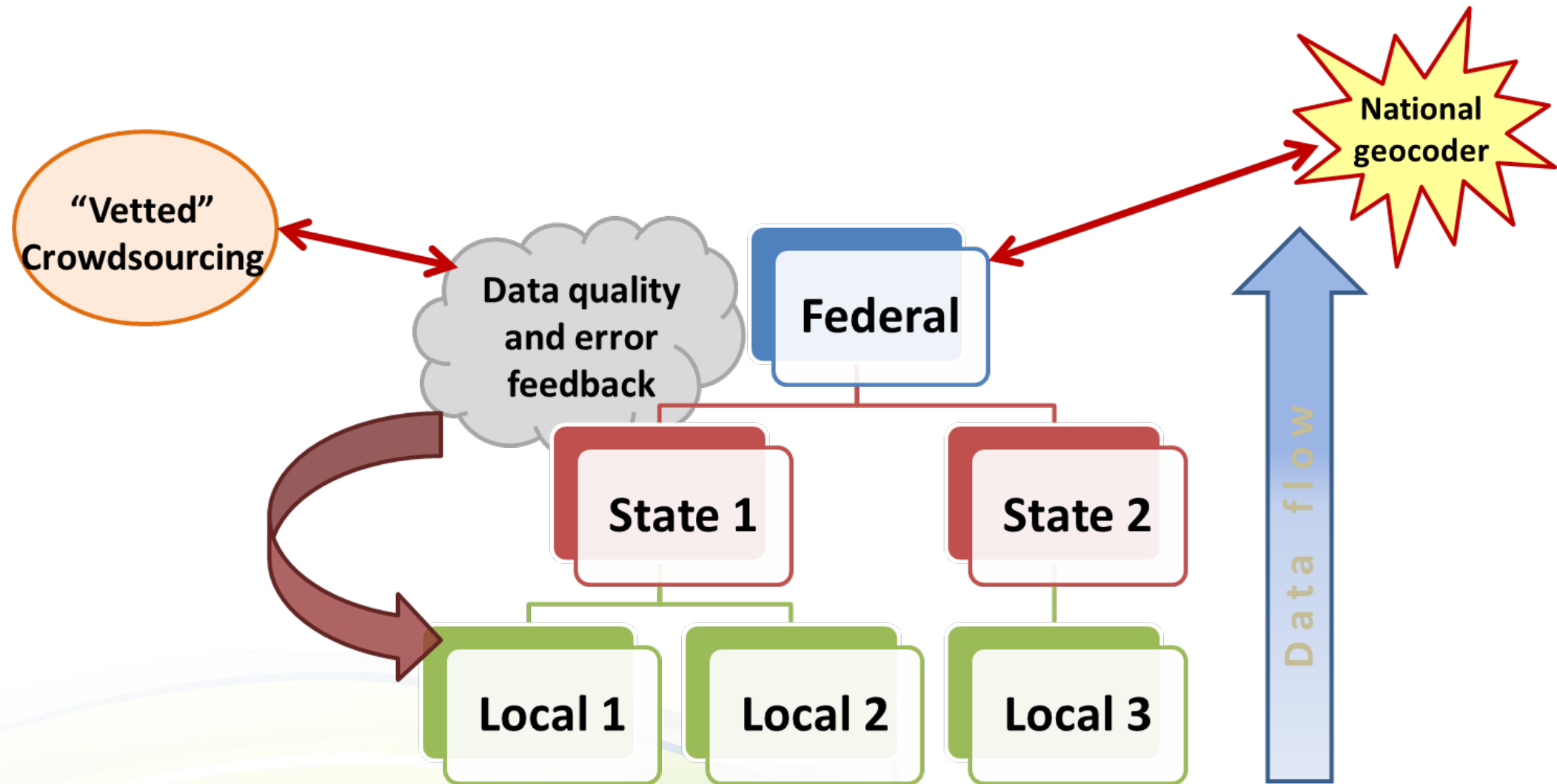


The National Address Database Pilot



Building the National Address Database



Pilot Launch October 2015

DOT Funded

Advisory Group Established – Key Stakeholders Goals

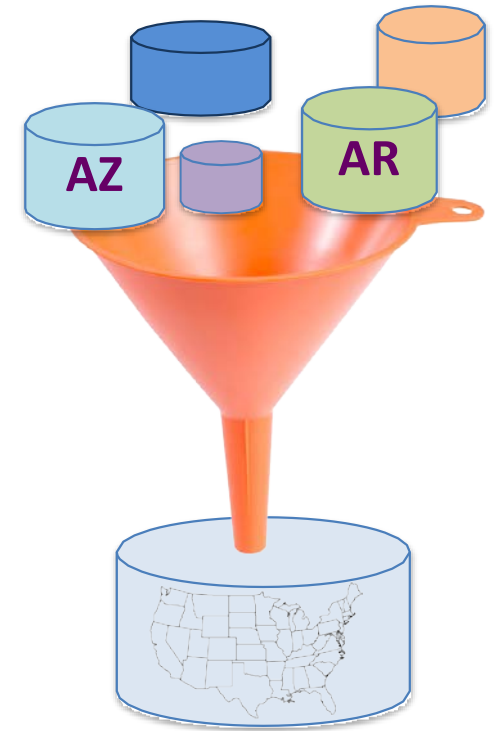
- Explore workflows
- Understand best practices for address roll-up
- Determine minimum content guideline
- Research geocoding options for “have nots”

	A	B	C	D	E	F
1	Name	Address	Address2	City	State	Zip
2	John Doe	123 Anystreet		Anycity	MN	12345
3	Betty Johnson	456 That Road	#108	Sometown	KY	67890
4	Tom Anderson	789 Broad Street		Dullsville	CA	23456
5	Sally Stevens	1011 Main Street	Unit 3	Pleasantville	NY	17890
6	Richard Townsend	1213 Mulholand Drive		Anywhere	WA	34567
7	Maria Sanchez	1415 Circle Road	Apt. 2	Sometown	NV	28901
8	Antoine Dodson	1617 Oregon Trail		Nowhere	FL	45678
9	Jane Doe	456 Anystreet	Unit 7	Anycity	MN	12345
10	Bart Johnson	123 That Road		Sometown	KY	67890



Pilot in Brief

- Identified the “haves”
 - 31 states plus DC have programs with varying degrees of completeness
 - Also Gila River Indian Community, Navajo Addressing Authority, National Tribal Geographic Information Support Center
 - Department of Navy¹
- Researched OpenAddresses.io and Community TIGER
- Schema comparison
 - FGDC and CLDXF
 - State schemas: AR, AZ, MA, NC, NY, RI, UT, VA, VT, plus DC & counties
- “Deep Dives” into partner States Arizona and Arkansas, as well as Boone County, Missouri
- Developed minimum content guideline
- Identified best geocoding & address list data sources for “have nots”



Minimum Content Guideline – 3 Components

The Address itself

- Address Number
- Street Name
- Subaddress
- City/Town/Place
- County
- State
- Zip

Geographic Location of the address

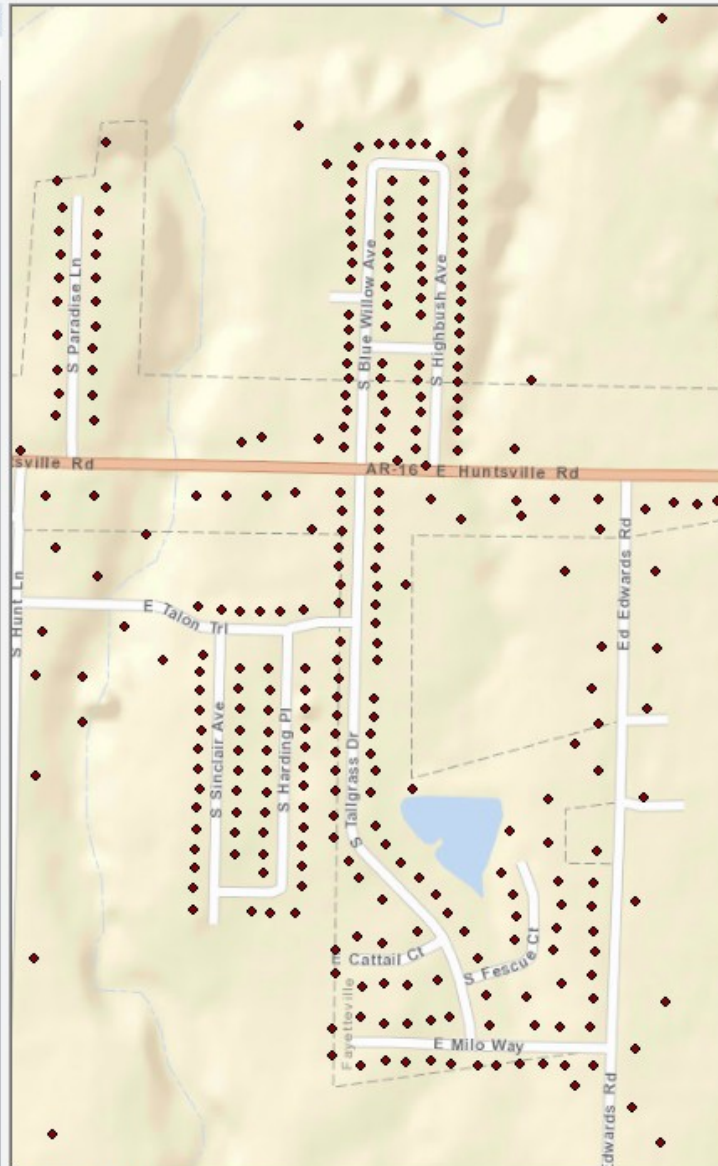
- Lat/Long
- National Grid Coordinates

Metadata about the address

- Address authority
- Address source
- Address date
- Unique ID
- Type (residential, commercial, etc.)
- Placement (rooftop, driveway access, etc.)

NAD Schema

Customize Windows Help



Identify

Identify from: <Top-most layer>

Location: -10,474,550.034 4,307,646.554 Meters

Field	Value
Shape	Point
State	AR
County	Washington
Incorporated Municipality	Fayetteville
Unincorporated Community	<null>
Neighborhood Community	<null>
Postal Community Name	<null>
ZIP Code	72701
Zip Plus 4 Addition	0500
Bulk Delivery ZIP Code	<null>
Bulk Delivery ZIP Plus 4 Addition	<null>
Street Name Pre Modifier (PRM)	<null>
Street Name Pre Directional (PRD)	South
Street Name Pre Type (STP)	<null>
Street Name Pre Type Separator (STS)	<null>
Street Name RD	Klen
Street Name Post Type (STS)	Ln
Street Name Post Directional (POD)	<null>
Street Name Post Modifier (POM)	<null>
Address number prefix (HNP)	<null>
Address number (HNO)	1085
Address number suffix (HNS)	<null>
Landmark Name Part (LMKP)	<null>
Landmark (LMK)	<null>
Building (BLD)	<null>
Floor (FLR)	<null>
Unit (UNIT)	2
Room (ROOM)	<null>
Additional Location Information (LOC)	<null>
Milepost	<null>
Address Longitude	-94.09447
Address Latitude	33.5083
National Grid Coordinates	<null>
GUID	{CB827007-BDA2-48DE-B6F2-E
Address Type	Residential
Address Placement	Parcel - Centroid
Address Source	Arkansas GIS Office
Address Authority	Washington County
Unique Within	<null>
Date Last Updated	1/27/2014
Effective Date	<null>
Expiration Date	<null>

FGDC/CLDXF

Location

Metadata

Pilot Partners Compiled Into NAD Schema



“Have Not” Status

- Goal was to find agencies (likely counties or tribes) that haven't yet created their addresses
- Wanted entity that was **interested, motivated, and willing to work with us.**
- We did not want to create addresses that will then sit on a shelf.

✓ **Jackson County, AR**

AGIO was a helpful partner, they want to finish statewide addresses by plugging few remaining holes

Jackson County, AR - Data Sources

- **Countywide E911 Address List**
 - 18k records
 - Some missing zip/city info
 - Some basic data scrubbing needed
- **Countywide centerlines** existed
 - No data scrubbing needed!
- **Countywide parcels**
 - 79% had some address info
 - Data standardization was needed
 - E.g., for city name, address field, etc.

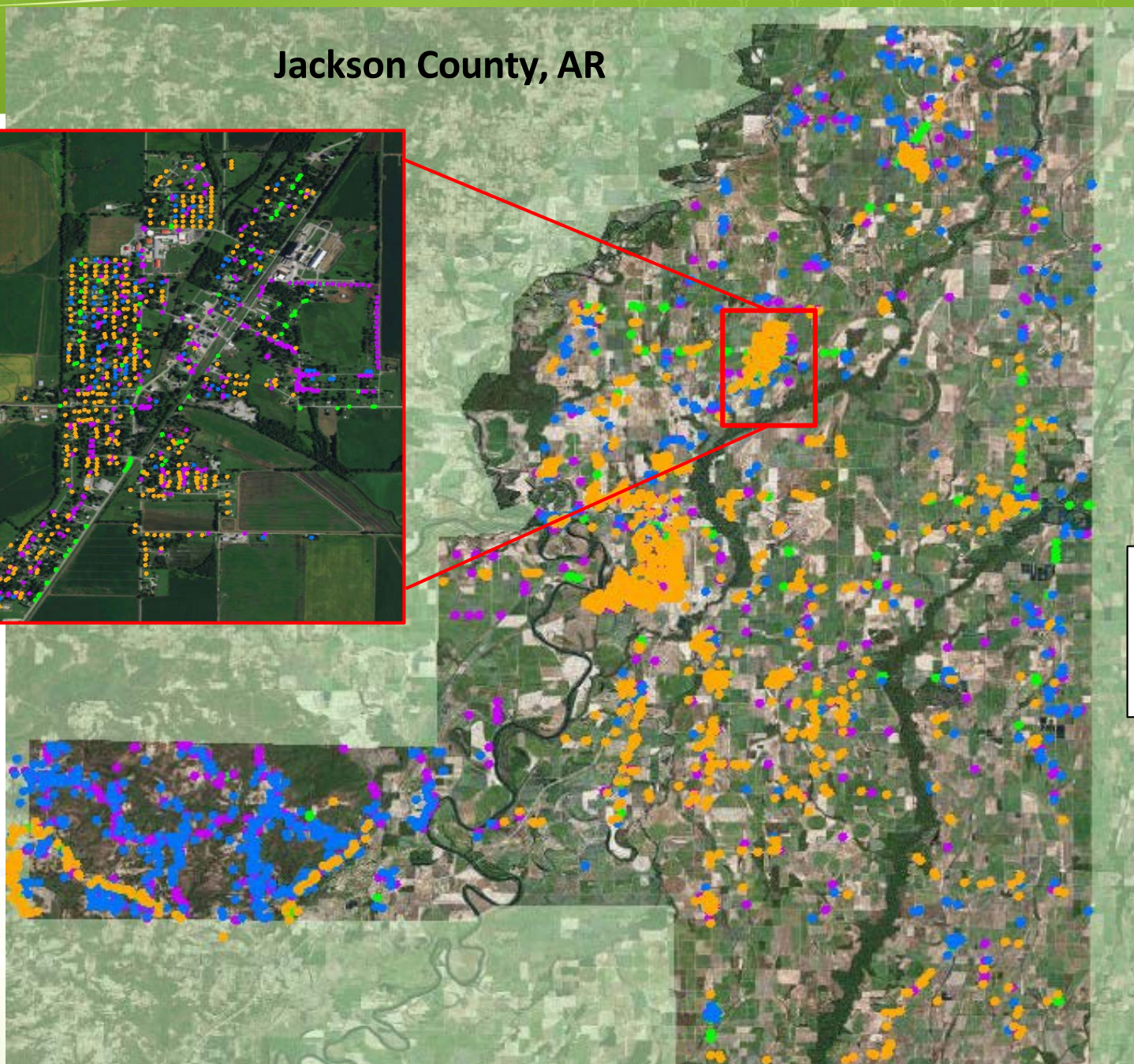
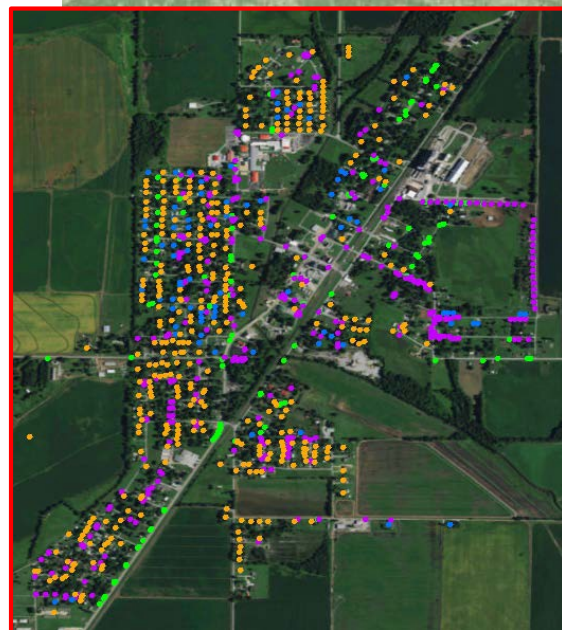
Jackson County, AR Geocoding Approach

- Multiple geocoding sources were used:
 - Melissa Data (<http://www.melissadata.com/index.htm>)
 - County Parcels
 - County road centerlines
 - Census road centerlines
- If an address wasn't matched in one source, the next source was used.
- Achieved a 77% overall match rate from the 18,469 records

Final Jackson County Geocoding Results

Source	Total Records Matched	% Matched*
Melissa Data	7,073	38%
Parcel Centroids	1,700	9%
County Centerline	4,112	23%
Census/Tiger Centerlines	1,347	7%
Totals:	14,232	77%

Jackson County, AR



- GeoCode Source
- MelissaData
 - ParcelCentroid
 - Centerline
 - Census/Tiger

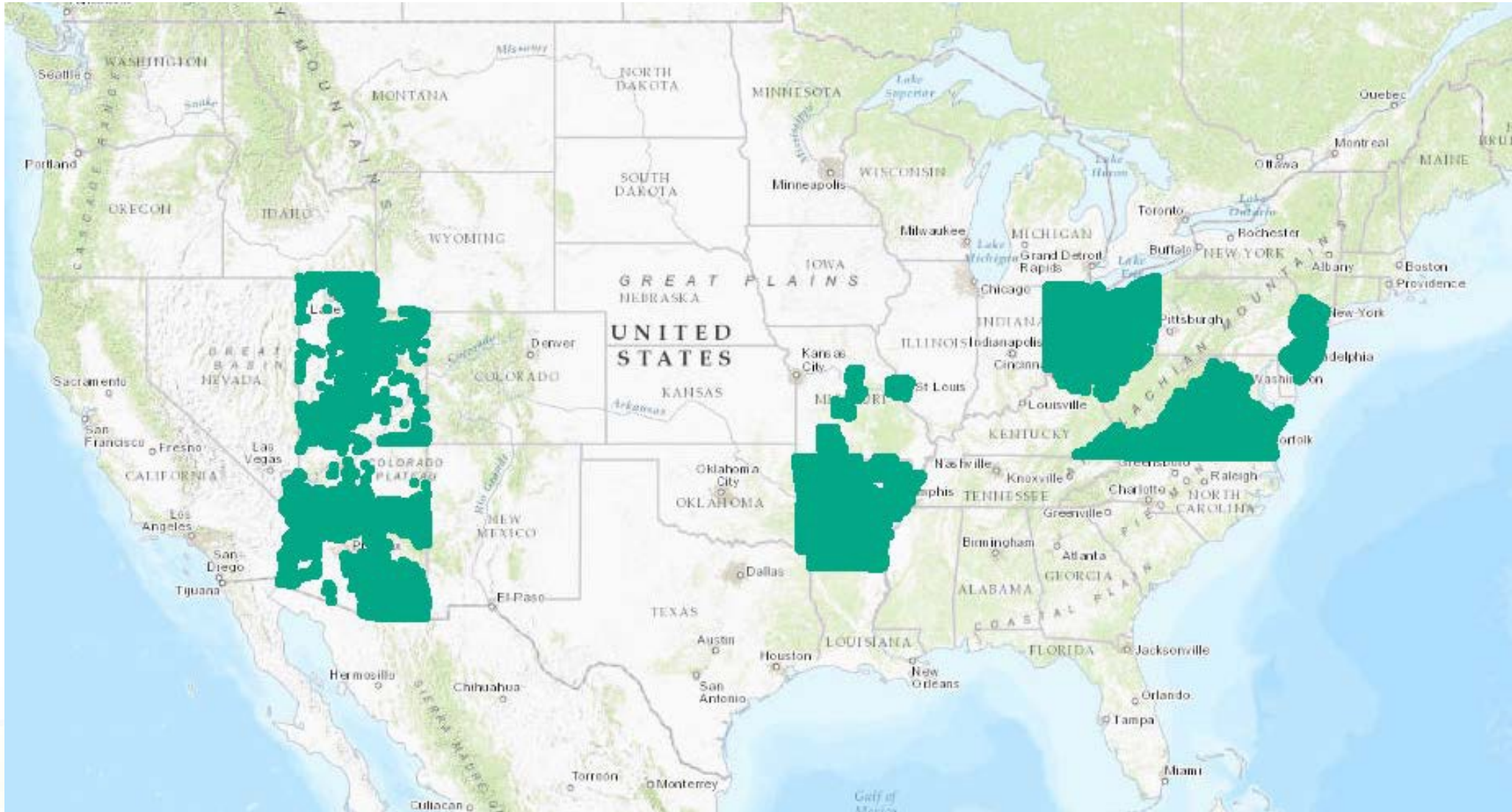
Pilot Findings

- **Tribal participation** is going to be a **challenge**
- Data sharing agreements to make data **publically available** could be a **challenge**
- **Aggregating existing statewide/have collections** was straight forward
- **The schema will likely evolve**, but needs to remain consistent with leading address schemas to allow for streamlined ETL
- **Final report now available:** <https://www.fgdc.gov/topics/national-address-database/nad-pilot-project>

From Pilot to Coalition of the Willing

- Since the release of the minimum content guideline and schema, 15 additional State/local address programs volunteered to develop their own ETLs
 - District of Columbia
 - New Jersey
 - Ohio
 - Utah
 - Virginia
 - 9 additional counties and 1 city from Missouri (Locals Helping Locals)
- Montana has delivered data, Mississippi on deck

16.8 Million Addresses



What's Next

- Continue the Coalition of the Willing
 - Seeking other State partners
 - Now have a developer resource to assist with ETL development!
- Choose platforms for development and production
- Identify funding for continued development
- Develop update and feedback mechanisms
- Make the data available!
- Launch Data Challenge for “have nots”

<https://www.transportation.gov/nad/challenge/registration>

Data Challenge

- Goal: develop an app to gather crowd sourced address information
 - Must collect the items identified in the minimum content guideline
- App can be used by
 - Local police and firemen
 - Real estate agents
 - Boy Scouts and Girl Scouts
 - FEMA Corps
 - Public
- Resulting address information would be used as “seed” data for local governments with no data and for QC/QA of existing data

The NAD and the NSDI

In February 2015, GAO published the report ***Geospatial Data: Progress Needed on Identifying Expenditures, Building and Utilizing a Data Infrastructure, and Reducing Duplicative Efforts***

- One of the recommendations from the report was to **Create an address data theme with associated subcommittees and working groups to assist in furthering a national address database.**
- The FGDC Steering Committee is the responsible party and DOT and the Census Bureau have taken the lead.

FGDC Announces Establishment of New Address Theme

- After 26 years, addresses were finally added as a layer of the National Spatial Data Infrastructure on 9/13/2016
- DOT and Census will serve as co-theme leads
- Currently filling out the roster for the FGDC Address Subcommittee
 - Arkansas, District of Columbia, Massachusetts, Michigan, Minnesota, Montana, New Jersey, and North Carolina will represent NSGIC/State government
 - Boone County Missouri and Oakland County Michigan representing County government
 - Also includes tribal and private sector representatives
 - Monthly Meetings started in December 2016 focused on theme mission and definition statements

For more information....

- On the NAD Summit:

<https://goo.gl/YXpSBH>

- On the NAD Pilot:

<https://goo.gl/VMjAfZ>