FBI CDE Discovery Findings & Solution Hypothesis

October 21, 2016

AGENDA

1:00-2:30 Executive summary

- What we heard
- What we think
- Looking ahead
- Q&A

2:30-2:45 Break

2:45-3:45 Focused discussions

- Detailed research findings
- Key technical considerations
- Visual design directions

3:45-4:00 Next steps

- Share key insights from research
- Align around what these learnings mean
- Demonstrate API progress to date
- Discuss future directions to explore and how we can best work together going forward

OUR PARTNERS



Samuel Berhanu, Unit Chief, Product Owner
Sammy DeMarco, Project Manager
Matt Fancher, Technical Project Lead
Russell Kerns, ATO/Compliance Support
Jason Corder, Technical Project Advisor
Lora Klingensmith, Project Advisor
Beverly Rinehart, Technical Advisor
Justin Rogowsky, Technical Advisor
Howard Snyder, Deputy Director, Bureau of Justice Statistics
Jim Dufford, Xcelerate Solutions
Greg Donewar, Xcelerate Solutions
Jonathan Cox, Unit Chief, Office of Public Affairs

ACTIVITIES & DELIVERABLES



Kickoff / Discovery workshop



Synthesis and playback deck



Weekly status meetings and reports with core team



Consumer, staff, and stakeholder research

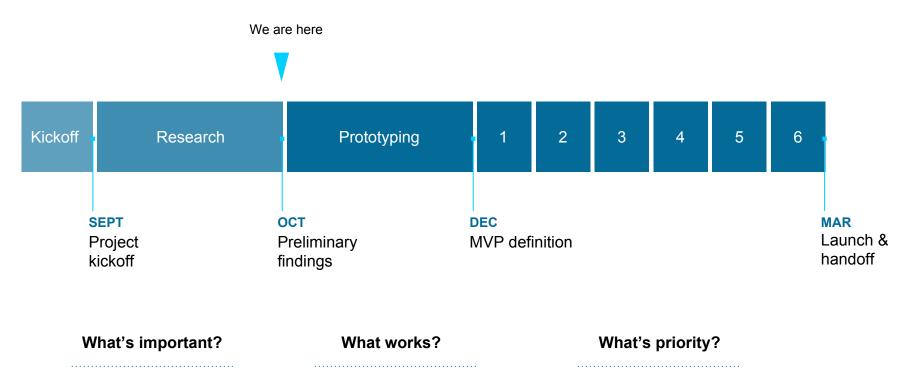


Technical research and API development

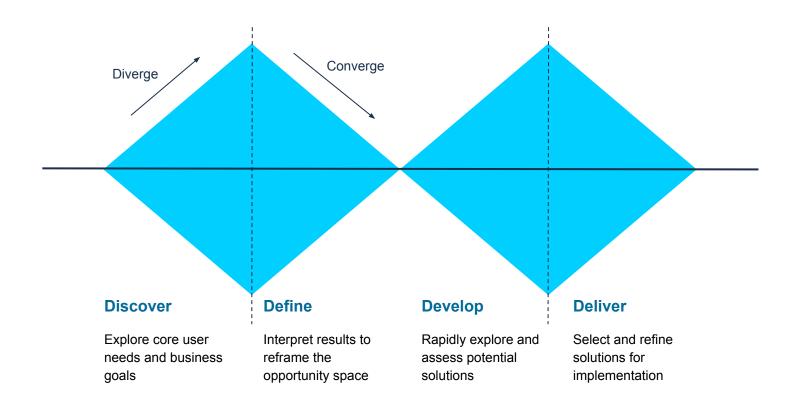


Preliminary findings deck

BIG PICTURE



DESIGN THINKING ("DOUBLE DIAMOND")



Who we talked to



Consumers want to easily find and access UCR data. Visualizations and contextual details engage, inform, and make data understandable. Open communication about data quality and limitations, increased visibility, and greater participation will result in better data and better dialogue.

SPECTRUM OF NEEDS

NOVICE CONSUMERS

GOALS

Understand crime trends and statistics that are relevant to me and my community. Provide me with a clear pathway to find answers to my questions while helping me understand what UCR data has to offer. Present information in a clear, open, and unbiased way.

NEEDS AND EXPECTATIONS

- Awareness of the CDE
- Easy access to data
- Provide context to better understand UCR
- View rates and trends over time
- Present data visuals and tables
- Allow me to compare local and national data

"I want to be able to drill down as locally as I can." - CRIMINAL JUSTICE ADVOCATE

"We need quick and easy places to answer questions reliably."

- LOCAL LAW ENFORCEMENT AGENCY

"I'm not looking for a story in the data. I'm looking for quantitative data to support my story."

- CRIMINAL JUSTICE REPORTER

SPECTRUM OF NEEDS

EXPERT ANALYSTS

GOALS

Ability to search, view, and download crime data in a usable format so I can conduct in-depth analysis, compare to state and local sources, and draw my own conclusions.

NEEDS AND EXPECTATIONS

- Easy access to data downloads
- Provide data descriptions and documentation
- Ability to explore granular data
- Present data visuals, tables, and sources
- Relevant, timely data
- Access to data experts to ask questions
- Option to link to and share data

"We're huge advocates for the create your own adventure data visualization." - CRIMINAL JUSTICE REPORTER

"What's missing out of data stories can be just as interesting as what's there." - CRIMINAL JUSTICE REPORTER

"The old journalism motto: sunshine is the best disinfectant."

- CRIMINAL JUSTICE REPORTER

SPECTRUM OF NEEDS

FBI STAKEHOLDERS

GOALS

Provide a tool for the general public and government to easily access national crime data. Be transparent about the role of the FBI in collecting, compiling, and publishing UCR data. Proactively communicate the flaws and limitations of the data. Reduce burden on staff to respond to basic questions about UCR data.

NEEDS AND EXPECTATIONS

- Promote transparency
- Describe the role of the FBI
- Present the data in a fair and balanced way
- Provide context and details available
- Increase data quality and participation
- Be the primary source for national crime data
- Improve the national dialogue on crime

"People should say: 'I got what I wanted, and got it right away.'"

- CJIS MPG

"We can't tell them what to think when they look at the data. Let them draw their own conclusions. Our responsibility is to report the data that we have access to."-CJIS Staff

Questioning

"I have a question that involves crime data."



Consumer has a question

Visits FBI.gov or state and

local sources

Searching and viewing

"I look for crime data on FBI.gov and other websites and determine if it will be useful."



Navigates site looking for relevant data



Finds data tables and downloads or searches



Contacts CJIS with question



CJIS Comms responds and sends data (on a CD)

Understanding

"I dig into the data comparing, analyzing, and interpreting."



Compares, combines, and studies data

Applying

"I use my knowledge in work and in life."



Discovers errors in data

 \odot



Communicates learnings



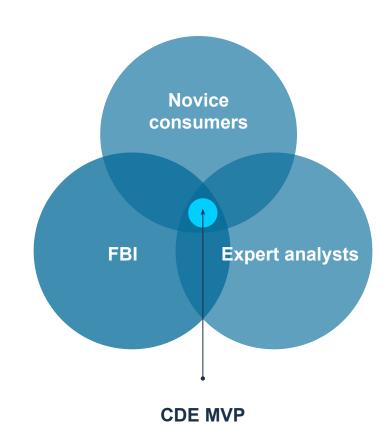


Questions?

CRIME DATA EXPLORER

Solution hypothesis

We believe that making crime data more accessible for a variety of users will lead to greater transparency around the UCR program, better data, and more informed debate about the state of crime in the U.S.



"We need more transparency and accountability in law enforcement. We also need better, more informed conversations about crime and policing in this country. To get there, we are improving the way this nation collects, analyzes, and uses crime statistics and data about law enforcement's use of force." - DIRECTOR COMEY

Access to data leads to greater awareness

Broader participation & improved data quality

New value for UCR program & general public

CONCEPTS TO EXPLORE

The CDE is a service for people and government. It is not a dedicated tool for data analysis.

Design for a wide range of users, but focus on consumers with influence over the public's perception of crime data and trends.

Provide pathways for novice and advanced consumers - showcase what the data can do by guiding users through common inquiries, while maintaining the flexibility to search, view, and access the data for more complex use cases.

An open API will provide the foundation for an ecosystem of apps built around uniform crime data.

EXPERIENCE PRINCIPLES

SHOW ME THE WAY AND LET ME EXPLORE

- Make it easy to search, view, and export the data
- Show me what the data can do
- Let me draw my own conclusions
- Get into the details when appropriate

PUT EVERYTHING IN CONTEXT

- Anticipate my questions
- Explain caveats and limitations in plain language
- Be upfront about what's there and what's not
- Show me what's changed

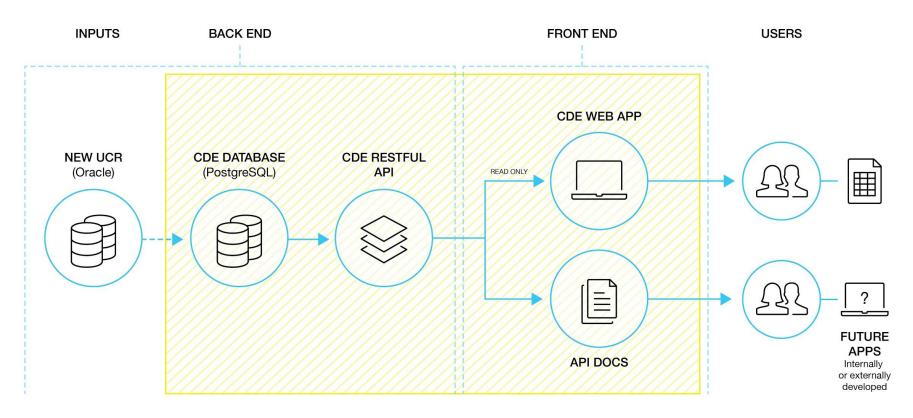
MAKE IT RELEVANT TO ME

- Show me national trends and what's happening in my area
- Be as accurate and thorough as possible, and keep everything up to date
- Help me understand why UCR matters and how it works
- Show me the data in interesting ways that I can customize

LET ME PARTICIPATE

- Make it easy to share, print, or link to
- Give me clear paths to ask questions, report errors, and get involved
- Help me build things with available crime data

TECHNICAL APPROACH



API Demo

Questions?

ABOUT PROTOTYPING



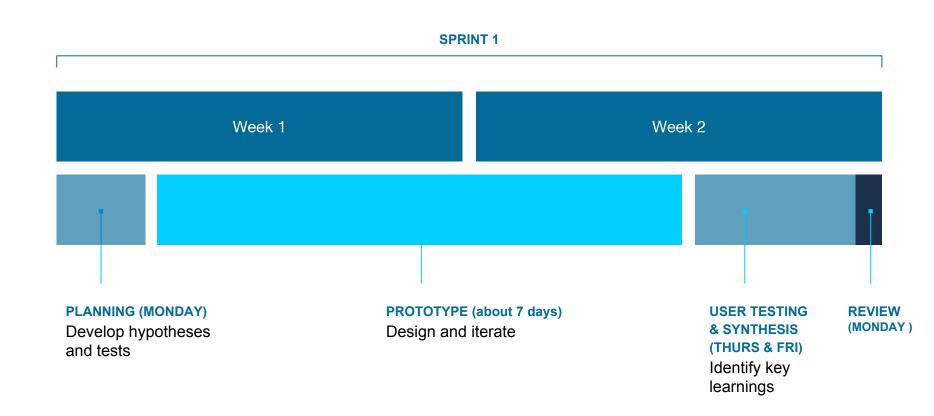
Research	Prototyping	Refinement

Prototypes are vehicles for learning. They enable us to test hypotheses, explore and refine ideas quickly, and demonstrate what's possible.

They can be of varying levels of fidelity (paper or digital), but are not representative of the final product.

We won't prototype everything and we'll throw away more than we keep, but with each test, we'll aim to reduce uncertainty.

ANATOMY OF A PROTOTYPE SPRINT



FOCAL AREAS FOR PROTOTYPING

We are approaching the prototyping phase with the mindset that these are design, not technical, challenges.

As a starting point, prototyping will help us answer the following:

What data is most important to people and why?

Do people always have a specific question in mind? Or are there cases where people will want to browse content?

How can we improve on how people search for and find relevant information?

When and for whom are reports or in-depth views into the data appropriate?

What are users' expectations around data reliability and changes? How can we best alert them to changes in definitions and other factors that influence the data?

What level of granularity can the data support and what are its limitations?

How will the lack of estimated data affect the value of the data?

How will geographic limitations affect the value of the data?

Questions?

Break

What we heard

Activities

WHO WE TALKED TO

Subject matter experts

10+ CJIS staff immersive research

FBI stakeholders and observers

20+ Kickoff / Discovery workshop participants

Consumer interviews

- **5** criminal justice reporters
- 1 policy analyst
- 1 academic
- 4 members of the public

Analogous services

- 3 city and state open data projects
- 1 business reliant on open data
- 1 accessibility expert
- 6 open data experts

Federal agencies

- 1 BJS representative
- 3 members of law enforcement

WHAT WE LOOKED AT

Comparative analysis

Visual branding and language Navigation and site organization Data visualization

Data research

Crime in the US report data interrogation
Available data set inventory
Data structure analysis
Data transfer process
Preliminary API development

ACCESS TO DATA

Data consumers and FBI staff need to quickly access and download UCR data.

FBI staff are unable to independently access UCR data making it difficult to analyze and compile data.

UCR data is sent to consumers in a file format that requires special equipment and software to use.

Compiling a range of data over time is a manual process. Consumers want to be able to search, filter, and aggregate data on the fly.

Consumers are comparing UCR data and state and local data sets to find answers to their questions.

It's really frustrating from our perspective that there isn't a reliable central area to get this kind of data. - EXPERT ANALYST

It's horrifying to have to tell someone you have to burn a CD. – STATISTICAL ASSISTANT

SEARCH AND VIEW

The ability to filter, sort, and compare data snapshots and trends allows consumers to find, assess, and download information efficiently.

Consumers want a site that is easy to navigate with filters, sorting, and toggles that support finding and exploring data.

Maps and visualizations provide an entry point into the data, prompt engagement, and make data relevant for consumers.

Consumers want to compare trends by time and location as well as other data sets.

Provide the data in an easy to use format with clear descriptions and definitions.

Most people want to play through with the filters, not get the CSV from GitHub.

- OPEN DATA EXPERT

[People should say about the CDE] I got what I wanted, and got it right away. - CJIS MPG

We will show you the data, but we will not draw conclusions. – STATISTICAL ASSISTANT

ENGAGE AND UNDERSTAND

Providing context and basic visualizations within a user-friendly tool will help a wide range of consumers approach, understand, and interpret UCR data.

Demonstrating how UCR data is relevant to consumers highlights its importance and provides pathways for understanding.

Understanding what data attributes are collected and how it is counted and processed allows consumers to better leverage the data.

Surfacing factors that influence or contribute to trends in crime data can lead to a more balanced interpretation of the data.

Data on its own can be overwhelming.

Explaining what people are looking at is important. You need to provide sufficient context, without telling people how they should interpret the data.

I'm more interested in the social phenomena rather than hard core quantitative data.

- CRIMINAL JUSTICE REPORTER

I warn my students about the dangers of cherry picking data. – ACADEMIC

PROACTIVELY COMMUNICATE

Being open about data quality, limitations, and inconsistencies will reduce questions and potential misinterpretations.

Surface important contextual details about data to promote understanding and responsible usage.

Clearly show what data is available and what is missing.

Provide guidance around comparisons, clearances, the hierarchy rule, and other nuanced definitions that can lead to confusion.

Communicate the value of the data we do have instead of focusing on precision.

Write for people that are not data people.

- CJIS MPG

Just because the press says it's a hate crime, doesn't mean the investigation says that.

Say: this is the best data we have.

What's missing can be just as interesting as what's there.

Don't write around holes in your story.

- CRIMINAL JUSTICE REPORTER

EXPLORE DETAILS

Consumers and staff want to drill into the data to find information that relates to them personally or to conduct in-depth analysis with expanded incident data.

Despite holes in the NIBRS data, its granularity is invaluable for a wide-range of consumers and staff.

Depending on the question and level of sophistication with the data, consumers interest range from local to national or local + national.

State and local level submitters fear that moving to NIBRS will lead to a spike in crime rates.

We have a boat load of data that we don't do anything with. – STATISTICAL ASSISTANT

Ideally, I would get every crime committed in a jurisdiction in a particular timeframe. Subject, arrest date, conviction, mental health status, time period... – ACADEMIC

[The future] is gonna be about NIBRS—we've got to get it right. – STATISTICAL ASSISTANT

RELEVANT AND TIMELY

UCR data is less relevant because of the time it takes to collect, compile, and publish. Improving timeliness will lead to broader usage and impact.

Consumers and law enforcement turn to other sources because UCR data is less useful by the time it is released.

The current publication process is completed on a yearly basis with mid-year updates. UCR data is less relevant because of the time it takes to be collected, compiled, and published.

The CDE will have a limited impact reducing the amount of time between when state submit data and when it is available for public consumption.

Granularity! When it doubt, offer as much as possible. – CRIMINAL JUSTICE ADVOCATE

To improve, be a lot faster. By the time it's released it's almost irrelevant. – ACADEMIC

If I hear ambulances, gun shots, etc...I want to know what's happening on my block.

- MEMBER OF THE PUBLIC

BETTER DATA

Greater understanding, usage, and scrutiny of UCR data will lead to improvements in quality and participation in the program.

The FBI may face challenges making the data more accessible but the benefits will outweigh the costs.

Facilitate the process of reporting and fixing errors in the data and communicating changes.

Transparency around who is submitting data may result in greater participation in the program.

Cultural change will result in shifting expectations and perceived risks around data transparency.

The old journalism motto: sunshine is the best disinfectant. – CRIMINAL JUSTICE REPORTER

No one is getting full data sets into the public in a good way. – OPEN DATA EXPERT

BETTER DIALOGUE

Easier access to better data will result in a more constructive dialogue around issues of criminal justice and government.

Democratizing access to information will enabling a wide range of consumers to do their own analysis reducing the risk of bias.

Reducing the burden on consumers and staff to compile data will free them up to focus on analysis.

Policymakers and analysts will have higher quality quantitative data to compare to their state and local data to help them answer questions and make better decisions.

Data sets don't have value in themselves.

They are problematic. The value is to start a conversation. – OPEN DATA EXPERT

[The CDE has the potential to] improve transparency and accessibility to a wide amount of important data to help us understand a complex function of state and federal government. - ACADEMIC

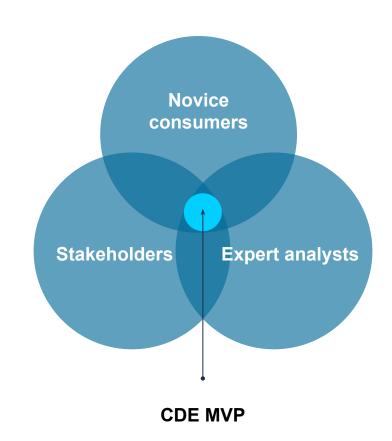
Questions?

What we think

CRIME DATA EXPLORER

Solution Hypothesis

We believe that making crime data more accessible for a variety of users will lead to greater transparency around the UCR program, better data, and more informed debate about the state of crime in the U.S.



Access to data leads to greater awareness

Broader participation & improved data quality

New value for UCR program & general public

CONCEPTS TO EXPLORE

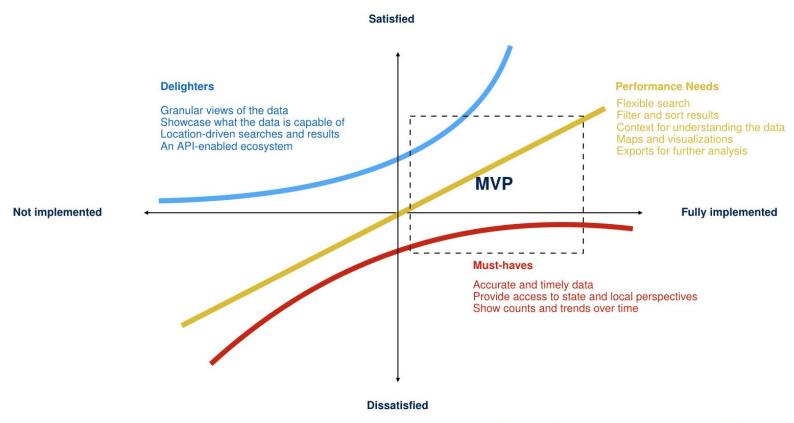
The CDE is a service for people and government. It is not a dedicated tool for data analysis.

Design for a wide range of users, but focus on consumers with influence over the public's perception of crime data and trends.

Provide pathways for novice and advanced consumers - showcase what the data can do by guiding users through common inquiries, while maintaining the flexibility to search, view, and access the data for more complex use cases.

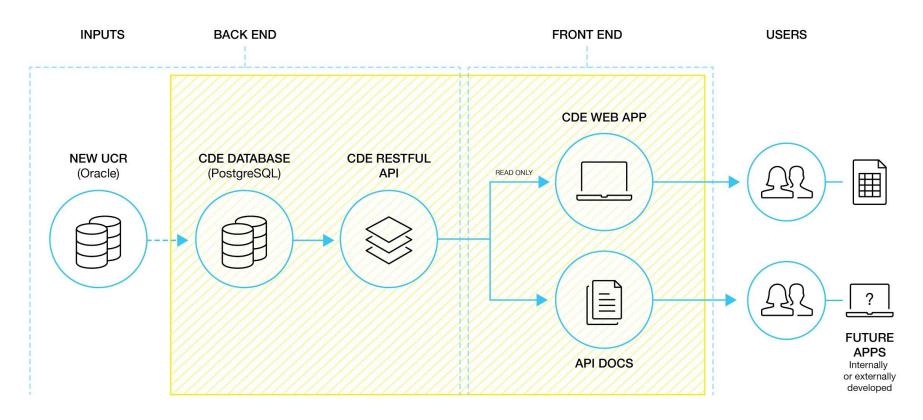
An open API will provide the foundation for an ecosystem of apps built around uniform crime data.

PRIORITIZING NEEDS & WORKING TOWARDS AN MVP



(MVP = must haves, + performance needs, + delighters)

TECHNICAL APPROACH



INFRASTRUCTURE

As currently envisioned, the first iteration of the CDE will be supported by 18F's cloud.gov and built around a single data transfer from new UCR.

Key questions and considerations for future iterations:

- How will the product evolve over subsequent phases?
- Timeline and readiness of new UCR?
- How will the CDE stay in sync with new UCR?
- What is the preferred method for transferring and updating data?
- Add write capability to collect feedback on data quality?

Questions?

Consumer experience

Understanding the end-to-end journey of data consumers highlights needs and opportunities and helps us design and orchestrate holistic experiences that meet expectations.

Questioning

"I have a question that involves crime data."



Consumer has a question

Visits FBI.gov

local sources

Searching and viewing

"I look for crime data on FBI.gov and other websites and determine if it will be useful."



Navigates site looking for relevant data



Finds data tables and downloads or searches



Contacts CJIS with question

CJIS Comms responds and sends data (on a CD)

Understanding

"I dig into the data comparing, analyzing, and interpreting."



Compares, combines, and studies data



Discovers errors in data

Applying

"I use my knowledge in work and in life."



Communicates learnings





QUESTIONS TO VALIDATE

Questioning	Searching and viewing		Understanding	Applying
Awareness of UCR Understand the FBI's role in data collection Clear path to CDE from FBI.gov	Simple interface to explore the data See crime and arrest rates, trends, and percentage changes Get context and background information about UCR	Quick way to download the data in a usable format Timely data More granular way of searching or exporting data Understand changes in data	Understand the holes and definitions behind the data Path to ask questions, report errors Ability to drill into incident-level data	Knowledge of resources Ability to embed or link to visualizations
Do people always have a specific question in mind? Or are there cases where people will want to browse content? How will people learn about the CDE?	How do consumers want to explore the data? How can the organization of the site support a variety of search paths? What kind of prompts or featured topics would be useful to lead users on in their journey? When and for whom are reports or in-depth views into the data appropriate? What are ideal pathways for a variety of consumers to access data? How can data exports support analysis outside of the CDE? How important is it to design for contextual search so people can see results based on where they live? Is a visualization always necessary? What's the right balance between visualizing the data and explaining in it text?		How does existing UCR documentation fit into the CDE? How can we make it more interactive? Do expert and novice users have different informational needs? What are users' expectations around data reliability and changes? How can we best alert them to changes in definitions and other factors that influence the data?	Do national trends suffice, or are users interested in state trends and comparisons? How will the lack of estimated data affect the value of the data? How do users want to share their findings?

EXPERIENCE PRINCIPLES

SHOW ME THE WAY AND LET ME EXPLORE

- Make it easy to search, view, and export the data
- Show me what the data can do
- Let me draw my own conclusions
- Get into the details when appropriate

PUT EVERYTHING IN CONTEXT

- Anticipate my questions
- Explain caveats and limitations in plain language
- Be upfront about what's there and what's not
- Show me what's changed

MAKE IT RELEVANT TO ME

- Show me national trends and what's happening in my area
- Be as accurate and thorough as possible, and keep everything up to date
- Help me understand why UCR matters and how it works
- Show me the data in interesting ways that I can customize

LET ME PARTICIPATE

- Make it easy to share, print, or link to
- Give me clear paths to ask questions, report errors, and get involved
- Help me build things with available crime data

EDITORIAL VOICE

Voice is what makes all of your communications sound like they came from the same place.

The CDE should sound like the people behind the data at CJIS:

- Approachable
- Conversational
- Engaged
- Informative
- Honest

Visual research



VISUAL DIRECTION 1

Friendly and modern

DIRECTION 1

Friendly and modern

We learned that consumers want:

- Simplicity
- Ease of use
- Plain language
- Warmth
- An approachable, non-threatening experience

Based on those parameters, this direction will feel like you're using the newest, most user-friendly mobile app out there.

Key design elements:

- Clean, bold, engaging, on-trend
- Sans-serif typography
- App-like visuals

We were inspired by modern data visualization and apps.













We developed a visual palette that communicates this modern, friendly style.

TYPOGRAPHY

Monterrat Bold for headlines

Roboto Bold for subheaders

Roboto for body copy. In 1995, an estimated 21,597 people were murdered in the United States. In this report, a murder is the willful killing of a human being by another. For the purposes of national data collection, the definition of murder does not include deaths caused by negligence.

ROBOTO BOLD ALL-CAPS FOR SMALL SUBHEADERS

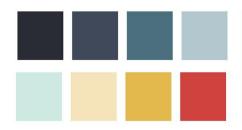
Roboto Italic for annotations

123456789

Roboto Medium for numbers

Roboto Medium for links

COLORS



A warm and vibrant palette that draws inspiration from the current FBI and UCR sites' reds and blues

GRAPHIC STYLE

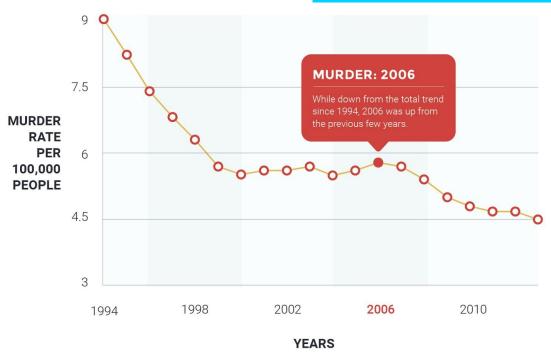


Murder rate from 1994 through 2013

In 1995, an estimated 21,597 people were murdered in the United States. In this report, a murder is the willful killing of a human being by another. For the purposes of national data collection, the definition of murder does not include deaths caused by negligence, suicide, or accident; justifiable homicides; and attempts to murder or assaults to murder, which are scored as aggravated assaults.

CLICK HERE

We applied that palette to existing CIUS content.



? ABOUT THIS DATA:

This is a sentance describing where the data for this table was collected, and perhaps some of the subsequent caveats necessary. There could also <u>be a link</u> that would lead somewhere else.

VISUAL DIRECTION 2

Editorial and authoritative

DIRECTION 2

Editorial and authoritative

We learned that consumers want:

- A definitive source
- The best source available
- The data to tell a story
- Confidence
- Promotion of dialogue

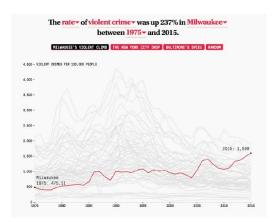
Based on those parameters, this direction will feel like you're reading and interacting with the best contemporary online publication.

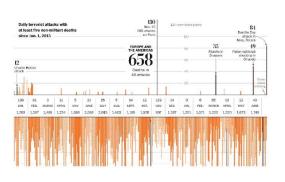
Key design elements:

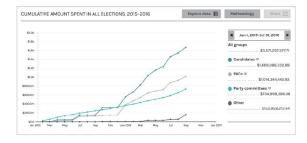
- Sophisticated, official, trustworthy
- Mix of Serif and Sans-serif typography
- Delicate graphic elements
- Minimal but punchy use of color

We were inspired by online news publications and well crafted government websites.

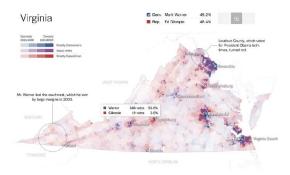












TYPOGRAPHY

Merriweather Bold for headlines

Open Sans Regular for subheaders

Open Sans for body copy. In 1995, an estimated 21,597 people were murdered in the United States. In this report, a murder is the willful killing of a human being by another. For the purposes of national data collection.

MERRIWEATHER BOLD ALL-CAPS FOR SMALL SUBHEADERS

Merriweather Light Italic for annotations

123456789

Merriweather Light for Numbers Merriweather Bold **for links**

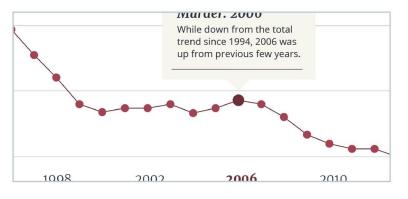
We developed a visual palette that communicates this editorial and authoritative feel.

COLORS



A refined palette that draws from the reds of the FBI and UCR sites. It connotes crime and seriousness without being too stark or shocking.

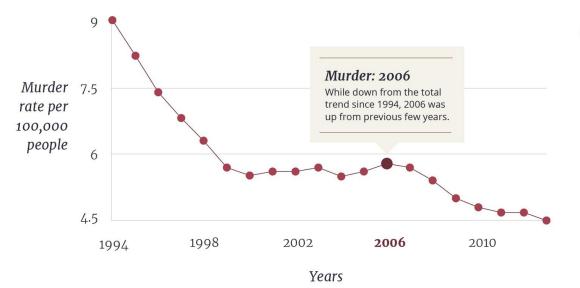
GRAPHIC STYLE



Murder rate from 1994 through 2013

In 1995, an estimated 21,597 people were murdered in the United States. In this report, a murder is the willful killing of a human being by another. For the purposes of national data collection, the definition of murder does not include deaths caused by negligence, suicide, or accident; justifiable homicides; and attempts to murder or assaults to murder, which are scored as aggravated assaults.

We applied that palette to existing CIUS content.



? ABOUT THIS DATA:

This is a sentance describing where the data for this table was collected, and perhaps some of the subsequent caveats necessary. There could also be a link that would lead somewhere else.

Technical, minimalistic, and serious

DIRECTION 3

Technical, minimalistic, and serious

We learned that consumers want:

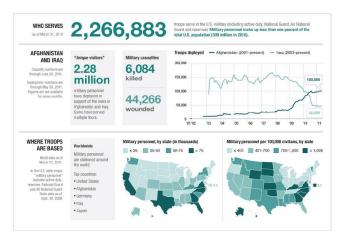
- Quick and easy access to data
- Straightforward language
- Neutral presentation (unbiased)
- Serious
- Focus on the essentials
- A bridge between FBI and the public, and part of an emerging ecosystem.

Based on those parameters, this direction will feel like you're getting the information you want, without any bells or whistles.

Key design elements:

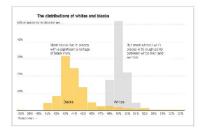
- Straightforward, minimalistic
- Monochromatic or duo-tone
- Serious, no frills, focused

We were inspired by clear and simple reports and visualizations.













We developed a visual palette that communicates this technical and minimal feel.

TYPOGRAPHY

Raleway Semibold for headlines

Open Sans Regular for subheaders

Open Sans for body copy. In 1995, an estimated 21,597 people were murdered in the United States. In this report, a murder is the willful killing of a human being by another. For the purposes of national data collection.

RALEWAY SEMI-BOLD ALL-CAPS FOR SMALL SUBHEADERS
Open Sans Regular for annotations

123456789

Open Sans Regular for numbers

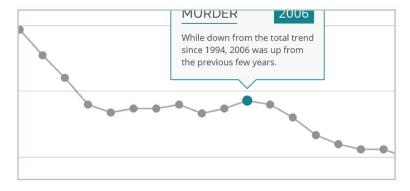
Open Sans Bold **for links**

COLORS

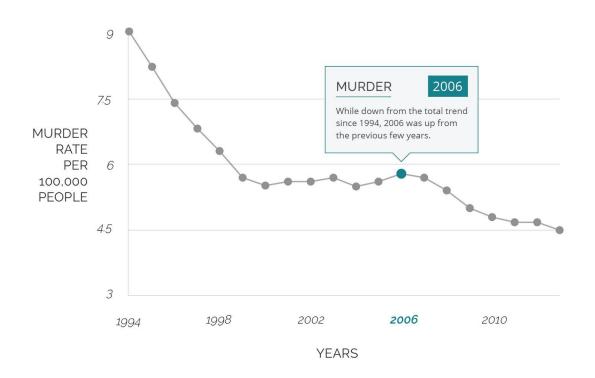


A limited but striking palette, cool and collected, blues and greens are calming but serious.

GRAPHIC STYLE



We applied that palette to existing CIUS content.



? ABOUT THIS DATA:

This is a sentance describing where the data for this table was collected, and perhaps some of the subsequent caveats necessary. There could also be **a link** that would lead somewhere else.

Murder rate from 1994 through 2013

In 1995, an estimated 21,597 people were murdered in the United States. In this report, a murder is the willful killing of a human being by another. For the purposes of national data collection, the definition of murder does not include deaths caused by negligence, suicide, or accident; justifiable homicides; and attempts to murder or assaults to murder, which are scored as aggravated assaults.

CLICK HERE

Discussion

NEXT STEPS

- Prototyping starts on Monday.
- We want your feedback and participation in the prototyping process:
 - Nominate a core team representative to join us for user testing, help us interpret results and identify additional prototyping opportunities.
 - Help us communicate our findings and progress to the broader stakeholder group at the FBI.
- As we move into this next phase, let's use our time on Monday to talk about what's gone right so far and where we can improve as a team.

Thank you!