

Prahran (Southern Metropolitan) State Electoral Division: social needs, gaps in transit

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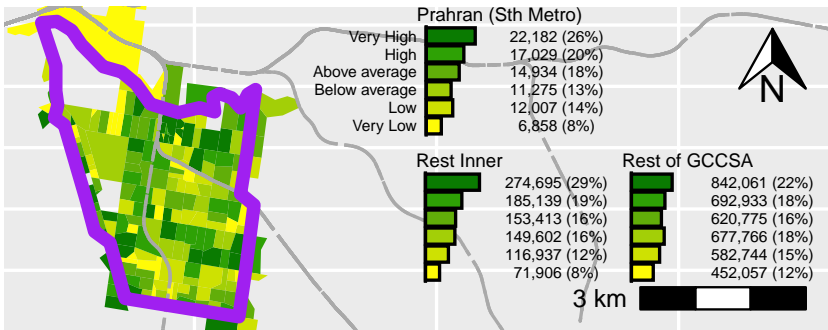
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This note is part of a series examining transit social needs-gaps in Greater Melbourne<sup>1</sup>. In Victoria, public transport is the responsibility of the state government, which is formed from among Members of Parliament elected to represent individual State Electoral Divisions (seats). However, it is unclear how much transit is supplied or how well social needs for transport are met within each seat. This note explores social needs for transport, and transit provision in 2021 and 2023, in the Prahran (Southern Metropolitan) State Electoral Division, using the Currie and Sendbergs (2007) methodology<sup>2</sup>.

METHODS:

Scores for transit supply and transport needs were calculated based on the Victorian GTFS feed<sup>3</sup> and Australian Bureau of Statistics (ABS) data using the *gtfssupplyindex* R package<sup>4</sup> as per Reynolds, Currie and Qu (in drafting)<sup>5</sup>. Results are shown for the ABS' Statistical Area 1s (SA1s), categorized based on averages across the Melbourne Greater Capital City Statistical Area (GCCSA).

RESULTS: Figure 1 compares social needs for the Rest of the Inner SA4 and the rest of Greater Melbourne with those for the Prahran (Southern Metropolitan) State Electoral Division.



Needs were higher than the Melbourne average for 64.2% of the Prahran (Sth Metro) State Electoral Division's population<sup>6</sup>.

Figure 2 shows the distribution of transit service in 2021 and 2023. Service levels were below the Melbourne average for 6.2% of Prahran (Sth Metro) residents in 2021, which is less than for the rest of the

<sup>1</sup> See <https://tinyurl.com/4rctaxfc>



<sup>2</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>3</sup> Results are based on GTFS feeds for August 2021 and 2023, so may not match services run.

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

<sup>5</sup> James Reynolds, Graham Currie, and Yanda Qu, "Social Needs for Transport and Gaps in Transit Service: New GTFS Tools," *In Drafting*, 2024.

Figure 1: Needs in 2021 by population, with suburban railways shown in grey

<sup>6</sup> Differences were not statistically significant between Prahran and rest of the Inner SA4 ( $\chi^2(5) = 2.41, p = .790$ ) or between Prahran and elsewhere in Greater Melbourne ( $\chi^2(5) = 8.41, p = .135$ ).

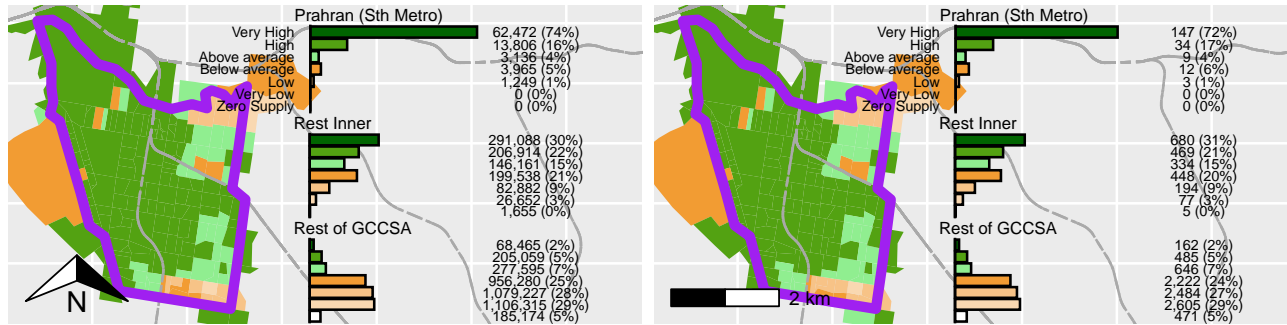


Figure 2: Transport Supply 2021 (left, by population) and 2023 (right, by SA1)

<sup>7</sup> Differences were statistically significant ( $\chi^2(6) = 151.85, p < .001$ )

<sup>8</sup> Differences were statistically significant ( $\chi^2(6) = 3219.14, p < .001$ ).

Inner SA4 (32.5%)<sup>7</sup> or elsewhere in Melbourne (85.8%)<sup>8</sup>. The distribution of transit supply, categorised with respect to the Melbourne average, appears similar in 2023 (Figure 2, right). Figure 3 directly compares 2021 and 2023 service levels.

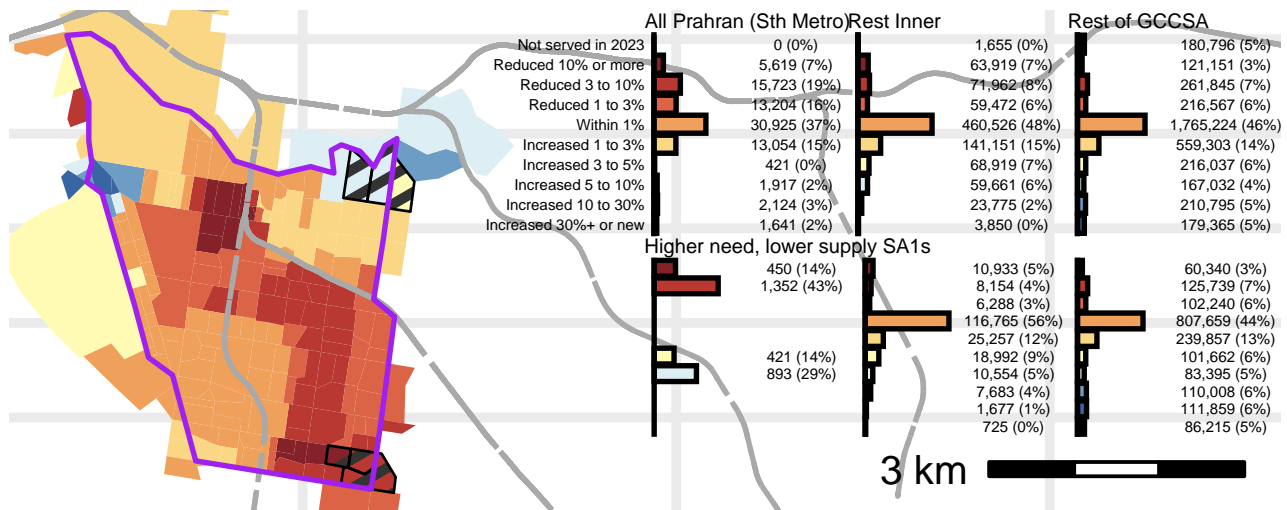


Figure 3: Transit service change 2021 to 2023. SA1s with needs above, but supply below, average highlighted in black.

<sup>9</sup> Differences were statistically significant ( $\chi^2(9) = 70.31, p < .001$ ).

<sup>10</sup> Differences were statistically significant ( $\chi^2(9) = 106.27, p < .001$ ).

<sup>11</sup> Shown with black in Figure 3. This compares to 21.7% of those elsewhere in the Inner SA4 and 47.2% of those elsewhere in Melbourne.

<sup>12</sup> Differences between the Prahran (Sth Metro) seat and the rest of the Inner SA4 were statistically significant (Fisher test  $p = 0.001$ ), but differences between the Prahran (Sth Metro) seat and parts of Greater Melbourne outside of the Inner SA1 were not (Fisher test  $p = 0.135$ ).

<sup>13</sup> Although, the relatively small number of residents with needs above, but supply below the Melbourne average in the Prahran seat were more likely to have seen increases in transit service of at least 1% than those in the similar cohort elsewhere in the inner SA4

Transit levels increased by 1% or more by 2023 in SA1s that were home to 22.6% of Prahran (Sth Metro) residents in 2021, which is a lower share than for the rest of Inner SA4 (31.1%)<sup>9</sup> or the rest of Greater Melbourne (34.4%)<sup>10</sup>. Only 3.7% of the Prahran (Sth Metro) population lived in SA1s with *needs above, but supply below* the Melbourne averages in 2021<sup>11</sup>. However, for 42.2% of this cohort service levels increased 1% or more, a higher proportion than for the similar cohort living the rest of the Inner SA1 (31.0%)<sup>12</sup>.

Overall, Prahran (Sth Metro) residents appear less likely to have had transit service levels below Melbourne's average and also less likely to have seen increases in service between 2021 and 2023<sup>13</sup>.