OGEMAW COUNTY

TECHNOLOGY ACTION PLAN

PREPARED BY CONNECT MICHIGAN
AND THE
OGEMAW COUNTY TECHNOLOGY PLANNING TEAM

JULY 1, 2014
INTRODUCTION

The purpose of this report is to summarize the community’s assessment of local broadband access, adoption, and use, as well as the best next steps for addressing any deficiencies or opportunities for improving the local technology ecosystem.

Background

Today, technology plays a pivotal role in how businesses operate, the type of service consumers expect, how institutions provide services, and where consumers choose to live, work, and play. The success of a community has also become dependent on how broadly and deeply the community adopts technology resources – this includes access to reliable high-speed networks, digital literacy of residents, and the use of online resources locally for business, government, and leisure. As noted in the National Broadband Plan, broadband Internet is “a foundation for economic growth, job creation, global competitiveness and a better way of life.”

Despite the growing dependence on technology, as of 2012, 30% of Americans did not have a high-speed connection at home. Connected Nation’s studies also show that 17 million families with children do not have broadband at home – and 7.6 million of these children live in low-income households. In 2012, Connected Nation also surveyed 7,004 businesses in 9 states. Based on this data, Connected Nation estimates that at least 1.8 million businesses - 24% - in the United States do not utilize broadband technology today.

Deploying broadband infrastructure, services, and application, as well as supporting the universal adoption and meaningful use of broadband, are challenging - but required - building blocks of a twenty-first century community. To assist communities, Connected Nation developed the Connected Community Engagement Program to help your community identify local technology assets, complete an assessment of local broadband access, adoption, and use, and develop an action plan for pursuing solutions.

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3 Connected Nation, Broadband and Business: Leveraging Technology to Stimulate Economic Growth, http://www.connectednation.org/survey-results/business
4 Connected Nation, parent company for Connect Michigan, is a national non-profit 501(c)(3) organization that works in multiple states to engage community stakeholders, state leaders, and technology providers to develop and implement technology expansion programs with core competencies centered around the mission to improve digital inclusion for people and places previously underserved or overlooked.
Methodology
By actively participating in the Connected Community Engagement Program, the Wexford County Technology Planning Team is boosting the community’s capabilities in education, healthcare, and public safety, stimulating economic growth, and spurring job creation. The Wexford County Technology Planning Team has collaborated with multiple community organizations and residents to:

1. Empower a community team leader (local champion) and create a community team composed of a diverse group of local residents from various sectors of the economy including education, government, healthcare, the private sector, and libraries.
2. Identify the community’s technology assets, including local infrastructure, providers, facilities, websites, and innovative uses employed by institutions.
3. Complete the Connected Assessment, a measurement of the community’s access, adoption, and use of broadband based on the recommendations of the National Broadband Plan.
4. Match gaps in the local broadband ecosystem to solutions and best practices being utilized by communities across the nation.
5. Pursue Connected Certification, a nationally recognized platform for spotlighting communities that excel in the access, adoption, and use of broadband.
**CONNECTED ASSESSMENT**

The Connected assessment framework is broken into 3 areas: **ACCESS**, **ADOPTION**, and **USE**. Each area has a maximum of 40 points. To achieve Connected Certification, the community must have 32 points in each section and 100 points out of 120 points overall.

The **ACCESS** focus area checks to see whether the broadband and technology foundation exists for a community. The criteria within the **ACCESS** focus area endeavors to identify gaps that could affect a local community broadband ecosystem including: last and middle mile issues, cost issues, and competition issues. As noted in the National Broadband Plan, broadband **ACCESS** “is a foundation for economic growth, job creation, global competitiveness and a better way of life.”

Broadband **ADOPTION** is important for consumers, institutions, and communities alike to take the next step in fully utilizing broadband appropriately. The **ADOPTION** component of the Connected Assessment seeks to ensure the ability of all individuals to access and use broadband.

Broadband **USE** is the most important component of **ACCESS**, **ADOPTION**, and **USE** because it is where the value of broadband can finally be realized. However, without access to broadband and **ADOPTION** of broadband, meaningful **USE** of broadband wouldn’t be possible. As defined by the National Broadband Plan (NBP), meaningful **USE** of broadband includes those areas of economic opportunity, education, government, and healthcare where values to individuals, organizations, and communities can be realized.

**Analysis of Connected Assessment**

The Community Technology Scorecard provides a summary of the community’s Connected Assessment. The Connected Assessment’s criteria are reflective of the recommendations made by the Federal Communications Commission’s National Broadband Plan. Lower scores indicate weaknesses in the community’s broadband ecosystem, but do not necessarily signify a lack of service.

- Ogemaw County achieved a score of 106 points out of 120 for overall broadband and technology readiness, which indicates that the community is exhibiting high success in technology access, adoption, and use and has surpassed the score of 100 required for Connected certification.
- The county scored 33 out of a possible 40 points in broadband access primarily because of some gaps in broadband availability. While broadband availability shows 99.85% of households having access to 3 Mbps, Ogemaw County is above the state average of 98.43%.
- Ogemaw County exceeded the 32 points in each focus area that are required for certification and has qualified for full certification.

While the results indicate that the community has made tremendous strides and investments in technology, this technology action plan will provide some insight and solutions that will help the community continue to achieve success.
Community Technology Scorecard
Community Champions: Mandi Chasey
Community Advisor: Tom Stephenson

<table>
<thead>
<tr>
<th>FOCUS AREA</th>
<th>ASSESSMENT CRITERIA</th>
<th>DESCRIPTION</th>
<th>SCORE</th>
<th>MAXIMUM POSSIBLE SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCESS</td>
<td>Broadband Availability</td>
<td>98% to 100% of households have access to 3 Mbps</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Broadband Speeds</td>
<td>75% of households with access to at least 25 Mbps</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Broadband Competition</td>
<td>80% to 89.9% of households with access to more than 1 broadband provider</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Middle Mile Access</td>
<td>Availability of broadband at speeds of at least 50 Mbps download</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Mobile Broadband Availability</td>
<td>90% to 94.9% of households with access to mobile wireless</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>ACCESS SCORE</td>
<td></td>
<td></td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Digital Literacy</td>
<td>Program grads are greater than 10 per 1,000 residents over the past year</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Public Computer Centers</td>
<td>250 computer hours per 1,000 low income residents per week</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Broadband Awareness</td>
<td>Campaigns reach 100% of the community</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Vulnerable Population Focus</td>
<td>At least 5 groups</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION SCORE</td>
<td></td>
<td></td>
<td>34</td>
<td>40</td>
</tr>
<tr>
<td>USE</td>
<td>Economic Opportunity</td>
<td>8 advanced, 7 basic uses</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>Education</td>
<td>8 advanced, 12 basic uses</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>Government</td>
<td>3 advanced, 3 basic uses</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>Healthcare</td>
<td>9 advanced, 2 basic uses</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE SCORE</td>
<td></td>
<td></td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>COMMUNITY ASSESSMENT SCORE</td>
<td></td>
<td></td>
<td>106</td>
<td>120</td>
</tr>
</tbody>
</table>
Itemized Key Findings

The Ogemaw County Technology Planning Team identified the following key findings (in addition to findings illustrated in the community scorecard) through its technology assessment:

**ACCESS**
- 18 last mile broadband providers currently provide service in Ogemaw County:
  - 98% of households have access to 3 Mbps.
  - 75% of households in Ogemaw County have access to 25 Mbps service.
  - 80% to 89.9% of Ogemaw County households have access to more than 1 provider.
- Middle mile fiber infrastructure is available from multiple providers in Ogemaw County.
- 90% to 94.9% of Ogemaw County households have access to mobile broadband.

**ADOPTION**
- 9 digital literacy programs exist in the community resulting in 821 graduates over the past year.
- 5 public computer centers (PCC) with a total of 36 computers are open to the public.
- 3 broadband awareness campaigns are reaching 100% of Ogemaw County.
- 6 organizations are working with vulnerable populations.

**USE**
- At least 15 uses of broadband were identified in the area of economic opportunity including 8 advanced uses and 7 basic uses.
- At least 20 uses of broadband were identified in the area of education including 8 advanced uses and 12 basic uses.
- At least 6 uses of broadband were identified in the area of government including 3 advanced uses and 3 basic uses.
- At least 11 uses of broadband were identified in the area of healthcare including 9 advanced uses and 2 basic uses.

In addition to the items identified above, the Ogemaw County Technology Planning Team identified the following technology resources in the community:

**Technology Providers**
- 18 broadband providers were identified in Ogemaw County
- 2 hardware providers
- 3 web developers
- 2 network developers

**Technology Facilities**
- 5 public computing centers
- 23 wireless hotspots
Community Websites
- 2 business-related websites (excluding private businesses)
- 4 education-related websites
- 23 government-related websites
- 2 healthcare-related websites
- 4 library-related websites
- 1 tourism-related website

Community Priority Projects
The Connected Assessment has culminated in the outlining of projects designed to empower the community to accelerate broadband access, adoption, and use. Below are four priority projects. Detailed descriptions of each project can be found in the Action Plan section later in this report. This is followed by a complete list of all proposed projects.

1. Complete a Vertical Assets Inventory for Ogemaw County
2. Create Local Jobs Via Teleworking Opportunities in Ogemaw County
3. Host Website and Social Media Classes for the Local Businesses in Ogemaw County
4. Develop a Program Supporting Schools in New Technology Initiatives in Ogemaw County

Complete List of Action Items
Below is a complete list of 16 proposed projects by the Ogemaw County Broadband Team to accelerate broadband access, adoption, and use. Detailed descriptions of each solution proposed by the Connect Michigan can be found in the Action Plan section later in this report.

ACCESS

Broadband Availability
1. Perform an Analysis of Local Policies and Ordinances.
2. Identify, Map, and Validate Broadband Demand in Ogemaw County.

Broadband Speeds – No action items.

Broadband Competition – No action items.

Middle Mile Access – No action items.

Mobile Broadband Availability
3. Identify and Expand Wireless Hotspots in the Community.
4. Complete a Vertical Assets Inventory.
ADOPTION

Digital Literacy
5. Develop a Digital Literacy and Low-Cost Broadband Program for Ogemaw County.

Public Computer Centers
7. Establish a "Community Technology Academy."

Broadband Awareness
8. Facilitate a Technology Summit.

Vulnerable Population Focus – No action items.

USE

Economic Opportunity
9. Develop or Identify a Broadband Training and Awareness Program for Small and Medium Businesses.
10. Create local Jobs Via Teleworking Opportunities.
11. Host Website and Social Media Classes for the Local Businesses in Ogemaw County.

Education
12. Improve Education through Digital Learning.
13. Develop a Program Supporting Schools in New Technology Initiatives in Ogemaw County.

Government
15. Pursue Next Generation 911 Upgrades.

Healthcare
## Detailed Findings

### Ogemaw County Assessment Findings

Residents in Ogemaw County (or sections of the community) are served by 18 providers. Currently, broadband is defined as Internet service with advertised speeds of at least 768 Kbps downstream and 200 Kbps upstream. According to Connect Michigan’s latest broadband mapping update, the following providers have a service footprint in the Ogemaw County Community:

<table>
<thead>
<tr>
<th>Broadband Providers</th>
<th>Website Reference</th>
<th>Technology Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri-Valley Broadband, Inc./miSpot</td>
<td><a href="http://mispot.net">http://mispot.net</a></td>
<td>Fixed Wireless</td>
</tr>
<tr>
<td>Celico Partnership /Verizon Wireless</td>
<td><a href="http://www.verizonwireless.com">www.verizonwireless.com</a></td>
<td>Mobile Wireless</td>
</tr>
<tr>
<td>CenturyTel, Inc./CenturyLink</td>
<td><a href="http://www.centurylink.com">www.centurylink.com</a></td>
<td>DSL</td>
</tr>
<tr>
<td>Charter Communications, Inc.</td>
<td><a href="http://www.charter.com">www.charter.com</a></td>
<td>Cable</td>
</tr>
<tr>
<td>Custom Software, Inc./M33 Access</td>
<td><a href="http://www.m33access.com">www.m33access.com</a></td>
<td>Fiber, Fixed Wireless</td>
</tr>
<tr>
<td>Endless Journey Internet</td>
<td><a href="http://www.ejourney.com">www.ejourney.com</a></td>
<td>Fixed Wireless</td>
</tr>
<tr>
<td>Frontier Midstates, Inc.</td>
<td><a href="http://www.frontier.com">www.frontier.com</a></td>
<td>DSL</td>
</tr>
<tr>
<td>Frontier North, Inc.</td>
<td><a href="http://www.frontier.com">www.frontier.com</a></td>
<td>DSL</td>
</tr>
<tr>
<td>Michigan Access, Inc.</td>
<td><a href="http://www.m33access.com">www.m33access.com</a></td>
<td>DSL</td>
</tr>
<tr>
<td>Michigan Bell Telephone Company/AT&amp;T Michigan</td>
<td><a href="http://www.att.com">www.att.com</a></td>
<td>DSL</td>
</tr>
<tr>
<td>Sprint</td>
<td><a href="http://www.sprint.com">www.sprint.com</a></td>
<td>Mobile Wireless</td>
</tr>
<tr>
<td>Iserv</td>
<td><a href="http://www.iserv.net">www.iserv.net</a></td>
<td>DSL</td>
</tr>
<tr>
<td>Vogtmann Engineering, Inc.</td>
<td><a href="http://www.veionline.com">www.veionline.com</a></td>
<td>Cable, Fiber</td>
</tr>
<tr>
<td>Hughes Network Systems, LLC</td>
<td><a href="http://www.hughesnet.com">www.hughesnet.com</a></td>
<td>Satellite</td>
</tr>
<tr>
<td>Skycasters</td>
<td><a href="http://www.skycasters.com">www.skycasters.com</a></td>
<td>Satellite</td>
</tr>
</tbody>
</table>

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5 Organizations define broadband in different ways. For information to be included on the National Telecommunications and Information Administration’s National Broadband Map, the technology must provide a two-way data transmission (to and from the Internet) with advertised speeds of at least 768 kilobits per second (Kbps) downstream and at least 200 Kbps upstream to end users. The Connected Community Engagement Program defines basic broadband as 768 Kbps downstream and 200 Kbps upstream.
Below is a list of local technology companies that are providing technical services or distributing/selling technical resources.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Website</th>
<th>Provider Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers Done Wright</td>
<td><a href="http://www.computersdonewright.com">www.computersdonewright.com</a></td>
<td>Hardware Provider</td>
</tr>
<tr>
<td>Ohp Internet</td>
<td><a href="http://www.qhpinternet.com">www.qhpinternet.com</a></td>
<td>Hardware Provider</td>
</tr>
<tr>
<td>Huizar Machines (Rose City)</td>
<td><a href="http://www.huizarmachines.com">www.huizarmachines.com</a></td>
<td>Network Integrator</td>
</tr>
<tr>
<td>Huizar Machines (West Branch)</td>
<td><a href="http://www.huizarmachines.com">www.huizarmachines.com</a></td>
<td>Network Integrator</td>
</tr>
<tr>
<td>M33 Access</td>
<td><a href="http://www.m33access.com">www.m33access.com</a></td>
<td>Web Developer</td>
</tr>
<tr>
<td>Promitech Technologies</td>
<td><a href="http://www.promitech.net">www.promitech.net</a></td>
<td>Web Developer</td>
</tr>
<tr>
<td>Interstate Domain &amp; WebSite Design</td>
<td><a href="http://www.interstatedomain.com">www.interstatedomain.com</a></td>
<td>Web Developer</td>
</tr>
<tr>
<td>Retailersoft</td>
<td><a href="http://www.retailersoft.com">www.retailersoft.com</a></td>
<td>Software</td>
</tr>
<tr>
<td>MERIT Network</td>
<td><a href="http://www.merit.edu">www.merit.edu</a></td>
<td>Other</td>
</tr>
<tr>
<td>Lynx Network Group</td>
<td><a href="http://www.lynxnetworkgroup.com">www.lynxnetworkgroup.com</a></td>
<td>Other</td>
</tr>
<tr>
<td>Great Lakes Comnet</td>
<td><a href="http://www.glcom.net">www.glcom.net</a></td>
<td>Other</td>
</tr>
<tr>
<td>ACD.Net</td>
<td><a href="http://www.acd.net">www.acd.net</a></td>
<td>Other</td>
</tr>
<tr>
<td>Peninsula Fiber Network</td>
<td><a href="http://www.pfnllc.net">www.pfnllc.net</a></td>
<td>Other</td>
</tr>
</tbody>
</table>

Below is a list of organizations that are making technological resources available to the community. These include organizations that provide videoconferencing, public computing, and wireless hotspots.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Website</th>
<th>Resource Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Branch District Library</td>
<td><a href="http://www.westbranchlibrary.org">www.westbranchlibrary.org</a></td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Ogemaw District Library</td>
<td><a href="http://www.ogemaw.michlibrary.org">www.ogemaw.michlibrary.org</a></td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Ogemaw District Library, Skidway Lake Branch</td>
<td><a href="http://www.ogemaw.michlibrary.org">www.ogemaw.michlibrary.org</a></td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Ogemaw East Branch Library</td>
<td><a href="http://www.ogemaw.michlibrary.org">www.ogemaw.michlibrary.org</a></td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Ogemaw Commission on Aging</td>
<td><a href="http://www.ogemawcountymi.gov/coa">www.ogemawcountymi.gov/coa</a></td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Café International</td>
<td><a href="http://www.cafeinternationalprescott.com">www.cafeinternationalprescott.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Big E Bakery</td>
<td><a href="http://www.facebook.com/pages/Big-E-Bakery/120221951327644">www.facebook.com/pages/Big-E-Bakery/120221951327644</a></td>
<td>Wireless Hotspot</td>
</tr>
</tbody>
</table>
### Community Websites

Below is a list of community websites (sorted by category) designed to share and promote local resources.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Website</th>
<th>Website Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Branch Area Chamber of Commerce</td>
<td><a href="http://www.wbacc.com">www.wbacc.com</a></td>
<td>Business</td>
</tr>
<tr>
<td>Michigan Small Business and Technology Development Center</td>
<td><a href="http://www.misbtdc.org">www.misbtdc.org</a></td>
<td>Business</td>
</tr>
<tr>
<td>Kirtland Community College</td>
<td><a href="http://www.kirtland.edu">www.kirtland.edu</a></td>
<td>Education</td>
</tr>
</tbody>
</table>

**Organization Name**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Briar Golf Course</td>
<td><a href="http://www.greenbriargolf.net">www.greenbriargolf.net</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>McDonald’s</td>
<td><a href="http://www.mcmichigan.com/22634">www.mcmichigan.com/22634</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Big Boy</td>
<td><a href="http://www.bigboy.com">www.bigboy.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Tim Hortons</td>
<td><a href="http://www.timhortons.com">www.timhortons.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Clear Lake Resort</td>
<td><a href="http://www.clearlakeresort.info">www.clearlakeresort.info</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>G’s Pizzeria</td>
<td><a href="http://www.gspizzeria.com">www.gspizzeria.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Loggers Depot</td>
<td><a href="http://www.facebook.com/pages/Loggers-Depot/176237109058403">www.facebook.com/pages/Loggers-Depot/176237109058403</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Loranger Pines RV Park</td>
<td><a href="http://www.lorangerpinesrvpark.com">www.lorangerpinesrvpark.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>McDonald’s</td>
<td><a href="http://www.mcstate.com/4704">www.mcstate.com/4704</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>NAPA Auto Parts</td>
<td><a href="http://www.wbtrailer.com">www.wbtrailer.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Lumber Jack Food &amp; Spirits</td>
<td><a href="http://www.visitthelumberjack.com">www.visitthelumberjack.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Quality Inn</td>
<td><a href="http://www.qualityinn.com">www.qualityinn.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Super 8</td>
<td><a href="http://www.super8.com">www.super8.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Taco Bell</td>
<td><a href="http://www.tacobell.com">www.tacobell.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Huizar Machines (Rose City)</td>
<td><a href="http://www.huizarmachines.com">www.huizarmachines.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Huizar Machines (West Branch)</td>
<td><a href="http://www.huizarmachines.com">www.huizarmachines.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Ogemaw Internet Café</td>
<td>n/a</td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Stone Mountain Coffee</td>
<td><a href="http://www.stonemountaincoffeeshop.com">www.stonemountaincoffeeshop.com</a></td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Organization Name</td>
<td>Website</td>
<td>Category</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>-------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>West Branch Rose City Area Schools</td>
<td><a href="http://www.wbrc.k12.mi.us">www.wbrc.k12.mi.us</a></td>
<td>Education</td>
</tr>
<tr>
<td>Whittemore-Prescott School District</td>
<td><a href="http://www.wpas.net">www.wpas.net</a></td>
<td>Education</td>
</tr>
<tr>
<td>Ogemaw Commission on Aging</td>
<td><a href="http://www.ogemawcountymi.gov/coa">www.ogemawcountymi.gov/coa</a></td>
<td>Government</td>
</tr>
<tr>
<td>Ogemaw County</td>
<td><a href="http://www.ogemawcountymi.gov">www.ogemawcountymi.gov</a></td>
<td>Government</td>
</tr>
<tr>
<td>Ogemaw Township</td>
<td><a href="http://www.ogemawtowmship.org">www.ogemawtowmship.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>West Branch Township</td>
<td><a href="http://www.westbranchtownship.org">www.westbranchtownship.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>Churchill Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Cumming Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Edwards Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Foster Township</td>
<td><a href="http://www.fostertownship.com">www.fostertownship.com</a></td>
<td>Government</td>
</tr>
<tr>
<td>Goodar Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Hill Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Horton Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Klacking Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Logan Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Mills Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Richland Township</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Rose Township</td>
<td><a href="http://www.rosetownship-mi.com">www.rosetownship-mi.com</a></td>
<td>Government</td>
</tr>
<tr>
<td>City of Rose City</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>City of West Branch</td>
<td><a href="http://www.westbranch.com">www.westbranch.com</a></td>
<td>Government</td>
</tr>
<tr>
<td>Village of Prescott</td>
<td><a href="http://www.ogemawcountymi.gov/townships">www.ogemawcountymi.gov/townships</a></td>
<td>Government</td>
</tr>
<tr>
<td>Ogemaw County Economic Development Corporation</td>
<td><a href="http://www.everythingogemaw.com">www.everythingogemaw.com</a></td>
<td>Government</td>
</tr>
<tr>
<td>District Health Department #2</td>
<td><a href="http://www.dhd2.org">www.dhd2.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>East Michigan Council of Governments</td>
<td><a href="http://www.emcog.org">www.emcog.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>Michigan Works Region 7B</td>
<td><a href="http://www.michworks4u.org">www.michworks4u.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>West Branch Regional Medical Center &amp; Seton Cancer Institute</td>
<td><a href="http://www.wbrmc.org">www.wbrmc.org</a></td>
<td>Healthcare</td>
</tr>
<tr>
<td>Tolfree Foundation</td>
<td><a href="http://www.tolfreefoundation.org">www.tolfreefoundation.org</a></td>
<td>Healthcare</td>
</tr>
<tr>
<td>Ogemaw East Branch Library</td>
<td><a href="http://www.ogemaw.michlibrary.org">www.ogemaw.michlibrary.org</a></td>
<td>Libraries</td>
</tr>
<tr>
<td>Ogemaw District Library, Skidway Lake Branch</td>
<td><a href="http://www.ogemaw.michlibrary.org">www.ogemaw.michlibrary.org</a></td>
<td>Libraries</td>
</tr>
<tr>
<td>Ogemaw District Library</td>
<td><a href="http://www.ogemaw.michlibrary.org">www.ogemaw.michlibrary.org</a></td>
<td>Libraries</td>
</tr>
<tr>
<td>West Branch District Library</td>
<td><a href="http://www.westbranchlibrary.org">www.westbranchlibrary.org</a></td>
<td>Libraries</td>
</tr>
<tr>
<td>West Branch Visitors Bureau</td>
<td><a href="http://www.visitwestbranch.com">www.visitwestbranch.com</a></td>
<td>Tourism</td>
</tr>
</tbody>
</table>
**Connected Assessment Analysis**

**ACCESS SCORE EXPLANATION**

**Broadband Availability** *(10 out of 10 Points Possible)* – is measured by analyzing the percentage of households in the community with access to fixed broadband speeds of 3 Mbps or higher. Data is collected by Connected Nation’s broadband mapping program. If broadband data is missing, the community team was able to improve the quality of data to ensure all providers are included.

- According to the April 2014 data collected by Connect Michigan, 99.85% of Ogemaw County residents had access to broadband speeds of 3 Mbps or greater.

**Broadband Speeds** *(4 out of 5 Points Possible)* – is measured by analyzing the speed tiers available within a community. Data is collected by Connected Nation’s broadband mapping program. The Connected Assessment analyzes broadband coverage by the highest speed tier with at least 75% of households covered. If broadband data is missing, the community team was able to improve the quality of data to ensure all providers are included.

- According to the April 2014 data collected by Connect Michigan, 78.68% of Ogemaw County residents had access to broadband speeds of 25 Mbps.

**Broadband Competition** *(3 out of 5 Points Possible)* – is measured by analyzing the number of broadband providers available in the community and the percentage of that community’s residents with more than one broadband provider available. Connected Nation performed this analysis by reviewing the data collected through its broadband mapping program. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- According to the April 2014 data collected by Connect Michigan, 89.22% of Ogemaw County residents had access to more than one broadband provider.

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*Connected Nation is working across states and with the federal government to implement the State Broadband Initiative (SBI) program created by the Broadband Data Improvement Act of 2008 and managed by the National Telecommunications and Information Administration (NTIA) within the Department of Commerce. One of the main components of the SBI program is the creation of a detailed, nationwide map of broadband coverage in order to accurately pinpoint remaining gaps in broadband availability across the nation. Connected Nation is the largest mapping agent across the nation supporting the SBI program, and has worked in thirteen jurisdictions to collect, process, integrate, and validate provider data, and map the broadband inventory across these jurisdictions. Connected Nation has received, processed, and submitted records to the NTIA from over 1,400 service providers.*
Middle Mile Access (10 out of 10 Points Possible) – is measured based on a community’s availability to fiber. Three aspects of availability exist: proximity to middle mile points of presence (POPs), number of POPs available, and available bandwidth. The community, in collaboration with Connected Nation, collected and analyzed middle mile access data.

- Ogemaw County is served by 7 or more middle mile fiber providers.

Mobile Broadband Availability (6 out of 10 Points Possible) – is measured by analyzing provider availability of mobile broadband service gathered by Connected Nation’s broadband mapping program. In communities that may have mobile broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- According to the April 2014 data collected by Connect Michigan, 94.59% of Ogemaw County residents had access to mobile broadband service.

ADOPTION SCORE EXPLANATION

Digital Literacy (10 out of 10 Points Possible) – is measured by first identifying all digital literacy programs in the community. Once the programs are determined, a calculation of program graduates will be made on a per capita basis. A digital literacy program includes any digital literacy course offered for free or at very low cost through a library, seniors center, community college, K-12 school, or other group serving the local community. A graduate is a person who has completed the curriculum offered by any organization within the community. The duration of individual courses may vary. A listing of identified digital literacy offerings is below.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Program Description</th>
<th>Number of Grads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ogemaw Commission on Aging</td>
<td>Computer training</td>
<td>44</td>
</tr>
<tr>
<td>Northwest Education Association</td>
<td>Computer Technology</td>
<td>80</td>
</tr>
<tr>
<td>West Branch District Library</td>
<td>Basic Computer Workshop</td>
<td>216</td>
</tr>
<tr>
<td>West Branch District Library</td>
<td>Advance Computer Workshop</td>
<td>79</td>
</tr>
<tr>
<td>West Branch District Library</td>
<td>E-Reader Workshops</td>
<td>114</td>
</tr>
<tr>
<td>West Branch District Library</td>
<td>Digital Photography</td>
<td>40</td>
</tr>
<tr>
<td>West Branch District Library</td>
<td>Social Networking</td>
<td>30</td>
</tr>
<tr>
<td>West Branch District Library</td>
<td>Tech Tuesdays</td>
<td>193</td>
</tr>
<tr>
<td>MI Works -Region 7B Consortium</td>
<td>Free Digital Literacy- Basics of Computers</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total Graduates 2013-2014</strong></td>
<td></td>
<td><strong>821</strong></td>
</tr>
</tbody>
</table>
Public Computer Centers (4 out of 10 Points Possible) – is measured based on the number of hours computers are available each week per 1,000 low-income residents. Available computer hours are calculated by taking the overall number of computers multiplied by the number of hours open to a community during the course of the week. A listing of public computer centers available in Ogemaw County is below.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Number of Open Hours per Week</th>
<th>Number of Computers</th>
<th>Available Computer Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Branch District Library</td>
<td>43</td>
<td>14</td>
<td>602</td>
</tr>
<tr>
<td>Ogemaw District Library</td>
<td>24</td>
<td>10</td>
<td>240</td>
</tr>
<tr>
<td>Ogemaw District Library, Skidway Lake Branch</td>
<td>28</td>
<td>4</td>
<td>112</td>
</tr>
<tr>
<td>Ogemaw East Branch Library</td>
<td>20</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>Ogemaw Commission on Aging</td>
<td>40</td>
<td>3</td>
<td>120</td>
</tr>
</tbody>
</table>

Broadband Awareness (10 out of 10 Points Possible) – is measured based on the percentage of the population reached. All community broadband awareness programs are first identified, and then each program’s community reach is compiled and combined with other campaigns. A listing of broadband awareness programs in Ogemaw County is below.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Campaign Description</th>
<th>Community Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ogemaw County Economic Development Corporation</td>
<td>Promotes broadband awareness programs in the newspaper and on Facebook</td>
<td>20%</td>
</tr>
<tr>
<td>Ogemaw District Library</td>
<td>Promote digital literacy classes through several media sources</td>
<td>40%</td>
</tr>
<tr>
<td>ML Works</td>
<td>Promote digital literacy classes through several media sources such newspaper, Facebook, and flyers throughout the entire county</td>
<td>100%</td>
</tr>
</tbody>
</table>

Vulnerable Population Focus (10 out of 10 Points Possible) – A community tallies each program or ability within the community to encourage technology adoption among vulnerable groups. Methods of focusing on vulnerable groups may vary, but explicitly encourage technology use among vulnerable groups. Example opportunities include offering online GED classes, English as a Second Language (ESL) classes, video-based applications for the deaf, homework assistance for students, and job-finding assistance. Communities receive points for each group on which they focus. Groups may vary by community, but include low-income, minority, senior, children, etc. A listing of programs focusing on vulnerable populations in Ogemaw County is listed below.
## USE SCORE EXPLANATION

**Economic Opportunity** *(10 out of 10 Points Possible)* – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within economic opportunity include: economic development, business development, tourism, and agriculture. Identified uses of broadband in the area of economic opportunity are listed below and identified as basic or advanced.
<table>
<thead>
<tr>
<th>Application Provider</th>
<th>Description</th>
<th>Basic/Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirtland Community College</td>
<td>100% of classrooms connected to Internet via broadband</td>
<td>Basic</td>
</tr>
<tr>
<td>Kirtland Community College</td>
<td>100% of libraries connected to Internet via broadband</td>
<td>Basic</td>
</tr>
<tr>
<td>Kirtland Community College</td>
<td>Presence of library automation system</td>
<td>Basic</td>
</tr>
<tr>
<td>Kirtland Community College</td>
<td>Online tutoring for students</td>
<td>Basic</td>
</tr>
</tbody>
</table>

**Education (10 out of 10 Points Possible)** – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within education include K-12, higher education, and libraries. Identified uses of broadband in the area of education are listed below and identified as basic or advanced.
<table>
<thead>
<tr>
<th>Application Provider</th>
<th>Description</th>
<th>Basic/Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirtland Community College</td>
<td>Availability of online courses for high school students</td>
<td>Basic</td>
</tr>
<tr>
<td>Whittemore-Prescott Area Schools</td>
<td>100% of classrooms connected to Internet via broadband</td>
<td>Basic</td>
</tr>
<tr>
<td>Whittemore-Prescott Area Schools</td>
<td>100% of libraries connected to Internet via broadband</td>
<td>Basic</td>
</tr>
<tr>
<td>Whittemore-Prescott Area Schools</td>
<td>Presence of library automation system</td>
<td>Basic</td>
</tr>
<tr>
<td>Whittemore-Prescott Area Schools</td>
<td>100% of 12th graders with digital literacy skills</td>
<td>Advanced</td>
</tr>
<tr>
<td>Whittemore-Prescott Area Schools</td>
<td>100% of K-12 classes with online access to curricula, homework, and grades</td>
<td>Advanced</td>
</tr>
<tr>
<td>Whittemore-Prescott Area Schools</td>
<td>100% of schools with online interaction with parents</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch - Rose City Area Schools</td>
<td>100% of classrooms connected to Internet via broadband</td>
<td>Basic</td>
</tr>
<tr>
<td>West Branch - Rose City Area Schools</td>
<td>100% of libraries connected to Internet via broadband</td>
<td>Basic</td>
</tr>
<tr>
<td>West Branch - Rose City Area Schools</td>
<td>Digital literacy programs for teachers</td>
<td>Basic</td>
</tr>
<tr>
<td>West Branch - Rose City Area Schools</td>
<td>Presence of library automation system</td>
<td>Basic</td>
</tr>
<tr>
<td>West Branch - Rose City Area Schools</td>
<td>Using Destiny software for the online catalog for community library</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch - Rose City Area Schools</td>
<td>90% of 12th graders with digital literacy skills</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch - Rose City Area Schools</td>
<td>Using Moodle software for K-12 classes with online access</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch - Rose City Area Schools</td>
<td>Using School Messenger software online for interaction with parents</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch - Rose City Area Schools</td>
<td>Availability of online courses for K-12 students through e20/20</td>
<td>Advanced</td>
</tr>
</tbody>
</table>

**Government** *(9 out of 10 Points Possible)* – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within government include general government, public safety, energy, and the environment. Identified uses of broadband in the area of government are listed below and identified as basic or advanced.
**Ogemaw County**

VINELink is the online version of VINE (Victim Information and Notification Everyday), the National Victim Notification Network. This service allows crime victims to obtain timely and reliable information about criminal cases and the custody status of offenders 24 hours a day.

**Basic**

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**Ogemaw County Road Commission**

Public safety answering points with broadband

**Advanced**

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**Healthcare (10 out of 10 Points Possible)** – A community receives one point per basic use of broadband and two points per advanced use of broadband. Entities within healthcare can include, but are not limited to, hospitals, medical and dental clinics, health departments, nursing homes, assisted living facilities, and pharmacies. Identified uses of broadband in the area of healthcare are listed below and identified as basic or advanced.

<table>
<thead>
<tr>
<th>Application Name</th>
<th>Description</th>
<th>Basic/Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid Michigan Health</td>
<td>Online listing of healthcare professionals within community</td>
<td>Basic</td>
</tr>
<tr>
<td>Mid Michigan Health Homecare</td>
<td>Availability of remote patient monitoring</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch Regional Medical Center</td>
<td>Online listing of healthcare professionals within community</td>
<td>Basic</td>
</tr>
<tr>
<td>West Branch Regional Medical Center</td>
<td>Over 75% of doctors using e-Health</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch Regional Medical Center</td>
<td>100% of doctors with adequate bandwidth (based on NBP standard)</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch Regional Medical Center</td>
<td>Doctors have remote access to patients’ records and status</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch Regional Medical Center</td>
<td>Availability of telemedicine (send or receive)</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch Regional Medical Center</td>
<td>ADI (Advanced Diagnostic Imaging). This is a group of Radiologists that read all images at WBRMC. There is a direct connection to their main facility in Saginaw where images can be read remotely. In addition, the PACS (Picture Archiving and Communication System) is available externally to all physicians. This allows viewing of images from a device in a clinic, office, home, or mobile device.</td>
<td>Advanced</td>
</tr>
<tr>
<td>West Branch Regional Medical Center</td>
<td>Remote Diagnostic Imaging-ADI (Advanced Diagnostic Imaging). This is a group of Radiologists that reads all images at WBRMC. There is a direct connection to their main facility in Saginaw where images can be read remotely. In addition, the PACS (Picture Archiving and Communication System) is available externally to all physicians. This allows viewing of images from a device in a clinic, office, home, or mobile device.</td>
<td>Advanced</td>
</tr>
</tbody>
</table>
West Branch Regional Medical Center | Doctors have remote access - Chartlink allows physicians and office staff to remotely access patients’ records. Ventura Telepathology allows a Pathologist to read specimens remotely. Winscribe – allows physicians to dictate reports locally and remotely. | Advanced
---|---|---
West Branch Regional Medical Center | Virtual Private Networks are implemented to directly connect to vendors to allow for support and maintenance | Advanced

**Current Community Technology Developments**

1. The Ogemaw County Team launched the Ogemaw County Broadband (High Speed Internet) Survey and conducted the survey among residents and business owners in Ogemaw County, gathering data about the current use of Internet services throughout the county. The team received over 1,400 responses. The answers to the questions were combined with other responses and then distributed in a summary to prospective Internet service providers along with a geographical map of those responses developed by Nico Tucker, Resource Planner for the Northeast Michigan Council of Governments. By identifying the need and developing a business case for further expansion of broadband services, the team hopes that faster and more affordable Internet services will be made available in all areas of the county.

2. On March 5, 2013 the Michigan Works Region 7B Consortium, Ogemaw County Economic Development Corporation (EDC), Kirtland Community College, West Branch Chamber of Commerce, and Northern Transformation announced they are co-sponsoring a “Crash Course in Business Software.” The workshops are held at Kirtland Community College’s West Branch Campus’s state of the art computer lab. The workshops will take place from 6:00 to 8:00 PM on the fourth Wednesday of every month. Topics include: Excel, QuickBooks, social media, and web design. The entire series is $40.00, and seating is limited to twenty participants.

3. Beginning on July 19, 2013, the Michigan works Region 7B Consortium hosted free digital literacy classes on Tuesdays and Thursdays. The classes were held at Michigan Works in West Branch from 10:00 AM to 12:00 PM and were focused on individuals who are inexperienced with computers, offering students the very basics of operating computers - from how to turn them on to basic troubleshooting techniques.

4. One of the priority projects that are being created in the development of the Ogemaw County Technology Action Plan is to develop a program to address digital literacy in Ogemaw County. The West Branch District Library already has a robust digital literacy program with several classes that had three hundred and thirty-eight residents in attendance, but the staff decided they needed to develop a program that addressed the needs of those residents who did not fare well in a normal class setting. So the staff developed “Tech Tuesdays” to address the needs of those residents that were not comfortable learning in a normal class setting. Starting in May of 2013 on every Tuesday from noon to 1 PM, the library offers its patrons the options to learn about any technology subject they are having an issue with. To date, the library has given one-hour classes to 193
patrons, with the subject matter running from basic computer skills, basic Internet use, using a mouse, defragging your hard drive, using an iPad or eReader, and searching for your favorite recipes on the Internet. The program has become very popular, with the numbers of patrons using the service increasing on a weekly basis.

5. Charter Communications expanded services so that 62% of households in Ogemaw County have access to 100 Mbps download speeds.

6. Frontier Communications has announced it is upgrading its network in Ogemaw County.

7. MiSpot.Net has launched its 4G LTE fixed wireless service in the West Branch and Skidway Lake area.

8. Merit Network, Inc. completed their REACH3MC fiber network in Ogemaw County.

9. Northern Transformation, a local 501c (3) organization, is having regional conversations in Northeast Michigan on how to expand the distribution and sales of locally grown foods and investigating the need for food hub(s) in the region. We are also partnering with Michigan Works and other entities to create and maintain community gardens.

10. The West Branch Regional Medical Center utilizes CPSI as an Enterprise EMR (Electronic Medical Record) in order to facilitate and improve patient care, billing, etc. with several interfaces to external facilities.

11. West Branch Regional Medical Center (WBRMC) has recently increased its bandwidth with Charter to 50 Mbps; and as part of phase 2 of its “Meaningful Use Program,” WBRMC will implement a patient portal that will allow patients to securely access their medical records. This functionality is targeted for implementation in the 1st or 2nd quarter of 2014.

12. The Ogemaw County Economic Development Corporation received a USDA grant to update its website and recently successfully completed the project.

13. On May 7th, 2014 the Ogemaw County Technology Planning Team joined the Ogemaw County EDC, MI Works Region 7B, Northern Transformation, Connect Michigan, and the West Branch Chamber of Commerce to sponsor the Ogemaw Technology Summit. The summit featured speakers on subjects like: “Tech Devices for Your Business,” “Using the Internet to Find New Leads,” “Social Media and Web Tips for Success,” and “Telemedicine.”

14. Ogemaw County residents can now pay their bills online at the county government’s website.

15. The West Branch Area Chamber of Commerce, the Ogemaw County EDC, Michigan Works, and Northern Transformation partnered to offer a monthly series on Constant Contact. Constant Contact is a social media program with a toolkit that helps businesses with marketing campaigns like email newsletters, surveys, events, Facebook promotions, online listings, and more.

16. The Ogemaw County EDC has expanded its use of Facebook and has added a quarterly e-newsletter.

17. The West Branch Area Chamber of Commerce has added a weekly e-newsletter.
Community Priority Projects
The Connected Assessment has culminated in the outlining of projects designed to empower the community to accelerate broadband access, adoption, and use. Below are four priority projects. This is followed by a complete list of all proposed solutions.

Complete a Vertical Assets Inventory

Project Description
Wireless communications equipment can be placed in a wide variety of locations, but ideally, wireless providers look for locations or structures in stable conditions, with reasonably easy access to electricity and wired telecommunications, and with a significant height relative to the surrounding area. “Vertical assets” are defined as structures on which wireless broadband equipment can be mounted and positioned to broadcast a signal over as much terrain as possible. These assets include structures such as cell towers, water tanks, grain silos, and multi-story buildings.

The lack of easily accessible and readily usable information regarding the number and location of vertical assets prevents the expansion of affordable, reliable wireless broadband service. Wireless broadband providers must determine if it is worth the effort and expense to collect and analyze this data when making investment decisions. Public sector organizations are faced with the same challenges. A centralized and comprehensive vertical assets inventory can help wireless broadband providers expedite decisions regarding the deployment of affordable, reliable broadband service in rural areas.

Goal
1. Develop a single repository of vertical assets, such as communications towers, water tanks, and other structures potentially useful for the support of deploying affordable, reliable wireless broadband in less populated rural areas or topographically challenged areas.

Benefits
1. The vertical assets inventory provides data for private and public investment decisions, lowering the initial cost of efforts needed to identify potential mounting locations for infrastructure.
2. The inventory can encourage the expansion of affordable, reliable wireless broadband services to underserved areas by shortening project development time.

Action Items
1. Identify or develop a vertical assets inventory toolkit to provide guidelines to identify structures or land that could serve as a site for installation of wireless communications equipment.
2. Data to collect would include vertical asset type, owner type, minimum base elevation, minimum height above ground, and location.
3. Identify and map elevated structures utilizing your community’s GIS resources. The resulting database should be open ended; localities should be encouraged to continuously map assets as they are made available.

Create Local Jobs Via Teleworking Opportunities

Project Description
Connected Nation’s Digital Works program is a hybrid between an employment agency and a co-working facility that connects residents with online training courses and connections with companies that lack a physical presence in the community. The Digital Works program creates jobs in areas facing high unemployment by leveraging broadband technology for call center and IT outsourcing. Extended training is available for HTML programming and other technical positions as well. The program is providing an avenue for communities to create a job incubator, retaining workers in the area and attracting corporate jobs while providing a pathway for improving a worker’s competitive advantage in the twenty-first century workforce with specified coursework and training.

At the end of training, workers are placed in available positions that match their skills and interests. All jobs pay above minimum wage, and the training provides opportunities for placement at levels for upward mobility. This is work that can be done from home or at the Digital Works center, which is provided through a partnership with the community.

Goal
1. Connect IT training and education with remote employment opportunities.

Benefits
1. This type of project can educate, train, employ, and has the potential to ultimately increase the productivity and economic competitiveness of your community’s workforce.
2. The physical infrastructure and training exposes a broad spectrum of residents to the benefits of telecommunications and productive uses of the Internet.
3. Through training and work, participants will rely heavily on local ISPs, broadband technology, and emerging IT technologies to provide services to a global marketplace, in turn fostering the demand driven strengthening of your community’s physical Internet infrastructure.
**Action Items**

1. The Digital Works program requires a site suitable for establishing office infrastructure, educational partners to develop the workforce, and business relationships with enterprises willing to hire workers through the digital factory.
2. Identify the physical, financial, and technological resources needed to establish a digital factory.
3. Space to house workspace and training and support offices will be needed, as well as the equipment, such as computers and monitors for video conferencing and training.
4. Develop partnerships with companies who would provide contractual employment to program graduates.

**Host Website and Social Media Classes for the Local Businesses in Ogemaw County**

**Project Description**

For small businesses, an online presence and the use of social media are vital to stay competitive in the twenty-first century. A website and social media use is not just for companies that have the experience, staff, or budget; any small business can tap into these resources. Training should be provided to small businesses regarding the use of websites and social media within each small business. Website topics should range from starting a basic website to more advanced topics such as e-commerce. Social media topics should include a variety of social media outlets including Facebook, Twitter, YouTube, Pinterest, and LinkedIn.

For many business owners, the belief that broadband would not help their business or the lack of knowledge of how broadband positively effects business development are the main reasons that they do not adopt broadband service. Many believe that since they have always operated without broadband, they can continue to do so. Communicating how businesses can achieve significant results via the utilization of broadband and broadband-enabled business tools is important to overcoming the barriers of relevance and lack of awareness. The key to this communication is providing local examples of successful broadband utilization and facilitating collaboration and cooperation among businesses and technology and service providers.

Broadband adoption should not be the end goal for an awareness program. New technology platforms continue to emerge, software and hardware evolve, and website, media, and online customer engagement methods continue to change, which can complicate adoption or leave businesses with outdated technology infrastructure and ineffective marketing strategies. An awareness program should promote the benefits of broadband, offer education and training, and provide assistance with follow-up questions and concerns. Thus, it is important to have a support network of businesses and community organizations that can assist each other with adoption and the continued use of technology.
Goals
1. Promote the adoption and use of broadband and broadband-enabled tools among businesses in Ogemaw County via awareness-building and training.
2. Build awareness of the benefits associated with the adoption of broadband among businesses and how a connected business community positively effects the county’s economic development through communicating how broadband and broadband-enabled tools allow businesses to increase efficiency, improve market access, reduce costs, and increase the speed of both transactions and interactions.

Benefits
1. Provides entrepreneurial support.
2. Eliminates knowledge gap about how best to utilize broadband tools, increasing productivity.
3. Promotes business growth and workforce development.
4. Broadband empowers small businesses to achieve operational scale more quickly by lowering start-up costs through faster business registration and improved access to customers, suppliers, and new markets. According to Connected Nation’s 2012 Jobs and Broadband Report, businesses that are using the Internet bring in approximately $300,000 more in median annual revenues than their unconnected counterparts.

Action Items
1. Develop an awareness program: Methods of implementing a broadband awareness program include, but are not limited to, facilitating awareness sessions, press conferences led by community leaders, inviting a speaker to community business conferences or summits, and public service announcements.
2. Build awareness and cohesion: Facilitate the distribution of needs assessments, case studies, technology education resources, and success stories among local businesses, and work to develop an informal network of local business owners who have adopted broadband for business operations in order to provide a resource to field common questions and respond to issues within the community.
3. Identify support: Identify federally or state-sponsored business support programs (e.g. Chamber of Commerce, SBA, EDA, Agriculture or Manufacturing extension) that includes assistance with broadband or IT content.
4. Develop local partnerships: Develop local partnerships with organizations such as the Chamber of Commerce, economic development corporation, main street program, or community anchor institutions such as the Kirtland Community College or a district library to expand on existing programs or develop programs that provide technology education.
5. Develop a training program: A training program or entry-level “Broadband 101” course should be developed to give small and medium businesses an introduction on how to capitalize on broadband connectivity, as well as more advanced applications for IT staff. In addition, training should include resources for non-IT staff, such as how to use commerce
tools for sales, streamline finances with online records, or leverage knowledge management across an organization. Additional training might include:

- “How to” training for key activities such as online collaboration, search optimization, cyber security, equipment use, and Web 2.0 tools.
- Technical and professional support for hardware, software, and business operations.
- Licenses for business applications such as document creation, antivirus and security software, and online, audio, and videoconferencing.
- Website development and registration.
- Basic communications equipment, such as low-cost personal computers and wireless routers.
- Educate local businesses on Internet tools that are available at minimal or no cost to them.

**Implementation Team**

The Michigan Works Region 7B Consortium, Ogemaw County Economic Development Corporation (EDC), Kirtland Community College, West Branch Chamber of Commerce, and Northern Transformation announced they are co-sponsoring a “Crash Course in Business Software.”

The West Branch Area Chamber of Commerce, the Ogemaw County EDC, Michigan Works, and Northern Transformation partnered to offer a monthly series on Constant Contact. Constant Contact is a social media program with a toolkit that helps businesses with marketing campaigns like email newsletters, surveys, events, Facebook promotions, online listings, and more.

**Develop a Program Supporting Schools in New Technology Initiatives in Ogemaw County**

**Project Description**

A large number of Michigan’s public school districts are requesting and receiving technology bond issues in order to implement e-learning programs such as the iPad 1:1 Initiative, and because of the value of these programs, communities need to develop a program to support these new technology initiatives. Research conducted by Connect Michigan reveals that broadband adoption rates among low-income groups with children range from 37% to 45% (or 56% in rural communities), thereby creating a digital divide and logistical problems for those school districts implementing e-learning programs. Placing computing devices in students’ hands is a critical component to the anytime, anywhere approach to learning that is foundational to twenty-first century education.

Some school districts have passed bonds for replacement or addition of technology devices. Other potential sources of computers may include donors or some sort of bring your own device plan as so many of today’s students have broadband enabled cell phones or their own
laptops. Every idea for student computer replacement has pros and cons and issues to be resolved, but it’s important to keep moving forward. We have dedicated educators preparing our students for their futures with technology. Continuing to give teachers and students the tools they need should be a priority.

**Goals**
1. Improve education through digital learning.
2. Increase digital literacy and access for all.

**Benefits**
1. Increase learning time by extending learning beyond the classroom walls.
2. Individualize learning and increase student engagement in school.
4. Enable parents to more effectively support their children at home.

**Action Items**
1. Develop an awareness campaign within the community to inform its citizens of the new technology advances and earn the community support that is required to ensure the success of the programs. Utilize the local media and public events to educate the public on the advantages of these programs.
2. Examine the community’s existing digital resources necessary to support these new e-learning programs. Do the existing public computer centers have adequate bandwidth? Do they have enough computers? Are they open evenings and weekends for school children to do their homework?
3. Remove any unnecessary barriers that would increase the cost of broadband. Community leaders should work in coordination with the school district, local business leaders, the citizens of the community, and local broadband providers to ensure that adequate resources are available to all the students to close the digital divide and ensure the success of these e-learning programs.

**Implementation Team**
To be determined.
All Proposed Projects

ACCESS

Broadband Availability

1. Perform an Analysis of Local Policies and Ordinances
High capital investment costs, including permit processing, pole attachment costs, and lack of effective planning and coordination with public authorities, negatively impact the case for deployment. For example, the FCC’s National Broadband Plan concludes that, “the rates, terms, and conditions for access to rights of way [including pole attachments] significantly impact broadband deployment.” The costs associated with obtaining permits and leasing pole attachments and rights-of-way are one of the most expensive cost functions in a service provider’s plans to expand or upgrade service, especially in rural markets where the ration of poles to households goes off the charts. Furthermore, the process is time consuming. “Make ready” work, which involves moving wires and other equipment attached to a pole to ensure proper spacing between equipment, and compliance with electric and safety codes can take months to complete.

Community and provider collaboration to problem solve around local pole attachment and other right of way issues is one of the most effective opportunities to encourage faster, new deployment of infrastructure.

Goal
1. Ensure local policies – Ensure that local policies are conducive to broadband build-out.

Benefits
1. Lowers cost barriers to improve the business case for broadband deployment.
2. Encourages good public policy and provider relations.

Action Items
1. Review local policies, ordinances, and other barriers to broadband deployment and consult with community leaders, providers, utilities and other members of the community to ensure that they are supporting policies (local ordinances, pole attachments, right-of-way) that are conducive to broadband build-out.
2. Develop an awareness campaign targeted towards community leaders to inform them of the benefits of broadband to the entire community derived from access to global resources that outweigh the need for some policies.

2. Identify, Map, and Validate Broadband Demand in Ogemaw County
Develop a team to conduct research surveys and market analyses to validate a business case. A market analysis includes research on the existing and potential service offerings and the
respective rates to determine the levels of interest in the services and rate plans offered by the client. The team should provide accurate, timely, and thorough solutions accompanied by personalized service to meet the needs of communities or broadband providers.

Goals
1. Understand existing and potential markets for broadband subscribers (both residential and business).
2. Perform a broadband build-out analysis in unserved areas
3. Increase access to broadband in the unserved areas of Ogemaw County.
4. Increase broadband access to all businesses in Ogemaw County.

Benefits
1. Enables the ability to better understand the key drivers of the broadband market.
2. Validates the business case for network build-out and capacity investment.

Action Items
1. The project team should be prepared to provide research project design, data collection services, data analysis and reporting, and presentation development and delivery.
2. Work with the members of the Ogemaw County Technology Planning Team to develop a marketing survey and methods of implementation utilizing best practice plans and survey samples from other communities participating in the Connect Michigan Community Engagement program.
   - Survey mailing samples from the Charlevoix County and Oscoda County teams are readily available and currently loaded on the web portal of Ogemaw County located on the Connect Michigan website www.connectmi.org.
   - A sample of a press release by the Charlevoix team is also loaded on the web portal of Ogemaw County.
3. The project team should tabulate the data, then work with a local GIS team to display the tabulated data on a series of Google Maps that create clusters of homes in need of greater access to broadband. The survey results and Google maps can then be placed on a public website for review by all the broadband providers who provide broadband service in Ogemaw County. A best practice sample of similar survey results tabulated by the HARBOR Inc. Broadband Committee can be found on their website: http://www.harborinc.org/technology-development-48/.

Implementation Team
The Ogemaw County Team launched the Ogemaw County Broadband (High Speed Internet) Survey and conducted the survey among residents and business owners in Ogemaw County, gathering data about the current use of Internet services throughout the county. The team received over 1,400 responses. The answers to the questions were combined with other responses and then distributed in a summary to prospective Internet service providers along with a geographical map of those responses developed by Nico Tucker, Resource Planner for
the Northeast Michigan Council of Governments. By identifying the need and developing a business case for further expansion of broadband services, the team hopes that faster and more affordable Internet services will be made available in all areas of the county.

**Broadband Speeds** – No proposed projects.

**Broadband Competition** – No proposed projects.

**Middle Mile Access** – No proposed projects.

**Mobile Broadband Availability**

3. **Complete a Vertical Assets Inventory**

Wireless communications equipment can be placed in a wide variety of locations, but ideally, wireless providers look for locations or structures in stable conditions, with reasonably easy access to electricity and wired telecommunications, and with a significant height relative to the surrounding area. “Vertical assets” are defined as structures on which wireless broadband equipment can be mounted and positioned to broadcast a signal over as much terrain as possible. These assets include structures such as cell towers, water tanks, grain silos, and multi-story buildings.

The lack of easily accessible and readily usable information regarding the number and location of vertical assets prevents the expansion of affordable, reliable wireless broadband service. Wireless broadband providers must determine if it is worth the effort and expense to collect and analyze this data when making investment decisions. Public sector organizations are faced with the same challenges. A centralized and comprehensive vertical assets inventory can help wireless broadband providers expedite decisions regarding the deployment of affordable, reliable broadband service in rural areas.

**Goal**

1. Develop a single repository of vertical assets, such as communications towers, water tanks, and other structures potentially useful for the support of deploying affordable, reliable wireless broadband in less populated rural areas or topographically challenged areas.

**Benefits**

1. The vertical assets inventory provides data for private and public investment decisions, lowering the initial cost of efforts needed to identify potential mounting locations for infrastructure.
2. The inventory can encourage the expansion of affordable, reliable wireless broadband services to underserved areas by shortening project development time.

**Action Items**
1. Identify or develop a vertical assets inventory toolkit to provide guidelines to identify structures or land that could serve as a site for installation of wireless communications equipment.
2. Data to collect would include vertical asset type, owner type, minimum base elevation, minimum height above ground, and location.
3. Identify and map elevated structures utilizing your community’s GIS resources. The resulting database should be open ended; localities should be encouraged to continuously map assets as they are made available.

ADOPTION

Digital Literacy

4. Develop a Digital Literacy and Low-Cost Broadband Program for Ogemaw County

Create a partnership between libraries, school systems, computer suppliers, and broadband providers to provide free training and discounted computers and broadband service to low-income community members who are not participating in the digital age. An example of such a program is Connected Nation’s Every Community Online program (ECO). This is an innovative program that is providing free digital literacy training, access to low-cost computers, and discounted broadband access to communities across the country.

Goals
1. Increasing technology adoption – Bridging the digital divide by providing free digital literacy training and access to reduced-cost computers and discounted broadband.
2. Increasing technology use – Introducing meaningful applications that improve lives through technology.
3. Increase the number of digital literacy training programs that focus on the senior citizens of Ogemaw County in addition to increasing the access to broadband for senior citizens.
4. Establish and maintain computer centers in pockets of vulnerable populations.

Benefits
1. Bridges the digital divide by enabling underprivileged individuals with access to affordable computers; offers true broadband performance and experience.
2. Introduces individuals to the Internet and abundant global resources that allow them to compete in the global economy.
3. Addresses a major barrier to computer ownership – computer affordability. Cost is cited as the main barrier to computer ownership by 43% of adults with incomes less than $25K annually and 44% of households with total incomes less than $25K cited.
4. Addresses a major barrier to broadband adoption – broadband affordability. Cost is cited as the main barrier to broadband adoption by 43% of adults with incomes less than $25K annually and 44% of households with total incomes less than $25K.
5. Increases awareness of the importance of computer ownership and use through training about essential online applications.

**Action Items**

1. Create a partnership with local non-profits (library, community center, school, etc.) to help promote the program locally, offer a facility where individuals can participate in the self-paced training or in-person training.
2. If ECO does not have a participating provider in local community, reach out to local providers to participate in the program.
3. Work with local media to promote ECO PSAs, ads, etc.
4. Seek support of local leadership.

**Implementation Team**
The Michigan works Region 7B Consortium is now hosting free digital literacy classes on Tuesdays and Thursdays, starting on July 9th, 2013. The staff of the West Branch District Library has developed “Tech Tuesdays” to address the needs of those residents that were not comfortable learning in a normal classroom setting.

**Public Computer Access**

5. **Provide Incentives to Encourage Computer Purchases among Students**
Develop a program that will enable students to obtain computers. Programs could include refurbished computers or new laptops or tablets. Consider a group-purchasing program, which would allow:
   - Special discount pricing
   - Warranty availability
   - Wired and Wireless usage throughout school and home
   - On campus access to tech support
   - Loaner computer access while devices are being repaired

**Goal**

1. Provide equal access to computers and enable digital learning.

**Benefits**

1. Provides equal computer access, regardless of ability to purchase.
2. Supports school-wide online education initiatives.
3. Enables the adoption of e-books.

**Action Items**

1. Research grants and private funding opportunities.
2. Assess whether developing a leasing or purchasing program is more appropriate for your school.

6. **Establish a "Community Technology Academy"

Develop partnerships between libraries, community centers, churches (places with computer labs for public use) and schools, community colleges, and universities (places with subject matter experts) to develop a "Community Technology Academy." Providers, local businesses, and community volunteers may be included to provide financial and/or in-kind support for the program. Academy curriculum should include basic training in areas such as "Introduction to Computers," "Internet Basics," social networking, using communication technologies, and the use of applications such as Microsoft Office, OpenOffice or Google Docs.

**Goal**

1. *Create a partnership* – Create a partnership to underscore a community's commitment to developing a tech-savvy workforce.

**Benefits**

1. Creates a more digitally literate and competent populace.
2. Develops community's human capital.

**Action Items**

1. Identify all organizations performing technology education and training services.
2. Identify all the organizations that have computer labs.
3. Compile a list of classes to be offered and develop content or leverage content that is currently available at minimum or no cost from organizations such as Microsoft.
4. Determine what classes are currently being offered in the community.
5. Develop a collaborative and cooperative approach for operating the "Community Technology Academy" between all organizations.

**Broadband Awareness**

7. **Facilitate a Technology Summit**

Develop and host a technology summit for residents and businesses to increase awareness of broadband value, service options, and the potential impact on quality of life. The technology summit should facilitate community partnerships between leaders in local government and the private sector, including non-profits and private businesses in the education, healthcare, and agriculture sectors, with the goal of ensuring that residents have at least one place in the community to use powerful new broadband technologies, and that this asset will be sustained over time. Further, the technology summit should highlight success stories as evidence of the impact of technology.
Goal
1. A technology summit should bring together community stakeholders to develop a dialogue about how public and private stakeholders can collectively improve broadband access, adoption, and use.

Benefits
1. Highlights successes, opportunities, and challenges regarding community technology planning.
2. Develops ongoing dialogue around improving broadband access, adoption, and use.
3. Unifies community stakeholders under one vision.

Action Items
1. Create community partnerships.
2. Identify funding sources and hosts.
3. Identify suitable speakers.
4. Develop relevant content.

Implementation Team
On May 7th, 2014 the Ogemaw County Technology Planning Team joined the Ogemaw County EDC, MI Works Region 7B, Northern Transformation, Connect Michigan, and the West Branch Chamber of Commerce to sponsor the Ogemaw Technology Summit. The summit featured speakers on subjects like: “Tech Devices for Your Business,” “Using the Internet to Find New Leads,” “Social Media and Web Tips for Success,” and “Telemedicine.”

Vulnerable Population Focus – No proposed projects.

USE

Economic Opportunity

8. Develop or Identify a Broadband Training and Awareness Program for Small and Medium Businesses

Methods of implementing a small and medium business broadband awareness program include, but are not limited to, facilitating awareness sessions, holding press conferences led by community leaders, inviting speakers to community business conferences or summits, and public service announcements. It is also important to educate local businesses about Internet tools that are available at minimum or no cost to them.

A training program, or entry-level “Broadband 101” course, could be utilized to give small and medium businesses an introduction on how to capitalize on broadband connectivity, as well as more advanced applications for IT staff. In addition, training should include resources for non-IT
staff, such as how to use commerce tools for sales, streamline finances with online records, or leverage knowledge management across an organization. Additional training might include:

- “How-to” training for key activities such as online collaboration, search optimization, cyber-security, equipment use, and Web 2.0 tools.
- Technical and professional support for hardware, software, and business operations.
- Licenses for business applications such as document creation, antivirus and security software, and online audio- and videoconferencing.
- Website development and registration.
- Basic communications equipment, such as low-cost personal computers and wireless routers.

**Goal**

1. Businesses adopt and use broadband-enabled applications, resulting in increased efficiency, improved market access, reduced costs, and increased speed of both transactions and interactions.

**Benefits**

1. Provides entrepreneurial support.
2. Eliminates knowledge gap about how best to utilize broadband tools, increasing productivity.
3. Promotes business growth and workforce development.
4. Broadband empowers small businesses to achieve operational scale more quickly by lowering start-up costs through faster business registration and improved access to customers, suppliers, and new markets. According to Connected Nation’s 2012 Jobs and Broadband Report, businesses that are using the Internet bring in approximately $300,000 more in median annual revenues than their unconnected counterparts.

**Action Items**

1. Identify federally or state sponsored business support programs (e.g. Chamber of Commerce, SBA, EDA, Agriculture, or Manufacturing extension) that include assistance with broadband or IT content.
2. Identify or develop a business awareness and training program.
3. Identify or develop online training modules for businesses. For example, the Southern Rural Development Center, in partnership with the National Institute of Food and Agriculture, USDA, administers the National e-Commerce Extension Initiative. As the sole outlet nationally for e-Commerce educational offerings geared at Extension programming, the National e-Commerce Extension Initiative features interactive online learning modules. In addition, the program’s website offers a library of additional resources and a tutorials section for greater explanation on website design and function. Modules and presentations include: A Beginner’s Guide to e-Commerce, Doing Business in the Cloud, Electronic Retailing: Selling on the Internet, Helping Artisans Reach Global Markets, and Mobile e-
Commerce. To see some examples, click here: [http://srdc.msstate.edu/ebeat/small_business.html#](http://srdc.msstate.edu/ebeat/small_business.html#).

**Implementation Team**

To be determined.

9. **Create Local Jobs Via Teleworking Opportunities in Ogemaw County**

Connected Nation’s Digital Works program is a hybrid between an employment agency and a co-working facility that connects residents with online training courses and connections with companies that lack a physical presence in the community. The Digital Works program creates jobs in areas facing high unemployment by leveraging broadband technology for call center and IT outsourcing. Extended training is available for HTML programming and other technical positions as well. The program is providing an avenue for communities to create a job incubator, retaining workers in the area and attracting corporate jobs while providing a pathway for improving a worker’s competitive advantage in the twenty-first century workforce with specified coursework and training.

At the end of training, workers are placed in available positions that match their skills and interests. All jobs pay above minimum wage, and the training provides opportunities for placement at levels for upward mobility. This is work that can be done from home or at the Digital Works center, which is provided through a partnership with the community.

**Goal**

1. Connect IT training and education with remote employment opportunities.

**Benefits**

1. This type of project can educate, train, employ, and has the potential to ultimately increase the productivity and economic competitiveness of your community’s workforce.
2. The physical infrastructure and training exposes a broad spectrum of residents to the benefits of telecommunications and productive uses of the Internet.
3. Through training and work, participants will rely heavily on local ISPs, broadband technology, and emerging IT technologies to provide services to a global marketplace, in turn fostering the demand driven strengthening of your community’s physical Internet infrastructure.

**Action Items**

1. The Digital Works program requires a site suitable for establishing office infrastructure, educational partners to develop the workforce, and business relationships with enterprises willing to hire workers through the digital factory.
2. Identify the physical, financial, and technological resources needed to establish a digital factory.
3. Space to house workspace and training and support offices will be needed, as well as the equipment, such as computers and monitors for video conferencing and training.
4. Develop partnerships with companies who would provide contractual employment to program graduates.

5. Visit www.digitalworksjobs.com/ to learn more.

10. Host Website and Social Media Classes for the Local Businesses in Ogemaw County

For small businesses, an online presence and the use of social media are vital to stay competitive in the twenty-first century. A website and social media use is not just for companies that have the experience, staff, or budget; any small business can tap into these resources. Training should be provided to small businesses regarding the use of websites and social media within each small business. Website topics should range from starting a basic website to more advanced topics such as e-commerce. Social media topics should include a variety of social media outlets including Facebook, Twitter, YouTube, Pinterest, and LinkedIn.

For many business owners, the belief that broadband would not help their business or the lack of knowledge of how broadband positively effects business development are the main reasons that they do not adopt broadband service. Many believe that since they have always operated without broadband, they can continue to do so. Communicating how businesses can achieve significant results via the utilization of broadband and broadband-enabled business tools is important to overcoming the barriers of relevance and lack of awareness. The key to this communication is providing local examples of successful broadband utilization and facilitating collaboration and cooperation among businesses and technology and service providers.

Broadband adoption should not be the end goal for an awareness program. New technology platforms continue to emerge, software and hardware evolve, and website, media, and online customer engagement methods continue to change, which can complicate adoption or leave businesses with outdated technology infrastructure and ineffective marketing strategies. An awareness program should promote the benefits of broadband, offer education and training, and provide assistance with follow-up questions and concerns. Thus, it is important to have a support network of businesses and community organizations that can assist each other with adoption and the continued use of technology.

Goals

1. Promote the adoption and use of broadband and broadband-enabled tools among businesses in Ogemaw County via awareness-building and training.

2. Build awareness of the benefits associated with the adoption of broadband among businesses and how a connected business community positively effects the county’s economic development through communicating how broadband and broadband-enabled tools allow businesses to increase efficiency, improve market access, reduce costs, and increase the speed of both transactions and interactions.
Benefits
1. Provides entrepreneurial support.
2. Eliminates knowledge gap about how best to utilize broadband tools, increasing productivity.
3. Promotes business growth and workforce development.
4. Broadband empowers small businesses to achieve operational scale more quickly by lowering start-up costs through faster business registration and improved access to customers, suppliers, and new markets. According to Connected Nation’s 2012 Jobs and Broadband Report, businesses that are using the Internet bring in approximately $300,000 more in median annual revenues than their unconnected counterparts.

Action Items
1. Develop an awareness program: Methods of implementing a broadband awareness program include, but are not limited to, facilitating awareness sessions, press conferences led by community leaders, inviting a speaker to community business conferences or summits, and public service announcements.
2. Build awareness and cohesion: Facilitate the distribution of needs assessments, case studies, technology education resources, and success stories among local businesses, and work to develop an informal network of local business owners who have adopted broadband for business operations in order to provide a resource to field common questions and respond to issues within the community.
3. Identify support: Identify federally or state-sponsored business support programs (e.g. Chamber of Commerce, SBA, EDA, Agriculture or Manufacturing extension) that include assistance with broadband or IT content.
4. Develop local partnerships: Develop local partnerships with organizations such as the Chamber of Commerce, economic development corporation, main street program, or community anchor institutions such as the Kirtland Community College or a district library to expand on existing programs or develop programs that provide technology education.
5. Develop a training program: A training program or entry-level “Broadband 101” course should be developed to give small and medium businesses an introduction on how to capitalize on broadband connectivity, as well as more advanced applications for IT staff. In addition, training should include resources for non-IT staff, such as how to use commerce tools for sales, streamline finances with online records, or leverage knowledge management across an organization. Additional training might include:
   - “How to” training for key activities such as online collaboration, search optimization, cyber security, equipment use, and Web 2.0 tools.
   - Technical and professional support for hardware, software, and business operations.
   - Licenses for business applications such as document creation, antivirus and security software, and online, audio, and videoconferencing.
   - Website development and registration.
   - Basic communications equipment, such as low-cost personal computers and wireless routers.
Educate local businesses on Internet tools that are available at minimal or no cost to them.

Implementation Team
The West Branch Area Chamber of Commerce, the Ogemaw County EDC, Michigan Works, and Northern Transformation partnered to offer a monthly series on Constant Contact. Constant Contact is a social media program with a toolkit that helps businesses with marketing campaigns like email newsletters, surveys, events, Facebook promotions, online listings, and more.

Education

11. Improve Education through Digital Learning
Several digital learning platforms are available for K-12 implementation. For example, CFY is a national education nonprofit that helps students in low-income communities, together with their teachers and families, harness the power of digital learning to improve educational outcomes. The organization is unique in that it operates both “in the cloud” (through PowerMyLearning.com, a free K-12 online learning platform) and “on the ground” (through its Digital Learning Program, a whole school initiative that works hands-on with all three of the constituents that impact student achievement: teachers, parents, and students).

PowerMyLearning.com is a free online educational tool that helps students, teachers, and parents locate and access over 1,000 high-quality online digital learning activities — videos, simulations, and other educational software — to propel student achievement in subjects including math, English, science, and social studies. The platform features a kid-friendly design. There is a playpoint/badge feature to help motivate students. In addition, students can rate digital learning activities and share them with friends via e-mail, Facebook, and Twitter. CFY also provides onsite training to instruct teachers how to integrate PowerMyLearning into their classrooms.

Goal
1. Increase student attention and engagement, encourage students to take ownership of their learning, and make it easier for teachers to differentiate instruction without embarrassing students.

Benefits
1. Increase learning time by extending learning beyond the classroom walls.
2. Individualize learning and increase student engagement in school.
4. Enable parents to more effectively support their children at home.
12. Develop a Program Supporting Schools in New Technology Initiatives in Ogemaw County

A large number of Michigan’s public school districts are requesting and receiving technology bond issues in order to implement e-learning programs such as the iPad 1:1 Initiative, and because of the value of these programs, communities need to develop a program to support these new technology initiatives. Research conducted by Connect Michigan reveals that broadband adoption rates among low-income groups with children range from 37% to 45% (or 56% in rural communities), thereby creating a digital divide and logistical problems for those school districts implementing e-learning programs. Placing computing devices in students’ hands is a critical component to the anytime, anywhere approach to learning that is foundational to a twenty-first century education. Some school districts have passed bonds for replacement or addition of technology devices. Other potential sources of computers may include donors or some sort of bring your own device plan as so many of today’s students have broadband enabled cell phones or their own laptops. Every idea for student computer replacement has pros and cons and issues to be resolved, but it’s important to keep moving forward. We have dedicated educators preparing our students for their futures with technology. Continuing to give teachers and students the tools they need should be a priority.

Goals
1. Improve education through digital learning.
2. Increase digital literacy and access for all.

Benefits
1. Increase learning time by extending learning beyond the classroom walls.
2. Individualize learning and increase student engagement in school.
4. Enable parents to more effectively support their children at home.

Action Items
1. Develop an awareness campaign within the community to inform its citizens of the new technology advances and earn the community support that is required to ensure the success of the programs. Utilize the local media and public events to educate the public on the advantages of these programs.
2. Examine the community’s existing digital resources necessary to support these new eLearning programs. Do the existing public computer centers have adequate bandwidth? Do they have enough computers? Are they open evenings and weekends for school children to do their homework?
3. Remove any unnecessary barriers that would increase the cost of broadband. Community leaders should work in coordination with the school district, local business leaders, the citizens of the community, and local broadband providers to ensure that adequate resources are available to all the students to close the digital divide and ensure the success of these e-learning programs.
Implementation Team
To be determined.

Government

13. Improve Online Business Services Offered by the Government

Developing more e-Government applications not only provides value to businesses, but also allows the government to realize cost savings and achieve greater efficiency and effectiveness. Examples of activities include paying for permits and licensing, paying taxes, providing services to the government and other operations.

Goal
1. Build an e-Government solution that improves the ability of businesses to conduct business with the government over the Internet.

Benefits
1. Facilitates business interaction with government, especially for urban planning, real estate development, and economic development.
2. e-Government lowers the cost to a business conducting all of its interaction with government. Further, as more businesses conduct their business with government online, their transaction costs will be lowered. The cost to a business for any interaction decreases as more technology and fewer staff resources are needed.
3. e-Government provides a greater amount of information to businesses and provides it in a more organized and accessible manner.

Action Items
1. The first step in the process of providing e-Government services to constituents is developing a functional web portal that allows businesses to have access to resources easily. Such a portal can enable outside businesses looking for new opportunities to make informed decisions about working in a certain community.
2. In addition, often overlooked in e-Government deployment are the issues of audiences and needs. Local governments must determine who will visit the website and what sort of information and services they will typically seek. A first step toward meeting general needs of constituents is to provide online access to as broad a swath of governmental information and data as is possible. The sort of information that should be included is:
   o Hours of operation and location of facilities.
   o Contact information of key staff and departments.
   o An intuitive search engine.
   o Access to documents (ideally a centralized repository of online documents and forms).
   o Local ordinances, codes, policies, and regulations.
   o Minutes of official meetings and hearings.
14. Pursue Next Generation 911 Upgrades

The overall system architecture of Public Safety Answering Points (PSAPs) has essentially not changed since the first 911 call was made in 1968. These 911 systems are voice-only networks based on original wireline, analog, circuit-switched infrastructure that prevents easy transmission of data and critical sharing of information that can significantly enhance the decision-making ability, response, and quality of service provided to emergency callers. To meet growing public expectations of 911-system functionality (capable of voice, data, and video transmission from different types of communication devices), that framework should be replaced. This would require replacing analog phone systems with an Internet Protocol (IP)-based system. This system would provide an enabling platform for current technology as well as future upgrades.

For example, in January 2013, the Federal Communications Commission proposed to amend its rules by requiring all wireless carriers and providers of “interconnected” text messaging applications to support the ability of consumers to send text messages to 911 in all areas throughout the nation where 911 Public Safety Answering Points (PSAPs) are also prepared to receive the texts (which requires an IP-based system). Text-to-911 will provide consumers with enhanced access to emergency communications in situations where a voice call could endanger the caller, or a person with disabilities is unable to make a voice call. In the near term, text-to-911 is generally supported as the first step in the transition to a Next Generation 911.

**Goal**
1. Design a system that enables the transmission of voice, data, or video from different types of communication devices to Public Safety Answering Points (PSAPs) and onto emergency responder networks.

**Benefits**
Transitioning to a “Next Generation” IP-based network will enable the public to make voice, text, or video emergency calls from any communications device. With Next Generation 911, responders and PSAPs will gain greater situational awareness, which will enable better-informed decisions, resulting in better outcomes and, ultimately, a safer community. By capitalizing on advances in technologies, you are enabling:
   1. Quicker and more accurate information to responders
   2. Better and more useful forms of information
   3. More flexible, secure and robust PSAP operations
   4. Lower capital and operating costs

**Action Items**
If you’re involved in PSAP decision making and are faced with replacing aging systems or purchasing new technology for the very first time, you need to consider what your most
immediate requirements are and where you need to be 10 years from now. Your community can take a measured and practical approach that spreads the operational impact and costs of a Next Generation 911 transition over time. Your local agency should choose a starting point that makes the most sense and provides immediate benefits for their PSAP, responders, and communities they serve. For example, according to Intrado, Inc., a provider of 911 and emergency communications infrastructure to over 3,000 public safety agencies, local public-safety agencies can implement any of the following next-generation 911 components today, and provide immediate benefits with little to no disruption of current operations:

1. A public-safety-class, IP-based network
2. IP-based call processing equipment (CPE) in public-safety answering points (PSAPs)
3. Geographic information system (GIS) data enhancements
4. Advanced 911 data capabilities and applications

Healthcare

15. Promote Telemedicine in Remote Areas

Promote the delivery of healthcare services from a distance using video-based technologies. Telemedicine can help to address challenges associated with living in sparsely populated areas and having to travel long distances to seek medical care - particularly for patients with chronic illnesses. It also addresses the issue of the lack of medical specialists in remote areas by awarding access to specialists in major hospitals situated in other cities, states, or countries. While telemedicine can be delivered to patient homes, it can also be implemented in partnership with local clinics, libraries, churches, schools or businesses that have the appropriate equipment and staff to manage it. The most critical steps in promoting telemedicine are ensuring that patients and medical professionals have access to broadband service, understand the main features of telemedicine, are aware of the technologies required for telemedicine, and understand how to develop, deliver, use, and evaluate telemedicine services.

One relevant funding opportunity includes the Distance Learning and Telemedicine Loans and Grants Program. The USDA provides loans and grants to rural community facilities (e.g. schools, libraries, hospitals, and tribal organizations) for advanced telecommunications systems that can provide healthcare and educational benefits to rural areas. Three kinds of financial assistance are available: a full grant, grant-loan combination, and a full loan.

Goal

1. Deliver improved healthcare services to rural residents.
APPENDIX 1: STATEWIDE PERSPECTIVE OF BROADBAND

Statewide Infrastructure
As part of the Michigan State Broadband Initiative (SBI), and in partnership and at the direction of the Michigan Public Service Commission (MPSC), Connect Michigan produced an inaugural map of broadband availability in spring 2010. The key goal of the map was to highlight communities and households that remain unserved or underserved by broadband service; this information was essential to estimating the broadband availability gap in the state and understanding the scope and scale of challenges in providing universal broadband service to all citizens across the state. Since the initial map’s release, Connect Michigan has collected and released new data every six months, with updates in October and April annually.

The most current Statewide and County Specific Broadband Inventory Maps released in the spring of 2014 depict a geographic representation of provider-based broadband data represented by cable, DSL, wireless, fiber, etc. These maps also incorporate data such as political boundaries and major transportation networks in the state. Vertical assets that can be utilized for broadband network facilitation or transmission will be added to the interactive mapping application in October 2012. A statewide map is found at www.connectmi.org/mapping/state. The county maps are found at www.connectmi.org/community_profile/find_your_county/michigan/ogemaw.

Table 1: Estimate of Broadband Service Availability in the State of Michigan By Speed Tier Among Fixed Platforms

<table>
<thead>
<tr>
<th>SBI Download Speed Tiers</th>
<th>Unserved Households ('000)</th>
<th>Served Households ('000)</th>
<th>Percent Households by Speed Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Least 768 Kbps/200 Kbps</td>
<td>37</td>
<td>3,836</td>
<td>99.05</td>
</tr>
<tr>
<td>At Least 1.5 Mbps/200 Kbps</td>
<td>46</td>
<td>3,826</td>
<td>98.80</td>
</tr>
<tr>
<td>At Least 3 Mbps/768 Kbps</td>
<td>103</td>
<td>3,769</td>
<td>97.33</td>
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<tr>
<td>At Least 6 Mbps/1.5 Mbps</td>
<td>251</td>
<td>3,621</td>
<td>93.52</td>
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<tr>
<td>At Least 10 Mbps/1.5 Mbps</td>
<td>279</td>
<td>3,594</td>
<td>92.80</td>
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<td>At Least 25 Mbps/1.5 Mbps</td>
<td>515</td>
<td>3,357</td>
<td>86.70</td>
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<tr>
<td>At Least 50 Mbps/1.5 mbps</td>
<td>646</td>
<td>3,227</td>
<td>83.33</td>
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<tr>
<td>At Least 100 Mbps/1.5 Mbps</td>
<td>647</td>
<td>3,226</td>
<td>83.30</td>
</tr>
<tr>
<td>At Least 1 Gbps/1.5 Mbps</td>
<td>3,867</td>
<td>5</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Source: Connect Michigan, May 2013.

Table 1 reports updated summary statistics of the estimated fixed, terrestrial broadband
service inventory (excluding mobile and satellite service) across the state of Michigan; it presents the number and percentage of unserved and served households by speed tiers. The total number of households in Michigan in 2010 was 3,872,508, for a total population of 9.88 million people. Table 1 indicates that 99.05% of households are able to connect to broadband at download speeds of at least 768 Kbps. This implies that the number of households originally estimated by Connect Michigan to be unserved has dropped from 121,701 households in the fall of 2010 to 36,603 households in the spring of 2014. Further, approximately 3,769,134 households across Michigan have broadband available of at least 3 Mbps download speeds and 768 Kbps upload speeds. The percentage of Michigan households having fixed broadband access available of at least 6 Mbps download speeds is estimated at 93.52%.

Taking into account both fixed and mobile broadband service platforms, an estimated 99.92% of Michigan households have broadband available from at least one provider at download speeds of 768 Kbps or higher and upload speeds of 200 Kbps or higher. This leaves 3,100 households in the State completely unserved by any form of terrestrial broadband (including mobile, but excluding satellite services).

As differences in broadband availability estimates between the fall of 2010 and the spring of 2013 show, additional participating broadband providers can have a large impact upon Michigan broadband mapping inventory updates. Further, the measured broadband inventory provides an estimate of the true extent of broadband coverage across the state. There is a degree of measurement error inherent in this exercise that should be taken into consideration when analyzing the data. This measurement error will decrease as local, state, and federal stakeholders identify areas where the displayed coverage is underestimated or overestimated. Connect Michigan welcomes such feedback to be analyzed in collaboration with broadband providers to correct errors identified in the maps.

In addition, the broadband availability data collected, processed, and aggregated by Connect Michigan has been sent on a semi-annual basis to the NTIA to be used in the National Broadband Map, and comprises the source of Michigan’s broadband availability estimates reported by the NTIA and the FCC in the National Broadband Map. The National Broadband Map can be found here: [http://www.broadbandmap.gov](http://www.broadbandmap.gov) and the Map’s specific page for Michigan can be found here: [http://www.broadbandmap.gov/summarize/state/michigan](http://www.broadbandmap.gov/summarize/state/michigan).

**Interactive Map**
Connect Michigan provides My ConnectView™, an online tool developed and maintained by Connected Nation, intended to allow users to create completely customized views and maps of broadband infrastructure across the state. The self-service nature of this application empowers Michigan’s citizens to take an active role in seeking service, upgrading service, or simply becoming increasingly aware of what broadband capabilities and possibilities exist in their area, city, county, or state.
[http://www.connectmi.org/interactive-map](http://www.connectmi.org/interactive-map)
For additional maps and other related information, visit: [http://www.connectmi.org/broadband-landscape](http://www.connectmi.org/broadband-landscape).

**Business and Residential Technology Assessments**

To complement the broadband inventory and mapping data, Connect Michigan periodically conducts statewide residential and business technology assessments to understand broadband demand and trends across the state. The purpose of this research is to better understand the drivers and barriers to technology and broadband adoption and estimate the broadband adoption gap across the state of Michigan. Key questions the data address are: who, where, and how are households in Michigan using broadband technology? How is this technology impacting Michigan households and residents? Who is not adopting broadband service and why? What are the barriers that prevent citizens from embracing this empowering technology?

Through Connect Michigan’s research, many insights are able to be collected. The most recent residential technology revealed the following key findings:

- **Statewide, 71% of Michigan residents subscribe to home broadband service.** Even though this represents a 10 percentage point gain from 2011, it means that more than 2.1 million Michigan adults still do not subscribe to home broadband service.
- **The cost of broadband is becoming a smaller barrier among Michigan residents who do not subscribe to broadband; fewer Michiganders who do not subscribe to broadband cite cost as the main reason for not subscribing, while a larger share say they don’t see home broadband service as relevant or useful.**
- **Broadband empowers Michigan workers to search for jobs or find better jobs. Statewide, 40% of Michigan Internet users search for jobs online, including 55% of low-income Internet users.**

Additionally, an assessment on technology in businesses released in May 2012 in a report titled *Technology Adoption among Michigan Businesses* revealed the following key findings:

- **Across Michigan, 69% of businesses subscribe to broadband service, representing approximately 70,000 Michigan businesses that still do not use or benefit from broadband.**
- **Michigan business establishments that use broadband report median annual revenues that are approximately $300,000 higher than businesses that do not use broadband.**
- **Online sales in Michigan account for approximately $9.2 billion in annual sales revenue, including nearly $1.8 billion for small businesses with fewer than five employees and more than $1.9 billion for rural Michigan businesses.**

For more information on the statewide information described, visit the Connect Michigan website at [http://www.connectmi.org/](http://www.connectmi.org/).


**APPENDIX 2: PARTNER AND SPONSORS**

*Connect Michigan*, in partnership with the Michigan Public Service Commission (MPSC), supports Michigan’s reinvention and technological transformation through innovation, job creation, and entrepreneurship via the expansion of broadband technology and increased usage by Michigan residents. In 2009, Connect Michigan partnered with the Michigan Public Service Commission to engage in a comprehensive broadband planning and technology initiative as part of the national effort to map and expand broadband. The program began by gathering provider data to form a statewide broadband map and has progressed to the planning and development stage. At this point, the program is expanding to include community engagement in local technology planning, identification of opportunities with existing programs, and implementation of technology projects designed to address digital literacy, improve education, give residents access to global Internet resources, and stimulate economic development.

[www.connectmi.org](http://www.connectmi.org)

The *Michigan Public Service Commission* (MPSC) is the lead Michigan agency for the State Broadband Initiative that is responsible for working with Connect Michigan, overseeing the Michigan initiative, and providing direction of the project. The MPSC facilitates interactions with other state government entities, broadband providers, and other Michigan stakeholders. They view promoting broadband view Connect Michigan activities as complementary to their mission to “grow Michigan’s economy and enhance the quality of life of its communities by assuring safe and reliable energy, telecommunications, and transportation services at reasonable rates.”

[http://www.michigan.gov/mpsc](http://www.michigan.gov/mpsc)

*Connected Nation* (Connect Michigan’s parent organization) is a leading technology organization committed to bringing affordable high-speed Internet and broadband-enabled resources to all Americans. Connected Nation effectively raises the awareness of the value of broadband and related technologies by developing coalitions of influencers and enablers for improving technology access, adoption, and use. Connected Nation works with consumers, community leaders, states, technology providers, and foundations, including the Bill & Melinda Gates Foundation, to develop and implement technology expansion programs with core competencies centered on a mission to improve digital inclusion for people and places previously underserved or overlooked.

[http://www.connectednation.org](http://www.connectednation.org)

The *National Telecommunications and Information Administration (NTIA)* is an agency of the United States Department of Commerce that is serving as the lead agency in running the State
Broadband Initiative (SBI). Launched in 2009, the NTIA’s State Broadband Initiative implements the joint purposes of the Recovery Act and the Broadband Data Improvement Act, which envisioned a comprehensive program led by state entities or non-profit organizations working at their direction, to facilitate the integration of broadband and information technology into state and local economies. Economic development, energy efficiency, and advances in education and healthcare rely not only on broadband infrastructure, but also on the knowledge and tools to leverage that infrastructure.

The NTIA has awarded a total of $293 million for the SBI program to 56 grantees, one each from the 50 states, 5 territories, and the District of Columbia, or their designees. Grantees such as Connect Michigan are using this funding to support the efficient and creative use of broadband technology to better compete in the digital economy. These state-created efforts vary depending on local needs but include programs to assist small businesses and community institutions in using technology more effectively, developing research to investigate barriers to broadband adoption, searching out and creating innovative applications that increase access to government services and information, and developing state and local task forces to expand broadband access and adoption.

Since accurate data is critical for broadband planning, another purpose of the SBI program is to assist states in gathering data twice a year on the availability, speed, and location of broadband services, as well as the broadband services used by community institutions such as schools, libraries, and hospitals. This data is used by the NTIA to update the National Broadband Map, the first public, searchable nationwide map of broadband availability launched February 17, 2011.
APPENDIX 3: THE NATIONAL BROADBAND PLAN

The National Broadband Plan, released in 2010 by the Federal Communications Commission, has the express mission of creating a high-performance America: a more productive, creative, efficient America in which affordable broadband is available everywhere and everyone has the means and skills to use valuable broadband applications. The plan seeks to ensure that the entire broadband ecosystem — networks, devices, content, and applications — is healthy.

The plan recommends that the country adopt and track the following six goals to serve as a compass over the next decade:

GOAL No. 1: At least 100 million U.S. homes should have affordable access to actual download speeds of at least 100 megabits per second and actual upload speeds of at least 50 megabits per second.

GOAL No. 2: The United States should lead the world in mobile innovation, with the fastest and most extensive wireless networks of any nation.

GOAL No. 3: Every American should have affordable access to robust broadband service and the means and skills to subscribe if they so choose.

GOAL No. 4: Every American community should have affordable access to at least 1 gigabit per second broadband service to anchor institutions such as schools, hospitals, and government buildings.

GOAL No. 5: To ensure the safety of the American people, every first responder should have access to a nationwide, wireless, interoperable broadband public safety network.

GOAL No. 6: To ensure that America leads in the clean energy economy, every American should be able to use broadband to track and manage their real-time energy consumption.

To learn more, visit: www.broadband.gov.
APPENDIX 4: WHAT IS CONNECTED?

The goal of Connect Michigan’s Connected program is to empower locally informed and collaborative technology planning that addresses each community’s need for improved access, adoption, and use of technology:

- **ACCESS** – Does your community have access to affordable and reliable broadband service?
- **ADOPTION** – Is your community addressing the barriers to broadband adoption?
- **USE** – Are residents using technology to improve their quality of life?

Connected Nation leverages state-based public-private partnerships to engage residents at the local level. Regionally based staff provide “train-the-trainer” activities to local leaders, such as librarians, school administrators, economic development professionals, and public officials, and help them organize multi-sector technology planning teams, inventory local technology resources and initiatives, assess local technology access, adoption, and use, and develop local strategies that target specific technology gaps in the community.

Connected’s community technology-planning framework is cyclical. As with other forms of community planning – and especially so with technology planning – change is the only constant. At the community level, changing technology requirements, shifting demographics, economic drivers, and workforce requirements may expose or create new digital divides. Connected’s community technology-planning framework supports a sustained effort.

**Connected Planning Process**
Connected’s community technology-planning framework provides a clear path for the sustainable acceleration of broadband access, adoption, and use.
Step 1: Engage. Successful strategies to bridge the local digital divide and increase broadband access, adoption, and use are predicated on broad and sustained stakeholder participation. A successful local technology planning team should include people from multiple sectors, including:

- State and Local Government
- Public Safety
- Education (K-12, Higher Ed)
- Library
- Business and Industry, Agriculture, Recreation and Tourism
- Healthcare
- Community Organizations
- Technology Providers

Step 2: Assess. The Connected planning process guides the local technology planning team through an assessment of community technology resources, strengths, assets, needs, and gaps in order to identify and develop strategies to address specific technology gaps and opportunities in the community. Bolstered by benchmarking data that had been gathered through Connect Michigan’s mapping and market research, the local technology planning team works with community members to benchmark local broadband access, adoption, and use via the Connected Assessment, which measures:

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>ADOPTION</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Mobile Broadband Availability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Step 3: Plan. Once community resources and needs are identified, the community planning team begins to identify local priorities and policies, programs, and technical solutions that will accelerate broadband access, adoption, and use. Connected Nation provides recommended actions based on best practices from communities across the United States.

Step 4: Act. The technology planning team works together to ensure that selected policies, programs, and technical solutions are adopted, implemented, improved, and maintained. The Connected program also provides a platform for collaboration and the sharing of best practices between communities. Connected Nation also provides communications support to raise awareness of your community’s efforts. For communities that measurably demonstrate proficiency in broadband access, adoption, and use in the Connected Assessment, Connected Nation offers Connected certification, a nationally recognized certification that provides an avenue for pursuing opportunities as a recognized, technologically advanced community.
APPENDIX 5: GLOSSARY OF TERMS

#
3G Wireless - Third Generation - Refers to the third generation of wireless cellular technology. It has been succeeded by 4G wireless. Typical speeds reach about 3 Mbps.
4G Wireless - Fourth Generation - Refers to the fourth generation of wireless cellular technology. It is the successor to 2G and 3G. Typical implantations include LTE, WiMax, and others. Maximum speeds may reach 100 Mbps, with typical speeds over 10 Mbps.

A
ADSL - Asymmetric Digital Subscriber Line - DSL service with a larger portion of the capacity devoted to downstream communications, less to upstream. Typically thought of as a residential service.
ATM - Asynchronous Transfer Mode - A data service offering by ASI that can be used for interconnection of customers’ LAN. ATM provides service from 1 Mbps to 145 Mbps utilizing Cell Relay Packets.

B
Bandwidth - The amount of data transmitted in a given amount of time; usually measured in bits per second, kilobits per second, and megabits per second.
BIP - Broadband Infrastructure Program - Part of the American Recovery and Reinvestment Act (ARRA), BIP is the program created by the U.S. Department of Agriculture focused on expanding last mile broadband access.
Bit - A single unit of data, either a one or a zero. In the world of broadband, bits are used to refer to the amount of transmitted data. A kilobit (Kb) is approximately 1,000 bits. A megabit (Mb) is approximately 1,000,000 bits.
BPL - Broadband Over Powerline - An evolving theoretical technology that provides broadband service over existing electrical power lines.
BPON - Broadband Passive Optical Network - A point-to-multipoint fiber-lean architecture network system which uses passive splitters to deliver signals to multiple users. Instead of running a separate strand of fiber from the CO to every customer, BPON uses a single strand of fiber to serve up to 32 subscribers.
Broadband - A descriptive term for evolving digital technologies that provide consumers with integrated access to voice, high-speed data service, video-demand services, and interactive delivery services (e.g. DSL, cable Internet).
BTOP - Broadband Technology Opportunities Program - Part of the American Recovery and Reinvestment Act (ARRA), BTOP is the program created by the U.S. Department of Commerce focused on expanding broadband access, expanding access to public computer centers, and improving broadband adoption.
Cable Modem - A modem that allows a user to connect a computer to the local cable system to transmit data rather than video. It allows broadband services at speeds of five Mbps or higher.

CAP - Competitive Access Provider - (or “Bypass Carrier”) A company that provides network links between the customer and the Inter-Exchange Carrier or even directly to the Internet Service Provider. CAPs operate private networks independent of Local Exchange Carriers.

Cellular - A mobile communications system that uses a combination of radio transmission and conventional telephone switching to permit telephone communications to and from mobile users within a specified area.

CLEC - Competitive Local Exchange Carrier - Wireline service provider that is authorized under state and federal rules to compete with ILECs to provide local telephone and Internet service. CLECs provide telephone services in one of three ways or a combination thereof: a) by building or rebuilding telecommunications facilities of their own, b) by leasing capacity from another local telephone company (typically an ILEC) and reselling it, or c) by leasing discreet parts of the ILEC network referred to as UNEs.

CMTS - Cable Modem Termination System - A component (usually located at the local office or head end of a cable system) that exchanges digital signals with cable modems on a cable network, allowing for broadband use of the cable system.

CO - Central Office - A circuit switch where the phone and DSL lines in a geographical area come together, usually housed in a small building.

Coaxial Cable - A type of cable that can carry large amounts of bandwidth over long distances. Cable TV and cable modem broadband service both utilize this technology.

Community Anchor Institutions (CAI) - Institutions that are based in a community and larger user of broadband. Examples include schools, libraries, healthcare facilities, and government institutions.

CWDM - Coarse Wavelength Division Multiplexing - Multiplexing (more commonly referred to as WDM) with less than 8 active wavelengths per fiber.

Dial-Up - A technology that provides customers with access to the Internet over an existing telephone line. Dial-up is much slower than broadband.

DLEC - Data Local Exchange Carrier - DLECs deliver high-speed access to the Internet, not voice. DLECs include Covad, Northpoint, and Rhythms.

Downstream - Data flowing from the Internet to a computer (surfing the net, getting e-mail, downloading a file).

DSL - Digital Subscriber Line - The use of a copper telephone line to deliver “always on” broadband Internet service.

DSLAM - Digital Subscriber Line Access Multiplier - A piece of technology installed at a telephone company’s CO that connects the carrier to the subscriber loop (and ultimately the customer’s PC).
DWDM - Dense Wavelength Division Multiplexing - A SONET term which is the means of increasing the capacity of Sonet fiber-optic transmission systems.

E
E-rate - A federal program that provides subsidy for voice and data lines to qualified schools, hospitals, Community-Based Organization (CBOs), and other qualified institutions. The subsidy is based on a percentage designated by the FCC.
Ethernet - A local area network (LAN) standard developed for the exchange data with a single network. It allows for speeds from 10 Mbps to 10 Gbps.
EON - Ethernet Optical Network - The use of Ethernet LAN packets running over a fiber network.
EvDO - Evolution Data Only - A new wireless technology that provides data connections that are 10 times faster than a regular modem.

F
FCC - Federal Communications Commission - A federal regulatory agency that is responsible for, among other things, regulating VoIP.
Fixed Wireless Broadband - The operation of wireless devices or systems for broadband use at fixed locations such as homes or offices.
Franchise Agreement - An agreement between a cable provider and a government entity that grants the provider the right to serve cable and broadband services to a particular area - typically a city, county, or state.
FTTH - Fiber To The Home - Another name for fiber to the premises, where fiber optic cable is pulled directly to an individual’s residence or building allowing for extremely high broadband speeds.
FTTN - Fiber To The Neighborhood - A hybrid network architecture involving optical fiber from the carrier network, terminating in a neighborhood cabinet that converts the signal from optical to electrical.
FTTP - Fiber To The Premise (Or FTTB – Fiber To The Building) - A fiber optic system that connects directly from the carrier network to the user premises.

G
Gbps - Gigabits per second - 1,000,000,000 bits per second or 1,000 Mbps. A measure of how fast data can be transmitted.
GPON - Gigabyte-Capable Passive Optical Network - A different, faster approach (up to 2.5 Gbps in current products) than BPON.
GPS - Global Positioning System - A system using satellite technology that allows an equipped user to know exactly where he is anywhere on earth.
GSM - Global System for Mobile Communications - This is the current radio/telephone standard in Europe and many other countries except Japan and the United States.
HFC - Hybrid Fiber Coaxial Network - An outside plant distribution cabling concept employing both fiber optic and coaxial cable.
Hotspot - See Wireless Hotspot.

IEEE - Institute of Electrical and Electronics Engineers (pronounced “Eye-triple-E.”).
ILEC - Incumbent Local Exchange Carrier - The traditional wireline telephone service providers within defined geographic areas. They typically provide broadband Internet service via DSL technology in their area. Prior to 1996, ILECs operated as monopolies having the exclusive right and responsibility for providing local and local toll telephone service within LATAs.
IP-VPN - Internet Protocol - Virtual Private Network - A software-defined network offering the appearance, functionality, and usefulness of a dedicated private network.
ISDN - Integrated Services Digital Network - An alternative method to simultaneously carry voice, data, and other traffic, using the switched telephone network.
ISP - Internet Service Provider - A company providing Internet access to consumers and businesses, acting as a bridge between customer (end-user) and infrastructure owners for dial-up, cable modem, and DSL services.

K
Kbps - Kilobits per second - 1,000 bits per second. A measure of how fast data can be transmitted.

L
LAN - Local Area Network - A geographically localized network consisting of both hardware and software. The network can link workstations within a building or multiple computers with a single wireless Internet connection.
LATA - Local Access and Transport Areas - A geographic area within a divested Regional Bell Operating Company is permitted to offer exchange telecommunications and exchange access service. Calls between LATAs are often thought of as long-distance service. Calls within a LATA (IntraLATA) typically include local and local toll telephone services.
Local Loop - A generic term for the connection between the customer’s premises (home, office, etc.) and the provider’s serving central office. Historically, this has been a wire connection; however, wireless options are increasingly available for local loop capacity.
Low Income - Low income is defined by using the poverty level as defined by the U.S. Census Bureau. A community’s low-income percentage can be found at www.census.gov.

M
MAN - Metropolitan Area Network - A high-speed date intra-city network that links multiple locations with a campus, city, or LATA. A MAN typically extends as far as 50 kilometers (or 31 miles).
Mbps - Megabits per second - 1,000,000 bits per second. A measure of how fast data can be transmitted.
Metro Ethernet - An Ethernet technology-based network in a metropolitan area that is used for connectivity to the Internet.

Multiplexing - Sending multiple signals (or streams) of information on a carrier (wireless frequency, twisted pair copper lines, fiber optic cables, coaxial, etc.) at the same time. Multiplexing, in technical terms, means transmitting in the form of a single, complex signal and then recovering the separate (individual) signals at the receiving end.

NTIA - National Telecommunications and Information Administration, which is housed within the United State Department of Commerce.

NIST - National Institute of Standards and Technology.

Overbuilders - Building excess capacity. In this context, it involves investment in additional infrastructure projects to provide competition.

OVS - Open Video Systems - A new option for those looking to offer cable television service outside the current framework of traditional regulation. It would allow more flexibility in providing service by reducing the build-out requirements of new carriers.

PON - Passive Optical Network - A Passive Optical Network consists of an optical line terminator located at the Central Office and a set of associated optical network terminals located at the customer’s premises. Between them lies the optical distribution network comprised of fibers and passive splitters or couplers.

Right-of-Way - A legal right of passage over land owned by another. Carriers and service providers must obtain right-of-way to dig trenches or plant poles for cable and telephone systems and to place wireless antennae.

RPR - Resilient Packet Ring - Uses Ethernet switching and a dual counter-rotating ring topology to provide SONET-like network resiliency and optimized bandwidth usage, while delivering multi-point Ethernet/IP services.

RUS - Rural Utility Service - A division of the United States Department of Agriculture that promotes universal service in unserved and underserved areas of the country through grants, loans, and financing.

Satellite - Satellite brings broadband Internet connections to areas that would not otherwise have access, even the most rural of areas. Historically, higher costs and lower reliability have prevented the widespread implementation of satellite service, but providers have begun to overcome these obstacles, and satellite broadband deployment is increasing. A satellite works by receiving radio signals sent from the Earth (at an uplink location also called an Earth Station).
and resending the radio signals back down to the Earth (the downlink). In a simple system, a signal is reflected, or "bounced," off the satellite. A communications satellite also typically converts the radio transmissions from one frequency to another so that the signal getting sent down is not confused with the signal being sent up. The area that can be served by a satellite is determined by the "footprint" of the antennas on the satellite. The "footprint" of a satellite is the area of the Earth that is covered by a satellite's signal. Some satellites are able to shape their footprints so that only certain areas are served. One way to do this is by the use of small beams called "spot beams." Spot beams allow satellites to target service to a specific area, or to provide different service to different areas.

SBI - State Broadband Initiatives, formerly known as the State Broadband Data & Development (SBDD) Program.

SONET - Synchronous Optical Network - A family of fiber-optic transmission rates.

Streaming - A Netscape innovation that downloads low-bit text data first, then the higher bit graphics. This allows users to read the text of an Internet document first, rather than waiting for the entire file to load.

Subscribership - Subscribership is the number of customers that have subscribed for a particular telecommunications service.

Switched Network - A domestic telecommunications network usually accessed by telephones, key telephone systems, private branch exchange trunks, and data arrangements.

T

T-1 - Trunk Level 1 - A digital transmission link with a total signaling speed of 1.544 Mbps. It is a standard for digital transmission in North America.

T-3 - Trunk Level 3 - 28 T1 lines or 44.736 Mbps.

U

UNE - Unbundled Network Elements - Leased portions of a carrier’s (typically an ILEC’s) network used by another carrier to provide service to customers.

Universal Service - The idea of providing every home in the United States with basic telephone service.

Upstream - Data flowing from your computer to the Internet (sending e-mail, uploading a file).

V

VDSL (or VHDSL) - Very High Data Rate Digital Subscriber Line - A developing technology that employs an asymmetric form of ADSL with projected speeds of up to 155 Mbps.

Video On Demand - A service that allows users to remotely choose a movie from a digital library and be able to pause, fast-forward, or even rewind their selection.

VLAN - Virtual Local Area Network - A network of computers that behave as if they were connected to the same wire even though they may be physically located on different segments of a LAN.

VoIP - Voice over Internet Protocol - A new technology that employs a data network (such as a broadband connection) to transmit voice conversations.
**VPN - Virtual Private Network** - A network that is constructed by using public wires to connect nodes. For example, there are a number of systems that enable one to create networks using the Internet as the medium for transporting data. These systems use encryption and other security mechanisms to ensure that only authorized users can access the network and that the data cannot be intercepted.

**Vulnerable Groups** - Vulnerable groups will vary by community, but typically include low-income, minority, senior, children, etc.

**W**

**WAN - Wide Area Network** - A communications system that utilizes cable systems, telephone lines, wireless, and other means to connect multiple locations together for the exchange of data, voice, and video.

**Wi-Fi - Wireless Fidelity** - A term for certain types of wireless local networks (WLANs) that uses specifications in the IEEE 802.11 family.

**WiMax** - A wireless technology that provides high-throughput broadband connections over long distances. WiMax can be used for a number of applications, including last mile broadband connections, hotspots, and cellular backhaul and high-speed enterprise connectivity for businesses.

**Wireless Hotspot** - A public location where Wi-Fi Internet access is available for free or for a small fee. These could include airports, restaurants, hotels, coffee shops, parks, and more.

**Wireless Internet** - 1) Internet applications and access using mobile devices such as cell phones and palm devices. 2) Broadband Internet service provided via wireless connection, such as satellite or tower transmitters.

**Wireline** - Service based on infrastructure on or near the ground, such as copper telephone wires or coaxial cable underground, or on telephone poles.