



Using GIS & Drones to Leverage Your Park & Recreational Assets

Jeff Powell, Remote Pilot / GIS Specialist
Shawn O'Shea, Remote Pilot / Urban Planner



HANDOUTS & PRESENTATIONS ARE AVAILABLE THROUGH THE EVENT APP
AND AT WWW.IOWALEAGUE.ORG

Introduction



Jeff Powell joined MSA Professional Services in 2017. His experience includes Web GIS Solutions and Custom Asset Management Solutions for organizations of all sizes in ArcGIS Online and Cartegraph. He has held a Small Unmanned Aircraft Systems (sUAS) license since 2016 and pilots missions for drone-based imagery, survey data collection, inspection/investigation, and promotional content.



Shawn O'Shea joined MSA Professional Services in January 2012. His experience includes Community/Regional Planning and Design, GIS Analysis and Planning, Comprehensive Planning, Land-use Planning Downtown Planning and Public Engagement. He is a certified planner (AICP) and he has both Private Pilot and Small Unmanned Aircraft Systems (sUAS) Airman Certificates. He led the establishment of MSA Aerial Solutions, the outward-facing brand of MSA that provides drone-based imagery and survey data acquisition. It is made up of MSA staff who serve as pilots, surveyors, video editors and marketers.



Agenda



- Impact of Outdoor Rec and Tourism
- Asset Management
- GIS Geographic Information Systems
- Drone Use
- Asset Inventory
- Story Maps
- Reaching the Community
- Questions

Outdoor Recreation Economy

THE
OUTDOOR
RECREATION
ECONOMY
GENERATES:

\$887 BILLION

IN CONSUMER SPENDING ANNUALLY



7.6 MILLION

AMERICAN JOBS



\$65.3 BILLION

IN FEDERAL TAX REVENUE



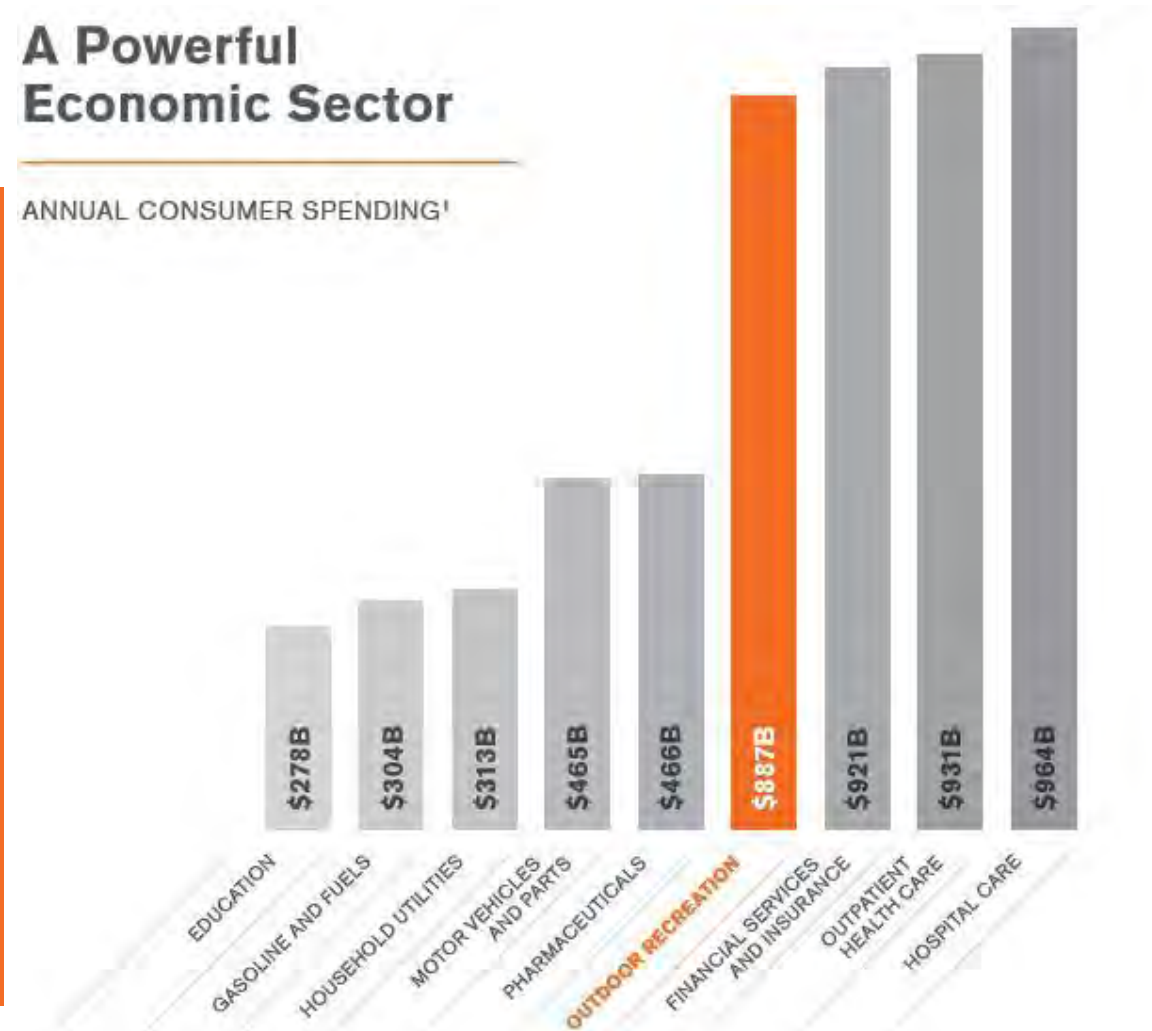
\$59.2 BILLION

IN STATE AND LOCAL TAX REVENUE



A Powerful Economic Sector

ANNUAL CONSUMER SPENDING¹



¹ Bureau of Economic Analysis, Personal Consumption Expenditures by Type of Product

Longwood's International Economic Impacts of Tourism

- \$58 spending per day visitor, and
- \$180 spending per overnight visitor per night



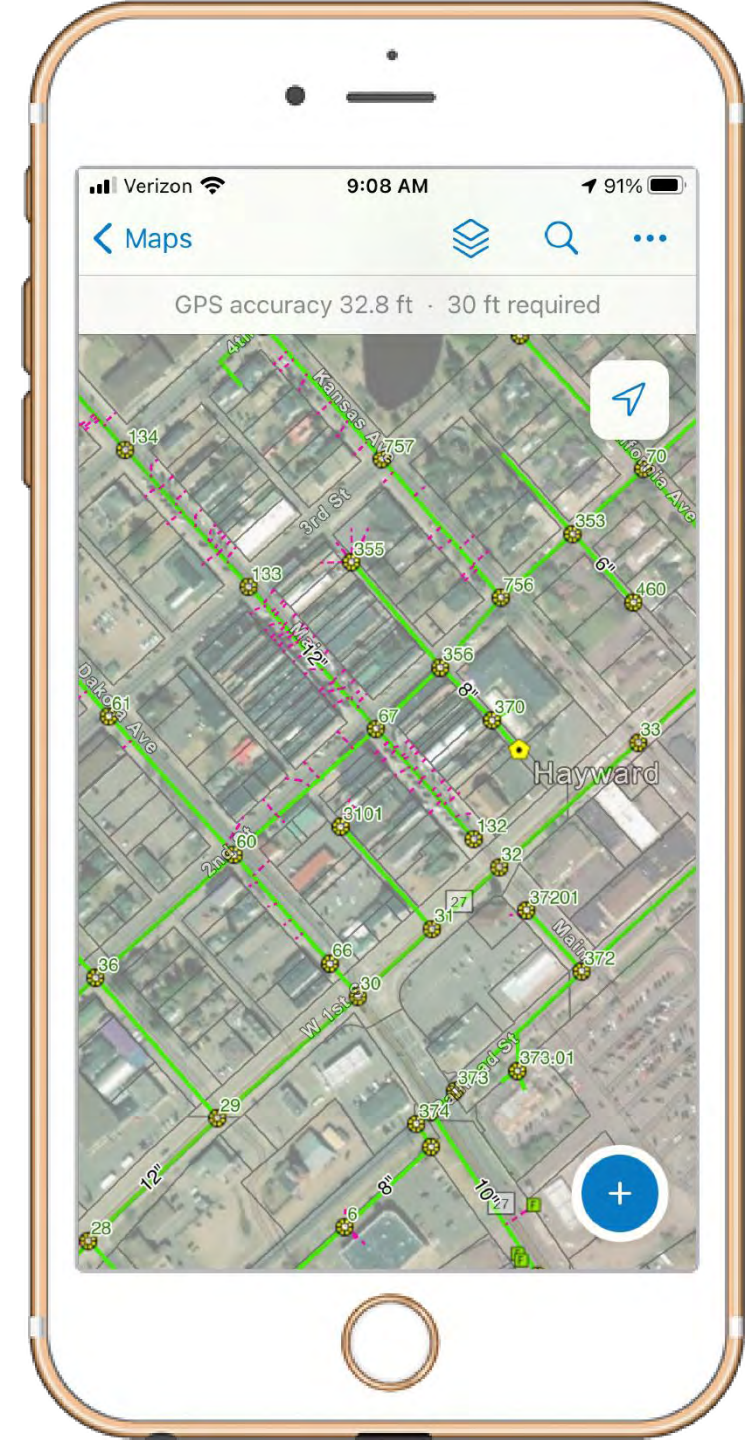
Definitions of Asset Management

EPA says

- Asset = “Components of your facilities with a specific function”
- Asset Management = “maintaining a desired level of service for what you want your assets to provide at the **lowest life-cycle cost.**”

Current Practices

- Paper notes & maps
- Lists, spreadsheets, reports
- Billing databases
- Project plans
- Consultants



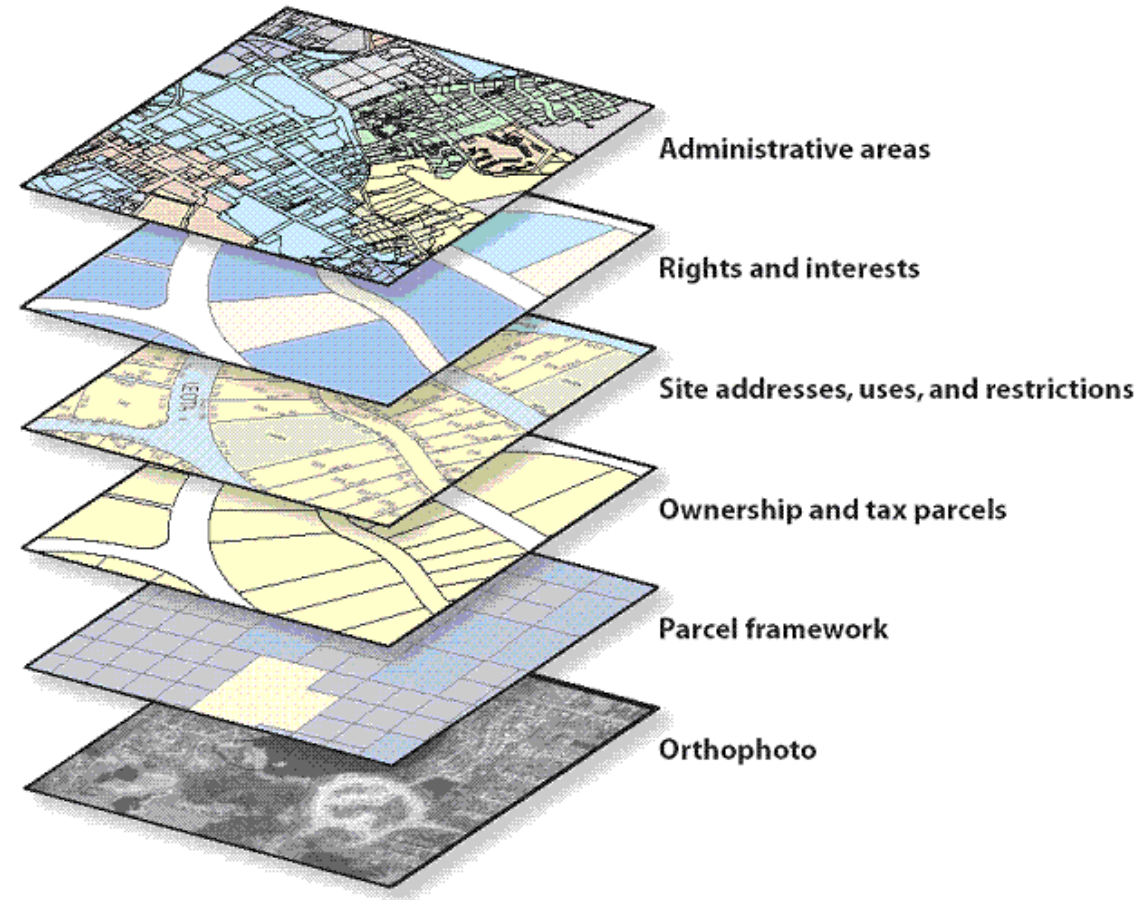
The Paper Challenge

- Record Tracking
 - Where did I put that note?
 - Works for individuals, not teams



GIS Technology

- Allowed for use of improved layers
 - GPS costs
 - Addressing, Parcels and Streets
 - Beginnings of tracking attributes
 - Construction details
 - Diameters, Materials, Models etc.
- Map Books
 - Semi Automated Printing
 - Spreadsheets attached – Manual Tracking Methods
- Web Based GIS Systems
 - Better access – Restricted to PC platforms



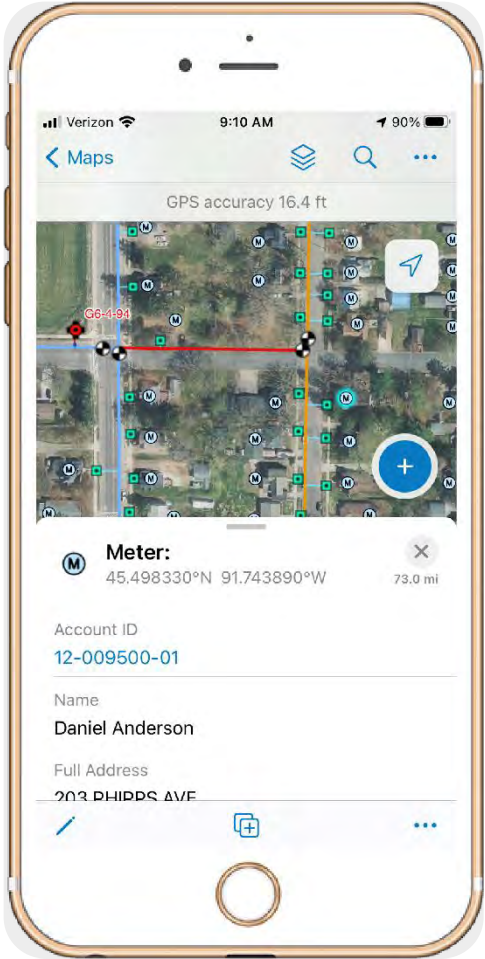
ArcGIS Online

ESRI's subscription based GIS service

- Supports uses by PC, Tablets and Smart Phones
- Provides ability to view & collect/edit data
- Ability to support multiple Departments
- Provides multiple levels of security and information distribution



ArcGIS Online In Use



Drone Use

- How can a drone inventory and enhance your outdoor assets and amenities?



Construction Progress

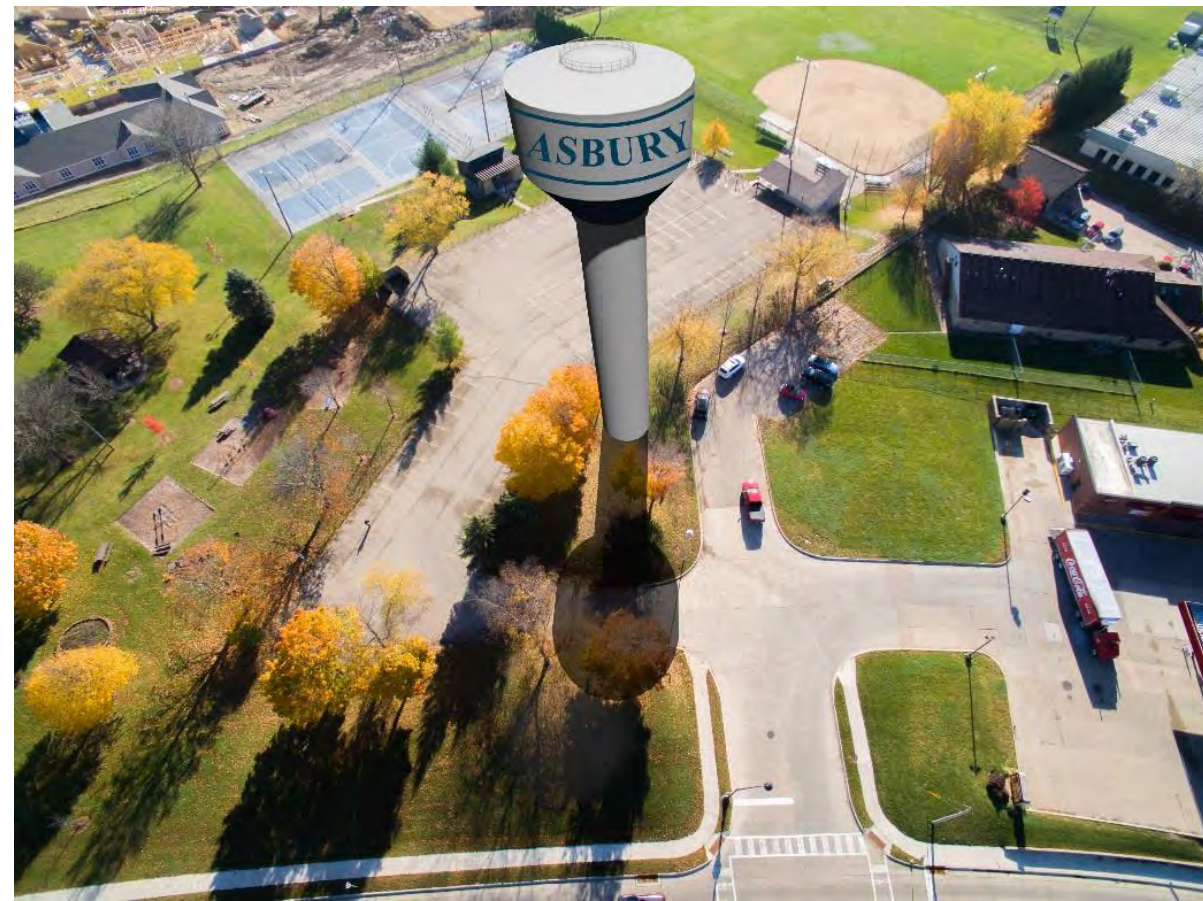


Orthomosaics

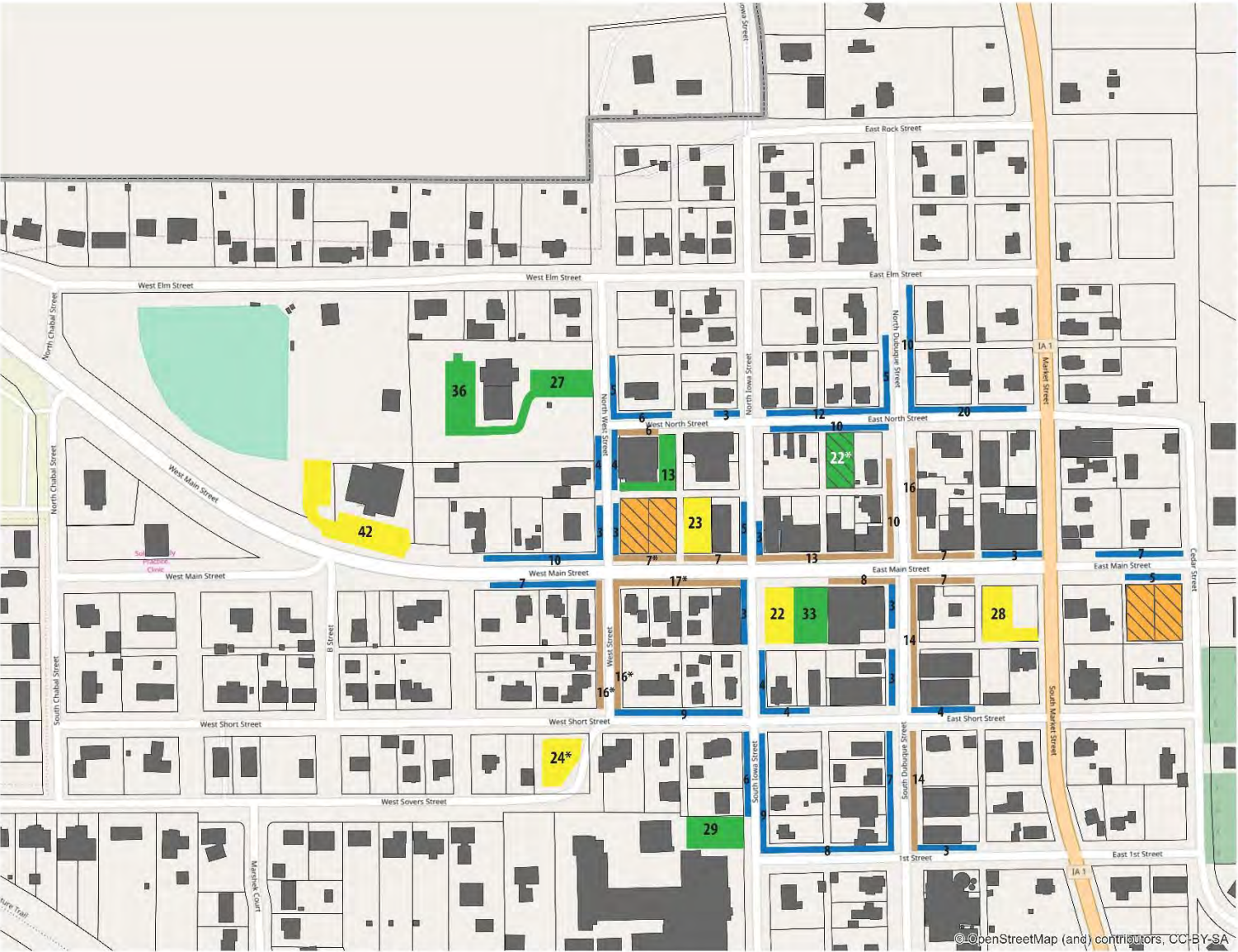
Orthomosaics are basically a series of individual photos which are programmatically matched up so that they form a new composite image, consisting of all the smaller ones.



Modeling Example

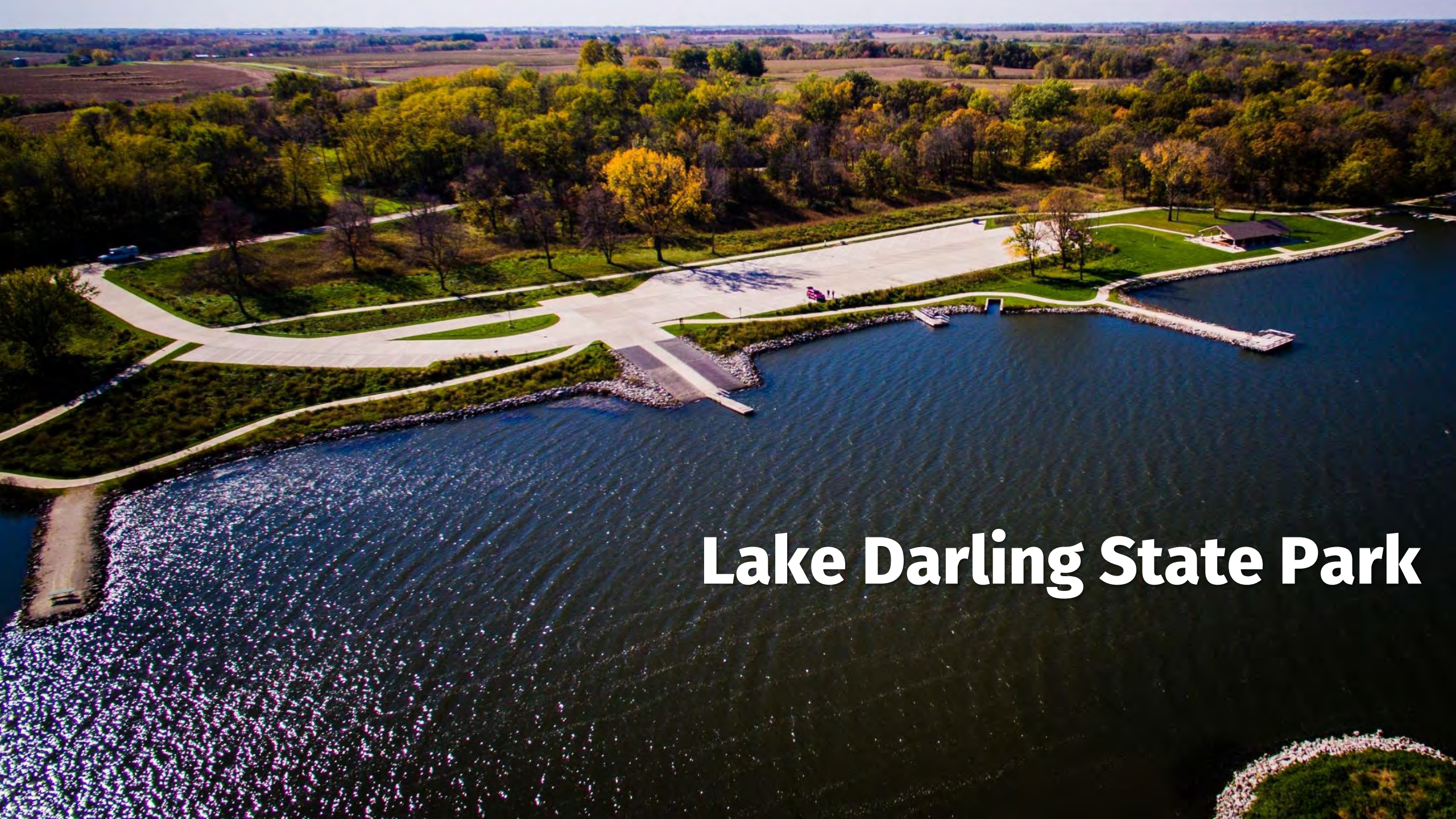


Parking Capacity and Utilization Studies



Use of drone to get high resolution images to catalog and track parking utilization.





Lake Darling State Park





Kewash Trail: Keota Trailhead

An aerial photograph of a community center and park. In the center-left, there is a large, light-colored building with a grey roof, identified as the Wellman Community Center. To its right is a large, open green field, North Park. The park features a baseball field on the right side, a playground with a green dome structure in the lower-left, and various trees with autumn foliage. The background shows a residential neighborhood with houses and more trees. The text "Wellman Community Center and North Park" is overlaid in white at the bottom right.

Wellman Community Center and North Park



Kalona City Park

English River Wildlife Area



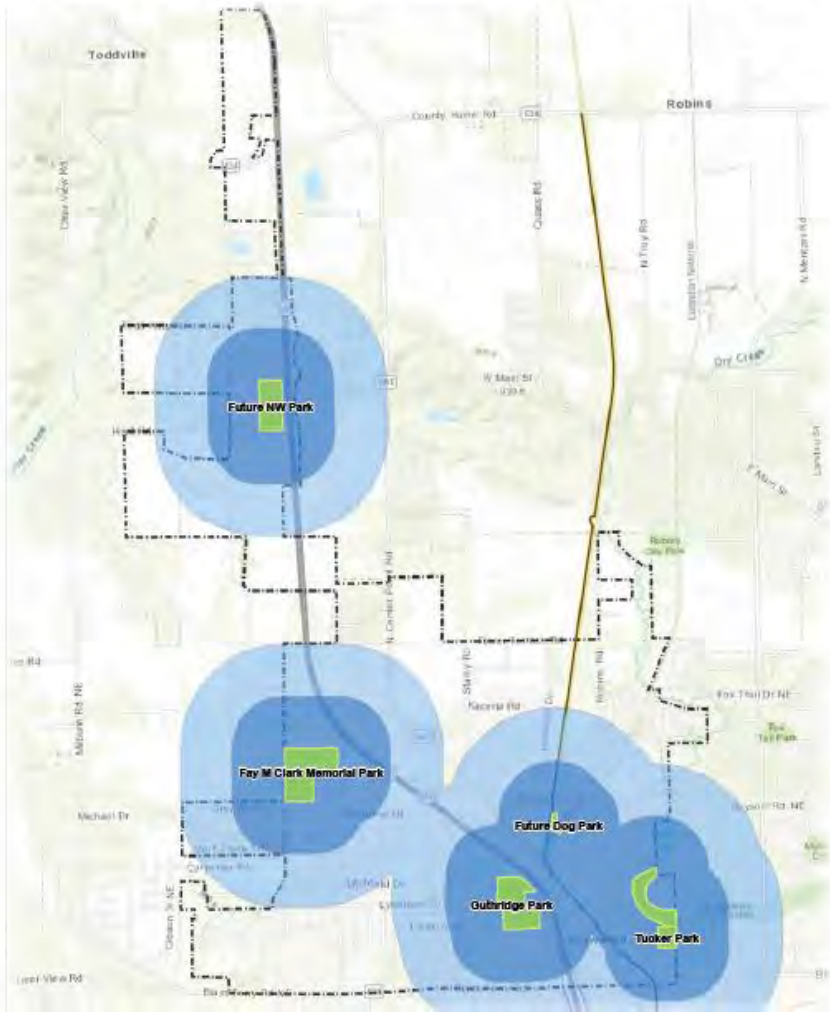


Blue Top Ridge Golf Course

Asset Inventory

City of Hiawatha Parks and Service Areas

The map below shows the existing Hiawatha Parks including the Future NW Park (undeveloped at the time of this planning process). The darker blue rings represent areas within a 1/4 mile distance of the park and the lighter blue rings represent areas within a 1/2 mile distance of the park. The 1/4 mile ring represents a 5 minute walk and the 1/2 mile ring represents a 10 minute walk. A recommendation of this plan is to evaluate the areas that are outside of these service areas to determine what steps can be taken to service these areas.



Parks + Recreation Inventory

Hiawatha Park Inventory

		Acres	Basketball Court	Tennis Court	Ball Fields	Open Field	Rental Shelter	Restroom Facilities	Frisbee Golf	Playground Equipment	Trail	Splash Pad	Sand Volleyball	Horseshoe Pits
City Parks														
Guthridge Park	704 Emmons St.	19.5	x	x	x	x	x	x		x	x	x	x	x
Tucker Park	101 B Avenue	8.1				x	x	x		x	x	x		
Fay M. Clark Memorial Park	1200 N 18th Ave	31.5				x	x	x	x	x	x			
Future NW Park	North Side of Town	18												
Total		77.5	1	1	1	3	3	3	1	3	3	2	1	1
Additional Facilities not City Owned														
Saint Elizabeth Ann Seton Parish	1385 Lyndhurst Drive	3			x				x				x	
Church of Jesus Christ Latter Day Saints	4150 Blue Jay Drive NE	3			x				x					
Hiawatha Elementary School	603 Emmons Street	5	x		x	x			x					
Nixon Elementary	200 Nixon Drive	6.2	x		x	x			x					
Viola Gibson Elementary	6101 Gibson Drive	2.5			x	x			x					
Total		19.8												

Parks + Recreation Inventory

Tucker Park

This park is tucked away in a quiet neighborhood and shares a border with the golf course. The 8.1-acre neighborhood park is located along B Avenue in the southeast side of town. It features a splash pad, two play sets, shelters, a trail and there is plenty of field/grass space. According to an assessment done by the Iowa Community Assurance Pool, Tucker Park is in need of some updates for ADA and safety concerns. Playground equipment and use zone conditions should be improved at Tucker Park so they are in compliance with the Public Playground Safety Standards.

The park facilities include:

- Two picnic shelters (seating for 65 and 50 people)
- Restrooms (attached to the yellow pavilion)
- A playground
- A splash pad
- A 0.3-mile paved walking trail
- Lawn area for field games
- Free WIFI

Safety Concerns

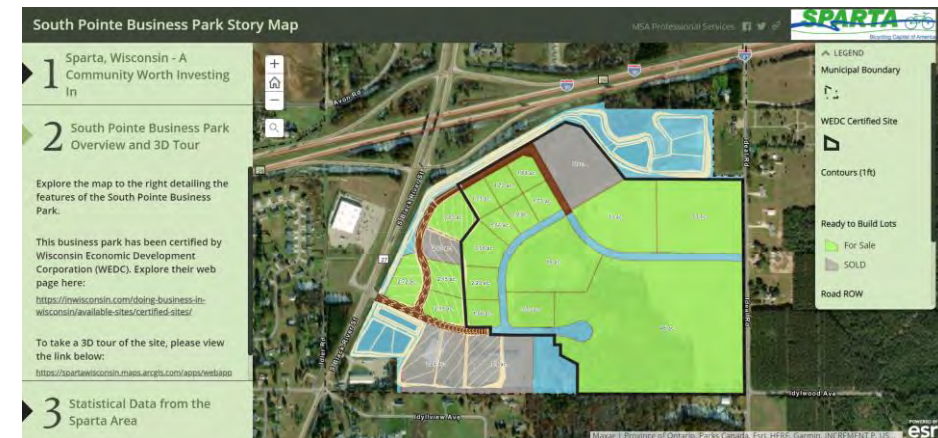
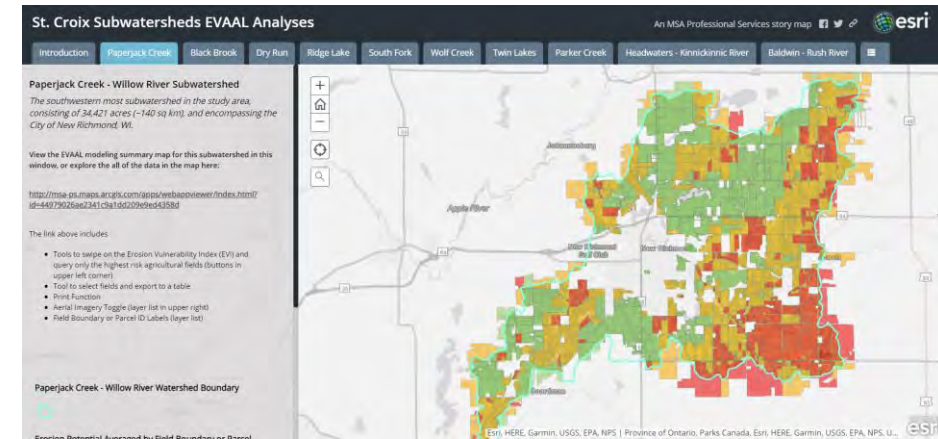
- Need for more trail lighting.
- Merry-go-round should have fall protection brought up to code as to protect a child from getting entrapped or entangled under the equipment.
- All S hooks and C hooks should be closed. A hook is considered closed if there is no gap or a space no greater than 0.04 inches which is about the thickness of a dime.
- Bolt ends should be cut down to ensure there is no more than 2 threads showing.
- Spring rockers should be bolted down correctly and adjusted so they are not leaning.
- The metal slide in the pre-school play area should be replaced with an age appropriate slide.



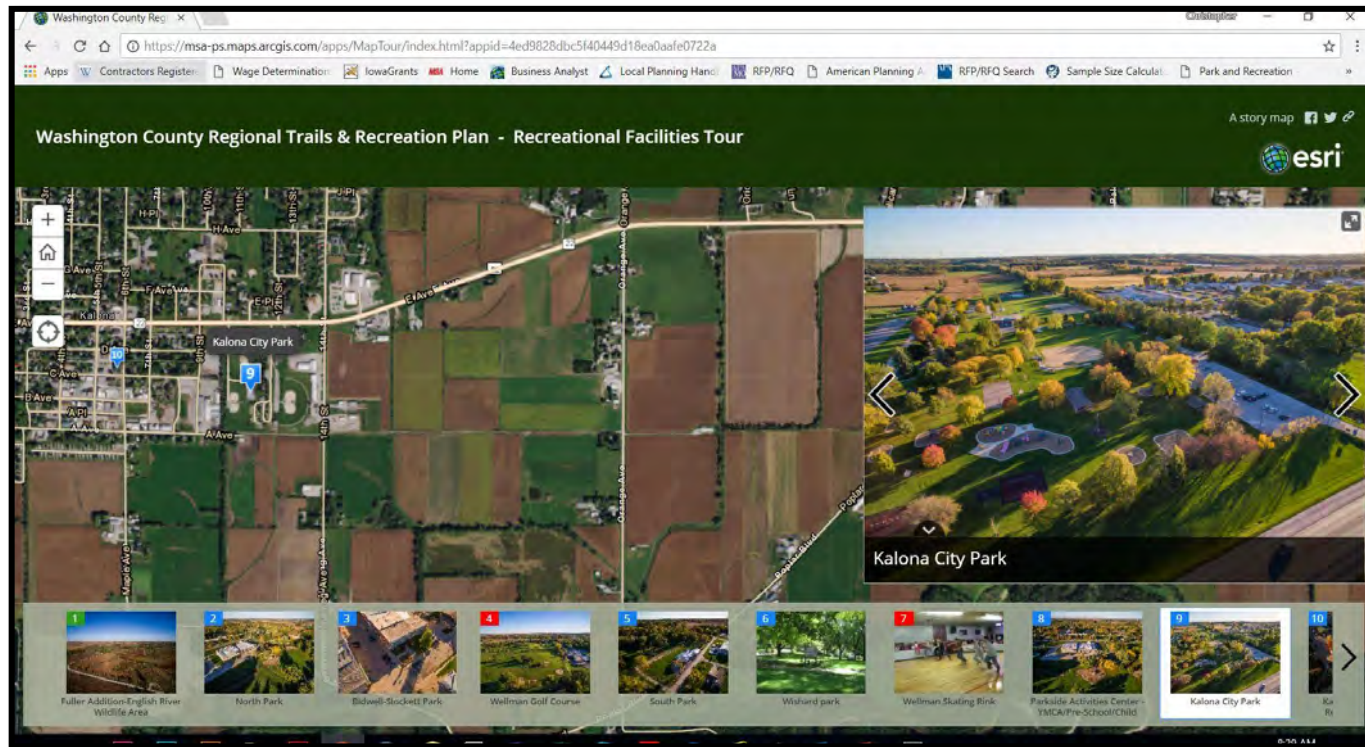
What is a Story Map?



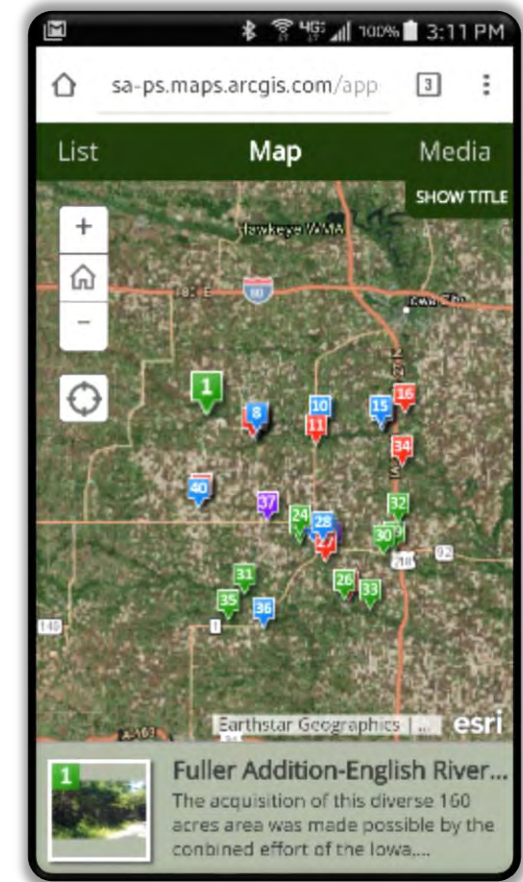
- An online GIS App through ArcGIS Online that combined maps, text, imagery, and other multi-media content
- The product can be simple or complex, depending on the desired message
- Several artistic layouts options
- Communities can leverage existing GIS data, photography, videos, and/or text to jump start the process



Story Map of Recreation Assets Example



Desktop/Laptop



Tablet/Smartphone

Story Map of Recreation Assets Example

Pine City, MN Parks & Recreation Tour

An MSA Professional Services Story Map



1 Welcome to Pine City, MN!

2 Robinson Park

This park is in the *heart of downtown* and essentially forms the town square, with the *old train depot* to the east, the *newly remodeled and expanded library* to the south and many locally owned specialty shops and restaurants lining 5th Street on the west side of the park. Featuring a *lovely brick gazebo*, it's a popular place for family gatherings and the *community's various events*. The attached stage is used by picnickers and as a backdrop for *musical and performing arts groups* that entertain on Friday evenings in the summer. A *playground area* is a favorite of the kids. Picnic tables, benches and electrical outlets are among the park's other amenities. Robinson Park is also the home of the *annual tree lighting* as part of the Pine City Area Chamber of Commerce hosted Holiday Madness celebration.

[Click Here for Directions to Park](#)

Park Address: 200 5th St SE, Pine City, MN 55063

PID #: 425318001

[Click Here for Park Boundary Map](#)

PHOTO CATALOG OF PARK

[PHOTOGRAPH 1](#)

[PHOTOGRAPH 2](#)



[Link to Story Map](#)

Golf Course Interactive Tour (Drones + GIS)

Luck, WI Municipal Golf Course



Hole 8

477 465 454 454



Luck
Golf
Course



Par 5
HCP. 9

Pro Playing Tip

Downhill Par 5 with OB left and trees to the right. Aim for the spruce tree in the middle of the fairway but don't hit it as the penalty is to buy a round for your group. Second shot is blind but line up with the trees behind the green. A bunker in front of the green will catch short shots and the back bunker catches long shots so choose carefully. A small flat green can result in a birdie.



Community Projects Spotlight (Drones + GIS)

City of Lindstrom, MN 2018 Projects Aerial Spotlight

An MSA Professional Services Story Map

City of
Lindstrom MN

- 1 Welcome to Lindstrom, Minnesota!
- 2 Tennis Courts and Pickleball Courts at Middle School
- 3 288th Street Reconstruction & Improvements
- 4 Allemansratt Wilderness Park

Allemansratt Wilderness and Swedish Heritage Park is Lindstrom's largest park and a crown jewel of the community. Allemansratt, literally translates to "Every Man's Rights" in Swedish and conveys the principal for the freedom to roam, a Nordic tradition that permits everyone to walk, ski, or snowshoe freely where it does not harm private property and the natural environment. In the spirit of this park, there are nearly 4 miles of beautiful all season footpaths through this leave-no-trace wilderness area. Please respect the park rules posted at the designated parking area.

Friends of Allemansratt Park provides volunteer and financial resources to maintain this natural resource. Please contact the City of Lindstrom offices at 651-257-0620 if interested in helping this organization and the community.
- 5 Allemansratt Wilderness Park - 10 Acre Property Acquisition

- 6 Plastic Products Co. New Headquarters



MSA



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Reaching the Community



Questions



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Thank You!

