The Smart Policing Initiative: Recent Findings from the Field

January 19, 2023
2:00 – 3:30 PM ET

SMART POLICING | Data. Analysis. Impact.

BJA Bureau of Justice Assistance U.S. Department of Justice

CNA ANALYSIS & SOLUTIONS

Amada Bond
Dr. Scott Decker
Center for Justice Research and Innovation
CNA

This project was supported by Grant No. 2019-WY-BX-K001, awarded by the Bureau of Justice Assistance. The Bureau of Justice Assistance is a component of the Department of Justice's Office of Justice Programs, which also includes the Bureau of Justice Statistics, the National Institute of Justice, the Office of Juvenile Justice and Delinquency Prevention, the Office for Victims of Crime, and the Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking. Points of view or opinions in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.

Webinar Agenda

- Overview of the Smart Policing Initiative (SPI) and introductions.
- Highlight efforts and findings of SPI sites including:
  - Anniston, Alabama
  - Miami, Florida
  - Salisbury, North Carolina
- Question and answer.

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

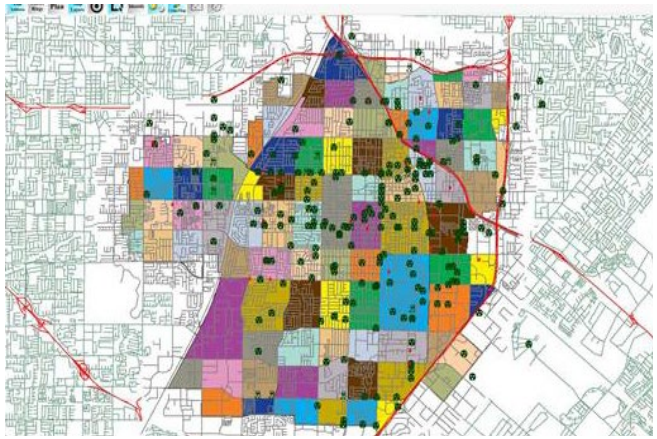
SPI Goals

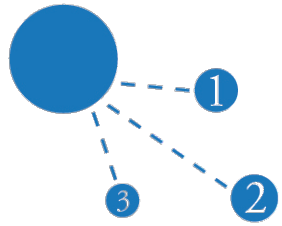
Establish and/or expand evidence-based programming in police agencies to increase their ability to **effectively and sustainably prevent and respond to crime**.

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

SPI Goals

Use **technology, intelligence, and data in innovative ways** that enable police agencies to focus resources on the people and places associated with high concentrations of criminal behavior and crime.





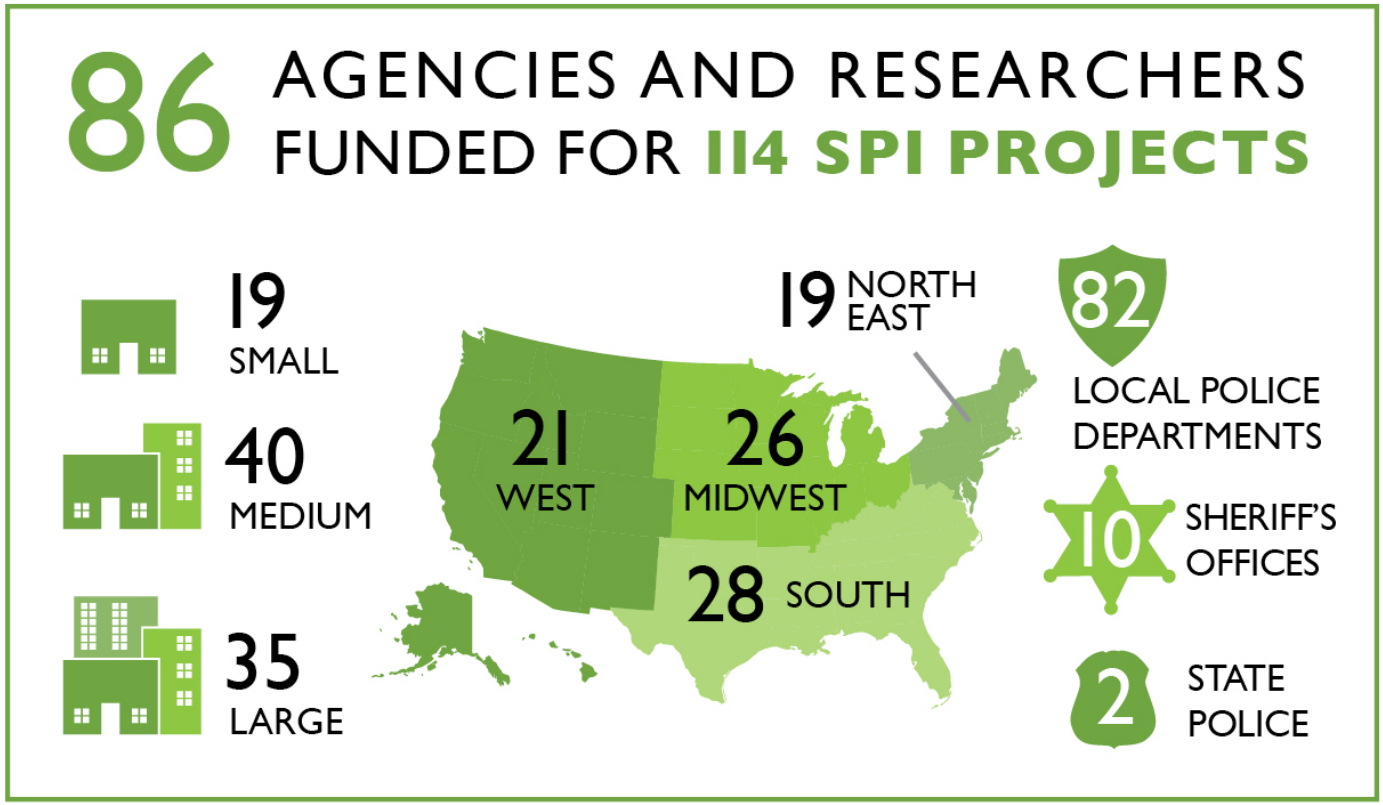
SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

SPI Goals

Advance the state of policing practice and science for the benefit of the entire field.

SMART POLICING | Data. Analysis. Impact.
BJA Bureau of Justice Assistance U.S. Department of Justice
CNA ANALYSIS & SOLUTIONS

What Has Happened?



SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Following the Evidence Leads to Interesting Innovations

Chicago, IL	Strategic Decision and Support Centers (SDSCs) – a real-time crime center approach within each district
Rochester, NY	Dispute risk assessment tool
Detroit, MI	Partnership with local businesses to reduce violent crime and build technology infrastructure
Commerce City, CO	Cross-Jurisdictional sexual assault taskforce
Portland, OR	Community outreach officer activity via mobile app

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Property Crime Prevention and Reduction

Anniston Police Department

Smart Policing Initiative

Grant#2019-WY-BX-0007

Captain Justin Sanford

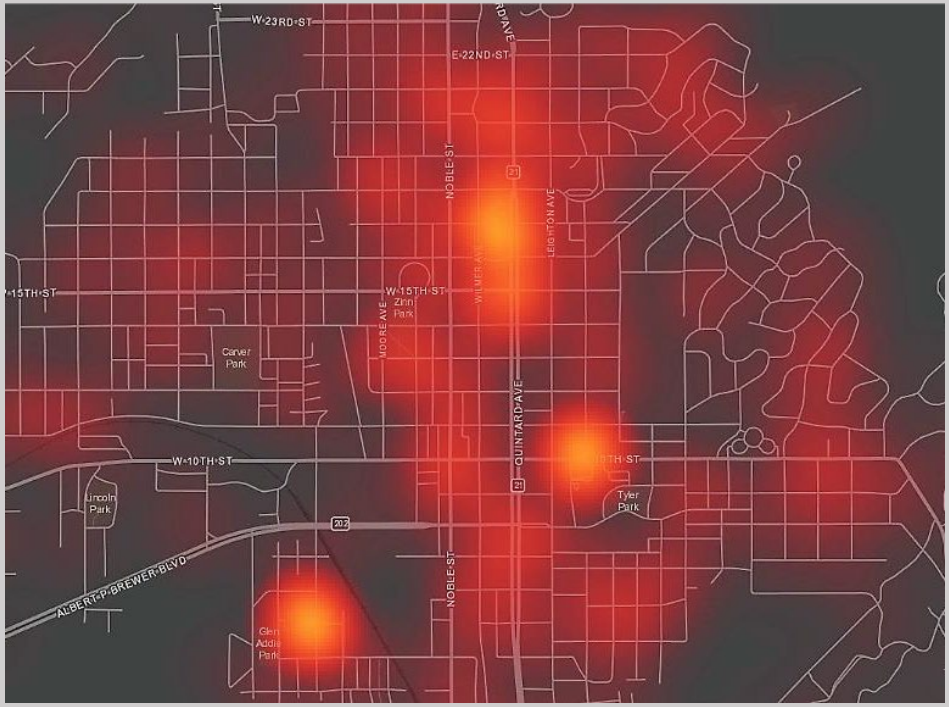
Background and Context

- 91 Sworn Officers
- 21,256 (city population 2022)
- 41,097 (police jurisdiction 2022)
- 24,276 (city population 2000)
- Ft. McClellan Closure in 2000
- Monsanto (PCBs)
- Intelligence-Led Approach to Policing

The Problem

Key Issues:

- In May of 2019, Anniston was dubbed the “most dangerous city” in Alabama ,according to the researchers at the financial news and opinion site 24/7 Wall St., who dug into FBI data from 2017 to determine violent crime rates in nearly 2,000 cities and towns.
- Motor vehicle theft and larceny were increasing in Anniston, but not in the State or the US. Part 1 property crime saw an increase of 24% from 2017 to 2018 alone.



Data Used:

- Publicly-available publications (FBI, 24/7 Wall St., etc.)
- Local Records Management System (Spillman)
- Jacksonville State University

The Approach

Strategies:

- Hot-Spot Policing
- Closed-Circuit Televisions (CCTV)
- Automated License Plate Readers (ALPR)

Key Partners:

- Jacksonville State University
- Business Community
- Housing Community
- City of Anniston
- Federal, State, and Local Partners

Evaluation and Outcomes

Type of Evaluation:

- Data set analysis over three treatment areas in the city with three control areas.

Findings:

- Low counts of data resulted in mixed results. However, the WDQ (Weighted Displacement Quotient) is positive for all property crimes aggregated, and this points to a decrease in property crime with no corresponding displacement of crime to another location or another crime.

Impact:

- At APD
- In the community

Sustained Activities

Practices that continued:

- Logs / Record Keeping / Tracking
- Daily activities

Organizational impacts of SPI:

- New tools
- New roles

Impacts on crime and the community:

- Positive public perception
- New partners

Lessons Learned

Challenges during implementation:

- Equipment procurement (poles, cameras, etc.)
- Equipment maintenance (defects, batteries, replacements)

Ways we addressed those challenges:

- Courses
- On the job training

Insights for fellow agencies:

- Cost vs. what you get
- Research partners

Insights for the field on what needs to be examined:

- Long term impacts on smaller jurisdictions

Contact Information

Contact:
Chief Nick Bowles
Anniston Police Department
nbowles@annistonal.gov
256-238-1800

Captain Justin Sanford
Anniston Police Department
jsanford@annistonal.gov
256-240-4005

The Miami Real-Time Crime Center (MRTCC) Violence Response Initiative: An Embedded Police-Academic Partnership

Rob T. Guerette, Ph.D.
Kimberly Przeszlowski
Florida International University

Major Jose Rodriguez
Lt. Jaime Ramirez
Sgt. Alejandro Gutierrez
Joelle Lee-Silcox, Ph.D.
Miami Police Department

This project was supported by Grant No. 2019-WY-BX-K001, awarded by the Bureau of Justice Assistance. The Bureau of Justice Assistance is a component of the Department of Justice's Office of Justice Programs, which also includes the Bureau of Justice Statistics, the National Institute of Justice, the Office of Juvenile Justice and Delinquency Prevention, the Office for Victims of Crime, and the Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking. Points of view or opinions in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.

Miami Real-Time Crime Center

Miami Real-Time Crime Center (RTCC)

- Virtual Policing Unit
  - 2015, foundation for RTCC
- Launched April 2019
- Criminal Investigations Division
  - Investigative Support Section

Unit Objectives

- Oversee RTCC technologies.
- Provide real-time support to officers and detectives.
- Create a virtual arrival scenario for officers within developing situations.

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Miami RTCC

Functions

- *Emphasis on incident-driven support*
  - Active surveillance
  - Real-time incident response
  - Post-incident investigative support
  - Command Center

Primary Technologies

- Closed-Circuit Television (CCTV)
- ShotSpotter
- License Plate Reader (Clarity, Vigilant)
- Facial Analytics (Clearview AI, Faces)
- Video Analytics (BriefCam)

Current Numbers

- *CCTV:* 582 Cameras
- *Personnel:* 9
- *Weekly Hours Covered:* 86%

Miami SPI Site

Geographic Area

- Dense urban area of nearly **36** square miles
- Second-most populous city in Florida

Demographics

- Population: **450,795**
  - **70%** Hispanic
  - **16%** Black or African American
  - **14%** White, Non-Hispanic

Socioeconomics

- Average household income: **$68,105**
- Poverty rate: **21.52%**

Crime

- Gun violence cluster in Miami's poorest neighborhoods
  - Model/Liberty City, Little Haiti, Overtown
  - Economically distressed communities (QOZs).

Tourism

- Highest tourist-to-local ratio
  - **1,641** visitors to every **100** residents

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Problem

Primary Objective

- Improve responses to violent crime incidents with support from "real-time" information technologies.

Additional Objectives

- Assess the use of RTCC technologies in violent crime processing.
- Determine the impact of RTCC technologies on violent crime case clearances and time-to-clearance.
- Understand officer perceptions of the RTCC technologies.

Approach

Project objectives were facilitated through:

- Collaboration between researchers from Florida International University and the Miami Police Department
  - Embedded criminologist component
- National appraisal of existing RTCCs
  - Used in the initial development of the MRTCC

Additional key partnerships:

- Several Business Improvement Districts (BIDs) and neighborhood management areas
- City's Department of Solid Waste Management

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Assessment Components

1. MRTCC User Survey
2. Module Network Analysis of MRTCC technologies within case processing
3. Outcome evaluation

Primary Data Used

	MRTCC Incident Log	MRTCC Expanded Analytical Database	Control Sample
Purpose	• Performance measurement • Justification of resource allocation • Foundation for expanded analytical database	• Capture additional measures • Facilitate controlling of case-level features in network and outcome analyses	• Facilitate quasi-experimental design • Allow for comparison with MRTCC sample case characteristics and outcomes
Assembly	• MRTCC unit personnel • Research partner • Systematic	• Research partner • Systematic	• Research partner • Proportionate Stratified • Random selection
Time period	• January 2019 - April 2022	• January 2019 - April 2022	• January 2019 - April 2022
Measures	• Incident information • MRTCC support provided	• Incident information • MRTCC support provided • Victim characteristics • Human evidence • Crime scene evidence • Warrants • Manpower	• Incident information • MRTCC support provided • Victim characteristics • Human evidence • Crime scene evidence • Warrants • Manpower
Validation	• Research partner review • Exhaustive via multiple data systems	• Research partner review • Exhaustive via multiple data systems	• Research partner review • Exhaustive via multiple data systems

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

MRTCC User Survey

Purpose

- In-person qualitative survey of MRTCC technology users across various MPD units to understand their role and benefits.

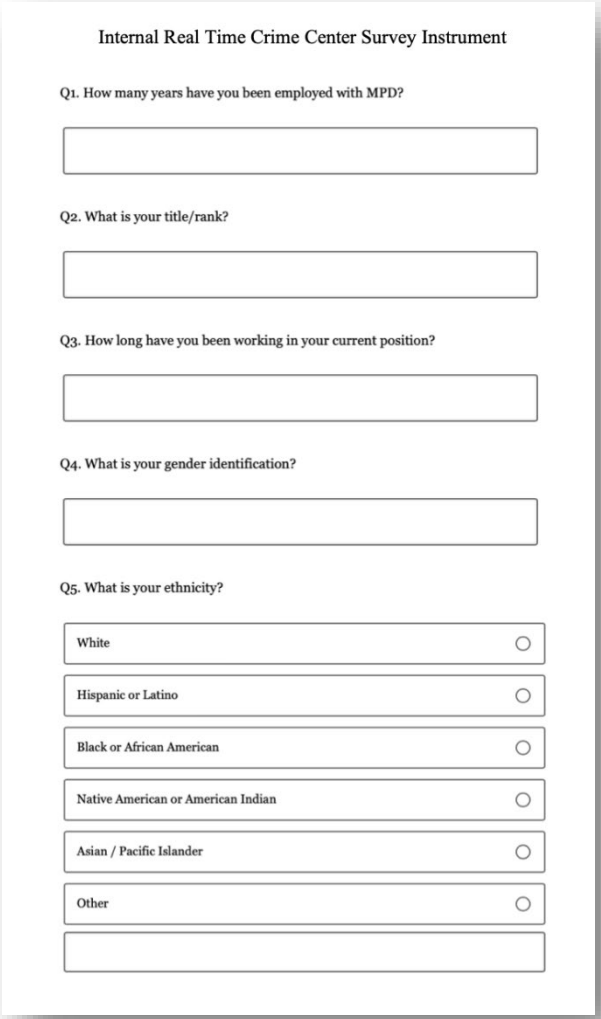
Research Questions

(1) "To what extent and in what ways were MPD personnel utilizing MRTCC technologies?"

(2) "What were the perceptions among MPD personnel of the MRTCC in terms of coverage, accessibility, and usefulness?"

Data

- A disproportionate sampling procedure resulted in a sample of 50 officers across units that typically request MRTCC assistance
  - Recorded responses from **46 officers**
  - 92% response rate
- The survey consisted of 29 questions and conducted in-person:
  - 17 closed-ended and 12 open-ended
- All surveys were conducted near the end of the project term
  - Allowed time for the development and use of the MRTCC by sampled respondents



Internal Real Time Crime Center Survey Instrument

Q1. How many years have you been employed with MPD?

Q2. What is your title/rank?

Q3. How long have you been working in your current position?

Q4. What is your gender identification?

Q5. What is your ethnicity?

- White
- Hispanic or Latino
- Black or African American
- Native American or American Indian
- Asian / Pacific Islander
- Other

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Findings

General Findings

(1) Perceived them to be easily accessible, useful, and to have become integral to their work.

(2) Believed that MRTCC technologies had improved the identification and documentation of evidence, improved the ability to clear cases, and reduced the time to clear cases.

(3) Conveyed that the MRTCC platform could be improved by expanding coverage of the technologies, particularly CCTV, and by allowing direct use.

MRTCC Technologies in Case Processing

Purpose

- Determine the extent to which MRTCC technologies were incorporated into the processing of violent crime incidents and how MRTCC technologies related to other traditional components of investigative evidence

Research Questions

(1) "Have MRTCC evidential technologies been integrated into the processing of cases?"

(2) "How did MRTCC evidence relate to traditional evidential components in case processing?"

Findings of Module Network Analysis

General findings:

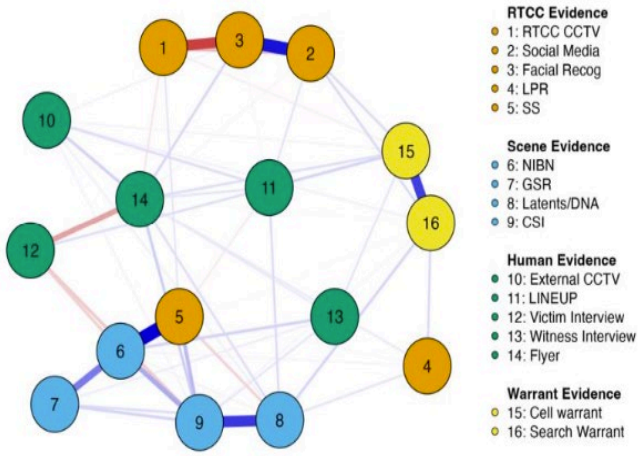
(1) MRTCC technologies have become fully integrated into the processing of cases

(2) MRTCC technologies have achieved the same level of importance as other traditional evidence sources

(3) Three of the MRTCC evidence sources, **CCTV**, **social media**, and **facial recognition**, had moderate to high "betweenness" centrality measures

- Key players in the processing of MRTCC cases

Figure 11. Module Network of MRTCC-assisted Violent Crime Incidents



Outcome Evaluation

Purpose

- Determine whether violent crime cases assisted by RTCC information technologies improved
  - Case clearance rates
  - Time-to-case clearance

Research Questions

(1) "Did RTCC-assisted violent crime incidents have greater rates of case clearance compared to similar cases not receiving RTCC support?"

(2) "Did RTCC assistance on violent crime cases shorten the amount of time that it took to clear those cases compared to similar cases not receiving RTCC assistance?"

Data

RTCC-Assisted Cases

Expanded RTCC log

- N = 648 RTCC-treated violent crime cases

Control Cases

Proportionate stratified random sampling procedure

- Random integer set generator
- N = 648 non-RTCC treated violent crime cases

Two criteria

- Crime type and NET area

Crime Types

Homicide (n = 62, 10%)
Aggravated assault (n = 232, 36%)
Assault (n = 53, 8%)
Sexual assault (n = 23, 4%)
Domestic violence (n = 45, 7%)
Robbery (n = 233, 36%)

Two Dependent Measures

- Cleared by arrest
  - Dichotomous (1 = yes; 0 = no)
- Days to arrest
  - Continuous

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Analytical Approach

(1) Nested multivariate logistic regression models

- Used to determine the odds of case clearances for RTCC cases compared to randomly drawn non-RTCC cases
- Adjusted for various violent crime incident characteristics

(2) Kaplan Meier survival analysis

- Used to determine differences in the time-to-case clearance for RTCC-assisted cases compared to the control sample

(3) Cox proportional hazards regression model

- Used to determine trajectories in the time-to-case clearance between RTCC-assisted cases and the control sample
- Adjusted for differences in case circumstances that could impact the time-to-case clearance

Findings

Case Clearance:

- After controlling for the neighborhood, crime type, and case-level characteristics, the RTCC-assisted cases had **66 percent better odds** of being cleared compared to those cases not receiving MRTCC support.

Time to Case Clearance:

- RTCC-assisted cases had a significantly longer time to clearance with a mean of **43 days (**SD = 112.4) compared to the control mean of **19 days** (SD = 54.5). Kaplan Meier survival analysis supported this.
- However, after adjusting for case characteristics in a Cox Proportional Hazards regression model**, no significant differences** in the time to case clearance were found between the two samples.

Sustained Activities

Overall operations of RTCC appear also to be highly sustainable:

- The allocation of personnel to the unit are full-time appointments.
- Technology has been purchased and is in use.
- The information technologies within the real-time crime center have become fully integrated into the daily practices of officers, detectives, and NET commanders.
- Continued use is even greater considering the positive publicity that the MRTCC has received in several anecdotal cases that were showcased in the local media, as well as these evaluation findings.
- This has helped justify the MPD's recent request for additional reoccurring funding from the city to support ongoing and expanded MRTCC operations.

Lessons Learned

(1) Establish clear and delineated roles for those employed within the unit

- It is important to clearly define roles for staff within the unit, do not repurpose personnel.

(2) Set boundaries on the functions that the RTCC will perform to avoid "mission creep"

- As an RTCC grows, it may find that some duties and responsibilities that previously fell under another unit will start to creep into the responsibility of the RTCC.

(3) Create the RTCC unit with anticipation for growth

- When constructing an RTCC and establishing its location within the agency, ensure that future growth is calculated into the equation.

(4) Continually maintain the RTCC as it grows

- From the initial development of the RTCC, it is important to establish standard operating procedures, document everything as it occurs, and build ongoing training for RTCC personnel as new technologies are acquired.

Contact information

Maj. Jose Rodriguez
6180@miami-police.org

Lt. Jaime Ramirez
27564@miami-police.org

Rob T. Guerette, Ph.D
guerette@fiu.edu

Salisbury, NC Police Department Smart Policing Initiative: Rowan Regional Crime Intelligence Center

SMART POLICING | Data. Analysis. Impact.

BJA Bureau of Justice Assistance U.S. Department of Justice

CNA ANALYSIS & SOLUTIONS

Lt. Patrick 'PJ' Smith
Salisbury, NC Police Department

Dr. Jessica Herbert
IDEA Analytics

This project was supported by Grant No. 2019-WY-BX-K001, awarded by the Bureau of Justice Assistance. The Bureau of Justice Assistance is a component of the Department of Justice's Office of Justice Programs, which also includes the Bureau of Justice Statistics, the National Institute of Justice, the Office of Juvenile Justice and Delinquency Prevention, the Office for Victims of Crime, and the Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking. Points of view or opinions in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.

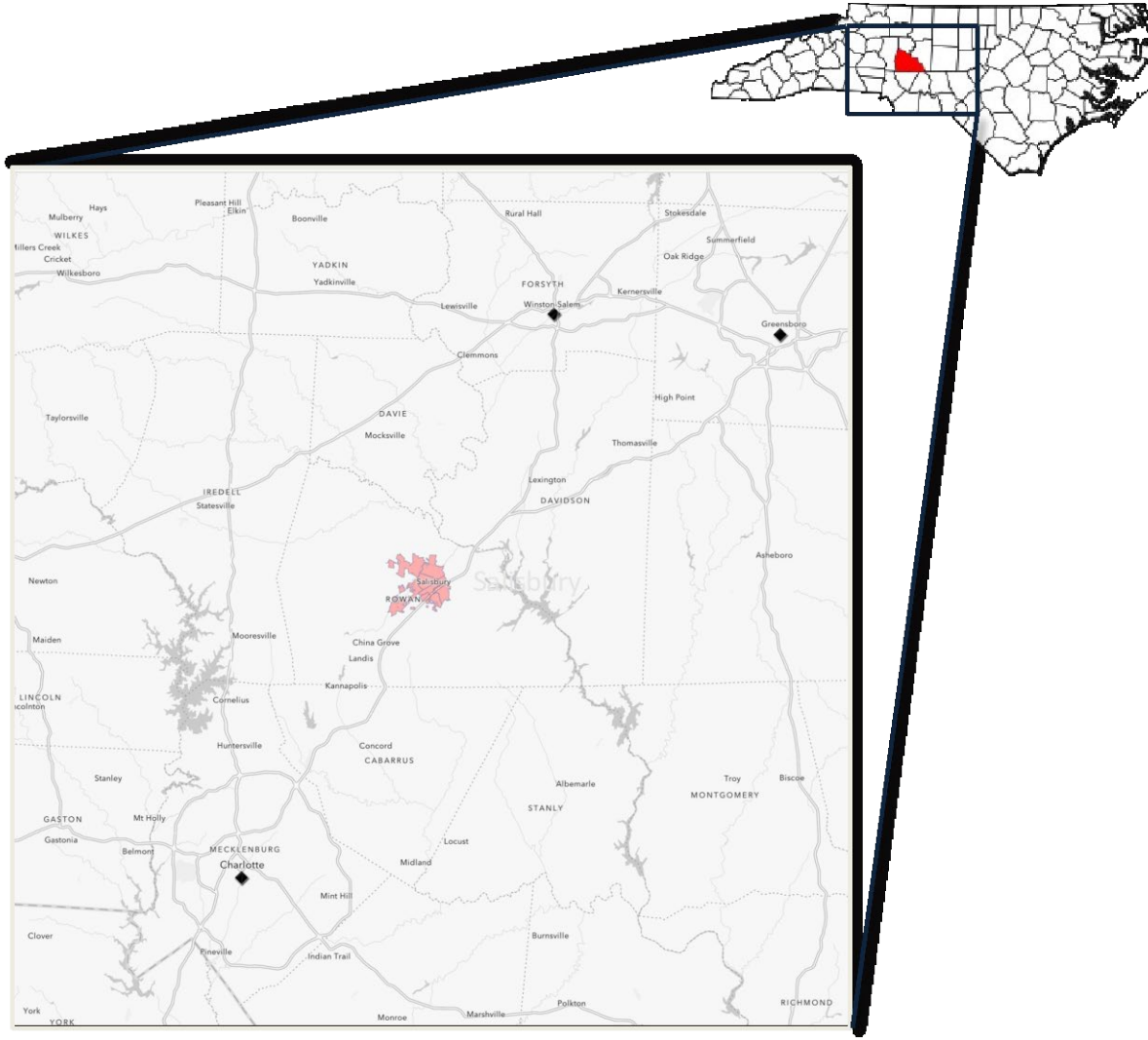
Background & Context: Salisbury, North Carolina

Our City

- Located in Rowan County
- Approximately 36,000 in population
- Middle District of North Carolina
- Equal distance from three major metro areas, along Interstate 85

Our Department

- Allocated 82 officers
  - 44 in Patrol



SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Background and Context:
SPD SPI Project - Crime Information Center

Why SPI?

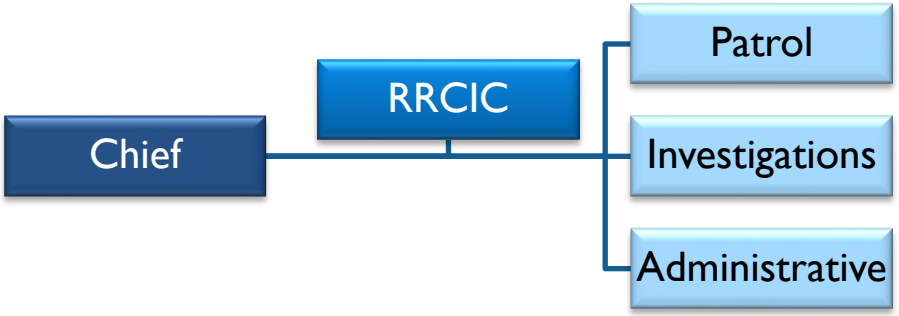
- Under the leadership of Chief Jerry Stokes, our department sought out and implemented policy initiatives to improve our patrol and investigative operations. SPI was one of the outcomes of our efforts – Focused on creating a centralized center aligning ***Leadership, People, and Technology*** to guide our public safety efforts.

- The FY19 SPI award supported technology innovations, allowing us to repurpose offices at headquarters, purchase equipment, expand our camera and technology needs, and have research support.

Background and Context:
SPD SPI Project - Crime Information Center

It is the **primary mission** of the Rowan Regional Crime Intelligence Center (RRCIC) to be a **centralized location**, wherein each Rowan County agency can be **represented and contribute to the process of gathering and sharing information.**

The RRCIC will **collect, evaluate, analyze, and disseminate information and intelligence** regarding criminal activity in, and around, the Rowan County Area while **following all applicable laws to ensure the rights and privacy of citizens.**



SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Our SPI Problem: Technology Innovations

- Key Issue:
  - Under investment in people & technology to support the leadership's desire for data-informed policing practices
  - Organizational assessment in five analytical domains demonstrated strengths and opportunities for SPD to build capacity
  - Summarized by three key characteristics – Leadership, People and Technology

Graphic Credits: IDEA Analytics Building Analytical Capacity™ Program

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Approach

Phase 1: Build

- Procurement of turnkey-technology (during COVID)
- Identification of staff (e.g., analysts, stakeholders, investigators)

Phase 2: Implement

- Integrate of technology in our 'day to day'
- Establish workflows with analysts to drive agency operations
- Enhance our meetings with data

Phase 3: Enhance

- Advance use of videos
- Advance analytical techniques for person- and place-based responses

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS

Approach

- Centralized location and functions for Salisbury PD
  - Biweekly with division commanders (past 60 days and trends) for operations and resource deployment
  - Monthly division review meetings and regional LEAs
  - Command location for critical incidents, public event monitoring

Evaluation Methods

Operational Research = Implementation Science

- Qualitative: review of procedures, observations, interviews
  - Coding – Phase 1: Deductive (top down, group by domain)
  - Coding – Phase 2: Inductive within each domain, emerging themes
- Analytical domains are an inter-disciplinary & include systems design approach
  - Each domain defines elements of data-driven and/or data-informed organizational practices (e.g., management, leadership, procedural)
  - Incorporates organizational theory within computer and data sciences, technology security, leadership, and management
- Agile and infinite process for sustainability and innovation

Outcomes (A Few)

- Leadership
  - Alignment of all staff on agency and community priorities through a defined language, data understanding, and data-informed requirement
  - Connection among staff for case development, problem-solving, and learning on crime reduction efforts
  - Inclusion of data maturity and data-informed decision making in succession plans

Outcomes (A Few) – Cont.

- People
  - Maximized analytical efforts with centralized analysts and digital forensic staff
  - Motivation among line staff (e.g., patrol or investigations) on requesting information and using information for resource deployment, community communications on crime problems, etc.
  - Investments on additional staff to support coordination and diversion efforts (e.g., victim advocate, homelessness coordinator)

Outcomes (A Few) – Cont.

- Technology
  - Supports more timely actions and reactions for events
  - Improves recovery of evidence and/or investigative leads
  - Assists communication efforts for regional collaboration among criminal justice stakeholders, community, and state/federal agencies

Key Impacts

- ***Using crime analysis to inform technology***
  - Placement of cameras
  - Evaluation of incidents around "crime attractor" locations
  - Routine information to patrol and investigations for timely decision making

- ***Problem-oriented responses***
  - Shutting down problem places
  - Awareness of problem persons

Our Future: Scaling

- December 2022: Rebranded to the Jerry Stokes Crime Information Center
- Additional people (e.g., detectives, additional analysts)
- Synthesize all crime reduction and community-based interventions
- Collaboration with community and public safety partners
- Further enhancing our regional knowledge, shared language, and analytical capacity
- Continued fiscal commitment by SPD and regional partners

Sustained Activities After Award

- New policies for crime analysis (including MOU and operational manual)
- Routine outreach for regional and national partners
- Site visit host for knowledge sharing and learning
- Efforts supported current efforts within Byrne Criminal Justice Innovation (BCJI) to connect community with crime reduction efforts
- Scaling of agency knowledge and processes for investigations and crime reduction

Lessons Learned

- Challenge 1: Procurement during COVID
  - Solution: Lots of meetings & ability to change procurement rules during pandemic
- Challenge 2: Getting "it" to click for staff
  - Solution: Physical space so people can see, touch and feel the work
  - Solution: **Learning Mindset -** understanding the pieces so we can create what works for us and share that with others
- Challenge 3: Endless…
  - Solution: Dedicated leadership, agency champion, took us 3+ years to match internal and external buy in, embedded research/advising partner that helped at every step

Contact information

Lt. Patrick 'PJ' Smith
Salisbury (NC) Police
psmit@salisburync.gov
704.216.7581

Dr. Jessica Herbert
Founder & CEO, IDEA Analytics
jessica@analyticsbyidea.com
703.798.9867

Questions?

Wrap Up

- Slides and a recording of the webinar will be available at:
  - https://www.smart-policing.com/tta/webinars/smart-policing-initiative-recent-findings-field-webinar
- Evaluation link in checkbox upon exiting.
  - Follow-up with slides for all that registered.

Thank you!

- SPI TTA Team -

www.smart-policing.com

spi@cna.org

SMART POLICING | Data. Analysis. Impact. BJA Bureau of Justice Assistance U.S. Department of Justice CNA ANALYSIS & SOLUTIONS