Davenport's Journey in Organizational Change, Crime Analysis, and Violence Reduction

Davenport (IA) Police

Evaluation Report

SMART Policing Initiative

Final copy - October 2024

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CHIEF'S ACKNOWLEDGEMENTS

On behalf of the Davenport Police Department, I express thanks to the dedication of the Department of Justice Bureau of Justice Assistance in supporting data-informed projects that allow for innovation and capacity building, specifically to address violent crime. The commitment and dedication of our leadership team and the city to anti-violence and in making the changes necessary to further enhance the department's approach to public safety was unwavering throughout the project. The learning and adapting of the leadership team throughout the initiative has led our department to work smarter, think about innovation, and focus on solutions. Special thanks to Captain Greg Behning, Lt. Jason Smith, Sgt. Lala, and Allissa Hawk on the dedication of producing valid, actionable data for operations.

We extend our deepest gratitude to IDEA Analytics whose invaluable collaboration over the past four years has been instrumental in the development and implementation of our crime analysis unit. Their expertise in training, technical assistance, and mentoring has greatly enhanced our ability to reduce violent crime through innovative strategies and best practices. Their unwavering support and commitment have significantly contributed to the success of this initiative. This partnership has not only strengthened our capabilities but has also fostered a lasting impact on our community's safety and well-being.

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EXECUTIVE SUMMARY

The Davenport (IA) Police Department (DPD) SMART Policing Innovation (SPI) Project focuses on the development of a Crime Analysis Unit (CAU). This timely effort undertaken by our organization has fundamentally transformed our approach to operational efficiency and strategic decision-making to deliver public safety services for the City of Davenport. From the onset, our five primary goals highlight the importance of data utilization within the organization to address crime concerns and how the adoption of data-driven leadership decision-making aligns with smart organizational practices for modern policing. Our activities over the three-year project period have led to transformative efforts regarding how our team thinks about resources, crime concerns, and professional development needs for modern police leadership.

This evaluation report summarizes our activities to meet and exceed our SPI Project goals and measure our progress. Activities within our SPI project contributed to timely prevention, intervention, and enforcement activities that lowered gun violence[1] in our city by 6.3 percent for reported offenses and 13.4 percent in "Weapon/Firearms" and "Shots Fired" calls for service between 2022 and 2023. Current trends led the community to experience several days and weeks of no shootings, a first in over five years and an annual rate that is 56 percent lower than our five-year average.

By achieving our SPI goals, we positioned our department for sustainable growth in innovative and data driven practices. The newly adopted emphasis on data within our organization cannot be overstated, as it has addressed critical concerns and enabled us to navigate an increasingly complex policing landscape. These achievements and the exposure to several technical assistance opportunities throughout the project period empowered our

[1] More information on how gun violence is defined in this report by the DPD can be found in the Gun Violence Place-based and Geospatial Analysis section.

leadership and middle management in new ways. As we continue to build on this success, we remain committed to leveraging data to drive excellence and achieve our long-term strategic vision to establishing a regional crime information center which supports the Quad Cities of Iowa and Illinois.

About Davenport (IA)

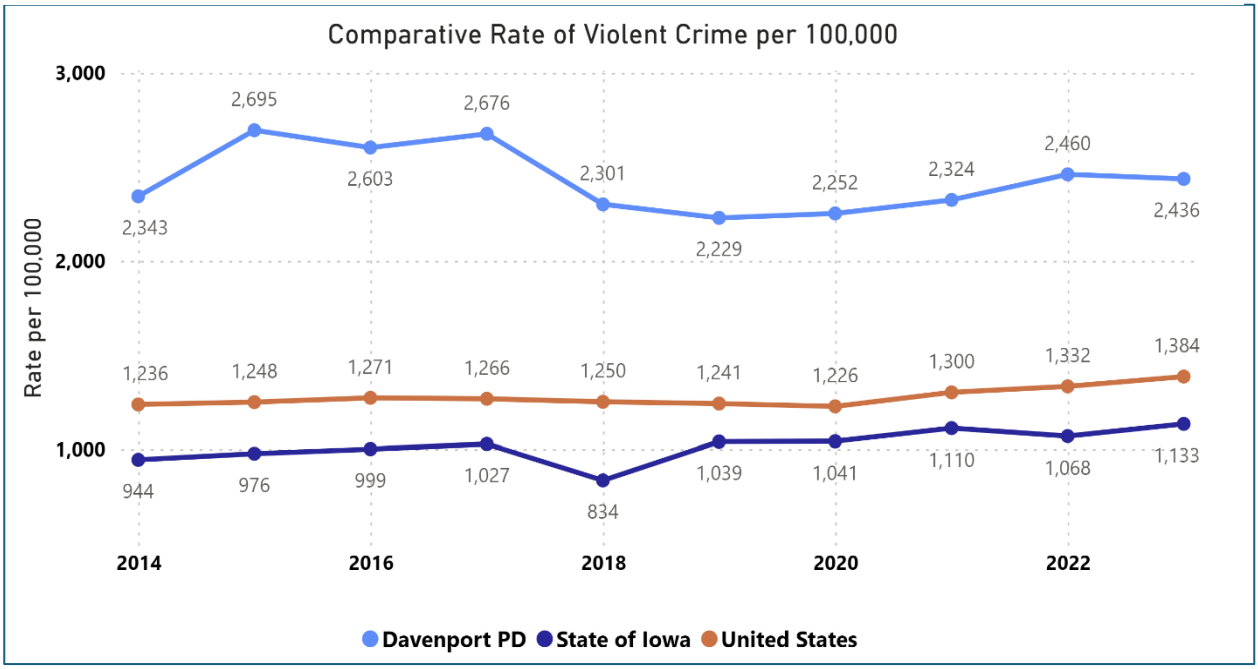
Davenport, Iowa is the largest city in the Quad Cities metropolitan area, situated along the Mississippi River in eastern Iowa. With a population of about 101,724 as of the 2020 census, it is the state's third-largest city. Known for its Midwestern charm and industrial strength, Davenport seamlessly blends historical significance with modern growth. The scenic riverfront and nearby buzzing downtown area is central to community life, while the City's diverse economy is anchored in manufacturing, healthcare, and education. Davenport offers endless recreational opportunities, enhancing its appeal.

Due to concerns about rising violent crime incidents between 2015 and 2017, and again in 2019 and 2020[2], DPD leadership focused on bringing resources to the Department and Quad City region to establish community-based and police-supported crime reduction efforts. The crime in the Quad City region impacted both Iowa and Illinois cities, often with retaliatory shootings or conflicts that occurred on either side of the river. DPD leadership focused on developing a Crime Analysis Unit (CAU) to lead data-informed policing strategies for the city and support surrounding jurisdictions in crime responses. The effort to implement a CAU and data-informed policing complemented the City's commitment to economic development and

[2] Figure 1 is based on NIBRS methodology and reporting. The violent offense total includes the offenses of murder and nonnegligent manslaughter, negligent manslaughter, rape, robbery, aggravated assault, simple assault, and intimidation. The violent offenses consist of SRS data and summarized NIBRS data. All other offenses include only NIBRS information. Please be aware that, due to changes in the reporting practices of some agencies, figures may not be comparable to previous years' data. This may be especially noticeable as agencies transition from reporting offenses via SRS to reporting offenses via NIBRS.

downtown revitalization efforts to bring businesses, restaurants, and cultural venues to the area. Engaging in evidence-based practices to ensure the safety of residents and visitors became a priority for DPD.

Figure 1. 2014-2023 NIBRS Violent Crime Rates, Davenport (IA) compared to state and country[1]



About IDEA Analytics

We selected IDEA Analytics as our strategic partner to develop, implement, and execute the SPI multi-year initiative, which focuses on enhancing data and technology use across the department. IDEA Analytics' successful track record in delivering digital transformation projects across over 80 cities and 36 states, along with their proven expertise in change management and partnership-driven solutions, made them the clear choice. By implementing data-driven strategies, IDEA Analytics consistently helps individuals and organizations unlock value and achieve mission-critical goals. Their ability to foster collaboration between public and private sectors has been key to developing tailored solutions for complex challenges. For these reasons,

IDEA Analytics was chosen as our strategic partner, ensuring we can adapt to the evolving technological landscape while addressing specific operational needs.

The selection of a partner who not only aligns with organizational priorities but also brings a wealth of expertise was crucial for the success of this ambitious project. IDEA Analytics' ability to balance technical proficiency with a deep understanding of organizational dynamics positions them as the ideal partner for this multi-year effort. Their history of managing digital transformation projects that require nuanced stakeholder engagement and robust change management strategies further solidifies their role in ensuring that the organization's mission is achieved efficiently and effectively. Specifically, their Digital Transformation and Analytical Capacity™ Program provided a three-pronged approach to strengthening our team and supporting change. Moreover, IDEA Analytics' commitment to driving sustainable results—by combining innovative solutions with a practical, people-centered approach—reinforces their ability to navigate the challenges inherent in such a wide-reaching initiative.

By partnering with IDEA Analytics, the organization is ensuring that it will not only meet its immediate technological goals but also build a resilient, future-proof infrastructure that maximizes the use of data and technology. This partnership reflects a commitment to leveraging top-tier expertise to execute a long-term vision, transforming data utilization in a way that supports both organizational performance and broader societal outcomes.

DAVENPORT'S SPI GOALS (TARGETED PROBLEM)

DPD applied for and received funding from the Department of Justice (DOJ) Bureau of Justice Assistance (BJA) SMART Policing Initiative to develop a multi-analyst CAU. As the first formal analysis-minded unit for the DPD, the CAU was envisioned to be responsible for all data development for crime (e.g., reported crimes, calls for service) and administrative police operations (e.g., overtime, training, case management). DPD leadership envisioned the CAU efforts would have a significant impact and enact department-wide changes for how to manage staff, allocate resources, and respond to public safety concerns. The comparatively high crime rates in Davenport underscored the need for the CAU, enabling DPD and their regional law enforcement partners to implement evidence-based crime reduction strategies.

DPD leveraged funding from SPI to strive for and complete the following goals:

1. Establish a Crime Analysis Unit with advanced data modeling and evaluation procedures to support crime reduction strategies and resource deployment.
2. Improve data governance processes to support automation and robust data modeling.
3. Build partnerships and buy-in from staff for data-informed processes and decision making through in-house training and collaboration.
4. Integrate crime reduction approaches (e.g., SARA problem-solving, Crime Gun Intelligence) within the CAU workflow and standards to address persistent crime problems.
5. Develop an agency-wide approach to data-informed decision making that focuses on prevention, intervention, and enforcement activities.

Throughout the project, DPD's leadership and the SPI Project Team leveraged these goals, data, and analyses to provide direct resources in patrol and investigations that support public safety

objectives, specifically regarding violent crime. The DPD leadership committed to providing its personnel with access to data and allocated time to develop specific performance metrics for each division and operational aspects (such as overtime usage and training data). This commitment enabled DPD to produce comprehensive, automated reports that supported decision-making. Within these goals, DPD also developed and implemented policies and procedural manuals for CAU operations and launched several interactive reports to support daily, weekly, and monthly briefings on the Department's data priorities (see Data and Intelligence Section).

During the first year of SPI, DPD prioritized the investment in personnel and data governance practices to support advanced analytical approaches to inform the Department leaders about resources (e.g., staffing, overtime), internal operations (e.g., evidence procedures, case management), and public safety requests for prevention and intervention (e.g., data-informed patrol and investigative responses). The DPD hired a crime analyst with strong technology and statistical skills, a focused vision of the CAU, and the professional demeanor to tackle the start-up element of the unit. DPD's partnership with IDEA Analytics throughout the SPI project supported this start-up element and infused the CAU staff, DPD leadership, and other regional partners with expertise on analytical procedures, technology implementation, and data development for interactive reports (see Data and Intelligence section for details on reports, Analysis and Evaluation on how DPD uses this information). The investment in the right personnel and leadership, and the right research partner led to the repeated successes within the SPI project and allowed DPD to reach all five goals during the performance period. Additionally, the activities within the SPI project complemented the collaboration of DPD and city officials in two concurrent initiatives with the BJA National Public Safety Partnership (PSP) program on

federal partnerships and John Jay National Network of Safe Communities (NNSC) on group violence interventions.[3]

STRATEGIES EMPLOYED

Digital Transformation & Analytical Capacity (DTAC)™ Assessment and Implementation Plan

Due to delays in starting the SPI project, DPD requested IDEA Analytics to establish a baseline of the Department's analytical capacity. IDEA Analytics performed this assessment during the November 2021 site visit, with semi-structured interviews guided by IDEA's DTAC™ Assessment Protocol (AMP).[4] The DTAC™ AMP evaluates procedures and processes across an organization to build and enhance analytical capacity and establish data-driven efforts among three key characteristics: ***Leadership, People,*** and ***Technology.***

Figure 2. DTAC™ Key Characteristic Relationships

The DTAC™ AMP examines five domains aligned with leadership, people, and technology characteristics. The evaluation of these domains allows the department to identify methods to enhance capacity for digital transformation efforts. These domains are defined as:

- ***Analytical Expectations -*** Outlines leadership priorities for data based on types of analysis and analytical skill sets necessary.
- ***People Resources -*** Examines the knowledge, skills, and abilities of personnel that contribute to analytical inputs, processes, and outputs.
- ***Organizational Commitment & Leadership -*** Identifies priorities of the organization and personnel that champion the mission and desired outcomes.
- ***Data Access & Quality -*** Explores formal and informal access to information (e.g., data sharing agreements) and quality of information to support decision-making.

[3] Leadership within the City of Davenport and Davenport Police engaged with several crime reduction programs in 2019 to bring resources to the city to support crime reduction efforts. The City and DPD participated in all three programs between 2019 and 2024, with all three overlapping at different periods of time. Collectively these programs contributed to the progress of DPD and/or the city.

[4] DTAC™ AMP is a proprietary tool developed by IDEA Analytics to support timely and cost-effective assessments of organizational capacity for leadership, people, and technology. The tool is delivered through an electronic intake form and reviewed during interviews for additional context and identification of solution-oriented actions to address organizational gaps and needs.

- ***Technology*** **-** Maps hardware, software, and data storage infrastructure and identifies needs.

Figure 3. Five Domains of the DTAC™ AMP

The absence or weakness of any of these domains can prevent or hinder an organization from implementing analytical processes and using data for decision-making. The alignment or strength of these domains enables an organization to continually improve and advance efforts for implementing data-driven decision-making. In addition to the DTAC™ AMP tool, IDEA Analytics reviewed policies, prior consultant-issued assessments, and documentation on technology procedures to synthesize information for an actionable implementation plan.

The resulting DTAC™ Implementation Plan delivered in January 2022 supported the DPD SPI goals, aligned with current organizational capacity and industry best practices, and provided a detailed schedule for the first year of training and technical assistance.[5] This implementation plan allowed DPD to focus resources for training and technical assistance needs on analytical skill development, enhancing the use of existing technology platforms for analysis

[5] The DTAC™ Implementation Plan was briefed to agency leaders and guided the course of activities throughout 2022 and 2023.

and reporting, and establishing new workflows for using data in decision-making. This plan supported DPD's SPI goals through the following technical assistance activities.

Hiring, Training, and Sustaining Analytical Staff (SPI Goals 1-3)

The first achievement for this goal was the ability for the department to establish and formalize the role of the Crime Analyst within the department. During the first year, DPD established the first job requirement for crime analysis and hired a crime analyst for the agency.[6] Initial interviews enabled DPD to transition an existing professional staff member from the Records Division into the Crime Analysis role, creating immediate added value to the foundation of the CAU. Institutional knowledge of DPD's primary data systems and reporting processes enabled Crime Analyst Allissa Hawk to firmly establish basic tactical reporting procedures for emerging crime trends and priority crimes (e.g., gun violence). To support this new position and skill development, DPD leveraged their partnership with IDEA Analytics to deliver multiphase training modules on conceptual and technical skills in over 700 hours throughout the first two years of the project. These training modules were delivered in three formats: asynchronously, virtual sessions, and in-person training that included DPD's National Guard Analyst and analysts from neighboring law enforcement agencies.[7]

In addition, a customized learning plan for DPD including asynchronous online sessions and resources were delivered via IDEA's LEA Community[8] via group and one-on-one interactive workshops with data science and research experts, and during in-person training and advising

[6] DPD had previous personnel that performed analysis for investigation information however, this was not a formal role for crime analysis within the agency and did not follow the structure for the CAU.
[7] DPD National Guard Analyst was not placed within the CAU, but within the Criminal Investigations Division. This role focused on case support for drug cases versus broader crime reduction efforts and statistical analysis for prevention and response to crime incidents.
[8] LEA Community is a membership site for IDEA clientele to Learn-Educate-Advance through customized learning plans suited for adult learners. Members access general and customized learning plans to support their professional development plans on topics such as analytical techniques, crime reduction strategies, and technical skills for analytical platforms.

sessions conducted through quarterly site visits. This dynamic delivery of training and technical assistance allowed flexibility in personnel's schedules, changes in workload throughout the year, and routine troubleshooting with data and technology processes. This consistency of support enabled the routine production of data and successful completion of projects throughout the SPI period. DPD leadership and crime analysts engaged in over 800 hours of workshops and learning sessions to further define, develop, and improve data operational efficiencies during the project period. These workshops included leadership training on managing crime analysis units, developing training programs for analysts, policy and procedural development, and operationalizing data for short-term projects.

The addition of a Crime Gun Analyst to the CAU occurred in the Fall of 2022. This role would further support the National Integrated Ballistic Information Network (NIBIN) and Crime Gun Intelligence Center (CGIC) procedures for the DPD and balance the workload across analysts. During an unexpected staff transition in 2023, the DPD Crime Analyst worked with IDEA Analytics to revise the job requirements and hiring process for the Crime Gun Analyst Position, including a skill-based test for candidates. The changes to the hiring process were developed to align with the complexity of data management and data processes for crime gun intelligence interactive reports which were developed in 2022 and early 2023 and required more advanced talent and skill sets for new staff. The hiring of a new analyst in fall of 2023 also allowed for DPD CAU to develop and implement a multi-week training program to ensure competencies and work performance were ideal for the agency and the new hire was successful in the role. This training program enhanced the documentation of the CAU procedural manual and data management processes which will ensure sustainable practices as the unit continues to evolve. At the end of this grant period, the DPD had established two crime analysis roles (from

zero), with aspirations to expand to a third over the next year to support supervision and distribution of analytical tasks for the department and the emerging regional coordination.

Investment in Data Governance and Technology (Goal 2)

A significant achievement during the SPI project was the alignment and enhanced use of existing technology for the CAU. The City of Davenport and DPD had previously invested in technology infrastructure and systems that would support more advanced analytics; however, this investment still came with challenges with third-party vendors and interoperability.[9] The dedication of DPD's leadership and collaboration with the Scott Emergency Communication Center (SECC) and the City of Davenport's Information Technology (IT) Department minimized costs significantly for the Department and strengthened relationships. Key activities for this effort included:

- Leveraged existing licensing with City GIS for ArcGIS access and training.
- Leveraging existing City owned software to implement ticketing requests and tracking for CAU
- Shared deployment of Power BI with IDEA Analytics while City IT shifted Microsoft 365 licensing.
- Leveraged additional data sources from new evidence procedures to enhance accurate reporting on property and firearm processing.
- Avoided costly processes for "new" tools by holding vendors accountable within current connections/platforms.
- Established replication server(s) to support unfettered access to data for the CAU.

[9] DPD public safety record management systems are managed by SECC and via a consolidated governance process with 28 other public safety and emergency responses agencies. Adaptations to the systems and/or processes to support advanced analytics often require agreement among all members to ensure decisions are fiscally responsible and not disruptive to different objectives and uses.

- Changed permission and information sharing with Quad City and Scott County agencies to support analytical and investigative procedures.
- Deployed new Microsoft 365 platforms to support sustainable procedures for data management and reporting.

Increasing Knowledge and Exposure to Crime Reduction Strategies and Data-Informed Decision-Making Procedures (Goals 4 and 5)

In addition to the hundreds of hours provided by IDEA Analytics for technical assistance and training, DPD leveraged other partnership and programs for additional learning and peer exchange opportunities to further their knowledge and experience with crime reduction strategies. The following peer exchanges or conferences were attended by DPD staff within the project period:

- Peer learning and training with John Jay National Network of Safe Communities (NNCSC) in New York (2022);
- Peer exchange with Salisbury (NC) Police CIC re: Camera and LPR Operations (2022);
- Peer exchange with Orlando (FL) Police re: Hiring Crime Analysts in a Crime Center (2022);
- Peer exchange with Salisbury (NC) Police CIC re: Procurement Procedures for Technology (2022);
- Social Network Analysis Training in Cleveland, OH;
- SPI supported IACA Conference attendance by DPD Crime Analyst and SPI Project Lead Lt. Smith (August 2022);
- DPD panel webinar of "Analytical Support Request System" for 16 attendees and four agencies (2022);

- Peer exchange with the Fairfax County (VA) Fire Department, Scott County Fire Department, and DPD re: Smart Data: Using Fire Response Data in Data-informed Decision Making (2022);
- DPD panel webinar of "One Year Later: SPI Updates for DPD CAU" for 66 attendees and 10 agencies (2023);
- DPD conducted virtual peer exchange with Salem (OR) Police re: development of crime analysis units (2023);
- National Public Safety Partnership (PSP) Symposium in Wichita (2023);
- PSP Peer Exchange with Phoenix (AZ) Police on gun crime procedures (2023);
- DPD Crime Analyst granted NIJ Presentation for IACA Conference for interactive Crime Gun Reporting (August 2023), attendance by SPI Project Lead Lt. Smith and Sgt. Lala;
- Violent Crime Reduction Meeting (December 2023);
- Virtual Peer Exchange with Harris County Sheriff's Office Crisis Intervention Team (2024);
- DPD hosted state representatives from Arkansas re: group violence interventions (John Jay NNSC program, 2024);
- SPI Peer Exchange with Harris County Sheriff's Office Hi-Tech Crimes and Information Technology Department (2024);
- DPD Crime Analyst granted NIJ Presentation for IACA Conference on An Analyst Role with NIBIN Leads (September 2024).

DPD's ongoing learning and exposure to topics from other agencies, as well as their participation in hosting other agencies, demonstrates DPD's commitment to advancing policing methods and strategies for the city. These experiences enable DPD leadership to formulate their

own procedures that worked best in their units. Evaluation interviews with participatory staff echoed the value of interacting with peers during conferences, virtual peer exchanges, and webinars to generate new ideas, confirm their own processes and approaches, and learn from other officers and agencies about common pitfalls.

Creating Actionable Data for Operations (Goal 5)

Throughout the SPI project, DPD focused on aligning the DTAC™ three characteristics of leadership, people, and technology to support the development of timely, actionable, and accurate data for operations. The steps and iterations of reporting to identify key priorities for administrative and operational data took over 12 months to refine. This length of time includes changes to data sources, legacy systems that were retiring, and challenges to data access. DPD tenacity with these efforts and continuation when personnel changed, led to development of over 10 interactive reports (see Data and Intelligence Section) and new patterns of practice for meetings.

Here are a few successes from timely data and leadership's decision-making for patrol, investigations, or other operations:

- Place-based and temporal analysis completed in May 2023 of stolen vehicle cases led to the precise identification of locations at elevated risk for theft and/or vehicle dumps. Information shared with investigators and patrol officers led to a briefing with DPD commanders to support surveillance operations. Outcomes included the quick recovery of stolen and dumped vehicles in addition to supporting the pursuit of thefts during the crime.
- In June 2023, the Davenport Police Department's CAU assisted with the identification of subjects involved with stolen vehicles and weapons offenses, which later lead to a pursuit and multiple arrests. Davenport's Crime Analyst,

Allissa Hawk, identified a pattern of vehicles being stolen and recovered in similar areas and having similar suspect descriptions. Using the available resources and tools, Crime Analyst Hawk identified five (5) potential suspects that were responsible for the vehicle thefts and found social media photos of the subjects inside similar vehicles to those that were stolen and were posted around the same time that the vehicles were active. Crime Analyst Hawk worked with the Gun Analyst, Isabella Zak, to verify that these same subjects had been involved in past weapons offenses, with one of the subjects having recently been involved in a case where a stolen firearm was located on their person. At this point, Gun Analyst Isabella Zak created a link chart of an unrecovered firearm that may have been associated with this group and the intelligence information was provided to the gun unit. Crime Analyst Hawk developed information on subjects, locations, and identified the link between the firearms to inform the rest of the Department for officer safety purposes. Because of the information provided by the CAU, DPD's Command Staff approved these subjects to be added to the pursuit list (officers in Davenport are unable to pursue subjects or vehicles unless approved by command staff). Two weeks later, the subjects were spotted by officers in a stolen vehicle and a pursuit ensued, leading to the arrest of the subjects. Due to the linked cases, the subjects were charged with multiple cases and additional firearms were recovered. The supervisor of the gun unit reports that it was because of the information provided by the CAU that they were able to make the pursuit happen and connect so many cases, leading to successful arrests.

- In August 2023, Davenport Police Department School Resource Officers (SROs) worked with family resources to reach out to high-risk juveniles prior to the start

of school, to prevent violence inside the schools following summer feuds. Captain Proehl reached out to Davenport's CAU requesting an information on juveniles who may have been recently involved in violence or feuds. Crime Analyst Allissa Hawk queried recent juvenile activity and identified several juveniles that may cause conflict. The captain, and a team of other staff, then requested a history of involvement for each juvenile. Allissa created 1- to 2-page juvenile workups for each subject with photos, personal information, cases/incidents, feuds, and identified parent/caretaker information (along with photos of all guardians). These workups helped to brief the officers on what they might need to talk with the students about. Thanks to this effort by the analyst and responding officers, the SROs have reported 39% less fights/assaults this year (2023) as compared to last year (2022) from August 1st to September 26th.

- Concerns about rising crime at Walmart in one district led to an analysis of multiple years of crimes at Walmart locations (n=2) for the City of Davenport. Additional information regarding the presence of private security and loss prevention practices indicated no significant changes at locations. This prevented the use of resources being allocated to a perceived problem v. actual crime increase.
- In March 2024, Crime Analyst Allissa Hawk completed a link chart for an ongoing RICO case with the USAO and DPD Gun Unit. The visualization of over 47 crime guns with DPD and regional cases identified additional targets and locations to expand investigations and strength pending indictments.

Data and Intelligence

DPD CAU and IDEA Analytics developed an array of interactive reports and standardized analytical products during the SPI project to support data-informed decision-making. All reports, regardless of formatting, were made available to DPD staff and leveraged during roll call, investigative briefings, prosecutorial strategies, community meetings, and other internal meetings (e.g., command staff, divisional planning meetings). The following sections summarize the CAUs request system, seven interactive reports that support several analytical products, and an overview of the remaining 15 analytical products. See Analysis and Evaluation Section on how these products are used by DPD staff.

Crime Analytics Unit Request System

Data Priority and Importance. The first step of the Data and Information Lifecycle is to *identify requirements* for data and information. This step requires leadership and analysts to collaborate and define data needs, how frequently data and information is needed, and why this data or information is important. While this step is typically performed for specific projects, there are many ad hoc requests received by a crime analysis unit for short-term needs. These ad hoc requests can often disrupt an analyst's critical thinking and cause the analyst to enter into a treadmill style workflow that lacks analytical strategy, much like a patrol officer clearing 911-calls without a crime reduction strategy. To avoid this misstep, analytical units establish request tracking systems to collect requests for data and information. This request system enhances task management, creates a firewall to filter out irrelevant and out-of-scope requests for the CAU, and promotes reflexivity to support automation.

Reporting Procedure. Based on the City of Davenport's Information Security Help Desk System, the CAU Ticketing System provides a standardized portal for officers to request information and directly communicate with an analyst from the CAU. This system incorporates

feedback loops that facilitate officers' learning about the analytical products and processes, as well as analysts' understanding of cases and trends. Through this portal, officers can gain a clearer insight into the analytical products available to them to request. Since the system has been operational the CAU has fielded over 1,400 tickets (see Table 1).

Table 1. CAU Requests, June 2022 - July 2024

CAU Request Type	Total Requests (June 2022-July 2024)
Ad-Hoc	**611**
Analytical Product Type \ Contact Sheet	57
Analytical Product Type \ Geospatial Analysis / Map	36
Analytical Product Type \ Link Chart	12
Analytical Product Type \ Workups	55
General \ General Request	445
Internal (Administrative) \ Internal Task	6
National Guard Analysis	**186**
Analytical Product Type \ Evidence Synopsis	32
Analytical Product Type \ External Intel Sharing	62
Internal (Administrative) \ Data Cleaning for Other	14
Internal (Administrative) \ Data Entry	78
Routine CAU Products	**599**
Recurring Analytical Products \ CCS	145
Recurring Analytical Products \ Monthly Gun Statistics	11
Recurring Analytical Products \ Patrol Briefing	340
Recurring Analytical Products \ Shoot Review	103
Routine (no longer provided)	42
Recurring Analytical Products \ PSP Statistics	42
Grand Total	**1438**

Agency Impact. The CAU Ticketing system has been helpful for the CAU to manage and prioritize work, evaluate common requests, and build automation and self-service options for routine reports mentioned above. Evaluation of these requests have allowed the CAU to develop new or refine existing reports to ensure timeliness of analytical products and to maximize officer self-service of data through deployed dashboards.

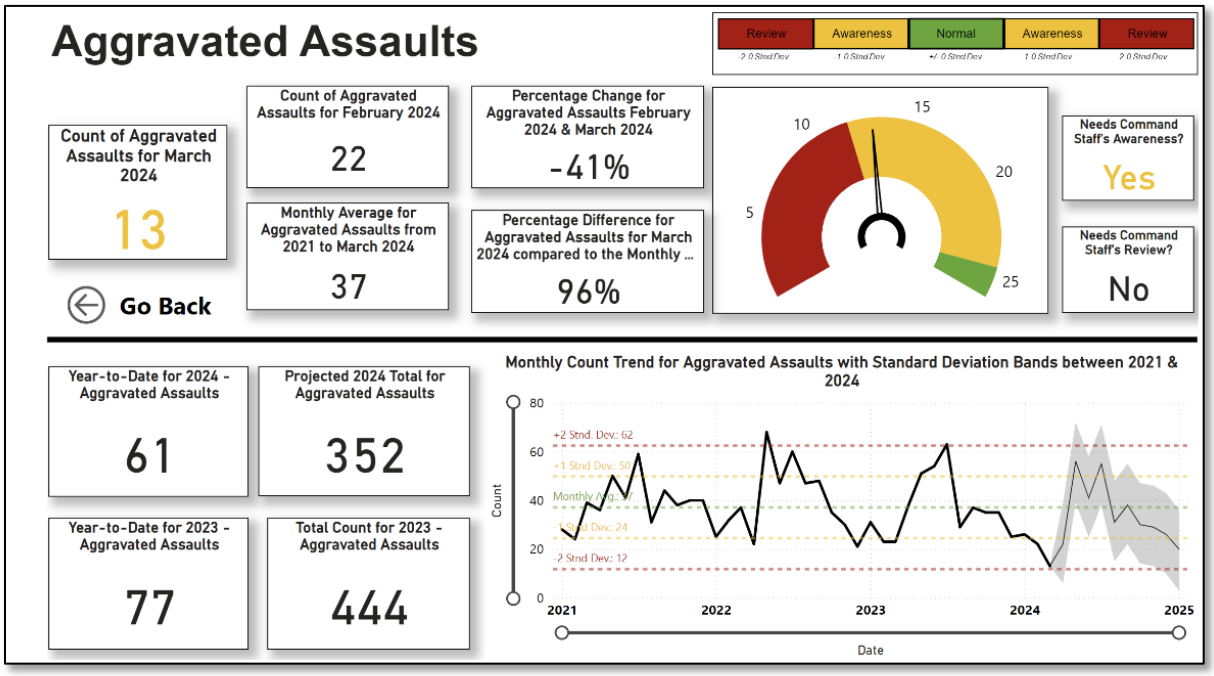
DPD Managerial Report

Data Priority and Importance. In 2022, DPD began developing an agency-wide management report. The pilot of this management report occurred in 2023, with the intention of providing DPD leadership with administrative and operational data related to each division, help them identify patterns or trends regarding resources (e.g., funding, personnel), and focus on priority public safety concerns aligned with the agency's strategic plan. Like other agencies on a data-informed path, the initial design of the report expanded quickly to 13 pages with over 200 data points. This volume and variety of data proved to be time intensive to regularly produce and, for some data points, not informative for decision-making. To remedy these challenges, IDEA Analytics worked with the DPD leadership to identify data requirements, frequency of reporting, and intention of reporting. From these meetings, IDEA Analytics held data sessions with the Business Analyst and the Crime Analysis Unit to structure data-collection processes and to produce several data visualization reports through Power BI. These data reports can be leveraged, in aggregation, to support the development of a monthly report and further inform DPD of a certain threshold of irregularity that would warrant additional attention by DPD Command Staff.

Reporting Procedure. Data priorities for each division were identified through meetings with the DPD leadership, DPD's Business Analyst, and the CAU. Since some data were related to crime statistics or calls for service, the alignment with existing reports from CAU was necessary to streamline some procedures for the managerial report. In addition, new data sources needed to be collected and/or revised to align with interactive reporting procedures. As of June 2024, this report consists of a summary landing page that reviews approximately 70 administrative or strategic data points important for DPD leadership. Based on the last three years of data, standard deviations for above and below averages are calculated for each data

point and flagged for leadership review each month (as necessary based on the statistical significance of the most recent data point, See Figure 3). The evaluation of upward and/or downward trends were requested by DPD leadership to understand impacts when things are working (e.g., lower numbers) or needs to be addressed (e.g., higher numbers or numbers exceeding the defined threshold).

Figure 4. Example of DPD Managerial Report for Priority Crime



Agency Impact. The difficulties in initial data development and the explosion of data points initially thought to be important resulted in the slowed adoption of the managerial report in command meetings. Early processes to place the responsibilities of data collection and analysis at the captain-level hindered timeliness of data for automated reporting due to data access and/or quality issues. Efforts over the pilot period to refine and restructure the data collection process for several data priorities (e.g., Overtime, Calls for Service time) enabled a systematic method for data collection and is gaining traction for DPD leadership review at the time of this report.

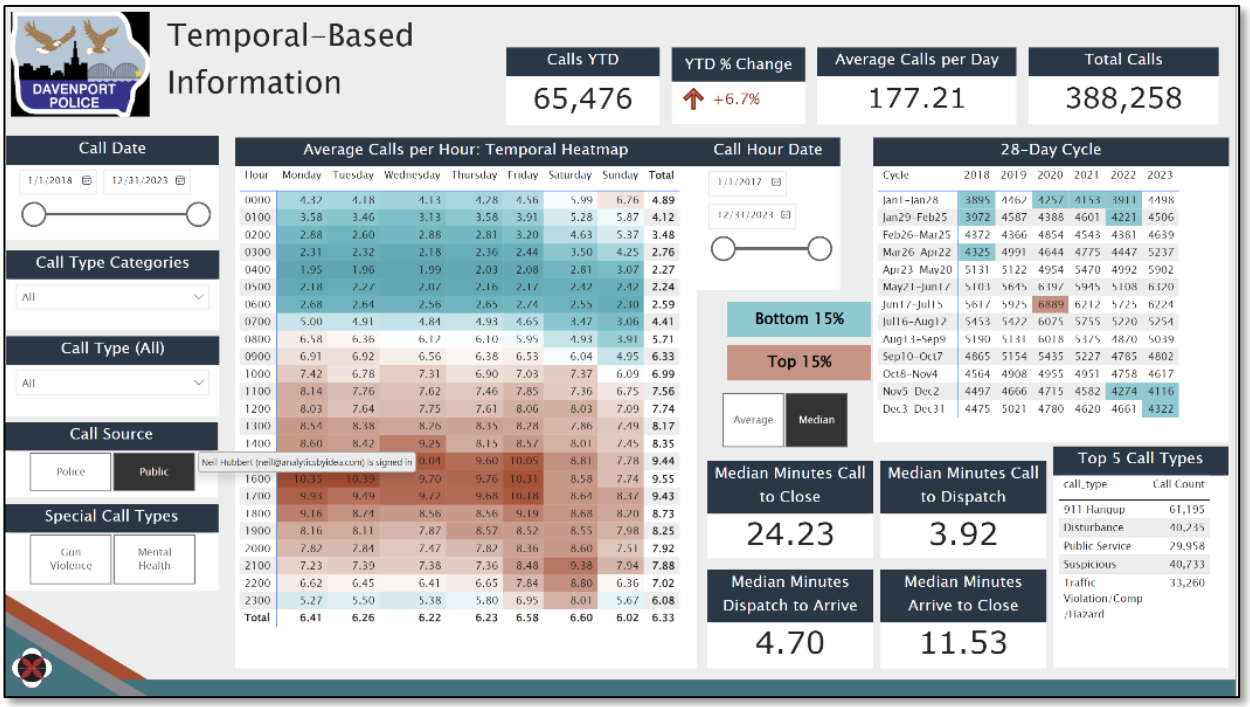
Calls For Service (CFS) Interactive Report

Data Priority and Importance. Analyzing CFS data helps police departments allocate resources effectively, identify crime patterns, and implement targeted crime prevention initiatives. It enables evaluation of police performance, informs resource planning and budgeting decisions, and promotes community engagement and transparency. A CFS analytical product allows for strategic decision-making by the Patrol Division's leadership team to allocate resources per shift and/or per period (e.g., week, month) to address emerging crime trends and/or public harm incidents.

Reporting Procedure. DPD's CFS reports include general trends over time (year over year, year to date percentage change, month over month), temporal trends (28-day cycle, day of week/time of day matrix, seasonal trends), percent changes, rates, comparing parallel time periods, analyzing public and police initiated calls across different geographical areas, and identifying changes in public service request patterns (see Figure 4).[10] Additional filters on the report isolate priorities for patrol regarding gun violence (e.g., shots fired) and mental health or crisis intervention calls.

[10] Due to abnormalities of police reporting during the COVID19 pandemic, evaluation of trends at the five- and three-year are conducted to understand true patterns and trends.

Figure 5. DPD Calls for Service Analytical Report - Temporal Page Example



Agency Impact. The iterations of the CFS report over time benefited the Patrol leadership in several ways. Information regarding call types (e.g., increases of calls by type, time of increased calls, location of calls) informed short-term patrol responses for local businesses contributing to disorder or crime (e.g., aggravated assaults, shots fired) and/or resident locations (e.g., stolen vehicles, theft locations). The baseline development of this information also allowed the CAU to provide timely responses the perceived increases of crime. For example, several patrol officers recommended additional resources to support responses for thefts at one of the city's Walmart locations. A quick analysis of calls to this location indicated no significant changes to calls, although it was perceived that crime was increasing. Furthermore, comparison to the other Walmart location provided context to the differences observed in thefts and how to coordinate with the loss prevention. DPD Command staff are now able to navigate to the CFS dashboard and gather information about the number of CFS based on a location on their own

rather than submitting a request to the CAU through the ticketing system, leaving more time for the CAU analysts to perform analytical duties rather than information gathering and counting.

Reported Crime (RC) Interactive Report

Data Priority and Importance. Analyzing RC data helps police departments identify crime patterns and identify crime data drivers. These interactive reports focus on crimes against persons, property, and society (i.e., NIBRS categories) over a five- and three-year period to establish baseline statistics and parameters for significant increases or decreases in crimes reported.[11] Additional filters or views within the reports allow DPD leadership and officers to review specific crime types, case information, and other details to support decision-making.

Reporting Procedure. DPD's RC reports include general trends over time (year over year, year to date percentage change, month over month), temporal trends (28-day cycle, day of week/time of day matrix, seasonal trends), percent changes, rates, comparing parallel time periods, analyzing crime across different geographical areas, and identifying changes in crime patterns. Additional filters and/or report views enable officers to focus on specific crime types and case details for quick review or recall.

Agency Impact. Similar to CFS, the development of this data and baseline trends is a foundation for CAU to provide context to emerging trends or other concerns for DPD. While pieces of this report are included in the Managerial Report for general review of trends, this report is most commonly used by analysts to review additional context to changes in crime and assignments of cases for investigations.

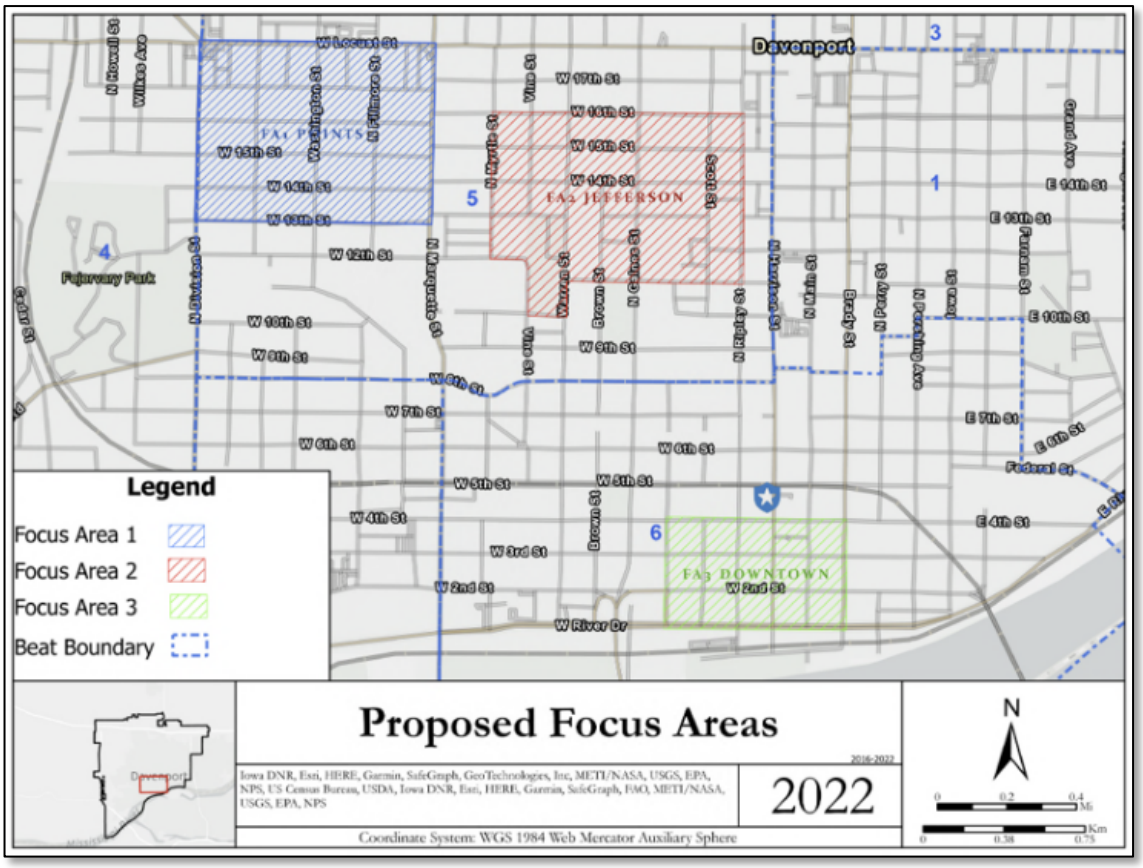
[11] Due to abnormalities of police reporting during the COVID19 pandemic, evaluation of trends at the five- and three-year are conducted to understand true patterns and trends.

Gun Violence Place-based and Geospatial Analysis

Data Priority and Importance. IDEA Analytics provided an eight-year analysis of all calls for service and reported crime to further refine hotspot locations for the Department. Prior reporting by research partners and/or analysts prior to the CAU development were not successful in identifying micro-locations that could support a place-based response from the DPD. This new analysis diminished prior frustrations with data visualizations that depicted crime happening everywhere, all the time.

Reporting Procedure. Geospatial analysis of the 56 statute descriptions (i.e., offenses) defined by DPD as gun violence resulted in the identification of three persistent micro-locations and possible other locations that may have been emerging. This analysis included socioeconomic demographics about each micro-location, possible levers (e.g., faith-based organizations, businesses, community organizations) to involve in a possible crime reduction strategy, and a calculation on whether the location was trending up or down in its most recent gun violence (see Figure 6).

Figure 6. Proposed Gun Violence Micro-Spots (2022)



Agency Impact. Part of being a data-informed decision-making agency involves knowing when to proceed and when to wait with operational plans. This analysis allowed DPD to determine the readiness of their resources for a response in one or more of these locations. Briefings on this information in 2022 and 2023 demonstrated the benefits and challenges to enforcement, intervention, and prevention for each area. Engagement in other programs (e.g., Group Violence Interventions with NNSC) and plans from the city (e.g., housing redevelopment) also informed the decision by DPD to not overextend resources in a specific place-based problem. Traction with the Firearms Dashboard and Shoot Review meetings suggested there would other methods to lower gun violence in these areas over the course of time.

The procedures for this analysis were shared with CAU, in order to support routine hotspot analysis and/or smaller crime reduction efforts.[12] This contributed to Crime Analyst Hawk's analysis for directed patrols in two-micro areas (est. .26 square miles) during specific time frames to interrupt patterns of shootings, resulting in arrests of shooting suspects, recovery of a crime gun, drugs, and cash (see Figure 7 CAU Highlight).

In May 2024, IDEA Analytics briefed outcomes for each of the three proposed locations from the 2022 analysis to Patrol leadership to provide crime trend changes and additional context. Two out of three locations, both being residential areas, reported lower gun violence incidents over the period. The third location, Downtown, reported increases in gun violence incidents. This information will further inform the placement of surveillance cameras and partnerships with businesses.

Figure 7. CAU Highlight

Analysis

- Evaluation of shooting locations in the city
- Identification of two micro-hotspot areas
- Directed extra patrol for hotspot areas between 20:00 and 23:00 hours for Area 1 and 23:00 and 03:00 hours for Area 2

Information Sharing

- Rock Island (IL) shooting suspect information provided to DPD CAU
- Suspects and vehicle information shared with patrol

Results

- During extra patrol in Area 2, Officer J. Crow recognized suspect vehicle and conducted a stop
- Suspects arrested
- Items Seized: handgun, over 300 grams of Marijuana, 18.75 grams of MDMA, and four grams of Cocaine, four phones and approximately $3,000 in cash

Firearms Dashboard - Shots Fired Interactive Map, Shoot Review Briefings, and NIBIN analysis.

Data Priority and Importance. DPD Leadership, Gun Unit detectives, and patrol officers have focused on gun violence for several years to intervene in neighborhood disputes and remove crime guns from the community. The daily requirement of knowing the latest

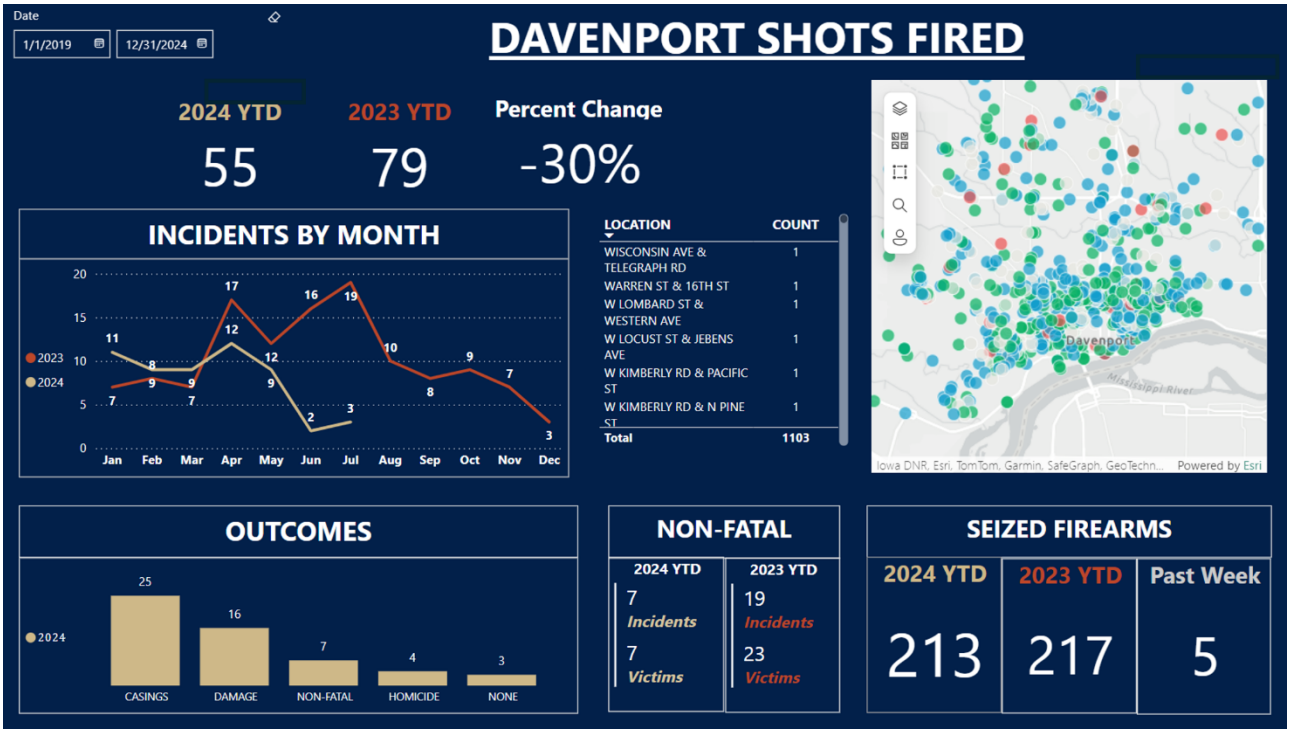
[12] IDEA Analytics' provided training and methodology documentation for this analysis and shared with the DPD CAU for repeatability via virtual trainings and screen recording

shooting locations for the city and any high-profile cases in the county were identified as a priority for reporting. As DPD improved their data access and collection procedures, this report evolved several times during the reporting period to ensure timely and accurate data for patrol and investigation responses.

Reporting Procedure. The first iteration of this report was a simple graphic of "shots fired" calls for service on an ArcGIS map deployed to DPD staff. This report was limited to a manual data collection and updating process. Additionally, regional cases outside of the city limits that may be relevant for investigators was difficult to capture and update in a timely manner. CAU Crime Analyst Hawk quickly worked to automate this reporting and improve the details portrayed for non-fatal shootings and evidence collection by leveraging the data variable Crime Gun IDs from the ATF. Hawk's effort resulted in a several iterations of Power BI reports to display information on CFS shots fired, reported crimes, hit and lead returns from ATF, and offender and victim analysis. Inclusion of GVI notifications and case drilldowns for shoot review cases was quickly added to make this a go-to report for DPD Gun Unit.

Agency Impact. The details within the several pages of this report and subsequent dashboards makes this a resource for the CAU and every DPD division (see Figure 8 and Analysis and Evaluation section). Similar to the CFS and RC reports, the automation of information from all data sources supports timely research on gun violence related incidents, offenders, and victims. Analysis of trends on places, persons, and gun violence variances is displayed in weekly shoot review meetings and information for tactical analytical products (e.g., Weekly CCS, Ad Hoc Reports).

Figure 8. Example of Davenport (IA) Shots Fired Interactive Report



School Resource Officer Reporting Portal

Data Priority and Importance. Top location analysis for assaults and other offenses related to violent crimes indicated several school campuses. DPD's violent offender analysis indicated more juvenile or young adult offenders, particularly regarding gun violence. Combined with the national concerns about school safety, DPD expressed interest in developing a reporting procedure that demonstrated proactive efforts by DPD School Resource Officers (SROs) and would provide further context to school-based incidents.

Reporting Procedure. DPD leveraged their existing technology platform, Survey 123 by ESRI, to generate an 8-minute data collection form that captures activities based on the National Association of School Resource Officer (NASRO) model. The design of the survey and context for categories aligns with other school-based programming reporting procedures and has supported additional collaboration with school officials on school-based incidents and responses (Herbert, 2019).

Agency Impact. As considerations were being discussed to remove SROs, the timely and detailed capture of incidents based on the NASRO Model enabled DPD and school stakeholders to have a different narrative. Concerns about the criminalization of youth were balanced with the reality of the number of prosocial activities, mentorship, and education provided by DPD in the schools. Additionally, fights and conflicts within the schools demonstrated the need for security approaches.[13] Evaluation interviews with a school district representative also indicated a value of this data and other data from gun violence helping school leadership develop different responses for incidents at school or how to have handle-with-care initiatives.[14] The DPD SRO dashboard is publicly available here.

Sonoma County Model Person-Based Assessment Tool

Data Priority and Importance. Subjective procedures (e.g., case audits, detective-only perspectives of persons of interest) to identify persons for offender or victimization crime reduction strategies fall short of strategic allocation of resources. Prior research has indicated these approaches produce short-term impacts and fail to result in long-term disruption of crime cycles (Fox & Farrington, 2018; Wallace et. al., 2015). DPD implemented a systematic evaluation procedure for person-based risk evaluation for offenders and victims in 2024 to minimize bias within response programs and effectively allocate resources.

Reporting Procedure. The model used in this analytical product is known as the Sonoma County Model where individuals receive points based on the severity of the offense and their role in the crime but also lose points based on a decay constant that reduces the score by a

[13] Read more about these in Quad City Times article: https://qctimes.com/news/local/government-politics/davenport-has-new-data-on-crime-in-the-classroom-will-school-resource-officers-remain/article_f4253cd5-9ca3-50c5-9ed0-02738bcb5945.html

[14] Handle with Care programs are based on knowledge shared between police and school leadership for incidents where a youth may have poor attention or school performance. These programs may be focused on domestic violence or other issues within the home or immediate community that may distract the youth during the day or week impacted.

small fraction for each day since the incident.[15] Each offense is assigned a score, the role of involvement receives a score for each person, and calculations based on date of crime are performed. All scores are then added together for each entity, thereby producing an objective score quantifying their contact with DPD. Additional filters and views enable DPD to isolate repeated victims for gun violence, domestic and crisis intervention calls, in addition to top offenders with gun violence offenses and other violent crimes.[16]

Agency Impact. The implementation of this tool within DPD CAU procedures is expected to have a large impact on person-based approaches for the future.[17] DPD CAU has leveraged this list to be more informative toward referrals to the city's Group Violence Intervention program, DPD's CIT response team, and coordination with school- or community-based stakeholders for juveniles.

Additional CAU Reports.

There are additional analytical products provided by the CAU for the Department's data needs. Tactical products (e.g., BOLOs, information sharing notices, office safety) are routinely disseminated via email or briefings. Weekly summary reports, such as the Crime Control Strategy (CCS) product, provide both patrol and investigators information about current trends, persons of interests, and priority case updates. The use of these products and the interactive reports were assessed in an agency-wide survey (see Analysis and Evaluation Section, Using Data and Analytical Products for Crime Reduction).

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[15] International Association of Crime Analysts. (2018) Prioritizing Offenders and the Role of Crime Analysts in Offender-Focused Crime Prevention (White Paper 2018-01). Overland Park, KS: Author.
[16] DPD defines gun violence offenses with 56 Iowa State Criminal Codes based on possession, use, and display of weapon. These offenses were reviewed by DPD leadership and detectives and categorized as gun violence for the CAU analytical procedures.
[17] IDEA Analytics may conduct future research on the evaluation of this procedure to support other initiatives for crime reduction.

Analysis and Evaluation

The changes among leadership, people, and technology during the SPI project period created unique challenges to our evaluation procedures. First, quantitative analysis on the volume of meetings, number of analytical reports produced, or general crime trends would not be direct measures for the organizational impact of the Crime Analysis Unit and the plethora of interactive reporting developed. Since quantitative information alone would not indicate usage, benefits, or change management, qualitative methods were incorporated in the final evaluation research design to gain a comprehensive understanding of DPD's change.

These mixed methods approach as an embedded, single case study design leverage the strengths of qualitative case study research to capture the nuanced, contextual, and often complex aspects of organizational change, such as employee perceptions, cultural shifts, and leadership dynamics (Yin, 2009). Case studies allow for in-depth exploration of specific instances of change, providing rich, detailed narratives that illuminate the processes and outcomes of organizational interventions (Yin, 2018). By conducting interviews, focus groups, and observations throughout the project period, IDEA Analytics gathered firsthand insights that are critical for understanding the human elements and subjective experiences associated with organizational change.

Additionally, the DTAC™ framework takes a critical action research approach by routinely evaluating the characteristics of analytical units as the capabilities enhance throughout the implementation and operational phases (Forester et. al., 1993; Friedman & Rogers, 2008; Altrichter, et. al., 2002). The core characteristics of leadership, people, and technology breakdown into five domains to further detail organizational characteristics, processes, and data maturity. The evaluation of these domains throughout the project period aligns with the iterative

process for action research and is viewed as beneficial for innovative business operations which is applied toward the data transformations of policing in this construct (Bryman & Bell, 2011).

In conjunction with qualitative methods, IDEA Analytics performed quantitative analysis to determine patterns and test hypotheses regarding the significant decrease of gun violence during the project period. An agency-wide survey and statistical analyses gathered information to enable researchers to quantify the extent and impact of organizational changes across a broader population. This dual approach ensures that data-driven insights are complemented by deep, contextual understanding, leading to more informed and effective decision-making within organizations (Creswell & Plano Clark, 2017). By combining qualitative case study procedures with quantitative measures, our evaluation of progress during the SPI project captured the multifaceted nature of change initiatives and further informing our agency on next steps.

Evaluation Methods

Interviews. Semi-structured interviews were conducted twice during the SPI project period. First in November 2021 to develop the DTAC™ Implementation Plan to guide our project work. The second round of interviews were conducted in May and June 2024 with DPD and identified stakeholders.[18] These interviews included the semi-structured interview protocol on the domains of the DTAC™ AMP, in addition to specific reporting and briefing procedures implemented during the project period.

Qualitative Coding. Based on prior research conducted by IDEA Analytics, the DTAC™ evaluation process uses deductive and inductive coding procedures to capture insights. Two

[18] Interviewees were identified by IDEA Analytics and DPD leadership team. All interviews were voluntary, and consent was captured during the scheduling and interviewing process. Interviews conducted in November 2021 included site visit team notes and synthesis of information among the project team. Interviews conducted in May and June 2024 were audio recorded and transcribed via Otter AI to support the virtual interview process. Some personnel were interviewed in both periods due to their continued and/or evolving role in the project. These interviews allowed for deeper reflection on the experience of the officer and/or stakeholder in seeing the work evolve, addressing barriers, and understanding the pace of change for the department when other priorities became involved.

levels of coding occurred to evaluate all information. Inductive coding aligned all information within the BAC five domain framework. Within each domain, additional deductive, flat coding was used to develop subthemes (Creswell, 2014). Subthemes for four of the five domains are noted for more descriptive value to organizational characteristics (see Table 2)[19] coding occurred to indicate impacts, advancement of knowledge or practices, or data maturity. If applicable, extraneous information that was outside the scope of the domains remained as observational notes and/or context to the project.

[19] Subthemes are not applied to Organizational Commitment & Leadership for this article due to sample of two agencies. Additional social, political, and economic subthemes emerge in larger sample sizes and longer durations based on intellectual property and practices by IDEA Analytics.

Table 2. Coding Schema for DTACTM Framework Evaluation

BAC Domain (Inductive codes)	Main Themes (Deductive codes)	Sub-themes
People (proles)	Knowledge (proles-1)	Formal education (e.g., college degree) Professional certificates (e.g., data science) Professional Development Courses (e.g., subject specific courses)
	Skills (proles-2)	Technical skills (e.g., computer coding/languages) Analytical skills (e.g., research methods, statistical methods) Critical thinking (e.g., deductive, and inductive reasoning)
	Abilities (proles-3)	Explanation of information (e.g., written, or oral) Data visualization (e.g., accurate display of information)
	Role in data governance (proles-4)	Contributions to data collection Skills and processes for data development Management of data for analysis Reporting procedures
Analytical Expectations (anexp)	Identification of data priorities (anexp-1)	Articulation of data priorities across the organization Consistency of data priorities over time
	Analytical techniques (anexp-2)	Strategic Analysis Tactical Analysis Operational or Administrative Analysis Crime Intelligence Analysis
	Articulation of using data in decisions (anexp-3)	Organizational meeting routine Identified performance metrics Articulation of key performance indicators
Data Access & Quality (dataq)	Access points for data per role/position (e.g., personnel processes and access methods) (dataq-1)	Personnel process for extraction Personnel processes for data management Personnel awareness of data locations (e.g., discoverability of information)
	Quality assurance processes (dataq-2)	Record validation process Responsibilities for editing and/or quality control of records
	Access to information (e.g., user permissions) (dataq-3)	Availability of information across roles or units Information sharing protocols
Technology (tech)	Hardware (tech-1)	Computers Surveillance technology (e.g., cameras, LPRs) Response monitoring technology (e.g., drones, body worn cameras)
	Software (SW) (tech-2)	SW for Data Collection SW for Processing Data SW for Analysis of Data SW for Reporting Data
	Data storage (tech-3)	On-premises Cloud hosting Third-party vendor management (per application)
Organizational Commitment and Leadership (orgcomm)	Prioritization for department (orgcomm-1)	[redacted]
	Prioritization for city/county government (orgcomm-2)	
	Agency-wide knowledge and awareness (orgcomm-3)	
	Dedicated personnel (orgcomm-4)	
	Financial support (orgcomm-5)	

Crime data evaluations. Industry standard analysis was implemented in all previously mentioned reporting of crime data for problem solving and crime reduction.[20] This analysis includes descriptive statistics and rates for all reported calls for service or reported crimes. Additional categorization of calls for service or offense types for contextual purposes were developed through technical assistance workshops with DPD staff and IDEA Analytics. For example, the evaluation of 'gun violence' for the city is defined by 56 charging categories related to the use, possession, or display of a firearm. This categorization allows for DPD evaluate these offenses prior to shooting incidents and/or other critical incidents of concern.

Agency-wide Survey. In March 2024, IDEA Analytics distributed an agency-wide survey to DPD staff to capture their insights, usage, and behavioral changes based on the CAU reporting. The survey was sent to 191 sworn and non-sworn staff via email from Qualtrics platform. The survey collection period started on February 28, 2024, and closed on March 27, 2024. Seventy-five staff responded for a response rate of 39 percent. The following sections summarize the agency perception of data, use and behaviors based on data, and overall changes for the DPD during the project period based on the development of data practices.

DPD's DTAC™ Overview and Changes

The characteristics of the five domains for the DTAC™ program as applied to DPD during this SPI project are adapted based on changes to DPD during the project period. IDEA Analytics defines a DTAC™ Program on three phases:

- The initial phase is defined by the initial assessment and understanding on the maturity and/or presence of each domain. DPD completed this phase between November 2021 and February 2022.

[20] NIBRS categories are used to define and/or describe crime types for general statistics; however, these categories are not descriptive for crime reduction efforts.

- The second phase is defined by the completion of Year 1 implementation activities. For DPD this was originally defined between March 2022 and March 2023; however, due to the some of the staffing changes within the CAU, some of the foundational steps were completed by November 2023 (e.g., staffing, training policies). This section of the report summarizes the progress made by DPD during the SPI Project during this period and how this advances DPD's DTAC™ framework.
- The final phase of a DTAC™ program is defined as at least two years after operating as an analytical unit and/or crime center.[21] If desired, future evaluation of CAU operations would be conducted in 2026 to determine additional growth and digital transformation efforts by the DPD.

DPD DTAC™ Second Phase Findings. The changes and growth in any of the DTAC™ domains are dependent on the readiness of the Department. With the fiscal support from SPI program, and the leadership commitment, DPD's improvements within the DTAC™ framework over the two-year period demonstrated growth in all five domains for a data mature agency. Table 3 summarizes the growth and achievements for each implementation domain. A key factor to this expansion of data maturity and digital transformation is the continued leadership commitment throughout the project. While the department experienced changes within the Chief's Office, promotions, and rotational assignment changes, personnel at the command level for DPD remained dedicated to addressing violence within the city. The efforts to learn from peers, examine data, assign resources, and various other activities previously mentioned are some of the many ways leadership demonstrated this commitment and the importance of

[21] The DTAC™ Program is designed for analytical units and/or crime centers. The first two years of operation of these units and/or centers are often the most impactful for ensuring standards and other procedures are established for sustainability.

lowering harm within the community. Leadership ensured that other personnel and technology resources were leveraged and adjusted to support the next steps, overcome barriers, and have the space to be innovative. These achievements in each digital transformation domain and DPD's persistence to the plan are one of the many reasons why DPD experienced enhanced development and use of data throughout the period.

Table 3. Summary of DPD Achievements to Implementation Plan

DTAC™ Domain	Initial Phase Implementation Commitments	Second Phase Achievements
Analytical Expectations	Develop the mission, vision, and goals for the CAU	CAU's mission, vision, and goals completed and finalized in 2022
	Develop/refine the priority crime and organizational concerns for DPD division	Revised throughout 2022 to define violent crime, gun violence, and mapping of multiple offense or call types for categorical priorities (e.g., mental health). Documented within analytical plans and procedures.
	Create functional policies and procedures for the CAU	Revised Crime Analysis Policy in 2022; Development of CAU procedural manual and training manual in Fall 2023.
	Develop a three-year plan for people and technology resources	Developed new onboarding and training plan for newly hired CAU analysts and outlined path towards civilian supervisor. Projections to have a third analyst and establish civilian unit supervisor. Leveraged new replication server technology (paid for by City IT) for automation, as well as other pre-paid technologies, with no additional expense to the department. Inclusion of technology enhancements for cameras and LPR within city limits.
People Resources	Training and Technical Assistance on Operationalizing Analysis	Over 800 hours of training and technical assistance delivered by IDEA Analytics; Additional training provided by DPD and city for leadership development.
	Establishing feedback loops for analytical requests and products	Implemented the DPD CAU Request Tracking System to monitor and support these procedures.
	Inclusion of analyst in meetings and discussions that require data	Routine inclusion of analyst in meetings and briefings for data.

DTAC™ Domain	Initial Phase Implementation Commitments	Second Phase Achievements
	Additional analyst within first year to support crime gun analysis	Hired first Crime Gun Analyst in 2022, replacement of personnel in 2023.
	Build knowledge on intervention and crime reduction strategies	Inclusion of evidence-based crime reduction suggestions in outputs by CAU.
	Develop sustainable workflows for analyst(s) and data procedures	Documentation on workflows, standards, templates and other practices to support reproducibility and repeatability of products.
Organizational Commitment and Leadership	Support time for learning and professional development for CAU staff	DPD leadership and staff were routinely supportive of availability for site visits, virtual sessions, and other needs throughout the project.
	Engage in learning and professional development for DPD leadership and/or midlevel managers	DPD Leadership and midlevel managers participated in virtual and in-person learning sessions, such as crime analysis organizational structure as well as setting job qualifications for new gun analysts. Ongoing leadership courses and experiences provided by the city and the Department for professional development goals. CAU presented unit capabilities at in-service training in 2023 and 2024.
	Provide feedback and input during iterations of reporting	DPD Leadership willingness to use data in decision making and requests for data in meetings. Feedback provided in a timely manner and helpful for continuation of project goals.
Data Access & Quality	Complete technology mapping and coverage for analytical procedures	Completed Technology Assessment through PSP program in 2022.
	Implement automation protocols for timely data access	Persistence with County and City IT and vendors to complete a replication server and access for DPD CAU purposes, live data in May 2024.
	Improve user access/permissions to ensure persons can use data	Collaboration with City IT for user access and permissions; improved access for CAU staff.
Technology	Improve collaboration with City IT	Routine meetings and inclusion in technology procedures with new City IT resources have been helpful throughout the project. Led to deployment of replication server enabling automation for CAU.

DTAC™ Domain	Initial Phase Implementation Commitments	Second Phase Achievements
	Enhance use of existing technology available to deploy advanced analytics	Full implementation and use of existing platforms by the CAU has been a springboard toward achievements throughout the SPI project period.

Using Data and Analytical Products for Crime Reduction

The agency-wide survey distributed in March 2024 examined how sworn and non-sworn staff used analytical products produced by the CAU. All participants (n=75) were asked to identify which analytical products they viewed and then to indicate if the information within the product assisted in their data-informed decision making.[22] ***Overall, the development and implementation of CAU analytical products has been adopted by personnel throughout the Department and indicates an improved level of data-informed decision making.*** Weekly products that provide updates to priority cases, crime trends, and patrol (i.e., CCS Report, Patrol Brief, CFS Dashboard) are most frequently used and reported to be actionable and helpful from participants. Additional niche products specific for tactical responses and/or gun violence reduction strategies also demonstrate usage toward patrol or investigation strategies. Results on usage are summarized by DPD divisions (i.e., Administrative, Criminal Investigations, Patrol, and Services). Table 4 indicates overall **viewing** per product.

[22] Categorical answers were provided for each question based on viewing, deciding, and changing behavior. These responses were "looked at it," "looked at it AND made a decision based on it," and "looked at it, made a decision based on it, AND changed a regularly occurring behavior based on it."

Table 4. Viewing of Analytical Products, by DPD Division

Product	Administrative *(n=6)*		Criminal Investigations *(n=16)*		Patrol *(n=35)*		Services *(n=18)*	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**
CCS Report	3	50%	**14**	**87%**	**21**	**61%**	8	47%
Patrol Brief	**5**	**75%**	8	50%	**33**	**93%**	6	36%
CFS Dashboard	2	25%	9	57%	19	53%	3	15%
Firearms Dashboard	2	25%	6	40%	6	16%	3	17%
Regional Shoot Review	0	0%	**10**	**60%**	6	16%	3	14%
Ad Hoc Bulletins	0	0%	**10**	**64%**	19	55%	5	29%
Ad Hoc Reports	0	0%	**10**	**64%**	19	55%	6	36%
Shift Stats	2	33%	2	14%	19	55%	1	8%
Firearm Stats	2	33%	6	40%	7	19%	1	8%
Services Stats	2	33%	2	14%	6	16%	8	43%
Juvenile Updates	0	0%	7	43%	12	35%	6	36%
NIBIN Link Charts	0	0%	**12**	**73%**	7	20%	3	15%
Mental Health Dashboard	0	0%	2	14%	0	0%	4	21%
SRO Report	0	0%	2	14%	1	3%	3	15%
GVI Stats	0	0%	4	27%	5	13%	4	23%
GVI Report	0	0%	4	27%	7	19%	3	17%
Index and Violent Crimes Report	0	0%	5	29%	8	24%	1	8%
Warrant Map	0	0%	5	29%	10	29%	1	8%
Demographic Profiling	0	0%	5	29%	11	30%	3	17%
Wanted Subjects Profiles	0	0%	**10**	**60%**	11	32%	4	23%
National Guard Analysis	0	0%	**11**	**67%**	4	10%	1	8%
DPD Management Report	**4**	**67%**	3	21%	9	26%	4	23%

Products with more than 60 percent of participants indicating viewing are in bold.

Further analysis of usage provides a snapshot for CAU and DPD leadership as their use of data to guide investigation and patrol responses.[23]

Administrative Division (n=6). With the smallest response for the survey, the Administrative Division respondents indicate a low usage of CAU products overall, with

[23] All responding staff are not expected to review all data products. Tables represent the usage by divisional level due to officers or staff not indicating a smaller level of identifying information (e.g., rank, unit). Self-reported assignment to division is used during analysis based on consent to provide information.

viewing 36 percent (n=8) of the available analytical products (i.e., Shift Stats, Firearm Stats, and Services Stats); however, no indication that it informs decisions or behaviors.

Criminal Investigation Division (n=16). As expected, responding investigation staff report more viewing and usage of CAU analytical products. The top five products viewed by this division are focused on gun violence, active case information (e.g., weekly CCS report), and investigative support analysis (e.g., link charts). Respondents indicate decision-making and changing behavior for these reports (see Table 5) suggesting valuable and actionable information from the CAU. Previously reported highlights of using data and interviews among DPD staff in investigations echoed these sentiments. Leadership and officers indicated that the use of information assisted them daily. In addition, information from one or more of these reports also supported school-based responses and efforts to lower conflicts, fights, and other concerns on school property. With many of Davenport's juveniles exposed and/or involved in gun violence, the timeliness of information has been most valuable for juvenile justice and school staff to make decisions.

Table 5. Decision and Behavior Changes from CAU Analytical Products

Product		Criminal Investigations (n=16)	
		n	%
CCS Report (n=13)	Looked	8	62%
	Made Decision	4	31%
	Changed Behavior	1	8%
NIBIN Link Charts (n=11)	Looked	3	27%
	Made Decision	4	36%
	Changed Behavior	4	36%
National Guard Analysis (n=10)	Looked	1	10%
	Made Decision	3	30%
	Changed Behavior	6	60%
Wanted Subjects* (n=9)	Looked	4	44%
	Made Decision	5	56%
	Changed Behavior	0	0%
Regional Shoot Review* (n=9)	Looked	4	44%
	Made Decision	3	33%
	Changed Behavior	2	22%
Ad Hoc Bulletins* (n=9)	Looked	3	33%
	Made Decision	4	44%
	Changed Behavior	2	22%
Ad Hoc Reports* (n=9)	Looked	3	33%
	Made Decision	4	44%
	Changed Behavior	2	22%

**Tied for top five used product*

Patrol Division (n=35). Most participants indicating Patrol Division also have high usage of CAU reports. The top products used are the CCS Report and Patrol Brief, with at least some decision-making stemming from the information (see Table 6). Several tactical outputs from CAU (e.g., Wanted Subjects, Patrol Briefing, Warrant Map) are expected to be used by a smaller number of participants based on application of information and/or area of responsibility (e.g. reporting area). While these reports do not have overall usage indicated by respondents, those that do use them indicate decision making and behavior change.

Table 6. Top Analytical Products for Decision Making, Patrol Division

Product		Patrol (n=35) n	%
CCS Report (n=18)	Looked	12	67%
	Made Decision	6	33%
	Changed Behavior	0	0%
Patrol Brief (n=27)	Looked	4	15%
	Made Decision	17	63%
	Changed Behavior	6	22%
CFS Dashboard* (n=15)	Looked	5	33%
	Made Decision	7	47%
	Changed Behavior	3	20%
Ad Hoc Bulletins* (n=16)	Looked	4	25%
	Made Decision	12	75%
	Changed Behavior	0	0%
Ad Hoc Reports* (n=16)	Looked	4	25%
	Made Decision	11	69%
	Changed Behavior	1	6%
Shifts Stats* (n=16)	Looked	6	36%
	Made Decision	7	44%
	Changed Behavior	3	19%
Wanted Subjects* (n=9)	Looked	4	44%
	Made Decision	5	56%
	Changed Behavior	0	0%

**Tactical products used for decision making or behavior change.*

Services Division (n=18). Respondents indicating Services Division do not report high usage of CAU reporting. This may be expected as administrative statistics are not the primary focus for the CAU, which would be most applicable for Services activities (e.g., training, report processing). Like other divisions, the CCS Report is the most used analytical product among staff in Services at 47 percent. Services Stats and Juvenile Updates also have relatively high usage at 43 and 36 percent respectively.

Communication on Crime Reduction Strategies and Data

During the November 2021 interviews, common themes regarding communication on crime reduction strategies were identified. With staff changes and other efforts to enhance communication on initiatives during the project period, DPD leadership wanted to reflect on

communication challenges and barriers previously identified. Challenges around communication themes regarding how information is shared (e.g., email, meetings), by whom (e.g., leadership responsible for disseminating), and general awareness about Department priorities informed this section of the survey. For each challenge previously identified by DPD leadership, survey respondents were asked to identify it as "no longer relevant," "somewhat relevant," or "still relevant." Responses were analyzed per division to further inform DPD leadership on perspectives of internal information sharing and changes during this project period. The following summarizes results by DPD division.[24]

Criminal Investigations Division – Communication (n=16). Overall, respondents from this division indicate several communication challenges identified previously were somewhat relevant. Based on respondents, a continuing concern for communication is that information sharing or dissemination being more consistent v. arbitrary throughout the Department and/or regional stakeholders. As a long-standing challenge in policing, DPD staff indicated in open ended questions and/or interviews that this will continue to be a priority as mid-level supervisors establish their leadership style and organizational processes (e.g., briefings) to continue to improve this piece of communication practices. See Table 7 for additional details.

[24] Administrative Division is excluded from this analysis as only one respondent completed this section of the survey. Conclusions from this information are limited due to the distribution of responses per divisions and within each communication theme; therefore, exact measures of improvements or negative changes to communication within the department cannot be made at this time.

Table 7. Communication Themes, Criminal Investigation Division

		Criminal Investigations (n=16)	
Challenge		**n**	**%**
Lack of meetings/formal information sharing within the department (n=12)	Still Relevant	2	17%
	Somewhat Relevant	8	67%
	No Longer Relevant	2	17%
Sergeants typically communicate informally amongst themselves rather than in formal meetings (n=10)	Still Relevant	3	30%
	Somewhat Relevant	6	60%
	No Longer Relevant	1	10%
Lack of communication and collaboration between prosecution and how officers write & include detail in reports (n=11)	Still Relevant	2	18%
	Somewhat Relevant	7	64%
	No Longer Relevant	2	18%
Patrol does not regularly check email (n=8)	Still Relevant	0	0%
	Somewhat Relevant	4	50%
	No Longer Relevant	4	50%
Difficult to disseminate updates for BOLOs or other requests for information throughout the department (n=11)	Still Relevant	0	0%
	Somewhat Relevant	4	36%
	No Longer Relevant	7	64%
Lack of uniform communication methods by Lieutenants and Sergeants (n=9)	Still Relevant	1	11%
	Somewhat Relevant	6	67%
	No Longer Relevant	2	22%
Information is disseminated arbitrarily throughout the department (n=11)	Still Relevant	5	45%
	Somewhat Relevant	5	45%
	No Longer Relevant	1	9%
Bulletins and other important information are not standardized (n=11)	Still Relevant	2	18%
	Somewhat Relevant	3	27%
	No Longer Relevant	6	54%
Bulletins and other important information come from “everybody” (n=10)	Still Relevant	6	60%
	Somewhat Relevant	3	30%
	No Longer Relevant	1	10%
The goals and direction of the department are generally unknown (n=10)	Still Relevant	3	30%
	Somewhat Relevant	3	30%
	No Longer Relevant	4	40%
There is a desire by DPD to work together and share information internally (n=11)	Still Relevant	3	27%
	Somewhat Relevant	6	54%
	No Longer Relevant	2	18%
There is a desire by DPD to work together and share information externally (n=10)	Still Relevant	2	20%
	Somewhat Relevant	6	60%
	No Longer Relevant	2	20%

Patrol Division – Communication (n=35). The decentralization of patrol officers (e.g., independent assignments to vehicles around the city) and alternating shifts often create communication challenges. Shift staff often do not have time to read or prioritize emails after 10–12-hour shifts, creating inherent gaps in awareness. Respondents for the Patrol Division indicate persistence in these issues based on communication from sergeants and lieutenants being a more significant issue than for CID officers. Seventy-five percent of respondents report sergeants keeping information amongst themselves and sergeants and lieutenants lacking uniform communication methods as "somewhat relevant" or "still relevant." Information sharing is still largely seen as a challenge, but with less relevancy. Eighty percent of patrol staff perceive information being arbitrarily disseminated through the Department as a relevant challenge. Patrol respondents report that issues related to information requests or standardized analytical products are no longer relevant issues, a positive indication for the CAU procedures incorporated over the last two years. In addition, the response that half of participants believe awareness about the Department's goals and mission has been resolved may indicate a positive step toward information sharing and/or connecting information to overall mission needs. See Table 8 for additional details.

Table 8. Communication Themes, Patrol Division

Challenge		Patrol (n=35) n	Patrol (n=35) %
Lack of meetings/formal information sharing within the department (n=19)	Still Relevant	7	37%
	Somewhat Relevant	8	42%
	No Longer Relevant	4	21%
Sergeants typically communicate informally amongst themselves rather than in formal meetings (n=16)	Still Relevant	7	44%
	Somewhat Relevant	5	31%
	No Longer Relevant	4	25%
Lack of communication and collaboration between prosecution and how officers write & include detail in reports (n=19)	Still Relevant	6	32%
	Somewhat Relevant	8	42%
	No Longer Relevant	5	26%
Patrol does not regularly check email (n=14)	Still Relevant	2	14%
	Somewhat Relevant	4	29%
	No Longer Relevant	8	57%
Difficult to disseminate updates for BOLOs or other requests for information throughout the department (n=19)	Still Relevant	2	11%
	Somewhat Relevant	7	37%
	No Longer Relevant	10	53%
Lack of uniform communication methods by Lieutenants and Sergeants (n=16)	Still Relevant	5	31%
	Somewhat Relevant	7	44%
	No Longer Relevant	4	25%
Information is disseminated arbitrarily throughout the department (n=20)	Still Relevant	11	55%
	Somewhat Relevant	5	25%
	No Longer Relevant	4	20%
Bulletins and other important information are not standardized (n=19)	Still Relevant	1	5%
	Somewhat Relevant	7	37%
	No Longer Relevant	11	58%
Bulletins and other important information come from “everybody” (n=17)	Still Relevant	5	29%
	Somewhat Relevant	7	41%
	No Longer Relevant	5	29%
The goals and direction of the department are generally unknown (n=20)	Still Relevant	5	25%
	Somewhat Relevant	5	25%
	No Longer Relevant	10	50%
There is a desire by DPD to work together and share information internally (n=20)	Still Relevant	9	45%
	Somewhat Relevant	5	25%
	No Longer Relevant	6	30%
There is a desire by DPD to work together and share information externally (n=17)	Still Relevant	6	35%
	Somewhat Relevant	5	29%
	No Longer Relevant	6	35%

Services Division – Communication (n=18). The pattern of challenges with sergeant and lieutenant communication persists when staff in the Services division are asked (see Table 9 for details). All respondents view the issues of sergeants solely communicating amongst themselves and a lack of uniform communication methods by lieutenants and sergeants as relevant. In regard to information sharing, the majority of Services staff see information sharing as a challenge. All staff perceived a lack of formal information sharing within the Department and information not being disseminated through the Department with purpose as relevant issues. Most notably, Services respondents seem to perceive the goals of the Department being generally unknown as a relevant problem (86 percent).

Table 9. Communication Themes, Services Division

Challenge		Services (n=18) n	%
Lack of meetings/formal information sharing within the department (n=8)	Still Relevant	3	38%
	Somewhat Relevant	5	63%
	No Longer Relevant	0	0%
Sergeants typically communicate informally amongst themselves rather than in formal meetings (n=4)	Still Relevant	3	75%
	Somewhat Relevant	1	25%
	No Longer Relevant	0	0%
Lack of communication and collaboration between prosecution and how officers write & include detail in reports (n=6)	Still Relevant	3	50%
	Somewhat Relevant	3	50%
	No Longer Relevant	0	0%
Patrol does not regularly check email (n=6)	Still Relevant	3	50%
	Somewhat Relevant	2	33%
	No Longer Relevant	1	17%
Difficult to disseminate updates for BOLOs or other requests for information throughout the department (n=5)	Still Relevant	1	20%
	Somewhat Relevant	3	60%
	No Longer Relevant	1	20%
Lack of uniform communication methods by Lieutenants and Sergeants (n=5)	Still Relevant	1	20%
	Somewhat Relevant	4	80%
	No Longer Relevant	0	0%
Information is disseminated arbitrarily throughout the department (n=7)	Still Relevant	3	43%
	Somewhat Relevant	4	57%
	No Longer Relevant	0	0%
Bulletins and other important information are not standardized (n=7)	Still Relevant	2	29%
	Somewhat Relevant	2	29%
	No Longer Relevant	3	43%
Bulletins and other important information come from “everybody” (n=7)	Still Relevant	2	29%
	Somewhat Relevant	5	71%
	No Longer Relevant	0	0%
The goals and direction of the department are generally unknown (n=7)	Still Relevant	3	43%
	Somewhat Relevant	3	43%
	No Longer Relevant	1	14%
There is a desire by DPD to work together and share information internally (n=8)	Still Relevant	4	50%
	Somewhat Relevant	4	50%
	No Longer Relevant	0	0%
There is a desire by DPD to work together and share information externally (n=6)	Still Relevant	4	67%
	Somewhat Relevant	1	17%
	No Longer Relevant	1	17%

Integration and Sustainability

Technology Strategy & Modern Tools

Rather than seeking quick wins for immediate needs, DPD stayed the course throughout the SPI project to ensure modernization of technology platforms would support automation and near-real-time analytics. This strategy throughout the project produced frustration and at times exhaustion among staff members waiting for the change to occur or encountering yet another barrier; however, in 2024 this paid off with a full adoption of Microsoft 365 and automation between servers and interactive report platforms (e.g., ArcGIS, Power BI). With this adoption, DPD was able to leverage its own City infrastructure to deploy analytical products built within the Microsoft Suite, such as firearms dashboard and other Power BI reports. This transfer of analytical product availability from IDEA Analytics' Microsoft 365 infrastructure to the integrated DPD workspaces enables DPD to sustain its analytical products developed during its time during SPI.

Data Automation Practices

Data Priority and Importance. Throughout this SPI project, DPD Leadership and the CAU focused on automation to ensure near-real-time information for all operations. The timeliness of information would allow resource deployment, have strategic and directed activities per shift, and prepare for expected changes based on routine pattern and trend analysis. These desired outcomes prioritized the need to develop a comprehensive foundation of crime analysis data to build from. IDEA Analytics and DPD CAU worked with Davenport City IT to identify possible pre-existing avenues of automation through the connection of analytical tools to Scott County servers. After several fruitless efforts conversing with current County management system software vendors, it was evident another solution would need to be explored for automating the ingestion and processing of data into current analytical products.

Procedure. Through meetings, technical assistance efforts, and evaluation of business cases, IDEA Analytics, Davenport City IT, and SPI Project Lead Lt. Smith were able to establish a replication server to accomplish automation for the DPD CAU.[25] This process took over a year to complete and in the late Spring of 2024, DPD CAU analysts were able to begin the initial connection tests to the newly commissioned server that would allow automation to occur.

Agency Impact. As the most tenuous task throughout the SPI project, this effort has the highest impact for the project. The outcomes from this effort include:

- Strengthened partnership between DPD, CAU, and City IT for data governance and infrastructure deployment
- Mutually beneficial outcomes for supporting data transparency for the community, city leadership, and DPD
- Decreased Freedom of Information Act (FOIA) requests due to readily accessible information
- Eliminated manual updating or appending process for multiple reports necessary for operations[26]
- Connected and automatically updated data for CAU reports that allow analysts to leverage computer coding and data modeling to decrease time for data collection and cleaning
- Supports agency-wide deployment of reports and accessibility for all staff to review crime information in near-real-time

[25] The replication server will be managed by City IT v. County IT to remediate the resistance from the software vendor.
[26] The process of appending data was not time consuming, but the fact that there were numerous products that needed to be updated on a daily basis is what made it time consuming.

- Enables the CAU to understand long-term trends to inform current analysis, provide context to public safety concerns (e.g., changes in public requests for service), and inform operations on crime reduction strategies
- Demonstrate best practices for crime analysis roles and procedures for regional analysts
- Allowed CAU to focus on proactive analysis and future needs for the department

The patience and persistence by DPD and City IT have resulted in the timely, relevant, and accurate CAU products that provide near-real-time information for decision making, inquiries about public safety concerns, and strategic crime reduction.

Summary and Conclusions

The DPD SPI project embarked on an ambitious three-year digital transformation project aimed at establishing a crime analysis unit, modernizing or technology and data practices, and developing data-informed crime reduction responses. This project was marked by significant challenges that tested the knowledge, patience, and resilience of DPD leadership and stakeholders. However, through unwavering focus, strategic problem-solving, and a commitment to sustainable technology practices, the project culminated in success. This project highlighted key lessons learned to be shared with the field.

Leadership Focus and Vision. From the project's inception, DPD Leadership demonstrated a clear vision and steadfast commitment to the transformation agenda. Recognizing the strategic importance of data in modern policing, the leadership prioritized this initiative as a critical component of the agency's long-term goals. DPD's focus was not merely on having short-term data reports, but on deploying new technologies that supported automation, advanced analytics, and agency-wide and regional information sharing. This focus also ensured changes

were deeply integrated into the organizational procedures. They maintained a hands-on approach, regularly reviewing progress, addressing roadblocks, and recalibrating strategies as needed. This proactive involvement was crucial in navigating the complex landscape of digital transformation.

Challenges and Barriers. As anticipated, the project encountered numerous challenges. Legacy system integration issues and unforeseen technical difficulties were among the primary obstacles. Each barrier required the leadership to leverage their extensive knowledge and exhibit extraordinary patience. Unexpected challenges with vendors or changes to infrastructure tested the patience of staff and further complicated the project timeline. These hurdles necessitated agile thinking and adaptive strategies, pushing the project team to innovate continuously and refine their approach.

Persistence and Problem-Solving. The project team's persistence is a cornerstone of the DPD's success in meeting all project goals. Despite the timeline challenges, the team maintained a problem-solving mindset, demonstrating resilience and adaptability. They employed a systematic approach to troubleshooting, identifying root causes of issues, and implementing effective solutions. Regular collaboration with stakeholders, our research partner, and access to other subject matter experts ensured we had next steps to tackle particularly challenging aspects of the transformation.

Sustainable Technology Practices. A key requirement for the success of this project was the implementation of automation and sustainable technology practices. DPD understood that sustainable solutions were essential for long-term viability and scalability. The continued focus on infrastructure to support automation and the leveraging of existing tools to work for the Department ensures long-term sustainability. Furthermore, the agency invested in ongoing training for its staff to ensure they were equipped to utilize and maintain these technologies effectively.

Organizational Change Management. The development of a new unit and implementation of data and technology shifted the way DPD operates. Recognizing that technology alone would not materialize crime analysis nor drive transformation, DPD's commitment to organizational changes ensured full integration of the CAU in operations. The implementation of regional meetings for information sharing (e.g., shoot review), requirements for data in decision-making, and continued consultation with the CAU demonstrates the changes in how officers are using data. DPD leadership fostered a culture of data-informed decision making and crime reduction strategies that have resulted in lower crime rates, modern police leadership practices, and new approaches to policing for the city.

DPD's SPI project epitomizes the strength of leadership, strategic persistence, and the adoption of sustainable technology practices. Through the effective management of both anticipated and unforeseen challenges, the leadership and project team successfully navigated the complexities of the transformation. Their focus on comprehensive organizational change management ensured that the new technologies were not only implemented but embraced, setting the agency on a path to continued growth and innovation.

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