



[GIS Pedestrian Study, City of Alexandria](#)

ATCS worked with the City of Alexandria to develop a prioritized plan to improve mobility for persons with disabilities, pedestrians, and bicyclists. Development of the plan required a detailed assessment of the existing infrastructure in order to make recommendations to the City. To ensure that the data collection process provided useful and accurate data, ATCS worked closely with City staff and the Study Advisory Committee (SAC) to finalize the data collection methodology prior to collecting the data. After receiving approval from the City, ATCS created a code list for the attribute collection and proceeded with the field work.

Field data collection was performed utilizing Leica TPS 1200 RTK GPS and Robotic Total Stations. Our GPS equipment is connected to the Loyola Network (n.g.s. cors - quality data), which gives us consistent results throughout the City. By operating off of a network, we were able to maintain low costs to our client, as a base station setup was not required. A major advantage of an RTK-net is a common high accuracy reference frame by which all features can be collected. The inherent problem of data from different sources not matching in a GIS environment was completely eliminated. The code list was used and set up to collect the following information:

Sidewalks, including

- Location
- Typical Width,
- Buffer width between sidewalk and street,
- Sidewalk surface type, and condition,
- Type of buffer(e.g., street trees, grass, landscaping, parked cars)

Roadways, including

- Typical lane, shoulder, and bicycle lane width,
- Length (roadway width and number of lanes crossed)
- Traffic control (traffic signal, stop sign, yield sign, uncontrolled)
- Traffic signals (type of pedestrian signal heads, presence of push buttons)
- Crosswalks (width)
- Curb ramps (compliant vs. Non-compliant with ADA)
- Presence of other crossing facilities (median islands, curb extensions, raised crosswalks)

Roadway crossings, including

- Location
- Length (roadway width and number of lanes crossed)
- Traffic control (traffic signal, stop sign, yield sign, uncontrolled)
- Traffic signals (type of pedestrian signal heads, presence of push buttons)
- Crosswalks (width)
- Curb ramps (compliant vs. Non-compliant with ADA)
- Presence of other crossing facilities (median islands, curb extensions, raised crosswalks)

Driveway crossings

- Location
- General rating of accessibility

After collecting the data the field crews were able to export the data as shape files which were imported directly into ARCGIS avoiding any manual data entry. These GPS layers were overlaid on the aerial photography which allowed for a quick qc check. ATCS then developed a MS-ACCESS database that provided the City officials with a user-friendly data analysis and data update package.