Oakleigh (Southern 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 Melbourne[1]. 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) methodology[2], this note explores social needs for transport, and transit provision in 2021 and 2023, in the Oakleigh (Southern Metropolitan) State Electoral Division,

[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] Burwood, Mount Waverley, Clarinda, Mulgrave, Keysborough, Bentleigh, Malvern and Caulfield

Methods:

Scores for transit supply and transport needs were calculated based on the Victorian GTFS feed[3] and Australian Bureau of Statistics (ABS) data using the *gtfssupplyindex* R package[4] 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 seats[6], and for the rest of Greater Melbourne with those for the Oakleigh (Southern Metropolitan) State Electoral Division.

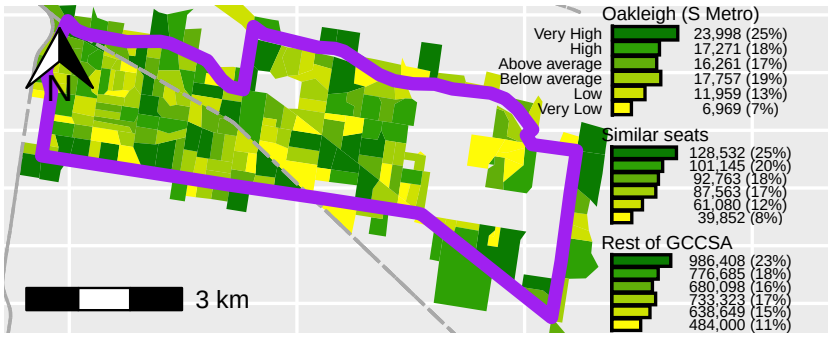

Figure 1: Needs in 2021 by population, with suburban railways shown in grey

Needs were higher than the Melbourne average for 61% of the seat of Oakleigh's population[7].

Figure 2 shows the distribution of transit service in 2021 and 2023. Service levels were below the Melbourne average for 40% of Oakleigh (S Metro) residents in 2021, which is lower than for surrounding seats

[7] Differences between the seat of Oakleigh and similarly located seats, or with the rest of Greater Melbourne were not statistically significant ($\chi^2(5) = 0.75$, $p = .980$)($\chi^2(5) = 5.82$, $p = .324$)

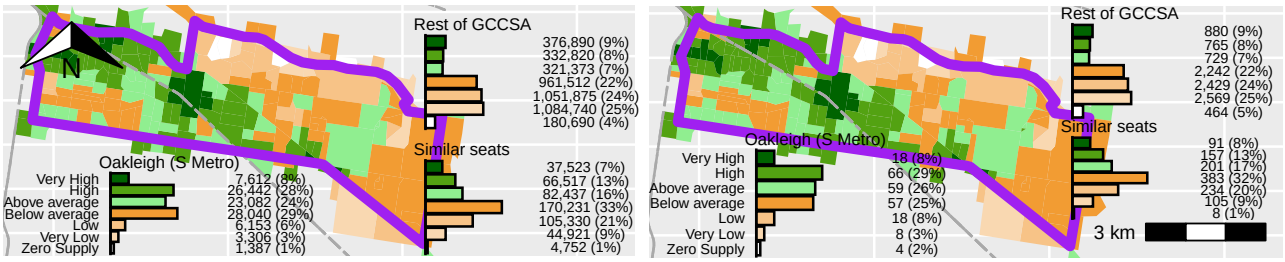

Figure 2: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

(64%)[8] or for the rest of Melbourne (76%)[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 ($\chi^2(6) = 65.30$, $p < .001$

[9] Differences were statistically significant ($\chi^2(6) = 262.37$, $p < .001$).

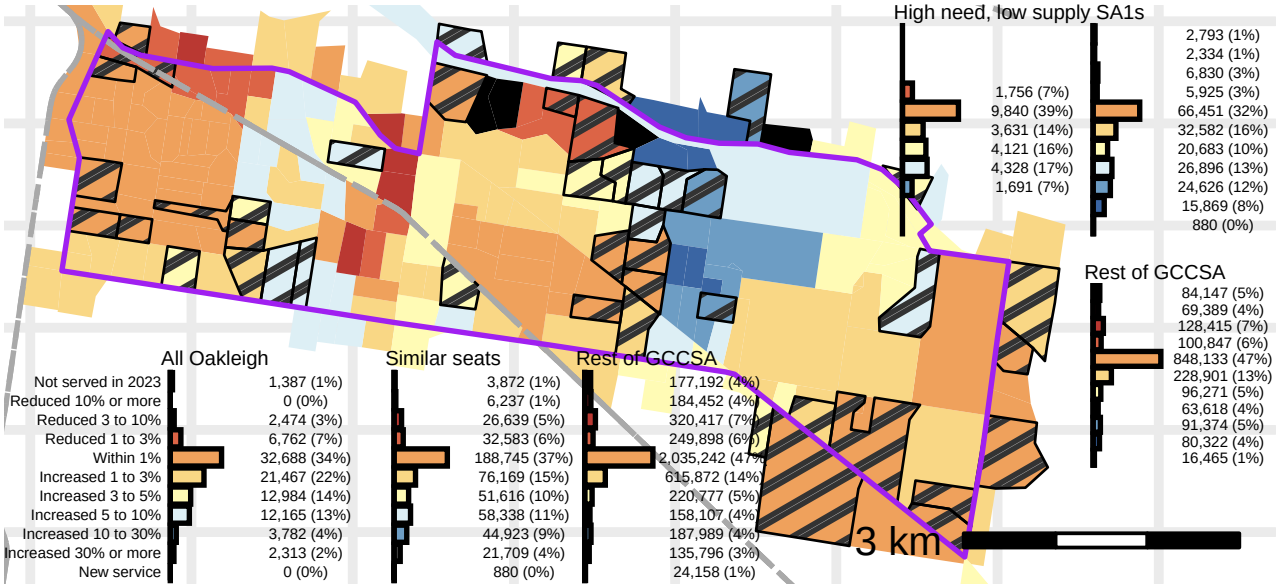

Figure 3: Transit service change 2021 to 2023, by population. SA1s with needs above, but supply below, average highlighted in black.

Transit levels increased by 1% or more by 2023 in SA1s that were home to 55% of Oakleigh (S Metro) residents in 2021, which is a larger share than for similarly located seats (50%)[10] or the rest of Greater Melbourne (31%)[11]. 26% of the Oakleigh (S Metro) population lived in SA1s with *needs above, but supply below* the Melbourne averages in 2021[12]. However, for 54% of this cohort service levels increased 1% or more[13].

Overall, Oakleigh (S Metro) residents appear to have been less likely to have less transit supply than Melbourne's average than those in surrounding seats or the rest of Melbourne, and more likely to have seen service increases between 2021 and 2023.

[10] Differences were statistically significant ($\chi^2(10) = 24.62$, $p = .006$).

[11] Differences were statistically significant ($\chi^2(10) = 127.38$, $p < .001$).

[12] Shown with black in Figure 3. This compares to 40% of residents of similarly located seats and 42% of those elsewhere in Melbourne.

[13] Differences were not statistically significant with similarly located seats (Fisher test p = 0.98). or rest of Greater Melbourne were not statistically significant (Fisher test p = 0.324).