Infrastructure X-Ray: Piloting Asset Management in Ramsey

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City of RAMSEY

Resilient Communities Project
University of Minnesota
Building community-university partnerships for sustainability

The project on which this report is based was completed in collaboration with the City of Ramsey as part of the 2017–2018 Resilient Communities Project (RCP) partnership. RCP is a program at the University of Minnesota's Center for Urban and Regional Affairs (CURA) that connects University faculty and students with Minnesota communities to address strategic projects that advance local resilience and sustainability.

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Resilient Communities Project

Infrastructure X-Ray

Piloting Asset Management in Ramsey

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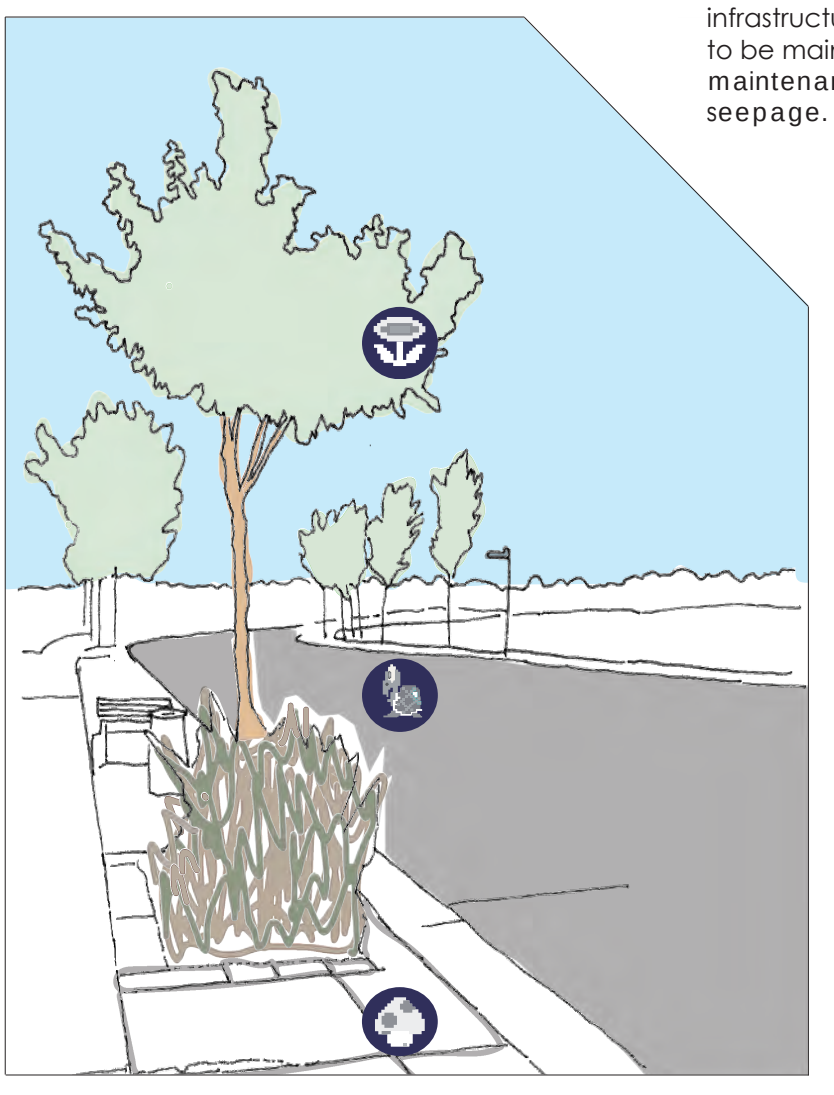
Introduction

What is asset management? The city of Ramsey consists of a coordinated system of public assets. Important infrastructure such as **streets, fire hydrants, sidewalks and utility lines** are assets that need to be inventoried, maintained and replaced. To manage this maintenance in the most cost and time effective manner, and to keep stakeholders informed regarding infrastructure updates, it is crucial that Ramsey implement an asset management system. This project assesses the capabilities of four asset management software systems and provides recommendations for their implementation.



Cost Cutting and Disaster Prevention

Can you count the types of infrastructure in this photo? There are thousands of interconnected assets that Ramsey must track and maintain. In addition to visible infrastructure, there are **underground pipes and utilities** that are not pictured, but need to be maintained. Besides regularly inspecting these assets, keeping a robust history of maintenance issues helps to avoid costly disasters such as water main breaks and sewer seepage. An inventory cuts costs of servicing assets needlessly.

Schedule and Batch Work with Ease

Maintenance and labor are most efficient when work is batched together by type or location. For example, **tree trimming** needs to be done every year and more often due to storms. Asset management software keeps a record of asset locations and establishes work orders to facilitate easy and effective batching of work.

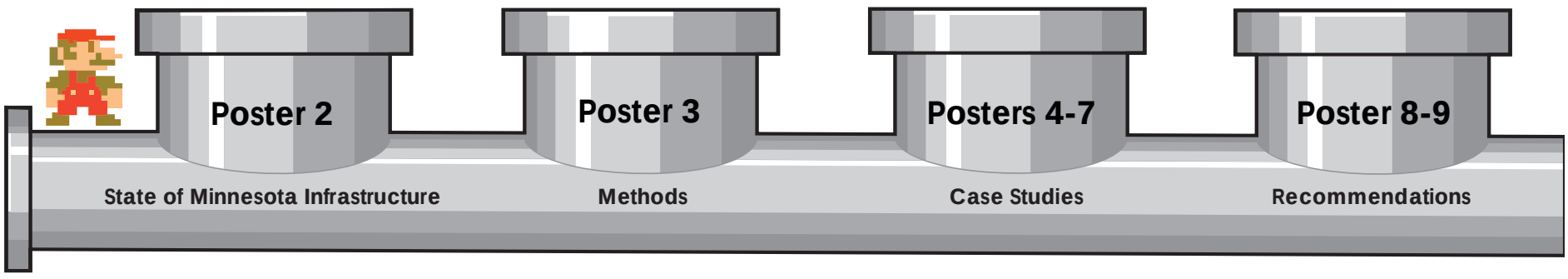
Pairing GIS and Asset Management Software

Infrastructure in Ramsey is an integrated and complex system. Many municipalities pay for and use GIS software to track and map their assets. To maintain a **complex street system,** the combined use of asset management and GIS software most effectively schedules regular maintenance. Asset management software schedules and tracks maintenance that has no fixed location such as street sweeping, snow plowing, or fleet maintenance.

Moving from Reactive to Proactive Maintenance

It is extremely important for municipalities to respond in a timely manner to the calls and needs of residents. If a resident calls about a **cracked sidewalk** or burned out streetlight, the city is responsible for responding as quickly as possible. Asset management software helps to manage workload and schedule regular preventative maintenance.

Project Outline:



Throughout the State of Minnesota, there is widespread lack of knowledge about the costs and best practices for maintaining aging infrastructure. In the upcoming posters, we pilot and assess the capabilities of four different asset management systems. We begin with a brief summary of asset management in greater Minnesota.

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The Current State of Asset Management in Minnesota

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The Current State

According to the MN 2050 State of Infrastructure Survey, Minnesota is in dire need of consistent, user- friendly and transparent asset management systems. Poor asset management leads to increased repair costs for cities, and in worst case scenarios, can cause disasters. The City of Ramsey does not currently have a comprehensive system for managing infrastructure, subjecting it to unnecessarily high costs and making it vulnerable to major infrastructure failures.

Unknown Asset Values

More than **two thirds** of Minnesota jurisdictions do not know the value of any of the assets that they manage

Low Asset Management

Just over half of cities, counties,and state agencies have a system for managing their assets, compared to Minnesota's goal of 90% by 2050

Funding Gap

Few jurisdictions know the actual value of their assets. An estimate of the gap between infrastructure investment needs and available funding is shown below:

- = -$228 million — Small Cities (pop. < 5,000)
- = -$501 million — Counties
- = -$360.5 million — Large Cities (pop. >/= 5,000)
- = -$750 million — State Agencies

Tools Used by Cities, Counties, and State Agencies for Asset Management

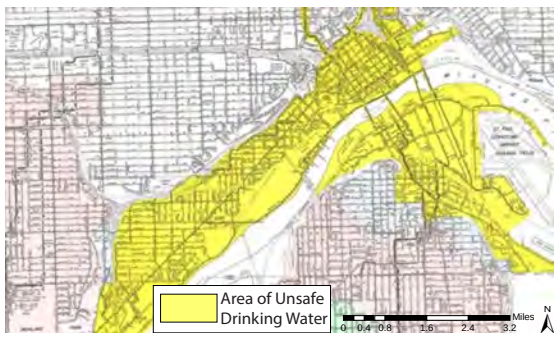
Almost two-thirds of Minnesota agencies use **MS Excel** or simply **Pen and Paper** to manage their assets!

Data Courtesy of MN2050 Survey, Databook Pg. 107, http://mn2050.org/wp-content/uploads/2015/08/MN2050-2016-Data-book.pdf

Consequences of Deteriorating Infrastructure

On February 8th, 2013, an underground water main ruptured in downtown St. Paul, sending an estimated **1.75 million gallons of water running** through the streets of Lowertown, disrupting service and forcing the city to test the area's tap water. The rupture is thought to have been caused by the **deterioration of underground infrastructure**, and quickly became nearly a city-wide disaster. To prevent these types of disasters, it is vital to thoroughly track and manage preventative maintenance through the use of asset management. (Twin Cities Pioneer Press, 2/8/2013, http://bit.ly/2haQahm)

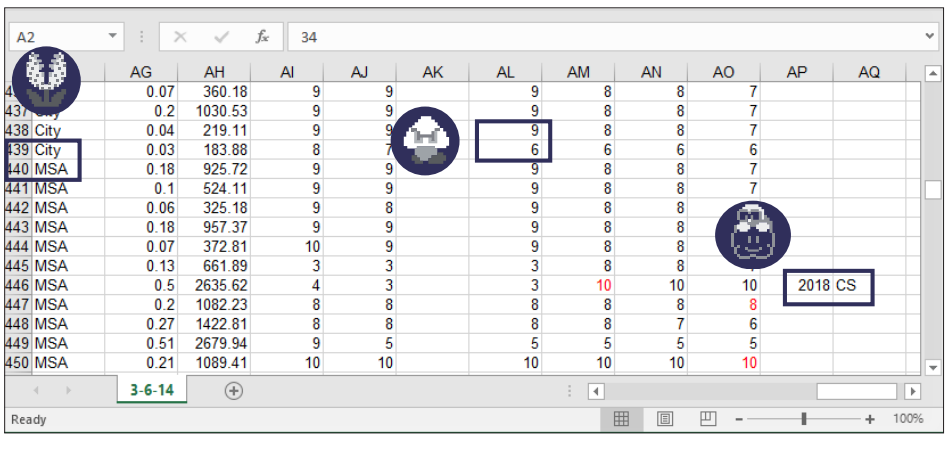
Affected area in downtown St. Paul
http://bit.ly/2BUdq8L



Unsafe Area After 2013 Water Main Break St. Paul, MN

Asset Management in Ramsey Can be Improved

The city of Ramsey currently uses large **Microsoft Excel** documents to track and manage most of their assets. This is extremely problematic for a number of reasons:



	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
437	0.2	1030.53	9	9		9	8	8	7		
438 City	0.04	219.11	9	9		9	8	8	7		
439 City	0.03	183.88	8	7		6	6	6	6		
440 MSA	0.18	925.72	9	9		9	8	8	7		
441 MSA	0.1	524.11	9	9		9	8	8	7		
442 MSA	0.06	325.18	9	8		9	8	8			
443 MSA	0.18	957.37	9	9		9	8	8			
444 MSA	0.07	372.81	10	9		9	8	8			
445 MSA	0.13	661.89	3	3		3	8	8			
446 MSA	0.5	2635.62	4	3		3	10	10	10	2018 CS	
447 MSA	0.2	1082.23	8	8		8	8	8	8		
448 MSA	0.27	1422.81	8	8		8	8	7	6		
449 MSA	0.51	2679.94	9	5		5	5	5	5		
450 MSA	0.21	1089.41	10	10		10	10	10	10		

There is room for **erroneous comments** and incomprehensible fields. There is no way to assign job duties and an overall **lack of responsibility** with Excel.

The city manages a complex system of interconnected assets, both **city-owned and state-owned**. Excel is an inadequate way to track these assets because it cannot give an all-encompassing view which is needed for scheduling maintenance.

While it is possible to **track preventative maintenance** through Excel, it is impossible to update maintenance real-time in the field. It is in Ramsey's best interest to create the most **efficient workflow** for their employees.

There are widespread issues with asset management in Minnesota. The systems are archaic, and there is a lack of knowledge about the general value of assets and their maintenance. Without proper asset management, the costs and consequences can be disastrous. Adopting asset management systems can reduce costs and avoid failing infrastructure. The next poster will show the criteria and methods we will use to assess different asset management systems.

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Methods

Project Methods

To alleviate the challenges created by the current state of asset management in Minnesota, we need to consider new management systems. In this poster we evaluate the capabilities of four asset management systems by providing case studies based on different cities in Minnesota. We aim to understand why the cities chose particular programs and how they deploy them.

Criteria

Based on priorities established by City of Ramsey staff and the case study analysis, we have chosen six criteria to evaluate infrastructure management programs and make recommendations.

Compatibility

For systems that intend to be comprehensive, the program should be capable of performing functions required for various types of assets, including:

- Utilities
- Streets
- Traffic
- Forestry
- Parks
- Equipment

Mobility

To be useful, infrastructure inventories need to be easily accessible. Staff can reduce office time by updating inventories in the field. Mobility can be provided by:

- Comprehensive Mobile Interface
- Real-Time Updates
- GPS Syncing

Costs

Cost is one of the top priorities in deciding on an asset management system. We've identified three types of costs that affect Ramsey's budget:

- Up-front Costs (Setup Costs)
- Long-term Costs (Monthly/Yearly)
- Variable Costs (Costs per Asset, etc)

Data Visualization

City staff need to report infrastructure data to the public, city council, and higher-order government. This can be done by prioritizing:

- Reports
- Maps
- Info Graphics

Public Interface

City staff want to provide some, but not all infrastructure information to the general public. They also need to be able to receive public feedback by providing:

- Interactive Maps and Databases
- Ability to Submit Repair Requests
- Systems for Prioritizing Requests

Training

Different roles will require different training times. We've divided the staff that needs to be trained into four categories.

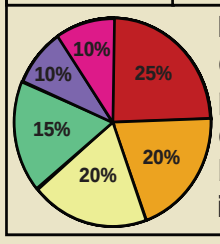
- Administrators
- Work Crews
- Decision Makers
- Public Liaisons

Score Card Comparison

We will evaluate proposed management systems using a score card. This tool compares different asset management systems based on the criteria and takes into account the advantages and disadvantages of each system. We score each system from 1-3 stars based on how it fulfills each criteria, and average the scores of individual criteria to come up with a comprehensive score for each system. The score card provides a metric to offer software recommendations to Ramsey.

Software Score Card

Criteria	Score (out of 3 stars)	Advantages / Disadvantages
Compatibility	★★★	
Mobility		
Costs		
Data Visualization		
Public Interface		
Training		
Final Score		



Not all criteria are of equal importance. This picture shows which criteria are valued most by Ramsey in considering infrastructure software

To apply the score card to different asset management systems, we will take the information from each case study and evaluate it in relation to the City of Ramsey's requirements. In the next posters we will assess the four chosen asset management systems.

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Case Study 1: Cartegraph

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Case Study: Cartegraph

This poster evaluates the use of Cartegraph's asset management software in Maple Grove, MN. We examine whether Cartegraph fits the needs of the City of Ramsey, and assess the program to produce a score based on Ramsey's needs. This score will be used to compare Cartegraph to other asset management programs and provide a recommendation to the City of Ramsey.

Case Study: Maple Grove, MN

Cartegraph
The Operations Management System.

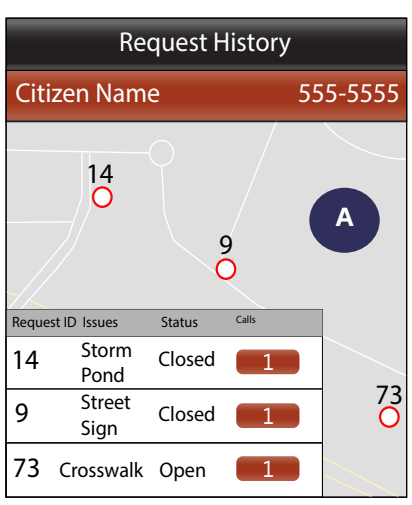
Maple Grove considered several asset management systems before deciding on Cartegraph in 2013. **Mobility, or ability to be used in the field, was Maple Grove's highest priority in making this choice,** with factors like cost and data visualization considered to be lesser priorities. Maple Grove already used an early, online version of Cartegraph, which helped inform their decision and helped ease their transition to full asset management.

Despite initial challenges with training, Maple Grove now uses Cartegraph to manage nearly all of its assets. The City finds Cartegraph useful for the entire infrastructure maintenance cycle, including **receiving service requests, scheduling maintenance, and creating and fulfilling work orders.** The City uses the system to track the costs and time spent on maintaining assets, **and finds the availability of data useful for presenting and conveying successes and needs.**

Cartegraph Score Card

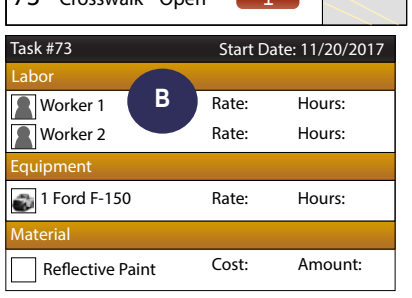
Compatibility	2.5 stars	**Advantages:** Cartegraph is robust in managing and evaluating almost all types of assets. **Disadvantages:** May not be compatible with Logis GIS or JD Edwards software, which is used by the City of Ramsey.
Mobility	3 stars	**Advantages:** Designed to pair with native iOS/iPad. It provides two-way communication with ESRI GIS, which can update every 24 hours. Primary interface is maps, not spreadsheets. **Disadvantages:** Cartegraph has very few mobility disadvantages compared to other systems
Cost	1 star	**Advantages:** Cartegraph provides the service of inputing the city's data for a one-time fee, and maintenance costs decrease when there are fewer assets. **Disadvantages:** Costs are high relative to other systems. ESRI licensing fee is required for every user.
Data Visualization	2 stars	**Advantages:** Contains tools for condensing data and creating reports. Excels with tables. **Disadvantages:** Maple Grove found it easier to export data to Excel for its reporting capabilities. Visualization is not Cartegraph's primary functionality.
Public Interface	2.5 stars	**Advantages:** Contains a public facing map interface. Convenient service request workflow as illustrated in graphic to the left. **Disadvantages:** The public interface doesn't require login, which potentially allows for anonymous service requests.
Training	1 star	**Advantages:** New staff train as they go, with little issue. It is easy for staff to learn their specific roles. **Disadvantages:** Maple Grove reported trouble with initial Cartegraph training, which mostly took place over webinars.

Cartegraph Interface

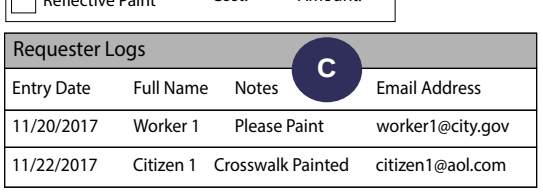


This is a simulation of a part of Cartegraph's desktop and mobile interface used for repair requests. Labor, equipment and material costs, as well as citizen requests can be uploaded directly into work order logs. When a work order is completed, Cartegraph then allows an email to be sent to the citizen who made the request.

A — Mock-up of a sample citizen's request history with location and status of work orders.



B — Mock-up of a work order, showing labor, equipment, and material costs.



C — Email log for an asset, including the work order email and the follow-up confirmation of completed status

Cartegraph Final Score:
2.1 Stars

Cartegraph may be one of the more robust asset management systems assessed. This advantage is offset by its high cost, which was given by Roseville and Richfield as the primary reason for choosing another system. Cartegraph might be ideal for large or growing cities with large numbers of assets or staff, and the need to account for new assets.

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Case Study 2: CityWorks

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Case Study: CityWorks

This poster evaluates the use of CityWorks asset management software in Richfield,MN.Weexam-ine whether CityWorks fts the needs of the City of Ramsey and assess the program to produce a score based on Ramsey's needs. This score will be used to compare CityWorks to other asset management programs and provide a recommendation to the City of Ramsey.

Case Study: Richfield, MN

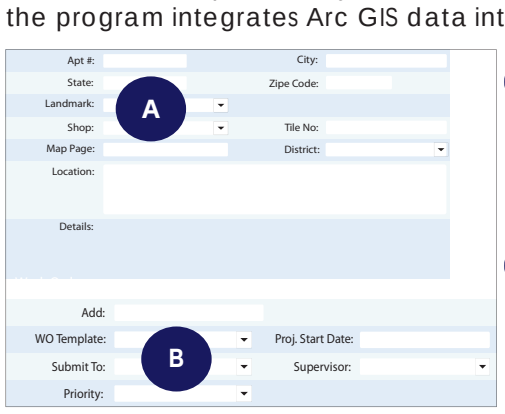
Cityworks

To assess the capabilities of CityWorks, we did an in-depth interview and software demo with two staff members from the City of Richfield. Their general consensus was that CityWorks was a good program, but may not be worth the cost and effort to implement.

Richfield uses an online version of CityWorks, **which means that their data is managed by CityWorks** and their GIS data is managed by Logis (which is also what the City of Ramsey uses). For Richfield, the best features of CityWorks are its **reporting capabilities** and **ability to batch work together by type, location, staff and timeline.** CityWorks has been easy for public works and parks staff, who have limited hours at a desk, to use in the field and update information in real time. Overall, Richfield recommended assessing what the city of Ramsey really needs concerning asset management, and to **weigh whether the costs of CityWorks are worth its output.**

CityWorks Interface

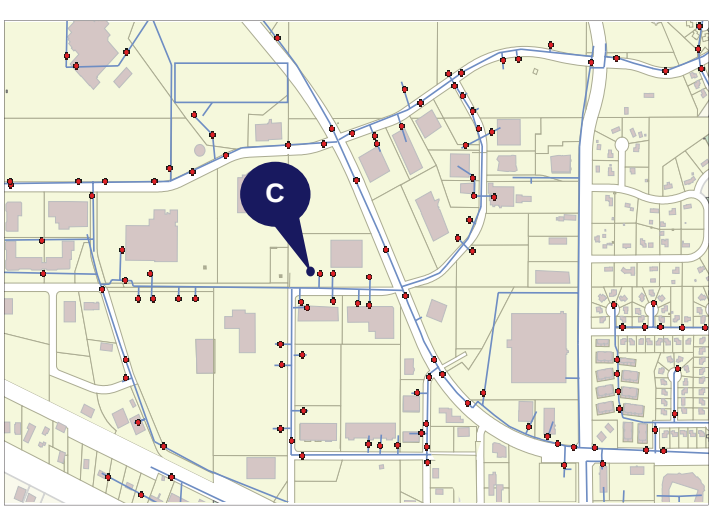
This simulation is part of CityWorks' desktop interface and shows how the program integrates Arc GIS data into asset management.



A All of the fields shown are searchable and able to be turned into reports and graphics for city council.

B Users can create a work order using this template. Corresponding assets will then be populated on the map.

C When a work order is selected or an item is searched, its corresponding symbol will automatically populate on the map as shown.



CityWorks Score Card

Compatibility	3 stars	**Advantages:** CityWorks is a comprehensive program implemented on a modular basis for assets and utilities. It is compatible with Logis GIS and JD Edwards financial software. The system can manage a tree inventory, which is of high importance to Ramsey. **Disadvantages:** N/A
Mobility	3 stars	**Advantages:** CityWorks has full mobility **Disadvantages:** Separate logins for each user-type can be a limiting factor. Ramsey needs to consider the costs associated with adopting mobility, including the cost of iPads and cellular access.
Cost	1 star	**Advantages:** N/A **Disadvantages:** The cost of implementing CityWorks is high, including a high upfront cost, separate cost per employee login, the need for dedicated staff time and costs for implementing mobile access.
Data Visualization	2.5 stars	**Advantages:** CityWorks has the ability to search and categorize by any field. Reports and graphs are easy to make and use. They are based on GIS data and export information to any Microsoft program. **Disadvantages:** N/A
Public Interface	2 stars	**Advantages:** CityWorks has a powerful service request function that can be automatically transformed into a work order and assigned to dedicated staff **Disadvantages:** This feature costs more and has limited functionality. We recommend that Ramsey continue to intake requests via telephone.
Training	1.5 stars	**Advantages:** Training time for public works staff is minimal. **Disadvantages:** We recommend that Ramsey confer with the City of Richfield prior to implementation to determine optimal workflow because that can be relatively complex and time consuming.

CityWorks Final Score:
2.3 Stars

CityWorks is a comprehensive program that has an intuitive user interface and the ability for mobile application. However, CityWorks may be a cost-prohibitive program. Not only does CityWorks have a high upfront cost, it also has costs associated with staff time, mobility and multiple users. The City of Ramsey will need to weigh the costs and benefits of CityWorks and determine if it is a good fit for their needs.

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Case Study 3: PubWorks

Case Study: PubWorks

PubWorks is an easy-to-use, GIS-integrated asset management software package. We tested PubWorks with the City of Roseville to assess the capabilities of PubWorks. Compared to the other asset management systems that we analyzed, it is a low cost option, but does not have optimal functionality or visualization.

Case Study: Roseville, MN

PubWorks
The Software For Public Works

The City of Roseville, MN updated their asset management in 2014 and considered Cartegraph and CityWorks before **choosing PubWorks for its low cost**. The City primarily uses the system as a timesheet for tracking work orders, and uses it for asset management as a secondary function. Although PubWorks offers a website portal for service requests from the public, Roseville no longer uses it. Roseville also does not use the PubWorks mobile application.

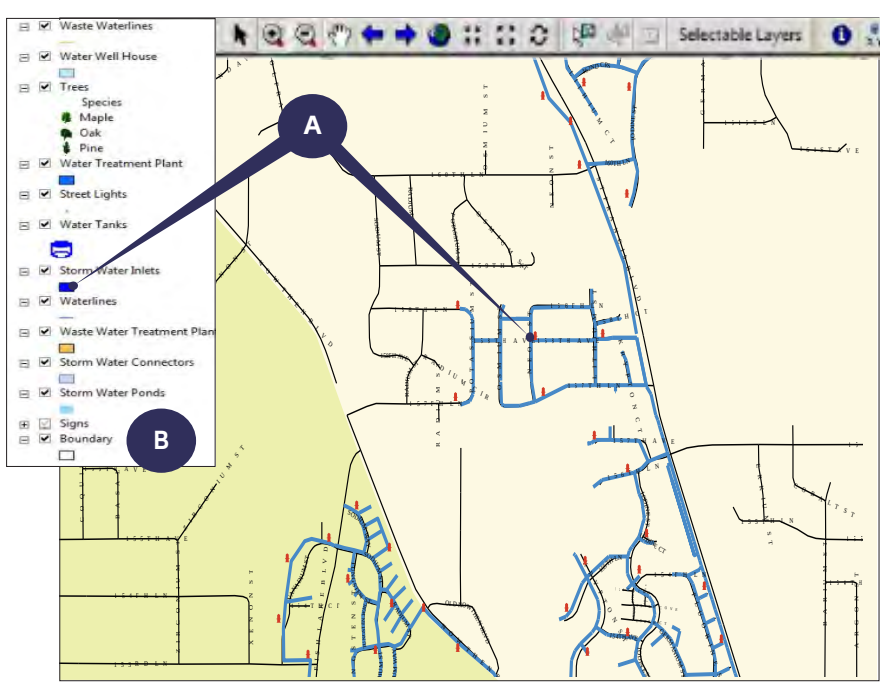
While PubWorks' interface is less attractive or intuitive than that of the other systems, staff at **the City of Roseville found it quick to learn and easy to use once learned.** The City has found it optimal to have **one staff member** that is an expert in all of PubWorks' functions and has access to all departmental logins, while the majority of staff members who use the system are only trained on functions relevant to their department.

PubWorks Interface

A Below we can see PubWorks' map interface. Highlighted in blue in this sample are several water lines.

B Items on the layers list are organized by asset type. However, it is not possible to update or change information from the map screen.

Although this map is interactive, Roseville staff found it easier to use it as a secondary, rather than primary, interface in their day-to-day workflow.



PubWorks Score Card

Compatibility	1.5 stars	**Advantages:** PubWorks tracks all types of assets: it can track costs, depreciation, and work time by asset, or by department or work team. **Disadvantages:** Interface is old-fashioned and does not save layers between uses. Users cannot create requests from the map.
Mobility	1 star	**Advantages:** It has a robust mobile app that can be integrated with the desktop app. It is compatible with iOS or Android. **Disadvantages:** PubWorks charges extra for the mobile app. Automatic information transfer between ArcGIS and PubWorks is only one-way (update ArcMap only manually).
Cost	3 stars	**Advantages:** PubWorks is available at relatively low cost, estimated at $29,500 for software and $14,200 to set up for professional services. PubWorks uploads data free of charge **Disadvantages:** N/A
Data Visualization	2 stars	**Advantages:** Can create reports locally and automatically using pre-loaded forms. Can also export to Excel for data visualization. **Disadvantages:** PubWork's interface is somewhat outdated, which makes it difficult to visualize data, assets, or tasks on-demand.
Public Interface	1 star	**Advantages:** PubWorks offers a website portal for service requests. **Disadvantages:** Website does not communicate with PubWorks or send emails, it must be manually checked. Request can easily get ignored if not maintained. Roseville did not continue to use this feature.
Training	2.5 stars	**Advantages:** 2-day training and free monthly webinars are offered. Roseville described PubWorks staff as responsive and helpful. **Disadvantages:** Primitive interface may increase new hire training time, and increase workflow development time.

PubWorks Final Score:
1.8 Stars

PubWorks' biggest advantage is its low cost. With the option of purchasing program features a la carte, this system works well for small cities that may not need every functionality. PubWorks' biggest disadvantages are its older desktop interface, and its difficulty in communicating with other programs. The program most likely requires dedicated staff members for manual data input and updates.

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Case Study 4: Infraseek

Case Study: Infraseek

Infraseek is the final asset management software that we evaluated. Because it was the only software that we had direct access to, we were able to assess its real-time capabilities. Infraseek is an attractive option for the City of Ramsey given that it is a Minnesota-based company that provides local support, and is fully customizable.

From the creators of Infraseek...

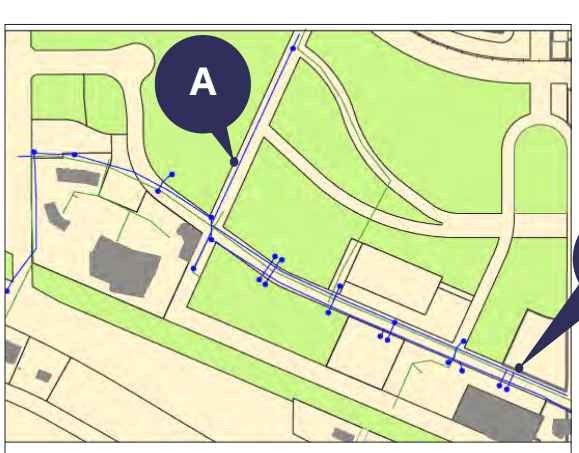
We sat down with the creators and owners of Infraseek to have an in-depth conversation and tutorial about Infraseek's capabilities. This level of access was unparalleled among the four asset management systems we evaluated.

While Infraseek is not as visually pleasing as CityWorks or Cartegraph, it has a high level of functionality and **could be a good option for Ramsey.** Overall Ramsey will need to assess the costs and benefits of each system and determine if they would like to implement a costlier system with more data visualization and reporting abilities, or a less expensive system like Infraseek with high functionality and local staff.

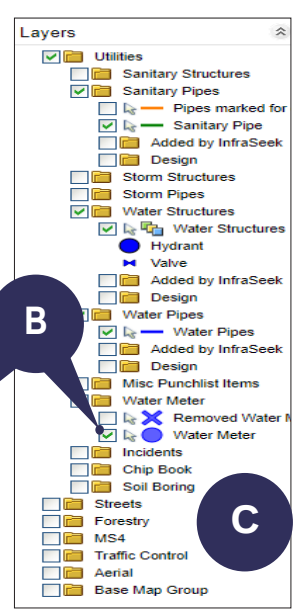
Infraseek Interface

This image of the Infraseek desktop interface shows its capabilities in using ESRI Arc GIS data with multiple simultaneous layers. We had access to the full Infraseek software, and were able to analyze its interface in more detail than the other systems.

- **A** Utilities in the Center of Ramsey (COR) as shown in Infraseek
- **B** Items on the layers list are organized by asset type, and correlate to items shown on the map
- **C** Infraseek has the ability to manage yearly inspections and many other necessary maintenance tasks for public works.



User view of Infraseek



Infraseek Score Card

Compatibility	2.5 stars	**Advantages:** Infraseek is compatible with Ramsey's Logis GIS software. It has the ability to manage all types of assets that their previous customers have requested. If Ramsey has a particular request, the proximity of the company could be a benefit in the ability to customize. **Disadvantages:** N/A
Mobility	2.5 stars	**Advantages:** Infraseek has full mobility through their new software, Cleerio. All new clients of Infraseek will be set up with this software, which can function with GPS on any mobile device. **Disadvantages:** The City of Ramsey will need to consider the costs and time to transition to a mobile system.
Cost	3 stars	**Advantages:** The cost of Infraseek is comparatively lower. With a monthly cost of only a few hundred dollars and unlimited login access, it is reasonably priced when you consider the high level of service you will receive with a local company. **Disadvantages:** N/A
Data Visualization	2.5 stars	**Advantages:** Infraseek has the ability to create dynamic reports and sort by certain features. **Disadvantages:** If data visualization is the only consideration, it lacks the sophisticated look of other programs.
Public Interface	0 stars	**Advantages: N/A** **Disadvantages:** Infraseek does not have a method for the public to give input or interact with their system.
Training	3 stars	**Advantages:** The average training time for staff is about 2 hours. Infraseek will teach each staff member how to manage and track information relevant to their roles. Infraseek offers data input service and will work with the municipality to help them gather necessary data. **Disadvantages:** N/A

Infraseek Final Score:
2.4 Stars

Infraseek has several benefits: a local knowledgeable staff, low cost, and help with implementation. Infraseek may never have all the capabilities of CityWorks or Cartegraph given its low cost, but it has a high level of functionality that could be adequate for Ramsey. In the next poster we will assess the steps Ramsey needs to take before implementing an asset management system, and conclude with our comprehensive assessment of the four systems.

Lauren Walburg, Yuxuan Guo, Max Pattsner

Resilient Communities Project
University of Minnesota Driven to Discover
City of Ramsey

Infrastructure X-Ray

Piloting Asset Management in Ramsey

Implementation Suggestions for Ramsey

8
Implementation

To help the City of Ramsey implement asset management software, we are providing several recommendations. To streamline the process, **the City should begin deciding which elements of asset management to update, move forward with its full infrastructure inventory and GIS update,** and **develop a model workflow to help transition City staff into the new system.**

Our Recommendation:

While each of the four programs functions well and has its own advantages and disadvantages, **we are recommending that the City of Ramsey choose Infraseek. For its final score, we gave the system 2.4 stars as a reflection of the following:**

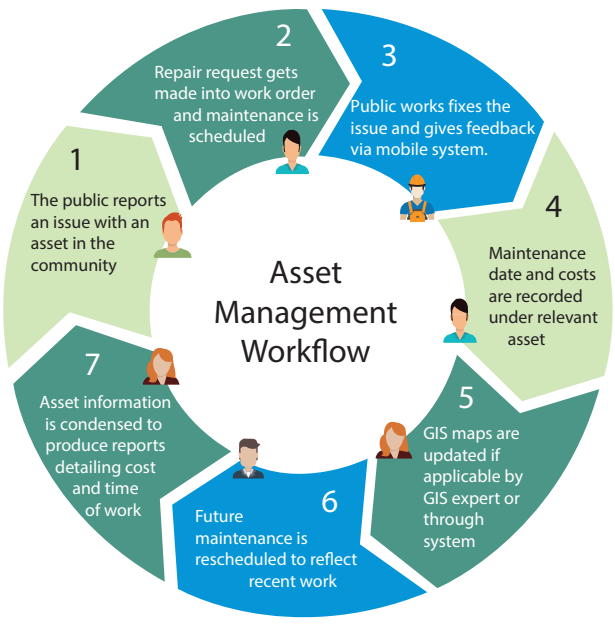
Final Score:
2.4 Stars

- **Scale:** Ramsey is a small but growing city. However, it is not yet at a size where a large, expensive program like Cartegraph or CityWorks would be necessary or cost-effective. Infraseek has all of the functions necessary for successful implementation at a reasonable cost for a city of Ramsey's size.
- **Locality:** Infraseek is a local company in Minnesota and has a responsive staff that is able to work with Ramsey through implementation and future troubleshooting.
- **Cost:** For the cost, Infraseek has a more robust overall system than PubWorks, with full mobile capability and better integration of GIS data.
- **Interface:** Infraseek's interface is distinctly modern and pleasant to use.

Infraseek is a relatively new program that is continually updated. By being an early user, Ramsey staff will be given the option to continually improve their experience for a relatively low entry cost.

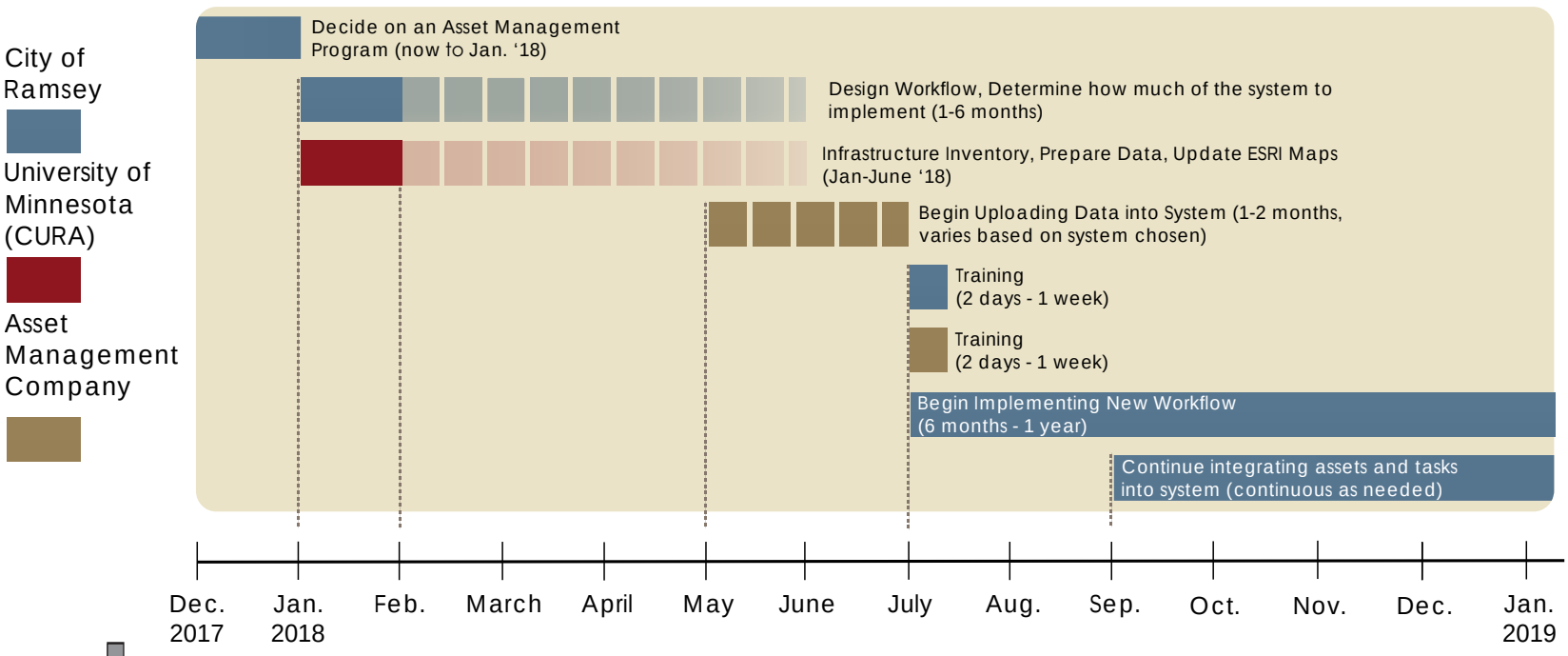
Creating an Asset Management Workflow

Once it has chosen which system to use, but before implementation, the City of Ramsey staff should devise new workflows to account for the new technology. Pictured below is a workflow model for a repair request.



Timeline for Software Implementation

Based on the City of Maple Grove's experience, we propose a one-year timeline illustrating a best case scenario for implementation in the City of Ramsey. With the help of the University of Minnesota and the asset management company, Ramsey can transition to computer-based asset management within a year.



Ramsey still has a long process ahead to update and modernize their asset management. Asset management is essential, but it is only the first step for the City to achieve its goal of increasing efficiency and protecting its investments. The next poster will sum up the state of asset management in Ramsey and in Minnesota, and provide suggestions for further research.

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Conclusion

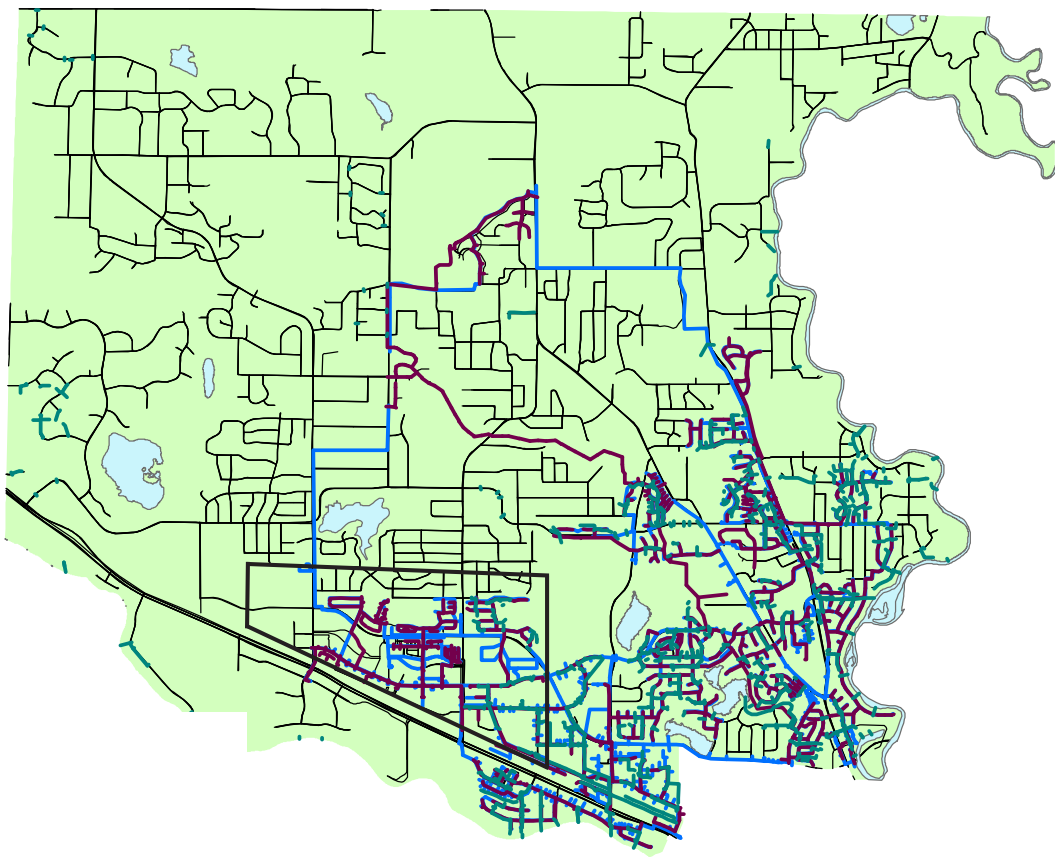
Conclusion

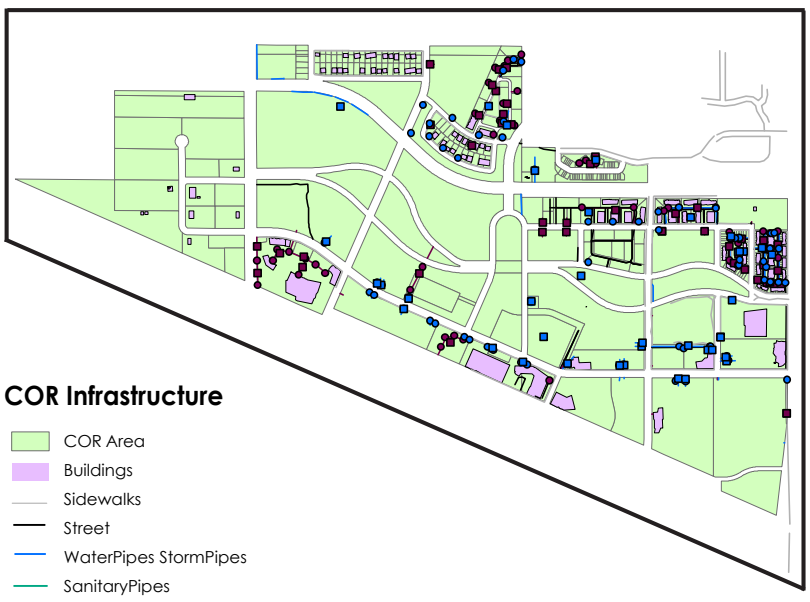
The entire state of Minnesota desperately needs to adopt a better way to manage its public assets. Each year, maintenance is done on roads, utilities, sidewalks and other public infrastructure that are not being properly tracked for future knowledge. The City of Ramsey needs to implement asset management software now to better manage their assets, and the greater state of Minnesota needs to follow.

When assets are managed properly, the entire community benefits. This picture shows well-maintained assets in the COR, which are safer, more functional, and more visually appealing for the community.

A GIS Map and Excel Sheet?

These maps show the scope of road and utility infrastructure in the Center of Ramsey (COR) and in broader Ramsey. There are too many assets to manage through GIS and Excel alone. It is imperative that the City of Ramsey adopt asset management now before building out the COR to avoid falling behind in managing and maintaining their growing number of assets.

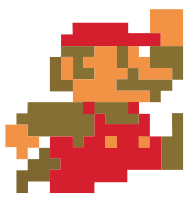




Further Research

We suggest that future students gain access to all four asset management systems and analyze their capabilities. Students could also aid the City of Ramsey in organizing an infrastructure inventory and structuring a consistent way to value assets. We suggest that Ramsey deeply analyze their asset management needs and decide which changes would be most cost-effective and helpful for their workflow. The City of Ramsey will also need to analyze which of their assets need to be inventoried prior to and concurrently with the implementation of any asset management system.

Policy Implications for Asset Management in Minnesota



Municipalities and entities managing public assets should consider adopting standard methods of asset management to ensure uniformity and consistency among the management systems and assessed value of assets. The State of Minnesota needs to make resources available for smaller cities to advocate for and facilitate the use of consistent and collaborative asset management across the state.

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