

Optimizing City of Tulsa Open Data

A report by
Urban Data Pioneers

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Introduction

Clearly, open data provides greater transparency into a city's operations, but this is not the greatest advantage provided by making data easy to locate and use. Sharing data puts information in the hands of people who seek to solve a city's problems and find ways to help a city thrive and prosper.

While Tulsa has taken steps in the right direction, additional work is needed to improve openness. This report describes some quick fixes that will make Tulsa's data more accessible and easier to navigate, as well as other improvements that will take some time and investment. In addition, this report provides an idea for an ultimate solution that will benefit the City of Tulsa as well as our community.

A Comparison of Cities

The Urban Data Pioneers team working on this open data project reviewed several governmental open data portals.

The team agreed Boston had the best city site. Following are key points about Open Tulsa and Analyze Boston.

Open Tulsa Observations

- Tulsa's Data Governance Manual provides guidance for how the open data portal is managed. The manual was instrumental in Tulsa winning a silver certification from What Works Cities in 2020. This certification is the national standard of excellence for well-managed, data-driven local government. Creating this manual and setting data standards were steps in the right direction.
- Tulsa's open data program is managed by a group of Tulsa employees referred to as Data Stewards. When a request is received to make data available, this group meets and decides if the requested dataset meets the criteria for posting to the portal. If approved by the group, work is assigned to a Data Steward for posting the dataset following established procedures.
- Tulsa has a limited budget for open data. Data Stewards spend only a fraction of their time on open data. There is no specific funding to support work on open data,

and no work is being done to proactively populate the open data portal. The open data GIS platform was chosen because it can be used at no charge.

- Open Tulsa has data available to download in the categories of Recreation (1 item), Political (1 item), Public Safety (6 items) and Other (20 items). There are no descriptions of what the items are or a way to preview before opening a file. Exhibit 1 shows what can be viewed when a user clicks on the Other category. In addition, there are 20 links on the Open Tulsa site that will take a user to other sites where information can be accessed.

Analyze Boston Observations

- Boston has a Chief Data Officer and an analytics team that completes 60+ projects per year. Their open data portal has 251 datasets in 8 categories. Exhibit 1 shows what users view when they open the datasets page.
- Analyze Boston website is user friendly, including:
 - Tips for how to use the site
 - Contact information to get assistance
 - Several ways to find datasets
 - Sorting capability
 - Short description of the datasets
 - Date of last update of datasets
 - Number of times a dataset was viewed
 - Preview capabilities that allow users to see the file before downloading it
 - Different formats for datasets that can be selected by the user based on the way they want to view and use the data
- Boston created a document entitled, “Analyze Boston Starter Kit.” This document provides clear instructions using laymen’s language.

Improvement Ideas

Quick Wins

These are things Tulsa can do with very little investment.

1. Make the Open Tulsa site easier to locate. The link appears on the City of Tulsa landing page in small letters at the bottom of the page. Making the link more prominent will help users find it more easily.
2. Make data labels easy to understand and add a short description of the dataset.

3. Conduct an awareness campaign. Send press releases as information is added to the site and its functionality improved.
4. Establish a process to proactively add more of Tulsa's datasets to Open Tulsa. The Attachment to this report lists useful data identified by the Urban Data Pioneers team. This can be added over time by Data Stewards.
5. Establish a way for people to request data. Add a fillable form to the Open Tulsa site to allow employees and the public to suggest data to be added to the site.
6. Add links to external data sites. When datasets not owned by Tulsa are requested, external links to the source could be added to Open Tulsa.

Longer Term Improvements

These improvements are recommended over the longer term since they will require establishing policy or a more significant investment of time and money.

1. Establish a data request architecture and user fees. The team's observations are described in Exhibit 2.
2. Improve the website. Open Tulsa can be improved by adopting user-friendly improvements such as those on the Analyze Boston site. In Exhibit 3, the team has provided information about an open source repository on Data.Gov, an open data site managed by the U.S. General Services Administration, Technology Transformation Service. This open source has potential to be used to improve Open Tulsa.
3. Establish a way for users to quickly determine if a dataset will be useful. Add links that allow users to preview the dataset and filter it, so they can decide if datasets are what they want before downloading it. Make API available for users who need data for coding.
4. Track number of times datasets are viewed. This information will allow users to start with datasets others find useful.

The Ultimate Solution

The team suggests consideration of establishing an open data authority. Here are some reasons an authority makes sense:

- Interest in and funding for open data varies based on the priorities established by each elected administration. The City of Tulsa does not have a fee structure or other dedicated funding source for open data. An authority with its own purpose and funding is more likely to last beyond an administration.

- There are interested non-profit organizations and other stakeholders who would help manage the extractions, transformations, and loading of good quality data if an authority was established to manage data. These organizations would be more likely to provide support if they had a seat at the table and could trust the long-term efficacy of this authority.
- The City of Tulsa, Tulsa County and other governments would be more likely to provide their data if they had a seat at the table and could trust the data would be used for the benefit of the community.
- Making a single authority to provide data for governments, non-profit organizations and the public would eliminate much duplication of effort, resulting in less time spent searching for data and more time to make better data-driven decisions.

This authority could be created following the provisions of Title V in Tulsa’s ordinances. This is how authorities such as Tulsa Airport Authority, Tulsa Utility Board and Tulsa Park and Recreation Board were created. Example excerpts from Title V can be found at Exhibit 4. Some factors in the authority’s creation include:

- Board members – City of Tulsa and non-profit board seats would be nominated by the Mayor and approved by the Council. Other participating organizations would create their own processes for filling their board seats. Board members would have multi-year terms with staggered expiration dates, so no Mayor could change the board composition quickly.
- Funding - Funding would come from donations to the authority, user fees and budgets provided by participating entities.
- Staff - The staff/contractors would include data analysts, technical writers, web designers, and other professionals who would maintain the data, websites and APIs that allow connection to the data.

Conclusion

Data are becoming one of the most valuable assets any organization owns. Data can only be valuable when it is complete, clean, timely, accessible, and available. When valuable data are made accessible, stakeholders can partner with one another on mutual efforts to benefit the community. Data.Gov expresses this idea best:

“Opening government data increases citizen participation in government, creates opportunities for economic development, and informs decision making in both the private and public sectors.”

Exhibit 1 – A Comparison of Cities

Open Tulsa – Other Category Page

The screenshot shows the City of Tulsa Open Data portal. At the top, there is a search bar and navigation tabs for 'All', 'Data', 'Documents', and 'Apps & Maps'. Below the search bar, there are filters for 'Content Type' (Document Link, Feature Layer, PDF, Web Mapping Application), 'Tags', and 'Last Updated'. The search results show three datasets, all of type 'Document Link' and published on July 23, 2020. The first dataset is 'Public Water and Sewer Lucity WDS WtrQual Hist', the second is 'Public Parks and Recreation RecPro FacilityUsage', and the third is 'Public Parks and Recreation RecPro ActivityParticipation'. Each dataset entry includes a document icon, a title, the City of Tulsa GIS logo, and a 'Tags: Open Data Non GIS Data' label.

Analyze Boston - Datasets Page

The screenshot shows the Analyze Boston Datasets page. At the top, there is a search bar with the text 'Search datasets...' and a search icon. Below the search bar, there is a navigation menu with 'ORGANIZATIONS' and 'TOPICS'. The search results show 251 datasets found, ordered by relevance. The first dataset is 'Certified Business Directory', which is a PDF, CSV, and HTML file. The second dataset is 'Moving Truck Permits', which is an HTML and CSV file. The third dataset is 'Street Sweeping Schedules', which is a CSV file. Each dataset entry includes a document icon, a title, a description, the modification date, total views, and file format tags.

Exhibit 2 – Data Request Architecture

There could be three different models for Open Data Website operation. The three models have different dataset request procedures which may require varied degrees of involvement for website maintenance and may take different legal risks regarding data quality and personal information de-identification. Fees may be applied based on the level of effort required for the request.

Model 1 - No registration required

Open to everyone, for both browsing and downloading.

The website is basically a starting point for further search. Links to other websites or databases are provided without further processing. There is no place to send a dataset request. Since the maintenance relies on volunteers, the website cannot update its contents to reflect people's search requests on a timely basis. But as more entities join in providing datasets or links, the website grows.

Pros—Very limited maintenance needs; with proper disclaimer provided, will bear very low legal risks.

Cons—Cannot reflect data needs on a timely basis; without enough time invested, the website may grow relatively slower.

Model 2 - A quick registration required if requesting a new dataset. Browsing does not require registration but requesting dataset does.

A simple form with basic questions will be completed, which may include contact information, purpose of data use and descriptions of data needs. Requests will be fulfilled only for data available in the database. This model requires some level of personal involvement, therefore may be maintained by a team of about three. The team may help search the requested data in the maintained database and provide links if found, without data cleansing or preparation. If the data is not in the database yet, may notify the requester but not spend time shopping for the request.

Pros—Limited maintenance needs; interaction with researchers, which may keep the website prospering and responsive; the information gathered from researchers may also help data shopping process.

Cons—Need some personal involvement; no income but have costs; taking some certain legal risks for the data provided.

Model 3 - A detailed registration required if request for a new dataset. Browsing does not require registration but requesting dataset does.

A detailed form will be completed when applying for a dataset; personal scrutiny required; fees may apply. A form with questions may include contact information, organization, purpose of data use, expected date, descriptions of data needs. A team may maintain the website and respond to the requests. The team may check the request forms for categorization purpose, may contact the requester for clarification questions, may help contact organization with the data and may charge for data de-identification or preparation.

- Pros—The interaction with researchers may help make the website a life cycle with timely responses, which may foster a community and benefit more people. With a dedicated team, the database maintenance and data shopping work would be more professional.
- Cons—Financial support needed; may take more legal risks for the data provided.

Exhibit 3 – Team Observation About Website Design

The team observed in the Data.gov website, (<https://www.data.gov/open-gov/>), there is a link to an online repository (<https://resources.data.gov/>) of tools, best practices, and schema standards to “facilitate the adoption of open data practices across the Federal Government.”

The website was built with open source software (<https://github.com/GSA/datagov-deploy>). It also emphasizes that “Anyone, especially local, state, and foreign governments are welcome to borrow the code behind Data.gov.”

The open source repository seems comprehensive:

- It has a progress tracker and playbook
- It includes the site components of the Open data website; catalog (the search page); inventory (possible connected to internal database); and project open data dashboard for visualization.
- It is mainly python based.

Exhibit 4 – Example citations from Title V

Example of Authority funding sources:

Section 1.8. - Airport funds.

The Tulsa Airport Authority shall operate any and all airports as a separate utility and **may accept funds from any source** for or in aid of the acquisition, operation, maintenance, development, and improvement of the airports and air navigation facilities of the city. All such funds and all income and revenue derived from the operation of airports and airport facilities and from property acquired for airport purposes shall be deposited with the City Treasurer to the credit of the Airport Fund and shall be paid out only upon the order of the Tulsa Airport Authority; provided, that nothing herein shall be deemed to prohibit compliance with requirements made prior or subsequent to the effective date of this amended Charter for airport bond retirement purposes. No funds shall be paid out of the Airport Fund and no funds shall be paid from accounts now or hereafter created from the proceeds of the sale of bonds for airport purposes except on warrants signed by the Chairman or Vice Chairman of the Tulsa Airport Authority and countersigned by the Mayor.

Example of authority board member restrictions:

Section 2.2. - Qualifications.

Each appointed member of the Tulsa Utility Board shall be a qualified elector of the city. Not more than three (3) of the appointed members of the Tulsa Utility Board shall be members of or affiliated with the same political party. Appointed members of the Tulsa Utility Board shall not hold or be candidates for an elective public office.

Attachment - Suggested Datasets

The Urban Data Pioneers team suggests these datasets be added to Open Tulsa or a link to the data be added to the Open Tulsa site.

Data Source Where did you see or hear about this data set	Dataset Description
City of Tulsa	City of Tulsa workforce by demographics, sex and race. Summary data; high importance
City of Tulsa	WorkAdvance participation by demographics and geography
City of Tulsa	Representation on city's authorities, boards, and commissions by demographics
City of Tulsa	Dead end flush
City of Tulsa	Evictions filed by demographics and geography; high importance
City of Tulsa	Meth labs; current data
City of Tulsa	City of Tulsa Gallup survey results; summary data; high importance
City of Tulsa	Bike lanes by geography
City of Tulsa	Sidewalks by geography and condition; high importance
City of Tulsa	Business Licenses issued by type, date, and geography
City of Tulsa	City of Tulsa Ordinances
City of Tulsa	City of Tulsa Tow List
City of Tulsa	Current Bid Opportunities
City of Tulsa	Survey results
City of Tulsa - Customer Care	Customer care cases
City of Tulsa - Customer Care	Kana - Historical 311 case information and location
City of Tulsa - Finance/Mayor's Office of Economic Development	Registered Business Locations Business Licensing This dataset includes the locations of businesses that pay taxes to the City and County of Tulsa.
City of Tulsa - Finance/Mayor's Office of Economic Development	Mobile Vendor/Outdoor Seller License Mobile Food Facility Permits including name of vendor, location, type of food sold and status of permit. Mobile Food Facility Permit Schedule
City of Tulsa - Information Technology	Dataset Alerts - Open and Monitoring Service Desk Plus A log of dataset alerts open, monitored or resolved on the open data portal. Alerts can include issues as well as deprecation or discontinuation notices.

<p style="text-align: center;">Data Source</p> <p style="text-align: center;">Where did you see or hear about this data set</p>	<p style="text-align: center;">Dataset Description</p>
City of Tulsa - Streets and Stormwater	Street Names - Dremio A list of officially valid street names contained in the City's GIS Basemap
City of Tulsa - Fire	Tulsa Fire Dispatch; high importance
City of Tulsa - Fire Department	Fire Incidents - Fire Calls-For-Service includes all fire units responses to calls. Each record includes the call number, incident number, address, unit identifier, call type, and disposition. All relevant time intervals are also included.
City of Tulsa - Police	911 calls by type and geography
City of Tulsa - Police	Arrests by charge, demographics and geography; high importance
City of Tulsa - Police	Searches by reason, demographics, geography, and outcome; high importance
City of Tulsa - Police	Stops by reason, demographics, geography, and outcome; high importance
City of Tulsa - Police	Use of force incidents (including all incidents from low level to use of deadly weapon) by reason, demographics (of officer and subject), geography, and outcome
City of Tulsa - Police	Tulsa Police Wanted
City of Tulsa - Police	Tulsa Police Warrants
City of Tulsa - Working in Neighborhoods	Animal bites
City of Tulsa - Working in Neighborhoods	Animal welfare intakes
City of Tulsa - Working in Neighborhoods	Nuisances
City of Tulsa - Working in Neighborhoods	Neighborhood and homeowner associations by geography
City of Tulsa - Water and Sewer	Utilities monthly cut reports by geography (including turn On and turn OFF by area); high importance
City of Tulsa - Water and Sewer	Active Waterline Breaks; link to database; high importance
Tulsa Transit	Bus routes and bus stops
Tulsa Health Department https://tulsa-health.org/food-safety/restaurant-inspections/results-inspections	Restaurant Scores - Tulsa Health Department inspection report and scoring system based on inspector's observations of health code violations
City of Tulsa, Tulsa County	City Assessor
Tulsa County	Sheriff's Office workforce by demographics, sex and race; summary data
Tulsa County	Sheriff's Office arrests by charge, demographics and geography
Tulsa County	Sheriff's Office searches by reason, demographics, geography, and outcome
Tulsa County	Sheriff's Office stops by reason, demographics, geography, and outcome

Data Source Where did you see or hear about this data set	Dataset Description
Tulsa County	Sheriff Office's use of force incidents (including all incidents from low level to use of deadly weapon) by reason, demographics (of officer and subject), geography, and outcome
Regional Chamber of Commerce	Commerce data & Report
https://findaschool.tulsaschools.org/	Find a school - Help parents find the proper schools for their children
Tulsa Public Schools	Arrests by charge, demographics and geography
Tulsa Public Schools	Searches by reason, demographics, geography, and outcome
Tulsa Public Schools	Use of force incidents (including all incidents from low level to use of deadly weapon) by reason, demographics (of officer and subject), geography, and outcome
https://www.trailink.com/city/tulsa-ok-trails/	Trail use & maps
https://www.okcommerce.gov/doing-business/#data-reports	Tulsa Commerce Department data - Published reports like: '2020 Fortune 500 Report,' 'Ecosystem Profiles,' 'Census'
https://www.health.state.ok.us/index.shtml	OK2SHARE Vital Statistics: Birth; Death; ITOP; Infant DeathHospital and ASC Discharges: Inpatient Discharges; ASC and Outpatient SurgeriesHealth Surveys: BRFSS; YRBSSHealth Registries: Birth Defects; Cancer; STD; Injury
https://oklaschools.com/	School report card
INCOG	Food deserts by geography
OK State Dept. of Health	Health Surveys
OK State Dept. of Health	Hospital and ASC Discharges
OK State Dept. of Health	Vital Statistics
US Bureau of Labor Statistics https://www.bls.gov/data/	Inflation & Prices
US Bureau of Labor Statistics	Employment Projections
US Bureau of Labor Statistics	Unemployment
US Bureau of Labor Statistics	Pay & Benefits
City of Boston	
Analyze Boston	City employee earnings record; 48,227 downloads reported
Analyze Boston	Crime incidents report; 32,155 downloads reported
Analyze Boston	Approved building permits; 27,388 downloads reported
Analyze Boston	Food establishment inspections; 6,047 downloads reported
Analyze Boston	Code violations; 5,103 downloads reported

<p style="text-align: center;">Data Source</p> <p style="text-align: center;">Where did you see or hear about this data set</p>	<p style="text-align: center;">Dataset Description</p>
Analyze Boston	Economic indicators; 5,001 downloads reported
Analyze Boston	City checkbook explorer; 2,956 downloads reported
<p>City of Los Angeles</p>	
https://data.lacity.org/	Market value tool displaying current value of property. Also set up with alerts which could be texted or emailed to users who sign up with a user name.
https://data.lacity.org/	Population of the City
https://data.lacity.org/	Resilience exploration options - Map of data with health clinic access %'s, police station service, fire station service, size of the city in square miles, population, median household income, diversity of population, % of renters, poverty %, population of foreign born individuals, details about leadership and engagement, disaster preparedness and recovery, economic security, Climate Adaptation.
https://data.lacity.org/	Demographic explorer - Provides at risk populations, commute profiles, employment overview, general demographics, and health care and insurance.
https://data.lacity.org/	Area for ongoing initiatives - Completed road work
https://data.lacity.org/	Street index - Grading system of every street
https://data.lacity.org/	Social vulnerability index - Mapped data about a community's vulnerability to natural or man made disasters.
https://data.lacity.org/	Internet and Computer access mapped data
https://data.lacity.org/	Health and Wellness - COVID stats
https://data.lacity.org/	Administration and Finance - City financial and administration data
https://data.lacity.org/	Arts and Culture - City arts and culture data
https://data.lacity.org/	Housing and Real Estate - Housing program data
https://data.lacity.org/	Parks and Recreation - Information on city parks and recreation centers with geography, amenities and condition
https://data.lacity.org/	Public safety data
https://data.lacity.org/	City infrastructure and service requests data
https://data.lacity.org/	Sanitation - Data on street cleanings and various other things
https://data.lacity.org/	Explore the GeoHub - Browse the geospatial data
https://data.lacity.org/	Street Wize - Current large construction projects/repairs interactive list with alerts which could be texted or emailed to users who sign up with a user name. Maybe allowing registered users to post any new construction projects/repairs not listed or indicated on the platform real time.

Data Source Where did you see or hear about this data set	Dataset Description
https://data.lacity.org/	School ratings and background - School information and alerts for users who sign up
https://data.lacity.org/	Employment tool - Employment rates of the city and surrounding area and alerts for users who sign up
https://data.lacity.org/	Tool for Real Estate Developers - Determine areas where grant funding is available to improve homes, offer rental assistance and rehab projects. Stats about grant distributions by demographics and geography, and alerts for users who sign up
https://data.lacity.org/	Offer information - Down payment assistance information and alerts for user who sign up
City of Las Vegas	
City of Las Vegas open data website	Purchasing Contracts - Monthly-updated list of purchasing contracts awarded to businesses
City of Las Vegas open data website	Zoning - Parcel zoning information
City of Las Vegas open data website	Parking in City of Las Vegas - Parking rates and number of spaces in various lots
City of Las Vegas open data website	Pedestrian Safety - Traffic incidents involving pedestrians
City of Las Vegas open data website	Census Data by Ward (also organized by tract in another data set) - Robust neighborhood demographic data
City of Las Vegas open data website	ADA Right of Way Sidewalk Improvements - Number of sidewalk repairs made for individuals with disabilities
City of Las Vegas open data website	Stable Housing - Number of clients served by city-funded providers who were stably housed within 12 months
City of Las Vegas open data website	Various education data sets - Kindergarten readiness, chronic absenteeism, literacy growth rates
City of San Francisco	
https://data.sfgov.org/City-Infrastructure/311-Cases/vw6y-z8j6	311 Cases - What and where people are making requests
https://data.sfgov.org/Public-Safety/Police-Department-Incident-Reports-Historical-2003/tmnf-yvry	Police Department Incident Reports - Activity by type and location
https://data.sfgov.org/Public-Safety/Police-Department-Calls-for-Service/hz9m-tj6z	Police Department Calls for Service - Calls by type and location
https://data.sfgov.org/City-Infrastructure/Street-Tree-List/tkzw-k3nq	Street Tree List - View public trees, which are a major driver of property values
https://data.sfgov.org/Health-and-Social-Services/Restaurant-Scores-LIVES-Standard/pyih-qa8i	Restaurant Scores - Health department scores for restaurants
https://transbase.sfgov.org/dashboard/dashboard.php#	TransBase - Traffic collision data to identify high collision and fatality corridors