

AFFECT MAPPING

Visualising EDA With Location

Overview

- Aim
- Background
- Approach
- Project/Tool Design
- Preliminary Results
 - Cognitive Load
 - Temperature
- Predicting Arousal
- Conclusion & Continued Work

Aims

Explore how location effects arousal levels within our daily lives.

Highlighting geographic locations which produce consistent arousal changes.

Assumption that stimuli are a product of location

Visualisation:

- Alternative approach to EDA Analysis

- Facilitate analysis against external data sources - Weather, POI, etc

- Automated highlighting of features/behaviour

High-level Goal:

- Predict & identify areas of expected arousal

- Form considerate maps that are designed around an individuals physiological responses

Background

Christian Nold - BioMapping Project

Artist at RCA

Highlight effect of environmental issues within a community through exploratory workshops

User tagged maps of environmental observations

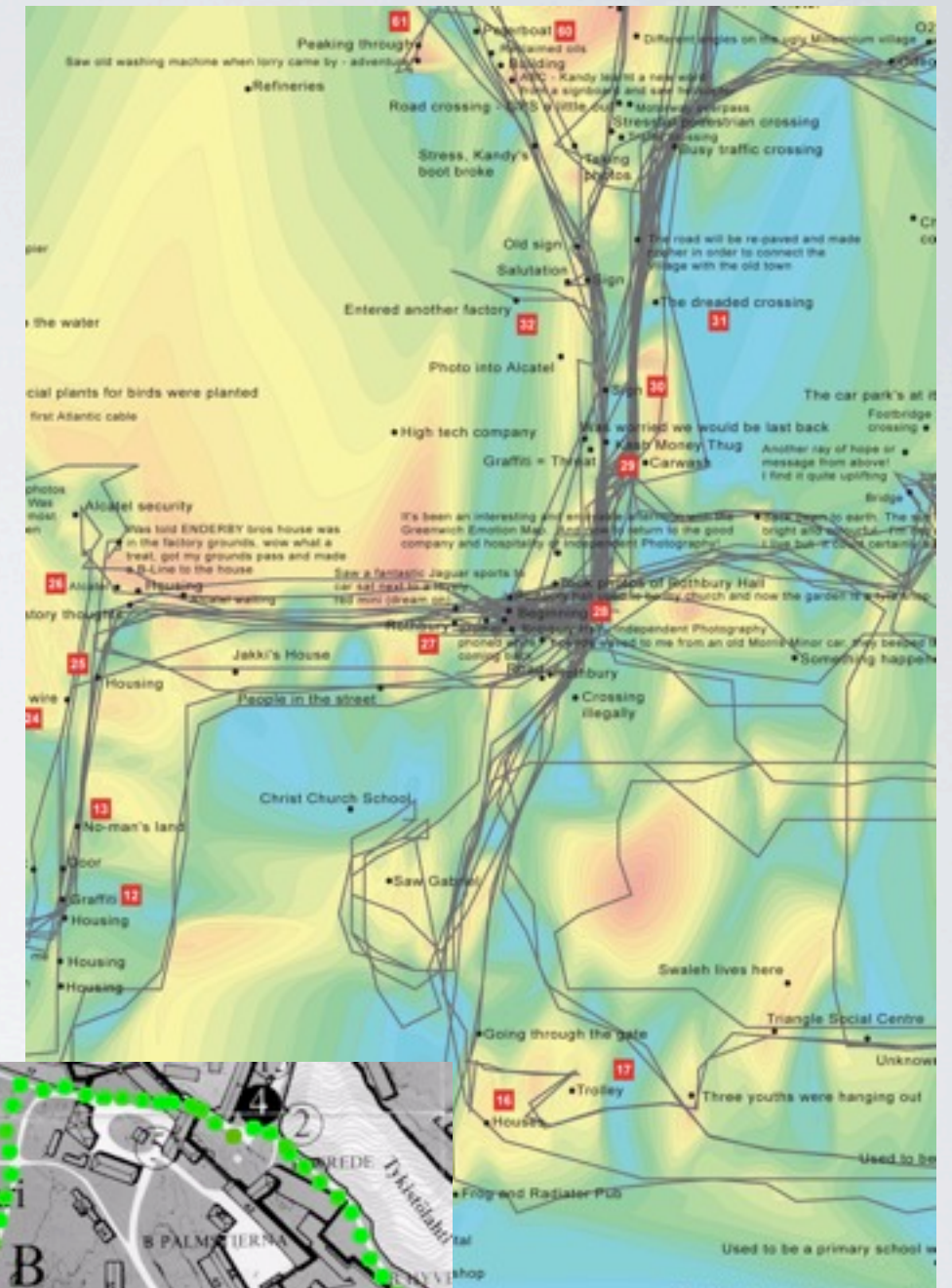
Produced Static Physical Maps highlighting issues and location

Assumed:

Constant Temperature Physical Work

Improvements:

Dynamic tool for analysing data set
Facilitate analysis against further
external factors



Chrisitan Nold

Experiment - Tracks



- Path 1 - Albany - Vassar - Memorial Drive
- Path 2 - Albany - Park - Vassar - Stata -
- Path 3 - Albany - Z centre - Infinite Corridor
- Path 4 - Albany - Mass Ave - Memorial Drive

Data Collection

Custom Android Application



Data Collection:

Location:

- GPS
- Cell Site
- WiFi

Activity:

- Touch Pressure
- Location - x,y
- Running App Name

Google Tracks



GPS Location Tracking

GPX Track Export

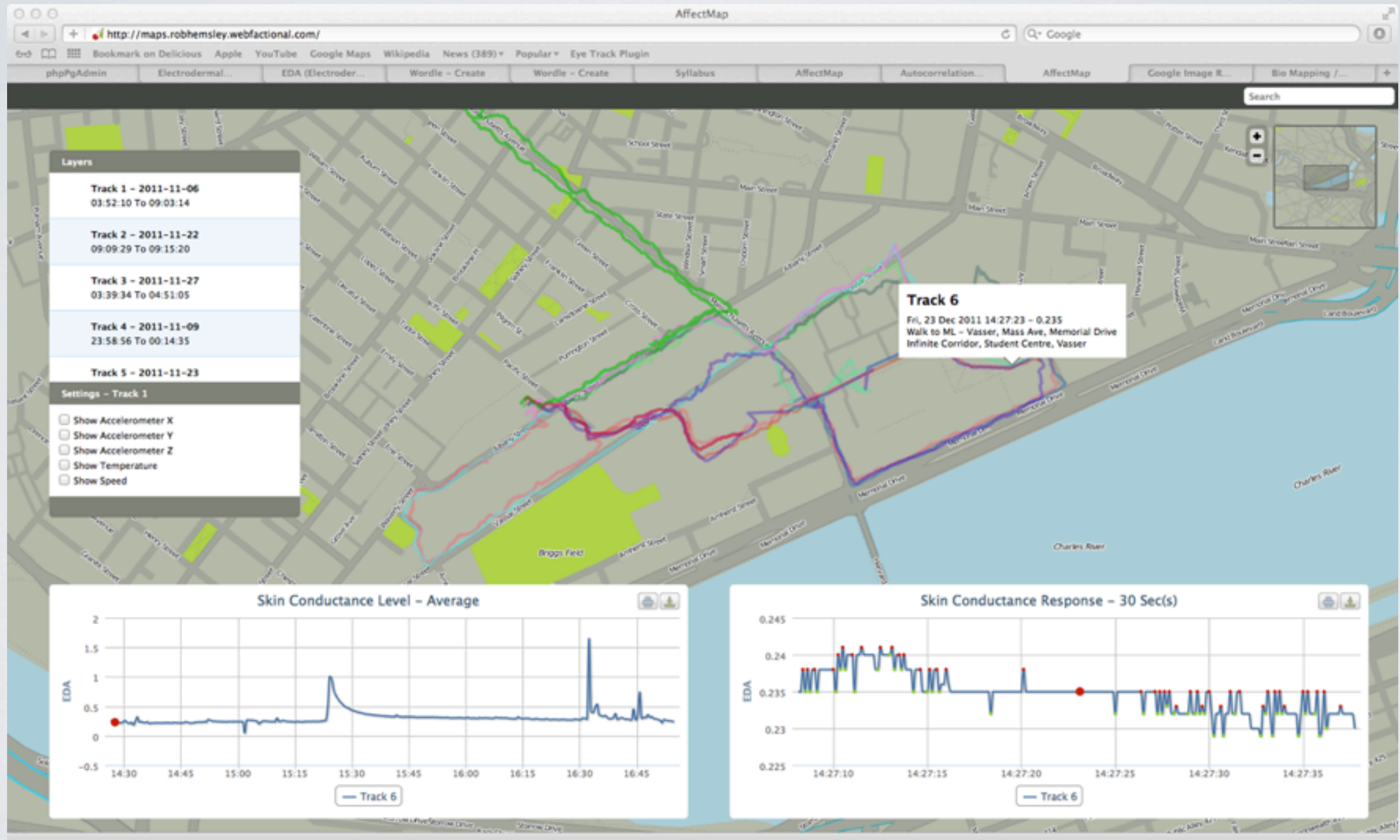
Affectiva Curve



EDA Logging

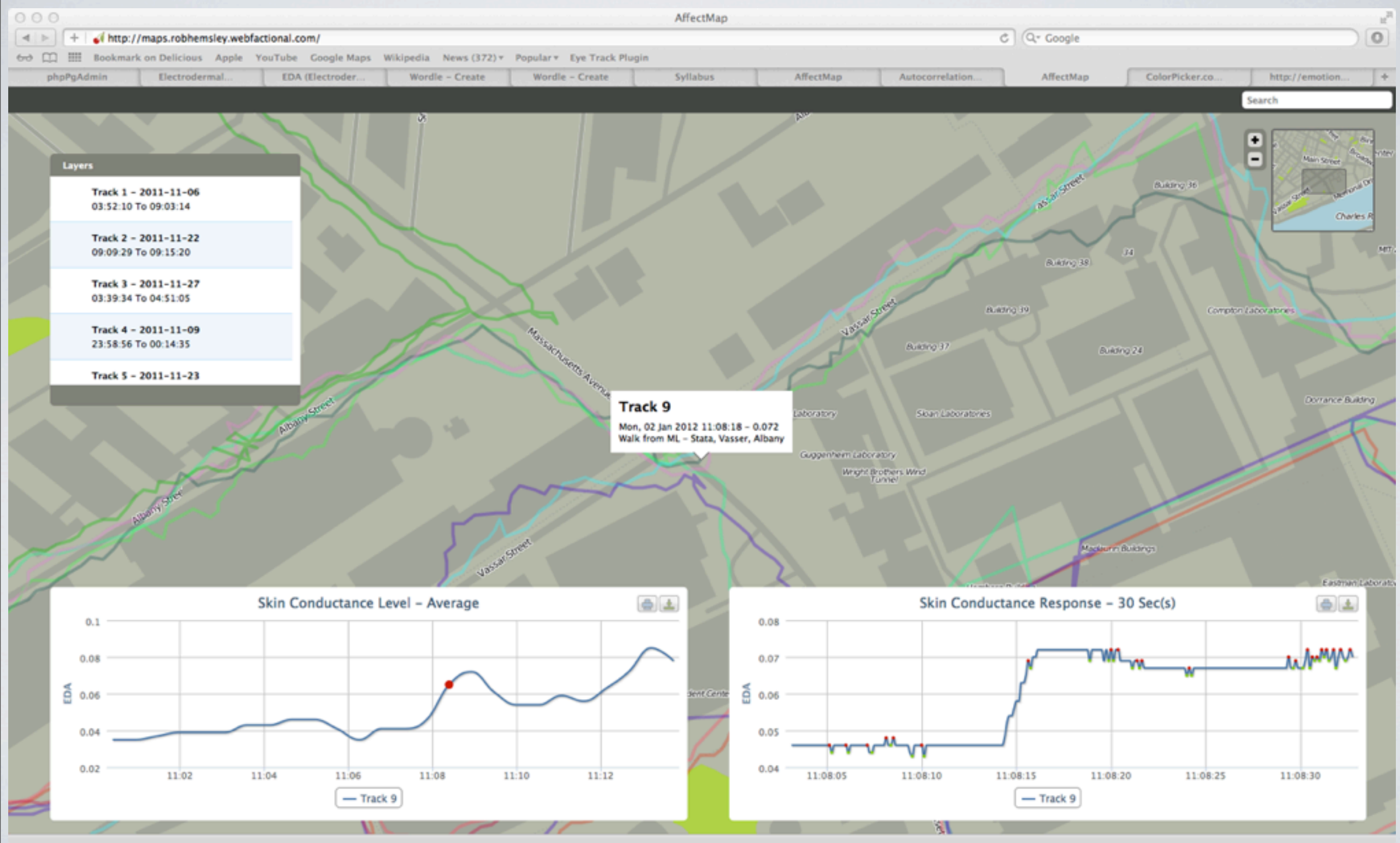
CSV Export

Analysis Tool - AffectMap

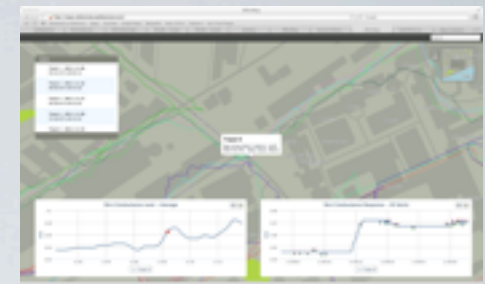


API

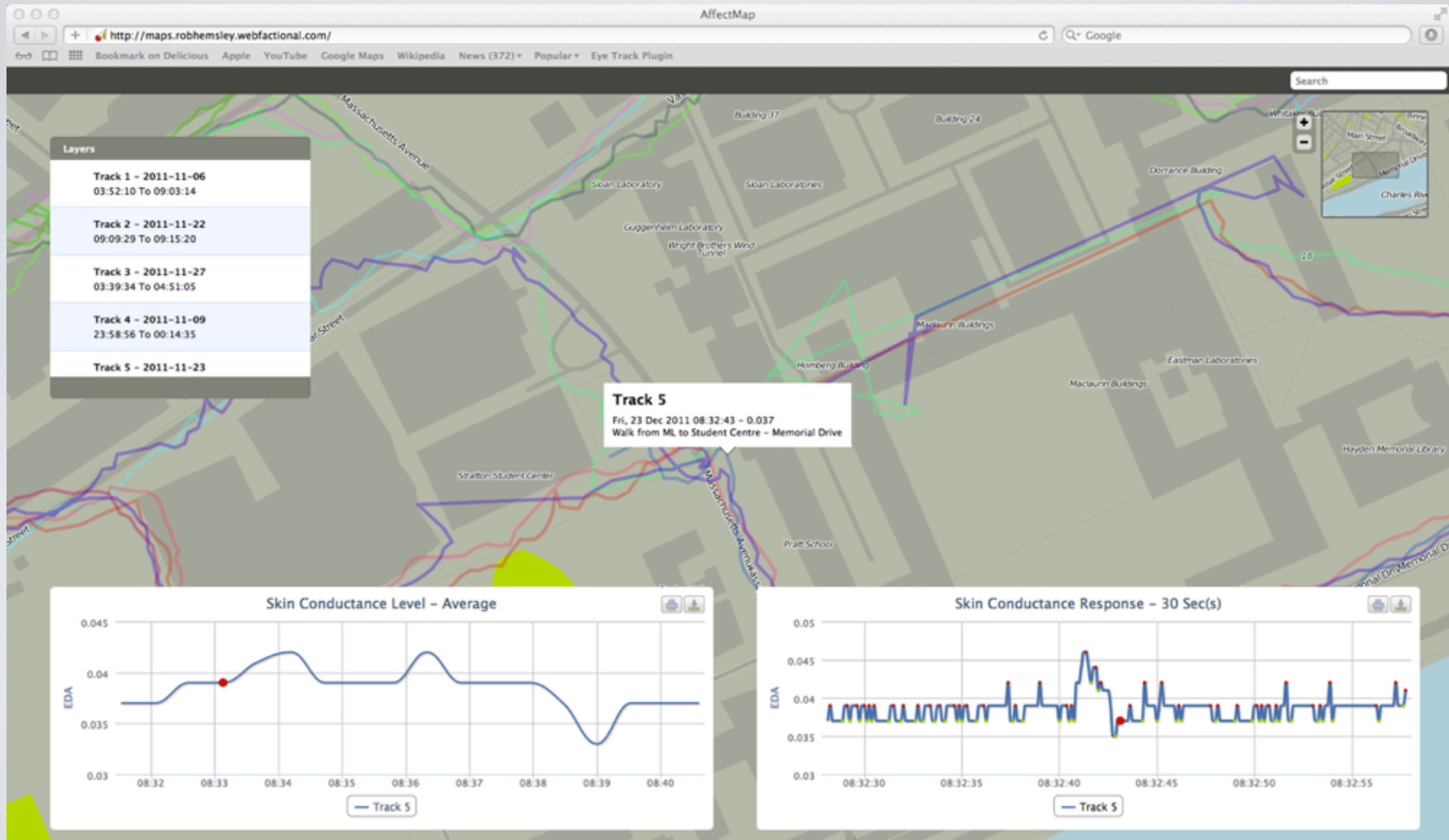
Roads & Traffic



Roads & Traffic



Mass Ave



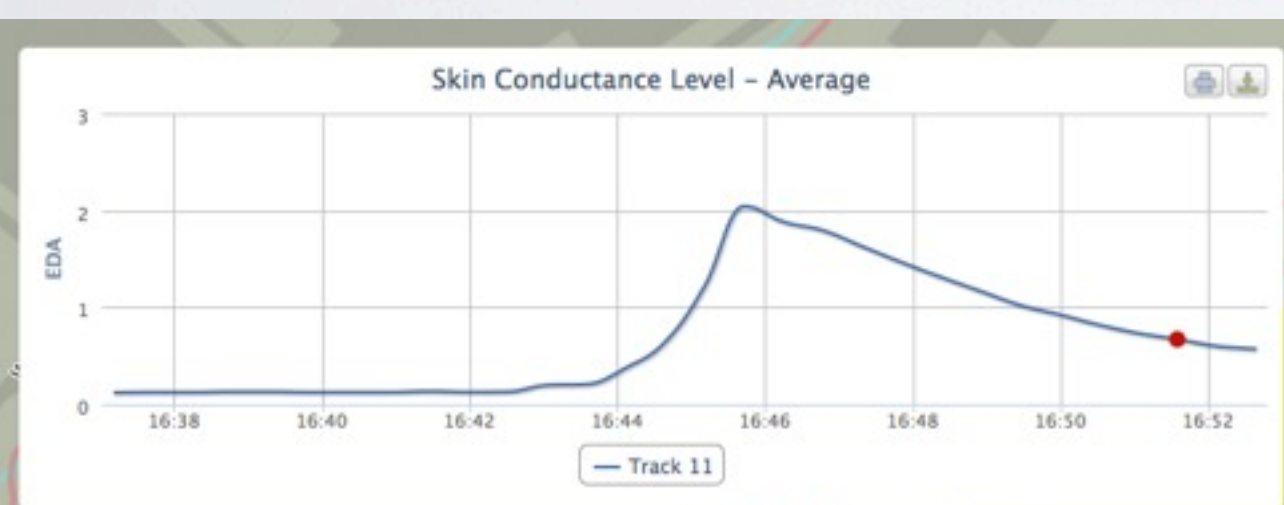
Mass Ave



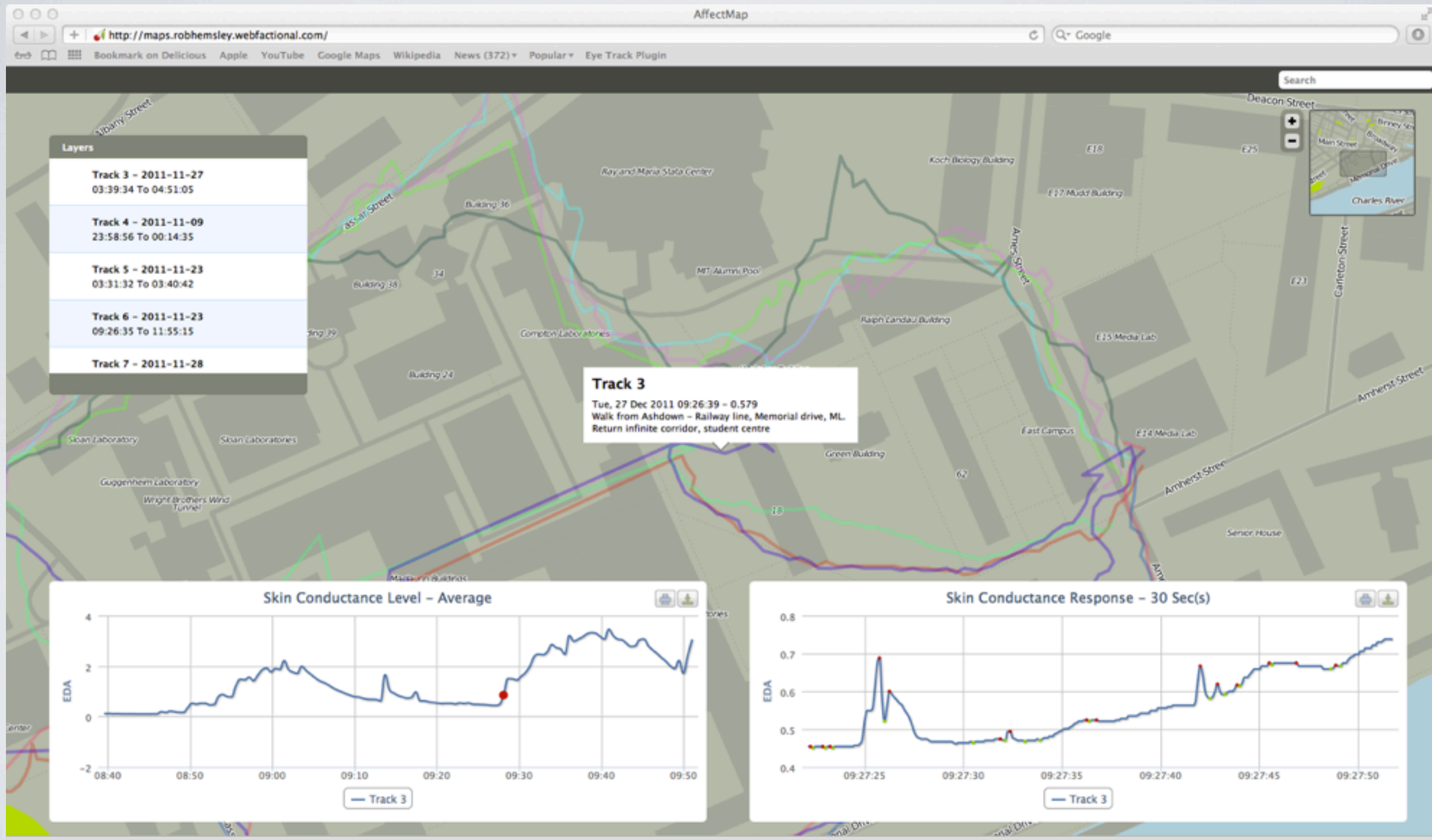
Railway Crossing



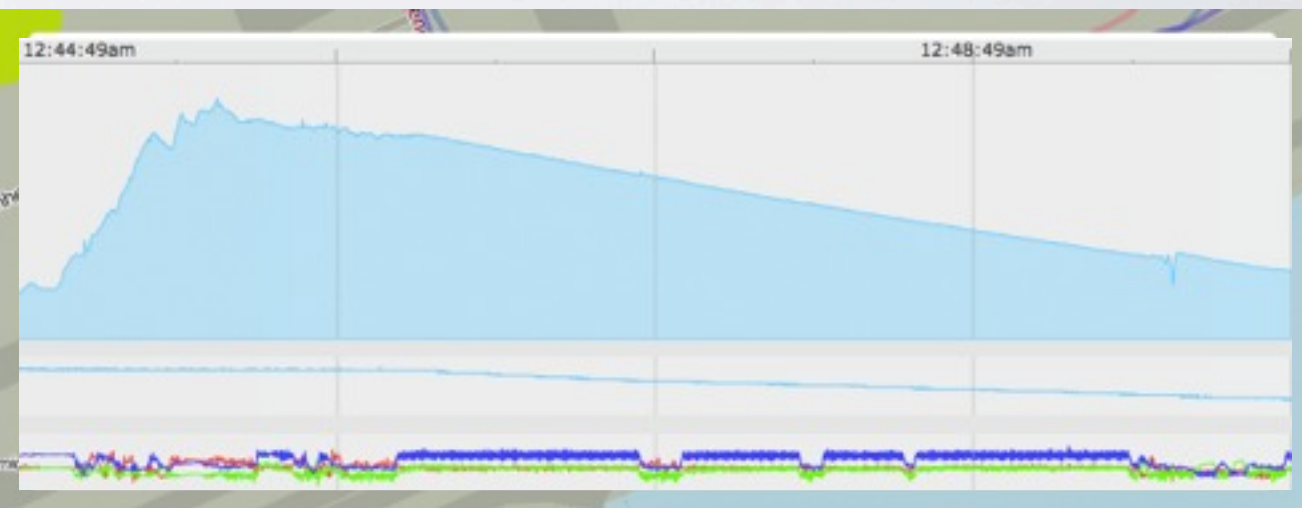
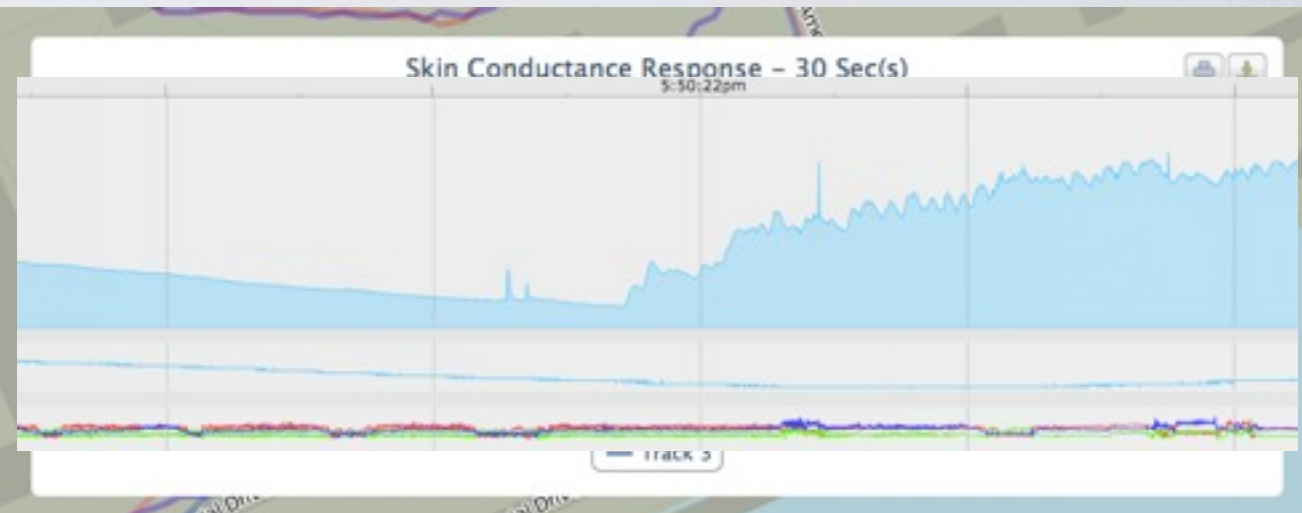
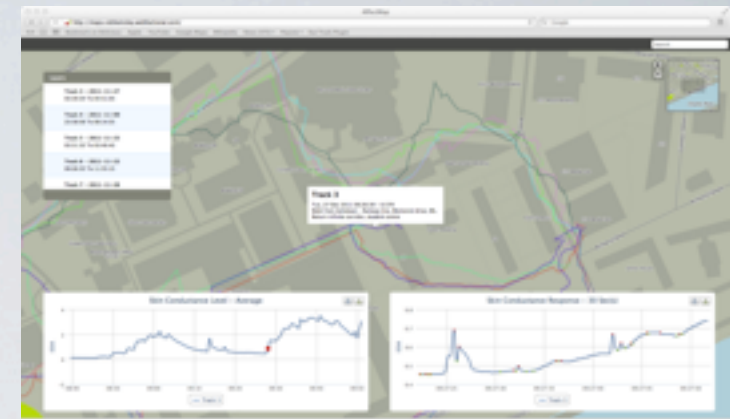
Railway Crossing



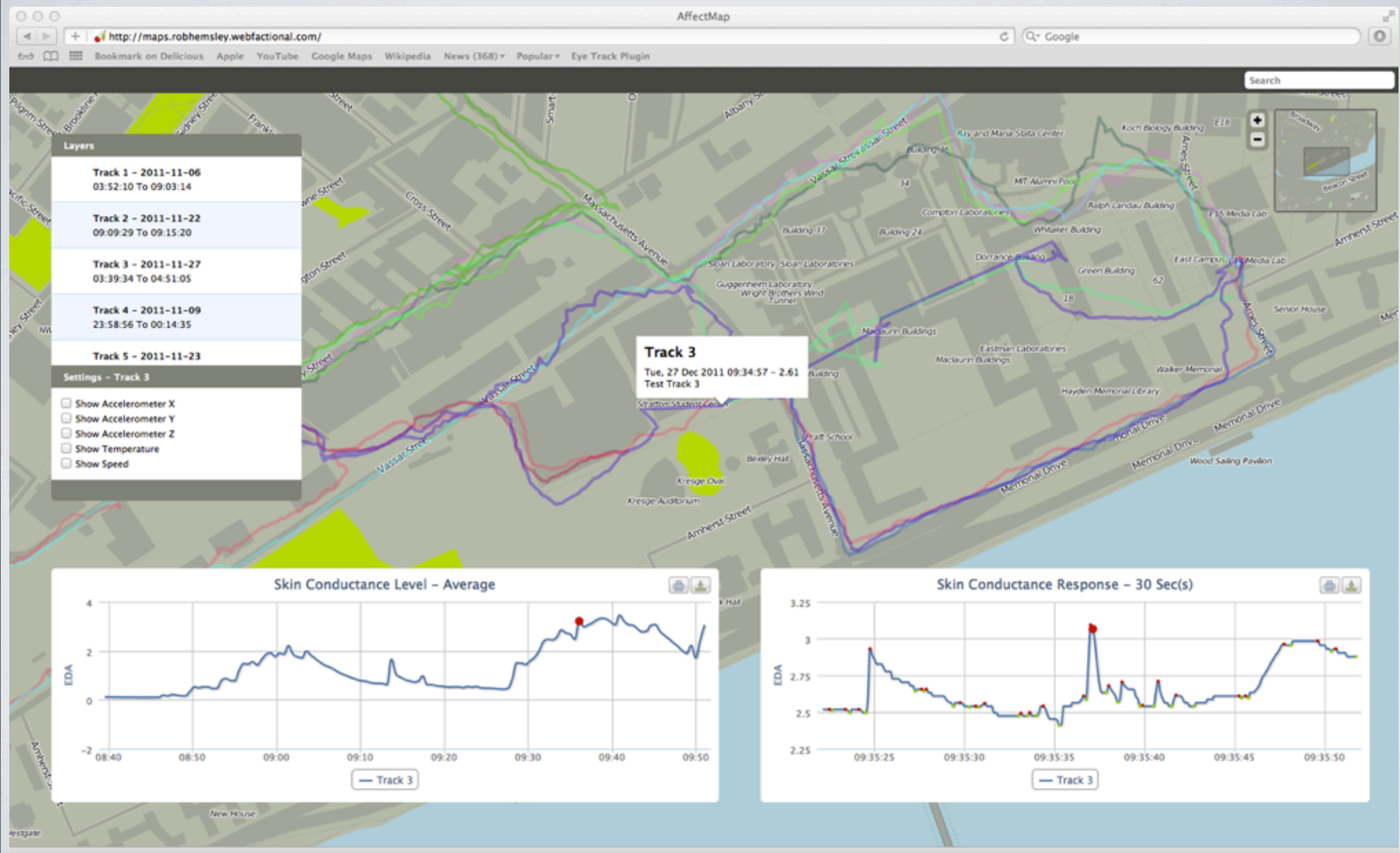
Temperature



Temperature



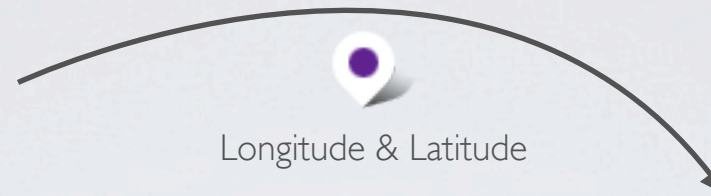
Predicting Arousal



Predicting Arousal



Affect Map - Data Frequency/Gradient/etc



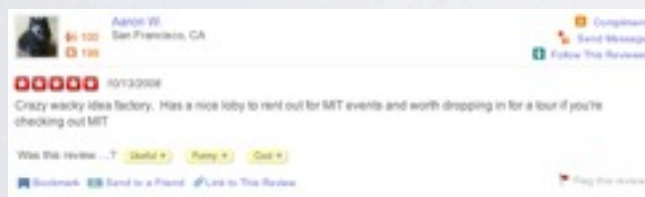
Longitude & Latitude

```
def getReviews(id):  
    str = urllib.urlopen("http://www.yelp.com/biz/"+id).read()  
    soup = BeautifulSoup.BeautifulSoup(str)  
    reviews = soup.findAll('p', {'class': 'review_comment_desc'})  
    output = ""  
    for tag in reviews:  
        output += tag.text+" "  
    return output
```

AffectMap API



Business Search



User Reviews



Text Corpus

Frequency Analysis

Frequency Analysis



8 Tracks - Gradient

Frequency Analysis



Further Work

Complete Analysis/Visualisation tool to provide user uploadable tracks

Implementation of new layers:

- Speed

- Weather

- Temperature

- Crowdedness - Spotrank

Text Analysis:

- Weighted results

- Potential Semantic Analysis - Age, Education level etc

Statistically identify least arousing track from initial dataset.

