

The Smart Location Calculator – T-EUI

Green Building Advisory Committee

November 17, 2016

Introduction to the Smart Location Database



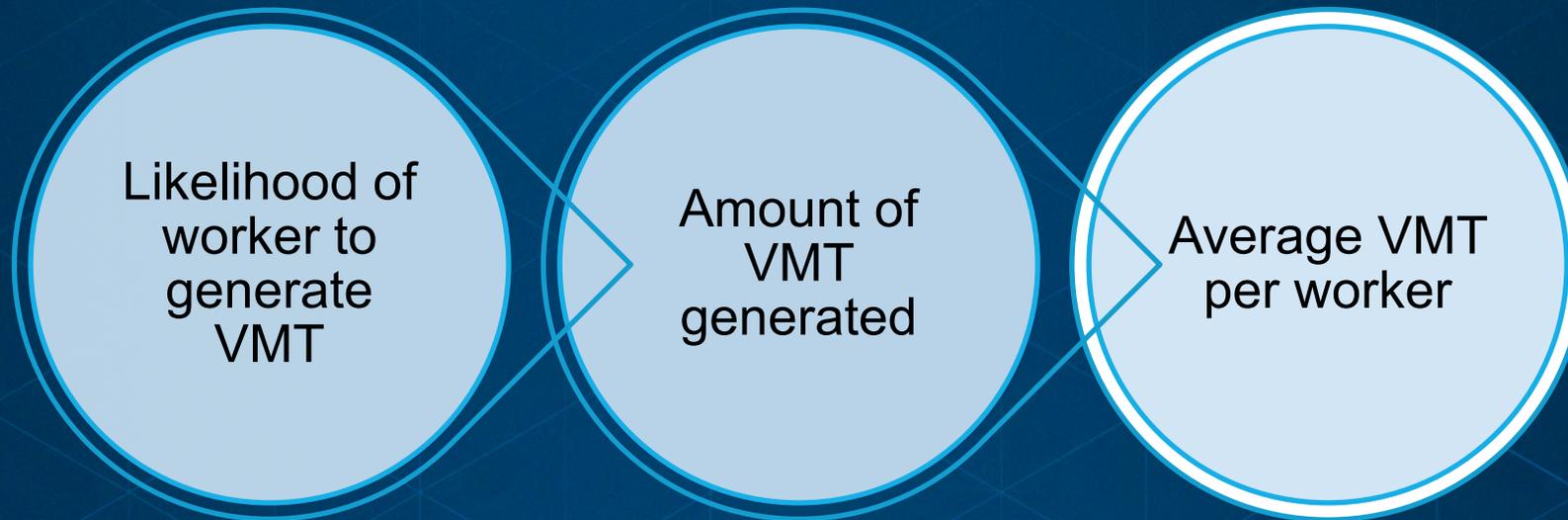
- Density
- Diversity
- Design of Street Network
- Destination Accessibility
- Distance to Transit



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.
 - SLD dependent upon many data sources, including American Community Survey, NAVTEQ streets, Longitudinal Employment Household Dataset, plus more
 - Find more information about the SLD, including interactive mapping, data downloads and user guide at <http://www2.epa.gov/smartgrowth/smart-location-mapping#SLD>

SLC Model: Modelling Process



SLC Results

- The block group scores are categorized using the following scale:

90-100 = Excellent



80-89 = Very good



70-79 = Good



60-69 = Fair



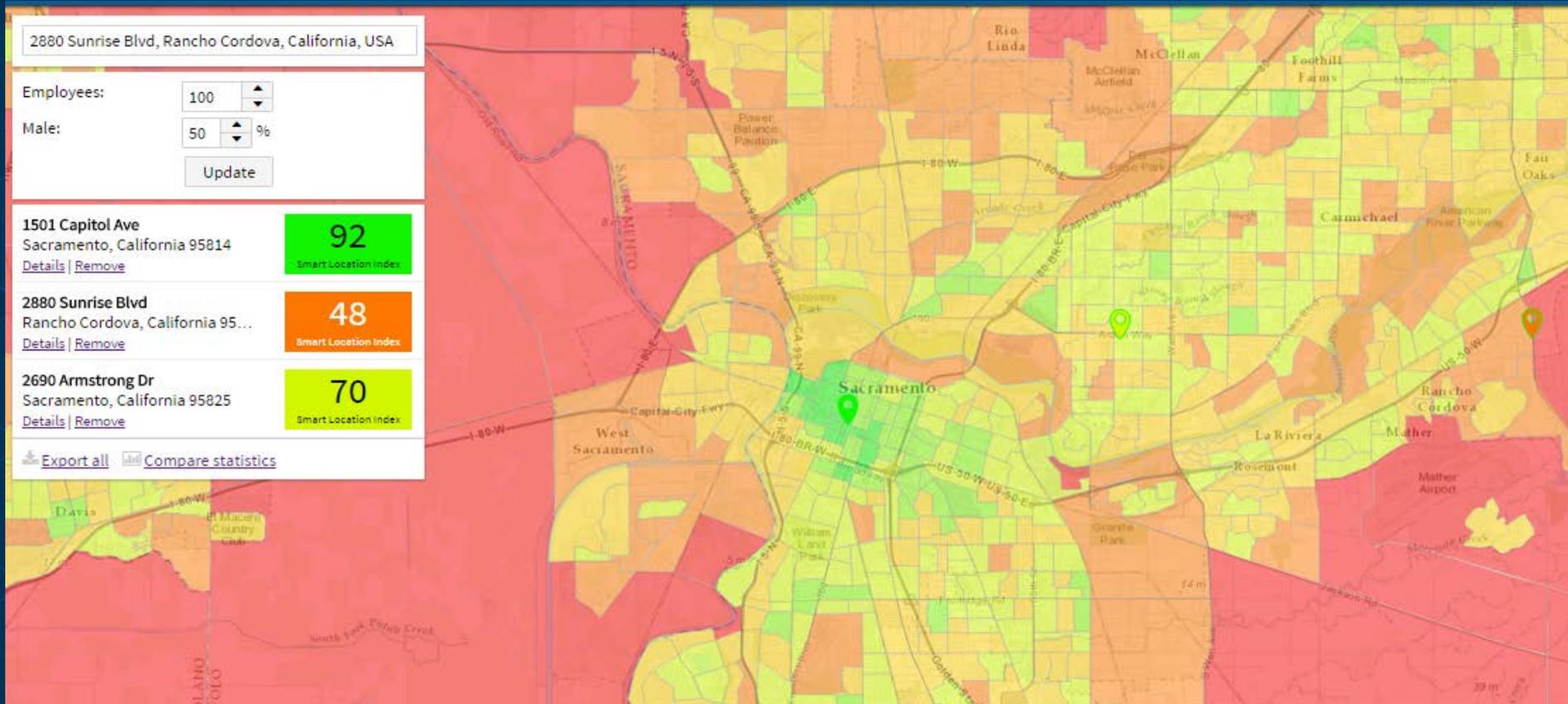
40-59 = Low



<40 = Very low



SLC Demonstration



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

SLC Demonstration

Smart Location Calculator

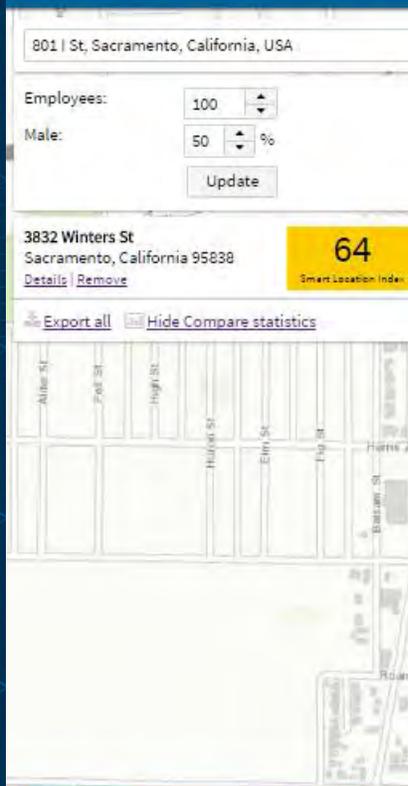
Measuring the environmental benefits of workplace location efficiency

801 I St, Sacramento, California, USA

Employees: 100
Male: 50 %
[Update](#)

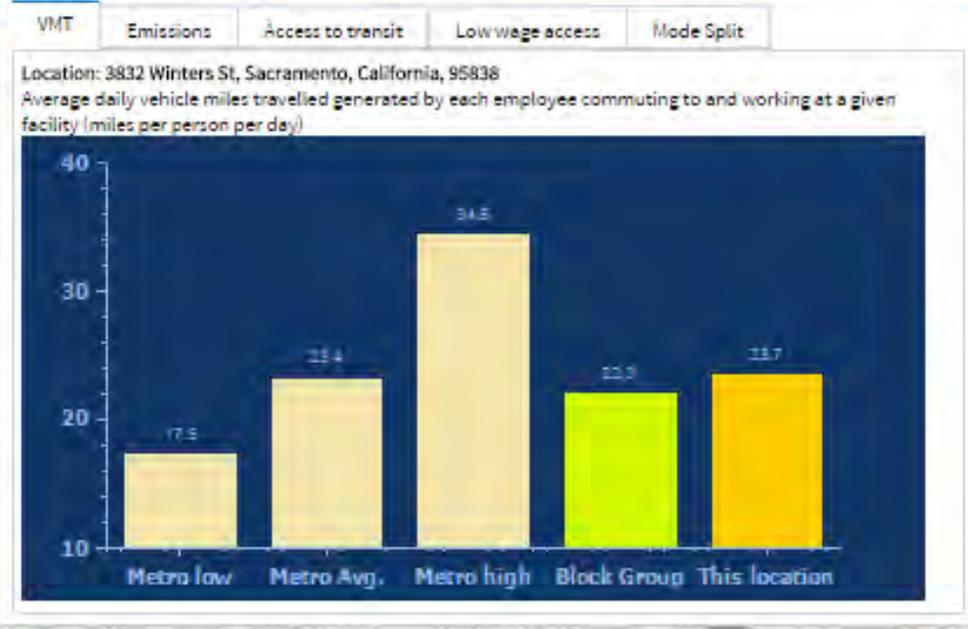
3832 Winters St
Sacramento, California 95838
64 Smart Location Index
[Details](#) [Remove](#)

[Export all](#) [Hide Compare statistics](#)



VMT Emissions Access to transit Low wage access Mode Split

Location: 3832 Winters St, Sacramento, California, 95838
Average daily vehicle miles travelled generated by each employee commuting to and working at a given facility (miles per person per day)



Category	VMT (miles per person per day)
Metro low	17.5
Metro Avg.	23.4
Metro high	34.5
Block Group	22.9
This location	23.7

Layers & Legend
 Show Regional Boundaries
 Show Blockgroup Scores
No legend

How it works: [Background](#) [Data & Methodology](#)

Resources: [Data Download](#) [Research Articles](#) [User Guide](#) [FAQ](#)

Feedback: slc@psa.gov



T-EUI Methodology

- **Challenge: How to translate smart growth considerations into building managers' language?**
- **Concept: Create a version of EUI that covers transportation energy to and from a building**
 - **Aid decision-making: compare actual energy impact of building operations vs. commute**
 - **Apples to apples comparison**
 - **For siting decisions, sufficient to have relative rather than absolute accuracy**

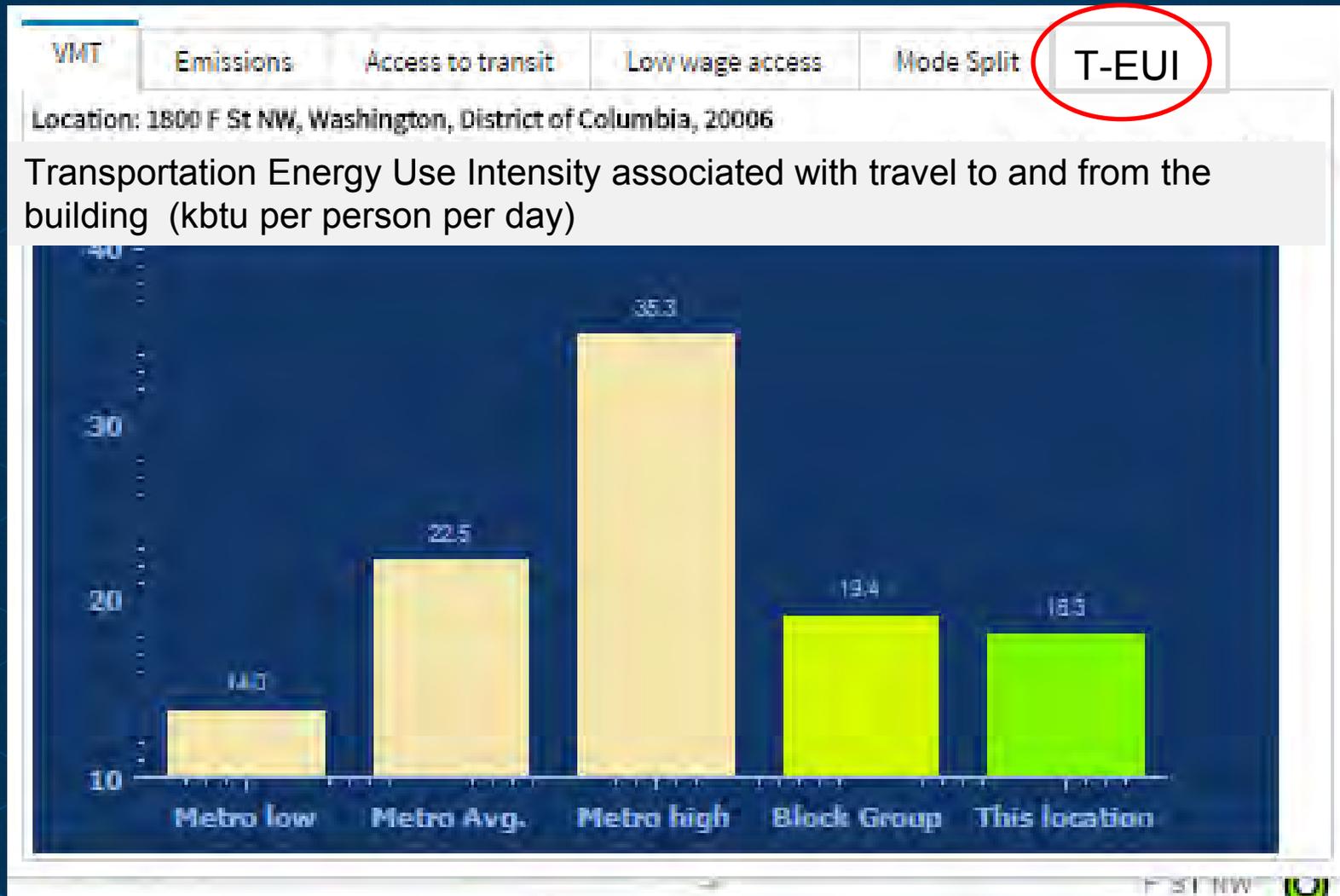
T-EUI Methodology

- **Need estimated vehicle miles travelled (VMT)**
- **Convert VMT to Btu:**

$$\text{BTU per person per day} = \frac{\text{VMT}}{22.1 \text{ mpg}} \times 120,476 \text{ btu}$$

(Based on average mpg & BTU content of gasoline)

Adding T-EUI



Questions

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