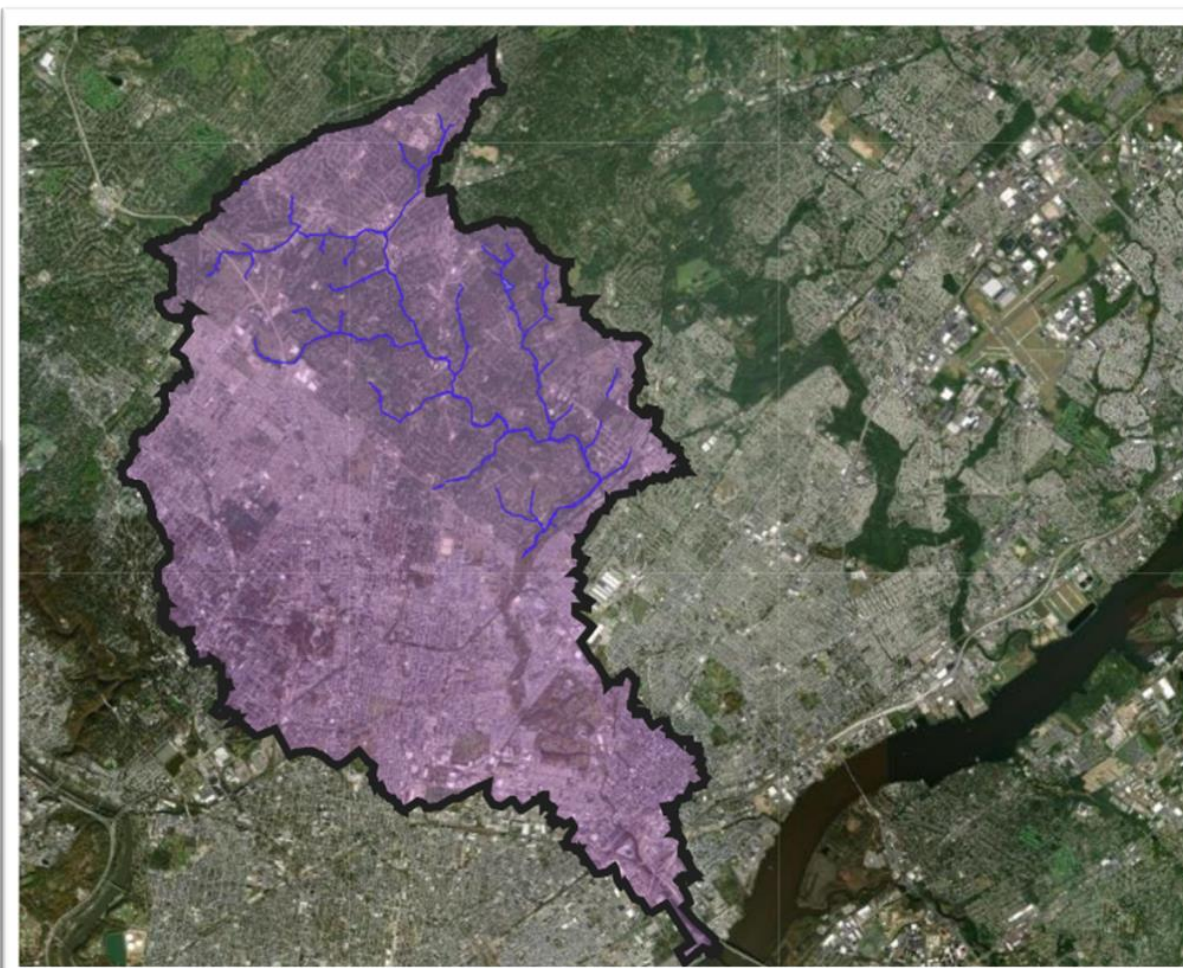
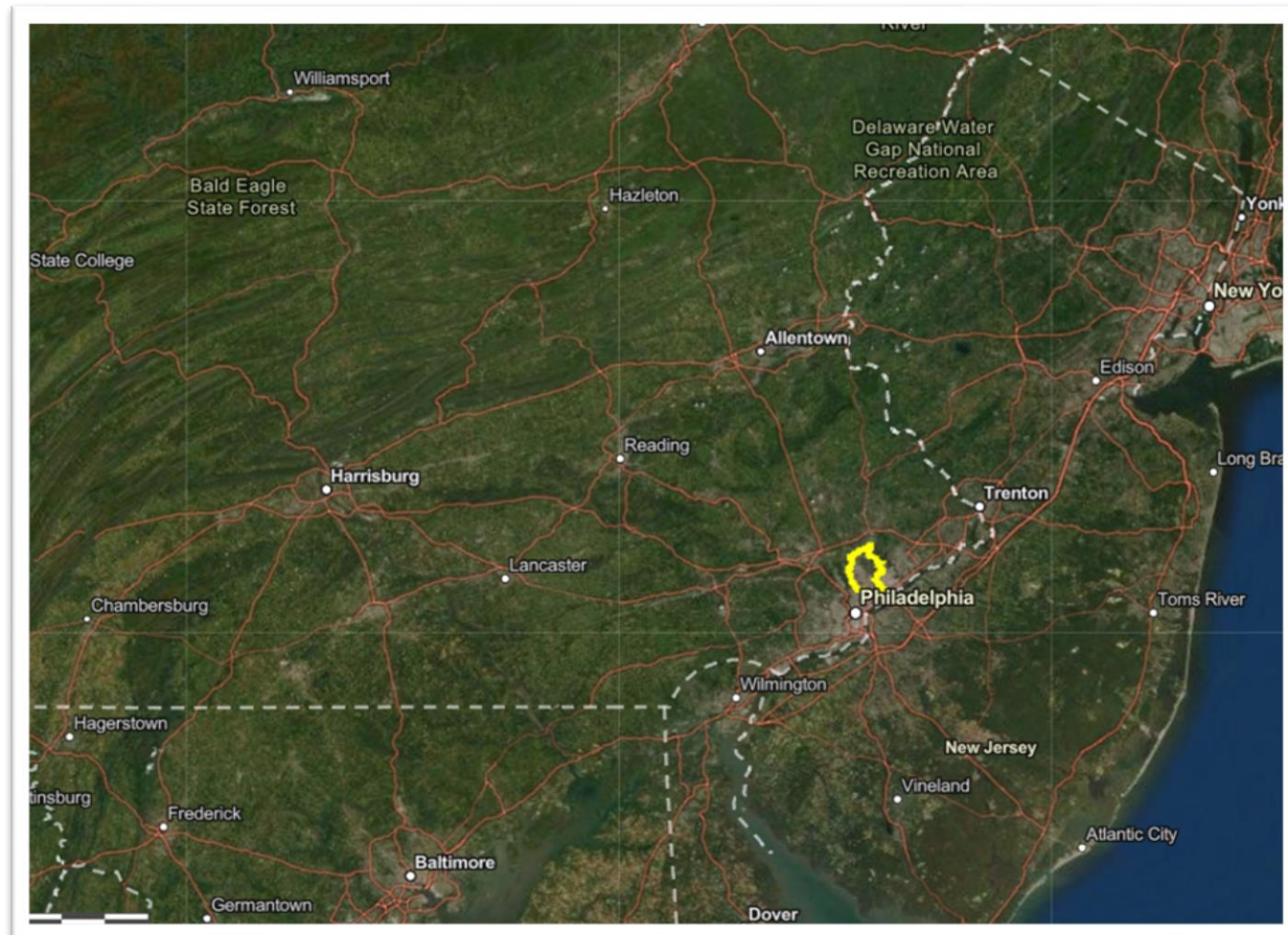




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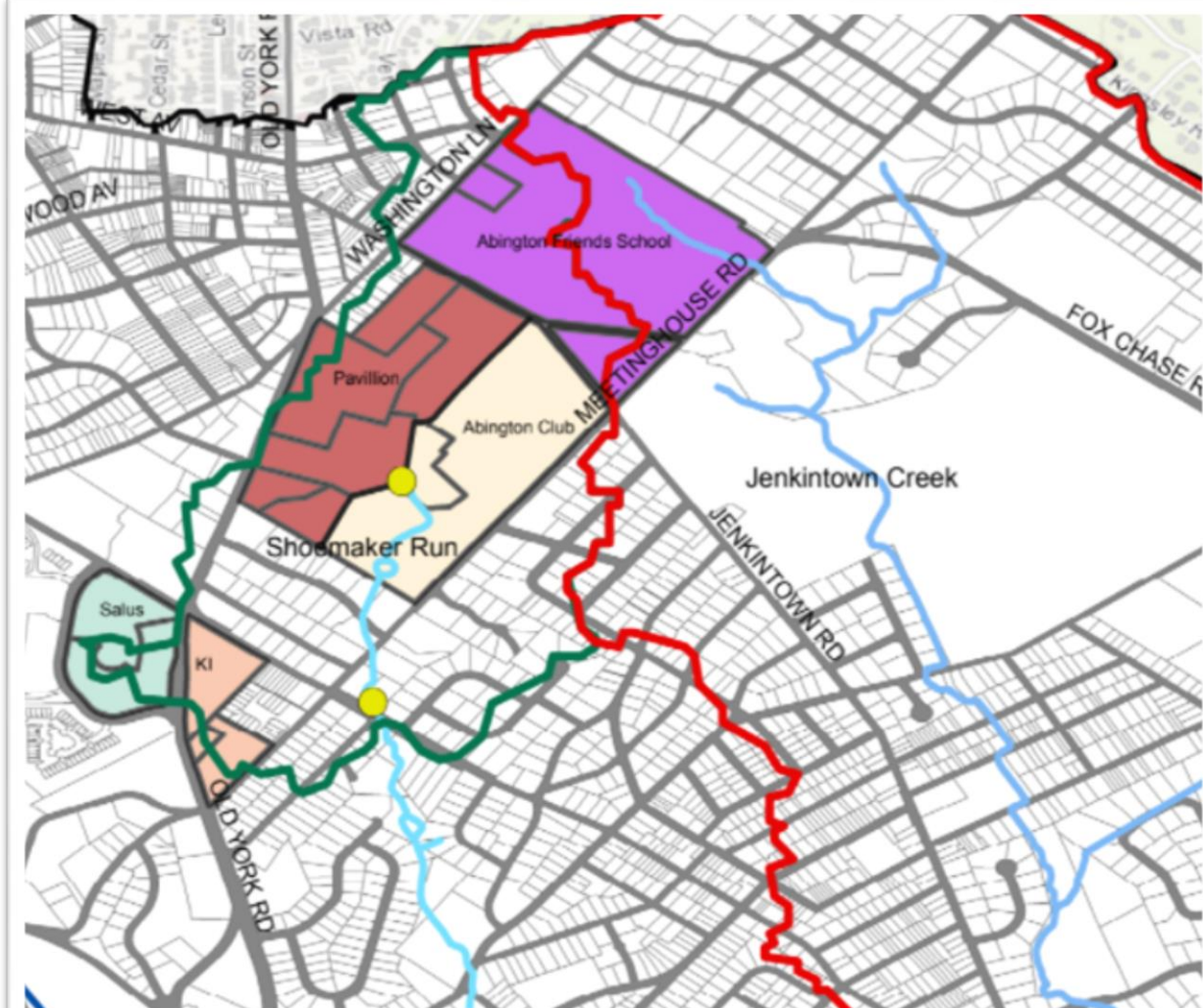
Tookany/Tacony-Frankford Watershed





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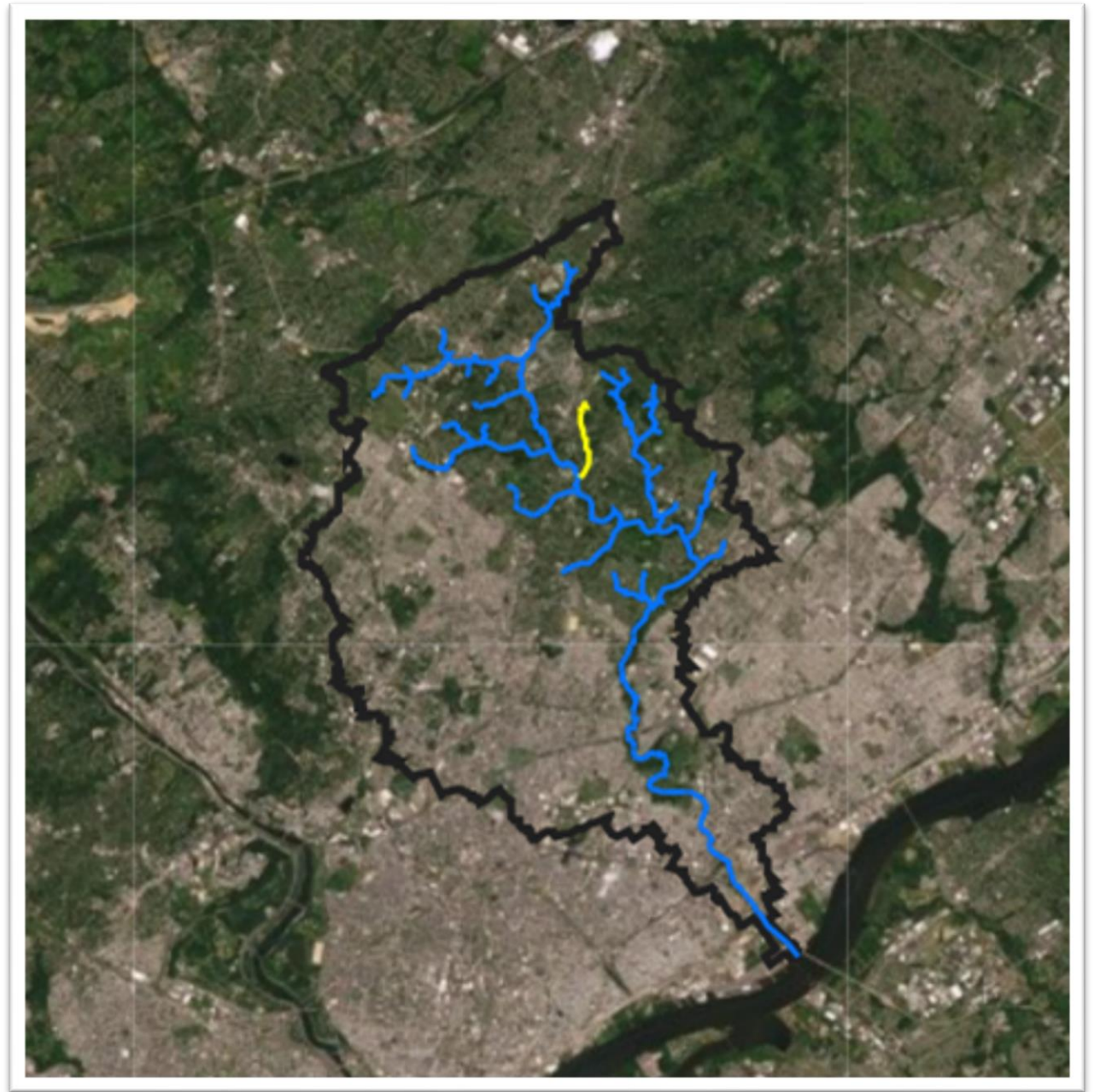
DIY Logger





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Shoemaker Run





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Baseflow Highs

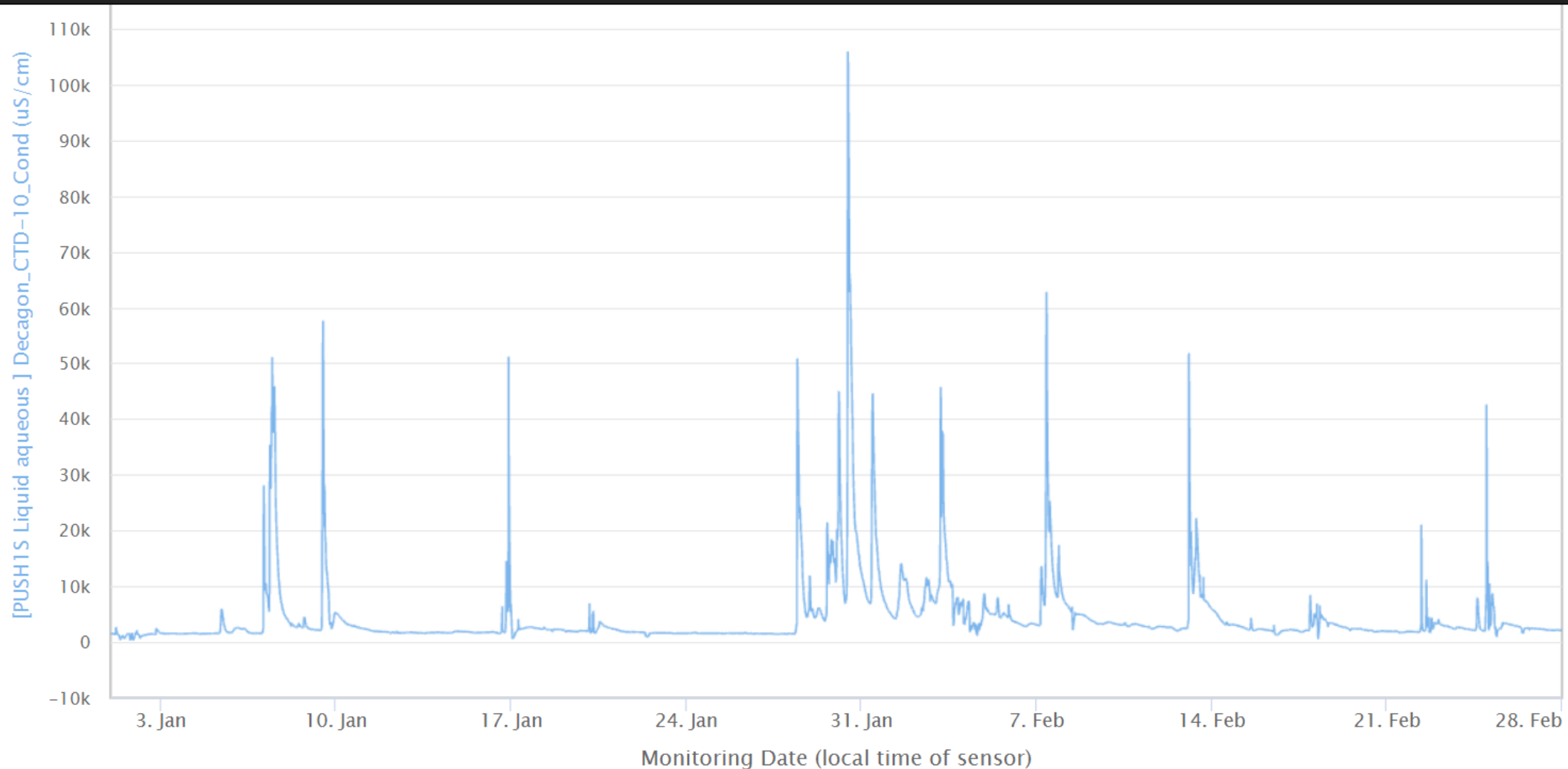




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Winter Spikes

 **Monitor My Watershed®** [Browse Sites](#) [Time Series Visualization](#)

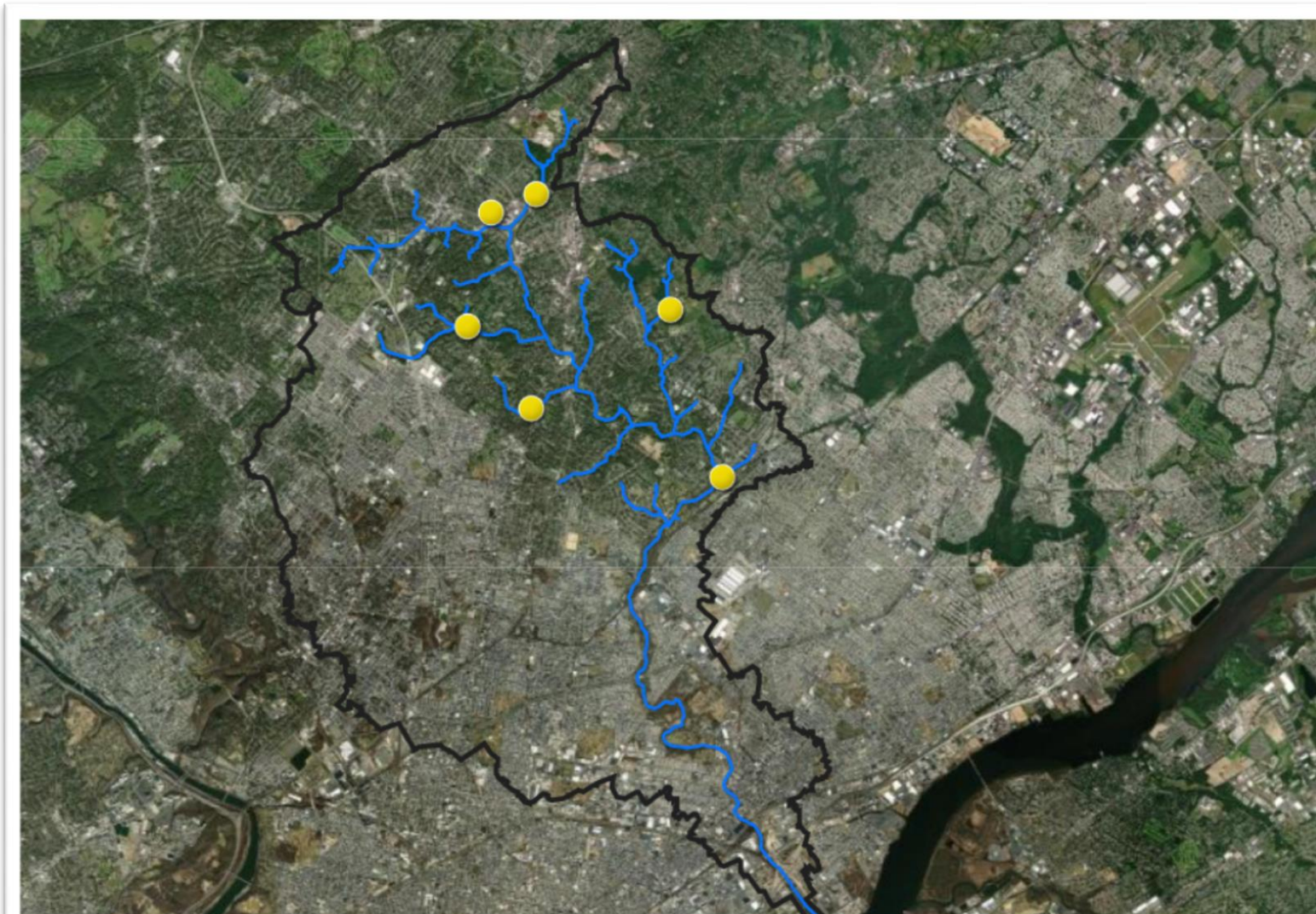




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WINTER SALT WATCH





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Chloride in the TTF



SAVE OUR STREAMS FROM ROAD SALT



A problem across the world

- An invisible freshwater pollutant - salt - has increased at least 2-4 times in the last 50 years in many places
- Road salt use has more than doubled since the 1970s, and is the main cause of the salt increase in our region
- Road salt dissolves in water and enters streams quickly via runoff from roads and parking lots, and slowly enters into the soil and groundwater
- Even though the problem is getting worse, solutions need to be balanced with safety and economic concerns



Photo by Geoffrey Selling
Excessive use of road salt on Ben Franklin Parkway

Salt is a problem in the Tookany-Tacony/Frankford watershed

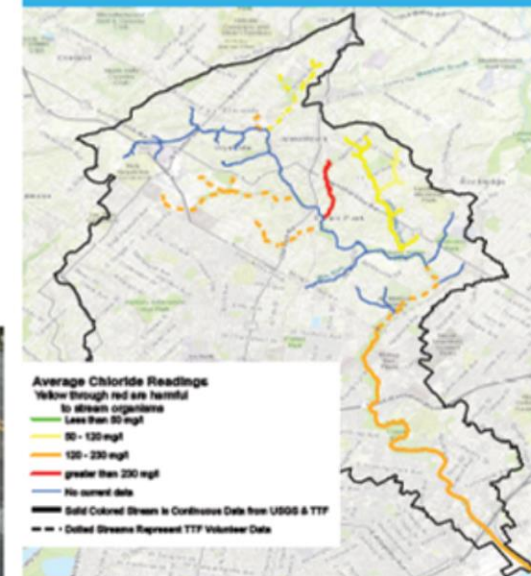
- Most TTF streams are contaminated with salt
- Salt levels in local streams are 10-30 times higher than natural levels, even in the summer. During winter storms, levels rise to 50-100 times higher than natural (TTF and USGS)



The amount of salt in
TTF streams is shocking

11,000+ TONS
of salt applied by humans
flow through the watershed every year
=
30+ TONS PER DAY

Salt (as chloride) in TTF streams



Average Chloride Readings
Yellow through red are harmful
to stream organisms

Green	Less than 50 mg/l
Yellow	50 - 120 mg/l
Orange	120 - 230 mg/l
Red	greater than 230 mg/l
Blue	No current data

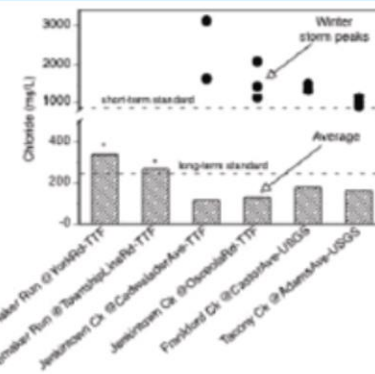
— Solid Colored Stream is Continuous Data from USGS & TTF
--- Dotted Stream Represent TTF Volunteer Data

Map includes all available data from 2018-2021, collected by TTF volunteers with chloride test strips in partnership with the Isaac Walton League, and by continuous sensors maintained by TTF volunteers and the US Geological Survey (Stations # 01467086 and 01467087).



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Salt (as chloride) in TTF streams



KEY



Natural Chloride Concentrations in this area should be less than 5 to 20 mg/l

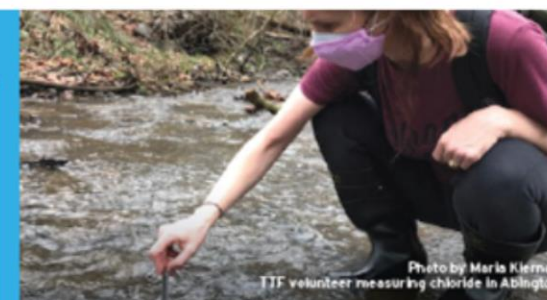


Photo by Maria Kleiman
TTF volunteer measuring chloride in Abington

What can we do to help?

Homeowners and residents

- **Shovel First:** Shovel before you salt and right after it snows to reduce the need for salt
- **Reduce and Reuse:** Use just enough salt to melt ice (One 12oz cup of salt per 20ft of driveway or 10 sidewalk squares). After snow melts, sweep up and reuse the salt that remains
- **Consider:** sand or crushed limestone instead of salt or a 1:1 sand/crushed limestone to road salt mixture
- **Read the Label:** Don't use products containing urea, kitty litter, or ashes
- **Speak Up:** Educate your neighbors! If you see an unprotected salt pile or excessive salt use contact your township

Considerations for municipal and private property owners

- Adopt more efficient mechanical snow/ice removal methods such as live edge plows
- Apply pre-storm salt brine to reduce use of rock salt
- Improve efficiency of salt application and storage to reduce waste. Sweep up salt after use
- Adjust brine and salt applications to match snow/ice expectations and traffic volume

Why is salt a problem?

- Salt can be harmful to aquatic animals and plants. Some of these streams exceed the federal standard for long-term exposure designed to protect aquatic life most days of the year
- High levels of road salt during winter storms have exceeded the federal standard for short-term exposure designed to protect aquatic life (about 1 tsp of salt per gallon)
- Road salt speeds up rusting of metal and corrosion of concrete. It has been shown to cause millions of dollars in damage to infrastructure and personal property



Photo by Carol Armstrong
Salt accelerates rusting of metal and corrodes concrete



QUESTIONS?

✉ Ryan@ttfwatershed.org ☎ 215-744-1853



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Planning a Chloride Blitz





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A Snapshot





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When to Sample





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A Pilot Blitz



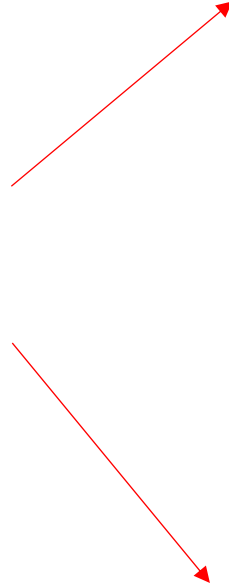


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**Meet at
central
location**



**Go to
assigned
(2) sites to
get
samples**



Label samples

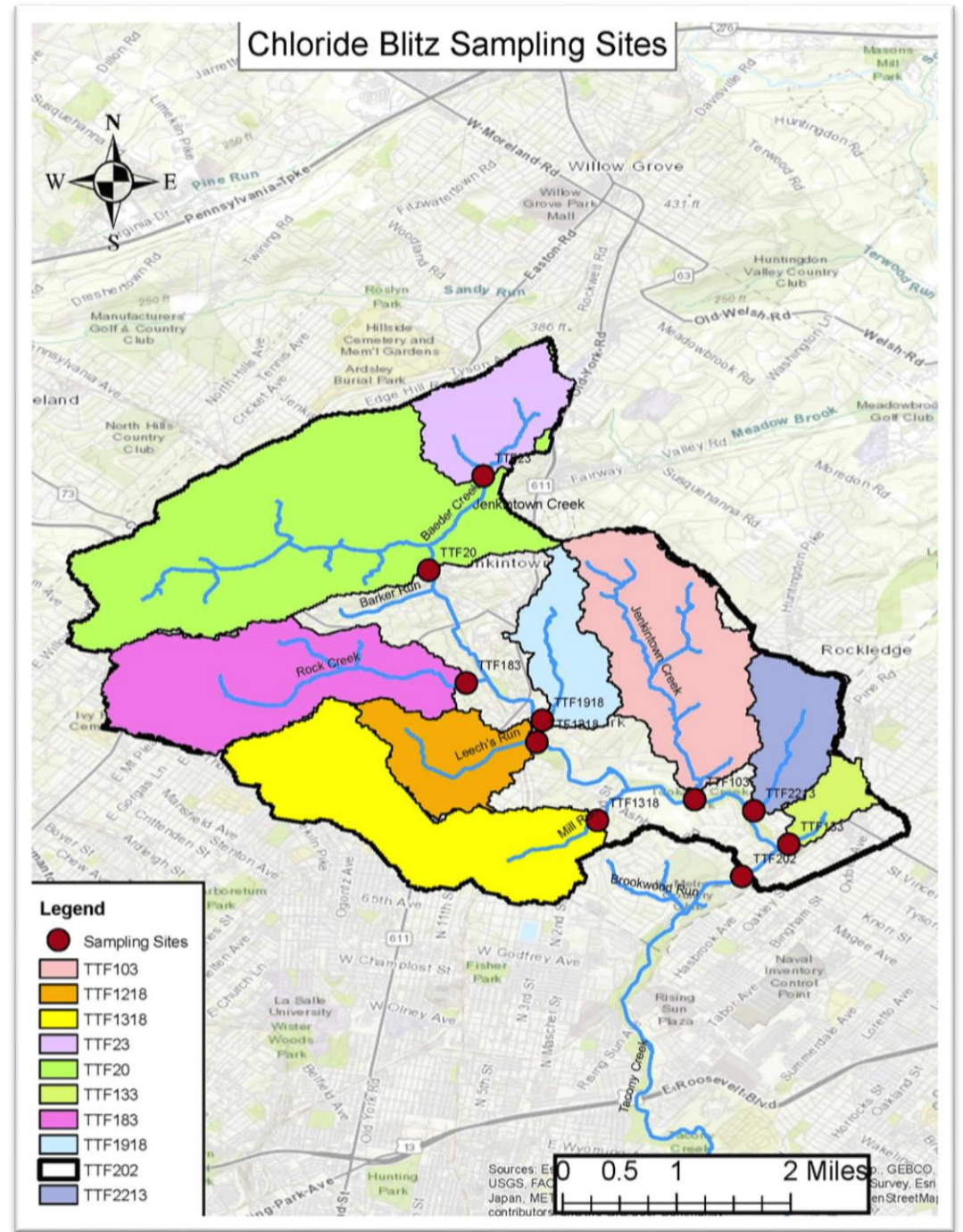
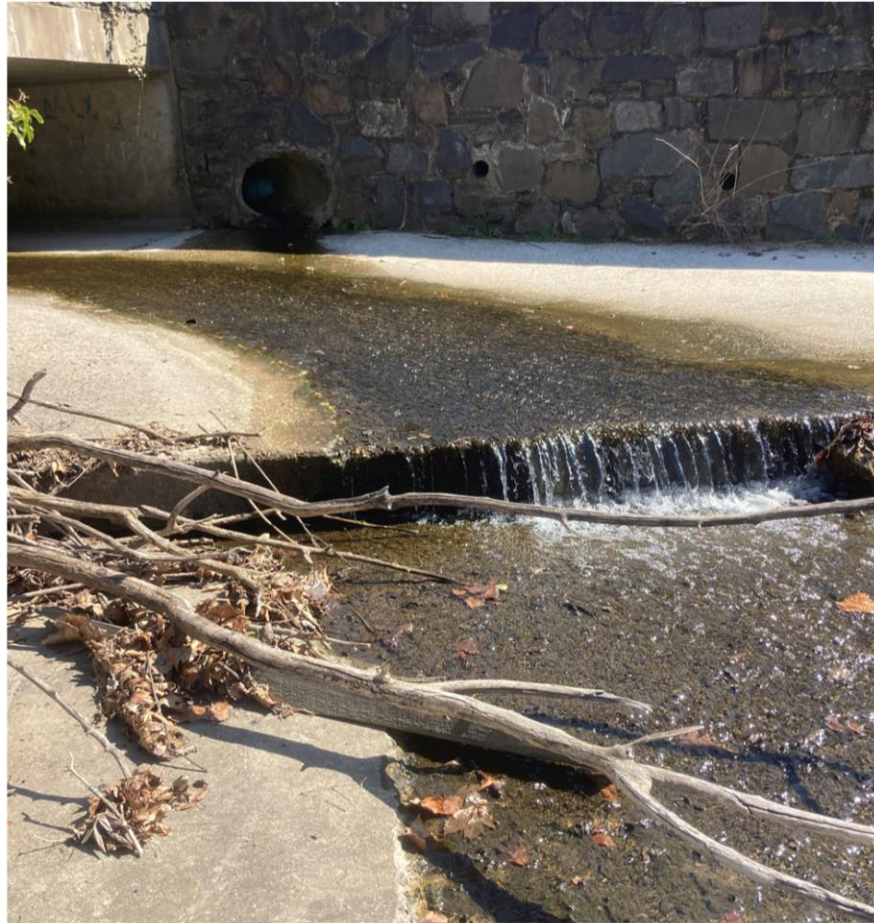
Label samples



**Return to original
meeting place for
samples to be
analyzed**



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Volunteers





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Preparation is Key





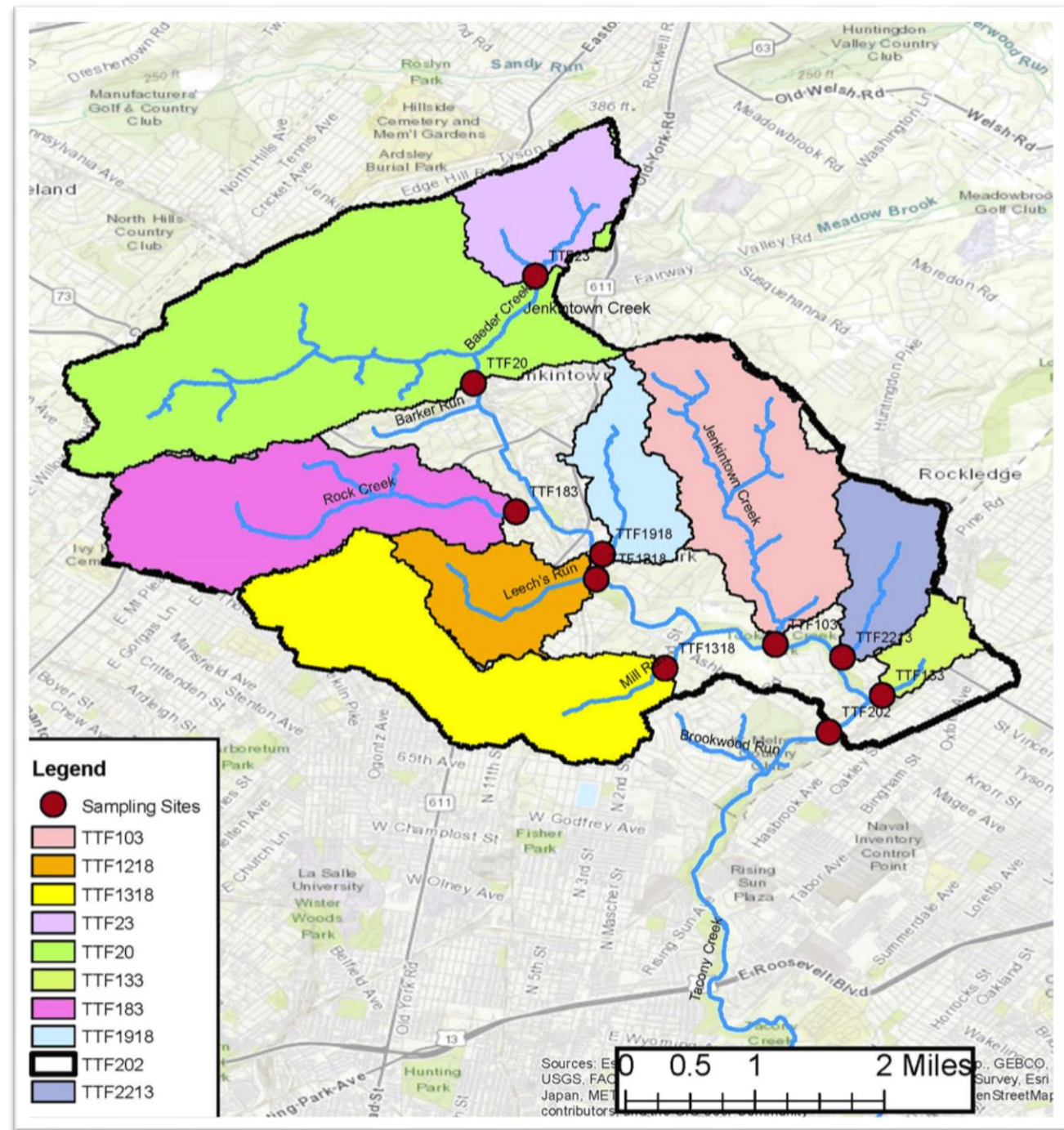
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The Sampling Sites





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Results





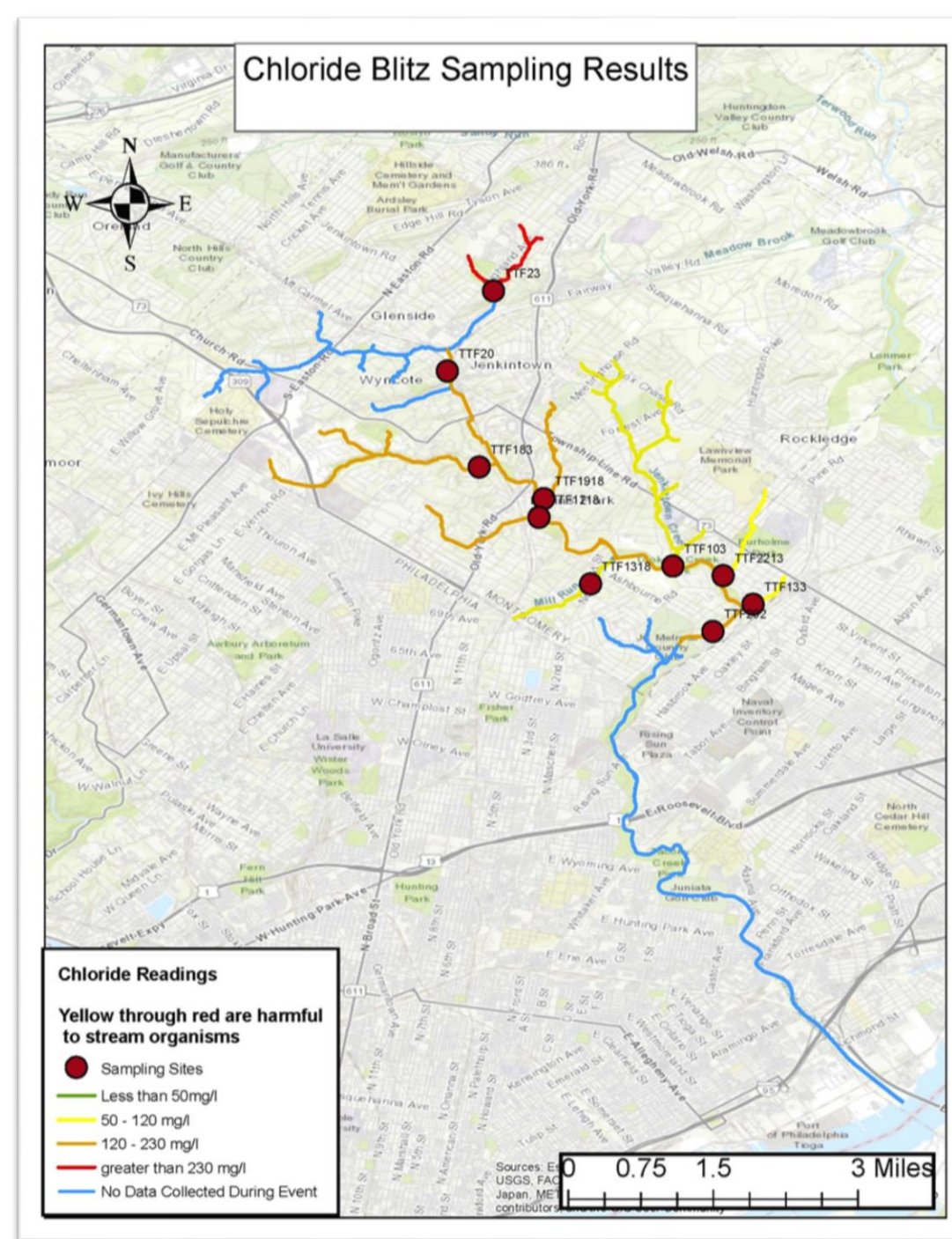
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		($\mu\text{S}/\text{cm}$) Cond	(mg/L) chloride
Debra	TTF202	714 $\mu\text{S}/\text{cm}$	144 mg/L
	TTF133	687 $\mu\text{S}/\text{cm}$	120 mg/L
Dik	TTF20	712 $\mu\text{S}/\text{cm}$	202 mg/L
	TTF23	975 $\mu\text{S}/\text{cm}$	236 mg/L
Dave	TTF2213	574 $\mu\text{S}/\text{cm}$	120 mg/L
	TTF103	608 $\mu\text{S}/\text{cm}$	120 mg/L
Traci	TTF 1218	663 $\mu\text{S}/\text{cm}$	132 mg/L
	TTF 1318	585 $\mu\text{S}/\text{cm}$	109 mg/L
Geoffrey	TTF183	784 $\mu\text{S}/\text{cm}$	172 mg/L
	TTF 1918	798 $\mu\text{S}/\text{cm}$	172 mg/L



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Site ID	Conductivity uS/cm	Chloride mg/L
TTF202	714 uS/cm	144 mg/L
TTF133	687 uS/cm	120 mg/L
TTF20	712 uS/cm	202 mg/L
TTF23	975 uS/cm	236 mg/L
TTF2213	574 uS/cm	120 mg/L
TTF103	608 uS/cm	120 mg/L
TTF1218	663 uS/cm	132 mg/L
TTF1318	585 uS/cm	109 mg/L
TTF183	789 uS/cm	172 mg/L
TTF1918	798 uS/cm	172 mg/L





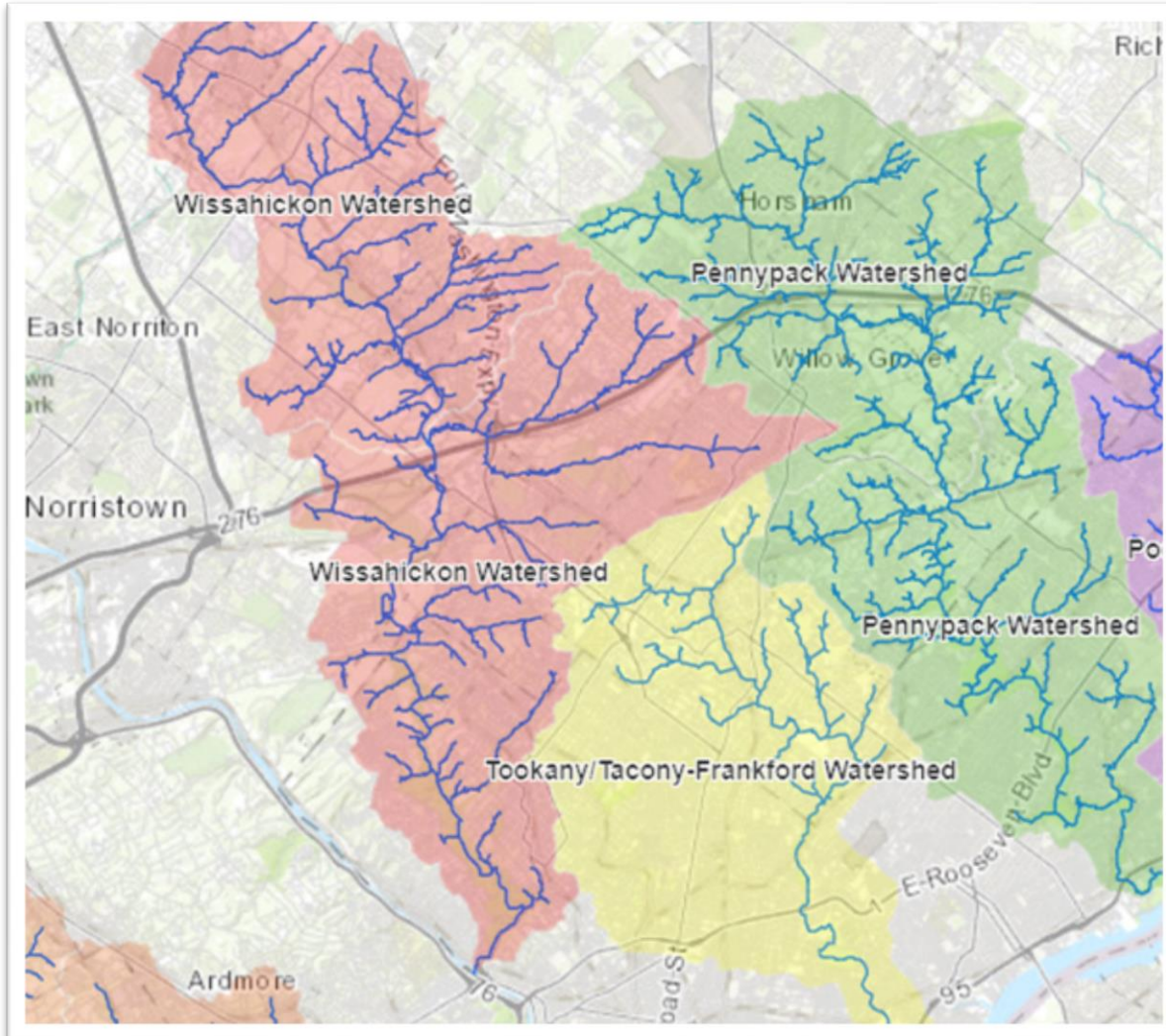
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Future Plans





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**WISSAHICKON
TRAILS** CONNECTING LAND,
WATER & PEOPLE



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Engaging Municipalities





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Salt and the News





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We undertook this pilot project with the hope that organizations in the Delaware River watershed would host similar initiatives. Data collected will be utilized to better inform us on chloride levels across our watershed, improving watershed-wide communication on this issue and enabling us to better pinpoint areas or tributaries with the highest and most problematic levels.

Five Streamkeepers visited two sites each across the watershed to gather water samples following proper procedures. They brought the samples back to Ethel Jordan Park.

Samples were gathered at baseflow water conditions. Sites on tributary creeks as close to the confluence to the Tookany with easy access to sample were chosen. Additionally, a pair of sites were selected along the mainstem of the Tookany. From there, low range chloride test strips as well as a Hanna DiST 3 conductivity meter (calibrated prior to readings) were used to gather readings in milligrams per liter and conductivity in microsiemens.



A map of all of the sub watersheds sampled can be seen [here](#).

Results from the sampling can be seen [here](#).

location, meaning that the stream had **twice** as much salt as seawater.

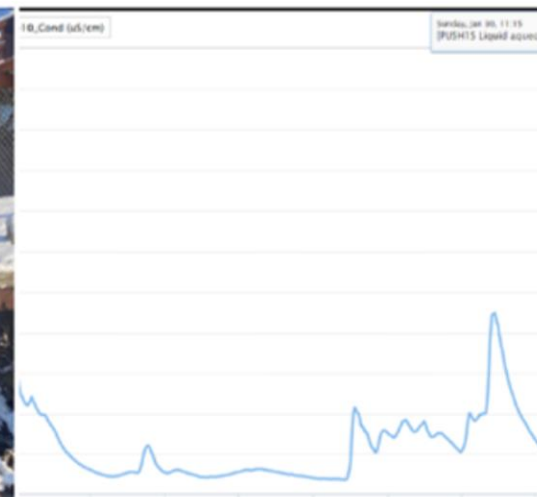
Did you notice all of the salt put on the roads to keep them safe during this past weekend's storm? Did you wonder where all of that salt goes after the storm? It doesn't just disappear.

It starts to melt and enter our waterways in runoff. That's what our sensor measured. We expected to see some spikes from winter storms, but never imagined we would see our freshwater replaced by saltwater!

Check out our Road Salt factsheet for ways to reduce salt use:
<https://ttfwatershed.org/resource/road-salt-factsheet/>

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-
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#TTFWatershed #TookanyCreek #ShoemakerRun #CleanWater
#RoadSalt #WinterSalt #Winter #SaltLevels





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Closing Thoughts

