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Reader Profile: How Dayton is Tracking Utility Street Cuts with RFID Tags

in Energy & Utilities, Innovation, Latest Posts, Public Works & Infrastructure, Technology & IT, Transportation October 16, 2014

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What Happened?

Dayton, Ohio, is requiring all utility street cut restorations to contain a RFID tag to track the responsible utility company. The city hopes to become more efficient by quickly identifying the owner of a deteriorating or damaged existing utility street cut to speed up the time for the utility company to make repairs.

Goal

When a utility company, or its contractor, makes an opening within the roadway to attend to utility lines in Dayton, they are required to first purchase a utility permit through the City Engineer’s office and then permanently restore the pavement once work is complete. With this permit, they are given RFID tags associated with this individual project. These RFID tags are preprogrammed with:

- Year of restoration
- Utility permit number
- Utility company responsible for the work

Most utility street cuts in Dayton are small in size; however there are plenty of larger cuts that span the entire width of the street or narrow trenches that run several hundred feet in length. Once the contractor completes the utility underground work, they will restore the street cut in kind, and place a RFID tag just below the last 1.5-2 inches of asphalt.

Since the RFID tags are below the travelled roadway and cannot be seen, Dayton requires the contractor to place them in the middle of all street cuts, and for longer or wider trenches, at both ends of the street cut and every 50 feet. When a citizen registers a complaint with Dayton’s engineering office regarding an unsafe utility street cut, the city’s utility inspector will investigate and determine what utility company is responsible for repairs to this area.

Before RFID technology, this investigation period could take several hours if the utility inspector arrived on site and had to go back into the office and sift through years of paper records to find the utility permit associated with the unsafe utility street cut. Now with RFID technology, it would only take the utility inspector seconds to scan the unsafe street cut, find the RFID signal beneath the pavement, and determine the utility company from the handheld unit’s display of the preprogrammed data. Once this happens, the appropriate utility company is contacted and given notice to fix the unsafe utility street cut in a quick and timely manner.

The Materials

The City of Dayton partnered with local systems integrator, CDO Technologies, to make this project a

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reality. CDO helped develop and select the software and materials needed for this project. These include:

- >10,000 William Frick & Co RFID Tags
- Alien Technology fixed reader, attached to a desktop PC running software developed by CDO to program the RFID tags
- Motorola handheld reader with an application developed by CDO to scan the RFID tags in the field

Success

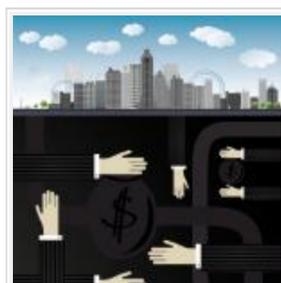
From initial project implementation in April of 2013, Dayton has issued over 4,700 RFID tags to utility companies and contractors doing work within the city. Through random spot checks and quality control methods monitoring RFID usage in the field, Dayton has seen nearly 100% success rate for contractors installing the RFID tags properly during the restoration process and has even noticed an increase in workmanship.

Dayton has yet to investigate a RFID contained utility street cut, but once the first cut is investigated, Dayton plans to see an instant 95 percent reduction in time. Within the next decade, once all investigated utility street cuts contain RFID technology, Dayton hopes to save nearly \$60,000/year in time from the previous investigation methods.

Since project implementation, Dayton has made it even easier to register a complaint about an unsafe utility street cut with the new mobile device app, Dayton Delivers. Using Dayton Delivers, a citizen can easily select the appropriate issue or concern, manually input an address or utilize the device's GPS drop pin, and submit the issue to the appropriate City of Dayton personnel. This allows even quicker results and a more efficient operation to keep public safety the number one goal.



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