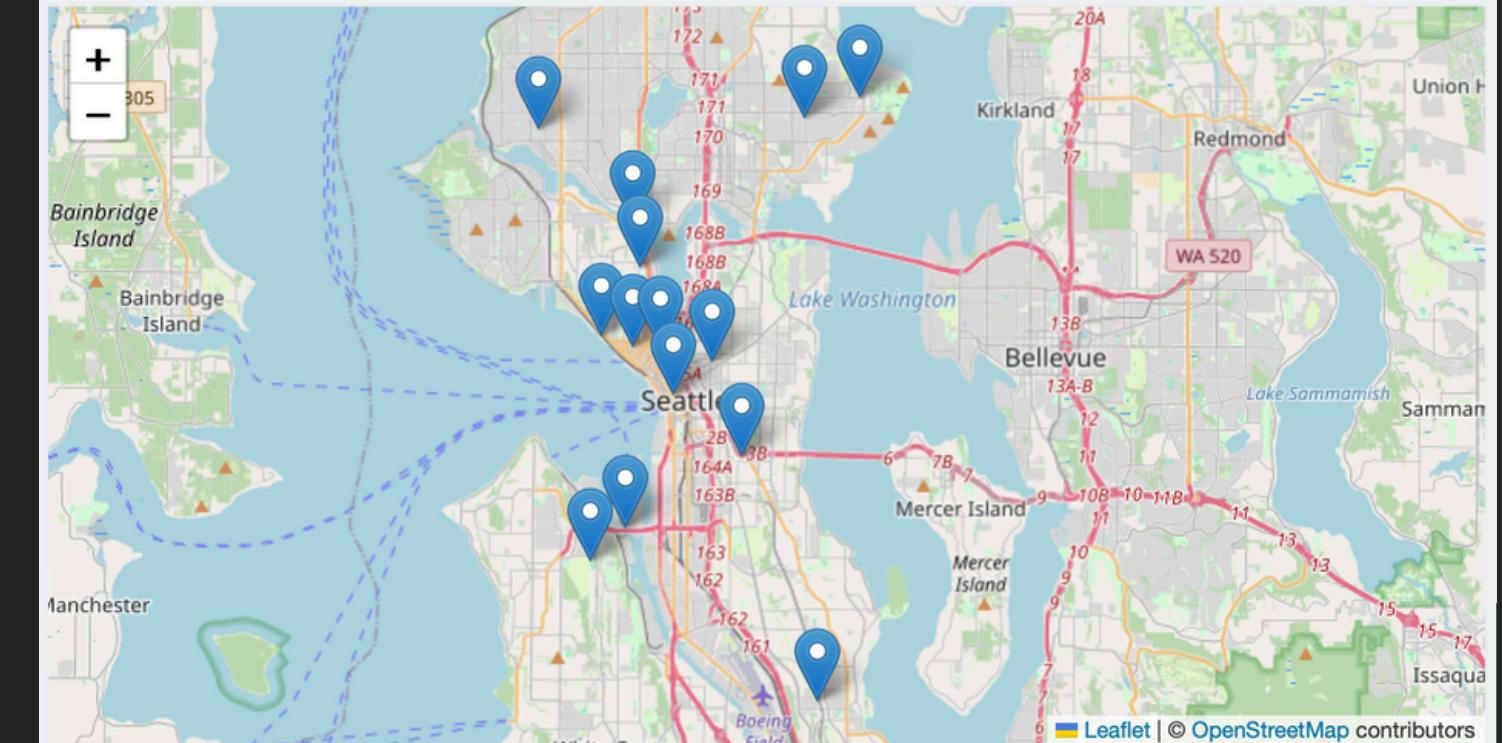


Seattle Bicycle Traffic & Weather Data API

Created by Ayato Hisanaga

Seattle Bicycle Traffic & Weather Data Map

Created by Ayato Hisanaga



Overview

- ▶ **Background**
- ▶ **Info Story**
- ▶ **Existing Structures**
- ▶ **New Structure**
- ▶ **Access Methodology**
- ▶ **Performance & Quality**
- ▶ **Q&A**





Background

I grew up in Long Beach, CA where I regularly commuted on my bicycle.

Through experience, I optimized my daily routes around safety,
prioritizing roads with bike lanes whenever possible.

At some point, Long Beach redesigned several major roads to enhance
the safety of cyclists by repaving and creating dedicated bike lanes.

I want to enable similar endeavors in Seattle, WA.

The Info Story

About the Product

- Previously, bicycle traffic and weather data existed separately with different access methods.
- Unifies and provides bicycle traffic and weather data for 14 locations in and around Seattle in CSV format.

Significance

- Intended for Seattle city planners and bicycle enthusiasts:
 - City planners can make data-driven decisions for resource allocation, contributing to appropriate road maintenance and safety for cyclists.
 - Cyclists can identify which routes other cyclists use/avoid based on historical weather conditions.



Seattle Open Data

Existing Structures

Bicycle traffic data is collected via API endpoints from **Seattle Open Data**, and is formatted in **JSON structure**.

Weather data is scraped from the **Farmer's Almanac** online.

Welcome to the City's Open Data Portal. Here you can find, search, and download data published by City departments. Data on this portal is free to use and share, subject to the [Terms of Use](#).

Search for Data

Problem 01

While traffic data can be downloaded as a CSV directly from the **Open Data Portal**, navigating to each location and downloading the data takes time.

Problem 02

Date ranges are inconsistent across different locations, and users cannot specify the date range they want to access / download.

Problem 03

Weather data is only viewable one day at a time on each webpage and cannot be directly downloaded from [Almanac.com](#).

Click here to view all data



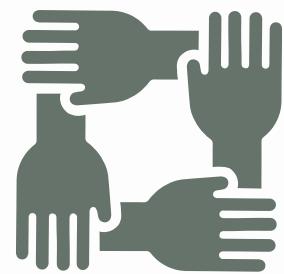
[New to Open Data?](#)

A guide to getting started



New Structure

The Seattle Bicycle Traffic and Weather Data API addresses the problems associated with *Open Data* and *Almanac* to create a new structure that promotes FAIR compliance.



Portable

- All output data from this API is downloadable as a CSV file, enhancing the portability of traffic and weather data.
- Once live, the API can also be accessed from anywhere.



Accessible

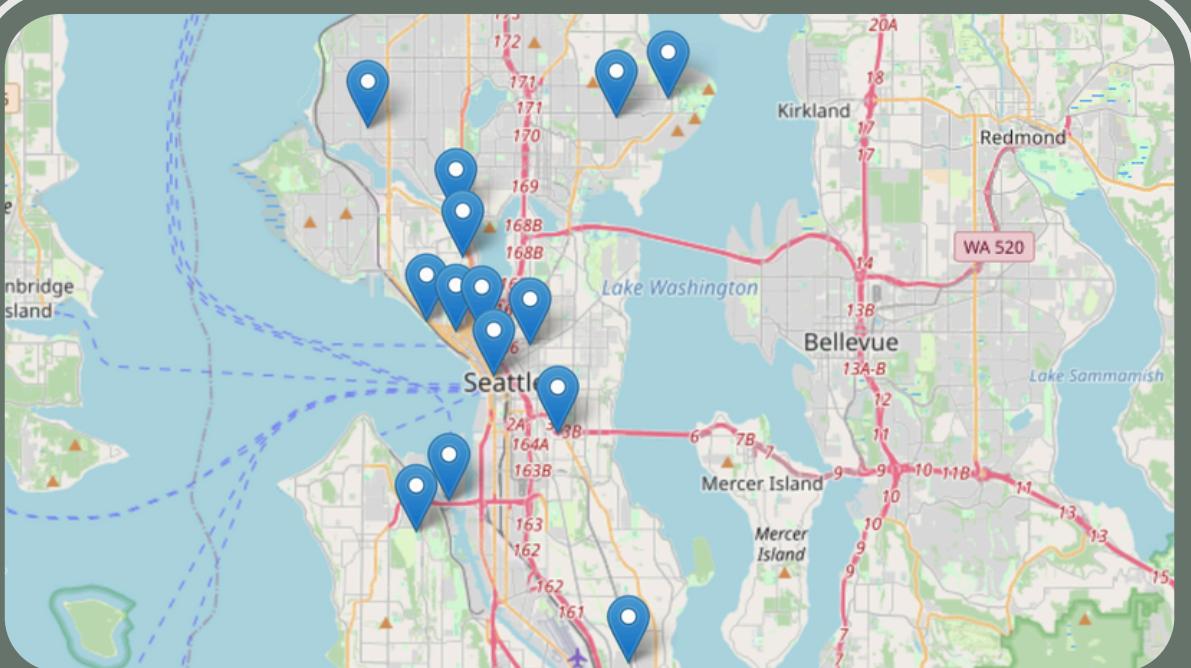
- Metadata file provides original dataset identifiers.
- Intuitive interface.
- CSV format also promotes interoperability.
- API is reusable.



Intuitive

- Data access and download is streamlined with a simple UI:
 - Interactive map
 - Date range selection
 - Unit conversion
 - 'Download CSV' button

Access Methodology



Select Location

Users can zoom in, zoom out, and navigate freely to select a desired sensor-supported location.

Select Dates for fremont

Available date range: 2012-12-03 to 2024-04-30

Start Date:

End Date:

[Submit](#)

[Back to Map](#)

Specify Date Range

The available date range for each location is listed and the calendar-date input field limits responses to that range.

Data for fremont

	nb	fremont_bridge_sb	temp_min	temp_max	temp_avg	precipitation
1	2054.0	44.1	62.1	52.3	0.0	
2	2666.0	46.0	68.0	56.6	0.0	
3	1969.0	44.1	68.0	49.9	0.21	
4	1632.0	44.1	54.0	46.1	0.02	
5	1280.0	43.0	53.1	45.8	0.0	
6	703.0	43.0	53.1	47.9	0.0	

Download Data

Users can select Metric or Imperial units for weather data before downloading the selected data.

Document Performance & Quality

Detailed test plan for ensuring the performance and quality of the Seattle

Bicycle Traffic and Weather Data API:

- Frequency: Once a month – aligned with updates to bicycle traffic data on *Seattle Open Data*.

01

Functional Testing:

- Data collection
- Data processing
- Interface

02

Performance Testing:

- Load testing
- Response time testing
- Data consistency

03

Maintenance:

- Routine audits
- User feedback mechanism
- Documentation review

THANK YOU!



Ayato Hisanaga



ayato@uw.edu



University of Washington – Seattle

Q & A