



APRIL 2024

# Social Infrastructure Accessibility Mapping

OUTDOOR SPORT FIELDS

ARUP

## Outdoor Sport Fields

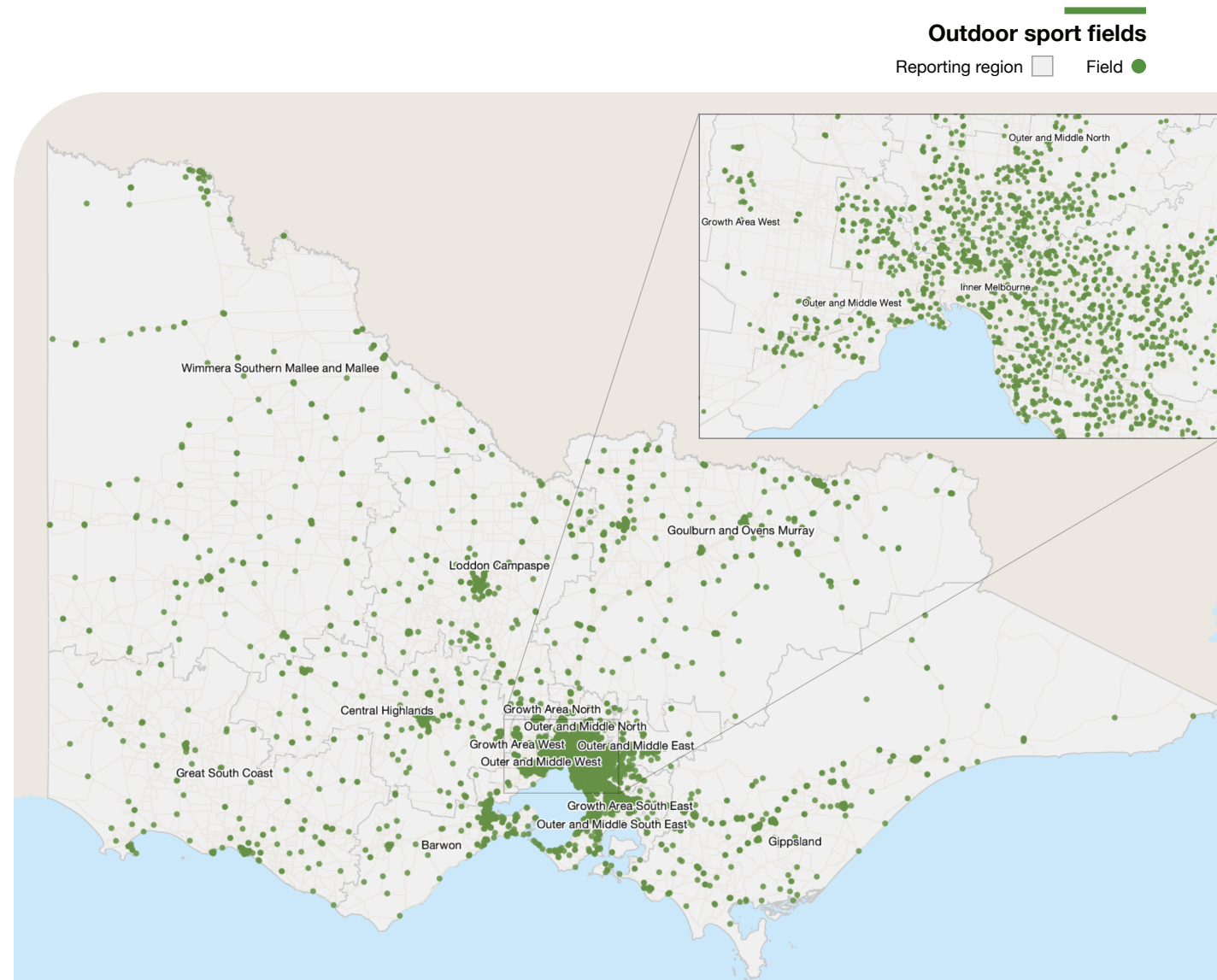
## Background

Arup investigated the accessibility of social infrastructure within Victoria across socio-demographic groups and transport modes. Isochrones (journey time catchments) were generated for every considered facility and used to inform what members of the population would be able to access this infrastructure under a variety of travel conditions.

This presentation focuses on accessibility to **outdoor sports fields**. These are public facilities like ovals whose primary purpose is to facilitate outdoor sports activity (as opposed to general green space).

The conducted analysis was comprehensive, with outcomes generated for four distinct modes of transport, two time periods, and over twenty different socio-demographic groups. This presentation focuses on a subset of these outcomes corresponding with the cohorts most likely to be using outdoor sports fields, such as younger people. 10-minute walking journeys were the primary trip characteristic used for this analysis.

Another core part of the analysis investigated the potential impacts on accessibility that the opening of outdoor sports fields contained within public schools would have on overall accessibility levels.



Outdoor Sport Fields

# Walking accessibility by region

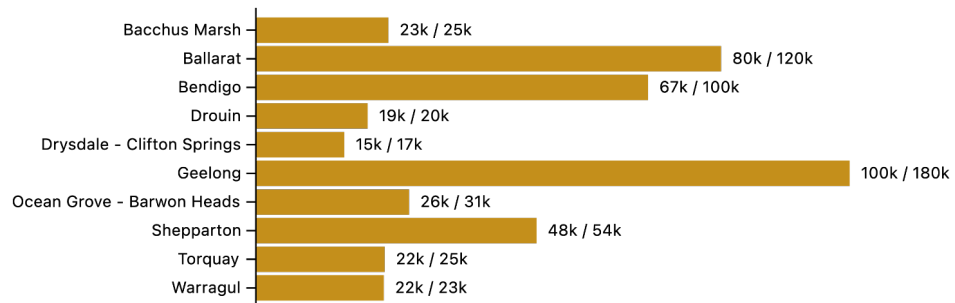
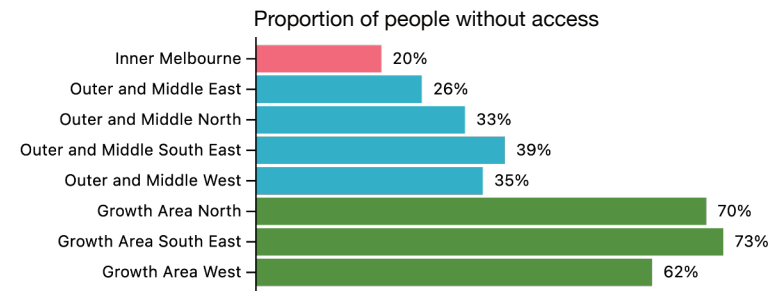
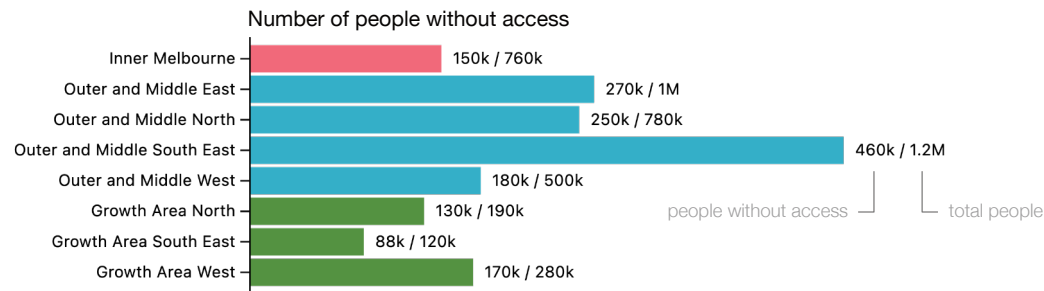
The charts below show walking access to outdoor sports fields within 10 minutes. The figure on the left shows the total number of people without access under these conditions by are, whilst the figure on the right shows this same statistic as a proportion of each area's population. Outcomes for reporting regions are shown for metropolitan Melbourne. Fast-growing regional centres are used for regional Victoria.

39% of the *Outer and Middle South East* region cannot access an outdoor sports field under these conditions, representing the highest number of people in absolute terms without access across all reporting regions.

All fast growing regional centres outside of *Ballarat*, *Bendigo*, and *Geelong* exhibit a proportion of people without access to above 85%.

## People without walking access to outdoor sports fields within 10 minutes

Inner Metropolitan Growth Regional Centre



Outdoor Sport Fields

# Walking accessibility over time

The chart below shows the change in walking accessibility to outdoor sports fields between 2021 and 2036 across reporting regions. These values correspond with 10 minute journeys. Outcomes for reporting regions are shown for metropolitan Melbourne. Fast-growing regional centres are used for regional Victoria.

2021 and 2036. This occurs because a greater portion of the population is expected to be living in areas that do not currently have many outdoor sports facilities or a walking network that enables people to reach these facilities.

It is worth noting that this analysis has not included future changes to the provision of additional infrastructure or changes in network conditions. Differences arise solely from changes in the underlying assumed distribution of residents.

The largest differences are seen in the growth areas, particularly the *Growth Area West* region which sees a 13% reduction in walking accessibility between

## Change in outdoor sports field accessibility between 2021 and 2036

For walking journeys within 10 minutes

2021 ● → 2036    ■ Negative Change    ■ Positive Change



Outdoor Sport Fields

# Accessibility within regions

The chart below shows 10-minute walking accessibility to outdoor sports fields for each individual Statistical Area 2 (SA2) within *Inner Melbourne*.

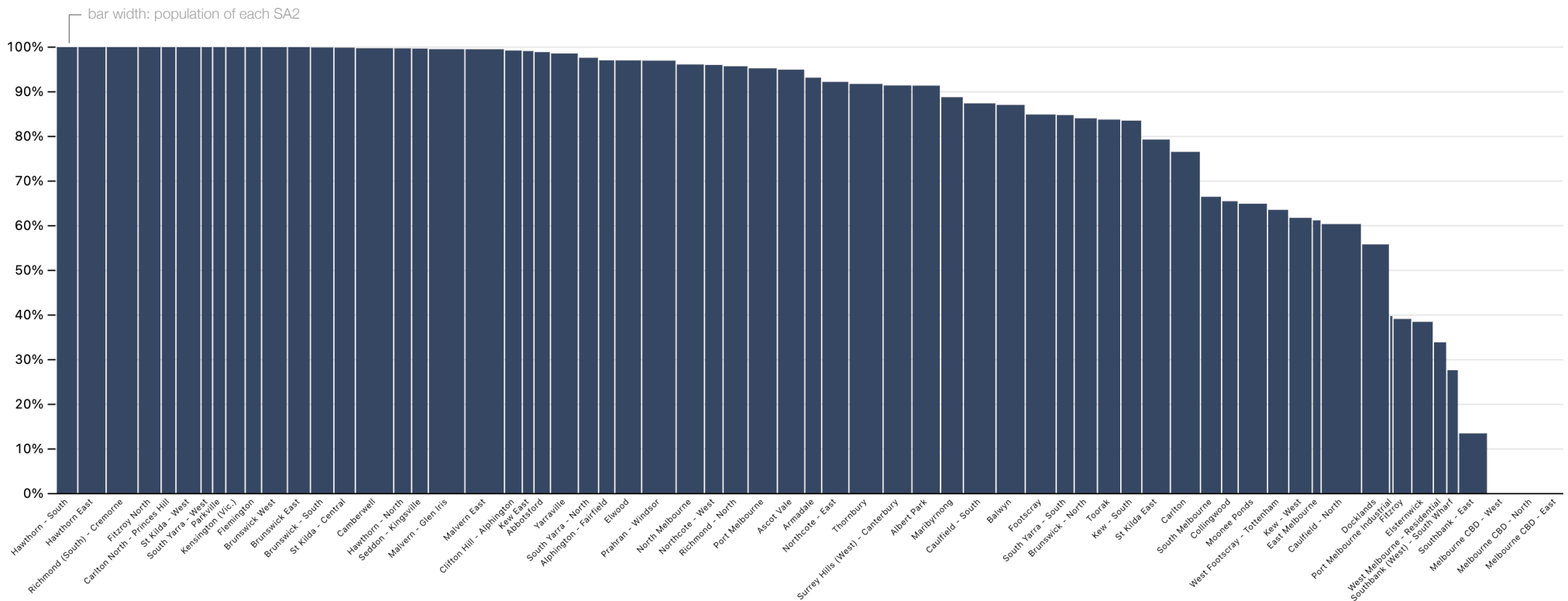
SA2s are statistical boundaries defined by the Australian Bureau of Statistics for the purposes of analysis, similar in both concept and size to suburbs.

As demonstrated within the figure, public transport accessibility to outdoor sports fields can vary significantly even within a region with good accessibility like *Inner Melbourne*.

Most areas have high levels of access, with SA2s encompassing Southbank, Melbourne’s CBD, West Melbourne, Elsternwick, and Fitzroy having the lowest levels of access.

## Walking access to outdoor sports fields within 10 minutes

Proportion of people with access within each SA2 inside *Inner Melbourne*



Outdoor Sport Fields

# Spatial variations in accessibility

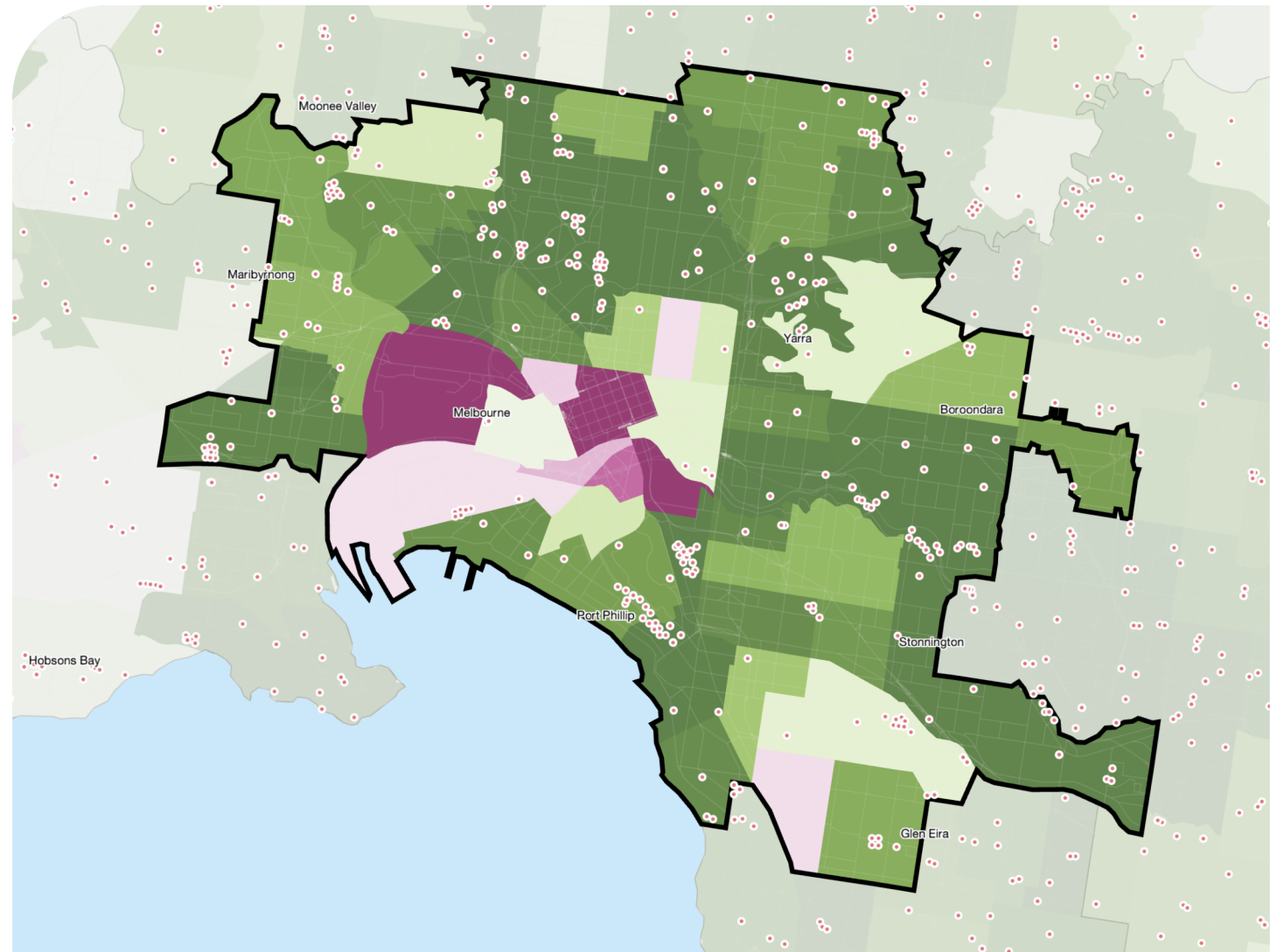
The map shows the proportion of people with walking access to outdoor sports fields within 10 minutes for each SA2 within the *Inner Melbourne* region. This is the same data as shown in the previous page but presented spatially. Purple areas are associated with low levels of walking accessibility, whilst green areas have high levels of accessibility.

Most areas within *Inner Melbourne* demonstrate good walking accessibility to outdoor sports fields, with key exceptions including Melbourne's CBD, West Melbourne, Port Melbourne and Southbank.

SA2s are statistical boundaries defined by the Australian Bureau of Statistics for the purposes of analysis, similar in both concept and size to suburbs.

**Walking access to sports fields via within 10 minutes**  
Proportion of people with access within each SA2 for the *Inner Melbourne*

Proportion with access (%) 0 50 100 Field ●



Outdoor Sport Fields

# Accessibility across demographic groups

The figure at the top-right shows the proportion of each demographic group that can access outdoor sports fields within 10 minutes by walking. Total population can be treated as the 'average' experience and is highlighted in orange. Outcomes are calculated across all metropolitan Melbourne reporting regions and fast-growing regional centres.

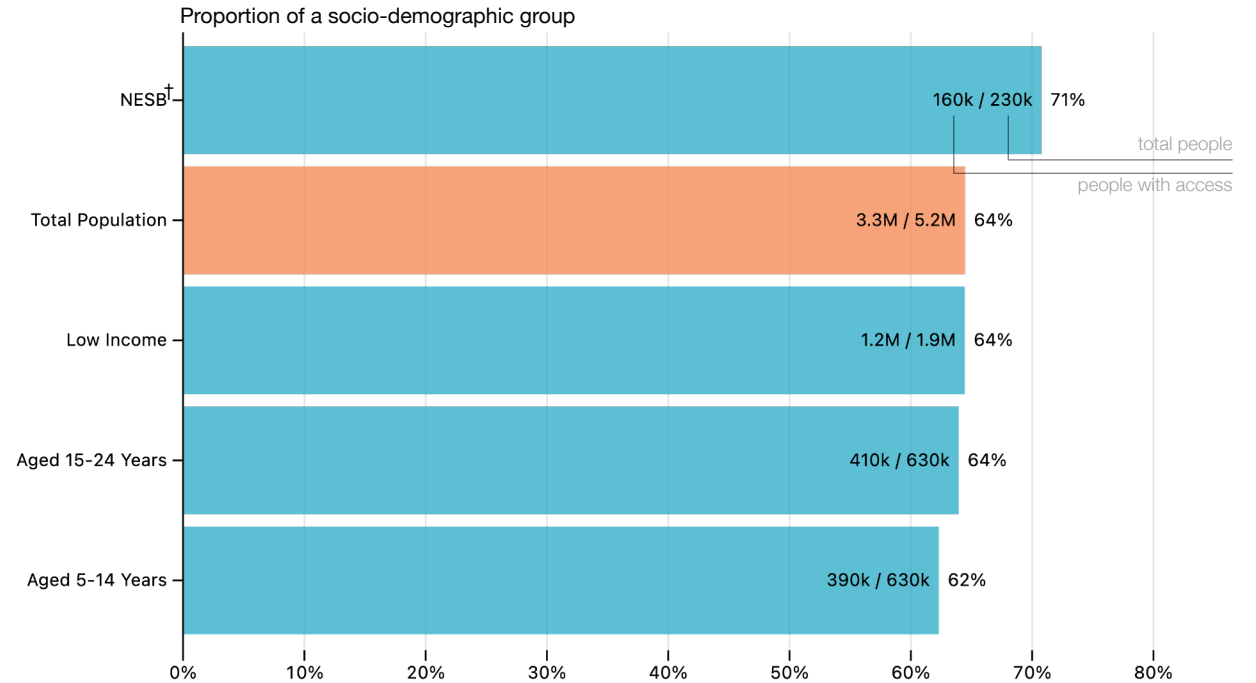
With this, it can be seen that non-english speaking background households (NESB) are more likely to reside near outdoor sports fields. All other demographic groups perform similarly to that of the total population in terms of accessibility levels.

Accessibility is expected to slightly decrease across demographic groups into the future as more of the population is distributed within areas that currently do not have provision of outdoor sports fields.

Where there is change in accessibility over time, this is because more people are projected to be living closer or farther from existing facilities. This analysis has not included future changes to the provision of additional infrastructure or changes in network conditions.

## Outdoor sports field accessibility by socio-demographic group

For walking journeys within 10 minutes

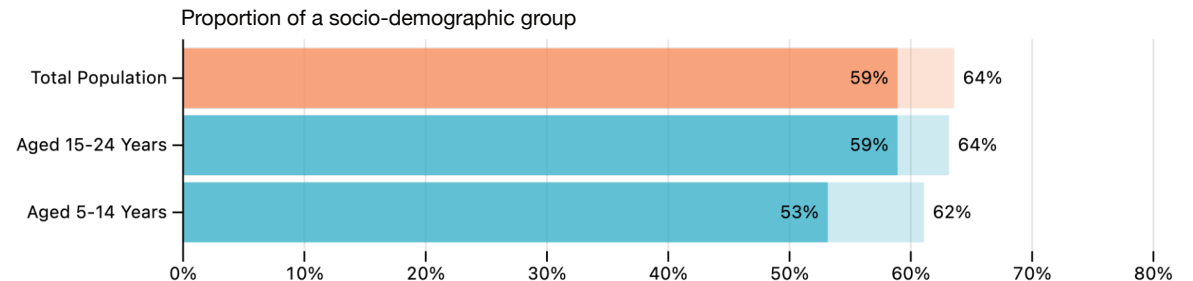


†Non-English Speaking Background (NESB) households

## Current and future accessibility to outdoor sports fields by socio-demographic group

For walking journeys within 10 minutes

2021 2036



Outdoor Sport Fields

# Rates of provision against accessibility

The chart compares the proportion of people with 10-minute walking access to outdoor sports fields against the number of people 'sharing' each outdoor sports field facility across reporting regions and fast-growing regional centres.

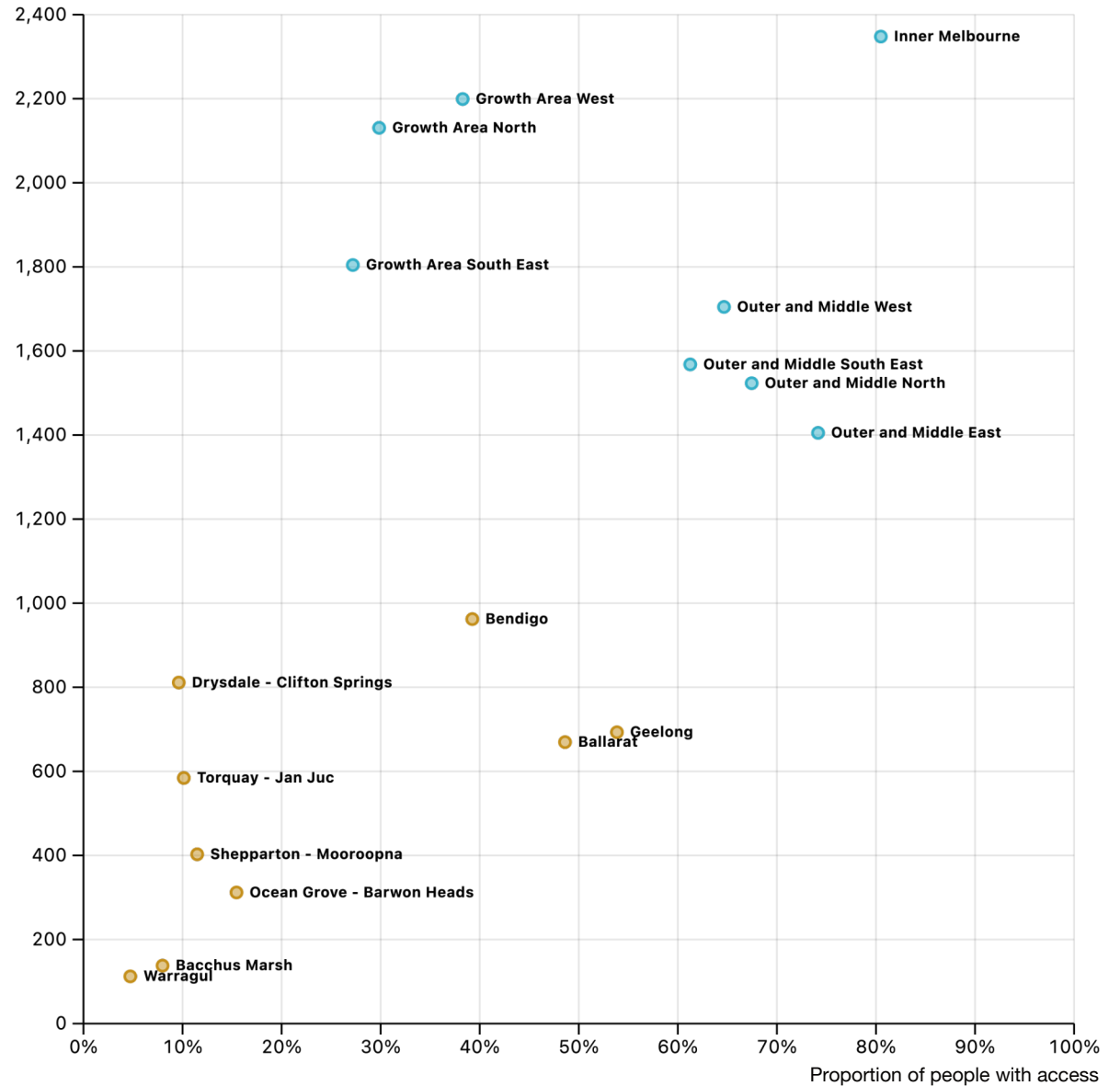
- Inner Melbourne has high walking accessibility to outdoor sports fields on average, but a relatively high number of people per facility.
- Fast-growing regional centres have low levels of walking accessibility to outdoor sports fields but relatively high levels of provision compared to metropolitan areas due to lower population densities.

## Outdoor sports field rates of provision against accessibility

For walking journeys within 10 minutes

Metropolitan Reporting Region    Regional Centre

People per outdoor sports field



Outdoor Sport Fields

# Opening public school grounds out of hours

Analysis shown on previous pages has only included outdoor sports facilities independent of those present on public school grounds. The figures below show the change in 10-minute walking accessibility that would occur if all outdoor sports facilities in public school grounds were made available for use by the public out of hours.

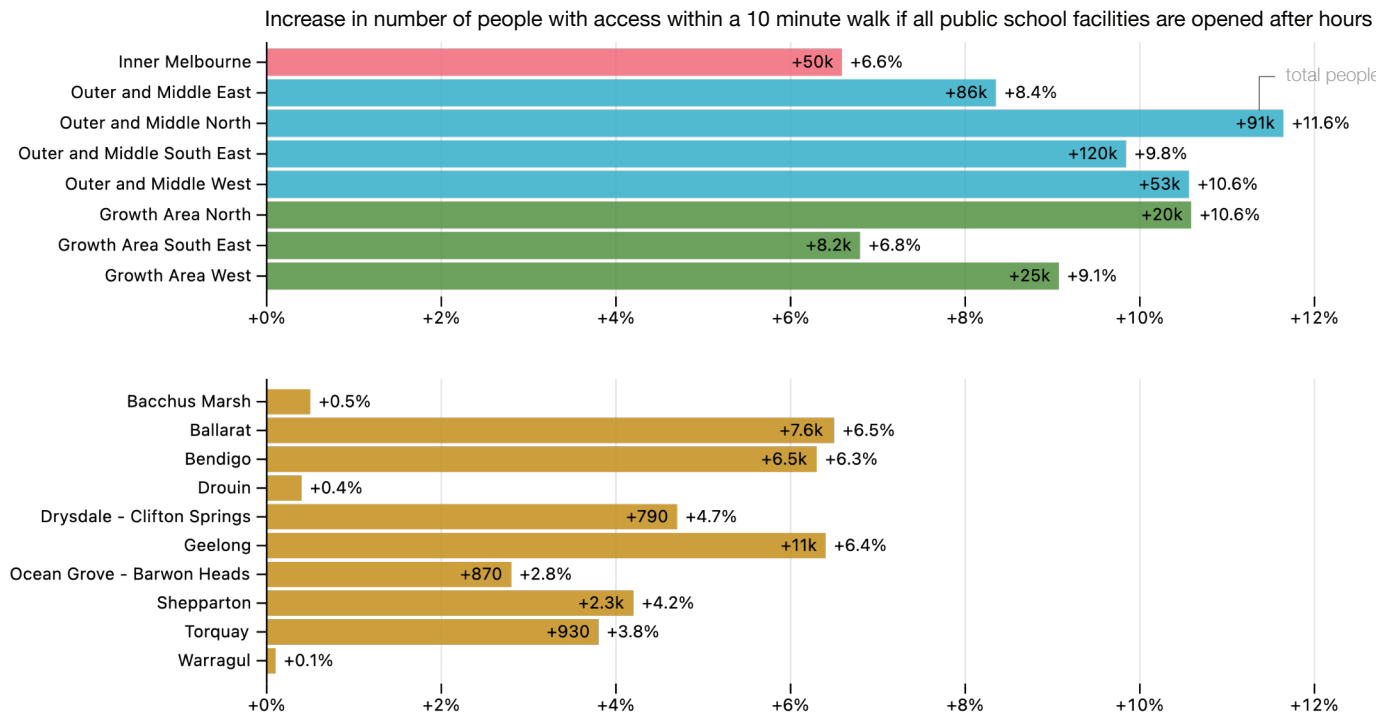
From this, it can be seen that the metropolitan

reporting regions like the *Outer and Middle North* benefit the most from this, with 91,000 more residents able to access an outdoor sports ground within 10 minutes given this change.

It is acknowledged that certain public school grounds may already open to the public out of hours. This has not been taken into account within the analysis conducted.

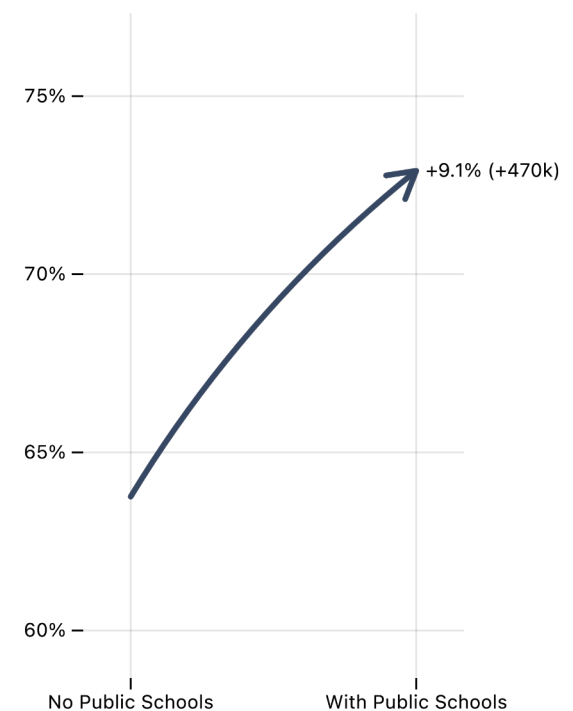
### Change in access to outdoor sports fields by reporting region

Inner Metropolitan Growth Regional Centre



### Overall change in accessibility

Across metropolitan reporting regions and fast-growing regional centres.



Outdoor Sport Fields

# Opening public school grounds out of hours

The chart below shows the change in 10-minute walking accessibility to outdoor sports fields for each individual Statistical Area 2 (SA2) within *Inner Melbourne* if all public school grounds are kept open after hours.

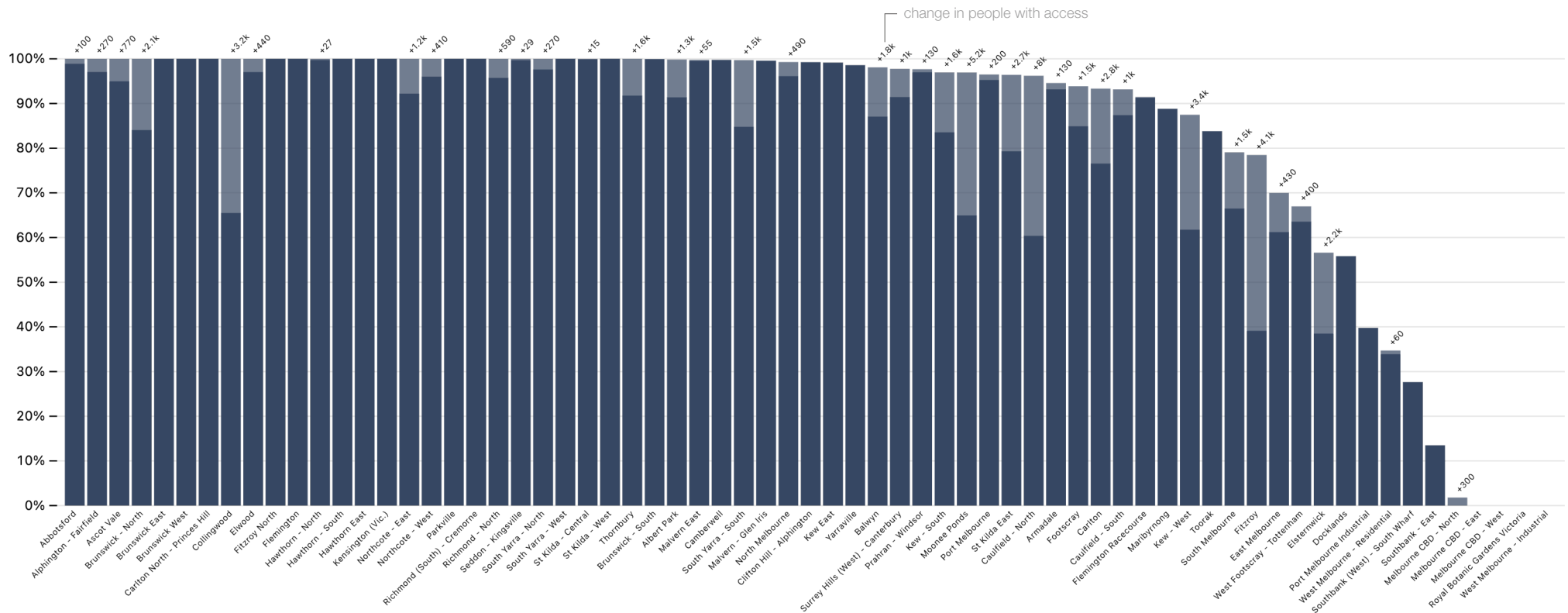
Whilst most areas within *Inner Melbourne* already exhibit good accessibility to outdoor sports fields, the presence of open school grounds can still make a difference. 3,200 additional people have access in Collingwood given this change for instance.

SA2s are statistical boundaries defined by the Australian Bureau of Statistics for the purposes of analysis, similar in both concept and size to suburbs.

It is acknowledged that certain public school grounds may already open to the public out of hours. This has not been taken into account within the analysis conducted.

## Change in walking access to outdoor sports fields

Change in access within each SA2 inside *Inner Melbourne* if all public school grounds are open out of hours



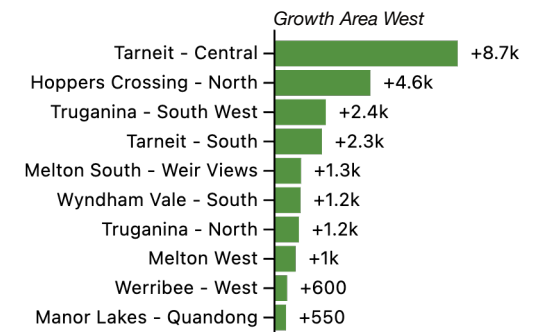
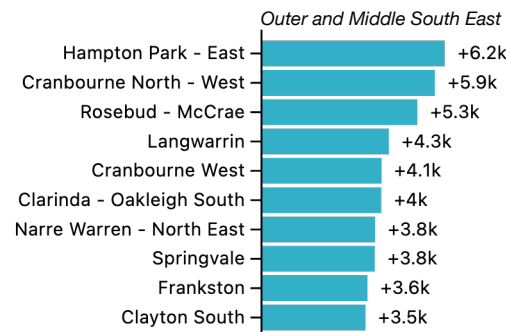
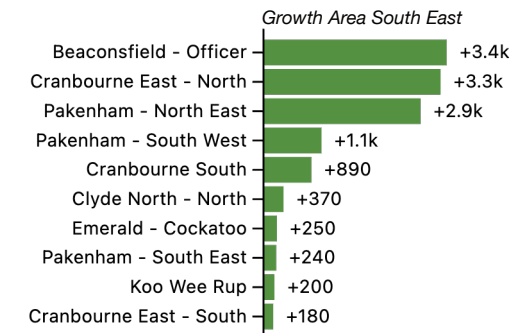
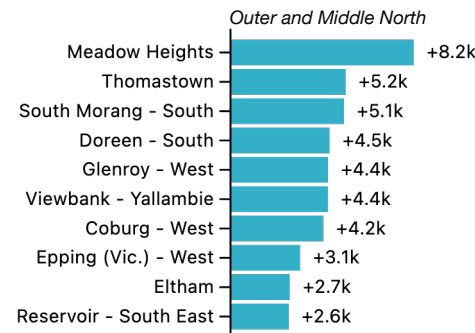
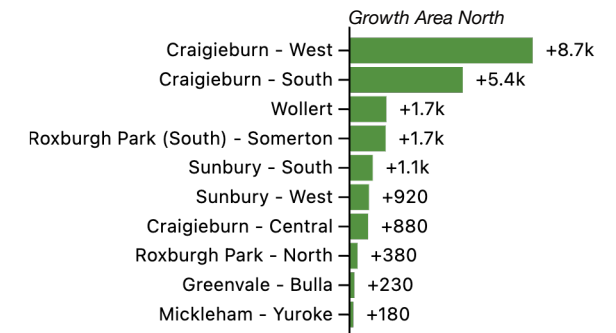
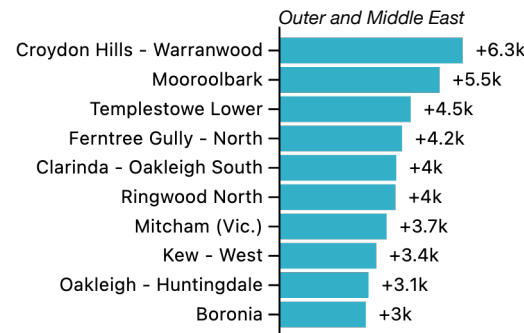
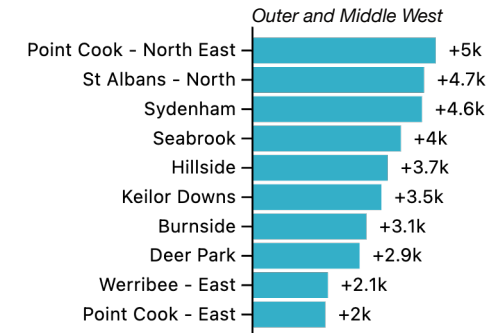
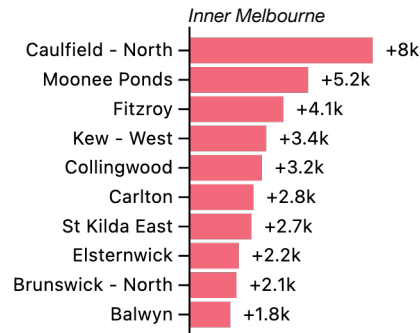
Outdoor Sport Fields

# Opening public school grounds out of hours

The charts shown to the right summarise the top ten SA2s within each metropolitan reporting region that demonstrate the largest absolute change in people with 10-minute walking access to outdoor sports fields if all outdoor public school sports facilities are left open after hours.

SA2s are statistical boundaries defined by the Australian Bureau of Statistics for the purposes of analysis, similar in both concept and size to suburbs.

It is acknowledged that certain public school grounds may already open to the public out of hours. This has not been taken into account within the analysis conducted.



SA2s† with that benefit from open school grounds

Change in people with walking access to outdoor sports fields within 10 minutes

Inner Metropolitan Growth

†Certain SA2s may be attributed to multiple reporting regions as they cross several reporting region boundaries.

## Outdoor Sport Fields

Accessibility analysis  
methodology

All analysis conducted in this report used a multi-step methodology to generate outcomes across socio-demographic groups from network accessibility.

1. Locations of outdoor sports fields were determined using Government and open data sources.
2. Travel time isochrones were generated across all facilities for combinations of travel modes (driving, public transport<sup>†</sup>, walking, cycling), time periods (morning peak or inter-peak), and journey time thresholds (ranging from 5 to 120 minutes). These utilised a family of network routing models developed by Arup using a combination of open transport network data and simulated congested travel times derived from the Victorian Integrated Transport Model (VITM).
3. Spatial analysis was conducted to determine the spatial intersection of socio-demographic groups against the isochrones. This was used, for instance, to determine what proportion of the population were able to access a certain type of infrastructure under one of the considered travel conditions.

<sup>†</sup>Public transport travel times include walking required to access and egress from stops.

## Example isochrone analysis visualisation

Facilities shown are not outdoor sports fields.

Travel time threshold (min) 120 60 45 30 15 5 Facility ●

