



**Faiz Mohammad**  
Technology Services Unit, CGIS

Road opening is a very common phenomenon that happens in a developing city. To an onlooker, digging of a road may seem to look only as complicated as the digging equipment, but there are a lot of issues that happen behind the scenes. The digging can get very serious if it goes and breaks a sewer line or a water line. It may even become hazardous if it hits an underground power line. Such a seemingly simple activity can break down the power, water, drainage or even the communication infrastructure of a city.

Anyone intending to open up a road has to obtain permission from various utility agencies before opening the road. Road Opening (RO) requests originate from a Government Agency or a private contractor conducting the job. It can even arise from an individual, but is normally done by the contractor doing the work.

In a normal scenario, the agency/contractor submits a Road Opening Application form called RO1, with the site plan and other details, at different agencies like Roads Division, Drainage Division, Planning Department, Garden Department, Qatar Telecom, Qatar General Petroleum Corporation, Ministry of Electricity & Water etc. All these agencies check and verify that none of their equip-

# A Cooperative Effort for an Efficient Road Opening Process

Little Samia woke up to a thundering sound. There was clamor of metal and her tiny cot was reverberating. It seemed as if the ground was breaking up. She cried out for her mother. Her mother consoled her and led her to the window. As they peeked through the window, there on the street below, she saw the excavators and shovels churning and spewing mud. Her mother told her that they were putting new pipes for the wastewater. Samia watched on until she got tired and cuddled back under the bedclothes.

ment or infrastructure is effected by the RO. In cases where their line or equipment is effected, they will put forth the preventive or remedial measures to be adopted. This information is sent on a different form called the Road Opening Approval (RO2). After getting the approval from all the above mentioned agencies a separate request for commencing the work (RO3) has to be sent to the Traffic Department with the copy of the RO2 obtained from the Roads Division. Once this is granted the digging starts. The Roads Division is intimated about the commencement of work by sending a copy of RO3 to them.

The aim of the whole exercise is to prevent damage to any of the existing services by the digging process. The Roads Division has set some standards which prevent a newly paved road from being dug again and again. This compels an agency to plan in advance by laying necessary ducts and cables when the road is built. This also helps in reducing the cost incurred in digging up the road repeatedly by different agencies.

agency and internally within an agency. For example, to get an approval from the Drainage Division, it has to go through seven different sections within the division. Obviously, the whole process is going to take weeks or even months. This is where GIS can play a very constructive role in speeding up the whole process effectively and efficiently, in turn saving a lot of time and money.

All the agencies linked to the RO process are connected to the GISNet - the high-speed fibre optic network - which connects the different agencies and the Centre for GIS. Under the initiative of the Centre for GIS, the application developers from the different agencies as well as CGIS are at the design table giving shape to an Intranet application to automate the whole process.

The project envisions a scenario where any agency can initiate a Road Opening Application from their office using the Intranet application. They will fill an electronic form and digitize the location on the map. The RO application will be automatically forwarded to all the other agencies for their approval. The Road Opening unit at the agency will receive the application with the marked location. It will then go around the agency and come back to the initiator. The other salient feature of the project will be the facility to track the RO application. One can query and see the position and status of the application at any time. The Roads Division can generate different kinds of analytical reports using the data that will now be available to them digitally.



From the above scenario we can visualize how the RO forms move from agency to

## Road Opening

The movement of the application within an agency is the responsibility of the concerned agency. Agencies like Drainage and Roads have an electronic forwarding and tracking system which they can continue to use. The status of the application will be recorded automatically as it moves from one section to another. The agencies that follow a manual process will be provided with a form on their Intranet application to acknowledge the receipt of the RO application. They will also have to manually update the status of the application within their agency as it moves from one section to another. It is encouraged to have an electronic system in the agency so that the whole process can be automated. The requirements to join such a system is designed to be minimal and simple.

The RO database is designed to reside on a central server accessible to all the agencies on the network. Every new case will be recorded in this database and the concerned agencies are intimated about this new application. There will also be a central status table, which will record the movement and status of the RO application. This will be updated either through the existing programs in the agency or using a form provided to them on a browser. The access to the central database will be restricted by authorization, and only the initiating agency will be privileged to view the status of their application. The Roads Division will generate reports using the Notice of work commencement (RO3) information they receive after the approval from the Traffic Department.

This project demonstrates the potential use of GIS in providing an efficient solution to an often time consuming process. A lot of cost savings can be achieved by way of reduction in manual movement as well as time saving. When the status is recorded electronically, the accountability factor will increase, resulting in more efficiency. With the cooperation of all the participating agencies it is going to be a RO-ring success.