Memorandum of Understanding

This document outlines the collaboration between Regionomics Inc., represented by Murtaza Haider (MH), and Shafquat Arefeen (SA) regarding the collaborative work they are undertaking on commute times in Canada using data from HERE Technologies.

Roles and Responsibilities:

Murtaza Haider is responsible for:

- 1. Providing the concept and context for research question and data needs.
- 2. Directing the research process.
- 3. Reviewing outputs.
- 4. Conducting spatial analysis on data generated by SA.
- 5. Merging other socio-economic data with the data being generated.
- 6. Drafting and editing a white paper to be released publically under the Regionomics Inc. banner.

Shafquat Arefeen is responsible for:

- 1. Generating code in Python and R to extract data from HERE Technology's API.
- 2. Creating shapefiles from the output generated by the SA's scripts.
- 3. Drafting a methodology section to document the steps in detail for the white paper.
- 4. Visualizing output.

The specifics of white paper are as follows:

- 1. It will be released under the Regionomics banner.
- 2. It will identify MH and SA as co-authors.
 - a. It may include one or more co-authors to be decided by consensus.
- 3. The white paper will be released publically for gratis and will not be subject to any restriction on its distribution.
- 4. MH to draft an op-ed for a news publication to be released in conjunction with the release of the white paper.
 - a. If needed, the public release of the white paper may have to be embargoed for a few days to provide exclusivity to the chosen publication.

Copyrights:

- 1. SA to hold the rights to the scripts generated. SA will be credited for the script if used subsequently.
- 2. Shapefiles and visualizations generated from this project belong equally and without restriction to MH and SA.
- 3. MH and SA can therefore reuse the resources from this project in subsequent endeavors.
- 4. MH and SA are not being compensated for their work on this project.
- 5. MH and SA are free to monetize the deliverables in the future.

Murtaza Haider Wor 1, 2017
Shafquat Arafaan