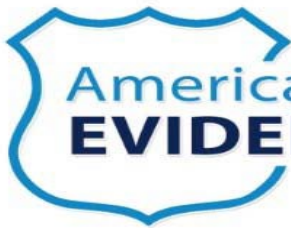


How do we know it works? Theft Deterrence Strategies



BETAGOV
EVIDENCE-BASED POLICING

Jason Potts

2019 Problem Oriented Policing Conference – Santa Cruz

You Can Too - Crime and Resource Challenges

Most dangerous cities

Among Bay Area cities with more than 25,000 people

Violent crime

Crimes per 1,000 residents



Property crime

Crimes per 1,000 residents



Police staffing

Among Bay Area cities with more than 25,000 people

Most police staff per capita

One employee per ...



Least police staff per capita

One employee per ...



Harm-Focused
Intelligence-Led
Problem-Oriented
Evidence-Based



So How Do You Know That?

- ❑ We only use 10% of our brain
- ❑ Sugar makes kids hyperactive
- ❑ Milk increases mucous
- ❑ We lose the most body heat through our heads
- ❑ We have different learning styles – auditory, visual, and tactile
- ❑ Rust causes tetanus
- ❑ Hair and nails continue to grow after death
- ❑ Spicy foods cause ulcers
- ❑ Dogs mouths are cleaner than human mouths
- ❑ During a full moon – crime increases?

Are You an Expert in Policing?

A recent (2017) panel of experts reviewed the published research for all the tactics in this list. **Only four were assessed as being effective?**

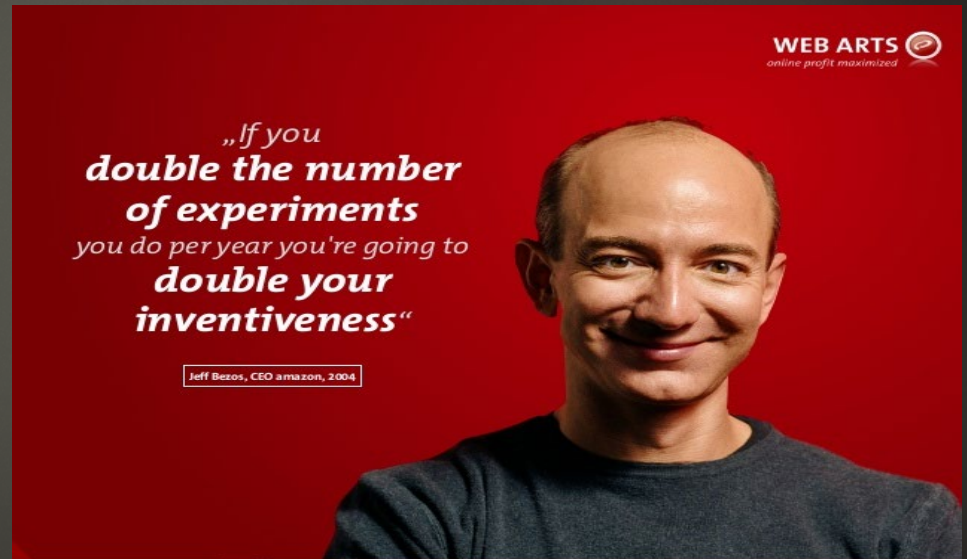
1. Hot spots policing
2. Predictive policing
3. 3rd party policing
4. Problem oriented policing
5. Active CCTV monitoring
6. Broken windows policing
7. Stop, question and frisk (aka stop and search)
8. Community-oriented policing
9. Procedural justice
10. Focused deterrence.

PRACTITIONER-LED

Failing Forward, Fast, and Looking at Data in Context

BETA TESTING

- ▶ Those closest to the problems empowered to come up with the solutions



Who We Are

Our team includes psychologists, economists, policy experts, clinical researchers, statisticians, and consultants with decades of experience planning and conducting randomized controlled trials (RCTs) and collaborating with stakeholders in the field. Supported initially by funding from Give Well and Good Ventures, and by subsequent funding from the Laura and John Arnold Foundation and the Smith Richardson Foundation, our services are provided at no cost.



Angela Hawken, Ph.D.

Director

Angela Hawken, Ph.D., is a Professor of Public Policy at the NYU Marron Institute of Urban Management and director of the Litmus program. As founder and director of BetaGov, she works closely with practitioners to identify areas for policy and practice improvement.



Maureen Hillhouse, Ph.D.

Associate Director

Maureen Hillhouse, Ph.D., is associate director of BetaGov. Her expertise is in the development and implementation of clinical trials. Dr. Hillhouse also provides expertise on regulatory issues, data collection, instrument development, and statistical analyses.



David Farabee, Ph.D.

Co-Director

David Farabee, Ph.D., co-directs BetaGov. He is also professor-in-residence in the Department of Psychiatry and Biobehavioral Sciences at UCLA and a principal investigator at the Integrated Substance Abuse Programs. Dr. Farabee's expertise ranges from



Ariana Anderson, Ph.D.

Statistician

Ariana Anderson, Ph.D., is a statistician and provides assistance with data analyses, including identifying patterns of behavior and associated interventions. An assistant professor at the Department of Psychiatry and Biobehavioral Sciences at UCLA, Dr.

Theft-Deterrence Strategies

Targeting seasonal crime with multiple deterrence components

Agency: Vallejo (CA) Police Department

Pilot Duration: 11/08/17–12/30/17

Pracademic*: Lieutenant Jason Potts

Context
Holiday shopping provides an increased opportunity for thefts of personal items from cars. Shoppers may move from store to store in a shopping center, depositing items in their cars as they shop. Thieves may be especially adept at targeting these items and such crime often increases over the holiday season.

Key Finding
Increased efforts to deter crime appeared to have led to a significant reduction in auto burglaries.

*BetaGov trains agency personnel to become research-savvy "Pracademics" who lead trials.

Background

Deterrence strategies attempt to reduce crime and may include the increased presence of officers, threats of apprehension for specific offenses, and focused police efforts in targeted areas. Research has shown that targeted deterrence strategies may be more effective if limited in duration and rotated across targets. Such strategies include reminders aimed at reducing crime vulnerability and increasing surveillance.

Pilot Design

The Vallejo Police Department launched a crime-prevention campaign, *Hide it Lock it Take it*, in an effort to deter crime that occurs around the December holidays. The campaign reminded the community about methods for preventing theft of items in cars. This pilot used a quasi-experimental design in which deterrence components were tested over the pilot period. Strategies tested included crime awareness flyers and billboards, surveillance, and increased "Holiday Patrol" in a high-density shopping center. Also included was the use of GPS devices placed inside locked undercover cars, and unoccupied police vehicles parked in the shopping center. Social and local media were used to increase awareness. Patrols, flyers, and billboards were used

December 1–30; and undercover surveillance and decoy cars were used November 8–December 30.

Results

Deterrence methods were associated with fewer auto burglaries ($p < 0.05$). Police-citizen contacts were a strong predictor of outcomes ($p < 0.05$), and the combined deterrence methods corresponded with a 40% drop in 2017 auto burglaries from the same time period in 2016. This is an important finding since the number of car burglaries in 2017 were greater than in 2016, prior to this campaign. These strong findings underscore the need for a replication study, preferably using an experimental design to rule out time-variant trends in crime.

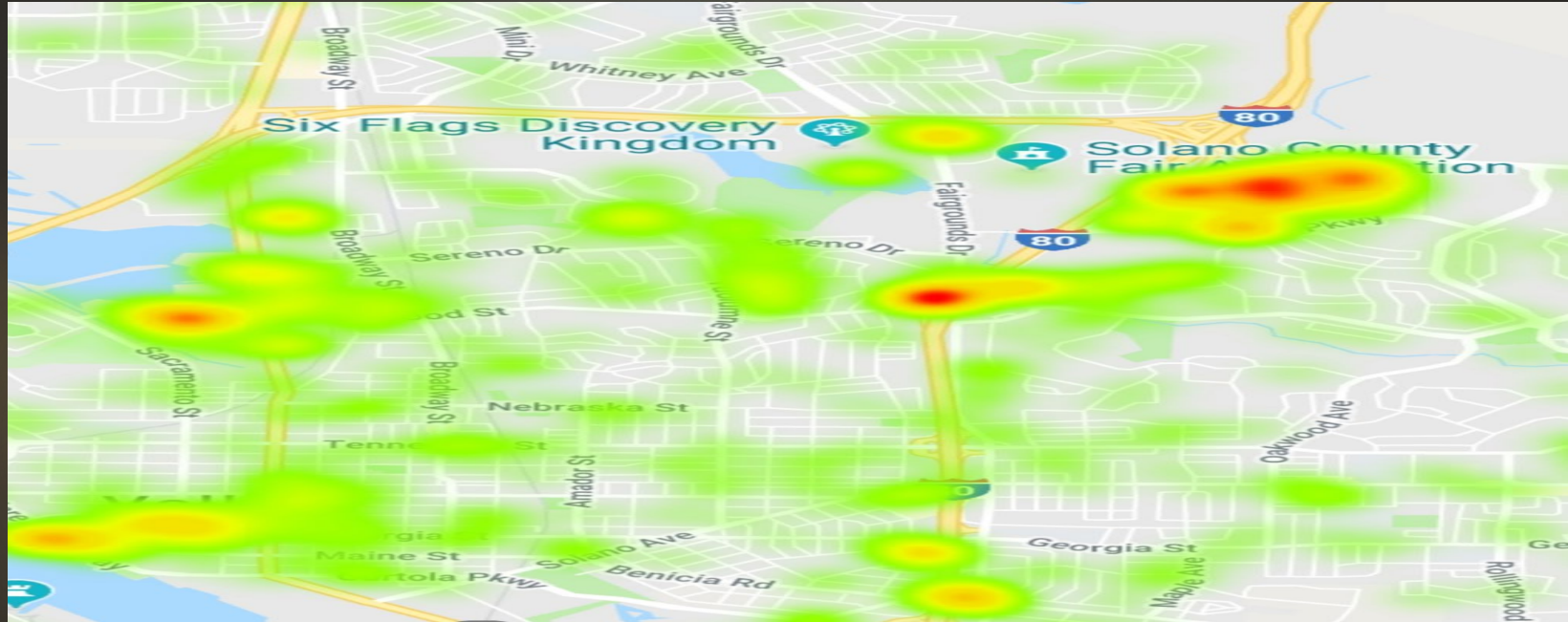
Auto Burglaries in Target Area, Equivalent Period 2016 & 2017



Why BetaGov?

We are *fast*. We are *free*. And we focus on research that matters to *you*. BetaGov focuses on practitioner-led research that tests locally generated advances in education, criminal justice, health, and human services. We support more than 200 randomized controlled trials across a dozen states. One trial at a time, we are changing the way knowledge is created in the public sector.

Scan - MVT Hot Spot Areas in Vallejo



Motor-vehicle hotspots are generally in shopping centers, large parking lots, or restaurants which are near on and off ramps for Hwy 80.

Analysis - The Problem

Table 1 - Auto Burglaries for Vallejo Plaza Shopping Center-- Each Calendar Year

Auto Burgs for Plaza	2015	2016	2017	2018
	266	294	311	245

Total Number of Auto Burglaries for Vallejo Plaza Shopping Center – Calendar Year – 21% decrease from 2017

Table 2 - 8 Nov to 28 Dec

8 Nov – 28 Dec	2015	2016	2017	2018
	33	44	25	28

Auto Burglaries in Vallejo Plaza Shopping Center 8 Nov to 28 December – 40% decline from previous year 2016 – despite numbers for 2017 being the highest in that 4-year span

Table 3- Black Friday to 28 Dec

Black Friday to 28 Dec	2015	2016	2017	2018
Total	25	22	19	24

Auto Burglaries in Vallejo Plaza Shopping Center Day After Thanksgiving to 28 December – 21% increase from 2017 to 2018

Table 4- Auto Burglaries for the Entire City

Auto Burgs for Entire City	2015	2016	2017	2018
Total	1192	1135	1262	1478

Total Number of Auto Burglaries for Entire City – Each Calendar Year (1 Jan to 31 Dec) -15% increase 2017 to 2018. Theft from Auto up for the entire city, but down 21% from it's high in 2017 in the Vallejo Plaza Shopping Center (Table 1).

Table 5 – FBI UCR statistics 2016-2018

Vallejo	Violent Crime	Murder	Rape	Robbery	Burglary	Auto Theft
2016	517	10	48	167	1,120	608
2017	541	10	46	187	1,256	510
2018	474	4	42	170	1,069	465

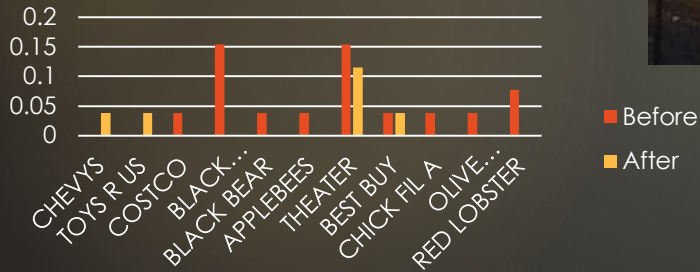
Auto Burgs for Plaza

Auto Burgs for entire city

Response - How?



Thefts in an Area Before and After "Ghost Cars" were Introduced



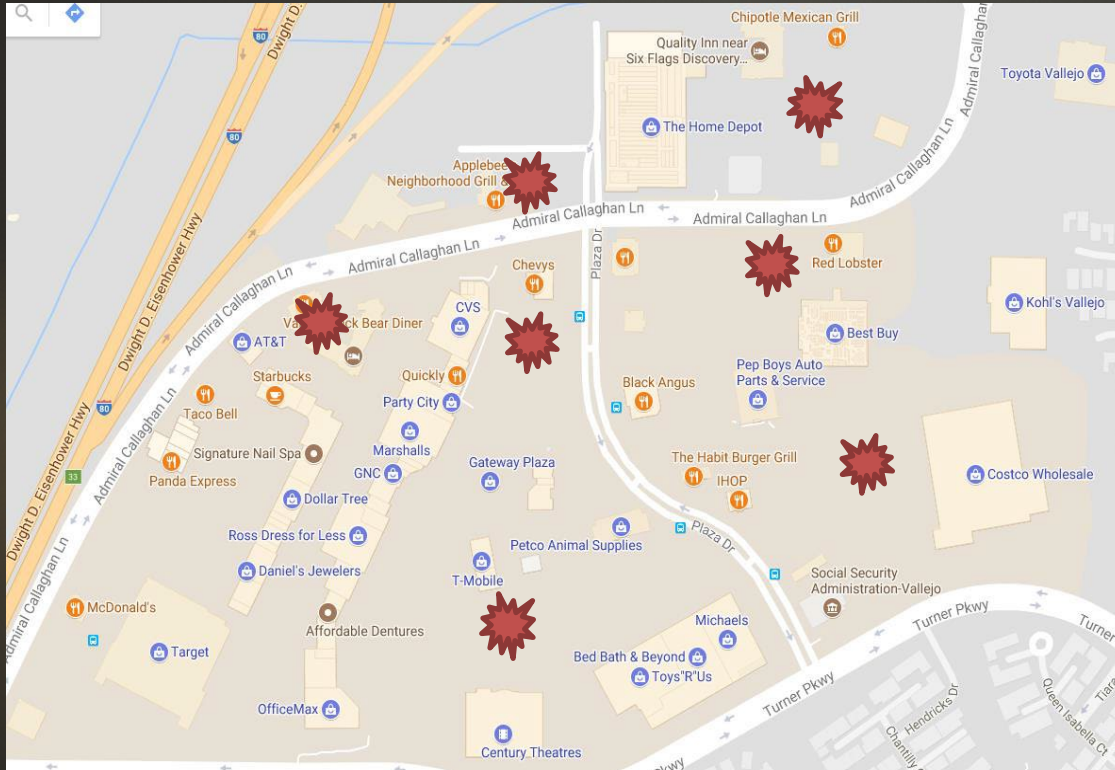
Unoccupied police cars



Crime Awareness:
Advertised on Major Hwy 80

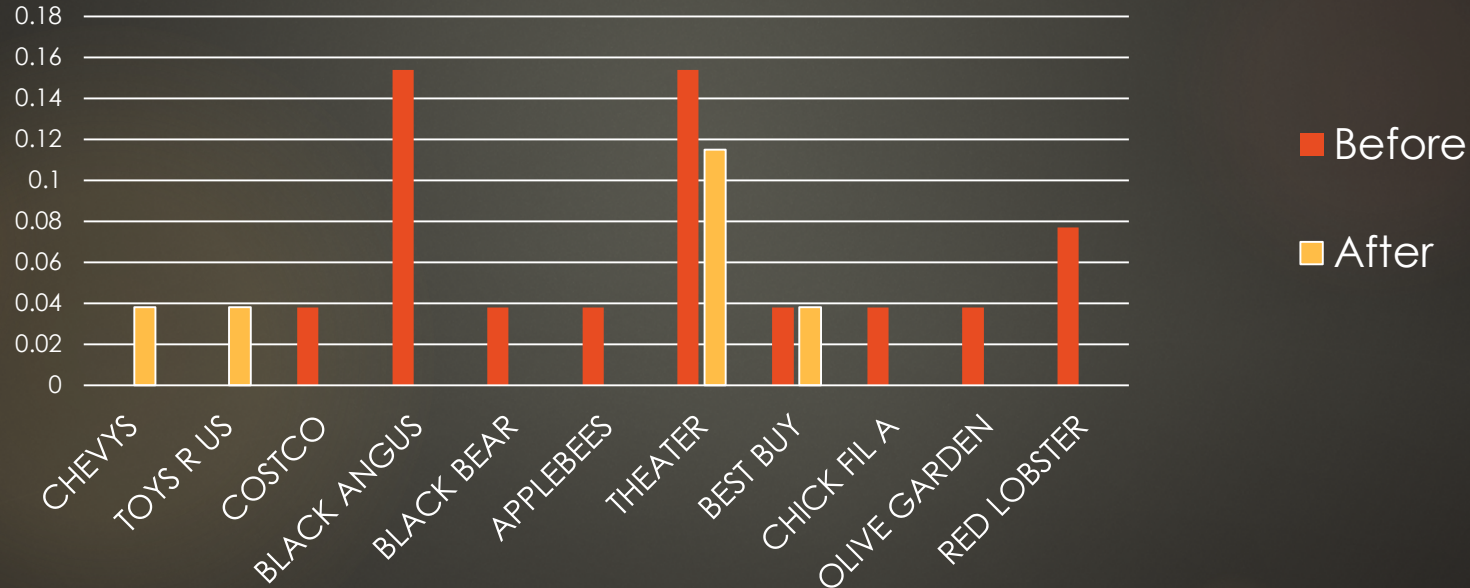
Crime Prevention Flyers
Increasing Capable Guardians

Hot Spots in Shopping Center



Unoccupied Police Car Analysis

Thefts in an Area Before and After “Ghost Cars” were Introduced



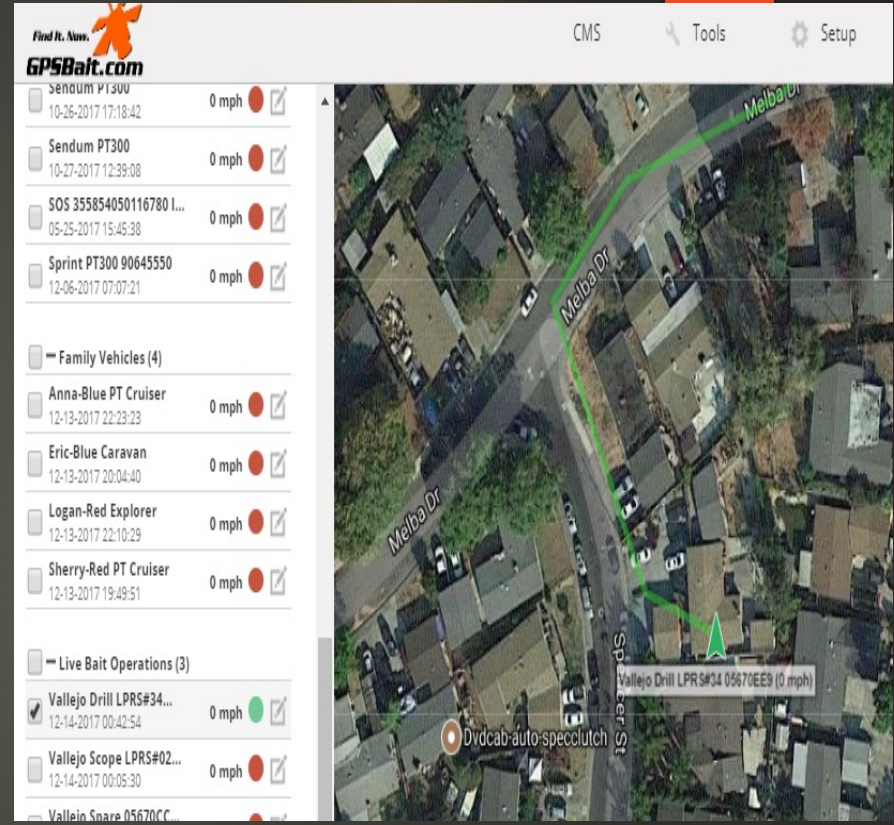
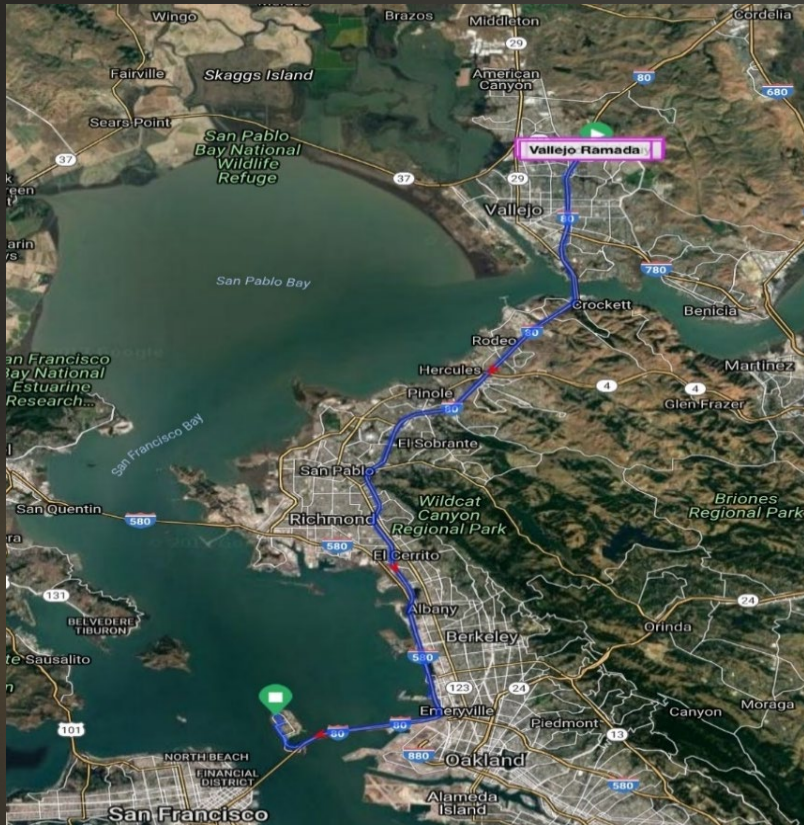
Leveraging Technology



GPS bait



Hidden cameras



GPS Bait – Involving Pursuit to SF

Theft to a residence where firearms and stolen items recovered (Search Warrant)

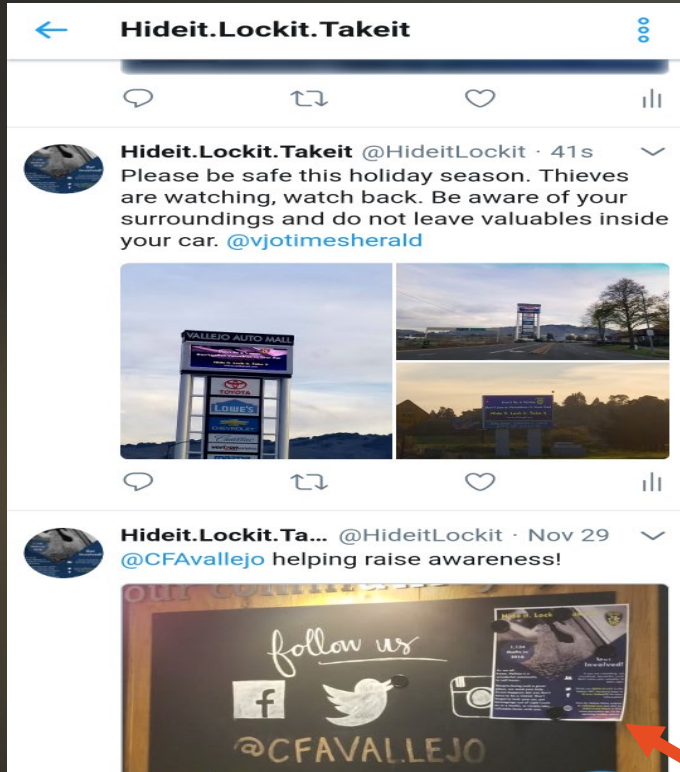
Electronic Crime Bulletin Boards



Table 8 – Electronic Bulletin Board. Attempting to show any correlation to increased awareness on a W/B Hwy 80 at Redwood street and less thefts from auto for those days

Start	Time	Stop	Time	# of Days	Total Days	THEFTS
12/1/17	9:00 AM	12/4/17	9:00 AM	3	14	2
12/8/17	8:00 AM	12/11/17	8:00 AM	3		1
12/18/17	4:30 PM	12/20/17	8:00 AM	1		1
12/22/17	8:00 AM	12/27/17	8:00 AM	5		1
12/30/17	8:00 AM	1/1/18	8:00 AM	2		

Awareness Campaign



The graphic features a background image of a car window with a jagged hole, suggesting a break-in. In the top right corner is the Vallejo Police Department badge. The headline 'Hide it. Lock it. Take it.' is written in yellow. A blue circular callout contains the text '1,134 thefts in 2016'. The phrase 'Get Involved!' is written in white on a dark blue diagonal background. Below this, there are three sections of text with corresponding icons: a person icon for the first section, a Twitter icon for the second, and a Facebook icon for the third. The bottom section includes a globe icon. The text in the sections is as follows:

Get Involved!

If you see something, say something! Spread the word and don't leave your valuables in plain sight.

As we all know, Vallejo is a wonderful community to call home.

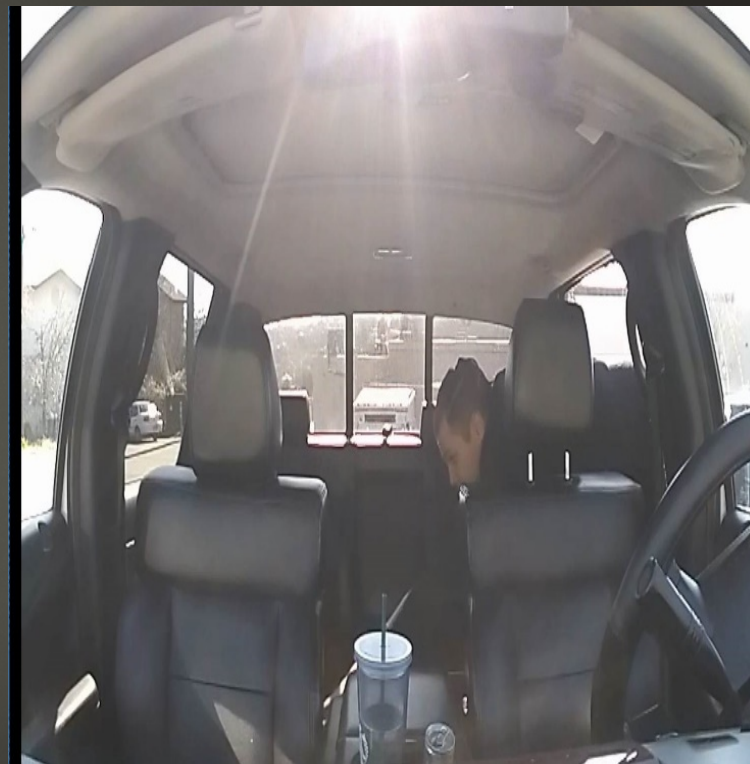
Despite being such a great place we need your help. Crime happens but you don't have to be a victim! Don't forget to lock your car, put belongings out of sight (such as in a trunk), or simply take valuable items with you.

Check out @HideitLockit or the Vallejo PD's Facebook page at fb.com/VallejoPD for more information!

Visit the Vallejo Police website at vallejopd.com and click on **Hideit.Lockit.Takeit** to find crime prevention tips for the upcoming holiday season.

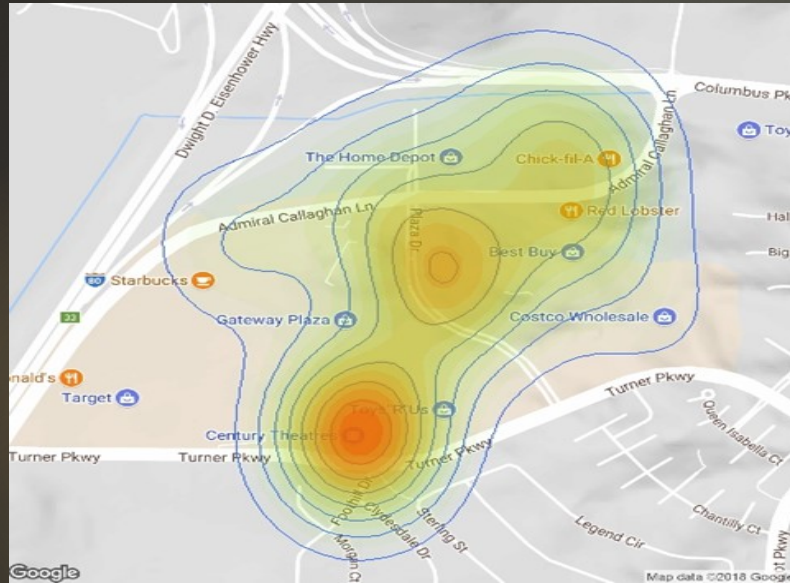
Merchants posting flyer

Thieves in the Act



Importance of Crime Analysts

The A's in SARA – Analyze and Assess



2017 Heat Map



2016 Heat Map

Discoveries

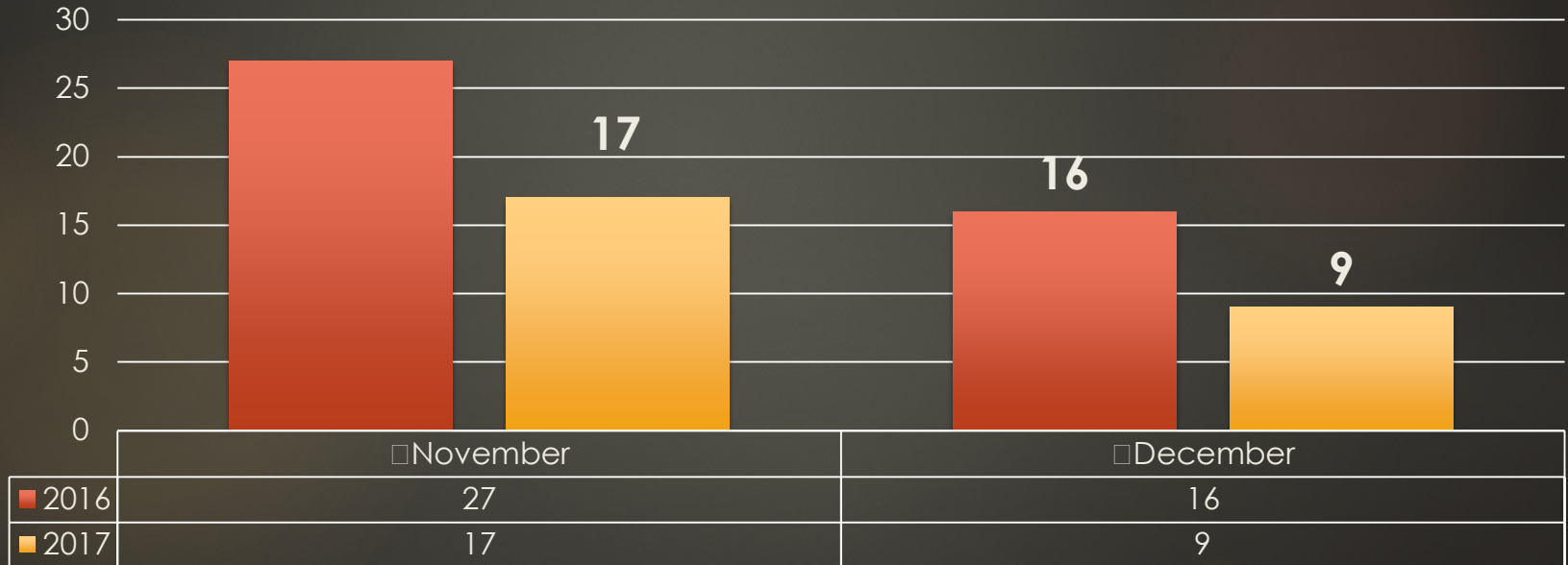


Radio
Frequency
Jammers

Personal Hotspots – Targeting Apple devices tethered to other devices i.e., Macbooks & iPads left inside car & emitting signal

Assessment Results

Auto Burglaries in the Gateway Plaza Area – 40 % decline



■ 2016 ■ 2017

Assessment Beta Gov

Statistical Analysis

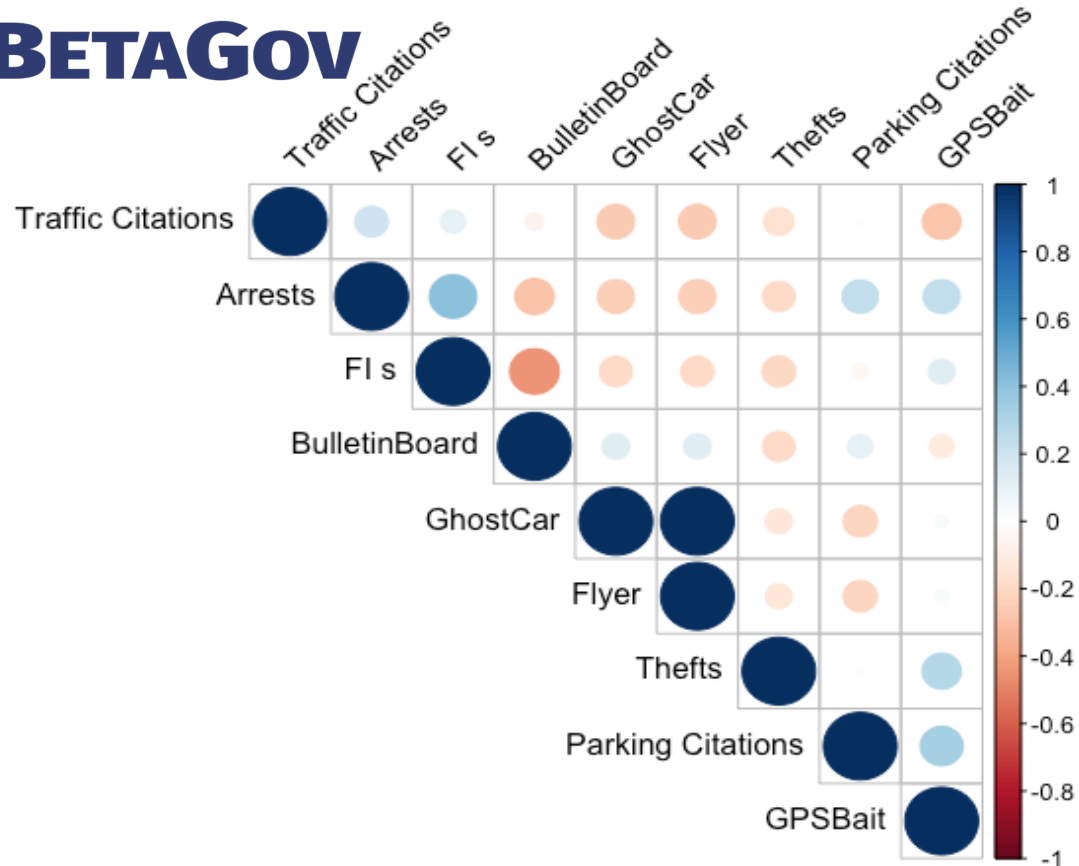
▶ **Figure 1: Correlation plot of all the variables**

▶ **FI's were significant for both thefts and arrests.**

▶ The data showed more FI's led to fewer thefts.

▶ FI's and Thefts are approximately -0.4.

BETAGOV





- Lock
- Take
- Hide

Merchants & Target Hardening

**What are you doing in
your jurisdiction to
solve similar problems?**


PLEASE SPEND 2-3 MINUTES DISCUSSING WITH PERSON NEXT TO YOU.

34-Day Police Light Randomized Controlled Trial

► An Example of Replication

BETA GOV

BetaGov
 The Marron Institute of Urban Management
 New York University
 60 Fifth Avenue, 2nd Fl.
 New York, NY 10011
 betagov.org



Police Vehicle Lights

Reducing crime through increased police visibility

Agency: Vallejo (CA) Police Department

Trial Duration: 11/23/18–12/28/18

Pracademic*: Lieutenant Jason Potts

Context
Some types of crime increase over the holiday season but one promising method of crime deterrence is simply to increase police presence. To determine whether increased patrol visibility reduces crime, the Vallejo Police Department tested whether keeping Code-2 lights on would reduce crime during the holiday season at a specified shopping center.

Key Finding
No auto thefts occurred on days when cruiser lights were kept on compared to four thefts on days when the cruiser lights were off.

*BetaGov trains agency personnel to become research-savvy "Pracademics" who lead trials.

Background

"Code-2" police lights refer to steady flashing blue and red lights on a patrol car that serve to increase awareness and perception of police presence. Increasing the number of law-enforcement personnel may generally help to reduce crime, but the major limitation of this strategy is the cost of resources. Manpower and equipment are costly and must be justified. However, it may be that the *appearance* of increased police presence is a more cost-effective method of reducing and deterring crime than increasing patrols.

Results from increased police presence to deter crime have been mixed. For example, random policing is not seen as successful, whereas increasing patrols in high-crime areas (hotspot policing) has shown reductions in crime.

Trial Design

The Vallejo PD used a randomized controlled trial design to investigate the effectiveness of keeping Code-2 police-vehicle lights on for reducing crime in a specified shopping area over the 34-day holiday season. Randomization to lights on (intervention) and off (control) accounted for day-of-week and weather conditions.

Two police cars were assigned to a high-density shopping center each day for each shift. Officers were told of condition assignment prior to their shifts and were texted reminders during the start of their shifts. Code-2 lights remained on or off during the entire shift except when responding to alarms or non-routine calls for service with a possible threat to officer safety. Frequent spot checks confirmed officers were adhering to the protocol. Outcomes included auto theft, auto burglary, and arrests as well as non-crimes such as DMV-registration checks and citizen contacts.

Results

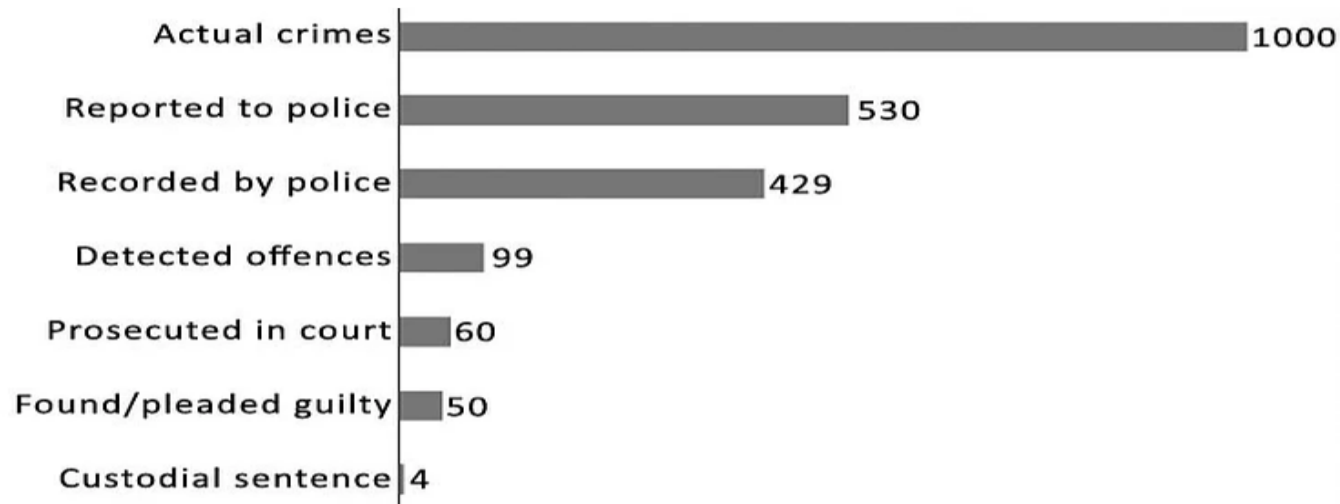
The table shows the number of events by condition and the statistical results. There were significantly fewer auto thefts in the lights-on condition. No other outcome differences were statistically significant. The low numbers of crimes and other events limited analyses and interpretation of findings.

	Outcomes		P value
	Lights On (n=17)	Lights Off (n=17)	
Total auto thefts	0	4	0.03
Total auto burglaries	6	8	0.4
Daily average DMV checks	12.6	7.4	0.12
Daily average arrests	0.8	0.4	0.2
Daily average citizen contacts	3.9	3.7	0.8

Why BetaGov? We are fast. We are free. And we focus on research that matters to you. BetaGov focuses on practitioner-led research that tests locally generated advances in education, criminal justice, health, and human services. We support more than 200 randomized controlled trials across a dozen states. One trial at a time, we are changing the way knowledge is created in the public sector.

British National Data – All Crime

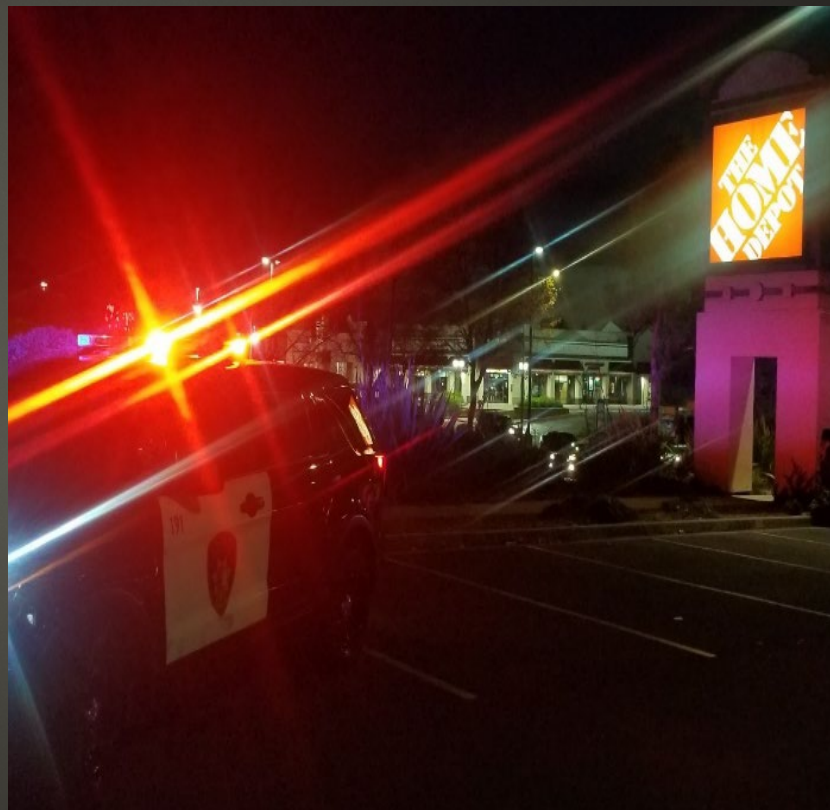
The Reason Deterrence is So Important



43% recorded by police - .4 % end up in incarceration

<https://www.jratcliffe.net/post/policing-explained-in-a-few-graphs>

Code 2 Lights – Police Light Deterrence



Text Message Notifications to Officers

< Jeremy Callinan, Anthony Abeyta ⋮

Thu, Dec 6, 2018 12:04 PM

Thanks for stepping up today to work holiday patrol.... LIGHTS ON today – deterrence and prevention of auto burglars and auto thefts is the end game – Code 2 lights while traversing inside lots and while stationary and visible. BOLO for that BMW last 3 444 and cars with paper plates etc.

Please grab fliers from desk and pass out to merchants.

Check in with dispatch with H and badge #. [1200-2200](tel:1200-2200)

Thank you and stay safe

< William Carpenter, Amanda Blain ⋮

Sun, Dec 9, 2018 11:49 AM

Hey Amanda and Bill... NO LIGHTS on today... Just business as usual. Thanks for stepping up to work OT on this detail...

Century Theater has been hit in the past.

Please check in with dispatch

H and badge number.

Also, let's find that BMW - last 3...444. Paper plates have been hitting other jurisdictions as well. We stopped a car yesterday that placed tape over top of plate. Thanks again.

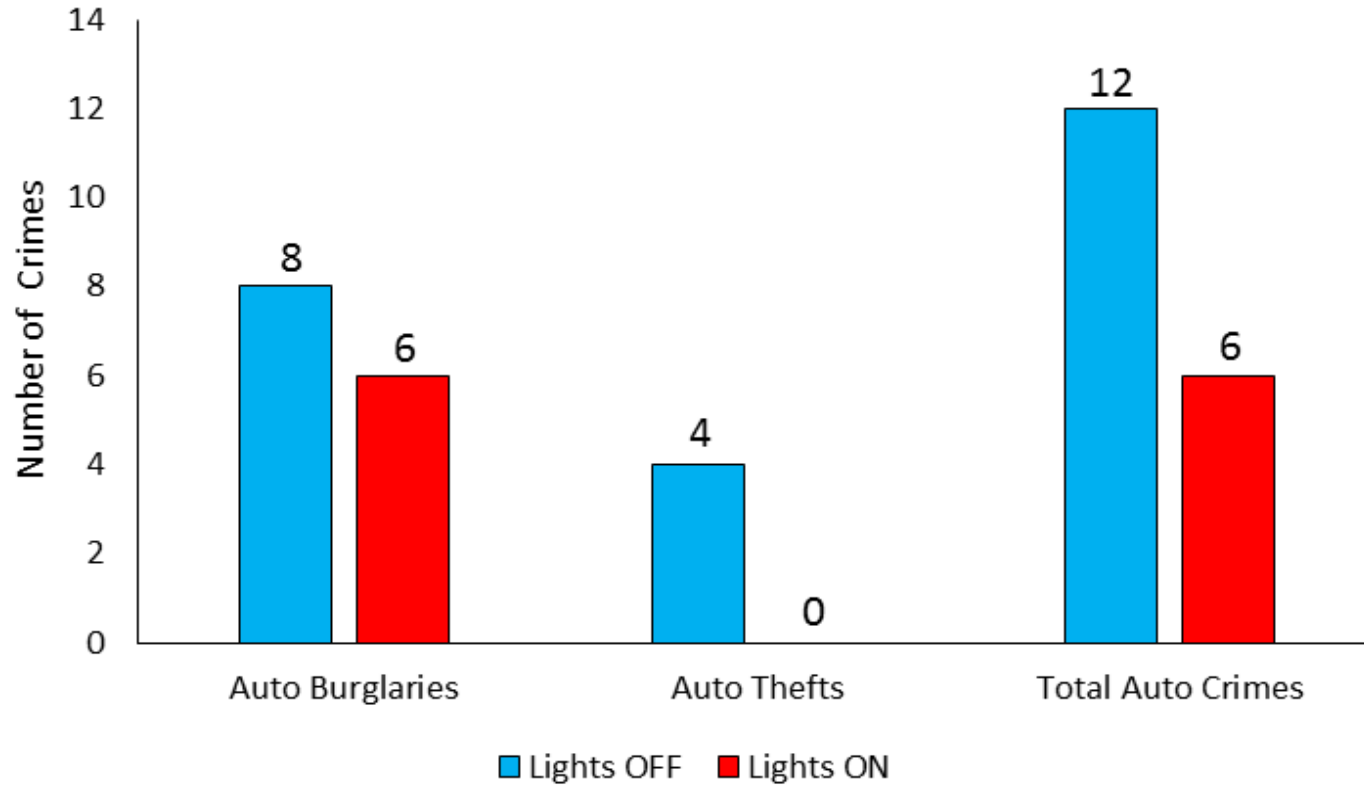
Internal Validity?

- How ?
- Spot Checks
- 12-10 PM

Outcomes

	Lights On (n=17)	Lights Off (n=17)	P value
Total auto crimes	6	12	0.07
Total auto thefts	0	4	0.03
Total auto burglaries	6	8	0.4
Daily average Vehicle registration checks	12.5	7.4	0.12
Daily average Arrests	0.8	0.4	0.2
Daily average Citizen contacts	3.9	3.7	0.8

Red Lights On / Blue Lights Off

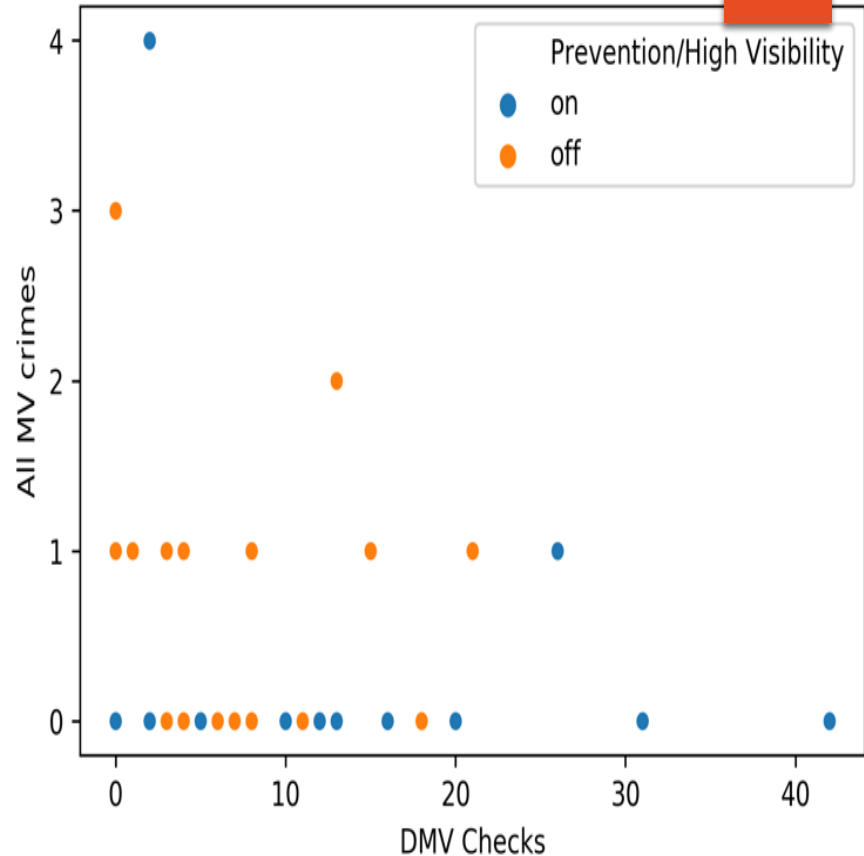


Assessing Activity

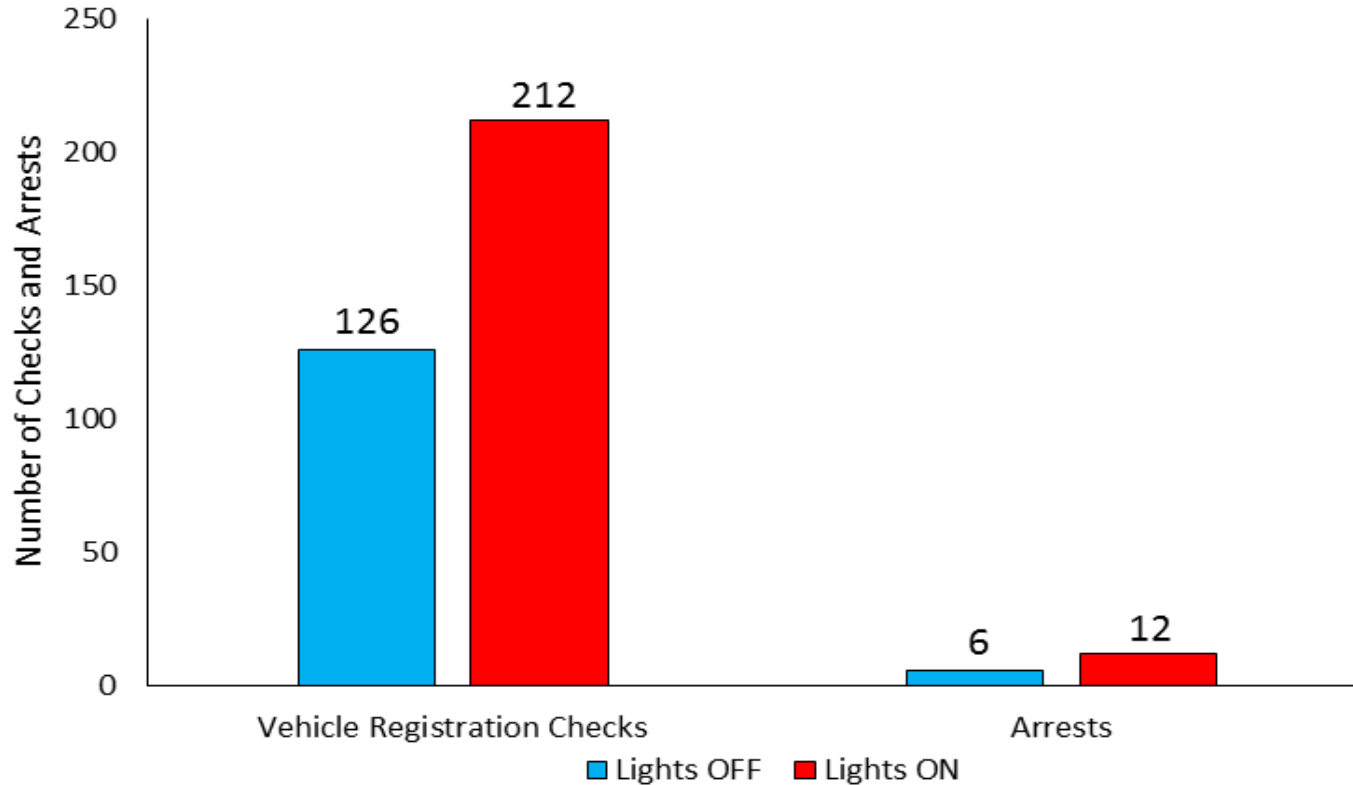
▶ DMV registration checks

	mean	std	sum
▶ Lights off	7.4	6.3	126
▶ Lights on	12.5	11.6	212

▶ 86 more DMV checks
during lights on than during
lights off



Red Lights On / Blue Lights Off

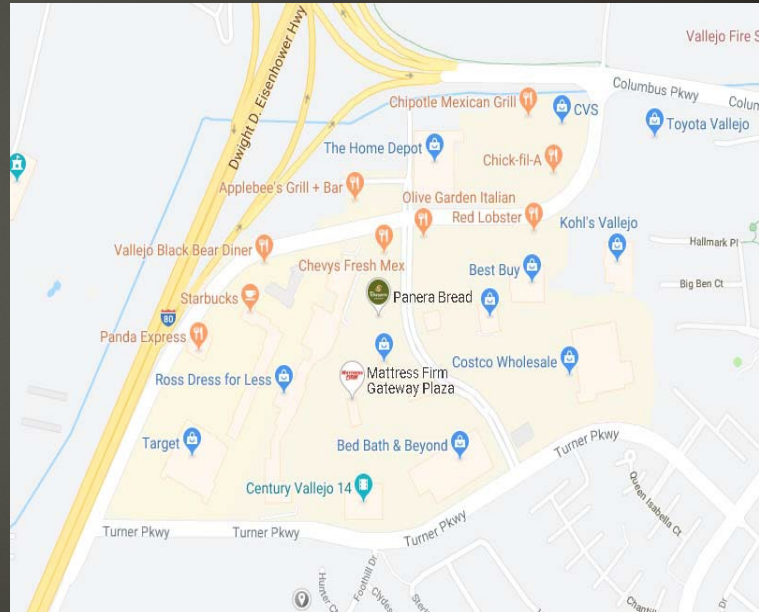


Comparison Areas for Theft Deterrence Strategies

8 Nov - 28 Dec 2016-2018

Control – Gateway Plaza

Intervention – Plaza Area



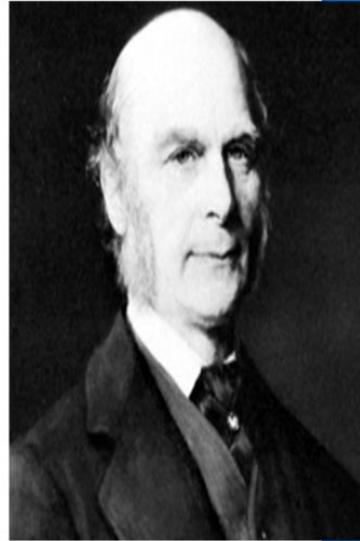
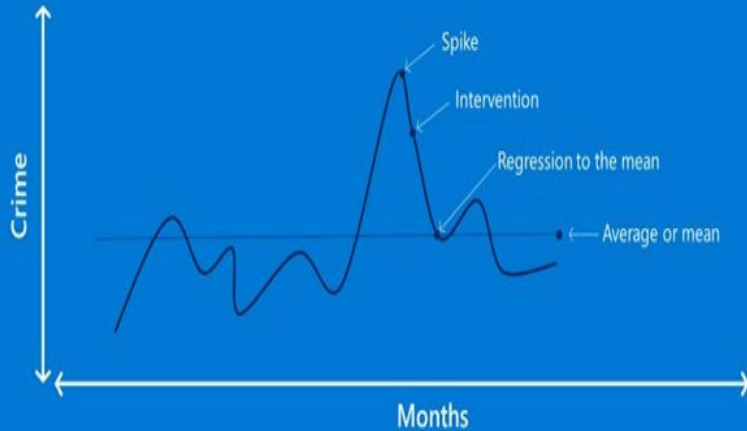
2016 **10** MVTs – 2018 **18** MVTs =
+44%

2016 **44** MVTs – 2018 **28** MVTs =
36%

Why is it Important?

Comparing treated group more than regression can explain

Regression to the mean



Whenever we study a variable that's affected by both stable factors and the influence of chance... the ratios in question have a tendency to wander about

Francis Galton

RESOURCES

THE PLAYBOOK

Plays for law enforcement officers to help prevent crime and increase citizen trust and confidence.

DRAFT ONLY
January 1, 2017

Developed by Cynthia Lum and Christopher Koper
Center for Evidence-Based Crime Policy
George Mason University

in collaboration with law enforcement partners

National Institute of Justice
STRENGTHEN SCIENCE. ADVANCE JUSTICE.

OFFICE OF JUSTICE PROGRAMS

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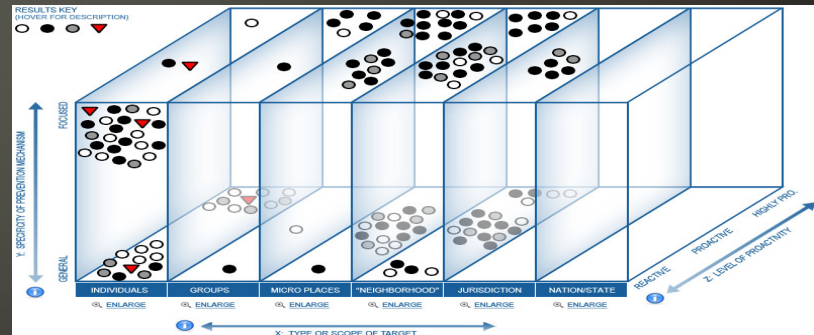
Crime SOLUTIONS .gov

RELIABLE RESEARCH. REAL RESULTS.

Enter your keyword(s) Search Site Advanced Search

TOPICS All Programs & Practices About CrimeSolutions.gov Resources FAQs Nominate

Red triangles – backfire



White or gray dots – interventions not necessarily showing effectiveness. **Black dots - effective**

Final Points



COMPARE
GROUPS



ASKING THE
RIGHT
QUESTIONS?

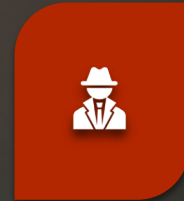
**SMALL CHANGES
INVERSE THINKING**



BE A CRITICAL
CONSUMER OF
EVIDENCE?
& PRODUCER



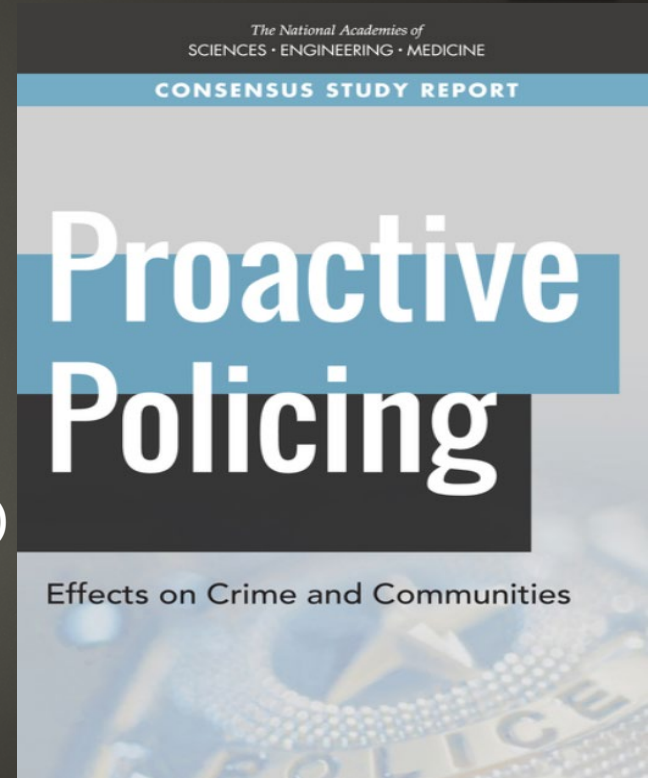
SIMPLICITY OF
DESIGN – EASE
OF
REPLICATION



PARTNER WITH
RESEARCHERS &
CRIME ANALYSTS

Did you Get it Correct?

1. *Hot spots policing*
2. Predictive policing
3. *3rd party policing*
4. *Problem oriented policing*
5. Active CCTV monitoring
6. Broken windows policing
7. Stop, question and frisk (aka stop and search)
8. Community-oriented policing
9. Procedural justice
10. *Focused deterrence*



<http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=11092017>

Thank you very much

Lt. Jason Potts

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jason@americansebp.org

707-333-6426