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?

Data with lat/lon → Tool → Demographic Disparity Scores, Geographic Disparity Scores
What does it do?

Demographic Disparity Score

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

Underrepresented | No significant difference | Overrepresented
City | City | City

White residents (non-Latinx)
Residents with a bachelor's degree
Seniors (≥ 65)
Cost-burdened renter households
Latinx residents
Residents of another race or ethnicity (non-Latinx)
Residents who are unemployed
Residents without insurance
Residents with disabilities
Veterans
Households with limited English proficiency
Households without internet access
Residents with less than a high school diploma
Asian residents (non-Latinx)
Residents with extremely low incomes
Children (< 18)
Residents with low incomes
Renters
Black residents (non-Latinx)

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 19-year-olds (i.e., children under 19).

Data: New Orleans 311 Call Requests (2014-2018), Total Population Baseline
What does it do?
Geographic Disparity Score

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?

**Step 1:** Make an analysis request to the SEDT

**Step 2:** Check status of a past analysis request to the SEDT

**Step 3:** Get analysis results from SEDT
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

Screenshot from Spatial Equity Data Tool website.
New Feature: Supplemental Comparison 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
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.
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

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](#).

Columns to include in table:
- 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 People in State Prison
- Num Population
- Num Renter Extreme Rent Burden
- Num Renter
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.
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](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:

<table>
<thead>
<tr>
<th></th>
<th>Tract A</th>
<th>Tract B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Number of Data Points</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Geographic Disparity Score = Prop. Data – Prop. Population

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

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

\[ \sum \text{All counties} \times 50\% \text{ white} - \text{Data implied percentage of white residents} \]