

Williamstown (Western Metropolitan) State Electoral Division: social needs, gaps in transit

Dr James Reynolds

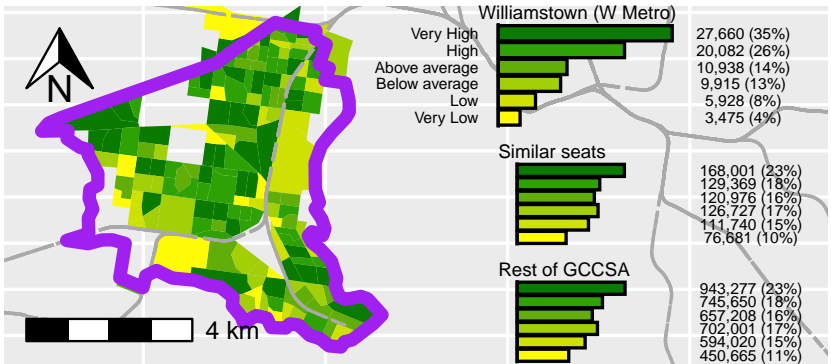
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This note is part of a series examining transit social needs-gaps in Greater Melbourne¹. In Victoria, public transport is the responsibility of the state government, which is formed from among Members of Parliament elected to represent individual State Electoral Divisions (seats). However, it is unclear how much transit is supplied or how well social needs for transport are met within each seat. Using the Currie and Sendbergs (2007) methodology², this note explores social needs for transport, and transit provision in 2021 and 2023, in the Williamstown (Western Metropolitan) State Electoral Division,

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 similarly located seats⁶, and for the rest of Greater Melbourne with those for the Williamstown (Western Metropolitan) State Electoral Division.



Needs were higher than the Melbourne average for 75.2% of the Williamstown (Western Metropolitan) State Electoral Division's population. This share was higher than among similarly located seats (57.0%)⁷ and the rest of Greater Melbourne (57.3%)⁸.

¹ See <https://tinyurl.com/4rctaxfc>



² 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.

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 Altona, Footscray, St Albans, Niddrie, Essendon, Brunswick, Pascoe Vale and Broadmeadows

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

⁷ Differences were statistically significant ($\chi^2(5) = 31.43, p < .001$)

⁸ Differences were statistically significant ($\chi^2(5) = 36.19, p < .001$).

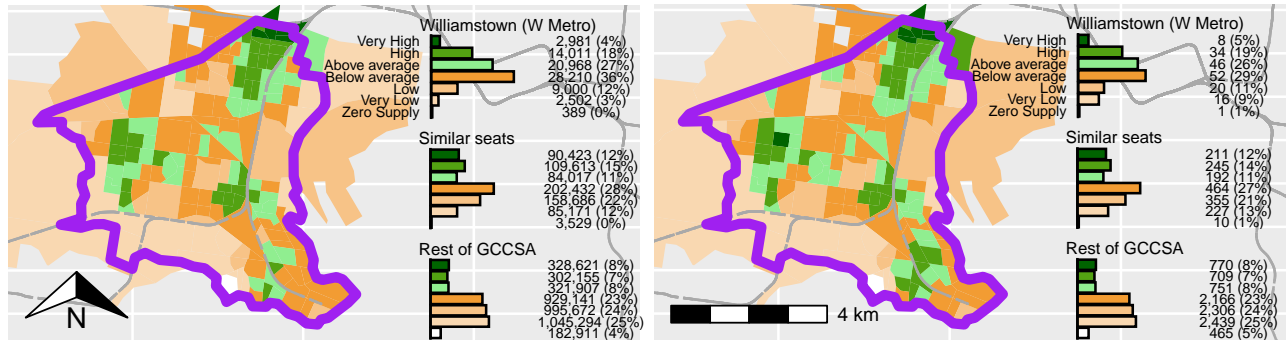


Figure 2: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

Figure 2 shows the distribution of transit service in 2021 and 2023. Service levels were below the Melbourne average for 51.4% of Williamstown (W Metro) residents in 2021, which is less than for similarly located seats (61.3%)⁹ or the rest of Melbourne (76.8%)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 service levels.

⁹ Differences were statistically significant ($\chi^2(6) = 48.36, p < .001$).

¹⁰ Differences were statistically significant ($\chi^2(6) = 134.76, p < .001$).

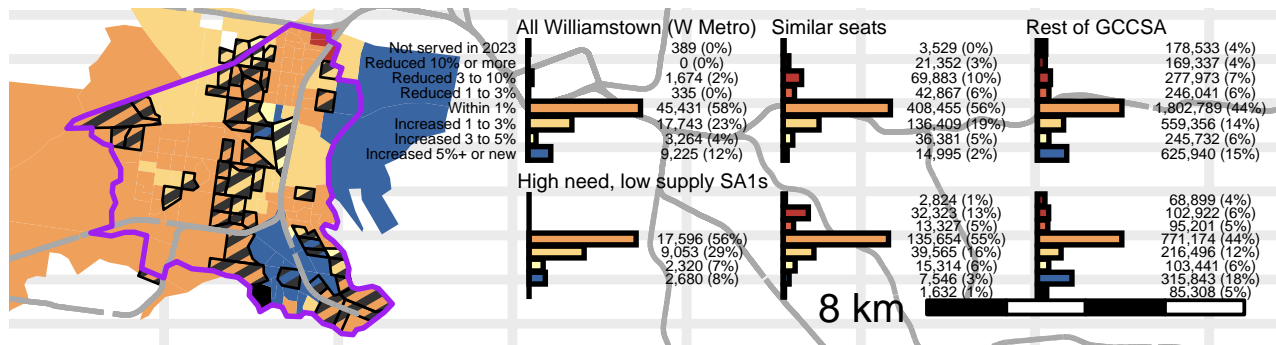


Figure 3: Transit service change 2021 to 2023. SA1s with needs above, but supply below, average highlighted in black.

Transit levels increased by 1% or more by 2023 in SA1s that were home to 38.7% of Williamstown (W Metro) residents in 2021, which is a larger share than for similarly located seats (25.6%)¹¹ or the rest of Greater Melbourne (34.9%)¹². 40.5% of the Williamstown (W Metro) population lived in SA1s with *needs above, but supply below* the Melbourne averages in 2021¹³. However, for 44.4% of this cohort service levels increased 1% or more, a higher proportion than for the similar cohort living in similarly located seats (25.2%)¹⁴ or the rest of Greater Melbourne (36.1%)¹⁵.

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

¹¹ Differences were statistically significant ($\chi^2(7) = 100.56, p < .001$).

¹² Differences were statistically significant ($\chi^2(7) = 47.98, p < .001$).

¹³ Shown with black in Figure 3. This compares to 33.8% of residents of similarly located seats and 42.8% of those elsewhere in Melbourne.

¹⁴ Differences were statistically significant (Fisher test $p = 7.72e-06$).

¹⁵ Differences were statistically significant (Fisher test $p = 8.69e-07$).