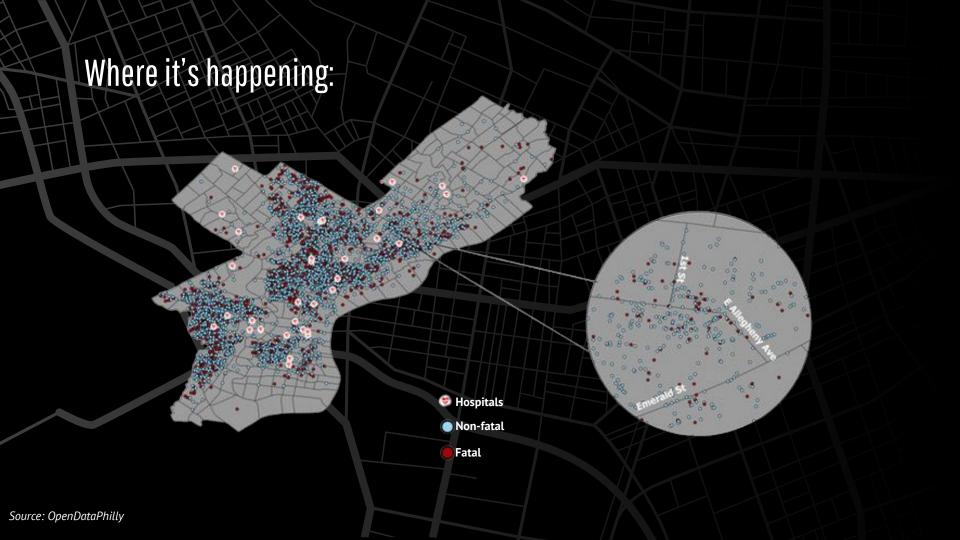
Changing the Narrative on Gunshot Detection Technology In Philadelphia

Kendra Hills, Mia Cherayil, Kemi Richards

The Issue: Rising Gun Violence in Philadelphia

- 2021 = worst homicide rate on record
 - 87% percent involved a firearm
- Other violent crimes have decreased; gun violence continues to rise
 - 3,850 shootings as of 12/5
 - **56%** involved victims



Gun Violence: Who is Impacted?

2,170 **MINITERIALITATION**

Total Victims

1,832

Black Victims

1,626



Black Males

Gun Violence: Who is Impacted?

4100

of victims were ≤25 years old.

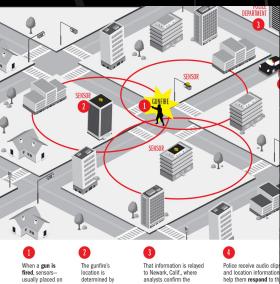
57%

of incidents took place in 7 zip codes

Source: Office of the Controller

ShotSpotter: Current Model & How it Works





top of buildings or light poles-record three or more sensors that pick

up and triangulate

the noise.

gunshots before alerting the corresponding police department, often within 30 to 45 seconds

incident. Some departme can access gunshot data their smartphones or ins their squad cars.

EXISTING ASSETS & INITIATIVES

-Municipal buildings -Municipal vehicles -Bridges -Streetlights -Street furniture

-Public transportation infrastructure

-Air monitoring sensors & index -Fire Department wearables -Automatic vehicle location

-Gunshot detection

-BigBelly Trash Bins -Public Safety cameras -Traffic counters -Smart benches Transit System Priority

NETWORK ELEMENTS

-Penn Futures-Early Childhood Initiative

COMPLEMENTARY INITIATIVE -CleanPHL

-Green City, Clean Waters

-Greenworks -Philadelphia 2035

-StartupPHL

-Vision Zero -Digital Literacy Alliance

> -Institutional network -Utility Infrastructure -Municipal fiber -Distributed Antennae Systems

-Utility Advanced Meterina

DATA & SYSTEMS

-DataBridge -Open Data Philly and the Metadata Cataloa -Atlas/MapBoard -Address Information Systems -CARES Integrated System ·Computer Aided Dispatch systems -Police data warehouse

Source: Spotshooter, SmartCityPHL Roadmap

Major Concerns with Current Model

Over Policing in Communities of Color/ Privacy Infringements

Conflict of interest b/w Police and Shotspotter Company

Use of "black box" algorithm

Questionable Efficacy & Methodology

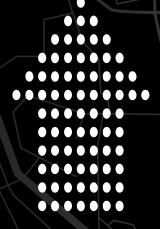
OUR PROPOSED NEW MODEL IN A NUTSHELL

LESS POLICE & BIASED ALGORITHMS

MORE EMERGENCY PERSONNEL



Carceral/Punishment Framework

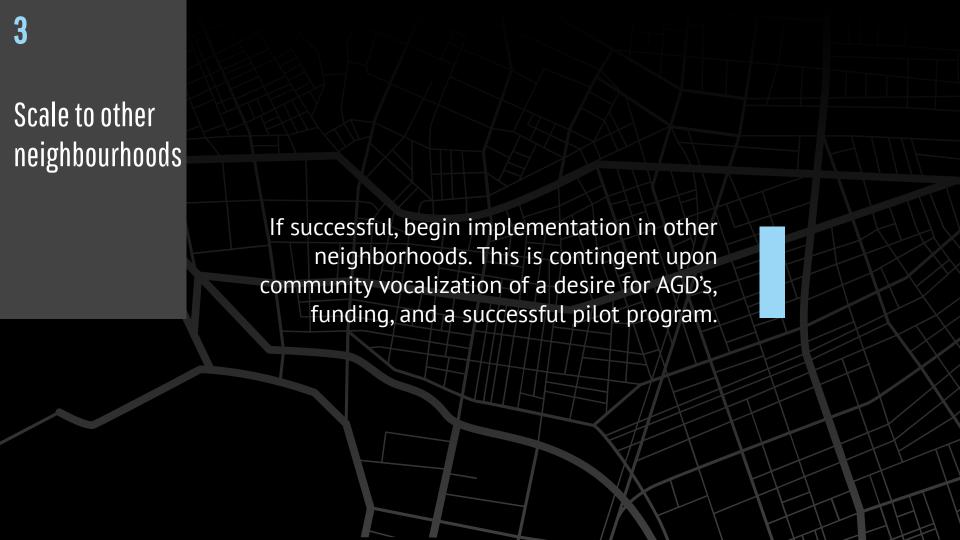


Public Health & Safety Framework









Limitations to Consider **Location of Gunshot** Preventative Measures > More Data to be Detection/Maintenance collected Reactive

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Thank you!