# Report
# Background, Purpose and Desired Impact

of the

# Arizona
# Telecom Providers and Stakeholders

# Request for Information
# (RFI)

Sponsored by

Arizona County Supervisor's Association
League of Arizona Cities and Towns
The Governor's Council on Innovation and Technology

**Introduction**
At the February 2005 meeting of GCIT's Telecommunications Infrastructure Sub-Committee (TISC), a Request for Information (RFI) process was approved. The approval followed on the heels of a series of presentations to TISC regarding the development of Broadband infrastructure in Arizona.

The purpose of the RFI was three fold. First the results of the RFI would serve to educate members the GCIT/TISC as these bodies considered advancing technology's impact on Economic Development in Arizona. Second, the RFI would provide a basis for developing a strategic telecommunications plan for the State. And finally, the results of the RFI could likely be used to broaden the scope of a new Carrier Services contract, enhancing broadband development it Rural Arizona.

The committee's discussion of the RFI included the timing of the State of Arizona Department of Administration (ADOA) issuance of a replacement Carrier Services Contract. Because ADOA had recently outsourced the management of its State Agency based phone system (ATS), the potential scope and priorities of a new Carrier Services contract would likely be different than previous carrier services contracts. Historically, these contracts are also used by many political subdivisions, including Arizona's counties, cities, towns, school districts, etc.

TISC's membership includes representation from the Arizona League of Cities and Towns, and the Arizona County Supervisor's Association (CSA), and because Broadband development is vital to their constituencies, they joined TISC as sponsors of the RFI.

**RFI & RFP Comparison**
The RFI distributed to providers by the TISC was a **feasibility study**. It posited that the State was interested in building out substantial Broadband infrastructure to 250 rural cities and towns. It asked Telco Carriers, ISP's, Cable companies, and interested third parties to provide examples and costs as to how this could be accomplished. The RFI was patterned after a real project in the State of Colorado initiated in 1999, which built fiber infrastructure out to Colorado's 64 county seats.

The basic assumptions internal to the RFI are different than the basic assumptions of a Carrier Services Contract, especially a contract written to support the relationship between State Agencies and the new telecom service manager contractor. The RFI hypothetically assumed that core funding would be made available to support its primary goal of infrastructure build out in rural Arizona. It asked responders to determine the cost of such a build-out, and to provide information on how those costs could be paid for (through a combination of rate structure, and other funding sources). In contrast, the goal of a Carrier Services RFP is to determine prices for existing telecom services, primarily for State agencies, without regard to what infrastructure is available.

Since the RFI concentrated on rural Arizona, only at the point where rural Agency offices and rural political sub-divisions use the Carrier Services contract, is there some commonality. Surprisingly, the dollars spent by political sub-division via the contract nearly equals its use by Agencies. Of the total dollars spent by government across all

contracts (State, County, Cities and Schools), almost two-thirds is spent by political sub-divisions of the State.  So the potential use of a well written contract is huge.

It has been a tenant of previous contracts that use by political sub-divisions provides an opportunity to leverage infrastructure build-out. If some form of leveraging is not built into the contract, then Telecom service providers are able to "cherry pick" government customers in rural areas, substantially weakening the economies of scale necessary to justify the build-out of broadband infrastructure.  Because of scarce supply of such infrastructure, prices for broadband services remain higher for non-government customers (and government customers subsidized by Federal dollars - schools and libraries), stifling the economic development opportunities of those rural areas.

In Arizona, the aggregation of demand of government with non-government telecom demand in rural areas, and then the leveraging of that demand toward infrastructure build-out is circumscribed under an initiative known as TOPAZ (Telecommunication Open Partnership of Arizona).  In 2002, Arizona won national awards because of TOPAZ implementation.  The benefits of embracing TOPAZ were measurable.  The number of communities where broadband was available increased from 60 to 209, and pre-TOPAZ pricing for a T-1 line fell from an average of $3,000 to about $500 per month.

**Brief Summary of Genesis of RFI**
The suggestion for an RFI came from one of the members of the TISC in December of 2004.  During the month of January 2005, a task group was formed out of the TISC membership to explore various RFI options.  A number of Telecom RFI's from around the country were looked at, including Telecommunications projects from the City of Chicago, from the State of Vermont, and the State of Texas.  The MNT program in Colorado was also explored.   That program was selected as most closely matching a process that could answer to Arizona rural needs. At the January TISC meeting, approval was given to the Task Group to put a final RFI together.  Based on the Task groups work, final permission was given in February to publish the RFI to the vendor community.

**RFI Process**
The details of the Colorado MNT RFP were extracted and summarized into a nine page basic RFI Document of general requirements.  Most important to the RFI was the documentation provided from past Community Telecom Assessments and demographic information about Arizona's rural communities.  Almost 1000 pages of documentation were provided to vendors as background about specific community telecomm needs.  Because time was short, Vendors were asked to download this info from the Interned, instead of receiving printed documentation.  In fact, the entire RFI process was executed electronically, using the Internet and Email as the primary method of transferring information.

**RFI Targets and Participants**
The RFI primarily targeted providers of Telecom Services in Arizona.  That was not limited to just the primary carriers, but included, cable companies, networking companies, Internet Service providers (ISP"S),  Wireless providers, and a host of

consultants. A list of approximately 100 potential respondents from across the spectrum of providers was gleaned. Contact names were confirmed for those companies.

The first wave of RFI announcements went out on Feb 23$^{rd}$, to approximately 15 prospective respondents. That was followed immediately by other waves of emails, as provider email addresses could be confirmed. Eventually, over 80 providers and industry experts indicated their receipt of the RFI. About 25 made commitments to respond. At issue for many was the quick turnaround required within the RFI. Initially a response was due March 8$^{th}$. That was pushed back to March 15$^{th}$, and then to March 31st. Given this confusion, only 15 entities actually responded to the RFI. Of those, nine were key Arizona Telecom providers. One responder, ALECA, represented thirteen different Carriers. With responses assured from the nine and from ALECA, it was felt the effort to process the RFI was justified.

**Provisions of RFI**
The RFI asked the basic question – can an Arizona Broadband Communications (ABC) Network be assembled which consists of approximately 250 points of service around the state called *Aggregated Network Access Points* or *ANAPs*. An ANAP was defined as a typical minimum of 100 Mbps of access capability for State network users in a given area. The basic idea was to explore the business and technical processes appropriate to deploy and sustain an Arizona intranet with high-speed network access to all Arizona communities having a population of 500 or more. It was also desirable to better understand the dependency of such deployment on an expanded public sector acting as anchor tenets of such a network.

The following goals were established in the RFI:
1. The primary goal of this RFI is to identify options that can provide direction to the State as it crafts an RFP for its telecommunication needs
2. To educate the Telecommunications Infrastructure Sub-Committee on possible solutions to statewide Telecommunication infrastructure problems. Respondents have free reign on how to provide the requested services.
3. To aggregate network management and communications purchasing to maximize the value of the State's communications investment in measures of cost efficiency and technical performance.
4. To define public/private partnerships which will enhance the communication capabilities throughout the state?
5. To identify how to provide a minimum of one point of service (ANAP) for high speed access to most communities in the state. An ANAP will provide a minimum bandwidth of 45 Mbps, capable of carrying voice, video, and data on a statewide network.
6. To create a communications service system in which the physical network may or may not be state owned. The network will likely consist of a network of purchased services with defined performance capabilities; and will be available to all consumers of broadband connectivity.
7. To align and aggregate all government purchases of communications services for efficiency and value of State investment (i.e., to receive the highest bandwidth and most reliable services for the available funds), coordinated management, and simplification of the vendor business relationship.

8. To leverage individual entity and State aggregate communications spending to assist vendor provision of broadband services in communities throughout Arizona.
9. To provide a secure, reliable, scaleable communications environment for the delivery of e-services.

**Evaluation of the RFI Results**

On March 31st, the appointed day to receive responses by, 12 responses were received. Subsequently, by mutual agreement, some supplemental information was also received from some of the respondents. With that supplemental information, eight of the responses were judged sufficiently robust to go through an evaluation process. (The remaining four responses were typically letters of support with few answers to the questions or directives)

To evaluate the eight responses, a group of twelve evaluators had previously been selected from within TISC, from Arizona County and State Government, and from the public at large, to review the RFI. They included: Matt McClymonds, Yuma County CIO; Genene Walker, Pinal County CIO; Lisa Bergeron, Telecom Project Manager, Pinal County; John Lucas, Graham County Director of Technology; Rod Franklin, Arizona Supreme Court; Mike Keeling, Chairman ATIC; Jay Miringoff, ATIC member and Telecom Consultant; Rick King, Central Arizona College; Galen Updike, GITA;. Ben Standifer, Tohono O'odham Nation, Tom Martin, Az Library and Archives, and Jeri Dustir, City of Flagstaff Asst. Manager. Jeri did not participate in subsequent activities because of schedule conflicts. Tom Martin also has schedule conflicts, and did not participate after the first coordination meeting. A non-disclosure agreement was signed by the ten remaining evaluators. The evaluators were divided into teams, with assignments to read and evaluate specific responses, and record answers and opinions on individual respondent forms.

| 6. AGGREGATION SUGGESTIONS |
| --- |
| A. Community-level aggregated demand is intended to provide the "anchor tenant" to defray the cost of "last mile," even in communities without significant State government communications. |
| 1. Did the Respondent reply to the Requirement? |
| 2. Was the Response detailed or general? |
| 3. In summary, what was the answer to the requirement? |
| 4. Note any thought you might have regarding feasibility with an overall goal of ubiquitous broadband deployment throughout the State, a change in a current condition, or consistency with or applicability to a future RFP. |
| B. With State as an anchor tenant, identify technologies and appropriate estimated costs to provide various volumes of broadband connection (minimum 1 Mbps) to various non-government customers. (Suggest scenarios which include individual homes, subdivisions, HOA's, individual businesses, aggregates of business like shopping centers, etc). |
| C. Base any cost estimates on levels of aggregation (numbers of schools, schools & towns & fire districts, multiple towns, or multiple counties in an Economic Region, etc.) per the Commerce Department's division of the State into 11 regions. |
| D Preferred consideration given to plans which include regional aggregation. |

An evaluation form was initiated so that responses to specific questions in the RFI could be quickly compared and contrasted the elements of the responses by the Evaluators
It consisted of parcing the RFI questions into subgroups and categories.

Evaluation comments were then included on the form, to the right of and adjacent to the questions.

| Response Evaluation ScoreCard for Vendor | Summary Comments | Nuggets |
|---|---|---|
| 1.  SCOPE OF RESPONSE | | COMMENTS / REMARKS |
| A.  Please indicate the Scope of the Response suggested by the Provider/Responder. | | |
|    1.  Is the scope of their proposal Statewide, Multiple Regions, Regional or Local? | | |
| 2.  SUGGESTIONS REGARDING GOVT. COOPERATION | | COMMENTS / REMARKS |
| A.  The Requesters desire that Respondents describe levels of cooperation and partnering requirements with government entities that will allow for rates are to be driven to their lowest levels consistence with rapid sustainable bandwidth availability and consumption. Respondents should scale levels of cooperation against rates and provide examples of how government can help lower rates. Plans could include tax breaks, right-of-way waivers, waivers for co-location of equipment, and others. | | |
|    1.  Did the Respondent reply to the Requirement? | | |
|    2.  Was the Response detailed or general? | | |
|    3.  In summary, what was the answer to the requirement? | Revenue Guarantees, Grants, Bonds, Contributions Universal Service Fund, Coop, E-Rate, Right of Way Waivers | |
|    4.  Note any thought you might have regarding feasibility with an overall goal of ubiquitous broadband deployment throughout the State, a change in a current condition, or consistency with or applicability to a future RFP. | anchor business of the government and education networks, which will provide guaranteed contracts offsetting the services provided to businesses and residents. Local demand aggregation should also be incorporated, to ensure that the network is deployable and sustainable. | |

The forms were then combined into a single form (a multi-columned spreadsheet, one column per respondent) where answers to each question were side-by-side for easy comparison and contrast.   (See the RFI Results spreadsheet attached below)   Evaluation took about two weeks.

**Further Interviews with selected Responders**
It was determined by the Evaluation Team that six of the Responses suggested more in depth questions. Subsequently, during April and the first part of May, interviews were scheduled with Vendors and team members, where specific questions were asked, and further understanding was shared, both as to the goals of the RFI and how the vendors response could meet those goals.

**Results of RFI**
A number of providers showed in detail, how the RFI Goals could be met. Responders identified how their existing service structure and planned improvements could meet the communications requirements of the ABC Network. Responders explored both regional prime contractors (as defined in Arizona Department of Commerce's Economic Development Region divisions) and statewide "anchor tenant" approaches having increased communications performance and advanced technologies throughout Arizona. In some cases responders consolidated regions into larger areas.

**Summary of Findings**
Responders further provided inputs to the RFI's initial guiding principles which strengthen them. The resulting guiding principles, summarized below, can act as a basis for further inquiry into fruitful statewide broadband development.

- Cooperation and partnering at various levels, both on the provider-side and buyer-side, is necessary to optimize plans and to overcome problems. Such cooperation often includes government involvement or policy changes to best impact costs. Examples could include the impact of tax breaks, right-of-way waivers, waivers for co-location of equipment, etc.
- Selected technology must be cost appropriate, capable of a minimum of 45 Mbps into Arizona towns or unincorporated areas of 500+ population, and have capability for a minimum of 10 Mbps of (synchronous clear channel ) transport to any political subdivision customer (School, School District, City, County Agency, State Agency office, etc)
- Take into account in the overall build-out plan all existing infrastructure, where feasible, to meet user requirement
- State should act as an anchor tenant.
- Identify flexible funding scenarios to defray build-out costs, including community funding or community based grants (that is, revenue from other than State agency offices) to create additional opportunities and use of the ABC Network.
- Connectivity, in all cases, must be of sufficient quality for voice, video, and data applications; internet connectivity must include Tier-one connectivity.
- Public sector contract term should be sufficiently long to accommodate the necessary amortization of build-out costs.
- The Commerce Department's division of the State into Economic regions is an appropriate basis for aggregation.
- Statewide aggregation of a common intranet via MPLS or equivalent multi-provider interoperability technology is strongly desirable; with common use of such an intranet by all public sector entities in a particular region is desirable.

## Findings of RFI - Concepts and Imperatives Related to the ADOA RFP Process

**Impact Statement**

The RFI process has initiated a dialog among the provider and user stakeholder, sufficient that an RFP could even be derived from the coherent concepts and technologies presented by the responders. The ABC Network has evolved as a viable concept, and appears to be a potential vehicle for coordination of State communication services, WAN resources, existing state-owned equipment, and network management resources to generate cost savings, increased efficiency, and improved performance. Such aggregation and coordination of State services should allow for the integration of all forms of communications traffic into a more cohesive and flexible network. The resulting services should be not only of higher performance, but also better availability, and potentially lower unit cost. Most importantly the resulting infrastructure would also be available for non-public sector usage and thus promote the economic development goals as exposed by TOPAZ.

**Overall RFP Environmental Context and Required Actions**

- The RFI provided substantial proof that an ABC Network covering the entire State was viable and a possibility through a concept of provider partnerships
- The upcoming RFP must go through USAC 470 process and be certified as a contract for use by schools' and libraries' 471 applications. This includes formulating a related Technology Plan.
- The Role of the TPO and Accenture management should be expanded to include Political Subdivisions as part of a Buyer's Co-op.
- The RFP and subsequent Contract should take into account ACC rules, tariffs, and differences between regulated and unregulated services. The Contract should also recognize the varying responsibilities of ILEC's, with as many as possible on the State Contract in their own areas. The distinctions between ILEC's, CLEC's, ISP's IXC's, etc, and their respective roles played in delivering Telecom services to the State should be recognized and exploited in the Contract.

**RFP Scope of Work Suggestions and Enhancements. (no particular order of priority)**

- Require MPLS Protocol as a requirement for Intranet and Internet connections
- Encourage K-12s (particularly rural K12s) to participate as buyers.
- Ensure that resulting Contracts are e-ratable (USAC 470 compliant).
- Provide mechanism for guaranteed Metro Phoenix revenue if access to rural markets is provided.
- Give some advantage to companies investing in alternative technologies like Broadband over Powerline (BPL).
- Create mechanism to add new products to any awarded contract as they become available. (encourages continued contractor investments over the lifetime of the contract).
- Ensure that all Political Subdivision have access to the Contract. Add their use of contract to overall statistics and usage metrics.
- List the Approximate 200 communities where Agencies have offices. As part of the Scope of work, indicate which communities have and do not have Broadband capacity. If service is to be provided in a community without Broadband capacity (Minimum 10Mbps connection below), indicate that new capacity must be provided. Capacity cannot come through combining existing circuits.

- Define broadband as a 1Mbps connection (symmetrical preferred)
- Eliminate non-Converge-able products and services as items provide through the contract.
- The contract must encourage the build-out of new capacity in Rural communities
- Encourage High Capacity Wireless usage, both for middle-mile transport and last-mile connections.

**Terms and Conditions for Evaluation metrics**
- Rate companies based on their financial strength and history (ability to sustain services for State customers for the duration of the contract).
- Allow some advantage for locally owned and minority businesses.
- Show a distinction between tariffed and non-tariffed connections. Ask providers, where possible, to provide a minimum 10Mbps clear channel capacity (IP protocols) to agencies and political subdivisions alike.
- Add Carrier and Telco Services identified as Eligible for SLD subsidies.
- Eliminate non-Converge-able products and services as items provide through the contract.
- Consider ways of measuring the value of increased broadband infrastructure in specific deficit areas against higher rates over a period of time.
- Eliminate non-Converge-able products and services as items provided through the contract.
- Priced elements should encourage High Capacity Wireless usage, both for middle-mile transport and last-mile connections. Provide incentives for such usage including quick deployment of higher volumes into a Regional landscape and WIFI an WIMAX last mile distribution.

**Impact of the RFI and its relation to a Statewide Telecommunications Plan, as formulated by TISC and approved by GCIT and other Statewide Policy bodies.**

**Summary**
The ABC Network concept involves the coordination of provider-side capabilities and service management with Arizona public sector owned resources to generate cost savings, increased efficiency, and improved performance. The aggregation and coordination of both the provider-side and public-sector consuming side is vital to an Arizona broadband future, which integrates of all forms of communications traffic into a more cohesive and flexible network. The resulting services promise to be of higher performance, better availability, and potentially lower unit cost.

**The following Barriers to implementing the various plans were explicitly stated or implicitly referenced in the RFI responses. They are:**

**Lack of cooperation**
There is a lack of cooperation among the telecom providers and lack of public and private cooperation

**Return on Investment:**
Broadband deployment requires a balance between deployment costs and "affordable" monthly end user rates. The length of time for the provider's Return on Investment must be balanced within a reasonable and acceptable pricing structure.

**Access to Rights-of-Way:**
Federal, tribal, state and local Rights of Way, including required multiple jurisdiction permitting, delayed application approvals, unequal and prohibitive fees, all act as severe impediments to Broadband deployment. There needs to be constant balancing between the necessities and value of Rights of Way and the necessities and value of Economic Development associated with Broadband deployment.

**Leadership, Planning and Coordination:**
The RFI illustrated consistently illustrated the need to coordinate the various Broadband initiatives underway in Arizona. Responses showed that currently there is no coordinated statewide strategy.

**Funding:**
Where rates cannot carry the load of deployment, Arizona needs to more effectively leverage grant dollars in those areas. In addition, there needs to be established additional funding mechanisms, such as an Arizona Broadband Universal Service Fund.

**The RFI responses identified various ways of surmounting or minimizing each of these barriers. They are included in the following 11 recommendations forwarded to GCIT.**

1. **Adopt an Arizona definition of Broadband to be 1MB.** Although the FCC defines broadband as an Internet connection at a speed of 200 kilobits per second (kbps), 200 K is already inadequate for applications such as telemedicine and eLearning that have ever increasing bandwidth requirements.

2. **Establish a Broadband Authority** to provide incentives and low cost, long term financing to encourage private sector development of **redundant, middle mile and last mile telecom solutions** in the state, as done in other states The Authority should be empowered to: issue bonds and notes; make loans and provide joint venture and partnership arrangements to broadband developers and broadband operators for financing or refinancing; enter into contracts for the lease or management of the infrastructure; and enter into joint venture and partnership arrangements with persons that will acquire, construct, develop, create, maintain, own, and operate the infrastructure. Owners of the network may be private, public or public/private partnerships. Any funding for public or public/private networks using state or federal funds must be open on an equal basis to all. We need to explore the use of existing financing mechanisms such as the Commerce and Economic Development Commission and the Greater Arizona Development Authority. Funding may come from sources such as the Arizona Universal Service Fund, tax incentives, bonding, tribal gambling, E-rate, and other Federal programs including homeland security.

3. **Provide state support for the development of a Statewide Telecom Strategic Plan** that will provide the vision, framework and strategies for the deployment of a statewide telecom infrastructure.

4. **Convene an ongoing Telecom Roundtable** to facilitate awareness, collaboration and cooperation among the many statewide telecom infrastructure initiatives in the state such as: TOPAZ; the Arizona Telemedicine Program; education; the CANAMEX Corridor, etc. Along with the Roundtable, develop a **database of current telecom plans and initiatives in Arizona** that provides a summary of their goals, geographic boundaries and their telecom requirements.

5. **Expedite access to local, state, federal and tribal rights-of-way**. Facilitate coordination and development of recommendations for legislation and Executive directives to enable one-stopshopping, consistent fees, and expedited right-of-way permitting processes for last mile and middle mile inter-city/town transport.

6. **Provide ongoing funding for Community Telecommunications Assessments** to identify community telecom assets, assess their needs, and develop and implement telecom infrastructure strategies and initiatives.

7. **Provide state support to research funding sources and write grant proposals** to help fund telecom infrastructure projects.

8.  **Implement a strategy to facilitate increased use of the federal E-rate** subsidies in the state.

9.  **Elevate the Telecommunications Infrastructure Subcommittee** under the Governor's Council on Innovation and Technology to a stand alone and funded entity to enable greater leadership, planning and coordination

10.  **Expand the role of the Arizona Corporation Commission in broadband deployment** including modifying the current Arizona Universal Service Fund or creating a new fund to support broadband deployment.

11.  **Oppose legislative actions that erect explicit or de facto barriers to municipal participation** in Broadband deployment.  Municipalities must be allowed to pursue broadband network solutions, and private sector firms must not be foreclosed from choosing to invest in and partner with municipalities. A framework of open processes and reasonable competitive neutrality allows all stakeholders to be heard. Reasonable examples are already being demonstrated in the marketplace voluntarily and without statutory mandates. We believe such a framework can encourage public-private partnerships that advance the goal of making affordable and high quality broadband available to all Americans.