Mornington Shire: social needs, gaps in transit

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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 being met within each LGA's boundaries. This note explores social needs-gaps in the Mornington Peninsula Shire, using the Currie and Sendbergs (2007) methodology[1]. It is part of a series on LGAs in Greater Melbourne[2].

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 package[4] to process the Victoria GTFS feed[5]. It involves calculating scores fir a Transit Supply Index (SI), based on service frequency and how much of an area is within walking distance of stops/stations[6] 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

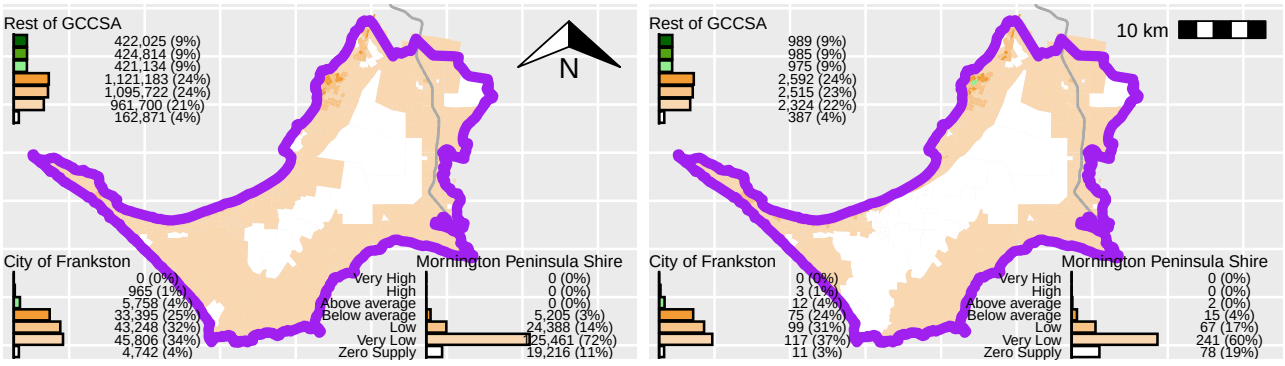

Figure 1: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

Differences in transit service between Mornington Shire and the City of Frankston, and with the rest of Greater Melbourne are statisti-

[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," *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.

cally significant in both 2021 and 2023 [7]. All residents in Mornington Peninsula Shire lived in SA1s with less than the average amount of transit supplied to SA1s across Greater Melbourne (Figure 1).

[7] 2021: $\chi^2(5) = 168.25$, $p < .001$ and prmisc::print_chi2(melbourne_2021_SA4_comparison)'; and 2023 ($\chi^2(5) = 141.45$, $p < .001$ and $\chi^2(6) = 661.84$, $p < .001$

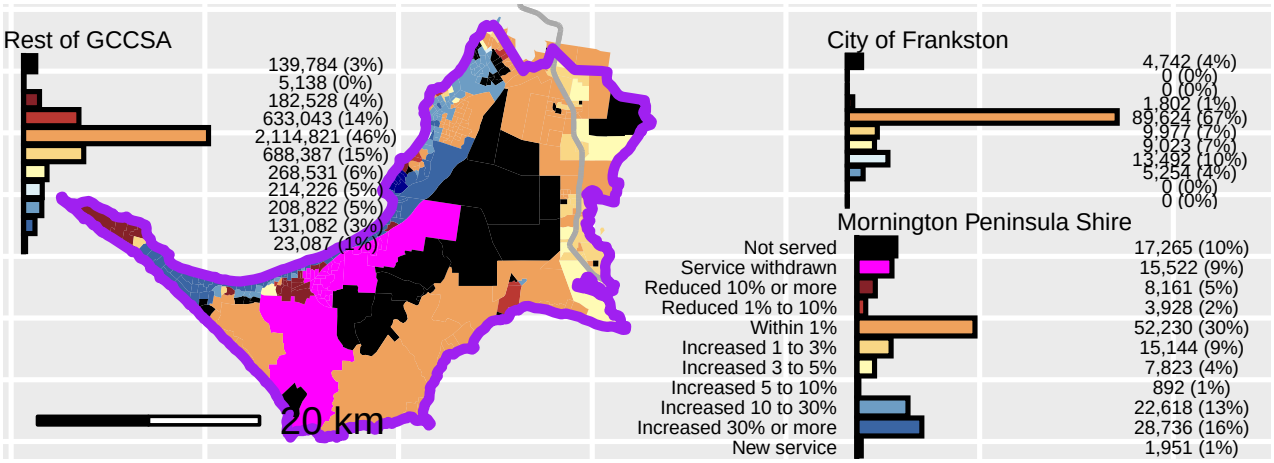

Figure 2: Change in SI score between 2021 and 2023 by SA1 and population

There were statistically significant differences in transit service level changes between 2021 and 2023 between Mornington Shire and the City of Frankston[8] and with the rest of Melbourne[9]. Figure 2 shows almost 1 in 10 (15.5k) Mornington Shire residents were living in SA1s in 2021 that no longer had transit in 2023[10]. However, for SA1s that in 2021 were home to more than two in five people[11] in Mornington Shire service levels increased by more than 1% by 2023.

[8] $\chi^2(10) = 213.12$, $p < .001$

[9] $\chi^2(10) = 1146.97$, $p < .001$

[10] A further 1 in 10 (17.3k) were in SA1s without transit in 2021 or 2023.

[11] A little over 75,000 people, mostly living close to the bay or the Stoney Point Line

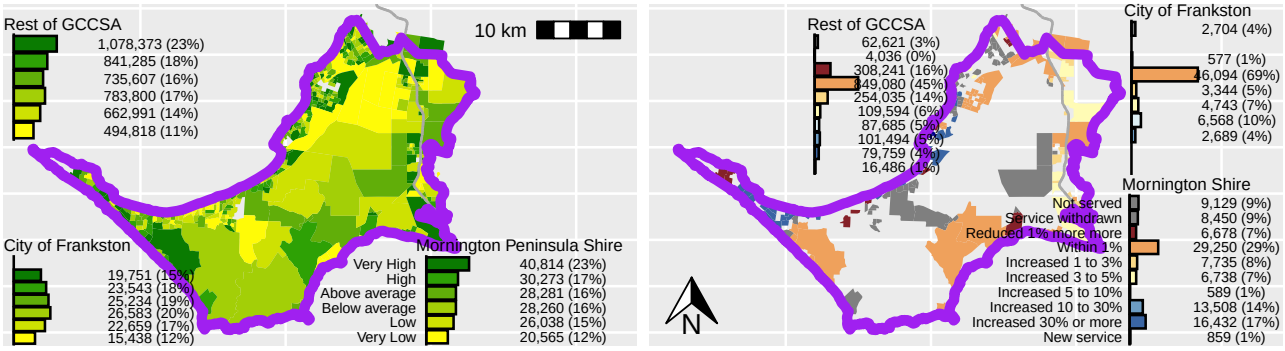

Figure 3: Needs by 2021 pop. (left) and change in SI to 2023 for those SA1s with needs above, but supply below average (by 2021 pop. right)

Social needs for transport in 2021 in the Mornington Peninsula Shire (Fig. 3, left) were similar to the rest of Greater Melbourne Melbourne[12]. Transit levels increased by 1% or more for almost half (48%) of those living in Mornington Shire in SA1s with needs above, but supply below, average, more than elsewhere[13](Fig. 3, right).

Overall, needs-gaps appear larger[14], but more has improved for those with larger needs-gaps, in Mornington Shire than elsewhere.

[12] $\chi^2(5) = 6.72$, $p = .242$; or the rest of the GCCSA: $\chi^2(5) = 0.89$, $p = .971$.

[13] 26% for Frankston, 35% for the rest of Melbourne. There are significant differences between the Mornington Peninsula Shire and the City of Frankston ($\chi^2(9) = 85.32$, $p < .001$) and the Rest of the GCCSA ($\chi^2(9) = 308.15$, $p < .001$).

[14] 57.0% of Mornington Peninsula Shire residents had above average needs but below average supply, compared with 49.8% in the rest of the Mornington Peninsula SA4 and 40.6% across the rest of Melbourne.