

Neighborhood Mobility Audits

Polk County, FL

Tom Deardorff, AICP

October 18, 2017



Polk Transportation
Planning Organization

AECOM

Mobility Audit Process

- 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



Neighborhood Mobility Audits

Defining the Neighborhood

Adam Purcell, AICP

October 18, 2017



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



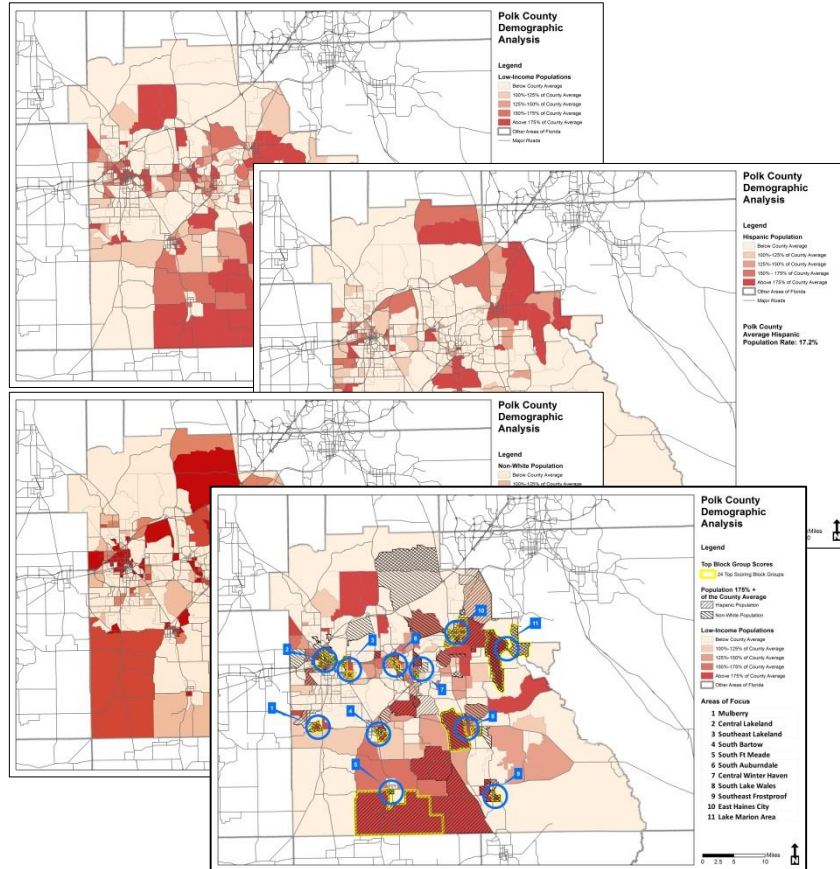
“Traditionally Underserved”

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.

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

Identifying the Traditionally Underserved



Polk County Percent Non-White

20.3

Range	Percent Non-White	Score
1-1.25 x County Average	20.30-25.38	0.25
1.25-1.5 x County Average	25.38-30.45	0.5
1.5-1.75 x County Average	30.45-35.53	0.75
1.75+ x County Average	35.53+	1

Polk County Percent Hispanic

17.2

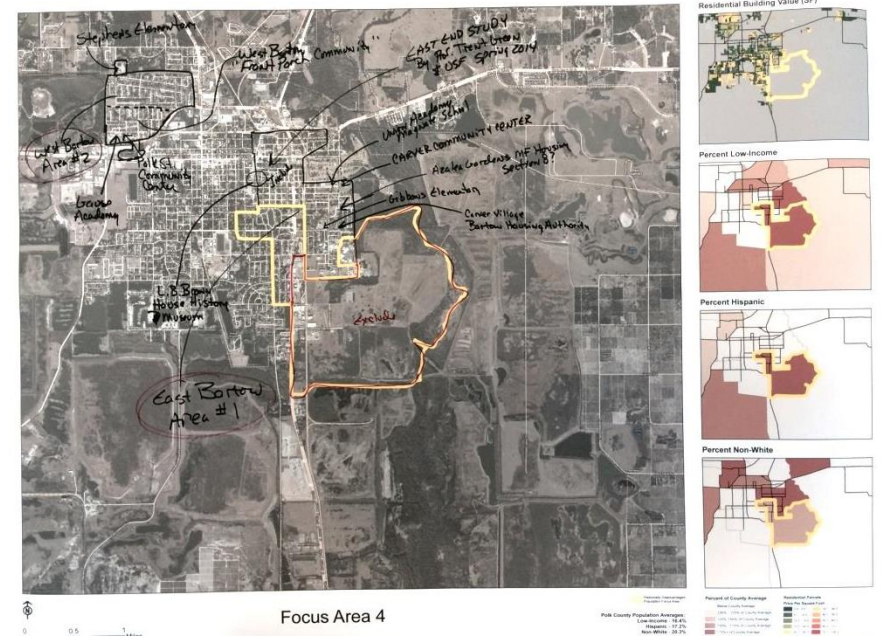
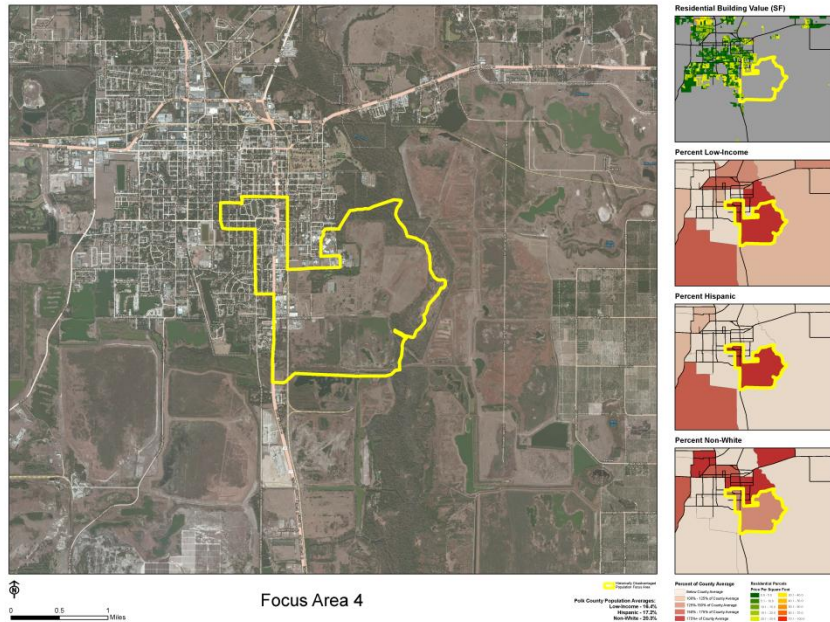
Range	Percent Hispanic	Score
1-1.25 x County Average	17.2-21.5	0.25
1.25-1.5 x County Average	21.5-25.8	0.5
1.5-1.75 x County Average	25.8-30.1	0.75
1.75+ x County Average	30.1+	1

Polk County Percent Below Poverty

16.4

Range	Percent Low-Income	Score
1-1.25 x County Average	16.40-20.50	0.25
1.25-1.5 x County Average	20.50-24.60	0.5
1.5-1.75 x County Average	24.60-28.70	0.75
1.75+ x County Average	28.70+	1

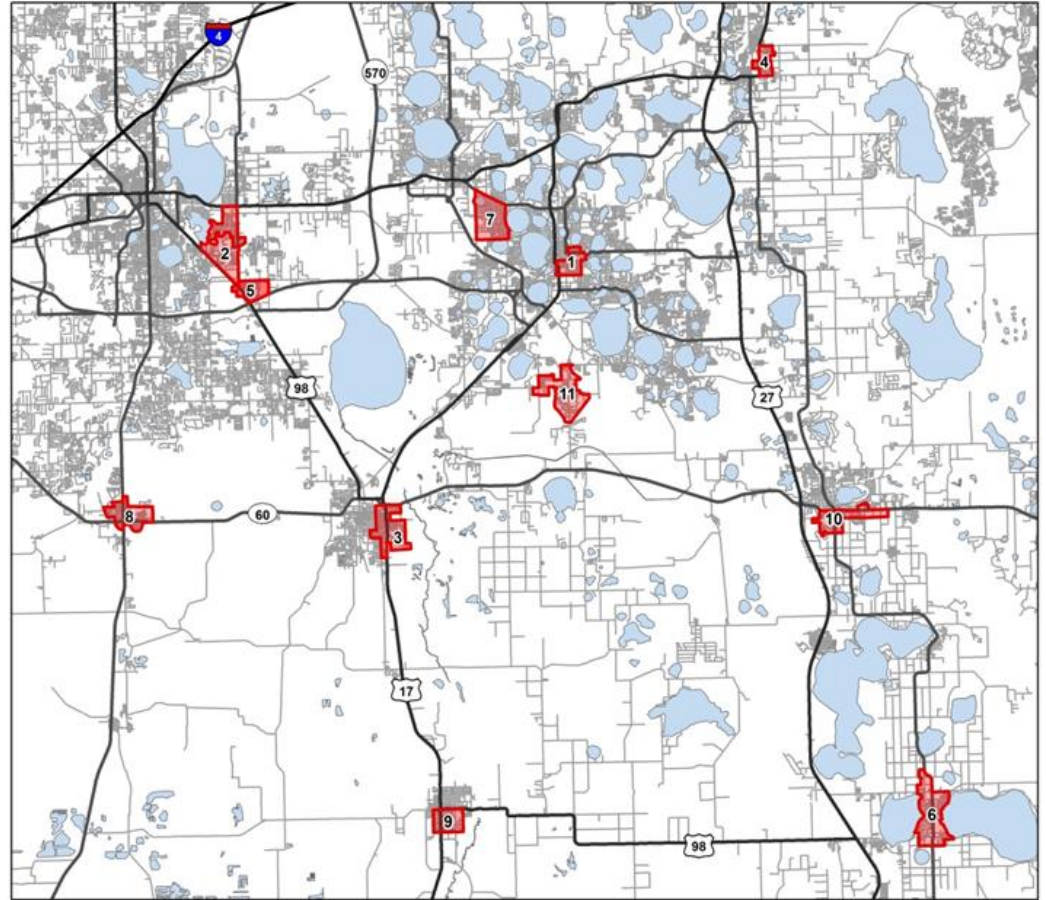
Local Engagement



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



Polk Transportation
Planning Organization

AECOM

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



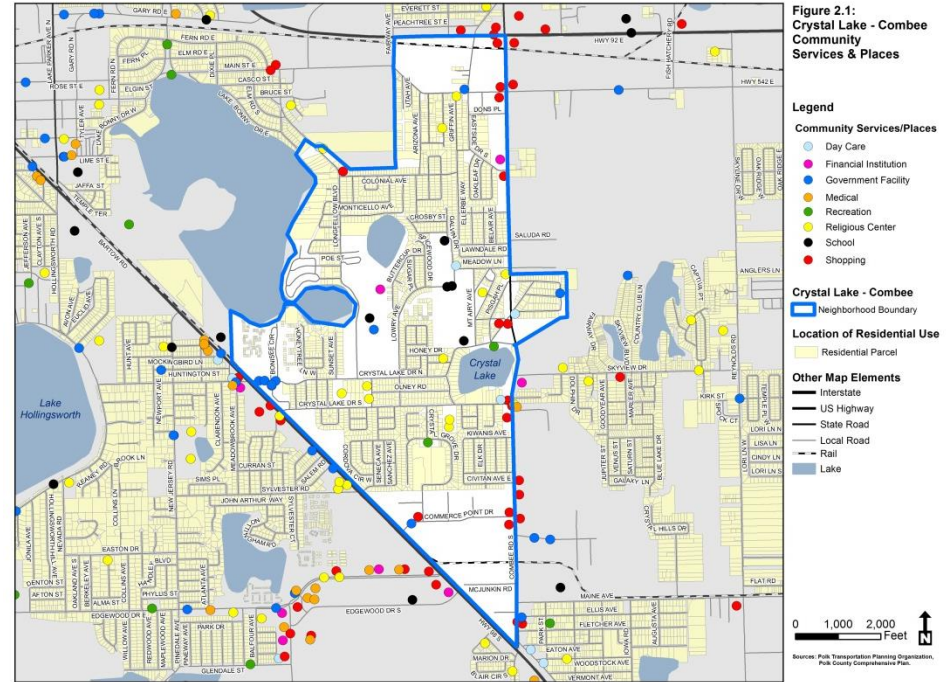
Description of Existing Use

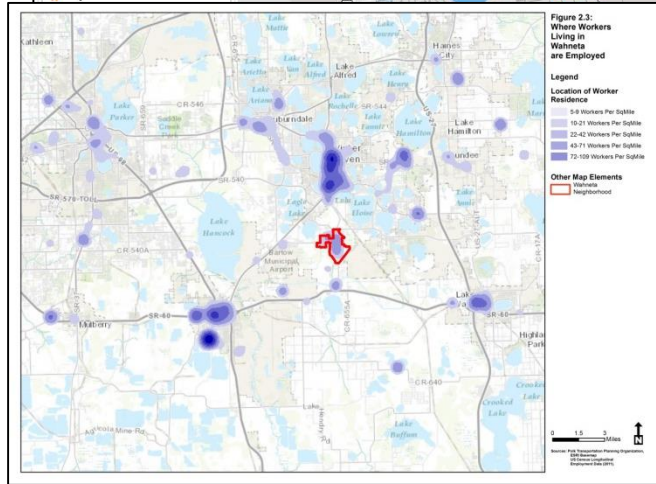
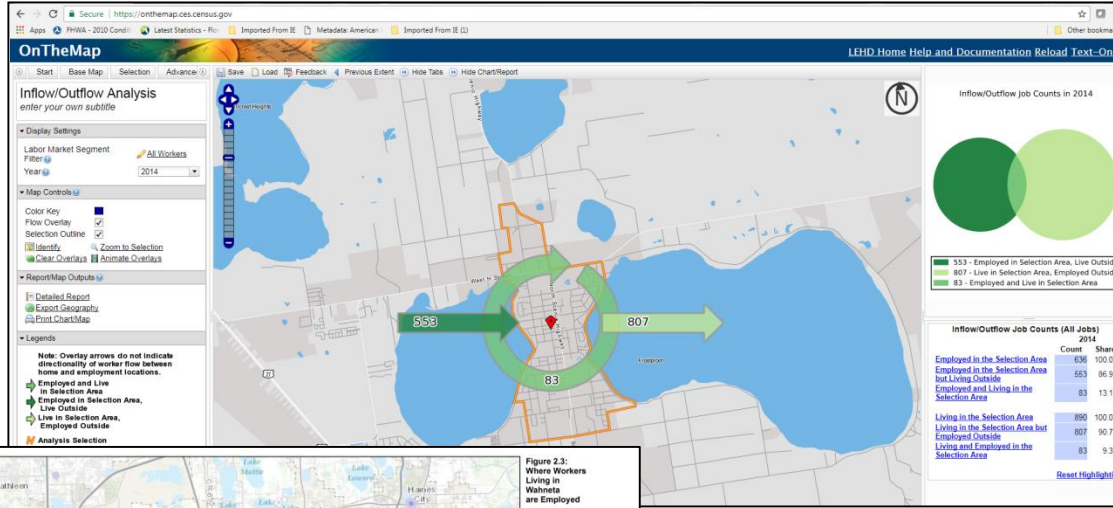
Property Appraiser Department of Revenue Code (DOR) information identifies location of existing use

- Parcel-level analysis
- Detailed assessment of current use

Florida Geographic Data Library (FGDL) Geocoded Resources

- Religious Centers
- Government Services
- Park and Recreation Areas





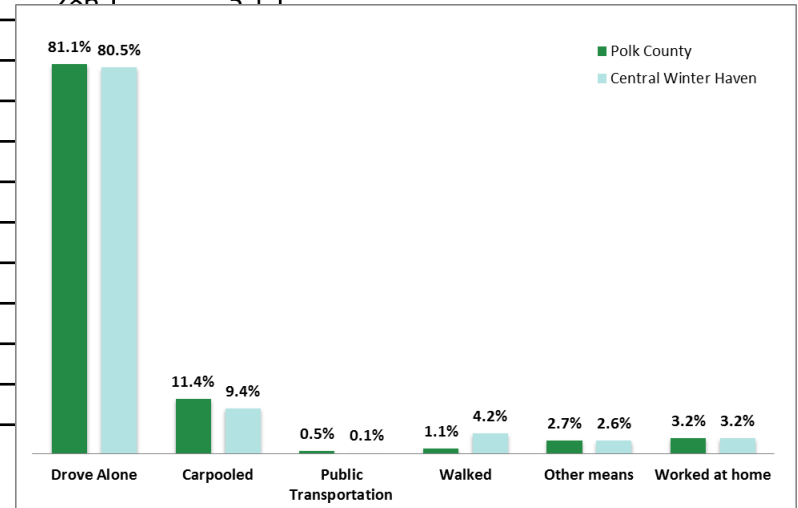
On the Map Tool - <https://onthemap.ces.census.gov/>

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

US Census - Commute Mode and Demographic Information

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



Pedestrian



Bicyclist



Transit User



Neighborhood Mobility Audits

Evaluating Access to Community Services and Places

Lauren Brooks, AICP

October 18, 2017

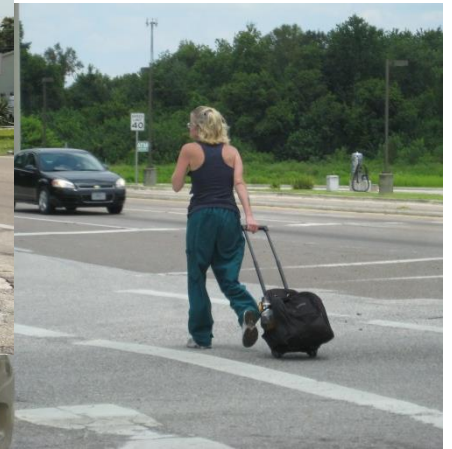
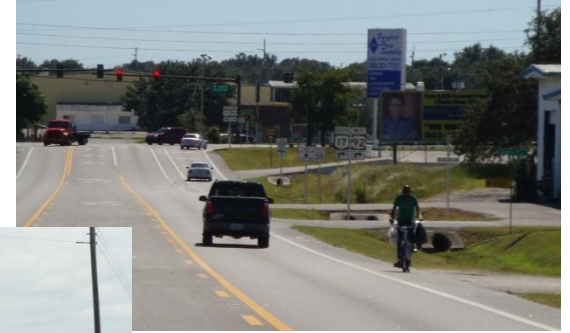
Evaluation of Access – Infrastructure & Safety

- 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

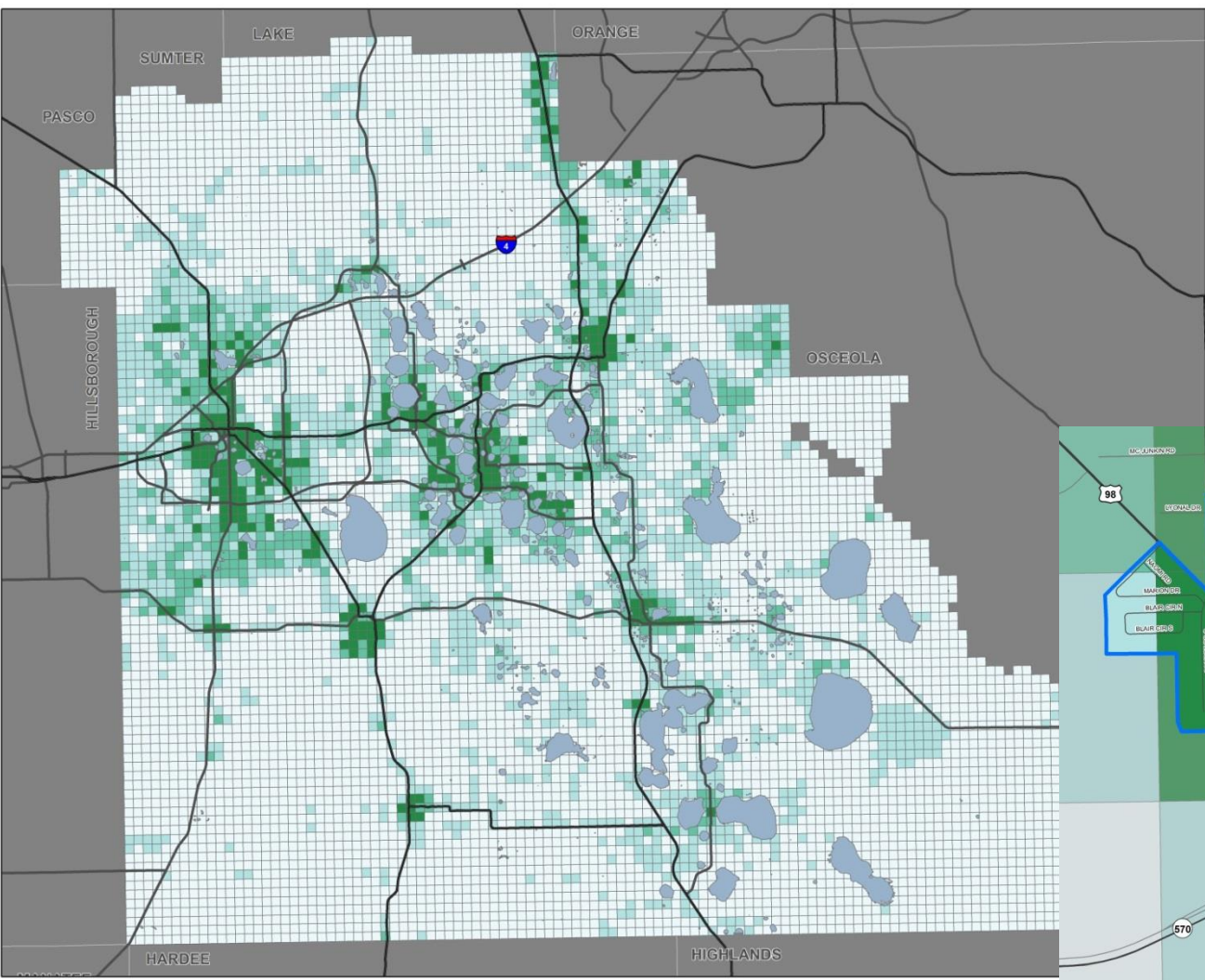
- Mobility Opportunities:
 - Walking Access Index
 - Biking Access Index
 - Transit Connectivity Index
- Mobility Constraints:
 - Gaps Index
 - Barriers Index
- Mobility Index



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



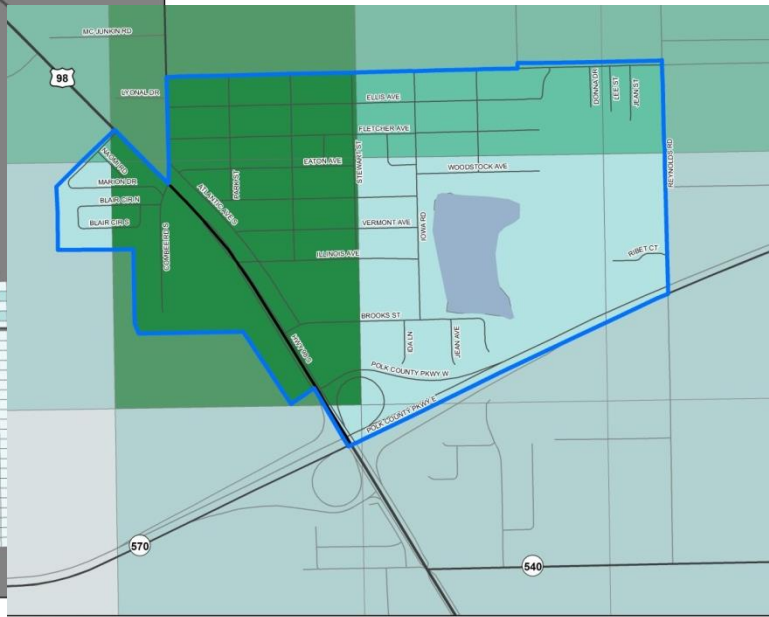


**Polk County
Walking Access Index
(Walk Potential)**

Legend

Quarter-Mile Square Score

- High Walk Potential
- Moderate Walk Potential
- Minimal Walk Potential
- No Walk Potential
- Major Road
- Lakes
- Other Areas of Florida



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

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

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

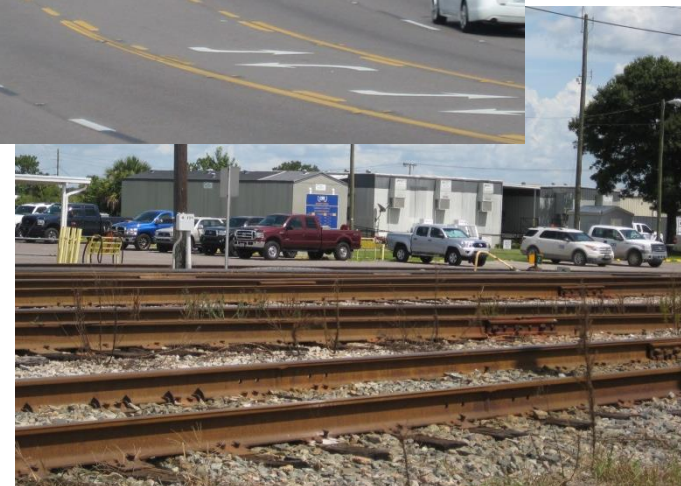


Sidewalk Gap



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

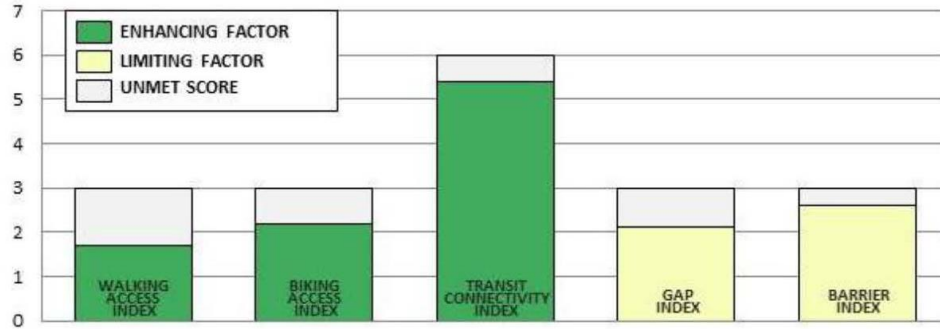
- Identify overall level of mobility through compilation of Indices

Mobility Index = Potential Access – Gaps – Barriers

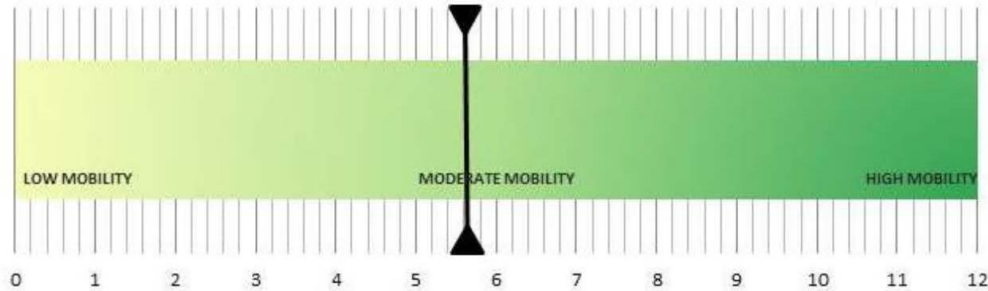
- Result: Prioritize neighborhoods for transportation investments



Eaton Park Neighborhood Mobility Dashboard



Mobility Index



Eaton Park Neighborhood Index Scores

Walking Access Index	Biking Access Index	Transit Connectivity Index	Potential Access	Gaps Index	Barriers Index	Mobility Index
1.7	2.2	5.4	9.3	2.1	2.6	5.67

Neighborhood Mobility Audits

Identifying Mobility Improvements

Lauren Brooks, AICP

October 18, 2017

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

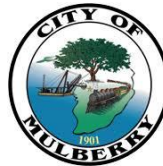
Engaging the Community and Prioritizing Improvements

Xiomara Meeks

October 18, 2017

Public Outreach Strategies

- 379 total surveys
- Local government



Local Agency Engagement

- Top 3-5 projects based on public outreach



December 14, 2017

Page 32



Polk Transportation
Planning Organization

AECOM

Neighborhood Mobility Audits

Funding and Implementing Improvements

Xiomara Meeks

October 18, 2017

Implementing Improvements

Currently Funded Projects – \$8.5M

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

Thank You

<http://bit.ly/MobilityAudits>

October 18, 2017



Polk Transportation
Planning Organization

AECOM

MOBILITY =

Walking  **Biking**  **Transit**

 **Gaps**  **Barriers**