City of Kingston: 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 some 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 explores social needs for transport, and transit provision in 2021 and 2023, in the City of Moonee Valley using the Currie and Sendbergs (2007) methodology[2].

[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 Australian Bureau of Statistics (ABS) data and the Victorian GTFS feed[3] 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] Note that results are based on the 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: Social needs for transport in Kingston in 2021 and comparison with the Rest of the Inner South and South East SA4s[6] and the rest of Greater Melbourne by population are shown in Figure 1.

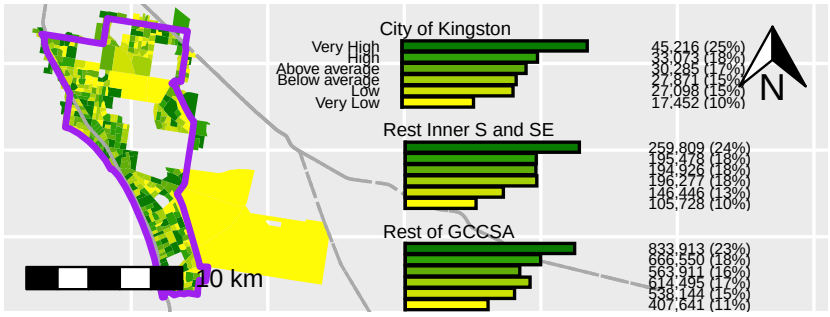

Figure 1: Needs in 2021 by population. Railway lines shown in grey.

[6] LGAs: Monash, Bayside, Dandenong, Glen Eira, Casey, (almost all of) Cardinia, part of Stonnington.

Social needs for transport were higher than the Melbourne average for 60.0% of the Kingston population. This is similar to elsewhere[7].

Figure 2 shows the distribution of transit service in 2021 and 2023. Transit service levels were below the Melbourne average for 75.6% of Kingston residents in 2021. This is a low proportion than for the rest of the Inner South and South East SA4s (79.4%)[8], but higher than for the rest of Melbourne (72.4%)[9]. The distribution of transit supply,

[7] Differences were not statistically significant with either the rest of the Inner South and South East SA4s ($\chi^2(5) = 2.34$, $p = .801$) or the rest of Greater Melbourne ($\chi^2(5) = 2.66$, $p = .752$).

[8] Differences were statistically significant ($\chi^2(6) = 31.98$, $p < .001$).

[9] Differences were statistically significant ($\chi^2(6) = 111.05$, $p < .001$).

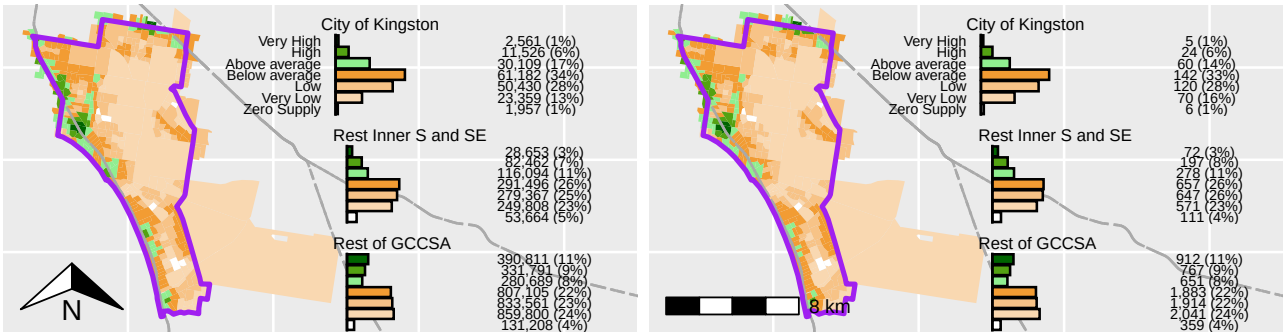

Figure 2: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

categorised with respect to the Melbourne average, appears similar in 2023 (Figure 2, right). Figure 3 compares 2021 and 2023 service.

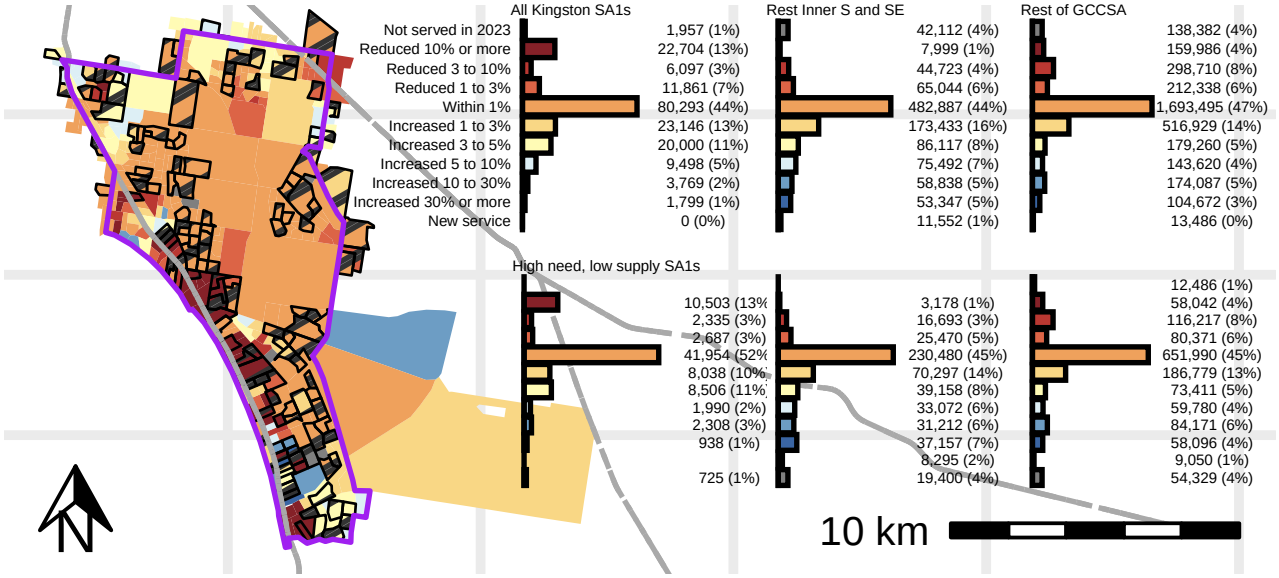

Figure 3: Transit change 2021 to 2023. SA1s with needs above, but supply below, average highlighted in black.

Transit levels increased by 1% or more for 32.1% of Kingston residents between 2021 and 2023, which is a lower proportion than for the rest of the Inner South and South East SA4s (41.6%)[10], but slightly higher than for the rest of Greater Melbourne (31.1%)[11]. 44.2% of the Kingston population lived in SA1s with *needs above, but supply below* the Melbourne averages in 2021[12]. For 28.1% of this cohort service levels increased 1% or more by 2023, a lower proportion than for the similar cohort in the rest of the Inner South and South East SA4s (46.4%)[13] or the rest of Melbourne (36.4%)[14].

Overall, Kingston residents had less transit than others in the Inner South and South East SA4s, but more than those elsewhere. Those with greater needs-gaps in Kingston in 2021 were less likely to have

[10] Differences were statistically significant ($\chi^2(10) = 218.92$, $p < .001$).

[11] Differences were statistically significant ($\chi^2(10) = 108.01$, $p < .001$).

[12] Shown with black in Figure 3. This compares to 46.7% of Inner South and South East SA4 residents and 39.7% of those elsewhere in Melbourne.

[13] Differences were statistically significant ($\chi^2(10) = 105.17$, $p < .001$)

[14] Differences were statistically significant ($\chi^2(11) = 53.03$, $p < .001$).

seen transit increase by 2023 than those elsewhere.