



Engaging Community Members to Become Empowered Community Scientists

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SHARED AIR/SHARED ACTION

Goals: Empower communities with air quality concerns to take action and test feasibility of low cost equipment to be used for crowdsourcing air quality data

Timeline: May 2016 – April 2019

Funder: U.S. EPA (RD83618201)

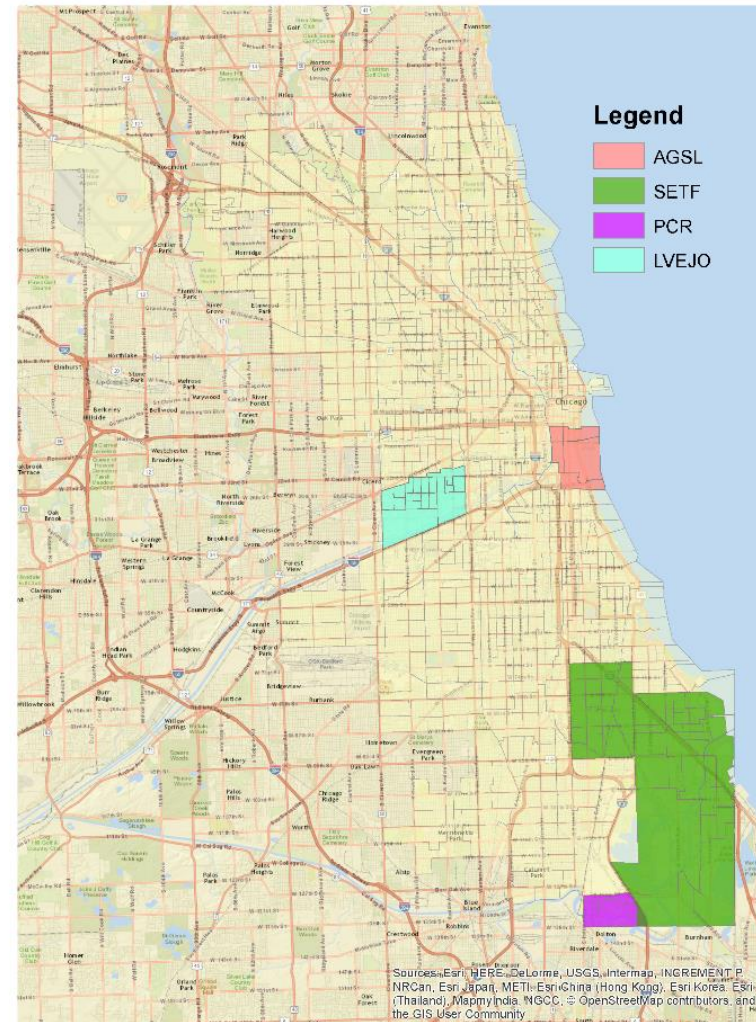


Type	Name		EJ	Mission
Community	Alliance for a Greener South Loop	AGSL		Environmental improvement/sustainability for South Loop
	Little Village Environmental Justice Organization	LVEJO	*	EJ, self-determination for Little Village
	People for Community Recovery	PCR	*	EJ for Riverdale Community
	Southeast Environmental Task Force	SETF	*	EJ/sustainable growth for Southeast community
Non-Profit	Delta Institute			Sustainable development
	Respiratory Health Association	RHA		Advocacy and education related to lung disease
University	Kansas State University	KSU		Sustainability, remediation, community outreach
	University of Illinois, Chicago	UIC		Environmental health disparities and risk assessment
	University of Memphis	UofM		Community and adult education, sustainability education

Community Goals

- LVEJO - advocate for policy changes to the zoning ordinances and for green development
- PCR - build awareness air quality and any potential threats
- SETF - create awareness of local air quality threats and build connections with bordering neighborhoods
- AGSL - connect with other environmental organizations and learn about own air quality

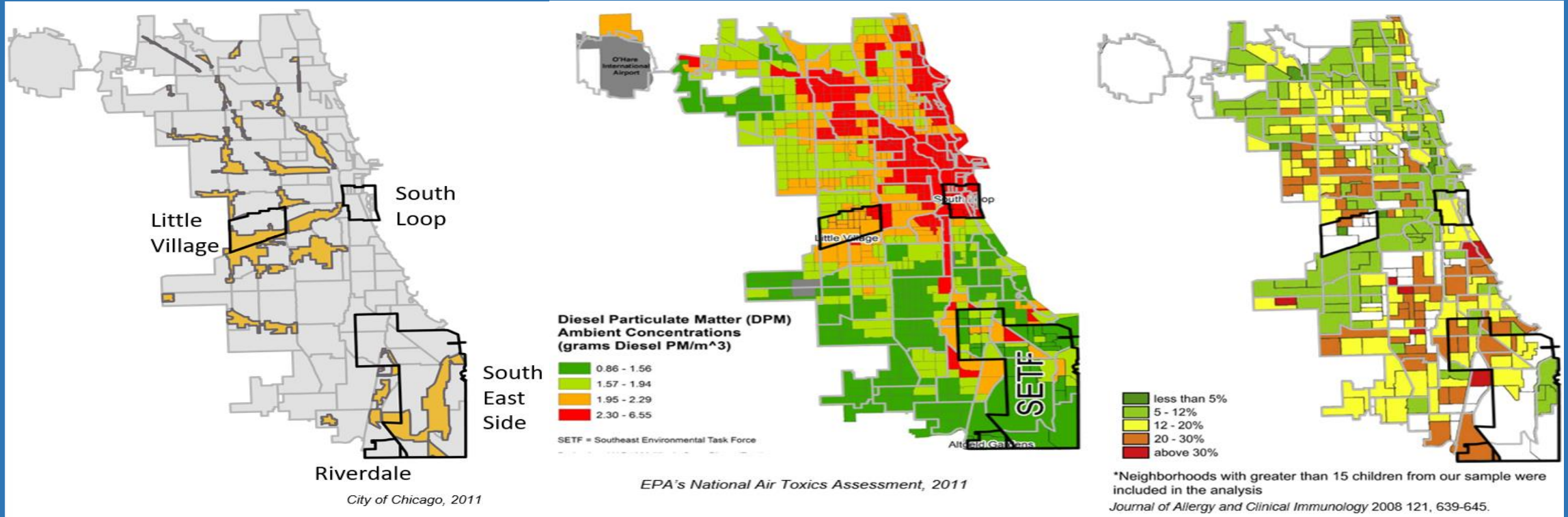
Map of Study Communities in Chicago Metropolitan Area



CHICAGO INDUSTRIAL CORRIDORS

DIESEL PARTICULATE MATTER CONCENTRATION

CHILDHOOD ASTHMA PREVALENCE



Community residents working to improve air quality, but missing localized data to shed light on connections between land use and public health outcomes

Differing Motivations

Non EJ

- AGSL - I know about ozone and I know about CO₂ as it relates to environmental impact, melting glaciers and stuff like that. But I don't know what it means for humans.

EJ

- SETF – I have a brain tumor, and I'm wondering if where I live contributed to that.

Differing Motivations

EJ

- LVEJO- “I developed asthma as a young child and still have hard time breathing when I play sports, there’s a factory right behind my high school. I want to know if they’re affecting my health.”

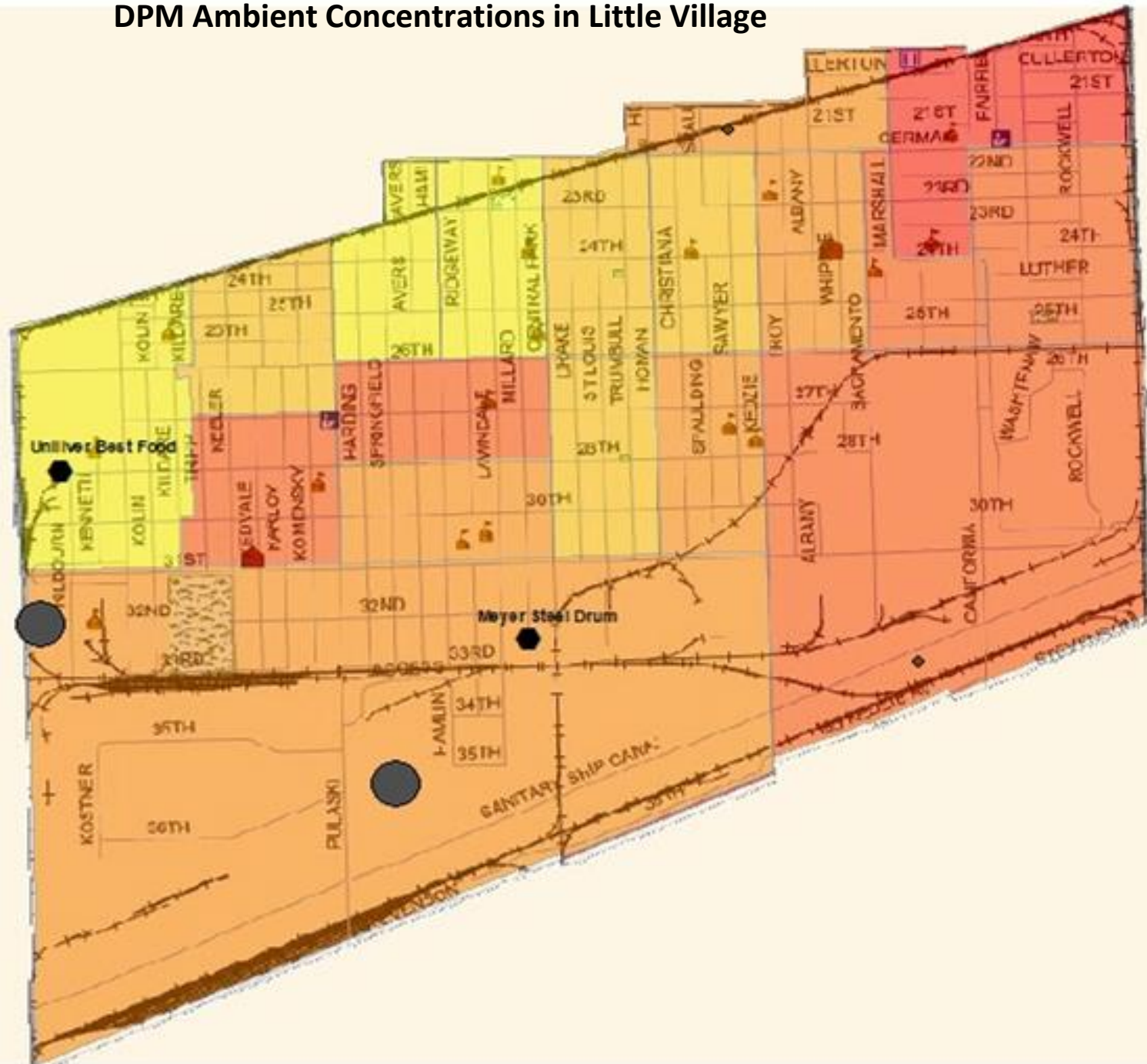
Assumptions challenged - AGSL

- I assumed that our air quality was better than theirs because we didn't have the label "environmental justice" attached to our community.
- Air quality doesn't care about who's living where or what's going on in terms of socioeconomic anything. It just follows the sources. Traffic doesn't care about where the pollution goes.
- It was humbling...that I had gotten involved in a project that...I get to meet some people...involved in...monitoring...and caring about air quality..., but I didn't personalize it in terms of thinking about the air I breathe.

Community Knowledge

SETF - We came in like experts. That's why we felt like the experts. We came in with this preconceived idea. Then when the data and the maps came out, it validated everything we said. So we were like, ok, we are experts on it. We can't just say we think...This is what we believed and now the data shows that it's exactly what we've been fighting and what we've been telling people.

DPM Ambient Concentrations in Little Village



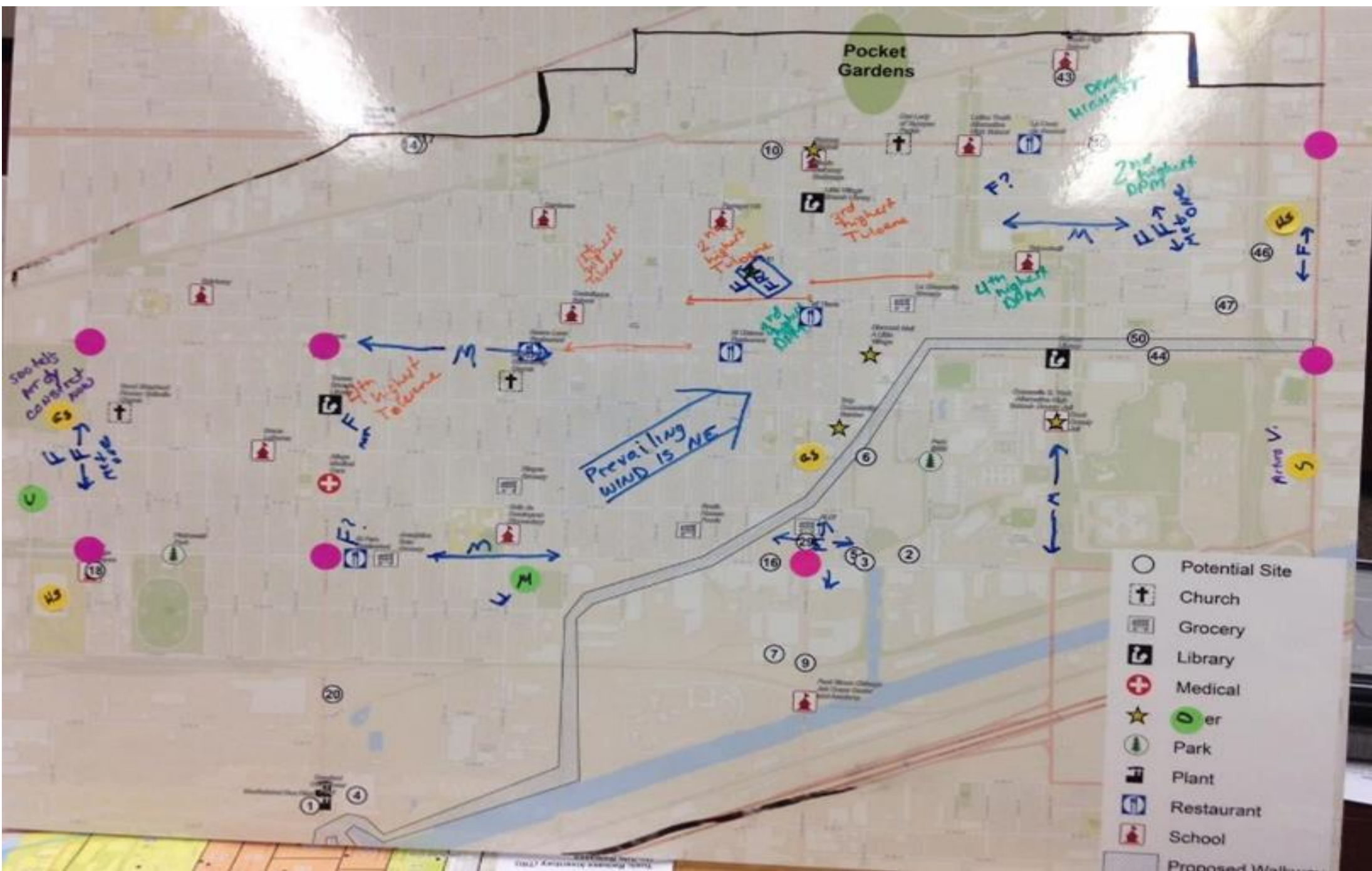
- ### Legend
- Firehouses
 - Hospitals
 - Libraries
 - Police Facilities
 - Schools
 - U S Post Offices
 - Railroads
 - Cemeteries
 - Parks
 - CTA Lines
 - Blue Line Subway
 - Blue Line Elevated/At-Grade
 - Brown Line
 - Brown, Purple Lines
 - Green Line
 - Green, Orange Lines
 - Pink, Brown, Purple, Orange Lines
 - Pink, Brown, Purple, Orange, Green Lines
 - Orange Line
 - Purple Line
 - Red Line Subway
 - Red Line Elevated/At-Grade
 - Red, Purple Lines
 - Red, Purple, Brown Lines
 - Yellow Line

DPM Concentration (g/m³)

- 1.69 - 1.87
- 1.88 - 2.03
- 2.04 - 2.20
- 2.21 - 2.34
- 2.35 - 2.52

Toxic Release Inventory (TRI) on-site Release (lbs/y)

- 0.000000
- <1000
- 1000-14856
- 14857-1220332



- Potential Site
- ✝ Church
- 🛒 Grocery
- 📖 Library
- ⊕ Medical
- ★ Other
- 🌳 Park
- 🏠 Plant
- 🍽️ Restaurant
- 🎓 School
- Proposed Walkway

