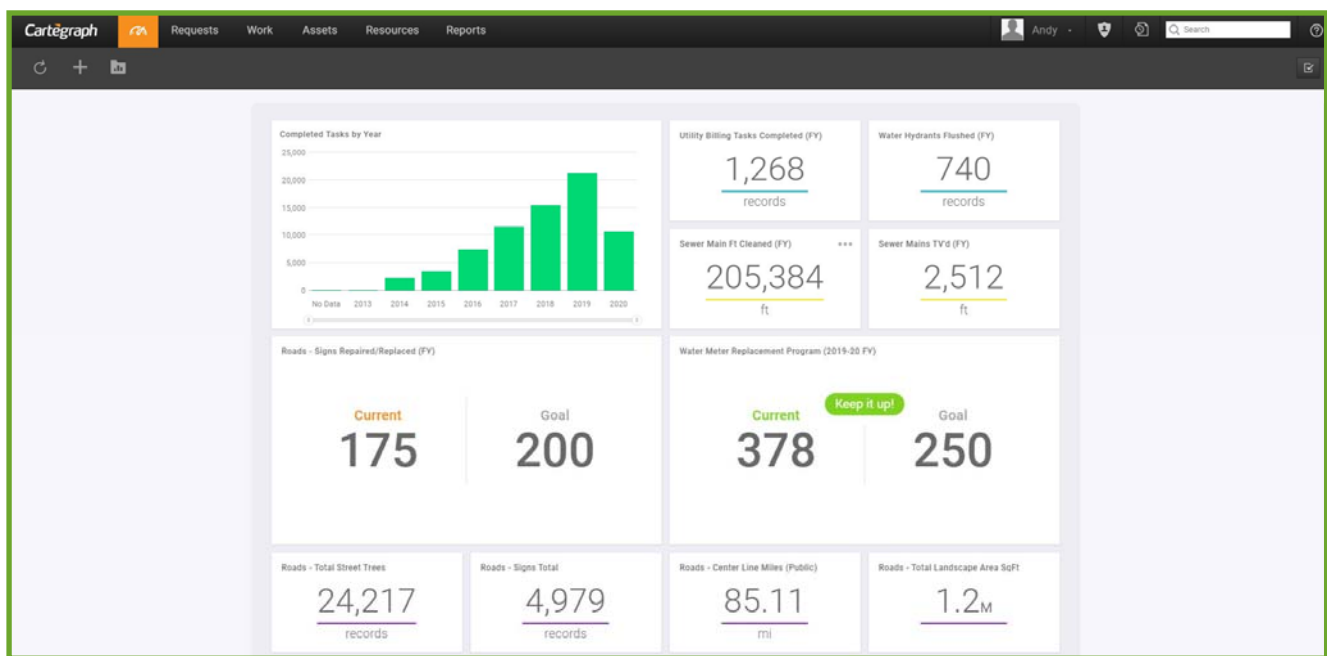


**From The Director's Office:**

Cartegraph OMS (*Operations Management Software*) is the City' asset management system/ work order system used to track detailed information and work completed on over 50 different asset types. In addition to the standard desktop version, Cartegraph has a robust mobile application that allows staff to look up assets, track resources and expenses and complete assigned tasks from the field. This existing capability allowed the department to transition to current social distancing standards with minimal impact.

One of the inherent features any asset management system, is the ability to accurately track service tasks and cost associated with maintaining the City's assets. This information in turn allows us to easily develop maintenance plans with accurate cost projects, maintenance intervals and required resources for each of our assets. Cartegraph is also integrated with the City's GIS database and any changes made to assets in either system transfers to the other. This provides the City with one shared GIS/Asset database that is updated daily to reflect any changes in the overall asset system. These changes can consist of new assets as a result of new construction or simply from data errors found in the field that need correction.



*Cartegraph Dashboard showing Key Performance Indicators (KPI's) and data metrics*

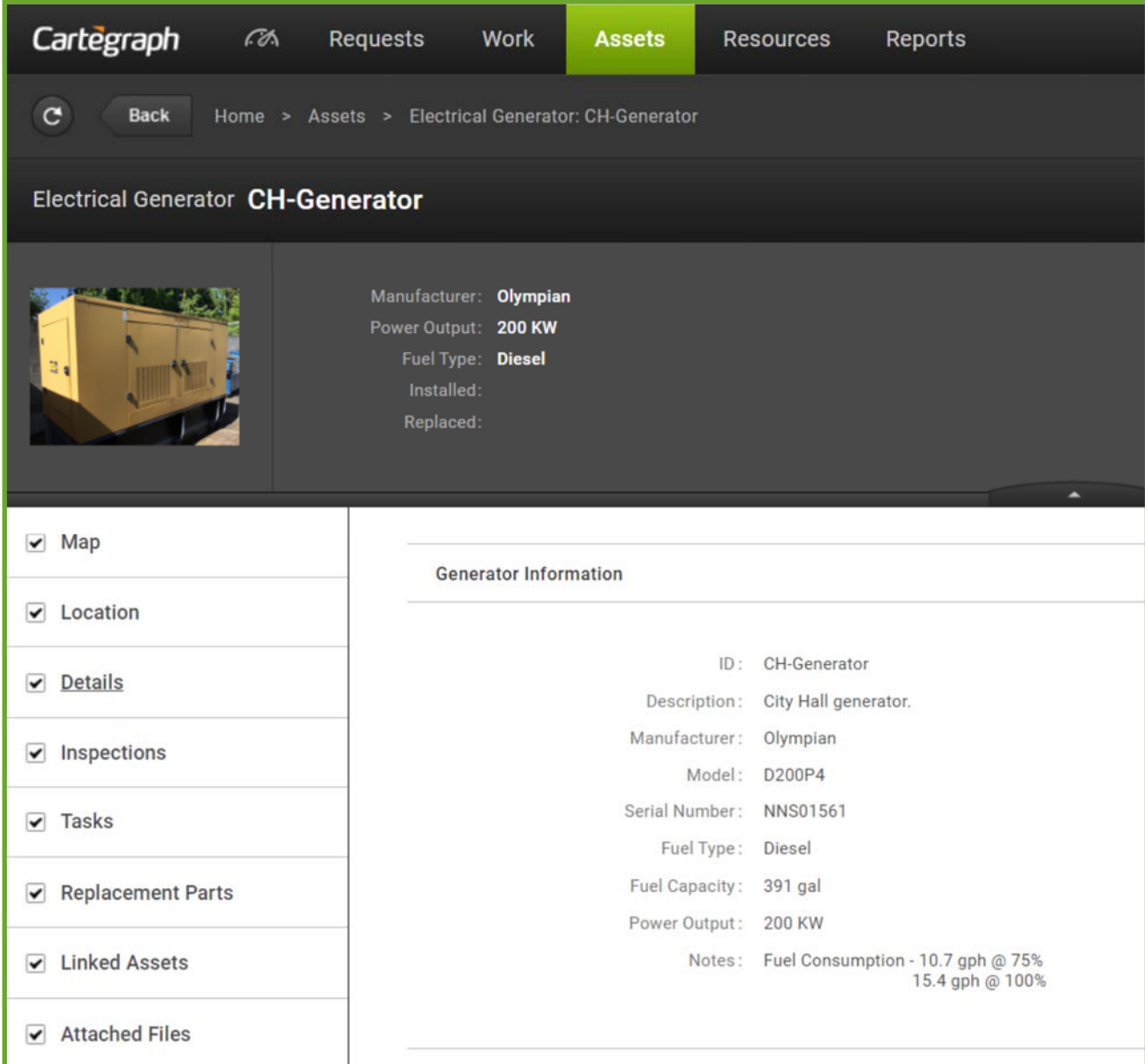
**Best Regards,**  
**Delora Kerber, PE**  
**Public Works Director**

## Facilities

### Asset Management—Generators

The Facilities Department continues to utilize the City's Asset Management Software (Cartegraph) to assist in tracking the condition of assets, as well as being a depository for baseline measurements and ongoing inspection reports. The latest example of this was the annual emergency generator service reports. To be in compliance with the National Fire Protection Association (NFPA) 110 and 111 Standards, the City must have an annual service/inspection performed on each of the eight Emergency Generators.

In addition, records need to be created and maintained for all inspections, tests, repairs, and modifications. The Facilities Department captures and enters general information and a photo of each generator into the Cartegraph program.



The screenshot displays the Cartegraph software interface for an asset named "Electrical Generator CH-Generator". The interface is organized into several sections:

- Navigation:** A top menu with "Requests", "Work", "Assets" (highlighted), "Resources", and "Reports". Below it is a breadcrumb trail: "Home > Assets > Electrical Generator: CH-Generator".
- Asset Overview:** A dark header bar with the asset name "Electrical Generator CH-Generator".
- Image and Basic Info:** On the left is a photo of a yellow generator. To its right, key specifications are listed:
  - Manufacturer: **Olympian**
  - Power Output: **200 KW**
  - Fuel Type: **Diesel**
  - Installed:
  - Replaced:
- Asset Details Panel:** A sidebar on the left contains several tabs, all of which are checked:
  - Map
  - Location
  - Details
  - Inspections
  - Tasks
  - Replacement Parts
  - Linked Assets
  - Attached Files
- Generator Information:** The main content area displays detailed information under the heading "Generator Information":
  - ID: CH-Generator
  - Description: City Hall generator.
  - Manufacturer: Olympian
  - Model: D200P4
  - Serial Number: NNS01561
  - Fuel Type: Diesel
  - Fuel Capacity: 391 gal
  - Power Output: 200 KW
  - Notes: Fuel Consumption - 10.7 gph @ 75%  
15.4 gph @ 100%

*Cartegraph allows us to have all of the key information for each of our asset types at our finger tips. The typical general information includes make, model, fuel, serial number, capacity and output. Additional tabs allow us more detailed information for each asset.*

## Facilities

### Asset Management—Generators, cont'd

Once the annual services are performed by a qualified contractor, the Facilities Supervisor enters the invoice amounts associated with each generator. The entries below shows the generator has received a full maintenance service as well as two transfer switch inspections.

**Task ID:** 101144  
**Activity:** Annual Service  
**Asset:** Electrical Generator CH-Generat...  
**Priority:** Important  
**Start Date:** 4/1/2020  
**Status:** Completed  
**Stop Date:** 5/20/2020

Total Cost	Productivity	Labor	Equipment	Material	Other	
<b>\$2,379</b>	Cost per Unit <b>\$0.00</b>	Labor Hours <b>1</b>	Labor Cost <b>\$20</b>	Equipment Cost <b>\$9</b>	Material Cost <b>\$0</b>	Other Cost <b>\$2,350</b>

Short Description	Vendor	Purchase Order	Usage	Cost	Entry Date
Annual Service	Peterson Power Systems	Inv # SW290059640	0 hr	\$1,830.00	5/20/2020 12...
Annual Generator Service- Transfer Switch (2)	Peterson Power Systems	Inv #SW290059646	0 hr	\$260.00	5/20/2020 12...
Annual Generator Service- Transfer Switch	Peterson Power Systems	Inv # SW290059633	0 hr	\$260.00	5/20/2020 10...

After all service and inspections are completed, the contractor sends the Facilities Department the results reports along with recommendations for each asset. These reports are uploaded into the Cartegraph program and attached to the appropriate asset. The screen shot below shows the separate attachments for Fuel Analysis, Transfer Switch Inspections 1 & 2, Load Bank Tests, and the full Inspection Report complete with pictures.

This information will allow the department to better track life cycle cost and better project future replacement time lines.

**Task ID:** 101144  
**Activity:** Annual Service  
**Asset:** Electrical Generator CH-Generat...  
**Priority:** Important  
**Status:** Completed

Attached Files	File Name	Size	Uploaded By	Upload Date
	City Hall Fuel Analysis.pdf	15.5 KB	mbaker	5/29/2020 8:57:47 AM
	City Hall Transfer Switch.pdf	0.3 MB	mbaker	5/22/2020 12:50:40 PM
	City Hall Inspection Report.pdf	5.6 MB	mbaker	5/22/2020 12:49:47 PM
	City Hall Transfer Switch - Lif...	0.3 MB	mbaker	5/22/2020 12:49:32 PM
	City Hall Load Bank Test.pdf	0.2 MB	mbaker	5/22/2020 12:49:18 PM

## Storm Water

### Asset Management—Catch Basin Project

Over a three-week period, Stormwater staff attached 200 feet of pipe at the end of a catch basin that had no constructed outlet. While conducting outfall inspections staff discovered a storm water catch basin that had somehow been constructed years ago with no viable outfall. This in turn was causing erosion down the embankment of Boeckman Creek near Wilsonville Road.

Much of the success of this project being delivered on schedule and within budget can be contributed to the City's asset management software (Cartegraph). The tracking software allowed staff to accurately track their time and materials used to inspect the contractor's work, install traffic control, and install erosion control measures. Once the contract work was completed, invoices and receipts will be uploaded into Cartegraph. This will provide an all-inclusive cost summary for this project. Being able to track cost in real-time helps staff to avoid cost overruns. Additionally the information is useful when budgeting for similar projects in the future.

Total Cost		Labor	Equipment	Material	Other
Progress: 100%	\$8,832	Cost: \$4,153	Cost: \$3,545	Cost: \$0	Cost: \$1,134

*Above is computer screen shot showing the costs for the Catch Basin project*



*Project work site along Wilsonville Road.*

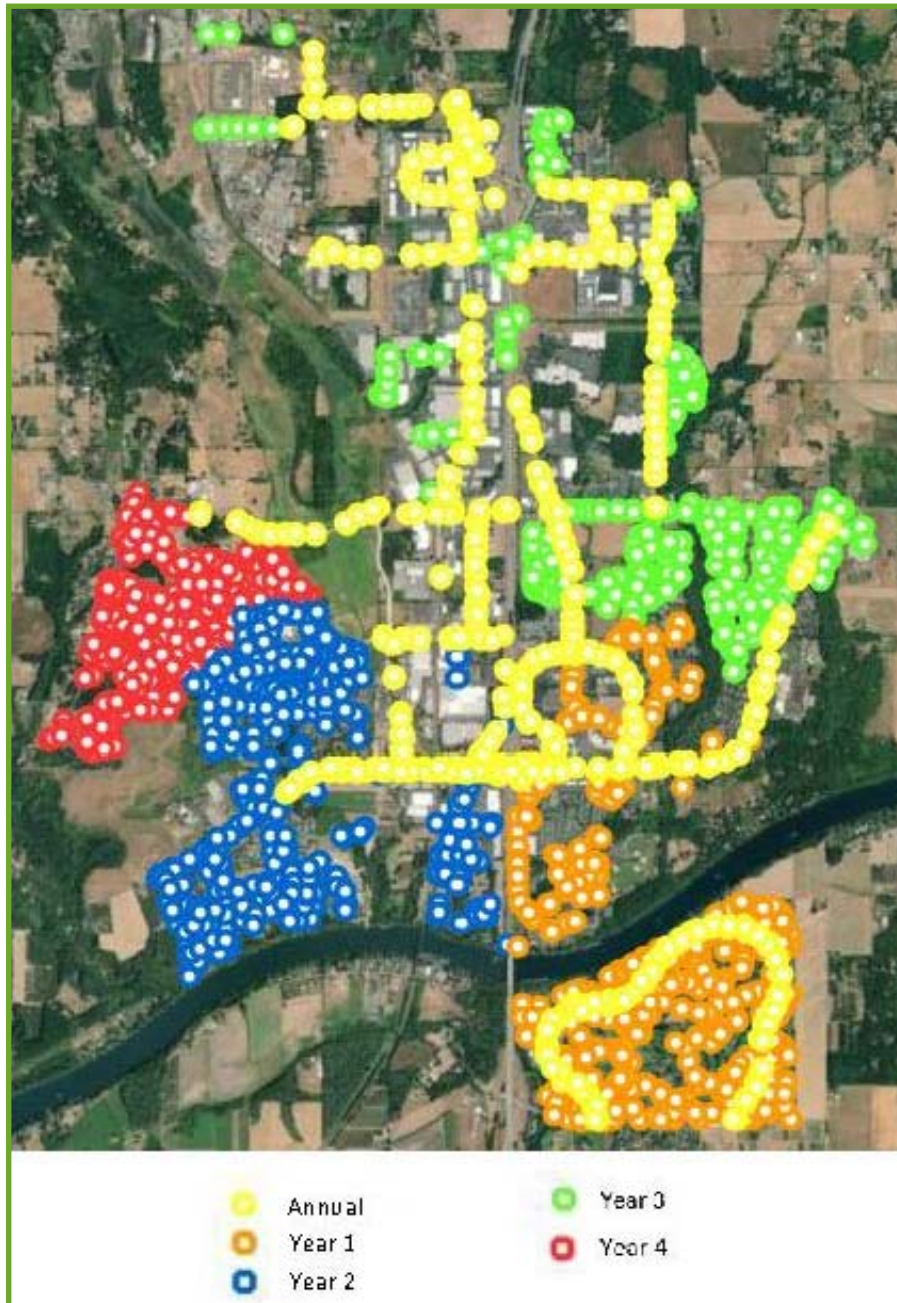


*Looking west towards Boeckman Creek with the temporary erosion control measures in place.*

## Stormwater

### Asset Management—Annual Maintenance Activities

The Stormwater Division uses the City's Asset Management software (Cartegraph) to manage daily activities as well as annually scheduled maintenance tasks. Each year on July 1, Cartegraph automatically creates work orders for assets to be maintained in the following fiscal year. This automatic generation of work orders helps ensure the consistent and comprehensive maintenance of our assets. Stormwater catch basins are divided up into annual maintenance and four-year rotation maintenance activities. The integration with the GIS mapping system also allows us to visually represent the work locations for better planning of assignments and activities.



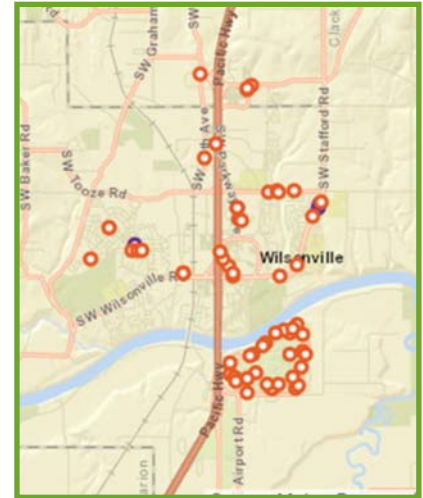
*Asset management map depicting the various assets maintenance intervals*

## Roads

### Asset Management—Sign Inspections and Replacements

One of the ways the Roads Division utilizes the City’s Asset Management software (Cartegraph) is for the inspections of the 4,979 publicly owned road signs. When staff inspect a sign and notice it needs replacement or requires cleaning, they will create a task in Cartegraph. Once the task is created, it is assigned to a staff member. When that task is complete, staff enters the amount of labor hours, equipment time and materials used to complete the task. This information is useful in determining the appropriate budget needed to maintain the City’s infrastructure.

This year 63 signs are scheduled for replacement. Using Cartegraph, a report can be produced which identifies the type and size of the sign that need to be replaced. This allows staff the ability to place one order for multiple signs which saves staff time looking up each sign individually to gather the same information.



2020 scheduled sign replacements

Total Cost	Productivity	Labor	Equipment	Material	Other	
<b>\$122</b>	Cost per Unit <b>\$0.00</b>	Labor Hours <b>2</b>	Labor Cost <b>\$58</b>	Equipment Cost <b>\$26</b>	Material Cost <b>\$38</b>	Other Cost <b>\$0</b>

Map

Search by address

Sign replacement cost including labor, equipment and materials as well as sign location

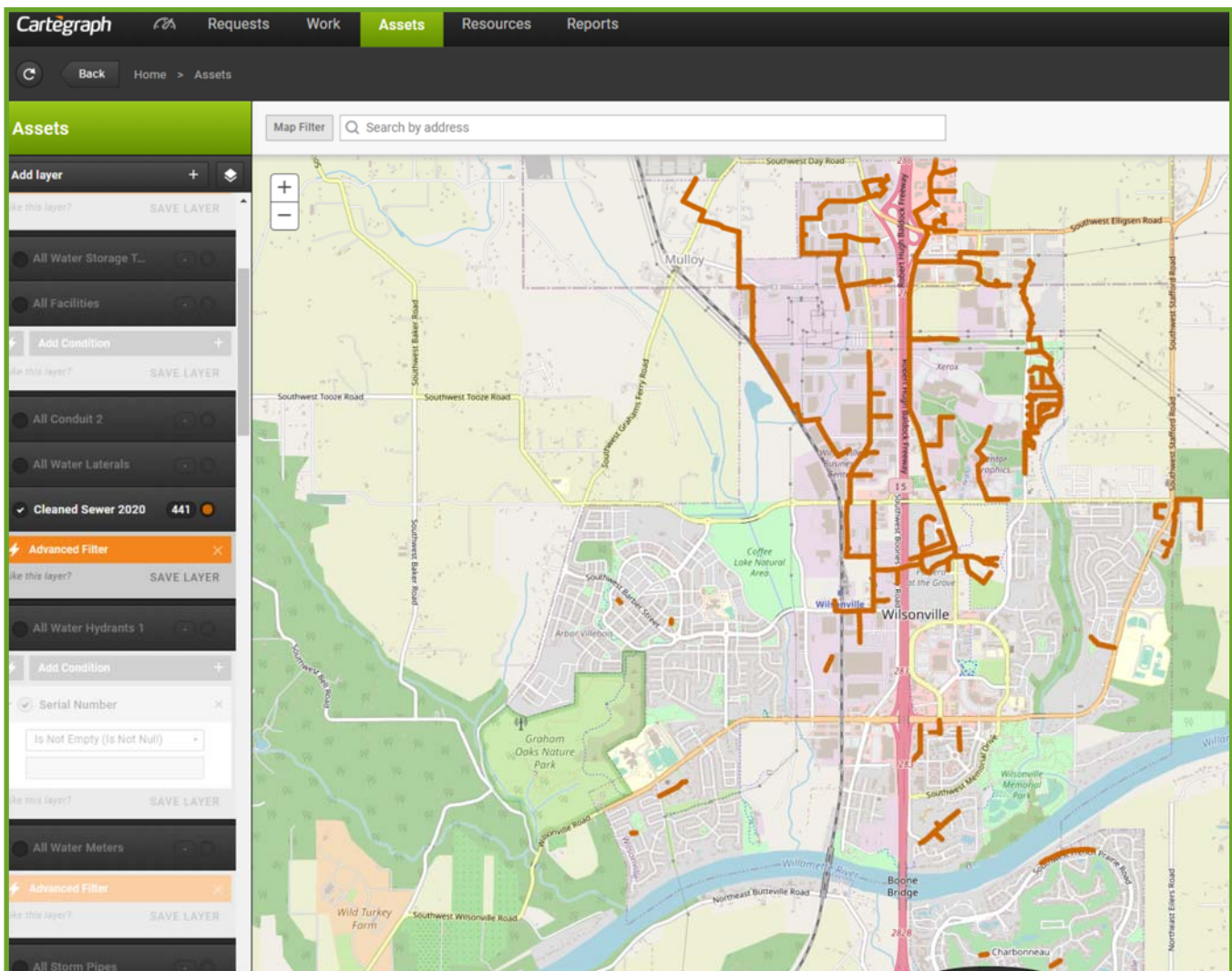


Asset management file includes a photo of the sign

## Utilities

### Asset Management—Sewer line cleaning

The wastewater crew has been hard at work cleaning sewer lines as part of routine maintenance and in preparation for the upcoming close circuit television (CCTV) inspections. The City's Asset Management software (Cartegraph) is an essential tool for keeping track of which lines have been cleaned and provides a place to record issues that need to be addressed. Cartegraph is also being utilized to create work orders to be assigned to the CCTV contractor and will aid in the organization of the data received from the inspections. Reports and video generated from the inspection process can now be stored and viewed within the system and the work graphically represented for better planning purposes.

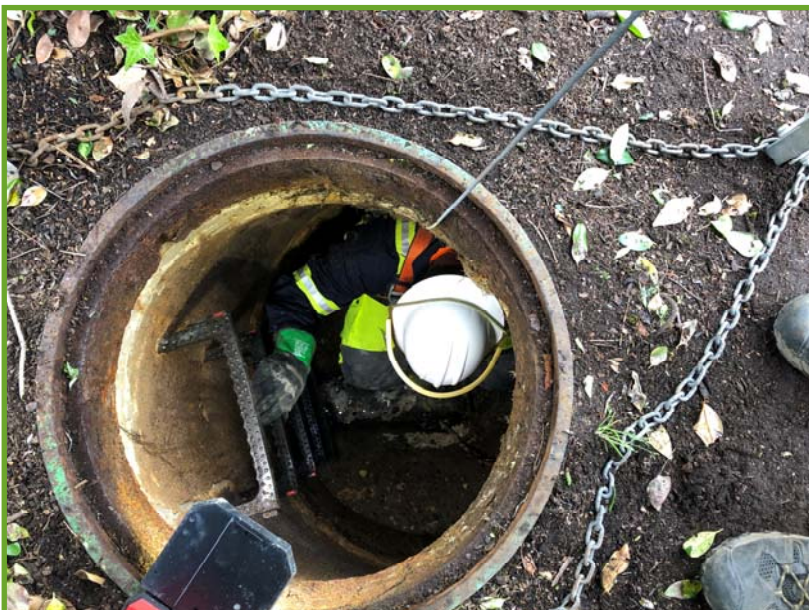


*Cartegraph map representing all the sewer lines which have been cleaned to date*

## Utilities

### Asset Management—Manhole Repair

In addition to cleaning sewer lines, the crew has tackled some very challenging manhole repairs this month. One such manhole provides service to Shari's Restaurant and McDonalds. This manhole has been a repetitive issue and required monthly cleaning to prevent the buildup of solids which could potentially cause a blockage and subsequent sewer spill. A confined space entry was performed to enter the manhole safely. Concrete was removed creating a smoother flowing channel. With the improvements made to the manhole it can now be removed from the monthly maintenance schedule.





## Utilities

### Asset Management—Hydrant Flushing

During the month of May, the water crew's main focus was on flushing the water distribution system. The water crew flushes the entire system annually as a proactive method to maintain high quality water for our customers. Flushing the system freshens up the water and removes sediment, loose deposits and tubercles. Tubercles are the result of minerals in the water interacting with the metal of the pipes. Additionally, the flushing program provides an opportunity to inspect the condition and operation of the hydrants and blow off valves. During flushing if a hydrant is not operating properly it is repaired within a day of discovery to restore its fire protection capabilities.



The crew utilizes Cartegraph for the flushing program to track which hydrants were actuated for flushing and to give the crew members a live representation of where they had flushed and where they are in relation to one another. At the end of the day the employee time and resources were distributed amongst the hydrants which were actuated. Having a live feed of where the crew is flushing is also very helpful to the office staff when receiving phone call inquiries from residents about where flushing is taking place.

Work Order 5686  
2020 Hydrant Flushing

Owner: Ian Eglitis | Status: In Progress | Complete Work Order

Category	Cost
Total Cost	\$11,120
Labor Cost	\$8,198
Equipment Cost	\$2,922
Material Cost	\$0
Other Cost	\$0

Progress: 740 Total Tasks, 739 Complete, 99 %

Work Order Tasks

- Work Order Tasks
- Details
- Labor
- Equipment
- Materials
- Other
- Attached Files

Map Filter | Search by address

Map data © OpenStreetMap contributors, CC-BY-SA | esri

Task Status	Count
PROJECTED Tasks	0
PLANNED Tasks	1
IN PROGRESS Tasks	0
COMPLETED Tasks	739
CANCELED Tasks	0

Actions