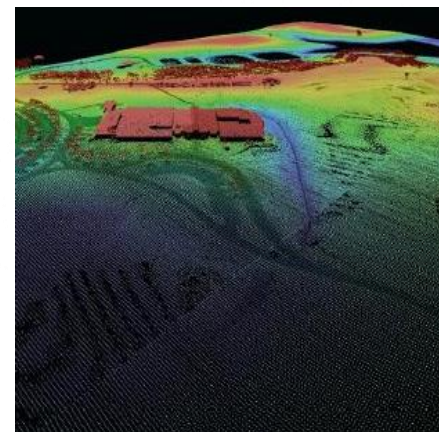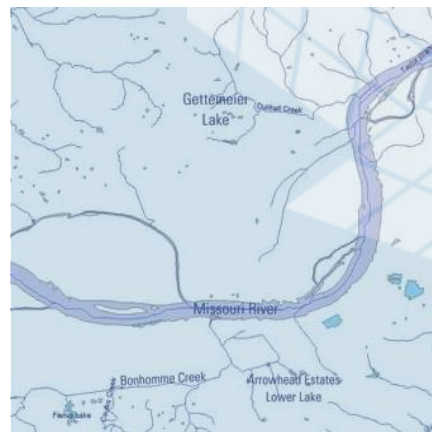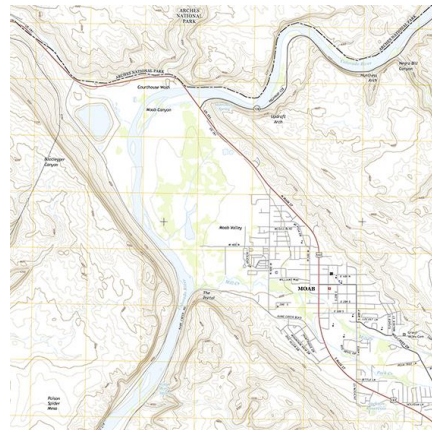# National Digital Trails Network Project

Briefing and Demonstration

10/15/2019

Elizabeth McCartney, Tatyana DiMascio, & Greg Matthews
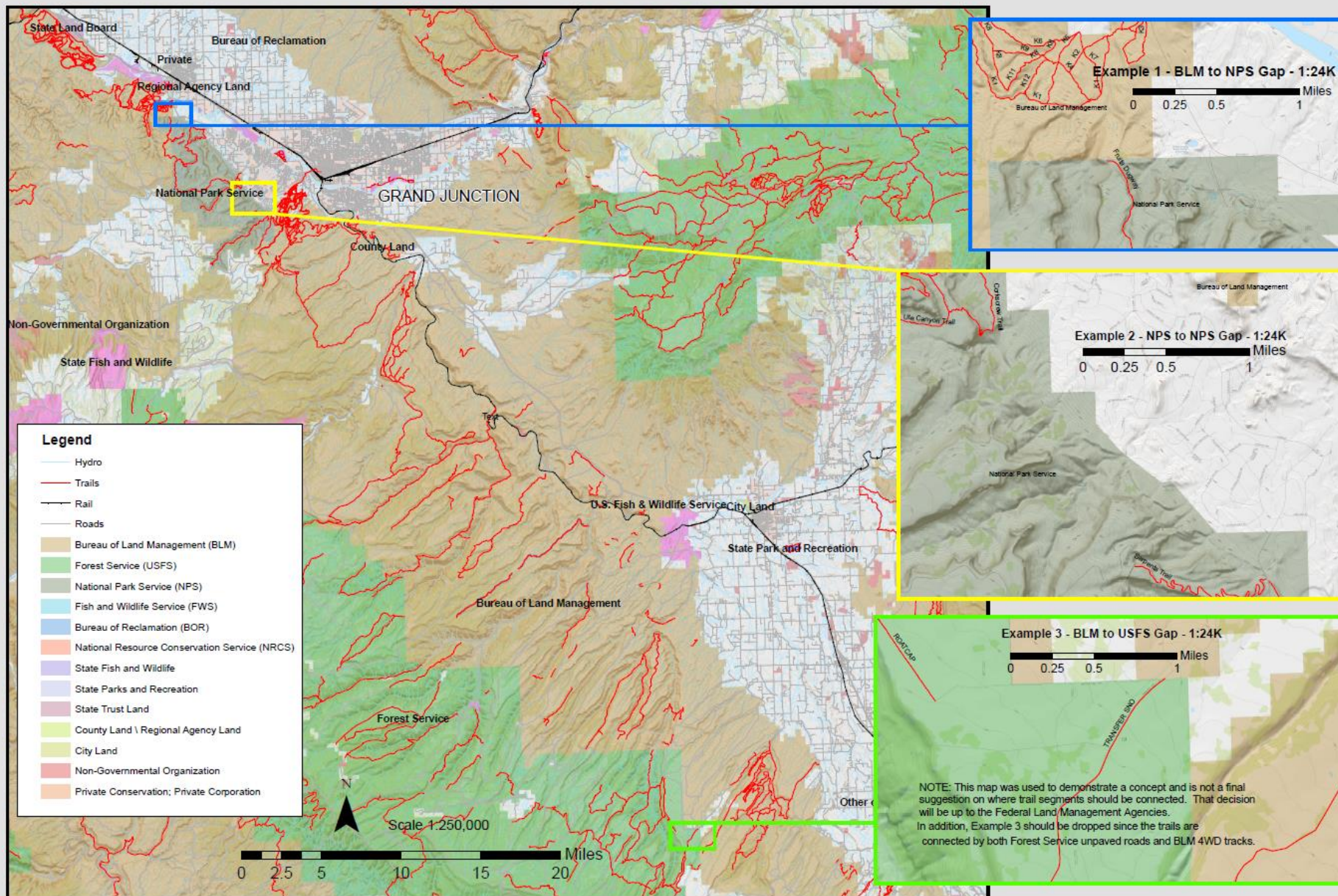U.S. Geological Survey

+ Agenda

Topics

- Project background and overall goals
- Demonstration of TRAILS
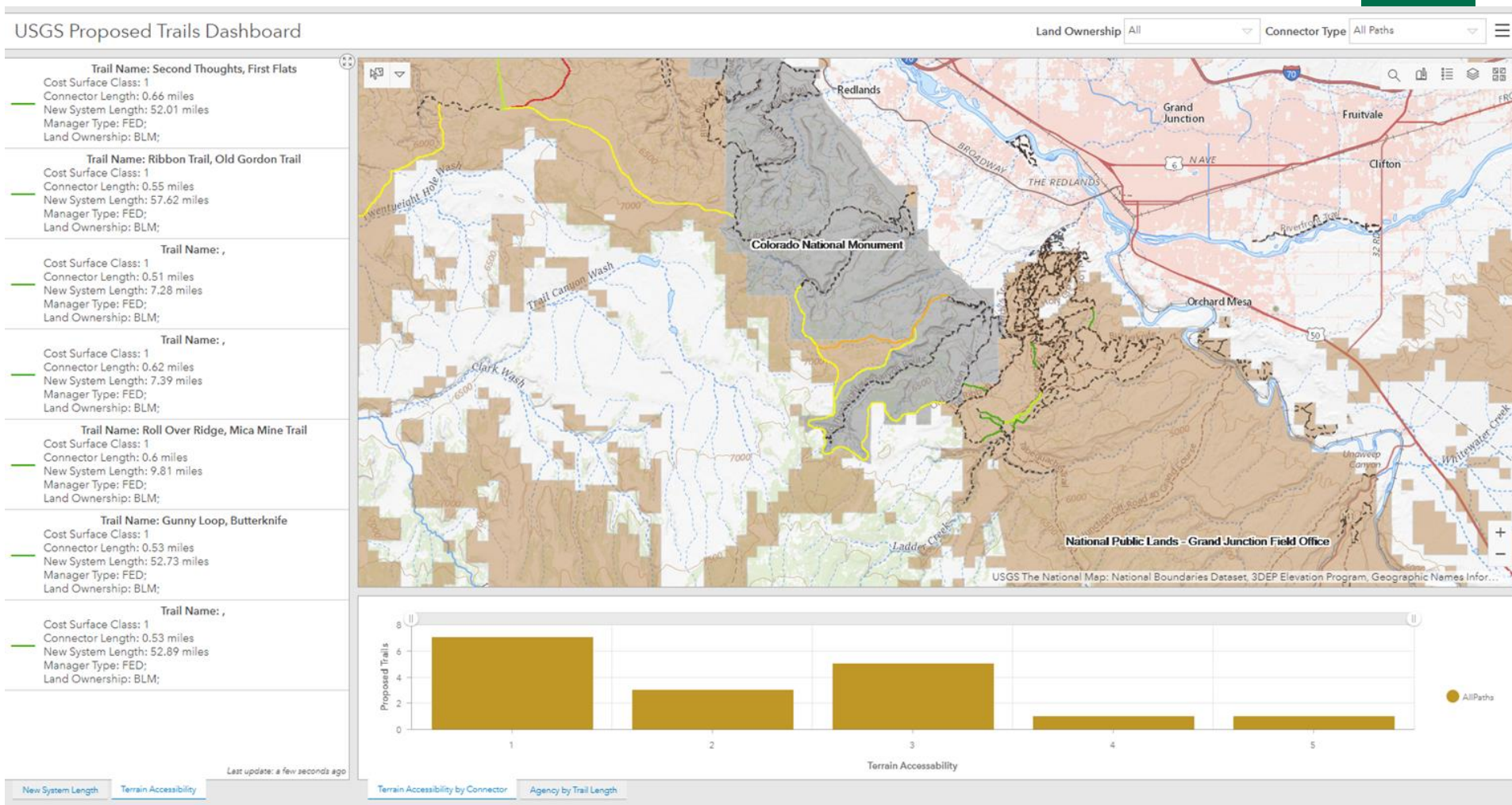- Next Steps
- Questions/Discussion

Vision

Connect trails systems to expand recreational opportunities on the Nation's public lands

National Trails Network Proof of Concept
Grand Junction, CO

USGS
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Example 1 - BLM to NPS Gap - 1:24K

Miles
0   0.25   0.5   1

Bureau of Land Management

National Park Service

Example 2 - NPS to NPS Gap - 1:24K

Miles
0   0.25   0.5   1

Bureau of Land Management

National Park Service

Example 3 - BLM to USFS Gap - 1:24K

Miles
0   0.25   0.5   1

NOTE: This map was used to demonstrate a concept and is not a final
suggestion on where trail segments should be connected. That decision
will be up to the Federal Land Management Agencies.
In addition, Example 3 should be dropped since the trails are
connected by both Forest Service unpaved roads and BLM 4WD tracks.

State Land Board

Bureau of Reclamation

Private

Regional Agency Land

National Park Service

GRAND JUNCTION

County Land

Non-Governmental Organization

State Fish and Wildlife

U.S. Fish & Wildlife Service   City Land

State Park and Recreation

Bureau of Land Management

Forest Service

Other

Legend
- Hydro
- Trails
- Rail
- Roads
- Bureau of Land Management (BLM)
- Forest Service (USFS)
- National Park Service (NPS)
- Fish and Wildlife Service (FWS)
- Bureau of Reclamation (BOR)
- National Resource Conservation Service (NRCS)
- State Fish and Wildlife
- State Parks and Recreation
- State Trust Land
- County Land \ Regional Agency Land
- City Land
- Non-Governmental Organization
- Private Conservation; Private Corporation

N

Scale 1:250,000

Miles
0   2.5   5   10   15   20

+ Proof of Concept - Decision Support Tool

+

2-Year Goals to Support the Vision

❖ **Goal 1**: Create a decision support tool (TRAILS) to assist land managers in identifying connections between existing trails and trail systems.
  ➢ Beta TRAILS decision support tool released 8/2019
    ■ User testing and proof of concept pilots ongoing

❖ **Goal 2**: Create a robust national digital trails database
  ➢ ~200,000 miles of trails aggregated
  ➢ New trail schema implemented

❖ **Goal 3**: Develop a mobile responsive editor for maintaining trails
  ➢ Review of existing applications ongoing

+

TRAILS Decision Support Tool

+ TRAILS Decision Support Tool

Top – Right Toolbar

Legend

Layers

Add Base Layer

Add Data

+ Create a New Project

Basic Project Information

+ Define Area of Interest (AOI)

Analysis Resolution	Max AOI Extent Dimensions (km)	Max AOI Extent Dimensions (mi)
1 m	8 km x 8 km	4.97 mi x 4.97 mi
3.4 m	27.2 km x 27.2 km	16.9 mi x 16.9 mi
5 m (Alaska only)	40 km x 40 km	24.85 mi x 24.85 mi
10 m	80 km x 80 km	49.71 mi x 49.71 mi
30 m	240 km x 240km	149.12 mi x 149.12 mi
60 m	480 km x 480 km	298.26 mi x 298.26 mi
90 m	720 km x 720 km	447 mi x 447 mi

Note: Max AOI Extent Dimension calculations assume 8,000 x 8,000 3DEP max image height

Assumption: If multiple DEM resolutions cover an AOI, we will default to coarsest resolution that covers the entire AOI

Assumption: We will display above Analysis Resolutions (which are the 3DEP native resolutions) in the dropdown in the application

+ Generate Trails - All Existing Trails

+ Generate Trails - Add Waypoints

+ Generate Trails - Advanced Settings

+ Explore Trails

+ Share Trails

Click here to Share Project (step 4)

Previous **Save & Next**

≋**USGS** Trail Routing, Analysis, and Information Linkage System (TRAILS) Beta
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Edit Project **Close**

4 Share Project

✓ 1 Project Information

✓ 2 Define Area of Interest

✓ 3 Refine Scenarios and Explore Results

4 Share Project

Dashboard | File Geodatabase

```
https://usgspod.esri.com/portal/apps/opsdashboard/
index.html#/ba1dde0922d048cc922d8e840541dda8?
ProjectID=%7B1C2B5CB8-72E3-47A6-87BA-
B564C5B5F300%7D&extent=-108.790,39.085,-108.719,39
.131
```

Copy URL **Open in New Window**

≋**USGS** **The National Map**
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+ Dashboard
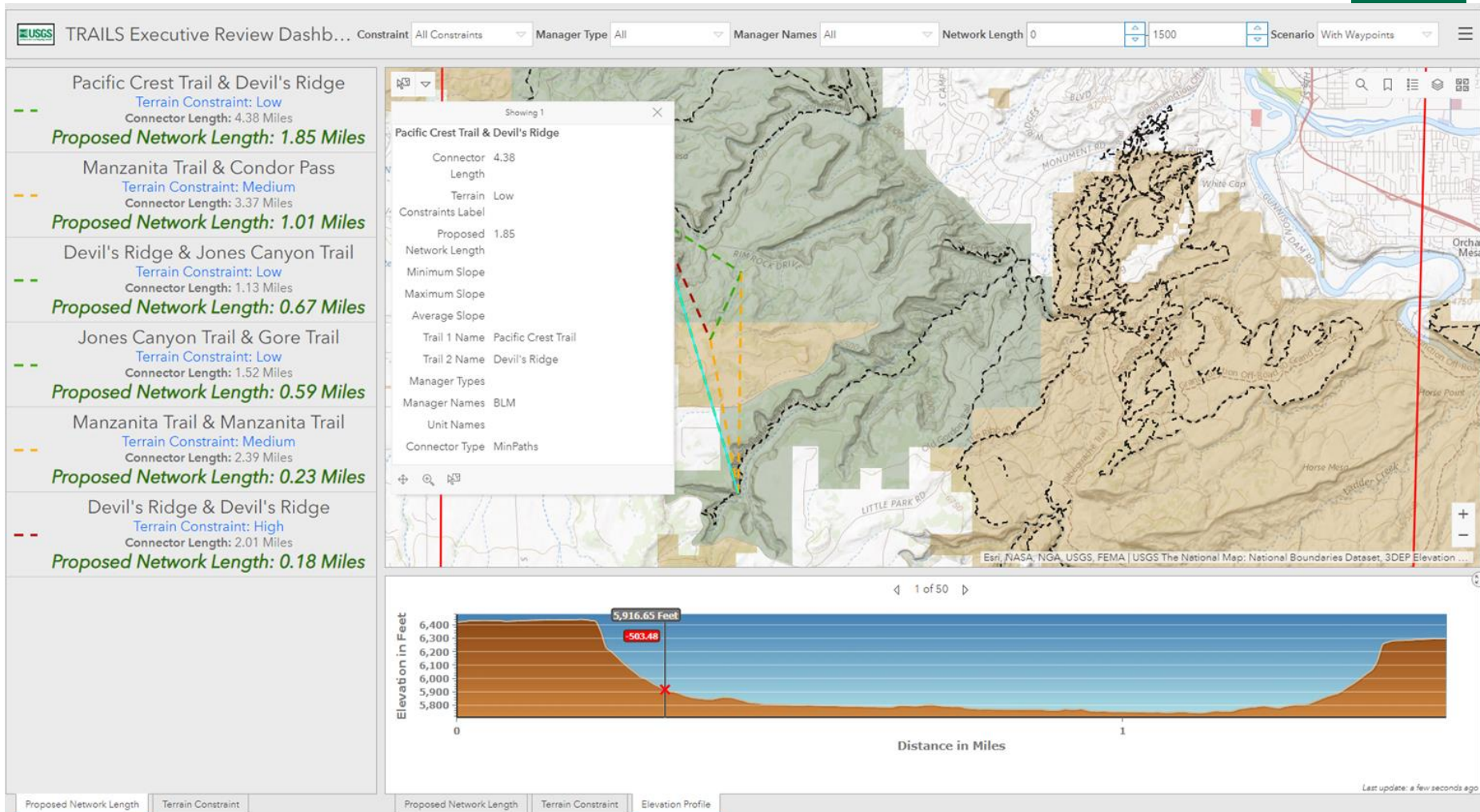
Short-Term Tasks from Acting DOI Deputy Director Kate MacGregor

❖ Identify management lead & technical POCs for pilots

❖ Provide data to USGS to populate the National Trails Database

❖ Work with bureau agencies to learn the TRAILS tool and evaluate trail-connection candidates

❖ Report progress to the Secretary's office and other stakeholders

+ Overview of Bureau Pilot Projects

USFWS: McNary Wildlife Refuge in Washington

BLM: Fruita, West of Grand Junction, Colorado

BLM: Red Rocks Canyon National Conservation Area, West of Las Vegas Nevada

NPS: The Delaware Water Gap in Pennsylvania

NPS: Mammoth Cave National Park in Kentucky

Hawaii

Alaska

U.S. Virgin Islands

USFWS: The Kenai National Wildlife Refuge in Alaska

Puerto Rico
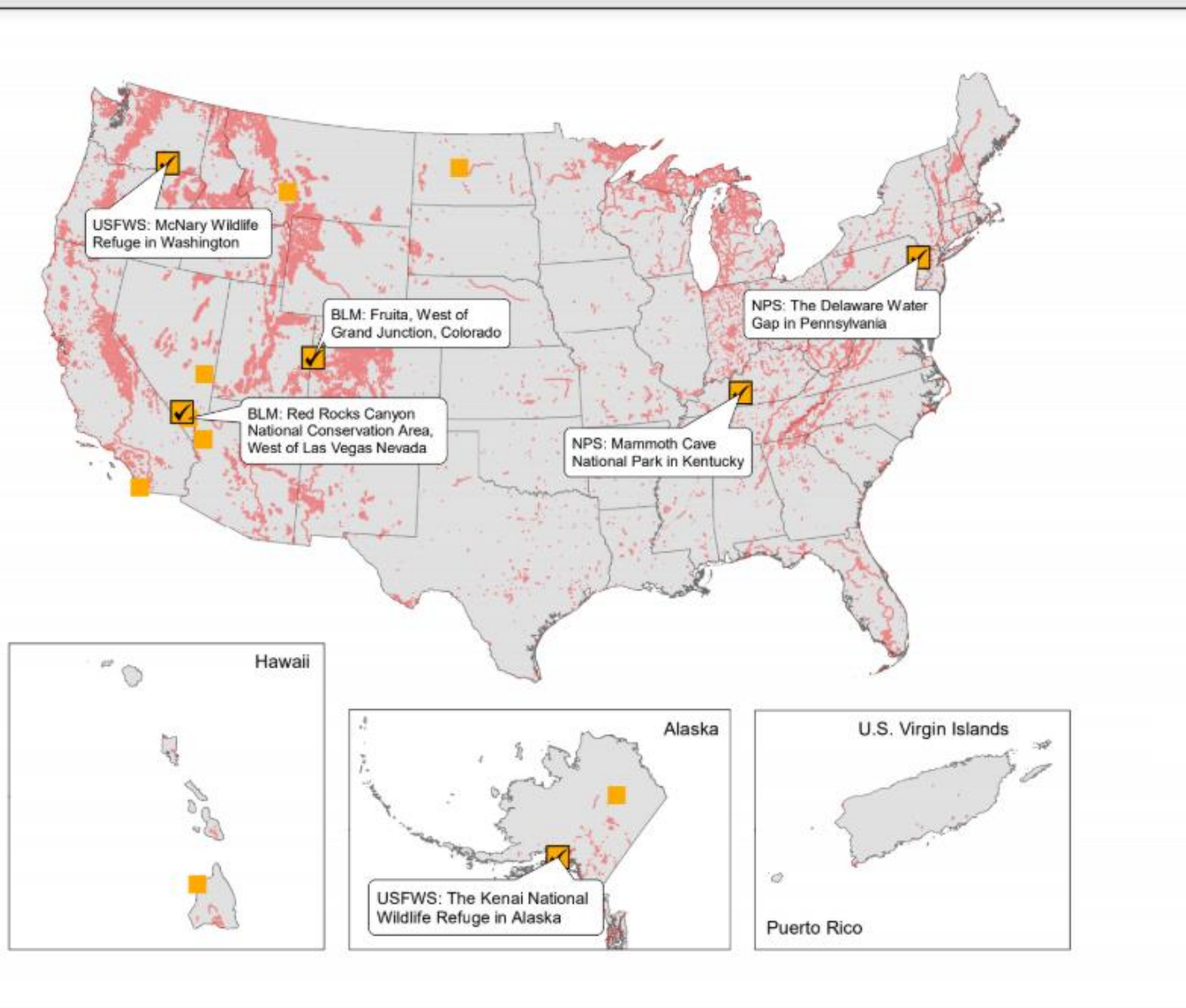
BLM - Fruita to McInnis Canyons National Conservation Area, Near Grand Junction Colorado

❖ Partners: CO BLM, City of Fruita, Grand Valley Trail Alliance, CO Plateau Mountain Bike Trail Association, and Mesa County
❖ Primary goal: Work with a variety of partners to provide better trails connectivity for long distance recreational experiences.
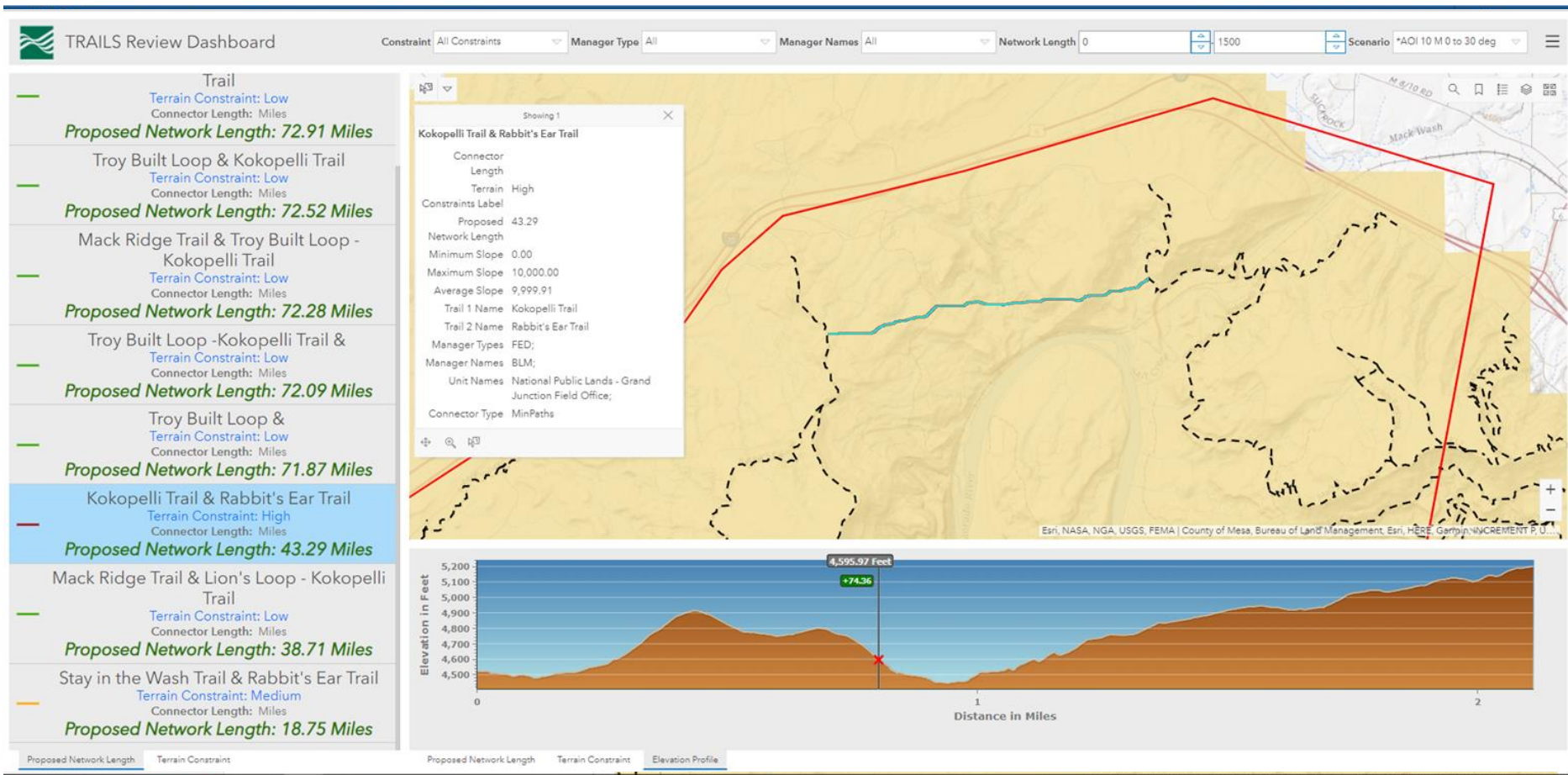
+ NPS - Mammoth Cave National Park, KY

❖ Increase connectivity within the existing trail systems
❖ Long-term plan to explore connectivity to the adjacent City of Brownsville, recently designated as a Trail Town
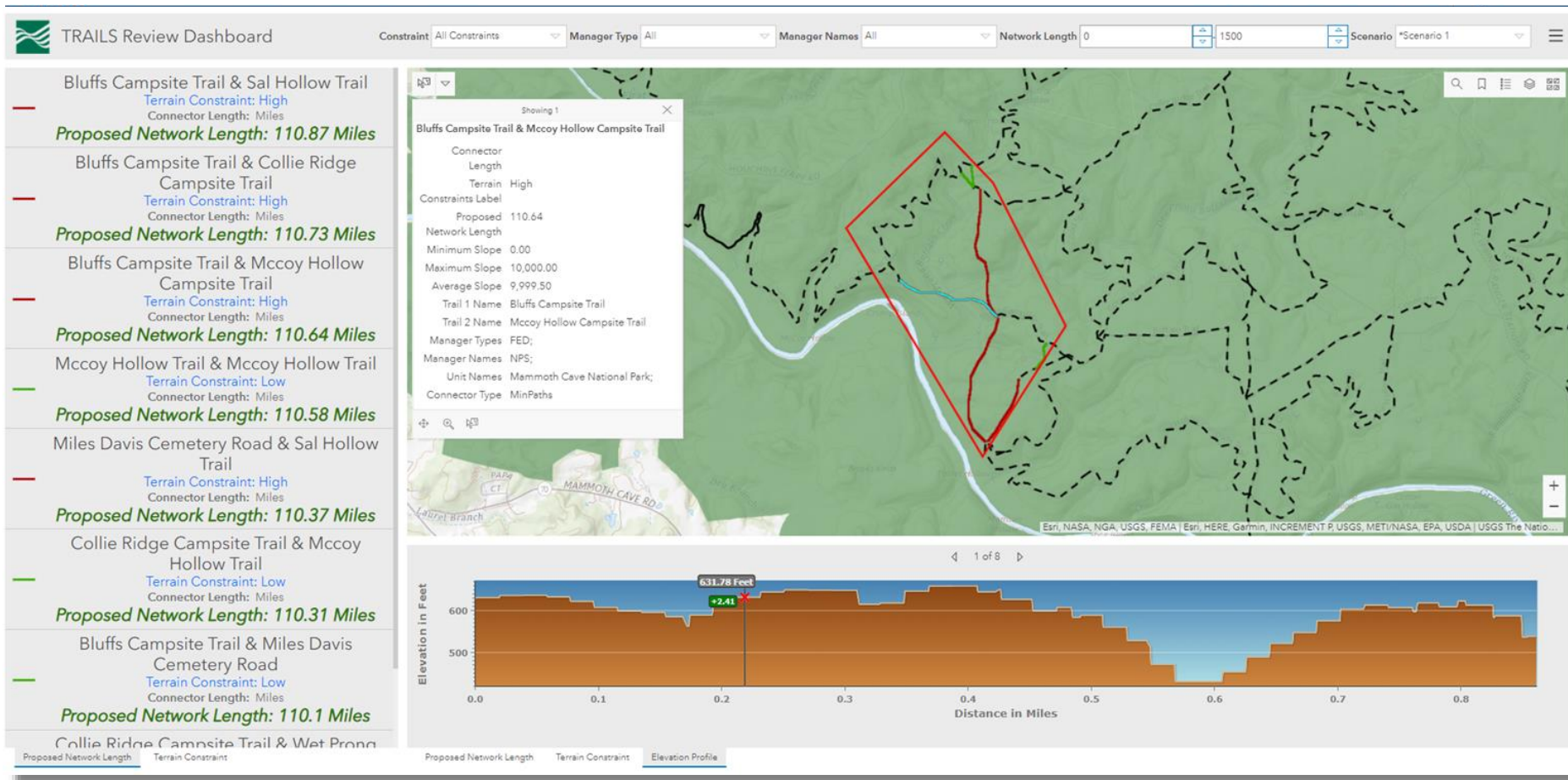
USFWS - Kenai National Wildlife Refuge, AK

❖ ~Two million acres, 80 miles of trails
❖ Tourism - major economic driver
❖ Rebuilding trails as a result of this summer's Swan Lake fire
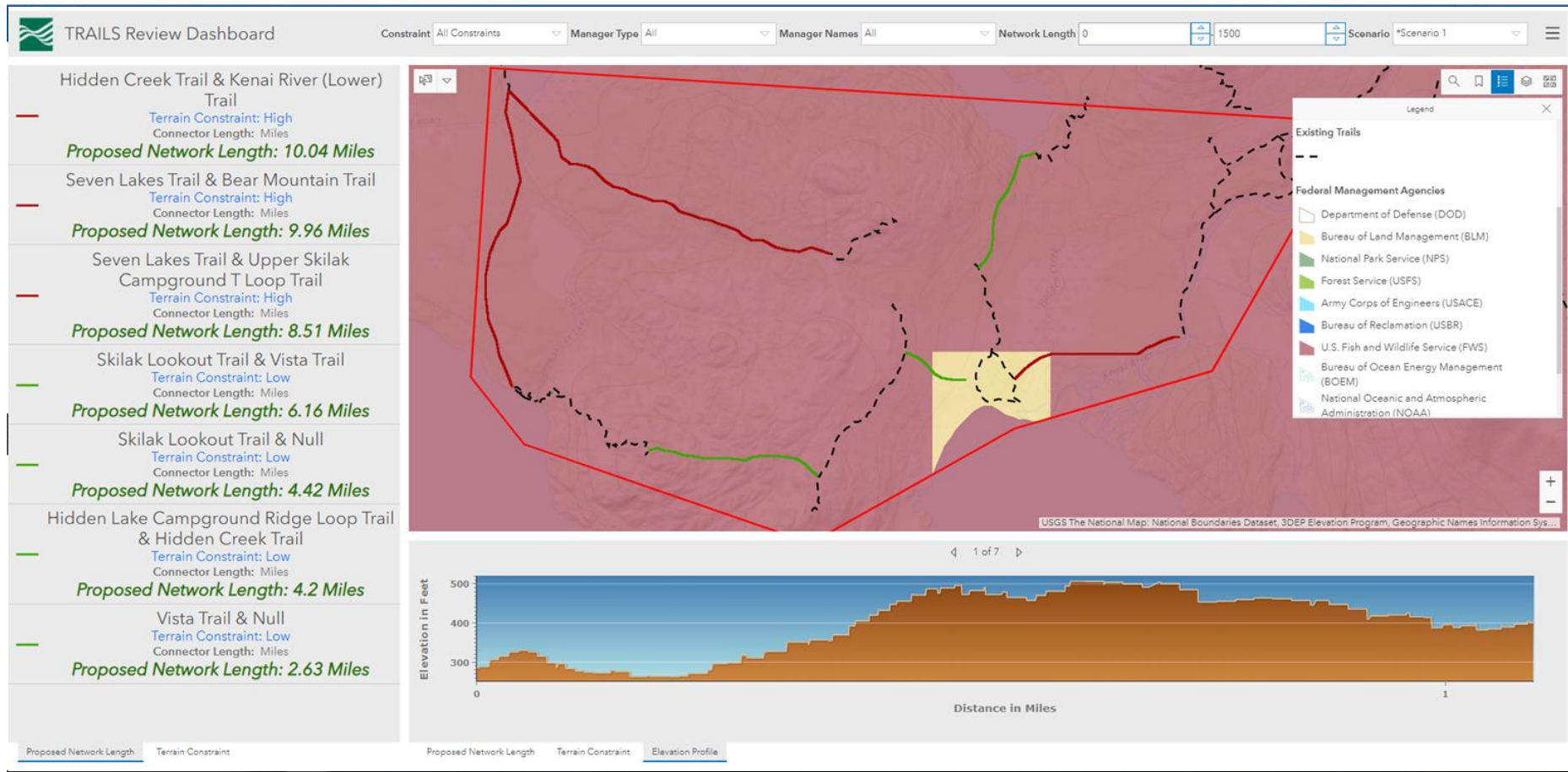
+ Next Steps...Goal 1 - TRAILS Decision Support Tool

- Initial focus DOI; future expansion to other Federal agencies and advocacy groups

- Launch of operational prototype on GeoPlatform - December 2019

- Work with stakeholders to identify additional groups/people for feedback

- Prioritize and incorporate additional requirements

- Future maintenance and update plans

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Next steps Goal 2 - National Digital Trails Database

❖ USGS has aggregated 199,067 miles of trails as of 9/24/19
❖ Continue to build partnerships with Federal, state, and other organizations
❖ Continue work with Federal partners to standardize trail schema

Hawaii

Alaska

U.S. Virgin Islands

Puerto Rico

Trails Explorer: https://usgs.maps.arcgis.com/apps/webappviewer
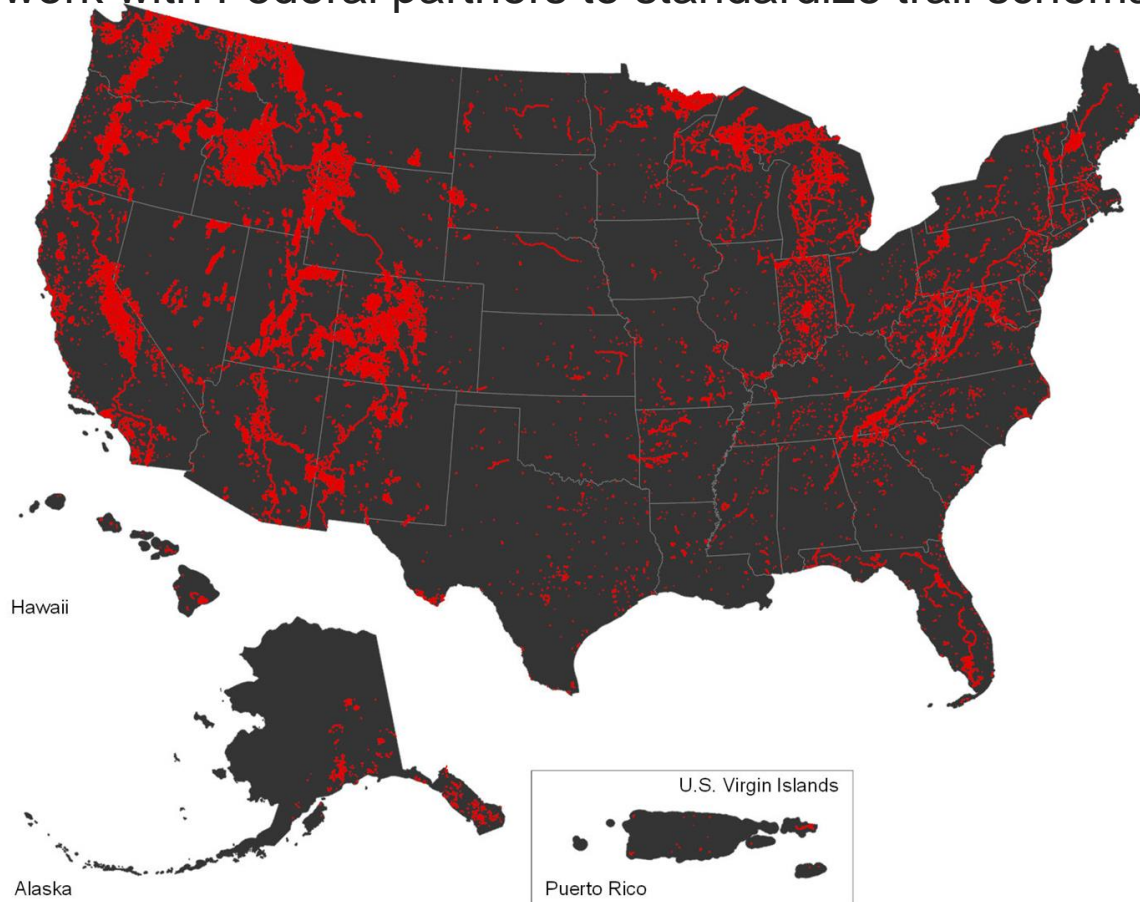
State Trail Contributions to USGS National Trails Database
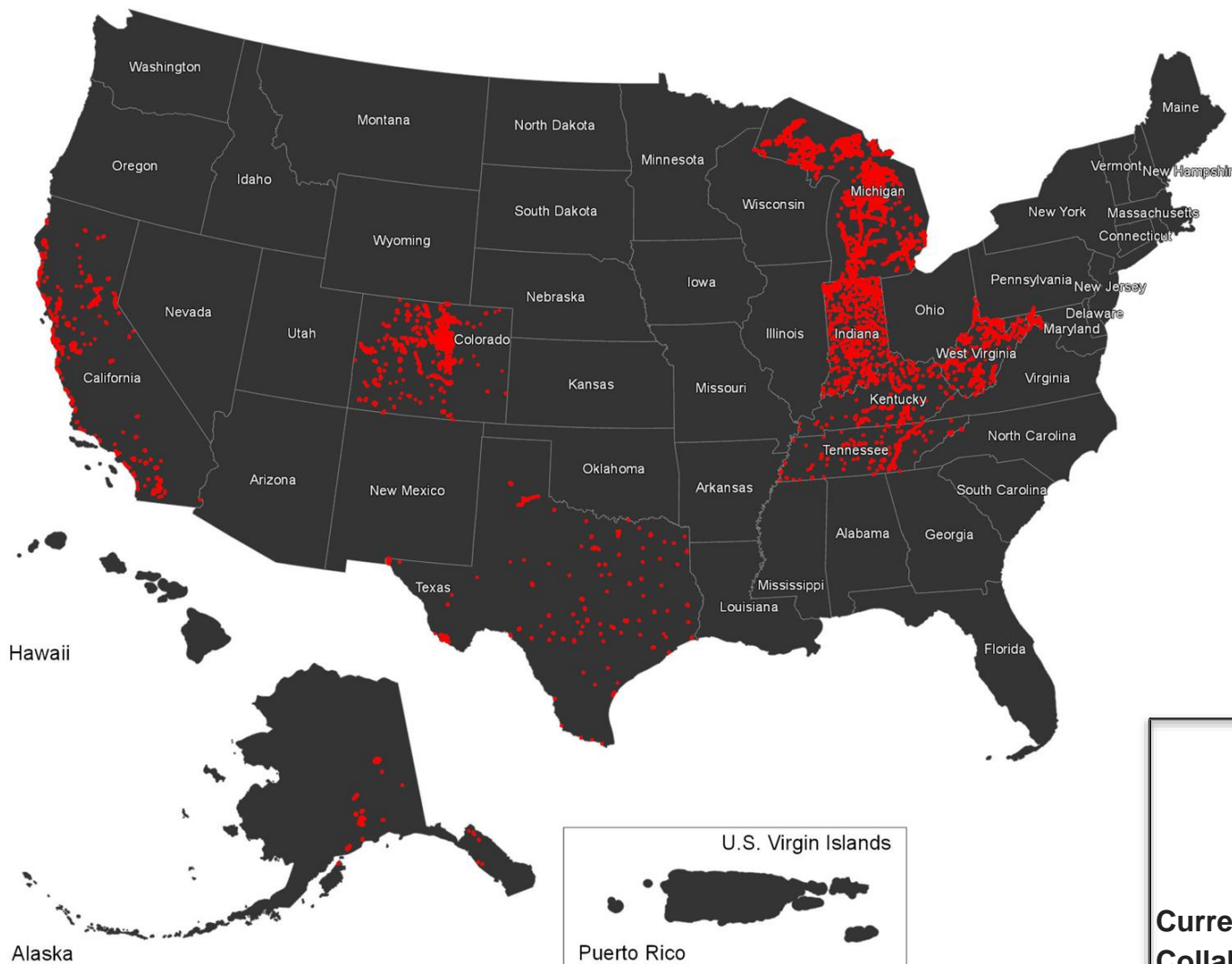
This status map shows state trails contributions to the U.S. Geological Survey, National Geospatial Program. Currently, the U.S. Geological Survey is focused on Federal land management agency partnerships as a top priority but as these mature and require less time, staff will focus on aggregating this additional trails data. Where the data meets program quality needs, and is available as Public Domain, partnerships are built to include states trails data into our national trails database.

7/15/2019
Greg Matthews
GDMatthews@usgs.gov

Future Potential	State	Year
	Washington	2020
	Alabama	2020
	Ohio	2020

Current Collaborators	State	Year	Miles
	AK	2014	684
	MI	2016	8938
	WV	2016	2277
	CA	2018	1708
	TX	2018	1305
	CO	2019	5846
	IN	2019	3574
	TN	2019	1083
	KY	2019	1135
		Total Miles	**26,550**

Next Steps Goal 3 - Develop a mobile responsive editor for maintaining trails

❖ Work with DOI partners and others to identify existing maintenance applications

❖ Evaluate existing mobile-friendly applications
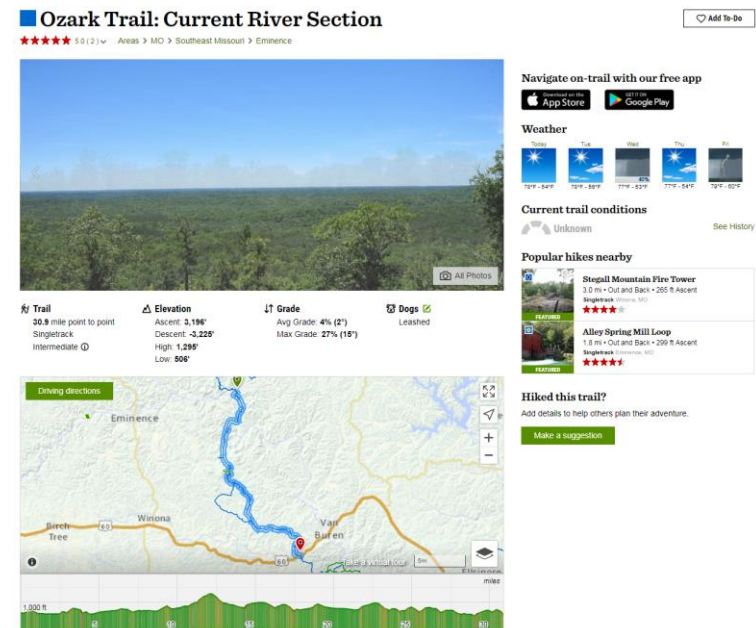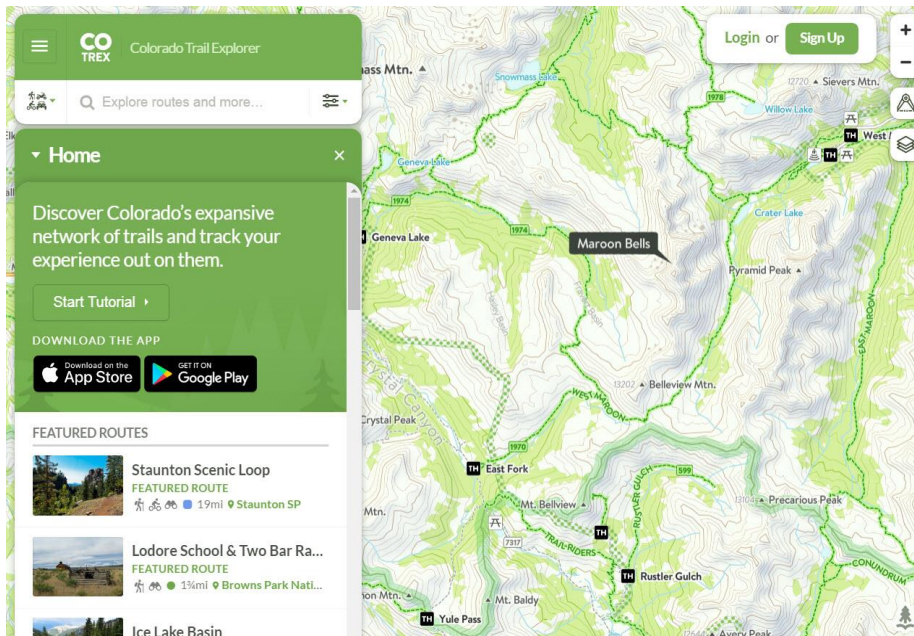
+ Future Work - Recreational Points of Interest

Features

The following recreation POIs have been approved by the USGS, FS, NPS, BLM, & FWS and will be added to US Topo quads

- Trailheads
- Visitors Centers
- Campgrounds
- Shelters

These POIs are in the process of being approved and acquired:

- Ranger Stations
- Park Headquarters
- Cabins
- Picnic Facilities

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Future Work - Project Outreach/Communication

□ GeoPlatform || Transportation
Sign In

National Digital Trails Working Group (NDT-WG)

Engages federal and non-federal stakeholders who share a common interest in trails and supports the National Digital Trails (NDT) Network project that seeks to aggr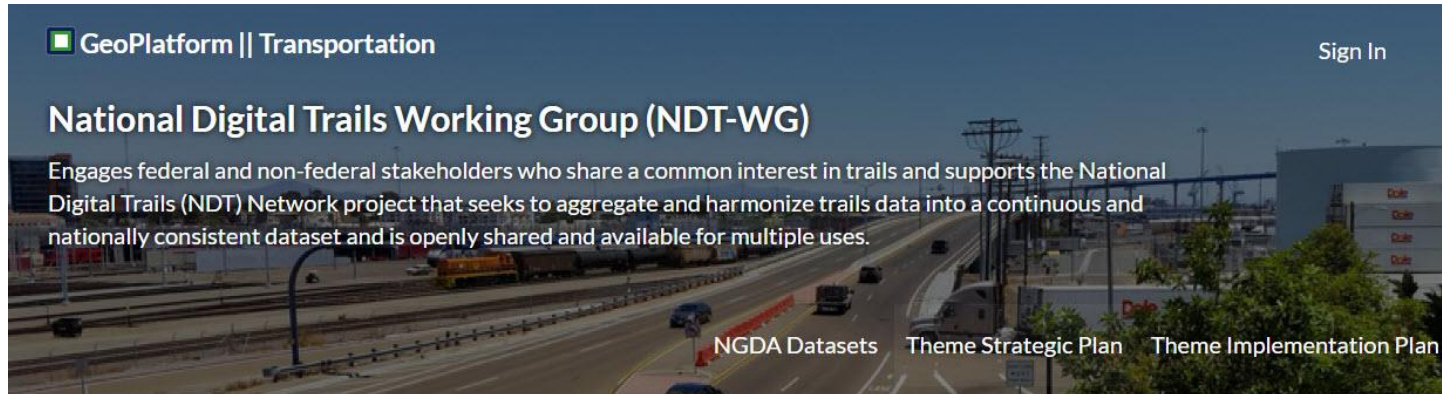egate and harmonize trails data into a continuous and nationally consistent dataset and is openly shared and available for multiple uses.

NGDA Datasets   Theme Strategic Plan   Theme Implementation Plan

First meeting is TBD.

NDT-WG Areas for Interest
1. **Trails Decision Support Tool.** Provide technical and strategic guidance on the development of this tool.
2. **Data Aggregation.** Develop a vision and eventually a product that better aggregates trails data from multiple agencies. Goals may include:
    – Adopting a common schema where core attributes are the same or very similar across agency.
    – Striving toward using service endpoints for data sharing/distribution.
    – Establishing agreed upon snap points on agencies boundaries where trail jurisdiction changes. Business rules would state who is responsible for what.
3. **Crowdsourcing.** Work with partners to establish a mobile friendly application that will allow trails stewards, including employees of land management agencies as well as members of the public to maintain trails information.

Meeting Minutes and Presentations *(coming soon)*

★**Transportation Theme**

Community Type: NGDA

Sponsor: FGDC

Sponsor Email:
NGDATeam@fgdc.gov

Theme Lead Agency: Department of Transportation (DOT)

Theme Lead: Derald Dudley (DOT)

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Questions?

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emccartney@usgs.gov