An Evaluation of the Effectiveness of San Francisco's Community Safety Cameras

Jennifer King

Deirdre Mulligan

Steve Raphael

University of California, Berkeley

CITRIS: Center for Information Technology Research
in the Interest of Society

Scope of Work

The CITRIS team was contracted to:

- Evaluate SF's Community Safety Camera system
  - Did not include any other city-owned camera system
- SF Camera Ordinance requires an analysis of: "camera locations, the crime statistics for the vicinity surrounding each camera both before and after the camera is installed, crime statistics from surrounding vicinities, the number of times the SFPD requested copies of the recorded images, the number of times the images were used to bring criminal charges, the types of charges brought, and the results of the charges."
- Our analysis included the above as well as a review of the program's technical infrastructure and management

CiTRIS
Center for Information Technology Research in the Interest of Society

Our Methods

- Document analysis, including the Municipal Ordinance governing the CSC program, documents and data provided by City agencies regarding the camera systems specifications, management, policies, and procedures, and documents published to the SFGov.org website

- Interviews with over thirty program stakeholders and end-users

- Reviewed minutes and video recordings of public hearings

- Review of relevant press releases and news articles

- Site visits conducted with the cities of Los Angeles and Chicago for comparative insights, in addition to previous site visits conducted by CITRIS researchers

- Empirical and quasi-experimental statistical analysis of 59,706 crime incident reports dated January 1, 2005 and January 28, 2008

Goals of CSC

Evaluation performed within context of the goals of the program as established through analysis of aforementioned sources

- Primary goals:
  - Deterrence of crime, particularly violent crime
  - Provide a forensic tool to SFPD investigators

- Secondary goals:
  - Community participation in process
  - Clear accountability & oversight of program
  - Protection of privacy, free expression, and related rights in execution of program

- Goals affected design, management, and execution of program

Three Part Findings

Our findings focus on three primary areas within the context of the program's goals:

– Results of empirical crime report analysis (deterrence)

– Analysis of program's investigatory goal and secondary goals

– Management analysis and technical evaluation

Uniqueness of SF System

- While some oppose all use of public video surveillance and others embrace it, we commend the City for attempting to balance privacy and civil rights with the goal of fighting crime
  - Level of transparency and oversight facilitated by ordinance and other policy choices is unique
  - At a policy level, while not perfect, it should stand as a model for other US cities considering camera programs
  - Codifying public participation and oversight is key for ensuring systems are used for public safety goals in a manner consistent with commitments to other democratic values

Quantitative Findings: Methods

- Compare change in crime near the cameras to changes in crime further away

- Compare changes in crime in areas receiving cameras to areas that have yet to, or already have cameras

- Compare the change in crime occurring in public places to crime occurring in private
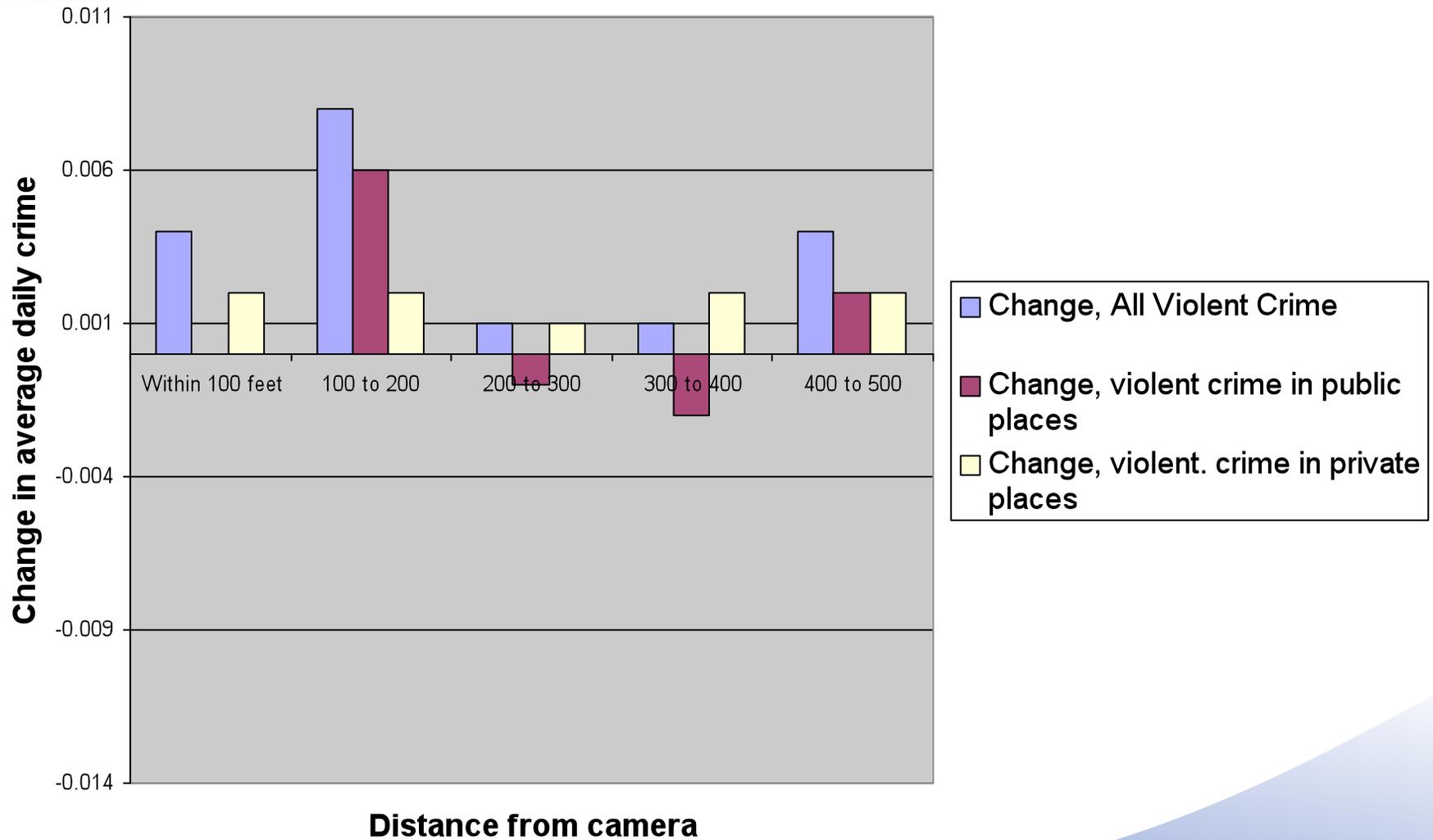
Change in Property Crime Within 100 Feet Bands of the Cameras
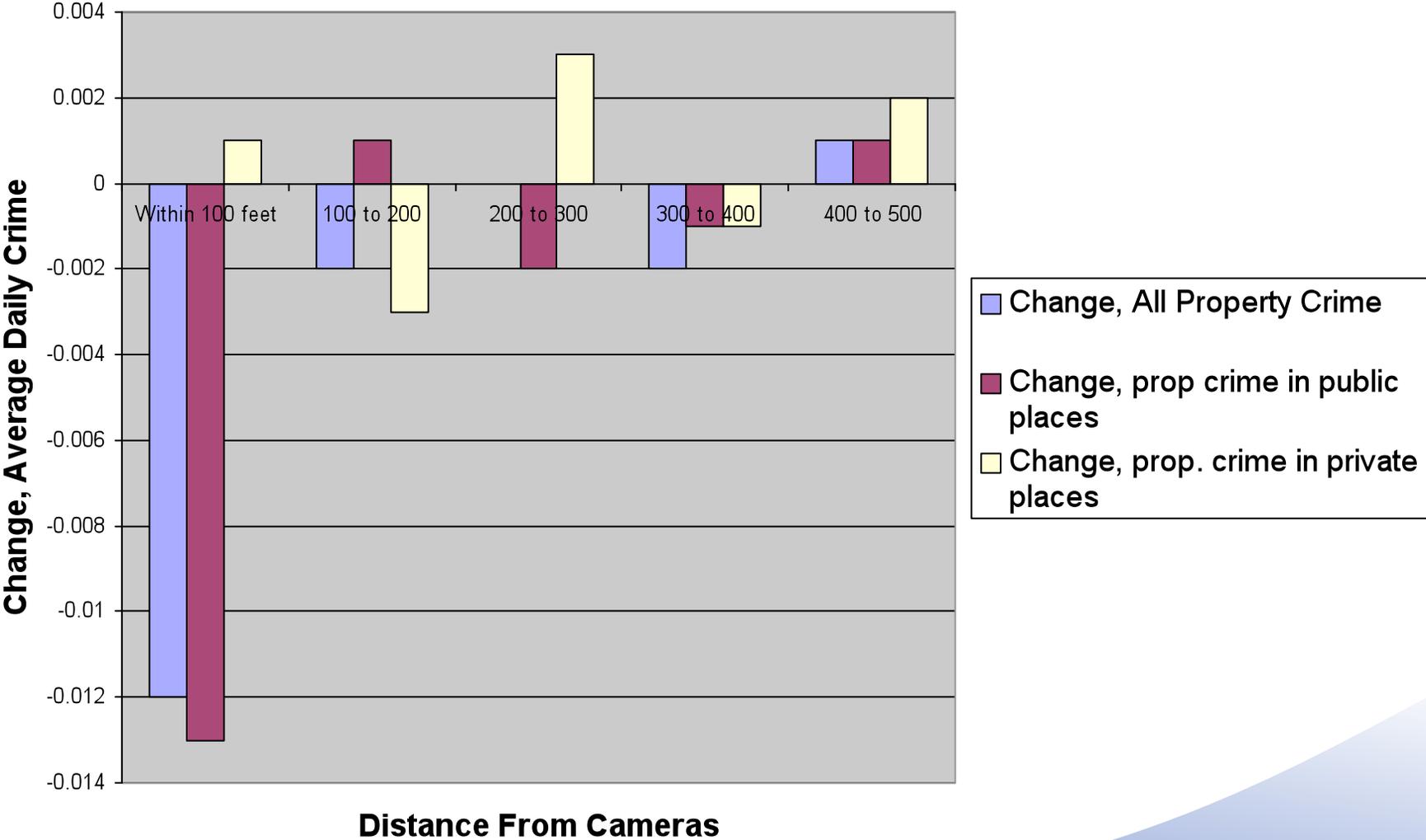
Which property crimes were impacted?

- Large effects on larceny theft (theft from vehicle, theft from building, pocket picking, purse snatching)
- No impacts on burglary or motor vehicle theft.

Change in Violent Crime Within 100 Feet Bands of the Cameras

Effects on Individual Violent Crime

- Little evidence of deterrence or displacement effects for homicide, robbery, assault, or sexual assault

The impacts on other infractions?

- No measurable effects on drug incidents, prostitution, vandalism, or suspicious occurrences.

Impact on Investigatory Use

Program has been beneficial for SFPD when investigating crimes to some extent (and for public defenders)

– Footage clarity is poor thus identifications of individuals or other details are rare

– Generally useful for establishing a sequence of events and placing witnesses at scene

– Limits with using footage as "silent witness"

iTRIS
Center for Information Technology Research in the Interest of Society

Issues with Investigatory Use

- Poor image clarity
- Existing process and infrastructure doesn't capture well SFPD need for viewing footage quickly
- Processes created w/o significant contributions from stakeholders (SFPD, DA, PD)
  - Obtaining stakeholder input could improve both operational and strategic usage of program

Impact on Secondary Goals

- Community participation in process:
  - SF unparalleled in its approach in US; City's efforts commendable

- Accountability & oversight of program:
  - Oversight exists but could be improved, in particular adopting a formal audit structure
  - Management of program to date has been unclear and disjointed

- Protection of privacy, free expression, and related rights in execution of program:
  - While Ordinance clearly establishes protections and limits, operational support of these goals need improvement, such as better guidance and training for users

Design, Management, and Execution

- Program's "pilot" status has had negative impact on all phases of project
  - Technical design largely unplanned
  - Inconsistent leadership primarily due to MOCJ turnover
  - Dedicated Project Manager (and/or technical manager) needed to provide consistent project oversight & vision
  - Formal requirements gathering and feedback needed from users and stakeholders
  - Documentation and training should be developed

Design, Management, and Execution Cont'd

- System Architecture & Hardware:
  - Existing system suffers from severe lack of storage
  - Key reason why 30 day data retention mandate cannot be met
  - Appropriate increase in storage capacity should also address image quality issues
  - Per DTIS, likely minimum investment of $500K

- Lack of Data Analytics & Technology Infrastructure
  - While we recommend better strategic integration with SFPD's policing goals, adequate technological infrastructure is likely to be absent for several years to support system to fullest potential

CiTRIS
Center for Information Technology Research in the Interest of Society

Improvements to Existing System

Key recommendations:

- Obtain stakeholder and user feedback
  - SFPD's access to footage
  - Prosecution and Defense issues
  - DEM with respect to process and capacity for increased load
- Improve auditing capabilities and oversight
- Increase storage to meet 30 day obligation and increase image clarity
- Establish a department as primary owner and assign a devoted project manager
  - Project manager should coordinate stakeholder groups, develop and document training and policies/procedures for system

Possible Alternatives

- Abandon program
- Make modifications to existing passive system
  - Include technical detection measures, such as coordinating with ShotSpotters or threat detection software
  - Redeploy cameras using a different strategic model

Active Monitoring

- Should the City wish to consider an actively monitored system, be cognizant of the limitations:
  - Existing research demonstrates that actively monitored systems have mixed results with deterrence, especially violent crime
  - Not a magic solution
  - Will require significant commitments in both funds and resources from SFPD and the City