



Using the Spatial Equity Data Tool API for More Efficient and Effective Equity Analysis

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Using the Spatial Equity Data Tool API for More Efficient and Effective Equity Analysis

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Agenda

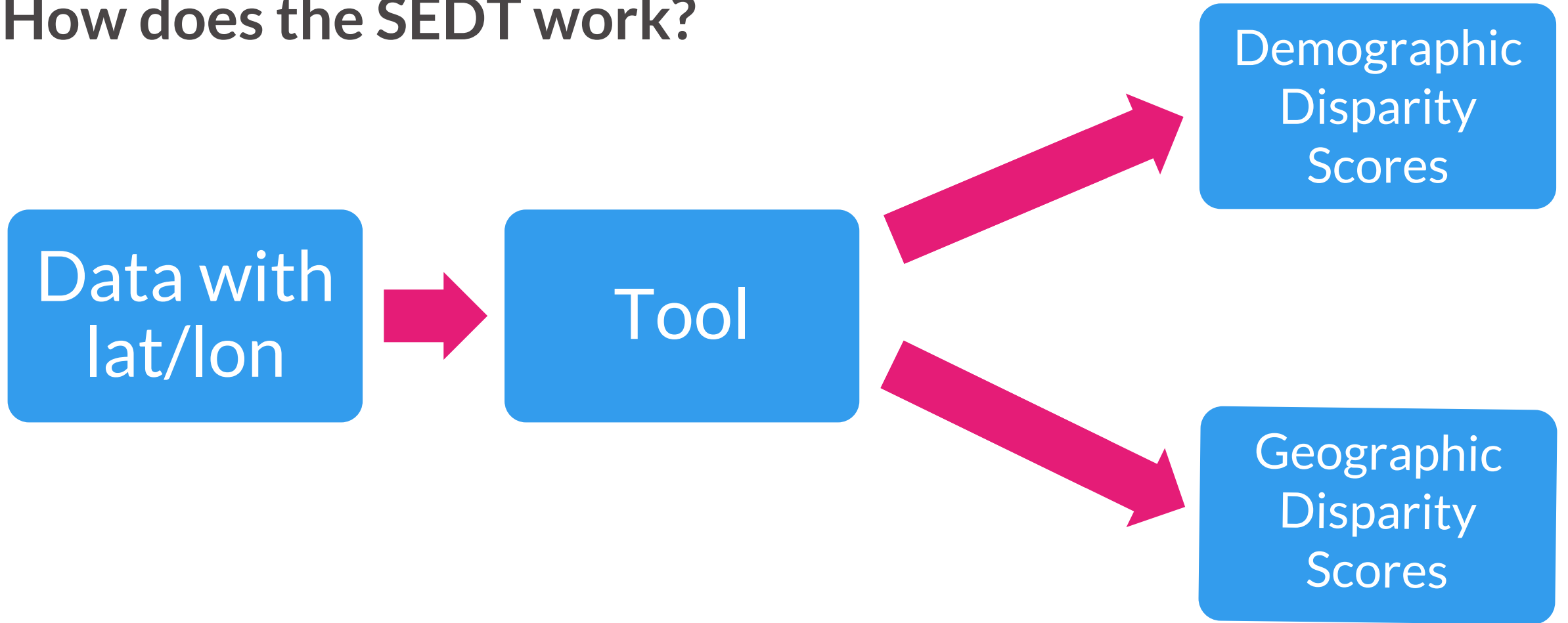
- Welcome
- Spatial Equity Data Tool API purpose and features
- Los Angeles Pilot Tool: MADE tool
- Panel
- Audience Q&A
- Closing

Housekeeping

- Event is being recorded and the recording will be posted online afterward.
- Hide captions or adjust settings with the Live Transcript button.
- Speaker biographies are available on the Events page at Urban.org.
- Participants are muted. Type your **questions** and **comments** into the Q&A box.
- Please complete the survey at the end of the event.
- Engage with us online using #LiveAtUrban.

About the SEDT API

How does the SEDT work?



Demographic distribution of your data compared with the total population in the city



Notes: Demographic categories for Asian, Black, White, and all other races and ethnicities include Latinx and non-Latinx residents, unless noted otherwise. When using "children under 18" as a baseline, the "uninsured" category includes 18-year-olds (i.e., children under 19).

Data: New Orleans 311 Call Requests (2014-2018), Total Population Baseline

What does it do? Demographic Disparity Score

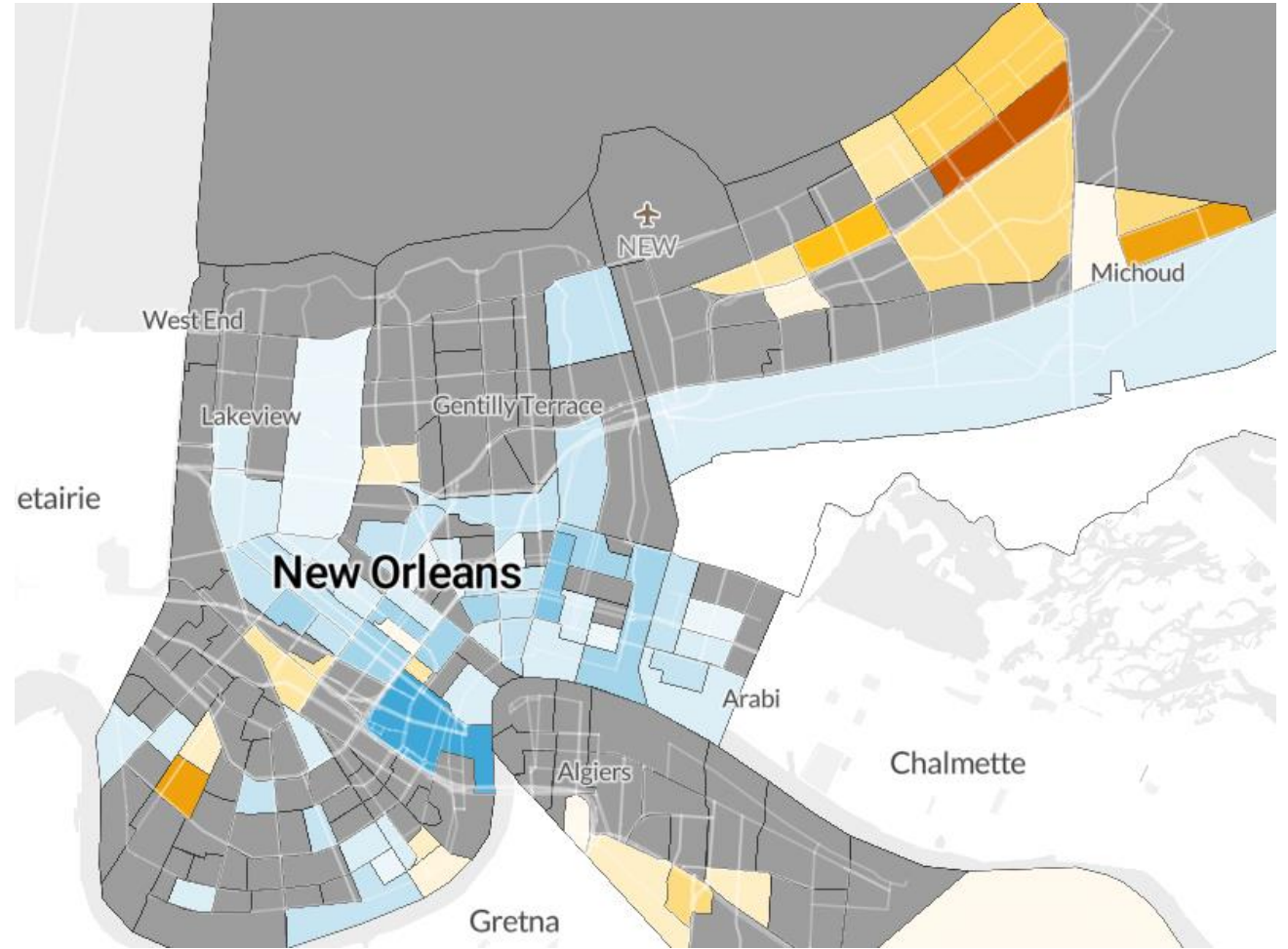
What does it do? Geographic Disparity Score

Disparity Score

-1.1% -0.8% -0.5% -0.3% 0.0% 0.3% 0.6% 0.8% 1.1%



No significant difference



Data: New Orleans 311 Call Requests (2014-2018), Total Population Baseline

How might you use the tool?

- Measure equity in allocation of place-based programs (e.g. playgrounds, bus shelters, libraries)
- Examine representativeness of program participants relative to target population
- Identify areas for future investment (e.g. identify underserved communities and areas)
- Inform department priorities and measure progress towards equity goals

Why we created an API

Motivation for our Application Programming Interface

- Embed the SEDT within their own tools and data workflows
- Incorporate advanced analytical features
- Completely free and open source!

How might you use the API?

- Build custom dashboards or tools that integrate with the Spatial Equity Data Tool through API
- Incorporate Spatial Equity Data Tool into open data portals
- Programmatically interact with Spatial Equity Data Tool with user-friendly tools
 - Automate repeated analyses
 - Analyze change-over-time data

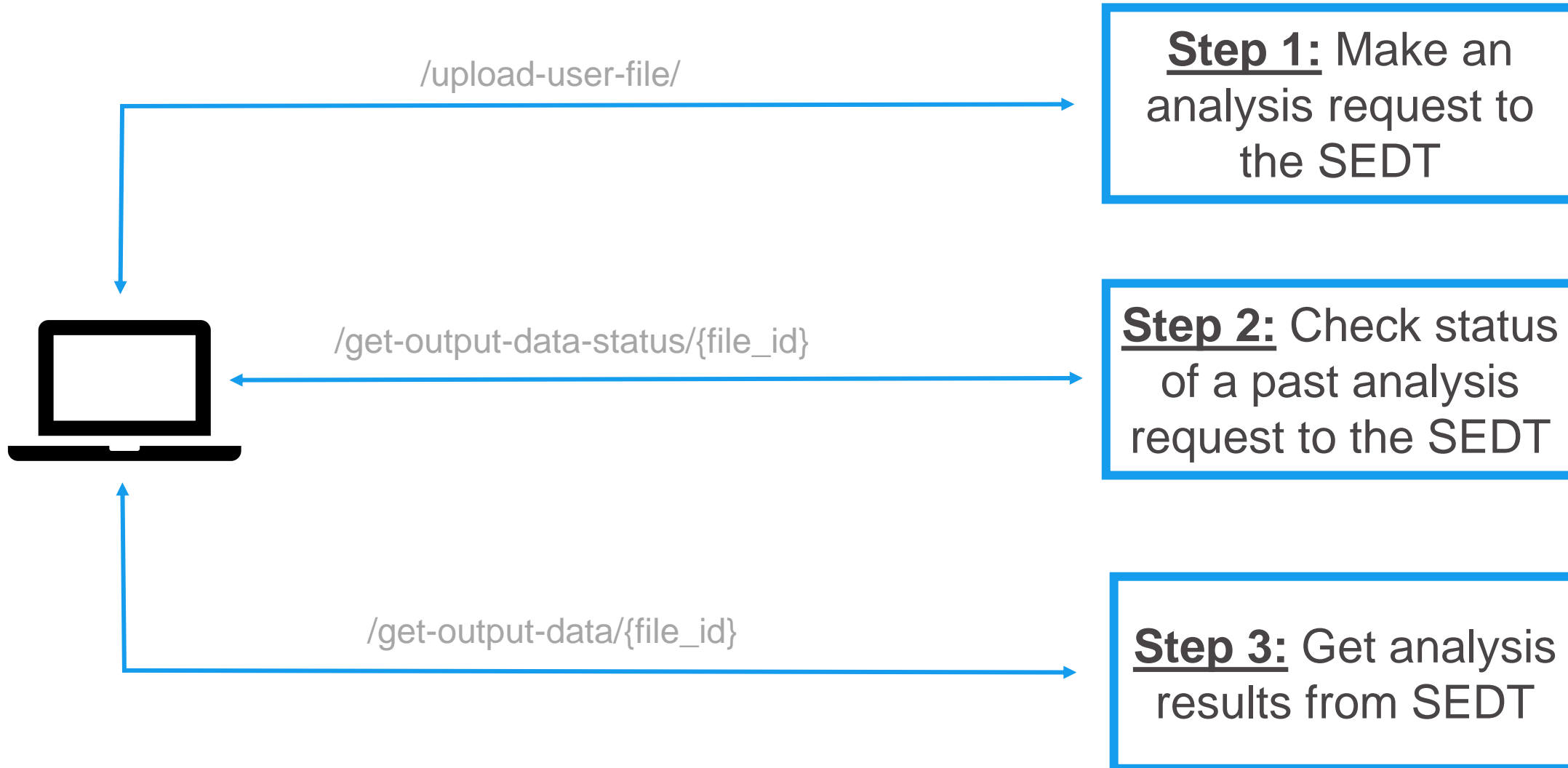
What is an API?

1. API = Application Programming Interface

What is an API?

1. API = Application Programming Interface
2. The API enables users to programmatically interact with the SEDT through URLs called "endpoints"

How does the SEDT API work?

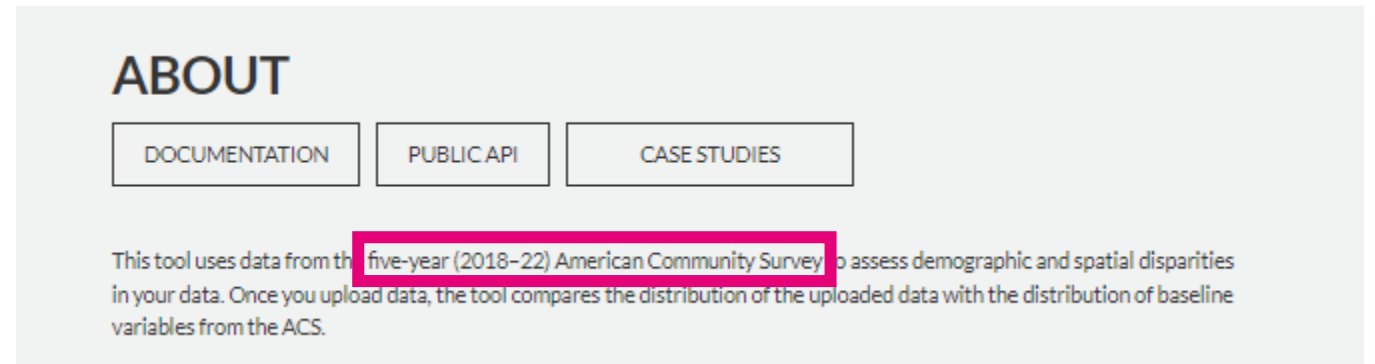


*Want to learn more?
Read our [Data @ Urban](#) post!*

New Analysis Features

New Feature: Updated Built-in Comparison Data

- Website:
 - Updated!
 - 2018-2022 5-year ACS
- API:
 - 2015 – 2019 5-year ACS
 - 2017 – 2021 5-year ACS
 - 2018 – 2022 5-year ACS

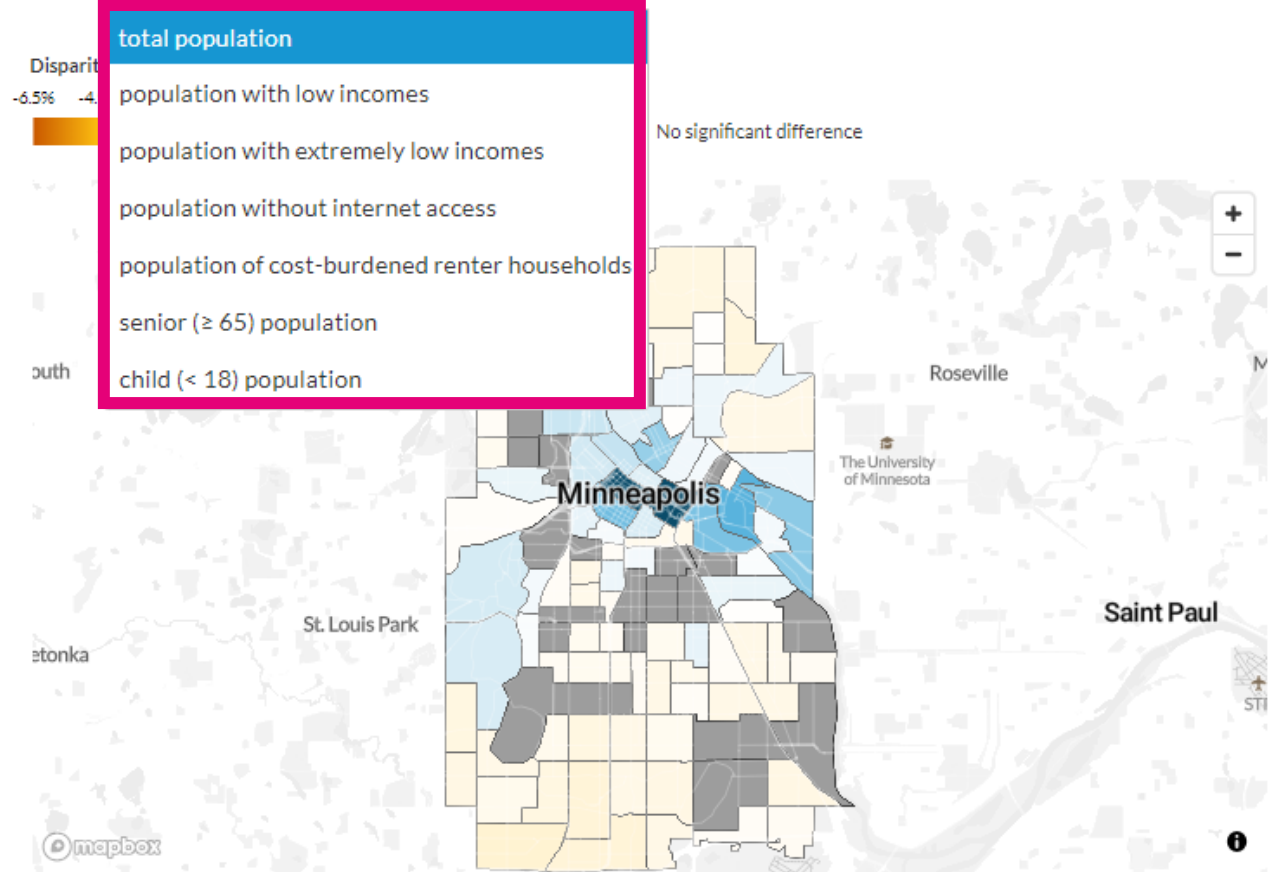


New Feature: Supplemental Comparison Data



Geographic distribution of your data compared with the **total population** ^ in the city

- Disparity Score**
See which census tracts are over- and underrepresented in your data ?
- Data comparison**
See your data side by side with the total population in the city



Download map image (PNG)

Download map data

Screenshot from Spatial Equity Data Tool [website's](#) Minneapolis Bike Share Example Analysis

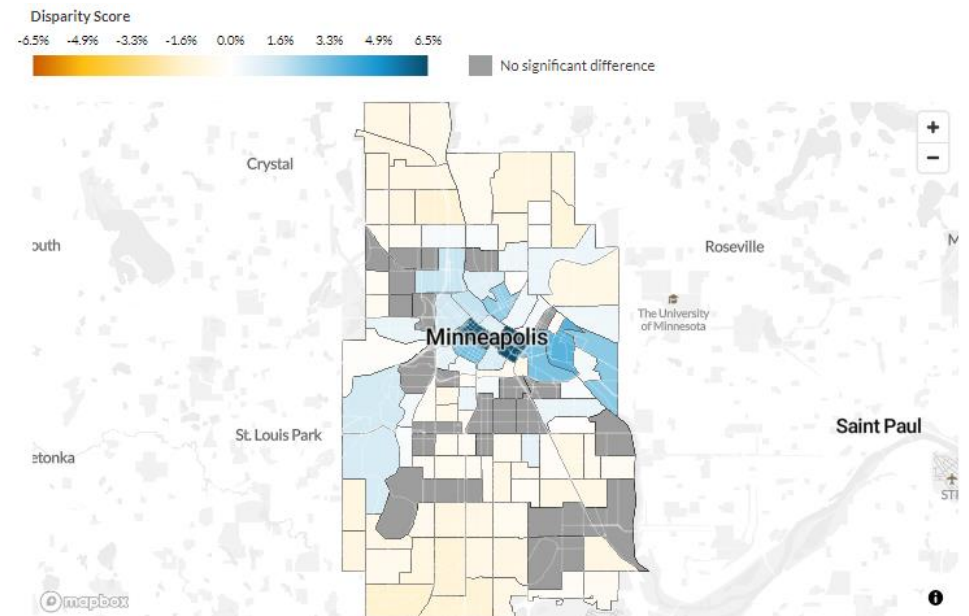
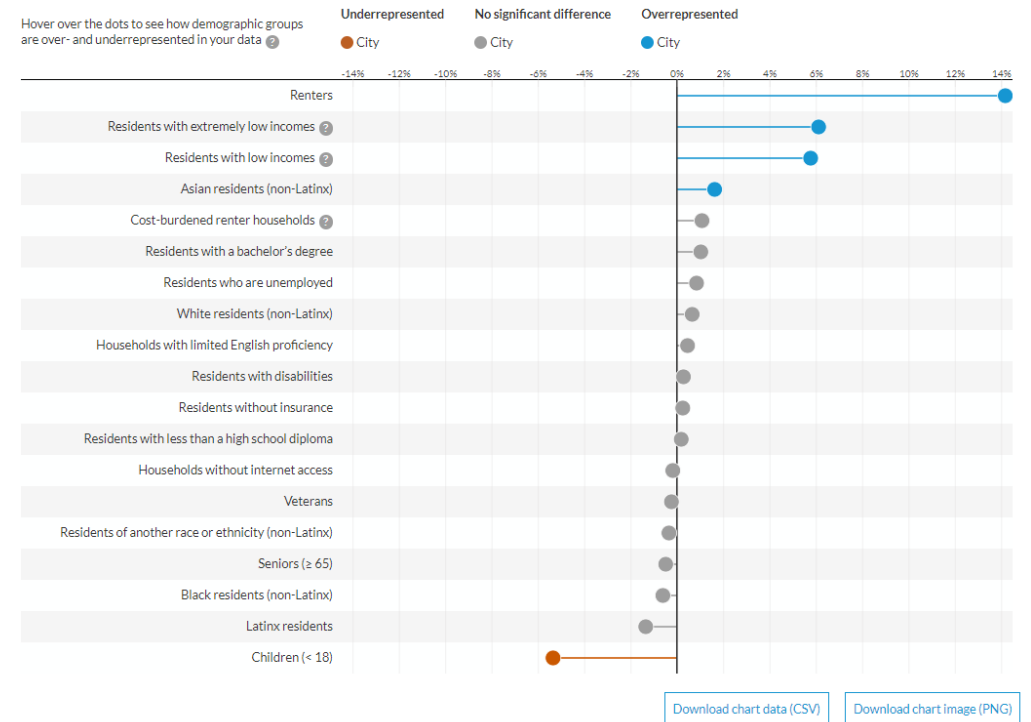
How to use the API

sedtR R package

- Functions calling each of the API's three endpoints
- Wrapper function

sedtR R package

- Functions calling each of the API's three endpoints
- Wrapper function
- Functions to create visualizations similar to those on the web tool



Public Documentation

Spatial Equity Data Tool Documentation



- 1 Introduction
- 2 Overview of the Spatial Equity Data Tool
- 3 Spatial Equity Data Tool Algorithm
- 4 Comparison Data
- 5 Selecting a Geography
- 6 Resource Datasets
- 7 Using Advanced Options
- 8 Interpreting the Results
- 9 How to Use the Website Tool
- 10 How to Use the API**
- 11 Custom Geographic and Demographic Datasets

Spatial Equity Data Tool Documentation

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1 Introduction

The Urban Institute's [Spatial Equity Data Tool \(SEDT\)](#) enables users to upload their own data and quickly assess whether the construction, improvement, and implementation of place-based programs and resources are equitably distributed across neighborhoods and demographic groups.

There are two ways for users to interact with the SEDT:

1. Through the **web tool**, by visiting the [SEDT website](#) and uploading data through the website's interface (see [Chapter 9](#) for more on the web tool).
2. Through the **application programming interface (API)**, by writing code to programmatically upload data to the API and process the analysis results (see [Chapter 10](#) for more on the API).

Open to Collaborations!

- We are always available to collaborate with interested users
- Reach out to if you're interested in using the API, have questions, or want to give feedback:
 - sedt@urban.org

City of Los Angeles,
Measure of Access, Disparity, and Equity (MADE) Tool

Measuring Equity



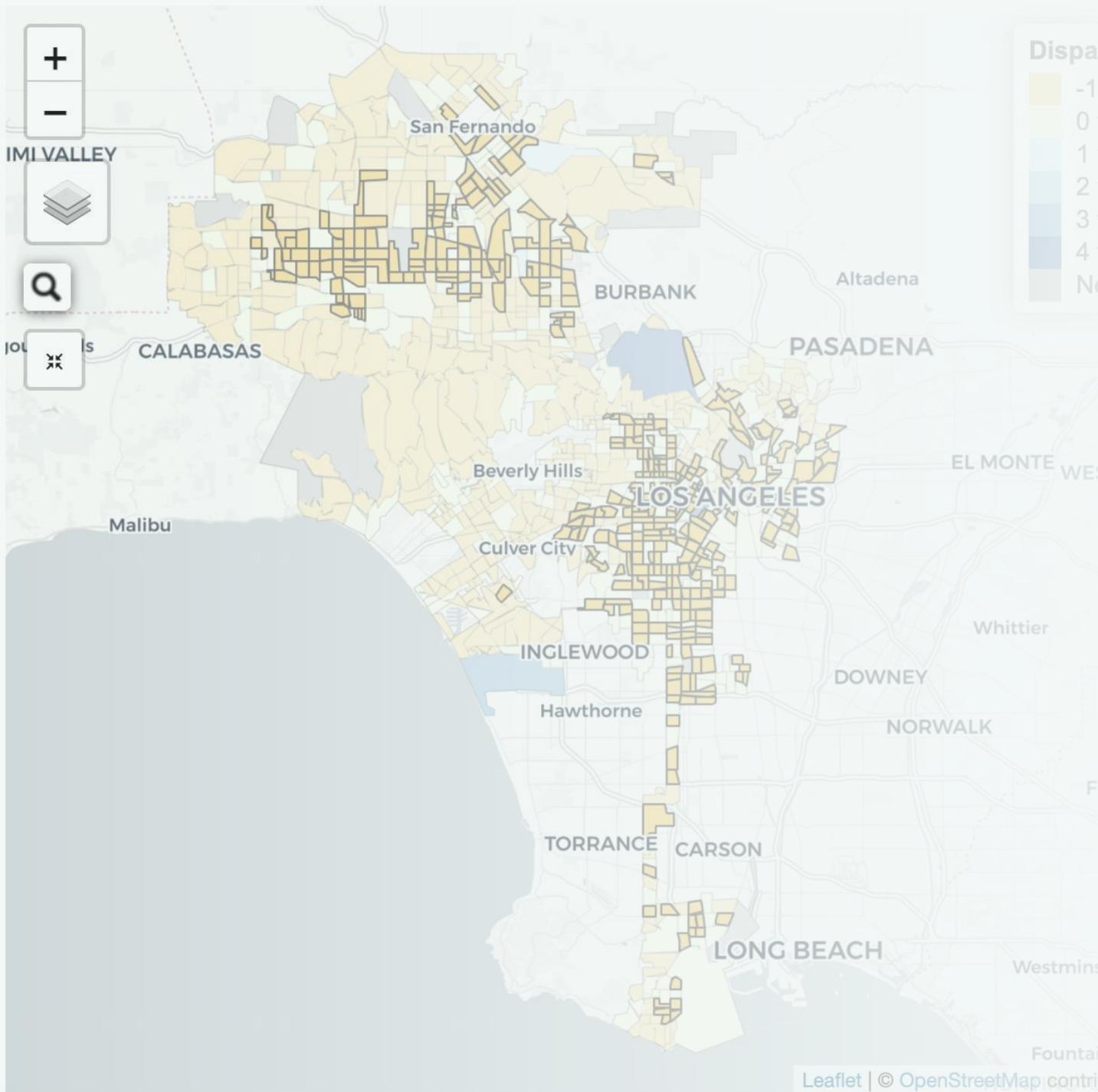
Presentation by the CAO's Equity, Performance
Management and Innovation Group

Office of the City Administrative Officer

Provide **recommendations** to the Mayor and City Council on the **fiscal condition**, **financial status**, and **future needs** of the City to promote productivity, economy, and efficiency in the conduct of City government so that **available resources provide the greatest benefit possible to the residents** of the City of Los Angeles.

Equity, Performance Management & Innovation Division:

Use **innovation**, **performance management**, and data tools with an **equity lens** to recommend **improvements** in the City's policies and practices



Measure of Access, Disparity, and Equity (MADE)

City Council directed our office to create an **Equity Index** in 2021

MADE is designed to make the equity index **actionable** and useful for the City's Budget Process and other policy development.

Developed partnership with Urban Institute to build a custom tool using Urban's API and the City's Equity Index



We aimed to answer these questions

- Do all Angelenos – regardless of income or neighborhood conditions – have **equitable access** to a specific resource
- Where should a new piece of infrastructure be located to **increase access** for communities who need it the most?
- If a program is most useful for specific communities, are we **targeting resources effectively**?

MADE Equity Tool Components

Use of Urban Institute's API

Compares resource allocation to selected population(s) to calculate any existing disparities of access to or the allocation of city services and resources

Highlights under and over-representation

LA City MADE Tool

Overlays City Equity Index to assist with prioritization or planning

Allows for customized analysis and tables

Tool Bar Navigation

Customization following data upload

Baseline Population
Select comparison population group for geographic disparity analysis.

Total Population ▲

- Total Population
- Children
- Cost Burdened Renter Households
- Population without Internet Access

Focus on tracts that are:

- Underrepresented
- Overrepresented

Low Equity Threshold
Move the marker to highlight all census tracts at or above that value. Learn more about the LA Equity Index [here](#).

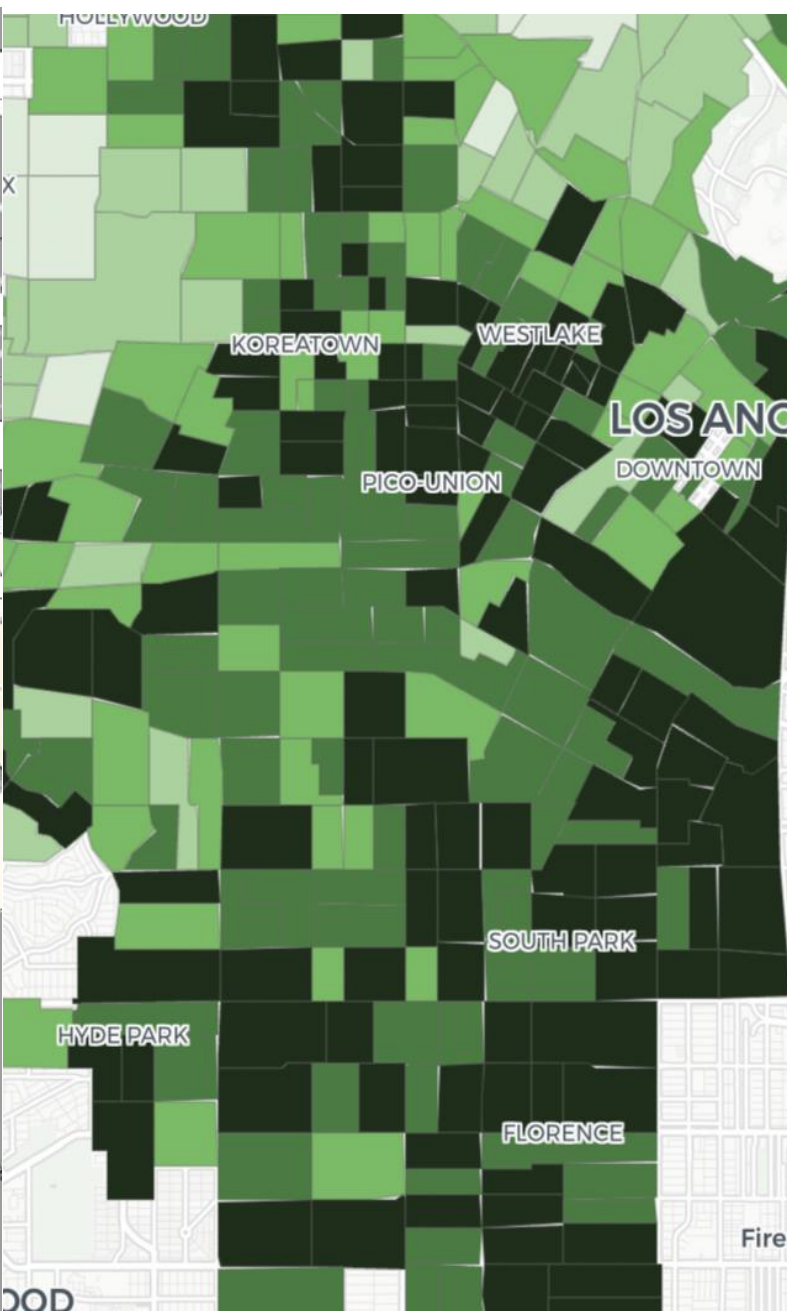
0 5 10

Columns to include in table

Equity Index Score, Dis ▼

Malibu

- Equity Index Score ✓
- Disparity Score ✓
- Neighborhood(s) ✓
- Num Cost Burdened Renter Hh
- Num Children
- Num HS Diploma
- Num Labor Force
- Num more than 30 Min Commute
- Num No Internet
- Num Peole in State Prison
- Num Population ✓
- Num Renter Extreme Rent Burden
- Num Seniors



INTERPRETING THE TOOL

Users can also export and use this **customizable table** to further understand census tracts that may benefit from further investment.

This table combines the API results with our LA Equity Index and selected census data.

Show entries Search:

| Equity Index Score | Disparity Score | Neighborhood(s) | Num Po |
|--------------------|-----------------|-----------------------------------|--------|
| 9.82680036463081 | -0.2 | North Hills, Panorama City | |
| 6.61804922515953 | -0.1 | Tujunga | |
| 6.12579762989973 | -0.1 | Tujunga | |
| 8.87876025524157 | -0.1 | Lake View Terrace, Pacoima | |
| 6.02552415679125 | -0.1 | Pacoima | |
| 5.76116681859617 | -0.1 | Hansen Dam, Pacoima | |
| 5.68824065633546 | -0.1 | Arleta, Pacoima | |
| 5.15041020966272 | -0.1 | Sylmar | |
| 9.51686417502279 | -0.1 | Granada Hills, North Hills | |
| 6.85505925250684 | -0.1 | Canoga Park, Chatsworth, Winnetka | |

Showing 1 to 10 of 128 entries Previous 1 2 3 4 5 ... 13 Ne

Next Steps



Incorporate Budget Processes

- Encourage use of MADE tool in budget submissions
- Create greater literacy around the tool



Train Departments

- Cleaning and uploading data
- Interpreting results
- Using data to inform actions



Continuous Improvements

- User Survey & Feedback
- Experiment with linear & polygon data
- Work on integration with other city data platforms

Closing

Coming Soon

- Resource library
 - Case studies
 - Extended code samples
 - Guidance documentation
- New distance-based access measures

Next Steps

1. Check out the API documentation to get started:
 - https://ui-research.github.io/sedt_documentation/api_documentation.html
2. Reach out to let us know how you're interested in using the API, to ask questions, or give feedback:
 - sedt@urban.org
3. Keep an eye out for email updates!

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Appendix

Geographic Disparity Score Example:

| | Tract A | Tract B |
|-----------------------|---------|---------|
| Population | 20 | 25 |
| Number of Data Points | 10 | 10 |

Geographic Disparity Score = Prop. Data – Prop. Population

$$\text{Geographic Disparity Score Tract A: } \frac{10}{(10+10)} - \frac{20}{(20+25)} = 0.0556 = 5.556\%$$

$$\text{Geographic Disparity Score Tract B: } \frac{10}{(10+10)} - \frac{25}{(20+25)} = -0.0556 = -5.556\%$$

Demographic Disparity Score Example:

