City of Casey: 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 state government, although Local Government Authorities (LGAs) may have influence through planning processes and advocacy. However, it is unclear how much transit is supplied or how well social needs for transport are met for each LGA. This note uses the Currie and Sendbergs (2007) methodology[2]. to explore social transport need, and transit provision in 2021 and 2023 in the City of Casey.

[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.

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).

[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.

Results:Figure 1 compares social needs for nearby LGAs[6] and the rest of Greater Melbourne, with those for the City of Casey.

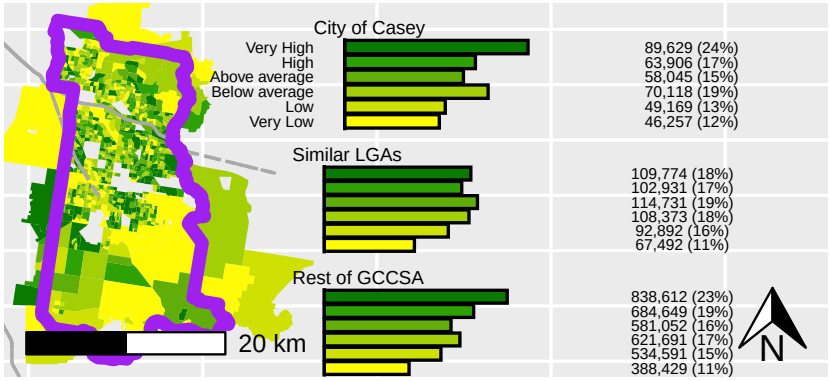

Figure 1: Needs in 2021 by population

[6] Frankston, Greater Dandenong, Knox and Cardinia.

Needs were higher than average for 56% of Casey's population[7].

Figure 2 shows the distribution of transit service in 2021 and 2023. Transit service levels were below the Melbourne average for 98% of City of Casey residents in 2021, which is a lower proportion than in the nearby LGAs (93%)[8] or for the rest of Greater Melbourne (74%)[9]. Distribution of transit supply, categorised with respect to Melbourne's average, appears similar in 2023 (Figure 2, right). Figure

[7] Differences between the CIty of Casey and the nearby LGAs were not statistically significant ($\chi^2(5) = 9.76$, $p = .082$), nor were differences with the rest of Greater Melbourne ($\chi^2(5) = 10.39$, $p = .065$).

[8] Differences were statistically significant ($\chi^2(6) = 26.10$, $p < .001$).

[9] Differences were statistically significant ($\chi^2(6) = 354.97$, $p < .001$).

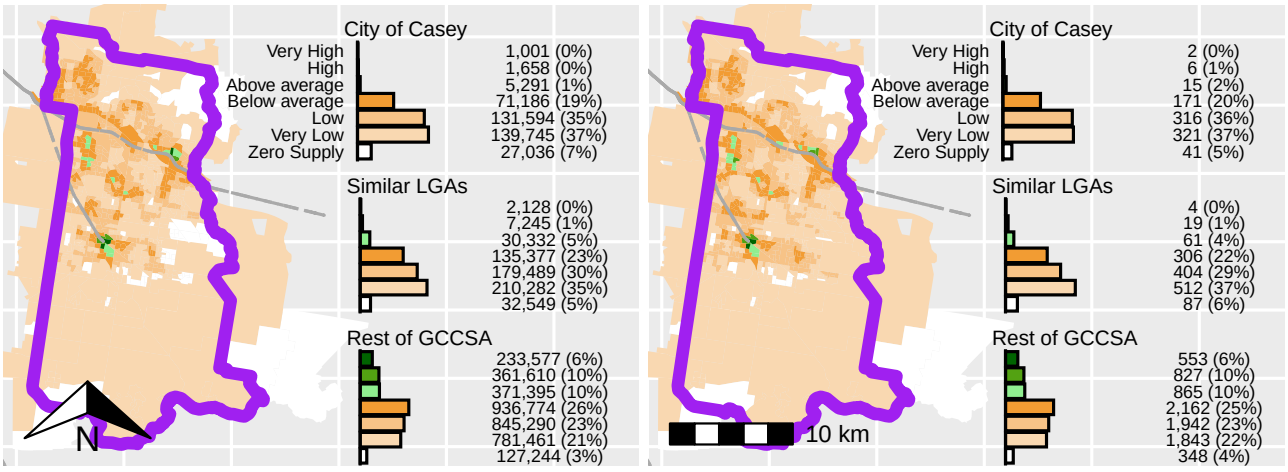

Figure 2: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

3 directly compares 2021 and 2023 service levels.

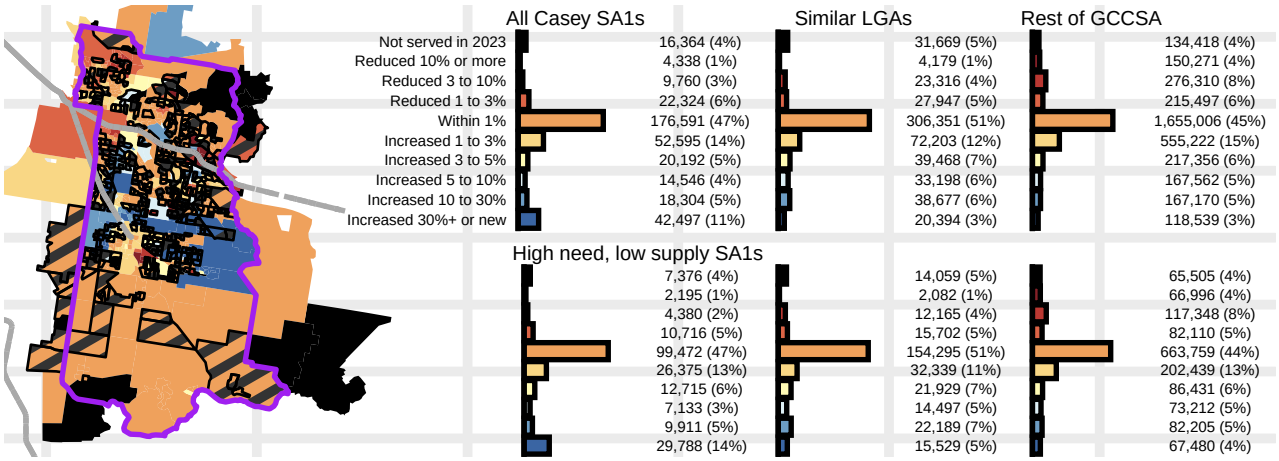

Figure 3: Transit service change 2021 to 2023, by population. SA1s with needs above, but supply below, average highlighted in black.

Transit levels increased by 1% or more by 2023 in SA1s that were home to 39% of City of Casey residents in 2021, which is a higher proportion than for those in the nearby LGAs (34%)[10] or across the rest of Greater Melbourne (34%)[11]. 56% of the City of Casey population lived in SA1s with *needs above, but supply below* the Melbourne averages in 2021[12]. However, for 41% of this cohort service levels increased 1% or more, a higher proportion than for the similar cohorts in the nearby LGAs (35%)[13] or for those with above average needs and below average supply across the rest of Melbourne (34%)[14].

Overall, City of Casey residents appear more likely have had transit service levels lower than the Melbourne average, but also more likely to have seen transit increase by 2023.

[10] Differences were statistically significant ($\chi^2(9) = 82.81$, $p < .001$).

[11] Differences were statistically significant ($\chi^2(9) = 177.13$, $p < .001$).

[12] Shown with black in Figure 3. This compares to 51% of residents in the rest of the middle suburban LGAs and 41% of those in more outer parts of Melbourne.

[13] Differences were statistically significant (Fisher test p = 0.0015).

[14] Differences were statistically significant (Fisher test p = 5e-04).