OSM Merge
A Community Project of OSM-US

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https://osmmerge.org
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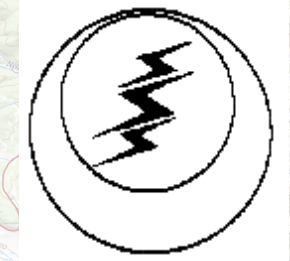
Why Fix This ?

- Fighting wildland fires, or backcountry rescues requires accurate maps in remote areas
- Recreational users also want to be able to navigate in remote areas
- Most paper maps are out of date
- Google doesn’t often include remote highways
- Good navigation requires good metadata
- Make OpenStreetMap the best map possible!



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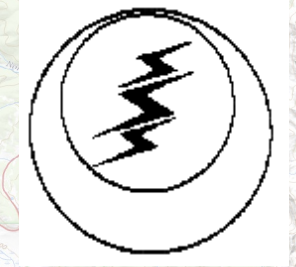
The Goals

- Fix metadata for highways and trails in remote areas
- Conflate external datasets with OpenStreetMap
- Identify and fix known quality issues
- Improve the ability to convey a location without a GPS or relate to a map
- Validate existing OpenStreetMap data



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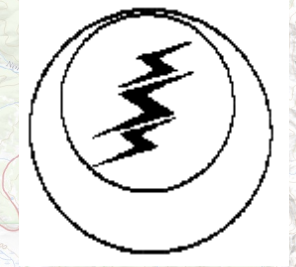
The Problems

- Many of these highways and trails in OpenStreetMap lack tags beyond **highway=track** or **highway=path**
- Sometimes the name or reference number is wrong
- There is usually no access data at all
- Sometimes the geometry is very wrong



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Location Without GPS

- Long before the digital age, people needed a way to communicate a location or to give directions
- These are very useful when trying to apply verbal directions (think radio transmission or phone call) to a map, for example on an MVUM map, or 7.5 quad topographical map
- Now that cool **highway=track** you just biked, hiked, drove, etc… has a name you can refer to tell your friends about

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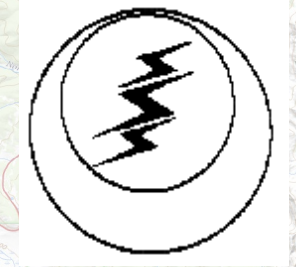
External Datasets

- The USDA publishes multiple datasets with a license compatible with OpenStreetMap
- This includes hiking trails in national parks, and remote roads and hiking trails in national forests
- Vector datasets of topographical map data are also available
- County and State sources for highways and addresses



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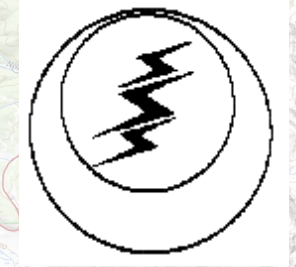
The Software

- Conflates external datasets with OpenStreetMap
- Identifies bad metadata and suggests improvements
- Runs standalone, also designed to function as a website backend
- Can process data for the entire US
- Works fully offline when in the field



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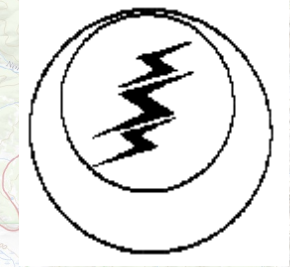
Other Outputs

- Other than improving OpenStreetMap, it’s possible to analyze the data for other purposes
- Generate a list of trails or highways in OpenStreetMap not in official sources
- Find trails or highways not currently in OpenStreetMap for a future import



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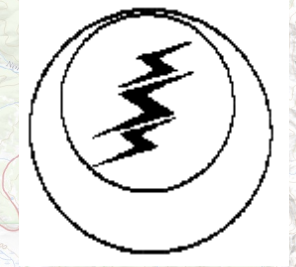
The Process

- Start by splitting up nationwide datasets into separate files, one for each national park or forest
- Make highways extracts from OpenStreetMap for each area
- Convert the external dataset to OpenStreetMap syntax
- Delete unwanted data fields from past imports



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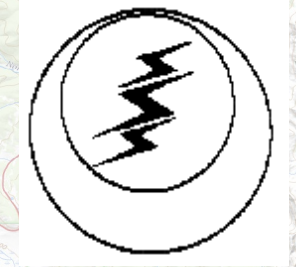
Conflation

- One all the datasets have a consistent metadata schema, they can be conflated
- The official sources are assumed to be correct (which is not always the case)
- Each external data feature is compared to OpenStreetMap features that are nearby
- Tags are compared if they exist
- Generates a confidence setting for the results



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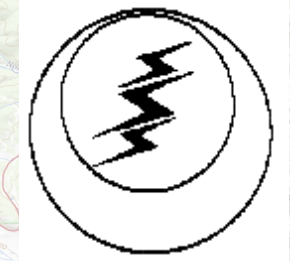
Editing The Results

- OSM Merge generates an OSM XML with only modified features file for JOSM
- Start by updating modified features if using OSM XML
- Validate each modified feature using the TODO plugin
- Review against original datasets
- Upload after validation



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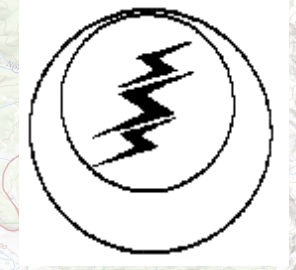
Infrastructure

- Nationwide data files are huge and crash all map editors
- Collect and extract boundaries for all national parks, forests, and wilderness areas
- Generate data extracts for each area
- Have a fully automated process to regenerate files as OpenStreetMap gets updated and software improves
- Make processed data files available for mappers in the community



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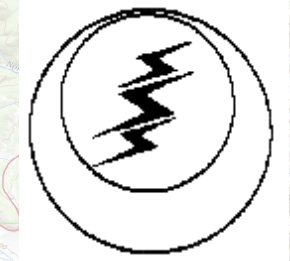
Tasking Manager

- There is support for the Tasking Manager to enable organized group mapping
- There is a 5000km sq limit for project size
- Generates a grid of each park or forest to be used when creating a project
- Generates data extracts for each task
- Unlike mapping buildings, highway mapping works better with large tasks boundaries



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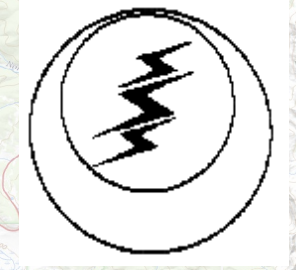
Updated So Far

- Updated Dixie National Forest
- Medicine Bow Routt National Forest
- San Juan National Forest
- White River National Forest
- Rio Grande National Forest



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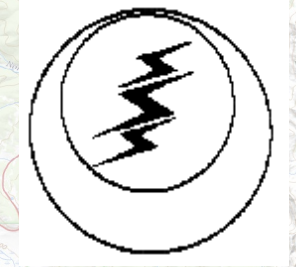
Resources

- The beginnings of a website for all the data
  - https://osmmerge.org
- The documentation
  - https://osm-merge.github.io/osm-merge/
- The source code
  - https://github.com/osm-merge/osm-merge



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