How To Use Mapillary For ArcGIS

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Introduction to Mapillary

Mapillary is a computer vision platform that turns street photos into 3D maps for extracting geospatial data. Photos taken with mobile phones or consumer-grade cameras can be stitched together and reconstructed within minutes of upload to Mapillary. Mapillary provides tools to extract data from street photos, including enhanced GPS positions, automated detection of objects like traffic signs, and optical character recognition (OCR).

Mapillary offers a Street View alternative for projects that require recent photo coverage, frequent updates, and quick turnaround. Inspectors or GIS teams can navigate streets through Mapillary photos instead of conducting multiple inspections or deploying high-end imagery vendors over the course of months. With Mapillary data extraction tools, manual workflows can be automated to track assets and infrastructure more efficiently.

Mapillary for ArcGIS is an app which allows you to:

- view your ArcGIS layers in street photos
- mark locations of features as you navigate
- edit feature properties
- sync all changes back to ArcGIS Online.

Technical and Business Requirements

To use Mapillary for ArcGIS on the web, you need:

Operating System:

- Mac OS X 10.9 Mavericks (comes bundled with Safari 7.1)
- Windows 8.1 (comes bundled with Internet Explorer 11)
- Windows 7 or Windows 8 with IE11 manually installed

Browser:

- Chrome 43.0+ (evergreen browsers auto-updates)
- Firefox 38+ (evergreen browser auto-updates)
- Safari 7.1+ (We do support 6.1 actually, but WebGL has to be enabled manually, which might be difficult to do for some people)
- Internet Explorer 11+
- Edge

To connect to ArcGIS, you will need to be an admin user in an ArcGIS Online organization account.

Limitations:

- Mapillary for ArcGIS only supports point layers today. If you are interested in support for line or polygon layers, please contact Mapillary at <u>sales@mapillary.com</u> to provide feedback for future improvements.
- Mapillary for ArcGIS is only supported on the web today. (You can still use Mapillary's mobile apps for capturing photos.)

Getting Started with Mapillary for ArcGIS

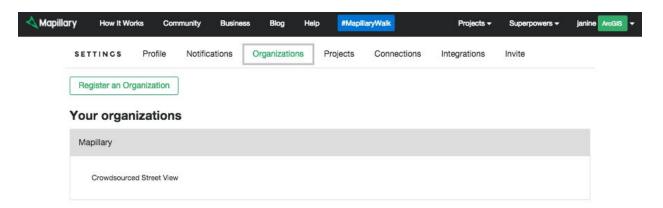
Before you use Mapillary for ArcGIS, determine which images you will be using for your project and how you will obtain them. Since Mapillary uses images uploaded from any source, you can use street level photos that :

- you obtain directly by deploying dedicated street inspection fleets and/or other resources (e.g., garbage haulers, postal service trucks, contracted surveying teams) using the Mapillary app on mobile phones or other devices
- 2) are contributed by citizens as part of a community engagement effort
- 3) are from other sources (e.g., older coverage from ground imagery or LiDAR vendors), that you have a right or license to reuse (Mapillary can help with importing)
- 4) may already exist in Mapillary's crowdsourced database on Mapillary.com

For more information on easy capture and upload using Mapillary tools, please refer to the *How to Capture Street Photos for Mapillary* guide.

Once you have determined which street level photos will be used, configure your Mapillary for ArcGIS app:

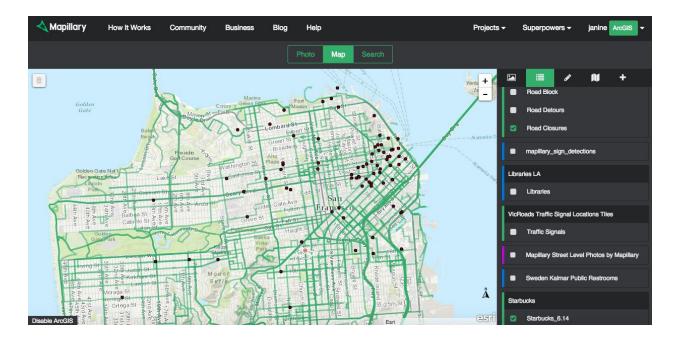
- Go to Mapillary.com and sign up for an account ("Sign Up With ArcGIS").
- On the *Organizations* tab, click on your organization name (if you do not see an *Organizations* tab, please contact sales@mapillary.com).



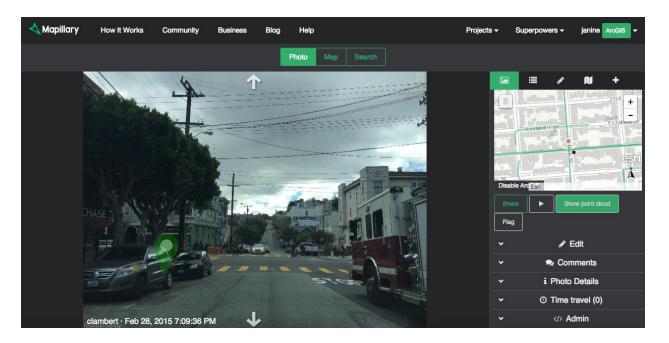
Invite other members of your ArcGIS organization using the "Invite by email" box.

Viewing And Editing Layers

 Make sure the ArcGIS map is enabled. The ArcGIS map should be enabled by default, but if there is a green "Enable ArcGIS" button on the lower left corner of the map, click the button and you will see the ArcGIS map. • On the *Layers* tab, you will see your organization's layers. Check the box to enable a layer that you would like to view.

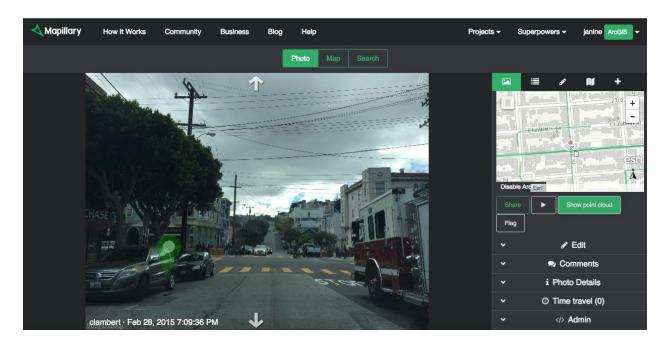


Select the Photo View to see Mapillary street level photos corresponding to the map.

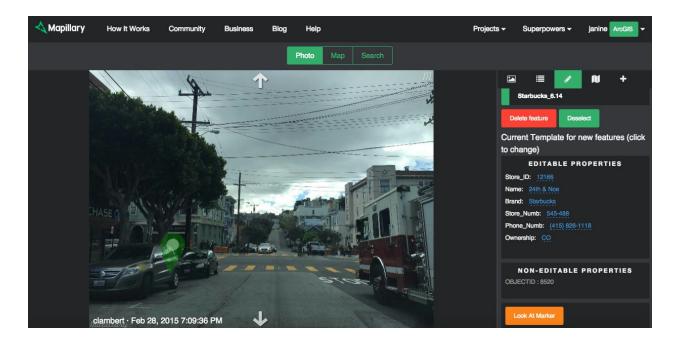


• To navigate through the 3D landscape, click the arrows in the photo or use the arrow keys on your keyboard.

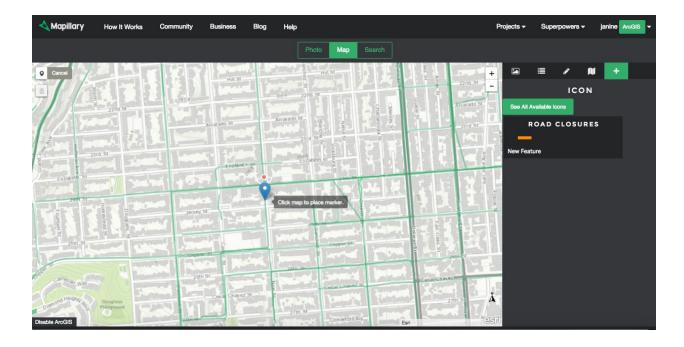
• To select a marker, click on the marker on the map (the marker will turn into a white box).



- If the marker is not in the right location, move the selected marker by (a) dragging the box on the map to the correct location, or (b) clicking the correct location within the photo.
- Edit and update information about the selected marker in the Edit tab.

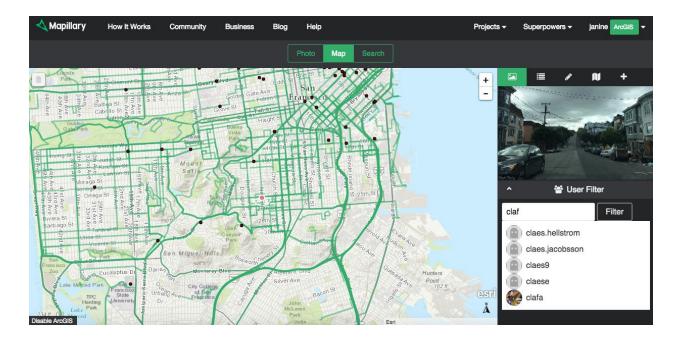


• To add a new marker, go to the Map View and click on the "+' icon. Select the feature you would like to add and place the marker at the desired location. (You can only add new markers in the Map View.) You can save the marker and continue to move it or edit its information.

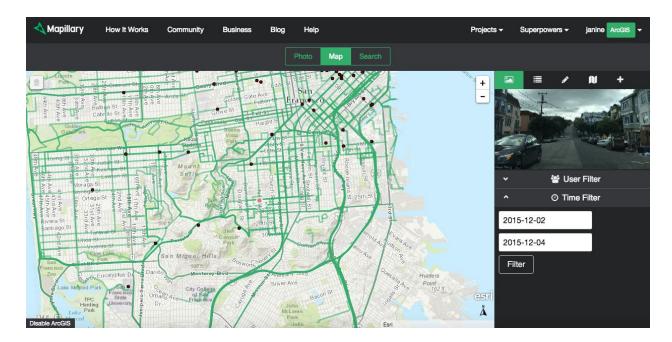


Advanced Tools

 If you are capturing photos with specific inspection teams or are running a crowdsourced community campaign, and would like to identify specific contributors, use the User Filter in the Map View.



 If you are interested in comparing photos captured at different times (e.g. before and after a capital project or environmental conditions during different seasons), use the Time Filter in the Map View.



• If you would like to preview Mapillary's automated traffic sign detection tool, click on the Edit dropdown in the *Photo* tab and click "Traffic Signs". If you would like to learn more about this tool or are interested in automated detection of similar objects, please contact the Mapillary team at sales@mapillary.com.



Contact

For questions and feedback, please email Mapillary at sales@mapillary.com. You may also reach us for realtime support on our Slack chat channel at https://mapillary.slack.com/messages/arcgis-early-access/