

STATE GOVERNMENT

User

Washington State Department of Labor and Industries

Challenge

Create more efficient, customized routing for electrical inspectors

Solution

ArcGIS® Network Analyst
Navigator for ArcGIS
StreetMap™ Premium for ArcGIS

Results

Inspectors are able to plan and navigate custom routes more efficiently.

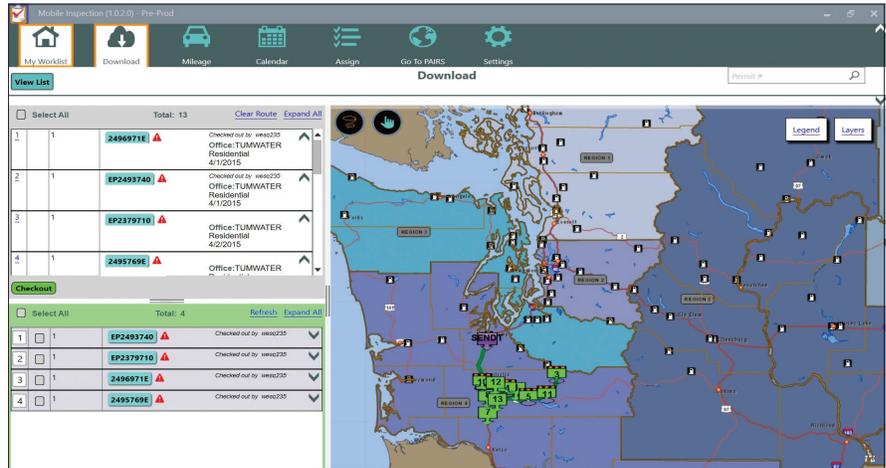
More Inspections in Less Time

The Washington State Department of Labor and Industries (L&I) is a diverse state agency dedicated to the safety, health, and security of Washington's 2.5 million workers. The department helps employers meet safety and health standards and inspects workplaces when alerted to hazards. With 19 offices throughout Washington, the department employs approximately 2,800 people including safety inspectors, claims specialists, nurses, researchers, accountants, labor experts, and support staff.

The Challenge

In an ongoing effort to develop more efficient workflows, L&I needed to create customized travel routes for its electrical inspectors. Anytime there is a residential or commercial electrical upgrade or installation in Washington, it must be inspected. The department's 200 inspectors perform nearly 200,000 inspections each year.

"By making it easier and faster for our inspectors to drive from site to site, they will be able to more easily complete their daily inspections," said Winston McKenna, geographic information system (GIS) product administrator for L&I. "We wanted to have a workflow and applications we could consistently count on being up-to-date and using the latest information for routing and geocoding."



L&I's custom blue-scale basemap displays downloaded or searched inspection locations (green) and the inspector's starting location (purple) for the Electrical Mobile Inspection application.

“Our inspectors now have a dynamic navigation and visualization tool, which allows them to adjust to changes in their workday responsibilities.”

Winston McKenna

GIS Product Administrator
Department of Labor and Industries

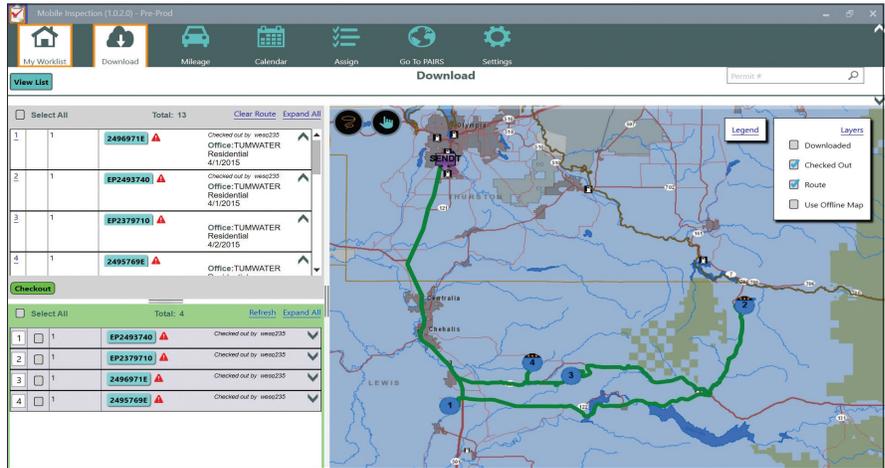
The Solution

McKenna and his team developed a solution that incorporates geocoding, routing, and custom basemaps. When an application for inspection is submitted to the department’s website, it is added to a SQL database and then geocoded. The geocoded addresses are displayed on the workstation of an electrical supervisor, who then assigns inspection locations to individual inspectors. Next, the inspectors see their assigned inspections and create an optimized route for their day on their laptops using a custom application, ArcGIS Network Analyst, and StreetMap Premium for ArcGIS. Once the route is planned, the inspector saves it as a web link and then connects to the planned route in Navigator for ArcGIS.

“Information in StreetMap Premium is well organized, well maintained, and consistent from release to release,” McKenna said. “Updating the geocoding and routing services is a breeze, and there is minimal interruption.”

Inspectors use Navigator for ArcGIS on their iPhones to receive audible turn-by-turn directions as they navigate to each inspection stop. Using a custom Labor and Industries basemap enables managers and inspectors to add, maintain, and update any information such as rural or forest roads, fuel stations, department offices, and regional information. The team created a map package, which allows for offline use in places with limited or no connectivity.

“It’s the easiest, most time-efficient, and most process-efficient way to create customized routes,” McKenna said. “We can adjust the settings to reflect the environment across the state. For example, routes that involve taking a ferry or areas that are closed for parts of the year due to weather.”



L&I's blue-scale basemap displays locations (blue) that are assigned for inspection. The green line is the electrical inspector's optimized route for the day's inspections.

The Results

"Navigator reduces unnecessary stops and will readjust the order to minimize the time and distance from location to location," McKenna said. "Our inspectors now have a dynamic navigation and visualization tool, which allows them to adjust to changes in their workday responsibilities. If someone needs to cancel or delay their inspection, the inspector can make the change in Navigator for ArcGIS, and the app will account for that."

Department staff now have a consistent view of their authoritative data on a navigation map they can customize and configure. They have enabled clear communication between managers in the office and inspectors in the field. Efficient route plans are easy to create and share. The department saves time and money because inspectors now drive fewer miles by sequencing stops in the most efficient, logical order and taking the surest route.



esri.com/products/navigator