



SPECIAL POINTS OF INTEREST:

- **SAVE THE DATE!!!!** - The 2015 **IMAGIN Annual Conference** is being held **June 7-9, 2015** at the **Great Wolf Lodge** in **Traverse City, MI**
- **Volunteer with IMAGIN** by joining one of our **Teams** today.

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SAW Grants and GIS for Asset Management

The Michigan Department of Environmental Quality (MDEQ) established the Stormwater, Asset Management, and Wastewater (SAW) Grant Program to assist communities in developing an asset management program for stormwater and wastewater collection systems and treatment plants, stormwater management plans, and/or planning and design of stormwater and wastewater projects. MDEQ plans to release \$450 million in grant money over the next few years to successful applicants. The grants have a \$2 million cap per community; the first million dollars includes a 10-percent local community match and the second million dollars includes a 25-percent local match. A total of 673 grant applications totaling \$541 million dollars were submitted to MDEQ on December 2, 2013. Almost \$100 million dollars were awarded to 94 communities in April 2014, which was the first round of the grant. The second round of grant funds could be awarded as soon as October 2014.

Asset management programs are designed to help communities identify the desired level of service at the lowest life cycle cost for rehabilitating, repairing, or replacing the assets associated with a wastewater or stormwater system. Assets may include manholes, inlets, outfalls,

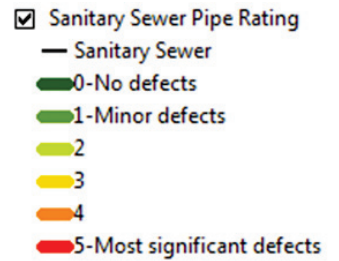
pipes, pump stations, and the equipment and processes associated with treatment facilities. Asset management helps plan for future capital improvement and identifies problems before they become emergencies. It also helps communities prioritize limited funding by focusing on the systems' most critical assets. Communities are better able to establish community expectations and set clear goals for their own maintenance and funding.

How do Geographic Information Systems (GIS) and asset management work together? The location and physical condition of assets are common areas where GIS plays a role in asset management. Asset management is a great opportunity to pull multiple sources of information from different formats and merge them into one location - your GIS. Such formats could be: record drawings, AutoCAD® files, survey data, historic hand-

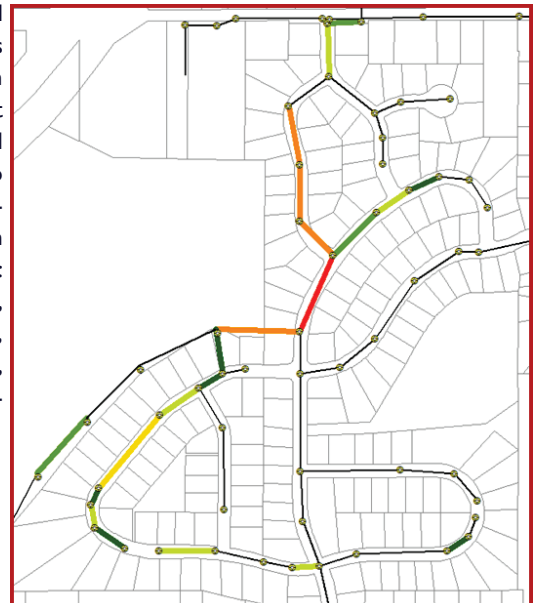
written field notes, and personal knowledge. A map is the easiest way to integrate many sources of data together to get a visual representation and a better understanding of what a community owns or maintains.

Communities are given the opportunity to survey and field verify the location of sewer assets with the SAW grant.

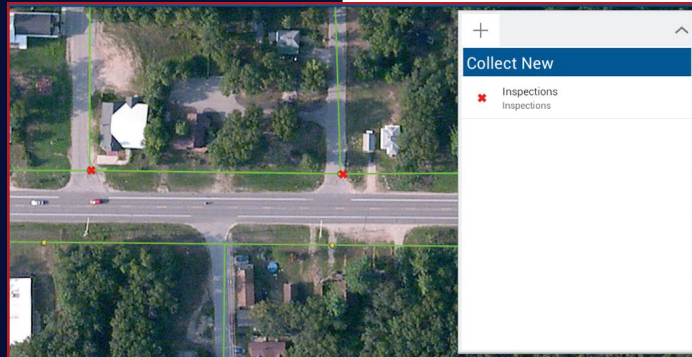
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Example of a PCAP Structural Pipe Rating



SAW Grants & GIS for Asset Management



Collect New

FRAME MATERIAL

Cast Iron

FRAME CONDITION

<null>

Broken

Missing

Corroded (Pitted/Worn)

Coated

<null>

ESRI Collector App

Simple field map books, ArcGIS Online, ESRI's Collector app, and geo-enabled Adobe® PDF files are examples of map applications that can help field crews locate and document assets in GIS.

Another part of asset management is condition assessment and rating of assets. Each asset is inspected, and the results are used to determine what needs to be repaired and/or replaced. The National Association of Sewer and Service Companies (NASSCO) sets standards for the assessment and rehabilitation of underground infrastructure. The SAW grant requires inspections and condition ratings to meet NASSCO standards for Manhole Assessment & Certification Program (MACP) and

Consequence of Failure/ Probability of Failure

25	20	15	10	5	5
20	16	12	8	4	4
15	12	9	6	3	3
10	8	6	4	2	2
5	4	3	2	1	1
5	4	3	2	1	

Probability of Failure

Consequence of Failure

- High Priority (16 - 25) or PACP Score of 5
- Medium Priority (5 - 15)
- Low Priority (1 - 4)

Pipeline Assessment & Certification Program (PACP). Both programs use a grading scale of one (minor defects) to five (most significant defects). One way FTCH is managing manhole inspections is using ArcGIS Online and ESRI's Collector app. Community data and blank inspection databases are loaded to ArcGIS Online, and data is accessed using ESRI's Collector app on smart telephones or tablets in the field. Manhole inspections are completed using the Collector app, instead of paper, and instantly uploaded to ArcGIS Online for use in the office. Once this data is uploaded back to the office network, this data can be used to generate manhole inspection reports within ArcMap. Closed circuit television (CCTV) inspection, pump station inspections, smoke testing, catch basin inspections, infiltration and detention basin inspections, and outfall evaluations are all eligible for SAW grant funds.

The SAW grant opens up new opportunities for facilities management using GIS. Mapping of treatment plants and pump stations can benefit from having an asset management plan. Documents can be stored and linked to each piece of equipment, along with photos, manuals, and reports. GIS is used to evaluate consequence of failure (criticality) by assigning priority ratings to assets based on severity of impact if an asset should fail. Factors that might

affect criticality include, diameter, failure history, critical customers (hospitals, city hall, airport), street type and proximity to wetlands. GIS is also used to evaluate probability of failure. Material, age of asset and condition are used to determine probability of failure.

The final step of the SAW grant is to create an asset management plan. A plan is developed to get the most value from assets, identify financial resources, reduce costs of unscheduled repairs, improve system reliability, and reduces risk. Many different asset management software options exist for communities of all sizes to manage their plans. For smaller systems, the MDEQ has provided a user's guide and workbook in MS Excel® format in the Forms and Guidance section of the SAW website (http://www.michigan.gov/deq/0,4561,7-135-3307_3515_4143-294952--,00.html). Larger systems may choose to implement GIS linked work order and asset management systems such as Azteca Cityworks®. Communities use maintenance history, inspection history, and condition assessment to determine the level of deterioration of an asset and likelihood of asset failure. GIS is a cost-effective tool that helps management balance the risk and cost of maintaining a system.

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If you are interested in submitting an article for a future issue of the IMAGINews please contact the IMAGIN Communications Team via email at communication@imagin.org.