



# Great Candidates for Future Sustainable Transportation

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## Backgrounds

- The transportation systems come with many problems, including global warming, environmental degradation, health implications, etc.
- Fossil fuel needs to be replaced with more efficient energy.
- Sustainable transport systems, aka green transportation, refer to all modes of transport with a low environmental impact.

## Research Questions

- What are the advantages and disadvantages of green transportation, especially among EVs, public transit, and biking? (**Figure 1**)

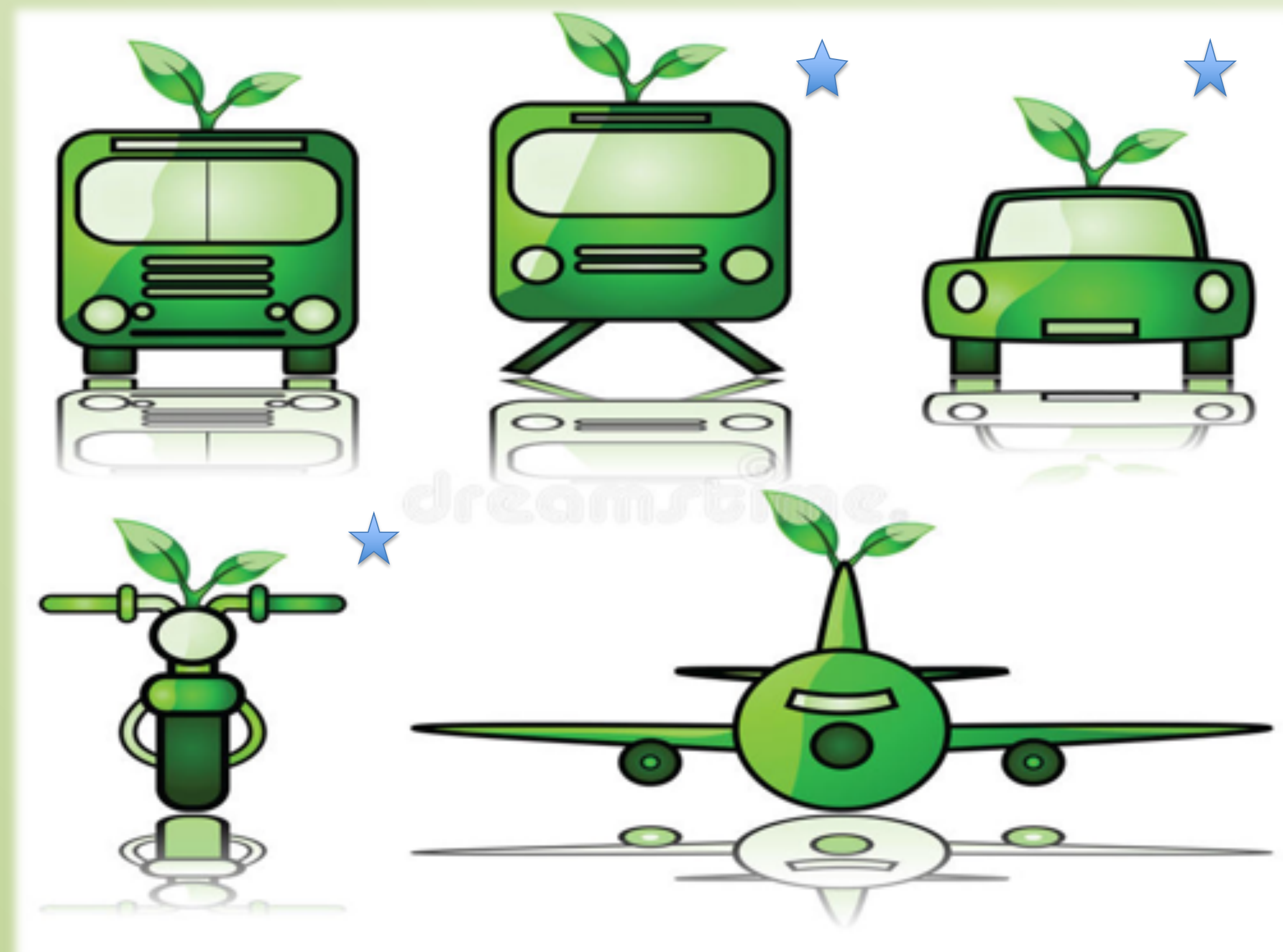


Figure 1: The icons of popular green transport candidates

★ = EVs, Public Transit, and biking will be focused on in this project

## Internship

- Seattle Subway Foundation assisted me in collecting data on how the subway would be a great approach to building a sustainable transportation
- Notice that in Seattle, **62%** of greenhouse gases come from transportation alone
- Added persuasiveness to the residents of the greater Seattle area about the subway as green travel

## Methods

- Online survey: conducted an online survey asking respondents to rank four forms of green transportation. Respondents were found at random through outreach events in Ballard, Seafood Market, and Alki Beach Pride; 71 responses (**Figure 2**)

## Survey Results

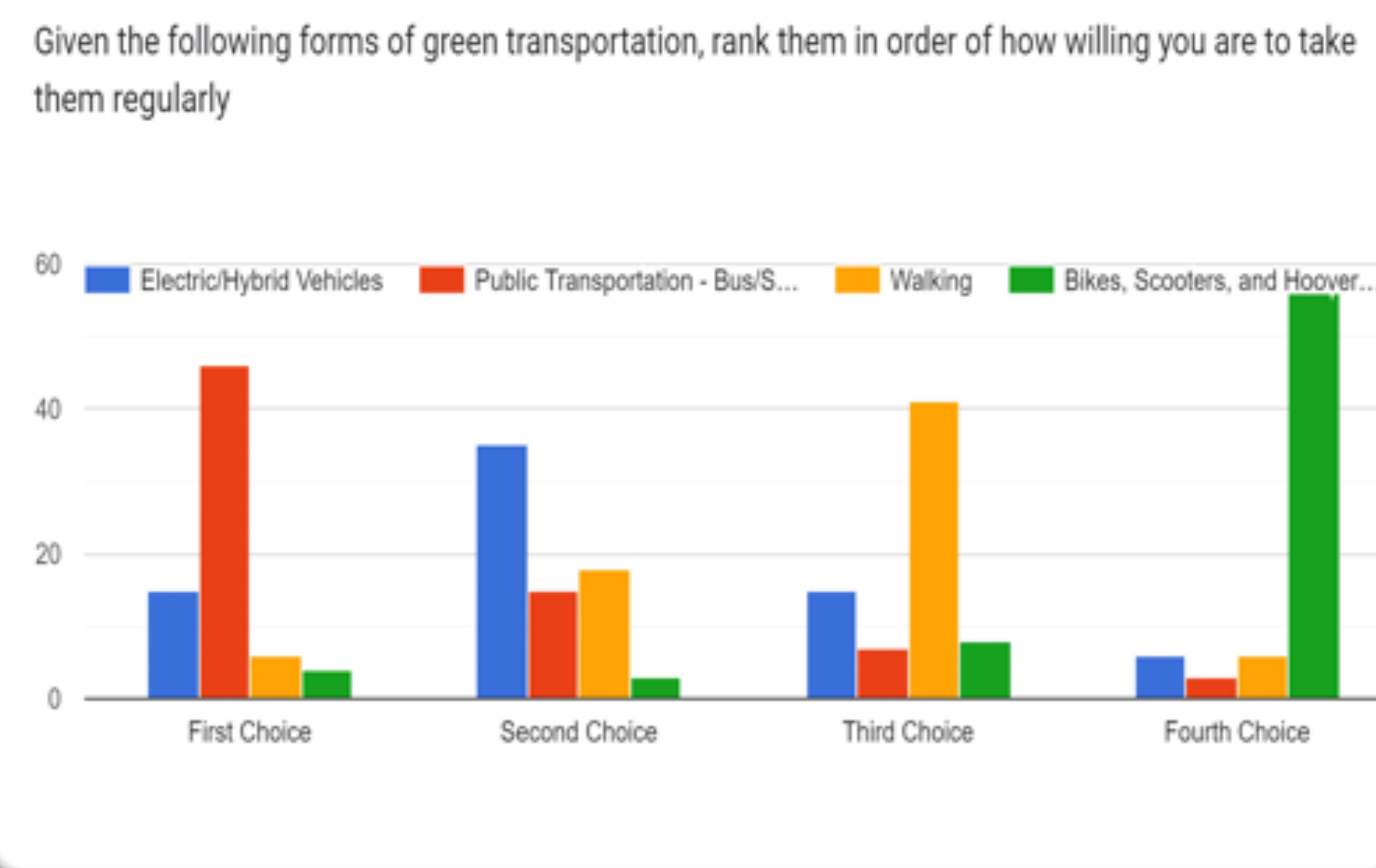


Figure 2: Green Transport Ranking based on people's preference among four available choices

Results: **1. EVs** **2. Public Transit** **3. Walking** **4. Bikes**

## General Results

### EVs

- 😊 Produce zero tailpipe emissions
- 😊 Do not emit a noise
- 😊 Cheap, etc.
- 😞 Battery & Production

### Subway

- 😊 Less energy consumption
- 😊 No exhaust emissions
- 😊 Cheap, etc.
- 😞 Time to build

### Biking

- 😊 Benefits Health
- 😊 Zero-emission
- 😞 Destination Range
- 😞 High Requirement

### Connection

- **Situational (Public >= EVs > Biking)**
- **Being sustainable is the priority**

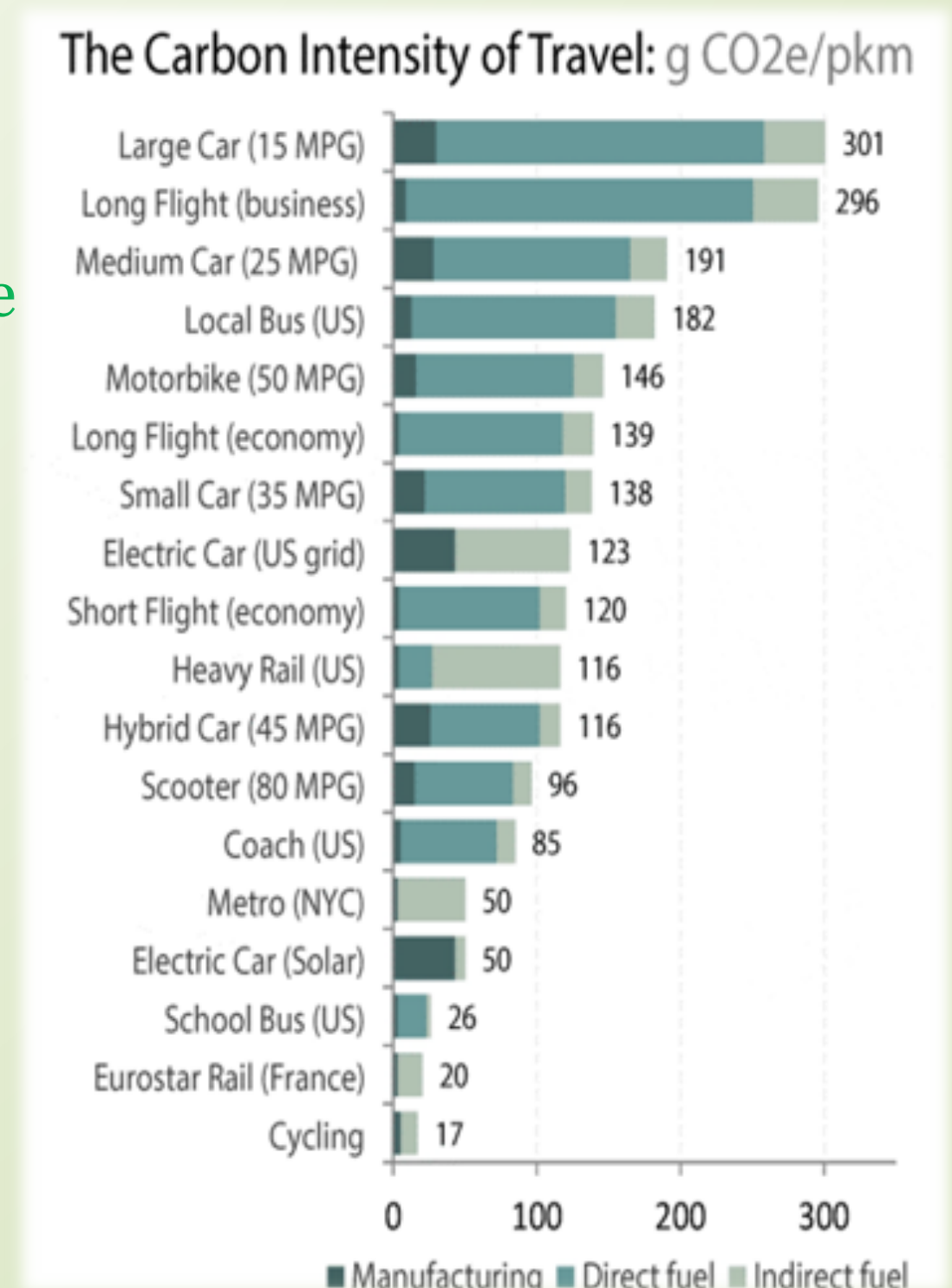


Figure 3: Shows the Carbon intensity of Travel among different types of transportation: the lower number, the better to be sustainable.

## Implications

- The popularity is far less than that of traditional gasoline vehicles
- The transition requires a long period
- The significance of the project aims to advocate the development of a sustainable transportation network

## Acknowledgment

- Family and Friends
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- Seattle Subway Foundation
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