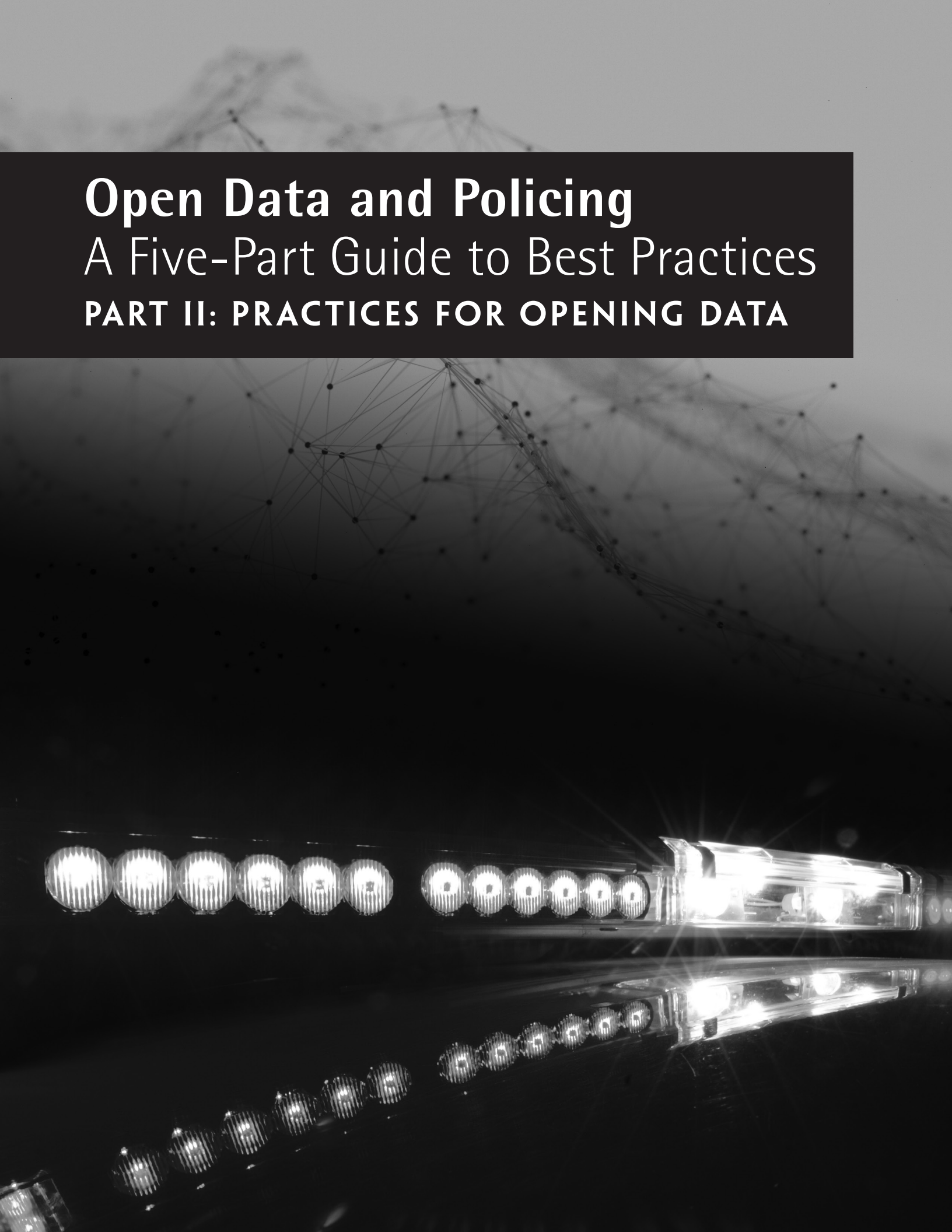# Open Data and Policing
A Five-Part Guide to Best Practices
PART II: PRACTICES FOR OPENING DATA

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I. Introduction

Law enforcement agencies across the country are increasingly using open data to collaborate with their communities on the co-production of public safety.[1] To date, over 140 law enforcement agencies have joined the Police Data Initiative (PDI), a community of practice consisting of member agencies that have committed to releasing open data.[2] Drawing from promising practices used by these law enforcement agencies, this five-part best practice series aims to guide executives and members of local law enforcement agencies as they release open data. This guide, *Part II: Practices for Opening Data,* explores steps agencies can take as they begin to release open data or to enhance their current open data practices.

1. For more on the value of open data, see *Law Enforcement Executive's Guide to Open Data: Supporting the Community in the Co-Production of Public Safety* (Washington, DC: Police Foundation, 2017), https://www.policefoundation.org/wp-content/uploads/2017/11/PF_Law-Enforcement-Executives-Guide-to-Open-Data_WEB.pdf.
2. For more information on the Police Data Initiative, visit https://www.policedatainitiative.org/.

II. What Should Be Considered in the Decision to Release Open Data?

Since open data projects involve making law enforcement and public safety information publicly available, agencies should consider policy and governance impacts on such projects, as well as how the public will react to the release of open data. More information on these considerations are listed below.

- **Governance:** To ensure that representative decisions are made about the distribution of data, many agencies formalize their decision-making practices or participate in a larger information-sharing or data-governance body. An agency interested in releasing open datasets should engage the appropriate governing entity to ensure the necessary authority is in place to make the data publicly available.

- **Policies:** Data policies are commonly established heuristics for proper use of law enforcement and criminal justice data. For example, the Federal Bureau of Investigation's (FBI) Criminal Justice Information Services (CJIS) Security Policy[3] exists to ensure sensitive criminal history information is appropriately handled throughout the criminal justice process. Similarly, agencies regularly establish internal data usage policies to ensure that active or ongoing investigations are not compromised. Agencies releasing open data should be aware of and consult pertinent policies.

- **Public Perception and Feedback:** Open data can encourage community collaboration and reinforce trust through transparency. To these aims, an agency should consider the public value offered by making a given dataset available. Agencies should also consider a path to garner public feedback and act on that feedback where appropriate.

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3. *Criminal Justice Information Services (CJIS) Security Policy* (Washington, DC: Federal Bureau of Investigation, 2016), https://www.fbi.gov/file-repository/cjis-security-policy-v5_5_20160601-2-1.pdf/view.

III. What Are Technical Options for Opening Data?

There are many technical options for compiling and releasing open data. Some common choices are listed below.

- **Manually Input Data Directly in an Open Format:** Agencies can manually compile open data directly into an open format, such as an Excel spreadsheet or CSV file. Although potentially more labor-intensive than other options, manual data entry may be appropriate for agencies with limited technical capacity or for datasets expected to have relatively few entries.

- **Manual Export:** Although it normally requires technical familiarity with the system or its underlying database, data can often be easily extracted from existing records through a manual export. For example, an agency could conduct a one-time database query or use a database-reporting tool to produce a one-time open-format extract.

- **Integrate with an Existing Interface:** Most line-of-business systems (Computer-Aided Dispatch, Records Management System, Case Management System, etc.) have application programming interfaces (API) that offer options to programmatically retrieve information from the system. Common interface technologies include SOAP or REST web services using JSON or XML payloads. This is generally a cost-effective approach because APIs are intended to abstract technical details of the underlying database. Agencies should consult their vendor or system documentation or seek outside technical assistance to determine if leveraging an existing system interface is a viable option. Even if an API does exist, some customization will likely still be needed to automate the publishing of data to the public-access page. However, this need for customization may decline as more vendors build open-data publishing capabilities directly into their systems.

  - Agencies should also examine existing non-public data extracts or exchanges and consider their suitability as open data sets. Not only can this expedite the release of open data, but it also allows agencies to leverage past investments. For example, a large percentage of law enforcement agencies already do, or soon will, provide data to the FBI's National Incident Based Reporting System (NIBRS) on a monthly basis.[4] NIBRS data is well defined, in an open format, stripped of personally identifiable information (PII), and provides a rich set of incident information that would likely be of use and interest to communities. In a scenario like this, the effort to publish the open dataset would be far less than starting from scratch.

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4. "SRS to NIBRS: The Path to Better UCR Data," Federal Bureau of Investigation, March 28, 2017, https://www.fbi.gov/services/cjis/cjis-link/srs-to-nibrs-the-path-to-better-ucr-data.

- **Custom Database Integration:** If integrating with an existing interface is not an option for the system, an alternative is to write a program that directly interacts with the system's underlying database for the sole purpose of producing the open dataset. This program could also take on the responsibility of publishing the dataset. Custom database integration assumes that the agency has direct access to the system's underlying database, which is common for most systems.

Data Collection and Quality

The process of opening data may help an agency to identify internal data quality issues that they can then address and improve upon. When the **Portland (Oregon) Police Bureau (PPB)** began the process of opening data soon after implementing a new records management system, they found certain areas of inconsistency in the data they were collecting. Based on these identified areas, the PPB was able to make internal fixes that helped their Records Division and improved the quality of their National Incident-Based Reporting System (NIBRS) reporting.

IV. What Groups Can Be Contacted For Coding Assistance?

Agencies have found support for compiling, releasing, and updating open data from a variety of groups and organizations. For example, many agencies have been able to tap into existing open data protocols and services that are part of their jurisdiction's larger open data initiative (often run out of their local government's IT department) or enterprise GIS (Geographic Information System) team. Other agencies have developed connections with local universities to collaborate on open data initiatives. Organizations including What Works Cities, Code for America, Open Justice Broker Consortium, and the Sunlight Foundation have supported local government and community use of data.

V. Case Studies

Ferndale (Michigan) Police Department

> *"We can't stress enough the importance of allowing your community to help you decide what information they want released. What we thought they would want to see was not anywhere near the top of the list of what the task force members wanted opened up. The process gave task force members a real sense of ownership over our data release."*
>
> — Sergeant Baron Brown, Ferndale Police Department

Ferndale (Michigan)
Police Department
Badge

The Ferndale Police Department (FPD) is the law enforcement agency serving the City of Ferndale, Michigan. Located in southeastern Oakland County and bordering the City of Detroit, the department employs 41 sworn officers that serve a jurisdiction of approximately 21,000 people.[5] Seeking to foster increased trust between officers and the citizens they serve, the FPD joined the Police Data initiative (PDI) in September 2016. The FPD saw the PDI, and releasing open data, as a positive means to give their community a view into their world.

Throughout the FPD's process of releasing open data, the department was able to leverage community and city relationships to assist them in opening data. One major source of support was a University of Michigan professional and community engagement program, Citizen Interaction Design (CID), which connects student teams with communities in the state to develop new information tools fostering civic engagement. Through CID, a group of students from the program collaborated with several different departments within the City of Ferndale, including the FPD. As a first step in supporting the FPD's goals for releasing open data, students researched and spoke with people from other police departments and organizations engaged in open data efforts, including Code for America and fellow-PDI agency Northampton (Massachusetts) Police Department. These discussions helped the group to better understand the process for opening data and consider ideas that they could incorporate into their plan, such as the creation of an open data task force that would guide the FPD's open data process.

5.   Sergeant Baron Brown, Ferndale Police Department, note to Police Foundation staff, January 25, 2018; "About the Ferndale Police Department," accessed March 5, 2018, https://www.ferndalepolice.org/about/Pages/default.aspx.

Ferndale Police Department open data task force meeting

The FPD held its first open data task force meeting in March 2017. The task force included representatives from the police department, CID, and local community members, who were able to share preferences for dataset and dataset field releases. As Sergeant Baron Brown found, "we were surprised by the things they wanted to see . . . and by the things they didn't have any interest in." The convening helped the FPD to identify priority datasets for their open data releases: department demographics, community engagement, and crime data.
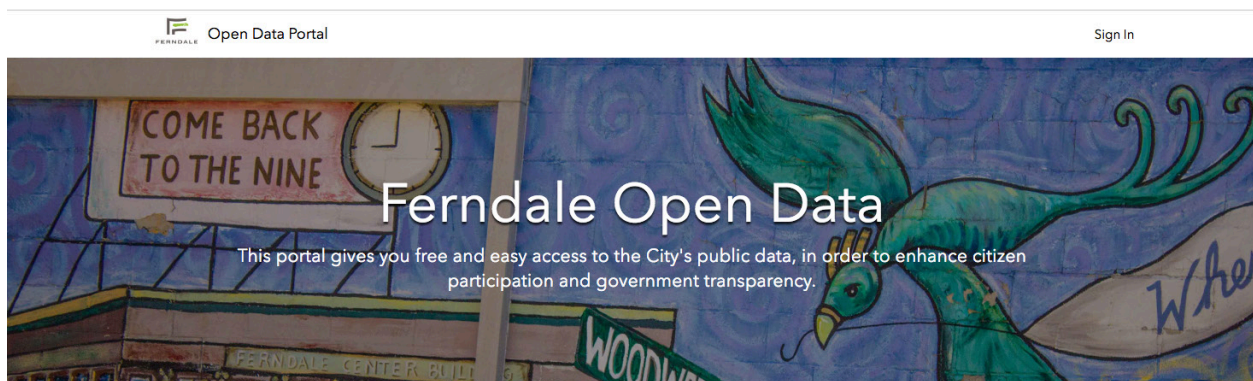
The FPD used different means to compile different datasets into an open format. As a smaller agency, the FPD had the capacity to compile department demographic data by hand into an Excel spreadsheet. This process also allowed department leaders to make personal contact with each officer to explain why the FPD was releasing this data, assure their officers that the process would protect their PII, and gain their buy-in to the open data effort.

CID students were able to help the FPD with more expansive data extraction needs. The FPD keeps its crime records in the Courts and Law Enforcement Management Information System (CLEMIS), operated by Oakland County's Department of Information and Technology and used by over 200

police, fire, and emergency medical service agencies to communicate and share criminal justice information.[6] As one of the first law enforcement agencies in Michigan, and the first agency using CLEMIS, to release open data, the FPD "had to find workarounds . . . to extract [the data] and make it usable."[7] Working together, the FPD, CLEMIS, and CID developed a process to export data from CLEMIS into a CSV format. In Excel, the FPD and a CID student cleaned the exported data. This process included anonymizing location data to the block level to protect PII.

After working with the data, the FPD and the CID student were able to connect with individuals in the City of Ferndale who had resources to create a data portal in ArcGIS to host the open data, maintain this portal, and incorporate the FPD open data into a more expansive city initiative.

Ferndale Open Data Portal

Since first releasing open data in July 2017, the FPD has continued to engage the community with its data. In November 2017, the FPD participated in the Ann Arbor Data Dive, a Hackathon-like event that connects organizations with community partner consultants. The event helped the FPD to create a GIS map based on the hometown location field in their police employee demographics dataset. The map was then incorporated into the FPD's open data portal as a visualization of the data, meant to help viewers understand and use the information.[8]

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6.   "Oakland County Michigan Information Technology (IT) Strategic Plan," accessed March 2, 2018, https://www.oakgov.com/it/Documents/IT%20Strategic%20Plan.pdf.
7.   Brown, note to Police Foundation staff (see note 5).
8.   Ferndale Police Officer Demographics, Ferndale Open Data, accessed January 25, 2018, http://data-ferndale.opendata.arcgis.com/pages/police-demographics.

Lincoln (Nebraska) Police Department

"It's just not that complex. The problem is that people working in police departments generally don't know how non-complex it is."

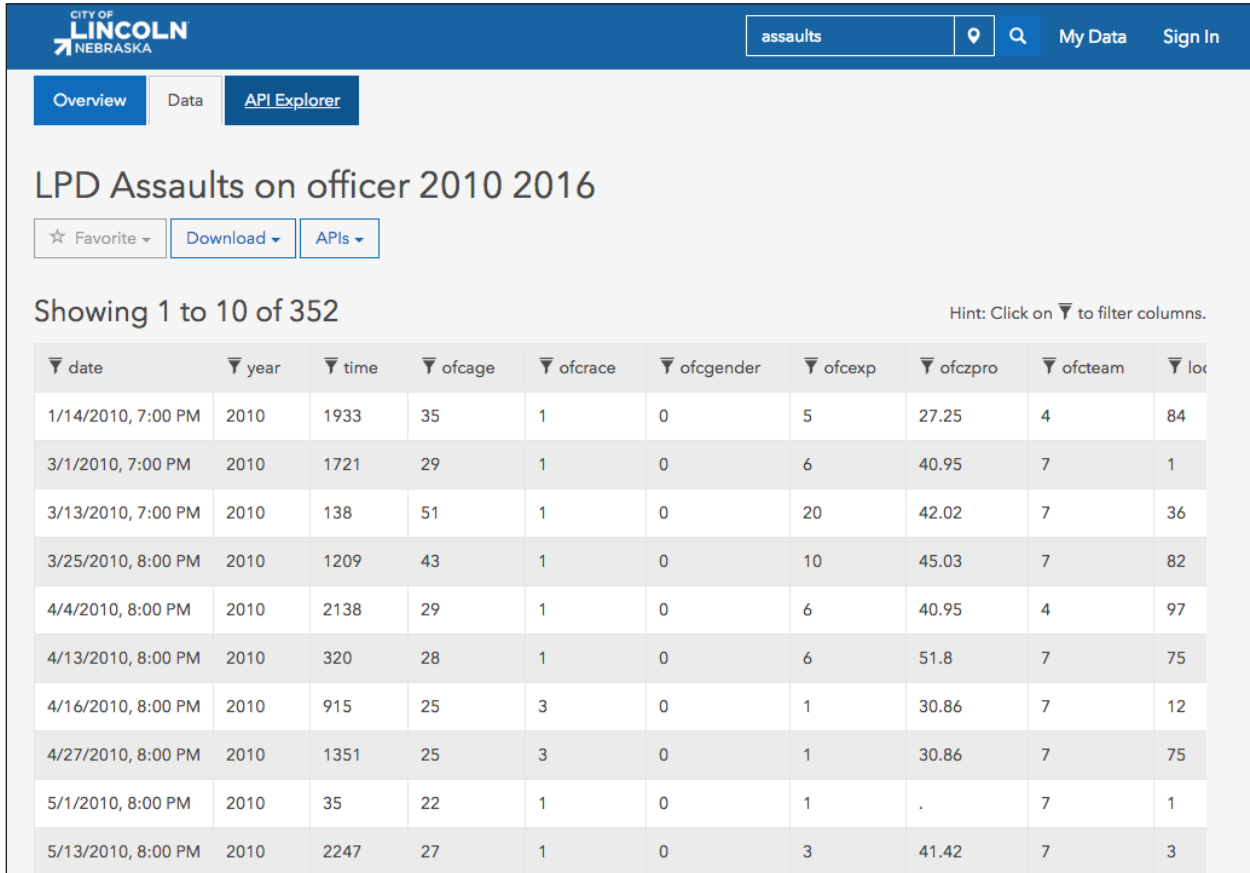— Tom Casady, Director of Public Safety, Lincoln Police Department

Lincoln (Nebraska) Police Department badge

The Lincoln Police Department (LPD) is the law enforcement agency serving the city of Lincoln, Nebraska. The LPD employs more than 300 sworn officers that serve a city of approximately 280,000 people.[9] The LPD has a long history of sharing police data with its citizens, publishing annual reports for over 70 years, and was a trailblazer as one of the first police agencies to begin publishing information online in the mid-1990s. The LPD joined the Police Data Initiative in March 2017 after determining that its open data goals were fairly easy to accomplish with the foundation already in place at the department. Today, the LPD's work is an excellent model for using the tools available to the agency to create a sustainable and low-maintenance open data plan.

In 2015, the City of Lincoln was chosen as one of the first 50 cities in Bloomberg Philanthropies' What Works Cities project. Through this assistance, the City of Lincoln was able to develop an open data governance plan, an open data strategy, and an open data portal.

Through their experience opening data, Lincoln Director of Public Safety Tom Casady and his team have learned much about how to best use the tools already available to their agency while minimizing their weekly work time on the project to an hour or less per week. The City of Lincoln has an existing Records Management System (RMS) that has provided them flexibility to add new reports over the years and to export data into other formats, like CSV. Lincoln has developed an automated geocoding process that automatically pulls records from their RMS and Computer Aided Dispatch (CAD) systems at intervals throughout the day, geocodes those records, and appends them to the appropriate GIS feature class. Since the City of Lincoln already had an enterprise license for Esri's ArcGIS, which includes access to create an open data portal, the LPD was able to use these existing city resources to publish their open data. Director Casady recommends beginning with datasets that are the easiest to prepare and creating a simple and sustainable open data plan that can be built upon over time.

9. "Career Opportunities," City of Lincoln: Lincoln Police, accessed March 2, 2018, https://www.lincoln.ne.gov/city/police/rebenefits.htm.

Lincoln Police Department Assaults on Officer dataset preview

The maintenance required to update open data is minimal once an efficient plan is in place, even for datasets which update daily. Director Casady feels strongly that there is an easy path for any department that is starting to collect data and begin releasing it openly to the public on an annual basis. "Most departments can do that with their own internal resources. All you need is a place on a web server to park a file, then put a link to it on their webpage . . . lots of small departments have done that, and you don't have to go out and pay [a vendor] thousands of dollars. You can get started with open data with virtually little or no cost at the outset," says Director Casady. "If you can export a table or report from your RMS and print it, you probably could have created that same content as a delimited .txt file, or tagged it as HTML, and posted it to a website." As the LPD realized how simple it can be to maintain open data, the department researched more types of data tables to release that would be of interest to the public; this led to the release of open data on topics such as use of force and hate crimes. For Director Casady, transparency is the greatest benefit to come from releasing open data, and researching new data tables to release helps the LPD to further open its door to the community.[10]

10. Tom Casady, Lincoln Police Department, interview with Police Foundation staff, February 7, 2018.

VI. Conclusion

Law enforcement agencies have many practices available to them to open data. As agencies decide to open data, they should consider these practices to determine the appropriate means of opening data for their situation, and consider which resources may be available to them to support their efforts and provide guidance. Key lessons learned from Ferndale, Lincoln, and other PDI agencies that have successfully developed open data practices are as follows:

- Consider governance, policies, and public perception and feedback.

- Identify technical options offered by the system where the data is natively housed.

- Inventory existing data extracts or exchanges and assess whether past investments can be reused.

- Identify support or technical assistance opportunities.

- Determine roles and responsibilities.

About the Police Foundation

The **Police Foundation** is a national, nonpartisan, nonprofit organization dedicated to advancing innovation and science in policing. As the country's oldest police research organization, the Police Foundation has learned that police practices should be based on scientific evidence about what works best, the paradigm of evidence-based policing.

Established in 1970, the foundation has conducted seminal research in police behavior, policy, and procedure and works to transfer to local agencies the best new information about practices for dealing effectively with a range of important police operational and administrative concerns. Motivating all of the foundation's efforts is the goal of efficient, humane policing that operates within the framework of democratic principles and the highest ideals of the nation.

To learn more, visit the Police Foundation online.

Law enforcement agencies nationwide have released open datasets representing calls for service, arrests, and more. Members of the public, community groups, and law enforcement agencies can analyze this data to identify problems and craft solutions. To date, more than 140 law enforcement agencies have joined the Police Data Initiative (PDI). Drawing from their promising practices, this five-part series aims to guide executives and members of local law enforcement agencies as they release open data.

This guide, *Part II: Practices for Opening Data*, explores steps agencies can take to begin opening data, including partnership options and technical considerations. Case studies examine programs in Ferndale, Michigan, and Lincoln, Nebraska.

POLICE FOUNDATION

1201 Connecticut Ave NW
Suite 200
Washington, DC 20036

www.policefoundation.org