Tongle

A high-tech mileage reporting system for use with Washington State’s upcoming Road Usage Charge

How can road infrastructure be funded in a more inclusive way?

**Problem**

![Fuel-Efficiency & Gas Tax Revenue](source: WA RUC)

Road Usage Charge

With an increase in average fuel efficiency, funding roads with a gasoline tax is no longer sustainable. Washington State has proposed a per-mile tax based on miles driven, called the Road Usage Charge.

**Process**

- **Explore**
- **Identify**
- **Diverge**
- **Validate**
- **Prototype**
- **Finalize**

- Workshop 1
- Workshop 2
- Workshop 3

Participatory Design

We sat down with 8 drivers from all over Washington State over the span of workshops to understand and incorporate their perspectives into the design process.

Rapid Prototyping with User Values

Our participants’ perspectives revealed a core set of values to be addressed in our designs. Our prototypes sought to effectively address the tensions between those values.

**Prototype**

Tongle pairs a smartphone app with an external device to ensure fair and convenient mileage recording. The external device, plugged into a car’s OBD-II port, records and stores a car’s trip data. The coupled app allows users to view, contest, and pay for their road usage.

1) Drive your car
   - Tongle maximizes **convenience** by requiring to connect the device once

2) Record Mileage
   - Tongle provides **accountability** by automatically record the road usage

3) Control Privacy
   - Users choose which trips are tracked with GPS to **secure** their privacy

4) Pay for Trips
   - Tongle **fairly** charges users only for their public road usage in Washington State

5) Store Data
   - User data is stored on the cloud to provide transparency and **fairness**

**Project by**

Shin Young (Lucia) Choi
Molly Fallen
Michael Fernandes
Alex Gilbert

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