

Bicycle Trip Safety Assessment

This web map projects intends to allow a user to plan their bicycle trip by identifying roads with the largest shoulder widths and other safety considerations. By choosing a bicycling route with larger shoulders the bicycling trip becomes safer and potentially more leisurely and fun.

The web map will provide bicycle users with a way to plan safe trips. The vast amount of road data as well as city, state, and federal regulations on shoulder-size allow us to create data sets estimating actual shoulder widths. Directions will be generated via Mapbox directions API.

I am an amateur road cyclist and have observed the need for an easy to use map detailing safety levels of road ways. I heard of a little-known book written by a resident of northern California who detailed some of the shoulder-widths and other characteristics of local roads. I'd like to expand the idea to include larger areas as well as utilize new web map technology to improve and share to a broader audience. This map will test a smaller area, probably no more than the extent of a single county.

Map Use Example:

A cyclist has planned a bike route but has not traveled the roads before and is concerned about how safe they may be. They pull up the map, enter their departure and arrival locations and explore the roads for safety. Shoulder-width is the first consideration and purpose of this map, they will observe based on size/color symbology on the roads how wide the shoulders are along their bicycle route.

- User Searches/geo locates their area of interest
- Optionally: User inputs gps route data for the bicycle trip
- User observes shoulder width and potentially other safety characteristics
- User loads additional data such as Bicycle Shop Locations, Popular lunch spots/breweries, other bicycle related layers
- Potential improvement: User receives a Safety Score for the area of interest

Datasets:

Stanislaus County Roads Layer

Technology Stack:

I will use Qgis to manipulate the dataset based on tables and traffic data sources. I have collected a lot so far but will need to find more. I plan to host my data on CartoDB and use Leaflet/Mapbox as a start. There will be a layer control to turn on and off various bicycle related layers. I will download Open Street map data to symbolize bicycle lane data. Mapbox Directions API will be used to allow the user to plug in a route. I use HTML and CSS to create an effective and attractive interface.

I'll use github pages to host the final map (as well as CartoDB is it makes sense to host my data there).

Anticipated Thematic Representation:

- **A combination of symbolized poly-lines and point shapes**
- **Poly-lines will represent roads and shoulder-size**
- **Points will represent bicycle relevant Points of interest and Safety Concerns**

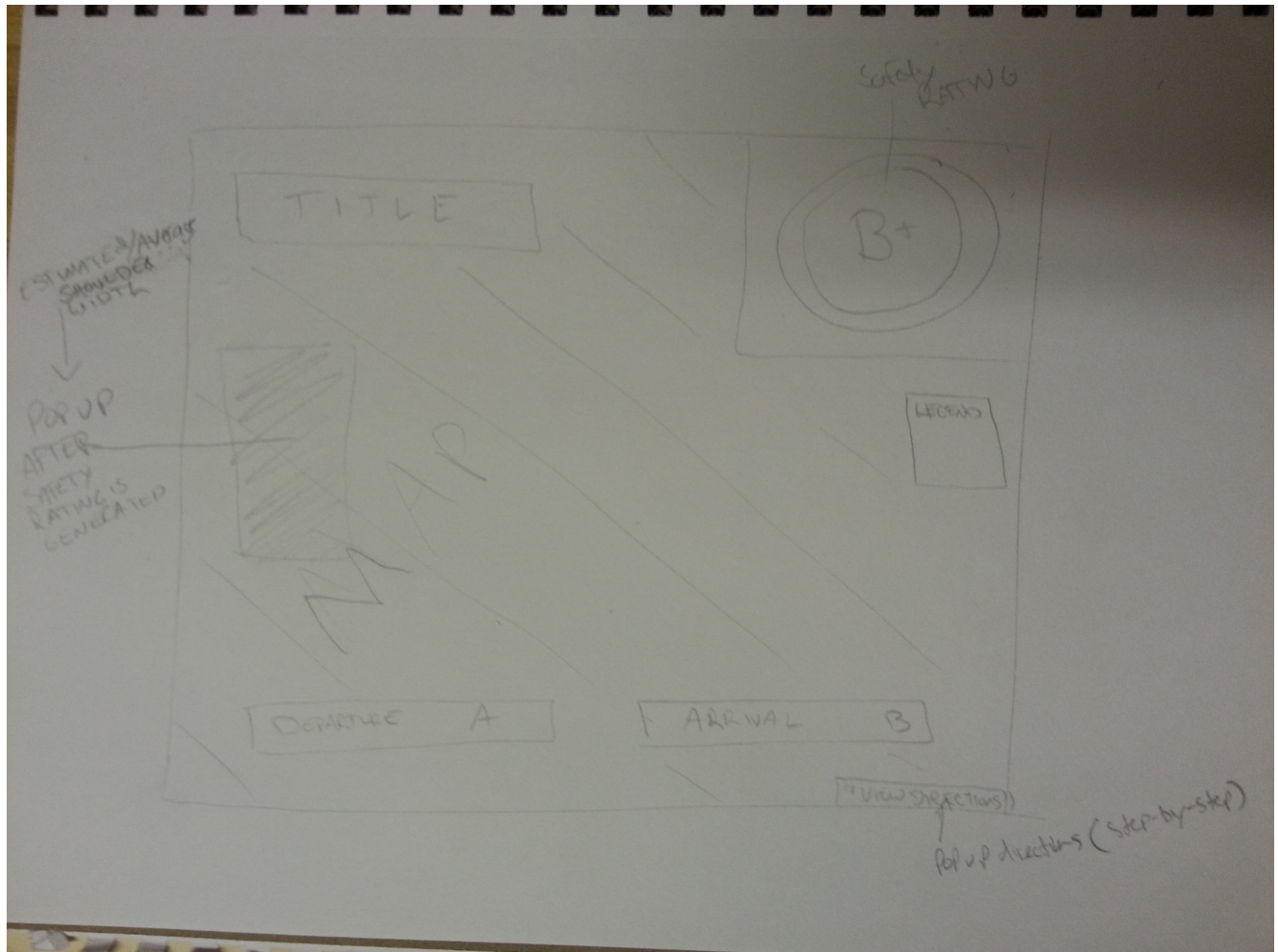
Content and Requirements:

- **Symbolized Roads Layer**
- **Legend Showing Shoulder-size Symbology**
- **Directions Information Presented to User via input of Departure and Arrival locations**
- **Data will read out on the screen pertaining to estimated shoulder-size along route. Possible more safety data.**
- **Overall Safety Rating is generated based on attributes of data under-lain by route**

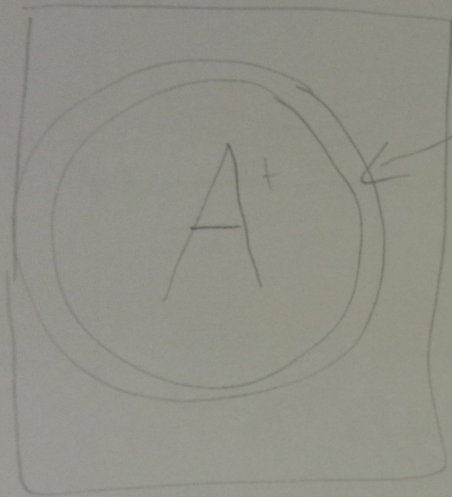
Anticipated User Interaction (UI):

- **Arrival and Desination form overlay on map**
- **Step by step direction read out available to expand**
- **Shoulder-size and other data read out on map generated after arrival/destination chosen**
- **Map zooms into area and allows user to see symbolized roads**
- **A Safety Rating is generated in the upper-right corner of the map**
- **User is not expected to need to scroll the map**

Prototypes/Wireframes/Mockups:



SAFETY RATING 6



BIKE TIRE

COLOR - Green = A⁺, Yellow = B, etc.
Red = C/D/F