CUTR
CENTER for URBAN TRANSPORTATION RESEARCH

National Public Transit Livability Performance Measures

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Recognize Contributors

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Project Background

- Collaborative Research
  - Center for Urban Transportation Research @University of South Florida (CUTR)
  - Oregon Transportation and Research Education Consortium (OTREC)
  - Texas A&M Transportation Institute (TTI)
- Research Roles
  - Define Rural Measures
  - Define Urban Measures
  - Develop National Transit Livability Database and Dashboard

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Project Goals

- Develop **National** Transit Livability Measures
- Inform Stakeholders of livability measures
- Impact Decision makers
  - FTA feedback on outcomes of transit investments
  - Transit Agencies aware of livability outcomes
  - Communities consider livable goals

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Livability Principles

Support Existing Communities	• **Enhance the unique characteristics of all communities** by investing in healthy, safe and walkable neighborhoods, whether rural, urban or suburban.
Value Communities and Neighborhoods	• **Target federal funding toward existing communities** – through transit-oriented and land recycling – to revitalize communities, reduce public works costs, and safeguard rural landscapes
Promote Equitable and Affordable Housing	• **Expand location- and energy-efficient housing choices** for people of all ages, incomes, races and ethnicities to increase mobility and lower the combined cost of housing and transportation

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Livability Principles

Enhance Economic Competitiveness	• **Improve economic competitiveness of neighborhoods** by giving people reliable access to employment centers, educational opportunities, services and other basic needs
Provide more transportation Choices	• **Provide more transportation choices** to decrease household transportation costs, reduce our dependence on oil, improve air quality and promote public health
Coordinate and Leverage Federal Policies and Investment	• **Align federal policies and funding** to remove barriers to collaboration, leverage funding and increase the effectiveness of programs to plan for future growth.

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Research Results

- Development of Transit Livability Measures
  - Urban Measures developed
    - Identification of variables that influence urban ridership
  - Rural Measures developed
    - Identification of measures directly impacted by transit and aligned with 6 livability measures.
- Findings
  - Incomplete Transit Data (fixed route and demand response)
  - BETA dashboard of transit livability

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Challenges

- Index Development based on theoretical idea of Livability
- National Scale
  - Many livability variables and measures are local in nature and not available on a national scale.
- Data Challenges
  - Lots of data (transit, blocks, streets)
  - Lots of analysis (service area buffers)
  - Lots of **HOLES** in transit data

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Challenge- Development of Index

- TTI established straightforward indexing
  - Challenge with no external validity
    - Any model measuring livability is constrained by the reality that there can be no empirical observation of what livability is.
    - Metrics reflect outcomes related to livability principles
  - Not punitive
  - Informative
  - Deciles indexing scale 1-10

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Challenge- National Scale Data

- Reliable data (accuracy and precision) available at local level
- Reasonable alternatives to support development of Index
  - Rural transit service data characteristics
    - Manually collected
  - Land Use and Housing Characteristics
    - LEHD Data for commercial activity, and employment locations
  - Urban Fixed Route Service Characteristics
    - GTFS
    - 80% of transit trips covered by agencies with GTFS data

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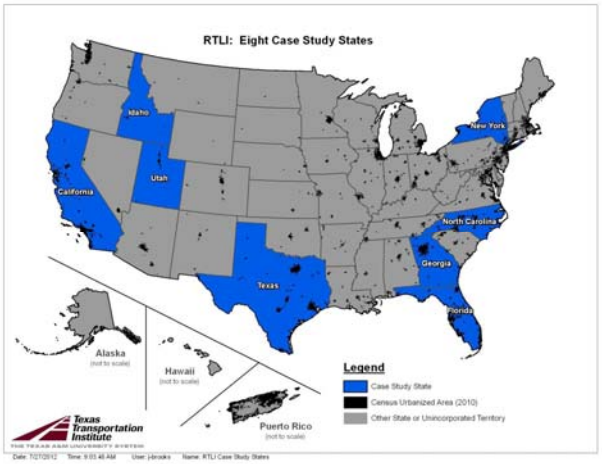
Rural Transit Case Studies



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GTFS Agencies

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Challenges - Data

- Large Data Sets
  - Census Blocks 11,078,297
  - Block Groups 217,740 records
  - Census Tracts 73,057
  - Census Designated Places 19,540
- Analysis
  - Geographic Analysis
  - Service Area Analysis

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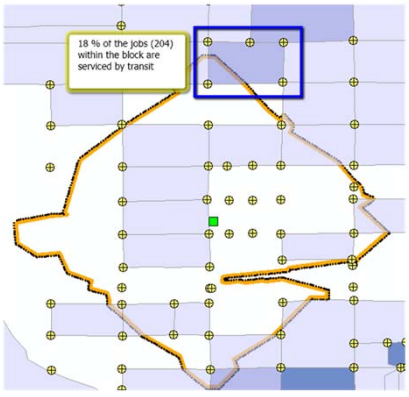
Service Area Analysis



- Total Agencies: 215
- States: 34
- Total stops: 396,643
- Total Routes: 8,821

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Urban Livability Measures

Support Existing Communities	• Percent of Pedestrian Generating Business and Population Served by Transit
Value Communities and Neighborhoods	• Intersection Density at Transit Stops
Promote Equitable and Affordable Housing	• Percent of Multi-Unit Housing Served by Transit

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Urban Livability Measures

Enhance Economic Competitiveness	• Percent of Employment Serviced by Transit
Provide more transportation Choices	• Transit Frequency, the number of times serviced by transit

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Rural Livability Measures

Support Existing Communities	• Unlinked Passenger Trips Per Rural Developed Land
Value Communities and Neighborhoods	• Annual Unlinked Passenger Trips per Transit Needs Population
Promote Equitable and Affordable Housing	• Percent of Household Income Not Spent on Transportation

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Rural Livability Measures

Enhance Economic Competitiveness	• Active Revenue Vehicles per 1,000 Square Miles of Rural Land Area
Provide more transportation Choices	• Percent of Workers that Did Not Drive Alone to Go to Work
Coordinate and Leverage Federal Policies and Investment	• Local Operations Funding per Operating Expense

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Dashboard (Preview)

Choose a location to begin. You can search by the location's name, or browse to the location using a map.

Location:

If there are too many search results, or you don't see what you're looking for, try adding the location's state to your search. (e.g. 'Dallas, TX' or 'Dallas, Texas')

Reset Search

Click the map to select a location. Double click to zoom in for more precision.

http://transitlivability.org/

Searching Features

- Text Search Features
  - Auto complete
  - Full List of Search Results

Location:

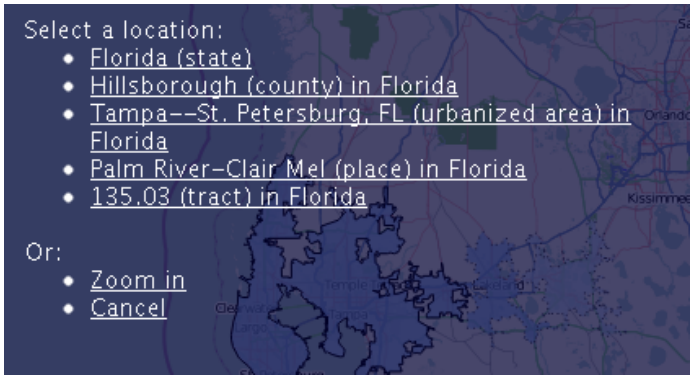
Middle

Reset Search

Middlesex (county in Connecticut)
Middlesex (county in Massachusetts)
Middlesex (county in New Jersey)
Middletown (place in Illinois)
Middletown (place in California)
Middletown (place in Indiana)
New Middletown (place in Indiana)
Middletown (place in Iowa)
Click to see more results.

Dashboard Features

- Drill down mapping feature



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Index "Score"

Tampa (urban place)

This location is scored on a scale of 1 to 10 for each of the six livability principles. For more information about the principles and the data behind the scores, click the title of a principle below.

Principle	Score	State Score
Support Existing Communities	6.7	4.7
Coordinate and Leverage Federal Policies and Investment	No Data	No Data
Value Communities and Neighborhoods	6.1	4.6
Provide More Transportation Choices	6.9	5.5
Enhance Economic Competitiveness	6.6	5.1
Promote Equitable and Affordable Housing	6.8	4.8
Composite Score	**6.6**	**4.9**

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Conclusions

- Several missing pieces
  - National Fixed Route and Demand Response Data
    - Support Livability and Other Federal Initiatives
      - Map21
      - Transportation for the Nation
    - Census Verification of Mode information reported
    - Support the National Household Transportation Survey (NHTS)
      - Assessment of transit availability of respondents
    - National Spatial Data Infrastructure (Federal GIS program)

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