ARIZONA GEOGRAPHIC INFORMATION COUNCIL
2023 Leadership Workshop
February 2, 2023 : 10:00 am-12:00 pm
Virtual Meeting

Welcome & Attendee Sign In:

NAME	TITLE	AGENCY | ORGANIZATION
Angela Arriaga	Account Manager	Aero-graphics
Aparna Thatte	Self	Self
Brian Bond	GIS Programmer Analyst Lead	Yavapai County GIS Department
Chris Black	Natural Resource Planner	USAF
David Moss	Director, Enterprise Planning	Sidwell
Elisabeth vanderLeeuw	GIS Manager	Pima County
Elizabeth Heller	GIS Analyst	ADWR
Eric Shreve	GIS Manager	Arizona Department of Administration | Arizona Strategic Enterprise Technology
Gene Trobia	Researcher	ASU
Howard Ward	President	TerraSystems Southwest
James Meyer	Data & Information Manager	ADOT
Jami Dennis	Geospatial Consultant	Geodetic Analysis LLC
Jason Howard	GIS Program Manager	Maricopa Association of Governments
Jay Corum	Cartographer	USDA - OIG
Jeff Wolkove	State Data Management Architect	AZ Department of Administration | ASET
Jenna Leveille	Deputy State Cartographer	Arizona State Land Department
Julie Mikolajczyk	GIS Manager	Arizona Department of Environmental Quality
Karen Rogers	Geospatial Project Manager	Dewberry
Kasey Green	GIS Analyst	Arizona State Land Department
Kevin Blake	GIS Director	Yavapai County
Kris Estes	CGCIO – GIS Administrator	City of Buckeye
Leslie Stovall	GIS Manager	Gila River Indian Community

NAME	TITLE	AGENCY | ORGANIZATION
Lucas Murray	GIS Analyst	Arizona Department of Transportation
Mariah Modson	GIS Analyst	Arizona State Land Department
Mark Christiano	GIS Coordinator	Kaibab National Forest
Matt Hiland	Director of Strategic Accounts | Central Region	AppGeo | Sanborn
Michael Dennis	Geodesist	NOAA National Geodetic Survey
Mike Walck	Senior Account Manager	Esri
Nichole Jenks	Partnering Facilitator	ADOT
Nicole Eiden	GIS Manager	AZ Dept of Health Services
Patrick Whiteford	GIS Group Manager	ADOT
Ryan Johnson	IS/RAD Director	Arizona State Land Department
Ryan McClain	GIS Coordinator	Arizona Department of Public Safety
Sage Donaldson	Data Analytics Section Manager	ADOT
Sarah Hess	IT Support Supervisor - GIS	Pinal County
Shea Lemar	GIS Manager	ASU
Shiloh Johnson	GIS Program Manager	Maricopa County
Steve Whitney	GIS Manager	Pima County ITD GIS
Veronica Nixon	GIS Supervisor	ADWR
Vince Collins	Sr. Account Manager	Esri
Virgil Coxon	Survey Manager	ADOT

Meeting purpose: Eric Shreve, ADOA GIS Manager

- Review of 2022 Strategic Direction Document (Appendix A)
- Overview of 2023 survey results & workshop objectives (Appendix B)

Facilitated breakout rooms using a Jamboard

Overall discussion topic - **State Geospatial Data Infrastructure**

Discussion areas for each assigned workgroup theme:

- Opportunities for collaboration across agencies and sectors
- Data development and quality improvement strategies

• Outreach and communication strategies for executive leadership

Workgroup 1: Addresses & Road Centerlines:

Opportunities for collaboration across agencies and sectors

- Federal funding through IIJA and IRA may present opportunities for collaboration with water authorities, Tribal Nations, non-profits, etc.
- Sharing workflow ideas/processes between agencies to reduce or relieve burdens for underfunded/understaffed.
- Central location (AGIC website?) for promoting funding opportunities and build awareness.
- Utilize federal funding opportunities, such as Broadband funds, to better develop addresses and centerlines.
- Utilize infrastructure funding or other sources to better edge match center lines and addresses between jurisdictions.
- With new Arizona leadership, there is an opportunity to educate on the power of GIS.
- Are we connecting all the local addressing authorities (agencies that have the job to assign a new address) into the state-wide addresses?
- Understand funding mechanisms for data stewards.

Data development and quality improvement strategies

- There is a need for standard process documentation to ensure knowledge retention, especially in rural communities.
- Better data for rural areas (centerlines and addressing)
- Educate and provide guidance/funding/resources for the local data authorities
- Better data for addresses on American Indian reservations
- There is a need for improved metadata guidelines, including intended use of any published data.
- Leveraging national initiatives to QA/QC the data for funding such as NG911 and the NAD.
- We may be able to use on-going geocoding work to monitor changes for the same address across time.
- Guidelines and examples of how to document data creation and QA procedures.
- The need for improved address data (uniform address nomenclature) for accurate geocoding.
- A mechanism through AZGeo for rural gov to create, edit and delete address points and road centerlines in a web editing environment vs. managing the data in a spreadsheet.
- ADOT may want to consider adding a data supply chain tool for address/address ranges.
- Possible development of tools that could be used by agencies on the front-end to standardize addresses as they are entered into systems?
- Education of the data providers of an incident that has to be geocoded, what type of data is helpful for place location. (AZDHS geocoding)
- The need for updated, high resolution imagery for not just high growth urban areas.
- Coordinate with the broadband office for additional missing addresses.
- Broadband coordination is a challenge, AZ could provide some information about how

others are doing broadband address collaboration via NSGIC.

Outreach and communication strategies for executive leadership

- Improved outreach materials - fliers, story maps, etc.
- Ensure that boards/councils management understand what Street and Address data has been shared and used for.
- Convincing local leadership to move to open data.
- Foster a culture of data sharing and collaboration by highlighting success stories and best practices in Arizona.
- Communicate regularly with executive leaders about progress and challenges in developing the state's geospatial data infrastructure.
- Show ROI for data sharing vs. data charging.
- Identify opportunities to reformat datasets to meet the needs of a broader audience.
- Outreach with tribal agencies and state agencies is a challenge. There are also challenges with inter-tribal coordination. Areas for improvement.
- Host regular geospatial data summits or workshops to bring together executives and key stakeholders to discuss current initiatives and future opportunities.
- It is an uphill challenge for high turnover agencies. State agencies pick up the slack.

Workgroup 2: Imagery

Opportunities for collaboration across agencies and sectors

- There could also be opportunities for collaboration and coordination among imagery and lidar collection.
- Urban = annually Rural = Every two years.
- Buy-in from executive leaderships.
- collective repository for everyone collecting data.
- leveraging existing private sector activities - include mining & utilities in the discussion.
- External service for storage, access, monitoring use.
- Need for Education on types of imagery and additional products.
- Federal funding through IIJA and IRA may present opportunities for collaboration with water authorities, Tribal Nations, non-profits, etc. (also - Infrastructure).
- I wonder if ranchers would contribute?
- Cost sharing mechanisms through business solutions.
- Private Stakeholders.
- AZGeo large data storage - creating a more self-service model.
- Educate private stakeholders - leverage requirements for sharing existing data; specifically projects supporting permitting.

Data development and quality improvement strategies

- What is the best resolution available for satellite now?
- Need for Education on types of imagery and additional products.
- Flights - after monsoons / seasonal flights.
- ingress & egress charges.
- use existing resources - subscription options (ie. google earth engine).
- intelligent storage.

- reducing duplicative storage.
- Utilize Satellite - subscription based, esp. for emergencies.
- tutorials on imagery.
- Alternative methods of collection.
- google drive limitations.
- Outreach to other states on their approach.
- Concern with Data availability & storage needs.
- utilizing alternative collection methods - i.e. satellite.
- need documents for investment - including cost savings.
- imagery products, veg index, false color.
- Collaboration on data processing.
- Frequency needed - urban vs rural.
- Valued added services: Lidar, Contours, Buildings, Obliques, etc.
- Statewide map of imagery resolution and temporality.
- subscription service options - education to stakeholders.
- Could the Statewide Imagery program assist in funding for storage, hardware, etc. Entities put in a little extra when paying for the imagery to help support this program.
- Emergency response needs - timing.
- additional stakeholders - developers, federal (DOD), Forests, Parks.
- Use of point cloud data to augment current collections.
- Business Partners.
- Cloud storage & optimization.
- a way to serve and share imagery.
- Funding.
- Commitment.
- Maybe a web map with polygons of imagery NEEDS like USGS did for 3Dep collection, would that be a help to plan out imagery needs?

Outreach and communication strategies for executive leadership

- Data Literacy education sessions for executives so they understand the benefits of imagery and coordination of collection.
- Use cases from derivative products for executive outreach.

Workgroup 3: Government units, Cadastral, and Geodetic Control

Opportunities for collaboration across agencies and sectors

- Statewide/regional data sharing MOU - Develop Framework; standard T&C to cover privacy, security, terms of use, etc.
- Local government opportunities to edge-match at their boundaries.
- Can AGIC help support the cohesion between the groups. What to do when there is a mismatch between the 2 counties? Who takes it to the next level? Census???
- Define governance structure to arbitrate differences and gaps between datasets and manage the workflow to make corrections.
- What are the mechanisms for cities to share their updates boundaries with the group maintaining the incorporated cities data layer?
- Coordinate with NGS for access to authoritative geodetic control, transformations, and definitions (such as State Plane).

- Standard data sharing agreement template - to include SLA/SLO for data quality and keeping data current.

Data development and quality improvement strategies

- Statewide layer for parcels - make it available.
- For state, county, and city boundaries, who maintains them? Should I be using different sources for different use cases? If not clear, then what can you tell us? Share this info on AZGeo.
- On AZGeo - allow people to comment on data quality and state what they use the data for. And launch a process to correct it.
- Make 911 layers available? - Fire districts mainly, but maybe other Emergency Response Boundaries.
- Statewide layer for incorporated municipalities that are updated with city input.
- What expectation is there for the frequency of updates, etc?
- Is spatial accuracy provided for the datasets? And if so, how is the accuracy determined? And how is this handled in different coordinate systems (such as so-called WG84)?
- Some other ideas of needed datasets: Fire districts, PLSS (clarify which ones to use).
- Should there be a common projection/reference system for data uploaded into AZGEO?
- Expand on categories (focus on boundaries) to show if a city or county or state provided that. That would allow different entities to upload the unique datasets.

Outreach and communication strategies for executive leadership

- StoryMap and accompanying PDF.
- Tie the data uses to government trends for local and county government agencies such as building resilience https://www.deloitte.com/global/en/our-thinking/insights/industry
- Have Executive Leadership sessions for local and county agencies to invite their decision makers to attend throughout the year or at AGIC conference.

Workgroup 4: Elevation and Hydro

Opportunities for collaboration across agencies and sectors

- Targeted outreach to land managers in the gaps (tribal communities and federal agencies).
- Variety of outreach materials - one pagers, StoryMaps, in-person communications.
- outreach with emphasis on water.
- Stock Pond maps collaboration opportunities.

Data development and quality improvement strategies

- Elevation is critical for natural resources management and understanding.
- Statewide high-quality elevation data.
- USGS - 3DEP
- Create a 3DHP workgroup to gather stakeholders.
- Sound the alarm about water!
- Increase access to lidar products.

- Track water use to promote water conservation.

Outreach and communication strategies for executive leadership

- Develop use cases to help demonstrate benefits.
- Explain how it helps solve a problem - like managing water resources.
- Invite BLM to join AGIC.
- Infrastructure budget for producing derivatives.
- Raise awareness and concern about frozen NHD data - will need high level pressure on USGS to effect any change.
- Fish and Wildlife as well.
- This echoes what the Imagery break-out group said about educating stakeholders on compelling use cases for imagery. Perhaps the same communication tools.

Moderated results discussion

Workgroup reports – Identified Priority Items

- Government Units, Cadastral and Geodetic Control.
- Identify authoritative GIS data sources.
- Coordinate/facilitate collaboration on - Boundary maintenance/updates, and user input/feedback; Edge matching layers between boundaries.
- AZGeo enhancements.
- Provide info to executive leadership, e.g. AGIC annual report.
- Great discussions today with a diverse group of participants.

Next steps discussion

- AGIC will review meeting notes in greater detail to create a strategic and business development plan for the year.
- The report will go to council to review and confirm the action items for this community.

Adjourn - 11:54 am

2022 Strategic Direction Document (Appendix A)

AGIC
ARIZONA GEOGRAPHIC INFORMATION COUNCIL

Summary
AZGeo: Arizona's State Spatial Data Infrastructure
2/2/2023

Introduction

AZGeo is Arizona's state Spatial Data Infrastructure (SDI), a collection of geospatial data, metadata, services, and authoritative agencies that support informed decision-making, research, and innovation. It is a collaborative effort among state agencies, local governments, and other partners to share and manage geospatial data and information in a consistent and coordinated manner.

Importance of a State SDI and Examples:

A state SDI plays a critical role in supporting a wide range of activities and decision-making processes that affect the lives of citizens and the functioning of government. There are key framework data layers within the SDI that provide the foundation for most geospatial mapping, analysis, and decision making. These common datasets are addresses, road centerlines, government units, cadastre, imagery, elevation, and hydrology. The maturity of these data impacts decision making across jurisdictions and sectors, and it is essential for the geospatial community to work collaboratively to maintain and sustain these data for the health of Arizona's SDI. Here are a few examples of how the state's SDI supports the geospatial community in Arizona:

- **Public Safety:** The Arizona 9-1-1 Office leverages AZGeo to validate and aggregate address points and road centerline data across the state. The data are used to validate 9-1-1 calls and route the calls to the correct Public Safety Answering Point (PSAP). Having AZGeo supports the state's efforts to modernize the public safety infrastructure known as Next Generation 9-1-1. This data improves the state's SDI with address points and road centerlines, which support national initiatives such as the National Address

Database (NAD) and All Roads Network of Linear Referenced Data (ARNOLD). This effort is further supported by the Arizona Department of Transportation's (ADOT) Data Supply Chain tool within AZGeo.

- **Natural Resources:** The AGIC Natural Resources Workgroup is a collaboration of state, federal, and local government agencies and organizations working together to improve the coordination of natural resource related and hydrographic data in Arizona. They are using AZGeo as a collaborative platform for their pilot project to update the National Hydrography Dataset (NHD) to serve Arizona stakeholders better. The Collaborative Conservation Mapping Project, The Cienega Timeline Project, and AGIC Protected Areas Database (PAD) Project all aim to create a searchable geospatial database to help collaborative groups and support organizations/entities more easily connect for shared learning and problem-solving, making decisions about conservation, recreation, or land use planning. The State SDI, like AZGeo, helps to provide accurate, up-to-date, and consistent geospatial data, metadata, services, and people that work together to support the decision-making process of these projects.
- **Transportation and Infrastructure:** ADOT is leveraging AZGeo to support its business use cases, including the All Roads Network of Linear Referenced Data (ARNOLD), data analytics, education & outreach. ARNOLD is a comprehensive data set that tracks transportation assets such as roads, bridges, signs, and traffic signals. Data analytics allows for better decision-making by providing accurate and up-to-date data. Education & outreach allows ADOT to share information with the public and other stakeholders. AZGeo provides ADOT with a consistent and coordinated way to share and manage geospatial data. AZGeo is also the data hub that ADOT uses for crowd-sourcing data from local agencies, such as roadway ownership and functional classification.
- **Economic Development:** The Arizona Commerce Authority (ACA) is leveraging AZGeo for its business use cases, including broadband mapping and the Arizona Sun Cloud initiative. Broadband mapping is used to identify areas where internet connectivity is lacking. The Arizona Sun Cloud initiative is a data portal for sharing transportation and socioeconomic data describing the Sun Corridor megaregion, extending from Phoenix to Mexico. The Sun Cloud portal enhances the work that supports transportation planning efforts and access to socioeconomic data, thus strengthening the mega-regional planning process, saving money, improving outcomes, and fostering the coordination of diverse priorities more effectively.

Conclusion:

AZGeo is Arizona's state spatial data infrastructure and plays a vital role in supporting informed decision-making, outreach, research, and innovation in the geospatial community. Access to accurate and up-to-date geospatial data and information supports various activities, including emergency management, natural resource management, transportation and infrastructure, economic development, education, and research.

2023 Survey Results (Appendix B)

2023 AGIC Leadership Workshop
Survey Results

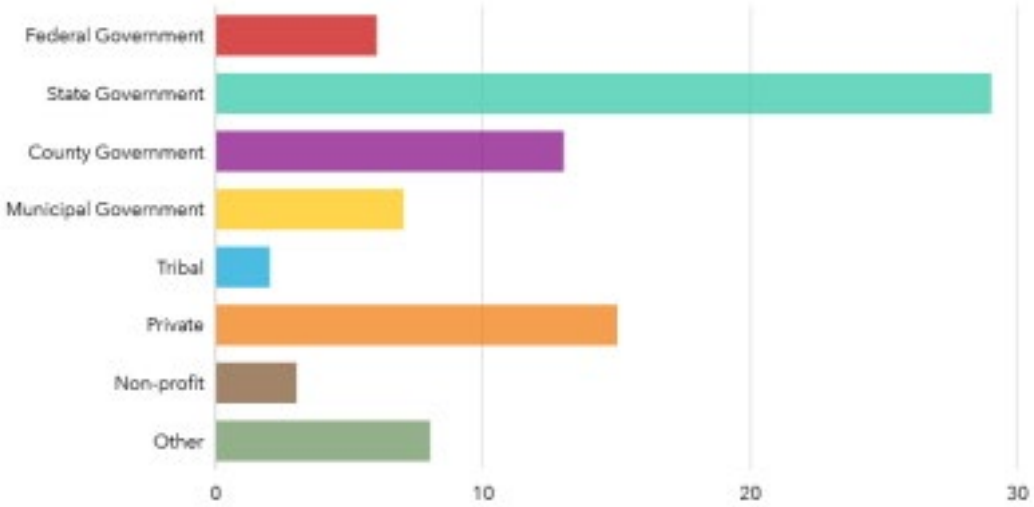
Participant Information

Participants: 83

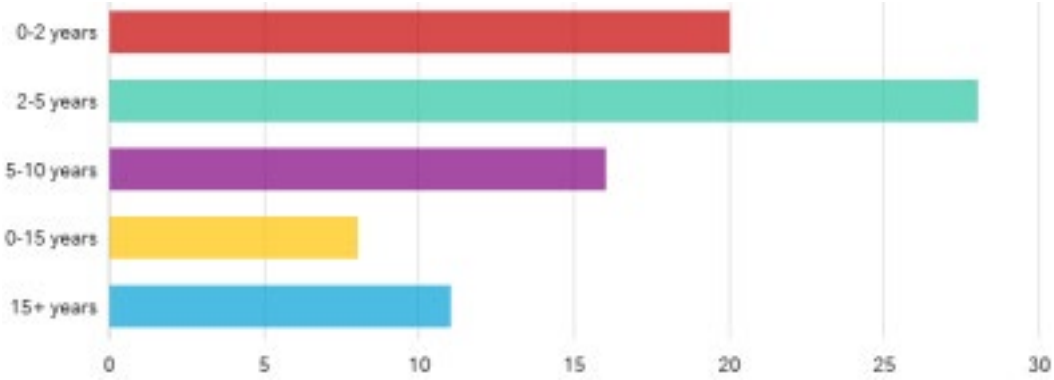
Organizations:

Positions:

Sectors:



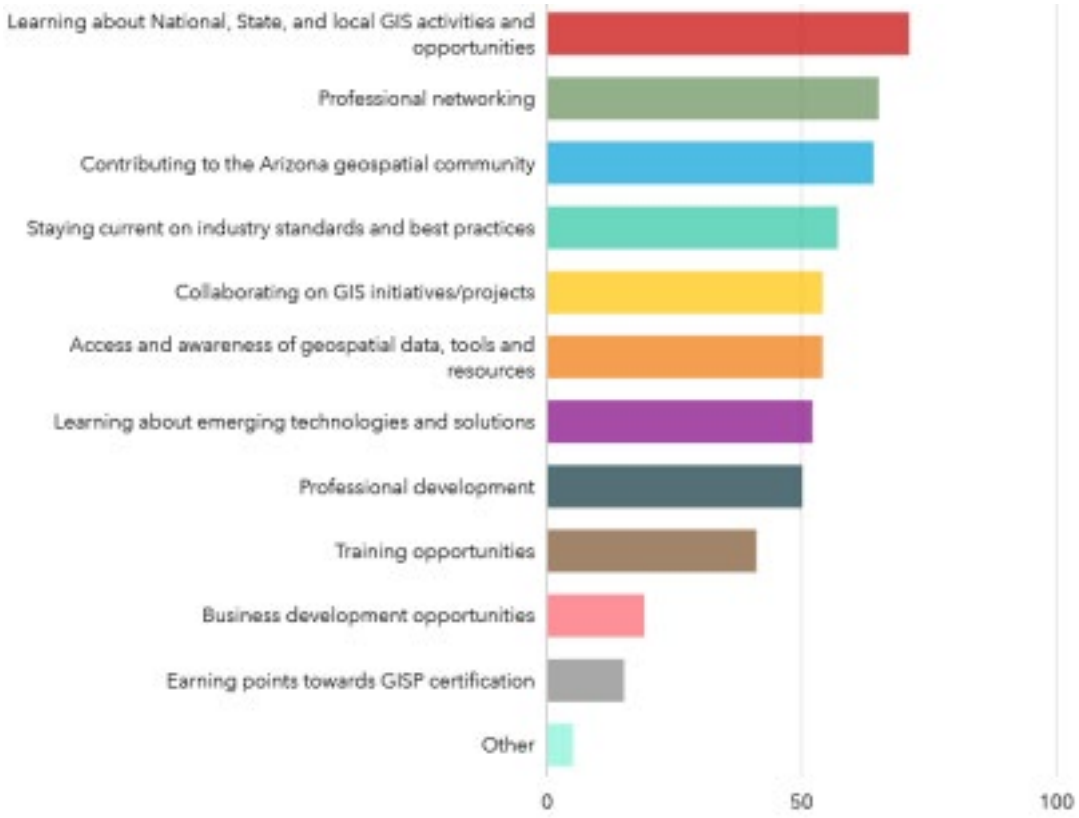
Time in AGIC:



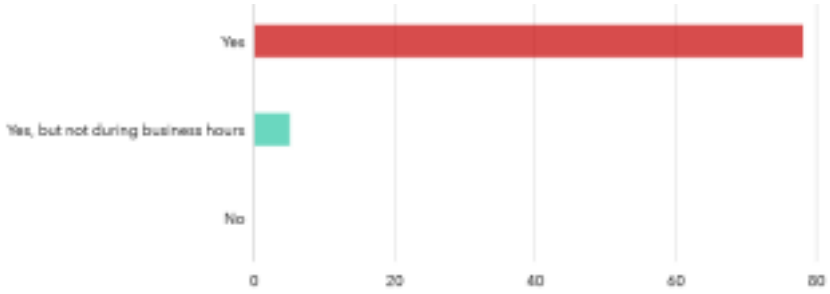
Spikes in 0-2 and 2-5 years indicate AGIC's recent efforts have been effective. Increased participation supports our focus on collaborations, advancing GIS support throughout the state, and bringing in people to help keep AGIC sustainable over time.

Level of Involvement:

Why are you involved in AGIC and what do you get out of participating?



Does your organization support your involvement in AGIC?



Does your organization have business requirements or goals that AGIC activities could support? If yes, what are they? •

Providing access to **authoritative statewide datasets**

- Need a statewide **fire district boundaries dataset** - it would be great to know who else needs this data & come up with a plan to develop & maintain, and of course share on AZ Geo
- **Public health topics**
- Collaboration on **State Hazard Map**
- Yes. The Arizona **911 Program** partners with AGIC's Public Safety Committee to ensure **education and outreach** are happening. In addition to these items, we are **leveraging** the **AZGeo** infrastructure to support **geospatial data validation and aggregation for Next Generation 9-1-1 NG9-1-1.**
- Yes, I am with **the management of agency wide geospatial data and in initiatives** that AGIC supports helps my work greatly. For example, the buy up of **statewide imagery** is very helpful to keep my data of quality.
- Many of ADOTs needs have been addressed by AGIC now. Primarily, AGIC continues to assist us with **growing collaboration efforts** with numerous external agencies and their support of AZGeo, a platform that allows us to accomplish our goals.

- **Enterprise Data Management**
- Access to frequently-updated **parcel data for the state**
- Access to **higher resolution imagery**
- We would like the best quality **LiDAR data** possible for Arizona state
- **Catalyze social change** by being connected to social needs. **Support communities** through mutually beneficial partnerships. **Engage with people** and issues **locally, nationally and internationally**.
- **Promote GIS education** and **student development**. Conduct and sponsor **GIS research** and development. • Statewide **imagery** and potential for **collaboration platforms for AZ urban land use**.
- GIS **data** as a resource for analysis and decision making
- **Collaboration** between state, county, and local jurisdictions to support **emergency response**; **building relationships** for **better communication** and **data sharing** amongst different levels of government • Continue efforts towards better **collaboration** and unity in AZGEO and our new **Public Safety Group**. We need to emphasize the unity of all.
- **AZGEO** and **PORTAL**!
- As a consultant, the **data** that AGIC organizes are of great use to the public center for technical analysis and permitting.
- **Tribal Participation** and **rural community initiatives**, at AGIC to further inclusion, diversity and equal opportunity within our GIS community.
- Yes. **Sharing** Pima County's GIS **data**. Natural Resource group at the County interested in **Natural Resource** projects/initiatives occurring throughout the State.
- General use **of AGIC standards, best practices, guidelines** and **NG911**
- **AZGeo**
- Yes. **Data sharing** and **related collaborations**.
- Procuring **imagery**. **GIS data** development.
- Improving **watershed management** (improving the science used for management) across the state. • **Collaboration** and **sharing**/dissemination of products.
- We publish some **data** to **AZGeo**

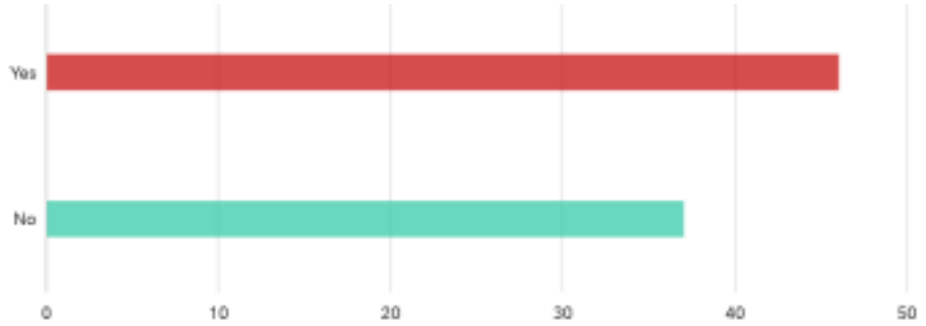
AGIC Strategic Direction

What do you believe the future priorities of AGIC and the AGIC Council should be?

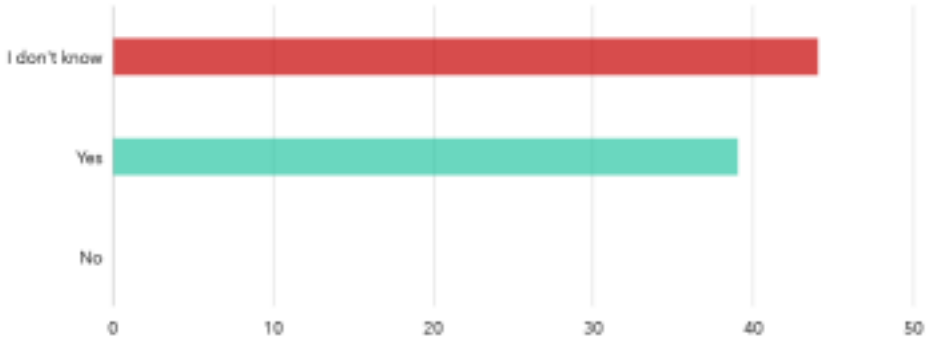
Please provide any additional future priorities you feel should be added that were not listed in the previous question. • First, raising awareness and visibility of geospatial solutions could include a **focus on executive leadership, rural/tribal communities, and the public**. I also think raising **awareness with specific industries** would be beneficial. Perhaps add a priority to **identify which industries are the fastest growing or most vital to Arizona**, determine what level of GIS they are currently using, and focus on growing their awareness of how GIS, AZGeo, or any other AGIC benefits could help them.

- Promote **data interoperability to reduce data silos**
- Keep Arizona **geospatial databases** and **networks** on par with those in other states
- Look at how AGIC can **support Governor and Legislative priorities**.
- The perceived **need of Arizona**, **Opportunity/Cost analysis**, what activities have **motivated champions** (AGIC members) behind them.
- The only other thing I can think of is **creating a Data Authority Board** where AGIC can begin **to put weight behind their curated data** (AZGEO, etc.) and get buy-in from the greater community (or at least leadership) on the authoritativeness of such datasets with an "endorsed as authoritative by..." type approach. This might also include a contract of sorts (year at a time) where the data provider agrees (no legal teeth of course) to update and maintain an "authoritative" dataset at a specific cycle with a specific level of integrity.

Were you aware of the 2022 AGIC Strategic and Business Direction (both the document and the goals)?

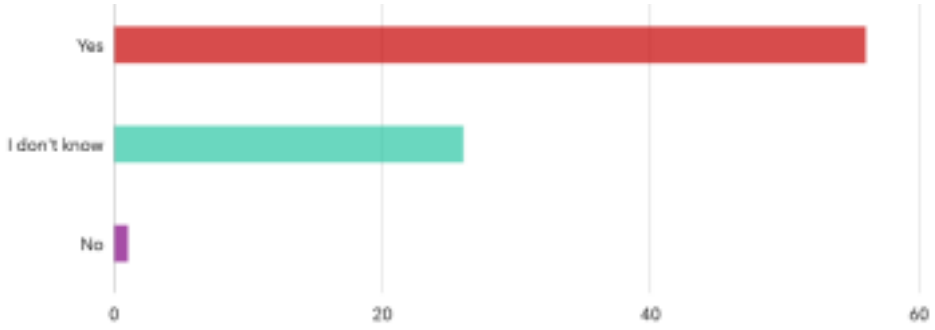


Do you feel that AGIC met the 2022 priorities?



If you answered no to the previous question, why and what could AGIC do to serve the community better? • I think AGIC has done a good job at advancing collaborative efforts between agencies. On a side-note, we should **advertise our priorities more clearly**, such as adding a link directly on the homepage so they are more visible.

Do you feel the priorities identified are serving the Arizona geospatial community?

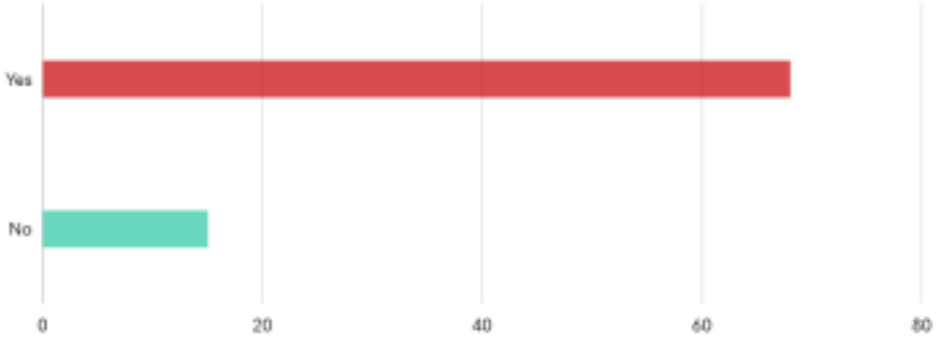


If you answered no to the previous question, why and what could AGIC do to serve the community better? • Overall yes, I think the priorities have served our community well. I think it's worth **continuing to branch out the collaboration efforts** to include **additional agencies and industries**.

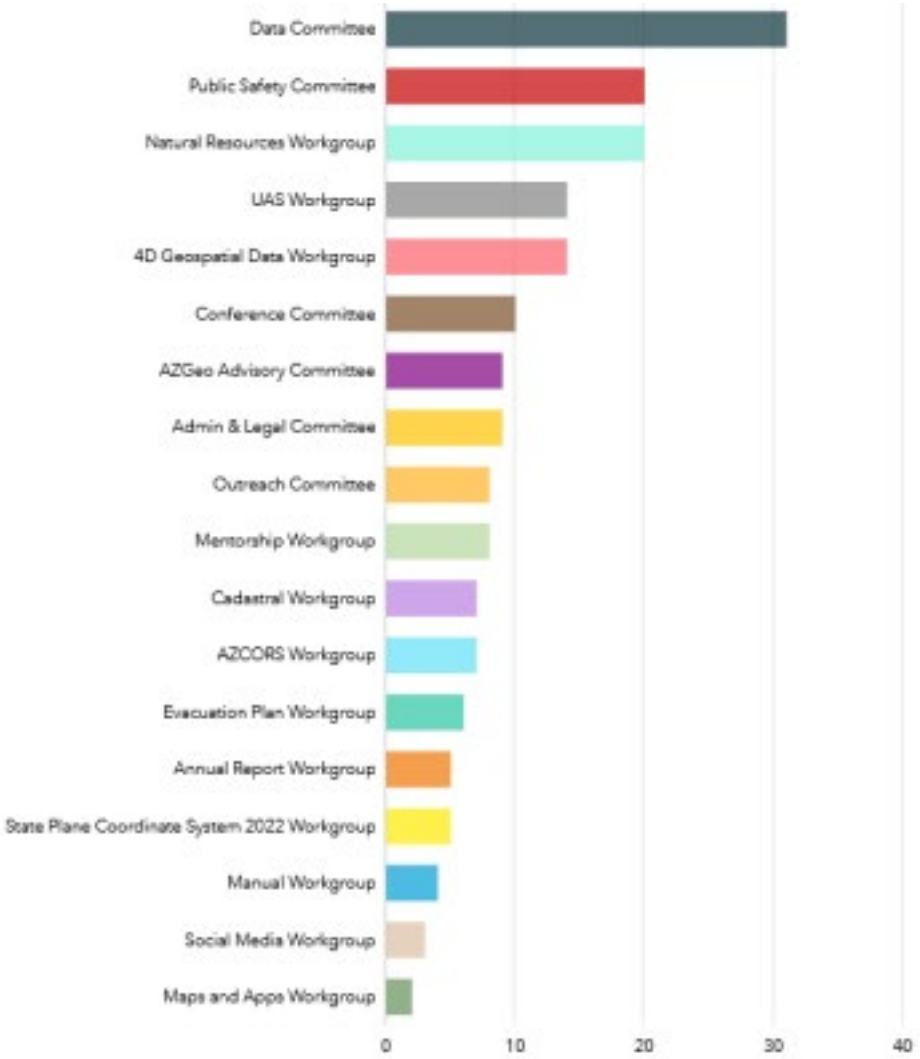
- **More Tribal Involvement with PSAP and GIS Data for DGB** and data sets for roads, center lines, address points, and satellite imagery

AGIC Committees and Workgroups

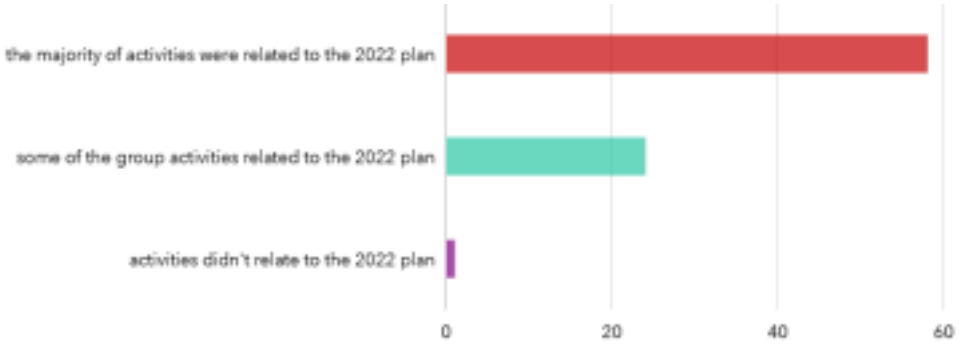
Do you participate in any AGIC Committee or Workgroups?



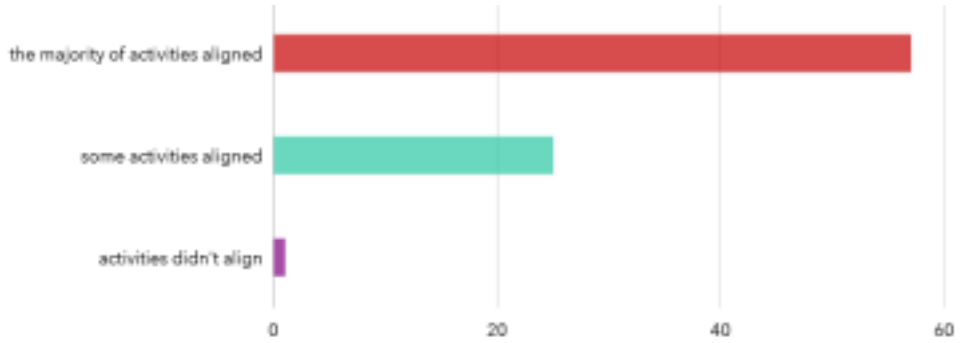
Which groups do you participate in?



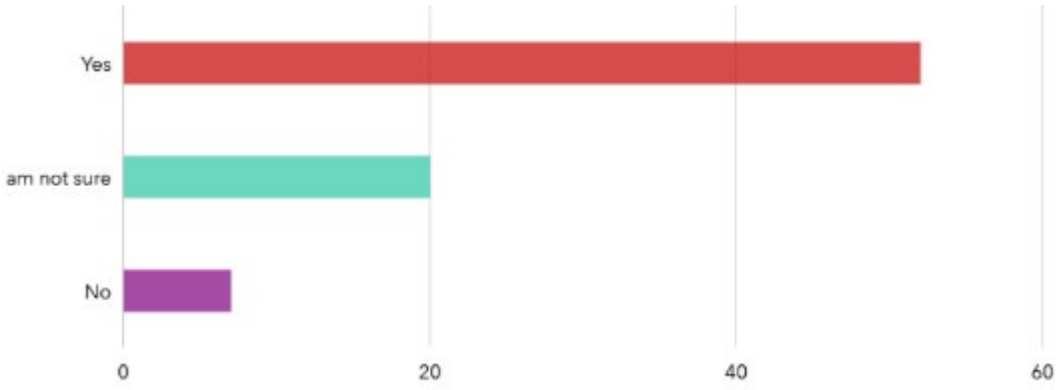
Please rate how you feel the Committee and/or Workgroup activities (of the groups you participated in) supported the AGIC Strategic and Business Plan for 2022?



Please rate how the Committee and/or Workgroup activities (of the groups you participated in) aligned with their 2022 Work Plan?



Do you feel that the groups you participate in have sufficient participation and resources?



Please use the space below to provide suggestions on how AGIC could improve participation and/or activities • We would like to get more involved and facilitate **rural and tribal community participation** and inclusion. • For me it's just **resources**. We have so many tasks, groups, meetings, that we **need more people to be able to participate** more. Or those that feel more comfortable participating. If I was to create a way to have more participation it would be sending out weekly or monthly newsletters. Upcoming GIS Workshops, GIS Training, Symposium; Did you know?; GIS Challenge (based off an image/topographic snip and an excerpt) where is this located; Topic of Interest.

Please use the space below to share any additional feedback

• The Cadastral workgroup does not seem to be very active.

• There is always **need for additional personnel** that wish to take an **active role in workgroups**. • Could always use **more resources** and **support from management and decision makers**. I am **glad to see the continuing development of a stable GIS infrastructure and data** in Arizona.

• I am a **huge proponent of AGIC** and have **liked the direction the council has taken** in the last few years. Although I cannot participate to the fullest level, I believe the numerous training and network events demonstrate **AGIC's commitment to the GIS community**. I will continue to proudly tote the accomplishments and importance of this group to anyone in my sphere of influence who will listen. Thank you to the hard-working members of the AGIC Council.

• Continue efforts **to bring a friend** so to speak. More **end-user involvement.**

• In the committees in which I participate, it seems like a few volunteers are doing the majority of the work. We need to have **more resources in the form of participants**. I speak as one who is likely not participating as I should. • AGIC is clearly gaining steam, but **funding** is always an issue. While you have an **incredible volunteer pool** to pull from, that too never seems to be enough to satisfy the need (thinking of the mentor program). Good problems to have!

• **Synopsis of each group would be great**. **Anticipated time commitment** to participate.

• I would like to see more sufficient participation, but I don't know how to **encourage "Active" participation**. • **AGIC is ama**zing and it is 100% due to the stable of **amazing people** that **passionately work for the greater community goals**. **THANK YOU for all that you do!**