

# WaterWatch



## Geographic Information Systems

### What is GIS?

Geographic Information Systems, GIS, are vital to the City of Orem's management of utilities infrastructure. GIS is a combination of computers,

software and correctly georeferenced data.

For years businesses and municipalities have been using databases to store information. Most people would

allows you to place one layer of information on top of another. A simple illustration is placing a layer of manholes over an aerial photograph. This would make it easier to visualize where a manhole is in relation to readily visible objects such as a crosswalk or an electrical box.

### Where do the data come from?

Collecting data for GIS is done in two ways, importing data from electronic sources and field observation.

The city contracts with a local aerial photography company to provide the orthographic images that many city

*(Continued on back)*



Street Information	
Route Description	Orem Blvd. - 800 South to 1200 South
Overall Condition Index (OCI)	69.27 = Fair
Originally Constructed	8/1/1971
Number of Lanes	3
Width	0 feet
Length	2773 feet
Last Slurry Seal	
Last Crack Seal	5/5/2004
Last Reconstructed	8/14/1997

recognize a spreadsheet, a computerized version of a pad of graph paper and a filing cabinet. GIS adds an X/Y coordinate or Latitude/Longitude position to the information found in a spreadsheet or table.

GIS then uses a graphic interface that

**Online application that shows road construction information. Visit [www.orem.org](http://www.orem.org) for more details.**

## Central Utah Gardens

In 2007, the Central Utah Water Conservancy District opened the Central Utah Gardens. The garden, located at 355 W University Parkway in Orem, was opened to show people how to maintain beautiful landscapes while conserving water. Throughout the garden, you will see iris, lavender, shasta daisies, poppies, coral bells, coneflower, and many more!



In addition to plants and interpretive signs, the gardens host classes and concerts. Some topics for 2010 gardening classes include landscape design, drip irrigation, and controlling weeds. There are also science classes for kids with topics like properties of water and animals.

If you would like more information about the gardens and the events

*(Continued on back)*

*If you wouldn't drink it, don't dump it!*

City of Orem Public Works  
1450 W 550 North  
Orem, UT 84057  
Phone: 801-229-7500  
Fax: 801-229-7599

We're on the Web!  
[www.orem.org](http://www.orem.org)

## Central Utah Gardens

*(Continued from front)*

that happen there, you can visit Monday-Saturday, 8:00 AM to 8:00 PM. You can also call 801-222-0123 or visit <http://www.centralutahgardens.org>.



## GIS

*(Continued from front)*

maps overlay.

When developments such as commercial shopping centers or residential subdivisions are constructed, the plans used to build them can also be used to construct data sets in GIS.

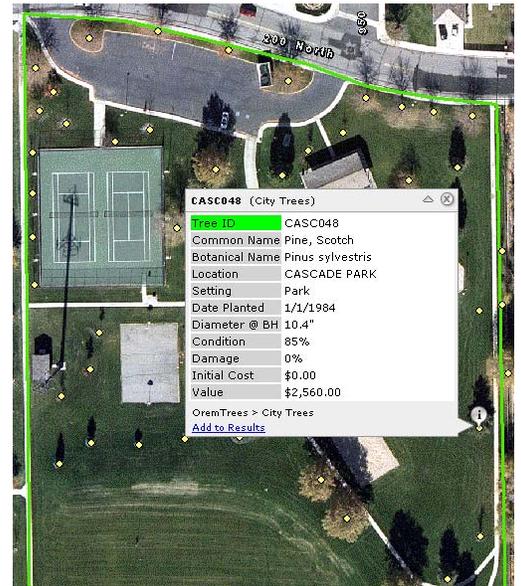
We also use field observations to create data for GIS. One common way that we do this is by using Global Positioning System (GPS) units to log the location of a feature, such as a manhole, a street sign or a pet waste bag dispenser in a park.

The points collected in a GPS unit are then combined with observed attributes of the feature. For example, a storm drain inlet has many attributes such as elevation, length, inlet, and inlet type. In addition, conditions and history can be kept. This helps us plan maintenance and reconstruction activities.

## Applications of GIS

In the field, storm drain inlets are connected to a system by a pipe. In GIS, the connected pipes, inlets, manholes, detention basins and sumps make up a network. GIS can be used to visualize the effects of paint or other pollutants dumped in a storm drain. GIS could also be used to help a crew know which valves to turn so that service interruptions are minimized while repairs are made to a water main break.

Efforts are now being made between the City's drinking water, water reclamation and storm sewer utilities and



**Online application that shows tree information. Visit [www.orem.org](http://www.orem.org) for more details.**

the City's engineering department to make GIS data usable for modeling. This will be an integral part of creating utility master plans. These documents direct the expenditure of funds on the highest priority projects.

GIS can also be used to comply with environmental regulations. One such application is the protection of drinking water source protection well zones. Maps have been produced to show the travel time of groundwater to each of the city's drinking water wells. These maps are based on soil types and water table levels. This mapping is important in development as stormwater must be treated in different ways based on travel time to wells. Those areas close to the wells may not use sumps and have to construct systems to pipe the water to be released in areas that will not have a negative impact on drinking water supplies.



**Drinking water source protection zones are delineated using GIS**