Scope of Work - Spare Realize for McKinney

Overall aim: To outline how Spare will conduct Realize simulations for McKinney, and the expected outputs from these simulations.

Structure: This document will outline the main steps needed to generate demand in a given area, including an idea of the types of datasets needed at each stage.
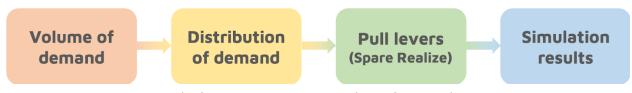
* * * * * * * * * * * * * *

What is the point of simulating demand for microtransit?
Quite simply, without rigorously simulating demand for a microtransit zone using empirical data, a transit agency puts itself at enormous risk of mis-designing that zone. This can have important cost implications, and affect the usability and convenience of the service for riders who rely on it to get around.

Special thought needs to be given to *where* a microtransit system should operate, *whom* it is likely to serve and therefore impact, during *which times* it should operate, the *service model* it should follow (stop-to-stop, door-to-door), and its potential costs and returns.

Summary of Spare's steps to simulating demand:

1. Estimate trip volume (i.e. total number of expected trips in a zone)

2. Define how that trip volume is distributed
   a. Assign trip types (work, rec, medical)
   b. Distribute trips spatially (i.e. where trips should start and end)
   c. Distribute trips temporally (i.e. time of day when trips should occur)
   d. Generate random origin-destination (O-D) pairs from these distributions

3. Run O-D pairs through Realize simulation tools, evaluating different on-demand transit possibilities in the area.

4. Collate results, perform in-depth contextual analysis, and make recommendations as part of a final report and presentation.

The four stages in Spare's simulation framework.