

Ivanhoe (Eastern Metropolitan) State Electoral Division: social needs, gaps in transit

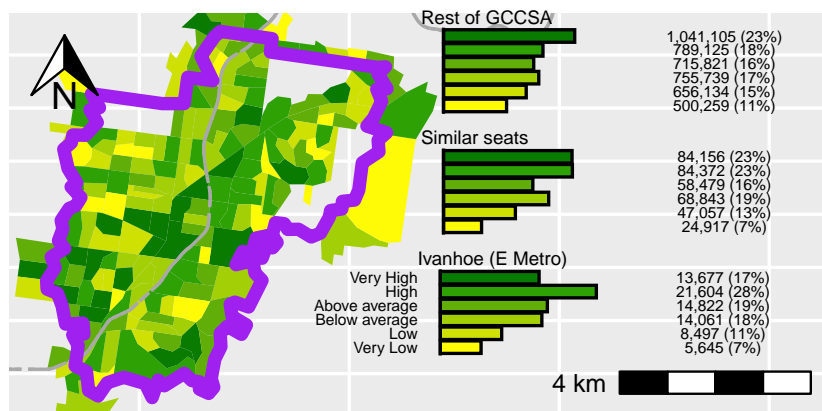
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This note is part of a series examining transit social needs-gaps in Greater Melbourne¹. In Victoria, public transport is the responsibility of the state government, which is formed from among Members of Parliament elected to represent individual State 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 Ivanhoe (Eastern 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 show social needs for the Ivanhoe (Eastern Metropolitan) State Electoral Division, with comparisons to those of similarly located seats⁶, and elsewhere in Greater Melbourne.



Needs were higher than the Melbourne average in SA1s that were home to for 64% of people living in the seat of Ivanhoe. This was a higher share than for the rest of Greater Melbourne (57%)⁷.

Figure 2 shows the distribution of transit service in 2021 and 2023.

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 Northcote, Bundoora, Preston, Kew and Bulleen.

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

⁷ Differences between the seat of Ivanhoe and other parts of Greater Melbourne (beyond Ivanhoe and the similarly located seats) were statistically significant ($\chi^2(5) = 16.44$, $p = .006$), but differences between Ivanhoe and the similarly seats were not ($\chi^2(5) = 3.55$, $p = .615$).

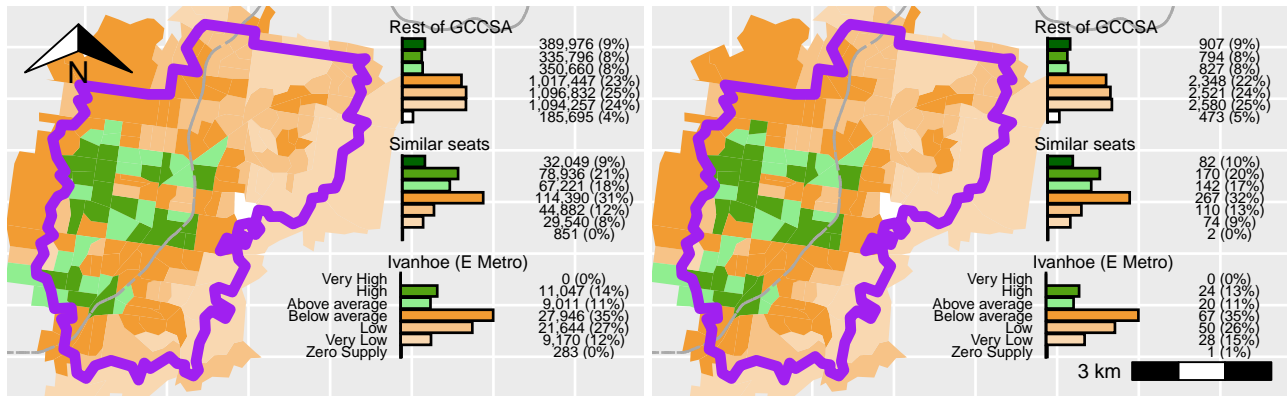


Figure 2: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

Service levels were below the Melbourne average for SA1s where 75% of Ivanhoe's residents lived in 2021, which is a higher share than for the surrounding seats (52%)⁸ but lower than that across the rest of Greater Melbourne (76%)⁹. There were no SA1s in Ivanhoe that had 'Very High' levels of transit service. The distribution of transit supply in 2023 (Figure 2, right) appears largely similar to that in 2021.

Figure 3 compares the 2021 and 2023 service levels directly.

⁸ Differences were statistically significant ($\chi^2(6) = 51.53, p < .001$)

⁹ Differences were statistically significant ($\chi^2(6) = 55.42, p < .001$).

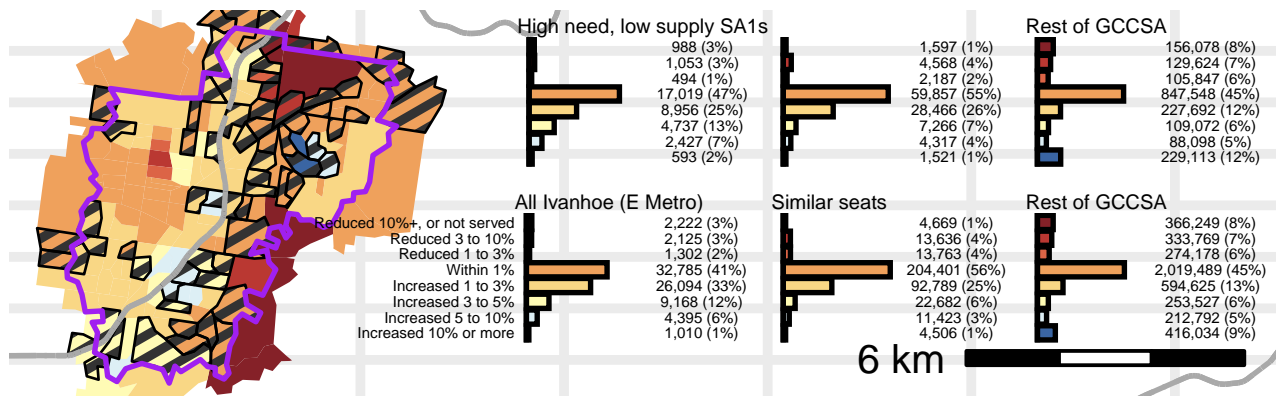


Figure 3: Transit service change 2021 to 2023, by population. SA1s with needs above, but supply below, average highlighted in black.

Transit levels increased by 1% or more by 2023 in SA1s that were home to 51% of Ivanhoe's residents in 2021, which is a higher share than for the nearby seats (36%)¹⁰ or elsewhere (33%)¹¹.

46% of the Ivanhoe residents lived in SA1s with *needs above, but supply below* the Melbourne averages in 2021¹², but for 46% of this cohort service levels increased at least 1% by 2023¹³.

Overall, a larger share of residents have below average transit supply in Ivanhoe than in nearby seats. No SA1s in Ivanhoe have 'Very High' service levels. However, Ivanhoe residents appear more likely to have seen service increase between 2021 and 2023 than others.

¹⁰ Differences were statistically significant ($\chi^2(7) = 33.55, p < .001$).

¹¹ Differences were statistically significant ($\chi^2(7) = 93.21, p < .001$).

¹² Shown with black in Figure 3. This compares to 30% of residents of similarly located seats and 42% of those elsewhere in Melbourne.

¹³ This is a higher share than for parts of Greater Melbourne beyond Ivanhoe and the similar surrounding seats (35%, differences were statistically significant (Fisher test $p = 0.0057$), but not for the similarly located seats (Fisher test $p = 0.615$)).