Neighborhood Mobility Audits
Polk County, FL

Tom Deardorff, AICP
Defining the Neighborhood
Preparing the Neighborhood Overview
Evaluating Access to Community Services and Places
Identifying Mobility Improvements
Engaging the Community
Prioritizing, Funding, and Implementing Improvements

Mobility Audit Process
Neighborhood Mobility Audits
Defining the Neighborhood

Adam Purcell, AICP
Defining the Neighborhood

– Difficult to define “Neighborhood”

– Important means of engagement
  • Unit of analysis that public can easily identify
  • Allows for ownership of evaluation effort and recommendations

– Multi-step process
  • Demographic Analysis
  • Analysis of existing land use and other environmental features
  • Refinement based on Technical Advisory Committee knowledge
Identifying the Traditionally Underserved

“Traditionally Underserved”

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

NCHRP Report 710 expands discussion to other populations recognized in other Executive Orders and Title VI legislation including those with limited English proficiency, low-literacy populations, seniors, persons with disabilities.

<table>
<thead>
<tr>
<th>Traditionally Underserved Population Category</th>
<th>2007 – 2011 American Community Survey Dataset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Income</td>
<td>Percentage of Families and People Whose Income in the Past 12 Months is Below the Poverty Level - All People</td>
</tr>
<tr>
<td>Racial Minority</td>
<td>Persons Self-Identifying as American Indian, Asian, Black, Hawaiian/Pacific Islander, Other, or Multiple Races</td>
</tr>
<tr>
<td>Ethnic Minority</td>
<td>Hispanic or Latino and Race – Hispanic or Latino (of any race)</td>
</tr>
</tbody>
</table>
Identifying the Traditionally Underserved

Polk County Percent Non-White

<table>
<thead>
<tr>
<th>Range</th>
<th>Percent Non-White</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1.25 x County Average</td>
<td>20.30-25.38</td>
<td>0.25</td>
</tr>
<tr>
<td>1.25-1.5 x County Average</td>
<td>25.38-30.45</td>
<td>0.5</td>
</tr>
<tr>
<td>1.5-1.75 x County Average</td>
<td>30.45-35.53</td>
<td>0.75</td>
</tr>
<tr>
<td>1.75+ x County Average</td>
<td>35.53+</td>
<td>1</td>
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</tbody>
</table>

Polk County Percent Hispanic

<table>
<thead>
<tr>
<th>Range</th>
<th>Percent Hispanic</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>1-1.25 x County Average</td>
<td>17.2-21.5</td>
<td>0.25</td>
</tr>
<tr>
<td>1.25-1.5 x County Average</td>
<td>21.5-25.8</td>
<td>0.5</td>
</tr>
<tr>
<td>1.5-1.75 x County Average</td>
<td>25.8-30.1</td>
<td>0.75</td>
</tr>
<tr>
<td>1.75+ x County Average</td>
<td>30.1+</td>
<td>1</td>
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</tbody>
</table>

Polk County Percent Below Poverty

<table>
<thead>
<tr>
<th>Range</th>
<th>Percent Low-Income</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1.25 x County Average</td>
<td>16.40-20.50</td>
<td>0.25</td>
</tr>
<tr>
<td>1.25-1.5 x County Average</td>
<td>20.50-24.60</td>
<td>0.5</td>
</tr>
<tr>
<td>1.5-1.75 x County Average</td>
<td>24.60-28.70</td>
<td>0.75</td>
</tr>
<tr>
<td>1.75+ x County Average</td>
<td>28.70+</td>
<td>1</td>
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</tbody>
</table>
Defining the Neighborhood

Local Engagement
Defined Neighborhoods

Refined boundary

- Local knowledge of social connections
- Demographic characteristics
  - Income
  - Race and ethnicity
- Housing characteristics
  - Square-foot value
  - Year built
- Geography/physical features
  - Major roadways
  - Water bodies
  - Shift in land use
Neighborhood Mobility Audits
Preparing the Neighborhood Overview

Adam Purcell, AICP

October 18, 2017
Elements of the Neighborhood Overview

- Location and context of neighborhood
- Description of existing land use and community services and places
- Employment and commute patterns
- Mode of travel
- Demographic characteristics
Description of Community Services and Places

– National Household Travel Survey (NHTS) classifies daily trips by purpose.

– FHWA - Ladders of Opportunity
  • “Essential Services”

– Identify destinations that support daily trips and essential services
  • Shopping, Medical Facilities, Financial Institutions, Government and Social Services, Schools, Daycare Centers, Religious Centers, Parks
Description of Existing Use

Property Appraiser Department of Revenue Code (DOR) information identifies location of existing use
- Parcel-level analysis
- Detailed assessment of current use

Florida Geographic Data Library (FGDL) Geocoded Resources
- Religious Centers
- Government Services
- Park and Recreation Areas
Commuter Flow

- Worker and Resident focus
- Identifies employment and residential centers
- Home-Job balance
- Compared to existing transit routes/service
- Compared to existing bike/ped infrastructure

On the Map Tool - https://onthemap.ces.census.gov/
## US Census - Commute Mode and Demographic Information

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>Polk County</th>
<th></th>
<th>Central Winter Haven Neighborhood</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Percent</td>
<td>Count</td>
<td>Percent</td>
</tr>
<tr>
<td>Population</td>
<td>602,095</td>
<td>N/A</td>
<td>5,588</td>
<td>N/A</td>
</tr>
<tr>
<td>White</td>
<td>452,854</td>
<td>75.2</td>
<td>3,324</td>
<td>59.5</td>
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<tr>
<td>Black or African American</td>
<td>88,833</td>
<td>14.8</td>
<td>1,875</td>
<td>33.6</td>
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<tr>
<td>American Indian and Alaskan Native</td>
<td>2,706</td>
<td>0.4</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Asian</td>
<td>9,760</td>
<td>1.6</td>
<td>286</td>
<td>5.1</td>
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<tr>
<td>Native Hawaiian and Other Pacific Islander</td>
<td>360</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some Other Race</td>
<td>32,847</td>
<td>5.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two or More Races</td>
<td>14,735</td>
<td>2.4</td>
<td></td>
<td></td>
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<tr>
<td>Hispanic or Latino</td>
<td>106,532</td>
<td>17.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 15 and Under</td>
<td>117,125</td>
<td>19.5</td>
<td></td>
<td></td>
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<tr>
<td>Age 18 and Under</td>
<td>141,736</td>
<td>23.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 65 and Over</td>
<td>108,296</td>
<td>18.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited English Proficiency(1)</td>
<td>46,717</td>
<td>8.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing Units with No Vehicle Available</td>
<td>12,990</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median Household Income</td>
<td>44,398</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Commute Mode

- **Drove Alone**: 81.1% (Polk County), 80.5% (Central Winter Haven)
- **Carpooled**: 11.4% (Polk County), 9.4% (Central Winter Haven)
- **Public Transportation**: 0.5% (Polk County), 0.1% (Central Winter Haven)
- **Walked**: 1.1% (Polk County), 4.2% (Central Winter Haven)
- **Other means**: 2.7% (Polk County), 2.6% (Central Winter Haven)
- **Worked at home**: 3.2% (Polk County), 3.2% (Central Winter Haven)
Evaluation of Access – Infrastructure & Safety

- Infrastructure/facilities inventory for walking, biking, & transit use
  - Sidewalks
  - Bike Lanes/Trails
  - Transit Routes & Stops

- Pedestrian & Bicycle Crashes

- Comparison of factors to each other & to location of community services
Evaluation of Access – Indices

– Mobility Opportunities:
  • Walking Access Index
  • Biking Access Index
  • Transit Connectivity Index

– Mobility Constraints:
  • Gaps Index
  • Barriers Index

– Mobility Index
Evaluation of Access – Walking & Biking Access Indices

– Apply quarter-mile square

– Account for trip distance to services:
  • Walking: Quarter-Mile
  • Biking: One Mile

– Measure walking & biking potential through:
  • Connectivity of Streets
  • Dwelling Unit (DU) Density
  • Diversity of Land Uses

– High score = High # of intersections, DUs, & services within distance
Evaluation of Access – Transit Connectivity Index

– Measure potential to access services through location, intensity, & frequency of transit service

– Apply quarter-mile buffer to routes

– Apply quarter-mile square

\[
\text{TCI} = \frac{\text{(Route Buffer Intersecting Quarter-Mile Square)} \times \text{(Total Weekly Transit Trips)}}{\text{Total Quarter-Mile Square Area}}
\]

Note: Route Buffer = quarter-mile buffer around fixed bus route (square miles)
Total Weekly Transit Trips = sum of weekly transit trips by route that pass within quarter-mile square

– High score = High transit coverage
Evaluation of Access – Gaps Index

– Assess presence of sidewalk gaps (field review/desktop analysis)
– Subtract linear feet of sidewalk from roadway linear feet = gap
– Divide linear feet of sidewalk gap into linear feet of roadway = % of roadway network with no sidewalks per quarter-mile square
– High score = no sidewalk
Sidewalk Gap
Evaluation of Access – Barriers Index

– Apply quarter-mile square
– Assess presence of features that may hinder potential to walk or bike:
  • Roadway with 4+ lanes or 45+ mph
  • Railroad line
  • Waterway (rivers, streams, & canals)
– High score = low # of barriers
Barriers

- Multi-lane Road
  - > 45 mph
- Railroad Track
- Water Body
Evaluation of Access – Mobility Index

– Identify overall level of mobility through compilation of Indices

Mobility Index = Potential Access – Gaps – Barriers

– Result: Prioritize neighborhoods for transportation investments
Neighborhood Mobility Audits
Identifying Mobility Improvements

Lauren Brooks, AICP
Identifying Improvements

– Review & map improvements of existing plans:
  • Comprehensive Plans
  • Polk TPO 2035 Mobility Vision Plan
  • Polk County My Ride

– Compare improvements of plans to indices, location of services, & safety issues to determine:
  • Modify existing improvements
  • Determine additional improvements

– Result: List of projects & map
Neighborhood Mobility Audits
Engaging the Community and Prioritizing Improvements

Xiomara Meeks

October 18, 2017
Public Outreach Strategies

• 379 total surveys
• Local government
Local Agency Engagement

- Top 3-5 projects based on public outreach

- 37% More Sidewalk
- 22% More Frequent Transit
- 19% More Bike Lanes
- 19% Transit Serving More Places
- 13% Improved Crosswalks
Neighborhood Mobility Audits
Funding and Implementing Improvements

Xiomara Meeks
Implementing Improvements

Currently Funded Projects – $8.5M

<table>
<thead>
<tr>
<th>PROJECT LENGTH</th>
<th>PROJECT TYPE</th>
<th>PROJECT COST</th>
<th>PROJECT LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.74</td>
<td>sidewalk</td>
<td>$1,584,158</td>
<td>Wabash - Polk County</td>
</tr>
<tr>
<td>2</td>
<td>lighting</td>
<td>$959,888</td>
<td>Wahneta - Polk County</td>
</tr>
<tr>
<td>1</td>
<td>sidewalk, lighting</td>
<td>$1,080,689</td>
<td>Haines City</td>
</tr>
<tr>
<td>0</td>
<td>transit shelters</td>
<td>$136,000</td>
<td>Lakeland</td>
</tr>
<tr>
<td>1</td>
<td>PD&amp;E - sidewalks</td>
<td>$1,545,000</td>
<td>Combee - Polk County</td>
</tr>
<tr>
<td>1</td>
<td>Bike path/trail</td>
<td>$1,023,284</td>
<td>Ft. Meade</td>
</tr>
<tr>
<td>0.36</td>
<td>sidewalk</td>
<td>$569,641</td>
<td>Haines City</td>
</tr>
<tr>
<td>1</td>
<td>Bike path/trail</td>
<td>$1,526,002</td>
<td>Inwood - Polk County</td>
</tr>
</tbody>
</table>
Thank You

http://bit.ly/MobilityAudits

October 18, 2017
MOBILITY =

Walking  +  Biking  +  Transit

- Gaps  - Barriers