

# Fixing Leaks Faster

Vancouver empowers field crews to respond faster.

**T**he Information Services Branch in the Engineering Services Department (ESD) of Vancouver, Canada, is responsible for delivering engineering, GIS, and infrastructure design services to the city's public works branches within the ESD. Documenting and sharing infrastructure documentation is a key component of the department's mission. Until recently, the ESD had to share infrastructure information and conduct design reviews with non-CAD users using paper plans and verbal communication, slowing essential processes. But today, the ESD depends on Autodesk® (www.autodesk.com) Design Review software and DWF™ technology to speed design reviews and to give extended team members the ability to access and mark up infrastructure maps, helping Vancouver to:

- Empower field crews to fix emergency water leaks as much as 50 percent faster.
- Accelerate design reviews with non-CAD users.
- Realize more value from its investment in design and GIS software.
- Improve the proactive leak detection process

Responsible for engineering infrastructure, such as pipes and roads, that cover 114 square kilometers and serve more than 545,000 people, the ESD uses Autodesk Map® 3D, Autodesk® Civil 3D®, and Autodesk® Land Desktop software products to create and maintain vital asset data. With advanced design capabilities, these applications help the ESD's engineers and drafters keep productivity high as they work together on infrastructure projects. But before turning to Design Review, the city contended with a slow process for soliciting and incorporating feedback on infrastructure designs. Oftentimes,

design reviews require detailed comments and markups from an extended team, including people without CAD software experience. Non-CAD users had to write and circulate comments on paper printouts, preventing the ESD from instituting efficient all-digital design reviews.

In addition to struggling with cumbersome paper design reviews, the ESD also strove to deliver up-to-date infrastructure documentation to water leak detection field crews. Until recently, crews used paper water main infrastructure maps they carried in their trucks. Because the maps are reprinted about every two years, they were sometimes out of date, which at times forced the crew to return to their base for up-to-date underground infrastructure plans.

"There is so much underground and aboveground infrastructure that it is very difficult to represent it all on a single paper map," explains Phil Karlsson, Vancouver's manager of waterworks operations.

## The Solution

With the free Autodesk® DWF™ Viewer deployed across the organization and hundreds of active users throughout city departments, ESD knew that it could easily share design information using DWF files. When the ESD's engineers and designers create and update documentation using design software, they publish the drawings as DWF files that are subsequently stored in a central database. Employees with no CAD experience then use the DWF Viewer to access and view the files.

However, the ESD wanted field crews and reviewers to be able to do more than simply access, view, and print infrastructure maps. It wanted to upgrade the organization's review capabilities with the ability to mark up and measure elements within designs. The ESD turned to Design Review to enhance DWF capabilities. Now, when non-CAD users

need to review infrastructure or utility drawings, they open a DWF file of the design in Design Review and mark it up digitally. CAD users can then overlay the comments on the original design in Map 3D, Civil 3D, or Land Desktop.

According to Richard Johnson, the ESD's business team lead for information services, "With Autodesk Design Review, we don't have to rely on paper or buy design software licenses just to mark up designs. We prefer it to paper and PDF because DWF supports spatial data better. As reviewers zoom in and out of infrastructure documentation, the information is more accurately geo-referenced."

Ready access to DWF files of Vancouver's infrastructure maps is transforming the workflow for leak detection and repair field crews, empowering them to work faster and more independently. Each leak detection truck is equipped with a laptop containing DWF files of Vancouver's infrastructure maps.

When the crews respond to an emergency situation, they find the relevant pipe and other underground asset drawings and call their base to verify that the underground utility information is correct. They can zoom in and out of design details and print the exact information needed.

"The DWF files in our leak detection trucks are electronically updated and contain far more detailed information than paper maps," says Ravi Chhina, superintendent for breaks and leak detection in the ESD's waterworks operations department. "With fast access to more detailed information, our leak repair crews are responding to emergencies more quickly."

Since turning to Design Review, the ESD has seen measurable improvement in emergency leak response. At the same time, the department's engineers and drafters are collaborating with non-CAD users more efficiently.

