When fewer graduates began to attend reunions and class events, the lack of information regarding handicap accessibility across the United States Military Academy (USMA) at West Point was brought to the attention of the Association of Graduates (AOG). This project aimed to provide an effective means for AOG to plan events that included aging and disabled graduates, while also offering peace of mind to visitors by ensuring they are informed of accessibility options across West Point facilities and venues. Additionally, these products will help provide USMA senior leadership increased awareness of potential accessibility challenges and help them identify key areas where improvements may be made to ensure all members of the Long Gray Line can safely return to their Alma Mater.

Utilize ArcGIS Online Web Maps, Web Applications, Story Maps, and volunteered geographic information (VGI) collected via Survey123 to create a web mapping application that displays accessibility information effectively on portable electronics. The Web Mapping Application was designed to focus on usability by all generations of West Point Graduates, as AOG wanted to ensure that the application was simple and easy to use.

Objective

Utilize ArcGIS Online Web Maps, Web Applications, Story Maps, and volunteered geographic information (VGI) collected via Survey123 to create a web mapping application that displays accessibility information effectively on portable electronics. The Web Mapping Application was designed to focus on usability by all generations of West Point Graduates, as AOG wanted to ensure that the application was simple and easy to use.

Methodology

- Using Survey123, we collected information across 32 West Point facilities for handicap accessible entrances, elevators, bathroom, and parking spaces
- VGI teams, consisting of 6 West Point Faculty members and 38 West Point Cadets, were deployed to collect data across the 32 facilities
- Used ArcGIS online to organize and trim the data, create a web map, and ultimately use the web map as the base of the interactive web mapping application
- Sorted the facilities into 3 categories: Unrestricted, Restricted, and Severely Restricted
- March 2022: Completed Beta Test and Application and Story Map refinement

Results

- Collected geographic information speeds up the data collection process, but impedes the quality of work
- Data needed to be revised without resurveying
- Parking proximity from buildings is an issue
- West Point is largely handicap accessible but the routes to enter buildings are complicated, restricting facility access
  - 2 Severely Restricted Facilities
  - 5 Restricted Facilities
  - 25 Un-Restricted Facilities
- Detailed instruction handout to help mitigate any confusion

Conclusions and Future Work

Overall, Survey123 was an effective means of data collection, though the accuracy of the volunteered geographic information varied by team. Nonetheless, the data was deemed useful as changing perspectives for gathering data is vital to understanding human activity, specifically the need for handicap accessible pathways and facilities. Despite the challenges of using VGI data it proved vital to creating accessibility information that is readily available for planners (mobility classification map) and visitors (web application and story map).

Initial feedback from the AOG beta test confirms the usefulness of the web application for reunion and event planners as well as individual visitors; while also providing feedback to simplify the application and add a detailed instruction pamphlet.

Future research should include the addition of network analysis to show pathways between the different handicap accessible facilities, providing more in-depth navigation and accessibility information to the user. Additionally, should highlight the challenges of parking at West Point.

References

4. GIS Building Layer: West Point DPW GIS Team