

City of Casey: social needs, gaps in transit

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This note explores social needs-gaps in the City of Casey, using the Currie and Sendbergs (2007) methodology¹. It is part of a series examining each LGA in Greater Melbourne².

In Victoria, public transport is managed by the state government, although Local Government Authorities (LGAs) may have some influence on service levels through planning processes, advocacy etc. However, not much is known about how much transit is supplied or whether social needs for transport are met within each LGA.

Methods: This note maps transport supply and a composite needs indicator based on Australian Bureau of Statistics (ABS) data. The methodology is as per Reynolds, Currie and Qu (in drafting)³ and uses the *gtfssupplyindex* R package⁴ to process the Victoria GTFS feed⁵. It involves calculating scores for a Transit Supply Index (SI), based on service frequency and how much of an area is within walking distance of stops/stations⁶ and a Composite Social Needs Index. Results are shown for ABS' Statistical Area 1s (SA1s), categorized into seven groups based on the average scores for SA1s across the Melbourne Greater Capital City Statistical Area (GCCSA).

Results: Differences between the transit supplied in the City of Casey, and the Rest of the South East SA4⁷ and the rest of Greater Melbourne⁸ were statistically significant. Figure 1 shows how only small parts of Casey, around railway lines and in the west, had above average service. Figure 2 shows how Transit Supply Index Scores (SIs) changed for SA1s in the City of Casey between 2021 and 2023.

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_melbounre_LGA_2024 but lookout, I misspelled "Melbourne"

³ James Reynolds, Graham Currie, and Yanda Qu, "Social Needs for Transport and Gaps in Transit Service: New GTFS Tools," *Journal Article, In Drafting*, 2024.

⁴ See <https://github.com/James-Reynolds/gtfssupplyindex>

⁵ Note that results represent what is in the GTFS feed for August 2021 and 2023, which may not match services provided.

⁶ 400m for tram and bus, 800m for train.

⁷ Covering the City of Greater Dandenong, City of Monash, (almost all of) Cardinia and parts of Kingston, by SA1 in 2021 ($\chi^2(6) = 133.24, p < .001$) and 2023 ($\chi^2(6) = 140.83, p < .001$)

⁸ 2021: $\chi^2(6) = 373.05, p < .001$, 2023: $\chi^2(6) = 352.76, p < .001$.

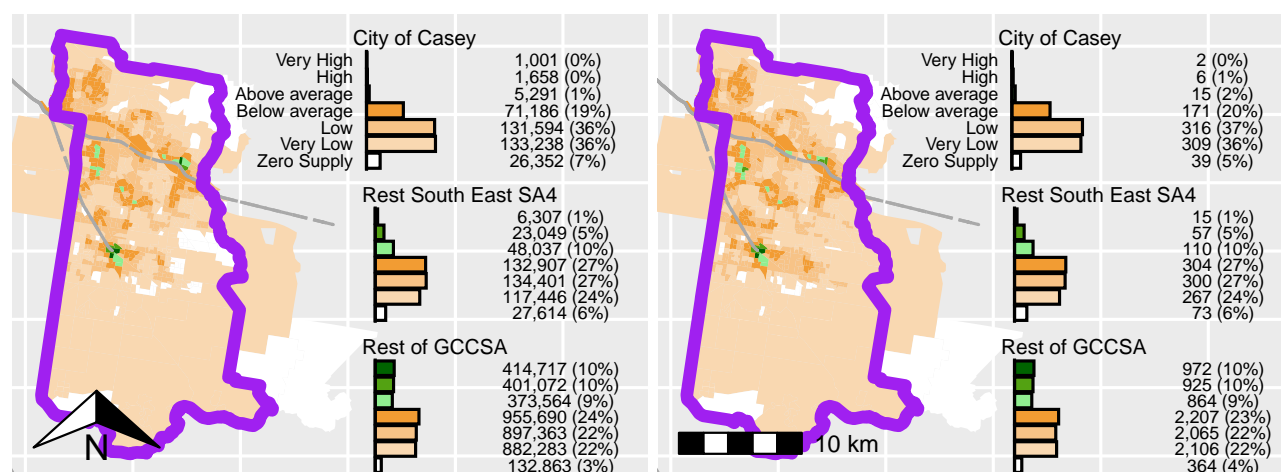


Figure 1: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

There were statistically significant differences⁹ in SI changes between 2021 and 2023. Transit service levels in 2023 1% or more higher for SA1s that had 34% of residents across the rest of Melbourne, 40% in Casey and 46% in the Rest of the South East SA4 in 2021 than in other parts of Melbourne, as shown in Figure 2.

⁹ for Casey with the South East SA4 ($\chi^2(6) = 140.83, p < .001$ and for Casey with rest of Melbourne ($\chi^2(6) = 352.76, p < .001$)

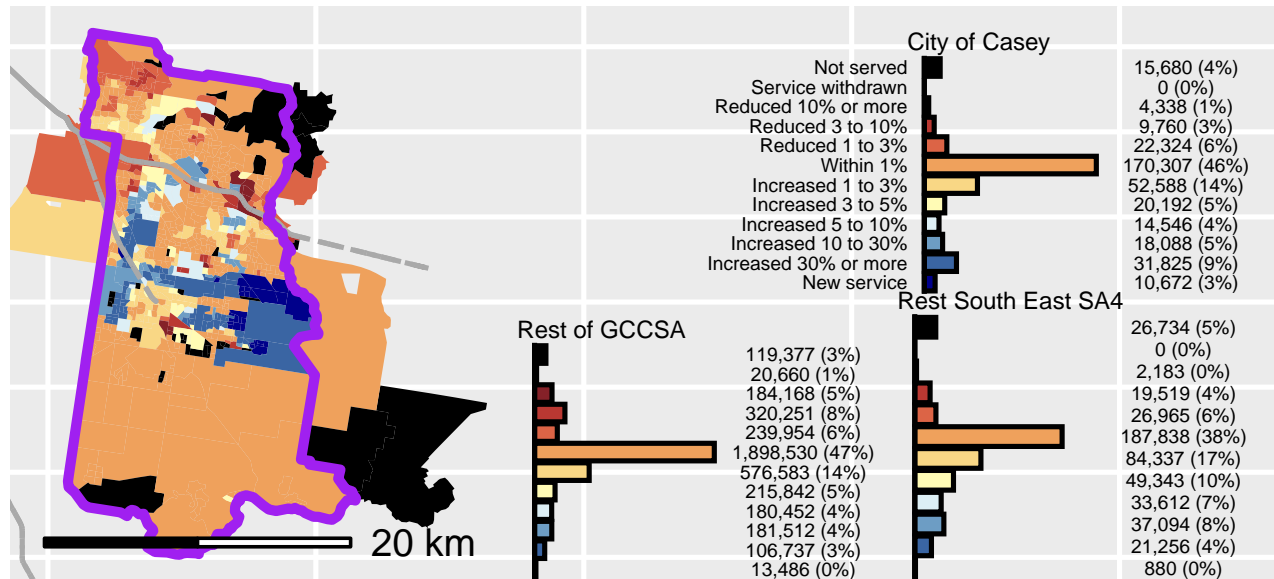


Figure 2: Change in SI score between 2021 and 2023 by SA1 and population

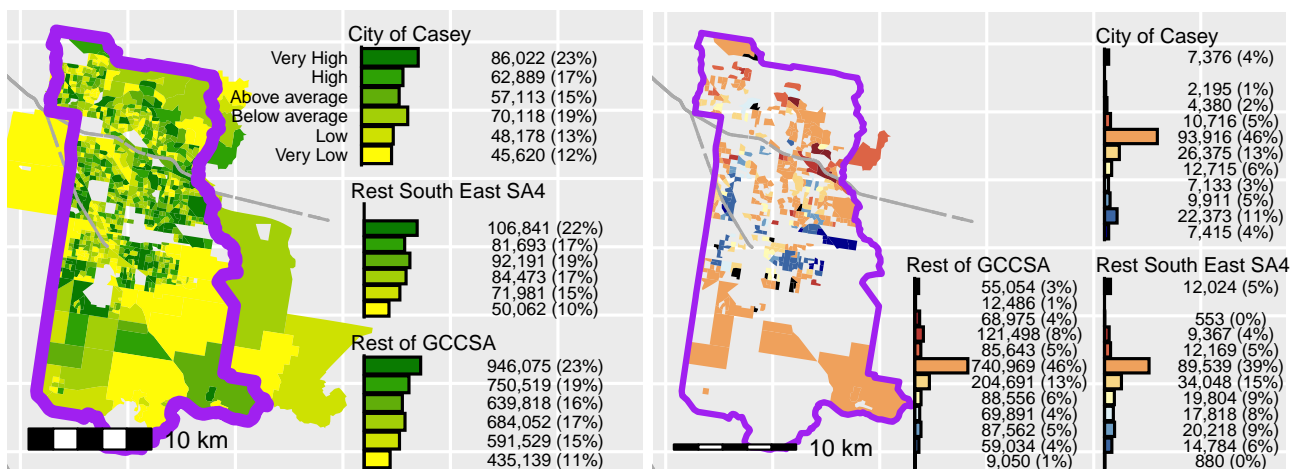


Figure 3, left, shows social needs for transport in Casey, which were similar to those elsewhere¹⁰ (Figure 3, left). 55.2% of City of Casey residents had above average social needs for transport but below average transit supply, compared with 47.2% in the rest of the South East SA4 and 39.5% across the rest of Melbourne. There

Figure 3: Needs by 2021 population (left) and change in SI for those SA1s with needs above average, but below average supply, by population Casey and the rest of the South East SA4 ($\chi^2(5) = 7.94, p = .159$) or the rest of Greater Melbourne ($\chi^2(5) = 9.88, p = .079$).

are significant differences between the City of Casey and the rest of the South East SA4¹¹ and the Rest of the GCCSA¹² in how much transit changed for those people with needs above, but supply below, average. 42% of those in Casey saw increases by 2023 of 1% or more, compared to 47% and 33% for the rest of South East SA4 and Greater Melbourne respectively. *Overall* Casey appears to mostly have limited transit, but this is improving for some of those in need.

¹¹ $\chi^2(10) = 35.62, p < .001$

¹² $\chi^2(11) = 88.35, p < .001$