

# City Works: A New Model for Management of Public Land

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## 1 OBJECTIVES

The main goals of City Works are the following:

- (1) Improve the quality and duration of roads;
- (2) Reduce the impact of the work on the mobility of citizens, eliminating traffic jams;
- (3) Retrieve economic resources by controlling of the territory;
- (4) Provide a service to the economic operators, reducing the time of investigation.

### 1.1 How to activate

Agencies that have joined this new management model have enabled a virtual one-stop-shop online that is accessible from any computer connected to the internet.

You can submit requests for digging permits, encroaching, scaffolding, exhibitions and more, in general any type of use of public soil.

In addition to textual information, it is mandatory to trace on map the geometry connected to the request, showing what will be the impact on the territory.

The system shows what are the possible overlaps and interference with other encroaches, allowing to have a true co-ordination in real time.

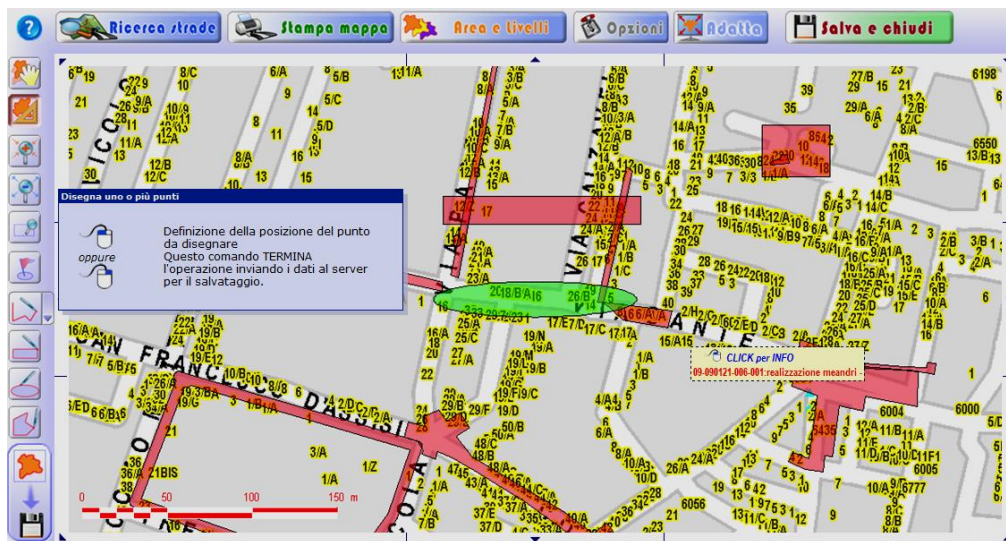


Figure 1: Sample of new geometry tracing: when the user terminates the geometry (green oval) the system displays the possible overlaps (red polygons).

#### 1.1.1 The situation before City Works

The amount of daily activities on the territory are increasing year by year and it is becoming more and more difficult to control all the encroachments insisting on the territory. Sometime it is possible to authorize public events and at the same time excavations on the same or on adjacent areas. This can cause damage to City Council's image and sometime to people, if an emergency service could not reach the target. With City Works we wanted to include all the possible encroachments, including also all the public works opened for broken pipes.

#### 1.1.2 What is the technical coordination of the territory

In some Municipalities it has been decided to activate a dedicated department for the coordination of these requests, and the department is transversely, checks all the events both activated by the infrastructure companies and by the other departments of the town (public works, mobility, traffic, land planning, building

permits, sports, culture, etc.). The task of the coordination is preventing overlaps and avoiding discomfort to citizenship (i.e. traffic jams).

### 1.1.3 City Council Departments

Each department has the ability to enter all their own planning, and check in real time what is already set by the other departments. In addition, the City Council can see the encroachments inserted by the infrastructure companies (i.e. water, gas, telephone companies). The main objective is to aggregate all the street works, therefore optimizing the economic resources of the City Council and of the infrastructure companies (digging and resurfacing one time for several public works).

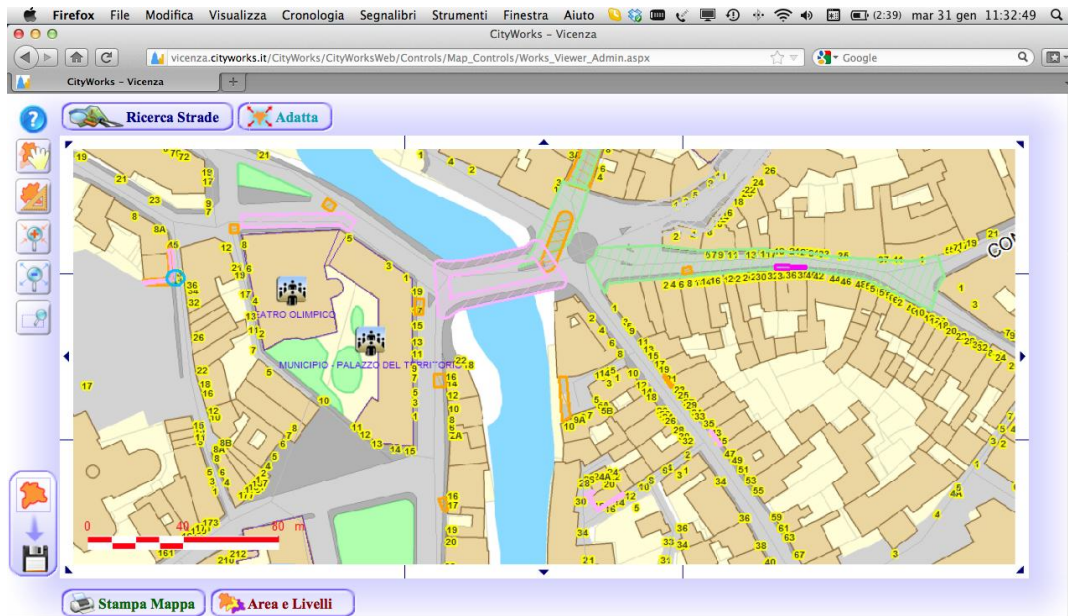


Figure 2: Sample of Vicenza City Works: Pink polygons are planned street works, Purple in progress, Orange temporarily completed.

### 1.1.4 Quality of the roads

The streets of the towns contain potholes, cracks, and damage of various kinds. These problems are normally determined by works on infrastructures. Very often the streets are not well restored and the City Council is forced to resurface the road in shorter times than those already scheduled.

### 1.1.5 Requests for compensation and insurance

In recent years, we have a considerable increase of citizens claims caused by bad streets maintenance. Some Italian City Councils will not even be insured anymore, thus creating a considerable damage to the budgets of the Municipalities. Therefore, it is necessary to have a better control of street works, reducing potholes and cracks, having a better restoration process of roads.

### 1.1.6 Improvement of technical analysis

We wanted also to improve the quality of the documentation, having all the necessary information (Project Tracks, Sections, Pictures etc.) to properly analyse each request.

### 1.1.7 Integration with the taxation department

In order to send a new request, the user will also be prompted to enter all the information which is normally managed by the Tax Department. The system automatically calculates taxes required. The incomes are automatically verified by the system, and this allows to not having to proceed with the recovery of fees not paid by the applicant.

### 1.1.8 Integration digging permits and traffic ordinances

City Works has, moreover, allowed to unify encroachments and traffic ordinances. The two permits are completely hooked and one should not exist without the other. We wanted to create a system that integrates activities usually handled by separate departments, but that, when they are not synchronised, procuring several issues to the territory.

### 1.1.9 One-stop-shop: paperless workflow with the use of digital signature

In the municipalities that have adopted the City Works system, it is possible to submit requests for digging and encroachment directly from the office without having to bring the „piece of paper“ to the City Council. It is possible to query in any moment the status of the request.

The entire process of analysis of requests is shared among all the City Council's departments, to avoid overlaps and interferences.

### 1.1.10 Result of the complete process

The City Council has a true dashboard of what is happening in the city, what has already done and what is already scheduled. This makes possible to control the contractors, see immediately what operations have been completed and which are to verify. This new process must also prevent a road just resurfaced to be broken after a few months for scheduled replacement of an infrastructure.

### 1.1.11 Certified Cartography

All the information produced are recorded in a WebGIS application. The end users are generating the information and this is certified by the City Council.

### 1.1.12 A true emerging system already used most common in cities with following sizes: from 30,000 inhabitants on

City Works is a true emerging system: each user, even with non-computer skills, inserts information in the system. This data is immediately available to all the other. It is like a “public land social network”, to improve the economic management of government companies and reduce the discomfort to the citizens. A new way of managing the public body since is possible to understand the transformations of the territory and what activities are handled by the City Council day to day.

## **2 THE CONTROL OF THE INTERVENTIONS: AS LENGTHEN LIFE IN THE STREETS, ELIMINATE THE ABUSIVE ACTIONS AND REDUCE THE REQUIREMENTS FOR COMPENSATION**

The City of Florence has activated with the City Works a new model for control and verification of the territory: having knowledge of the planned street works, twelve inspectors come out every day to check each yard or construction site, they verify the used filling, the quality of the concrete and asphalt.

### **2.1 New developments to improve the model**

We have already planned to develop new Apps which will allow the contractors to insert the emergencies (broken pipes) directly from the territory: the app will collect GPS coordinates, Photos, technical data, and all of these information will be immediately sent to City Works.

Another App will be developed to collect possible issues of the territory (potholes, cracks, dangerous cross roads etc.).

To improve the control management system, we will create another application for the City's inspectors to collect all the street works information using a tablet device. This application will be connected also with the City's Police to have an integrated process for the control of the territory (street works safety, mobility and traffic etc.).

All of these software modules will be developed to have a better organisation of human resources, since it will be possible to plan from the office the routes of verification for planned and emergency street works.

### **2.2 Effects in using the system**

Twelve Italian City Councils already acquired City Works, having very positive results with the use of this new management model. In particular, Florence, Brescia, Prato and Livorno, City Councils allow sending of requests for digging and ordinances directly online. Also Municipalities like Vicenza, Pordenone and Castelfranco Veneto have a one-stop-shop to manage digging permits directly by the Internet.

### **2.3 Average results achieved with the use of this new operational model**

After 8 years of operation, we can collect an average of results obtained in City Works City Councils:

Description	Income/Savings
Increased number of authorizations	From +15 % to +26 %
Occupation taxes	From +18 % to +42 %
Paper warehouse	From -93 % to -100 %
Potholes	From -30 % to 57 %
“Useless” street resurfacings	From -22 % to -35 %
Fines for irregular application of authorization	+ 200 %
Time dedicated to front office activities	-93 %
Time dedicated to assistance	-88 %
Data entry activity	-96 %
Quality of territorial control	+ 400 %

Table 1: tangible and intangible results using City Works (average results of 8 City Councils).

### 3 CONCLUSION

City Works has proven itself as a model of efficient management and particularly efficient because it allows to recover economic resources, and have a better spending avoiding useless street works. This new management model improves the quality of the roads and reduces the number of claims asked by citizens for bad road maintenance. In this case, the technologies are helping the control of the territory, and the City Councils are providing a better service to businesses, professionals and citizens, having the transformations of the territory under control.