The Smart Location Calculator

Interagency Sustainability Working Group
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Overview

• EPA’s Smart Location Database
• Smart Location Calculator introduction and demo
• SLC application for GSA
• Q&A
Introduction to the Smart Location Database

- Density
- Diversity
- Design of Street Network
- Destination Accessibility
- Distance to Transit

Image sources: Lincoln Land Institute’s “Visualizing Density” and Victor Dover
Introduction to the Smart Location Database

• **EPA’s Smart Location Database (SLD)**
  - Nationwide geographic data resource including more than 90 attributes summarizing characteristics such as diversity of land use, neighborhood design, destination accessibility, employment, and demographics.

• Data sources include American Community Survey, NAVTEQ streets, Longitudinal Employment Household Dataset

• Find more information about the SLD, including interactive mapping, data downloads and user guide at [http://www2.epa.gov/smartgrowth/smart-location-mapping#SLD](http://www2.epa.gov/smartgrowth/smart-location-mapping#SLD)
SLD Application

- Federal government application
  - EPA Walkability Index
  - Smart Location Calculator
  - Access to Jobs via Transit

- External research
  - Housing affordability, access to jobs and services, transportation analysis
  - AARP Livability Index
  - Plus more...
Background to the Smart Location Calculator

• Much like energy efficiency, location efficiency reduces resource demands while fostering a healthier, more sustainable built environment and providing equitable access to government jobs and services.

• Location-efficient commercial facilities are generally:
  • Accessible via multiple transportation options, including public transit and active transportation;
  • Centrally-located within their “commute shed” or region so as to maximize accessibility and minimize travel distances for employees and other users; and
  • Integrated within a mixed-use environment that offers easy access to services and destinations.
SLC Research Questions

• What measures of location efficiency would enable us to compare facility locations relative to each other – ie put numbers to the policy?

• How can we fill the gap where there has been little research into the effect of the built environment around workplace locations?

• How can we estimate worker vehicle miles traveled (VMT) and greenhouse gas emissions (GHG) associated with that travel?
SLC Model: Data Source

- Model estimates how urban form characteristics of workplace block groups (from SLD) impact worker VMT generation when traveling to/from workplace block groups

- **Worker commute data comes from 2009 National Household Travel Survey**
  - Worker characteristics (income, gender, etc.)
  - Whether a trip generated VMT, and if so, how much
SLC Model: Modelling Process

1. Likelihood of worker to generate VMT
2. Amount of VMT generated
3. Average VMT per worker
The block group scores are categorized using the following scale:

- 90-100 = Excellent
- 80-89 = Very good
- 70-79 = Good
- 60-69 = Fair
- 40-59 = Low
- <40 = Very low
SLC Demonstration

https://www.slc.gsa.gov/slc
SLC Demonstration

Smart Location Calculator
Measuring the environmental benefits of workplace location efficiency

Where do you work?

Business address:

Navigate to the application

Enter facility address
SLC Demonstration

Smart Location Calculator
Measuring the environmental benefits of workplace location efficiency

801 I St, Sacramento, California, USA
Employees: 100
Male: 50%
Distance to nearest transit stop: 0.05 miles
Distance to rail: 0.00 miles

Use average block group distance to transit values

93
Score: 100

Layers & Legend
- Show Regional Boundaries
- Show Blockgroup Scores
- No legend
SLC Demonstration
• User-entered data
• Distance to transit
• ¼ mile buffer
  • Tool adjusts for edge effects
  • Variables impacted: residential and employment densities, network variables (links), transit density, access, land use mix
SLC Application for GSA

- GSA National Blueprint Measure
- Lease Acquisition Planning
- Local Portfolio Planning
Testing and Feedback

- Questions
- Use case scenarios
- Enhancements
- Methodology critique

https://www.slc.gsa.gov/slc

Email slc@gsa.gov
Questions

Ruth E. Kroeger
GSA Urban Development Program
ruth.kroeger@gsa.gov
(202) 208-3288