Sustainable Community Performance Measures:

Evaluation and testing in four pilot communities

New Partners for Smart Growth
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SUSTAINABLE COMMUNITY PERFORMANCE MEASURES

Overview of Project

- HUD-DOT-EPA Partnership for Sustainable Communities
  - Six livability principles
  - Developed 17 outcome-based performance measures

- Evaluation of measures
  - Identified national and local level datasets (public and private)
  - Conducted preliminary evaluation of the performance measures

- Testing of measures
  - Produced guidebook for four pilot communities
  - Communities tested measures and provided feedback in workshops
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Performance Measures

- Transit trips per capita
- Workers commuting by transit, bicycle, or foot
- VMT per capita
- New homes built in areas well-served by transit (or near employment centers)
- Affordable homes and rental units well-served by transit (or near employment centers)
- Low income households within a 30 minute transit commute (or 20 minute driving commute) of major employment centers
- Jobs well-served by transit
- Residential units near employment centers
- Homes within walking distance to retail, services, and parks
- Household transportation costs
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Performance Measures (continued)

- New construction accommodated on previously developed land
- Rate of agricultural and natural resource land lost to development
- Shared elements of regional transportation, housing, water and air quality plans tied to local comprehensive land use or capital improvement plans
- Dollars of public sector investment within ½ mile of a well-served transit stop (or within ½ mile of an employment center)
- Dollars of private sector investment within ½ mile of a well-served transit stop (or within ½ mile of an employment center)
- Transportation related emissions per capita
- Non-occupant fatality rate
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Pilot Communities

- Buffalo, NY
- Madison, WI
- New River Valley, VA
- Knoxville, TN
Measure: Vehicle Miles Traveled per Capita

- **Data Elements:**
  - Vehicle Miles Traveled
  - Resident population

- **Geographic Boundary Approach**
  - VMT occurring within a jurisdiction
  - Data sources: FHWA Highway Statistics; travel demand model
  - Challenges: Not indicative of community control in some cases

- **Generated Trips Approach**
  - VMT generated by area residents
  - Data sources: travel demand model; household survey data; odometer/DMV data
  - Challenges: more time consuming to estimate
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**Measure: Vehicle Miles Traveled per Capita**

- **Buffalo, Madison, and NRVPDC:** Used geographic approach only, with data from travel demand model and/or vehicle counts

- **Knoxville:** Used hybrid of geographic and generated trips approach
  - Attempted to account for pass-through traffic using travel model

- **Key observations:**
  - Relatively easy to calculate. But harder to compare over time.
  - VMT is not a clear indicator of sustainability, since many factors affect VMT
  - VMT per driver would better capture the experience of an individual motorist
  - The geographic approach does not lend itself to per capita comparisons at the county level
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Measure: Vehicle Miles Traveled per Capita

TPO Travel Demand Model Pass Thru Traffic

Legend:
- PLANET Region
- County in Travel Model
- Travel Model External Station
- Pass Thru Traffic Flow

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Measure: Percent of existing homes within ½ mile radius of an employment center

Data Elements:

- Location of employment centers
  - Contiguous areas of dense job concentrations
  - Identified in GIS through a multi-step process
  - Data source: Longitudinal Employer-Household Dynamics (LEHD)

- Existing homes within ½ mile radius of employment center
  - Data sources: U.S. Census or ACS
  - Distance Calculation: GIS buffer analysis
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Measure: Percent of existing homes within ½ mile radius of an employment center

- Employment Centers:
  - LEHD incorrectly locates some jobs
  - Knoxville and NRVPDC regions felt that each county should have identified employment centers
  - A single quantitative definition may not serve the needs of all communities

- Residential Units
  - NRVPDC included all units in any part of a block group that are intersected by 1-mile boundary (used ACS data)
    - 61% of all homes in the New River Valley are within a block group within a 1-mile radius of areas identified as employment centers.
  - Knoxville used ACS data but prefers to use permit or assessor data going forward
    - 12.0% of homes in Knoxville region within ½ mile of employment centers
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Measure: Percent of existing homes within 1/4 mile radius of an employment center

Red: Employment centers with > 0.1% of regional employment
Blue: Employment centers > 0.1% county employment
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Measure: Residential Units Near Employment Centers

Main Employment Centers of the New River Valley
Homes within 1-mile Radius of Employment Centers
Measures for Further Development

- **Household transportation costs**
  - Pilot communities wanted more guidance on interpretation of this measure

- **New construction accommodated on previously developed land**
  - Communities hesitant to use land cover data

- **Dollars of public and private investment**
  - No complete datasets were found

- **Homes within walking distance to retail, services, and parks**
  - The function and identification of retail/service centers needs more work
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Other Findings

- Pilot communities emphasized use of their own parcel level datasets, though there are questions about the quality of the data.

- More guidance on appropriate geographic and time scales for calculation and comparison of measures is needed.

- Many workshop participants wanted more discussion around the goals that are inherent in the performance measures, and more assistance in understanding what the results of measures mean about their communities.

- Pilot communities need more time to consider the use of performance measures in decision making.