



# Oregon State Broadband Initiative

Broadband Mapping Project

January 2013

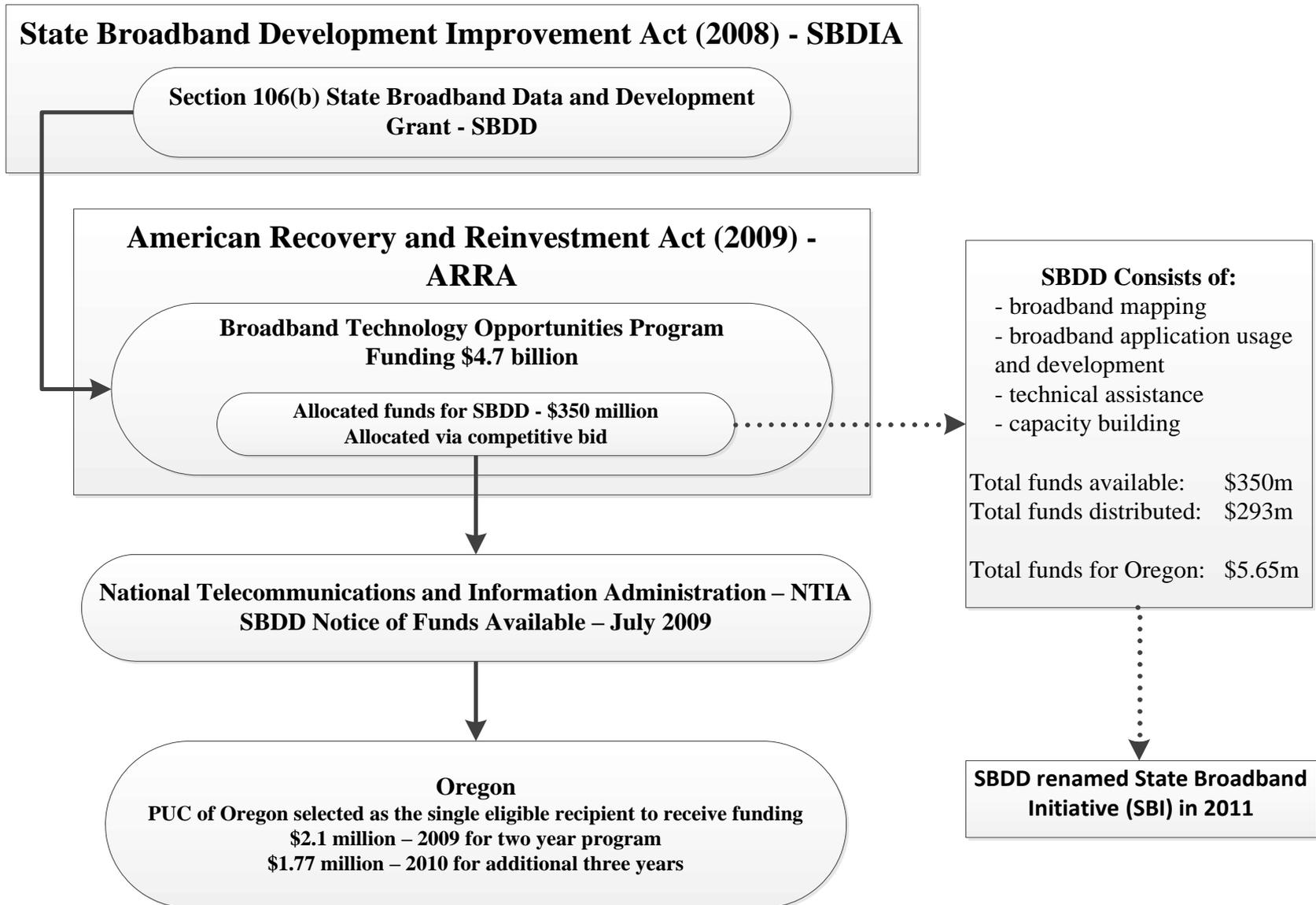


# What is the Broadband Mapping Project?

- To create and maintain a statewide map based inventory of broadband internet availability.
- “support the collection of comprehensive and accurate state-level broadband mapping data, development of state-level broadband maps, development and maintenance of a nationwide broadband map for the use by policy makers and consumers.”

[http://www.oregon.gov/broadband/Pages/state\\_broadband\\_project.aspx](http://www.oregon.gov/broadband/Pages/state_broadband_project.aspx)

# Policy Background



# Other SBI Projects

The Broadband Mapping Project is not the only project under the SBI banner:

- **State Capacity Building:**

NetCity survey – encourage broadband adoption.

<http://netcityengineering.com/index.htm>

- **Technical Assistance:**

Small business development – Oregon Small Business Development Center Network.

<http://www.bizcenter.org/>

- **Application Usage and Development:**

Association of Oregon Counties.

<http://www.aocweb.org/aoc/default.aspx>

# What is Broadband?

## **In the context of the project broadband is:**

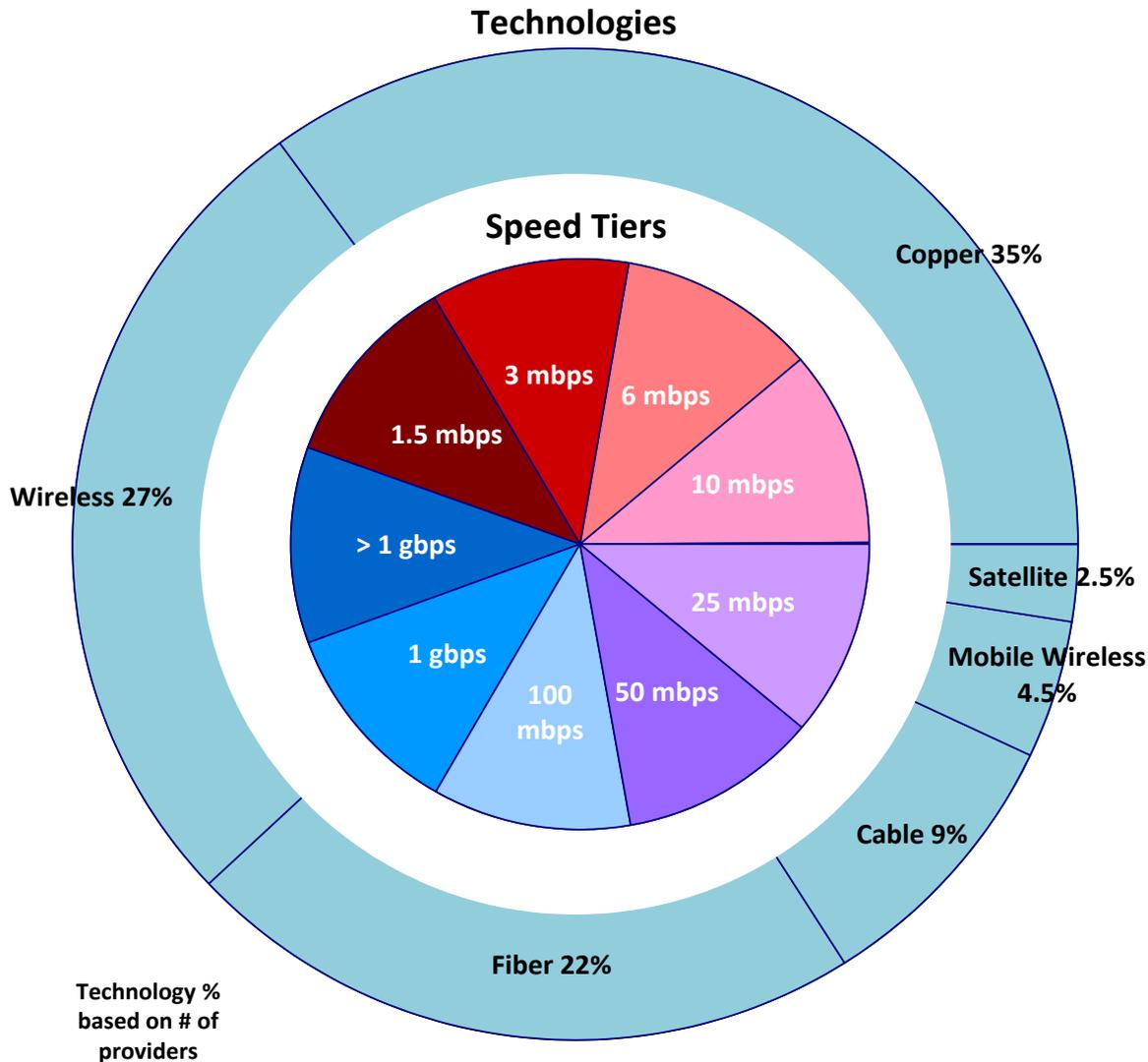
- A term that commonly refers to high-speed Internet access that is always on and faster than the traditional dial-up access.

## **Broadband differentiates itself from other form of internet connectivity because:**

- Broadband service provides higher-speed of data transmission. It allows more content to be carried through the transmission “pipeline.”
- Broadband provides access to the highest quality Internet services—streaming media, VoIP (Internet phone), gaming, and interactive services. Many of these current and newly-developing services require the transfer of large amounts of data that may not be technically feasible with dial-up service. Therefore, broadband service may be increasingly necessary to access the full range of services and opportunities that the Internet can offer.
- Broadband is always on. It does not block phone lines and there is no need to reconnect to network after logging off.
- Less delay in transmission of content when using broadband.

[http://www.broadband.gov/about\\_broadband.html](http://www.broadband.gov/about_broadband.html)

# Amassing Information



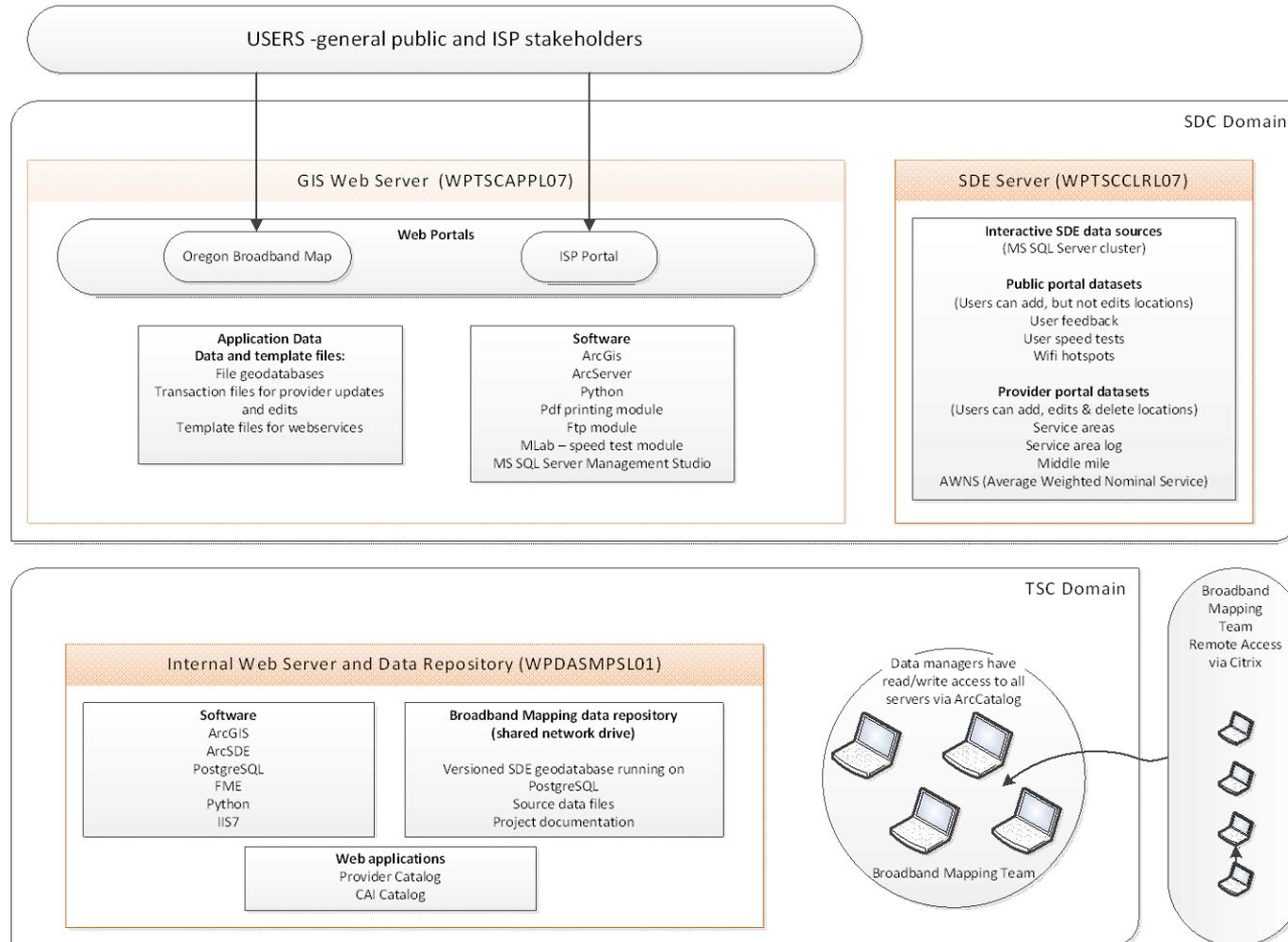
- **Geography**  
What is the service area?
- **Technology**  
What technologies are employed?
- **Speed Tiers**  
How fast is the service?
- **Wireless Spectrum used**  
Licensed or unlicensed?

## Other information collected:

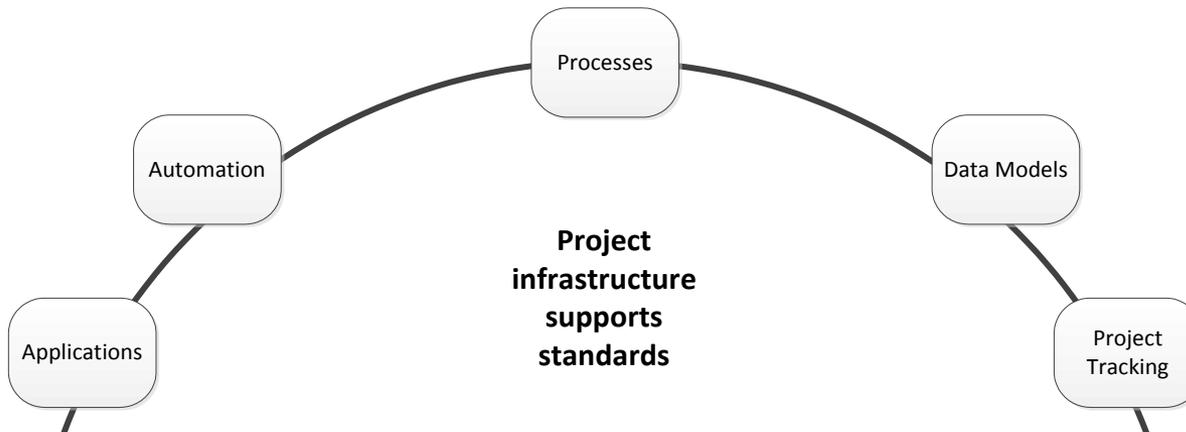
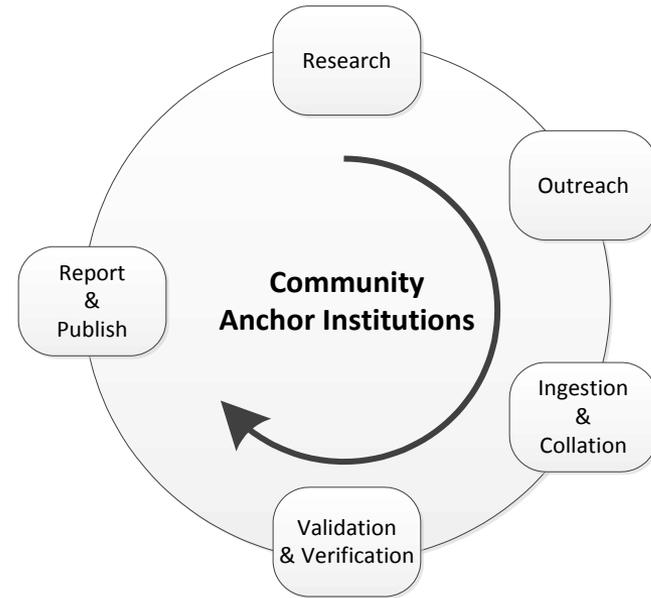
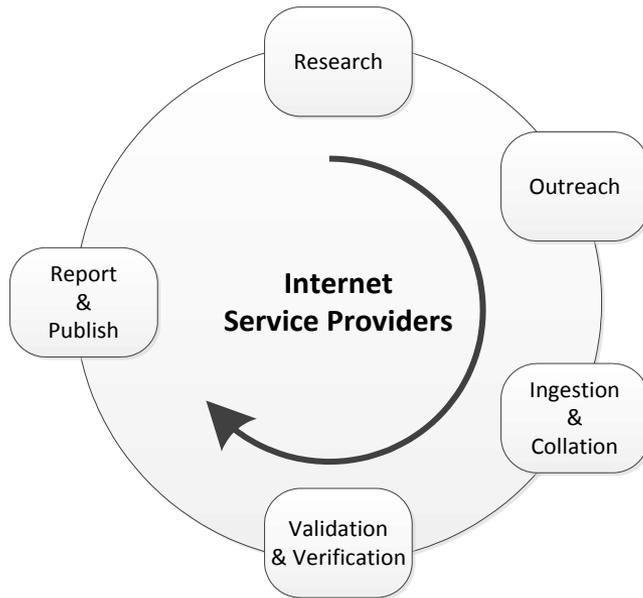
- Middle mile locations. The network connectivity.
- Community Anchor Institutions (CAI). Schools, hospitals, libraries, etc.

# System Configuration

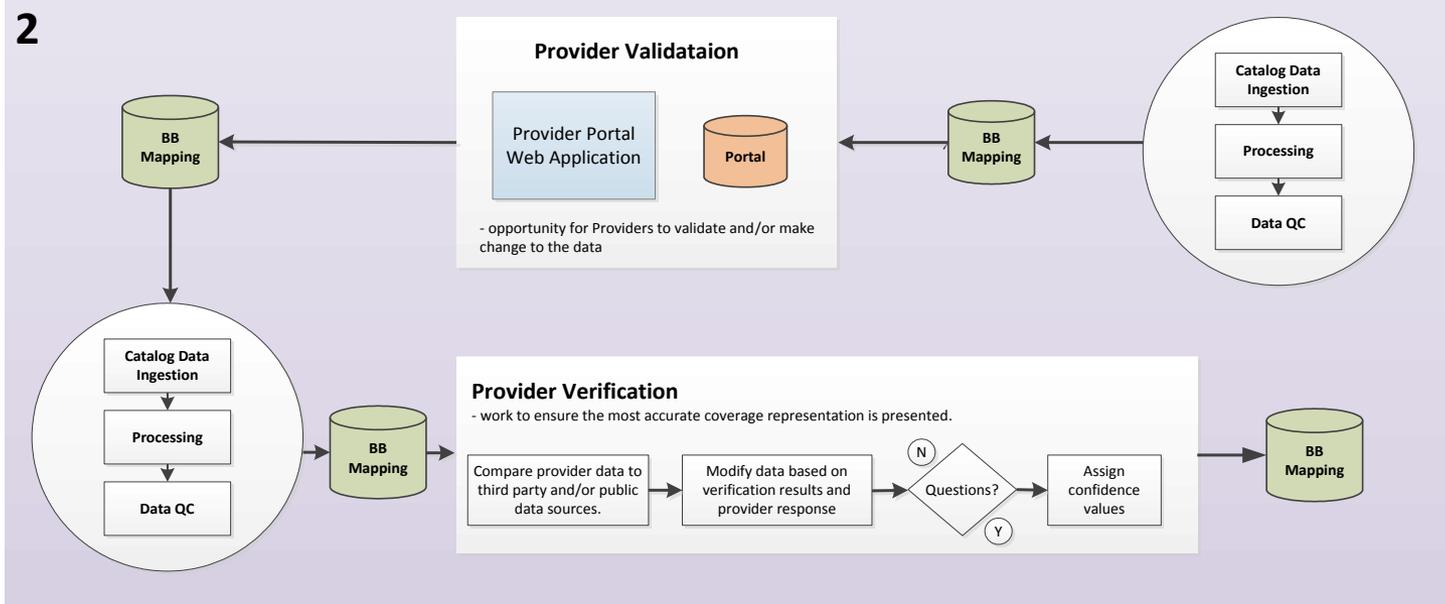
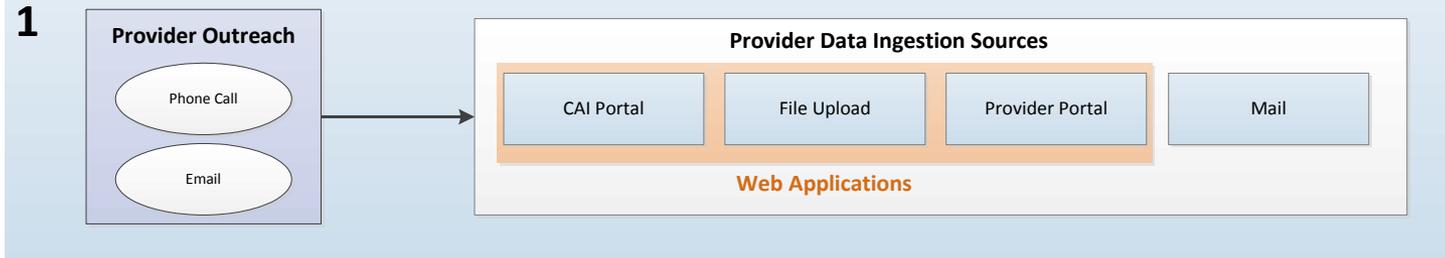
## Oregon Broadband Mapping System Schematic



# Mapping Activities



# Data Processing

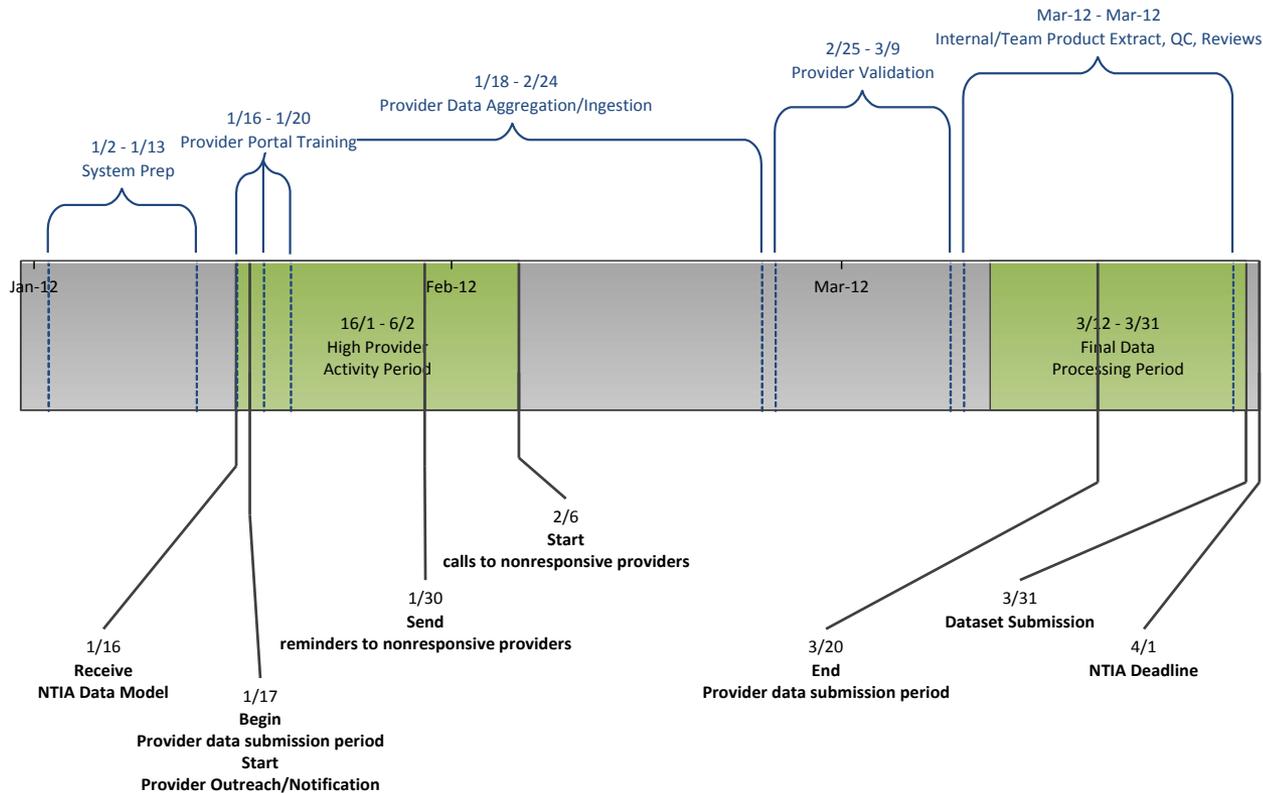


# Data Collection Timeline

## NTIA Data Submission Reporting Cycle

hypothetical timeline

(This cycle is repeated twice a year, in the first and third quarters )



# Provider Portal

Broadband Provider Portal

Status: pan

Service Area Legend

- Service Area
- Selected Service Area
- Provider Added Area
- Provider Removed Area
- Provider Replaced Area

Select All Zoom to Selected Clear Selection Valid Add Remove Replace Delete Save Edits

Print	Service Area	Transmission Technology	Spectrum	Max Abr Download Speed	Max Abr Upload Speed	Typical Download Speed	Typical Upload Speed	Provider Type
	Provider removed on Mon Mar	Other	not applicable	Unknown	Unknown	Unknown	Unknown	Broadband
	Arthur	DSL Asymmetric	not applicable	>= 3 mbps and < 8 mbps	>= 1.8 mbps and < 3 mbps	>= 3 mbps and < 8 mbps	> 200 kbps and < 768 kbps	Broadband

Broadband Provider Portal

Status: pan

Service Area Legend

- Service Area
- Selected Service Area
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- Provider Removed Area
- Provider Replaced Area

Select All Zoom to Selected Clear Selection **Valid** Add Remove Replace Delete Save Edits

Print	Service Area	Transmission Technology	Spectrum	Click to set service area valid flag to 'Yes' for selected records	Adv Upload Speed	Typical Download Speed	Typical Upload Speed	Provider Type	End Use
	Arthur	DSL Asymmetric	not applicable	>= 3 mbps and < 8 mbps	>= 1.5 mbps and < 3 mbps	>= 3 mbps and < 8 mbps	> 200 kbps and < 768 kbps	Broadband	Reside

# Background Automation

## Data Processing

### NTIA Data Submission

- BDIA\_BBCov\_Speed\_Check
- RunBDIACreateSBDDOutput
- BDIACreateSBDDOutput
- SBDD\_CreateSubmission

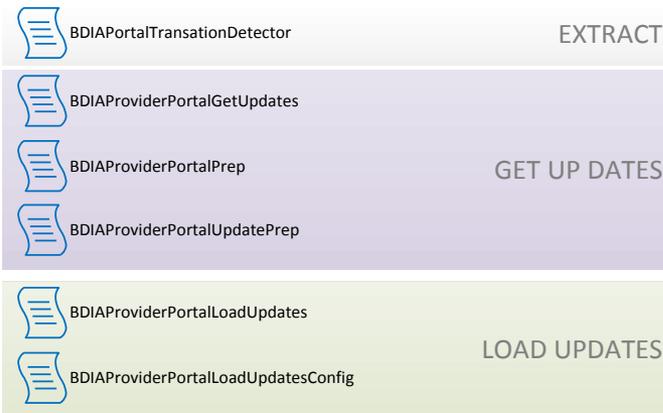
### OR BB Map

- BDIAStateSitePrep

### P-Cat

- ESRIWrapper
- SourceSyncV3noPassword
- NE\_OR\_GA\_SFTPPortalPull\_v1\_NoPasswords

## Provider Portal



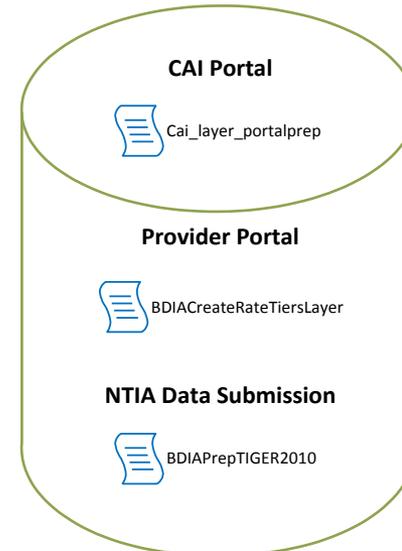
## Provider Uploads

- ProviderUploadPCatSyn
- ProviderUploadPrep

## Script Data

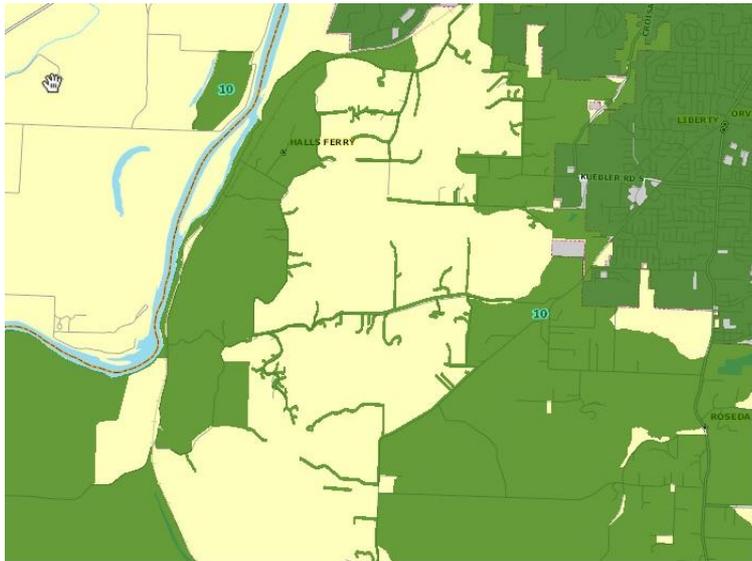
- BBCov
- TIGER2010
- ProviderPortalDomains
- SBDD\_TRANSFER

## Data Prep

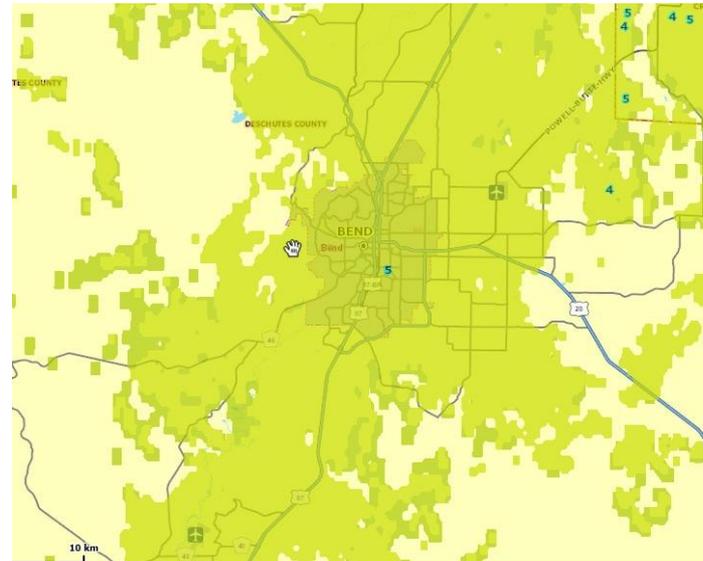


# Data Representation

## Wireline Services



## Wireless Services



US Census Bureau geography  
Census blocks less than two square miles  
- census block  
Census blocks greater than two square miles  
- TIGER road segments

ISP coverage geography

# Data Confirmation

- ISP
  - Provide confirmation of their services via the provider web portal
- Modeling
  - Create service areas from provider data such as radio tower locations, network aggregation locations
- Third party data sources
  - Wire center boundaries, wireless service areas, cable service areas
- Field tests
  - Testing of mobile wireless service at specific locations
- Confidence scores
  - Assigned to each provider based on a number of factors

Criteria	Description	Points Assigned
Technology Type – Geometry	Represents the common geometry of the specified technology	1
Technology Type – Attribution	Attribution is complete and matches specified technology	1
3 <sup>rd</sup> Party Verification	3 <sup>rd</sup> party verification review supports provider's footprint, discrepancies are minimal	1 per dataset (Maximum of 2 points)
Provider Validation	Provider validated their coverage via portal or otherwise	1
Peer Review	Peer review was completed and agrees with provider's coverage	1
Crowd Sourcing/other	Results from the following do not show significant discrepancies and/or supports (agrees) with coverage and attribution, Website, Speed Test ResultsFeedback, anecdotal sources	1 per dataset (Maximum of 2 points)
NTIA Guidelines	Technology and attribution satisfies NTIA guidelines. Example: Technology/Speed tier table, doesn't come up in the Submission Receipt as an error	1
Currency of Overall Process	Data, validation, and verification activities are current within a timeline of 2 data submissions, or 1 year. 2 points if participated in current submission, 1 point if participated in previous submission, 0 points if have not participated within the previous year.	sliding scale 0-2
Provider Engagement	A measure of how engaged the provider is in the project.1 point for responding to communications, 2 points for actively participating and submitting data in a timely manner (not at the last minute), 3 points for significant work on ensuring update accuracy.	sliding scale 0-3

# ISP Tracking

PCat Hello, pwoods!

Tasks DBAs Sources Settings Reports

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**Acmetech OR (DBA ID: 6362) Active**  

<http://www.calvin-and-hobbes.org/>  
Parent Provider:  
Provider Type: Broadband provider as described in the NOFA

**DBA Details**

155 Cottage St	User name: <a href="#">acmetech_or</a>	<b>TransTechs</b>
Salem, OR 97301	Password: <a href="#">acme66tech</a>	10 Asymmetric xDSL
Have Ever Participated: <a href="#">False</a>	Portal Trained: <a href="#">True</a>	20 Symmetric xDSL
Do Not Contact: <a href="#">False</a>	Awarded Grant: <a href="#">False</a>	<b>FRN Numbers</b> 
NDA: <a href="#">False</a>	NDA Signed:	
NDA Required: <a href="#">False</a>	NDA Exchanged:	
Business Only: <a href="#">False</a>		
Origin:		
Notes: This is our testing account		
Created 12/18/2012 by		

**Contacts**

**Contact Log**

**Confidence** 

**0413 Delivery** 

Delivery Status: <a href="#">Initial Outreach</a>	Footprint Status: <a href="#">Not Provided</a>
Outreach Date: <a href="#">01/07/2013</a>	Midmile Status: <a href="#">Not Provided</a>
Initial Response:	Subscriber Status: <a href="#">Not Provided</a>
Portal Login: <a href="#">02/04/2013</a>	

**Sources** 

**1012 Delivery** 

# CAI Tracking

CAI Cat Hello, pwoods!

Tasks CAIs Sources Settings

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**acmeLib (DBA ID: 6366) Active**  

Parent Provider: [Acmetech OR](#)  
Provider Type: School - K through 12

**CAI Details**

Have Ever Participated: [False](#) Do Not Contact: [False](#)  
NDA: [False](#) NDA Signed:  
NDA Required: [False](#) NDA Exchanged:  
Origin: [ESD\\_Bandwidth.xls](#)  
Notes:  
Created 1/29/2013 by pwoods

**Children**

**Sources**

**Contacts**

First	Last	Position	Phone 1	Phone 2	E-Mail	Remarks	
some	Body					test case	   

**Contact Log**

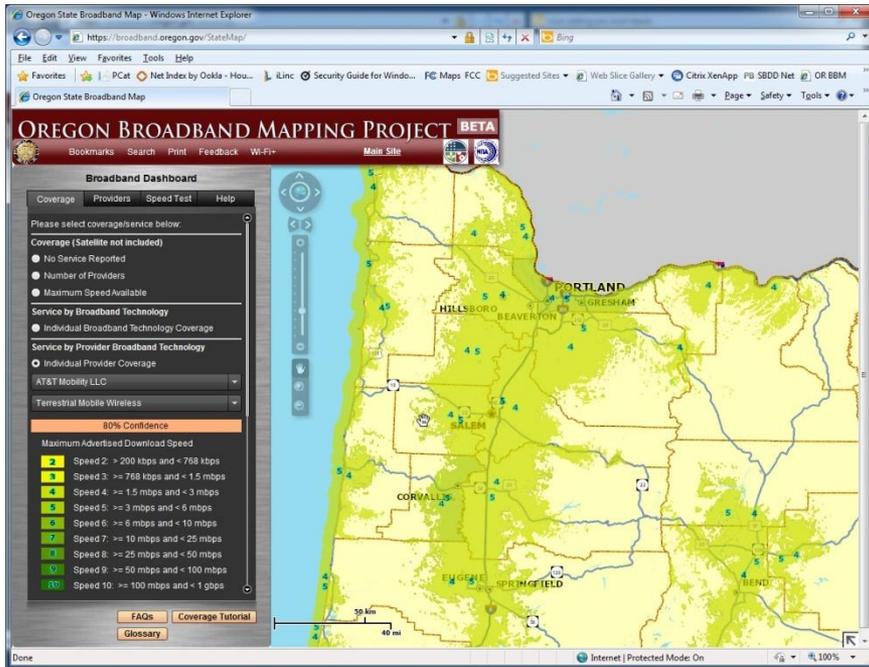
Date	By	Contact Name	Method	Notes	
01/29/2013 09:24	pwoods	some Body	E-Mail	dddd	

**Confidence**

# NTIA Reports

- **Reporting timeline:**
  - Reports submitted to the NTIA every six months
  - Baseline dates December 31<sup>st</sup> and June 30<sup>th</sup>
  - Report deadlines April 1<sup>st</sup> and October 1<sup>st</sup>
- **Reports consist of:**
  - File geodatabase – ISPs by technology, speeds, etc.
  - Spreadsheet – lists ISPs by technology, census block/street segment counts, etc.
  - Methodology document – ISP counts, methods used, lists every potential ISP contacted

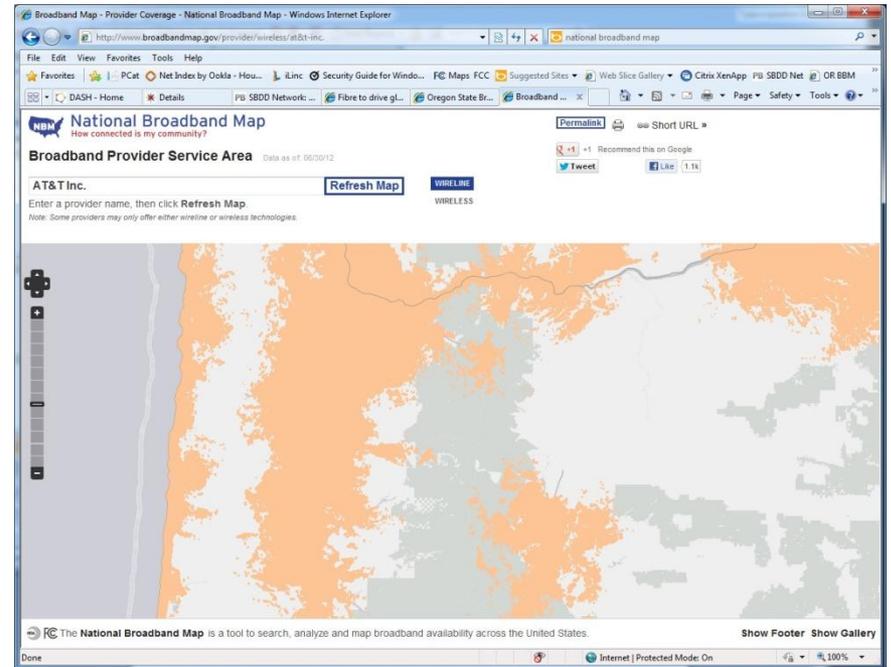
# Public Access



## Oregon Broadband Map

Provides functionality to:

- explore Oregon ISP's,
- provide feedback to the program,
- run speed tests from a user's location,
- and find/add publicly available WiFi locations.



## National Broadband Map

Provides functionality to:

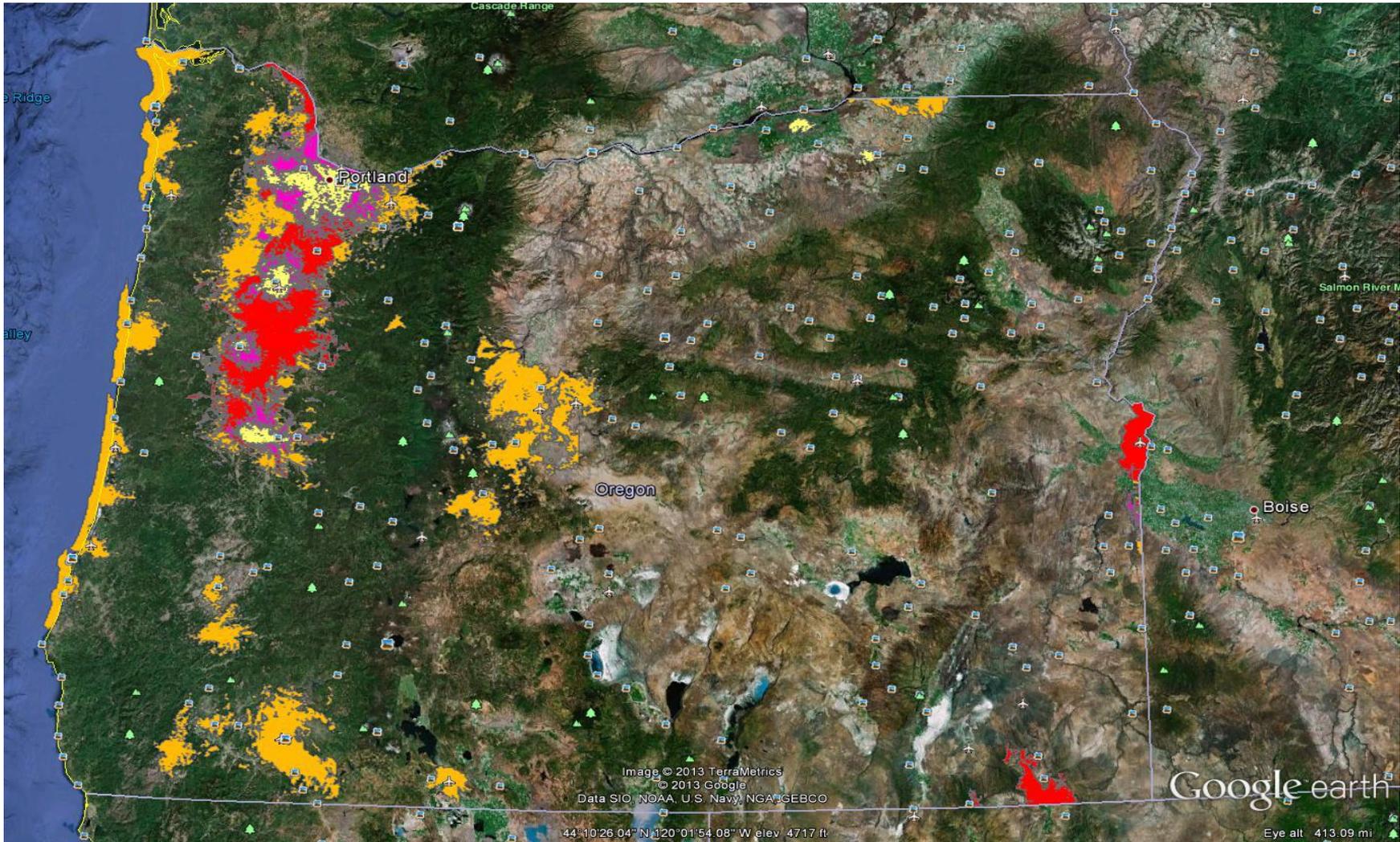
- explore Oregon ISP's,
- provide feedback to the program,
- run speed tests from a user's location,

# Links

- Oregon Broadband Map  
<http://broadband.oregon.gov>
- Project Website  
<http://www.oregon.gov/broadband>
- National Broadband Map  
<http://www.broadbandmap.gov/>
- National Telecommunications and Information Administration -  
BroadbandUSA  
<http://www.ntia.doc.gov/>

# Other related efforts...

- FirstNet (National Public Safety Broadband Network):  
Implementation of 4G LTE network nation-wide for the provision of interoperable communications (data and voice) for emergency response
  - New NTIA grant opportunity for all states
  - Oregon to receive \$2.2M for outreach and then data collection for implementation



# Other related efforts...(pt 2)

- NextGen 911: Implementation of map-enabled emergency response and dispatch
  - NENA Addressing Standard
  - Interoperability with GIS datasets for locating emergencies and dispatching responders
- Oregon Health Network: tele-health provision across Oregon
  - Peer-to-peer connections for rural healthcare provider
  - OHN Interactive Map (<http://www.oregonhealthnet.org/content/ohn-interactive-community-map>)
- Smarter Balanced Assessment Consortium: dynamic testing capability for common core standards in language arts/literacy and mathematics
  - Relies on broadband network for interactive student achievement testing
  - Requires broadband connectivity across Oregon...