Traffic Monitor Interactive Web App

Version 0.326 Documentation

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http://gis.morrison.life/trafficmonitor/

Statement of Purpose

The Traffic Monitor Interactive Web App is an introduction of online data sharing to the Traffic Monitor project. By utilizing the project's device, users can collect locally stored traffic and environment data which includes object detection, counts, velocity, and environmental temperature, flux, gas, and particulate measurements. The web app features the object count and environmental measurements of three devices over a 5-month period in the Central Eastside of Portland, Oregon.

The intended audience are uneducated potential users of the device and the web app will be presented with an introduction to the Traffic Monitor project, details of the device, and a call to action to set up their own. Version 0.326 is a proof of concept for shared data visualization that can be applied to a larger dataset of devices with a basis for further development.

User Instructions

The web app loads the map with a focus on the three Traffic Monitor devices featured. In addition to the Traffic Monitor data, high crash intersections and streets designed by the City of Portland are also featured for reference. To explore the map, click and drag to pan and use the mouse scroll wheel to zoom in and out to explore the City of Portland. To see more data related to a feature, click on it to open the side panel popup. To exit a popup, click on the red 'X' in its top left corner, or click on another feature to switch to its popup.

The Traffic Monitor device popup features multiple graphs with a fixed object count in the top half and selectable categories of charts to display in the bottom half for comparison. On the navigation bar under the top graph, select a category to display the graphs in that category. If the scroll bar appears once a category is open, there are multiple graphs available to view. Left click the scroll bar, hold, and drag to scroll to the other charts in that category. Hover over data points in a chart to see the date and feature counts/amounts.

Mapping Tools Used

The web app was built utilizing the Leaflet and Chart.js JavaScript libraries with help from additional references below. The data sets for the basemap layers were sourced from the Metro Regional Government and modified in ArcGIS Pro for use. The tile layer was customized with and is hosted by Mapbox. The map feature data sets were sourced from the Traffic Monitor project and the City of Portland.

References and Sources

Bike Portland – Portlander creates AI-powered device to monitor street health – Article and Images
https://bikeportland.org/2025/03/18/portlander-creates-ai-powered-device-to-monitor-street-health-393363

Bike Portland – The AI Traffic Monitor – Video
https://www.youtube.com/watch?v=kksj0ZuYYKo

Chart.js – JavaScript Library
https://www.chartjs.org/

City of Portland – Portland Open Data – Feature Layer Data
https://gis-pdx.opendata.arcgis.com/

Flaticon – Download Icon – Image
https://www.flaticon.com/free-icon/download_724933?term=download&page=1&position=8&origin=tag&related_id=724933

Leaflet – Javascript Library
https://leafletjs.com/

Mapbox – Tile Layer Host
https://www.mapbox.com/

Metro Regional Government – RLIS Discovery – Basemap Data
https://rlisdiscovery.oregonmetro.gov/

SVG Repo – Warning Icon – Image
https://www.svgrepo.com/svg/460155/warning-alt

Tomickigrzegorz Github – Leaflet Examples – Popup in a Fixed Position
https://tomickigrzegorz.github.io/leaflet-examples/#68.popup-in-a-fixed-position

Traffic Monitor – Device Data, Content, Images
https://www.trafficmonitor.ai/

Turbo Scribe – YouTube Download and Transcription
https://turboscribe.ai/dashboard

w3 Schools – HTML, CSS, and JavaScript Tutorials
https://www.w3schools.com/