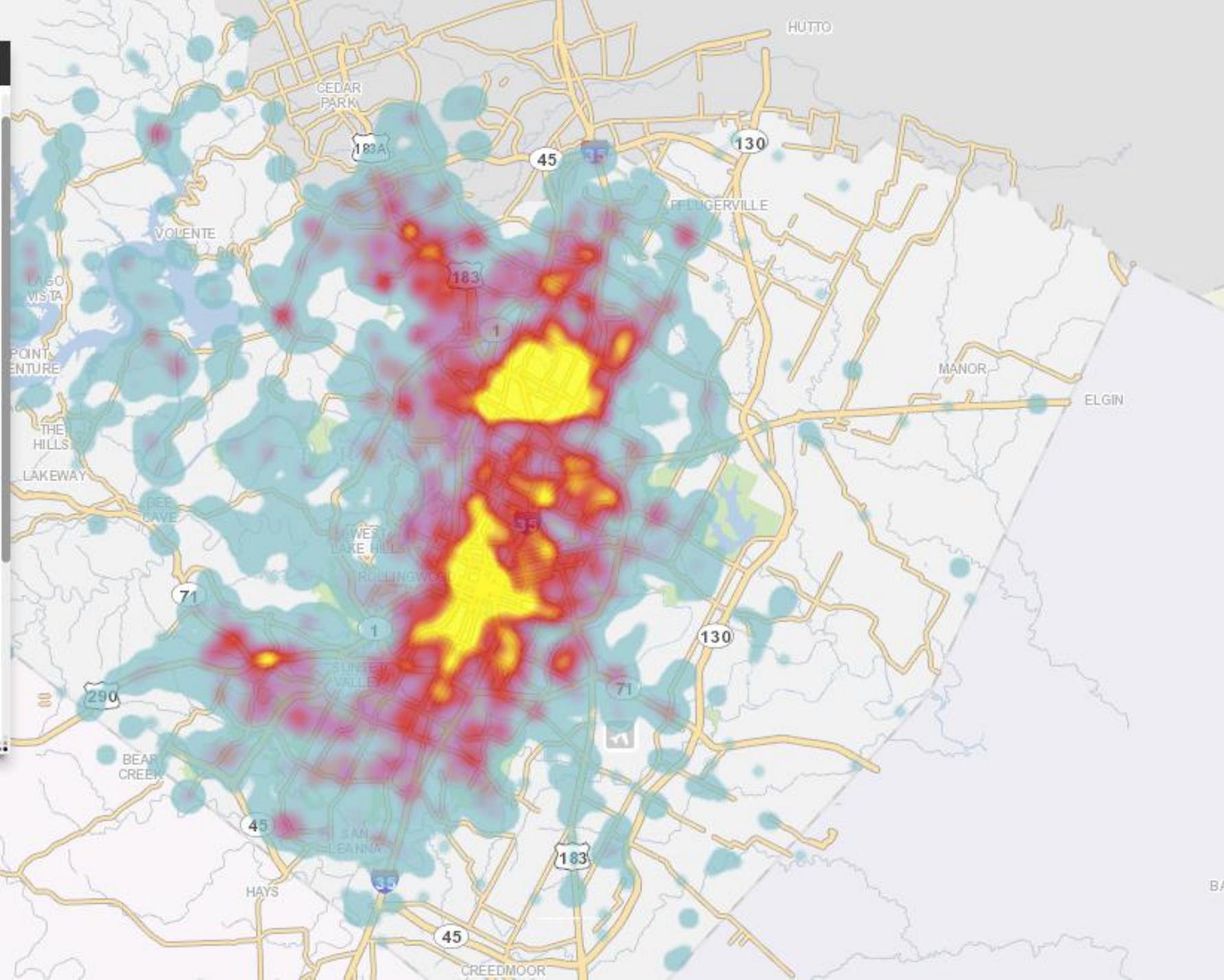
(1 of 7)

Spill Volume (Cubic Yards)	
Street Name	
Place ID / Address	
Watershed Name	Colorado River
Recovered (Gallons)	40.00
Unrecovered (Gallons)	0.00
Recovered (Cubic Yards)	
Unrecovered (Cubic Yards)	
Pollutant Type Group	Petroleum
Zoom to	...

Layer List

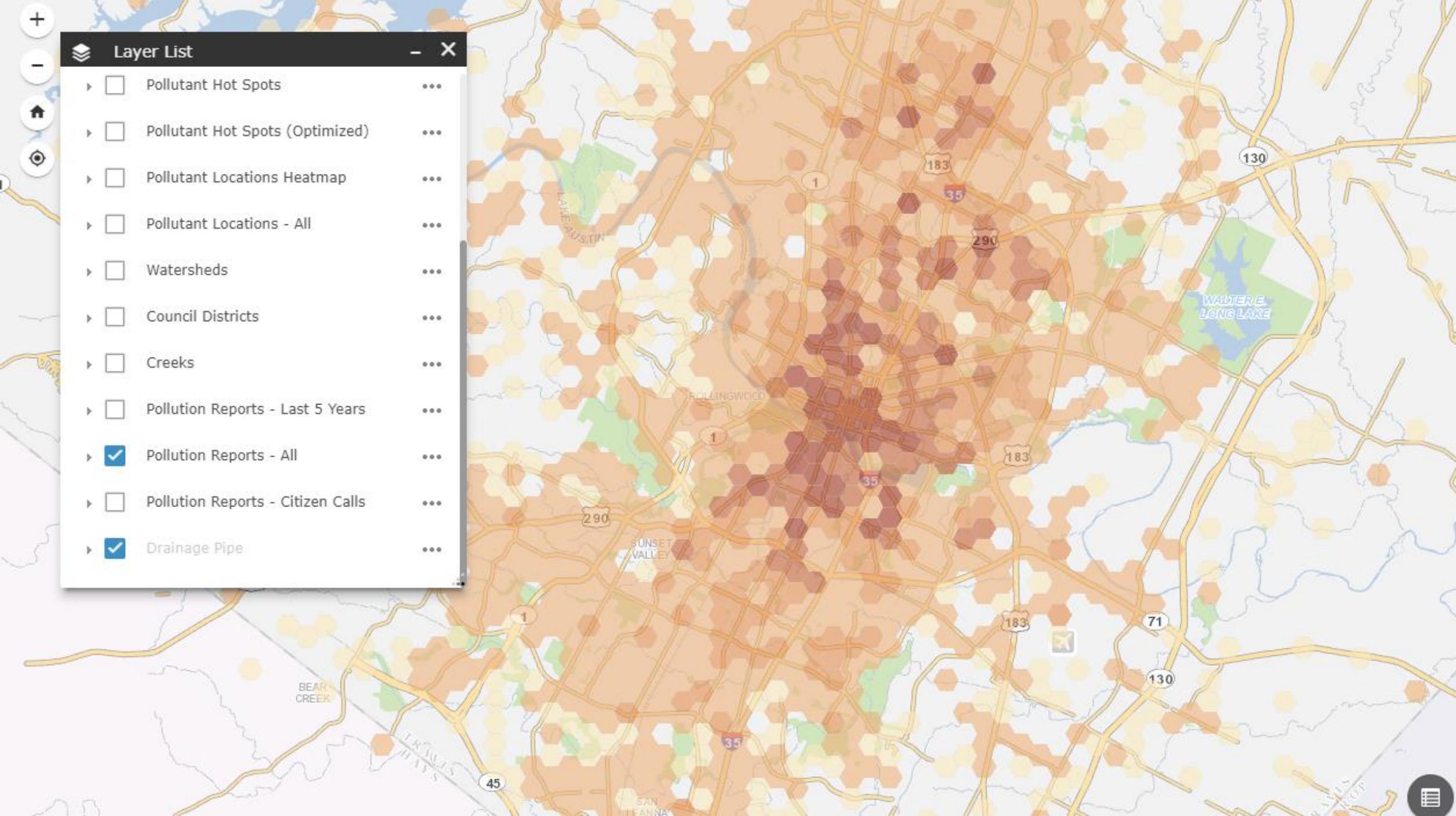
Layers

- Large Spills (Chemicals) ...
- Large Spills (Water based) ...
- Large Spills (Unrecovered; Chemicals) ...
- Large Spills (Unrecovered; Water based) ...
- Pollutant Hot Spots ...
- Pollutant Hot Spots (Optimized) ...
- Pollutant Locations Heatmap ...
- Pollutant Locations - All ...
- Watersheds ...
- Council Districts ...
- Creeks ...



Layer List - X

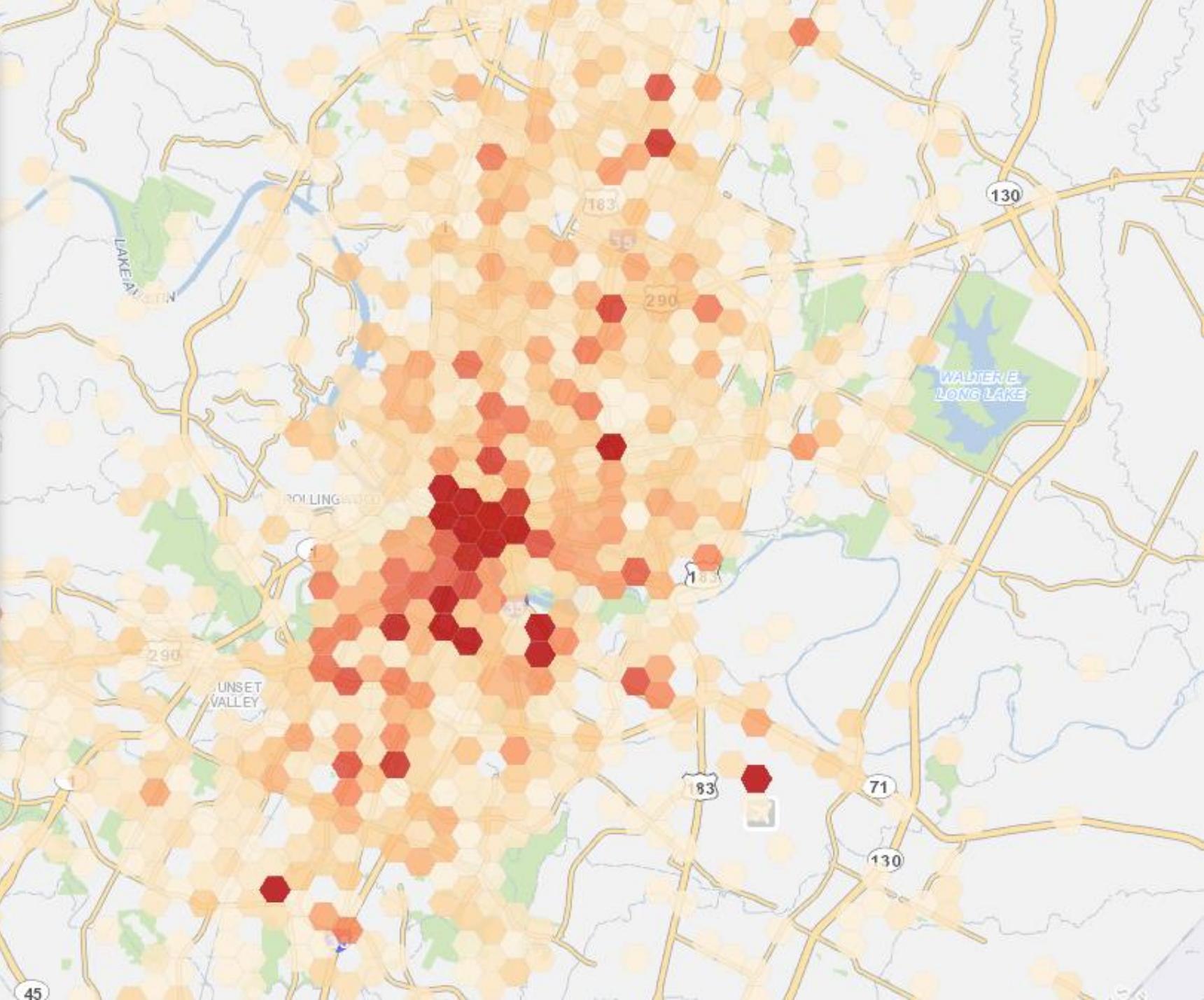
- Pollutant Hot Spots ...
- Pollutant Hot Spots (Optimized) ...
- Pollutant Locations Heatmap ...
- Pollutant Locations - All ...
- Watersheds ...
- Council Districts ...
- Creeks ...
- Pollution Reports - Last 5 Years ...
- Pollution Reports - All ...
- Pollution Reports - Citizen Calls ...
- Drainage Pipe ...





Layer List

- Pollutant Hot Spots ...
- Pollutant Hot Spots (Optimized) ...
- Pollutant Locations Heatmap ...
- Pollutant Locations - All ...
- Watersheds ...
- Council Districts ...
- Creeks ...
- Pollution Reports - Last 5 Years ...
- Pollution Reports - All ...
- Pollution Reports - Citizen Calls ...
- Drainage Pipe ...



Context and Cautions

- ▶ No toxicity information
- ▶ Heat map/Hotspot map are based on occurrences, not volumes
- ▶ Some data and trends are more easily seen in non-spatial analyses
- ▶ Context matters, especially for volumes

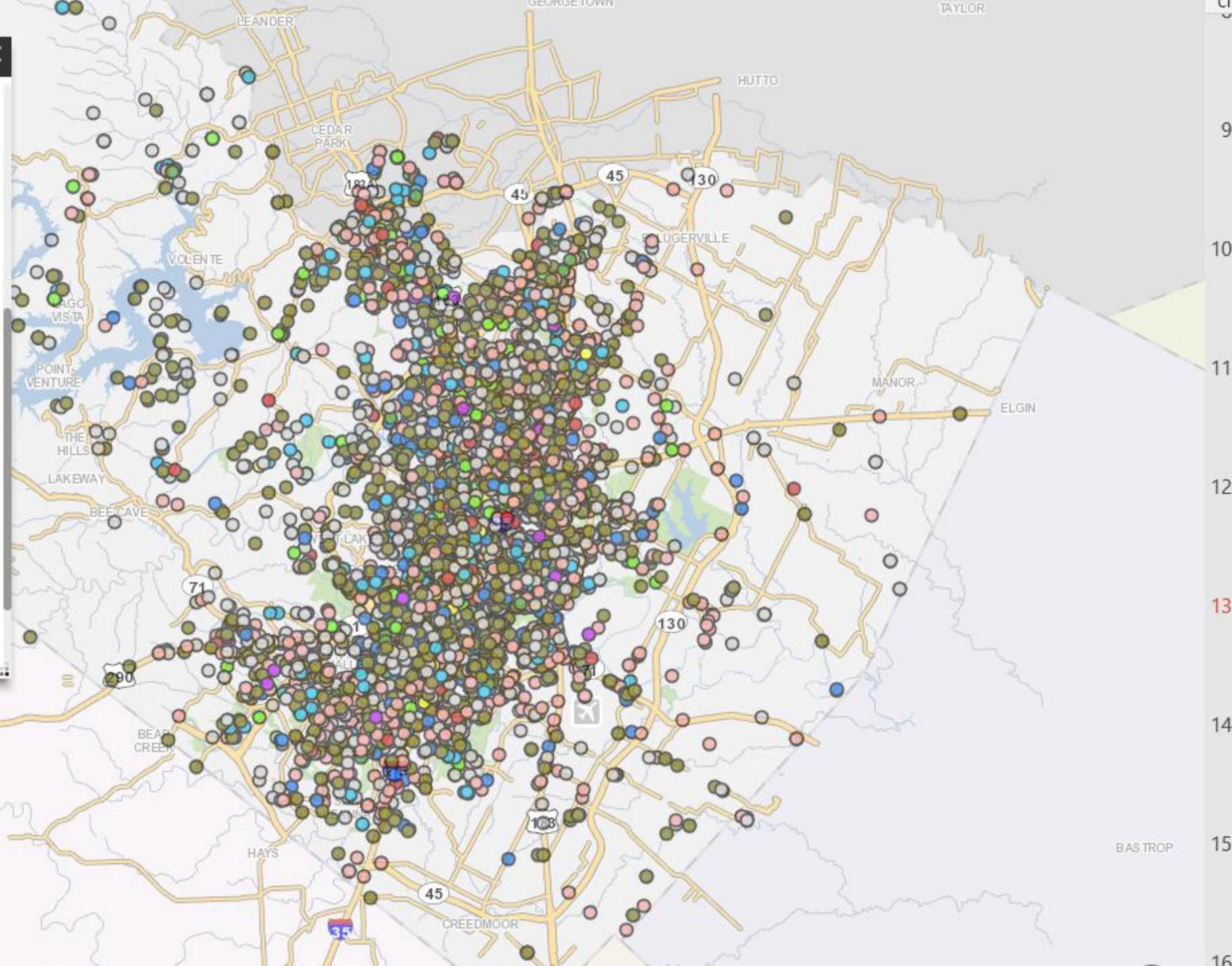
Layer List

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- Soaps
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Watersheds

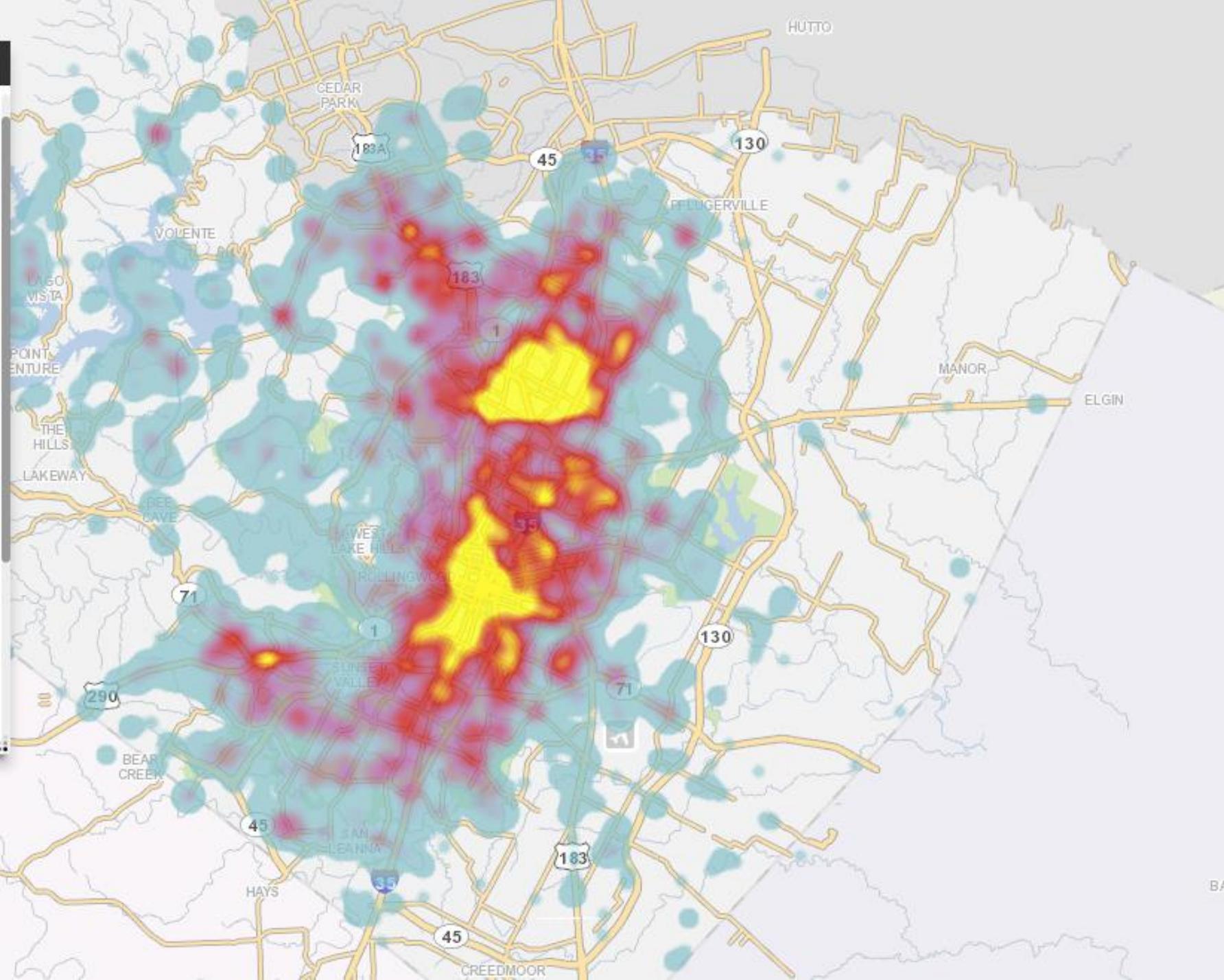
Council Districts



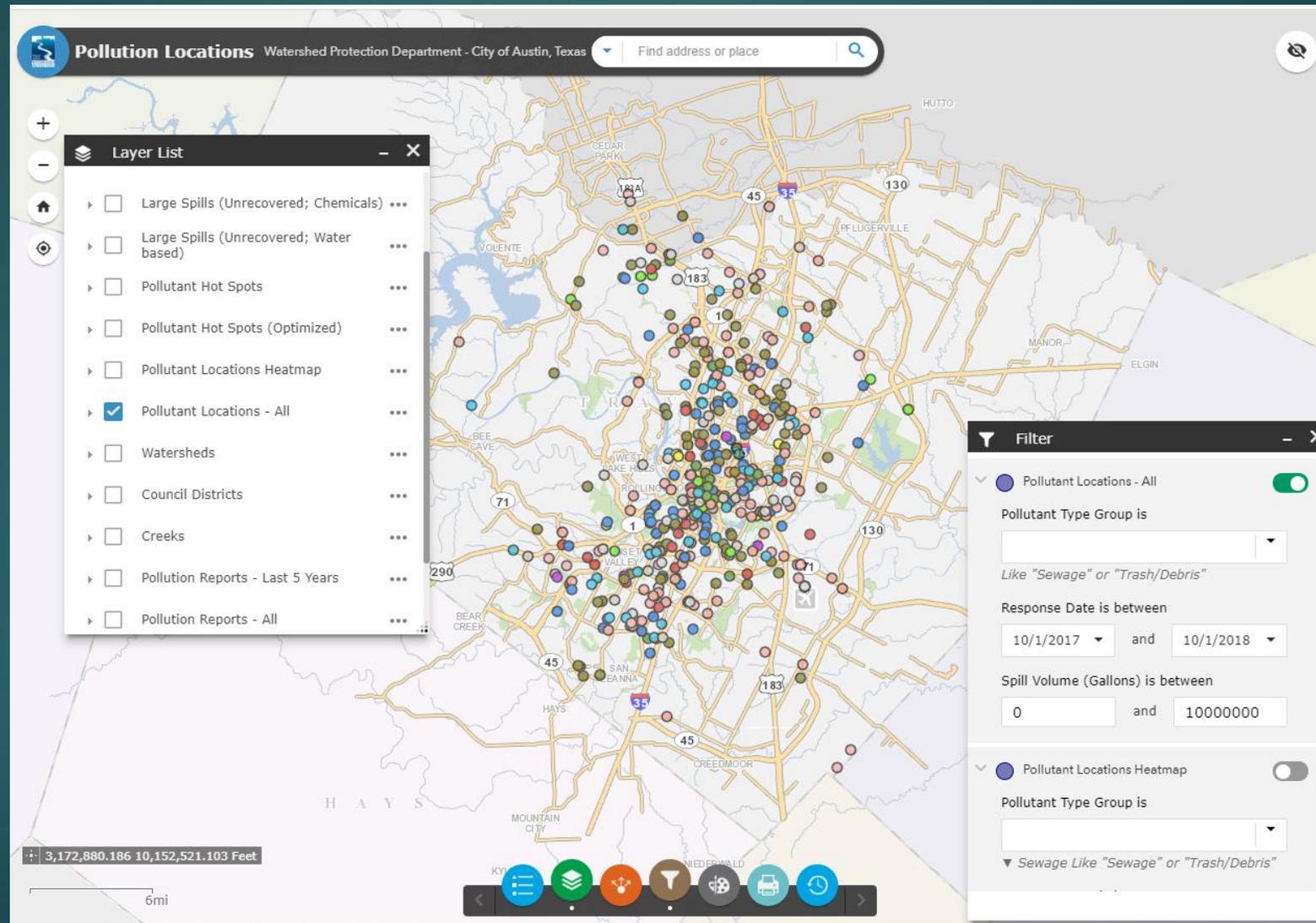
Layer List

Layers

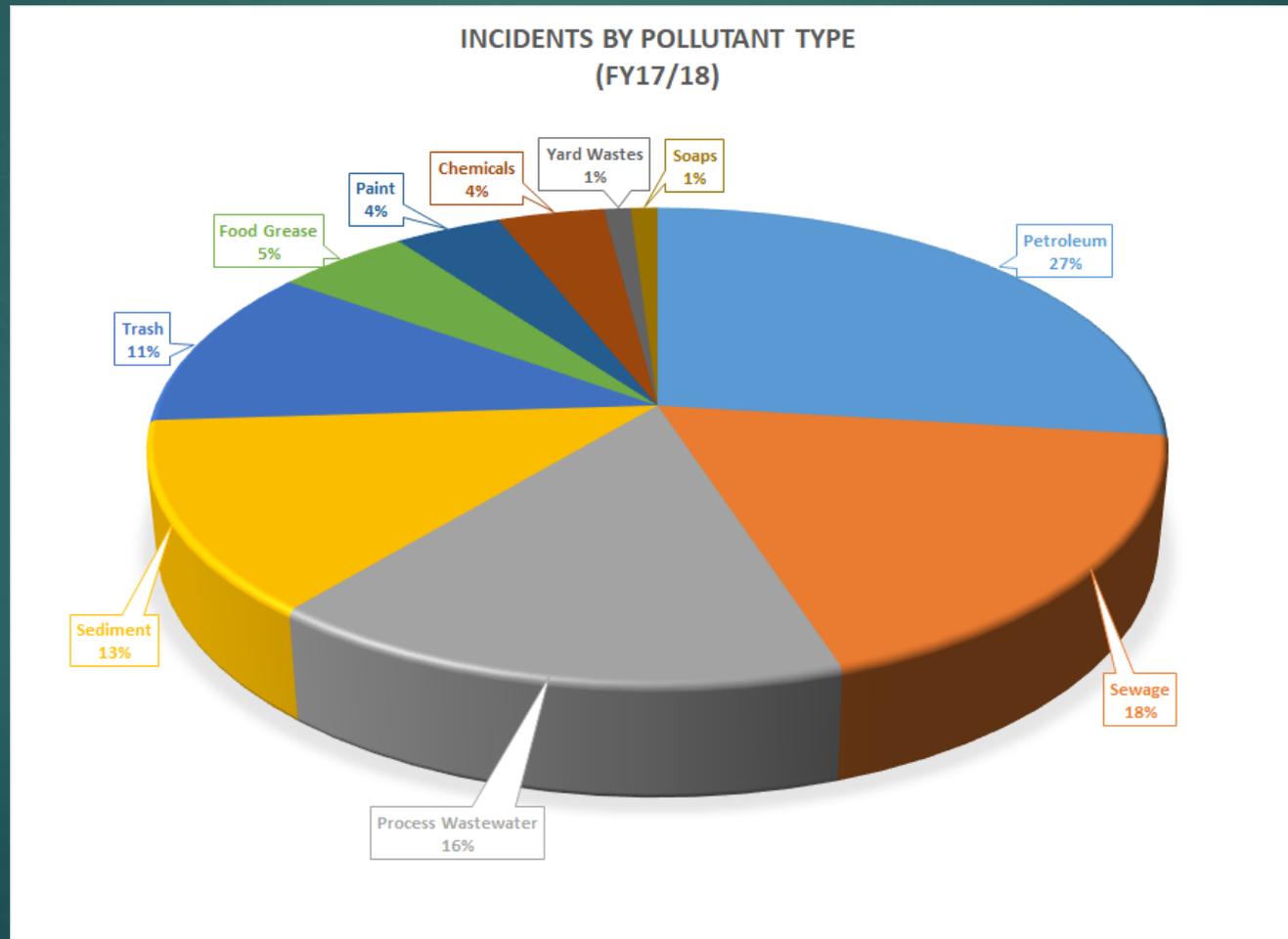
- Large Spills (Chemicals) ...
- Large Spills (Water based) ...
- Large Spills (Unrecovered; Chemicals) ...
- Large Spills (Unrecovered; Water based) ...
- Pollutant Hot Spots ...
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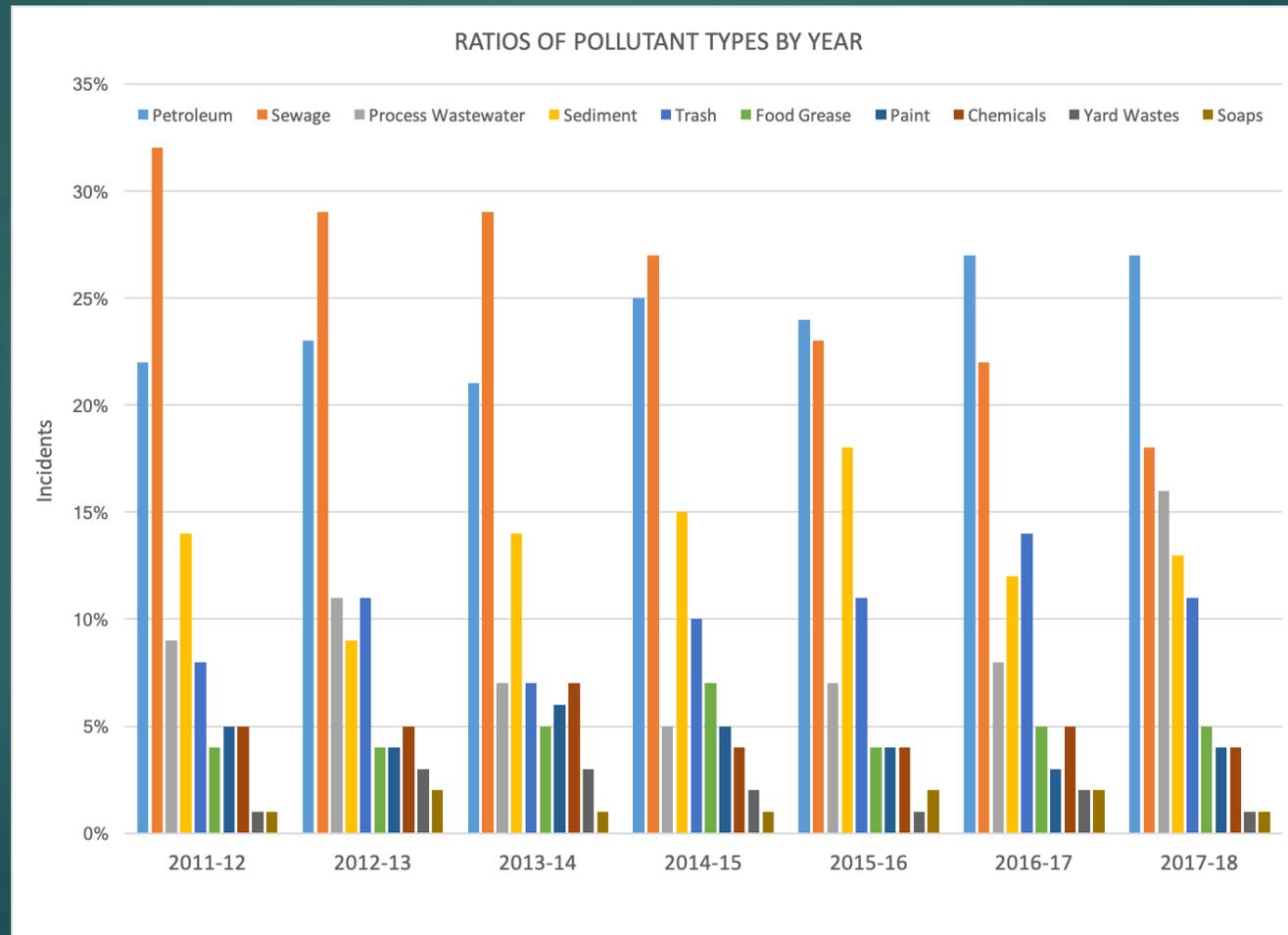
Spatial vs Non-Spatial



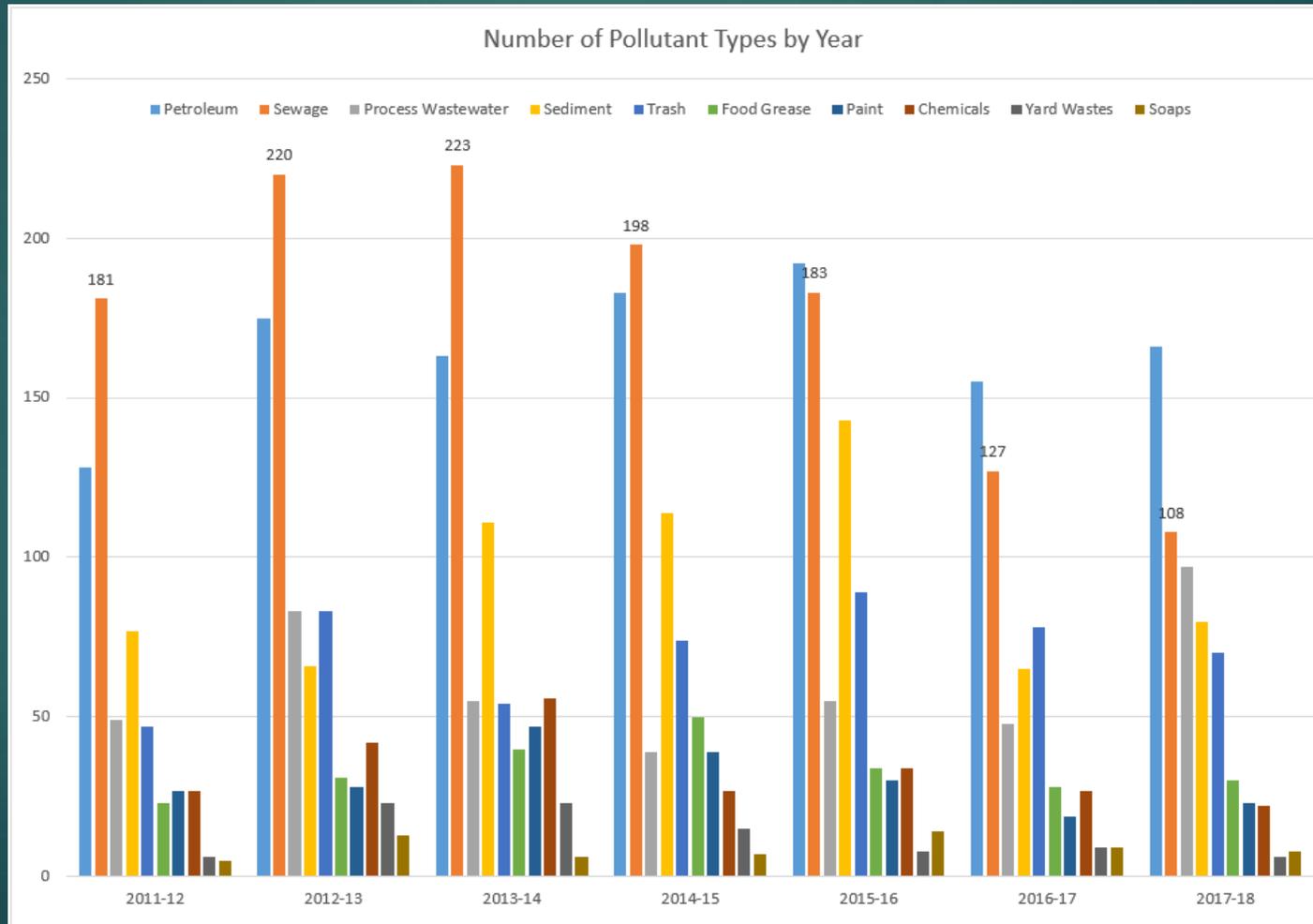
Spatial vs Non-Spatial



Spatial vs Non-Spatial



Spatial vs Non-Spatial



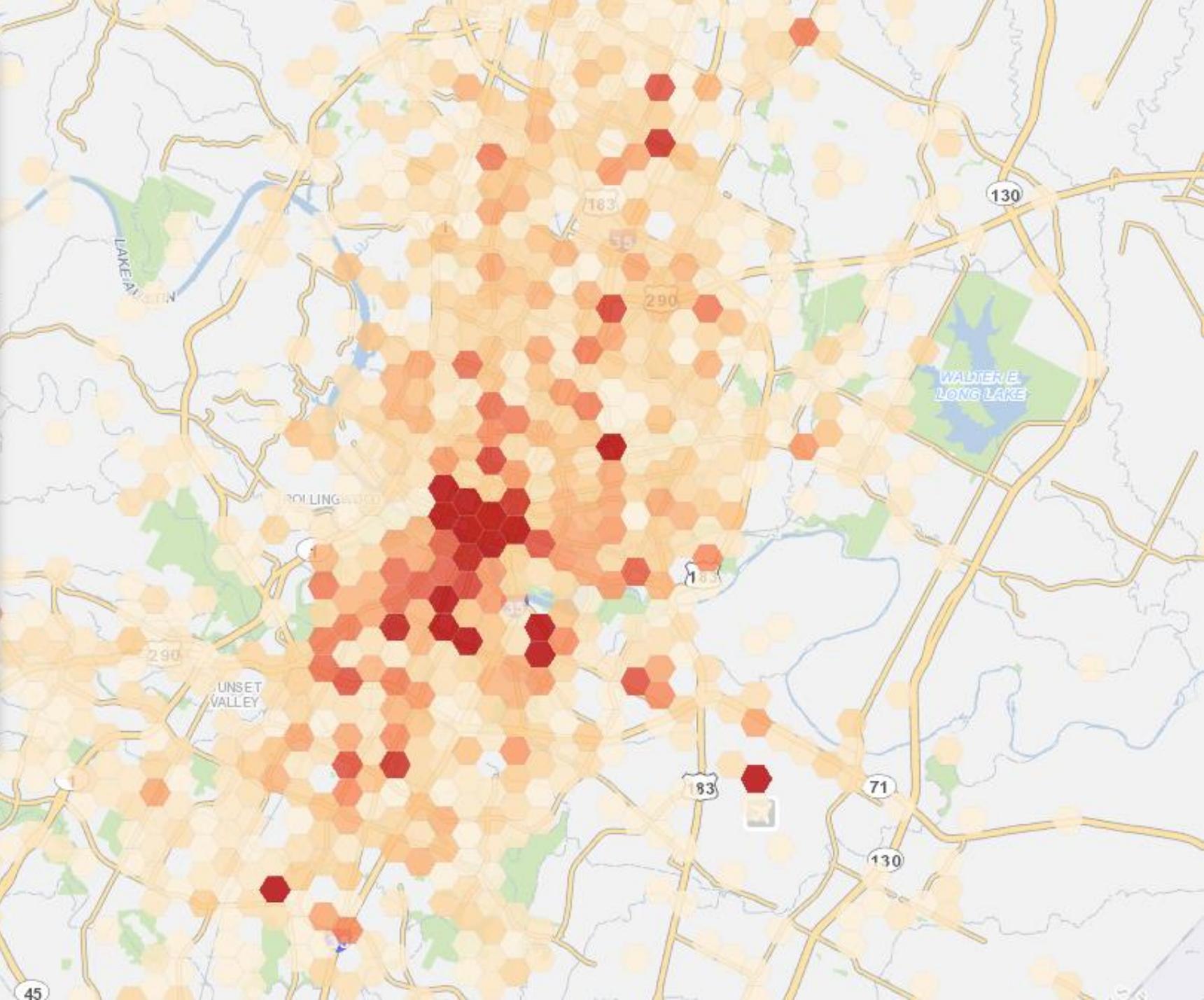
Future Applications and Projects

- ▶ Combining pollutant data with drainage maps to prioritize outfalls for dry weather screening
- ▶ Publicly available tool for raw pollutant location data
- ▶ Exploring how spills degrade stream health



Layer List

- Pollutant Hot Spots ...
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Thanks!

▶ Any questions?

