

**EcoUp PDX**

**Portland State  
OSS 2017**

**Rachel Philip**

# What is EcoUp PDX?

Goal: A site that helps people (specifically, Portlanders) learn about their environmental impacts on climate change, and provide tools to reduce their impact.

OSS Goals: The content regarding many of the causes of climate change are universal. However, the solutions that work for people in Portland aren't the same for people in other cities (i.e., access to public transit). Developers in other cities are encouraged to fork this project and make updates for their own city.

# Unique Challenges

- Research and sources:
  - Finding cohesive information that allows for “apples to apples” comparisons about how much the average American emits is challenging.
  -
- Motivating change without shaming people into inaction and balancing messages:
  - Climate change is a threat, even though it doesn't feel like one
  - Small daily actions have large cumulative effects over time
  - Changing habits is hard and may cause inconvenience, but the severity of the problem makes it worth it.

# Design Changes During Development

## Original Concept:

There would be a series of graphs throughout the site; the main page would show segments of causes of CO2 emissions, scaled in proportion to how much CO2 was emitted from that cause (i.e., transit, food, home appliances, etc).

When the user clicked into transit, a new graph with emissions from transit sources would appear. The user could interact with forms to see how they could reduce their impact by committing to different actions (such as using public transit).

# Design Changes During Development

Problem with Original Concept:

Collecting the data to get accurate segment ratios is very difficult. There is also the problem of how to figure out what the average American emits.

- Do we count up all emissions in the US and divide by the US population?
  - Undercounts imports and overcounts exports
- Do we include or exclude industrial processes?
- Do we try to adjust for regional differences?
  - Oregon has lower per-capita CO<sub>2</sub> emissions than the US as a whole

# Design Changes During Development

## Solution:

- Focus on specific areas people have control over, ask questions about their habits, and show how that habit contributes to climate change.
- Provide substantive solutions that can reduce their impact (for example, take a bus, bike, carpool, or telecommute if possible rather than drive) and show the impact reduction over the course of a year.

# Languages and Libraries

- React => front end framework
- Create-react-app => boilerplate React template to allow fast and easy development without configuring Webpack
- React-router => library for handling page routing and linking
- Redux => library for handling state in React
- Semantic UI for React => CSS and JS library for stylized components (similar to Bootstrap)
- React-rangeslider => Slider widget
- Lodash => Javascript utility library

# “Final” Product

- Two sections (food and transportation) with questionnaires, current impact, and suggested actions.
- A summary sheet of how actions the user commits to reduces their annual carbon impact



# What I Got From The Project

Besides learning about climate change...

- Deeper dive into learning React best practices and tools
- Learning about Redux, and its benefits and drawbacks
- Learning more CSS
- Designing a user-friendly UI that “flows” easily
- Improving documentation style

# Future Development Goals

- Add additional sections, including home energy use and miscellaneous actions
- Add information about activism, organizations, and policies to support infrastructure investments
- Increase number of images throughout site
- Make some pages less “word dense”
- CSS bells and whistles
- Possible mobile app?