

## Q4-2014 Arizona Supplemental Answers Document

This attachment to our Q4 PPR details progress made against all goals, objectives, and milestones detailed in the approved Project Plan. Included is a description of each major activity / milestone planned for completion and current status.

Task	Year 5, Q4 (Oct 1 – Dec 31, 2014) Primary Milestone(s)	Complete By	Q4 Response	Corresponding Primary Activities
<b>Capacity Building</b>				
1.1	Continuously Update activities related to Digital Arizona Council (DAC)	Complete	Current as of Q4	<p>DAC meetings never reconvened. As previously reported, DAC members were surveyed regarding their interest in continuing the Council and their views on effectiveness. Although most members felt the Council had been useful for exploring the issues around expanding broadband capacity in the state, they felt the Council was handicapped by not having formal approval from the state legislators or the governor. A decision was made to not reconvene the Council.</p> <p>As previously reported, the legislature has created a study group to consider approving a possible grant program to fund statewide school districts ability to augment E-Rate funding of fiber builds throughout the state. If such a program is approved, it would likely be in the next year's legislative session, which convenes January 12, 2015. To this date, we are awaiting action by the study group.</p> <p>Letters to the DAC Council notifying them of the upcoming end of grant period were sent out this quarter.</p>
1.2	<p>Identify set of tasks related to the purpose of Digital Arizona Council (DAC)</p> <p>Strategic Plan - Work includes use of data from the mapping project to create and maintain a Statewide Strategic and Tactical Broadband plan, with emphasis on Broadband deficit areas of the State.</p>	Complete	Current as of Q4	<p>The draft strategic plan continues to be available for review on the Digital AZ portal, <a href="#">Strategic Broadband Plan</a>.</p> <p>As mentioned in the previous quarter, we continued to maintain a relationship with the AZ Department of Transportation (ADOT), the AZ Department of Education (ADE), regional government consortiums and others to pursue the vision of the Digital Arizona Highways SB1402.</p> <p>We continued to engage ADOT's Intelligent Transportation Systems (ITS) group in conversation about implementing public/private solutions for the construction of fiber on Arizona highways. ITS is the group in ADOT who manages the construction and operation of fiber systems for ADOT's own use in managing traffic and signaling systems. We believe this may prove to be the optimum team with whom to explore implementation strategies for SB 1402 because they have a need for external funding of fiber builds and believe it may be permissible to partner with private construction partners who will allow them to own newly constructed fiber and lease portions of that fiber back to the construction partner as compensation for funding the build. Many of these activities will be sustained by private sector organizations in the state and the Councils of Government in rural areas.</p>

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				<p>Northern Arizona Council of Governments (NACOG) and four communities in the Verde Valley region within NACOG continue to develop their plans in cooperation with ADOT to increase broadband capacity into their area with a proposed fiber build along State Hwy 260 in conjunction with widening of the road under the provision of SB 1402. They continue to benefit from using the mapping and planning tools we have created.</p> <p>They have also committed to being beta testers of the first release of our new mapping data viewer, developed jointly with the Land Department and ASU.</p> <p>We are awaiting to see the new governor's level of engagement around broadband issues. We will continue to serve as Subject Matter Experts (SMEs) to support the Governor's Office of Education Innovation (GOEI) or its equivalent, as determined by the next governor.</p>
1.2	ASET Team and Digital Arizona Council (DAC) Task Group Formalize and Maintain a Statewide Digital Arizona Broadband Plan	Complete	Current as of Q4	Given that the DAC has now been sunset, the draft strategic plan will be left in draft form but continue to be available on the Digital Arizona website for use by all interested parties after the ending of the grant period in support of our commitment to sustainability.
1.3	Capacity Building - continuous use of Broadband Team, including Staff support of DAC and to actualize Contracts for Broadband Policy work. As part of Capacity Building, Broadband Team definitions and Various Tasks to accomplish and support ASET's Broadband Requirements. Tasks will be performed and accounted for with Allocations for Capacity Building.	Sunsetting with leadership and staff activities winding down.	Current as of Q4	<p>ASET Broadband Team's Leadership Activities (manager and team meetings, budget, et cetera) are winding down as the formal Digital Arizona Program will come to a close.</p> <p>The State Land Department and AZGEO will support the Digital Arizona Program Speed Test and website.</p> <p>The Broadband Team made significant contributions to the development of a new State Carrier and Broadband Service Solicitation. Bids continued to be evaluated in Q4 and new contracts are expected to be in place Q1 2015.</p> <p>This quarter we have developed a planning tool that can be used by communities and providers to estimate the broadband demand and revenue for clusters of communities throughout the state. We intend to share this tool widely in the hope that the revenue forecast combined with the incentive of much longer allowable contract durations under the new state contract will produce ROI calculations that can act as a major incentive for broadband build-outs in the rural area of the state.</p>

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2.0	ASET Team to Identify Broadband Policy Needs and required changes via a Task Group - This Task group proposes policies (i.e., Right of Way) that help to either eliminate barriers or improve the likelihood that Broadband Infrastructure may be more easily deployed.	Complete	Current as of Q4	We continued and completed this quarter the final gathering of ROW data on a mile-by-mile basis for road segments that we have defined in our mapping system. This data will continue to be available to interested parties to support their planning of potential fiber-build projects. The active work with the DAC task groups has been completed.
3.0	ASET team to provide continuous support and Outreach to Digital Arizona Council (DAC) Task Group activity - including Outreach to Economic Development, Tribal, and Rural Business Development groups, to promulgate best practices and policies to the local level and align local and State Strategies.	Complete	Current as of Q4	<p>Education Super Highways continued to collect school speed test data and item 21 data in Q4, and they plan to continue to collect this data for an indefinite amount of time.</p> <p>As stated earlier, the DAC had been suspended.</p> <p>Our final outreach in Q4 consisted of funding a market and technical assessment for broadband deployment in multiple communities in the Verde Valley region of the state and presentations to the NACOG Economic Development committee and a meeting with county officials for LaPaz County.</p> <p>Letters to the DAC stakeholders notifying them of the upcoming end of grant period were sent out this quarter.</p>
4.0	Intergovernmental Broadband & Economic Development Task Groups - These Task Groups may coordinate intergovernmental Broadband needs, including Counties, Cities, Towns, and School Districts as they work toward funding Broadband in their jurisdictions.	Sunsetting	Current as of Q4	<p>We completed efforts focusing on the rural Councils of Government (COGs) as a centralized coordination point for this outreach effort. These organizations will continue to be effective in reaching further into the depths of rural Arizona. The focus of the rural outreach effort was successful in creating an ongoing local cross-disciplinary dialogue about the needs for better internet to serve education, health care, public safety, and economic development interests within each community.</p> <p>It remains to be seen what the incoming governor and the next legislature will do to provide support for expanding broadband capacity. We also expect that the new state carrier and broadband services contract will act as a significant incentive for expanded broadband investment in rural areas of the state by the private sector. The expectation is that initial contracts will be awarded in Q1 of 2015.</p> <p>We have completed a community-by-community proforma revenue forecast modeling tool that will be made available to both rural communities and providers as part of helping them understand these markets and their potential to provide significant ROIs for building out these underserved communities. This tool sums the number of students, households, businesses, and employees as a proxy for the total available market (TAM) in each contiguous cluster of rural</p>

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				communities.  We worked with Arizona Commerce Authority (ACA) this quarter to develop a message for the new governor about the importance of broadband expansion for economic development in the state. The ACA has adopted broadband expansion as a key ingredient of their economic development model.
5.0	Impact regional and National Policy: Support Personnel costs associated with outreach activities to various US regional and National professional Stakeholder Communities as required, to facilitate partnerships in Policy solutions, Broadband projects, and dissemination of Best Practices.	Complete	Current as of Q4	There were no national conferences available in this quarter justifying physical attendance.  We have completed the updates of CAI broadband data in our planning tool for public safety entities. This will prove to be very useful to the Arizona's FirstNet planning activities.
<b>Technical Assistance Project</b>				
6.0	The following are Institutional (non-State) and Local providers of Broadband technical support. Dollars will pass thru from ASET to these institutions. Matching is illustrated here as being from "Travel". Matching could also be from local Personnel allocations or from Other (Cash, local Contracts, etc.). ASET will also provide pass thru value from its "Matching" in-kind sources.	Complete	Current as of Q4	As previously reported, we completed the second and last round of the TA program, which provided technical assistance to new communities within each of the regions.  The final reports are available on the Digital Arizona website found at: <a href="https://digitalarizona.az.gov/about-us/rural-outreach">https://digitalarizona.az.gov/about-us/rural-outreach</a> .
6.0	Implement multiple community broadband planning tools, design of sustainable governance & funding models, SB1402 implementation with third parties	Sunsetting	Current as of Q4	The development of the Java-based front-end to our broadband mapping tool has been completed and provided with a four-month support agreement by the developers to fix bugs, if necessary, and ensure proper performance of the tool at no charge.  The Digital Arizona team agreed to consolidate its mapping servers with the servers that support AZGEO. Also, the AZGEO organization agreed to provide support and maintenance for the broadband map database and viewer after the end of the grant.  Our legal intern-level data analyst completed the data gathering relating to the decision matrix ROW availability and planning tool this quarter. This ROW identification project will support implementation of proposed SB1402 projects by identifying underlying right-of-way ownership along the state's highways. The team has developed an indexing solution to connect the pdf files representing land ownership relative to mile markers along these highways. The capability to identify these land owner pdfs will significantly speed up permitting processes for fiber-builds along those highways utilizing SB1420. This information will be made available to all providers who request

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6.0	Technical Assistance for Local Communities. Via Letters of Agreement they will supply matching dollars as their portion (ASET to manage portfolio of Contracts) three to four Contracts will total 80K per year as pass thru via ATI Institute to entities.	Complete	Current as of Q4	As previously reported, the ATI Institute completed their Technical Assistance (TA) oversight and contract management under direction of ASET. Round 2 efforts were completed at the end of Q2.
<b>Local Planning Project</b>				
3.0	Implementation of detailed broadband use case and demand aggregation analysis in selected rural communities and other associated tasks	Complete	Current as of Q4	<p>As previously reported, Round 2 of the LRP agreements with the COGs have been completed. Business Case Analysis (BCA) reports have been completed by consultants retained by the COGs: CAG, NACOG, WACOG, and Cochise County Government Association. Round 2 reports for each of the COG regions are posted on our website <a href="https://digitalarizona.az.gov/about-us/rural-outreach">https://digitalarizona.az.gov/about-us/rural-outreach</a> and will continue to be available to all stakeholders.</p> <p>As mentioned earlier in this report, the Arizona Commerce Authority (ACA) is now including broadband capacity development as a fundamental part of their general economic development mission in the State. Their commitment will create a significant degree of sustainability for the broadband outreach efforts we have successfully initiated under the grant.</p>
4.0	Implement detailed decision support MATRIX for determining prioritization of SB1402 (AZ Digital Highways Act of 2012) rollout options and other associated tasks	Complete	Current as of Q4	<p>The Decision Support Matrix supports critical decision-making and planning in order to facilitate investment decisions by communities and providers for expanding broadband capacity. It is an interactive planning tool that can take inputs regarding assumed cost for fiber and microwave builds and combine those inputs with existing demographic data for rural areas and communities.</p> <p>The tool has now been additionally expanded so that assumptions can be made about market “take rates” for residential, school, and business markets within the 400+ identified communities in the state. In addition, the tool can automatically rank proposed middle-mile rights of way for both demand aggregation and construction cost estimates as well as estimated market sizes and forecasted revenue per market.</p> <p>We will continue to make this tool available to providers and communities throughout the state on request as a method of encouraging provider and community investment for constructing new infrastructure in poorly served areas.</p>

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7.0.	ASET will Manage a program of Local Broadband Planning funding to Local communities and Stakeholder groups. Matching will be provided by recipients. Total funds to pass through to local recipients will equal up to 250k through years 3-5.	Sunsetting	Current as of Q4	<p>As previously reported, we have completed our sub-award Local Planning activities with the four regional organizations.</p> <p>We had a final opportunity to fund a sub-grant contract of \$36,100 for research into implementing and funding the development of a fiber network that would interconnect six communities in a region known as the Verde Valley. The funding was granted to a 501(c)(3) known as Verde Valley Regional Economic Organization (VVREO). VVREO contracted with an expert consulting organization to develop this Phase I plan and provided a preliminary revenue forecast and cost analysis leading to feasible ROIs for actually constructing the network. The proposed network would have 87.3 miles of combination middle-mile and MAN aerial and buried fiber. It will provide a second network in addition to the one provided by the LEC. This would make it possible for area businesses, schools and governments to economically implement carrier diverse solutions. The study can be found at <a href="https://digitalarizona.az.gov/about-us/rural-outreach">https://digitalarizona.az.gov/about-us/rural-outreach</a> under Other Rural Broadband Reports.</p>
<b>Mapping Task</b>				
3.2	Update and Deliver Broadband and Community Anchor Databases.	Complete	Current as of Q4	<p>As of the grant conclusion, we are ceasing further tracking of broadband services used by community anchor institutions in the state. We will continue to collect, under NDAs, digital fiber maps of existing fiber resources from many of the providers in the state. Providing such fiber maps is a requirement of the new state carrier and broadband services contract.</p> <p>ESH will continue to collect school data and share it with us.</p> <p>With the ending of the current Governor's term, it is uncertain if the Governor's Office of Education Innovation (GOEI) activities will continue. The partnership with EducationSuperHighway (ESH) will continue with the Department of Education and with ASET. As ESH collects Item 21 data from schools, they will continue to share it with ADE and ASET.</p>
3.3	Update the Arizona Broadband Map (including community economic and census data for purposes of community broadband planning).	Sunsetting	Current as of Q4	<p>We have completed updating the Arizona Map utilizing the data we have been able to obtain during the grant period. Because the mapping tool and database has now been moved to AZGEO, they have the ability to incorporate new data as it becomes available through new sources.</p> <p>Our Arizona specific speed test functionality will remain operational and has also been moved to the new servers.</p> <p>The maps will continue to be updated with valuable datasets by AZGEO and Arizona's FirstNet planning program, including demographics, economics, statistics, middle-mile route maps from selected providers, and many other functions which will be used by a wide array of planners, developers, and public/private stakeholders in efforts to determine factual representations of</p>

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				actual community specific circumstances.
3.4	Maintain the Hardware, Software, Communications and Data Infrastructure to Support Processing and Delivery of the Arizona Broadband Services and Community Anchor Databases and the Operations of the Arizona Broadband Map.	Sunsetting	Current as of Q4	<p>The final significant improvements to the graphical user interface for the mapping tool have been completed by the end of the grant, as mentioned before. The mapping tool with these enhancements have been installed on the new server. The enhanced tool will continue to be available for use by communities, providers and the public. A context sensitive help tool has been added to the new enhanced version of the mapping tool, in lieu of video tutorials.</p> <p>The new server partially funded by the grant are replacing the current servers that have been retired at end of life. AZGEO has agreed to continue to provide support for the Broadband map tool, database and the speed test/survey functionality.</p> <p>AZGEO will continue to maintain the speed test and survey database.</p>
3.5	ASET Y5 Phase 3 Project Management.	Sunsetting	Current as of Q4	We continued to manage the overall Mapping, Capacity Building, Local Planning, Addressing and Technical Assistance programs for effective results and will sunset these activities by grant's end.
<b>Addressing Tasks</b>				
3.6	Addressing Initiative tasks.	Sunsetting	Current as of Q3	<p>The Arizona Broadband (AZBB) Mapping Project, through the AZBB Address task, obtained existing address and road network data. This information improved the accuracy of our overall broadband mapping records, as well as road and address accuracy for all other state, county and local GIS functions. ADOT contributed additional financial support to this effort under its All Roads Program.</p> <p>A consultant, TerraSystems Southwest (TSSW), was contracted to provide GIS services for developing improved address data for the AZ Broadband Mapping project. TSSW assessed existing address data and helped develop project requirements to ensure newly developed 9-1-1 address data can be used to better identify levels of broadband services available at the street address level throughout the state. All counties have completed their 9-1-1 road network data capture and that data is now in use in the broadband map.</p> <p>All counties have integrated their street centerlines and address data. This data now meets our state 9-1-1 GIS standards. This standard anticipates NG911 and has additional attributes which support AZ Broadband Mapping geocoding activities.</p>



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				<p>Additionally, ADOT is initiating its own programs at the request of the USDOT to further improve its centerline and address data. Agreements have been made to share this improved information with our 9-1-1 and Broadband programs. The Arizona State Cartographer's Office (SCO) signed an agreement with ADOT to partner on the development and maintenance of road network data going forward, which meets FHWA, Broadband mapping, 9-1-1 and MAP-21 requirements. This will add to the sustainability of the broadband mapping data after the grant ends.</p> <p>We have discontinued our initial dialogues with the Bureau of Indian Affairs (BIA) State Office and the Department of Interior (DOI) Geographic Information Officer (GIO) for obtaining road and address data that those organizations were believed to have on file. Unfortunately, this effort proved to be unsuccessful. However, it is important to note that some tribal road network data is available through data contributed by the local 911 systems.</p> <p>This enhanced data has now been incorporated in the broadband mapping database on the Arizona Geospatial Clearinghouse (AZGEO) portal. The insights gained into multi-agency coordination, collection, pre-processing, appending and quality control has been used to develop and refine a sustainable workflow for maintaining statewide geocodable street network and address point files.</p> <p>In order to provide additional support of the broadband addressing effort and its sustainability, project funds were allocated for the production of address point data, the development of an address editor, and the purchase of software to support the workflow associated to the updating of address data by local contributors. As with the previous data development, this was accomplished through partnership with the Arizona 911 Program and the State Cartographer's Office (SCO).</p> <p>Address point data assists in more accurate address information to identify broadband services. Of the 15 Arizona counties, it was determined that eight (8) counties lacked address points. TerraSystems Southwest, Inc. (TSSW) was contracted to assess the existing local data and develop a process for the creation of address points. TSSW, as the prime contractor, subcontracted with the Master's GIS programs of both the University of Arizona and Arizona State University to assist in the address point development.</p> <p>An address editor was developed to provide the State of Arizona a web interface and set of address editing tools for various audiences (local address providers, law enforcement/fire/EMS staff, volunteer groups or citizens) to review and edit the location and/or attributes of address points,</p>



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				<p>statewide in Arizona. This continuing process will ensure address accuracy for the broadband map database. In addition, a Data Loader was acquired for the State of Arizona with an extensible ArcGIS Desktop application, based on the ArcGIS extension for FME, to allow for the intake, evaluation, quality-checking and flagging, and loading of local provider address points into a statewide address point database for the State of Arizona. The goal of this application is to assist in the continued updating and maintenance address information.</p> <p>Grant funding has been used to partially cover the purchase of a new server the balance of the necessary funds were provided by Arizona Geospatial Clearinghouse (AZGEO). This purchase was necessary because the current server had reached end of life. This was done to ensure sustainability of the broadband data and mapping tool. The AZGEO will at the end of the grant, become the primary repository for geospatial information for broadband mapping, such as address ranges, points, road networks and other data, to support the activities of this project and for continued sustainability. This information combined with additional data available on AZGEO will encourage participants to contribute and engage on a long-term transactional basis. The Arizona Counter Terrorism Information Center (ACTIC) has agreed to become the back-up repository for AZGEO.</p> <p>The agreement with ADOT is providing additional funding for AZGEO development. Additional long-term sources of funding have been identified to maintain AZGEO in the future. The Arizona Geographic Information Council (AGIC) has identified that attendance fees from its annual conference is sufficient to maintain the operations of the servers.</p> <p>In support of obtaining possible additional funding, the state CIO's Center of IT Excellence Program has created a Center of GIS Excellence to work with other agencies, the Governor's Office, and the legislature. This activity may lead to additional funding and accelerated growth in the user base for AZGEO.</p> <p>To date, there has been limited progress in implementing the GIS Center of Excellence under the CIO's office. However, AZGEO is essentially providing that function. Street centerline and address data developed for the AZBB Mapping Project will also be made available to state and county agencies to locate and geocode address data to assist state, county and municipal first responders, and for other approved purposes including land management and other resource management responsibilities.</p>