



Accessibility Analysis for Basic Services

May 16th, 2019



Introduction

- Everyone needs basic services
 - Groceries, Medical Care, Community Centers
- Different population groups have different access needs
 - Distances
 - Automobile availability/Ability to drive
 - Affordability
 - Physical ability
- Focus of analysis
 - Access for general population
 - Access for target population groups
 - Access by different transportation modes
 - Driving, Public Transportation, Walking





Definitions & Methodology

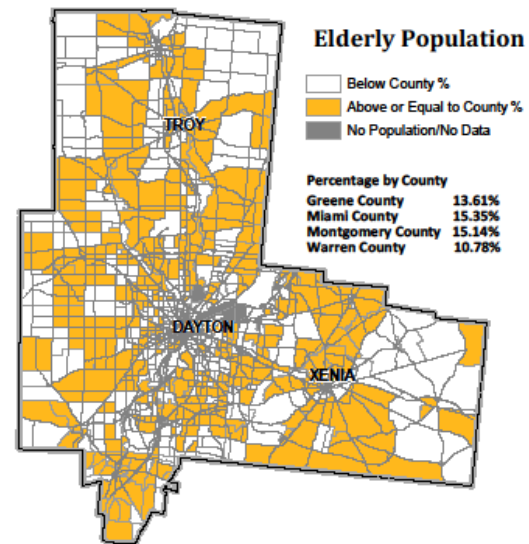
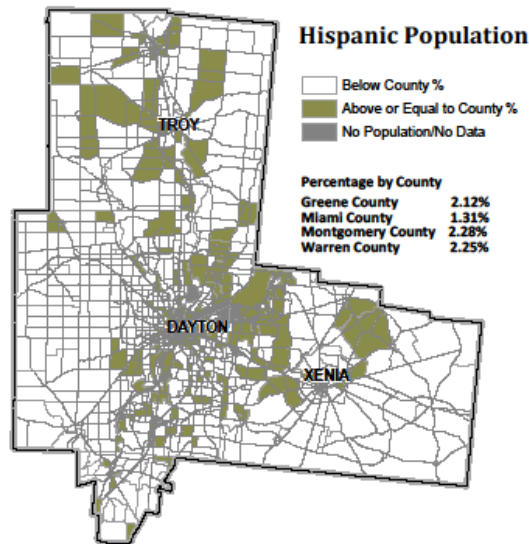
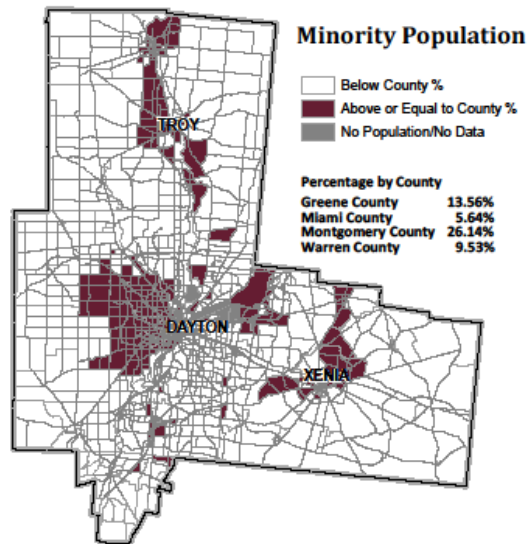
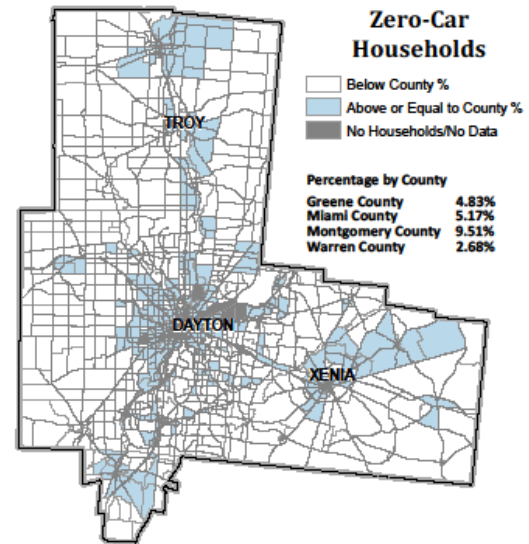
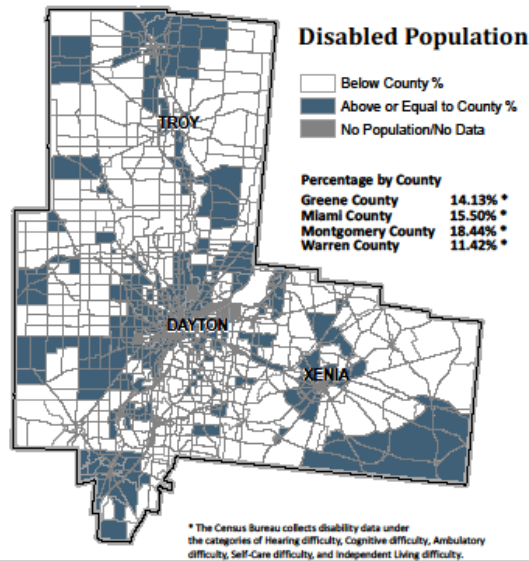
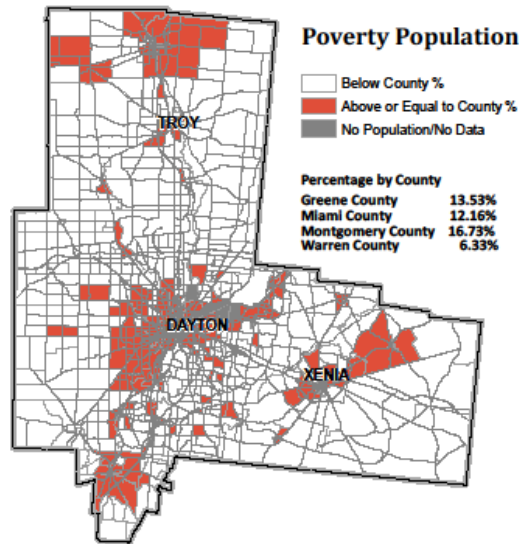
Defining Vulnerable Populations

- **Persons in Poverty**
 - Household population plus non-institutionalized group quarters
- **Disabled Population**
 - Difficulties with: Hearing, Vision, Cognitive, Ambulatory, Self-care, Independent living
- **Zero-Car Households**
 - No automobiles at home and available
- **Minority Population**
 - All races other than Caucasian
- **Hispanic Population**
 - e.g. Mexican, Mexican-American, Puerto Rican origin
 - Any race
- **Elderly Population**
 - 65+

	County	Total
People in Poverty	Greene	20,714
	Miami	12,366
	Montgomery	87,503
	Warren	3,929
Disabled Population	Greene	16,647
	Miami	11,897
	Montgomery	73,416
	Warren	4,396
Zero-Car Households	Greene	3,037
	Miami	2,112
	Montgomery	21,304
	Warren	2,047
Minority Population	Greene	21,903
	Miami	5,784
	Montgomery	139,881
	Warren	20,262
Hispanic Population	Greene	3,439
	Miami	1,341
	Montgomery	12,177
	Warren	4,784
Elderly Population	Greene	21,998
	Miami	15,731
	Montgomery	81,041
	Warren	22,936



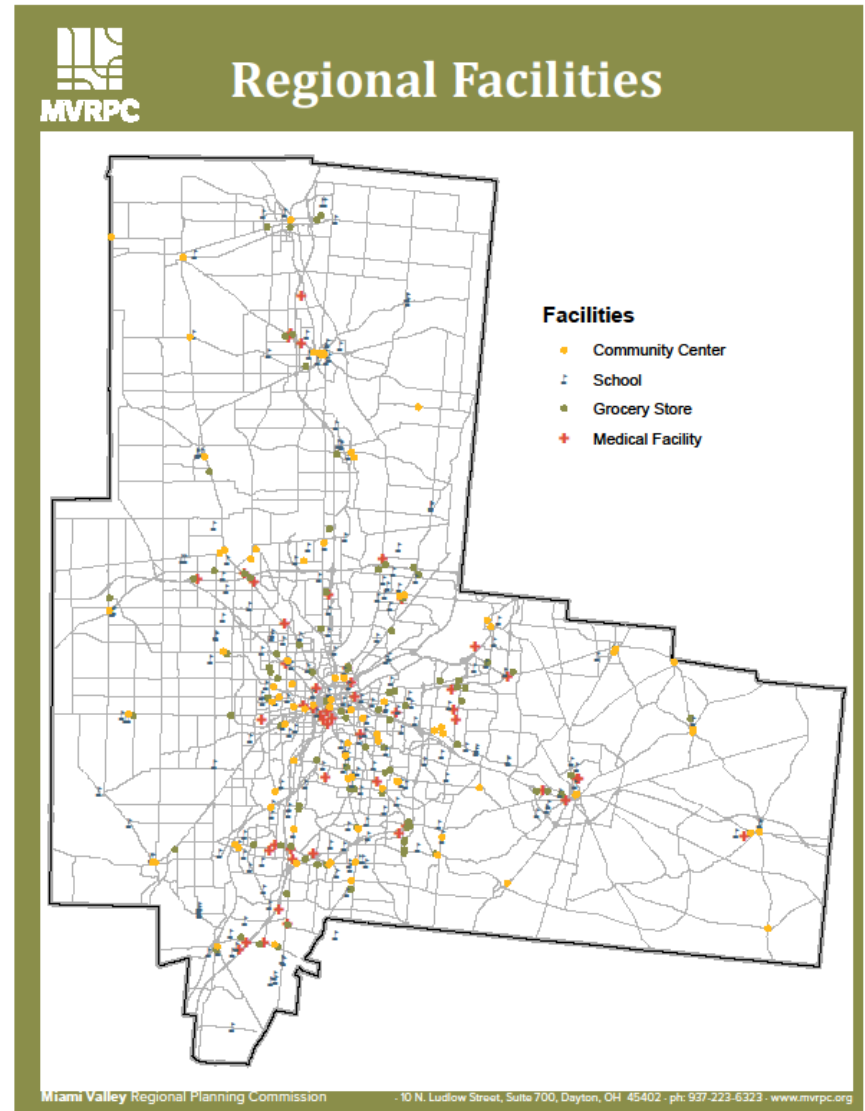
Population Distributions



Target
Group
Populations

Identifying Facilities

- As of July 2018
- Grocery Stores
 - Fresh produce
 - Deli and/or stock butchered meats
 - Basic pantry items
 - Staples (milk, bread, eggs)
 - Basic sanitation
- Medical Centers
 - Hours extending beyond business day
 - Basic emergency services (e.g. stitches)
 - Doctor on staff
- Community Centers
 - Cultural centers, recreation centers, senior centers
 - Libraries
 - Schools
 - Analyzed separately



Defining Accessibility

- Walking Threshold:
 - 15 minutes
- Transit Threshold:
 - Only fixed-route & flex transit examined
 - Includes access/egress, waiting, transfers, and in-vehicle times
 - Accessible for Grocery Stores and Medical Centers: 45 minutes
 - Accessible for Schools and Community Centers: 30 minutes
- Driving Threshold:
 - Accessible: 10 minutes



Methodology

- Driving and Transit – Traffic Analysis Zones (TAZs)
 - Facilities “located” at TAZ “Centroids”
 - Center of activity, not geographic center
 - Travel Demand Model determined travel time
 - Population/Households summed
 - For each analysis group
- Walking – Micro Analysis Zones (MAZs)
 - U.S. Census blocks
 - Centroid-to-centroid distance determined travel time

TAZ



MAZ



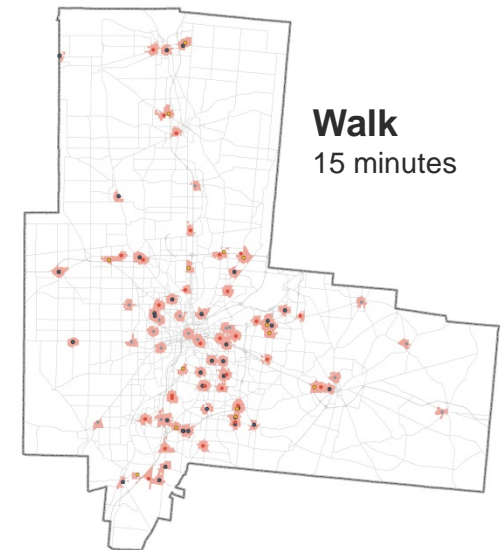
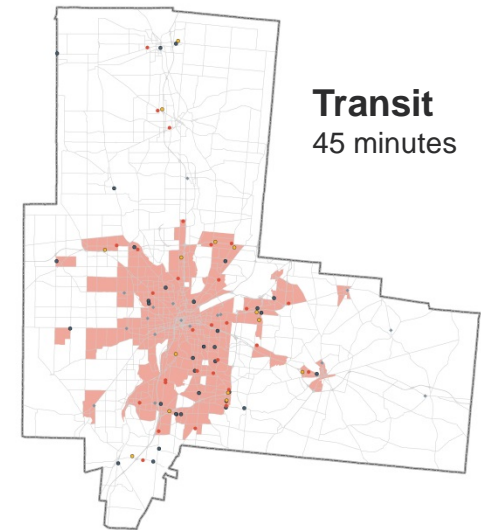
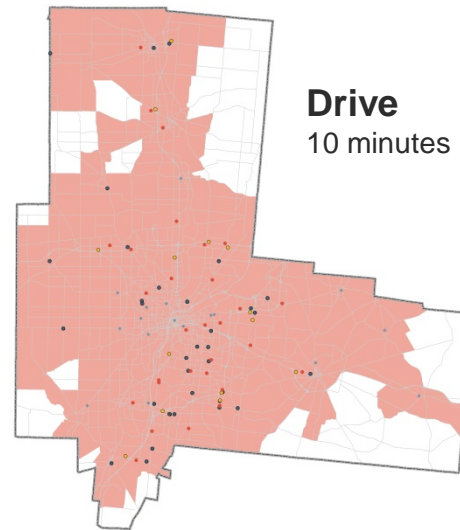


Results

Results – Grocery Stores

- **Grocery Access**
 - Driving: All groups >95%
 - Transit: All groups >55%
 - Walking: All groups >20%
- **Groups with best access**
 - Driving: Minority -- 99.5%
 - Transit: Minority -- 80%
 - Walking: Zero-car -- 31%

	Grocery Stores		
	Driving	Transit	Walking
General Population	96.75%	56.25%	21.89%
Poverty	98.92%	71.63%	29.08%
Disability	97.43%	61.91%	24.22%
Zero-Car Households	99.11%	76.39%	30.52%
Minority	99.54%	79.72%	26.50%
Hispanic	98.38%	66.38%	27.53%
Elderly	96.90%	56.19%	20.83%



All Maps

- Walmart/Target
- Kroger/Meijer
- Other Chain
- Non-Chain

Within Access Time
Any Grocery



Results – Medical Centers

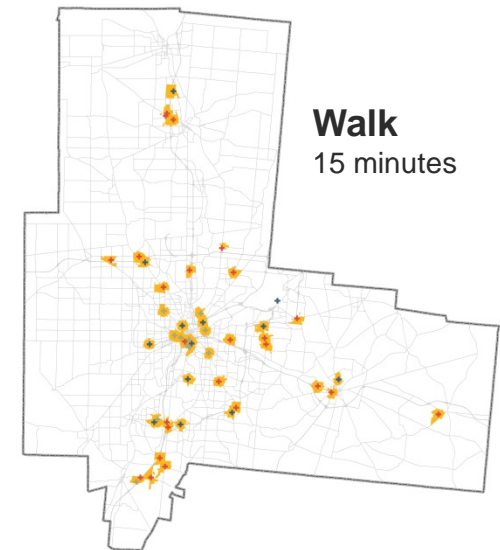
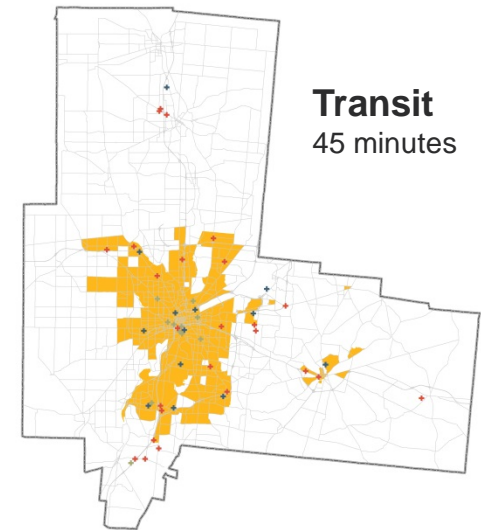
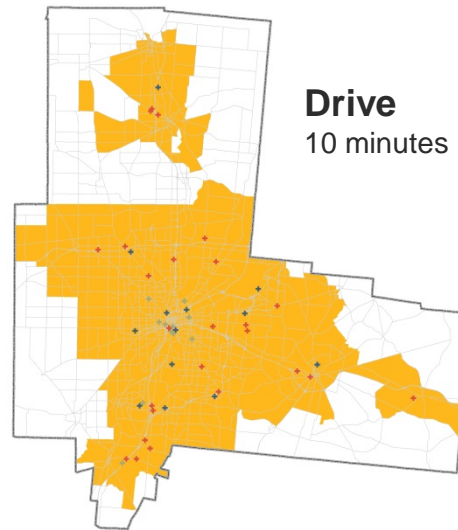
- Medical Center Access

- Driving: All groups >88%
- Transit: All groups >50%
- Walking: All groups >8%

- Groups with best access

- Driving:
Minority – 98%
- Transit:
Minority – 76%
- Walking:
Zero-car – 17%

	Medical Centers		
	Driving	Transit	Walking
General Population	89.17%	50.15%	8.72%
Poverty	94.38%	64.72%	13.01%
Disability	91.08%	56.17%	10.64%
Zero-Car Households	96.65%	70.99%	17.03%
Minority	98.06%	76.07%	11.58%
Hispanic	94.54%	58.83%	10.97%
Elderly	88.68%	50.34%	9.66%



All Maps

- + Hospital
- + Community Health Center
- + Urgent Care Center

Within Access Time

- Medical Facility



Results – Community Centers & Schools

Community Center Access

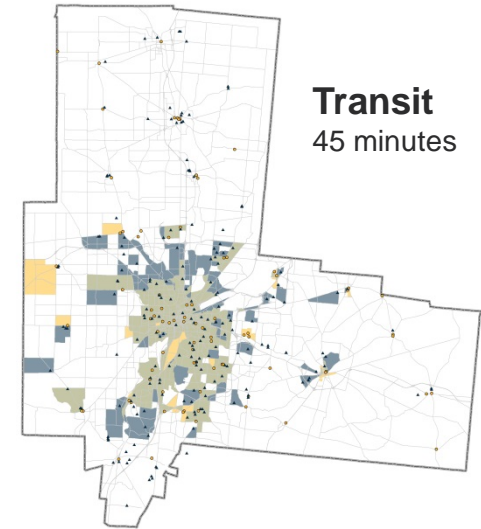
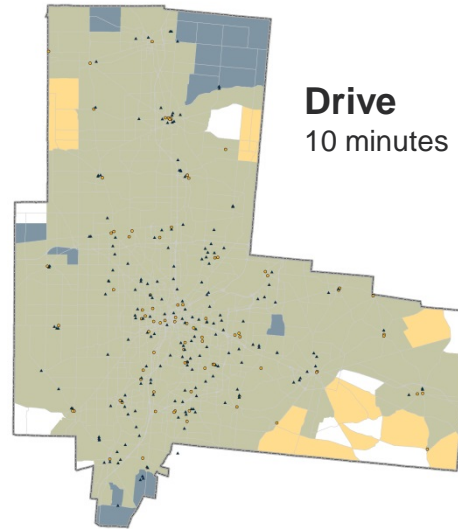
- Driving: All groups >98%
- Transit: All groups >35%
- Walking: All groups >18%

School Access

- Driving: All groups >98%
- Transit: All groups >48%
- Walking: All groups >40%

Groups with best access

- Driving:
Minority – 99.7% (C.C.), 98% (School)
- Transit:
Zero-car HHs – 58% (C.C.), 71% (School)
- Walking:
Zero-car HHs – 27% (C.C.), 51% (School)

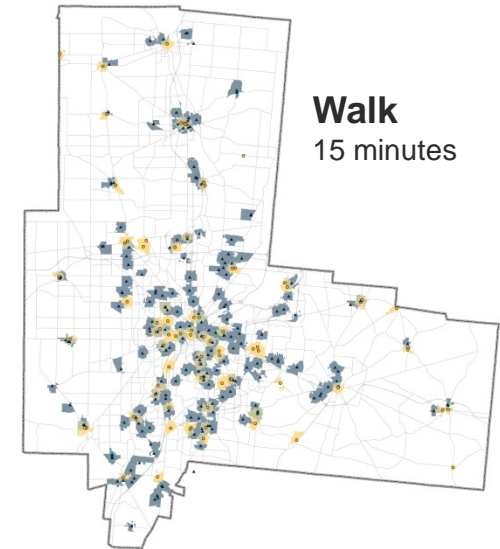


All Maps

- ▲ School
- Community Center

Within Access Time

- School Only
- Community Center Only
- Community Center and School

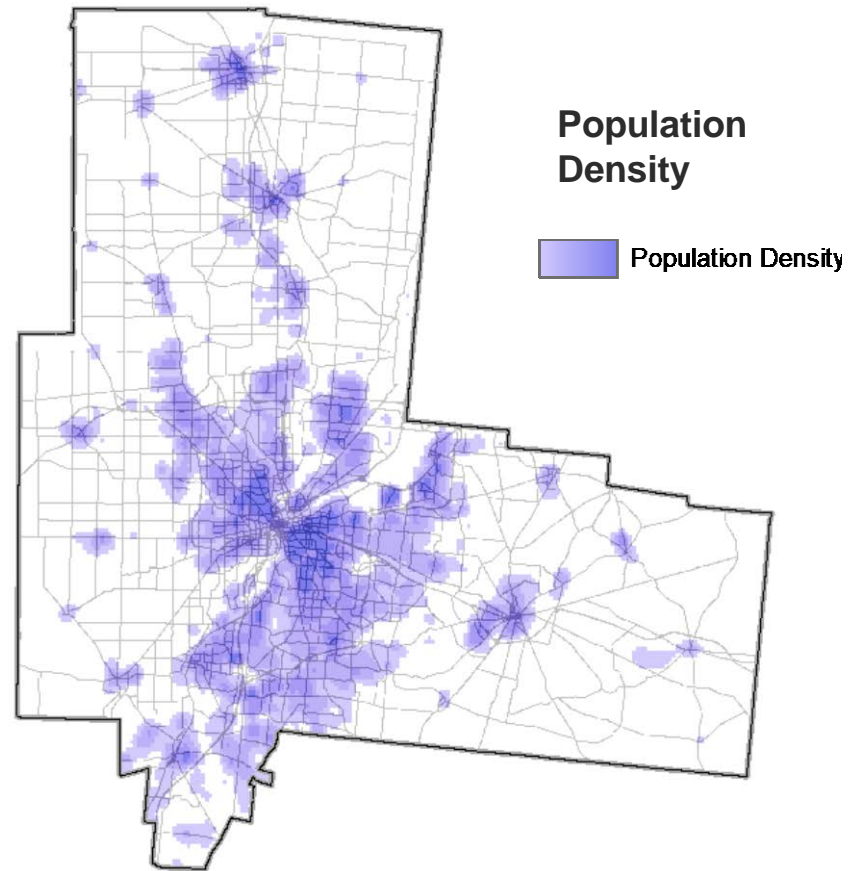


	Community Centers			Schools		
	Driving	Transit	Walking	Driving	Transit	Walking
General Population	98.28%	35.91%	18.05%	98.93%	47.75%	40.59%
Poverty	99.48%	51.26%	25.38%	99.61%	63.28%	48.30%
Disability	98.59%	42.78%	21.09%	99.12%	54.61%	44.58%
Zero-Car Households	99.37%	57.94%	26.80%	99.74%	70.72%	50.51%
Minority	99.72%	53.76%	21.23%	99.86%	69.37%	42.71%
Hispanic	99.06%	42.78%	19.59%	99.65%	55.87%	43.93%
Elderly	98.33%	35.65%	17.35%	98.91%	48.43%	40.92%

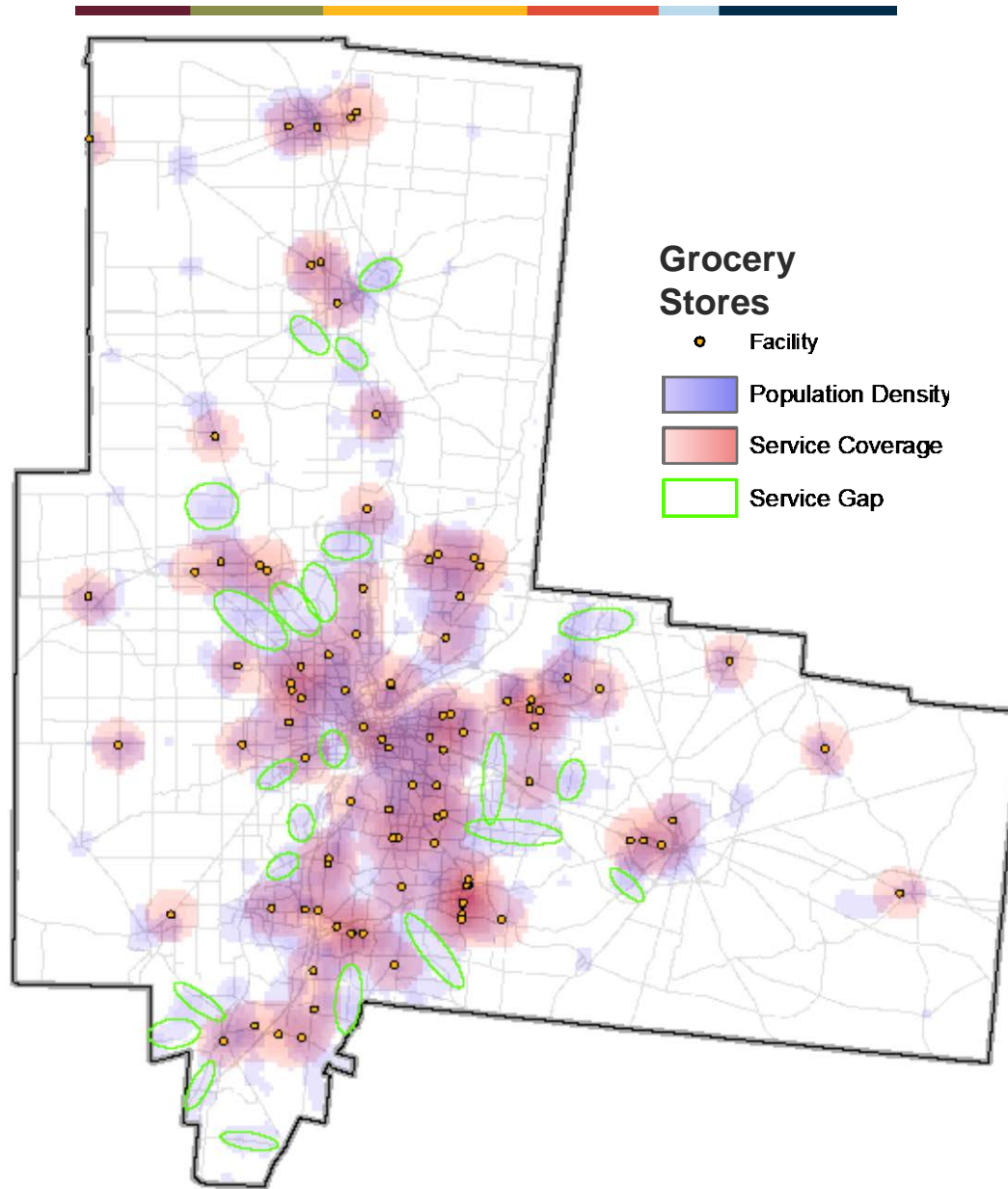


Service Gap Analysis

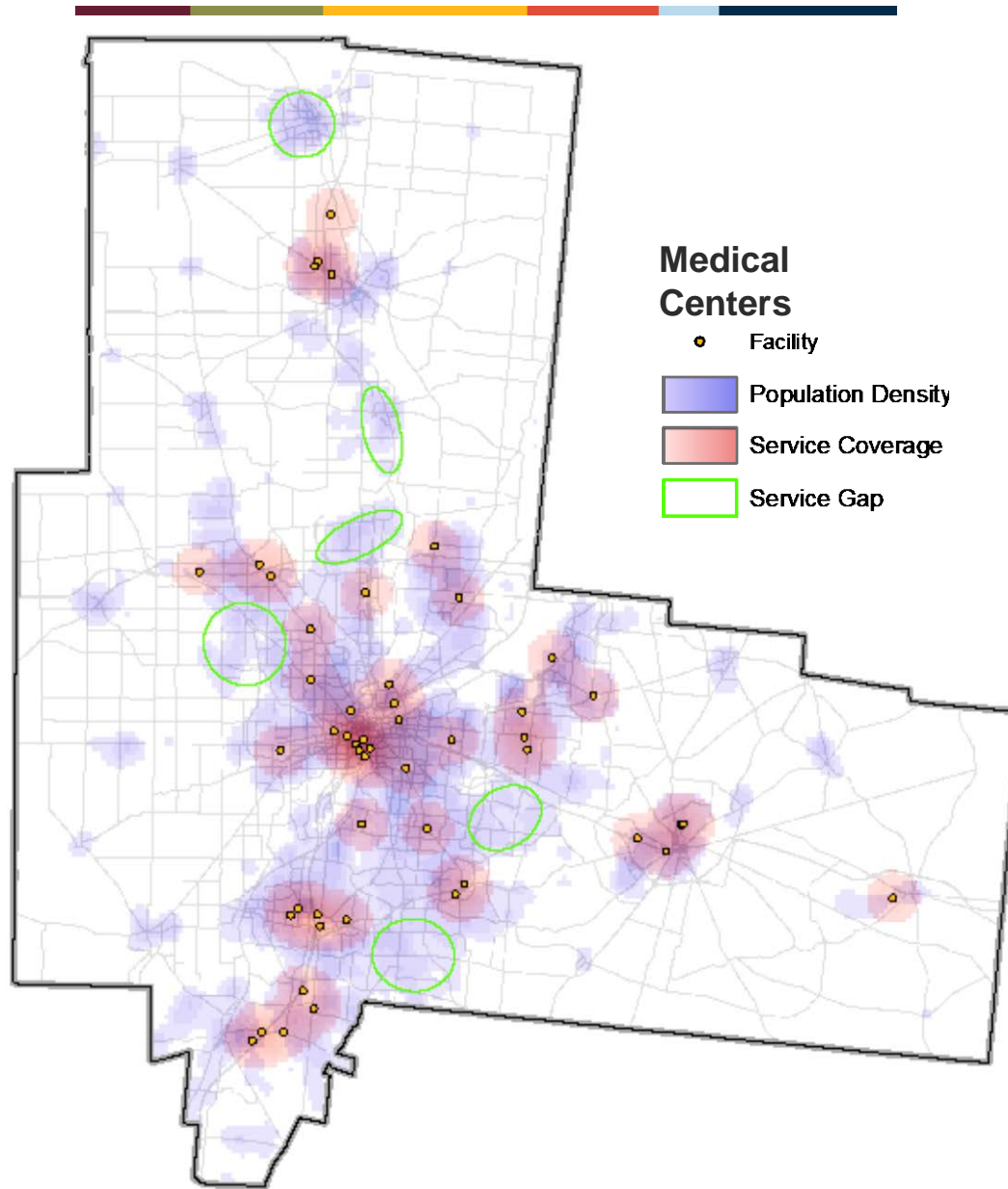
- Service Gaps
 - Places where there is a density of population but a relative lack of facilities
- Population Thresholds
 - **Grocery Store:** 3,000 residents
 - **Medical Center:** 10,000 residents
 - **Community Center/School:** 1,000 residents



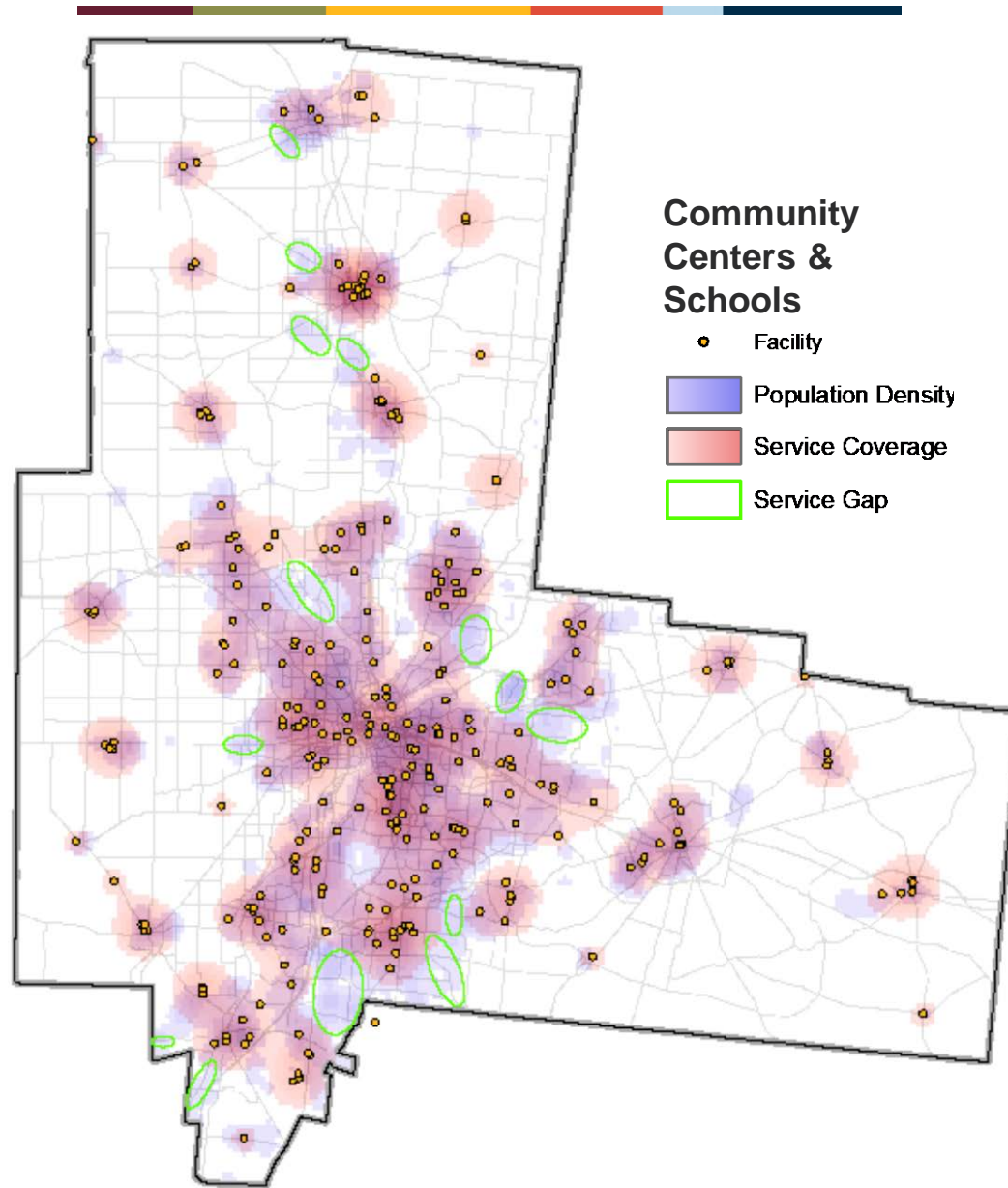
Service Gap Analysis – Grocery Stores



Service Gap Analysis – Medical Centers



Service Gap Analysis – Community Centers

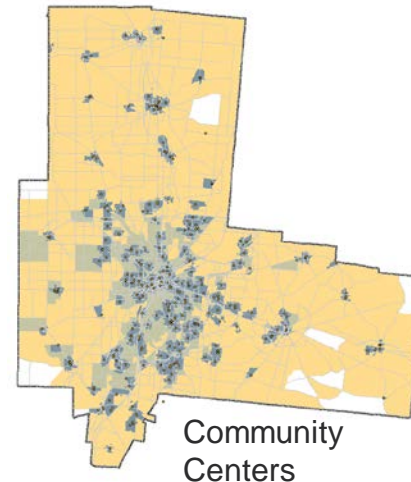
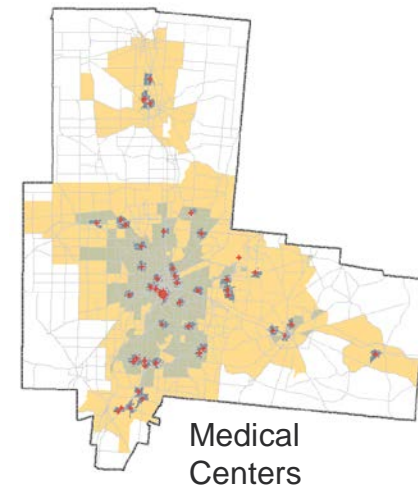
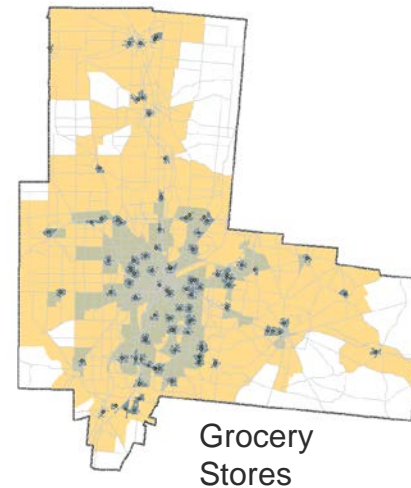




Conclusions

General Summary

- Access is generally better for target populations, for a given mode
 - Especially minority, people in poverty, and zero-car households
 - Elderly track closely with general population
 - Explained by geographic distribution
 - Lack of a car alters accessibility significantly
- Rural areas have least access
- Some areas lack services; others have concentrations of services
 - Leads to higher vehicle miles traveled and congestion
- Driving
 - Universally over 88%
- Transit
 - 35% to 80%
- Walking
 - Under 52% for all facility types



Future Concerns

- Food Insecurity and Food Deserts

- Lack of access to affordable, fresh produce
- Target populations especially vulnerable
 - Often limited automobile access
- Transit access to grocery stores
 - People in Poverty: 72% (28% without)
 - Minority: 80% (20% without)
 - People with a Disability: 62% (38% without)
 - Elderly: 56%
- Walking access to grocery stores
 - All populations: 70% or more lack access



- Silver Tsunami

- Proportion of elderly population increasing
- Significant majority still able to drive
 - Yet anyone living long enough will outlive driving
- Comfortable transition is important
 - Preserve dignity
 - Access basic services
- Elderly population currently has similar non-auto access to the general population to all facilities measured, which is low



More Information

mvrpc.org/transportation/lrtp-accessibility-analysis

- **Contacts**
 - Rob Uhlhorn – ruhlhorn@mvrpc.org

