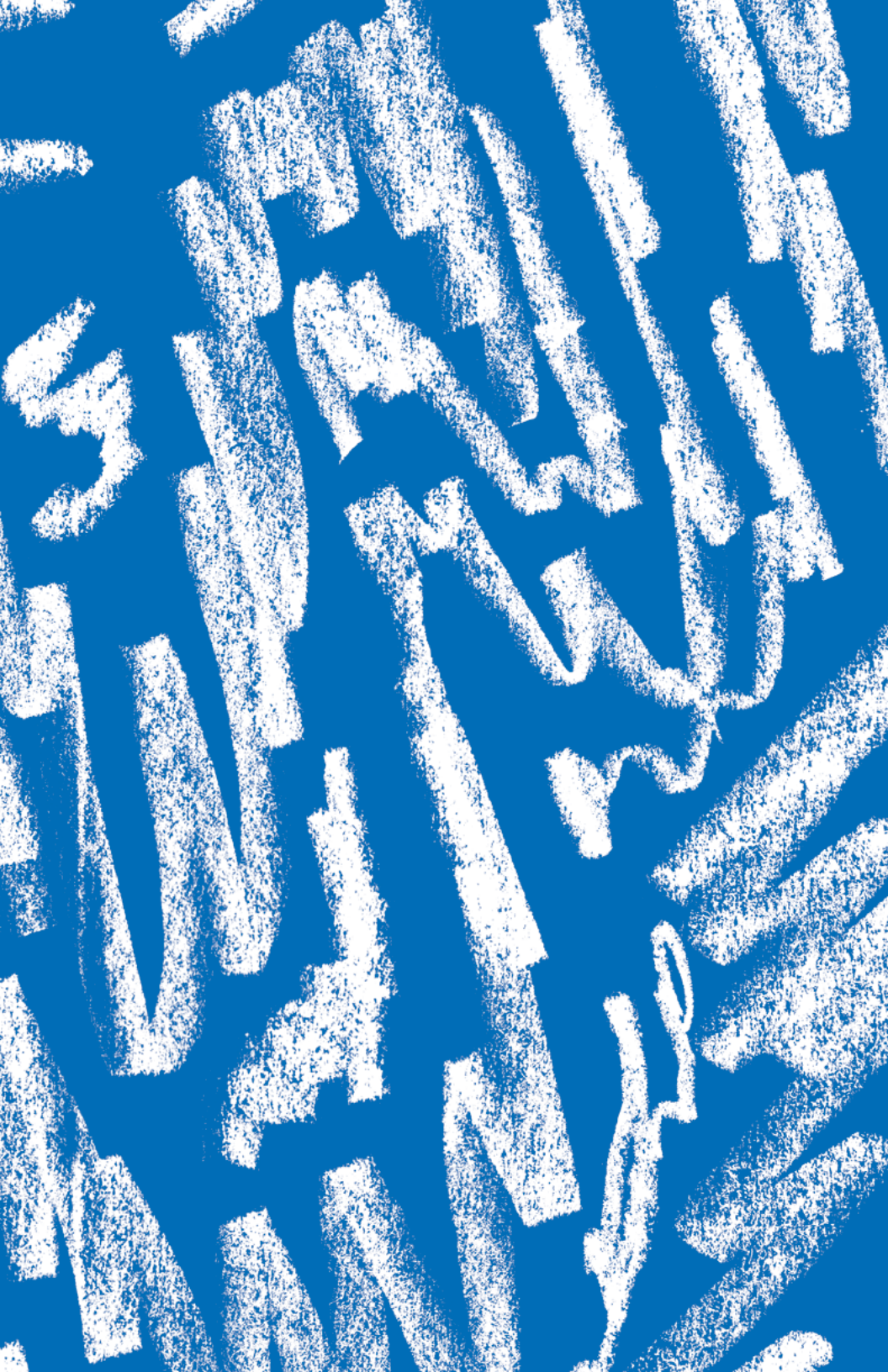
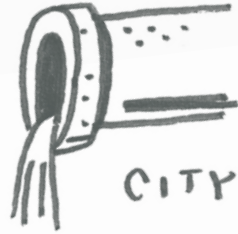


DATA

OPENING



Digital



CITY
SYSTEMS



Opening Data



TABLE OF CONTENTS

DDJC Principles 1

About Detroit's Open Data Portal 6

A Data Primer 8

Open Data FAQs 12

Big Data: Social Justice Opportunities and Civil Rights Risks 20

**Finding Land for the
Community** 26

**Data Discrimination: Lessons
from Data-driven Retail
Redlining** 30

**Research Justice: Using Data
at a Human Scale** 35

**Creative Data Approaches:
Detroit Future Schools' Data
Murals** 40

Two Way Streets 44

Principles

The Detroit Digital Justice Coalition is comprised of people and organizations in Detroit who believe that communication is a fundamental human right. We are securing that right through activities that are grounded in the digital justice principles of:

- **ACCESS • PARTICIPATION**
- **COMMON OWNERSHIP**
- **HEALTHY COMMUNITIES**

ACCESS

Digital Justice ...

- ensures that all members of our community have equal access to media and technology, as producers as well as consumers.
- provides multiple layers of communications infrastructure in order to ensure that every member of the community has access to life-saving emergency information.
- values all different languages, dialects and forms of communication.

Digital Justice ...

- prioritizes the participation of people who have been traditionally excluded from and attacked by media and technology.
- advances our ability to tell our own stories, as individuals and as communities.
- values non-digital forms of communication and fosters knowledge-sharing across generations.
- demystifies technology to the point where we can not only use it, but create our own technologies and participate in the decisions that will shape communications infrastructure.

Participation

Digital Justice ...

- fuels the creation of knowledge, tools and technologies that are free and shared openly with the public.
- promotes diverse business models for the control and distribution of information, including: cooperative business models and municipal ownership.

**Common
ownership**

Healthy communities

Digital Justice ...

- provides spaces through which people can investigate community problems, generate solutions, create media and organize together.
- promotes alternative energy, recycling and salvaging technology, and using technology to promote environmental solutions.
- advances community-based economic development by expanding technology access for small businesses, independent artists and other entrepreneurs.
- integrates media and technology into education in order to transform teaching and learning, to value multiple learning styles and to expand the process of learning beyond the classroom and across the lifespan.

About Detroit Open Data

The City of Detroit has launched its Open Data Portal initiative in order to increase public access to valuable data and information concerning City government operations and service delivery. This tool exists to promote trust, transparency, and accountability between City agencies and the people they serve by reducing barriers to access public data and information. This data is freely available in formats that are understandable to humans, can be processed by software and machines, and formatted according to national technical standards to facilitate visibility and reuse of published data. The portal offers access to standardized data that can be easily retrieved, combined, downloaded, sorted, searched, analyzed, redistributed and re-used by individuals, business, researchers, journalists, developers, and government to process, trend, and innovate.

City of Detroit Open Data Policy: Executive Order 2015-2

Pursuant to the powers vested in me by the 1963 Michigan Constitution and the 2012 Detroit City Charter, I, Mike Duggan, Mayor of the City of Detroit, do hereby establish the City of Detroit Open Data Initiative through the creation of Detroit GO DATA (Government Open Data Access To All).

Detroit GO DATA Initiative

This initiative, implemented through Detroit GO DATA, will foster and create a more transparent, open, collaborative, participatory and accountable relationship between the City government and the people it serves, fostering a creative culture and innovation-driven economy. In an effort to provide better customer service to the public, it is the purpose of this Executive Order to increase the accessibility and the availability of certain data collected or maintained by the City. Increasing the public's access to high quality, accurate data and information is critical to this mission and will also improve business functions and prepare for future innovations in City operations.

This open data philosophy will be coordinated and accomplished through Detroit GO DATA. The cornerstone of this major shift in City policy will be that data and information, unless exempt from disclosure under State or federal law, will be available to the public, starting with an open data portal.



An Open Data Primer

By Jessica McInchak

We consume and make data every day, although it's easy not to notice the tracks our digital personas leave behind. We've created a basic glossary as an entry point for starting to understand more about data – both the kinds that we take in and have the power to produce – so that we can be more intentional about using and creating data that can be meaningful to our communities.

So, why should we care about and buy into data? Lots of reasons, which can be found throughout this zine! But for starters, grasping the technical jargon around “data” can help us keep pace and communicate with our government leaders, funders, or other folks in positions of power. Harnessing the language of data can be a first step to effectively advocating for the types and uses of data that support our theories of change and help us make decisions.

It's also important to understand the information ecosystems we inhabit and know what types of data are already floating around us that we can access. By identifying existing data-driven narratives that align, or don't, with our lived experiences and naming gaps in available information, we can start to define and create new datasets that let us tell the full stories of our communities.

Here, we'll answer the questions:

- What is data?
- What makes "open data"?
- Where can I get open data?
- What might open data mean for my communities?

DATA IS A SET OF VALUES. When data is collected and analyzed, it becomes information and is imbued with meaning and knowledge.

Primary data are collected first-hand through original research.

Secondary data are collected and accessed from outside sources, like the government, companies, or local institutions.

Data values can be quantitative or qualitative in nature.

Quantitative data are values based on things we can count and measure. When analyzed, these data are often thought of as statistics. A common method for collecting quantitative data is surveying a large sample population, like the Census.

Qualitative data are values based on our perceptions, observations, stories, and experiences. Some methods to collect qualitative data include interviewing, facilitating focus groups, or recording oral histories.

Data are often structured as tabular or spatial, and have metadata.

Tabular data are values organized in rows and columns, about anything really, and usually not tied to a specific place. For example, your grocery receipt that has rows of items, quantities, and prices.

Spatial data are values that can be mapped to a geographic point using a street address or latitude and longitude coordinates. A phone book is full of spatial data points.

Metadata are data to describe your data. Like the header row on a spreadsheet that characterizes the rows of data values beneath it.

Open data are data that are kept in the public domain, a common public space that is not subject to copyright. Open data are often collected and maintained by the government or local institutions.

Some ways to access open data are through data portals or Freedom of Information Act (FOIA) requests.

Data portals are websites that visualize and provide raw datasets for download, usually for users to do their own analysis.

FOIA requests are usually made to governmental agencies or public officials asking for the release of data that is part of the public domain, but may not be currently provided to the public in an accessible format.

Open data are often provided in formats that are human-readable or machine-readable.

Human-readable data formats are unstructured and often challenging to use because they're text-heavy, such as a PDF file, or can even be handwritten documents.

Machine-readable data formats are structured so that they can be easily processed and analyzed using computers, such as a CSV file.

Initiatives and projects that make use of open datasets are sometimes collectively called civic technology, and often result in a web app created by a group or individual that makes a dataset easier to use and more engaging, maybe through data visualization or search and filter features.

Frequently Asked Questions About Data

By Clifford Samuels Jr

Q: What makes “Open Data” open?



A: Open data requires that the data be:

● **LEGALLY OPEN:**

that is, available under an open (data) license that permits anyone freely to access, reuse and redistribute.

● **TECHNICALLY OPEN:**

that is, that the data be available for no more than the cost of reproduction and in machine-readable and bulk form.

Q: What types of open data are out there?

A: There are many kinds of open data that have potential uses and applications. Here are a few examples.

CULTURAL: Data about cultural works and artefacts — for example titles and authors — that are generally collected and held by galleries, libraries, archives and museums. (Detroit Institute of Arts or the Detroit Historical museum).

SCIENCE: Data that is produced as part of scientific research, from astronomy to zoology.

FINANCE: Data such as government accounts (expenditure and revenue) and information on financial markets (stocks, shares, bonds etc.).

STATISTICS: Data produced by statistical offices such as the census and key socioeconomic indicators (US Census).

WEATHER: The many types of information used to understand and predict the weather and climate.

ENVIRONMENT: Information related to the natural environment such as presence and level of pollutants, the quality and rivers and seas (air quality or water quality data).

TRANSPORTATION: Data such as bus timetables, routes, on-time statistics.



GEODATA: Data points that include a location, e.g. as latitude and longitude or another standard encoding. Maps, transport routes, environmental data, catastral data (land record documents), and many other kinds of data can be published as geodata.

Q: What does open data look like when I access it? What formats do sets come in?

A: The following are file formats that data sets often come in and that can be used by web developers and software engineers.

JSON (JavaScript Object Notation) is a simple file format that is very easy for any programming language to read. Its simplicity means that it is generally easier for computers to process than other formats.

XML (Extensible Markup Language) is a widely used format for data exchange because it lets users maintain data structure and allows developers to include documentation without interfering with reading of the data.

API (Application Programming Interface)

For data, this is usually a way provided by the data publisher (Government agency) for programs or apps to read data directly over the web. The app sends the API a query asking for the specific data it needs, e.g. the time of the next bus leaving a particular stop. This allows the app to use the data without downloading the whole dataset, saving bandwidth and ensuring that the data used is the most up-to-date available.

RDF (Resource Description Framework) makes it possible to represent data in a form that makes it easier to combine data from multiple sources. RDF data can be stored in XML and JSON, among other serializations. RDF encourages the use of URLs (website addresses) as identifiers, which provides a convenient way to directly interconnect existing open data initiatives on the Web. Use of RDF is not widespread, but it has been a trend among open government initiatives.

HTML (Hyper Text Markup Language)

Today, much data is available in HTML format on various sites. This may well be sufficient if the data is very stable and limited in scope. In some cases, it could be preferable to have data in a form that's easier to download and manipulate. But it's cheap and easy to refer to a page on a website, so HTML can be a good starting point in the display of data.

These file formats are often used by the general public and community leaders.

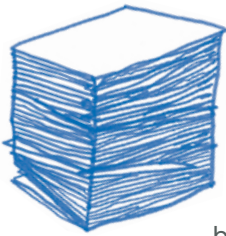
SPREADSHEETS

Many agencies have information in spreadsheet formats like Microsoft Excel or OpenOffice/LibreOffice. This data often can be used immediately with the correct descriptions of what the different columns mean. But spreadsheets may also contain macros and formulas, which can be more cumbersome to handle.

COMMA SEPARATED FILES

CSV files are compact and thus suitable to transfer large sets of data with the same structure. However, the format is so spartan that data are often useless without documentation since it can be almost impossible to guess the significance of the different columns. Furthermore it is essential that the structure of the file is respected.

TEXT DOCUMENT



Classic documents in formats like Word, ODF (OpenDocument Format), OOXML (Office Open XML), or PDF (Portable Document Format) may be sufficient to show certain kinds of data – for example, relatively stable mailing lists or the equivalent. This approach may be inexpensive because most data are born in this format. But the format gives no support to

keep the structure consistent, which often makes it difficult to enter data by automated means. Generally it is recommended not to exhibit in word processing format, if data exists in a different format.

PLAIN TEXT

Plain text documents (.txt) are easy for computers to read. They generally exclude structural metadata from inside the document however, meaning that developers will need to create a parser that can interpret each document as it appears. Also some problems can be caused by switching plain text files between operating systems.

SCANNED IMAGE

This is probably the least suitable form for most data, but both TIFF and JPEG-2000 formats can at least be marked with documentation of what is in the picture. Scanned image formats may be relevant for displaying information that wasn't born electronically – for example, old church records and other archival material where a picture is better than nothing.

Q: So, where can I get some local open data?

A: Some options are:

- **The City of Detroit** (data.detroitmi.gov)
- **State of Michigan** (gis.michigan.opendata.arcgis.com)
- **Data Driven Detroit** (portal.datadrivendetroit.org)
- **DetroitData** (detroitdata.org)

Q: Are there projects I can contribute data to?

A: YES. Here are a few collaborative portals for groups or individuals to submit and share datasets.

- **Detroit Sound Conservancy** (detroitssoundconservancy.org)
Oral histories and other rich audio artifacts of Detroit
- **Detroit Ledger** (detroitledger.org)
Grant data that illustrate the flow of philanthropic resources in Detroit
- **Detroit Charter Data** (detroitcharterdata.org)
Information about charter schools and districts, and a FOIA generator to request more

- WDET's **Detroit By The Numbers** (wdet.org/series/detroit-numbers)
Visuals and reporting inspired by open data
- **Detroit Music Box** by the Detroit Community Technology Project
Collecting stories of the Cass Corridor to preserve its history in the midst of gentrification. CALL 313-451-7359 to leave a story!

Q: How have journalists and organizers used open data to expose and organize around injustices?

A: Here are a few examples:

Investigative reporting into racial profiling of African American bike riders in Tampa, FL. "How riding your bike can land you in trouble with the cops—if you're black." *Tampa Bay Times*. 4/17/2015.

<http://www.tampabay.com/news/publicsafety/how-riding-your-bike-can-land-you-in-trouble-with-the-cops---if-youre-black/2225966>

The Anti-Eviction Mapping Project documents instances and stories of displacement in the San Francisco bay area.

<http://www.antievictionmap.squarespace.com/>

The Counted, a database of people killed by the police in the U.S. created by The Guardian newspaper.

<http://www.theguardian.com/us-news/ng-interactive/2015/jun/01/the-counted-police-killings-us-database>

The website **Detroitography** collected data on water shut-offs from 2014, which revealed the top 40 commercial enterprises whose delinquent accounts with the Water & Sewerage Department accounted for one quarter of total debt owed to the Department.

<http://detroitography.com/2014/07/01/data-water-shutoffs-in-detroit/>

Q: What are some networks and resources that can support me in this?

A: Here are a few networks you can tap into to get started on an open data project with your community.

RESEARCH JUSTICE: Honors multiple systems of knowledge and yields data – broadly defined as our experiences as well as research reports – as a tool for movement building. Check out field guides and toolkits from the **DataCenter** in Oakland, CA.

(<http://www.datacenter.org/research-tools/research/>)

COMMUNITY TECHNOLOGY: Recognizes that technology – and all of the data and information encapsulated within it – is a powerful medium for community organizing and expression. Check out the toolkit that the **Detroit Community Technology Project** and **Open Technology Institute** created to support the development of community owned data and communications infrastructure.

(<https://communitytechnology.github.io/>)

MAPTIME DETROIT: A monthly mapping event focused on democratizing mapmaking by bringing community members together to learn, share, and create new maps of Detroit.

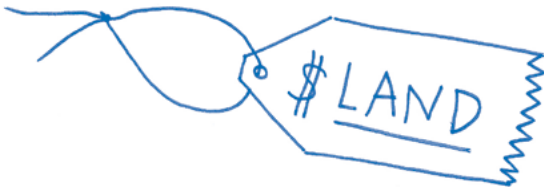
(<http://www.meetup.com/Maptime-Detroit/>)

(<http://maptimedet.github.io/>)

Daatä **Daatä**

fi **fi**

Big Data: Social Justice Opportunities and Civil Rights Risks



By Talia Selitsky

The “Big Data” concept refers to modern computing techniques used to manipulate high-volume data from many different sources much faster than previously possible. With the prevalence of devices like smart sensors and mobile phones, and the growing use of social media networks, we are generating huge amounts of digital data. All of this data can easily be captured and processed, due partially to the decreased cost of data storage.

Data mining refers to the practice of searching through large amounts of data using sophisticated algorithms, in order to discover patterns, predict likely outcomes, and create actionable information.

BIG DATA AND DATA MINING OFFER A LOT OF POTENTIAL AS SOCIAL JUSTICE TOOLS. They can help identify troublesome trends and clarify patterns of discrimination and inequality to better inform decision makers. But they also pose severe civil rights risks, especially for marginalized communities, which we will examine later on in this article.

How is big data being used today?

Companies are competing on their ability to use big data to gain a business edge. One common way big data and data mining are used is to predict what customers might want before they ask for it. To do this companies might collect data on previous purchases and websites the customer visited in order to make future recommendations. Amazon was one of the pioneers of this technique, and now many other companies have followed suit.

Another technique companies use is **Sentiment Analysis**. Companies comb through massive amounts of internet data in different forms such as comments, tweets, and Facebook posts, to understand what consumers are saying about their products. This can help them better anticipate what kinds of products people might like, or how to change their brand presentation.

Businesses are not the only group interested in exploring the possibilities that big data and data mining have to offer. Social justice groups and social scientists are also interested in seeing whether these techniques can be used to better understand and improve society.

The Urban Institute in Washington, DC has done important work to explore how these techniques

can be used to better understand school segregation patterns. Using a combination of data sources such as demographic information, school surveys, and the Department of Education's National Center for Education Statistics, they created a visualization that demonstrated that Black and Hispanic students remain segregated from white students at historic levels.

<http://www.urban.org/urban-wire/americas-public-schools-re-main-highly-segregated>

Another growing area of interest is whether these techniques can predict mass-violence, war, and genocide. Assistant Professor of Political Science at Trinity College Dublin has been using text mining on newspapers to build mathematical models to predict the outbreak of war. He uses newspapers because certain words such as “clash” and “conflict” give signals about a tense political climate. His research finds that the number of conflict-related news items increase rapidly preceding a conflict.

Studies show that intervention to prevent state-sponsored genocide is more successful the earlier it happens, but there is not a systemic forecasting system yet available. Researchers at Dartmouth College with the support of the United States Holocaust Memorial Museum have been able to predict outbreaks of violence in South Sudan and the Central African Republic. Part of the program is to use data mining of social media and news

**SOCIAL JUSTICE OPPORTUNITIES
AND
CIVIL RIGHTS RISKS**

reports for keywords that identify troubling trends in different countries. The goal is not to replace human judgment, but to provide more effective tools.

What are the risks involved with big data?

Despite the many opportunities, these modern data mining techniques pose some serious challenges to civil rights and privacy. Analyzing data and using statistics is not a new practice, but the vast amounts of data available today allows for much more fine-grained targeting and segmenting of people in a way that can lead to discrimination.

For example, the use of these tools can exacerbate criminal justice discriminatory practices, such as Predictive Policing. In 2014 it was reported that the Chicago Police Department was sending officers to make visits on residents that it had deemed most likely to commit a violent crime. These were not individuals who were under investigation, but were selected from an algorithm that was produced using different sources of data.

Another major issue is the targeting of financially vulnerable customers by companies with



predatory practices such as selling high cost loans.

Data brokers, a term for companies that analyze customer data and sell it to different organizations, have been found to sell data packages specializing in vulnerable consumers. Data brokerage is an old industry, but what is new is the volume and availability of data about people. This industry is highly unregulated, and their products enable discriminatory marketing.

It is important that the uses of data are highly scrutinized and a strong emphasis is placed on privacy and control over personal information.



Finding Land for the Community

By Alex B. Hill

Besides being one of the top 20 most populous cities in the United States, Detroit has a significant amount of publicly owned land. Ideally, the Detroit City Government would like to see publicly owned land developed or redeveloped, but that doesn't always mean it is in the community's best interest. A handful of recent land deals with private entities emphasize the need for more community control through land trust models.

Land in Detroit is often referred to as blighted, vacant, dangerous, or a development opportunity. Whether it is a \$1 land deal to a



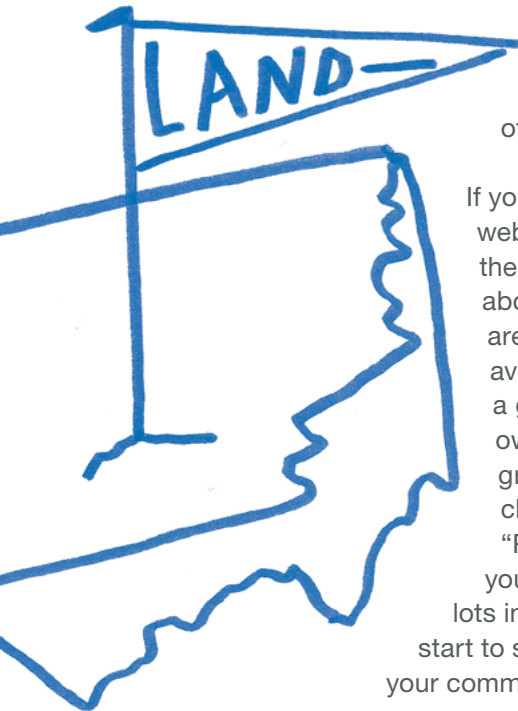
corporate entity, tax breaks for land developers, or the privatization of community park land – it has become readily apparent that “publicly owned” land in Detroit will quickly go to the highest bidder.

The key first step to starting a community land trust is to identify available land. The greatest benefit of Detroit having a large amount of publicly owned land is that the process of acquiring land for the community is somewhat streamlined. That isn’t to say that acquiring land in Detroit is easy or without hurdles, but there are a handful of resources available to help identify land to purchase for a community land trust.

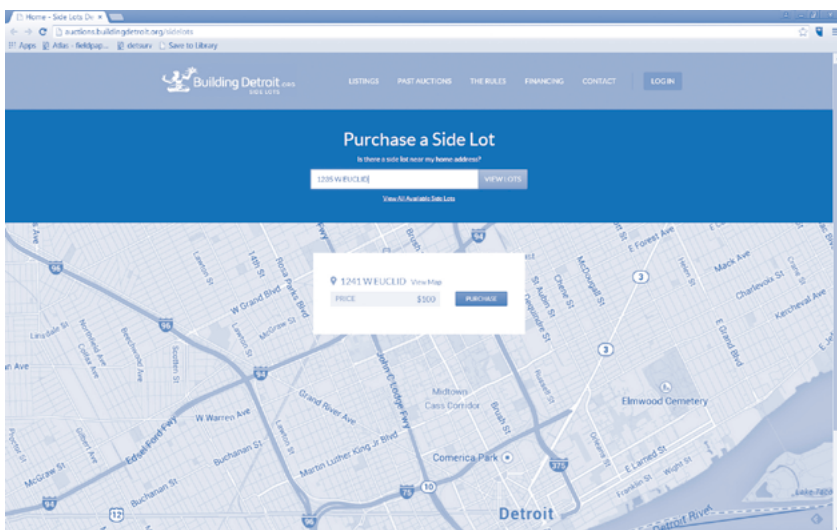
Motor City Mapping

Information on land in Detroit is not very easy to find. The city has an Open Data Portal, but the information isn’t always up to date. During the winter of 2013, the Motor City Mapping project (MCM) sent

surveyors with computer tablets to take pictures and document the status of every parcel of land in Detroit. The result is an amazingly comprehensive look at what the existing conditions of land are in the city.



If you visit the Motor City Mapping website at: motorcitymapping.org there are many options to view data about each piece of land. If you are looking for land that might be available for a community land trust a good place to start is “publicly owned” land. If you click on the green “Explore” button and then choose the blue button that says “Publicly owned, structures vs. lots,” you will see structures in yellow and lots in green. This is a great place to start to see what land might be available in your community.



Screenshot from <http://auctions.buildingdetroit.org/sidelots>

Building Detroit - Side Lot Sales

The Detroit City Government has implemented a handful of versions of the “Side Lot” program where residents can buy adjacent land next to their own lot for a low cost if they agree to maintain and improve the land. The program saw a boost under Mayor Bing and now Mayor Duggan has piloted the program and launched it as part of the new Detroit Land Bank Authority. On the Detroit Land Bank Authority website (<http://auctions.buildingdetroit.org/sidelots>) you can search for side lots that are available for sale for \$100.

Mayor Duggan also announced at the national “Reclaiming Vacant Properties” conference in May 2015 that a new program would allow individuals and groups to lease vacant lots for \$25 per year after approval from area block clubs. This could be a potential gain for cash strapped community groups, but a leasing agreement is contrary to the goals of a community land trust. Additionally, if the past is any indicator, the city would potentially break a lease agreement to give the land to the highest bidder.



Screenshot from <http://motorcitymapping.com>

Conclusion

The Motor City Mapping website and the Detroit Land Bank Authority's side lot program are just two tools that can be used to better understand where to start looking for land in Detroit. Once you've identified land that your community organization is interested in, it will require a lot more digging to find out the status of the property such as who else might be trying to buy it, whether it is up for auction, the amount due in back taxes, etc.

For follow up questions or issues about land, contact these groups:

Michigan Community Resources

(313) 962-3171

Damon J. Keith Center for Civil Rights

(313) 577-6181

Greening of Detroit

(313) 237-8733

Data Discrimination: Lessons from Data-driven Retail Redlining

By Ryan Gerety

Over the last several decades, the use of skewed or flawed data played a central role in the continued disinvestment in inner city neighborhoods, according to researchers and community development organizations. They concluded that market decisions are made using data sets that, in some cases, incorrectly suggest a lower market potential for low-income, communities of color and profile these communities in a manner that narrows opportunities for commercial investment. As a result, it is difficult for residents to attract new businesses or business loans into these communities. This pattern of disinvestment results in many neighborhoods not

having grocery stores, banks, sit-down restaurants, and other services.

Retail redlining is a practice in which businesses or financial institutions do not invest or extend access to credit in certain neighborhoods, often communities of color, regardless of the actual merits of the investment. This practice can happen actively, as in the case of housing, where red lines were historically drawn around specific neighborhoods on maps to indicate areas where banks refused to provide mortgages. It can also be a result of less explicit practices which, nonetheless, ultimately result in the exclusion of particular communities. Unlike redlining in the housing sector, retail site selection based on neighborhood characteristics is not illegal; as a result, potentially discriminatory practices can continue.

Retailers examine large quantities of data to create profit estimates before they build a store, and then use data to determine optimal products and product placement within a particular store. This data is surfaced from various proprietary and public sources and can be as detailed as the credit cards you have, how much you paid for your house, and when you purchased your car. In turn, this baseline data is used to build models that estimate and update other indicators, such as individual income.

Here we describe how neighborhoods are profiled by retailers and banks and how those profiles are sometimes impacted by inaccurate and/or biased data.

Market Segmentation and Profiling

MARKET SEGMENTATION is the process of using data to cluster (or combine) people into groups by



a combination of data points. The most well-known segmentation system was developed by Claritas in 1974 and is now owned by Nielson. The system clusters people into 40 segments defining their lifestyle and purchasing habits. For decades, community groups have questioned the crude ways people are classified into consumer types. Here are three examples of consumer types from their website <http://www.nielson.com/>:

Low-Rise Living: The most economically challenged urban segment, Low-Rise Living, is known as a transient world for young, ethnically diverse singles and single parents. Home values are low – about half the national average – and even then less than a quarter of residents can afford to own real estate. Typically, the commercial base of Mom-and-pop stores is struggling and in need of a renaissance.

Family Thrifts: The small-city cousins of inner-city districts, Family Thrifts contain young, ethnically diverse parents who have several children and work entry-level service jobs. In these apartment-filled neighborhoods, visitors find the streets jam-packed with babies and toddlers, tricycles and basketball hoops, Daewoos and Hyundais.

Cosmopolitans: Educated, upper-midscale, and ethnically diverse, The Cosmopolitans are urbane couples in America's fast-growing cities. Concentrated in a handful of metros – such as Las Vegas, Miami, and Albuquerque – these households feature older, empty-nesting homeowners. A vibrant social scene surrounds their older homes and apartments, and residents love the nightlife and enjoy leisure-intensive lifestyles.

How do you think neighborhood residents would feel about these descriptions?

How would they define themselves?

The Problem with Data Errors



For at least two decades, community development organizations in underserved neighborhoods have tried to counter the traditional analysis and provide evidence

that their neighborhoods could support additional investment. Here we detail a few lessons about data that we have learned from analyzing data-driven retail redlining practices.



Data is interpreted by humans who have bias and frequently use data to support what they already think.

Example: The way media covers crime in particular neighborhoods gives people a lasting perception of that place that, in turn, informs their interpretation of data. Similarly, people have preconceived ideas about who is poor and what communities contain valuable customers. Often retailers will say that they use data to back up their intuitions on the grounds that they are looking for people who look like their target customers.

Data can be skewed in ways that are biased against particular groups.

Example: For a variety of reasons, the Census tends to undercount income and population in low-income, communities of color. Additionally, traditional measures of income may undervalue the substantial informal income or exchange that is common in some neighborhoods.

Data is used in models that are not necessarily equally accurate across all communities.

Example: Suburban-based models do not work in dense urban areas, which may be more diverse with different types of housing

and mixed incomes. Traditionally, suburbs are quite simple: single-family homes and people with similar incomes on the same blocks. Urban areas tend to be more complex.

Data is less available for some places or groups of people, and that increases error.

Example: The extensive retail in suburban areas means that banks lending to businesses have a clear sense of the risk. In contrast, many urban neighborhoods have not had significant retail investment in the last decades, so there is less information about store performance. With less information, banks will judge the loans to be higher risk. Similarly, people who do not have a credit card or bank account will be considered more risky, as there is less information about their past behavior.

Can you think of other examples of how data might misrepresent people? Do those examples fit into one of these data error categories?

What have people done to challenge retail redlining?

- Community-based alternatives that depend less on outside investment and outside retailers (i.e. food co-ops, lending circles, etc.).
- Census challenges and increased efforts for accurate counting have improved the Census in low-income, communities of color.
- Alternative market profiles of neighborhoods, based on resident input, that demonstrate market strengths.
- Demonstration of food deserts (including measuring distance to grocery stores, price disparities and square footage per household) and the public health implications have pushed cities to invest in the local food ecosystem.

What other strategies can you think of that people are using to fight for more equitable development?

Research Justice: Using Data at a Human Scale

By Kat Hartman

Research is an open ended and creative process, defined as a systematic approach to problem solving. However, it is often placed in a realm reserved for scientists, academics, and other so-called experts. The resulting knowledge gleaned from their research tends to remain locked in peer-reviewed journal articles, behind paywalls, or layered in jargon, accessible only to other scientists, academics, and experts.



While “expert-driven” research does indeed impact the world, the majority of the world never sees it. There is a resulting passivity on the part of many people, where research is done to them rather than by them. This can be especially apparent in the realm of public health, where individuals’ poor health may be observed and

catalogued in a study aimed at serving the greater good, but not in a way that will ever directly impact the lives of those who supplied their private information to the study.

The Research Justice Track just finished up its 4th year at the 17th annual Allied Media Conference (AMC) in Detroit. A Track is a series of sessions connected by a shared theme. The Research Justice Track serves to define and honor the varied approaches to research, not just those led by “experts,” and also elevate research that promotes justice at a scale that impacts and engages people. While academic and scientific research is often regulated by institutional committees to ensure it does no harm, we hope to promote research that actively does good. Just research is humane research, inspiring actions that bend the world towards equity and transform people’s lives for the better ¹.

A principle component of research is often data. If research is a systematic approach to problem solving, data often operates as the systematic documentation of this process. Though data, like research, is similarly open-ended in its definition and scope, it is still often assumed to be a material used by experts, academics and scientists. While the Research Justice Track works diligently to include and expand different definitions of data, it is important to build additional quantitative capacity at the grassroots level.

In an era of “Open Data,” communities now have more access to larger datasets. But as a dataset’s size increases, so does the difficulty to glean knowledge from it. Even though the knowledge is no longer hidden behind a paywall or locked in a private database, communities must actively develop the knowledge themselves by analyzing this data. With many traditional data formats, this requires some degree of data literacy and quantitative comfort. Data is fast becoming a new language (complete with its own grammar, accents, and jargon) whose conversations are rapidly transforming the world. Unfortunately, even when data is open, it still often remains highly abstract and difficult to translate into action on a human scale.

1. The AMC’s Research Justice Track models their definition of research justice on Data Center’s definition.

Data at a Human Scale

Research and data are powerful tools. As open data becomes more and more prevalent, communities will continually develop ways to improve their data literacy and utilize this resource via their own research. Community members can use open data to advocate for themselves and influence emerging data-driven conversations.



Here are a few approaches that describe how data is being humanized:

Data Trainings

At some level, data is just information. However, to actually understand the information contained within more traditional data formats utilized by open data portals, one must have a basic level of data literacy.

Data can be demystified for any age and learning type, but this requires an intentional and inclusive pedagogy. Any training should make data relevant to people's lives, but also not shy away from the technical. Building data literacy requires both an awareness of the big picture and the nitty-gritty.

Local Example:

Data, Mapping, + Research Justice class through **Co.Open**

<https://www.alliedmedia.org/co-open>

Extended Community Example:

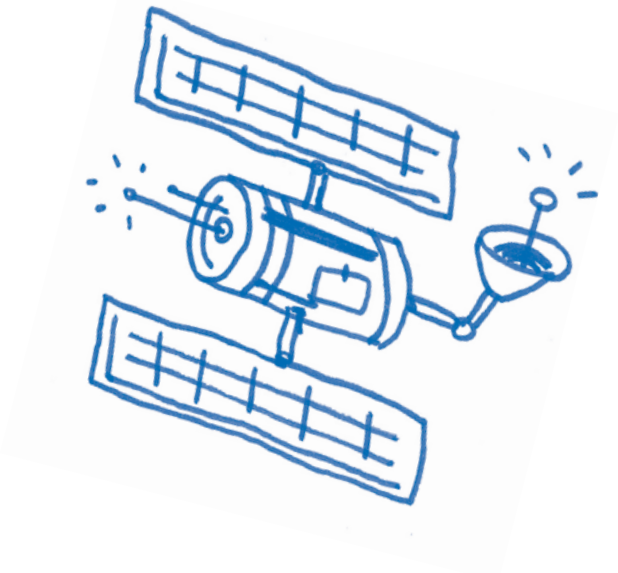
Data Feud Toolkit from **Data Center**

<http://www.datacenter.org/research-tools/data-feud>

Other Useful Precedence:

Tuva Labs, School of Data, Data Courses on **Coursera**

<http://edmaps.co/en/moocsnews/tuvalabs/>



Participatory Research Techniques

Once a community has data literacy, it can begin to conduct its own research using more quantitative approaches. This might involve analyzing open data for its own needs, or gathering data that is important to the community, but isn't readily available.

Participatory Action Research (PAR) demystifies research methodologies and helps communities define the most relevant problems they hope to solve. It is activist in nature, providing an empowering method of conducting research and sharing the findings.

Local Example:

Detroit Future Schools' What's Math Got To Do With It?

<http://www.detroitfutureschools.org/projects/whats-math-got-to-do-with-it/>

Extended Community Example:

Public Science Project's PAR approach

<http://publicscienceproject.org/>

Other Useful Precedence:

Center for Urban Pedagogy, City Digits Project at MIT

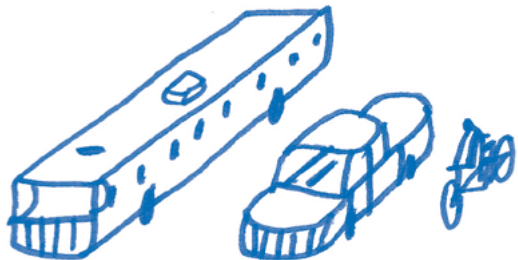
<http://www.citydigits.org/>

Data Stories and Visualizations

Once data literacy has been established and research conducted, communities will likely want to share new knowledge to advocate for justice and change. Some methods for sharing this knowledge include data stories and visualizations.

Data Stories humanize the abstractness of data, making it both engaging and accessible to individuals who have minimal understanding of the data or issue. This is where the technical must meet the big picture. In order to translate statistical summaries into something someone can empathize with, you need a data-literate storyteller.

Another way to tell stories is through pictures. Data Visualizations are statistically-sound drawings made of data. The point is to make them clear and beautiful. They also tell a data story, but visually rather than verbally.



CREATIVE DATA APPROACHES:

Detroit Future Schools Data Murals

From: <http://www.detroitfutureschools.org>



What Stories Can We Tell From Data?

During the 2014-2015 school year, Detroit Future Schools completed two “data mural” projects in Detroit schools, supported by the Knight Arts Challenge and the Michigan Council for Arts & Cultural Affairs.

A data mural is public art that engages community members in a dialogue about data-driven representations and misrepresentations of their community. We worked with two of our anchor schools – the The James and Grace Lee Boggs School and Tri County Educational Center – to implement the data murals over the course of six months.

Our goal was to conduct research with each classroom about their school communities and convey our findings through public art. Each classroom was paired with a DFS teaching artist who helped them express their research through compelling visual language and graphics.



The Boggs School: How to be a Boggs School Student?

At The James and Grace Lee Boggs School, teaching artist Alicia López Castañeda worked with the “Painted Turtles” classroom (2nd/3rd grade students) and their teacher Liz Kirk to develop a mural based on the question: How to be a Boggs School student? The students brainstormed the core content of what it means to be a Boggs School student through creative writing activities around the questions: Who are we? Where do we come from? What do we know how to do? They worked with Alex B. Hill,

a local graphic designer and mapmaker, and Phil Simpson, a painter and muralist, to create the final mural.

The DFS Data Murals project cultivated essential character skills in the students, such as collaboration, empathy and grit – three of the “DFS 11 Essential Skills.” When asked to define these skills during an end-of-program interview, one third grade student answered, “collaboration is when kids do it together and they include everyone and empathy is when, let’s say Raphael is sad, I would come over to Raphael and I would know how he felt because I’ve been sad before and I know how it feels to be sad... Grit is when someone wants to give up, they don’t give up.”

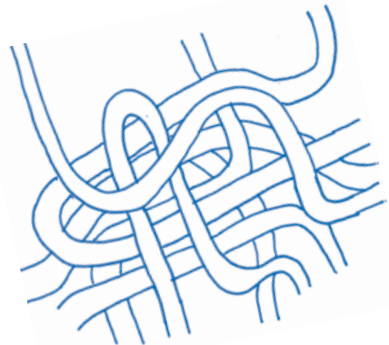
Tri County Educational Center: How Do Schools Measure Success?

At Tri County Educational Center (TCEC), DFS program director Nate Mullen worked with 9th through 12th grade graphic design students and teachers Adelaide Fabiilli and Brooke Leiberman to create their data mural. They used drawing, painting, graphic design, student-led research, and mosaic art to explore the question “Can Design Save the World?” The students brainstormed problems in their community that they wanted to address through graphic design and determined to focus their research on the obstacles that prevent students from graduating from high school. Starting with the question “How do schools measure success?” they researched standardized testing, interviewed their school principal, and surveyed fellow students. Through a process of mosaic design, the mural evolved to become a graphic representation of the students’ many different ideas of success.

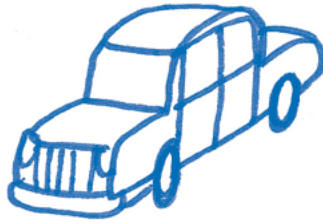
In describing the mural, one student wrote, “the mural represents that there are multiple ways of deeming yourself successful. The most intricate message is the brain, which shows knowledge in a book beside it. This explains that knowledge is very important when becoming successful.”



The Data Murals project gave us the opportunity to create captivating public art that merges the talents of artists with the stories of communities and the leadership of young people. The murals also helped spark conversation within the broader community through their unveiling at end-of-the-year events including the TCEC Spring Festival and the Boggs School community block party.



Two-Way Streets:



Forging the Paths Towards Participatory Civic Technology

By Diana J Nucera

As technology becomes further integrated into our systems of governance, the challenges of our nation's digital divide are increasingly apparent. In Detroit, for example, social services such as social security, welfare, and unemployment have transitioned to being offered exclusively online. While this has most likely cut costs (by streamlining the services themselves), it has also cut access: According to the 2013 U.S. census, 33% of households in Detroit lack a persistent connection to the Internet. Without the ability to interface with essential government services, those who are already disenfranchised may find themselves in dire situations, leading to crime, violence, and ultimately the destruction of their own neighborhoods.

The advent of the internet brings with it myriad opportunities to unlock the enormous potential that is otherwise latent in our local communities. These opportunities can only be sustainably seized, however, if networked technology projects are led by people who are deeply invested in their community's welfare; that is, people with a deep understanding of—and a desire to maintain—the fabric that binds their community together.

There are many ways that civic designers can lower the barriers between those who see and wish to leverage the potential of civic technology and those who wish to galvanize their local communities. Drawing upon my experience working with the Detroit Digital Justice

●
**How can we make
 civic technology more
 participatory?**

●
**How do we create
 environments in which
 it can thrive?**

Coalition and Detroit Future Schools, I've distilled some of the most salient processes that civic technologists can use to forge a participatory digital future.

Rules of the road

My involvement with bridging the worlds of community and technology began in the Summer of 2009, when the Detroit Digital Justice Coalition came together to understand the role that media and technology might play in restoring our community and creating local micro-economies. The Detroit Digital Justice Coalition is comprised of thirteen member organizations; together, they represent seniors, youth, environmental justice communities, welfare rights activists, hip hop community organizers, independent technologists, and designers. Everyone involved believes that communication is a fundamental human right. To develop a common understanding of the role media might play, the coalition asked members to answer the following questions:

How are you currently using media and technology for organization and economic development?

What kind of support and collaboration would make your work stronger?

What should digital justice in Detroit look like?

Interviews were recorded and later edited before being debuted at the first Detroit Digital Justice Coalition meeting. Attendees were then asked to write down any quotes that stood out and thoughts that emerged while listening to the highlight reel. A group conversation followed, from which the Detroit Digital Justice Principles were born, creating a unifying definition of what digital justice means to the community. (See the full list of DDJC principles at the beginning of this zine.)

The Detroit Digital Justice Principles continue to serve as our coalition's guiding light. Perhaps more important, however, was the way in which the act of their creation united previously disparate sectors of grassroots work. The facilitation process that led us here amounted to:

- **PLAY THE AUDIO** track (the one highlighting results from our previous questionnaire).
- Ask people to **WRITE DOWN** their thoughts as they listen.
- Ask participants to further **REFINE** their thoughts using the prompt: “Digital justice is...”
- **POST PHRASES** that include the prompt in a central location for everyone to see.
- Begin a **COLLECTIVE EDITING** process by grouping phrases into common themes.
- **DISCUSS EACH THEME** and identify its underlying concepts.
- Draft **SUPPORTING LANGUAGE** for those concepts from participants' phrases.
- Assign a participant or group of participants to **FINALIZE THE LANGUAGE**.

Look for desired paths

The Detroit Digital Justice Coalition's experience underscores the importance of convening conversations throughout the creative process. More specifically, it implies that civic technologists should begin by identifying communities that are already working on difficult problems. Having identified such communities, our next task is to use participatory frameworks to help members of that community articulate their most pressing questions and sketch the shape of their answers. Then, and only then, should we introduce technology.

This process is incredibly nuanced, so let's step through it together. Participatory frameworks help designers work with communities to articulate big questions. Big questions, in turn, offer avenues for more focused investigation.

The *Detroit Future Schools Guide to Transformative Education* details a participatory framework for eliciting big questions. While it was originally conceived for use in the classroom, we've had good success using it to work with communities. Briefly, it entails the following steps:

Identify something you want to change. Be specific and action-oriented. If your community is struggling with digital literacy, for example, articulate all of the ways in which digital illiteracy hinders progress.

Identify skills and practices you wish to develop.

Can you strengthen existing relationships while building a mesh network? Can you train new people along the way? Are there opportunities to connect people who were not connected before?

Ask a big question. A big question is comprised of the change you wish to see (see step one) as well as the skills and practices you want to develop (see step two).



Major topic + skills or practices you want to develop = big question

Example: How can I use technology to strengthen relationships in my community?

Shifting into high gear

If we want civic technology to facilitate systems of engagement, the creation of these systems must be rooted in inclusivity. It's not enough to embed a system within a community without also giving members of that community the skills to customize, adapt, and maintain it. Place-based organizing seeks to draw connections between diverse perspectives in order to create systems and tools that are relevant, valuable, and accessible to residents.

Civic designers can serve as leaders in this process by exhibiting a desire to both learn and teach the ways in which technology can support our communities. It is vital to have an understanding of place and politics before designing civic technology; and it's at the intersection of civic technology and place-based organizing where the magical ingredients of a participatory design culture will be found.



NOTES

The Opening Data Zine was a collaboration between:

Chief Editor

Diana J Nucera (Detroit Community Technology Project)

Copy Editor

Muna Danish (Allied Media Projects)

Concept Direction and Design

Nina Bianchi and Shar McLeod (theworkdept.com)

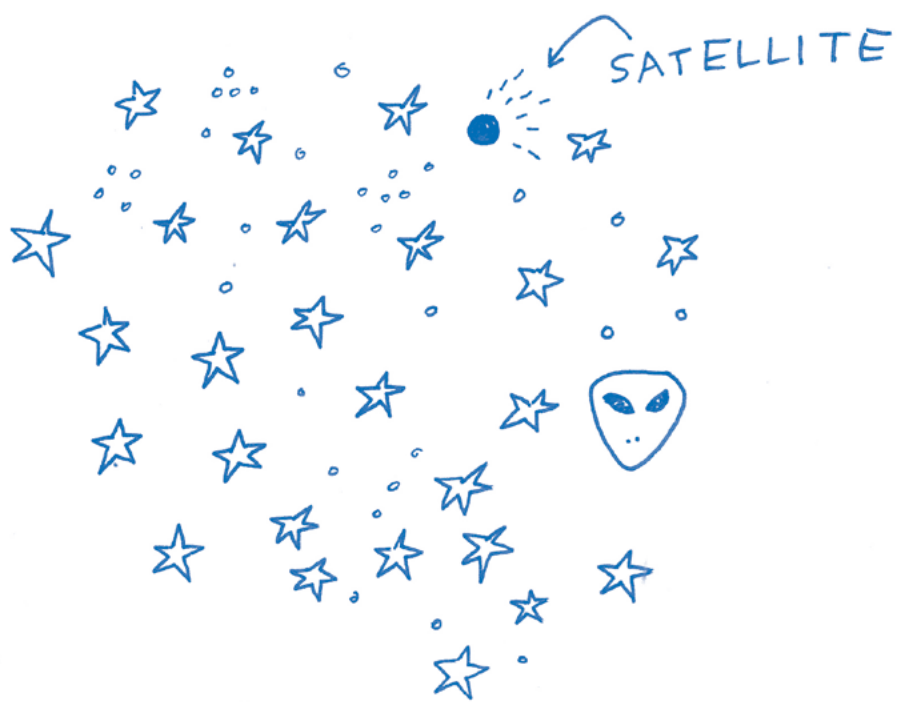
Guest Illustration by

Michael Burdick: Pages 12, 13, 24, 31, 32, 33, 35, 38, 39, 44

Kikko Paradela: Pages 15, 25, 37, 43

*Special thanks to the Media Democracy Fund and the Ford Foundation for supporting the opening data organizing in Detroit.







- ACCESS ● PARTICIPATION
- COMMON OWNERSHIP
- HEALTHY COMMUNITIES