The Mobile Application

**Uses Existing Hardware**
- Uses the phone’s GPS to identify the rider’s location
- Uses Bluetooth™ to communicate directions to the bike unit

**Clear User Interface**
- Rider inputs the destination address
- Application sends address to MapQuest™ and receives list of turns on the route
- Phone is put away for the duration of the ride

**Always Right, Every Turn**
- Application updates in real time and provides new directions when riders go off-path
- Error screens display when phones loses GPS signal or Bluetooth connectivity

Acknowledgements

<table>
<thead>
<tr>
<th>Anil Mankame</th>
<th>David Wallace</th>
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<tr>
<td>Danielle Hicks</td>
<td>Chevalley Duhart</td>
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<td>Emily Obert</td>
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<td>Lee Zamir</td>
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<td>Greg Cappiello</td>
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<td>Matt Johnson</td>
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<td>Sean Schoenmakers</td>
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<td>Tomas Martins</td>
<td>Jeff Mekler</td>
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<tr>
<td>Lydia Volaitis</td>
<td>Lauren Hernley</td>
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<td>Peter Nielsen</td>
<td>Josh Ramos</td>
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<td>Matt Duplessie</td>
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Team Green

<table>
<thead>
<tr>
<th>Ahmed Alnemer</th>
<th>Arash Kani</th>
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<tr>
<td>Chris Gerber</td>
<td>Audrey Bosquet</td>
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<td>Chris Hammond</td>
<td>Charlotte Herhold</td>
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<tr>
<td>Devin Dee</td>
<td>Dan Goodman</td>
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<tr>
<td>Julia Kimmerly</td>
<td>Jackson Wirekoh</td>
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<tr>
<td>Megan Uberti</td>
<td>Lauren Kuntz</td>
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<tr>
<td>Paul Lazarescu</td>
<td>Pradesh Len Carlos</td>
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<tr>
<td>Paulina Mustafa</td>
<td>Stephen Frost</td>
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<tr>
<td>Trevor Zinser</td>
<td>Tim Jenks</td>
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<td>Vahe Taamazyan</td>
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2,009 December 10, 2012
Green Team
Our Product

RiderGuider offers worry-free, safe, and affordable bike navigation.
- Uses a mobile application and vibrations in the grips to direct the rider.
- Eliminates dangerous visual distractions.
- Integrates directions directly into the biking experience.

Affordable navigation solution for young professionals and college students.
- Allows users to confidently navigate unfamiliar routes without compromising safety.
- Offered at a retail price of $50 and easily installed on existing handlebars.

The Bike Module

- **Arduino Microcontroller**
  - Interprets and transmits signal to motors and LEDs

- **Lithium Polymer Battery**
  - Provides 11 hours of battery life

- **Printed Circuit Board**

- **USB Recharge Board**
  - Recharges battery

- **Power Switch**
  - Includes LED to indicate status

- **Vibration Motor**
  - Communicates directions via vibration

- **LEDs**
  - Flash directional signals

- **Custom Silicone Rubber Grips**

- **Outer Shell**
  - Waterproof hard casing protects electrical components

- **Copper Contacts**
  - Transmit signals from central module to mount

- **Handlebar Mount**

- **Bluetooth Receiver**

- **Copper Contacts**
  - Transmit signals from central module to mount

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