

## History and Introduction

- Created in 1879 with the mission of **providing reliable topographic mapping**, the **U.S. Geological Survey (USGS)** is the primary civilian mapping agency for the **United States**.
- The National Map (TNM)** is a collaboration between the USGS and its partners at the **Federal, state, and local level** to provide accurate and up-to-date **topographic data** of the United States. It's primary uses include: **recreation, scientific analysis, and emergency response**.
- The National Map Corps (TNMCorps) is a crowdsourced, mapping project implemented to collect structures data for TNM.
- As interns from UNAVCO we participated in a summer program to help **review** and **update** structures data on The National Map. This included both **editing points** and **peer reviewing** the edits of volunteers.

## Editing Process

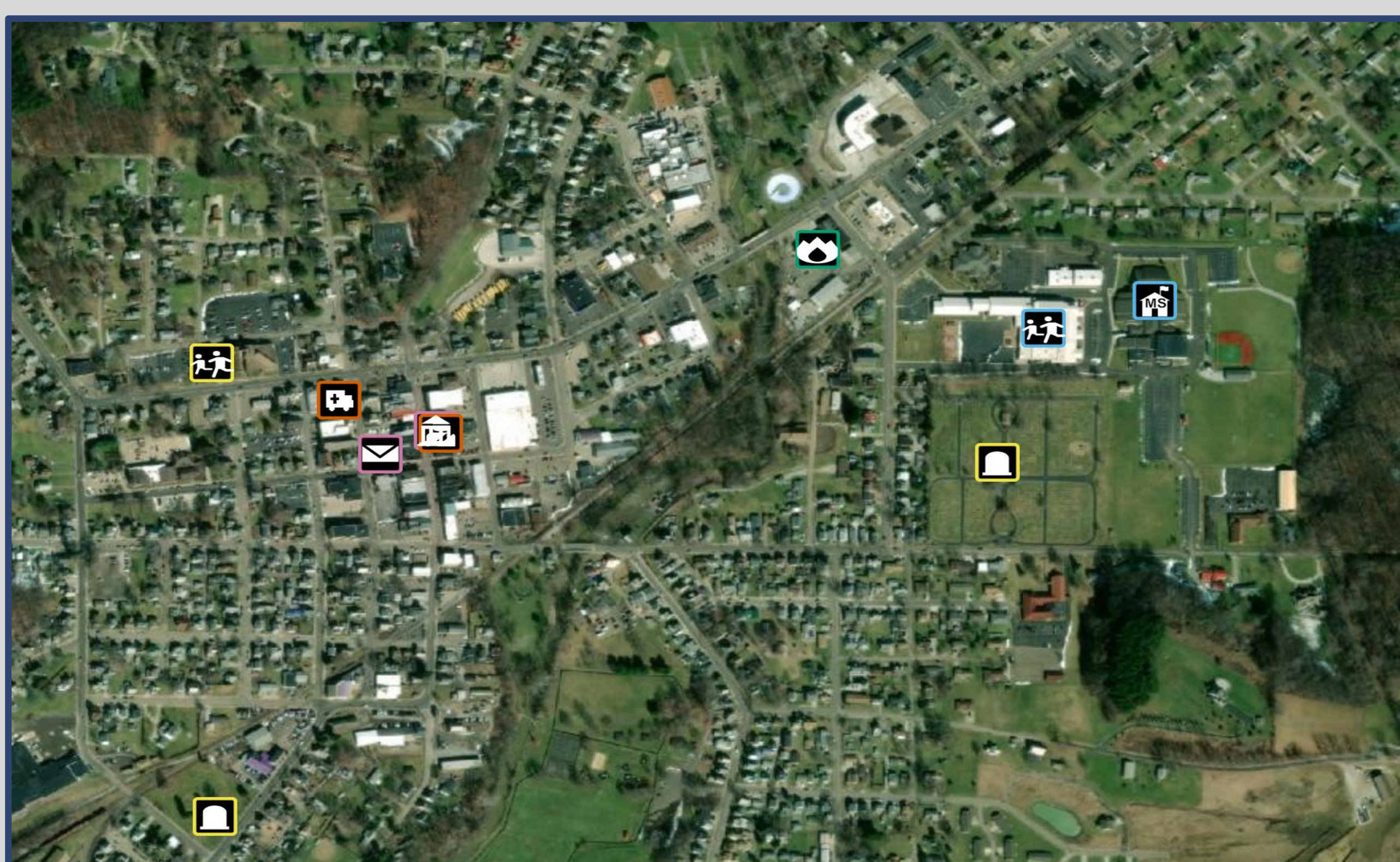


Figure 1. The National Map Corps Online Editor

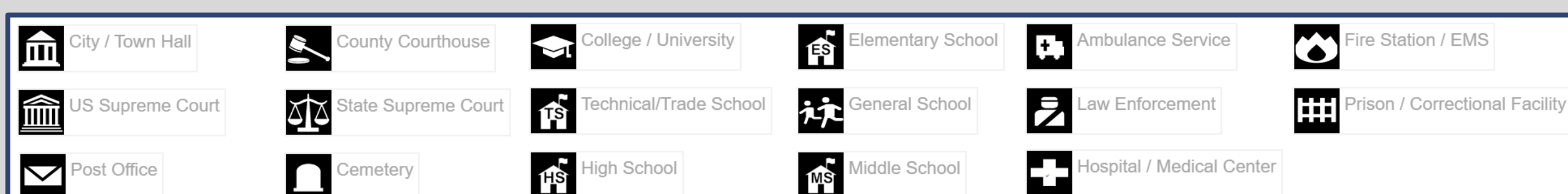


Figure 2. Types of Structure Points

- 17 types of structures** are collected, each with their own specific **icon (Fig. 2)**
- Volunteers edit by **adding** missing, **deleting** obsolete, or **updating** existing points
- Points are placed on their respective structure in the **center of the building**

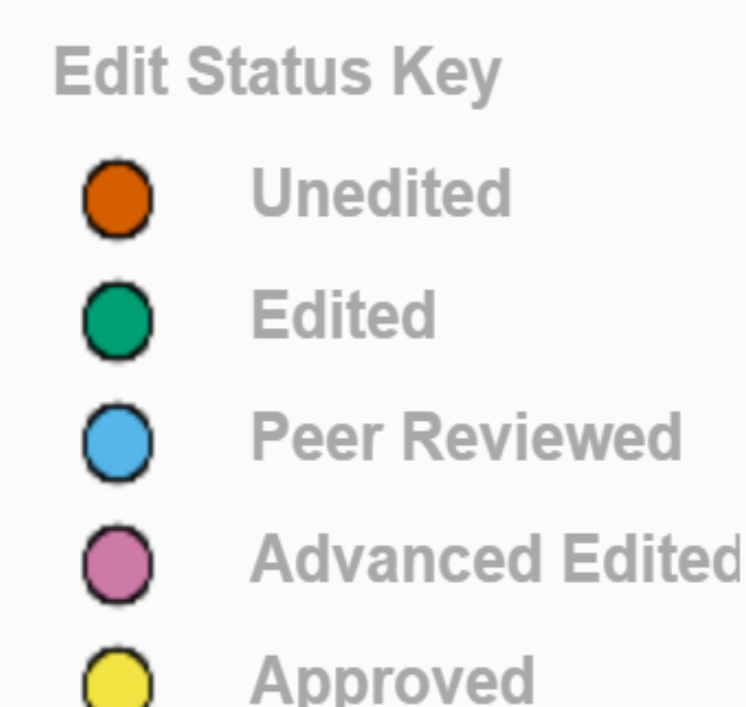


Figure 3. Editor Roles Key

- Attribute info** gathered includes the **official name and address**
- All data collected must be **accurate** and as **complete** as possible
- Icon color** changes depending on the **user's role (Fig. 3)**
- Final stage** of the editing process is **Approved (Fig. 3)**
- Volunteers can **increase** their role by contributing high quality edits (**Fig. 4**)

## Quality Assurance

- Volunteers must follow **specific guidance** for points using: **TNMCorps User Guides**, the structure features list, and **FAQ articles**
- Quality checks** are performed by **USGS staff** on random samples of a volunteer's points when they meet specific **editing milestones**
- As interns, we reached the level of **Peer Reviewers**
- We Peer Reviewed **50+** points as a team

Authoritative Sources		
RANKING LEGEND	Primary Source: Excellent / Preferred	✓
	Secondary Source: Conditional / Acceptable	!
	Aggregate / Third Party Source: NOT AUTHENTIC	✗
The list below provides examples of authoritative sources for each structure type and their corresponding rank/preference as a source.		
Structure Type	Sources	Ranking
Schools:	School District Websites	✓
	Individual School Websites	✓
	Facebook Pages	✓
	First-hand / Personal Knowledge	✓
	Government Websites ("gov" or ".edu")	✓
	Local News Articles	✓
	National Center for Education Statistics (NCES)	✓
	National Association for Independent Schools	✓
	National Parochial Schools Association	✓
	Commercial or Third-Party Websites	✗

Figure 5. Authoritative Sources

STRUCTURE FEATURES			
ICON	NAME	DESCRIPTION	EXAMPLES
	General School	A building or building complex used as a learning center for children grades kindergarten through high school.	<b>INCLUDES:</b> Public, private, alternative, and juvenile hall schools that do not fall into the categories of Elementary, Middle, or High School (e.g., K-12 schools, or schools offering a single level of formal education). <b>DOES NOT INCLUDE:</b> Preschools, childcare facilities, or any schools where kindergarten is the highest, or only, level offered (e.g., PreK-K, or K-only).

Figure 6. Structures List Example

## Our Results

- Our main assignment was to **assist** in seeking out, researching, and **digitizing points** on TNMCorps' digital map.
- We **updated/deleted** these man-made structures, paying special attention to **city halls, schools, and fire stations**.
- Using TNMCorps' online editor, we looked for **unedited points** on the map, then input the **correct/updated** addresses and **physical locations** for those points.

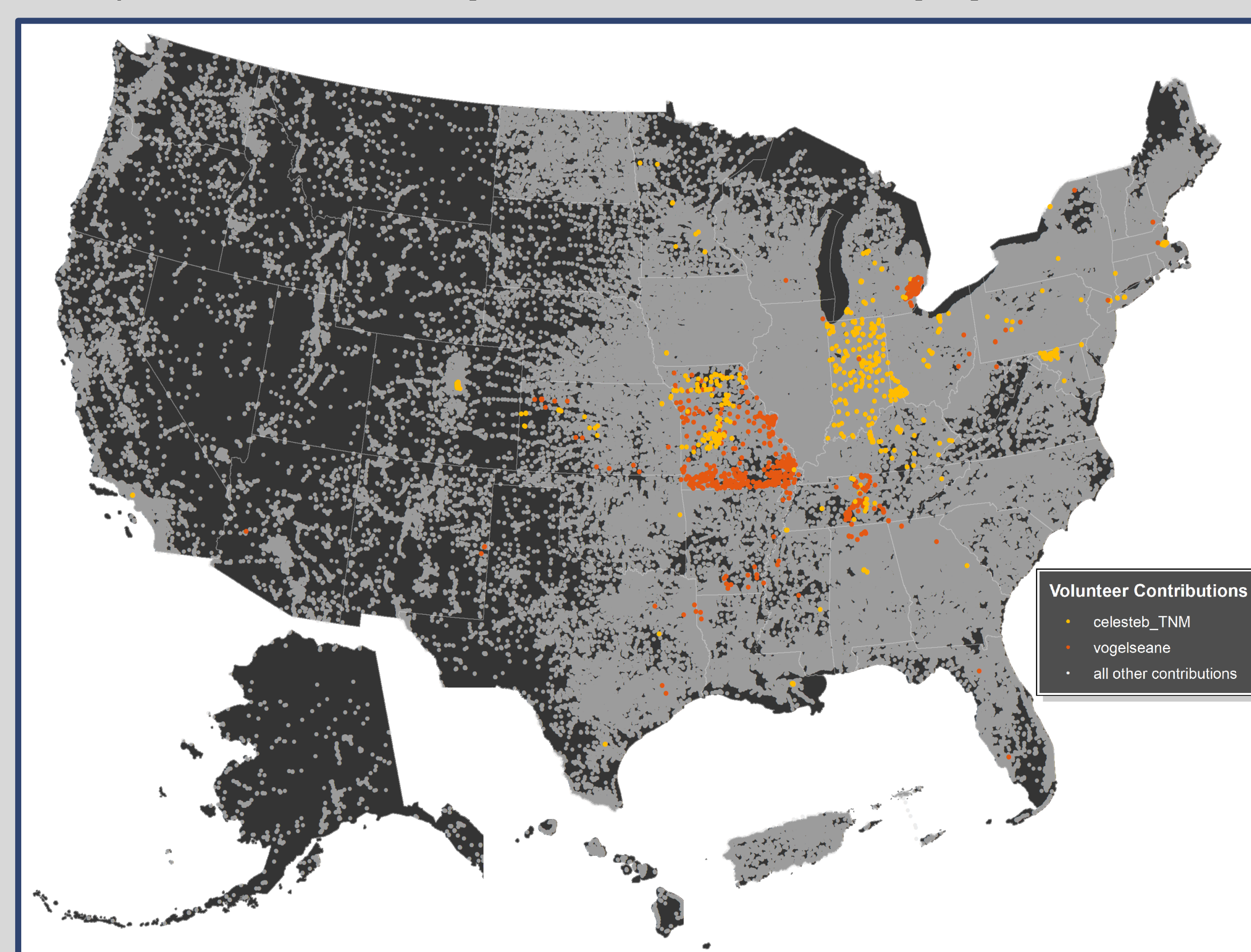


Figure 7. Our Contributions

### Our Edits

- Updated: **826**
- Created: **386**
- Deleted: **266**

### Our Assignments

- 5** of each structure type
- MO and IN** city halls
- Detroit, MI** area schools
- Cincinnati, OH** area schools
- Northern and Southern MO** Fire Stations
- Three TNMCorps Newsletter** articles

## Volunteers and Impact

- Volunteers contribute significantly by updating and **verifying** data on **man-made structures**
- Users get **constructive feedback** on their edits to help them **improve**
- Crowdsourcing** adds a level of **authenticity** to the program
- Approved points** are input onto **US Topo maps** with specific icons (Fig 8)
- Mapping challenges** focus volunteers' efforts on **specific structure types** in **specific areas**, ex: mapping all fire stations in a state (Fig 9)
- Volunteers get **virtual badges** based on **unique points edited**, and some are **featured** on TNMCorps website (Fig 10)



Figure 8. Topographic Map with Points

- Volunteer Contributions: **571,166\***  
\*counts each point edited by user role
- Total Edits: **650,079\***  
\*counts every time a point is saved
- Unique Points: **483,551\***  
\*counts each unique point once

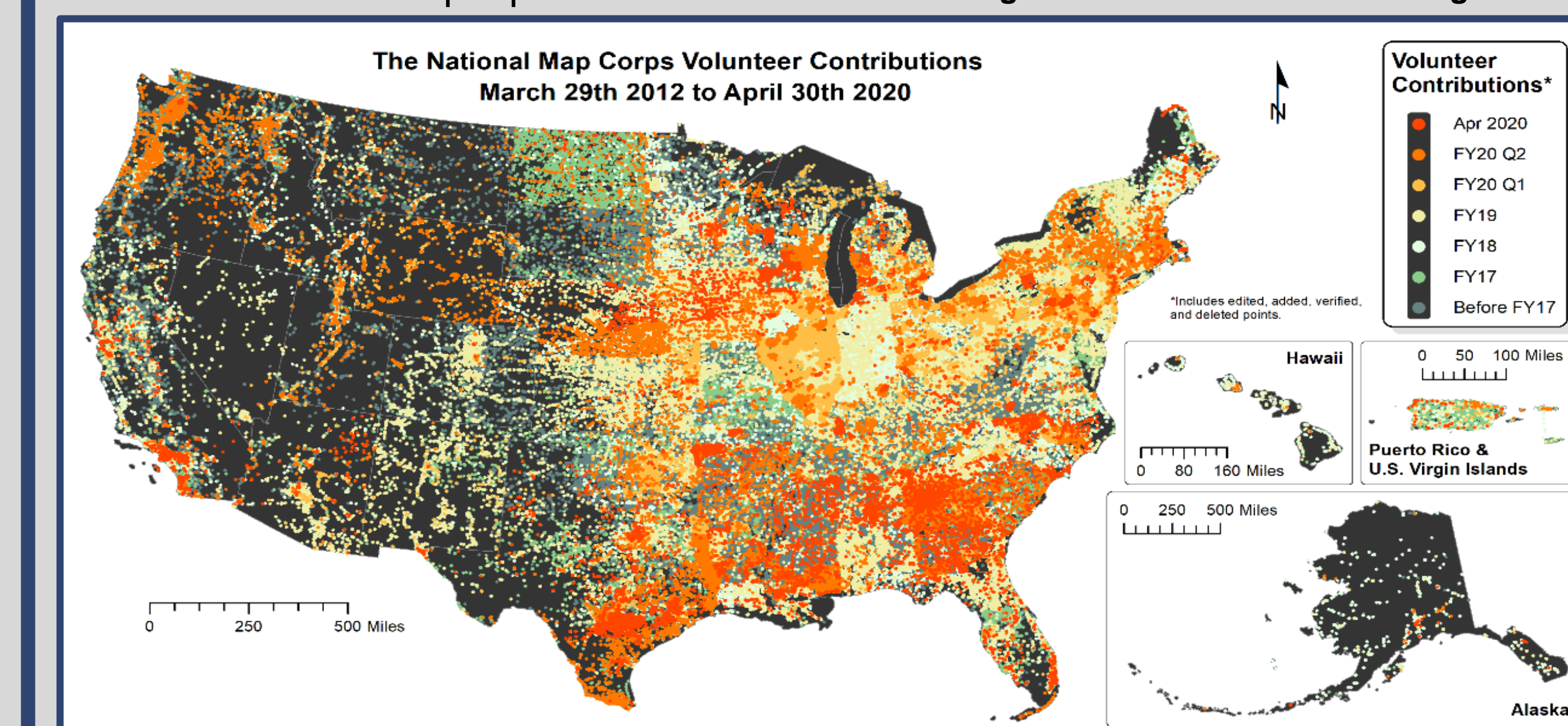


Figure 11. Volunteer Contributions

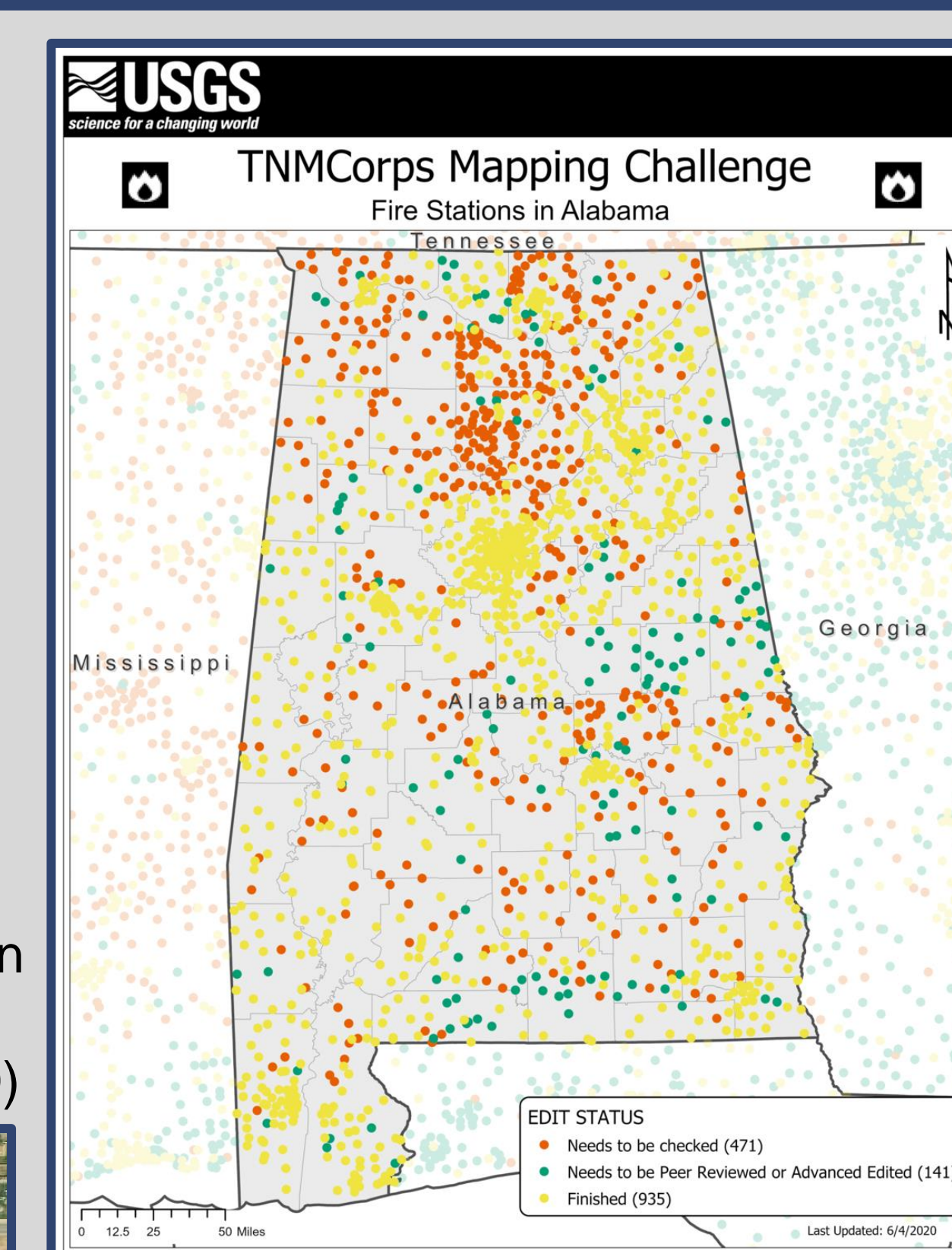


Figure 9. Mapping Challenge Example



Figure 10. Virtual Volunteer Badges

## Acknowledgments

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