

SUPPORTING ARIZONA ADDRESS ECOSYSTEM

NSGIC Midyear Meeting
Salt Lake City, Utah
February 28, 2018

DATA GOVERNANCE AND PROJECT SUPPORT IN A CHANGING STATE ENVIRONMENT

As one of the two original pilot states for the National Address Database project, Arizona continues to build a state-wide address management eco-system.

KEY SUCCESS FACTORS:

- Support from State Agencies
 - Arizona State Land Department (ASLD) Support
 - Arizona Geographic Information Council (AGIC) Support
 - Arizona Department of Administration State 9-1-1 Office
 - Arizona Department of Transportation
- Active state and local government collaboration
- Strategic public and private partnerships
- Participation in National State Geographic Information Council

AGIC HISTORY

- State GIS functions placed in the Arizona State Land Department
(State Statute Title 37, Chapter 1.2, Article 1, 37-171 through 37-178)
- Statutes established:
 - The State Land Commissioner as State Cartographer (can appoint the position and/or duties to administrative staff)
 - Arizona Land Resource Information System (ALRIS)
 - Arizona Geographic Information Council
 - Arizona State Cartographer's Office

AGIC STATUS

- Arizona's Governor promotes an initiative for all state run agencies to assess and improve their business practices
 - Increase efficiency
 - Streamline activities

- ASLD continues to assess and improve upon its core business functions in response to Governor's initiative
 - Results in State Cartographer Office functions absorbed into an enterprise GIS model
 - State Land Commissioner assigns ASLD CIO and key GIS staff to support and coordinate with AGIC
 - Continued strong support of AGIC and state GIS coordination

AGIC Council

Chair: James Meyer Vice Chair: Gene Trobia Past Chair: Kevin Blake Treasurer: Lucas Murray Secretary: vacant

Transition
Ryan Johnson

- Council Support
- Council Continuity
- ASLD and Additional Support Options

AZGEO
TBD

- AZGEO Management
- Server Maintenance
- Application Support
- AZGEO Sustainability

Committees

Workgroups

Focus Areas

Data
Gene Trobia
Jenna Straface

E9-1-1
Sandra Dyre

sUAS
Brian Brady
Gene Trobia

- AZGEO
- Data Development and Access
- NextGen 9-1-1 Data Migration
- EMAP/9-1-1 Data Uploader
- National Address Database (NAD)
- NAIP Imagery
- 3DEP
- Census/LUCA
- ARNOLD/ Transportation Unification
- Data Sharing

Conference
Steve Whitney
Jami Dennis

Maps & Apps
Cheryl Thurman
Shawny Ekadis

- AGIC Education and Training
- Symposium Planning
- GIS Education
- Information Exchange

Admin & Legal
Lucas Murray
Gene Trobia

Budget Planning
Steve Whitney
Jenna Straface

- AZGEO
- Council Members Support
- NSGIC Participation and Membership
- Guidelines, Statues and Administrative Issues
- Council Resources and Funding Opportunities

Outreach
Cheryl Thurman
Jenna Straface

Social Media
TBD

- AGIC Website
- GIS in Rural Counties
- GIS in the Classroom
- Marketing Materials
- Social Media Platform
- AZGIS & GIS News/Newsletter/Blog

AGIC PROACTIVE GIS AGENDA

CURRENT AGIC ACTIVITIES

- Creating work groups to identify how to maintain AGIC functionality
- Work groups include:
 - Transition: how to maintain AGIC priorities and activities
 - Budget and Planning: funding and resources to meet AGIC goals and objectives
 - AZGEO: State GIS Clearinghouse operations, management and sustainability
- Ongoing processes:
 - Identify how ASLD and AGIC can maintain and conduct statewide GIS coordination
 - Continue support for major projects initiated by the State Cartographer's Office
 - Identify functionality and resource gaps and determine how to best meet those needs

HIGH PRIORITY AGIC PROJECTS

- Priority Project Support
 - All Road Network of Linear Data (ARNOLD)
 - Next Generation 9-1-1 (NG9-1-1)
 - National Address Database (NAD)
- Address Point Development, Validation and Management
- ARNOLD, NG9-1-1 and NAD
 - Provide guidelines and standards for state efforts
 - Support ASLD and other AGIC State Members core business functions

The development of a statewide address point database not only meets the needs and requirements of NG9-1-1 but also supports:

- Arizona State Land Trust management
- Link address points to county assessor databases to ID parcel valuations
 - Allows ASLD to better appraise and manage trust land sales and leases

AGIC SUPPORT OF ARNOLD & NAD

- NTIA ARRA funding originally provided Arizona Broadband mapping funds to develop road segments and address points
- Led to coordination between SCO, ADOA 9-1-1 State Office, ADOT and AGIC
- Technical consultants were required to support the collaboration
 - TSSW, GISTIC and GIS Works were brought on as project consultants
 - Collaboration continues to help manage and validate address and road data
- ARNOLD and NAD are an ongoing AGIC and ASLD priority
 - ASLD Commissioner and CIO, and AGIC are all supporting the effort
- Projects will provide statewide accurate roads, address data, and parcels which will benefit not just NG9-1-1 and ARNOLD but also ASLD and other State, local, tribal and federal agencies

AGIC SUPPORT OF STATEWIDE INITIATIVES

NTIA ARRA FUNDING

AZ BROADBAND MAPPING

(DEVELOPMENT OF ROAD SEGMENTS AND ADDRESS POINTS)

STATE COORDINATION

(SCO, ADOA 9-1-1, ADOT, AND AGIC)

CONTINUED ASLD & AGIC
SUPPORT

ARNOLD AND NAD DEVELOPMENT

TECHNICAL CONSULTANTS

TSSW, GISTIC AND GISWORKS

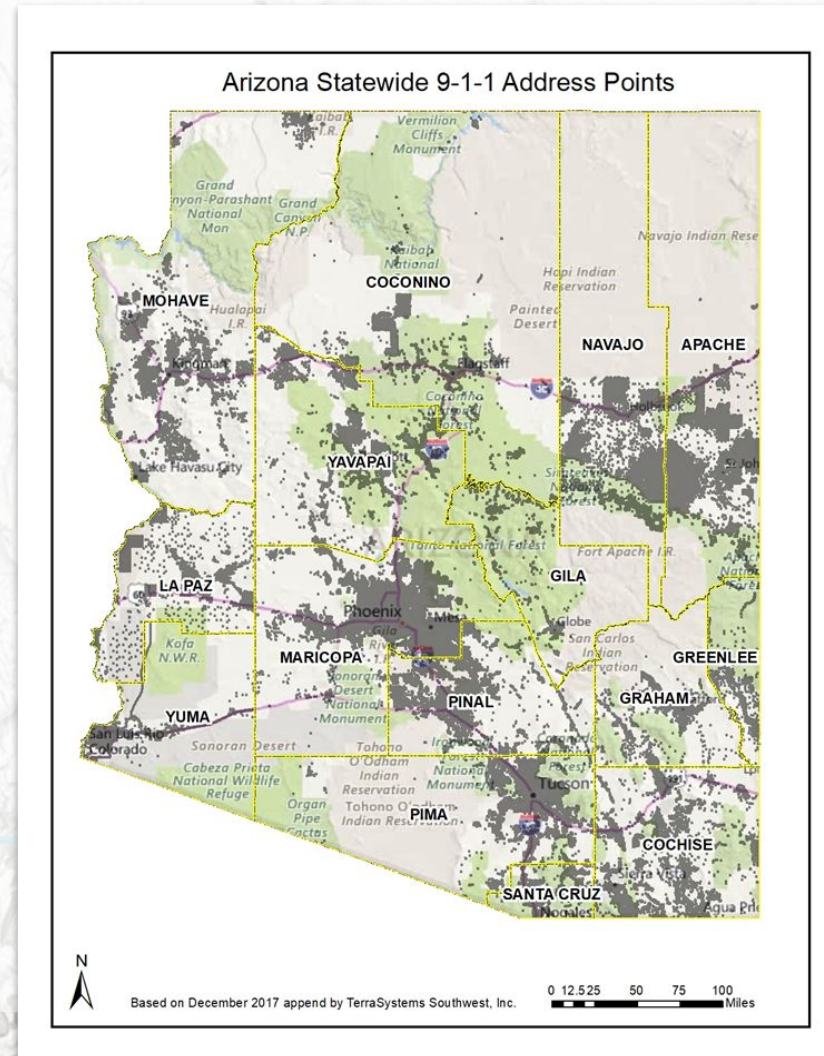
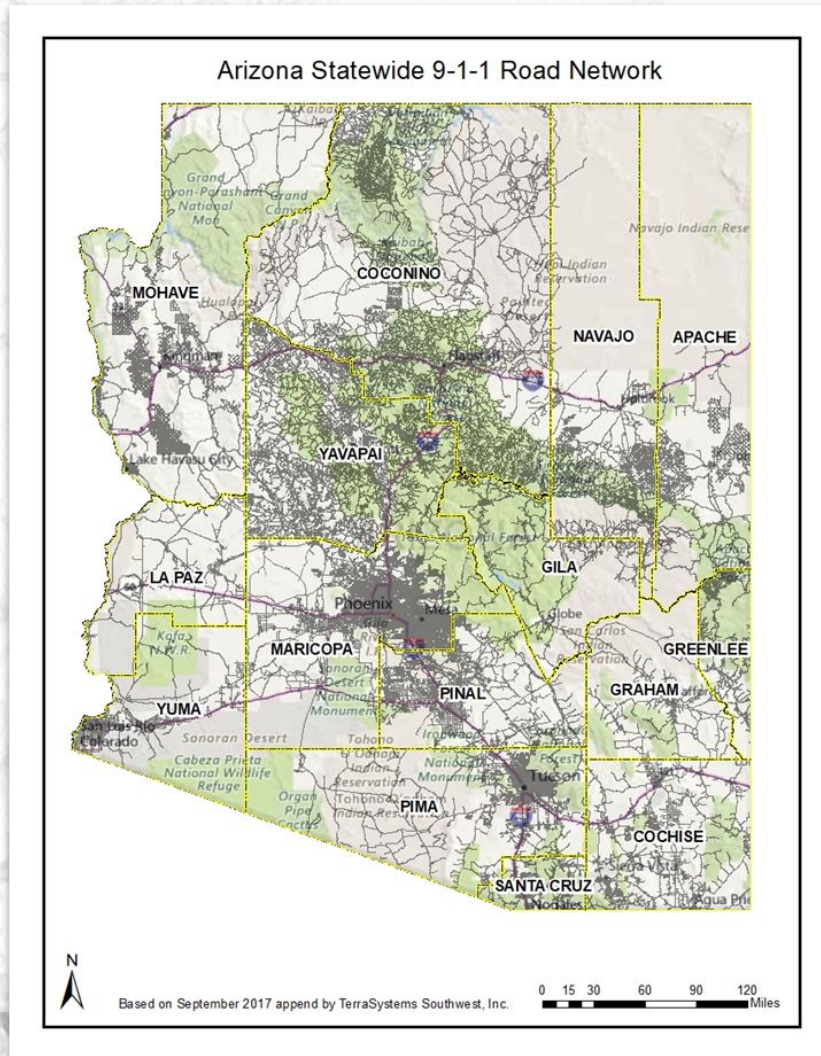
CONTINUED COLLABORATION

MANAGE AND VALIDATE ADDRESS AND ROAD DATA

STATEWIDE ACCURATE ROADS, ADDRESS DATA,
AND PARCELS

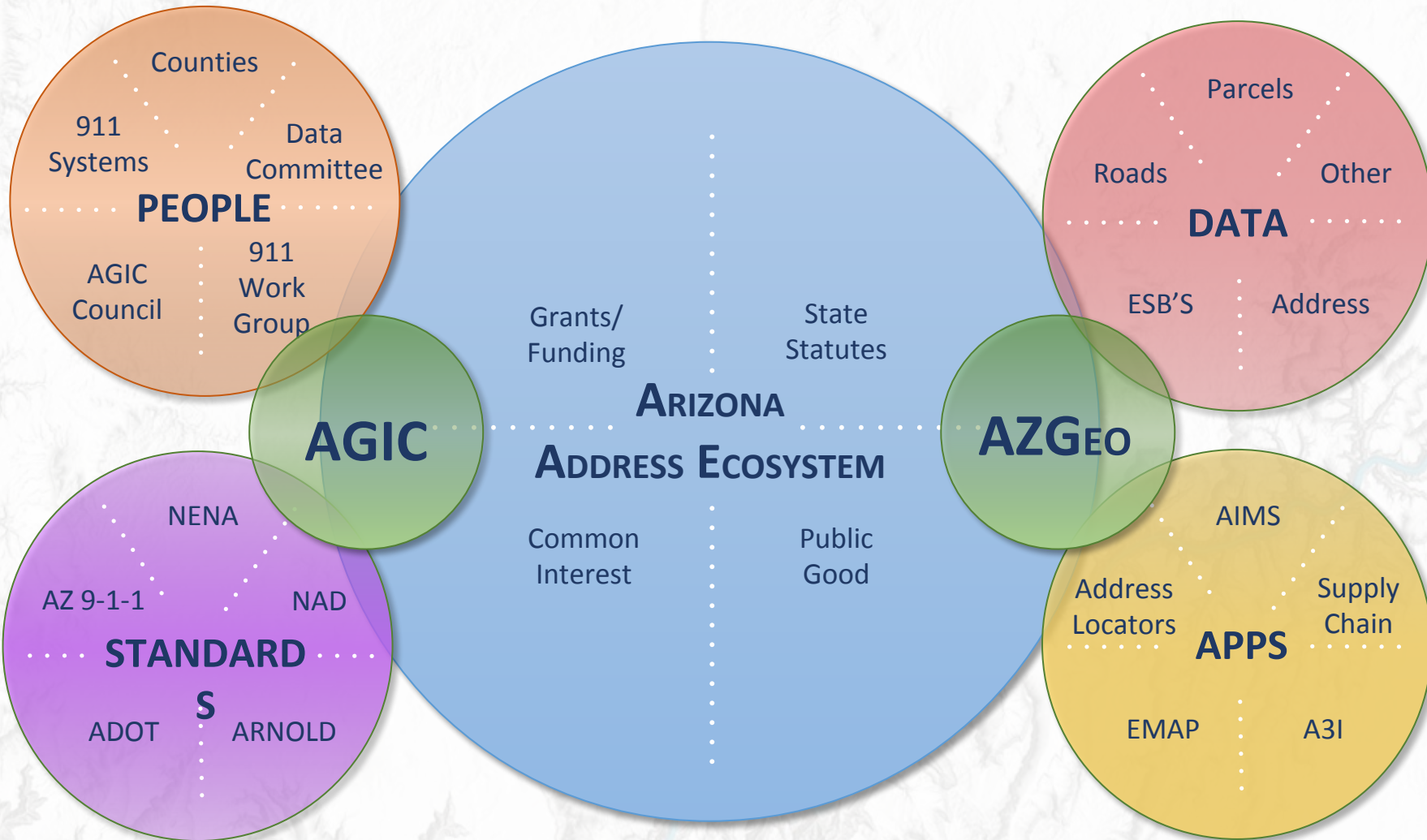
ARIZONA ROADS AND ADDRESSES

The ability to provide public safety and emergency services and other services will depend on better road and address data

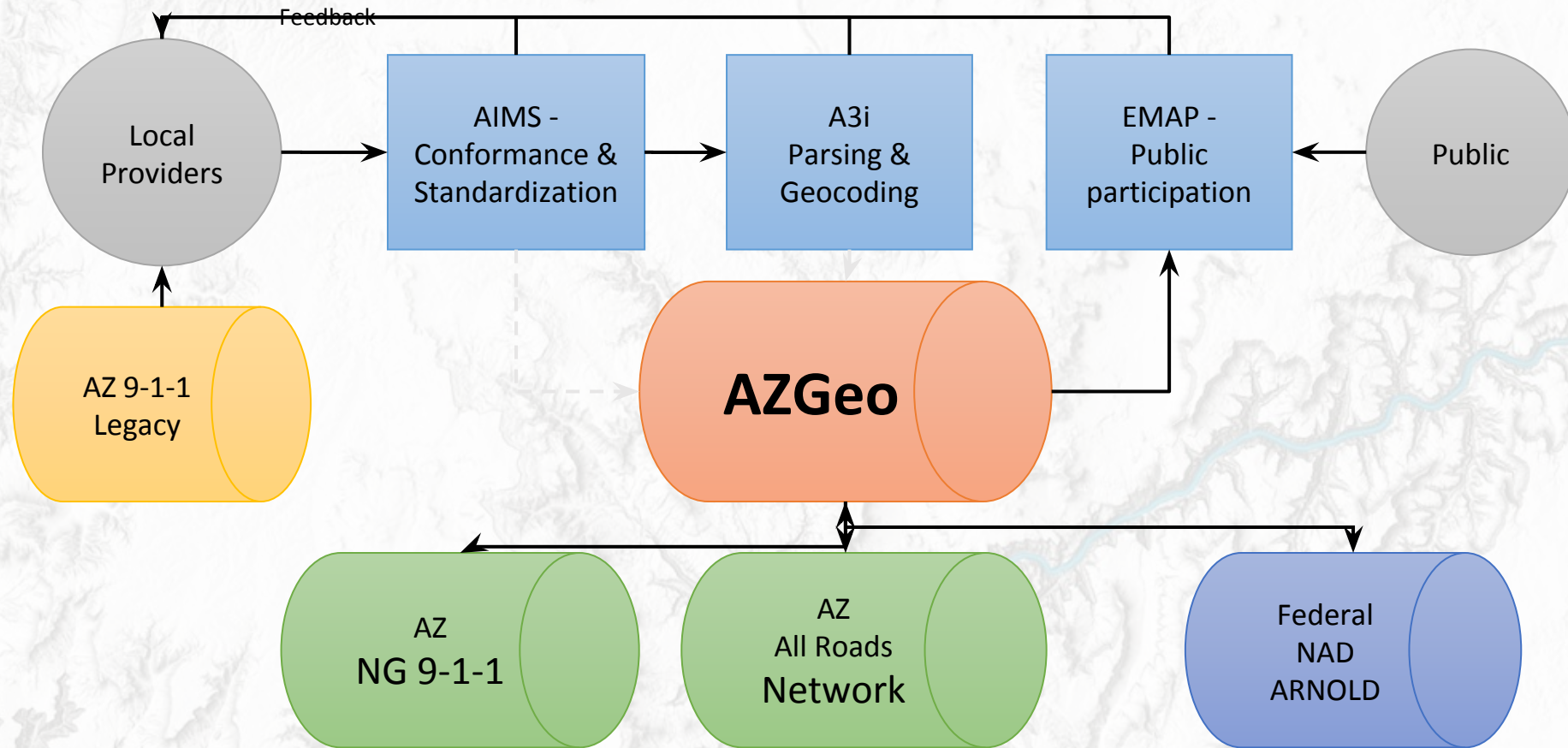


EVOLUTION OF AN ARIZONA ADDRESS ECOSYSTEM

- In 2014, the Arizona E9-1-1 Program Office led the first organized effort to collect and append statewide address point data.
- Purpose was to assess and monitor the readiness of the sixteen unique 9-1-1 Systems in Arizona for the coming switch to Next Generation 9-1-1 systems.
- This was the beginning of an address ecosystem in Arizona
 - The program has turned into a bi-annual collection which depends on the voluntary cooperation of each 9-1-1 System in the State
 - In exchange for data, the 9-1-1 Systems get valuable feedback on the content and schema of their data.



MANAGED OPEN ADDRESS ECOSYSTEM



EMAP FOR PARTICIPATION

Secure | <https://gis.azgeo.az.gov/emap/#/?bdryCate=ADMINISTRATIVE&spatial=spatial&filter=MARICOPA,ZIP,85003&street=&dataRetrieve=on&legendFilter=original,modified,submitted,commented,deleted&refBdry=Zip&featureI...>

EMAP - Arizona

Bo Comment Share Send Help

Professional Mode

On

Address Filter

Attribute Spatial

Boundary Category

ADMINISTRATIVE

County

MARICOPA

- US ZIP Codes
- Incorporated Municipalities
- Unincorporated Communities

85003

Street

ALL

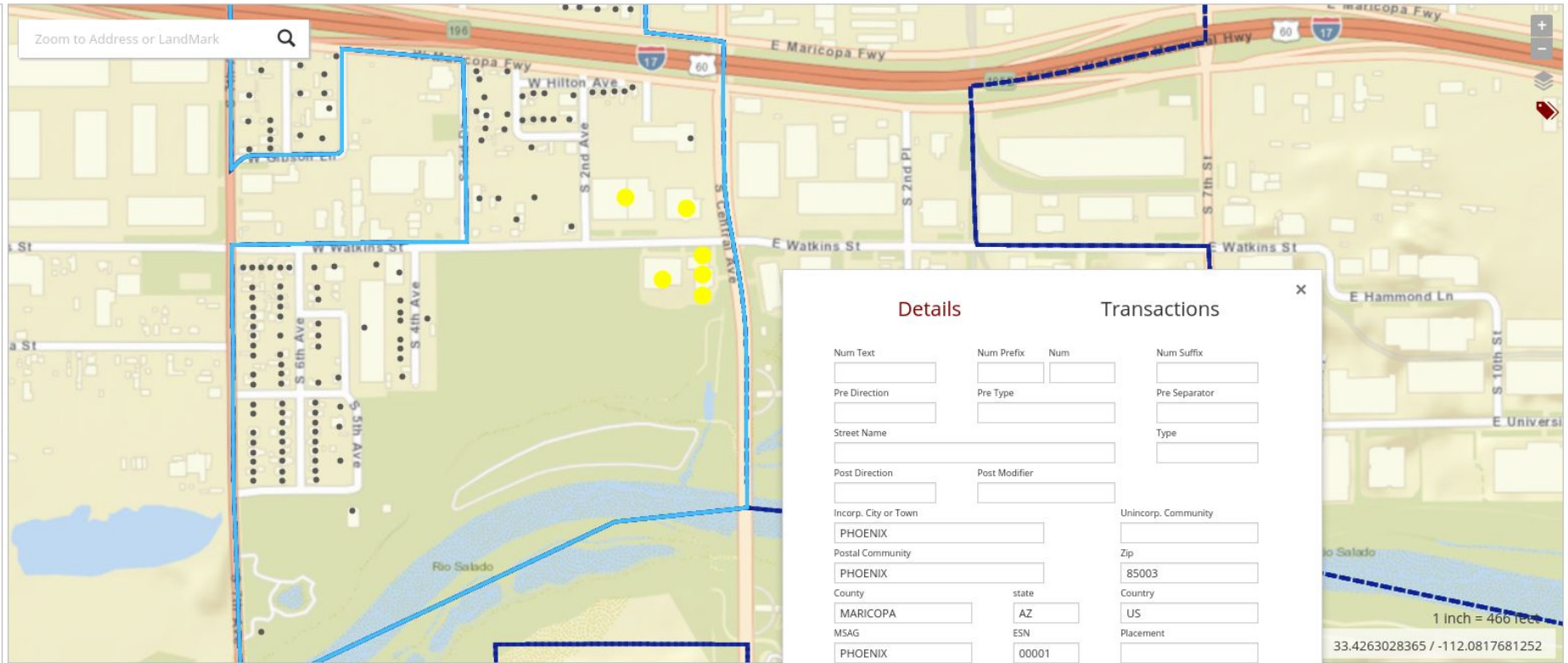
Data Retrieval

Address Legend

- Original (134)
- Edited
- Deleted
- Commented
- Submitted
- Unfiltered
- Attribute Filter Extent

Reference Boundary

- Zip
- Inc_Muni
- Authority
- MSAG
- None



Details

Num Text:

Pre Direction:

Street Name:

Post Direction:

Incorp. City or Town:

Postal Community:

Country:

MSAG:

Transactions

Num Prefix:

Pre Type:

Post Modifier:

Unincorp. Community:

Zip:

Country:

ESN:

Placement:

Comments:

Save Undo

Legend_Flag	Site_NGUUID	Source	DateUpdate	Effective	Expire	Country	State	County	AddNum_Suf	ST_PREMOD	ST
	DEE487F7-D970-...					US	AZ	MARICOPA			
	DF11E679-0810-...					US	AZ	MARICOPA			
	E1C21C32-6A3A-...					US	AZ	MARICOPA			
	E1E65670-CC75-...					US	AZ	MARICOPA			
	E2C67AB4-4DED-...					US	AZ	MARICOPA			
	E6A309E0-D26B-...					US	AZ	MARICOPA	PHOENIX		2515
	E7046229-092C-4...					US	AZ	MARICOPA	PHOENIX		115
	E759CA6C-7001-...					US	AZ	MARICOPA	PHOENIX		510

A3i FOR ANALYSIS

- Mission
 - From unstructured to Geo-locatable!
- Challenges
 - With Parcel APN, TRS, Lat/Lon, even LRS!
 - Geocoding Engine of different quality and changing.
- Solution
 - Machine Learning + Tokenization algorithm
 - Web app supported by strong back-end server

SAMPLE OF ADDRESSES

ADDRESS	COMMUNITY	ZIP	COUNTY
245 US-70	PERIDOT	85530	GRAHAM
5TH EAST 7TH STREET SOUTH	FREDONIA	85936	APACHE
15489 WEST STATION AVE PARCEL #235-26-142	WINSLOW	86337	YAVAPAI
WHITE STONE ACRES UNIT 75	CAMERON	86504	COCONINO
3 MI SE OF JEDDITO MARKET T17N R3E S5	JEDDITO	86053	COCONINO
HICKIWAN VILLAGE, TOWNSHIP 16S, RANGE 7E, SECTION 4	SELLS	85634	PIMA
1/4 MILE NW OF POST OFFICE 35 55'21.8"N 110 40'01.1"W TOWNSHIP T29N R16E SEC.S18	TUBA CITY	86030	NAVAJO
{36.9999999, -111.9999999} 1/4 MI SW OF CUL DE SAC #3 (T32N R11E+ S31 T32N R11E)	TUBA CITY	86030	NAVAJO

ADDRESSES PROCESSING

RAW

1

123 W Main Str.
235-26-142
Mesa 85289

CLEANED

123 W MAIN STR
235-26-142
MESA 85289

PARSED

Addr No.	123
pre Dir	W
Street Name	MAIN
Street Type	STR
Community	MESA
Zip	85289
APN	235-26-142

STANDARDIZED

Addr No.	123
pre Dir	W
Street Name	MAIN
Street Type	ST
Community	MESA
Zip	85289
APN	235-26-142

CIVIC

Addr No.	123
pre Dir	W
Street Name	MAIN
Street Type	ST
Community	MESA
Zip	85289

NON-CIVIC

APN	235-26-142
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m

X	Y	Engine	Date
x1	y1	AZGeo	2018-02-08
x2	y2	Google	2018-02-08
x3	y3	AZ Parcel	2017-12-08

GEOCODE



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A3i

Data Discovery

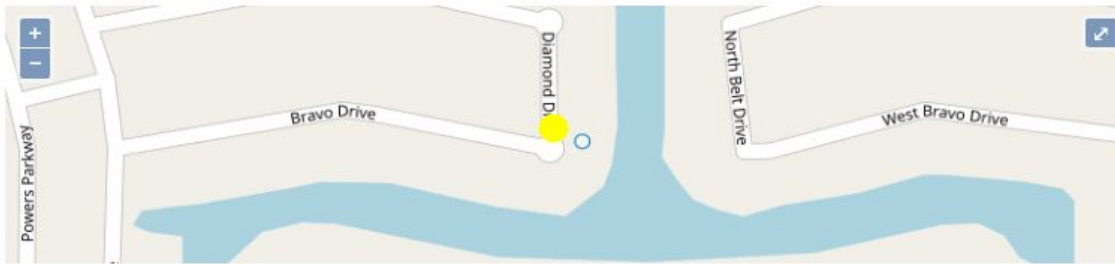
Geocoding Download

Addresses

- Source Addresses
- Cleaned Addresses
- Parsed Temporary
- Parsed Addresses
- Std Civic Addresses**
- Std Non-civic Address

Reports

MISC



GeoCode Source	Priority	Transaction ID	X	Y
Google Maps	13	f275e168-ac68-40f1-886e-afb8f6ecd86c	-112.0046244	33.0797695
Geocode - 911-AddPts-f 3		6830753f-6824-4bfb-bdc6-661769d28c4	-112.00484070295	33.07984738

Total: 2

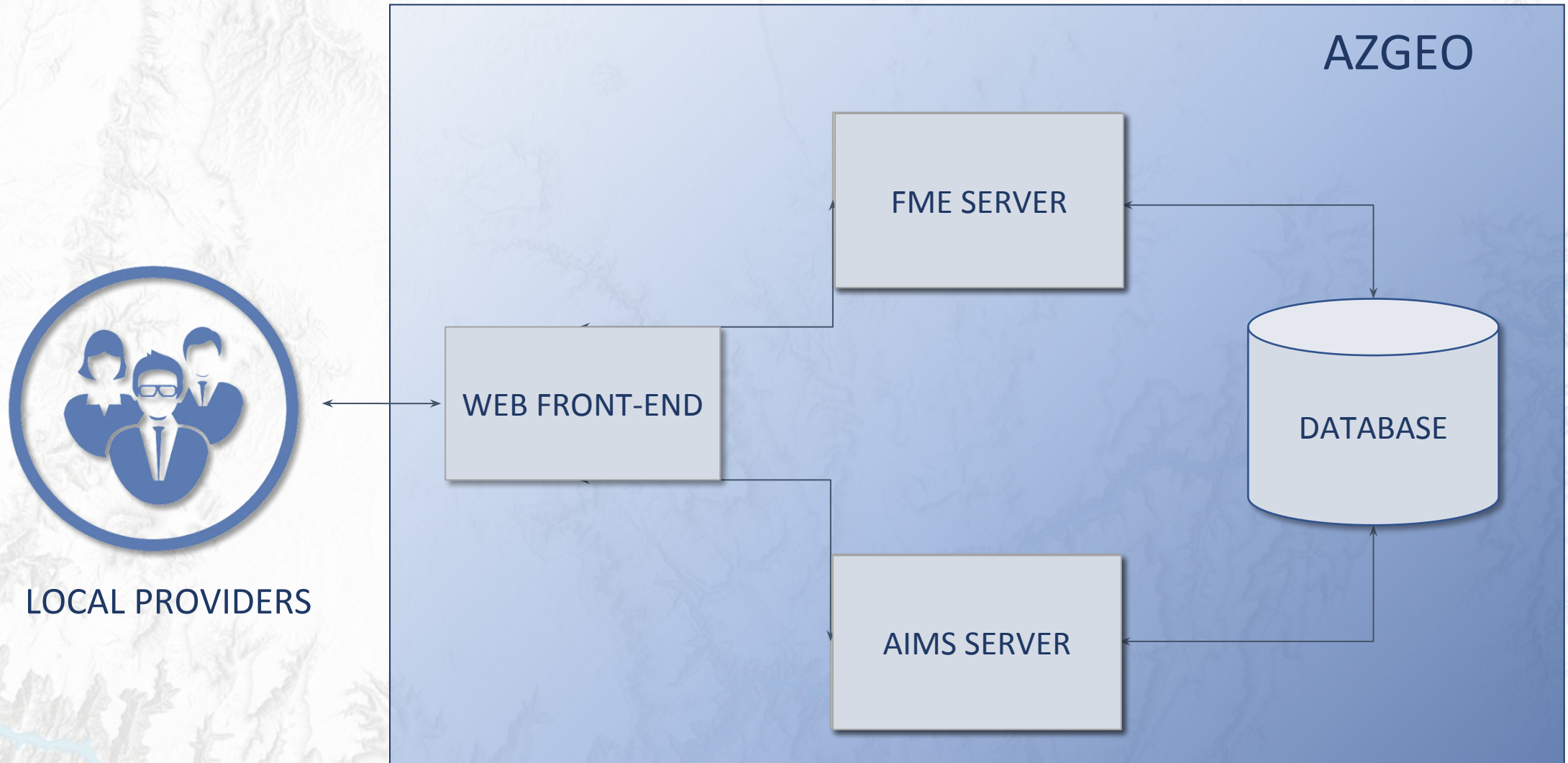
New Test Project

New Test Project

AIMS FOR CONTINUOUS INTEGRATION

- Mission
 - Empower local participation with fast feedback
 - Continuous integration
- Challenges
 - Diverse data structure and naming conventions
 - Shrinking resources
 - Lack of know-how

AIMS ARCHITECTURE



AIMS

AIMS - NAUA 911 User

P No double-click to edit **Submit**

P Jobs

Configure

Date	Data File	AIMS' State	User
1/5/2018	NAUA_Addrs.CSV	QC	Jonna
1/7/2018	NAUA_Addrs.ZIP	Transform	Jonna

This is the job history.
User can pick a qualifying job to submit to the state.

ADDITIONAL INFORMATION

A3i

- <https://www.youtube.com/watch?v=xeyVCclJ2Kc>

EMAP

- <https://www.youtube.com/watch?v=CkleFEq7MyQ&t=31s>

search Youtube using “A3i Address” or “EMAP address” to find videos

QUESTIONS?

THANK YOU!

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