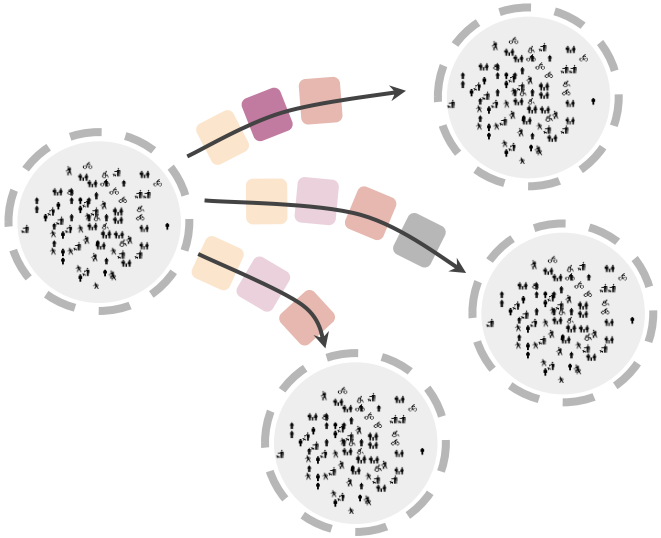
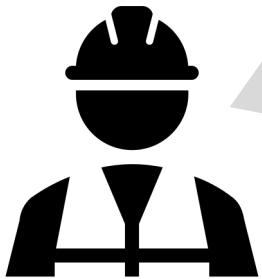
Pandemic Activity Modeller/Modifier (PAM)

< Example Applications >





Example User Story:

“We’ve reduced transit services as best we can for our drivers and public safety. But we’re unsure what impact this has had on people’s travel behaviour.

I want to consider closing/opening some stations to better serve the existing demand, but my existing demand model is out of date…

If I can get my demand model adjusted for this new baseline then I can start to make more careful decisions – I am sure there are going to be some trade-offs between costs, risks and economic benefits.”

- Local Authority Transport Planner

Use-Case A: Building a new Baseline demand model

(1) Build Activity Plans

Travel Diaries

Baseline Population

(2) Modify Population Activity Plans

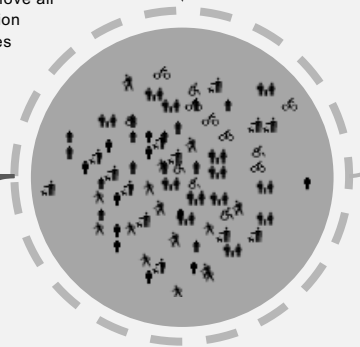
Policy A

Policy B

Policy C

eg: non-critical workers remove work activities with p = 0.9

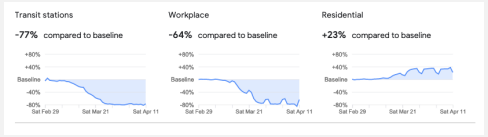
eg: remove all education activities



New Baseline Population

(3) Validate New population against recently published datasets

Travel & Activity Statistics



Travel & Activity Statistics

(4) Output new Demand Model Data

Travel Diaries

OD-Matrices

MATSim inputs

Example User Story:

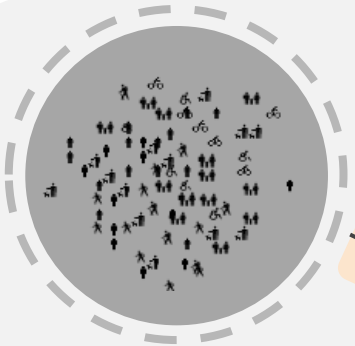
“Seems like we can start to think about staged return to normality but we want to minimise crowding. We’d like to explore the idea of peak spreading. We’re thinking to request schools and workplaces to stagger opening hours, maybe using a lottery?

But we don’t know what the impact on public transit crowding will be. There’s another problem - we think we might have to have fewer services running due to driver shortages.

Is there any way you can test this?

- Policy Planner

Use-Case B: Testing Impact of Future Policy Scenarios



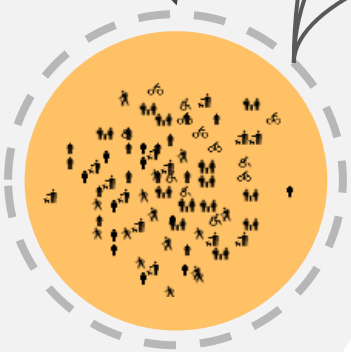
New Baseline Population

(1) Modify Population Activity Plans Based on Different Scenario Policies.

Policy A

Policy B

Policy C



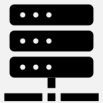
Scenario Population

(2) Output Proposed Demand Scenarios for further Modelling.

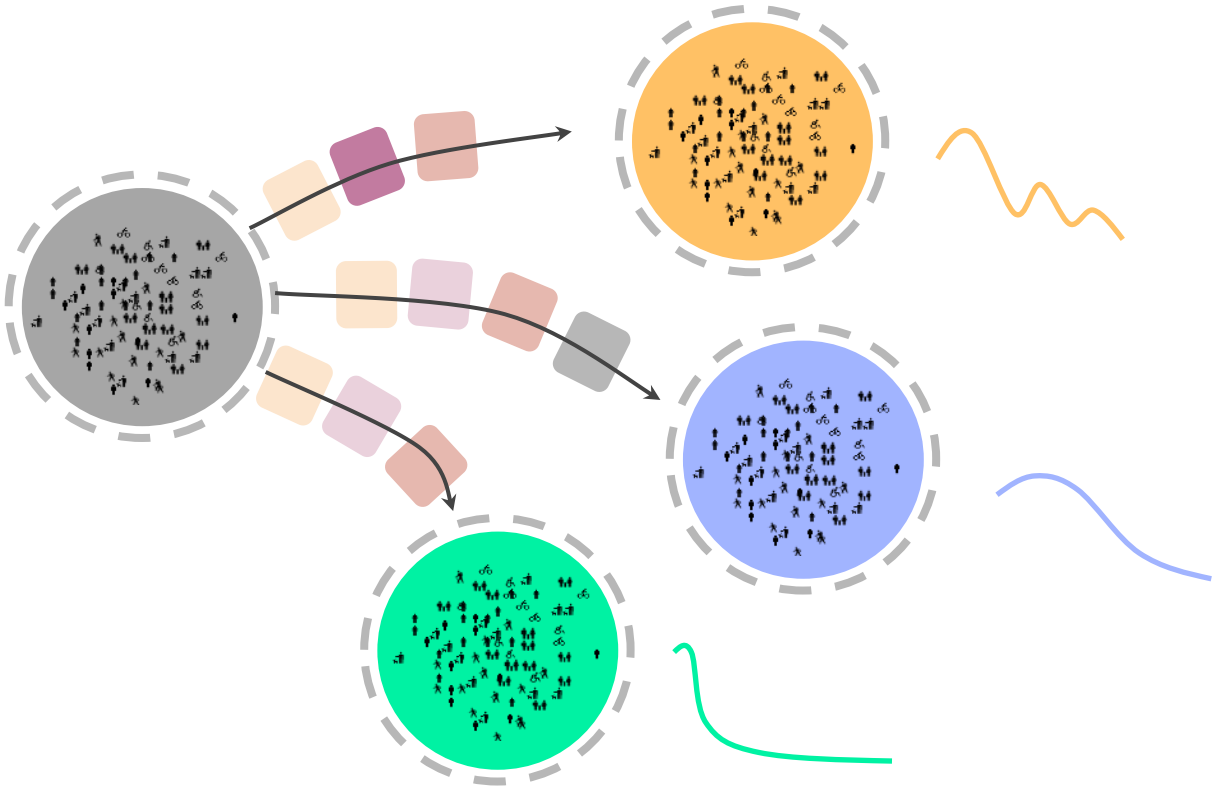
- Travel & Activity Statistics
- OD-Matrices
- MATSim inputs

(3) (Optional) Build new transport supply representation. For example reducing the frequency of public transport schedules or removing stations.

(4) (Optional) Analyse Impacts Using Transport Simulation or traditional Traffic Assignment Model, can further look to use in Economic, Utility, Commercial and Transmission models.



Use-Case B: Can Quickly Explore Many Scenarios…



PAM tooling contributions:

1. **Transform:** Read and Write Activity Plans from various common Activity and Travel data representations for use in transport models or other applications.

2. **Quick Scenarios:** Quickly build new activity and travel scenarios based on new behaviour and rule policies.

3. **Validate:** Transformations and outputs to facilitate validation of scenarios against novel data sources