Welcome to

The Planning Exchange
UNDERSTANDING THE LINKS BETWEEN TRANSPORTATION AND HEALTH: CASE STUDIES FROM THE FIELD

Melissa Taylor

Special thanks to Gresham Smith & Partners for their HIA Assessment Analysis and Cambridge Systematics as contributing author to the Community to Region Framework

Methods for Incorporating Health into Project Selection & Performance Measurement
CHATTANOOGA REGION

- 451,531 people w/ 23% growth over 20 years
- 222,684 jobs w/ 30% growth over 20 years
- 19 jurisdictions (four counties and 15 municipalities)
- 2,110 lane-miles
Health Perspective

**Viewing the Transportation Plan through the lens of public health:**

How can the built environment influence decisions for the Plan process?
“COMMUNITY TO REGION” PERFORMANCE FRAMEWORK

INVESTMENT NEEDS THAT SUPPORT

Within Community

- Local, multimodal connections and access to community resources
- Advance livability and quality of life principles

Community to Region

- Strategic, multimodal connections between communities and regional activity/economic centers to support economic development

Region to Region

- Mobility and intermodal improvements to ensure region is well connected within the state and the nation
- Support economic competitiveness and advance overall economic development potential
<table>
<thead>
<tr>
<th>PM Categories</th>
<th>Project Level Measures</th>
<th>Within Community</th>
<th>Community to Region</th>
<th>Region to Region</th>
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<tbody>
<tr>
<td>System Maintenance</td>
<td>1. Project addresses pavement, bridge deficiency</td>
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<td>Congestion Reduction</td>
<td>2. Project reduces delay</td>
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<td>• Interstate</td>
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<td>Safety and Security</td>
<td>3. Project reduces fatal or serious crashes</td>
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<td>4. Addresses security or emergency response need, provides network redundancy</td>
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<td>Economic Growth/Freight Movement</td>
<td>5. Project reduces delay</td>
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<td>• Intermodal connection</td>
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<td>• Freight corridor/area</td>
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<td>Environmental Sustainability</td>
<td>6. Project reduces VMT</td>
<td>30</td>
<td>20</td>
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<td>7. Promotes safe, nonmotorized access; integrates complete streets</td>
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<td>8. In keeping with community character</td>
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<td>System Reliability</td>
<td>9. Adopted corridor protection plan</td>
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<td>10. Project fills gap in existing system</td>
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<td>11. Improves efficiency through ITS</td>
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<td>Project Delivery</td>
<td>12. Supported by TDOT and local jurisdictions</td>
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Health Impact Assessment

• GIS-based
• Readily available data
• Yields relevant information
Integrating Health into the Plan

**Existing Conditions Analysis**
- Safety emphasis areas
- Livability corridors
- Accessibility analysis
- Bicycle/pedestrian gap analysis
- Transit gap analysis
- H+T affordability analysis

**Project Identification**
- Targeted multimodal investments
- Complete streets upgrades on strategic corridors
- Strategies to reduce vehicle-miles travelled

**Project Evaluation**
- Project improves safety
- Project reduces VMT
- Project promotes multimodal access to community resources
- Project fills gap in multimodal system

**Plan Evaluation**
- VMT per capita
- Air pollution emissions
- Transportation disadvantaged analysis – crashes, emissions, accessibility
- Investment allocations by transportation mode
Proximity is key

Studies show people will walk to destinations:

- 46% will walk 1 mile to church or school.
- 1% will walk 3-4 miles to church or school.
- 35% will walk 1 mile to work.
- 1% will walk 3-4 miles to work.

Centers for Disease Control and Prevention 2012, newpublichealth.org
Three-pronged approach

Proximity to active transportation facilities.

Active transportation facilities that serve health destinations.

Proximity to health destinations.
Active transportation facilities

- Bicycle level of service
- Parks and open space
- Trails
- Transit stops
- Sidewalks
Active Transportation Facilities

- Streets with Bicycle LOS of B or better
- Parks, Recreation and Open Space
- Trails (Hamilton County only)
- CARTA Transit Stops
- MPO Boundary
- County Boundary
- Limited Access
- Highways
Intersection density as a proxy for sidewalks?
Health Destinations

• Healthcare facilities
• Grocery stores
• Farmers markets, community gardens and mobile market sites
• Public and private schools (K-12)
Health Related Destinations

- Healthcare Facilities (Clinics, Hospitals, etc.)
- Grocery Stores
- Farmers Markets, Community Gardens
- Public and Private Schools

Legend:
- MPO Boundary
- County Boundary
- Limited Access
- Highways
"The sovereign invigorator of the body is exercise, and of all the exercises walking is the best." Thomas Jefferson
Access to Parks and Open Space

- **1/4 mile walking access (29% of Homes)**
- **1/2 mile access**
- **1 mile bicycle access (76% of Homes)**
- **> 1 mile access**

- **MPO Boundary**
- **County Boundary**
- **Limited Access**
- **Highways**

Note: Map based on 2010 Census Block Group data
Access to Healthcare Facilities

- 1/4 mile walking access (5% of Homes)
- 1/2 mile access
- 1 mile bicycle access (35% of Homes)
- > 1 mile access

TPO Planning Area

Note: Map based on 2010 Census Block Group data
Access to Grocery Stores

- **1/4 mile walking access (3% of Homes)**
- **1/2 mile access**
- **1 mile bicycle access (40% of Homes)**
- **> 1 mile access**

**Legend**
- MPO Boundary
- County Boundary
- Limited Access
- Highways
Access to Transit Stops

- **1/4 walking access (18% of Homes)**
- **1/2 mile access**
- **1 mile bicycle access (36% of Homes)**
- **> 1 mile access**

- **MPO Boundary**
- **County Boundary**
- **Limited Access**
- **Highways**

TPO Planning Area

Note: Map based on 2010 Census Block Group data
CommunityViz provides the ability to combine multiple layers of data simultaneously.

Composite Active Transportation “score”
Access to Active Transportation Facilities
Composite Score

Lower   Higher
Access to Health-related Destinations
Composite Score

Lower  Higher
The average home in the Chattanooga region is 1.6 miles from the nearest trail, bike route or bus stop.
BUT the average distance from a home to the nearest CARTA transit stop is 3.05 miles
36% of all Health-Related Destinations are within a $\frac{1}{4}$ mile from a CARTA transit stop.
• 60,000 people and 2 grocery stores
• 64 corner stores and gas stations
• 23 fast food chain restaurants
• Neighborhoods of Westside, Alton Park, Orchard Knob, East Chattanooga
Project Ranking

- Process yielded three lists sort-ordered by project score; one for each scale
- Projects were combined into one list based on individual project scores
- Projects were grouped into four tiers ("Rank 1, Rank 2, etc.") based on groupings of scores
Key 2040 RTP Outcomes

- Doubling of system preservation funding levels – fully funded long-term needs
- Doubling of funding for bicycle and pedestrian improvements (includes Complete Streets on roadway projects)
- Strategic roadway and transit capacity expansion improvements
- Identification of two, new major transit capital projects
- Identification of targeted safety and system operations funding set-asides
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