Comfort and Safety

low risk

Overview

Indicator name	**Pedestrian crowding**		
Indicator number	24	**Indicator type**	Supplementary
Objective	To measure the level of crowding pedestrians experience on footpaths and how this impacts their comfort levels		
Application guidance	Many attributes of great places can be related to people and liveability. The presence of people of different cultures, ages and abilities gathering for social activities or recreation can indicate that a place is providing a safe, comfortable and active environment that they can frequent. This indicator will support practitioners to understand the comfort experienced by pedestrians when walking in a highly dense footpath. Based on the outcome of the assessment, practitioners can determine the ability of a footpath to maintain suitable comfort levels for pedestrians. Practitioners can use the *comfort percentile of pedestrians* metric to measure the comfort levels of pedestrians across representative locations.		

Metric

Comfort percentile of pedestrians

Recommendation

N/A

Related indicators

Access and Connection
2 Walking paths

Amenity and Use
14 Mix of uses
15 Population density

Comfort and Safety
25 Safe speed for environment

Character and Form
29 Permeability
32 Street space for pedestrians

Metric – Comfort percentile of pedestrians

Metric unit	Percentile
Description	To measure the density of pedestrians at representative locations along a footpath and the level of comfort and service experienced based on available width and intensity of activity
Spatial coverage	Applicable to all NSW
Spatial application	This metric is most suitable for link-based analysis based on the road network

Calculation methodology

Determine amount of walking space

1. Based on the methodology provided in 2 Walking paths, undertake a site assessment and manual survey to calculate the effective footpath width at representative locations

Classify footpath type

2. Where possible, undertake a pedestrian count survey at each representative location to understand the number of people on the footpath during peak hour
3. Using the pedestrian volumes gathered in Step 2, classify each representative location along the footpath to one of 5 footpath types according to the table below (replicated from Table 2A in the Walking Space Guide)

Footpath type	Peak hour number of people on the footpath (people per hour PPHr)
Type 1	Less than 7 PPHr
Type 2	7-69 PPHr
Type 3	70-399 PPHr
Type 4	400-2000PPHr
Type 5	Greater than 2000 PPHr

Assess level of service and comfort percentile

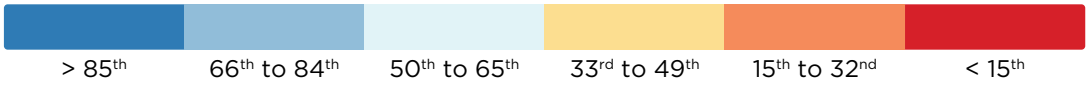
4. Based on the footpath type classification determined in Step 3 and the effective footpath width calculated in 2 Walking paths, determine the level of service (using Table 4A in the Walking Space Guide, replicated below) and associated comfort percentile at each representative location

Table 4A – Walking Space Level of Service

Footpath type	Adjacent to Active Edge	Walking Space and LOS Types 1 – 4 Minimum Walking Space in metres (m) Types 5 Minimum Walking Space in metres (m) and Maximum Peak Hour flow rate in PPMM					
		LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
Type 1	–	2.7	2.3	2.0	1.6*	1.3*	Less than 1.3*
Type 2	–	3.0 + 0.6 Passing zone	2.7 + 0.6 Passing zone	2.3 + 0.6 Passing zone	1.9 + 0.6 Passing zone	1.6 + 0.6 Passing zone	Less than 1.6 + 0.6 Passing zone
Type 3	Not adjacent	3.9	3.5	3.0	2.6	2.2	Less than 2.2
	Adjacent	4.3	3.8	3.2	2.8	2.3	Less than 2.3
Type 4	Not adjacent	4.8	4.3	3.7	3.2	2.7	Less than 2.7
	Adjacent	5.2	4.6	3.9	3.4	2.9	Less than 2.9
Type 5	Min. width (m)	5.2	4.6	3.9	3.4	2.9	Less than 2.9
	Max. PPMM	4.0	6.0	9.5	13.5	18.0	Greater than 18.0

* Note well: equal access issues - see page 33

Metric – Comfort percentile of pedestrians (Cont.)

Calculation methodology	**Data representation** 5. Assign colour based on the classification below (replicated below from Table 5 in the Walking Space Guide) Unit: Comfort Percentile 
Assumption	• When classifying footpath by type, preference is given to classification by volume, with classification by desktop analysis methods only applied when survey data is unable to be obtained • Peak hour for pedestrian count surveys will be different for every location • The walking space Levels of Service (LoS) relate to comfort percentiles at that intensity of use. For example, LoS A is the 85th comfort percentile (ie. more than 85% of people would be expected to be comfortable given the amount of walking space at that level of intensity of use during the peak hour). In all situations, the aim should be to achieve at least LoS C. • Walking Space Level of Service differs from the Fruin Level of Service and has been calibrated to Australian urban norms and are therefore more representative of local conditions
Limitation	N/A
Data source	Manual collection of data

Reference

TfNSW, Walking Space Guide (2020): roads-waterways.transport.nsw.gov.au/business-industry/partners-suppliers/documents/guides-manuals/walking-space-guide.pdf