# *City of Monash: social needs, gaps in transit*

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This note explores gaps between social needs for transport and the amount of transit 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 some influence on service levels through planning processes, advocacy etc. However, not much is known about how much transit is supplied or whether social needs for transport are met within each LGA. This note examines the City of Monash in 2021 and 2023, and is part of a series examining each LGA in Greater Melbourne[2].

Methods: A Transit Supply Index (SI) and a composite social needs indicator were calculated for the Australian Bureau of Statistics (ABS) Statistical Area 1 (SA1s), as per Reynolds, Currie and Qu (in drafting)[3], using the *gtfssupplyindex* R package[4] to process the Victorian GTFS feed[5]. SI scores depend on service frequency and how much of a SA1 is within walking distance of stops and stations[6]. Results are categorized into seven groups based on the average scores for SA1s across the Melbourne Greater Capital City Statistical Area (GCCSA).

Results: In 2021 almost three-quarters (73%) of Monash residents lived in SA1s with service levels below average (Figure 1, left).

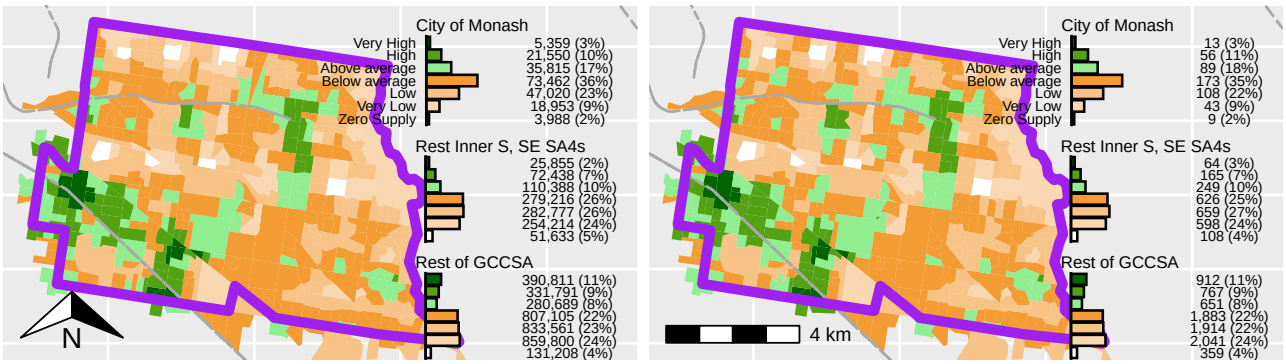


Figure 1: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

Differences with the Rest of the Inner South and South East SA4s were statistically significant[7] as were differences with the rest of Melbourne[8]. More SA1s had transit service above the Melbourne average in Monash than across the rest of the Inner South and South East SA4s or across the rest of the GCSSA.

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

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

[5] Note that results represent what is in the GTFS feed for August 2021 and 2023, which may not match services provided.

[6] 400m for tram and bus, 800m for train.

[7] Covering the City of Glen Eira, Bayside, Greater Dandenong, City of Monash, Kingston, Casey, (almost all of) Cardinia and parts of Stonnington. 2021: $\chi^2(6) = 95.10$, $p < .001$), 2023: $\chi^2(6) = 105.63$, $p < .001$

[8] 2021: $\chi^2(6) = 163.83$, $p < .001$, 2023:$\chi^2(6) = 182.52$, $p < .001$.

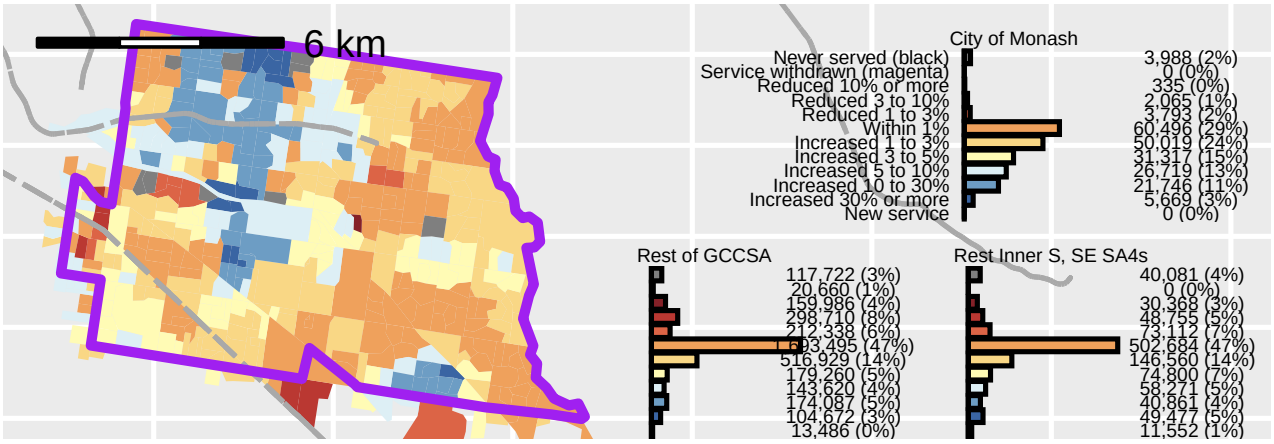


Figure 2: Change in SI score between 2021 and 2023 by SA1 and population

However, coverage and frequency of transit appears to have decreased by 2023 for more of those in the City of Monash[9] than in other parts of Melbourne, as shown in Figure 2.

[9] Differences are statistically significant with the South East SA4 ($\chi^2(10) = 221.10$, $p < .001$) and the rest of Melbourne ($\chi^2(11) = 343.26$, $p < .001$)

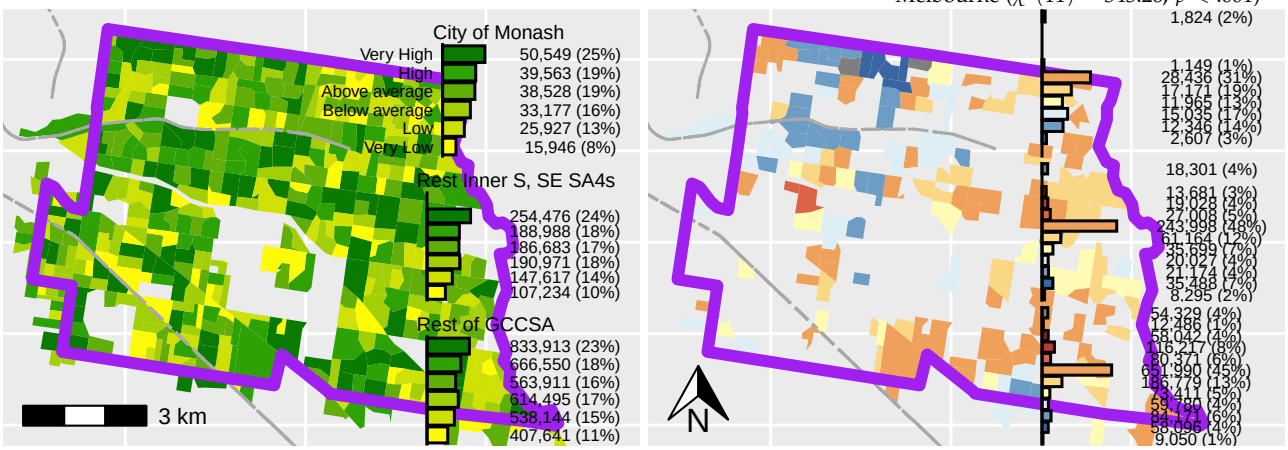


Figure 3: Needs by 2021 population (left) and change in SI to 2023 for those SA1s with needs above average, but below average supply (by 2021 populations right)

Social needs for transport in the City of Monash in 2021 (Figure 3, left) were similar to those of the rest of the Inner South and South East SA4s[10] but greater than those elsewhere in Greater Melbourne[11]. 43.9% of City of Monash residents had above average social needs for transport but below average transit supply[12]. Figure 3, right, shows how transit service levels changed between 2021 and 2023 for those residents. It appears a greater proportion of those with larger needs-gaps in Monash saw increases than elsewhere[13]

Overall,

[10] Differences with the rest of the South East SA4 were not statistically significant ($\chi^2(5) = 5.15$, $p = .397$).

[11] Differences with the rest of GCCSA were statistically significant ($\chi^2(5) = 13.22$, $p = .021$).

[12] compared with 46.8% in the rest of the South East SA4 and 39.7% across the rest of Melbourne.

[13] Rest of Inner South and South East SA4s: $\chi^2(10) = 104.91$, $p < .001$, Rest of the GCCSA: $\chi^2(11) = 126.60$, $p < .001$