Generating postcode choice sets - schematic

Stored data | During model run

OS Open Roads → Prepared and optimized for pgRouting

Circular buffer equivalent to service area distance applied to improve performance

Virtual nodes injected every 1km for edges >1.5km

1, 5, 10, 20, 30, 40 , 60, 80, 105 km station service areas

Stations data

Postcode centroids

bounding box to increase performance

Virtual nodes injected for routing, generated for nearest point on nearest edge

sql function finds first service area where postcode centroid intersects >= 10 stations

Expanded pgRouting sql functions measure distance from origin to each station

Injected virtual nodes concept

Injected virtual node

Postcode centroid

Nearest real node for routing

Holcombe Down Road

Service areas for Plymouth station

Message	Result 1	
name	crscode	distance
PAIGNTON	PGN	659
TORQUAY	TQY	3846
TORRE	TRR	5172
TOTNES	TOT	9804
NEWTON ABBOT	NTA	12585
TEIGNMOUTH	TGM	16487
DAWLISH	DWL	21040
DAWLISH WARREN	DWW	23988
IVYBRIDGE	IVY	27024
STARCROSS	SCS	27545

Query time: 0.215s   Record 1 of 10