Test Plan

Ideal Plan

Platforms to be tested include:

- **Windows PCs**
  - Windows 7
  - Windows 8
  - Windows 8.1
  - Windows 10
- **Windows Tablets/Phones**
  - Windows RT
  - Windows 10 Mobile
- **Mac Computers**
  - OS X 10.7 (Lion)
  - OS X 10.8 (Mountain Lion)
  - OS X 10.9 (Mavericks)
  - OS X 10.10 (Yosemite)
  - OS X 10.11 (El Capitan)
- **Apple iDevices**
  - iOS 5
  - iOS 6
  - iOS 7
  - iOS 8
  - iOS 9
- **Android Mobile Devices**
  - Android 4.0.x (Ice Cream Sandwich)
  - Android 4.1.x – 4.3.x (Jelly Bean)
  - Android 4.4.x (KitKat)
  - Android 5.x (Lollipop)
  - Android 6.0 (Marshmallow)

Browsers to be tested include:

- Internet Explorer 8+
- Microsoft Edge 12+
- Firefox 30+
- Chrome 30+
- Safari 7+
- Opera 25+
- iOS Safari 7.0+
- Android Browser 4+
- Chrome for Android 46
- IE Mobile 10+
Screen resolutions to be tested (including estimated market share as of Nov 2015 in parenthesis) include:

- 1366 x 768 (14.15%)
- 1920 x 1080 (9.16%)
- 360 x 640 (9.11%)
- 768 x 1024 (7.91%)
- 320 x 568 (5.73%)
- 1280 x 800 (5.32%)
- 1440 x 900 (4.90%)
- 375 x 667 (4.76%)
- 1600 x 900 (4.30%)
- 1280 x 1024 (4.10%)
- 1920 x 1200 (1.35%)
- 2560 x 1440 (1.22%)

Test Cases (using both touchscreen devices and standard mouse/trackpad input):

- Navigate to game URL and optionally rotate device if requested
  - Expected Result: Game renders and makes visual sense. Variation in exact rendering and appearance is acceptable and anticipated given differences in screen resolution. However, the game should always look visually appealing with no graphics overlapping on another, no text running off the screen, etc.
- Click the icon for the Helmet Safety level
  - Expected Result: Game switches to pre-game view for the Helmet Safety Game
- Click Play on Helmet Safety’s pre-game screen
  - Expected Result: Game switches to the game screen for Helmet Safety, and a visual tutorial appears in the middle of the screen. This graphic should be comfortably placed with plenty of space between all sides and the edge of the game.
- Click anywhere
  - Expected Result: Helmet Safety gameplay begins. The text at the top of the screen (your score, time remaining, and the pause button) should be entirely visible (not running off the edge of the game window).
- Click the first two un-helmeted riders
  - Expected Result: Your score should increment by a greater amount for the second click than for the first as your safety multiplier increments
- Allow an un-helmeted rider to exit the screen
  - Expected Result: You should lose a life. Lives are indicated by band aids in the bottom right of the screen
- Allow 3 un-helmeted riders to exit the screen
  - Expected Result: The game should immediately end as you have lost all of your lives. You should be taken to the high score screen, perhaps after a brief delay as high scores are being pulled from the server
- Replay the game with the intent of not losing all of your lives
• Click the Replay button on the high score screen
  ○ Expected Result: You should be returned to the main menu where you can select which game you’d like to play next

• Click the icon for the Water Safety level
  ○ Expected Result: Game switches to pre-game view for the Water Safety Game

• Click Play on Water Safety’s pre-game screen
  ○ Expected Result: Game switches to the game screen for Water Safety, and a visual tutorial appears in the middle of the screen. This graphic should be comfortably placed with plenty of space between all sides and the edge of the game.

• Click anywhere
  ○ Expected Result: Water Safety gameplay begins. The text at the top of the screen (your score, time remaining, and the pause button) should be entirely visible (not running off the edge of the game window).

• Click the first two life jacketless riders
  ○ Expected Result: Your score should increment by a greater amount for the second click than for the first as your safety multiplier increments

• Allow a life jacketless rider to exit the screen
  ○ Expected Result: You should lose a life. Lives are indicated by throwables in the bottom right of the screen

• Allow 3 life jacketless riders to exit the screen
  ○ Expected Result: The game should immediately end as you have lost all of your lives. You should be taken to the high score screen, perhaps after a brief delay as high scores are being pulled from the server

• Replay the game with the intent of not losing all of your lives
  ○ Expected Result: After the timer runs out (60 seconds), you should be taken to the high score screen as before and presented your score/high scores

• Click the Replay button on the high score screen
  ○ Expected Result: You should be returned to the main menu where you can select which game you’d like to play next
**Intended Plan**

Platforms to be tested include:
- Windows PCs
  - Windows 7
  - Windows 8.1
  - Windows 10
- Mac Computers
  - OS X 10.10 (Yosemite)
  - OS X 10.11 (El Capitan)
- Apple iDevices
  - iOS 8
  - iOS 9
- Android Mobile Devices
  - Android 5.x (Lollipop)
  - Android 6.0 (Marshmallow)

Browsers to be tested include:
- Microsoft Edge 20.10240.x +
- Firefox 42+
- Chrome 47+
- iOS Safari
- Android Browser
- Chrome for Android 46+

Screen resolutions to be tested (including estimated market share as of Nov 2015 in parenthesis) include:
- 1366 x 768 (14.15%)
- 1920 x 1080 (9.16%)
- 768 x 1024 (7.91%)
- 1280 x 800 (5.32%)
- 1440 x 900 (4.90%)
- 1600 x 900 (4.30%)
- 1280 x 1024 (4.10%)
- 1920 x 1200 (1.35%)
- 2560 x 1440 (1.22%)

Test Cases (using both touchscreen devices and standard mouse/trackpad input):
- Navigate to game URL and optionally rotate device if requested
  - Expected Result: Game renders and makes visual sense. Variation in exact rendering and appearance is acceptable and anticipated given differences in screen resolution. However, the game should always look visually appealing with no graphics overlapping on another, no text running off the screen, etc.
• Click the icon for the Helmet Safety level
  o Expected Result: Game switches to pre-game view for the Helmet Safety Game
• Click Play on Helmet Safety’s pre-game screen
  o Expected Result: Game switches to the game screen for Helmet Safety, and a visual tutorial appears in the middle of the screen. This graphic should be comfortably placed with plenty of space between all sides and the edge of the game.
• Click anywhere
  o Expected Result: Helmet Safety gameplay begins. The text at the top of the screen (your score, time remaining, and the pause button) should be entirely visible (not running off the edge of the game window).
• Allow an un-helmeted rider to exit the screen
  o Expected Result: You should lose a life. Lives are indicated by band aids in the bottom right of the screen. These should be easily visible and not grossly obstruct the actual playing field.
• Allow 3 un-helmeted riders to exit the screen
  o Expected Result: The game should immediately end as you have lost all of your lives. You should be taken to the high score screen, perhaps after a brief delay as high scores are being pulled from the server. The high score screen should be easily readable and comfortably laid out. There should be no overlapping images or randomly placed text floating around the screen.
• Click the Replay button on the high score screen
  o Expected Result: You should be returned to the main menu where you can select which game you’d like to play next
• Click the icon for the Water Safety level
  o Expected Result: Game switches to pre-game view for the Water Safety Game
• Click Play on Water Safety’s pre-game screen
  o Expected Result: Game switches to the game screen for Water Safety, and a visual tutorial appears in the middle of the screen. This graphic should be comfortably placed with plenty of space between all sides and the edge of the game.
• Click anywhere
  o Expected Result: Water Safety gameplay begins. The text at the top of the screen (your score, time remaining, and the pause button) should be entirely visible (not running off the edge of the game window).
• Allow a life jacketless rider to exit the screen
  o Expected Result: You should lose a life. Lives are indicated by throwables in the bottom right of the screen. These images should be clearly visible, but not obstruct the player’s view of the actual game field.
• Allow 3 life jacketless riders to exit the screen
  o Expected Result: The game should immediately end as you have lost all of your lives. You should be taken to the high score screen, perhaps after a brief delay as high scores are being pulled from the server. The high score screen should be easily readable and comfortably laid out. There should be no overlapping images or randomly placed text floating around the screen.
Click the Replay button on the high score screen
  ○ Expected Result: You should be returned to the main menu where you can select which game you’d like to play next

Test Findings

- It is important to note that ideally we would be able to test the full gameplay on all devices we’d like to support. However, in our actual test plan, we have streamlined the testing of actual gameplay and focused on testing visual aspects of the game. We are confident that the game plays very similarly on all devices we have tested. The biggest issues arise with certain devices and monitors that render graphics differently. Thus, you’ll note that our intended test plan focuses very heavily on these visual aspects of the game.
- We have tested screen resolutions 768 x 1024 and higher, which covers the vast majority of users. However, we have found that certain monitors (particularly TVs being used as monitors and older monitors) have aspect ratios that are not conducive to a high quality of game play despite the fact that their resolution technically falls within the tested range.
- We have found that Phaser does not do a great job of determining the height and width of the game canvas internally. Thus, making the UI consistent across devices (particularly across screen resolutions) is next to impossible. We have resolved to allow differences in appearance as long as the appearance is acceptable. Unfortunately, we cannot guarantee a perfect UI on all devices, but we have found that screens with 768 x 1024 and higher resolution tend to work well.