City of Melbourne: social needs, gaps in transit

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This note explores social needs for transport, and transit provision in the City of Melbourne, using the Currie and Sendbergs (2007) methodology[1]. In Victoria, public transport is managed by the state government, although Local Government Authorities (LGAs) may have influence through planning processes, advocacy etc. However, it is unclear how much transit is supplied or how well social needs are met for each LGA. This note examines the City of Melbourne in 2021 and 2023, and is part of a series on LGAs in Greater Melbourne[2].

METHODS:

Scores for transit supply and transport needs were calculated based on the Victorian GTFS feed[3] and Australian Bureau of Statistics (ABS) data using the *gtfssupplyindex* R package[4] as per Reynolds, Currie and Qu (in drafting)[5]. Results are shown for the ABS' Statistical Area 1s (SA1s), categorized based on averages across the Melbourne Greater Capital City Statistical Area (GCCSA).

RESULTS: Social needs for transport Figure 1 compares social needs for the Rest of the Inner SA4[6] and the rest of Greater Melbourne with those for the City of Melbourne.

Figure 1: Needs in 2021 by population
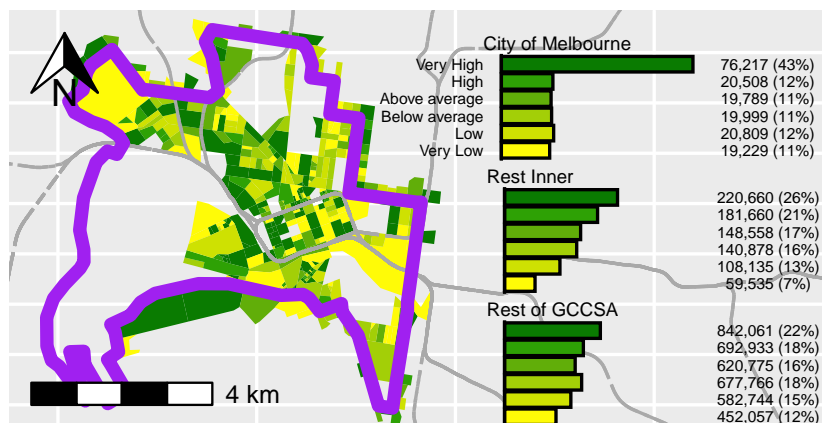
Needs were higher than the Melbourne average for 66.0% of the City of Melbourne's population, a larger share than for rest of the Inner SA4 (64.1%)[7], or elsewhere in Greater Melbourne (55.7%)[8].

Figure 2 shows the distribution of transit service in 2021 and 2023. Transit service levels were below the Melbourne average for 4.5%

[1] Graham Currie and Zed Senbergs, "Identifying Spatial Gaps in Public Transport Provision for Socially Disadvantaged Australians: The Melbourne 'Needs Gap' Study," 2007; Graham Currie, "Quantifying Spatial Gaps in Public Transport Supply Based on Social Needs," *Journal of Transport Geography* 18, no. 1 (2010): 31–41.

[2] See https://github.com/James-Reynolds/gtfssupplyindex_melbounre_LGA_2024 but lookout, I misspelled "Melbourne"

[3] Results are based on GTFS feeds for August 2021 and 2023, so may not match services run.

[4] See https://github.com/James-Reynolds/gtfssupplyindex

[5] James Reynolds, Graham Currie, and Yanda Qu, "Social Needs for Transport and Gaps in Transit Service: New GTFS Tools," *In Drafting*, 2024.

[6] LGAs: City of Melbourne, Yarra, Port Phillip, Bayeside, Glen Eira and parts of Moonee Valley, Merri-Bek, Darebin, Kingston and Monash.

[7] Differences were statistically significant ($\chi^2(5) = 63.52$, $p < .001$).

[8] Differences were statistically significant ($\chi^2(5) = 58.37$, $p < .001$).

City of Melbourne (left, 2021)
- Very High: 14,177 (80%)
- High: 22,834 (13%)
- Above average: 4,835 (3%)
- Below average: 3,969 (2%)
- Low: 3,220 (2%)
- Very Low: 908 (1%)
- Zero Supply: 0 (0%)

Rest Inner
- 209,383 (24%)
- 197,886 (23%)
- 144,462 (17%)
- 199,534 (23%)
- 80,911 (9%)
- 25,744 (3%)
- 1,655 (0%)

Rest of GCCSA
- 68,465 (2%)
- 205,059 (5%)
- 277,595 (7%)
- 956,280 (25%)
- 1,079,227 (28%)
- 1,106,315 (29%)
- 185,174 (5%)

City of Melbourne (right, 2023)
- Very High: 332 (78%)
- High: 58 (14%)
- Above average: 13 (3%)
- Below average: 12 (3%)
- Low: 7 (2%)
- Very Low: 3 (1%)
- Zero Supply: 0 (0%)

Rest Inner
- 495 (25%)
- 445 (22%)
- 330 (17%)
- 448 (23%)
- 190 (10%)
- 74 (4%)
- 5 (0%)

Rest of GCCSA
- 162 (2%)
- 485 (5%)
- 646 (7%)
- 2,222 (24%)
- 2,484 (27%)
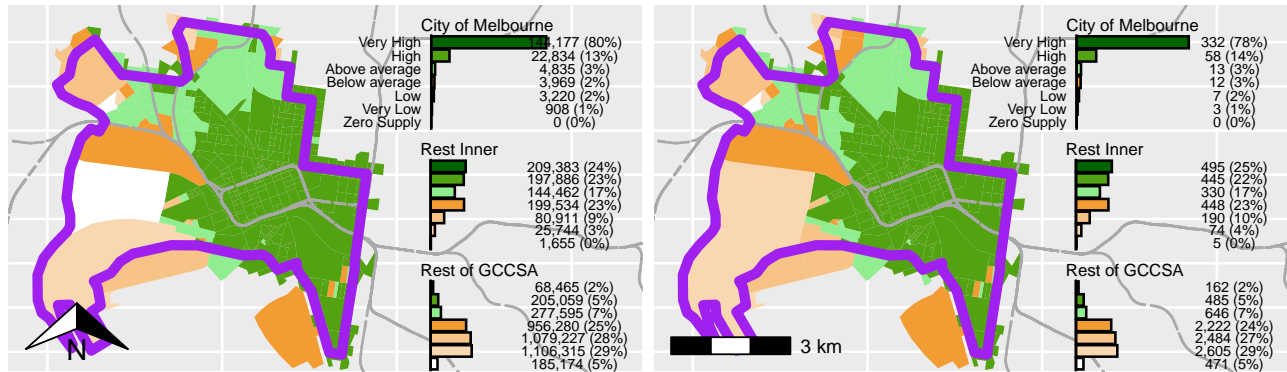- 2,605 (29%)
- 471 (5%)

Figure 2: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

of City of Melbourne residents in 2021, which is less than for the rest of the Inner SA4 (35.8%)[9] or the rest of Melbourne (85.8%)[10]. The distribution of transit supply, categorised with respect to the Melbourne average, appears similar in 2023 (Figure 2, right). Figure 3 directly compares 2021 and 2023 transit service levels.

[9] Differences were statistically significant ($\chi^2(6) = 456.44$, $p < .001$).

[10] Differences were statistically significant ($\chi^2(6) = 5090.57$, $p < .001$).

	All City of Melbourne SA1s	Rest Inner	Rest of GCCSA
Not served in 2023	0 (0%)	1,655 (0%)	180,796 (5%)
Reduced 10% or more	28,228 (16%)	41,310 (5%)	121,151 (3%)
Reduced 3 to 10%	29,300 (16%)	58,385 (7%)	261,845 (7%)
Reduced 1 to 3%	14,216 (8%)	58,460 (7%)	216,567 (6%)
Within 1%	59,143 (33%)	432,308 (50%)	1,765,224 (46%)
Increased 1 to 3%	18,281 (10%)	135,924 (16%)	559,303 (14%)
Increased 3 to 5%	6,655 (4%)	62,685 (7%)	216,037 (6%)
Increased 5 to 10%	12,401 (7%)	49,177 (6%)	167,032 (4%)
Increased 10 to 30%	9,607 (5%)	16,292 (2%)	210,795 (5%)
Increased 30%+ or new	2,112 (1%)	3,379 (0%)	179,365 (5%)

High need, low supply SA1s

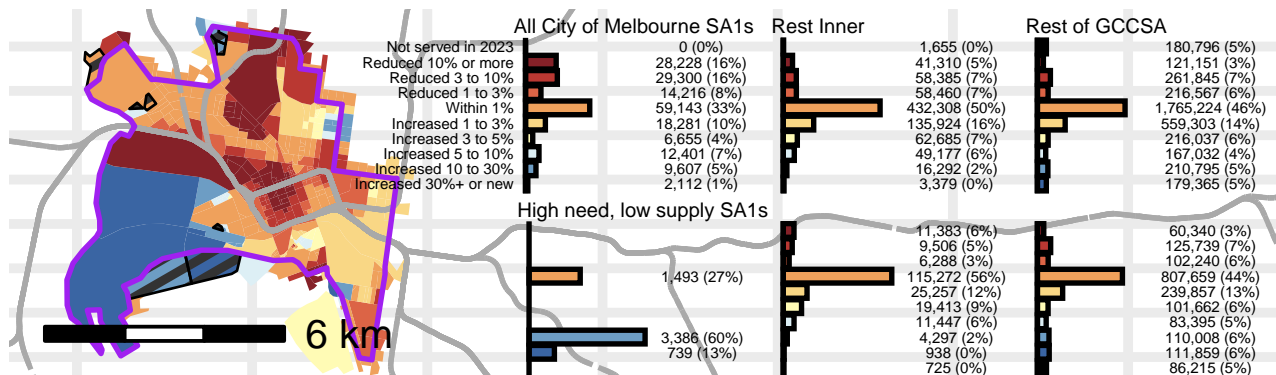|		Rest Inner	Rest of GCCSA
		11,383 (6%)	60,340 (3%)
		9,506 (5%)	125,739 (7%)
		6,288 (3%)	102,240 (6%)
	1,493 (27%)	115,272 (56%)	807,659 (44%)
		25,257 (12%)	239,857 (13%)
		19,413 (9%)	101,662 (6%)
		11,447 (6%)	83,395 (5%)
	3,386 (60%)	4,297 (2%)	110,008 (6%)
	739 (13%)	938 (0%)	111,859 (6%)
		725 (0%)	86,215 (5%)

Figure 3: Transit service change 2021 to 2023. SA1s with needs above, but supply below, average highlighted in black.

Transit levels increased by 1% or more by 2023 in SA1s that were home to 27.3% of City of Melbourne residents in 2021, which is lower than for the rest of Inner SA4 (31.1%)[11] or the rest of Greater Melbourne (34.4%)[12]. ONly 3.1% of the City of Melbourne population lived in SA1s with *needs above, but supply below* the Melbourne averages in 2021[13]. However, for 73.4% of this cohort service levels increased 1% or more, a higher proportion than for the similar cohorts in the rest of the Inner SA4 (30.0%)[14], and elsewhere (35.4%)[15].

Overall, City of Melbourne residents appear less likely to have had transit service levels below Melbourne's average, and more likely to have seen increases, including for those with larger needs-gaps.

[11] Differences were statistically significant ($\chi^2(9) = 149.77$, $p < .001$).

[12] Differences were statistically significant ($\chi^2(9) = 285.96$, $p < .001$).

[13] Shown with black in Figure 3. This compares to 23.8% of Inner SA4 residents and 47.2% of those elsewhere in Melbourne.

[14] Differences were statistically significant (Fisher test p = 5e-04).

[15] Differences were statistically significant (Fisher test p = 2.64e-11).