STATISTICAL TRANSPARENCY OF POLICING (STOP)

PRESENTATION TO JOINT COMMITTEE ON WEIGHS AND MEANS SUBCOMMITTEE ON PUBLIC SAFETY

8 May 2019

Ken Sanchagrin

Tiffany Quintero

STOP Program Co-Directors

Criminal Justice Commission



BACKGROUND

HB 2355

79th OREGON LEGISLATIVE ASSEMBLY-2017 Regular Session

Enrolled House Bill 2355

Introduced and printed pursuant to House Rule 12.00. Presession filed (at the request of Attorney General Rilen Rosenblum)

CHAPTER

AN ACT

Relating to public safety; creating new provisions; amending ORS 51.050, 181.915, 181.920, 131.925, 137.633, 161.670, 161.615, 181A.410, 221.339, 419C.501, 423.478, 423.825, 475.006, 475.874, 475.884,

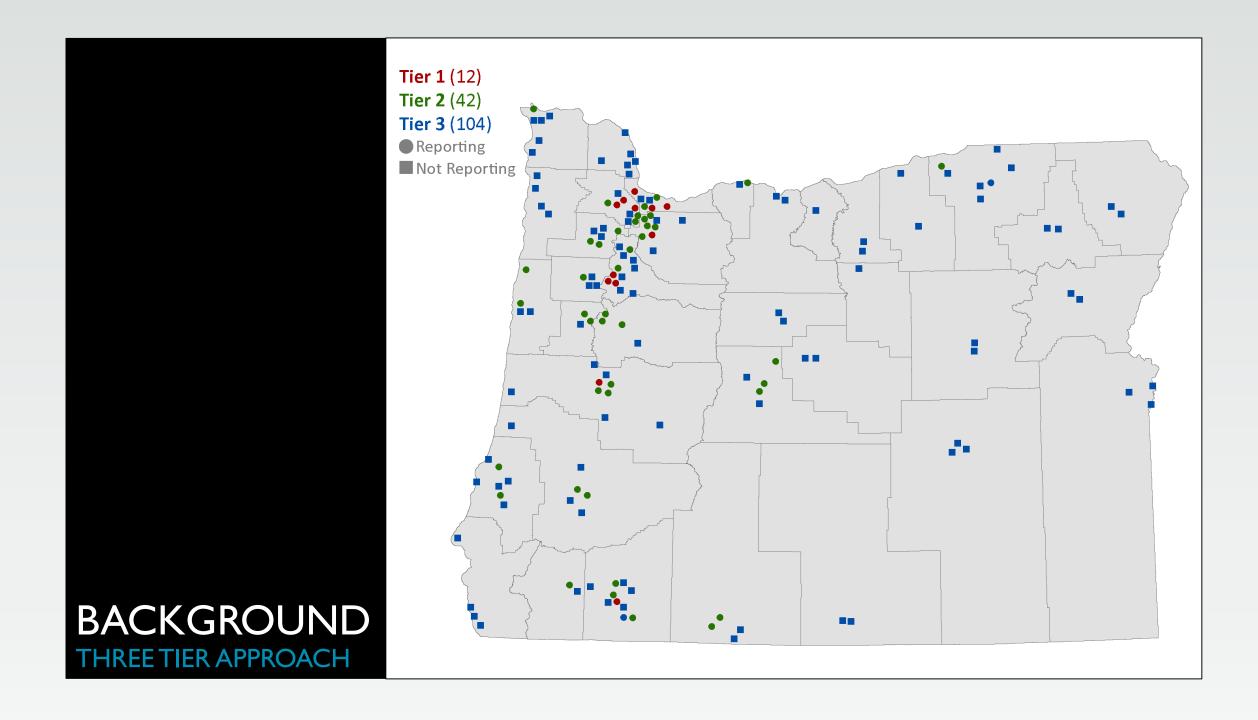
Be It Enacted by the People of the State of Oregon:

- SECTION 1. As used in sections 1 to 4 of this 2017 Act:
- (1) "Law enforcement agency" means an agency employing law enforcement officers to enforce criminal laws.
- (2) "Law enforcement officer" means a member of the Oregon State Police, a sheriff or a municipal police officer.
- (3) "Officer-initiated pedestrian stop" means a detention of a pedestrian by a law enforcement officer, not associated with a call for service, when the detention results in a citation, an arrest or a consensual search of the pedestrian's body or property. The term does not apply to detentions for routine searches performed at the point of entry to or exit from a controlled area.
- (4) "Officer-initiated traffic stop" means a detention of a driver of a motor vehicle by a law enforcement officer, not associated with a call for service, for the purpose of investigating a suspected violation of the Oregon Vehicle Code.
- (5) "Profiling" means the targeting of an individual by a law enforcement agency or a law enforcement officer, on suspicion of the individual's having violated a provision of law, based solely on the individual's real or perceived age, race, ethnicity, color, national origin, language, sex, gender identity, sexual orientation, political affiliation, religion, boundessness or disability, unless the agency or officer is acting on a suspect description or information related to an identified or suspected violation of a provision of law.
 - (6) "Sexual orientation" has the meaning given that term in ORS 174.100.
- SECTION 2. (1) No later than July 1, 2018, the Oregon Criminal Justice Commission, in consultation with the Department of State Police and the Department of Justice, shall do velop and implement a standardized method to be used by law enforcement officers to record officer-initiated pedestrian stop and officer-initiated traffic stop data. The standardized method must require, and any form developed and used pursuant to the standardized method must provide for, the following data to be recorded for each stop:
 - (a) The date and time of the stop;
 - (b) The location of the stop;

HB 2355 (2017) required law enforcement to report on all discretionary traffic and pedestrian stops.

STOP Data Elements			
Agency Name	Gender		
Stop Date/Time	Reason for the Stop		
Location & County†	Outcome of Stop		
Type of Stop (Traffic/Ped)	Search (Y/N)		
Residential Zip Code†	Search Reason		
Race/Ethnicity	Search Findings		
Age	Was an Arrest Made?		

Kneolled House Bill 2855 (HB 2855-B)



BACKGROUND

THE STOP PROGRAM



- Initial project management and stakeholder engagement
- Technical solution design and implementation for Tier 1



- Research and statistical analyses (annual reports beginning in December of 2019)
- Assumed project management, technical solution, implementation, and stakeholder engagement responsibilities in Oct. 2018

DPSST

- Development of training for data collection
- Conduct research and build toolkit for technical assistance
- Engage with and assist agencies with identified disparities

BACKGROUND OREGON STATE POLICE

- OSP Responsibilities:
 - Initial project management,
 - Designing, building, and implementing the STOP technical solution.
- Even with an extremely short timeline, OSP completed their role in the project on time and on budget.
- In October of 2018, OSP transferred project responsibilities to CJC.



- Stakeholder Engagement
- Business Case
- Stage Gate
- Vendor Selection

- Design & Build
 Technical Solution
- Implement for TI
- Go-Live July 1, 2018

BACKGROUND

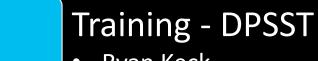
CURRENT STOP PROGRAM TEAM

Implementation - CJC

- Tiffany Quintero
- Shayne Spratt (Technical)
- Alex Pichel (Technical)
- Angel Pairan
- Krystal Styles

Research - CJC

- Ken Sanchagrin
- Kelly Officer
- Michael Weinerman
- Siobhan McAlister
- Courtney Rau
- Katherine Tallan



- Ryan Keck
- Annie Rexford

BACKGROUND STOP PROGRAM STEERING COMMITTEE

The STOP Steering Committee provides technical guidance to improve data collection efforts and advises the STOP team on technical/software enhancements.

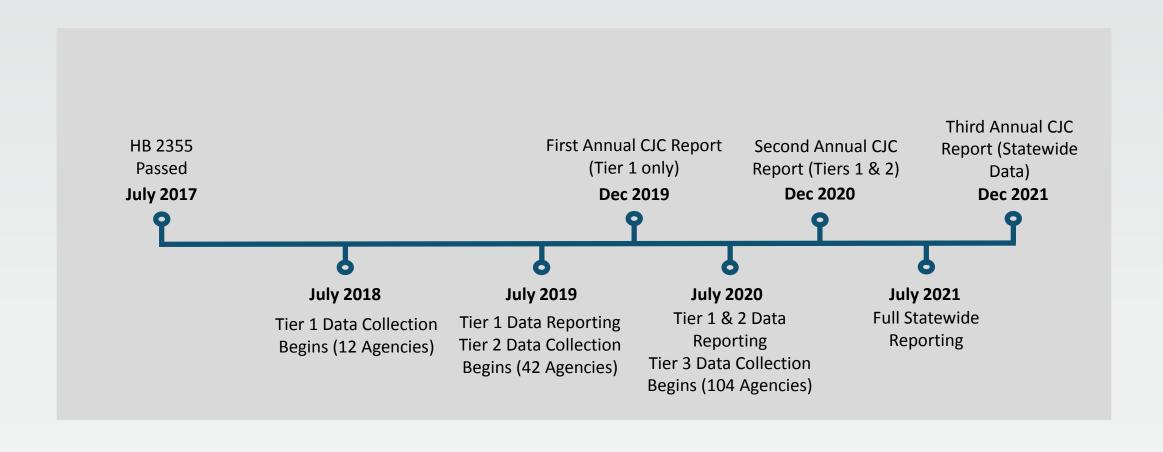
STOP Program Team

- Tiffany Quintero (CJC)
- Ken Sanchagrin (CJC)
- Shayne Spratt (CJC)
- Ryan Keck (DPSST)

Stakeholder Committee Members

- Ben Gherezgiher (OSCIO)
- Becki David (OSP)
- Chief John Teague (Keizer PD)
- Chief Jerry Moore (Salem PD)
- Chief Peter Spirup (Gervais PD)
- Sheriff Jim Yon (Linn County SO)
- Captain Nick Hurley (Corvallis PD)

BACKGROUND STOP PROGRAM TIMELINE



STOP PROGRAM UPDATE

IMPLEMENTATION



IMPLEMENTATION

- Governance and Engagement
 - Steering Committee
 - Stakeholder Engagement Group
 - Community
- Agency engagement (each)
 - At-least 3 calls with leadership
 - Initial Call
 - Pre Go-Live
 - Post Go-Live
 - approx. 20-min for each call
 - Minimum of 6 emails
- Statewide IT project management responsibilities
 - OSCIO Stage Gate
 - Vendor management
 - Contract Administration
- Statewide IT data collection
 - All Agencies with stop authority (158 Agencies)
 - Results in statewide analyses and reports

Governance and Engagement

IT Project Management

Statewide IT Data Collection

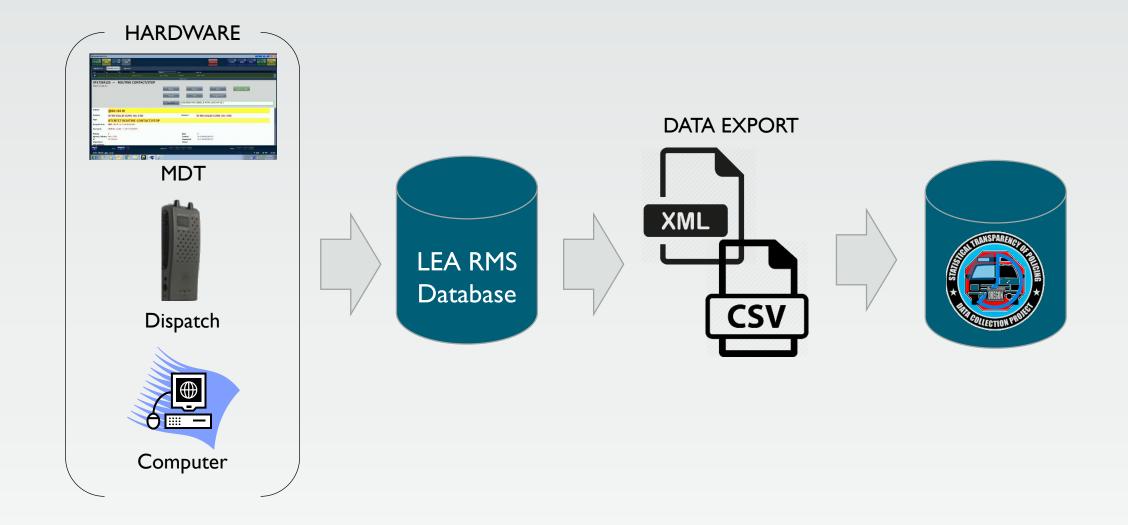
AGENCY SUBMISSION OF STOP DATA

- Agencies can submit data to the STOP Program in three ways.
 - Mobile Data Collection/Submission
 - Web-based Data Collection/Submission
 - Bulk Upload (XML or CSV)
- Agencies can and have used multiple submission approaches
- Mobile and Web-based software is provided free of charge to agencies by the STOP Program.
- While most Tier I agencies utilize the bulk upload method, medium and smaller agencies tend to use STOP software.

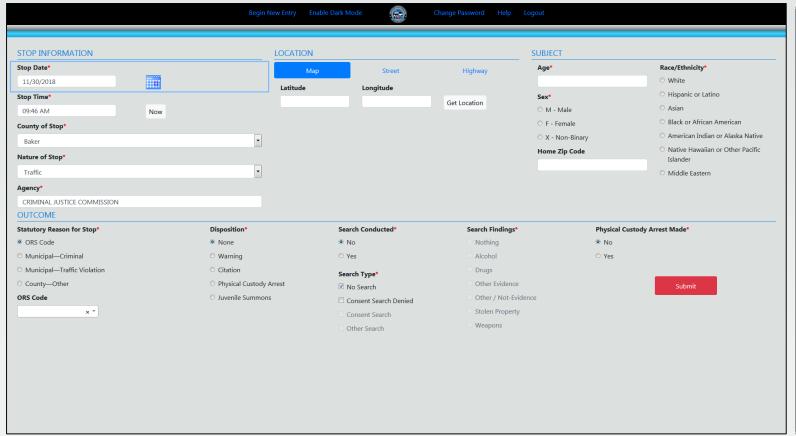
Data Submissions by Source (as of 5/6/2019)

Source		Tier I	Tiers 2 & 3	Total
Android (Mobile)		0.00%	8.36%	1,760
iOS (Mobile)		1.05%	3.44%	3,993
Web Form		0.99%	40.50%	11,591
Flat File (CSV)		97.96%	47.70%	316,611
	Total	312,988	20,967	333,995

AGENCY SUBMISSION OF STOP DATA: FLAT FILES



AGENCY SUBMISSION OF STOP DATA: MOBILE AND WEB







CURRENT REPORTING FOR TIER I AGENCIES (12)

- All 12 Tier 1 agencies began collecting data by the July 1, 2018 deadline and all agencies are submitting data into the STOP database.
- Agencies submit on a variety of schedules.
 - Real time data submission
 - Monthly
 - Quarterly

Tier 1 Agencies	Freq.
Beaverton PD	16,782
Clackamas Co SO	14,239
Eugene PD	5,276
Gresham PD	7,305
Hillsboro PD	9,670
Marion Co SO	11,387
Medford PD	4,900
Multnomah Co SO	8,650
OSP	179,030
Portland PB	22,546
Salem PD	8,768
Washington Co SO	24,435
Total	312,988

CURRENT REPORTING FOR TIER 2 AGENCIES (42)

- Following our waterfall approach, we currently have 20 Tier 2 and 1 Tier 3 agencies reporting data into the STOP database.
- During the month of May, remaining 22 agencies are scheduled to begin collecting and/or submitting data.

Tier 2 & 3 Agencies	Freq.		Freq.
Ashland PD	2,482	Lebanon PD	90
Canby PD	966	Lincoln Co SO	610
Central Point PD	440	McMinnville PD	2
Deschutes Co SO	191	Milwaukie PD	1,899
Forest Grove PD	1,503	Oregon City PD	244
Grants Pass DPS	2,178	Polk Co SO	1,374
Jackson Co SO	232	Talent PD (Tier 3)	1,004
Keizer PD	1,568	Tualatin PD	1,573
Klamath Co SO	349	West Linn PD	2,063
Klamath Falls PD	343	Woodburn PD	72
Lake Oswego PD	1,784		
		Total	20.067

Total 20,967

CHALLENGES

- STOP application improvements and bugs
 - User interface for STOP software
 - Agency related issues with their hardware
 - Stops reported in areas of the state outside an agency's jurisdiction.
 - Stops reported out of state (WA, CA, KS)
 - Connectivity Issues
 - Multiple agency management in data hub
- Agency troubleshooting
- Volume of engagement for statewide implementation

Functional Technology

Systems & Integration

Network & Hardware

WHAT'S NEXT 2019-21 BIENNIUM

Implementation of 104 Tier 3 agencies

Enhancements to address connectivity, permissions, and Tier 3 agency needs

STOP Reports for Tier 1 (December 2019) and Tier 1 & 2 (December 2020)

Stakeholder and DPSST collaboration to develop training

Maintain and support STOP applications as well as law enforcement agencies

STOP PROGRAM UPDATE

RESEARCH



RESEARCH INTRODUCTION

Thirty Years of Stops Research

- Mostly, research has used benchmark analyses to determine if there are disparities.
- Quality analysis of stop data is difficult and time consuming.
- No analysis is perfect and all approaches have strengths and weaknesses.
- No statistical method can "prove" discrimination.

Selected Traffic Stop Benchmark Data (CT)

Sto	ps	Pop	
Count	Pct.	Pct.	Ratio
1,902	22.29%	12.89%	1.73
1,547	11.96%	13.12%	0.91
2,036	34.77%	31.97%	1.09
185	2.16%	5.82%	0.37
694	16.86%	7.55%	2.23
791	43.2%	16.6%	2.60
	Count 1,902 1,547 2,036 185 694	1,902 22.29% 1,547 11.96% 2,036 34.77% 185 2.16% 694 16.86%	Count Pct. Pct. 1,902 22.29% 12.89% 1,547 11.96% 13.12% 2,036 34.77% 31.97% 185 2.16% 5.82% 694 16.86% 7.55%

RESEARCH CHALLENGES: BACKGROUND

Selected Traffic Stop Benchmark Data (CT)

	Sto	ps	Рор	Abs	
Department	Count	Pct.	Pct.	Diff	Ratio
Berlin	1,902	22.29%	12.89%	9.40	1.73
Branford	1,547	11.96%	13.12%	1.16	0.91
Danbury	2,036	34.77%	31.97%	2.80	1.09
East Hampton	185	2.16%	5.82%	3.66	0.37
Redding	694	16.86%	7.55%	9.31	2.23
Wethersfield	791	43.2%	16.6%	26.60	2.60

Berlin, CT 9.40% ABS Disparity

Unknown

Driving Behavior Differences

Racial Profiling

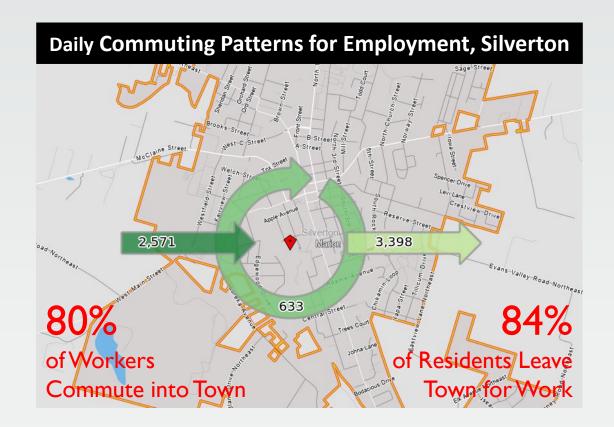
Officer
Deployment Patterns

Differences in Exposure to the Police

RESEARCH CHALLENGES:WHO IS "AT RISK?"

Differences in Exposure to the Police

- Residential population ≠ at risk population due to many factors:
 - Commuting patterns for work,
 - Travel for tourism, recreation, and entertainment,
 - The presence of major interstates and highways,
 - Transportation choices.



RESEARCH CHALLENGES: WHO IS "AT RISK?"

Differences in Exposure to the Police

- Municipalities can look completely different during festivals, rodeos, or other events.
- Holidays can significantly change driving patterns.
 Currently, the STOP data shows:

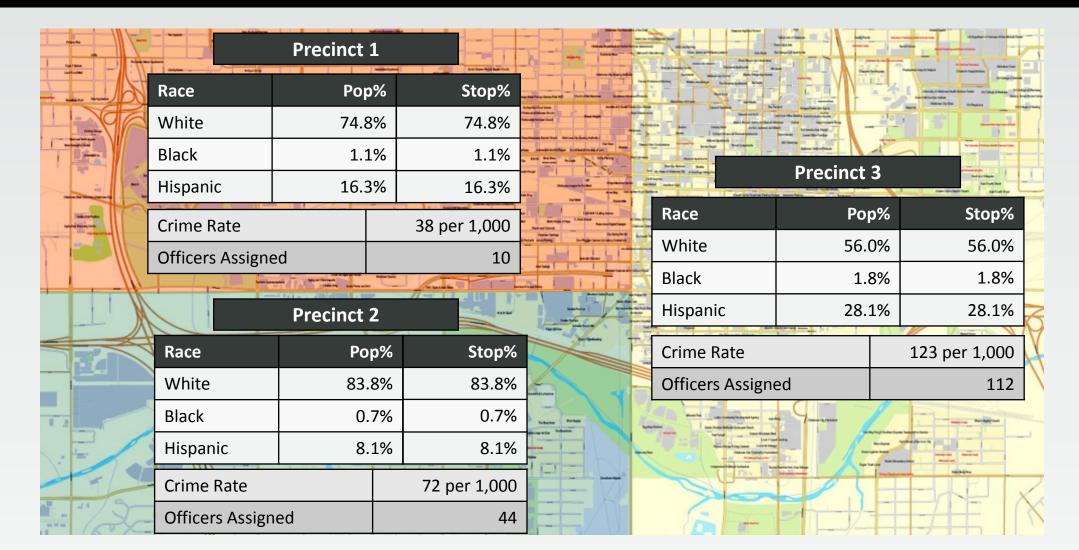
Holiday	Departure from Avg.
July 4	+ 32%
Labor Day Weekend	+ 35%
New Year's	+ 38%



"The crowds in town for Round-Up events have peaked at 50,000 people in years past, tripling the population of Pendleton."

- OPB News Story on Pendleton Round-Up in 2018

CRIMINAL JUSTICE COMMISSION RESEARCH CHALLENGES: OFFICER DEPLOYMENT DECISIONS



RESEARCH CHALLENGES: OFFICER DEPLOYMENT DECISIONS

- When data from the three precincts are combined:
 - While stop rates in each precinct matched their demographics, when aggregated there are disparities
 - Remember, these disparities exist even though individuals were stopped at random according to their share of the population in each neighborhood. Thus,
 - When diversity varies between neighborhoods, there is a risk that this pattern can occur.
 - Patterns of this type are particularly likely when crime rates and policing resources are clustered as well.

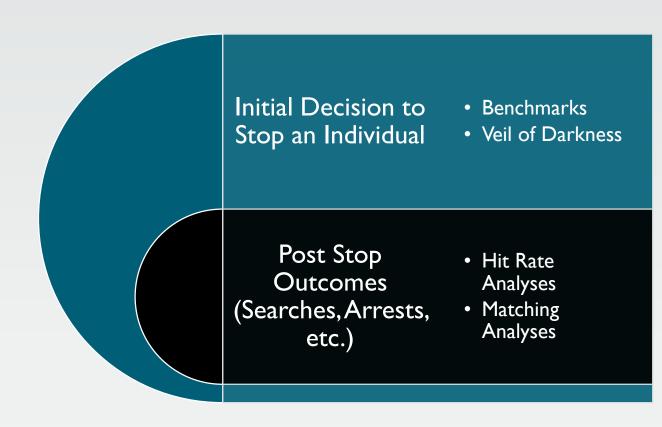
Weekly Traffic Stops and Population Percentages for a Hypothetical Oregon City

	Traffic Stops		Рор	
Race	Num.	Pct.	Pct.	Ratio
White	648	66.1%	69.9%	0.95
Black	14	1.4%	1.3%	1.12
Hispanic	206	21.0%	18.4%	1.14

ADDRESSING RESEARCH CHALLENGES

CJC's Multimodal Approach

- Considers the different stages of stops to ensure that each decision point is examined.
- Deemphasizes baselines due to their methodological weaknesses.
- Utilizes multivariate statistics wherever possible to address alternative explanations.
- Will provide the most holistic view of the stops landscape in Oregon.



ANALYSES OF STOPS DATA

THE INITIAL DECISION TO STOP AN INDIVIDUAL

Veil of Darkness Model

- Compares stops made in the daylight to stops made at night.
- If stops are being made in a race-neutral manner, stop rates should be almost identical.

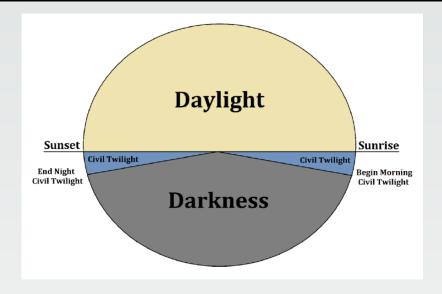


Table 2. Selected Connecticut VOD Odds Ratios

	Odds Ratio (to White)		
Department	Black	Hispanic	
Berlin	3.40***	1.68**	
Monroe	0.71	I.69*	
New Haven	1.07	7.85**	

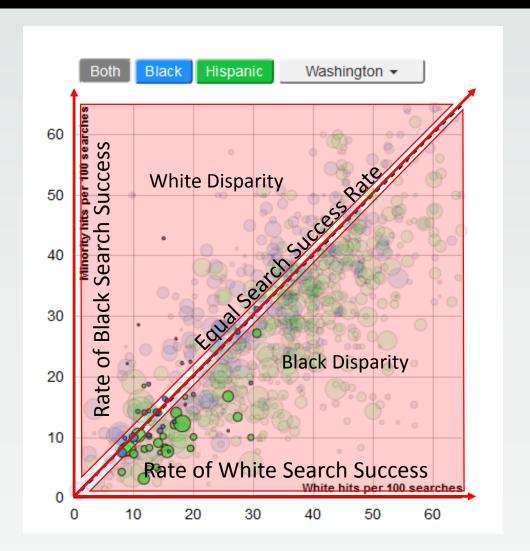
Source: State of Connecticut Traffic Stop Data Analysis and Findings 2015-2016

ANALYSES OF STOPS DATA

POST STOP OUTCOMES: SEARCHES, ARRESTS, CITATIONS

Outcome/Hit Rate Test

- Successful searches should be equal across different races if the decision to search is based on race neutral factors.
- If hit rates are consistently lower for one racial group, the target group is being searched more often than success rates would warrant.
- For example:
 - If searches of whites are successful 60% of the time, but searches of Hispanics are only successful in 10% of cases, then
 - The model would suggest that a different (and less successful) standard is being used when searching Hispanics.



ANALYSES OF STOPS DATA

POST STOP OUTCOMES: SEARCHES, ARRESTS, CITATIONS

Propensity Score Matching

- Ideally, we would like to approximate a random control trial.
- Propensity score matching analysis mimics important aspects of an RCT in cases where random assignment is not possible.
- In effect, you are able to balance your data so you can test for race-based differences.

List of Variables Used for Matching

Age	Gender
Agency	Holiday
Citation Type	Location
County	Stop Type
Daylight	Daily Stop Volume
Day of the Week	Time of Stop

STOP PROGRAM UPDATE

STOP PROGRAM CHALLENGES



DATA QUALITY AND CONSISTENCY

Data Quality and Consistency

- Error is always present in data
- Statistical analysis is designed to address this error
- On the whole, our data is pretty clean, although we have faced some challenges in our initial audits.

Over 2,100 stops for traffic violations were recorded for pedestrians

Cross Tabulation of Stop Reason by Stop Type

Stop Reason	Pedestrian	Traffic
Moving Traffic Violations	1,998	232,889
Vehicle Equipment	74	31,648
Cell Phone/Seat Belt	7	19,064
Driving Regulatory	50	42,403
Criminal	4,606	2,375
County Codes	1,238	744
Other Violations	1,918	5,011

DATA QUALITY AND CONSISTENCY

Missing Data

- Unreported, or "missing data," is always a concern in statistical analyses.
- Overall, missing data is not a problem in the STOP database.
- There are, however, areas where improvements can be made and CJC is reaching out to agencies where we have concerns.

Missing Data Counts for Officer Input Variables

Variable Name	Num.	Pct.
Stop Type	10	>0.01%
Age	2,184	0.65%
Race	7,771	2.33%
Gender	1,133	0.34%
Citation Type	92	0.03%
Stop Disposition	0	
Arrest	0	
Search (Y/N)	7	>0.01%
Search Reason	7	>0.01%
Search Finding	523	0.16%

DATA QUALITY AND CONSISTENCY

179 times something was found, but the officer reported that there was no search **Cross Tabulation of Searches versus Search Findings**

Search Finding	Search - NO	Search - YES	No Report	Total
No Search	224,555	0	0	224,555
Nothing Found	99,728	4,617	2	104,347
Alcohol	24	1,075	3	1,102
Drugs	15	2,502	0	2,517
Stolen Prop	41	81	0	122
Weapons	12	256	0	268
Other Evid	44	384	0	428
Other NonEvid	43	50	0	93
Not Reported	0	521	2	523
Total	324,462	743	4	27,674

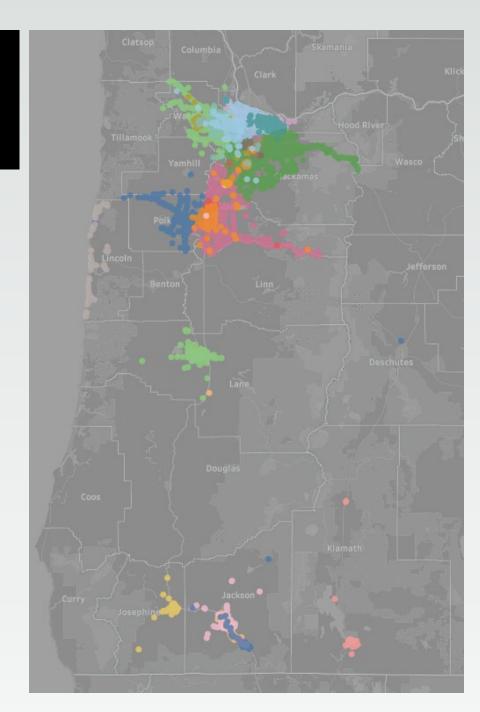
Five times
where we have
search results,
but no data
entered for the
search itself.

521 times
where we know
there was a
search, but
there is no data
on what was
found.

DATA QUALITY AND CONSISTENCY

Location Data

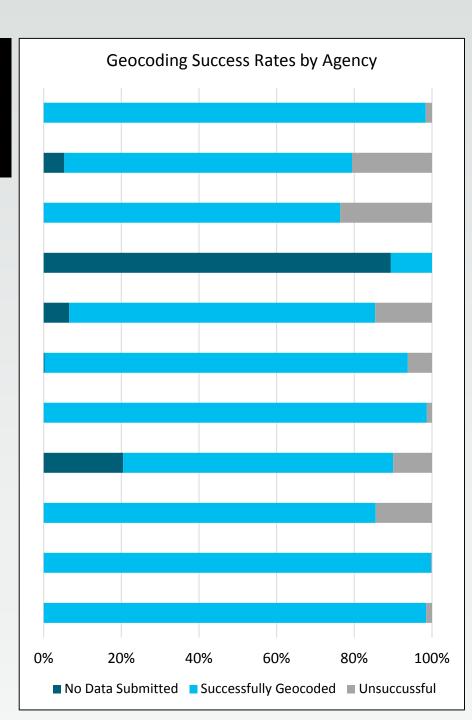
- Submission of detailed location data by agencies has been good overall, but improvements can be made.
- Agencies submit data either by:
 - GPS Coordinates (42.34083176 -122.8766708), or
 - Street Address: (123 Main St., Salem)
- The ease of transferring location data to a map for analysis depends on the type of data submitted.



DATA QUALITY AND CONSISTENCY

Location Data

- Data submitted in GPS format is geocoded successfully in nearly all cases.
- Agencies submitting GPS coordinates, therefore, have nearly 100% complete location data.
- Agencies that submit street addresses have lower geocoding success rates.
- Some agencies are not submitting location data for a many of their stops.



DATA QUALITY AND CONSISTENCY

Why is geocoding address data so difficult?

- Even addresses that appear complete can be problematic.
- Here is an example:

510 E MAIN ST, JACKSON

With just this information, 11 possible entries are found in Jackson County.

DATA QUALITY AND CONSISTENCY

Time Zones

- A portion of Malheur County is in the Mountain Time zone
- This presents possible problems with the Veil of Darkness analysis
- Currently, the STOP team is working with the Malheur County Sheriffs Office to troubleshoot this issue.



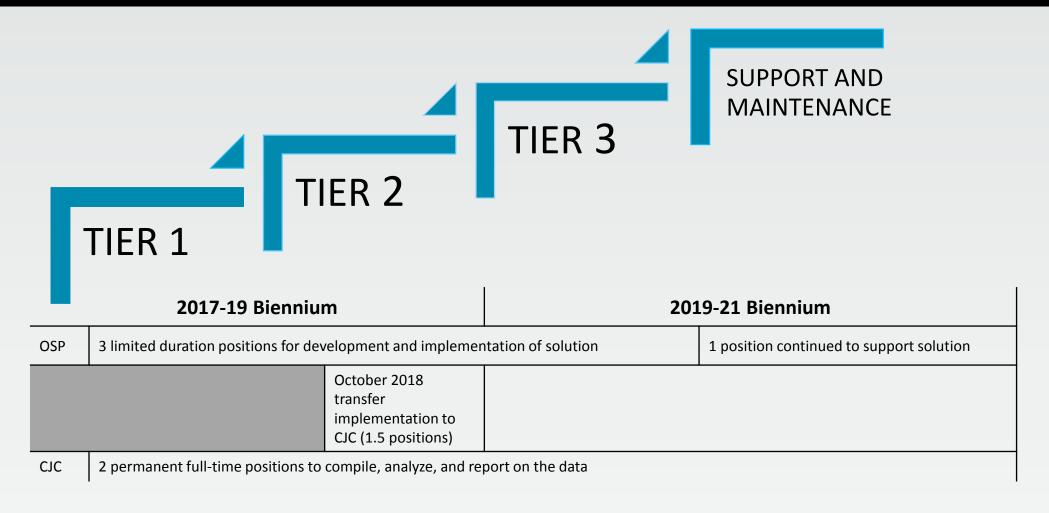
STOP PROGRAM UPDATE

2019-2021 BUDGET CYCLE UPDATE



BACKGROUND

2017-2019 STOP PROGRAM FUNDING



BACKGROUND

2019-2021 STOP PROGRAM BUDGET REQUEST

Implementation Team

- Tiffany Quintero
 - Shayne Spratt (ISS8)
 - Alex Pichel* (ISS6)
 - Angel Pairan (AS2)
 - Krystal Styles (PA2)

Research Team

- Ken Sanchagrin
 - Kelly Officer
 - Michael Weinerman* (RA4)
 - Siobhan McAlister
 - Courtney Rau
 - Katherine Tallan (RA2)

19-21 Budget Request

- Vendor Contract
 - \$841,046 General Fund
- Personnel, Services & Supplies
 - ISS6: technical design, bulk upload processing, development
 - AS2: scheduling, agency engagement, program onboarding
 - PA2: project management, documentation
 - RA2: data cleaning, hit rates
 - \$636,633 Other Fund
 - \$159,159 General Fund

STOP PROGRAM UPDATE

ACHIEVEMENTS, SUCCESSES, AND NEXT STEPS



STOP PROJECT ACHIEVEMENTS AND SUCCESSES

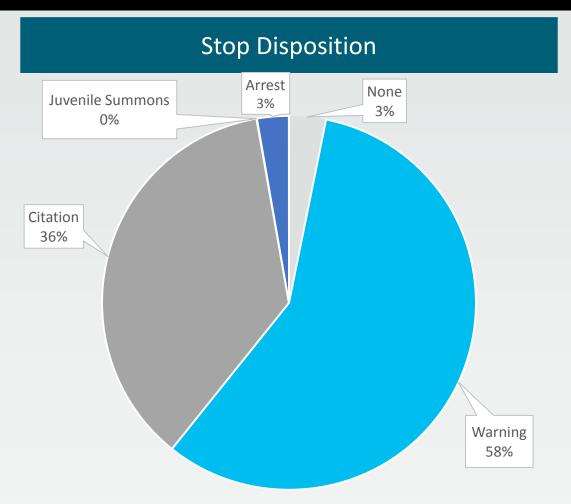
Implementation: the STOP Program

- Provides multiple, no-cost approaches for LEAs to submit data.
- Continues to be on schedule and on budget
- Has developed strong working relationships with law enforcement.
- Special thanks to Polk County, Lincoln County, Klamath Falls PD, Klamath County, Newberg-Dundee PD, Yamhill County, and Malheur County

Research:

- To date, almost 335,000 stops have been reported by 33 law enforcement agencies.
- The CJC Research Team is working with national experts and other stops research groups to ensure high quality data analysis
- The Research Team has also developed strong working relationships with law enforcement to troubleshoot data issues.

STOP PROJECT NEXT STEPS ANALYSES AND RESEARCH RESULTS PREVIEW





STOP PROJECT NEXT STEPS ANALYSES AND RESEARCH RESULTS PREVIEW

Variable	Freq.	Pct.	Variable	Mean/Pct	SD
Stop Type			Perceived Race		
Pedestrian	9,417	2.82%	White	77.90%	
Traffic	324,528	97.18%	Black	4.82%	
Search Conducted?			Hispanic	12.04%	
No	324,462	97.16%	Asian/PI	3.27%	
Yes	9,486	2.84%	Native American	0.57%	
Search Findings			Middle Eastern	1.39%	
Alcohol	1178	12.42%	Gender		
Drugs	2,634	27.77%	Male	66.25%	
Stolen Property	228	2.40%	Female	33.38%	
Weapons	538	5.67%	Non-Binary	0.36%	
			Average Age	38.04	(15.28)

STOP PROJECT NEXT STEPS ANALYSES AND RESEARCH RESULTS PREVIEW

- Currently, the CJC Research Team is:
 - Continuing to clean and audit data as it is received.
 - Examining location data to determine completeness and quality.
 - Estimating pilot models for Veil of Darkness, Hit Rates, and Matching Analyses for post stop outcomes.
 - Conceptually planning and building interactive dashboards.
- We hope to have results to begin engagement by early fall.

General STOP Program Questions?

503-378-4830

CJC.stop@oregon.gov

