

# City of Melbourne: social needs, gaps in transit

Dr James Reynolds

2024-10-16

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 City of Melbourne, using the Currie and Sendbergs (2007) methodology<sup>1</sup>. It is part of a series examining each LGA in Greater Melbourne<sup>2</sup>.

## 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)<sup>3</sup>, and involves Transit Supply Indication (SI) scores, which are based on service frequency and how much of an area is within walking distance of stops/stations<sup>4</sup>. 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).

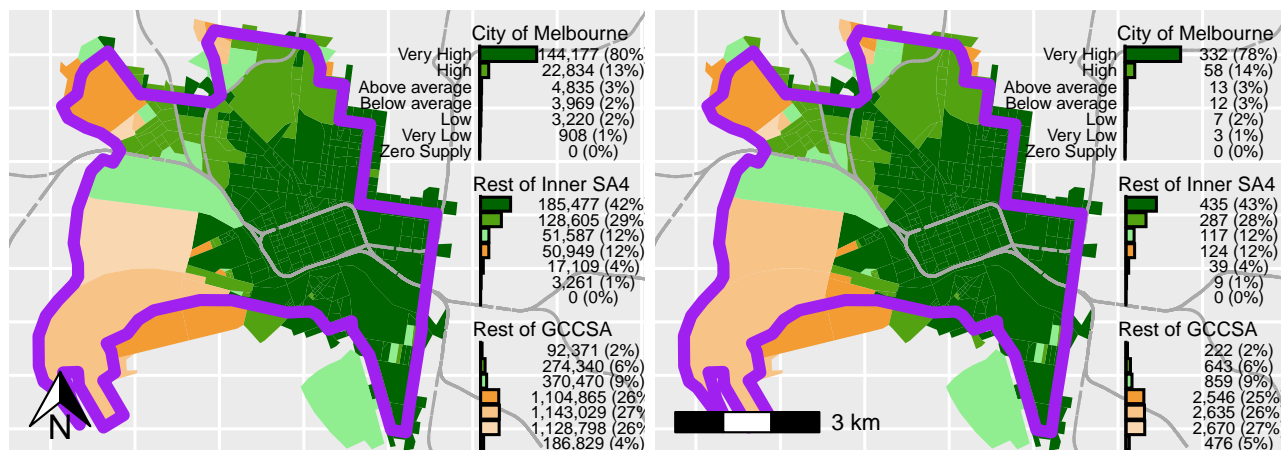
## Results

<sup>1</sup> 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.

<sup>2</sup> See [https://github.com/James-Reynolds/gtfssupplyindex\\_melbourne\\_LGA\\_2024](https://github.com/James-Reynolds/gtfssupplyindex_melbourne_LGA_2024) but lookout, I misspelled "Melbourne"

<sup>3</sup> Forthcoming hopefully, but using the *gtfssupplyindex* R package (see <https://github.com/James-Reynolds/gtfssupplyindex>) to process the Victoria GTFS feed. Note that results represent what is in the GTFS feed for August 2021 and 2023, which may not match services provided.

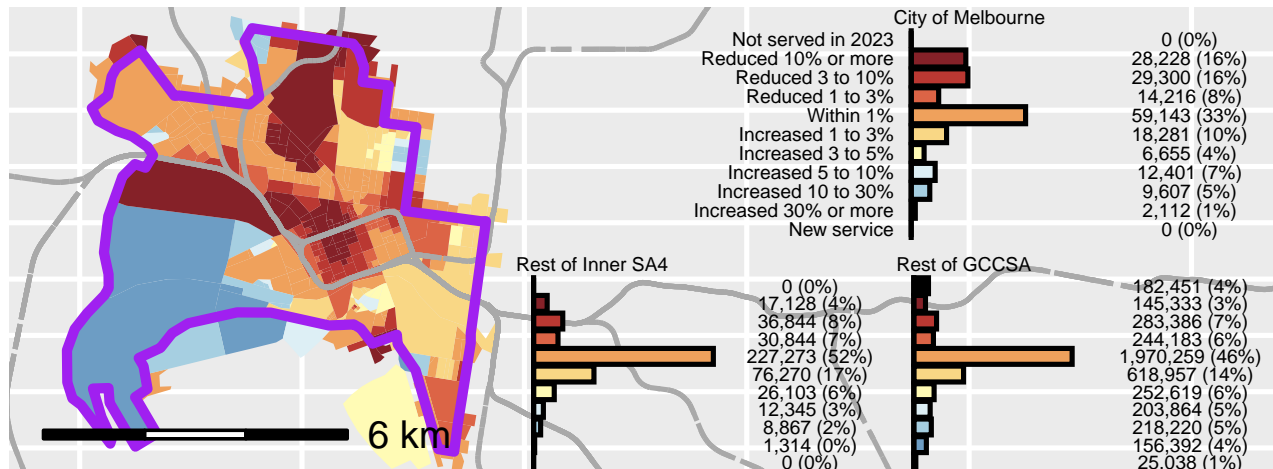
<sup>4</sup> 400m for tram and bus, 800m for train.



In 2021 most of the City of Melbourne's population lived in SA1s with Very High levels of transit (Figure 1, left)<sup>5</sup>. However, as shown

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

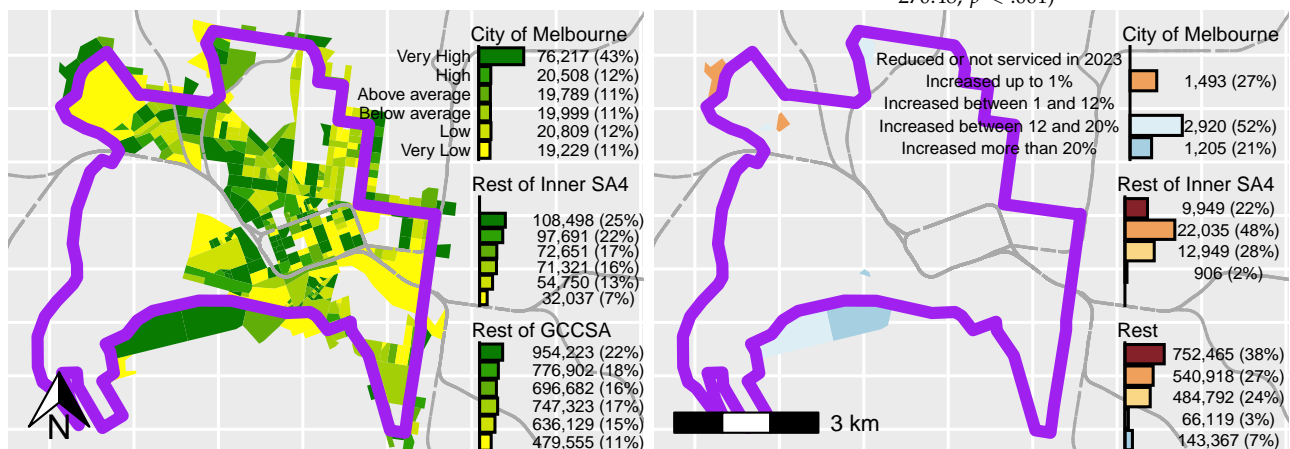
<sup>5</sup> Differences with the Rest of the Inner SA4 (covering Yarra, Port Phillip and parts of Moonee Valley, Merri-Bek, Darebin and Stonnington), by SA1, are statistically significant in 2021 ( $\chi^2(5) = 172.67, p < .001$ ) and 2023 ( $\chi^2(8) = 128.03, p < .001$ ). Differences with the rest of Melbourne are also statistically significant (2021:  $\chi^2(6) = 4984.42, p < .001$ , 2023:  $\chi^2(10) = 270.48, p < .001$ ).



in Figure 2<sup>6</sup>, the coverage and frequency of transit service appears to have reduced by 2023 more for those in the City of Melbourne.

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

<sup>6</sup> Differences are statistically significant (rest of the Inner SA4:  $\chi^2(8) = 128.03$ ,  $p < .001$ , & rest of GCCSA:  $\chi^2(10) = 270.48$ ,  $p < .001$ )



Social needs for transport in the City of Melbourne in 2021 were High or Very High for more than half the population (Figure 3, left), more than for other parts of Melbourne<sup>7</sup>. Figure 3 (right) shows how transit service levels changed between 2021 and 2023 for those who were living in SA1s with needs above, but supply below, the GCCSA average<sup>8</sup>. Those SA1s with the largest gaps in the City of Melbourne in 2021 mostly have similar levels of, or more, transit in 2023.

Overall, the City of Melbourne appears well supplied with transit and, compared to other parts of Greater Melbourne, has lower gaps between social needs and transit supply<sup>9</sup>. Those with the largest needs-gaps in 2021 appear to have similar or more transit in 2023.

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

<sup>7</sup> Statistically significant for City of Melbourne vs rest of Inner:  $\chi^2(5) = 54.15$ ,  $p < .001$ , and vs rest of GCCSA  $\chi^2(5) = 56.43$ ,  $p < .001$ .

<sup>8</sup> Fisher's tests show significant differences between the City of Melbourne and the rest of the Inner SA4 ( $p = 1.21e-07$ ) or the Rest of the GCCSA ( $p = 1.62e-07$ ).

<sup>9</sup> Only 3.1% of City of Melbourne residents had above average social needs for transport but below average transit supply, compared with 10.5% in the rest of the Inner SA4 and 46.2% across the rest of Melbourne.