# Regional Broadband Connectivity Existing Conditions Analysis

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INTERNATIONAL

SOUTHWESTERN PENNSYLVANIA
SPC
COMMISSION

# Regional broadband connectivity existing conditions analysis

The Southwestern Pennsylvania Commission (SPC) is the cooperative forum for regional collaboration, planning, and public decision-making. The Commission serves as the official Metropolitan Planning Organization (MPO) and Local Development District (LDD) for a 10-county region in Southwestern Pennsylvania including the City of Pittsburgh and the counties of Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington, and Westmoreland.

SPC and its Steering Committee members (Carnegie Mellon University and Allies for Children) examined the current state of broadband related coverage, speed, resources, gaps, and needs in relation to the region's demographic and socioeconomic conditions. SPC also examined connectivity in relation to the region's businesses, educational, and medical facilities. Using existing local and national open-source datasets, SPC analyzed, collected, and compared all broadband and socioeconomic data and identified gaps in regional access, adoption, and affordability.

Once gaps in the broadband service were identified, two Connectivity Indices were developed. The first one focused on broadband accessibility in the region, while the second Index focused on adoption and equity. Environmental Justice and Title VI data was analyzed and incorporated to create the Connectivity Indices. These two Indices were used to further the analysis by identifying, evaluating, and prioritizing areas where the greatest disparity between coverage, speed, and affordability of high-speed broadband connectivity access in relation to the demographic and socioeconomic conditions in rural and urban populations of the region.



## Serving the region
The Commission serves as the official MPO and Local Development District for a 10-county region in Southwestern Pennsylvania, shown above.

The final product of the Connectivity Indices analysis was a set of Connectivity Opportunity Areas (COAs). These COAs will act as the equity component in the project analysis and prioritization process for future connectivity project development efforts. The COAs can also potentially be the basis for the development of incentives in their respective geographic areas such as streamlined permitting and regulations, tax credits, and others to spur high-speed connectivity deployment. An ArcGIS Online web mapping application has been created to share the final results of the existing conditions analysis, where the Connectivity Indices and COAs results can be viewed and used to analyze existing conditions via the links presented in the ArcGIS analysis online breakdown on Page 3 of the Executive Summary.

## Behind the data. ...
**Data related to Environmental Justice and Title VI** was analyzed and incorporated to create the Connectivity Indices.

# Existing conditions analysis highlights

- Approximately 87,000 census block records are within the 10-county SPC region and were used as the basis of the analysis.

- Approximately 170 data points were used to create the existing condition analysis data for viewing on the ArcGIS Online web mapping dashboard applications.

- Environmental Justice and Title VI factors, along with computer ownership and internet access by age and race statistics, were collected from U.S. Census American Community Survey (ACS) data.

- Mobile broadband access, along with fixed broadband access, speed, and provider availability, is a derivative product cultivated from datasets such as FCC Form 477, OOKLA, and MLAB.

- For the 10-county SPC region, the percent of population within the Broadband Access Index COAs is 3%, while the percent of population within the Adoption and Equity Index COAs is 21%. The Broadband Access Index COAs comprise 16% of the total square miles in the region, while the Adoption and Equity Index COAs comprise 26% of the total square miles.

As data gaps are identified and additional data is collected and purchased, the new data will be added to the Indices and used to refine the Opportunity Areas. The Connectivity Indices and COAs will be available through the ArcGIS Online application.

This data will be used as a baseline to further build upon the SPC's Strategic Plan of developing a Connectivity Roadmap for the 10-county SPC region. This future strategic plan will examine the current and true state of the region's broadband connectivity in relation to the region's demographic and socioeconomic composition and deploy connectivity programs and projects to enable communities of the region lacking adequate high-speed internet access to be better connected to jobs, education, and health care. The future of high-speed connectivity is essential for the 21st Century to be globally competitive.

The following pages in the Executive Summary provide a one-page county-by-county statistical analysis highlighting the Connectivity Indices and COA results along with additional broadband data findings that are within the Broadband Access and Adoption and Equity Indices Dashboards. In addition, there is also a one-page overview of the SPC region with aggregate data analysis and statistics.

## ArcGIS analysis available online

An ArcGIS Online web mapping dashboard application has been created to share the final results of the existing conditions analysis. The Connectivity Indices and COAs results can be viewed interactively to see current broadband connectivity conditions, visualize real-time data, and to help SPC evaluate the current state of the region.

**Broadband Access Index Dashboard:**

https://gis.mbakerintl.com/portal/apps/opsdashboard/#/9e40e5cbd864431883f03d0218500370

**Adoption and Equity Index Dashboard:**

https://gis.mbakerintl.com/portal/apps/opsdashboard/index.html#/d580a2ebe76b435384e9391b35413b8e

In addition to the Broadband Access and Adoption and Equity Dashboards, a Fixed Broadband Analysis Story Map was created for a high-level understanding of what fixed broadband speeds, fixed broadband technologies, and fixed broadband providers are available within the 10-county SPC region.

**Fixed Broadband Analysis Story Map:**

https://gis.mbakerintl.com/portal/apps/MapSeries/index.html?appid=031fa03428064ea98f8ce9788a202c3d

Please contact the SPC Project Manager for login information.

# 10-COUNTY SPC REGION

## POPULATION: 2,574,959

### BY THE NUMBERS

**11.33%**
*Minority Population*

**13.50%**
*Low-Income Population*
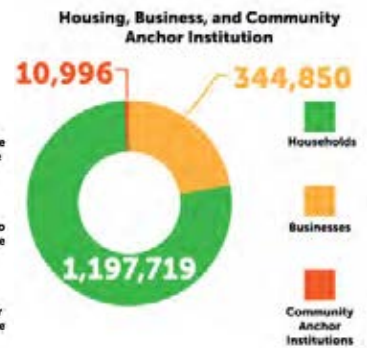
**1.25%**
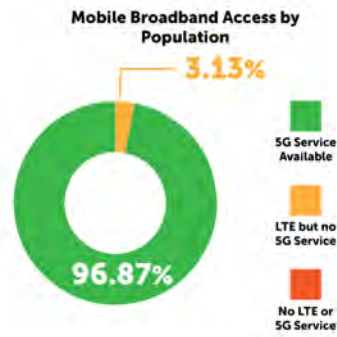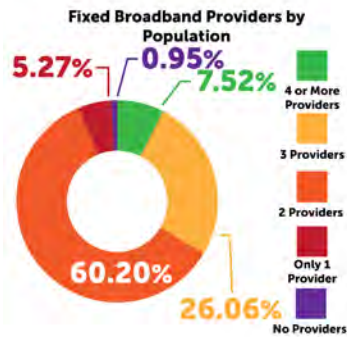*Limited English Proficiency Population*
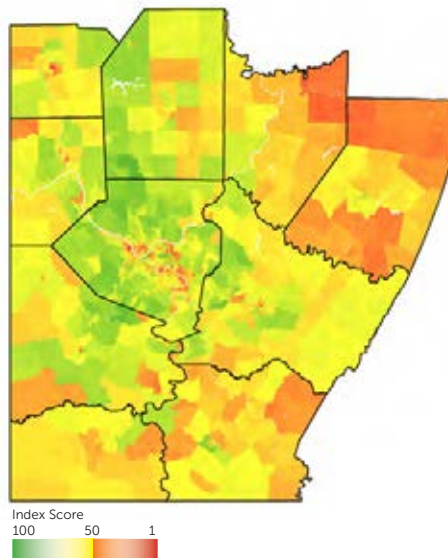
**15.99%**
*Disabled Population*

**10.47%**
*Household with no Available Vehicle*

**19.19%**
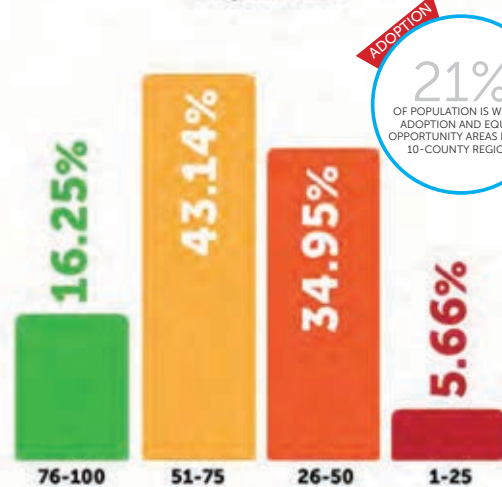*65 years or Older Adult Population*

**Fixed Broadband Providers by Population**

- 7.52% — 4 or More Providers
- 26.06% — 3 Providers
- 60.20% — 2 Providers
- 5.27% — Only 1 Provider
- 0.95% — No Providers

**Mobile Broadband Access by Population**

- 96.87% — 5G Service Available
- 3.13% — LTE but no 5G Service
- No LTE or 5G Service

**Housing, Business, and Community Anchor Institution**

- 344,850 — Households
- 1,197,719 — Businesses
- 10,996 — Community Anchor Institutions

## ADOPTION AND EQUITY INDEX

Index Score
100  50  1

## BROADBAND ACCESS INDEX

Index Score
100  50  1

**Fixed Broadband Access by Population**

- 51.81% — Well Served
- 44.82% — Served
- 0.51% — Underserved
- 2.87% — Unserved

**Adoption and Equity Index Score by Population**

- 16.25% — 76-100
- 43.14% — 51-75
- 34.95% — 26-50
- 5.66% — 1-25

ADOPTION

**21%** OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN THE 10-COUNTY REGION.

**Broadband Access Index Score by Population**
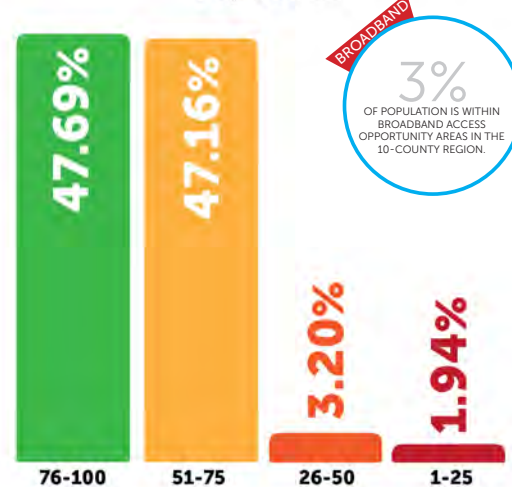
- 47.69% — 76-100
- 47.16% — 51-75
- 3.20% — 26-50
- 1.94% — 1-25

BROADBAND

**3%** OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN THE 10-COUNTY REGION.
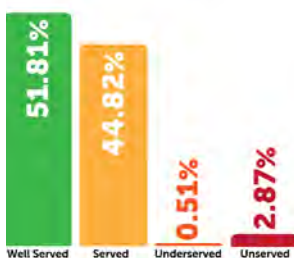
# ALLEGHENY COUNTY

## POPULATION: 1,223,348

Lawrence · Butler · Armstrong · Beaver · Indiana · Allegheny · Westmoreland · Washington · Greene · Fayette

## BY THE NUMBERS

### 22.11%
*Minority Population*

### 14.14%
*Low-Income Population*

### 1.95%
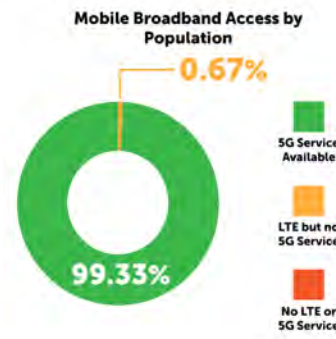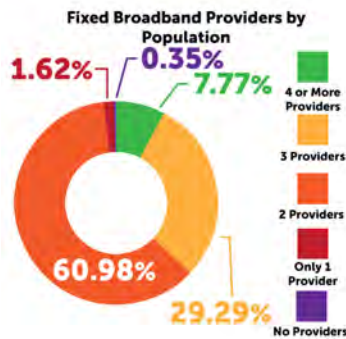*Limited English Proficiency Population*

### 14.54%
*Disabled Population*
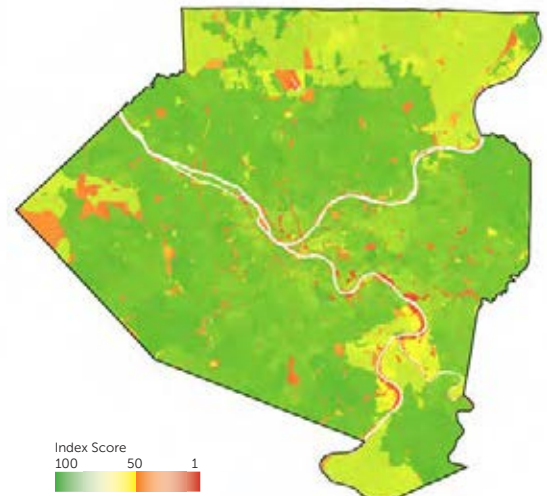
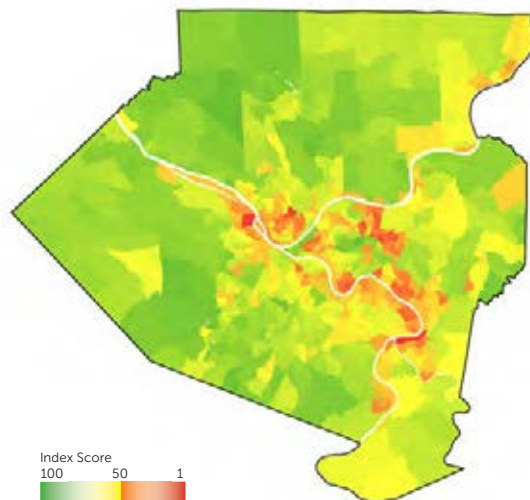### 14.63%
*Household with no Available Vehicle*
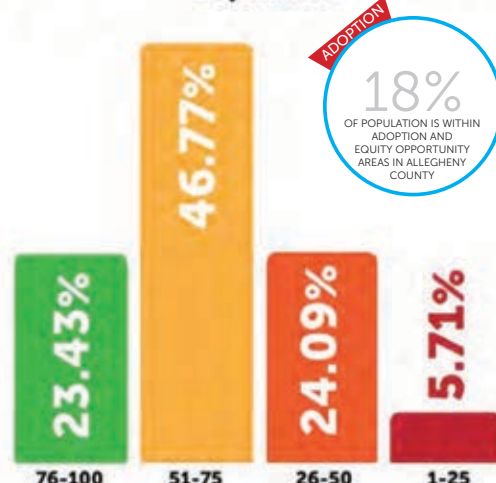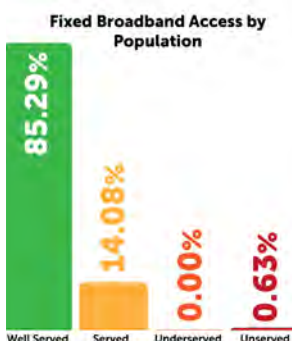
### 17.84%
*65 years or Older Adult Population*

**Fixed Broadband Providers by Population**

- 0.35%
- 7.77%
- 1.62%
- 60.98%
- 29.29%

Legend:
- 4 or More Providers
- 3 Providers
- 2 Providers
- Only 1 Provider
- No Providers

**Mobile Broadband Access by Population**

- 0.67%
- 99.33%

Legend:
- 5G Service Available
- LTE but no 5G Service
- No LTE or 5G Service

**Housing, Business, and Community Anchor Institution**

- 5,320
- 177,174
- 589,193

Legend:
- Households
- Businesses
- Community Anchor Institutions

## ADOPTION AND EQUITY INDEX

Index Score
100 · 50 · 1

## BROADBAND ACCESS INDEX

Index Score
100 · 50 · 1

**Fixed Broadband Access by Population**

| Category | Percent |
| --- | --- |
| Well Served | 85.29% |
| Served | 14.08% |
| Underserved | 0.00% |
| Unserved | 0.63% |

**Adoption and Equity Index Score by Population**

| Score | Percent |
| --- | --- |
| 76-100 | 23.43% |
| 51-75 | 46.77% |
| 26-50 | 24.09% |
| 1-25 | 5.71% |

ADOPTION

**18%** OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN ALLEGHENY COUNTY

**Broadband Access Index Score by Population**

| Score | Percent |
| --- | --- |
| 76-100 | 77.06% |
| 51-75 | 20.76% |
| 26-50 | 1.66% |
| 1-25 | 0.52% |

BROADBAND

**0.63%** OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN ALLEGHENY COUNTY

# ARMSTRONG COUNTY

## POPULATION: 68,941

### BY THE NUMBERS

**2.04%**
*Minority Population*

**12.28%**
*Low-Income Population*
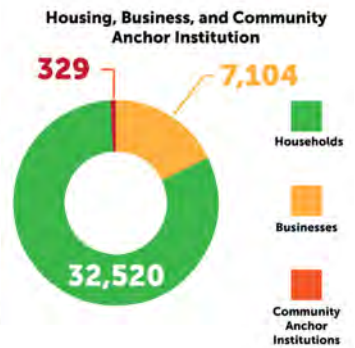
**0.43%**
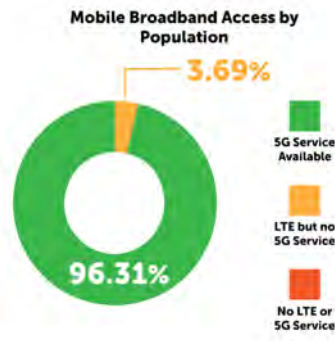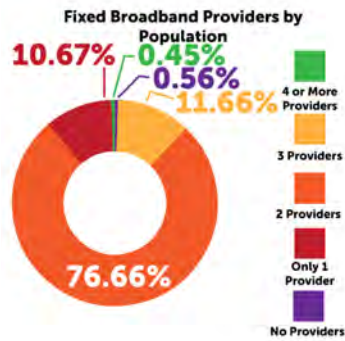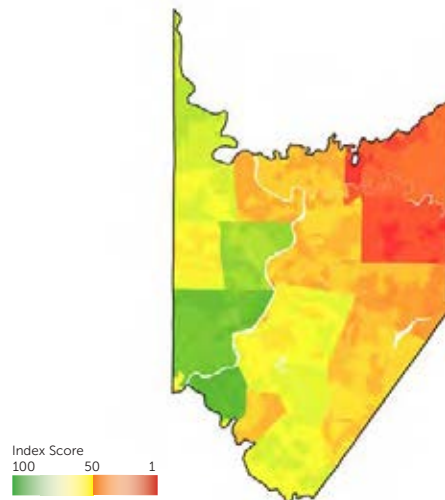*Limited English Proficiency Population*

**18.93%**
*Disabled Population*

**7.19%**
*Household with no Available Vehicle*
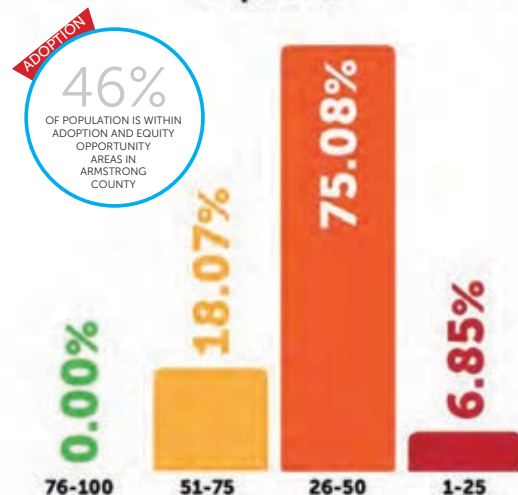
**20.54%**
*65 years or Older Adult Population*

**Fixed Broadband Providers by Population**

- 10.67%
- 0.45%
- 0.56%
- 11.66%
- 76.66%

4 or More Providers
3 Providers
2 Providers
Only 1 Provider
No Providers

**Mobile Broadband Access by Population**

- 3.69%
- 96.31%

5G Service Available
LTE but no 5G Service
No LTE or 5G Service

**Housing, Business, and Community Anchor Institution**

- 329
- 7,104
- 32,520

Households
Businesses
Community Anchor Institutions

## ADOPTION AND EQUITY INDEX



Index Score
100   50   1

## BROADBAND ACCESS INDEX



Index Score
100   50   1

**Fixed Broadband Access by Population**

- 57.85% — Well Served
- 38.19% — Served
- 1.00% — Underserved
- 2.96% — Unserved

**Adoption and Equity Index Score by Population**

ADOPTION

46% OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN ARMSTRONG COUNTY

- 0.00% — 76-100
- 18.07% — 51-75
- 75.08% — 26-50
- 6.85% — 1-25

**Broadband Access Index Score by Population**

BROADBAND

3% OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN ARMSTRONG COUNTY

- 56.29% — 76-100
- 39.39% — 51-75
- 3.06% — 26-50
- 1.25% — 1-25

# BEAVER COUNTY

## POPULATION: 170,539



## BY THE NUMBERS

**10.13%**
*Minority Population*

**12.28%**
*Low-Income Population*
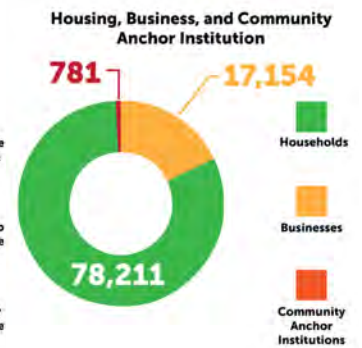
**0.67%**
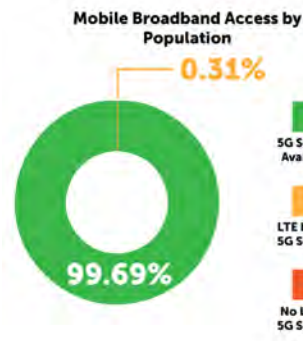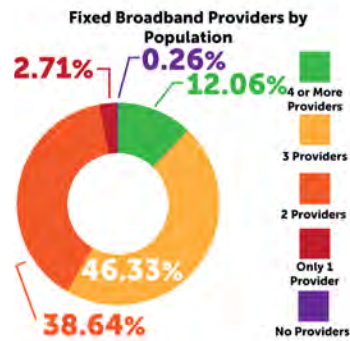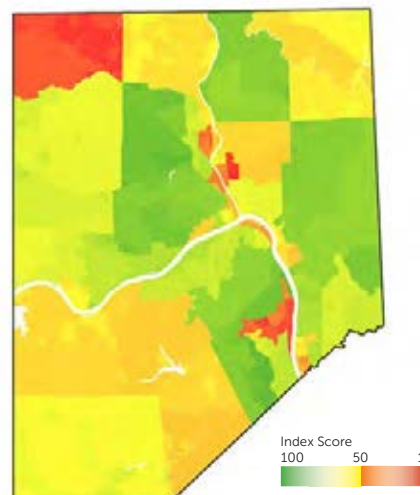*Limited English Proficiency Population*

**16.09%**
*Disabled Population*

**9.26%**
*Household with no Available Vehicle*
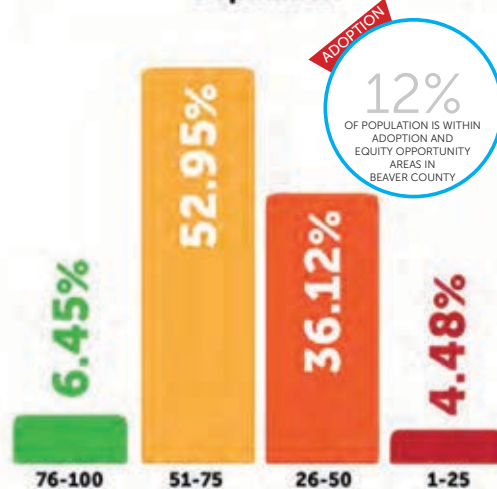
**19.62%**
*65 years or Older Adult Population*

### Fixed Broadband Providers by Population

2.71% — 0.26% — 12.06% 4 or More Providers

3 Providers

2 Providers

Only 1 Provider

No Providers

46.33%

38.64%

### Mobile Broadband Access by Population

0.31%

99.69%

5G Service Available

LTE but no 5G Service

No LTE or 5G Service

### Housing, Business, and Community Anchor Institution

781 — 17,154

78,211

Households

Businesses

Community Anchor Institutions

## ADOPTION AND EQUITY INDEX



Index Score
100   50   1

## BROADBAND ACCESS INDEX



Index Score
100   50   1

### Fixed Broadband Access by Population

28.76%   69.62%   0.02%   1.60%

Well Served   Served   Underserved   Unserved

### Adoption and Equity Index Score by Population

6.45%   52.95%   36.12%   4.48%

76-100   51-75   26-50   1-25

**ADOPTION**

**12%**
OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN BEAVER COUNTY

### Broadband Access Index Score by Population

27.70%   66.97%   4.53%   0.80%

76-100   51-75   26-50   1-25

**BROADBAND**

**2%**
OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN BEAVER COUNTY

# BUTLER COUNTY

## POPULATION: 183,862

BY THE NUMBERS

**3.44%**
*Minority Population*

**11.65%**
*Low-Income Population*
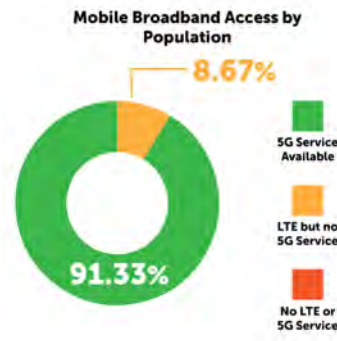
**0.52%**
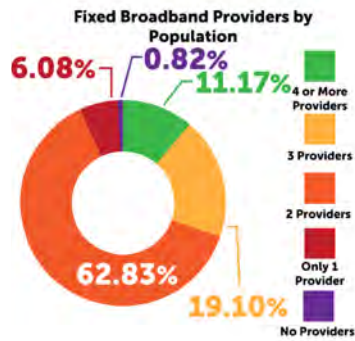*Limited English Proficiency Population*

**13.78%**
*Disabled Population*
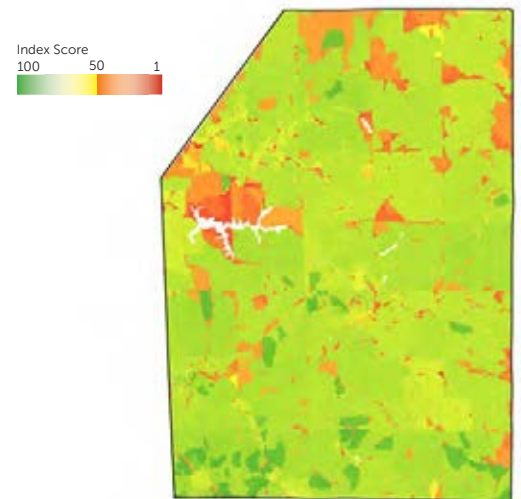
**7.09%**
*Household with no Available Vehicle*
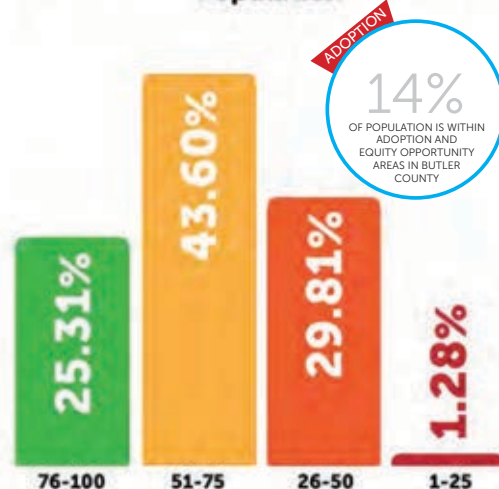
**18.37%**
*65 years or Older Adult Population*

### Fixed Broadband Providers by Population

- 11.17% — 4 or More Providers
- 0.82% — 3 Providers
- 62.83% — 2 Providers
- 19.10% — Only 1 Provider
- 6.08% — No Providers

### Mobile Broadband Access by Population

- 8.67% — 5G Service Available
- 91.33% — LTE but no 5G Service
- No LTE or 5G Service

### Housing, Business, and Community Anchor Institution

- 78,167 — Households
- 23,961 — Businesses
- 678 — Community Anchor Institutions

### Fixed Broadband Access by Population

- 7.75% — Well Served
- 88.49% — Served
- 0.64% — Underserved
- 3.12% — Unserved

## ADOPTION AND EQUITY INDEX

Index Score
100   50   1

### Adoption and Equity Index Score by Population

- 25.31% — 76-100
- 43.60% — 51-75
- 29.81% — 26-50
- 1.28% — 1-25

**ADOPTION**

14% OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN BUTLER COUNTY

## BROADBAND ACCESS INDEX

Index Score
100   50   1

### Broadband Access Index Score by Population

- 7.75% — 76-100
- 87.68% — 51-75
- 3.02% — 26-50
- 1.55% — 1-25

**BROADBAND**

4% OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN BUTLER COUNTY

# FAYETTE COUNTY

## POPULATION: 136,606



**BY THE NUMBERS**

**6.96%**
*Minority Population*

**18.21%**
*Low-Income Population*

**0.90%**
*Limited English Proficiency Population*

**18.77%**
*Disabled Population*

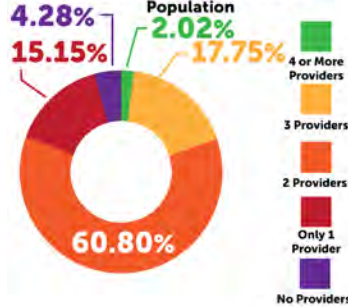**8.81%**
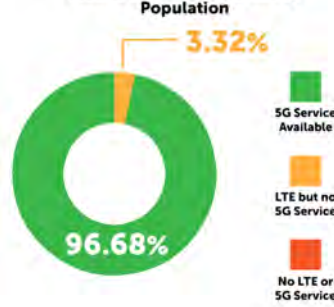*Household with no Available Vehicle*
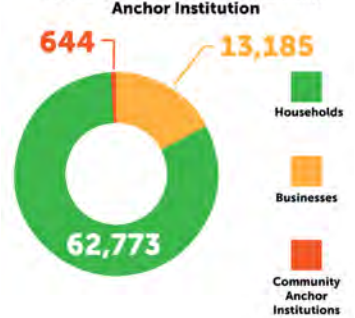
**20.04%**
*65 years or Older Adult Population*

### Fixed Broadband Providers by Population

4.28%
15.15%
2.02%
17.75%
60.80%

- 4 or More Providers
- 3 Providers
- 2 Providers
- Only 1 Provider
- No Providers

### Mobile Broadband Access by Population

3.32%
96.68%

- 5G Service Available
- LTE but no 5G Service
- No LTE or 5G Service

### Housing, Business, and Community Anchor Institution

644
13,185
62,773

- Households
- Businesses
- Community Anchor Institutions

## ADOPTION AND EQUITY INDEX



Index Score
100    50    1

## BROADBAND ACCESS INDEX



Index Score
100    50    1

### Fixed Broadband Access by Population

9.54% — Well Served
79.93% — Served
0.07% — Underserved
10.46% — Unserved

### Adoption and Equity Index Score by Population

ADOPTION

47% OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN FAYETTE COUNTY

3.60% — 76-100
18.44% — 51-75
71.57% — 26-50
6.39% — 1-25

### Broadband Access Index Score by Population

BROADBAND

11% OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN FAYETTE COUNTY

9.53% — 76-100
76.29% — 51-75
5.94% — 26-50
8.23% — 1-25
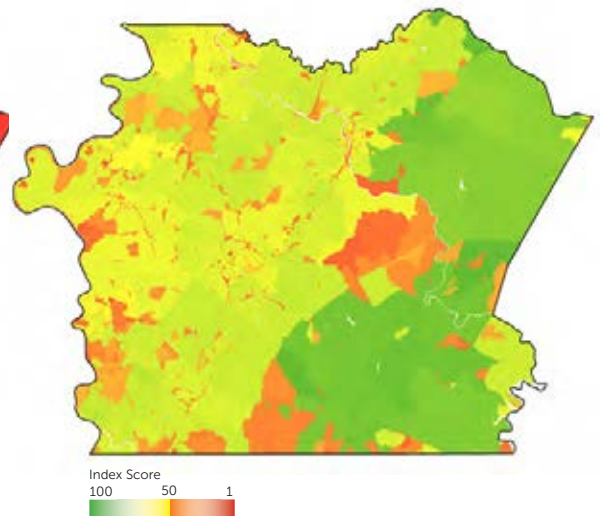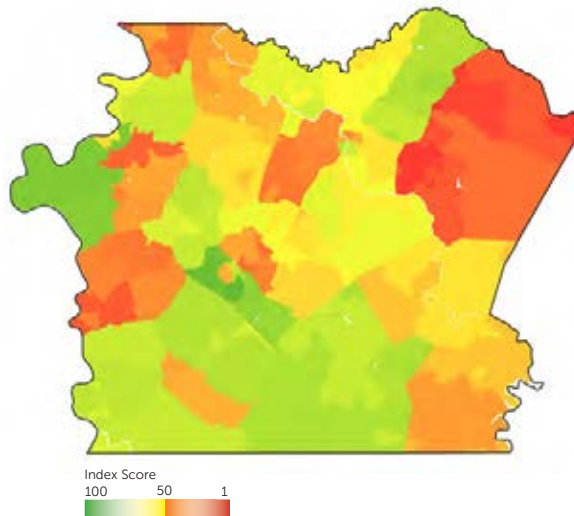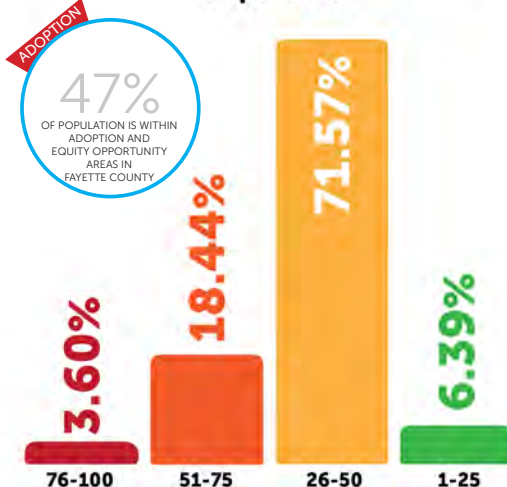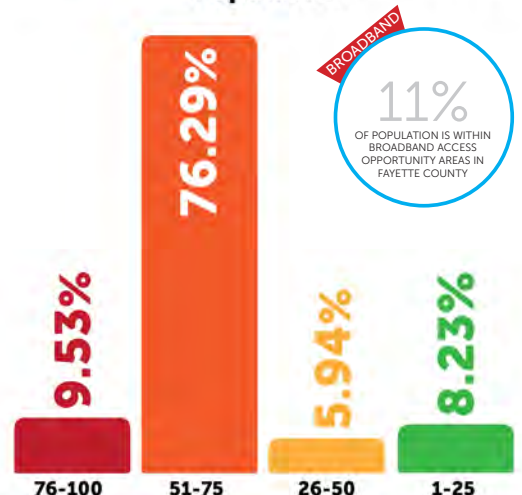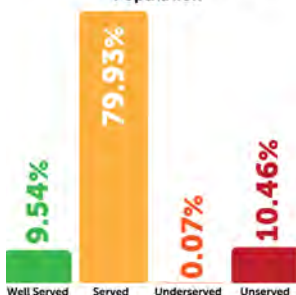
# GREENE COUNTY

## POPULATION: 38,686

## BY THE NUMBERS

**2.95%**
*Minority Population*

**11.98%**
*Low-Income Population*
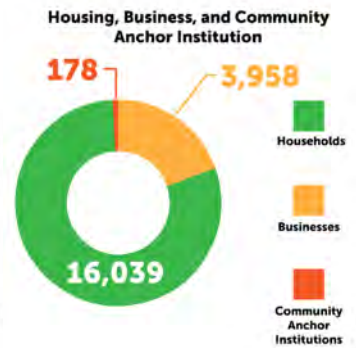
**0.34%**
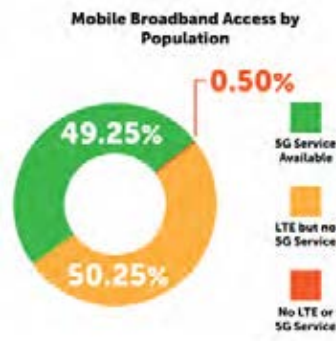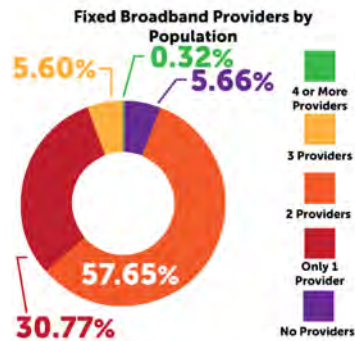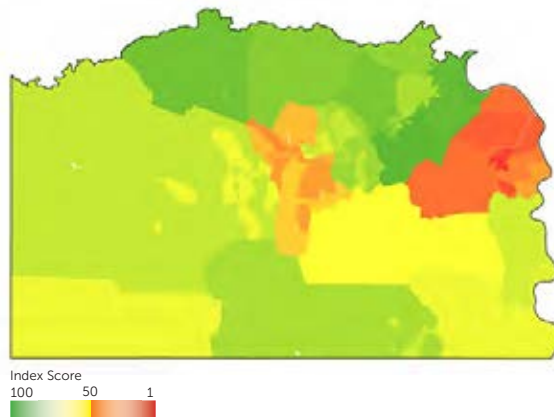*Limited English Proficiency Population*

**19.74%**
*Disabled Population*

**6.67%**
*Household with no Available Vehicle*

**18.05%**
*65 years or Older Adult Population*

### Fixed Broadband Providers by Population

5.60%
0.32%
5.66%
57.65%
30.77%

- 4 or More Providers
- 3 Providers
- 2 Providers
- Only 1 Provider
- No Providers

### Mobile Broadband Access by Population

0.50%
49.25%
50.25%

- 5G Service Available
- LTE but no 5G Service
- No LTE or 5G Service

### Housing, Business, and Community Anchor Institution

178
3,958
16,039

- Households
- Businesses
- Community Anchor Institutions

## ADOPTION AND EQUITY INDEX

Index Score
100    50    1

## BROADBAND ACCESS INDEX

Index Score
100    50    1

### Fixed Broadband Access by Population

61.52% — Well Served
21.03% — Served
3.16% — Underserved
14.29% — Unserved
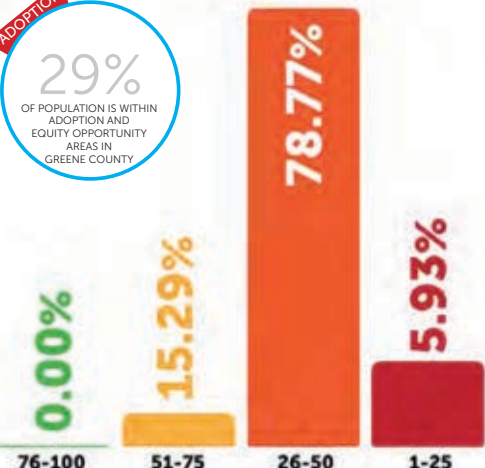
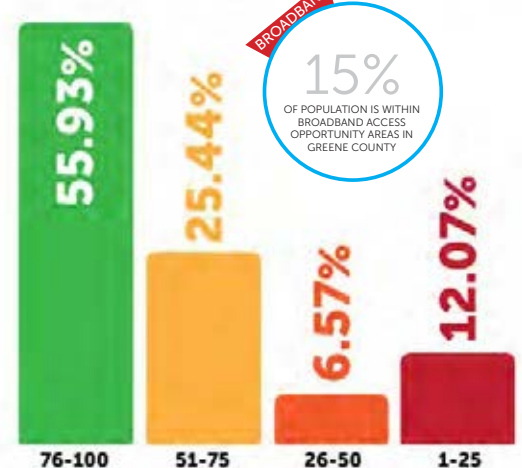### Adoption and Equity Index Score by Population

ADOPTION

29% OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN GREENE COUNTY

0.00% — 76-100
15.29% — 51-75
78.77% — 26-50
5.93% — 1-25

### Broadband Access Index Score by Population

BROADBAND

15% OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN GREENE COUNTY

55.93% — 76-100
25.44% — 51-75
6.57% — 26-50
12.07% — 1-25

# INDIANA COUNTY

## POPULATION: 88,880

## BY THE NUMBERS

**3.19%**
*Minority Population*

**13.94%**
*Low-Income Population*

**2.68%**
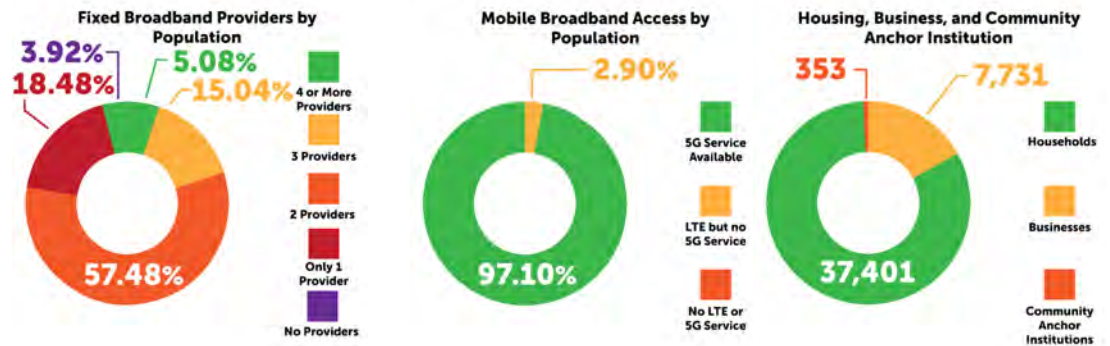*Limited English Proficiency Population*
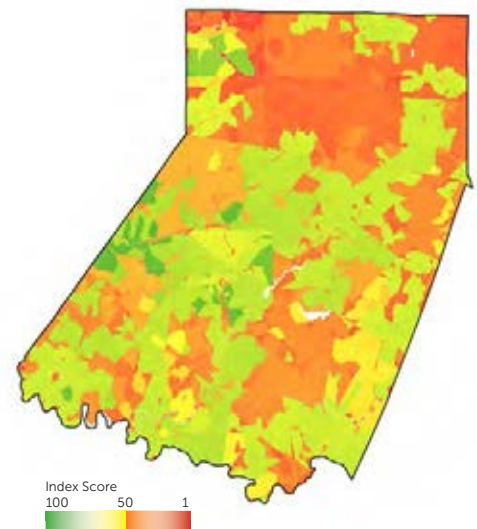
**15.76%**
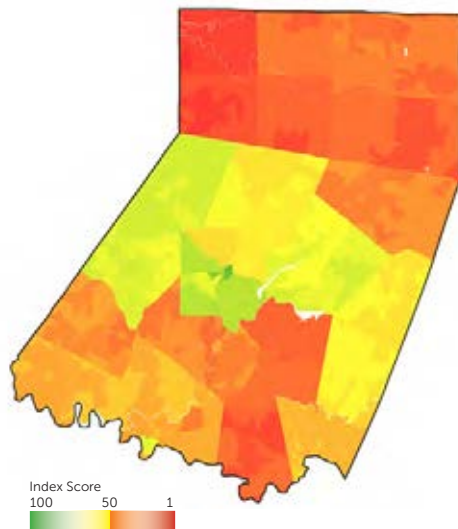*Disabled Population*

**8.54%**
*Household with no Available Vehicle*
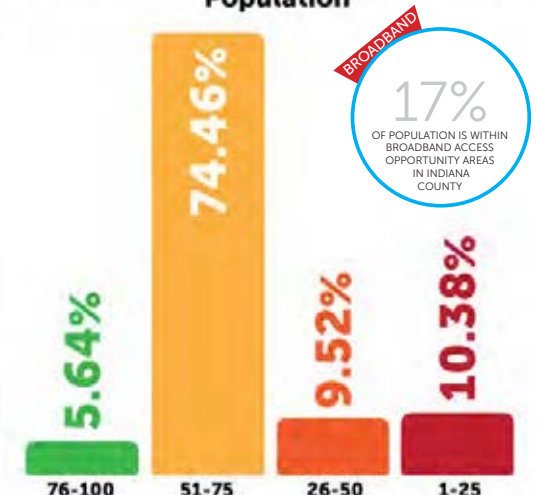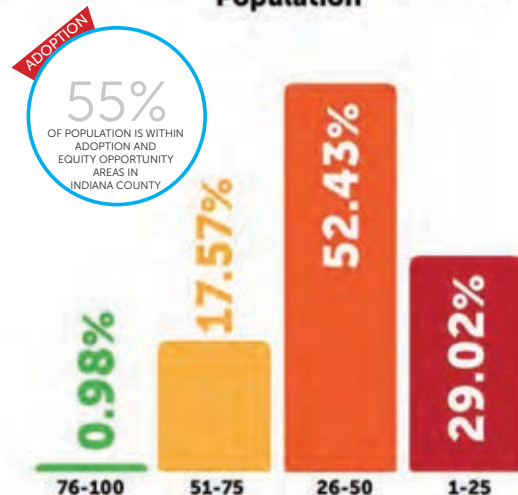
**18.44%**
*65 years or Older Adult Population*

### Fixed Broadband Providers by Population

3.92%
18.48%
5.08%
15.04%
57.48%

- 4 or More Providers
- 3 Providers
- 2 Providers
- Only 1 Provider
- No Providers

### Mobile Broadband Access by Population

2.90%
97.10%

- 5G Service Available
- LTE but no 5G Service
- No LTE or 5G Service

### Housing, Business, and Community Anchor Institution

353
7,731
37,401

- Households
- Businesses
- Community Anchor Institutions

### Fixed Broadband Access by Population

5.69% Well Served
75.09% Served
2.77% Underserved
16.45% Unserved

## ADOPTION AND EQUITY INDEX



Index Score
100    50    1

### Adoption and Equity Index Score by Population

55%
OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN INDIANA COUNTY

0.98% (76-100)
17.57% (51-75)
52.43% (26-50)
29.02% (1-25)

## BROADBAND ACCESS INDEX



Index Score
100    50    1

### Broadband Access Index Score by Population

17%
OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN INDIANA COUNTY

5.64% (76-100)
74.46% (51-75)
9.52% (26-50)
10.38% (1-25)

# LAWRENCE COUNTY

## POPULATION: 91,108



## BY THE NUMBERS

**5.38%**
*Minority Population*

**12.86%**
*Low-Income Population*
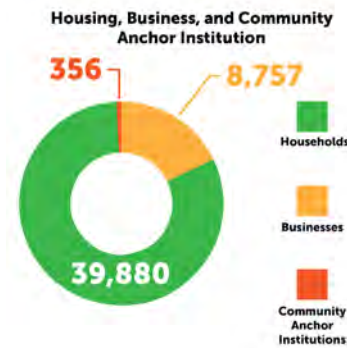
**1.24%**
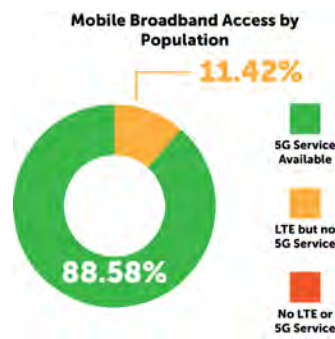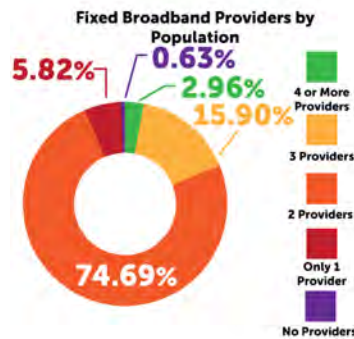*Limited English Proficiency Population*
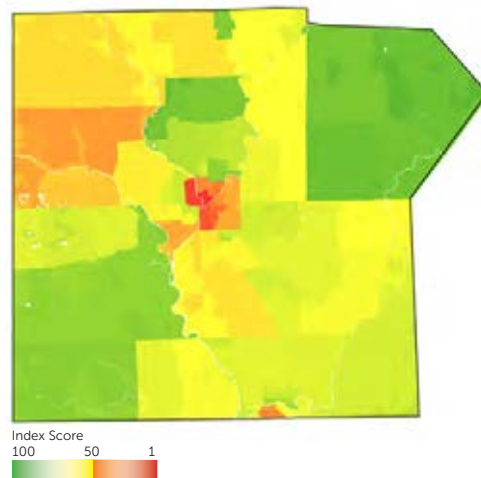
**16.98%**
*Disabled Population*

**8.20%**
*Household with no Available Vehicle*
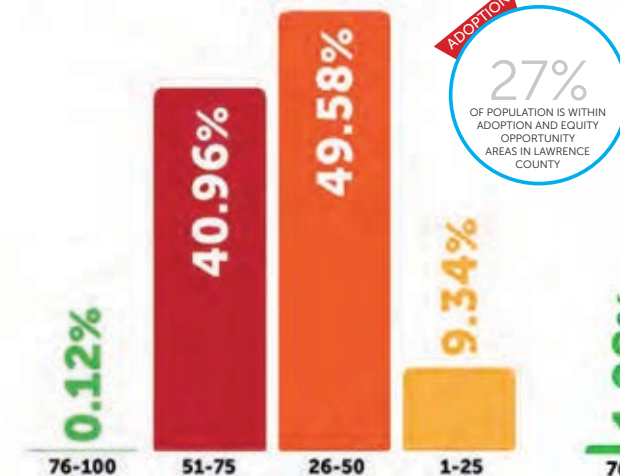
**20.59%**
*65 years or Older Adult Population*

### Fixed Broadband Providers by Population

- 0.63%
- 2.96%
- 5.82%
- 15.90%
- 74.69%

Legend:
- 4 or More Providers
- 3 Providers
- 2 Providers
- Only 1 Provider
- No Providers

### Mobile Broadband Access by Population

- 11.42%
- 88.58%

Legend:
- 5G Service Available
- LTE but no 5G Service
- No LTE or 5G Service

### Housing, Business, and Community Anchor Institution

- 356
- 8,757
- 39,880

Legend:
- Households
- Businesses
- Community Anchor Institutions

## ADOPTION AND EQUITY INDEX



Index Score
100   50   1

## BROADBAND ACCESS INDEX



Index Score
100   50   1

### Fixed Broadband Access by Population

- 1.98% — Well Served
- 93.85% — Served
- 0.43% — Underserved
- 3.73% — Unserved

### Adoption and Equity Index Score by Population

- 0.12% — 76-100
- 40.96% — 51-75
- 49.58% — 26-50
- 9.34% — 1-25

**ADOPTION**

**27%** OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN LAWRENCE COUNTY

### Broadband Access Index Score by Population

- 1.98% — 76-100
- 86.25% — 51-75
- 9.13% — 26-50
- 2.64% — 1-25

**BROADBAND**

**4%** OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN LAWRENCE COUNTY

# WASHINGTON COUNTY

## POPULATION: 207,820

## BY THE NUMBERS

**5.90%**
*Minority Population*

**11.46%**
*Low-Income Population*
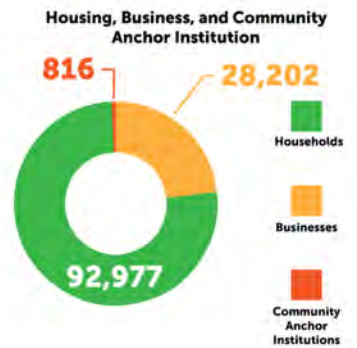
**0.85%**
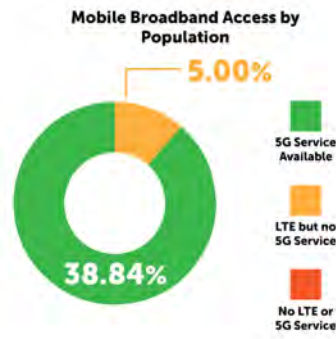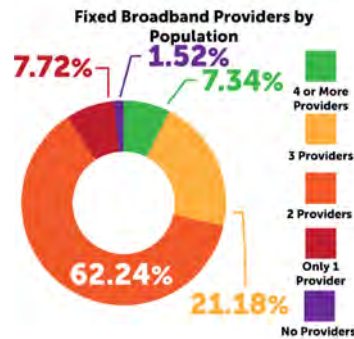*Limited English Proficiency Population*
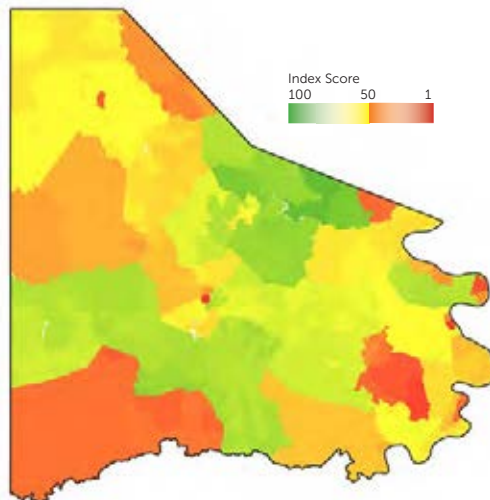
**16.37%**
*Disabled Population*

**7.94%**
*Household with no Available Vehicle*

**19.44%**
*65 years or Older Adult Population*

### Fixed Broadband Providers by Population

- 7.72%
- 1.52%
- 7.34% — 4 or More Providers
- 3 Providers
- 21.18% — 2 Providers
- Only 1 Provider
- 62.24% — No Providers

### Mobile Broadband Access by Population

- 5.00%
- 38.84%
- 5G Service Available
- LTE but no 5G Service
- No LTE or 5G Service

### Housing, Business, and Community Anchor Institution

- 816
- 28,202 — Households
- 92,977 — Businesses
- Community Anchor Institutions

## ADOPTION AND EQUITY INDEX

Index Score
100   50   1

## BROADBAND ACCESS INDEX

Index Score
100   50   1

### Fixed Broadband Access by Population

- 30.62% — Well Served
- 60.86% — Served
- 3.25% — Underserved
- 5.27% — Unserved

### Adoption and Equity Index Score by Population

- 20.40% — 76-100
- 41.65% — 51-75
- 34.08% — 26-50
- 3.87% — 1-25

**ADOPTION**

**18%**
OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN WASHINGTON COUNTY

### Broadband Access Index Score by Population
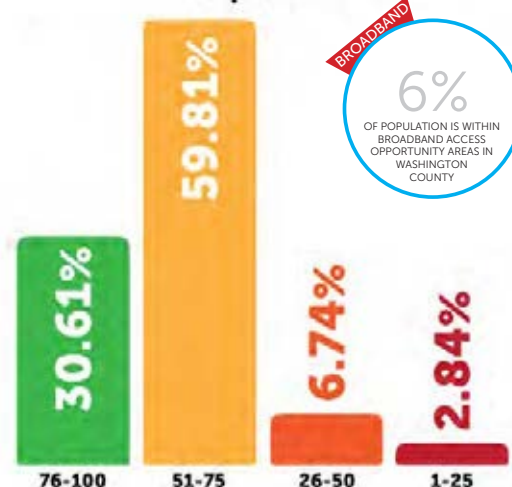
- 30.61% — 76-100
- 59.81% — 51-75
- 6.74% — 26-50
- 2.84% — 1-25

**BROADBAND**

**6%**
OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN WASHINGTON COUNTY

# WESTMORELAND COUNTY

## POPULATION: 365,169

### BY THE NUMBERS

**5.31%**
*Minority Population*

**11.82%**
*Low-Income Population*

**0.59%**
*Limited English Proficiency Population*

**15.80%**
*Disabled Population*

**7.97%**
*Household with no Available Vehicle*
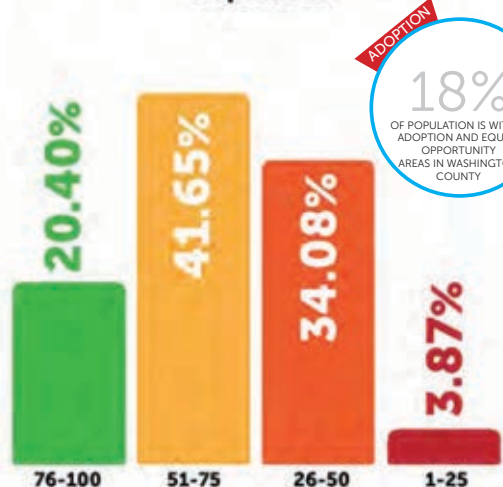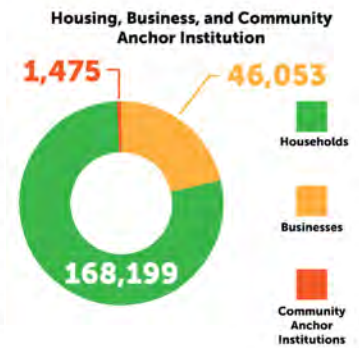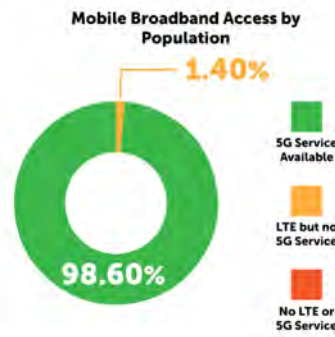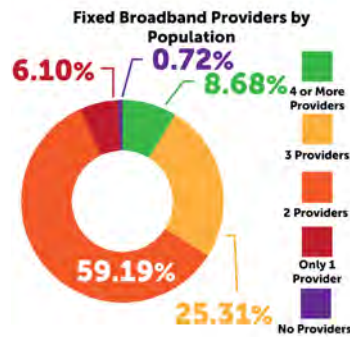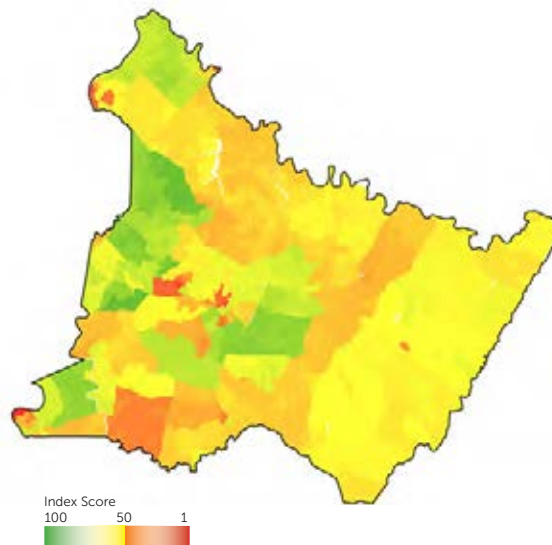
**21.00%**
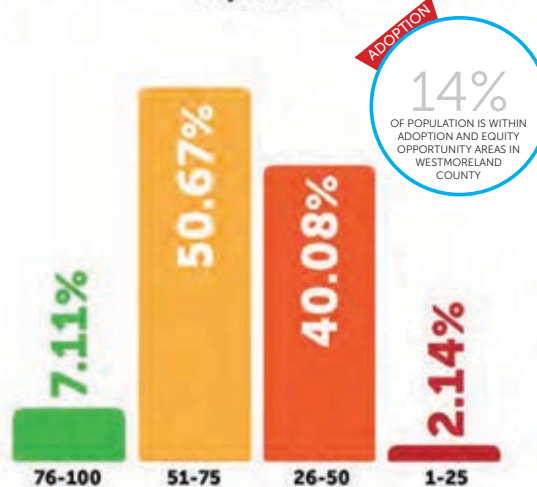*65 years or Older Adult Population*

**Fixed Broadband Providers by Population**

- 8.68% — 4 or More Providers
- 0.72% — 3 Providers
- 25.31% — 2 Providers
- 59.19% — Only 1 Provider
- 6.10% — No Providers

**Mobile Broadband Access by Population**

- 98.60% — 5G Service Available
- 1.40% — LTE but no 5G Service
- No LTE or 5G Service

**Housing, Business, and Community Anchor Institution**

- 168,199 — Households
- 46,053 — Businesses
- 1,475 — Community Anchor Institutions

## ADOPTION AND EQUITY INDEX



Index Score
100    50    1

## BROADBAND ACCESS INDEX



Index Score
100    50    1

**Fixed Broadband Access by Population**

- 21.92% — Well Served
- 76.1% — Served
- 0.04% — Underserved
- 1.92% — Unserved

**Adoption and Equity Index Score by Population**

- 7.11% — 76-100
- 50.67% — 51-75
- 40.08% — 26-50
- 2.14% — 1-25

**ADOPTION**
14% OF POPULATION IS WITHIN ADOPTION AND EQUITY OPPORTUNITY AREAS IN WESTMORELAND COUNTY

**Broadband Access Index Score by Population**

- 21.89% — 76-100
- 74.68% — 51-75
- 2.01% — 26-50
- 1.41% — 1-25

**BROADBAND**
2% OF POPULATION IS WITHIN BROADBAND ACCESS OPPORTUNITY AREAS IN WESTMORELAND COUNTY