

Melbourne (Northern Metropolitan) State Electoral Division: social needs, gaps in transit

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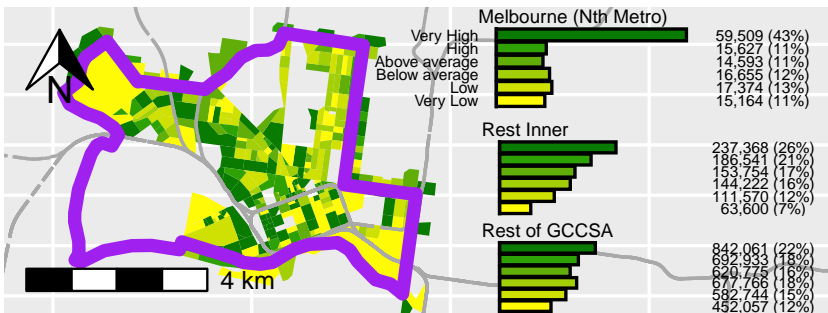
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This note explores social needs for transport, and transit provision in the Melbourne (Northern Metropolitan) State Electoral Division, using the Currie and Sendbergs (2007) methodology¹. In Victoria, public transport is managed by the state government, formed from amongst Members of Parliament elected to represent individual State Electoral Divisions (seats). However, it is unclear how much transit is supplied or how well social needs for transport are met within each seat. This note examines the Melbourne (Northern Metropolitan) State Electoral Division in 2021 and 2023, and is part of a series examining transit social needs-gaps in Greater Melbourne².

METHODS:

Scores for transit supply and transport needs were calculated based on the Victorian GTFS feed³ and Australian Bureau of Statistics (ABS) data using the *gtfssupplyindex* R package⁴ 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: Figure 1 compares social needs for the Rest of the Inner SA4 and the rest of Greater Melbourne with those for the Melbourne (Northern Metropolitan) State Electoral Division.



Needs were higher than the Melbourne average for 64.6% of the Melbourne (Northern Metropolitan) State Electoral Division's population. This share was similar to the rest of the Inner SA4 (64.4%)⁶, but higher than among those elsewhere in Greater Melbourne (55.7%)⁷.

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_melbourne_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.

Figure 1: Needs in 2021 by population, with suburban railways shown in grey

⁶ Differences were statistically significant ($\chi^2(5) = 49.58, p < .001$).

⁷ Differences were statistically significant ($\chi^2(5) = 46.07, p < .001$).

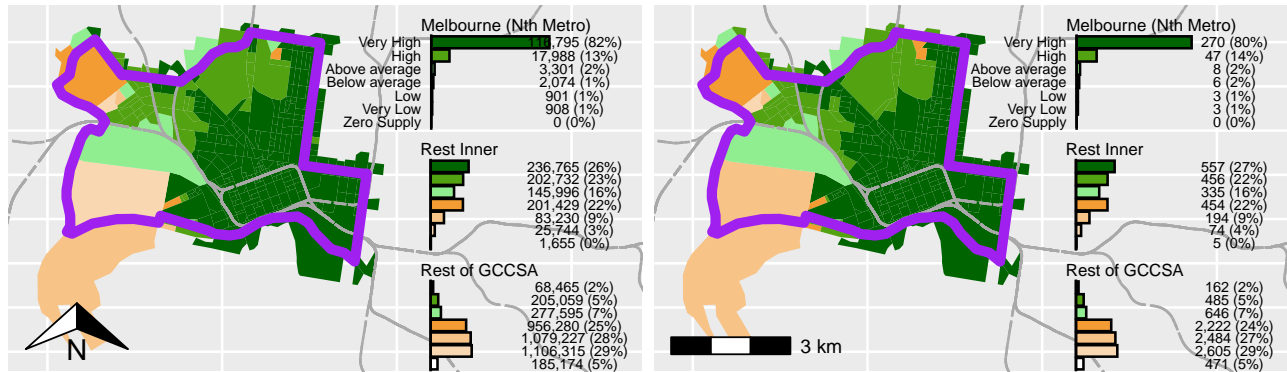


Figure 2: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

Figure 2 shows the distribution of transit service in 2021 and 2023. Service levels were below the Melbourne average for 2.7% of Melbourne (Nth Metro) residents in 2021, which is less than for the rest of the Inner SA4 (34.8%)⁸ or the rest of Melbourne (85.8%)⁹. 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 service levels.

⁸ Differences were statistically significant ($\chi^2(6) = 381.74, p < .001$).

⁹ Differences were statistically significant ($\chi^2(6) = 4848.49, p < .001$).

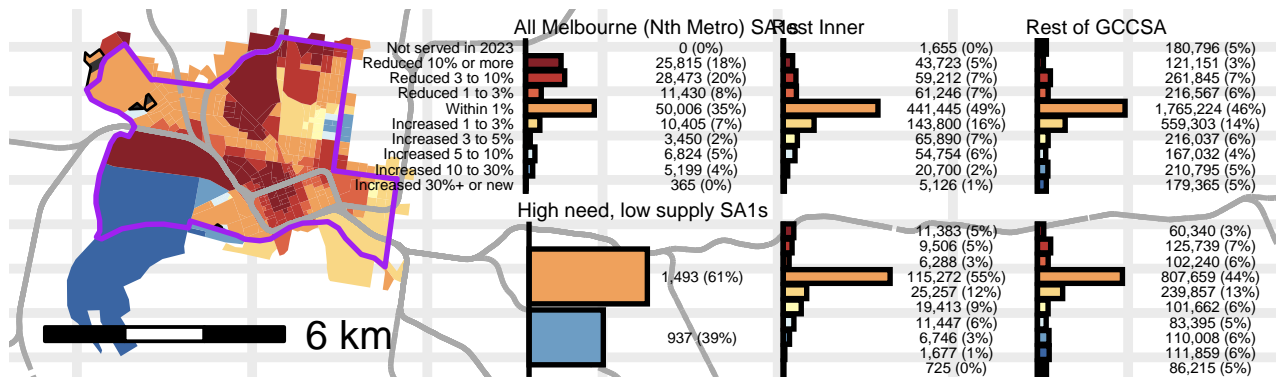


Figure 3: Transit service change 2021 to 2023. SA1s with needs above, but supply below, average highlighted in black.

¹⁰ Differences were statistically significant ($\chi^2(9) = 168.16, p < .001$).

¹¹ Differences were statistically significant ($\chi^2(9) = 338.15, p < .001$).

¹² Shown with black in Figure 3. This compares to 23.1% of Inner SA4 residents and 47.2% of those elsewhere in Melbourne.

¹³ Differences were statistically significant between the Melbourne (Nth Metro) seat and parts of Greater Melbourne outside of the Inner SA1 (Fisher test $p = 8.79e-09$). However, there were no statistically significant differences between the Melbourne (Nth Metro) seat and the rest of the Inner SA4 (Fisher test $p = 0.109$).

Transit levels increased by 1% or more by 2023 in SA1s that were home to 18.5% of Melbourne (Nth Metro) residents in 2021, which is lower than for the rest of Inner SA4 (32.3%)¹⁰ or the rest of Greater Melbourne (34.4%)¹¹. Only 1.7% of the Melbourne (Nth Metro) population lived in SA1s with *needs above, but supply below* the Melbourne averages in 2021¹². However, for 38.6% of this cohort service levels increased 1% or more, a higher proportion than for the similar cohort living elsewhere in Melbourne but outside the Inner SA1 (35.4%)¹³.

Overall, Melbourne (Nth Metro) residents appear less likely to have had transit service levels below Melbourne's average, but also less likely to have seen increases in service between 2021 and 2023.