



Optimizing Law Enforcement Surveillance Systems

Milwaukee Police Department

Milwaukee Public Safety Committee Meeting, April 27, 2017

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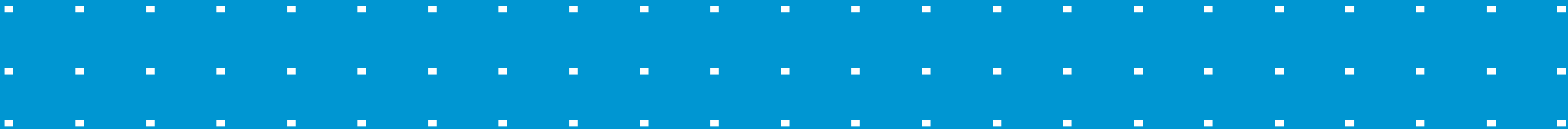
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This project was supported by Award No. 2015-R2-CX-K002, awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed in this publication/program/exhibition are those of the author(s) and do not necessarily reflect those of the Department of Justice.

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Urban Institute Projects with MPD

- Evaluating Gunshot Detection Technology
 - National Institute of Justice, Jan 1, 2016 to Dec 31, 2018
- Milwaukee PD Body-Worn Camera Evaluation
 - Bureau of Justice Assistance, Oct 1, 2016 to Sep 30, 2018
- Optimizing Law Enforcement Surveillance Systems Project
 - National Institute of Justice, Jan 1, 2016 to Dec 31, 2018

Presentation Overview

- Evaluations of Public Surveillance Systems
- Milwaukee Police Department's Current Public Surveillance System
- National Institute of Justice's Optimizing Law Enforcement Surveillance Systems Project

Public Surveillance Systems

- Purpose
 - to aid in the real-time apprehension of perpetrators,
 - support investigations of crimes that have already occurred,
 - prevent crime altogether by enhancing the perceived risk of detection among likely offenders
- Overall, results are mixed but there are specific reasons why some systems did not find improvements to crime levels

Mixed Results on Public Surveillance Systems

Location	Percent with Decrease Crime	Notes	Source
United Kingdom	54% of areas	Other areas had no impact or increase	(Welsh & Farrington, 2002, 2004, & 2008)
United Kingdom	14% of areas	Shoplifting & public order crime increased	(Gill & Spriggs, 2005)
Los Angeles	41% of areas	Other areas had no impact or increase	(Cameron, et al. 2007)
Philadelphia	~50% of areas	Other areas had no impact	(Ratcliffe et al., 2008; Ratcliffe et al, 2009)
San Francisco	No impact in drug offenses, vandalism, prostitution, or violent crime in 58% of areas under study		(King et al, 2008)
San Francisco	Decrease of 23% in property crimes within 100 feet of the cameras; driven entirely by declines in larceny theft		(King et al, 2008)
Newark	Decrease in auto thefts in 47% of areas		(Caplan et al., 2011)
Newark	Decrease in thefts from autos in 56% of areas		(Caplan et al., 2011)
Newark	Decrease in shootings in 80% of areas		(Caplan et al., 2011)

Public Surveillance Systems Reducing Crime - Baltimore

Table 4.2: Significant Changes in Crime, Downtown Baltimore*

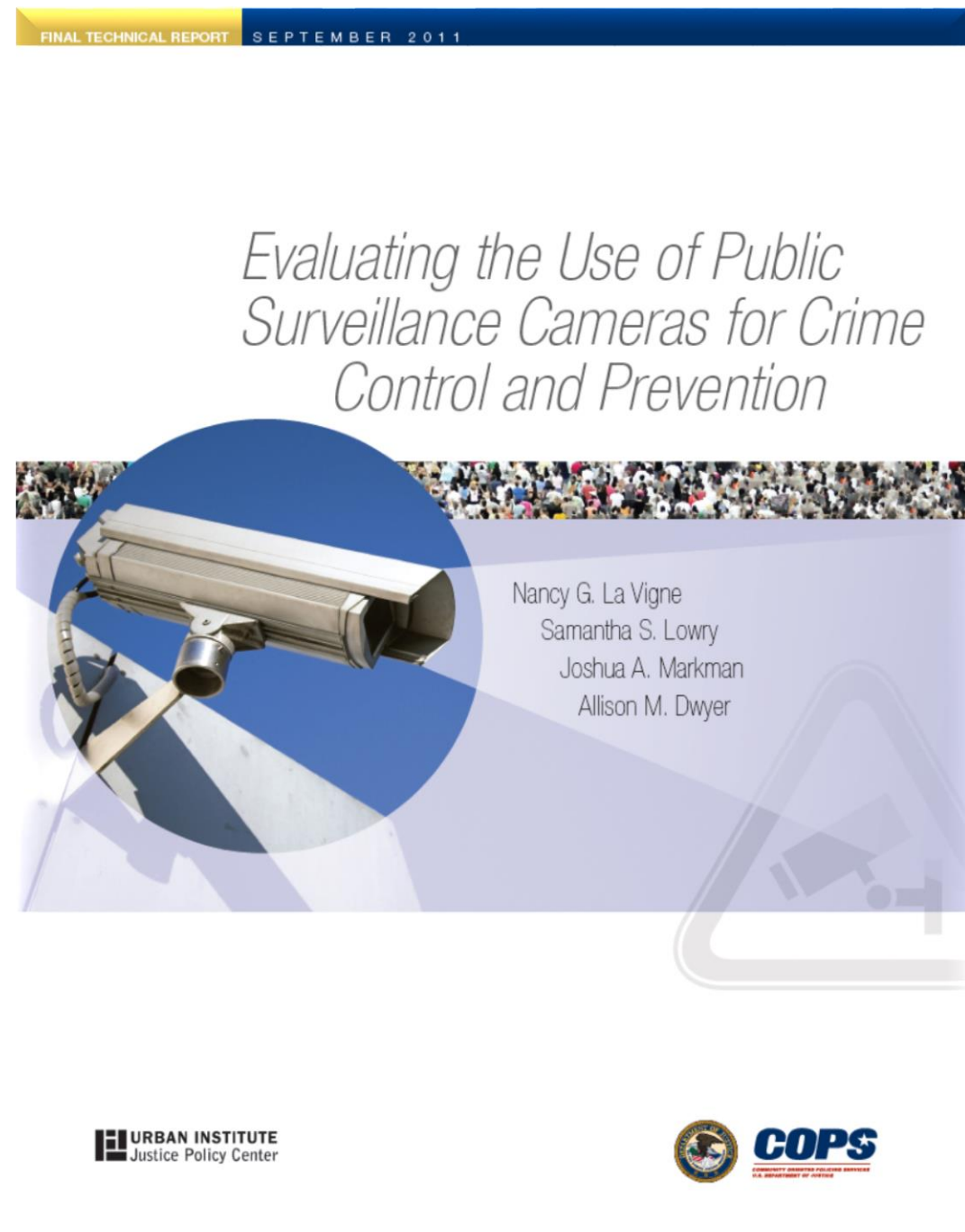
Crime	Time from Installation	Pre-Shift Mean	Post-Shift Mean	%Change
Larceny Inside [†]	3 months	36.79	25.03	-31.97%
Larceny Outside [†]	11 months	41.47	27.13	-34.58%
Violent [†]	6 months	21.17	16.36	-22.72%
Total[†]	4 months	119.05	89.47	-24.85%
1000-ft Buffer [†]	5 months	82.83	58.38	-29.52%

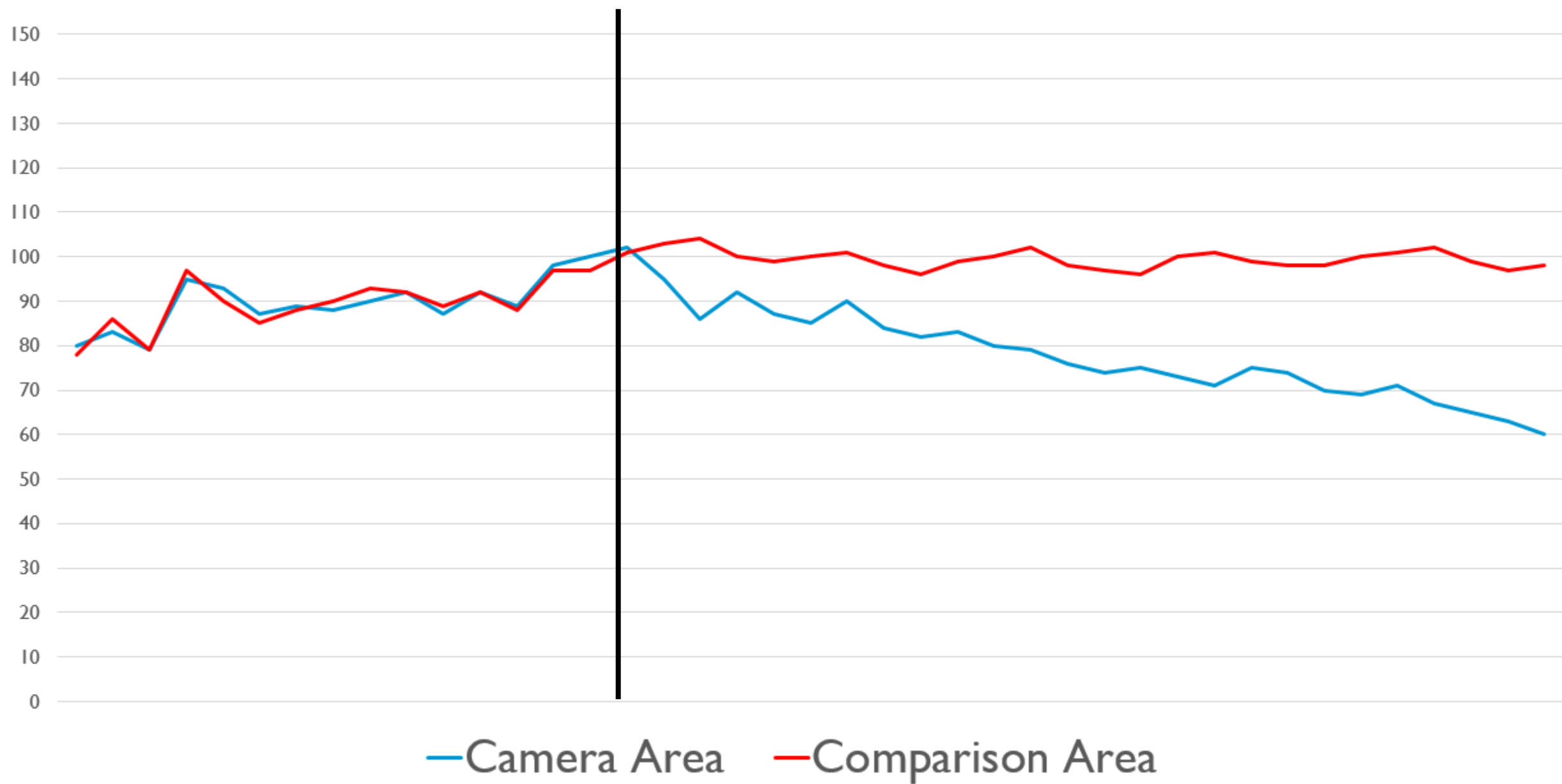
Source: The Urban Institute

*First set of cameras were installed in early May 2005; therefore, the intervention point was determined to be May 2005. The downtown extension cameras were not included in this analysis.

[†]Significant at $p < .05$.

La Vigne et al., 2011

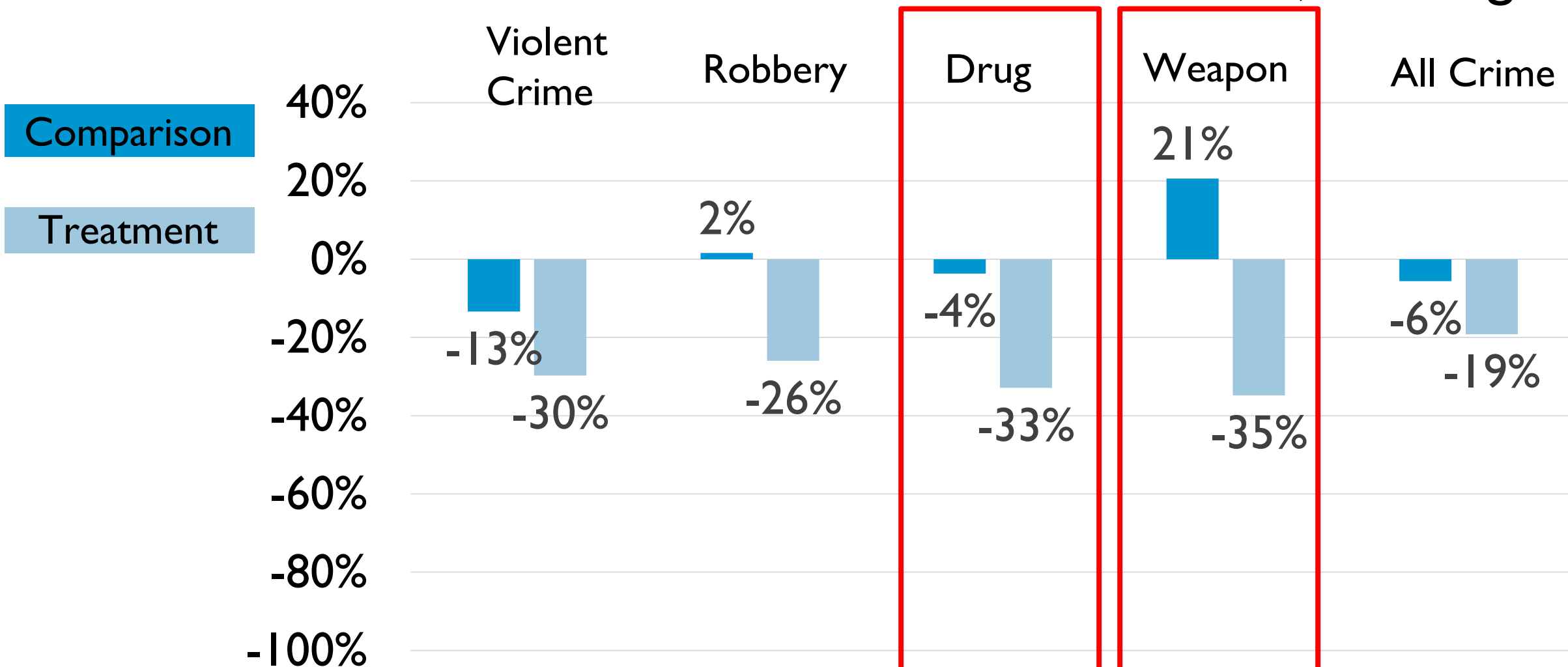




Public Surveillance Systems Reducing Crime - Baltimore

- Greenmount Neighborhood
(residential, flanked by commercial, ~30 cameras)
 - 20.7% decrease in all aggravated crimes following camera installation representing an average of 13 fewer incidents per month compared to a 12.4% decline in the comparison area
- Tri-District Neighborhood (residential, ~30 cameras)
 - 22.6% decrease in all aggravated crimes following camera installation representing an average of 8 fewer incidents per month compared to a 11.8% increase in the comparison area

Percent Decrease in Crime in Humboldt Park, Chicago



Representing an average of: 5.87 3.17 33.49 2.15 38.30
fewer incidents per month

La Vigne et al., 2011

However...

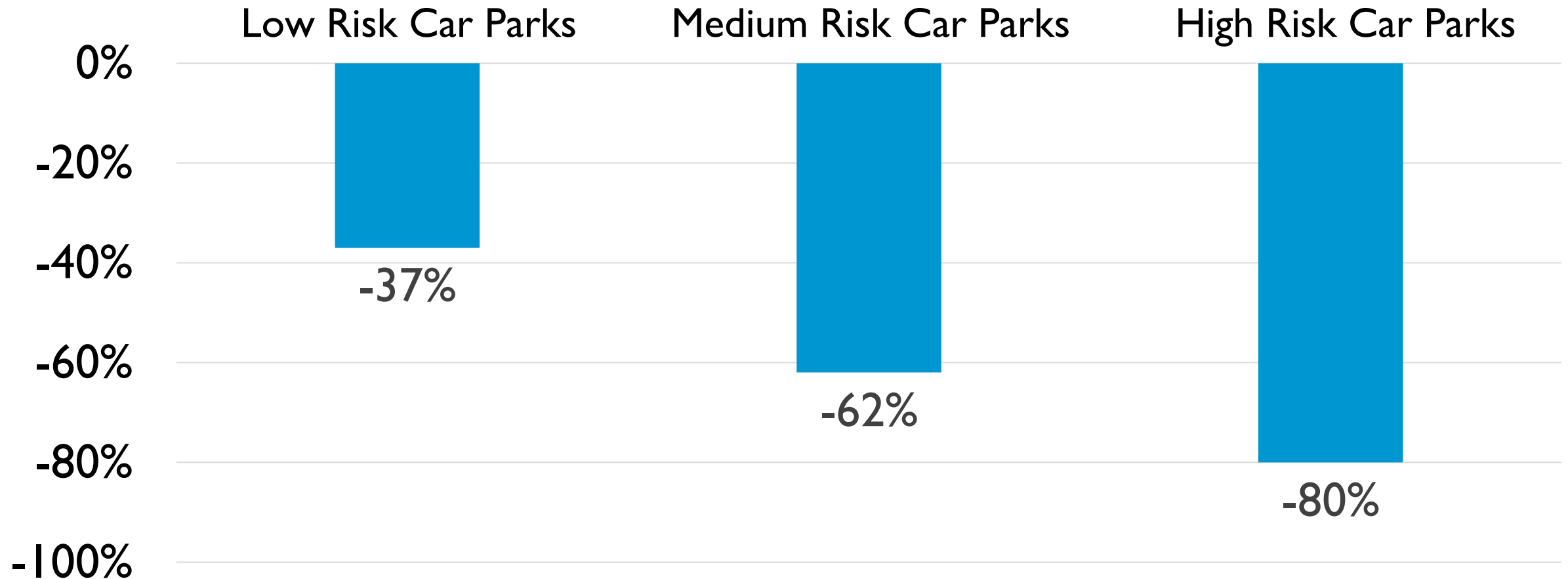
Same La Vigne et al., 2011 study found

No reduction in crime in...

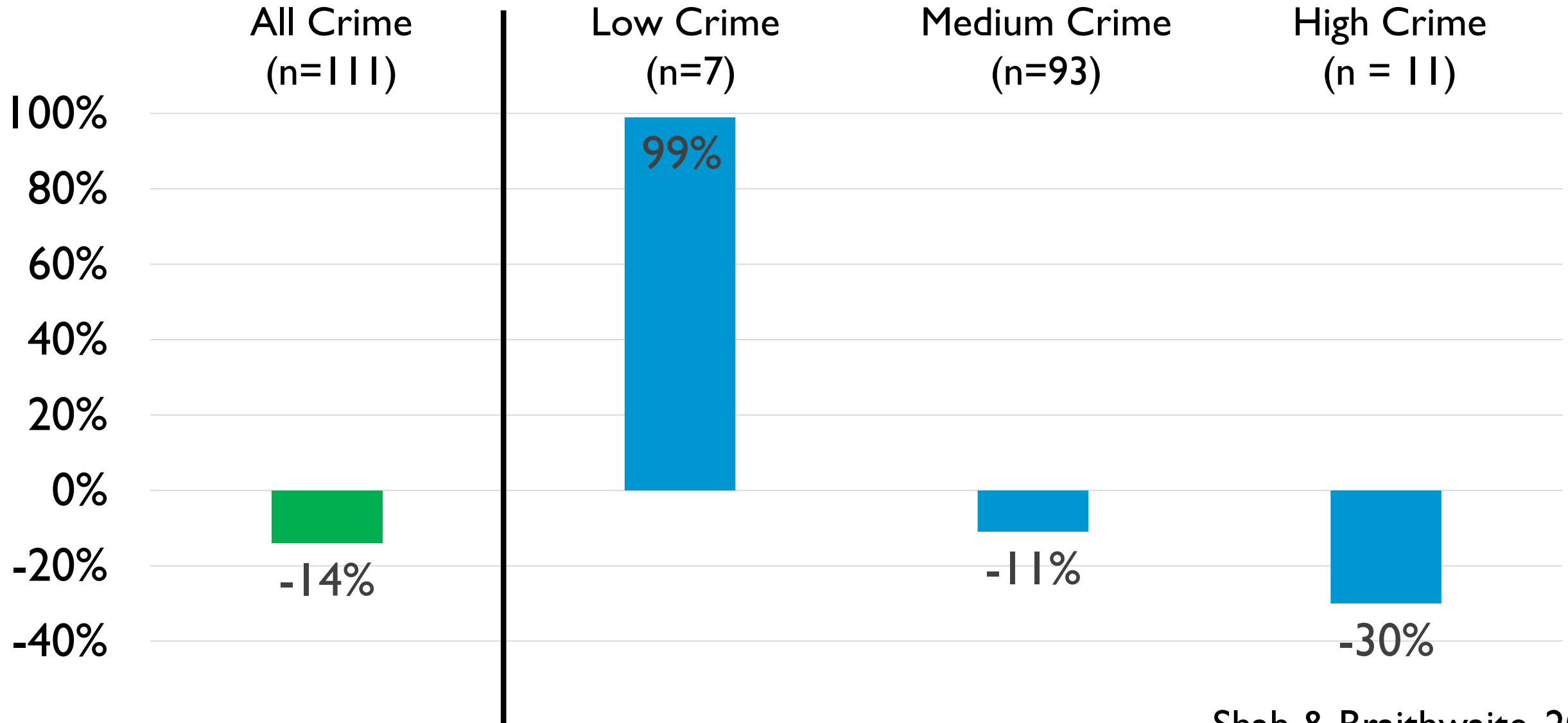
- North Avenue Area, Baltimore
- West Garfield Park, Chicago
- Washington, DC (73 cameras in pre-selected areas)

Auto Crime Decrease by Area Risk Levels in UK

Percent decrease in **thefts from and of autos** in the UK



Crime Decrease by Camera Risk Levels in Chicago



Necessary Practices for Successful Systems

- Careful placement of cameras
- Understanding that cameras are only one component of a public surveillance system
- Integration with proactive police activities
- Erecting signs to notify public about cameras
- Let police personnel know about this tool
- Work with the community

Milwaukee PD's Current Surveillance Infrastructure

44 Cameras in 39 locations

41 point, tilt, zoom (PTZ) cameras



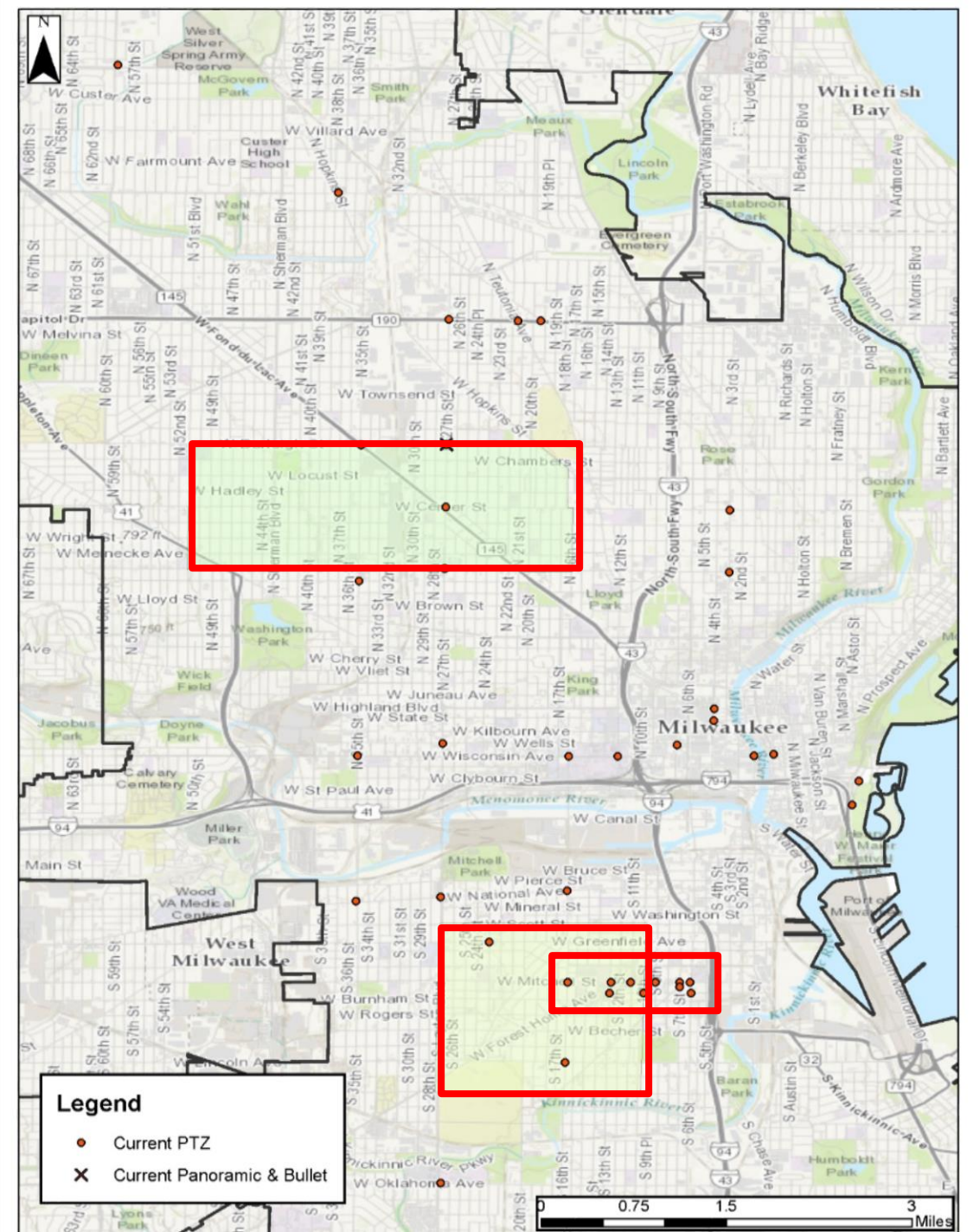
1 panoramic camera



2 box cameras



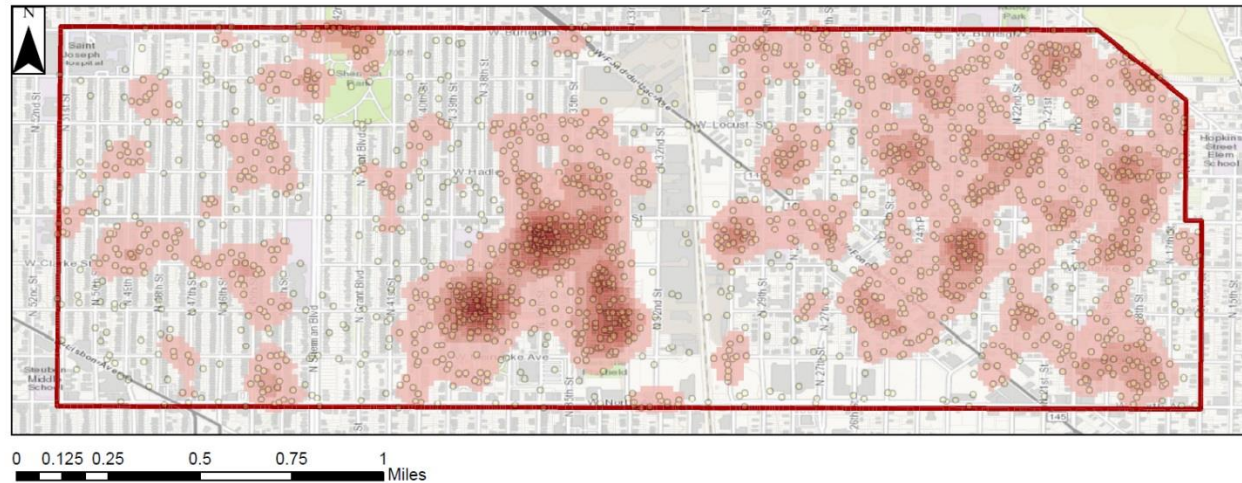
Milwaukee PD's Current Surveillance Infrastructure



Center Street Corridor

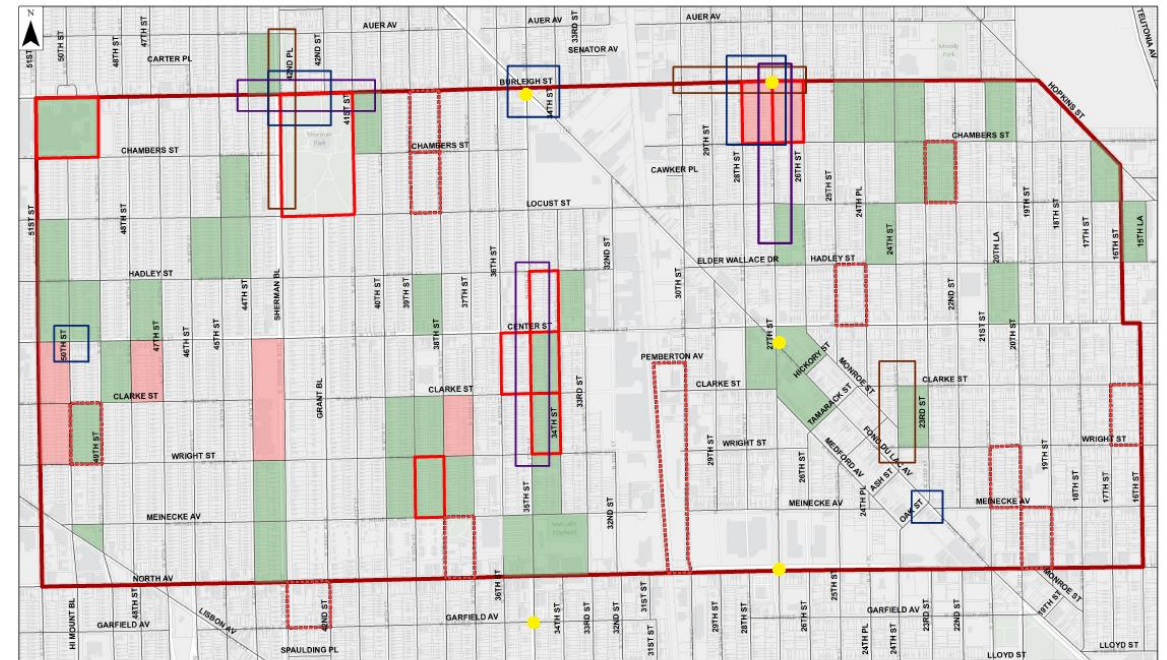
N 16th Street to N 51st Boulevard & W Burleigh Street to W North Avenue

Center Street Corridor: ShotSpotter Alerts
06/01/2015 to 05/31/2016



Milwaukee Police Department

Violence Reduction Network: Center Street Corridor

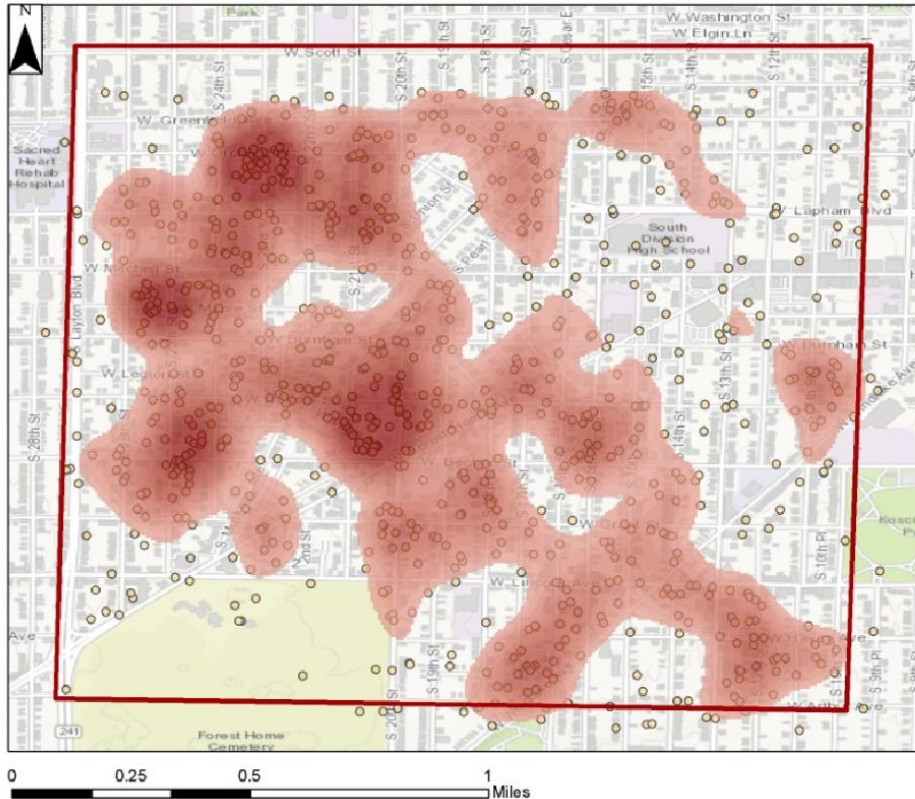


- 100+ Priority 1 Calls in past year
- High Firearm Recoveries
- 10+ Street Robberies in past year
- Business Improvement District (in addition to Center Street)
- 15+ Incident Reports in past year
- 10-14 Incident Reports in past year
- 6+ Recovered Vehicles in past year
- Current Camera Location

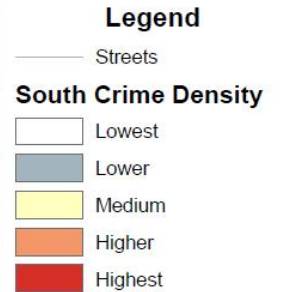
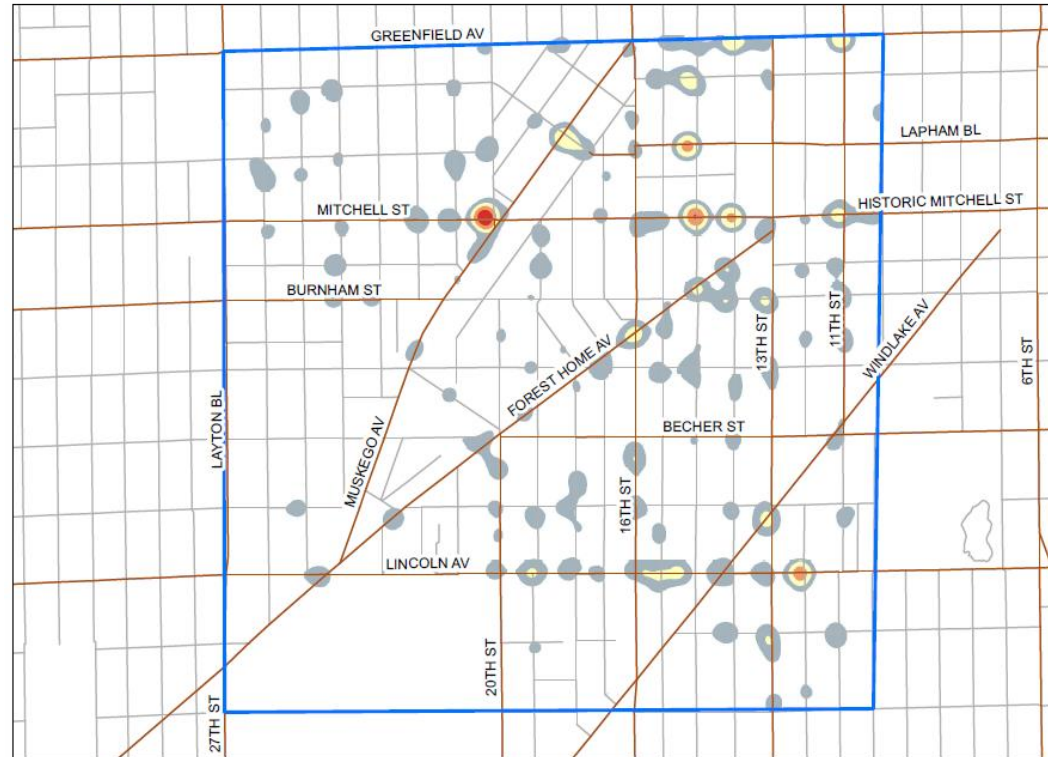
Muskego Way Neighborhood

S 10th Street to S Layton Boulevard & W Scott Street to W Arthur Avenue

Muskego Way Focus Area
SST Alerts 06/01/2015 to 05/31/2016



Muskego Way Focus Area
Crime Density



NIJ Optimizing Video Surveillance Systems Project

- Planned Improvements:
 - New PTZ and Panoramic Cameras in current and new locations
 - Center Street Corridor
 - Muskego Way Neighborhood
- Automatic License Plate Recognition (ALPR) Cameras
- Integrating PTZ Cameras with MPD's Gunshot Detection System
- Integrating MPD Connection with Business-Owned Cameras



Integrating MPD Connection with Business-Owned Cameras

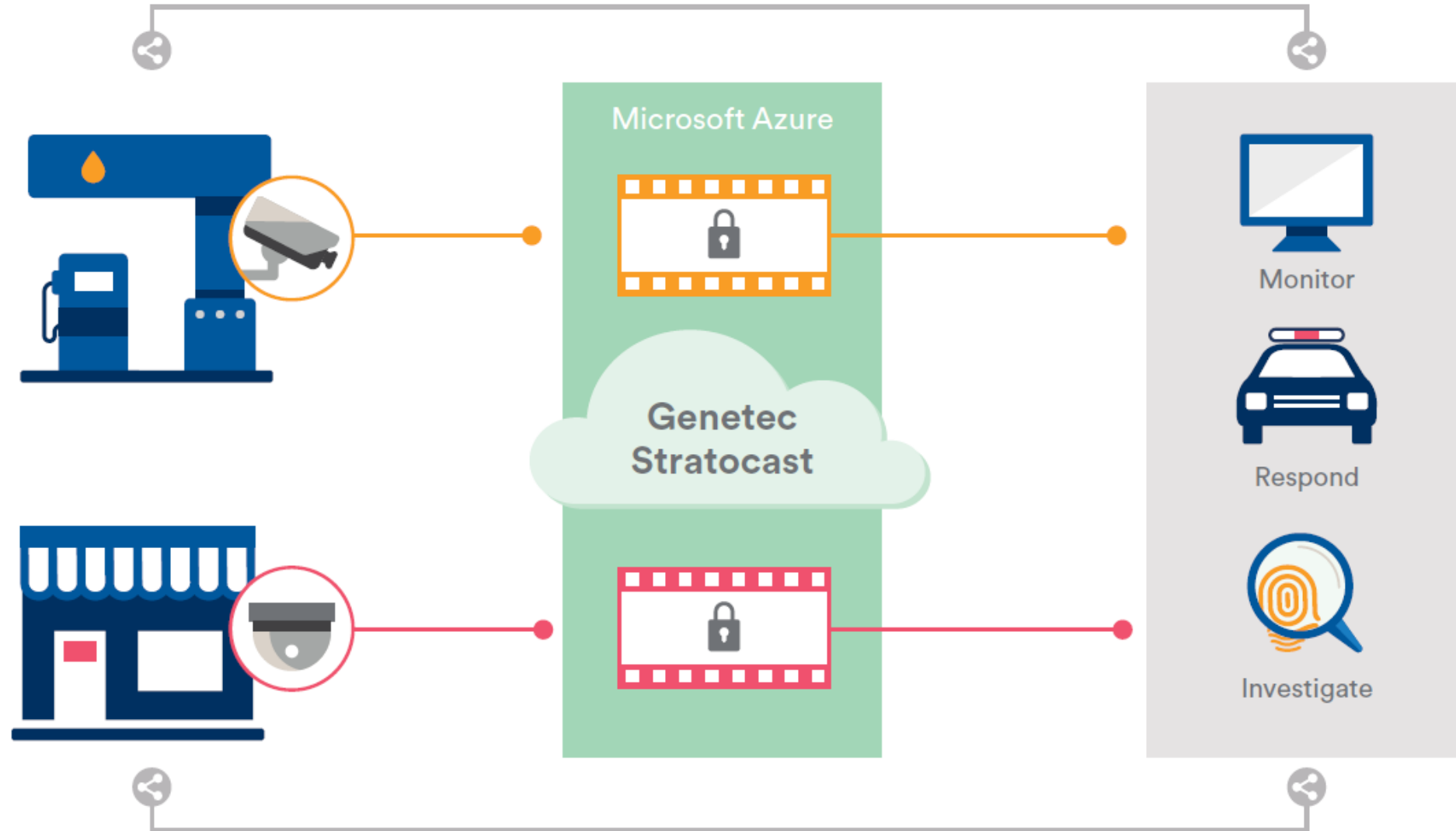
- Similar to Detroit's Project Green Light (<http://www.greenlightdetroit.org/>)
 - Started with 8 businesses on June 1st, 2016
 - Now has 130+ businesses throughout the city
- Public-private-community partnership
- Partners install, and will maintain, a number of high-definition (720p) cameras which MPD will have *live* access to as part of its public surveillance system.



Community Connect

Local Businesses

Law Enforcement



Costs to Businesses

Customer Requirements:

- Signed MOU with MPD
- Physical mounting structure
- Access to 110v electric power within 50 feet of camera installation
- Access to Internet service within 50 feet of power source
- Does not include core drilling or electrical.
- Installation price to be confirmed at site survey for camera placement

Item	Fees		
Professional Fixed Day/night Color Camera HD 1280x720	~\$2,000 (720p) - ~\$4,000 (1080p)		
Annual Subscription to Cloud Service 7 days archive running for 1 year \$200 Installation Fee/camera	Owned Cameras		Rent Cameras
	2 Cameras	~\$35.83/month	~\$50-80/month
	3 Cameras	~\$53.75/month	~\$75-120/month
	4 Cameras	~\$71.67/month	~\$100-160/month

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