



WEBINAR

Using Technology to Collect Better Data and Make Better Decisions

Tuesday, April 29, 1-2pm ET



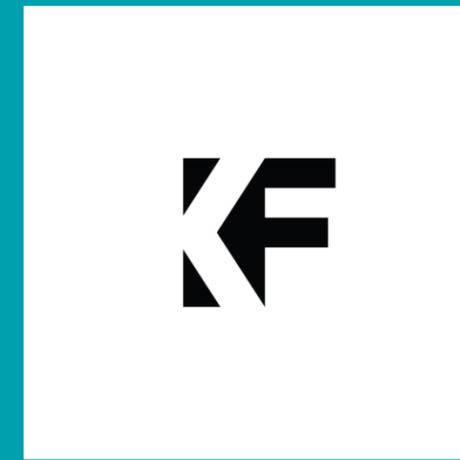
MODERATOR



Nikhil Reddy

CEO & Co-Founder
Kaizen
nikhil@kaizenlabs.co

SPONSORED BY



CEUS

- General CEUs
- AICP

SPEAKERS



Peter Hamma

Data Insights Analyst
Minneapolis Park & Recreation Board
phamma@minneapolisparcs.org



Joe Ayers

GIS Administrator
Minneapolis Park & Recreation Board
jayers@minneapolisparcs.org



R.J. Cardin

Former Director
Maricopa County Parks & Recreation
recprof@msn.com

A desert landscape at sunset. In the foreground, a large saguaro cactus stands prominently on the right. The middle ground is filled with various desert plants, including smaller cacti and shrubs. In the background, a range of mountains is silhouetted against a sky with vibrant orange and red clouds. The overall scene is a classic representation of a Southwestern desert environment.

Leveraging Big Data and Artificial Intelligence (AI) in Parks and Recreation Management



R.J. Cardin

- **Retired Director Maricopa County Parks and Recreation Department (18+ Years)**
- **40 Years of Parks and Rec. Experience**
 - County
 - City and Town
 - State
 - Non-profit
 - Private
 - Professional Associations
 - Academia
 - Consulting

Maricopa County Parks and Recreation

- **Regional Open Space and Trails System**
- **122,000 Acres**
- **13 Regional Parks and Conservation Areas**
- **500+ Miles of Trails**
- **Enterprise System**
- **Maricopa County Quick Facts**
 - **Population 4.5 million (4th largest)**
 - **9,224 square miles, larger than four U.S. states**
 - **24 cities and towns and several unincorporated communities**

Introduction

Collecting big data and using AI improves decision making and service delivery.

- 1. Helps agencies enhance community impact and visitor experiences.**
- 2. Drive revenue.**
- 3. Improve efficiency/reduce costs, include staffing, maintenance, capital improvements and marketing.**
- 4. Tell your story!**

What is Big Data in Parks and Recreation?

Big data refers to large, complex sets of information that come from many different sources and are analyzed to help make better decisions. When analyzed effectively, this data helps departments understand how parks are used, which services are most popular, and how to better serve the community.

Source: National Recreation and Park Association (NRPA). "2023 Agency Performance Review."

What Is AI?

The science and engineering of making intelligent machines.

Source: Stanford Professor John McCarthy 1955

The use of science and engineering (hardware and software) to replicate human intelligence. Systems that comprehend, learn and synthesize knowledge from vast sources to rapidly solve problems or produce results.

What Can AI Do For You?

New technologies are revolutionizing how urban parks and green spaces are managed

But there's a growing need for technologies that go further by helping us understand park use and ensure equitable park investments.

Source: City Parks Alliance. "Parks and Technology."

Provide Real-Time Information
From Big Data For Better Decisions.

Maricopa County Data

- **Park Visitor Surveys**
- **General Population Surveys**
- **Master Plan Polling**
- **Reservation/Sales Data**
- **Cell Phone Data (Placer AI)**
- **Economic Impact**
- **Social Media**
- **Secondary Sources (data mining)**
- **Drone GPS data**
- **Maintenance Management Systems**

Enhancing Customer Service

- **Track program participation to identify trends and enhance program delivery.**
- **Apply predictive maintenance to improve safety and sanitation.**
- **Analyze GPS and visitor use data to allocate and position capital resources.**
- **Monitor social media and surveys to gauge satisfaction in real-time.**
- **Develop and enhance services, facilities and programs for target markets/user groups.**

Drive Revenue

- **Identify in-demand programs, expand and price them appropriately.**
- **Develop smart pricing based on time and demand.**
- **Promote underused facilities rental income.**
- **Personalize marketing to drive participation.**
- **Stock and expand popular concession items using sales data.**
- **Prove sponsorship ROI with attendance data.**

Improve Efficiency

- **Forecast park usage to optimize staffing.**
- **Automate facility scheduling.**
- **Use smart irrigation and HVAC to save water and reduce energy costs.**
- **Predict maintenance needs using AI.**
- **Analyze customer sentiment from feedback.**
- **Map equity gaps in access and participation.**

Leveraging Data

- **Collecting Data Methods**
- **Big data and AI create smarter, more responsive services.**
- **Departments gain operational efficiency and revenue.**
- **Better experiences for the public and stronger outcomes.**
- **Support equity and long-term sustainability.**
- **Use Data to share your success and demonstrate the Benefits of Parks and Recreation.**

Using Technology to Collect Better Data and Make Better Decisions

Peter Hamma – Data Insights Analyst

Joe Ayers -- GIS Administrator



Minneapolis Park and Recreation Board

- 2024 National Gold Medal Award Recipient
- 185 Neighborhood Parks
- 20 Regional Parks
- 7,059 Acres of Land & Water
- 99 % of 430,000 Residents within 10 min walk of a park



Asset Management Journey

- Prior to Viewworks
Used Paper/Emails/Phone/Ice reservation system
Scheduler was used as work communication tool
- Viewworks since 2017
First Full Asset Management System
- Cartegraph in 2025
75% implemented with launch in end of May 2025

The screenshot displays a GIS application interface. On the left, a 'Layer List' panel shows several layers: Athletic Fields (checked), Buildings (checked), Courts (checked), Ice Rinks (unchecked), and Playground Containers (checked). The main map area shows an aerial view of a park area with various colored overlays: green rectangles for athletic fields, yellow rectangles for buildings, and purple rectangles for courts. A label 'Bethune Park, Mary McCleod' is visible on the map. On the right, an 'Editor' window is open, displaying a form for editing a court asset. The form fields are as follows:

Field	Value
MPRB_ID	CRT273
Location Name	Bethune Park, Mary McCleod
Court Name	Bethune Basketball Full
Court Type	Basketball
Number of Courts	1
Build Year	1990
Build Date	

At the bottom of the Editor window, there are 'Close' and 'Save' buttons. The bottom of the map interface shows a footer with the text: 'Esri Community Maps Contributors, City of Minneapolis, Metropolitan Council, MetroGIS, Three F'.

GIS Journey

- First created dedicated GIS position in 2017 for the Viewworks Project Launch
- The original inventory data was collected in 2017. A recollection effort was completed in 2022/23
- Overall demand of GIS started to rise in 2022 (licensing and capability)
- Implemented with ESRI a Small Government Enterprise Agreement



Deciding on Cartegraph

- Multi-Step process to “shop” for new Asset Management Software
- Evaluation team consisted of internal core team of 6 with consultant: Simplar
- Full selection process took about 9 months



Sample of Cartegraph Interface

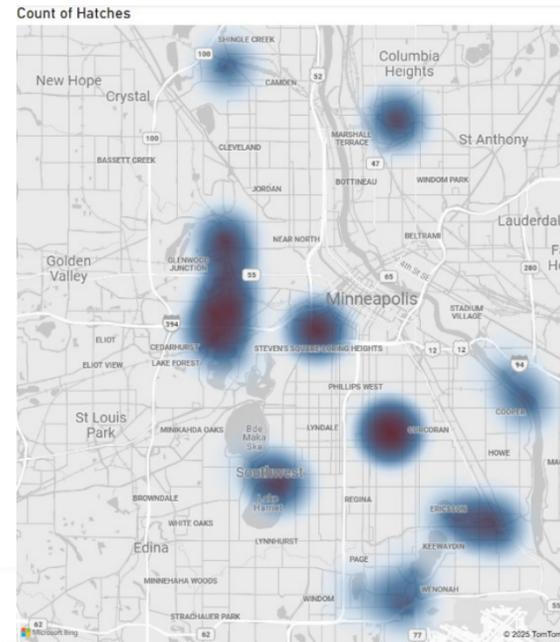
The screenshot displays the Cartegraph Asset Management interface. At the top, a navigation bar includes 'Asset Management' and menu items: Home, Dashboard, Resources, Scenarios, and Administration. On the right side of the navigation bar, there are options to 'Switch to the Classic UI', a search bar, a '+ Create Asset' button, and help/settings icons. Below the navigation bar is a search bar labeled 'Search Address or Record'. The main map area shows a satellite-style view of a park area in Minneapolis, with numerous red circular markers representing benches. Key landmarks include Dunwoody Institute, Chiron Middle School, Minneapolis Community and Technical College, and Loring Lake. The map is overlaid with a grid of streets, including Dunwoody Boulevard, Kenwood Parkway, Vineland Place, and 15th Street West. On the right side of the map, there is a 'Layers' panel with a 'Back' button and a 'Filter Layer' dropdown. The panel shows one active layer: 'Bench All Benches' with a count of 3,512 and a red dot icon. At the bottom left of the map, there are status indicators for 'Tasks 0' and 'Assets 3,512'. At the bottom right, there is a 'Hide Layers' button. The map is powered by Esri Community Maps.

Benefits of Cartegraph

- The GIS integration provides an overall feedback loop. If a bench in GIS is reported broken, Cartegraph allows you to tell someone to fix it, and see that the task was completed.
- You can see how many requests you have in a Service Area.
- You can add notes/attachments.
- We make more insightful decisions and miss fewer issues.

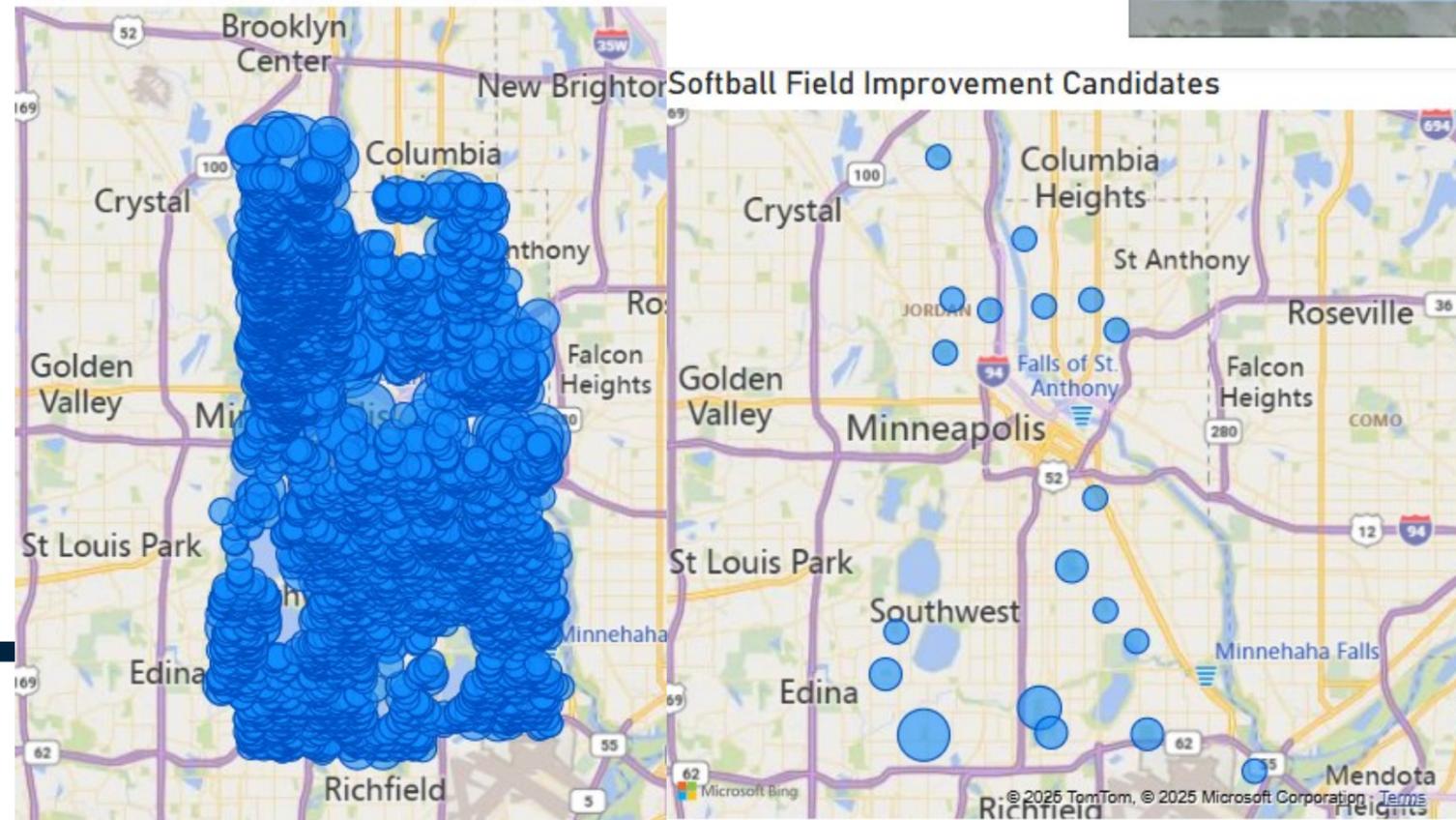


Telling Stories with Data

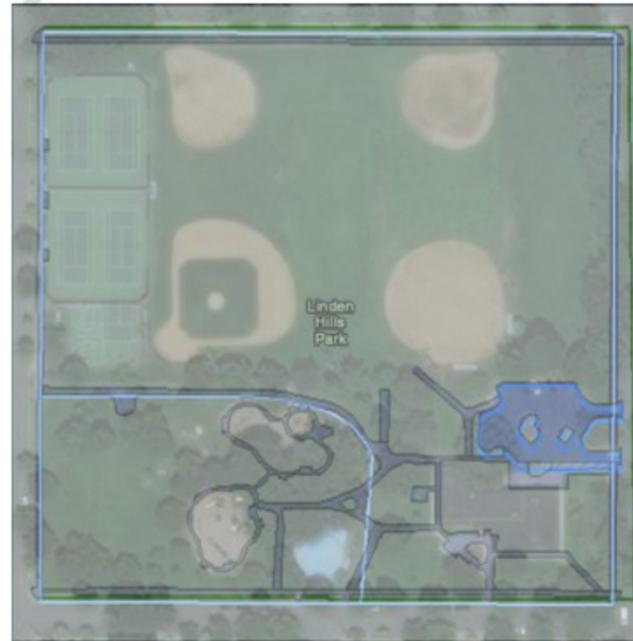


Trees Condemned

Trees Condemned by Diseases... ● Emerald ash borer



Linden Hills Park



MPRB works to ensure that paths around the perimeter and through the park are accessible to the public. Not all hard surfaces are plowed

Key

- Grey: all hard surfaces in the park
- Blue line: MPRB plow routes
- Blue polygon: Parking Lot
- White: Other space (building, playground or turf)
- Green Line: Edge of park board owned space

Note: there are additional areas that staff remove snow using small equipment such as snow blowers and shovels. This includes entry ways, paths from parking lot to entry areas and handicap accessible ramps

Lights

- No
- Yes

Fenced

- No
- Yes

In Long Range Plan?

- No
- null
- Yes

Lights

- No
- Yes

Intersects Rink

- No
- Yes

Play Now or Improvement Candidate?

- ?
- Improvement Candidate
- Not a candidate
- Play Now

Telling Stories with Data

Pools

Status ● Resolved Since Audit

Pool Audit Status

- Resolved Since Audit
- Unresolved

Audit Item Description

Description	Percentage
Install ADA compliant sloped entry	31.91%
Inspected Compliant	19.15%
Correct or repair accessible ro...	8.51%
Correct or repair for ADA com...	6.38%
Repair and maintain for ADA C...	2.13%
Purchase aquatic wheel chair	2.13%
Create an accessible entry point	2.13%
Compliant Inspected	2.13%

31

Number of Pools

31

Accessible Pools

47

Total Audit Items

Percent of Audit Items Completed

Asset Type	Resolved Since Audit
Pools	100.00%
Total	100.00%

Audit Item Details

Location Name	First Build Date (groups)
Farview Park	Resolved Since Audit
Franklin Steele Square	Resolved Since Audit
Harrison Park	Resolved Since Audit
Hi-View Park	Resolved Since Audit
Create an accessible entry point.	Resolved Since Audit
Install ADA compliant sloped entry.	Resolved Since Audit
Repair the change in level at entrance or pool deck.	Resolved Since Audit
Jackson Square Park	Resolved Since Audit
Jim Lupient Waterpark	Resolved Since Audit

Lessons Learned/Tips

- Organizational buy-in
- Build internal staff capacity to focus on GIS
- Define Core Assets
- Decide what should be tracked in those assets
- Implement a base GIS database
- Hire Intern/Staff for base data collection.



THANK YOU!



Peter Hamma – Data Insights Analyst
Phamma@minneapolisparcs.org

Joe Ayers -- GIS Administrator
Jayers@minneapolisparcs.org

