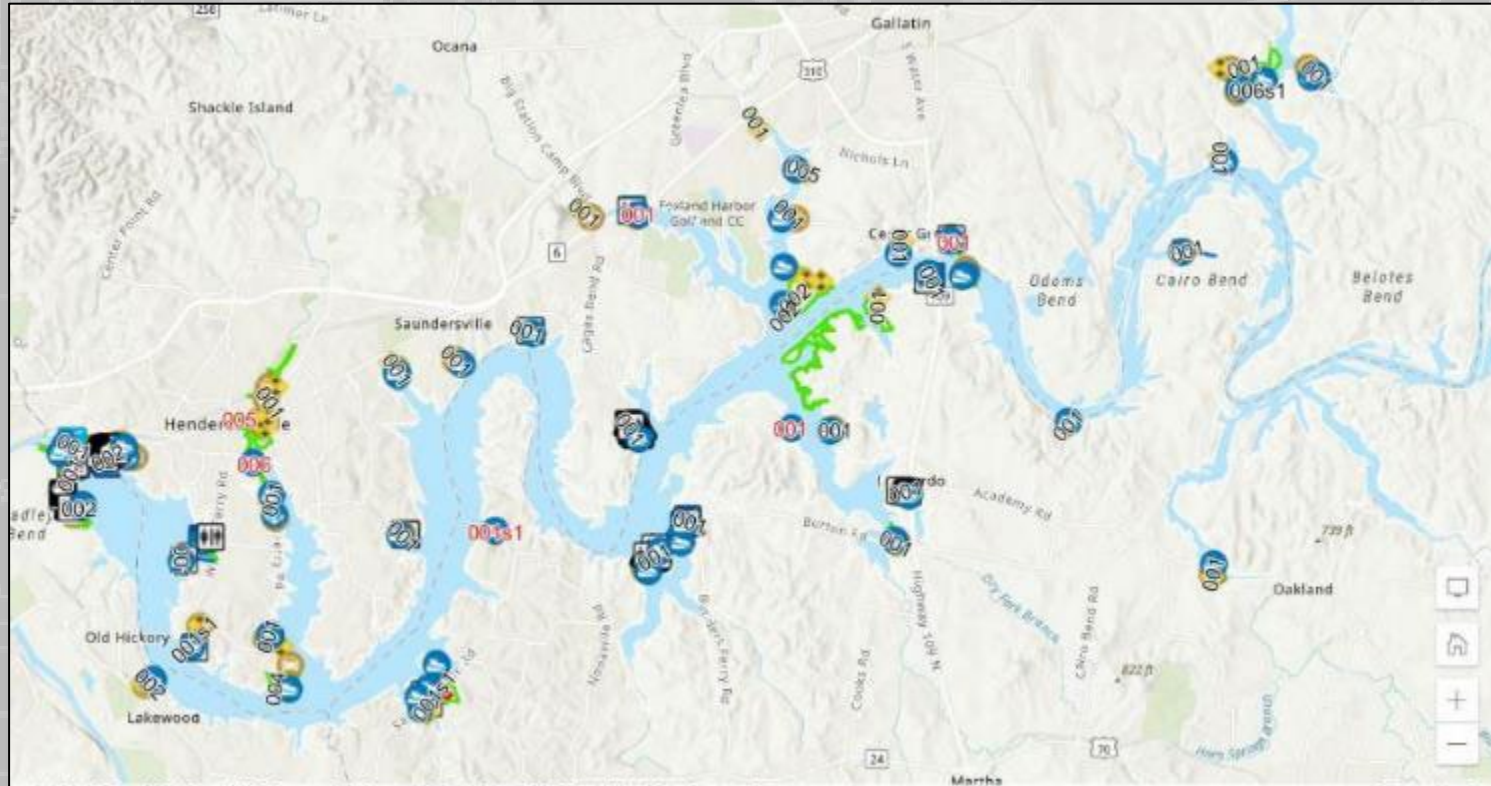


NRM SPATIAL DATA COLLECTION AND MANAGEMENT

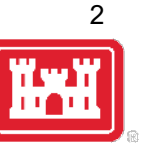
FEBRUARY 24, 2022 – 2:00PM EST



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NRM SPATIAL DATA COLLECTION AND MANAGEMENT



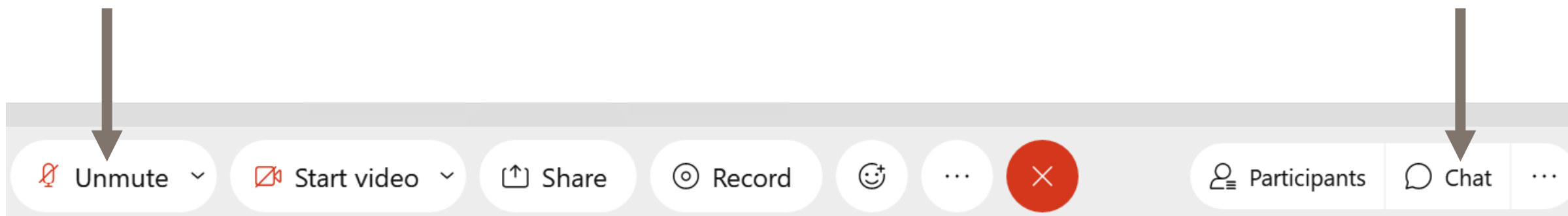
- The webinar will begin at 2:00pm EST.
- To access the audio select “Call Me” – this is the preferred option to reduce feedback.
- If you are unable to connect via the “Call Me” feature,
 - Dial: 1-844-800-2712
 - Access: 199 565 7227#



WEBINAR INSTRUCTIONS



- All lines are muted.
- Submit questions or comments in the Chat Box to “Everyone”.
- The webinar is being recorded and will be shared following the meeting.





SPEAKER: BEN SILVERNAIL



- Ben Silvernail has been a Social Scientist with the US Army Corps of Engineers Institute for Water Resources (IWR) since 2016, and is a member of the Natural Resources Management Technical Support team.
- Ben completed a B.S. in Environmental Studies with an additional major in Geographic Information Science in 2011 from Michigan State University, and an M.S. in Geographic Information Science in 2014, also from Michigan State University.
- Since joining IWR, Ben has worked with teams conducting analysis pertaining to a broad range of issues, including the relationship between Corps-managed lands and water and migratory corridors, boundary condition assessment techniques, invasive species mapping and regional prioritization methods, recreation visitation analysis and recreation facility mapping, and the inventory of transportation infrastructure.
- These topics have afforded an opportunity to collaborate and learn from many colleagues at the Corps District and Project offices, NRM Business Line Managers and the National NRM team at Headquarters, ERDC, and the Army Geospatial Center.

RECREATION GEOSPATIAL DATA OVERVIEW

Ben Silvernail
USACE Institute for Water Resources

24 February 2022

"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."



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PURPOSE

Provide NRM program staff with a summary of the status of program level spatial data collection, management, and applications.

- Current collection efforts
 - PSA operational status
 - Facilities/amenities mapping CA
 - PSA boundary updates
 - OCAs & AMMA
- Spatial data standards
- Hosting spatial data
- Using spatial data
 - NRM Assessment, VERS, OCA/AM, Capacity, Environmental Justice, Qliksense, USGS PAD-US, public information, recreation.gov, Federal Lands Transportation, HQ report requirements

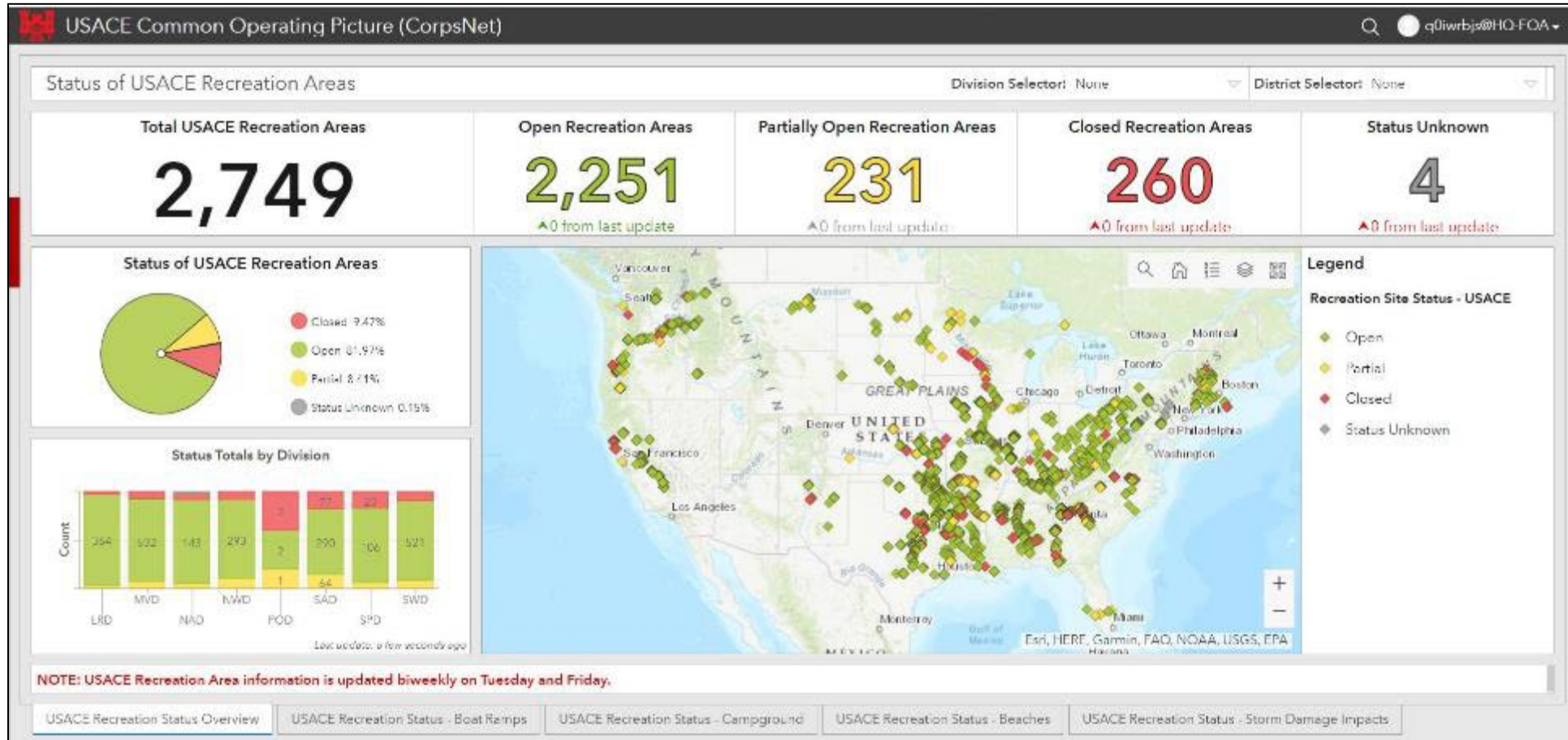
CURRENT COLLECTION EFFORTS

- PSA operational status
 - Data provided by NRM field staff
- PSA open/partially open/closed
 - Boat ramp, beach, campgrounds status within PSA
 - PSA experiencing flooding
 - Status notes, comments
- Pull field entered data and update internal and public services twice weekly (Tues/Fri AM)
- Occasional enterprise hosting issues do arise, requiring resolution and coordination
with GIS CoP/uCOP



CURRENT COLLECTION - PSA STATUS DASHBOARD

<https://arcportal-ucop-corps.usace.army.mil/s0portal/apps/sites/#/covid19>



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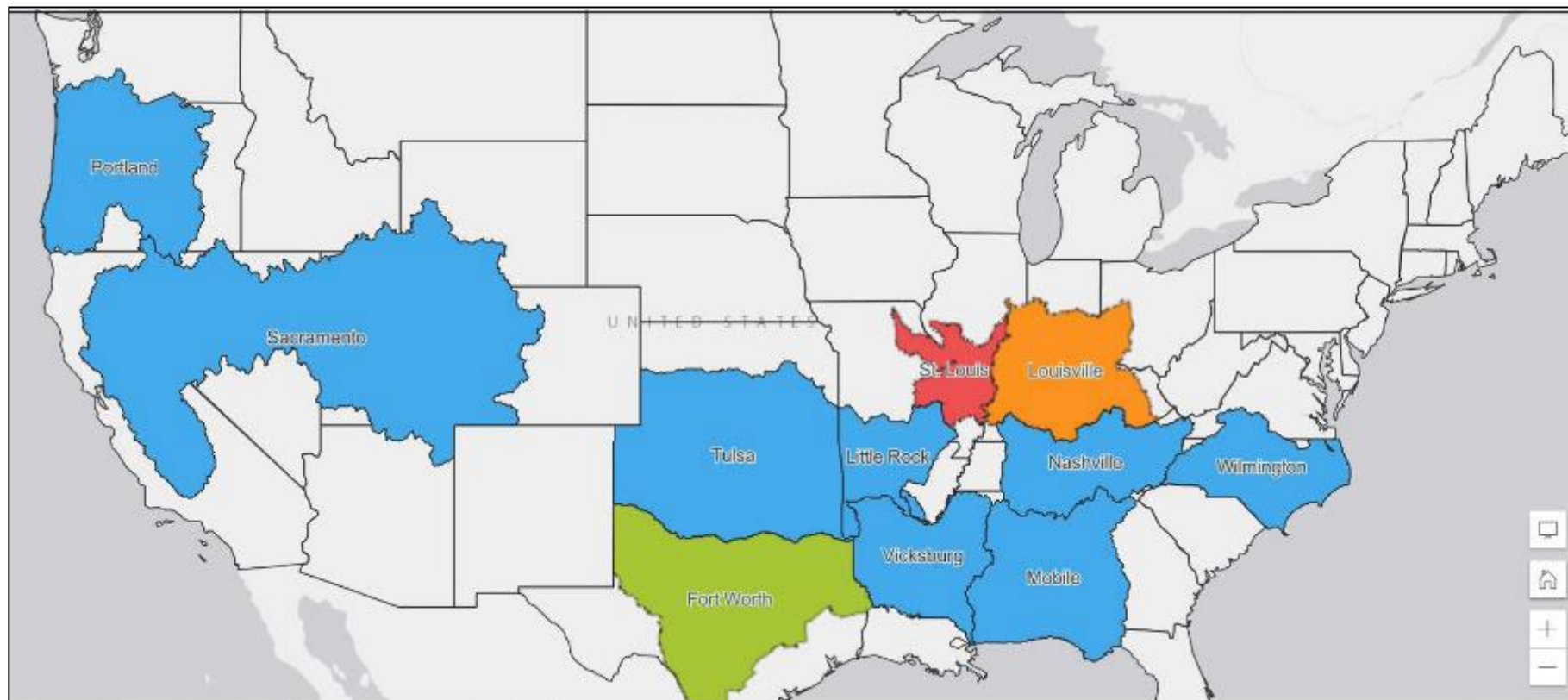
- PSA status and access point data used in this dashboard is available for use in District mapping applications
- USACE internal WFS:
https://geoportal.eis.usace.army.mil/s3arcgis/rest/services/Hosted/RecreationSite_Status_gdb/FeatureServer
- Public WFS:
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CURRENT COLLECTION EFFORTS

- Cooperative Agreement for geospatial data collection
- Currently wrapping up CA initiated in 2019 with the Student Conservation Association (SCA)
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 - Campgrounds & campsites
 - Boat ramps
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 - Picnic sites
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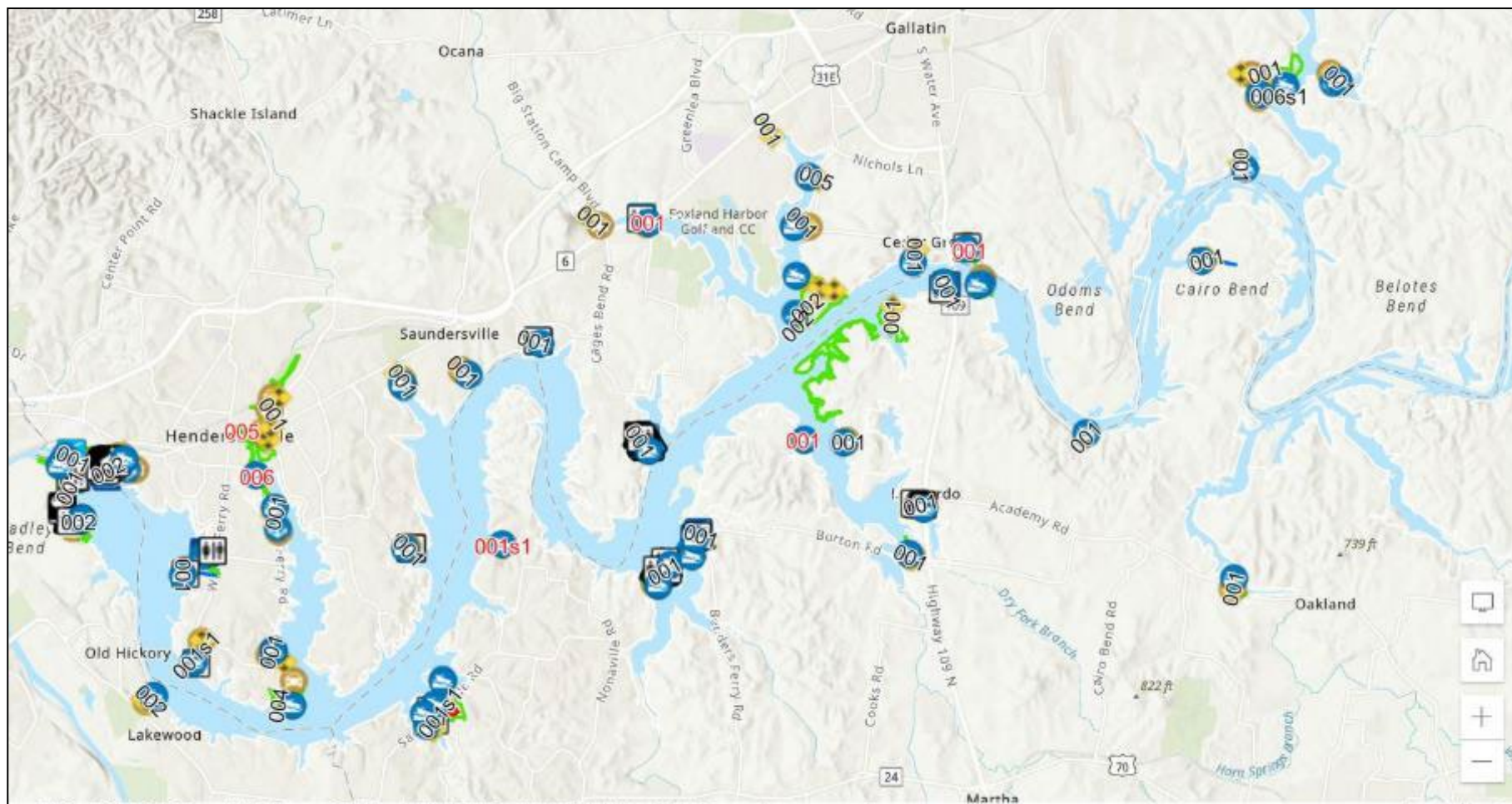


RECREATION FACILITIES MAPPING



Districts with facilities mapped utilizing cooperative agreement with the Student Conservation Association (SCA)

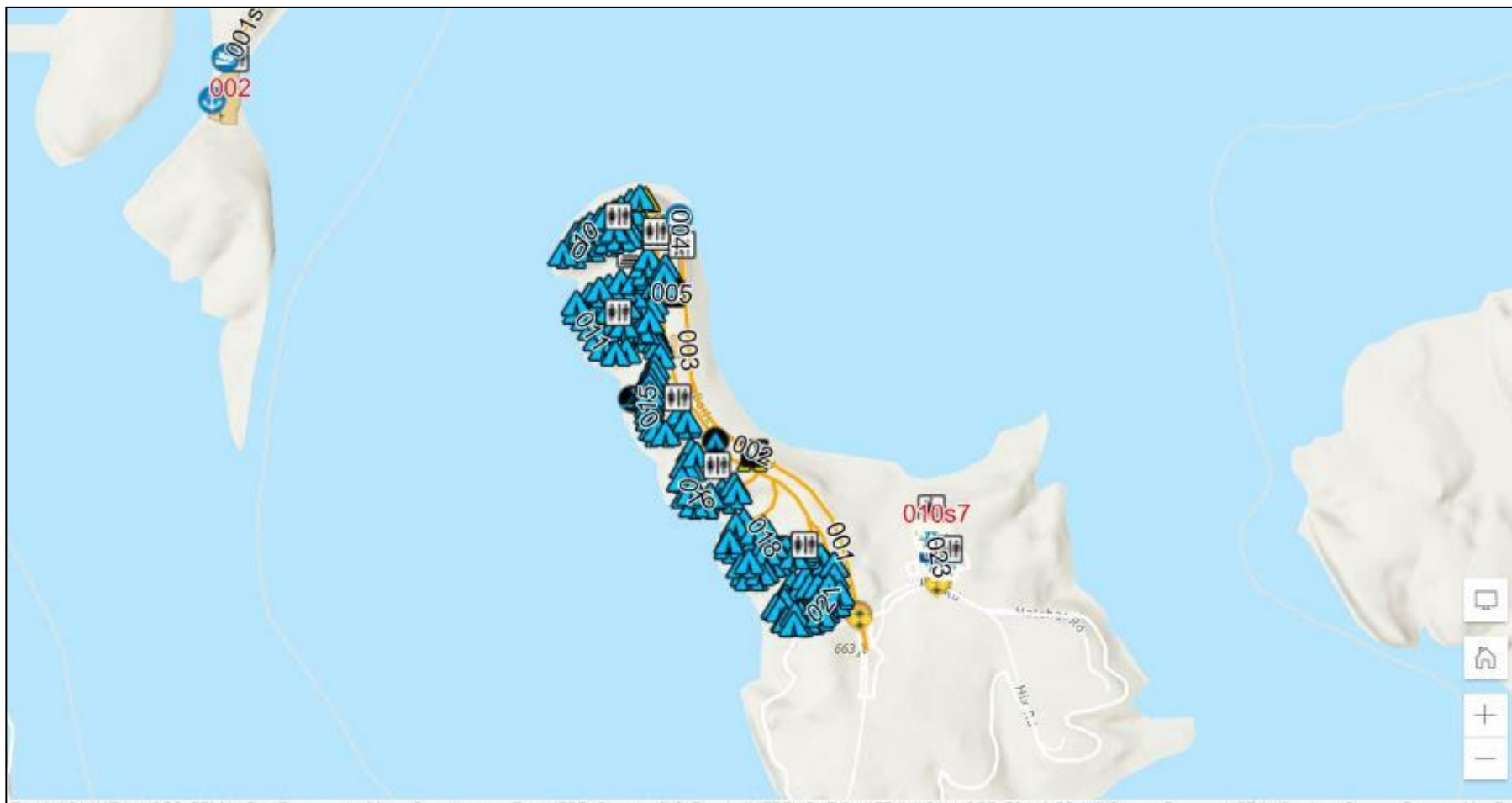
RECREATION FACILITIES MAPPING EXAMPLES



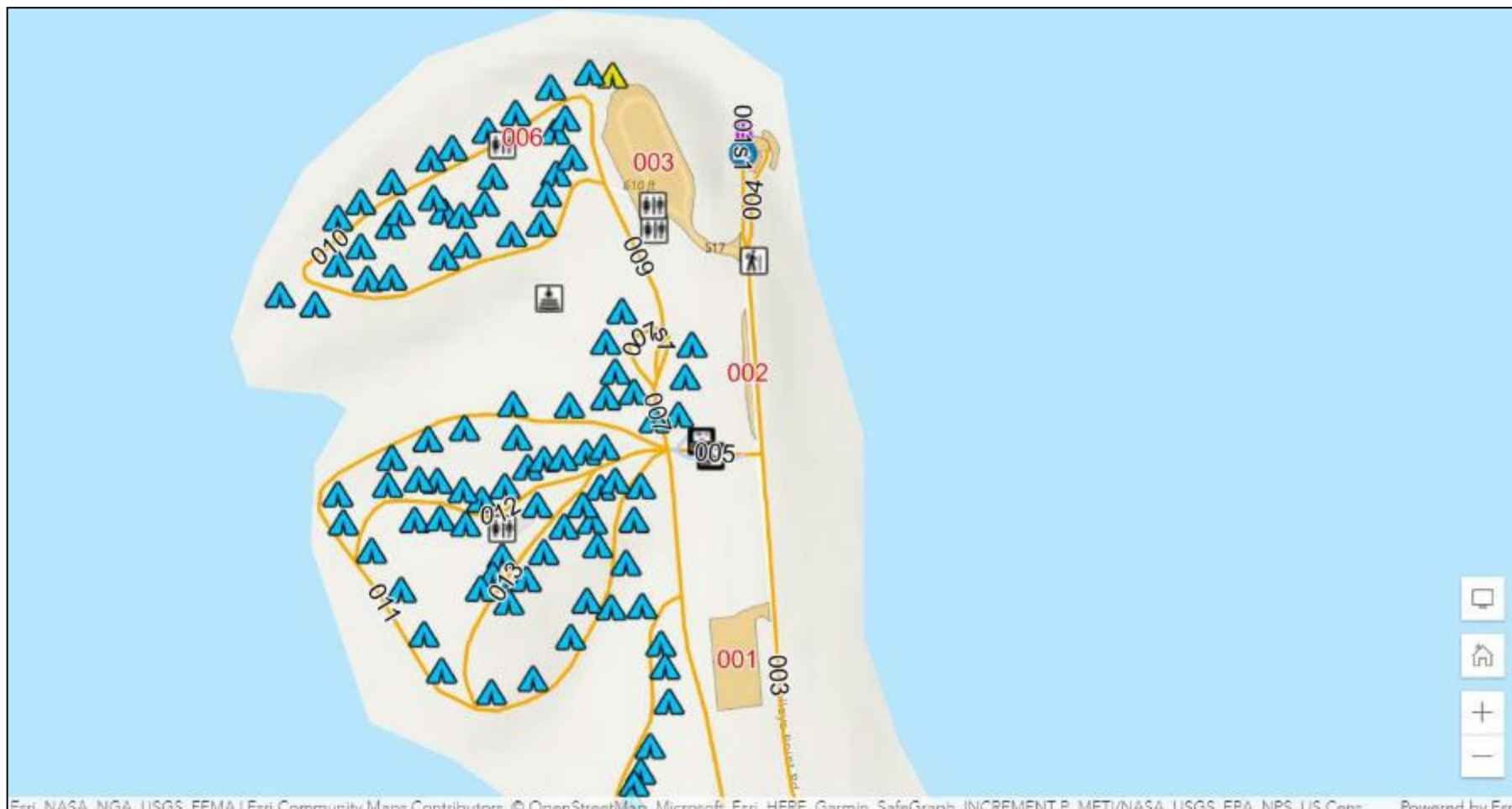
RECREATION FACILITIES MAPPING EXAMPLES



RECREATION FACILITIES MAPPING EXAMPLES



RECREATION FACILITIES MAPPING EXAMPLES



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RECREATION FACILITIES MAPPING EXAMPLES

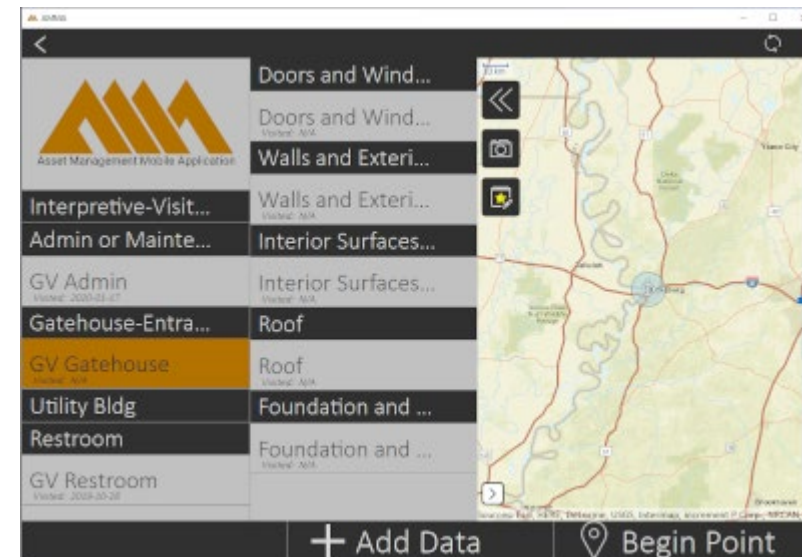
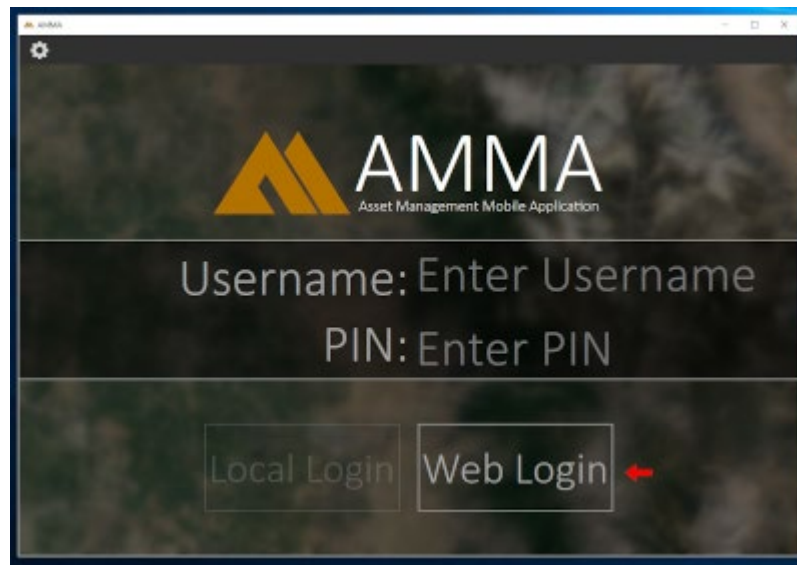


RECREATION FACILITIES MAPPING EXAMPLES



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- Full OCAs completed with AMMA are generate output that includes coordinate information of features receiving field assessments
- Georeferenced photos show condition and locations of assets



UPCOMING COLLECTION EFFORTS

- PSA boundary updates require a joint effort between GIS and NRM CoPs
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 - Identify POCs to create and verify missing boundaries, or edit existing boundaries
 - Compile national dataset. Will require maintenance

SPATIAL DATA STANDARDS

- For national recreation data, SDSFIE USACE HQ 4.0.2.1 is currently being utilized.
- Will migrate to USACE HQ 4.0.5 when published
- NRM technical support team is working to communicate NRM's data needs with SDSFIE program
 - This has resulted in updates to data models for RecreationBoundary and RecreationFeature
 - More coordination is required for boat ramps, trails and trailheads, campsites, etc. to meet recreation business line's needs

SPATIAL DATA STANDARDS

Dataset	SDSFIE 4.0.2 Entity
Roads	RoadSegment
Parking areas	ParkingArea
Boat ramps	BoatRamp
Buildings	BuildingPoint
Campgrounds	Campground
Campsites	Campsite
Fishing cleaning stations	FishingFeature
Marinas	Marina
Picnic sites	RecreationFeature
Trailheads	RecreationTrailFeature
Road access points	RoadPoint
Structures	Structure
Traffic counters	TrafficCounter

SPATIAL DATA STANDARDS

- PSA access points use point type schema developed for PSA boundaries.
 - SDSFIE RecreationBoundary_P
 - Includes amended fields for operational status information
- Roads and parking areas not only need to meet USACE standards and NRM program needs, but also must meet DOT Federal Lands Transportation Program standards
 - SDSFIE RoadSegment
 - DOT HPMS
- Common attributes have been crosswalked between these sets of requirements in order to eliminate redundancy

SPATIAL DATA STANDARDS - DOT

REQUIREMENT	FIELD_NAME	DESCRIPTION / DEFINITION
Minimum Requirement	OWNERSHIP	See HPMS Item 6 description and code list located on page 4-27: https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/hpms_field_manual_dec2016.pdf
Minimum Requirement	MAINTENANCE_OPERATIONS	The legal entity that maintains and operates a roadway. Needed For administrative, legislative, analytical, and national highway database purposes. See HPMS Item 68 description and code list located on page4-128: https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/hpms_field_manual_dec2016.pdf
Minimum Requirement	FLMA_ROUTE_IDENT	Unique Identifier for each route used internally by FLMA. FHWA will use this field as a crosswalk (typically is the FMSS/SAMS/FBMS number)
Minimum Requirement	FLMA_REGION	FLMA Region
Minimum Requirement	FLMA_UNIT_ID	Partner "Unit" Code/Name - examples: "GOGA" (NPS), "PUTX" (FWS). N/A is an acceptable response
Minimum Requirement	RTE_NAME	Partner Route Name (The route names should be vetted with all groups that use/publish maps such as Park Rangers or local emergency responders, and should match any signage in the field) Note - HPMS has 3 fields related to this that may not match how FLMA's name or sign their roads. Partners may use "official" or "unofficial" names in their descriptor as desired.
Minimum Requirement	ASSET_TYPE	"Road" or "Parking area"
Minimum Requirement	FROM_DESC	Description of beginning point of route; Specific physical locations desired, such as route intersection name or landmark; lat/long acceptable as last resort.
Minimum Requirement	TO_DESC	Description of end point of route; Specific physical locations desired, such as route intersection name or landmark; lat/long acceptable as last resort
Minimum Requirement	VER_DATE	Date that the Route ID Information was last verified via Route ID Meeting or Field Visit.
Minimum Requirement	FLTP	Is route a FLTP Route (Yes, No, or Partial)
Minimum Requirement	RTE_LENGTH	Total centerline length of route in miles (may include paved and unpaved). Distance between "From" and "To" points.
Minimum Requirement	STATE	State abbreviation in which route resides
Minimum Requirement	SURF_TYPE	Primary Surface type: Examples of codes that could be used are AS (asphalt), CO (concrete), BR (brick/pavers), CB (cobblestone), GR (gravel), SA(sand), NV (native or dirt) Note – HPMS Item 49 (Surface Type) codes will not be required now, FLMA's may use their own coding and definitions.
Minimum Requirement	FACILITY_TYPE	See HPMS Item 3 description and code list located on page 4-18: https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/hpms_field_manual_dec2016.pdf This field indicates one way, two way, or ramp (among others) and is used to tell HPMS how to calculate road capacity. Cannot do the certified miles without this field
Recommended	PAVED_MI	Length of paved portion of route.
Recommended	UNPAVED_MI	Length of unpaved portion of route.
Recommended	RTE_NO	FLMA Route Number
Recommended	FUNCT__CLASS	Partner Defined Functional Class Note – HPMS Item 1 (The approved FHWA Functional Class) will not be required now.
Recommended	USER_ACCESS	Primary Access Designation (Public or Non-Public)
Recommended	SQ_FEET	Route Square Foot Area. Only Parking Area or other Polygon, not for linear routes
Recommended	RTE_WIDTH	Width of paved or unpaved route (does not include shoulder width). Only used for linear routes, not polygons.
Recommended	NO_LANES	Predominant Number of travel lanes on route. Only used for linear routes. See HPMS Item 7, "THROUGH_LANES" located on page 4-29: https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/hpms_field_manual_dec2016.pdf
Recommended	COUNTY_CODE	For identifying the County for which the data is being reported.

HOSTING SPATIAL DATA

PSA entrance point locations hosted at two locations:

USACE Enterprise Geospatial Portal (S3ARCGIS)

WFS:

https://geoportal.eis.usace.army.mil/s3arcgis/rest/services/Hosted/RecreationSite_Status_gdb/FeatureServer

USACE Public Civil Works Business Intelligence (AGS03)

WFS:

https://ags03.sec.usace.army.mil/server/rest/services/Hosted/RecreationSite_Status_gdb/FeatureServer

*Also available via USACE Geospatial Open Data

<https://geospatial-usace.opendata.arcgis.com/>



HOSTING SPATIAL DATA - CWBI MODERNIZATION

- Data catalog includes recreation metadata submitted by NRM Technical Support Team
- https://data-test.sec.usace.army.mil/data-catalog/browse?page=0&size=10&sort=_score,desc&q=recreation
- Links tab shows relationships between systems, applications, datasets, services
- Demonstration

HOSTING

RECREATION

Overview Core **Links** Related

Item Help Filter By Type Filter By Link Previous 1-9 of 9 Next

RECREATION
 Concept
 Recreation - 202:007
 Author: cwbi curator (ld)
 Created:
 Last Modified: May 25, 2021

A central yellow node labeled "Recreation" is connected to several peripheral nodes. Clockwise from top-left: "Roads Segment & Parking Area", "Wild Resource Management (R)", "USACE Recreation Areas, as sub", "USACE Recreation Site Entrance", "Recreation Facilities Spatial", "USACE Program Code Reference", "Recreation Information Database", "Validation Estimation and Repo", and "USACE Recreation Area by Public".

RECREATION FACILITIES SPATIAL DATA

Overview Core Links Related Constraints Knowledge Graph

Item Help Filter By Type Filter By Link Previous 1-10 of 10 Next

RECREATION FACILITIES SPATIAL DATA
 Dataset
 Geospatial dataset represents recreation facilities and amenities located in Recreation Project Site Areas. [more](#)
 Author: cwbi curator (jy)
 Created:
 Last Modified: Aug 12, 2021

A central yellow node labeled "Recreation Facilities Spatial" is connected to several peripheral nodes. Clockwise from top-left: "CWBI Dataset Type", "USACE Recreation Areas (Factor)", "Recreation", "Validation Estimation and Repo", "CWBI Work Business Intelligence", "USACE Recreation Site Entrance", "Vector", "CWBI Program Code", "USACE Recreation Site Entrance", "Operations / services", "Roads Segment & Parking Area", and "Recreation Information Database".



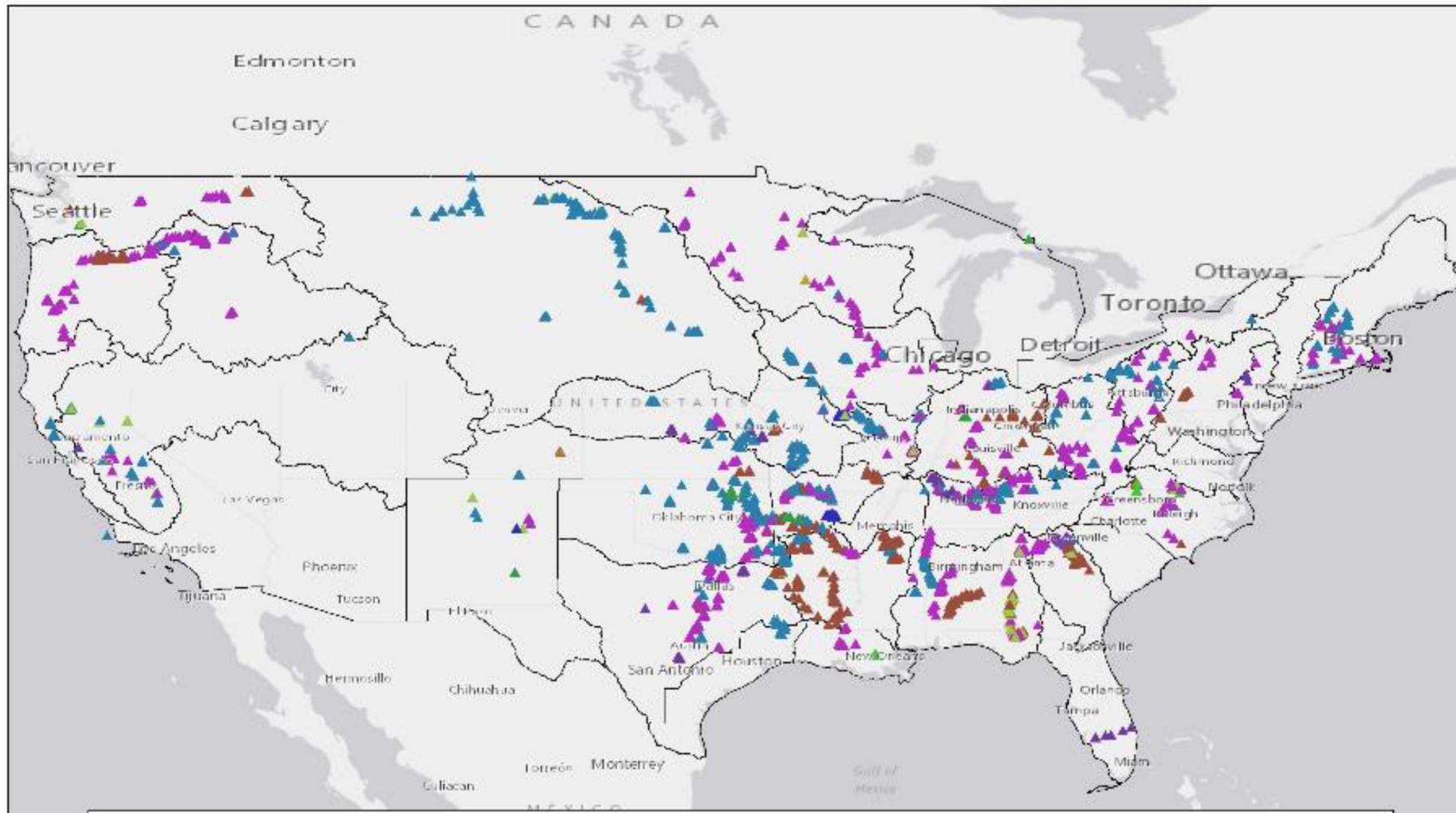
USING SPATIAL DATA – NRM ASSESSMENT

- Roads, parking areas, and other mapped recreation facilities that have been reviewed and approved by the field may be used to generate facility counts reported in NRM assessment
 - Examples:
 - Paved/unpaved & public/non-public road mileage measurements
 - Car and trailer parking space counts

USING SPATIAL DATA – VERS

- Maintaining a current dataset of traffic meter locations is necessary to ensuring accurate visitation analytics
- Meter information from the VERS team can serve as the foundation for a national hosted meter geospatial dataset
- Geospatial data of meters and facilities can assist in development and verification of visitation load factors
 - i.e. the facilities and site characteristics behind the meter
- Data describing the surrounding communities is key to dispersed use analysis

USING S

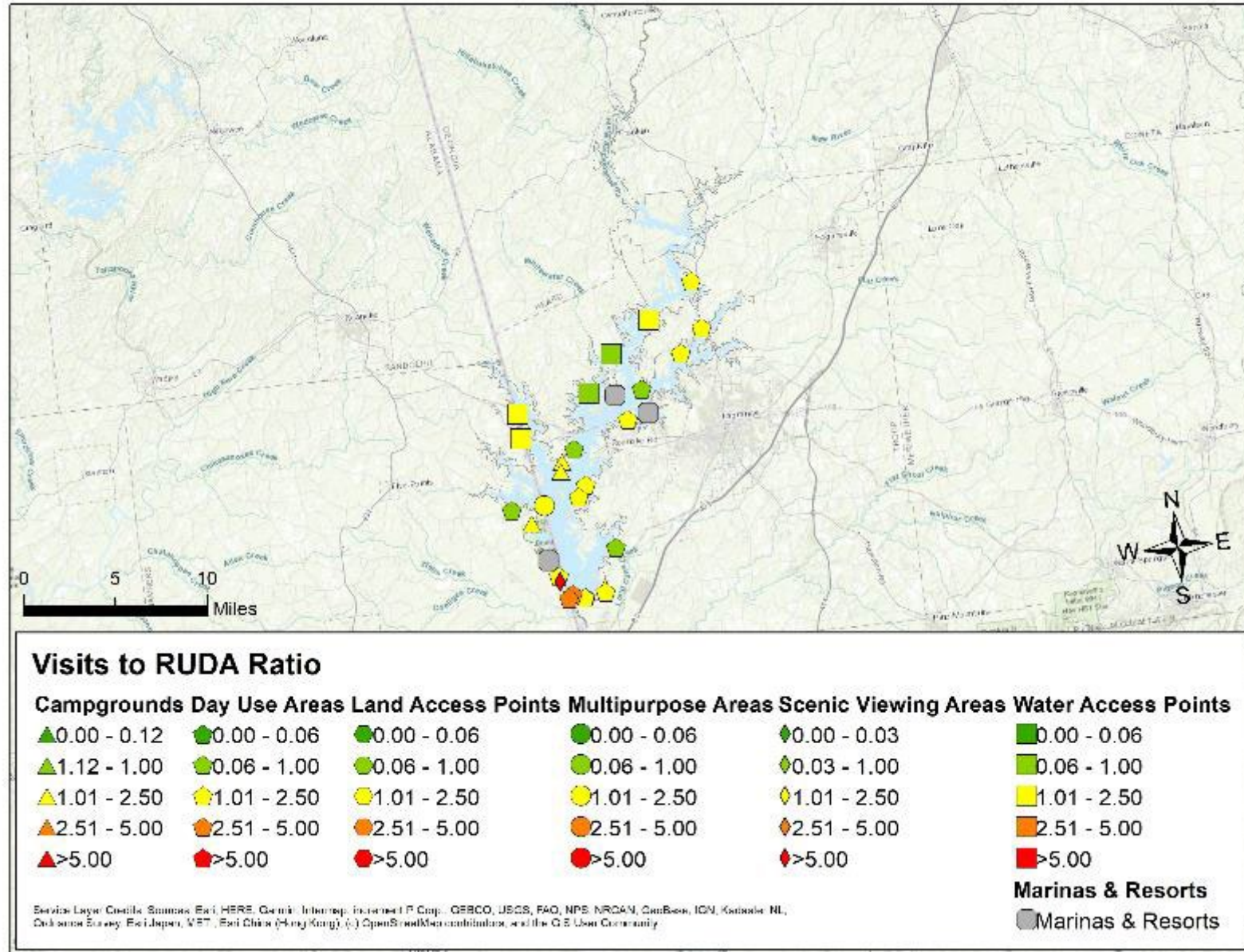


Meter Make

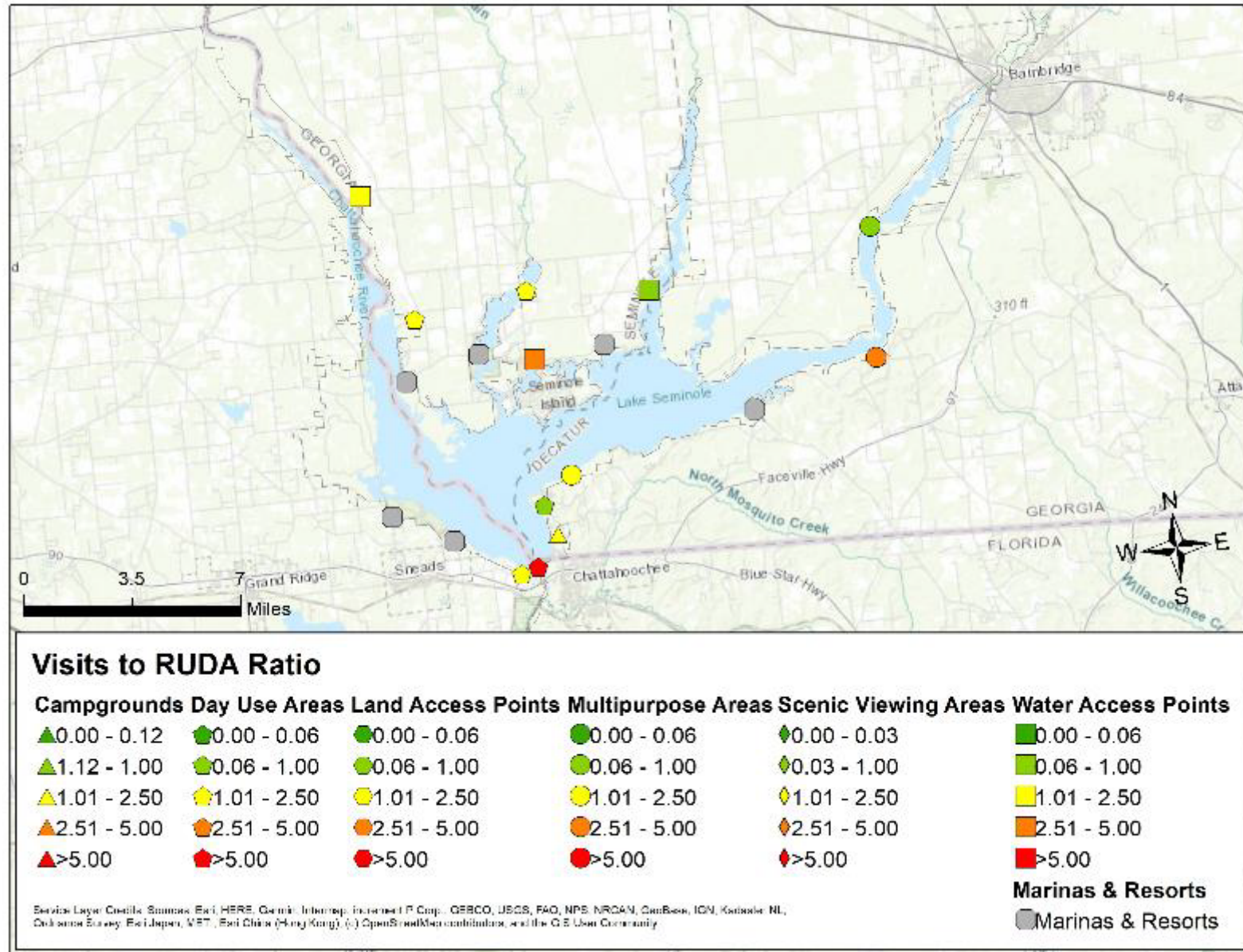
- | | | | |
|------------------|-------------------------------|----------------|----------------|
| ▲ Allen-Bradley | ▲ International Road Dynamics | ▲ Peek Traffic | ▲ StreeterAmet |
| ▲ Amesco | ▲ K-Hill | ▲ Redington | ▲ TRAFx |
| ▲ Cuesta Systems | ▲ Opcon | ▲ Redlion | ▲ Traf-Sys |
| ▲ Diamond | ▲ Other | ▲ SenSource | ▲ Tri-Tronic |



USING SPATIAL DATA – REC CAPACITY



USING SPATIAL DATA – REC CAPACITY



USING SPATIAL DATA – OCA

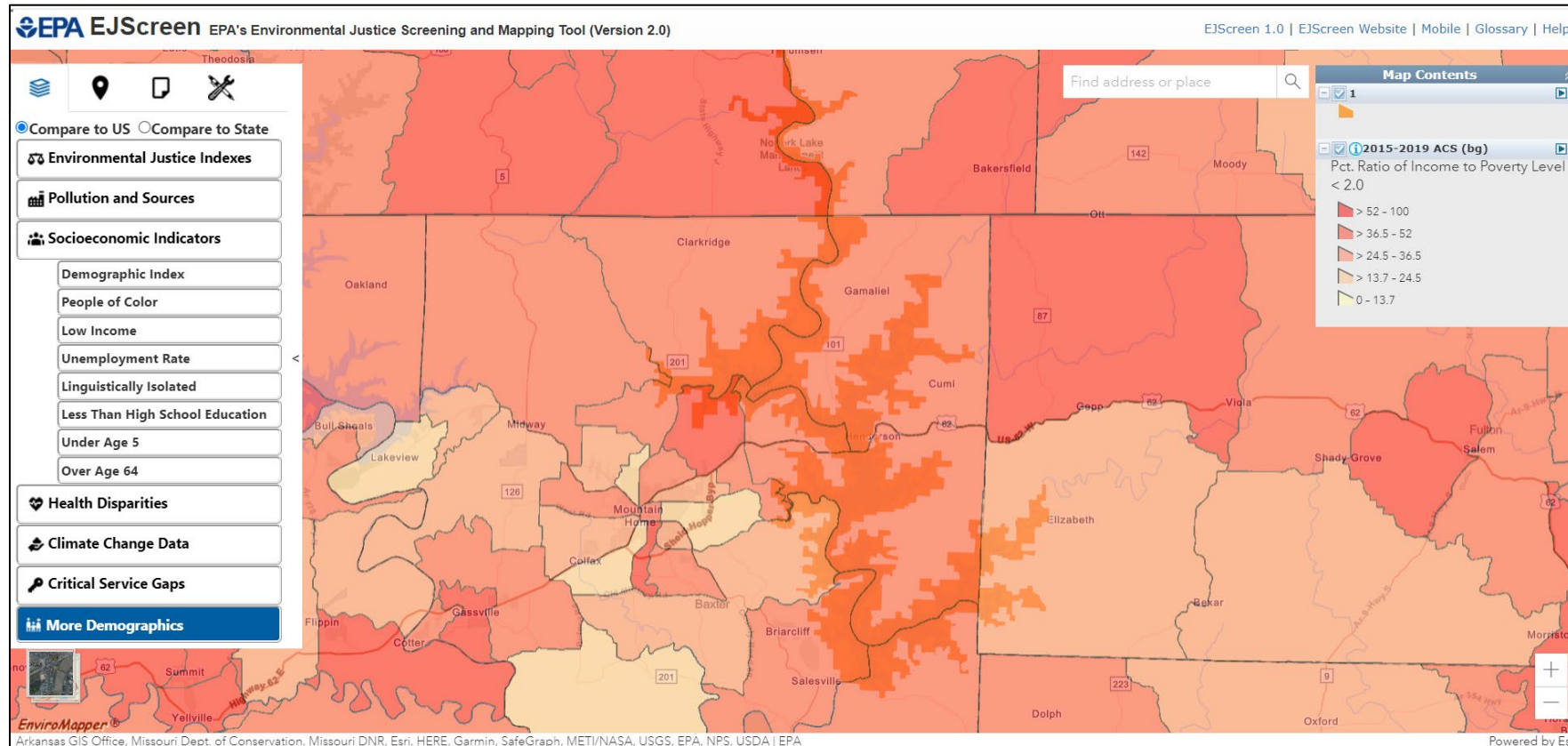
- Currently in the initial planning phase for recreation OCA status QlikSense dashboard
- Coordinating with Asset Management (AM) program on reporting needs and data visualization
- Seeking to utilize PSA points web feature service to assist with geographic representation



USING SPATIAL DATA – OCA

- Data from NRM assessment currently used with the Operational Condition Assessment (OCA) builder interface
- Where spatial data for recreation facilities aligns with NRM assessment data:
 - Can be used to prepopulate builder forms and feature locations in AMMA field condition assessment tool
 - Inventory data can help with feature identifiers and road segment/parking area naming convention

USING SPATIAL DATA – UNDERSERVED COMMUNITIES



USING SPATIAL DATA – DOT FLPP

- The Department of Transportation's Federal Lands Planning Program (FLPP) and Federal Lands Transportation Program (FLTP) require an inventory and condition assessment of road segments and parking areas that are:
 1. Managed by USACE
 2. Publicly accessible
- Standardized data inventory and data submission is required for eligibility to road improvement funds
- Data model being utilized for CA collection efforts meets both USACE SDSFIE and DOT FLPP attribute requirements
- More about this program will be presented by Allison Walker



USING SPATIAL DATA – PAD-US

- The Protected Areas Database of the US (PAD-US):
 - <https://www.usgs.gov/programs/gap-analysis-project/science/protected-areas>
- Includes data from federal, state, and local land management agencies and organizations
 - For USACE, this includes fee land and recreation PSA polygons
- Geospatial has been the lead on sharing authoritative enterprise-level data with this effort
 - Updated annually to reflect improvements or changes in data



USING SPATIAL DATA – RECREATION.GOV

RECREATION.gov

What are you looking for? [What's New](#) [Help](#) [Sign Up](#) [Log](#)

Starting May 23rd 2022 < 5 Days Next Available 5 Days >

Sites	Loop	MAY							JUNE							
		MON 23	TUE 24	WED 25	THU 26	FRI 27	SAT 28	SUN 29	MON 30	TUE 31	WED 1	THU 2	FRI 3	SAT 4	SUN 5	MON 6
05	Lpoi	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
06	Lpoi	A	A	R	R	R	R	R	A	A	A	A	A	A	A	A
10	Lpoi	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A
12	Lpoi	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A
14	Lpoi	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
15	Lpoi	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
16	Maya	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
20	Maya	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A
22	Maya	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A

Show legend No campsites selected [Add to Cart](#)

© Mapbox © OpenStreetMap Improve this map



USING SPATIAL DATA

- There are many other potential applications data for accurate data representing the Corps geographic coverage
- Can help analyze and communicate the linkage between the Corps NRM program and broader environmental, conservation, and recreation initiatives



Comments or Questions?

Benjamin.J.Silvernail@usace.army.mil



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RECREATION GEOSPATIAL DATA OVERVIEW

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24 February 2022

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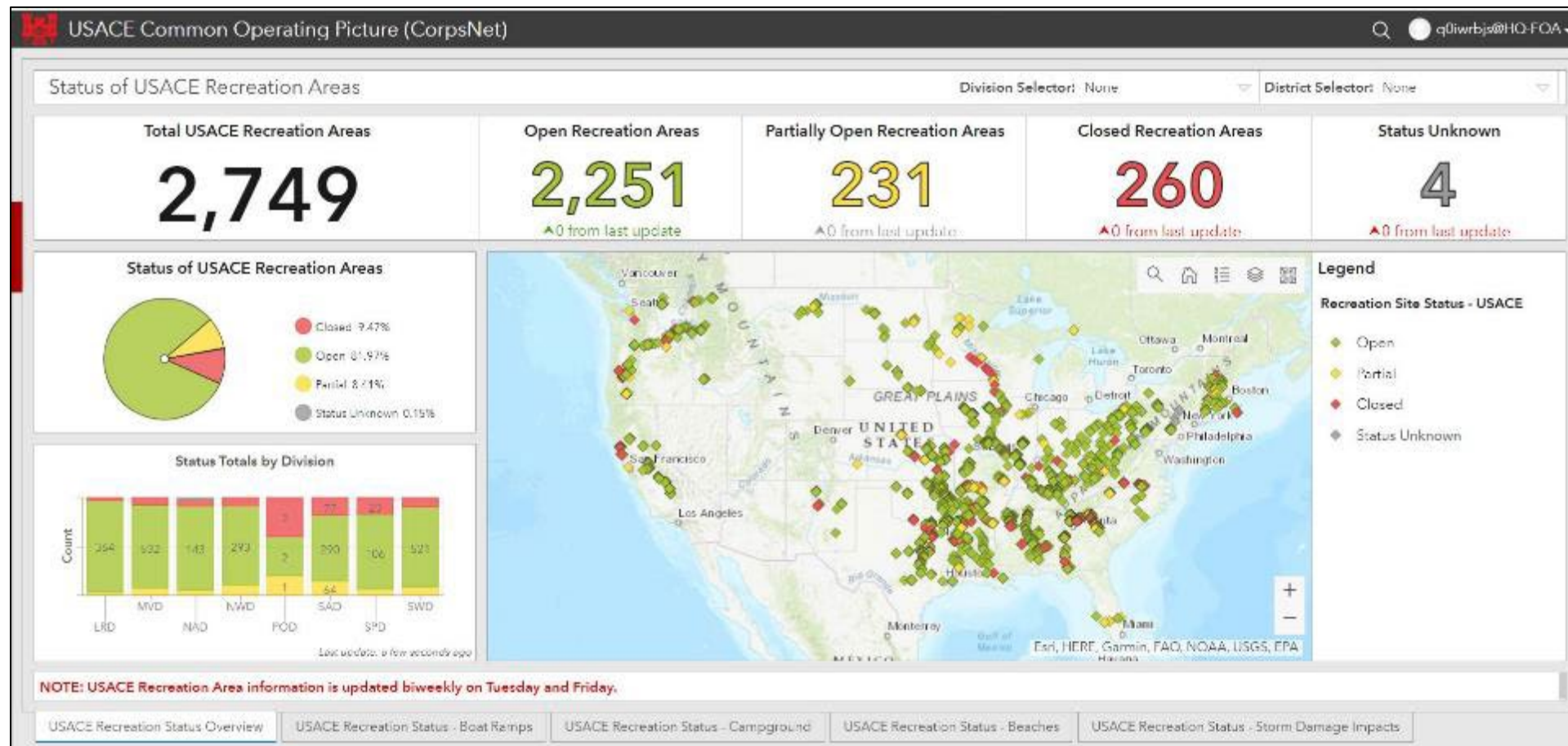
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****These URLs may change in the future****



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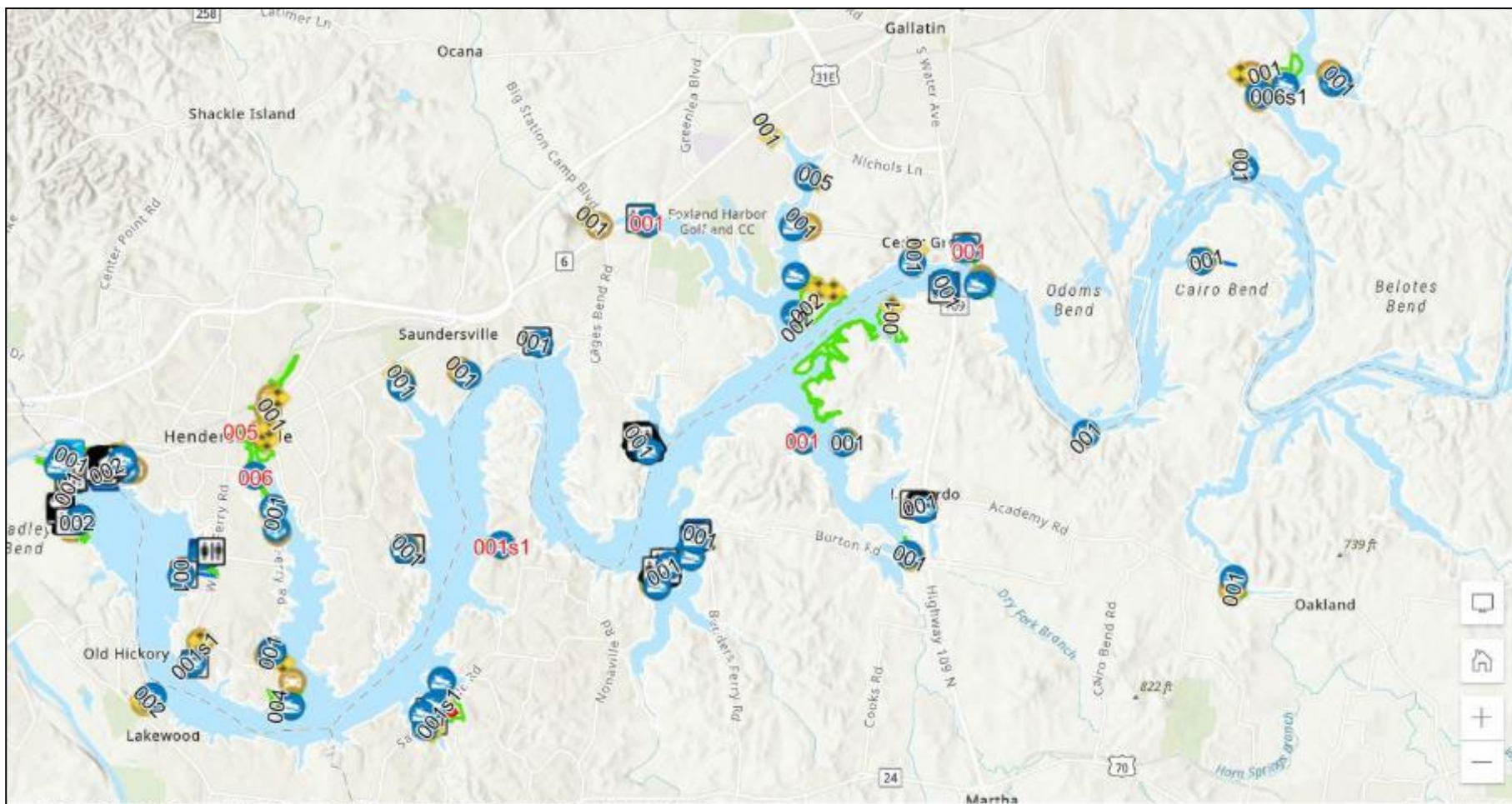


RECREATION FACILITIES MAPPING



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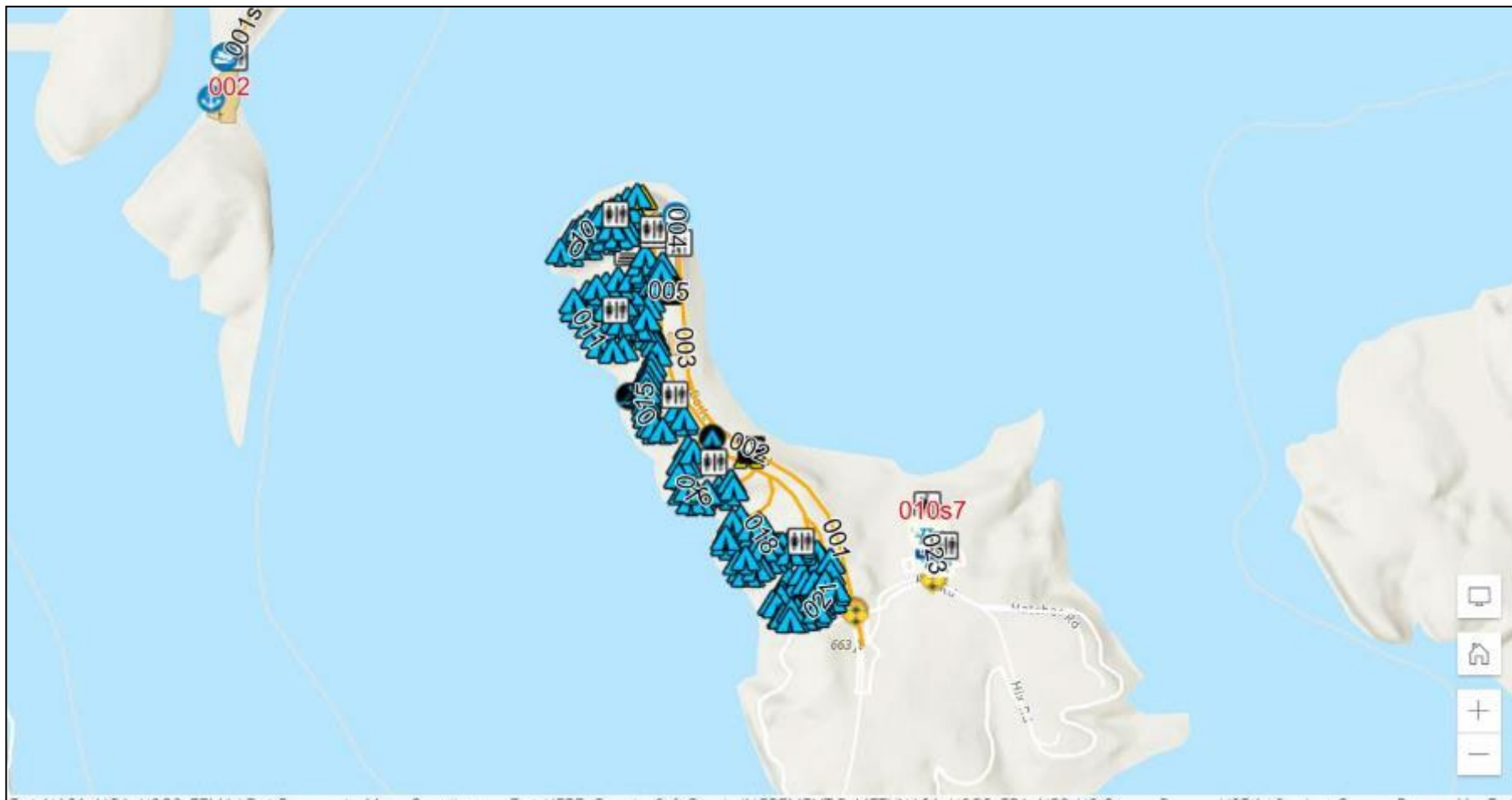
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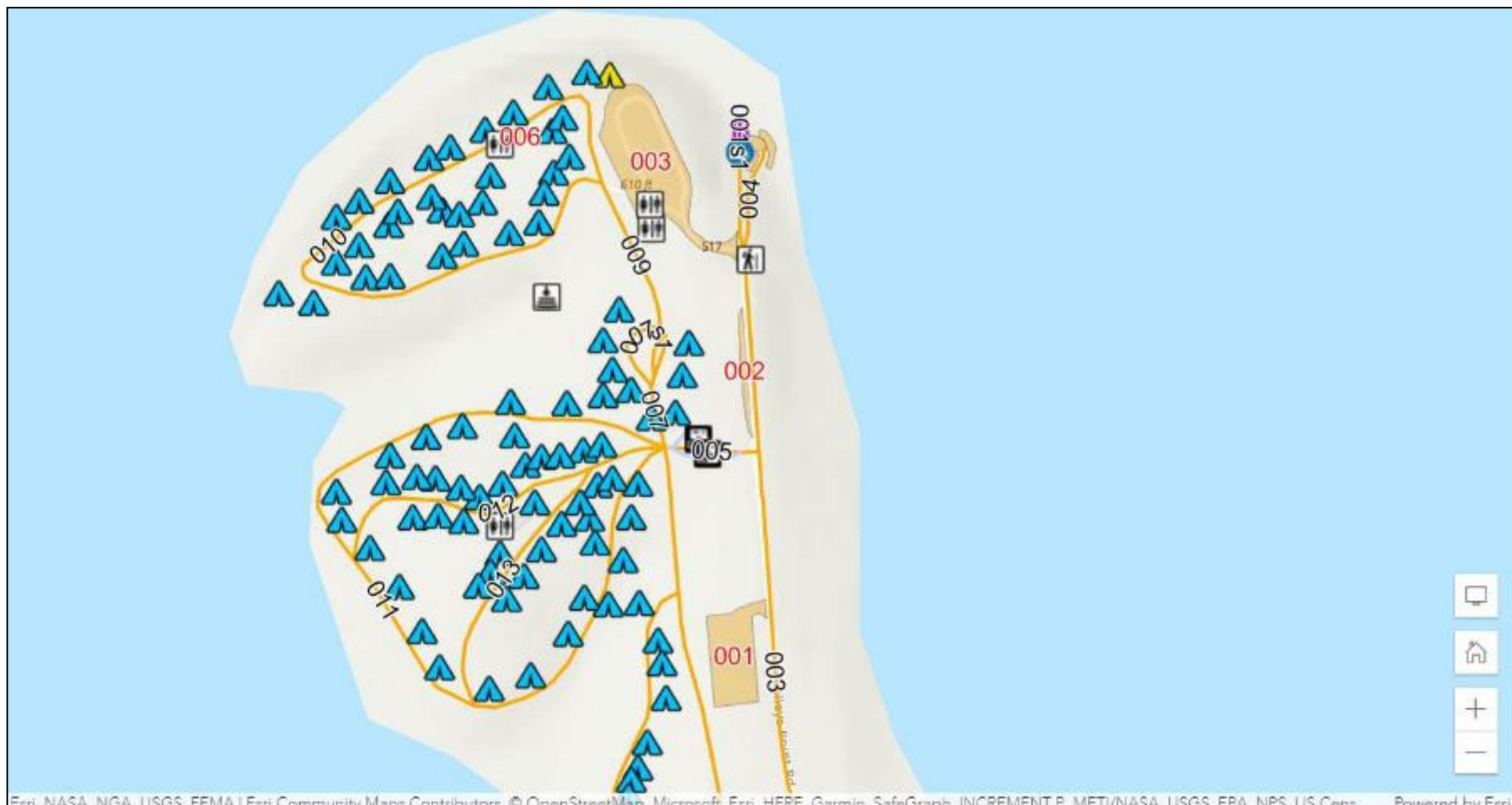
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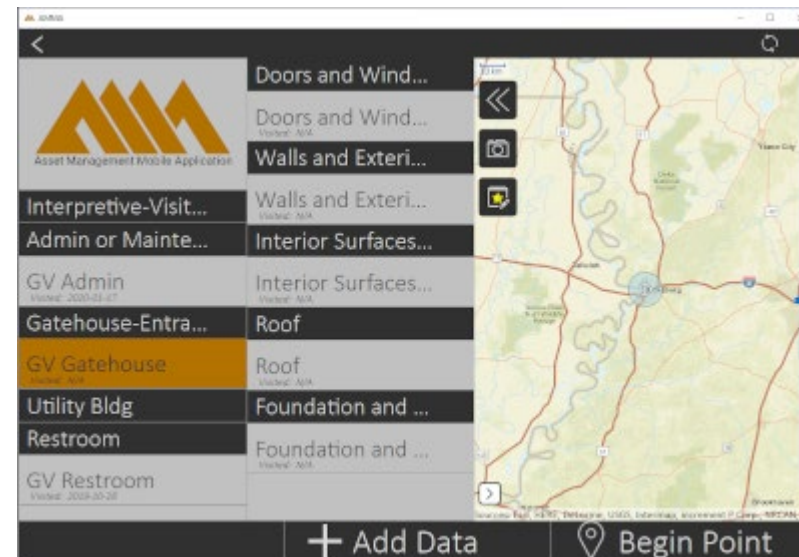
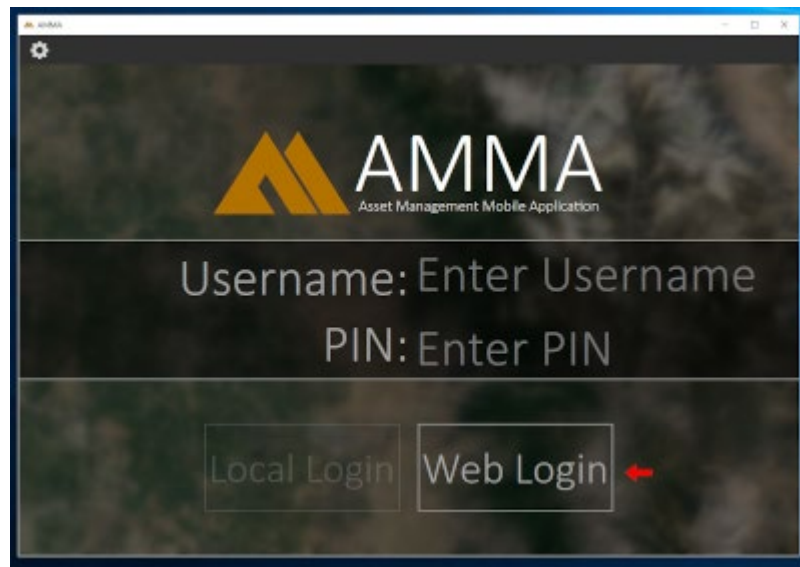


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- <https://www.sdsfieonline.org/>



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Minimum Requirement	RTE_NAME	Partner Route Name (The route names should be vetted with all groups that use/publish maps such as Park Rangers or local emergency responders, and should match any signage in the field) Note - HPMS has 3 fields related to this that may not match how FLMA's name or sign their roads. Partners may use "official" or "unofficial" names in their descriptor as desired.
Minimum Requirement	ASSET_TYPE	"Road" or "Parking area"
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Minimum Requirement	VER_DATE	Date that the Route ID Information was last verified via Route ID Meeting or Field Visit.
Minimum Requirement	FLTP	Is route a FLTP Route (Yes, No, or Partial)
Minimum Requirement	RTE_LENGTH	Total centerline length of route in miles (may include paved and unpaved). Distance between "From" and "To" points.
Minimum Requirement	STATE	State abbreviation in which route resides
Minimum Requirement	SURF_TYPE	Primary Surface type: Examples of codes that could be used are AS (asphalt), CO (concrete), BR (brick/pavers), CB (cobblestone), GR (gravel), SA(sand), NV (native or dirt) Note – HPMS Item 49 (Surface Type) codes will not be required now, FLMA's may use their own coding and definitions.
Minimum Requirement	FACILITY_TYPE	See HPMS Item 3 description and code list located on page 4-18: https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/hpms_field_manual_dec2016.pdf This field indicates one way, two way, or ramp (among others) and is used to tell HPMS how to calculate road capacity. Cannot do the certified miles without this field
Recommended	PAVED_MI	Length of paved portion of route.
Recommended	UNPAVED_MI	Length of unpaved portion of route.
Recommended	RTE_NO	FLMA Route Number
Recommended	FUNCT__CLASS	Partner Defined Functional Class Note – HPMS Item 1 (The approved FHWA Functional Class) will not be required now.
Recommended	USER_ACCESS	Primary Access Designation (Public or Non-Public)
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HOSTING SPATIAL DATA

PSA entrance point locations hosted at two locations:

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https://geoportal.eis.usace.army.mil/s3arcgis/rest/services/Hosted/RecreationSite_Status_gdb/FeatureServer

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https://ags03.sec.usace.army.mil/server/rest/services/Hosted/RecreationSite_Status_gdb/FeatureServer

*Also available via USACE Geospatial Open Data

<https://geospatial-usace.opendata.arcgis.com/>

****These URLs may change in the future****



HOSTING SPATIAL DATA - CWBI MODERNIZATION

- Data catalog includes recreation metadata submitted by NRM Technical Support Team
- https://data-test.sec.usace.army.mil/data-catalog/browse?page=0&size=10&sort=_score,desc&q=recreation
- Links tab shows relationships between systems, applications, datasets, services
- Demonstration

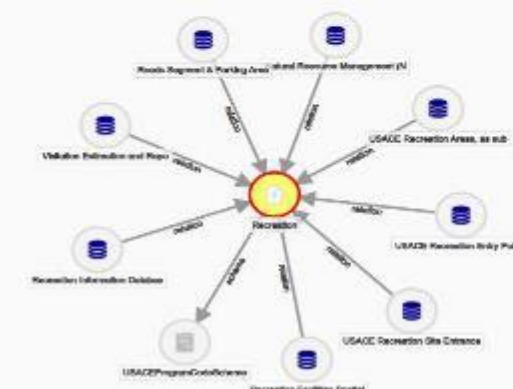
HOSTING

RECREATION

Overview Core **Links** Related

Item Help Filter By Type Filter By Link Previous 1-9 of 9 Next

RECREATION
Concept
Recreation - 202:007
Author: cwbi curator (ld)
Created:
Last Modified: May 25, 2021



A central yellow circle labeled 'Recreation' is connected to ten surrounding nodes, each with a database icon. The nodes are: Roads Segment & Parking Area, Shared Resource Management (R), USACE Recreation Area, as sub, USACE Recreation Site Entrance, Recreation Facilities Spatial, USACE Program Code/Reference, Recreation Information Database, Validation Estimation and Repo, USACE Recreation Study Public, and USACE Recreation Area, as sub.

RECREATION FACILITIES SPATIAL DATA

Overview Core Links Related Constraints Knowledge Graph

Item Help Filter By Type Filter By Link Previous 1-10 of 10 Next

RECREATION FACILITIES SPATIAL DATA
Dataset
Geospatial dataset represents recreation facilities and amenities located in Recreation Project Site Areas. [more](#)
Author: cwbi curator (jy)
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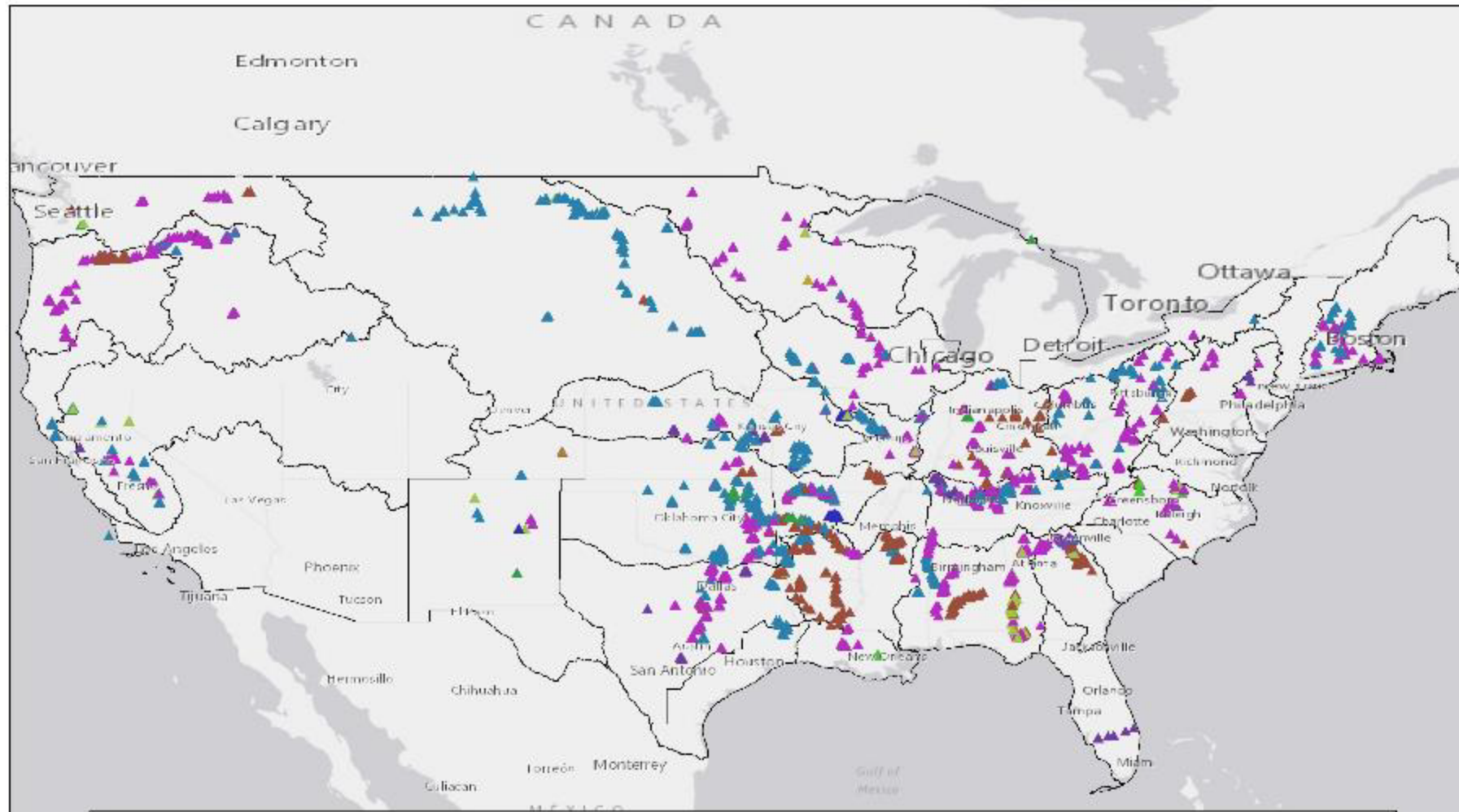
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 - Examples:
 - Paved/unpaved & public/non-public road mileage measurements
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- Maintaining a current dataset of traffic meter locations is necessary to ensuring accurate visitation analytics
- Meter information from the VERS team can serve as the foundation for a national hosted meter geospatial dataset
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USING S

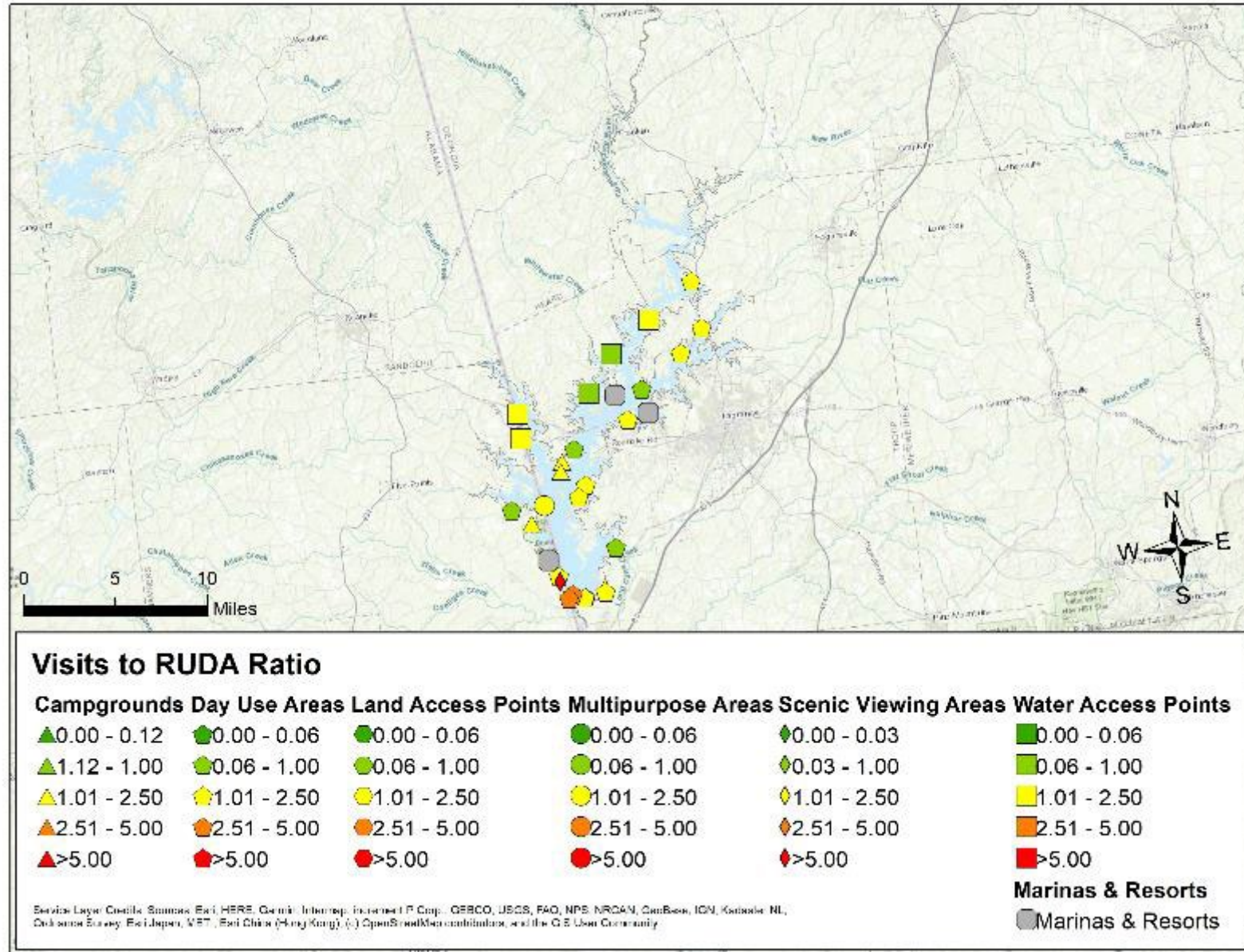


Meter Make

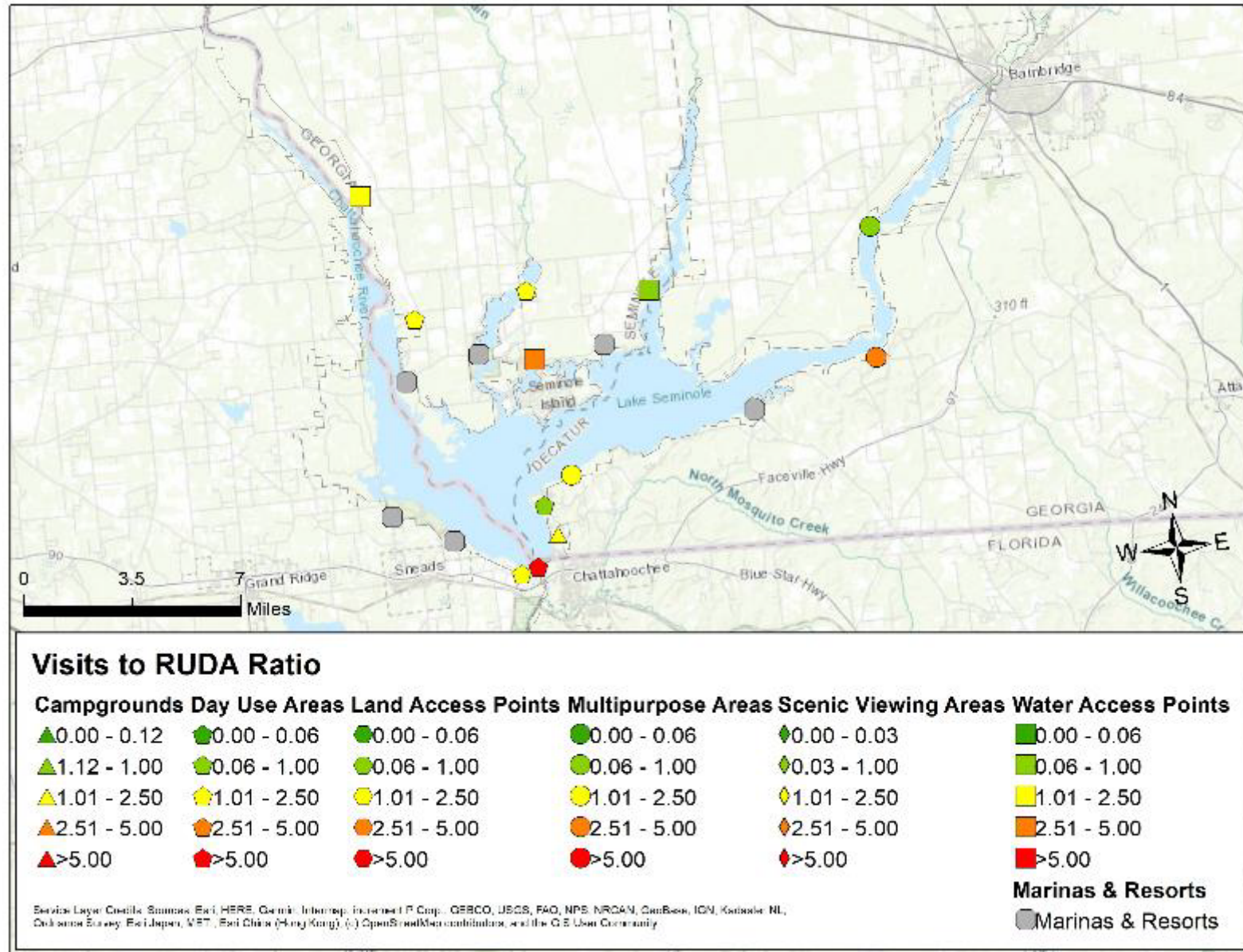
- | | | | |
|------------------|-------------------------------|----------------|----------------|
| ▲ Allen-Bradley | ▲ International Road Dynamics | ▲ Peek Traffic | ▲ StreeterAmet |
| ▲ Amesco | ▲ K-Hill | ▲ Redington | ▲ TRAFx |
| ▲ Cuesta Systems | ▲ Opcon | ▲ Redlion | ▲ Traf-Sys |
| ▲ Diamond | ▲ Other | ▲ SenSource | ▲ Tri-Tronic |



USING SPATIAL DATA – REC CAPACITY



USING SPATIAL DATA – REC CAPACITY



USING SPATIAL DATA – OCA

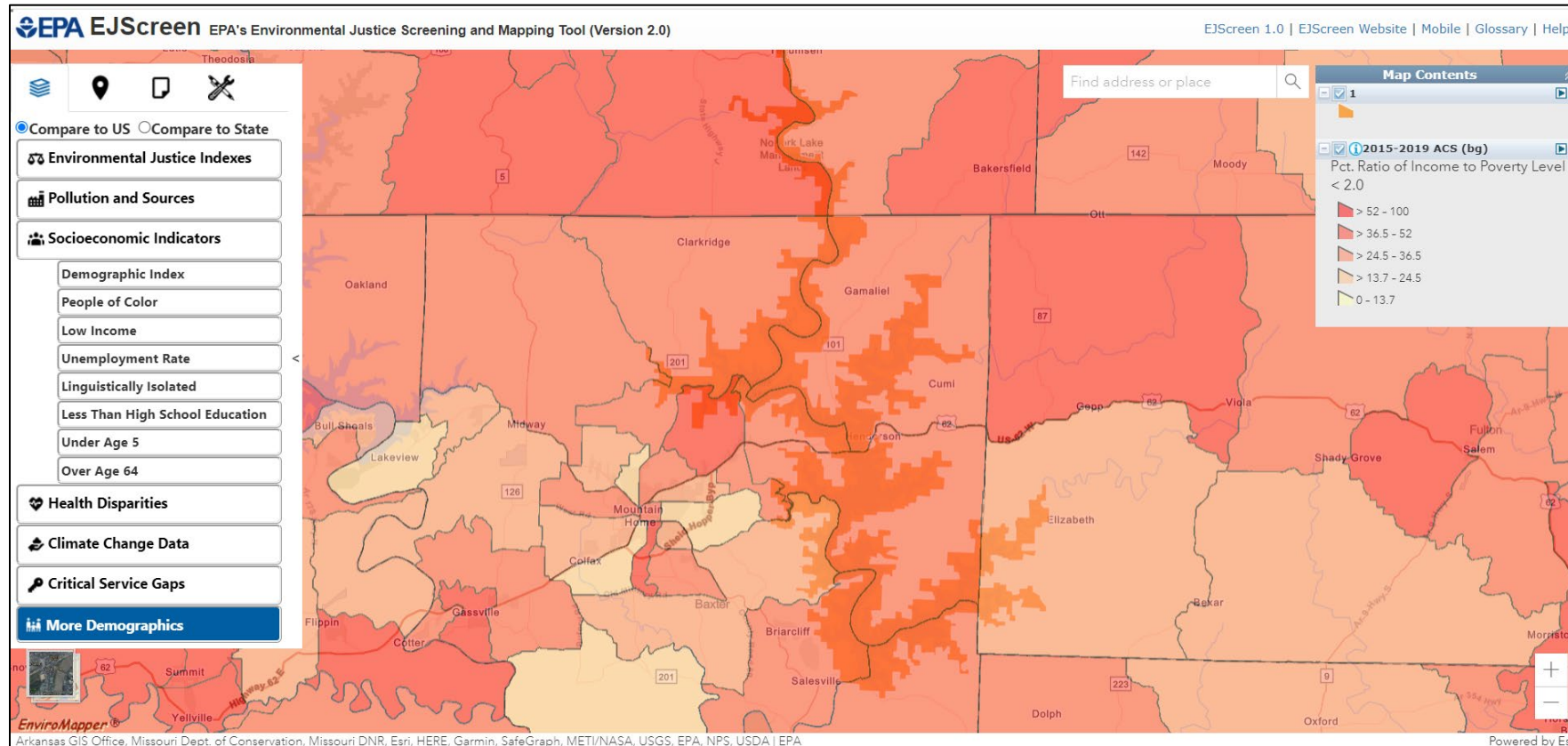
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USING SPATIAL DATA – DOT FLPP

- The Department of Transportation's Federal Lands Planning Program (FLPP) and Federal Lands Transportation Program (FLTP) require an inventory and condition assessment of road segments and parking areas that are:
 1. Managed by USACE
 2. Publicly accessible
- Standardized data inventory and data submission is required for eligibility to road improvement funds
- Data model being utilized for CA collection efforts meets both USACE SDSFIE and DOT FLPP attribute requirements
- More about this program will be presented by Allison Walker



USING SPATIAL DATA – PAD-US

- The Protected Areas Database of the US (PAD-US):
 - <https://www.usgs.gov/programs/gap-analysis-project/science/protected-areas>
- Includes data from federal, state, and local land management agencies and organizations
 - For USACE, this includes fee land and recreation PSA polygons
- Geospatial has been the lead on sharing authoritative enterprise-level data with this effort
 - Updated annually to reflect improvements or changes in data



USING SPATIAL DATA – RECREATION.GOV

RECREATION.gov

What are you looking for? [What's New](#) [Help](#) [Sign Up](#) [Log](#)

Starting May 23rd 2022 < 5 Days Next Available 5 Days >

Sites	Loop	MAY							JUNE							
		MON 23	TUE 24	WED 25	THU 26	FRI 27	SAT 28	SUN 29	MON 30	TUE 31	WED 1	THU 2	FRI 3	SAT 4	SUN 5	MON 6
05	Lpoi	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
06	Lpoi	A	A	R	R	R	R	R	A	A	A	A	A	A	A	A
10	Lpoi	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A
12	Lpoi	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A
14	Lpoi	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
15	Lpoi	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
16	Maya	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
20	Maya	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A
22	Maya	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A

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Mapbox © OpenStreetMap Improve this map



USING SPATIAL DATA

- There are many other potential applications data for accurate data representing the Corps geographic coverage
- Can help analyze and communicate the linkage between the Corps NRM program and broader environmental, conservation, and recreation initiatives



Comments or Questions?

Benjamin.J.Silvernail@usace.army.mil



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RECREATION GEOSPATIAL DATA OVERVIEW

Ben Silvernail
USACE Institute for Water Resources

24 February 2022

"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."



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PURPOSE

Provide NRM program staff with a summary of the status of program level spatial data collection, management, and applications.

- Current collection efforts
 - PSA operational status
 - Facilities/amenities mapping CA
 - PSA boundary updates
 - OCAs & AMMA
- Spatial data standards
- Hosting spatial data
- Using spatial data
 - NRM Assessment, VERS, OCA/AM, Capacity, Environmental Justice, Qliksense, USGS PAD-US, public information, recreation.gov, Federal Lands Transportation, HQ report requirements

CURRENT COLLECTION EFFORTS

- PSA operational status
 - Data provided by NRM field staff
- PSA open/partially open/closed
 - Boat ramp, beach, campgrounds status within PSA
 - PSA experiencing flooding
 - Status notes, comments
- Pull field entered data and update internal and public services twice weekly (Tues/Fri AM)
- Occasional enterprise hosting issues do arise, requiring resolution and coordination
with GIS CoP/uCOP



CURRENT COLLECTION - PSA STATUS DASHBOARD

<https://arcportal-ucop-corps.usace.army.mil/s0portal/apps/sites/#/covid19>



CURRENT COLLECTION - PSA STATUS DASHBOARD

- PSA status and access point data used in this dashboard is available for use in District mapping applications

- USACE internal WFS:

https://geoportal.eis.usace.army.mil/s3arcgis/rest/services/Hosted/RecreationSite_Status_gdb/FeatureServer

- Public WFS:

https://ags03.sec.usace.army.mil/server/rest/services/Hosted/RecreationSite_Stat us_gdb/FeatureServer

****These URLs may change in the future****



CURRENT COLLECTION EFFORTS

- Cooperative Agreement for geospatial data collection
- Currently wrapping up CA initiated in 2019 with the Student Conservation Association (SCA)
- Collecting/editing/field verifying the following datasets
 - Campgrounds & campsites
 - Roads & parking lots
 - Boat ramps
 - Traffic counters
 - Fishing features
 - Marinas
 - Picnic sites
 - Trailheads
 - Recreation buildings & structures



All Photo Credit: SCA Staff

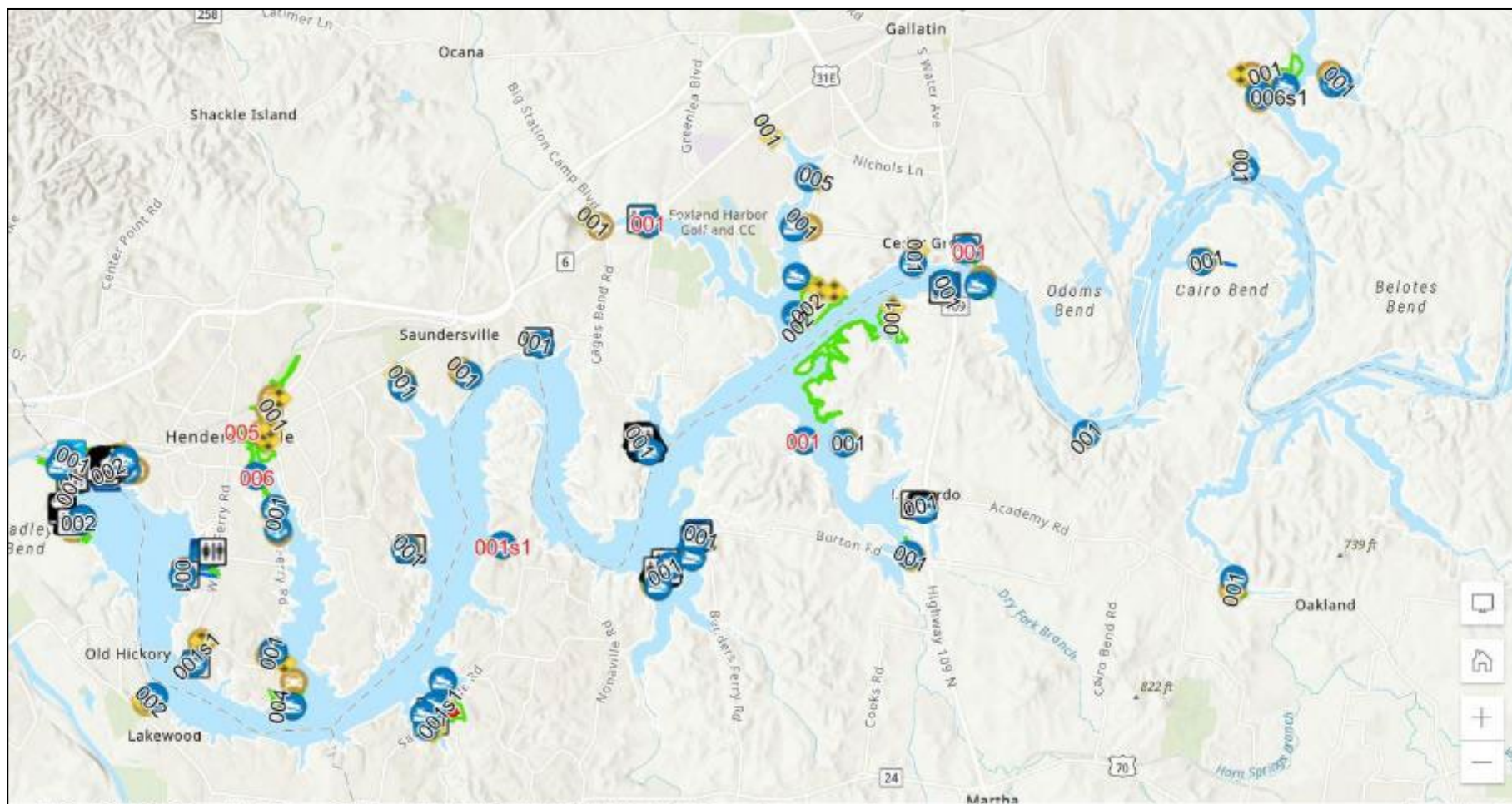


RECREATION FACILITIES MAPPING



Districts with facilities mapped utilizing cooperative agreement with the Student Conservation Association (SCA)

RECREATION FACILITIES MAPPING EXAMPLES



RECREATION FACILITIES MAPPING EXAMPLES



NASA, NGA, USGS, FE

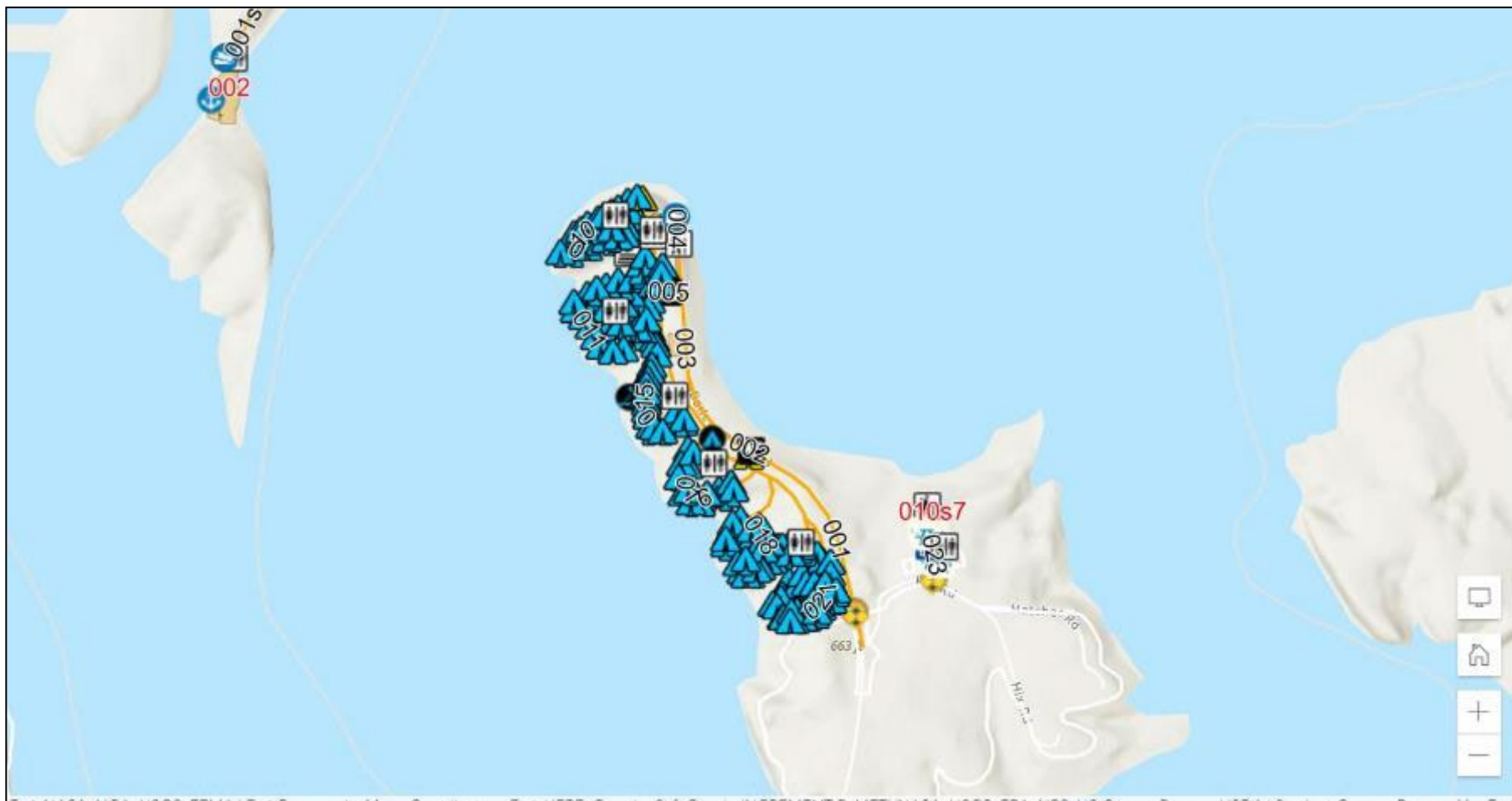
RECREATION FACILITIES MAPPING EXAMPLES



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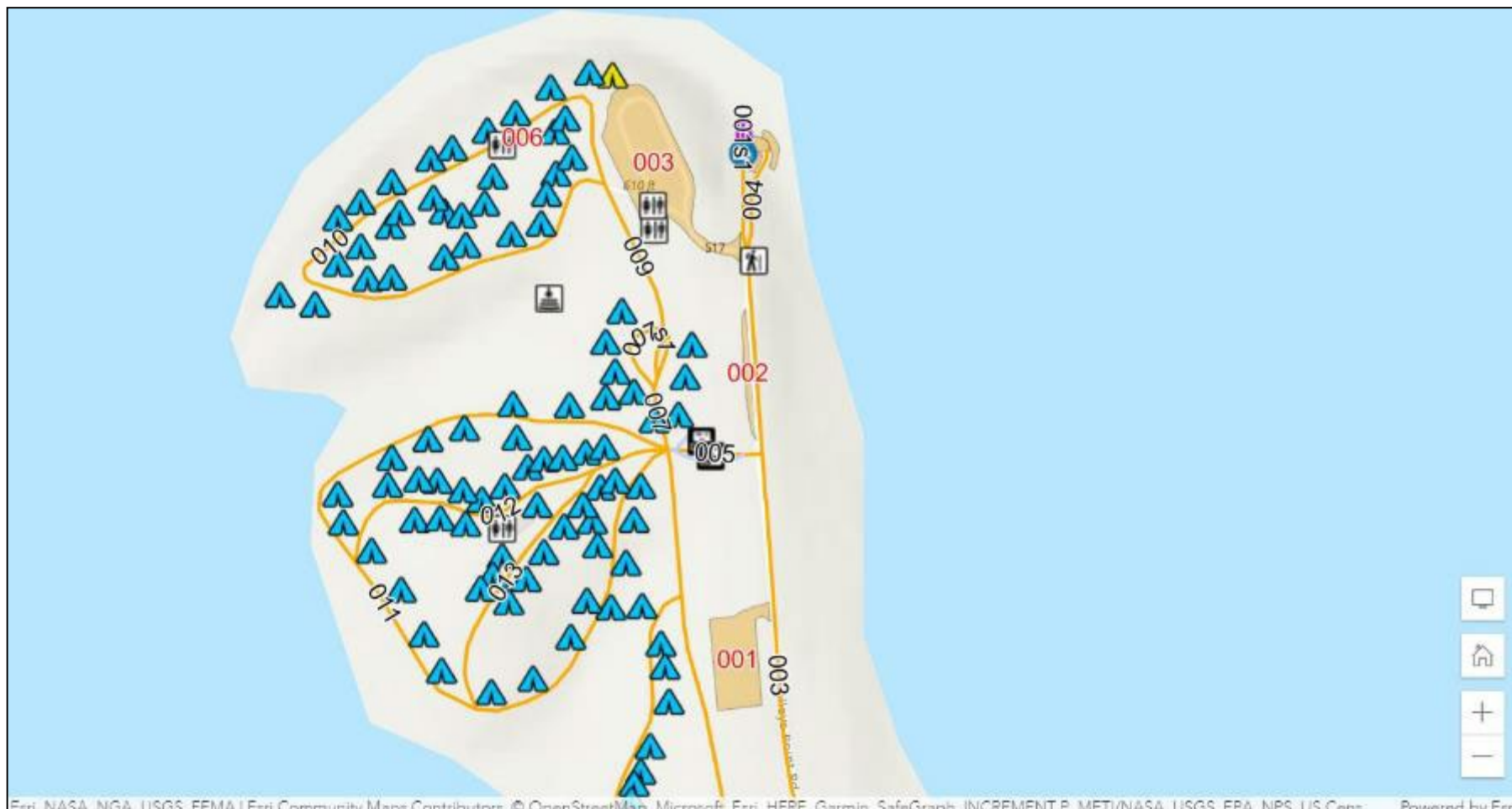
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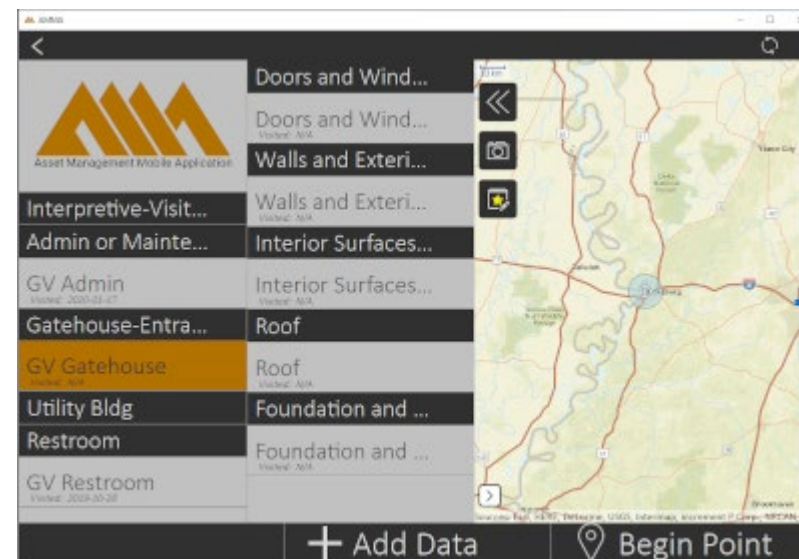
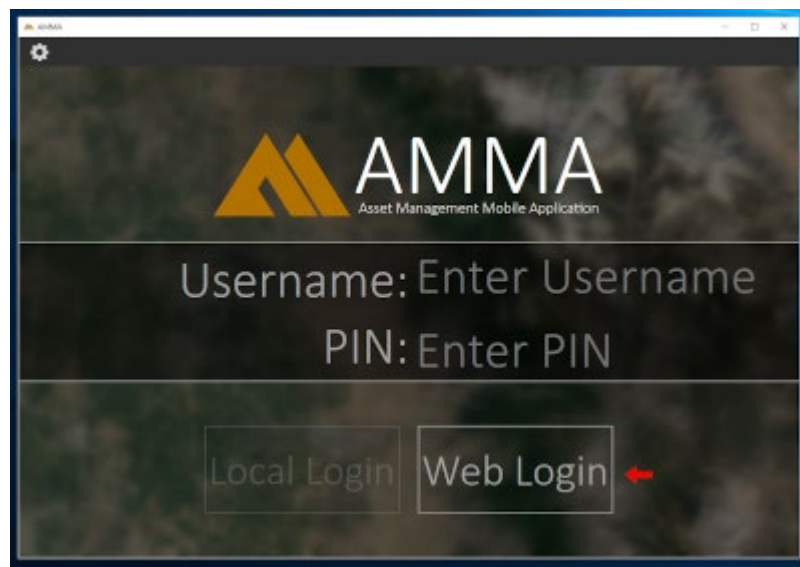


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CURRENT COLLECTION EFFORTS

- Full OCAs completed with AMMA are generate output that includes coordinate information of features receiving field assessments
- Georeferenced photos show condition and locations of assets



UPCOMING COLLECTION EFFORTS

- PSA boundary updates require a joint effort between GIS and NRM CoPs
- Purpose is to update data to reflect current list of PSAs
- Data that is now being hosted on enterprise portal and public portal does not align with current list of PSAs
- Currently in the early stages of a phased approach (schedule TBD):
 - National gap analysis: Identify PSAs that have no record in existing national data
 - Data inquiry: Does up to date PSA boundary exist at the District or Project level? Is there existing local data that requires edits or modification? Do Projects have up to date Master Plan?
 - Identify POCs to create and verify missing boundaries, or edit existing boundaries
 - Compile national dataset. Will require maintenance

SPATIAL DATA STANDARDS

- For national recreation data, SDSFIE USACE HQ 4.0.2.1 is currently being utilized.
- Will migrate to USACE HQ 4.0.5 when published
- NRM technical support team is working to communicate NRM's data needs with SDSFIE program
 - This has resulted in updates to data models for RecreationBoundary and RecreationFeature
 - More coordination is required for boat ramps, trails and trailheads, campsites, etc. to meet recreation business line's needs
- <https://www.sdsfieonline.org/>



SPATIAL DATA STANDARDS

Dataset	SDSFIE 4.0.2.1 Entity
Roads	RoadSegment
Parking areas	ParkingArea
Boat ramps	BoatRamp
Buildings	BuildingPoint
Campgrounds	Campground
Campsites	Campsite
Fishing cleaning stations	FishingFeature
Marinas	Marina
Picnic sites	RecreationFeature
Trailheads	RecreationTrailFeature
Road access points	RoadPoint
Structures	Structure
Traffic counters	TrafficCounter

SPATIAL DATA STANDARDS

- PSA access points use point type schema developed for PSA boundaries.
 - SDSFIE RecreationBoundary_P
 - Includes amended fields for operational status information
- Roads and parking areas not only need to meet USACE standards and NRM program needs, but also must meet DOT Federal Lands Transportation Program standards
 - SDSFIE RoadSegment
 - DOT HPMS
- Common attributes have been crosswalked between these sets of requirements in order to eliminate redundancy

SPATIAL DATA STANDARDS - DOT

REQUIREMENT	FIELD_NAME	DESCRIPTION / DEFINITION
Minimum Requirement	OWNERSHIP	See HPMS Item 6 description and code list located on page 4-27: https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/hpms_field_manual_dec2016.pdf
Minimum Requirement	MAINTENANCE_OPERATIONS	The legal entity that maintains and operates a roadway. Needed For administrative, legislative, analytical, and national highway database purposes. See HPMS Item 68 description and code list located on page4-128: https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/hpms_field_manual_dec2016.pdf
Minimum Requirement	FLMA_ROUTE_IDENT	Unique Identifier for each route used internally by FLMA. FHWA will use this field as a crosswalk (typically is the FMSS/SAMS/FBMS number)
Minimum Requirement	FLMA_REGION	FLMA Region
Minimum Requirement	FLMA_UNIT_ID	Partner "Unit" Code/Name - examples: "GOGA" (NPS), "PUTX" (FWS). N/A is an acceptable response
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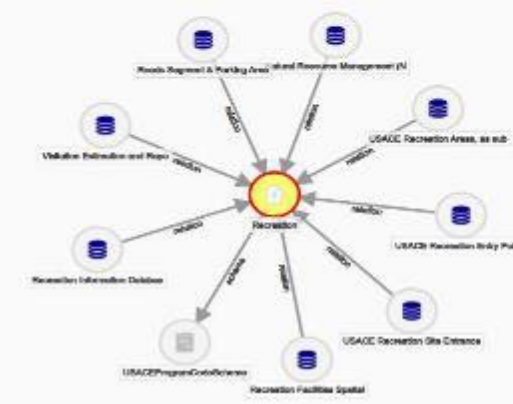
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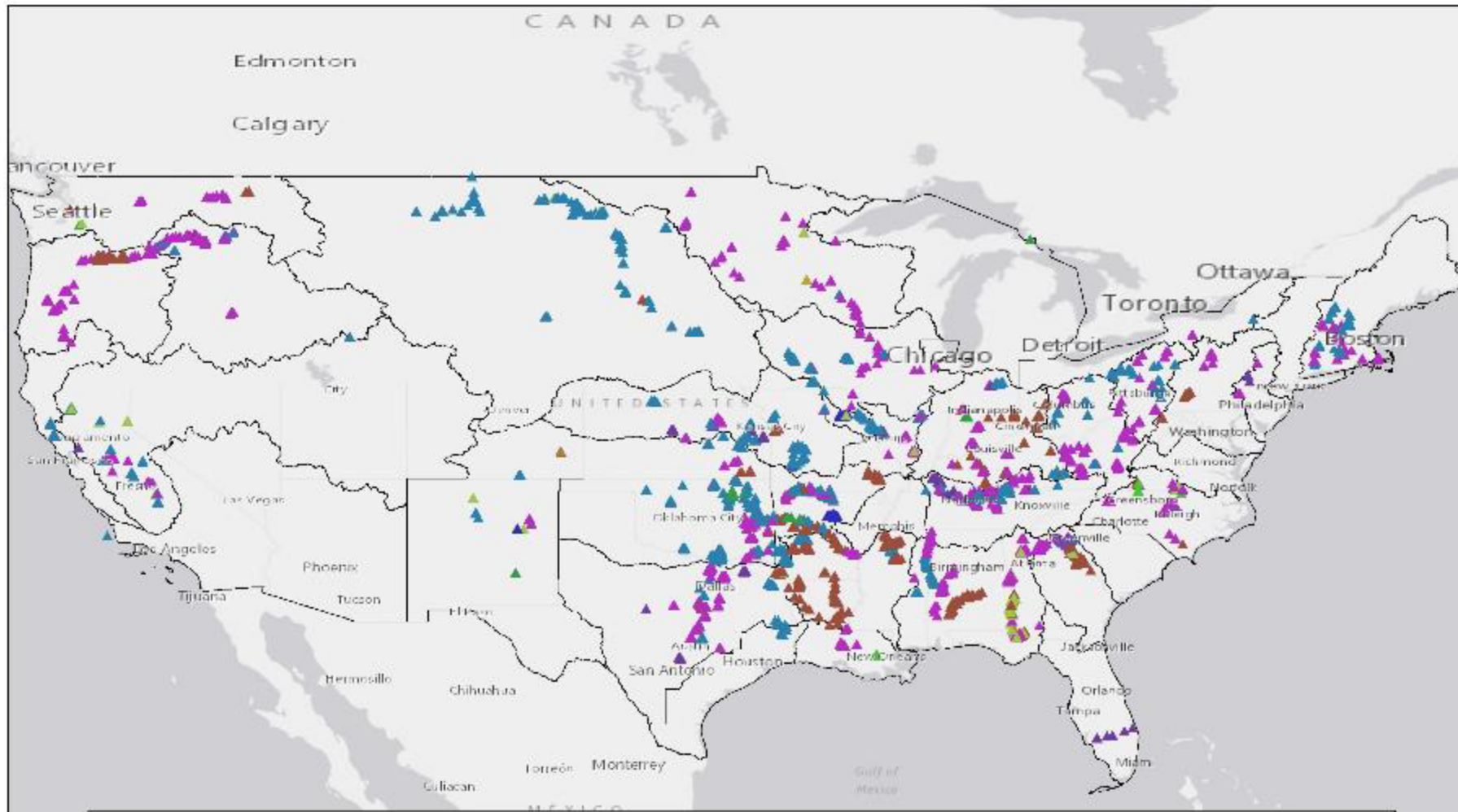
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USING S



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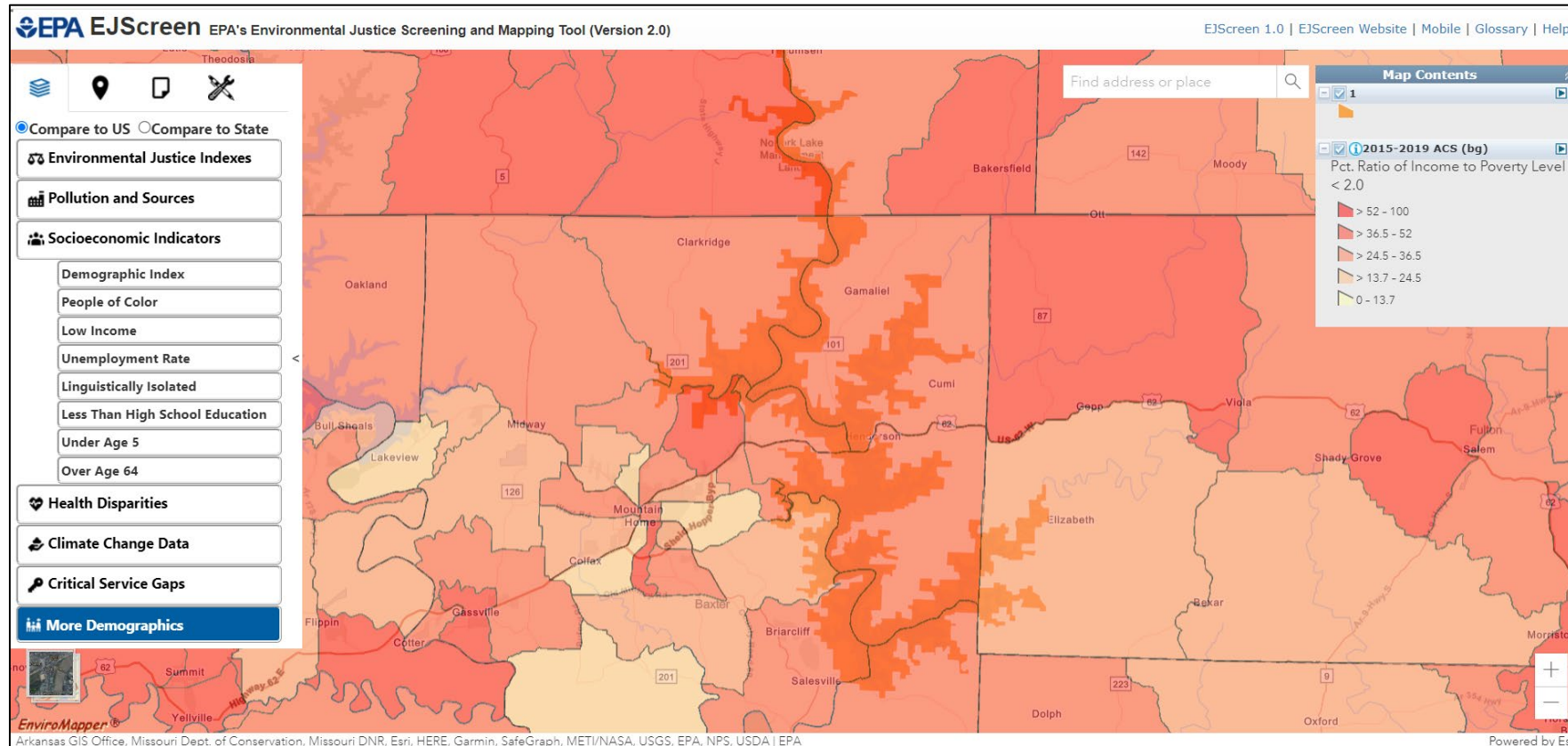
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USING SPATIAL DATA – PAD-US

The screenshot displays the USGS Protected Areas Database of the United States (PAD-US) web application. The interface includes a search bar, a 'DATA SETS' panel with 13 items, and a map view showing a satellite-style map with overlaid colored polygons representing protected areas. The legend in the 'DATA SETS' panel lists various agencies and their corresponding colors: Department of Defense (DOD) in brown, American Indian Areas (Census Bureau) in yellow, Bureau of Land Management (BLM) in orange, National Park Service (NPS) in green, Forest Service (USFS) in light green, Army Corps of Engineers (USACE) in blue, Bureau of Reclamation (USBR) in cyan, U.S. Fish and Wildlife Service (FWS) in purple, and National Resources Conservation Service (NRCS) in red. The map also shows a river network in blue. The USGS logo and tagline 'science for a changing world' are visible in the top left corner. The bottom of the page contains navigation links for privacy policy, legal, accessibility, site map, and contact USGS, along with social media icons for follow.



USING SPATIAL DATA – RECREATION.GOV

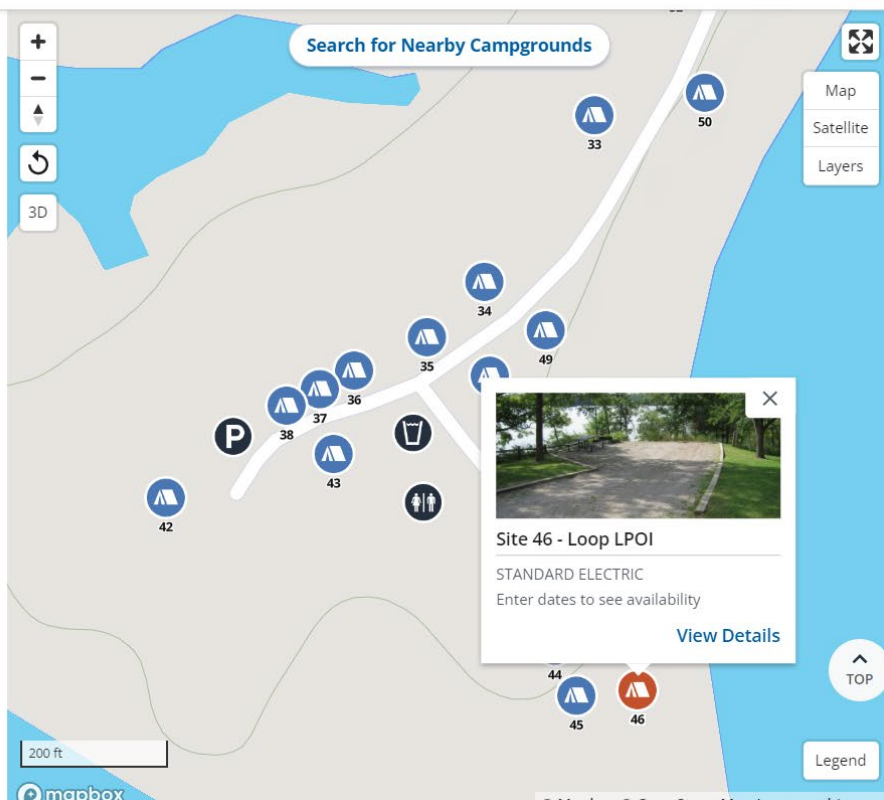


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05	Lpoi	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
06	Lpoi	A	A	R	R	R	R	R	A	A	A	A	A	A	A	A
10	Lpoi	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A
12	Lpoi	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A
14	Lpoi	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
15	Lpoi	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
16	Maya	A	A	A	A	R	R	R	A	A	A	A	A	A	A	A
20	Maya	A	A	A	R	R	R	R	A	A	A	A	A	A	A	A
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- There are many other potential applications data for accurate data representing the Corps geographic coverage
- Can help analyze and communicate the linkage between the Corps NRM program and broader environmental, conservation, and recreation initiatives



Comments or Questions?

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