

State of Arizona



Arizona Broadband Assessment Project (AZ BAP)

Arizona Broadband Coverage

Submission 9 - April 1, 2014

State of Arizona

Arizona Strategic Enterprise Technology Office (ASET)

Arizona Broadband Assessment Project (AZ BAP) Arizona Broadband Coverage

Submission 9 - April 1, 2014

Arizona Broadband Assessment Project Overview

The purpose of the Arizona Broadband Assessment Project (AZ BAP) is to identify both the availability and speed of broadband services, and the location of broadband infrastructure throughout Arizona, including middle mile infrastructure and Community Anchor Institutions (CAIs). This project is provided through the American Recovery and Reinvestment Act of 2009 (ARRA) and the Broadband Data Improvement Act (BDIA), and in conjunction with the National Telecommunications and Information Administration (NTIA) and the Federal Communications Commission (FCC). AZ BAP is managed by the Arizona Strategic Enterprise Technology Office (ASET) under the Arizona Department of Administration (ADOA) in partnership with the Arizona State Land Department (ASLD), contractor Data Site Consortium, Inc. and their GIS subcontractor, TerraSystems Southwest (TSSW).

Submission 9 for the broadband availability and CAI data set was duly submitted to NTIA prior to the April 1, 2014 deadline. Spring 2014 was the ninth of ten semi-annual submissions by the State of Arizona and attempts to capture and reflect broadband availability and conditions in the field as of December 31, 2013. See the Arizona Broadband Provider Changes & Corrections Document at the back for a list of included Broadband Providers and relevant notes for each.

Arizona Digital Landscape and Situational Analysis

From the Arizona Broadband Assessment Project (AZ BAP) data for Spring 2014, we know that while a healthy 99.6% of Arizona households can get broadband of at least 768 Kbps download from at least one provider, not including available satellite service. As we move to rural areas that decreases to 97.9% of households. And for sparsely populated rural areas, the percentage decreases further to 96.2% of households, leaving about 4% of sparsely populated rural households without any broadband coverage at all except satellite.

When we consider the more reasonable modern connection speed of at least 3 Mbps download, the availability percentages start to decline to 98.6% of households statewide, 93.3% for rural areas, and 87.9% for sparsely populated rural areas leaving some 12% of households in sparsely populated rural areas without what we would consider adequate bandwidth. At a somewhat higher connection speed of 6 Mbps download, the availability percentages decline slightly to 98.2% of households statewide, 91.5% for rural areas, and 85.6% for sparsely populated rural areas leaving some 14% of households in sparsely populated rural areas without such higher performance services.

For the availability of more than a single Broadband Provider with at least a 3 Mbps download speed, analysis shows that for All Technologies, 98.8% of the statewide population has access to at least one provider, 97.8% has access to at least two providers, and 96.5% has access to at least three providers. For Arizona's rural areas, 94.0% of the population has access to at least

one provider, 88.7% access to at least two providers, and 82.32% access to at least three providers with at least a 3 Mbps download speed. And for Arizona's sparsely populated rural areas, 88.3% of the population has access to at least one provider, 82.2% access to at least two providers, and 74.2% access to at least three providers with at least a 3 Mbps download speed. These percentages have been steadily rising, mostly due to the expanded coverage for 4G mobile wireless networks.

Looking at specific technologies, DSL, xDSL & other copper delivered services at connection speeds of at least 3 Mbps download are available to 88.3% of households statewide, 60.3% for rural areas, and 46.7% for sparsely populated rural areas. At a somewhat higher connection speed of 6 Mbps download, the availability percentages more precipitously decline to 81.1% of households statewide, 47.9% for rural areas, and only 37.2% for sparsely populated rural areas.

Cable modem services at connection speeds of at least 3 Mbps download are available to 88.4% of households statewide, 54.7% for rural areas, and 33.0% for sparsely populated rural areas. The cable industry has invested heavily in a new generation of DOCSIS 3.0 services to be able to deliver connection speeds of 10 Mbps download or greater to 88.3% of households statewide, but that percentage declines to 54.4% of rural households and only 32.6% of sparsely populated rural households.

Fixed wireless services at connection speeds of at least 768 Kbps download, including Wi-Fi networks and other fixed wireless technologies, are available to 94.7% of individuals statewide, 76.0% for rural areas, and 68.3% for sparsely populated rural areas. At connection speeds of at least 3.0 Mbps, fixed wireless services are available to only 62.0% of individuals statewide, 63.2% of those living in rural areas and 53.7% of those in sparsely populated rural areas.

Mobile wireless services at connection speeds of at least 768 Kbps download, generally 3G services edging into 4G, are available to 98.9% of individuals statewide, 94.3% for rural areas, and 91.2% for sparsely populated rural areas. At connection speeds of at least 3.0 Mbps, well into 4G service range, mobile wireless services have continued to rapidly expand and are now available to 97.5% of individuals statewide, but only to 87.3% of those living in rural areas and 81.3% of those in sparsely populated rural areas.

Satellite broadband services at connection speeds of at least 1.5 Mbps download are available to all individuals statewide with a view of the southern sky and ability to mount a small satellite dish. Connection speeds of up to 10 Mbps and beyond are available selectively within defined geographic footprints depending on the provider.

Broadband Providers Included

During this cycle we received data from a total of 81 entities, which included 74 Broadband Providers (BPs), 5 resellers and 2 entities classified as other. There were 2 BPs who refused to participate and provide data, so they are not represented in the submittal.

For more details see the Arizona Broadband Provider Changes & Corrections Document below for a list of included Broadband Providers and relevant notes for each.

Arizona Broadband Data Set for Spring 2014 Description

For the State of Arizona broadband availability data set submitted to NTIA April 1, 2014 for BP coverage declared as of 12/31/13, the summary of the data submission is as follows:

BB_Service_CensusBlock - 458,478 Census 2010 polygons less than or equal to two square miles in area representing the service area of 38 broadband providers (unique FRN's). Multiple instances of a census block polygon may exist where a provider has two or more technology types and/or end-user categories in a block or multiple providers have service in that block. Only the fastest upload and download speeds in a census block are reported for a given provider, technology type and end-user category. Some providers supplied a list of census blocks they serve, while others reported their service as a list of addresses or as census blocks/road segments or a service polygon in KML or shapefile format. Addresses were geocoded using a combination of local, TIGER 2009, TIGER 2010 and Navteq road networks and then aggregated to census blocks. Footprint geography for landline providers was used to select the underlying census blocks using a "centroid in" rule.

BB_Service_RoadSegment - 56,957 road segments that fall inside Census 2010 polygons greater than two square miles representing 28 broadband providers (unique FRN's). Multiple instances of a road segment may exist where a provider has two or more technology types or end-user categories on a segment or multiple providers have service on the segment. Only the fastest upload and download speeds on a segment are reported for a given provider, technology type and end-user category. The TIGER segments have all been clipped to fit entirely within a census block. Local road networks may overlap into the census block geography. The address ranges were not interpolated to accommodate any clipping. Some providers supplied a list of TIGER road segments they serve by TLID number, while others reported their service as a list of address ranges or as a road segment or service polygon (KML or shapefile). Address range submittals were geocoded using both low and high address values and then aggregated to the road segment in census blocks greater than two square miles to which they geocoded. Footprint geography was used to select the underlying road segments using a "centroid in" rule.

BB_Service_Wireless - 58 wireless service area polygons representing 38 broadband providers. Polygons fully or partially overlap where a single provider offers service over two or more technology types or spectrums or where multiple providers offer service in an area. Only the fastest upload and download speeds are reported for a given provider, spectrum and technology type. Wireless providers submitted their service area in either KML or shapefile formats. In some cases the Arizona Broadband Mapping project consultant "reverse engineered" a service KML file from publicly available data sources on tower locations, technology types and spectrum information. These service areas were shared back with the provider with varying levels of response.

BB_Service_MiddleMile - 899 middle mile points representing 20 broadband providers. Middle mile points were generated from provider data using either latitude/longitude or address information. Elevation attributes were included from overlaying a statewide 10-meter Digital Elevation Model and moving the elevation attribute into the database.

Community Anchor Institutions (CAI)

Spring 2013 CAI Submittal Status: Further focus was given to improving the inclusion and having correct naming of school and library entities, as well as the addition of some limited incremental broadband information. A comprehensive review and update of public safety CAIs was performed and over a thousand new Wi-Fi (Category 7) CAI added this cycle. A total of 8,250 CAI records were developed and maintained of which 7,827 were able to be submitted as follows:

CAICAT	CAI Type	Total Records	Good Address Records	Good Initial ID	Good CAIID	Good BBSERVE	Good Address with CAIID	Good Address with CAIID Records BBSERVICE Presence
1	School - K through 12	2,937	2,849	2,807	2,200	1365	2195	1,330
2	Library	230	223	220	221	212	220	203
3	Medical/ Healthcare	195	174	0	170	114	170	98
4	Public Safety	1,238	1,141	0	1,103	499	1,101	482
5	University, College, Other Post-Secondary	213	186	61	184	70	184	55
6	Other Community Support - Government	2,053	1,874	0	1,908	914	1,870	871
7	Other Community Support - Nongovernmental	1,384	1,380	0	145	1,380	145	141
0/Null	Erroneous or Missing	0	0	0	0	0	0	0
Total		8,250	7,827					

Causes for Bad Address Elements

	CAICAT 1	CAICAT 2	CAICAT 3	CAICAT 4	CAICAT 5	CAICAT 6	CAICAT 7	Totals
Word 'box' appears in address	4	0	3	1	5	1	0	14
Address field is empty	0	0	1	28	1	30	0	59
A slash is in address (intersection)	1	0	1	0	3	70	1	76
BLDGNBR field is empty	88	7	21	97	27	179	4	412
Total Bad Address Elements								561

Fall 2013 CAI Submittal Recap: Previous submittal cycles had not properly included CAIID values generated from federal school and library identification codes, but was completely remediated for this and subsequent cycles. A significant number of CAI records were not usable from past submittal cycles due to non-compliant addresses, particularly those with post office boxes, intersections, and rural mailboxes along highways. These non-compliant addresses were largely remediated during this cycle, though some work remains for a small residual group. Further focus was given to improving the inclusion and having correct naming of school and library entities, as well as the addition of some limited incremental broadband information, especially for libraries from the mining of e-rate applications that USAC had granted. A total of 6,711 CAI records were developed and maintained of which 6,299 were able to be submitted as follows:

CAICAT	CAI Type	Total Records	Good Address Records	Good Initial ID	Good CAIID	Good BBSERVE	Good Address with CAIID	Good Address with CAIID Records BBSERVICE Presence
1	School - K through 12	2,753	2,606	2,593	2,618	2753	2593	2593
2	Library	230	224	221	221	230	221	221
3	Medical/ Healthcare	194	174	0	169	194	169	169
4	Public Safety	1,208	1,110	0	1,098	1208	1098	1098
5	University, College, Other Post-Secondary	205	190	55	181	205	181	181
6	Other Community Support - Government	2,036	1,912	0	1,891	2036	1891	1891
7	Other Community Support - Nongovernmental	84	82	0	81	84	81	81
0/Null	Erroneous or Missing	1	1	0	1	1	1	1
Total		6,711	6,299					

Causes for Bad Address Elements

	CAICAT 1	CAICAT 2	CAICAT 3	CAICAT 4	CAICAT 5	CAICAT 6	CAICAT 7	Totals
Word 'box' appears in address	29	0	20	0	7	3	1	60
Address field is empty	1	0	1	33	0	30	1	66
A slash is in address (intersection)	4	0	1	2	7	111	0	125
BLDGNBR field is empty	147	6	20	98	15	124	2	412
Total Bad Address Elements								663

Arizona Statewide Broadband Coverage for Spring 2014

	Statewide		Rural		Sparsely Pop. Rural	
All Broadband Tech (Except Satellite) 1 or More Providers	Population	Household	Population	Household	Population	Household
≥ 768 Kbps Down	99.55%	99.56%	97.76%	97.92%	95.62%	96.20%
≥ 3 Mbps Down	98.80%	98.59%	93.99%	93.33%	88.31%	87.85%
≥ 6 Mbps Down	98.32%	98.19%	91.60%	91.45%	85.86%	85.59%
≥ 10 Mbps Down	97.70%	97.41%	88.48%	87.75%	81.12%	80.06%
All Broadband Tech (Except Satellite) 2 or More Providers	Population	Household	Population	Household	Population	Household
≥ 768 Kbps Down	98.90%	98.93%	94.49%	94.95%	90.65%	91.62%
≥ 3 Mbps Down	97.75%	97.57%	88.71%	88.50%	82.20%	81.78%
≥ 6 Mbps Down	96.66%	96.37%	83.47%	83.34%	76.59%	75.47%
≥ 10 Mbps Down	95.12%	94.60%	75.75%	75.01%	63.86%	62.24%
All Broadband Tech (Except Satellite) 3 or More Providers	Population	Household	Population	Household	Population	Household
≥ 768 Kbps Down	98.20%	98.10%	90.97%	91.04%	85.36%	85.63%
≥ 3 Mbps Down	96.47%	96.14%	82.31%	81.74%	74.23%	72.89%
≥ 6 Mbps Down	93.50%	92.74%	72.17%	71.53%	62.99%	60.55%
≥ 10 Mbps Down	90.07%	89.02%	56.72%	55.64%	46.95%	44.84%
DSL, xDSL & Other Copper Tech	Population	Household	Population	Household	Population	Household
≥ 768 Kbps Down	93.65%	93.33%	75.41%	75.65%	63.32%	64.99%
≥ 3 Mbps Down	89.03%	88.29%	60.31%	60.31%	46.07%	46.65%
≥ 6 Mbps Down	82.36%	81.09%	47.97%	47.91%	36.58%	37.15%
≥ 10 Mbps Down	73.90%	72.46%	39.31%	39.28%	28.21%	28.27%
Cable Modem Technologies	Population	Household	Population	Household	Population	Household
≥ 768 Kbps Down	89.25%	88.66%	55.39%	55.58%	31.80%	33.71%
≥ 3 Mbps Down	89.03%	88.41%	54.63%	54.73%	31.23%	33.02%
≥ 6 Mbps Down	88.95%	88.34%	54.27%	54.39%	30.78%	32.59%
≥ 10 Mbps Down	88.95%	88.34%	54.27%	54.39%	30.78%	32.59%
Fixed Wireless Technologies	Population	Household	Population	Household	Population	Household
≥ 768 Kbps Down	94.68%	94.39%	75.98%	75.90%	68.29%	68.54%
≥ 3 Mbps Down	62.00%	62.87%	63.18%	62.22%	53.68%	52.11%
≥ 6 Mbps Down	53.70%	54.57%	53.63%	53.44%	44.77%	42.55%
≥ 10 Mbps Down	5.85%	5.85%	12.35%	10.10%	9.49%	7.80%
Mobile Wireless Technologies	Population	Household	Population	Household	Population	Household
≥ 768 Kbps Down	98.87%	99.01%	94.31%	95.32%	91.17%	92.76%
≥ 3 Mbps Down	97.46%	97.26%	87.27%	87.05%	81.27%	80.75%
≥ 6 Mbps Down	97.13%	96.79%	85.60%	84.83%	78.19%	76.90%
≥ 10 Mbps Down	97.13%	96.79%	85.59%	84.82%	78.18%	76.88%
	Population Count	Household Count	Population Count	Household Count	Population Count	Household Count
Arizona Totals (2010 Census)	6,392,017	2,844,526	1,274,234	601,889	651,358	329,022

Arizona Broadband Coverage Table Notes

Data presented in table above is as collected by the State of Arizona for the NTIA and FCC broadband maps and submitted in Spring 2014 for Arizona Broadband Provider (BP) coverage declared as of 12/31/13.

The Census Bureau identifies two types of urban areas: **Urbanized Areas (UAs)** of 50,000 or more people and **Urban Clusters (UCs)** of at least 2,500 and less than 50,000 people. Per the Census Bureau, “**Rural**” encompasses all population, housing, and territory not included within Urbanized Areas (UAs). For Arizona analysis purposes, “**Sparsely Populated Rural**” encompasses all population, housing, and territory not included within either Urbanized Areas (UA) or Urban Clusters (UC). Using an Urban Area/Cluster GIS Layer, Arizona is calculated to have a total of 241,666 Census Blocks per the 2010 Census of which:

- 86,648 Census Blocks are in Urban Areas (UAs)
- 19,479 Census Blocks are in Urban Clusters (UCs)
- 106,127 Census Blocks total are in Urban Areas (UAs) or Urban Clusters (UCs)
- 155,018 Census Blocks are in Rural areas (Outside UAs only) with a population count of 1,274,234 and household count of 601,889
- 135,539 Census Blocks are in Sparsely Populated Rural areas (Outside both UAs and UCs) with a population count of 651,358 and household count of 329,022

For wireline providers, census blocks greater than 2 square miles intersected by covered road segments were added to their reported list of census blocks less than or equal to 2 sq. mi. For fixed and mobile wireless providers, census block counts were based on census blocks that intersected (were touched by) an overlaying wireless provider's service area. Satellite providers which tend to offer lower downstream and upstream data rates are not included in the Broadband Providers (BPs) for purposes of this analysis. All census blocks, regardless of area or water characteristic were included in this analysis.

Arizona Broadband Coverage Maps for Spring 2014

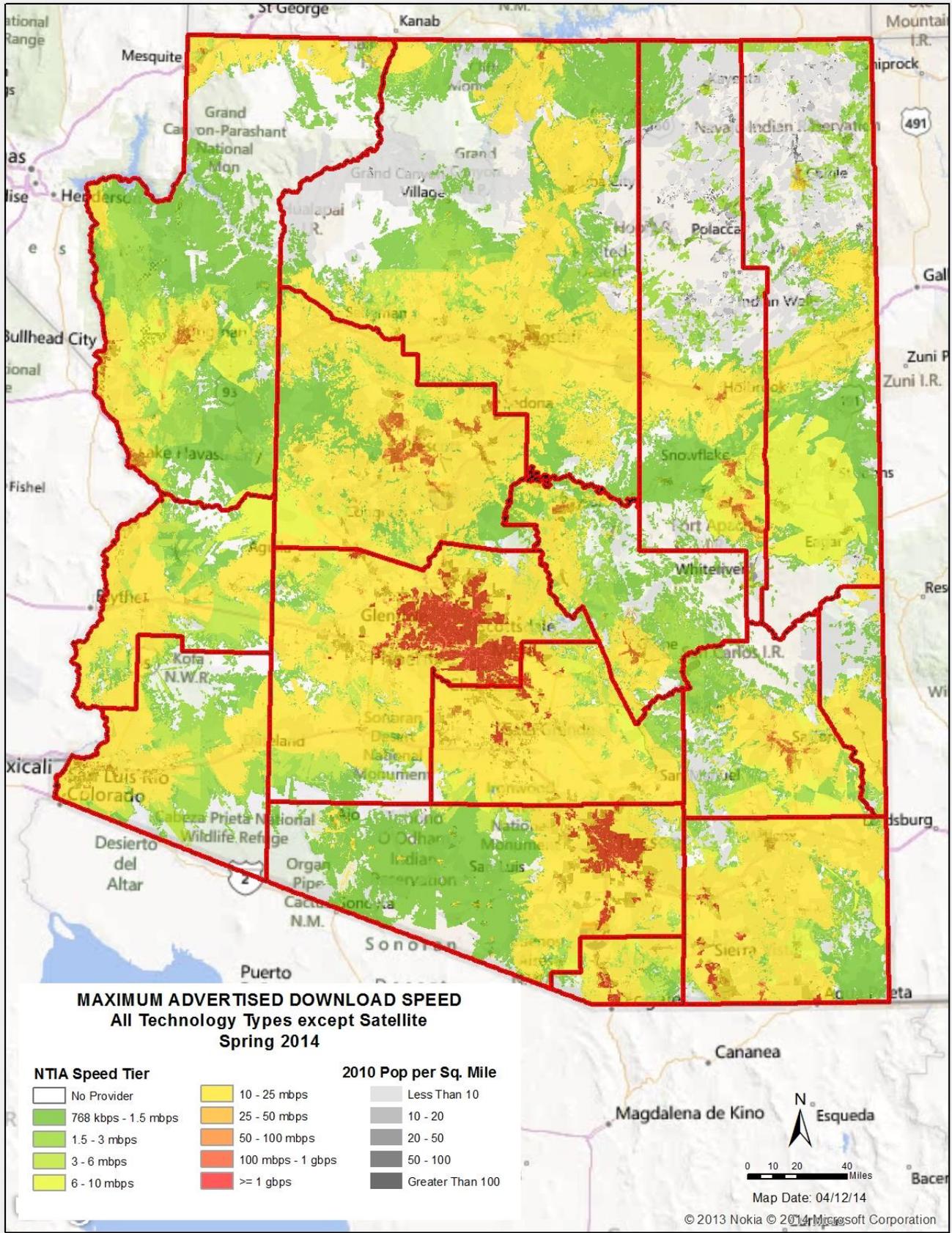
Data presented in nine statewide maps that follow is as collected by the State of Arizona for the NTIA and FCC broadband maps and submitted in Spring 2014 for Arizona Broadband Provider (BP) coverage declared as of 12/31/13.

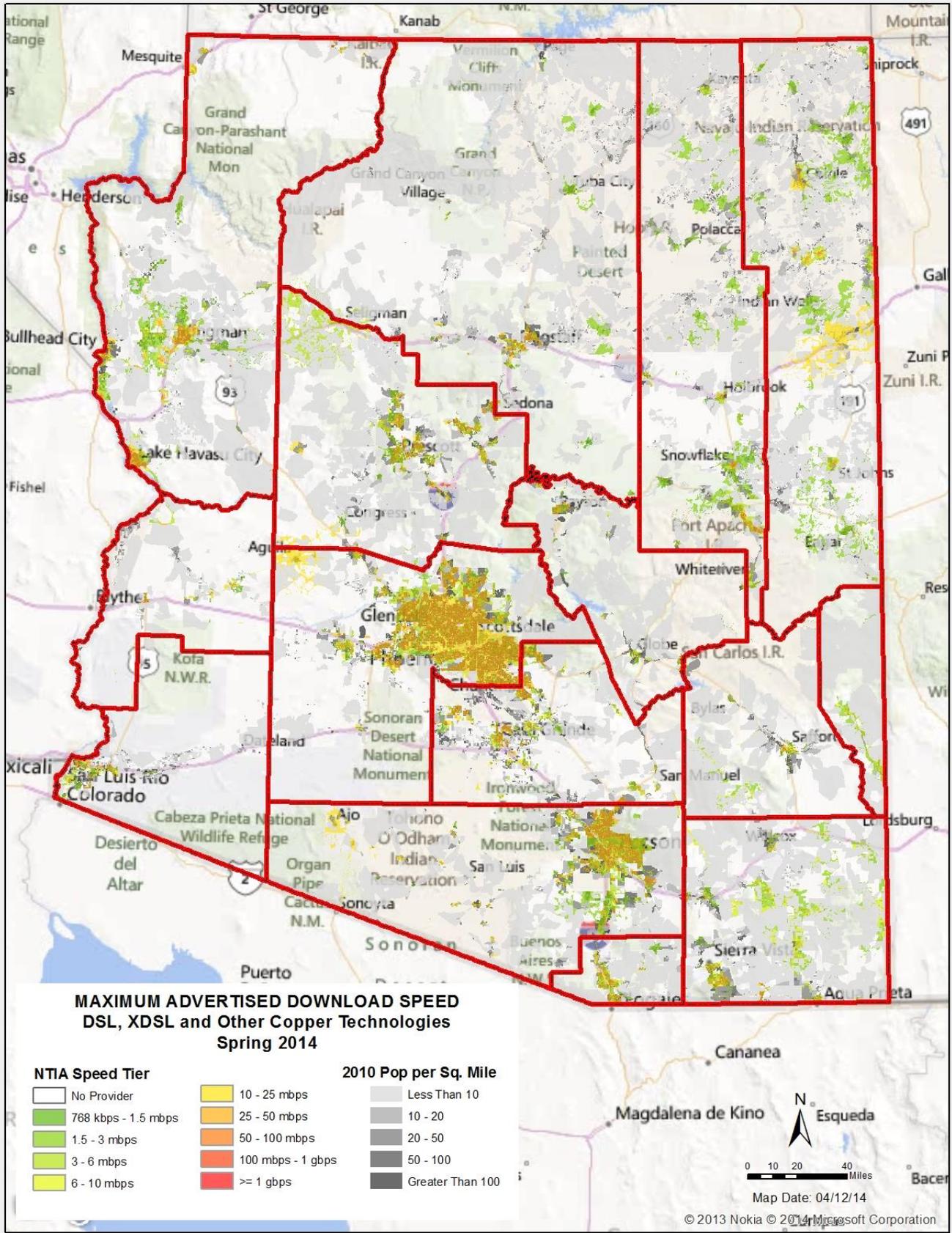
Maximum Advertised Download Speed:

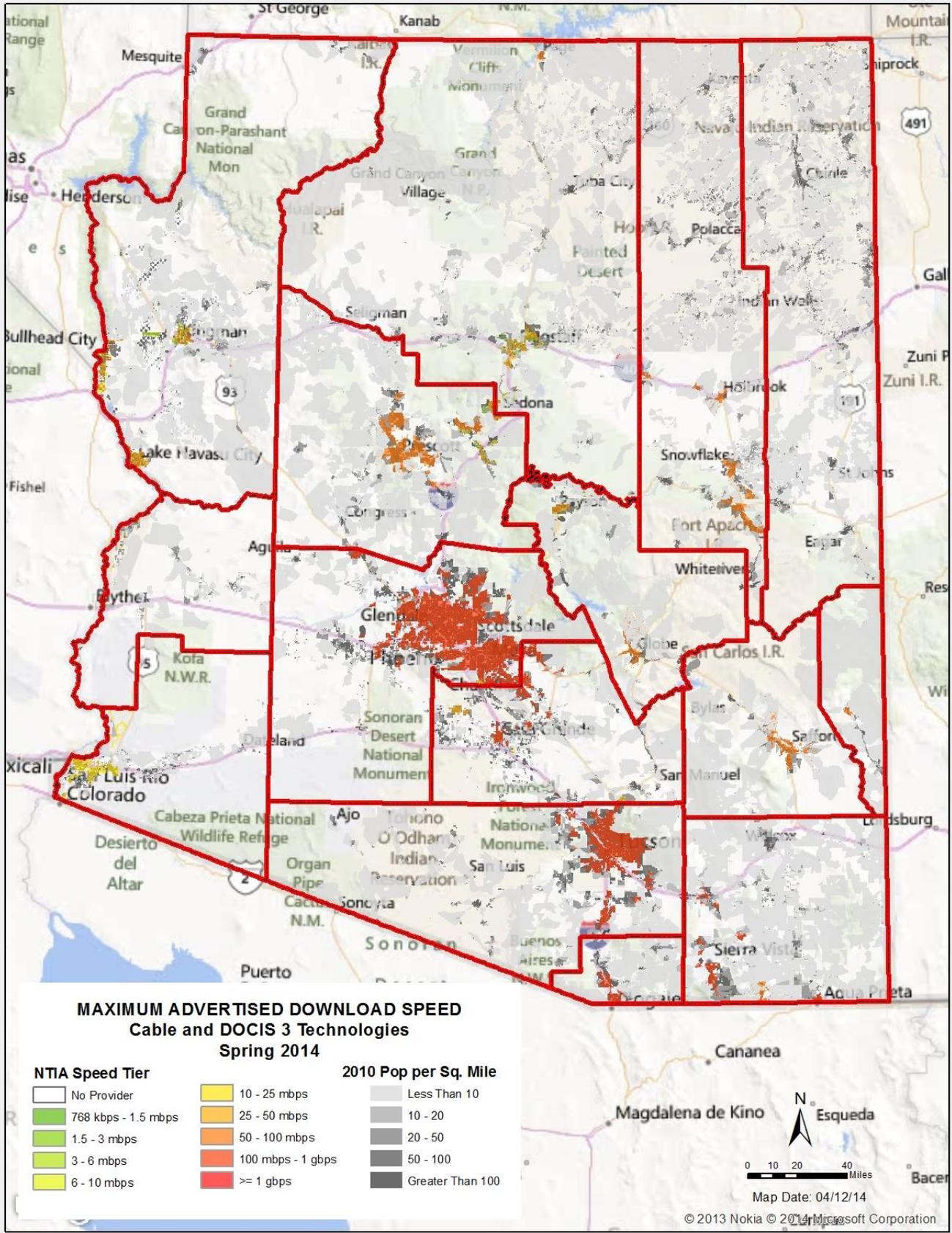
All Technologies (except Satellite)
DSL, xDSL & Other Copper Technologies (Tech 10-30)
Cable Modem Technologies (Tech 40-41)
Fixed Wireless Technologies (Tech 70-71)
Mobile Wireless Technologies (Tech 80)
Satellite Technologies (Tech 60)

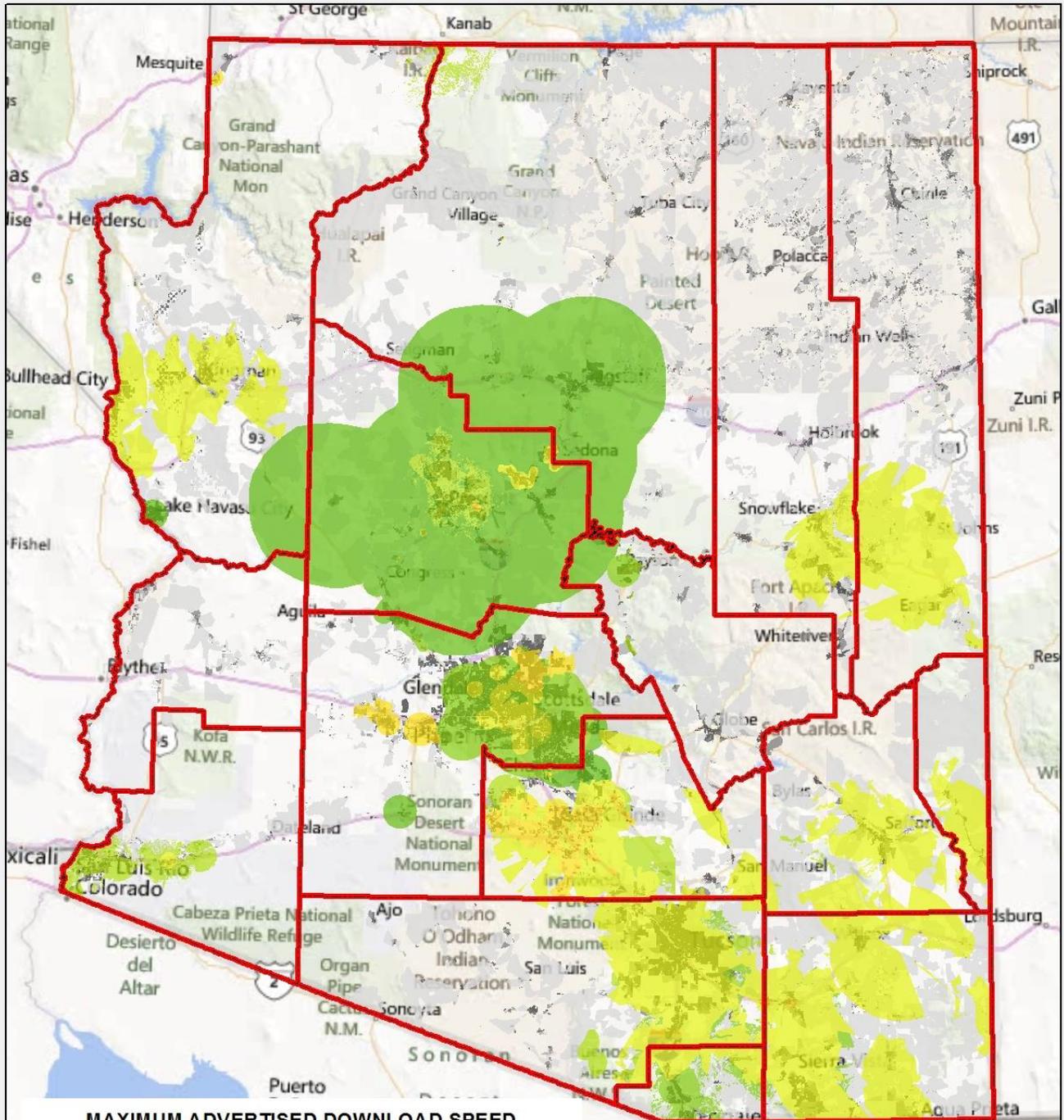
Broadband Provider Count (except Satellite)

Optical Carrier/Fiber to End User (Tech 50)
Middle Mile Provider Locations









**MAXIMUM ADVERTISED DOWNLOAD SPEED
Fixed Wireless (Licensed and Not) Technologies
Spring 2014**

NTIA Speed Tier

- No Provider
- 768 kbps - 1.5 mbps
- 1.5 - 3 mbps
- 3 - 6 mbps
- 6 - 10 mbps

2010 Pop per Sq. Mile

- Less Than 10
- 10 - 20
- 20 - 50
- 50 - 100
- Greater Than 100

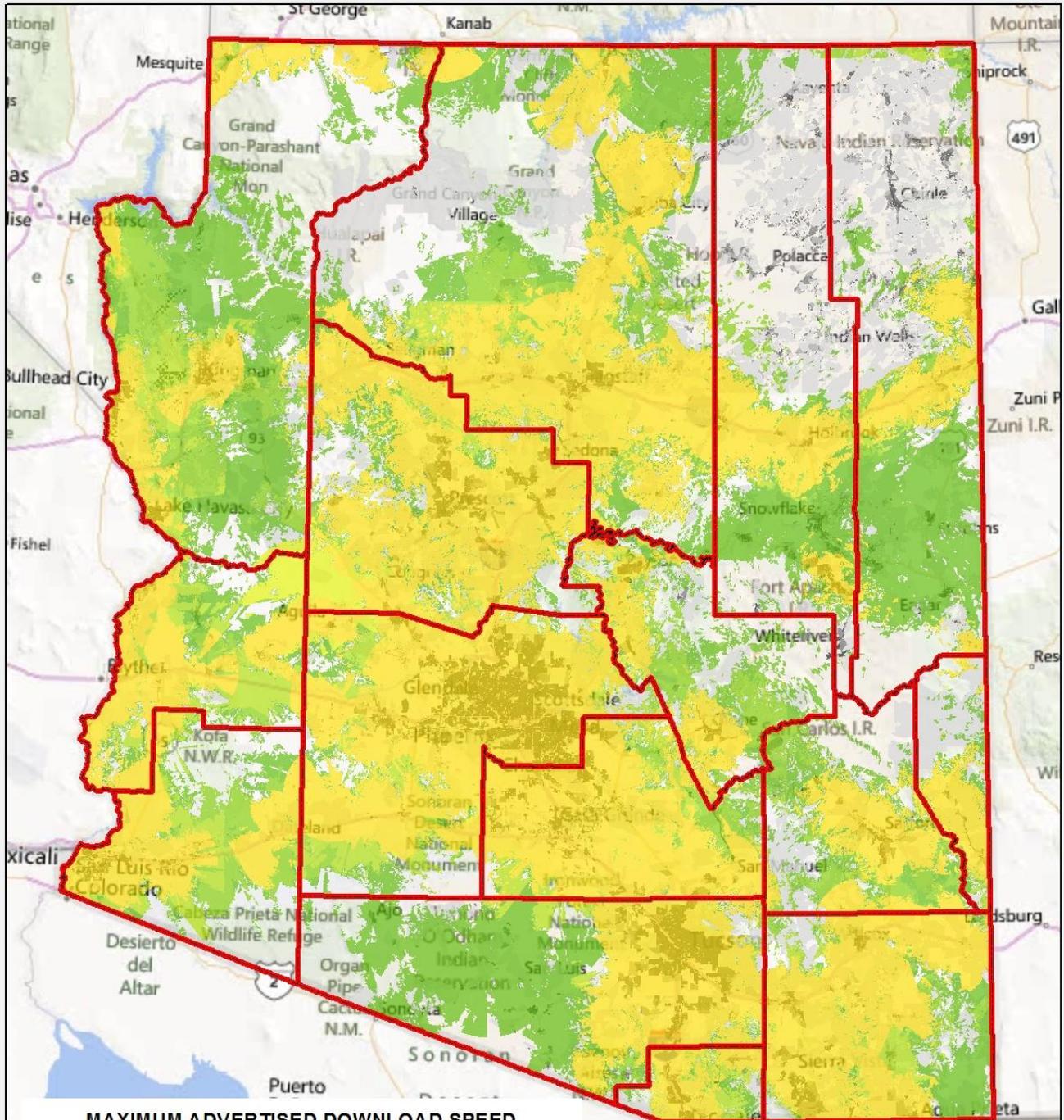
- 10 - 25 mbps
- 25 - 50 mbps
- 50 - 100 mbps
- 100 mbps - 1 gbps
- >= 1 gbps

Magdalena de Kino Esqueda

0 10 20 40 Miles

Map Date: 04/12/14

© 2013 Nokia © 2014 Microsoft Corporation



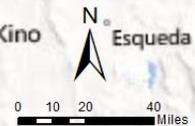
**MAXIMUM ADVERTISED DOWNLOAD SPEED
Mobile Wireless Technologies
Spring 2014**

NTIA Speed Tier

- No Provider
- 768 kbps - 1.5 mbps
- 1.5 - 3 mbps
- 3 - 6 mbps
- 6 - 10 mbps

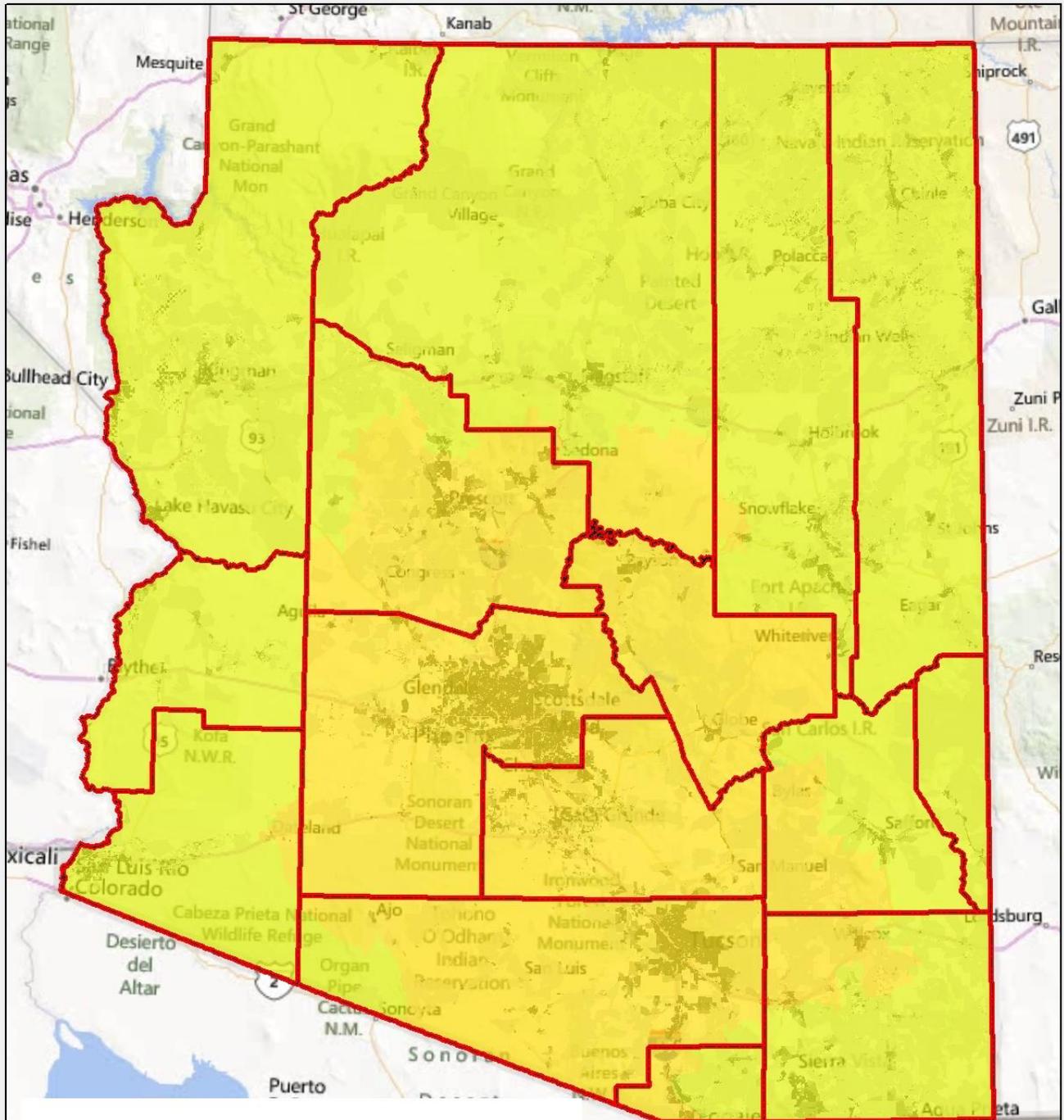
2010 Pop per Sq. Mile

- 10 - 25 mbps
- 25 - 50 mbps
- 50 - 100 mbps
- 100 mbps - 1 gbps
- >= 1 gbps
- Less Than 10
- 10 - 20
- 20 - 50
- 50 - 100
- Greater Than 100



Map Date: 04/12/14

© 2013 Nokia © 2014 Microsoft Corporation



**MAXIMUM ADVERTISED DOWNLOAD SPEED
Satellite Technologies
Spring 2014**

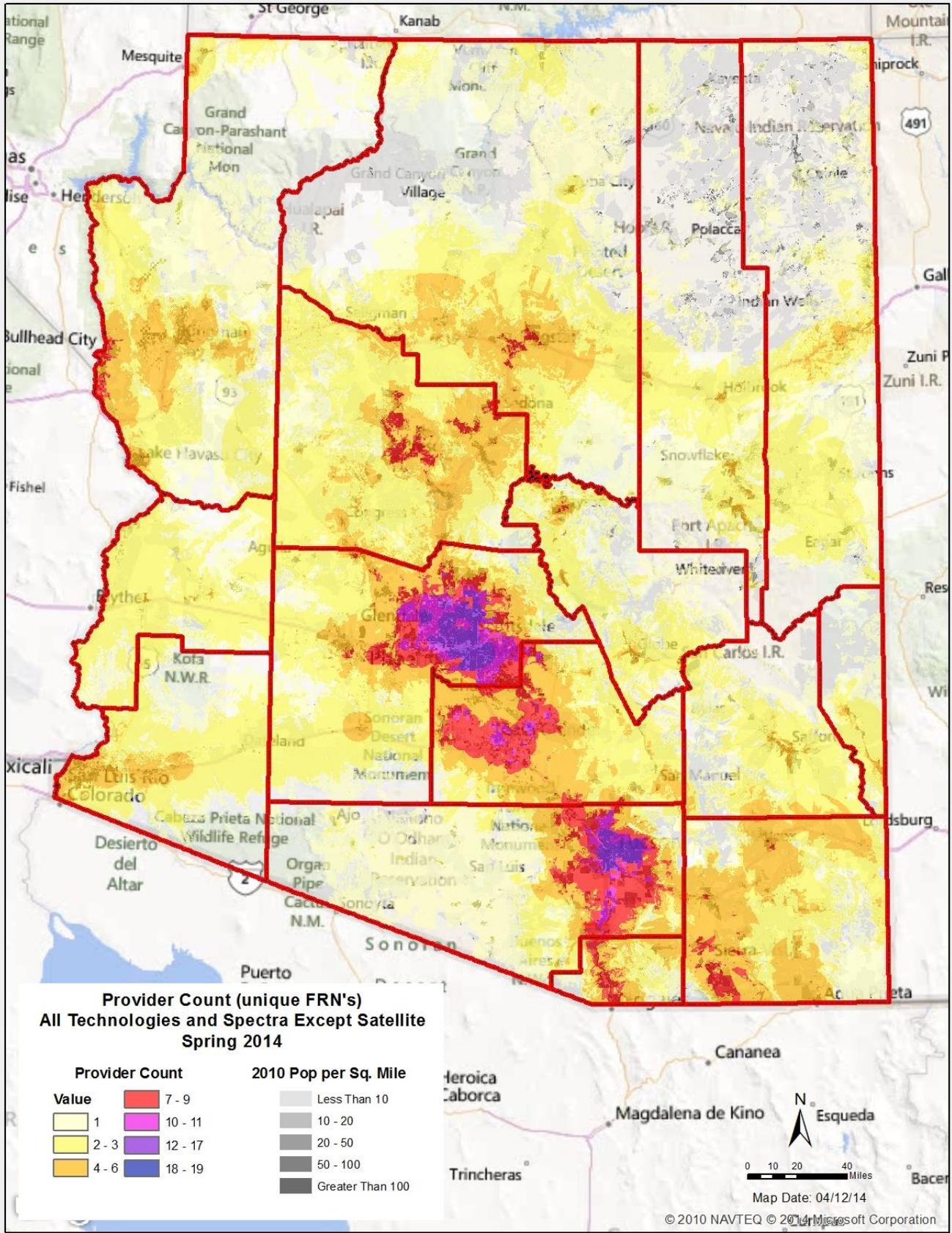
NTIA Speed Tier

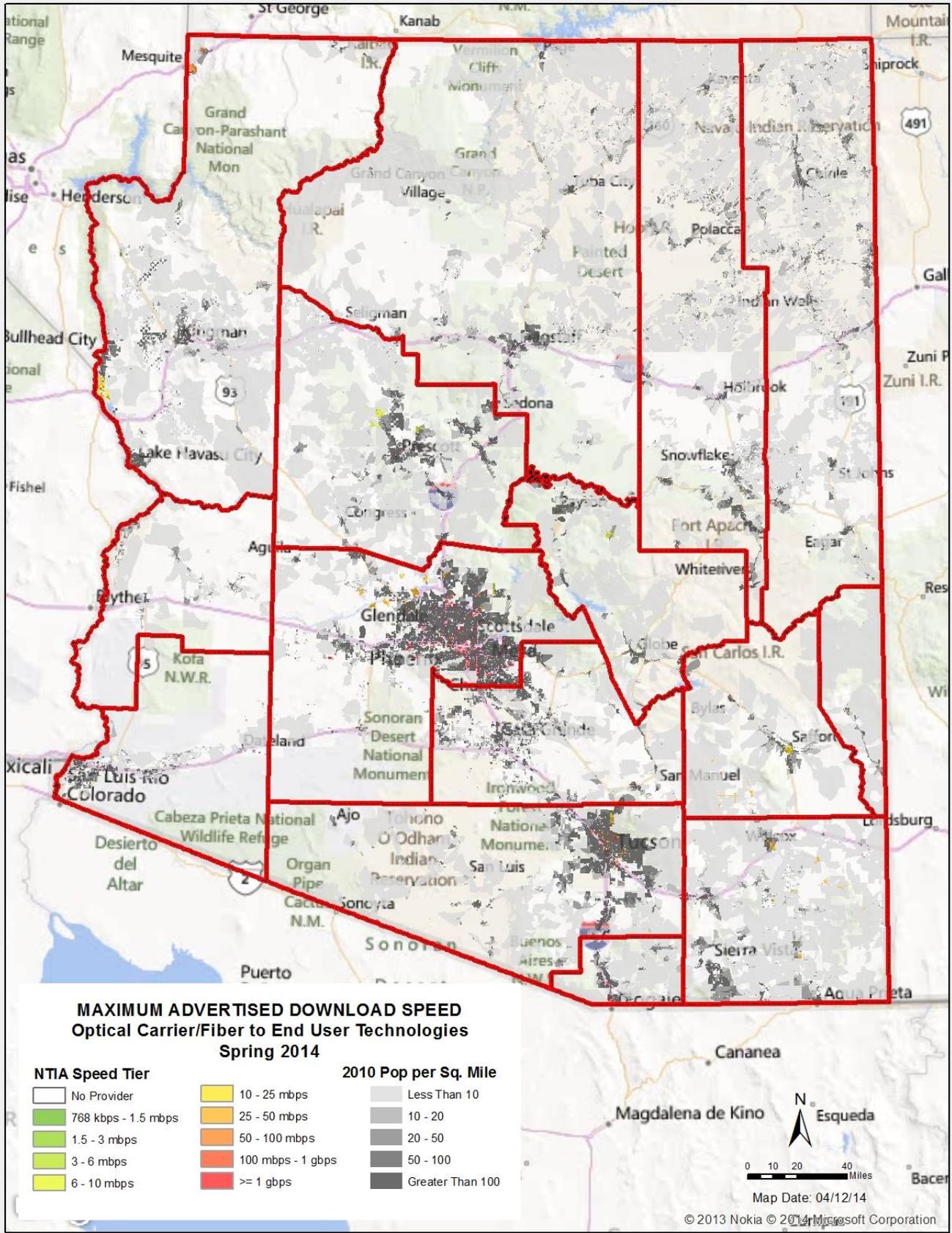
- No Provider
- 768 kbps - 1.5 mbps
- 1.5 - 3 mbps
- 3 - 6 mbps
- 6 - 10 mbps

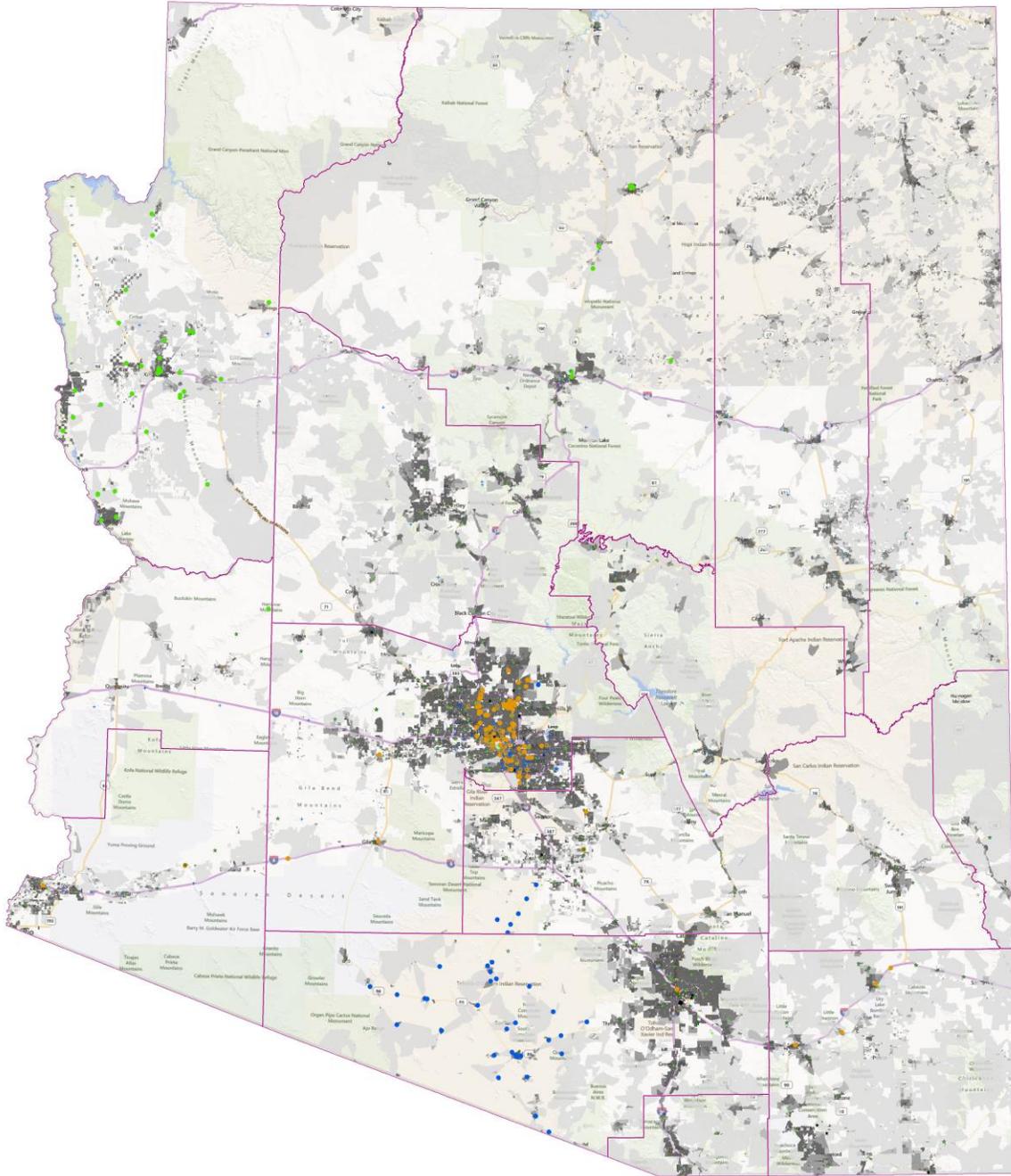
2010 Pop per Sq. Mile

- 10 - 25 mbps
- 25 - 50 mbps
- 50 - 100 mbps
- 100 mbps - 1 gbps
- >= 1 gbps
- Less Than 10
- 10 - 20
- 20 - 50
- 50 - 100
- Greater Than 100

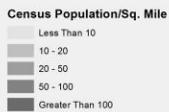








Arizona Broadband Mapping Program Middle Mile Providers SPRING 2014 SUBMITTAL



DBA NAME, Number of Points

- AT&T Mobility LLC, 1
- Airband Communications Inc, 52
- Cellular One of NE Arizona, 17
- CenturyLink, 136

- Covad Communications Company, 3
- CoxCom Inc, 14
- Fort Mojave Telecommunications Inc, 5
- Integra Telecom, 24
- Level3 Communications LLC, 65

- Mediacom Southeast, 4
- Saddleback Communications, 2
- Salt River Project, 268
- Sprint, 3
- T-Mobile, 6

- TDS Telecom, 4
- TW Telecom of Arizona LLC, 2
- Tohono O Odham Utility Authority, 37
- Trucom, 4
- Wecom, 44
- Zayo Enterprise Networks LLC, 208

Map Date: 04/13/14
 Author: TerraSystems SW, Inc.
 File: AZBB_MMPoints_Spring2014.mxd



Arizona Broadband Coverage Speed Changes From Fall 2013 to Spring 2014

The following set of maps are new for the Spring 2014 submittal cycle and represent the speed changes for statewide broadband coverage when compared to the Fall 2013 data for All Technologies and selected individual technologies. A heatmap represents the delta in NTIA speed tiers from the previous submittal cycle to this one. As has been the case since the transition of cable modem technologies to DOCSIS 3.0 some time back, the most significant speed and coverage increases are to be found for Mobile Wireless Technologies (Tech 80).

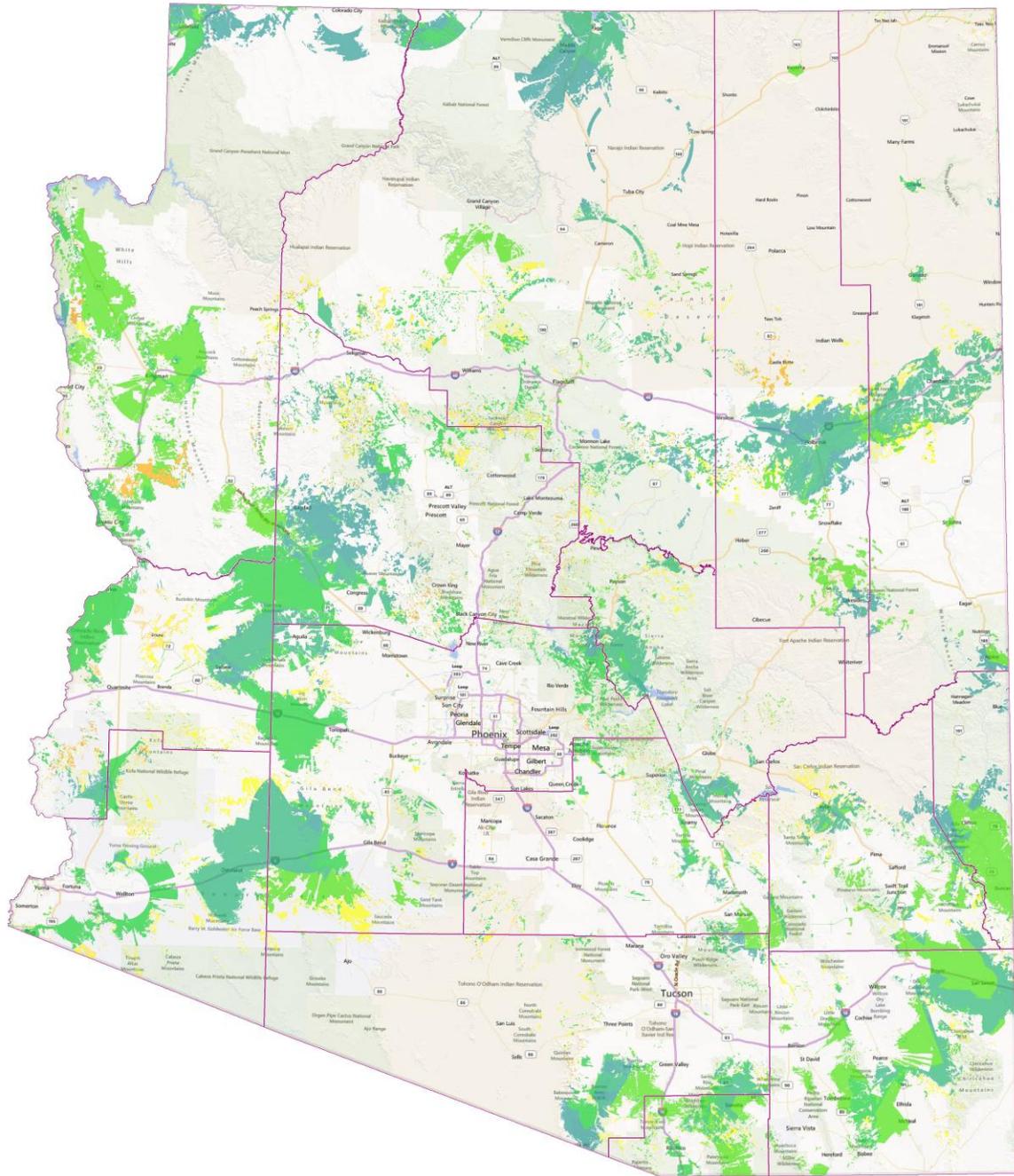
All Technologies (except Satellite)

DSL, xDSL & Other Copper Technologies (Tech 10-30)

Cable Modem Technologies (Tech 40-41)

Fixed Wireless Technologies (Tech 70-71)

Mobile Wireless Technologies (Tech 80)



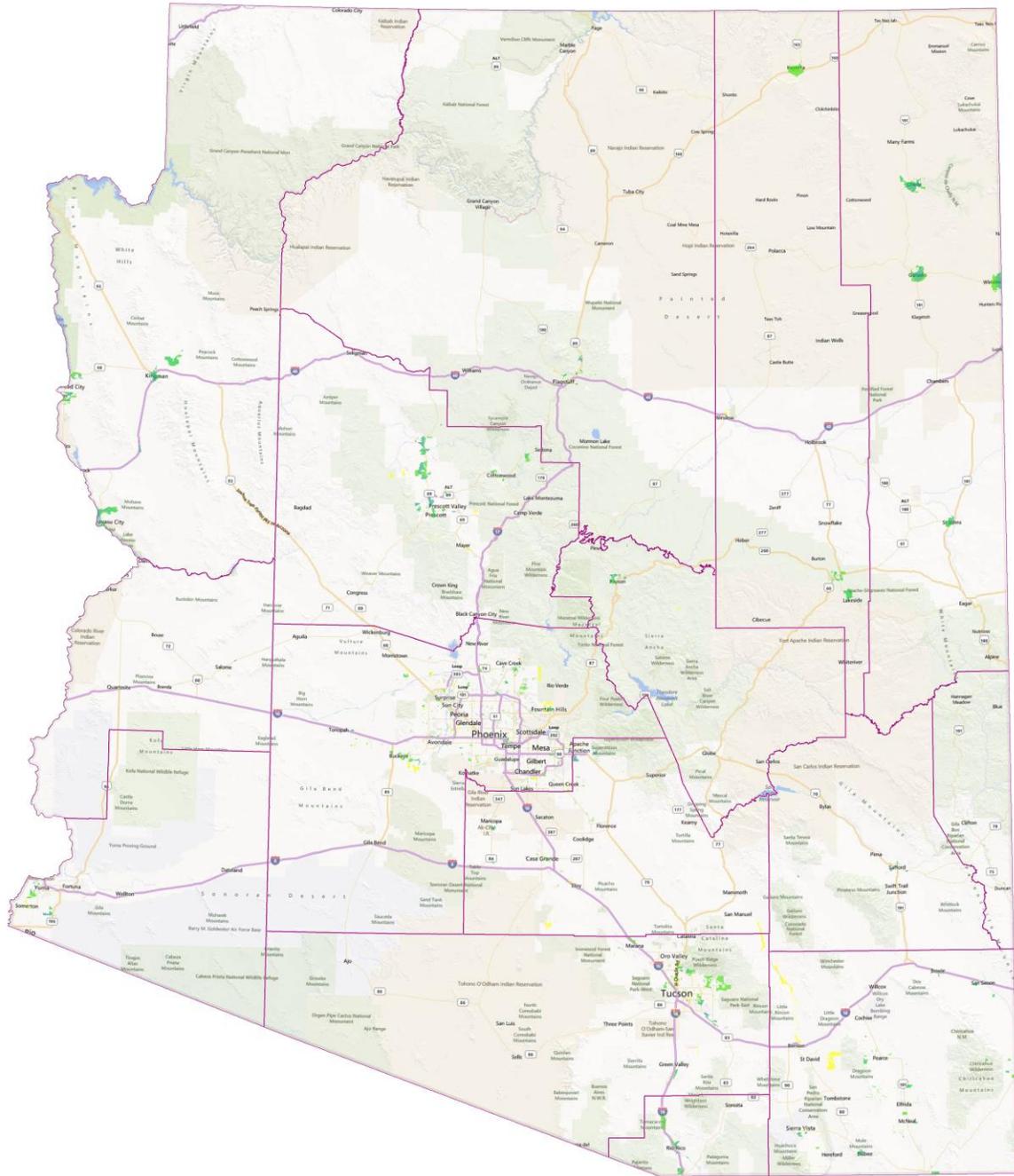
Arizona Broadband Mapping Program
 NTIA Maximum Download Speed Category Change All Providers and Technologies Except Satellite
 FALL 2013 TO SPRING 2014 SUBMITTAL

Value



Map Date: 04/13/2013
 Author: TerraSystems SW, Inc.
 File: Spring2014_AZ_SpeedChange_AllTech.mxd

Note: Analysis for Census Block, Road Segment Buffers and Wireless Polygons. Does not include Satellite Providers.



Arizona Broadband Mapping Program
 NTIA Maximum Download Speed Category Change All Providers
 Technology Types 10 - 30
 FALL 2013 TO SPRING 2014 SUBMITTAL

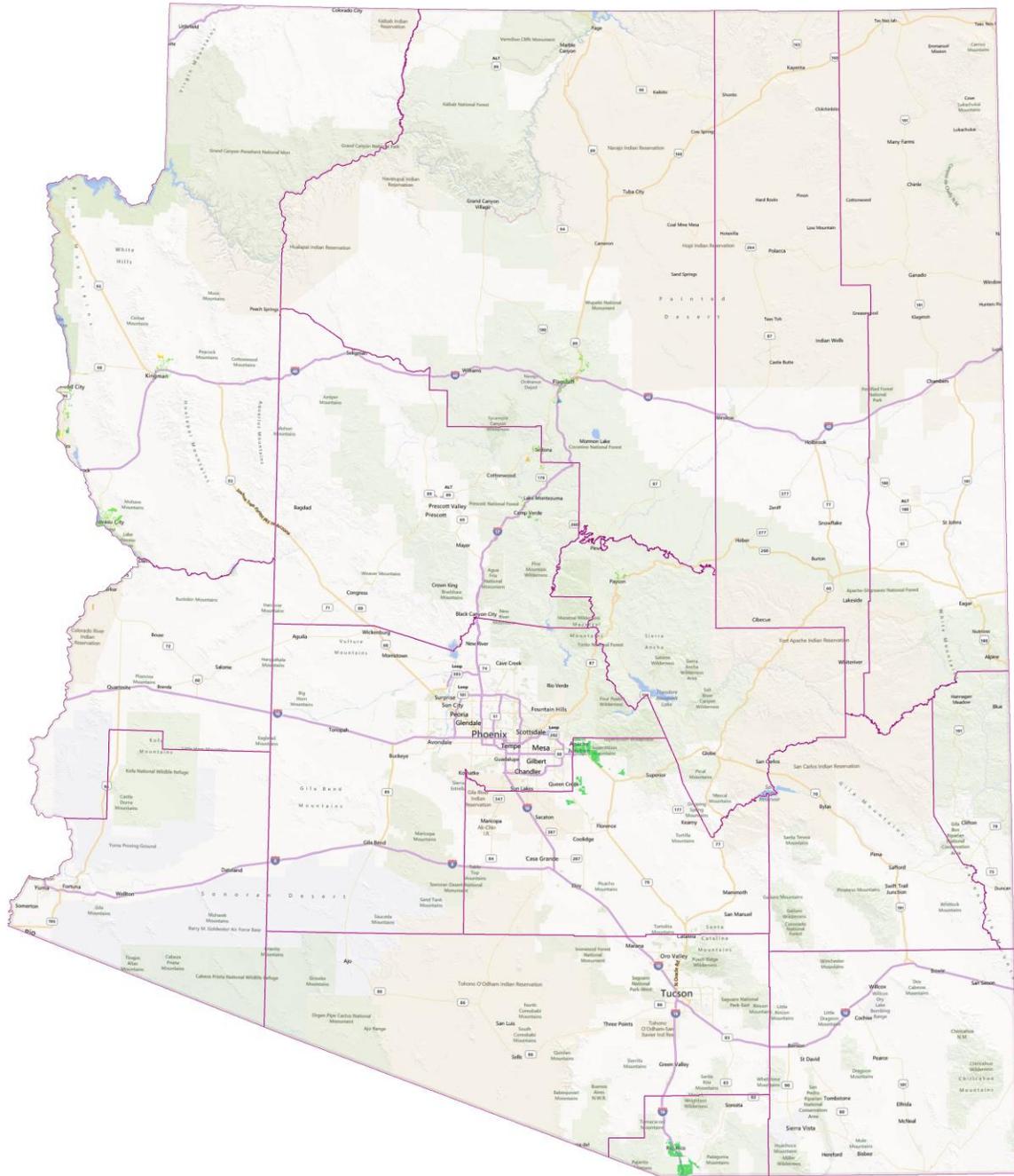
Value



Map Date: 04/13/2013
 Author: TerraSystems SW, Inc.
 File: Spring2014_AZ_SpeedChange_Tech1030.mxd

Note: Analysis for Census Block, Road Segment Buffers and Wireless Polygons. Does not include Satellite Providers.





Arizona Broadband Mapping Program
 NTIA Maximum Download Speed Category Change All Providers
 Technology Types 40 and 41
 FALL 2013 TO SPRING 2014 SUBMITTAL

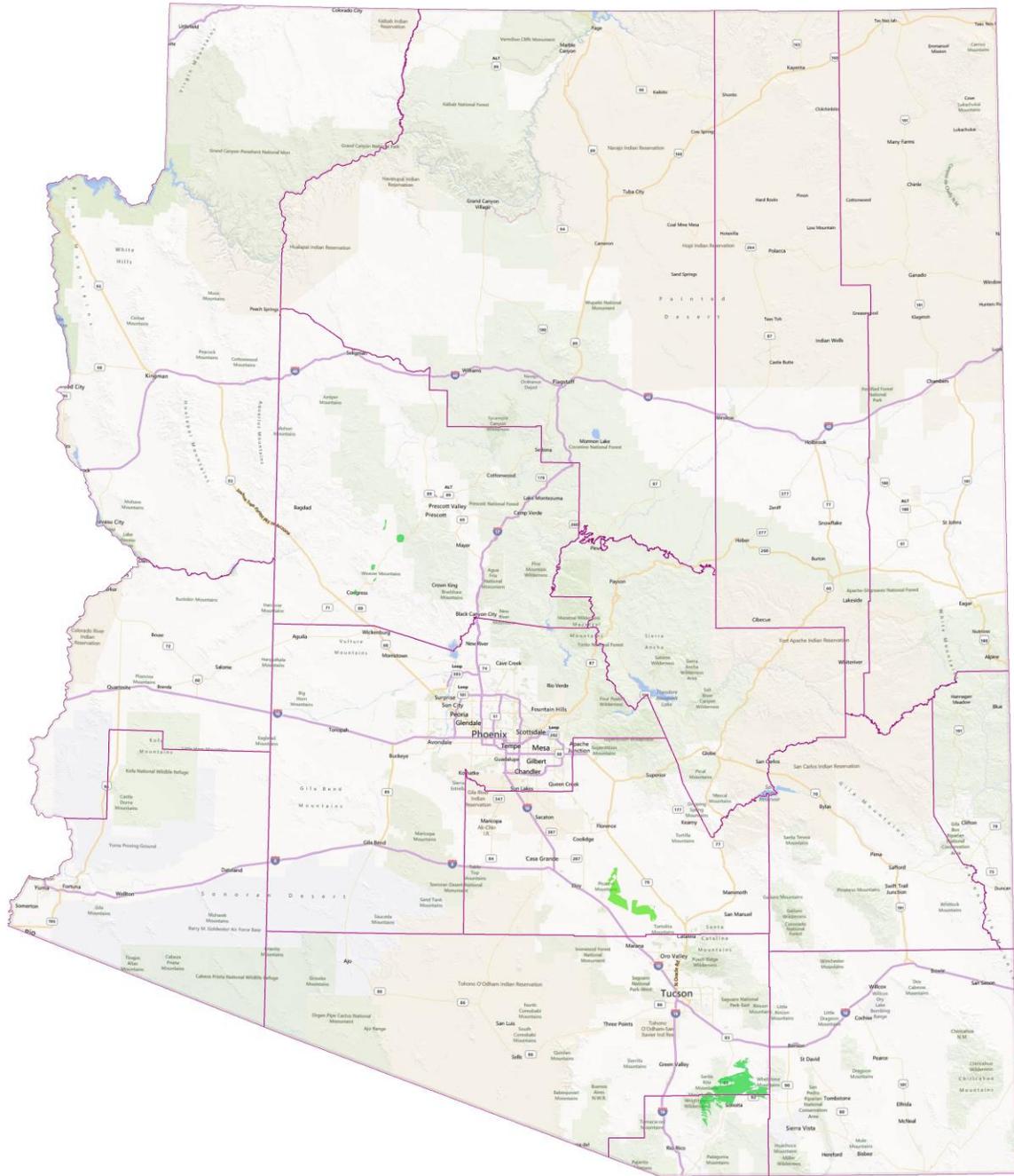
Value



Map Date: 04/13/2013
 Author: TerraSystems SW, Inc.
 File: Spring2014_AZ_SpeedChange_Tech4041.mxd

Note: Analysis for Census Block, Road Segment Buffers and Wireless Polygons. Does not include Satellite Providers.





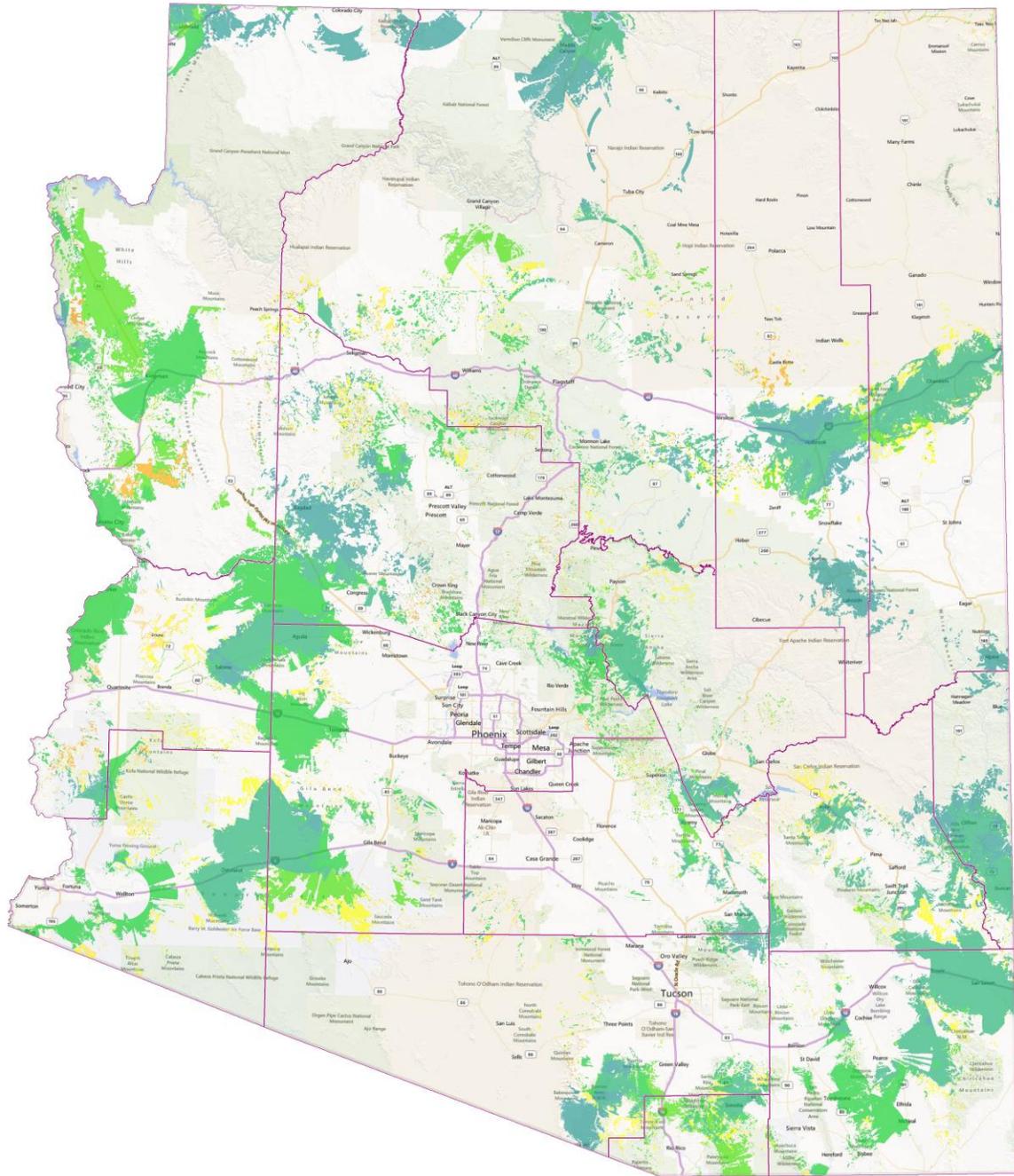
Arizona Broadband Mapping Program
 NTIA Maximum Download Speed Category Change All Providers
 Technology Types 70 and 71
 FALL 2013 TO SPRING 2014 SUBMITTAL

Value



Map Date: 04/13/2013
 Author: TerraSystems SW, Inc.
 File: Spring2014_AZ_SpeedChange_Tech7071.mxd

Note: Analysis for Census Block, Road Segment Buffers and Wireless Polygons. Does not include Satellite Providers.



Arizona Broadband Mapping Program
 NTIA Maximum Download Speed Category Change All Providers
 Technology Type 80
 FALL 2013 TO SPRING 2014 SUBMITTAL

Value



Map Date: 04/13/2013
 Author: TerraSystems SW, Inc.
 File: Spring2014_AZ_SpeedChange_Tech80.mxd

Note: Analysis for Census Block, Road Segment Buffers and Wireless Polygons. Does not include Satellite Providers.

Arizona Broadband Assessment Project (AZ BAP)

Arizona Broadband Provider (BP) Changes and Corrections (C & C) Document

Spring 2014 (Submission 9)

Arizona Broadband Providers (BPs)	Changes	Corrections	Spring 2014 (Submission 9) Changes and Corrections Notes
AireBeam			No change
Arivaca	X		Speed change
AT&T			No change
AT&T Mobility	X		New spectrum shows growth of over 30%. The 4G LTE shows minor growth in borders and in-fill. Changes in 3G coverage look logical, and more detailed. Crowdsorce concurrence is over 98%.
AZ Airnet	X		Provider gave us towns, and a few addresses.
BeamSpeed			No change
Bolt Internet			No change
Cable One			No change
Casa Grande Internet			No change
CenturyLink	X	X	Tech 50 increased from 4 sq, miles to 8 sq. miles, DSL coverage increased 11 Sq. miles, and Tech 10 road segments increased to 300 miles. Crowdsorce confirmation is 99% for both location and speed. FTTH is present in Anthem, Desert Ridge and Scottsdale. There appeared to be an offset in the map's shapefiles when overlaid with a standard map, this was corrected I n the Spring 2014 cycle. We also note some additional gap-filling.
CIS Wireless Broadband			No change
City of Phoenix (Sky Harbor Airport)			No change
Comcast Cable	X		Updated coverage
CommSpeed			No change
Copper Valley	X		Tech 10 and fifty. Tech 10: No real change in coverage, but we note an increase in business End User Category.
CopperNet			No change
Cox Communications			No change
Desert iNET			No change
eSedona			No change

Arizona Broadband Providers (BPs)	Changes	Corrections	Spring 2014 (Submission 9) Changes and Corrections Notes
Fort Mojave Telecom			No change
Frontier Citizens Utilities Rural	X		Eight new CO's 4 in Kingman and 2 in Bullhead City. . We paid special attention to road segment coverage this time, and came up with more coverage.
Frontier Communications of the White Mountains	X		Due to submittal being incremental, if changes in speed were present, we took the highest sample in all past submittals. 6 new CO Locations and speeds look logical.
Frontier Navajo Communications	X		Chinle has few changes; Ganado has few changes, mostly the addition of road segments.
Frontier Southwest			No change
(Gila River Telecom)			Not participating
Golden Valley Cable			No change
Grand Avenue Broadband			No change
Greenfield Communications			No change
HNS (Hughes, Echostar)			No change
Hopi Telecom (HTI)			No change
HPAZ			No change
InfoWest			No change
Integra Telecom			No change. Have fiber maps.
Last Mile Research			No change
Leap Wireless (Cricket)	X		Leap shows some loss in 4G spectrum in Tucson, and Nogales area. Spectrums 3 and 4 show minor loss and gain. Crowdsorce concurrence is over 98%.
Level 3 Communications	X		New coverage in Kingman, and Show Low; This seems odd, since these locales are very far from declared middle mile routes. We also note some fluctuations of coverage in Goodyear, and Scottsdale. Nogales and Rio Rico look logical.
Mediacom Southeast	X	X	Initial submittal had terrible Crowdsorce concurrence; we questioned Mediacom via collaborative session. Corrected submittal held an improved crowdsorce concurrence (98%) All coverage is Tech 40 (DOCSIS 3).

Arizona Broadband Providers (BPs)	Changes	Corrections	Spring 2014 (Submission 9) Changes and Corrections Notes
MegaPath Corporation	X		Updated coverage; Final changes of company name to MegaPath completely, Covad no longer exists.
MTE Communications	X		Tech 10 and 50, speeds are 7, and 3. Note changed from 6 down and 2 up. Road segments more than doubled between both tech ID's. The presence of Tech 50 and Tech 10 suggests that MTE is upgrading their coverage in a progressive manner. We note new fiber coverage in Young, AZ.
Phoenix Internet			No change
Pointe Wireless			No change
Rio Verde Wireless			No change
Rio Virgin Telephone (Reliance Connects)			No change
RuralNet Wireless			No change
Saddleback Communications			No change
Salt River Project (SRP)			No change. Have fiber maps.
San Carlos Apache Telecom Utility (SCATUI)			No change
(Schurz Communications)			Will represent Orbitel and Western Broadband
Simply Bits			No change
Skycasters			No change
Smith Bagley			No change
South Central Utah Telephone Association			No change
Sprint Communications	X		Change in coverage is 2 square miles. We show only one middle mile point, which is suspect, as it lies in a river.
StarBand Communications			No change
Suddenlink	X		We note two less census blocks, but a greater area of coverage from Road Segments.
Table Top Telephone			No change
TDS Telecom	X		Minor changes; from 44 miles of road coverage to 64 miles.
Time Warner Cable	X		Additional coverage noted
T-Mobile (Deutsche Telekom)	X		Additional coverage noted

Arizona Broadband Providers (BPs)	Changes	Corrections	Spring 2014 (Submission 9) Changes and Corrections Notes
Tohono O'Odham Utility (TOUA)			No change
Transcend Broadband			No change
Transworld Network	X		Updated coverage, spectrum
TruCom			No change
tw telecom	X		Minor overall changes, 37% crowdsource concurrence.
UNSI (Airband)			No change
Valley Connections	X		Reselling Satellite coverage, Tech 60, not included in submittal. Minor increases in End User cat 2.
Valley Telephone Coop	X		Increase of 10 sq. miles in Tech 50. Northern Cochise and Southern graham HWY 191 area
Verizon Wireless	X		Verizon Submitted 3 shapefiles, AWS, EVDO, and LTE. AWS is new this cycle. We now have spectrum 2 and 4 4G LTE. 4G has almost tripled in coverage, from 25k square miles to 84k sq miles. Significant growth is shown, mostly along highways and extending border coverage.
ViaSat	X		Dropped availability in the Southeast corner of AZ.
Webhiway Communications			No change
Wecom			No change
(Western WiMax)			Not participating
WydeBeam			No change
XO Communications			No change
Xpressweb Internet	X		Updated coverage
Ygnition			No change
Zayo Enterprise Networks	X		Added locations. Have fiber maps.
Zona Communications			No change
Totals: 77	27	2	