City of Melbourne: social needs, gaps in transit

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Minimal amounts of public transport service are provided in many places to give those who cannot drive themselves at least some independent motorised mobility.[1] In Victoria the State Government manages transit, although Local Government Authorities (LGAs) may have some influence through planning processes, advocacy etc. However, not much is known about gaps between social needs and transit supply across each LGA. This note reports needs-gaps in the City of Melbourne, using the Currie and Sendbergs (2007) methodology[2] and is part of a series examining each LGA in Greater Melbourne[3].

Methods and results

This note adopts a similar methodology to Reynolds, Currie and Qu (in drafting)[4], mapping transit Supply Index (SI) scores using the *gtfssupplyindex* R package[5] to process the Victoria GTFS feed[6], and a composite needs indicator based on Australian Bureau of Statistics (ABS) data. The SI is based on the frequency of service and how much of an area is within walking distance of stops/stations[7]. Results are reported for the ABS' Statistical Area 1s (SA1s) that are part of the City of Melbourne in 2021 and 2024, with comparisons made to the rest of the Inner SA4[8] and the rest of the Greater Melbourne Greater Capital City Statistical Area (GCCSA). SI and composite needs scores are categorized into seven groups based on the Melbourne GCCSA average score.

[1] Graham Currie, "Managing on-Road Public Transport," in *Handbook on Transport and Urban Planning in the Developed World*, ed. Michiel C. J. Bliemer, Corinne Mulley, and Claudine J. Moutou (Cheltenham, UK : Edward Elgar Publishing, 2016), 471–97, doi:10.4337/9781783471393.

[2] Graham Currie and Zed Senbergs, "Identifying Spatial Gaps in Public Transport Provision for Socially Disadvantaged Australians: The Melbourne 'Needs Gap' Study," 2007, `https://www.semanticscholar.org/paper/9759acfacc8f91558157a7da8b85ad1847f35173`; Graham Currie, "Quantifying Spatial Gaps in Public Transport Supply Based on Social Needs," *Journal of Transport Geography* 18, no. 1 (2010): 31–41, doi:`https://doi.org/10.1016/j.jtrangeo.2008.12.002`.

[3] See `https://github.com/James-Reynolds/gtfssupplyindex_melbounre_LGA_2024`

[4] Forthcoming hopefully

[5] James Reynolds, "Gtfssupplyindex," 2024, `https://github.com/James-Reynolds/gtfssupplyindex`.

[6] Note, therefore, that results represent what is shown in the GTFS feed, which may not exactly match services pro-

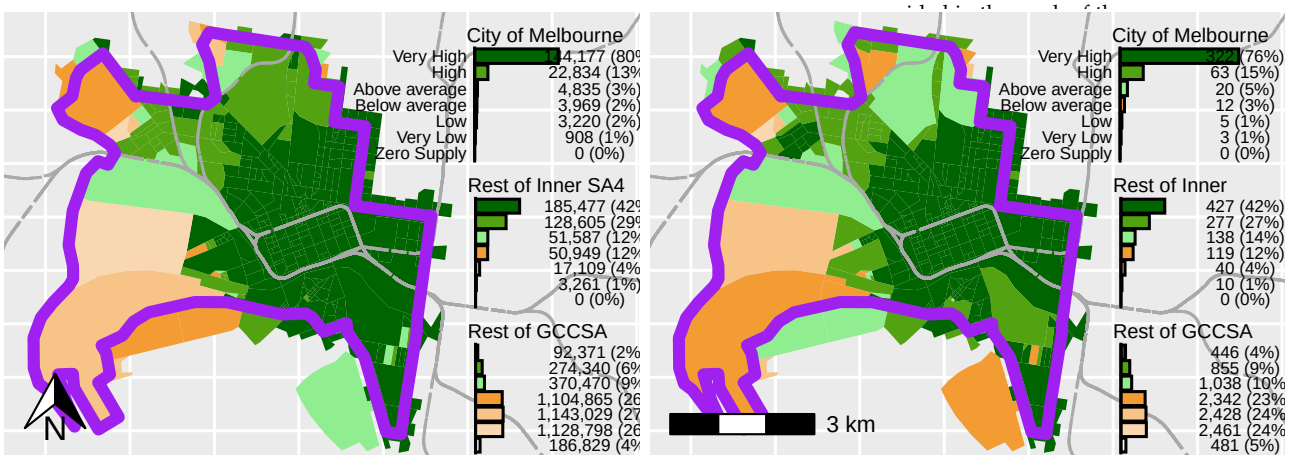

Figure 1: Transport Supply by population in 2021 (left) and by SA1 in 2024 (right)

Figure 1 (left) shows that in 2021 most of the City of Melbourne population lived in SA1s[9] with Very High transit supply, more so than for the rest of the Inner SA4 or the rest of Greater Melbourne. Figure 1 (right) shows a similar pattern in the share of SA1s in 2024, with only the Port of Melbourne, Albert Park and a few other areas have less than average supply.

[9] There is a statistically significant difference in the share of SA1s in each Transport Supply category in 2021 between those SA1s within or intersecting the City of Melbourne and the rest of the Inner SA4 ($\chi^2(5) = 172.67$, $p < .001$) and between the Inner SA4 and the rest of the Greater Mel-

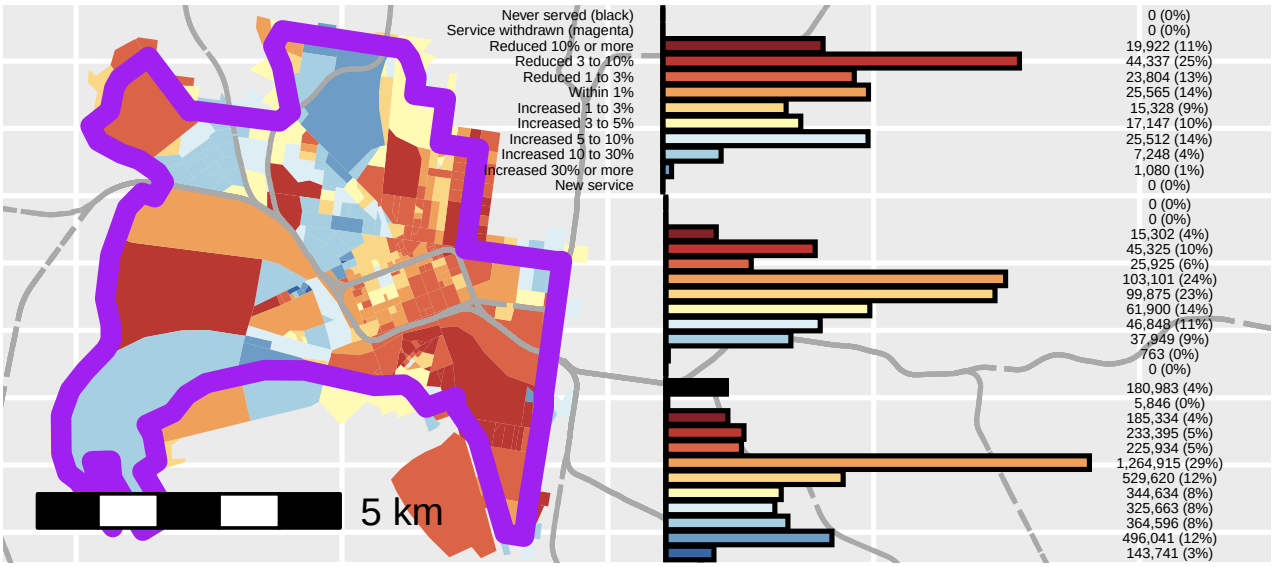

Figure 2: Change in SI score between 2021 and 2024 by SA1 and population

Figure 2 indicates SI scores fell (by more than 1%) for a greater share of the population between 2021 and 2024 in the City of Melbourne than in the rest of the Inner SA4 or Melbourne GCCSA[10].

[10] These differences were statistically significant ($\chi^2(11) = 386.34$, $p < .001$,

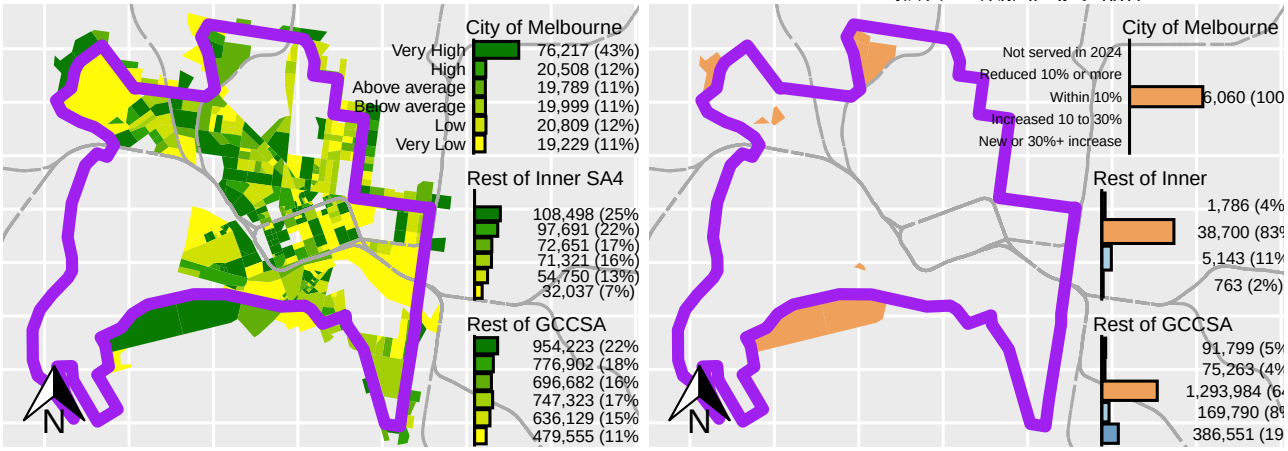

Figure 3: Transport by SA1 and population in 2021 (left) and change in SI by 2024 for those SA1s with needs above average but supply below average in 2021 (by 2021 populations)(right)

Figure 3 (left) shows social needs for transport in the City of Melbourne, and how a greater proportion of the 2021 population had

Very High needs than for the rest of the Inner SA4 or the Melbourne GCCSA[11]. Figure 3 (right) shows transport supply categories for *only* those SA1s with Very High needs. All of the SA1s with Very High needs in the City of Melbourne have at least a Low supply of transit, while this is not the case for the rest of the Inner SA4 or Greater Melbourne[12]

Overall,

[11] These differences were statistically significant ($\chi^2(5) = 54.15$, $p < .001$, $\chi^2(5) = 56.43$, $p < .001$).

[12] These differences...