



GENERATING TRAFFIC DATA FROM ORIGIN DESTINATION MATRICIES

B. KELLY

ORIGIN DESTINATION DATA

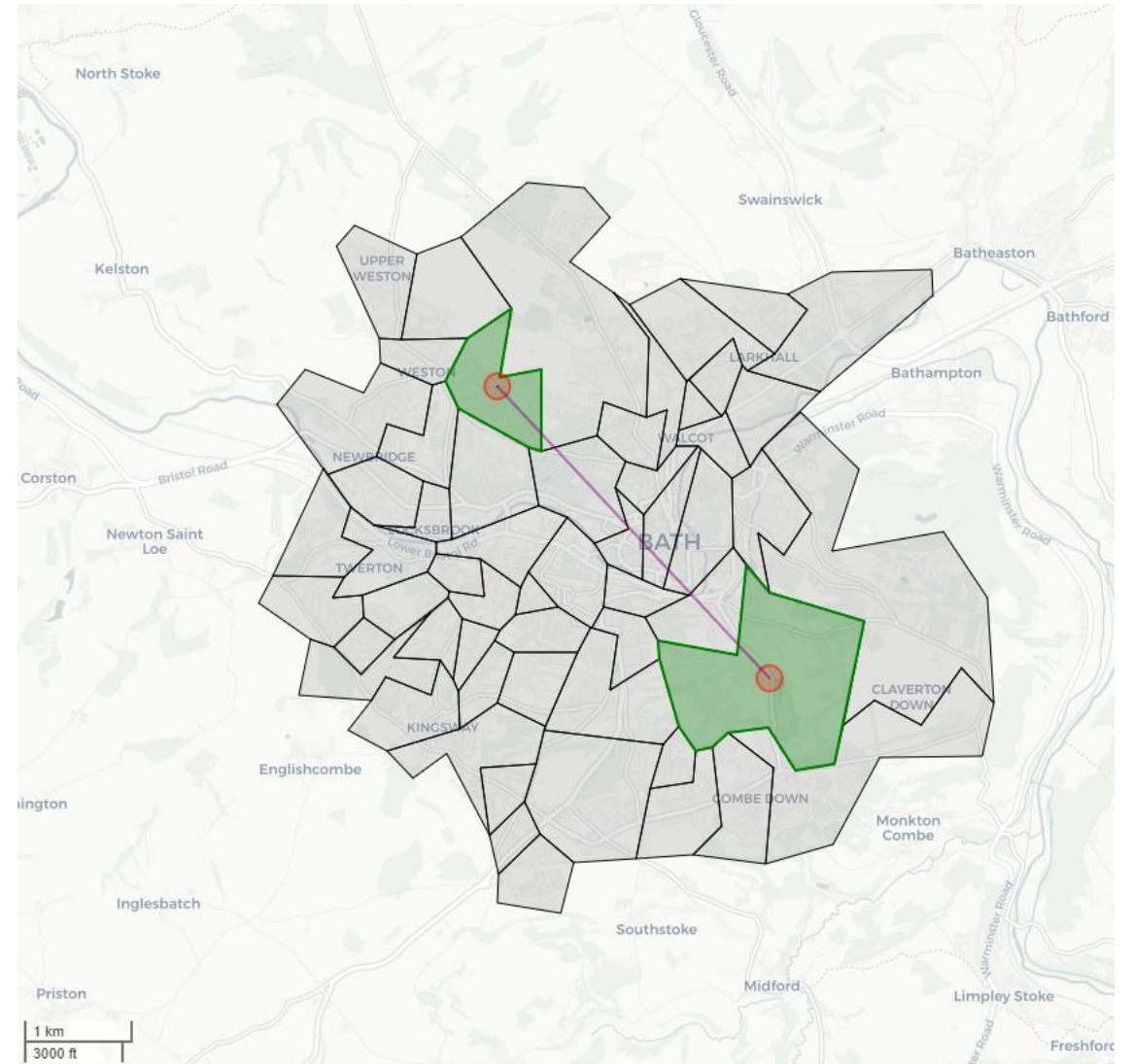
- + Available for entire country
- + Most transport models based on it
- Snapshot at one moment
- Aggregated by Zone
- Poor transparency

TIMESTEP 1

	A	B	C	D	E	F
A	22	74	25	66	87	24
B	48	42	64	52	91	33
C	21	71	18	86	80	40
D	89	85	46	55	87	76
E	54	93	47	100	79	52
F	86	56	76	68	1	27

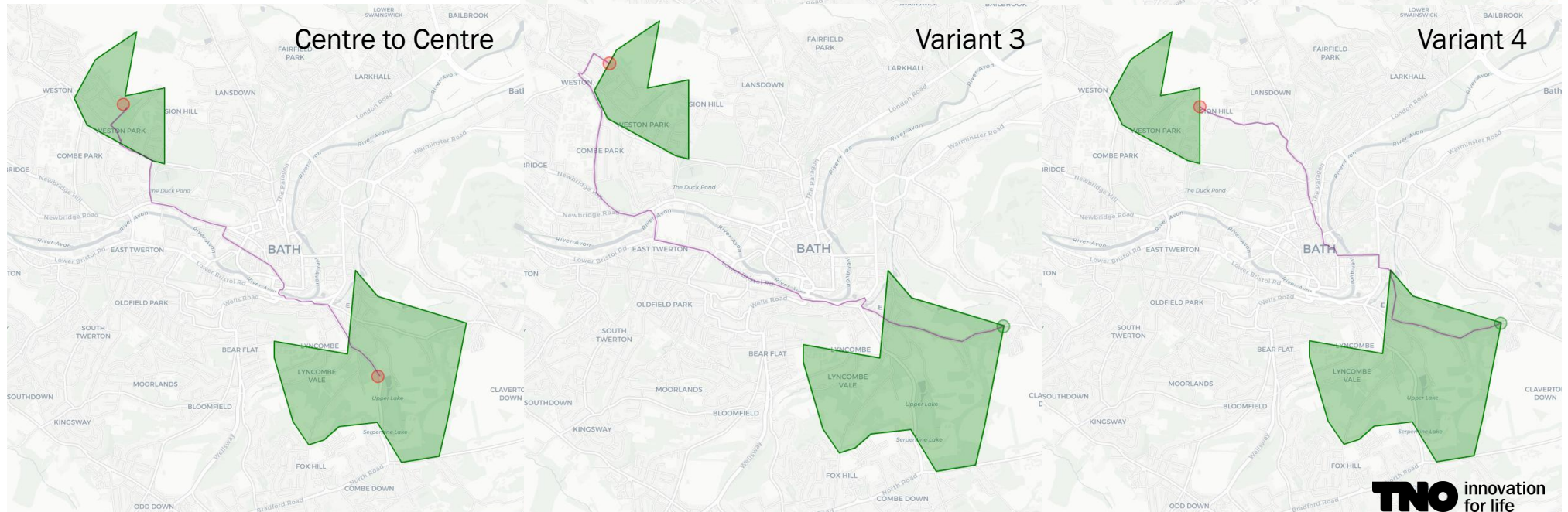
TIMESTEP 2

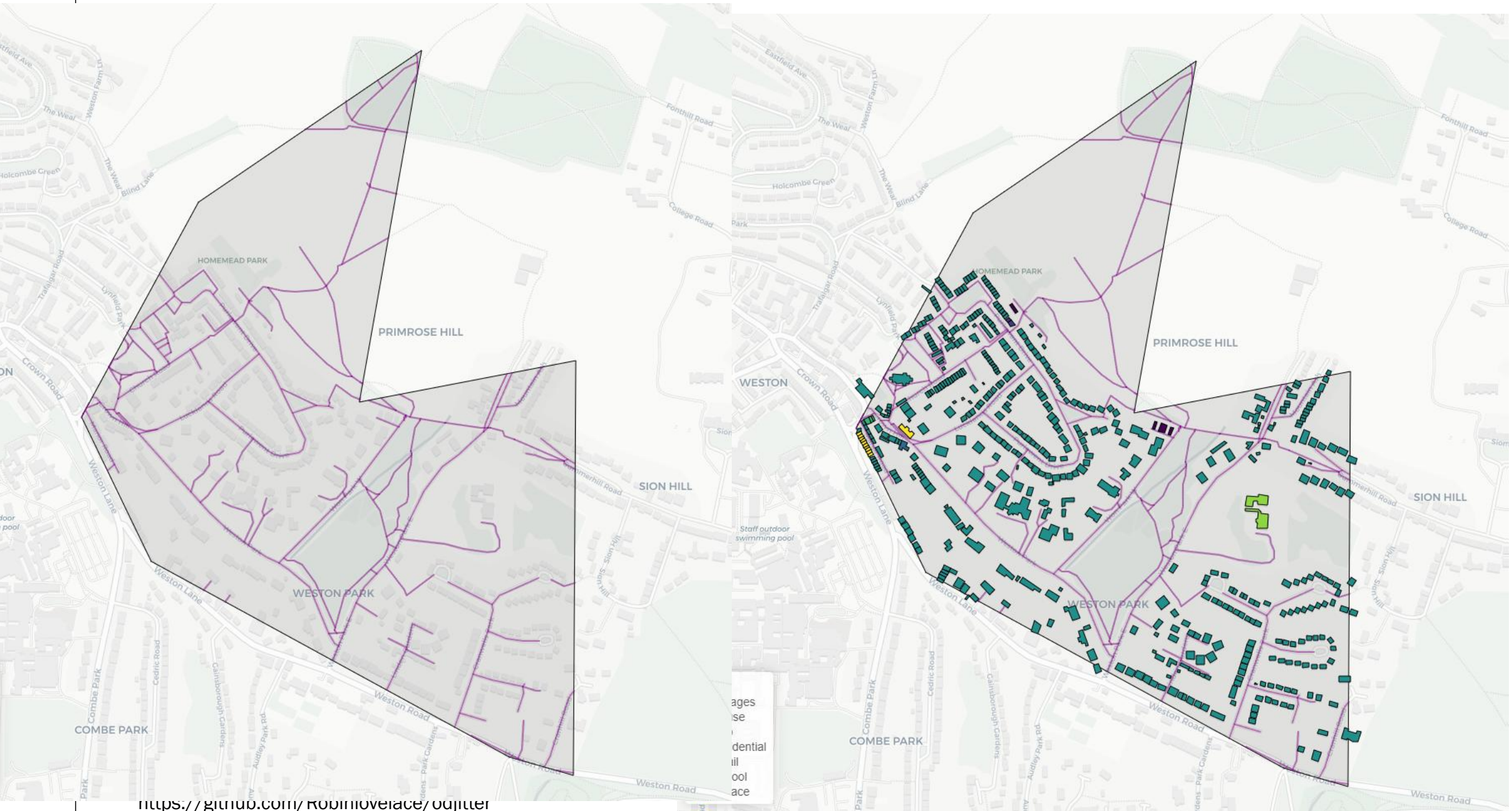
	A	B	C	D	E	F
A	71	8	90	80	82	59
B	71	34	6	41	100	66
C	27	83	24	14	71	27
D	46	88	76	74	89	71
E	95	55	75	14	47	80
F	27	31	93	76	2	89



OD JITTER

- › The start and end point within a zone has a huge effect on the route a vehicle takes
- › This changes the resulting flows on roads

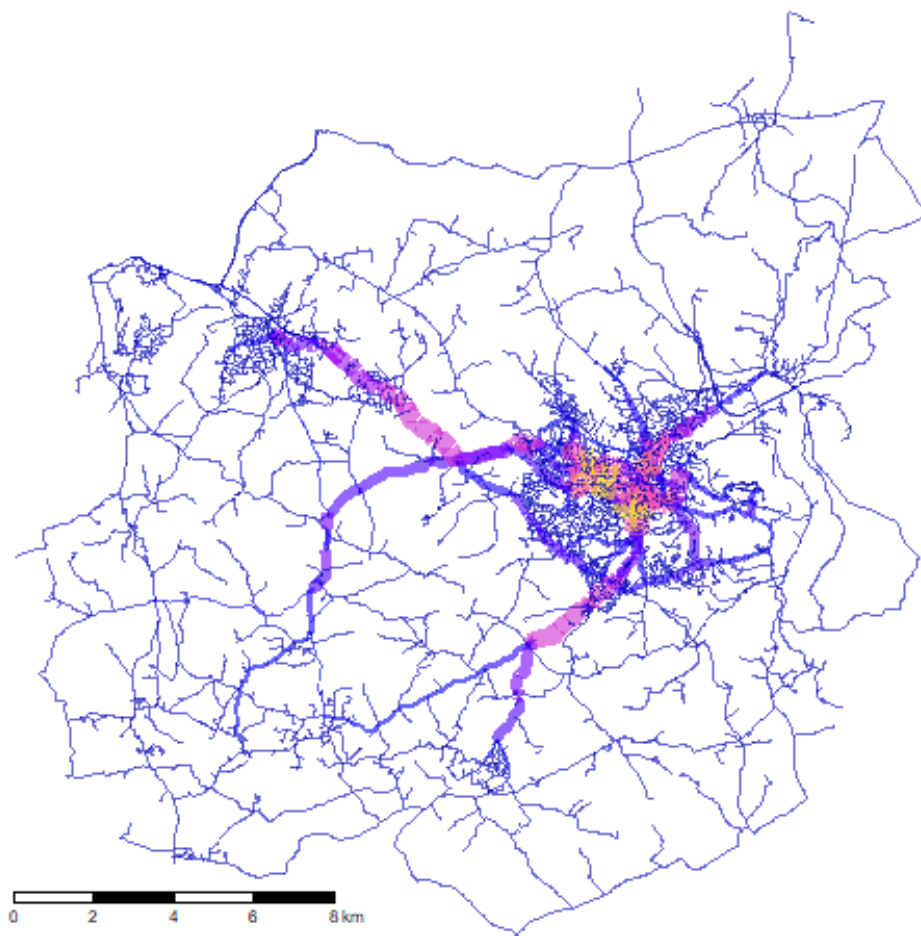




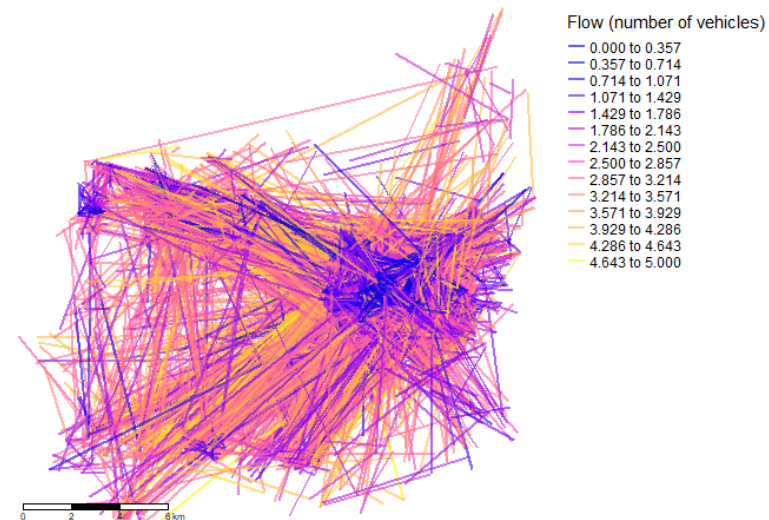
<https://github.com/RobInOvelace/oujitter>

OD JITTER

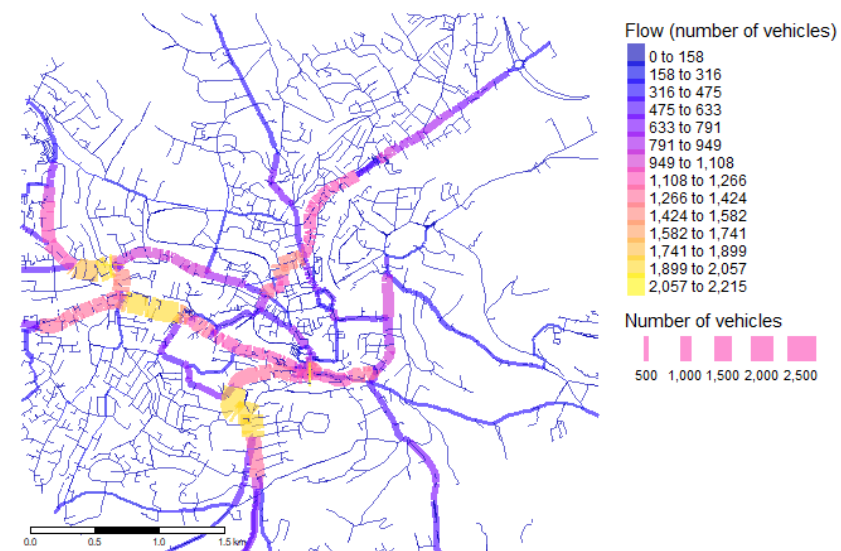
01



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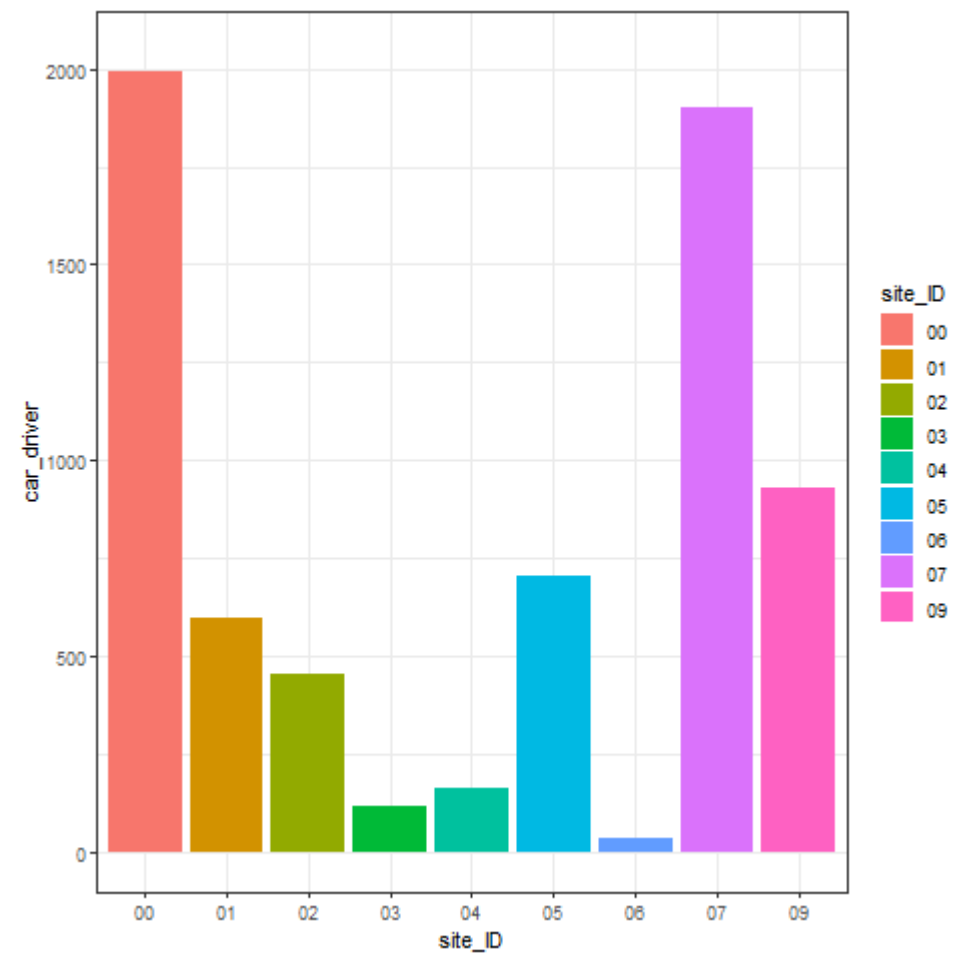
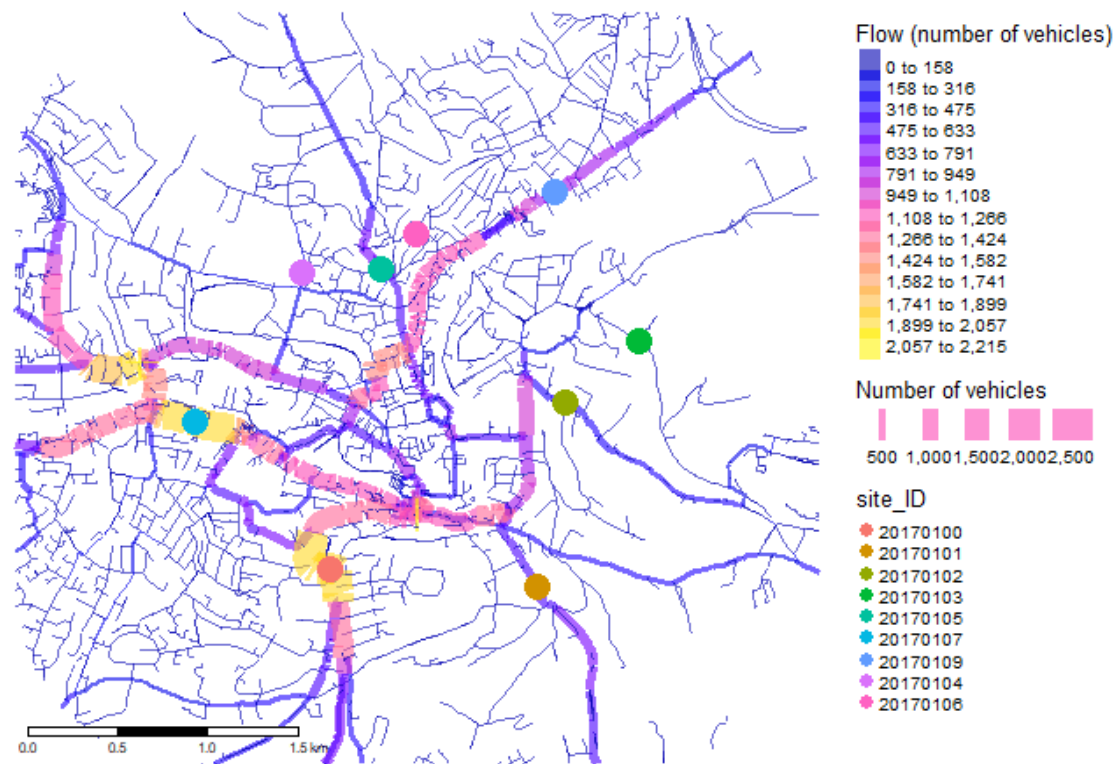


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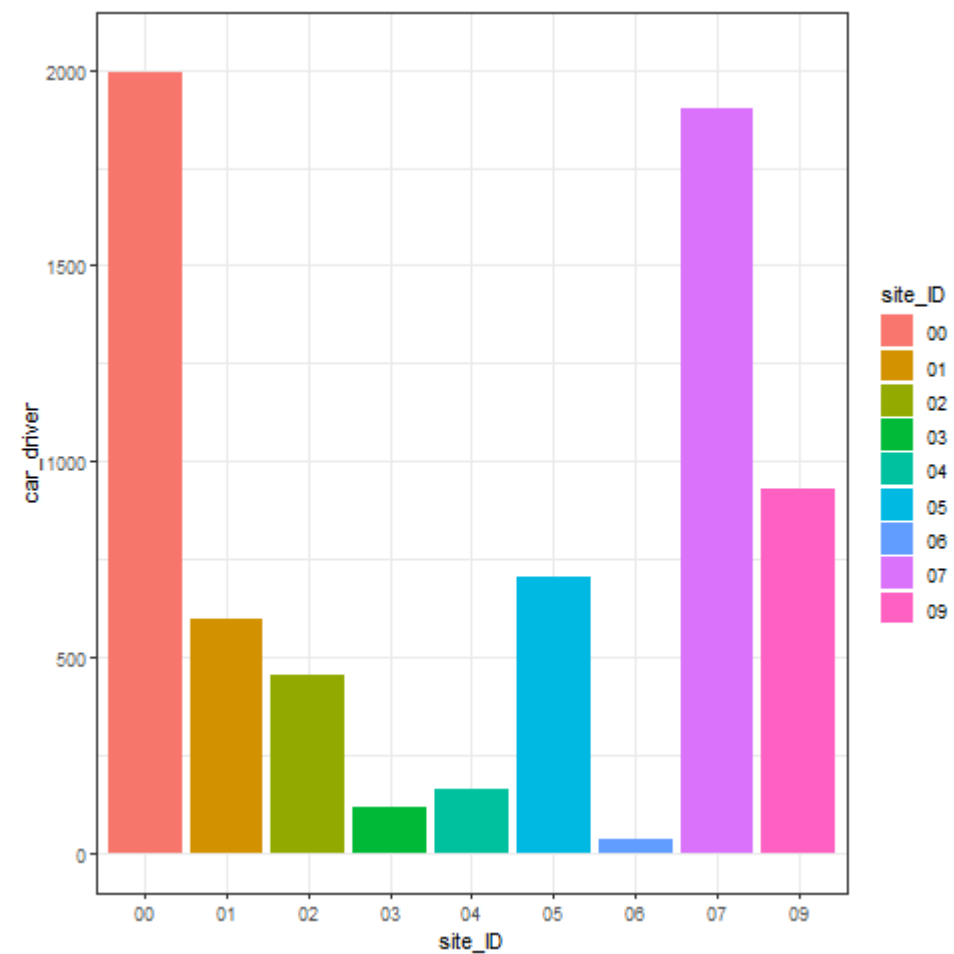
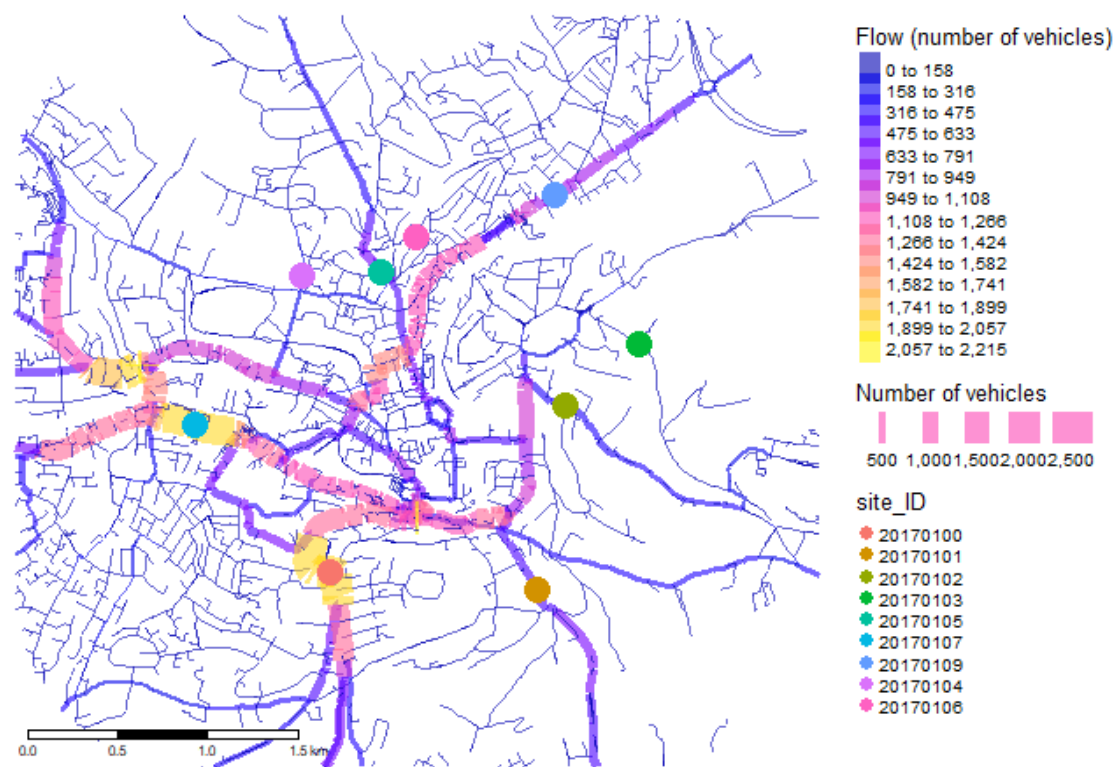


OD JITTER

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01



› EUROPEAN TRAVEL SURVEYS

1. Austria: Österreich unterwegs (Austria on the Move) - <https://www.oesterreichunterwegs.at/>
2. Belgium: BELDAM (Belgian Long Distance Mobility Survey) - <https://beldam.be/>
3. Denmark: Danish National Travel Survey (TU) - <https://www.dtu.dk/english/Service/Phonebook/Person?id=104731&tab=2>
4. Finland: Finnish National Travel Survey (HATS) - https://www.stat.fi/tup/hats/index_en.html
5. France: Enquête nationale Transports et Déplacements (ENTD) - <https://www.statistiques.developpement-durable.gouv.fr/enquete-nationale-transports-et-deplacements-entd>
6. Germany: Mobilität in Deutschland (MiD) - <https://www.mobilitaet-in-deutschland.de/>
7. Ireland: National Travel Survey (NTS) - <https://www.cso.ie/en/releasesandpublications/ep/p-nts/nationaltravelsurvey2019/>
8. Italy: Indagine nazionale sugli spostamenti delle persone (National Survey on Mobility) - <http://www.istat.it/it/archivio/206168>
9. Netherlands: Mobiliteitsonderzoek Nederland (MON) - <https://www.cbs.nl/nl-nl/onze-diensten/methoden/onderzoeksomschrijvingen/korte-onderzoeksbeschrijvingen/mobiliteitsonderzoek-nederland-mon->
10. Norway: Norwegian National Travel Survey (NRTS) - <https://www.toi.no/norwegian-national-travel-survey/>
11. Spain: Encuesta de Movilidad (Mobility Survey) - <http://www.mitramiss.gob.es/encuesta-movilidad/>
12. Sweden: RVU Sverige (Nationella resvaneundersökningen) - <https://www.trafikanalys.se/om-oss/nyhetsarkiv/nyheter/2018-08-21-nya-resultat-fran-nationella-resvaneundersokningen/>
13. United Kingdom: National Travel Survey (NTS) - <https://www.gov.uk/government/collections/national-travel-survey-statistics>

› SUMMARY

- › Develop an open access and transparent methodology that can be applied to any country in the world.
- › Gather census data from the country.
- › Apply an hourly time profile.
- › Use the OD jitter package to vary the start and end points for each hour of the year for all zones.
- › Assign routes to each combination.
- › Use the Overline function to sum the routes for each.
- › Use known points for validation (traffic count data/ANPR data/Google speed data).
- › Use the Ensemble Kalman Filter (EnKF) to find the OD distribution that best matches the known points.
- › The result is an estimate of traffic for every road in the country for each hour of each year.