

Measuring Walking II: Counting Pedestrians

**Standardisation, research needs and
future cooperation**

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1. Why count pedestrians?

Why count pedestrians? (1)

Basic
dimensions

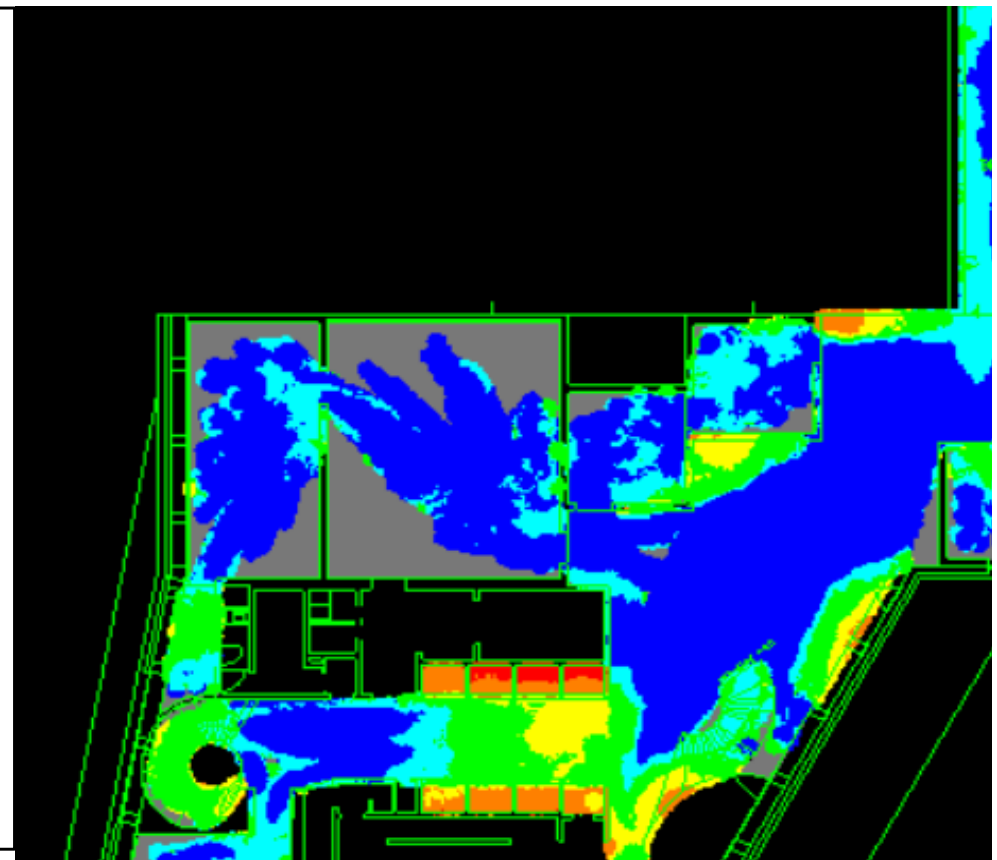
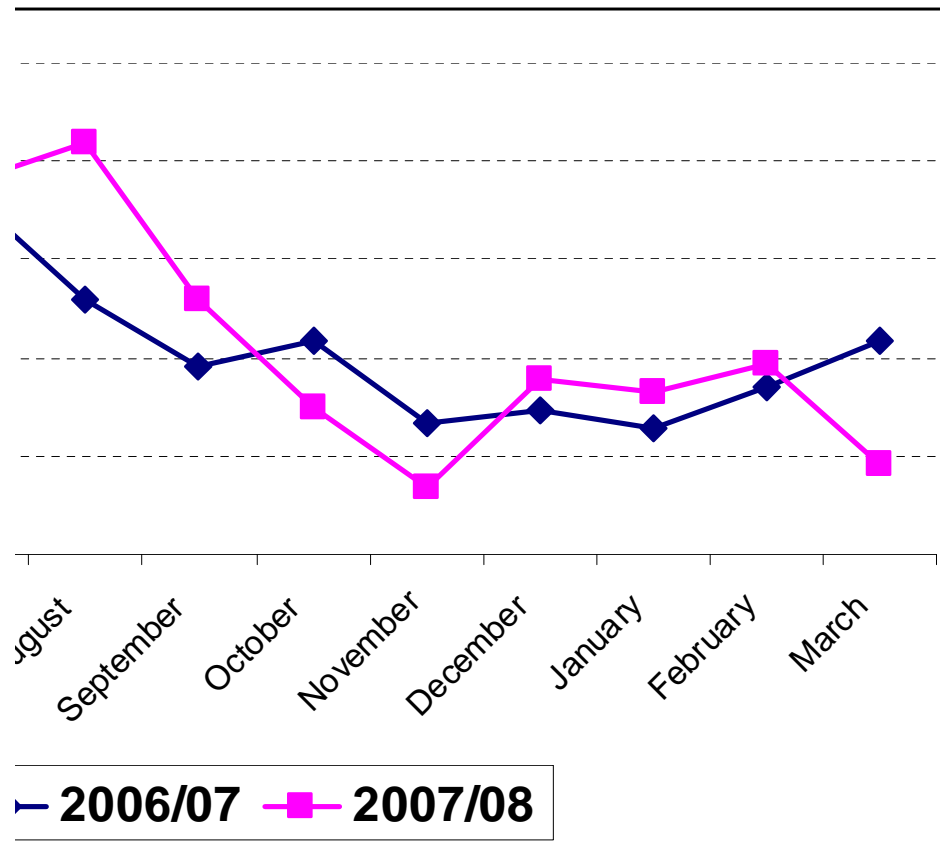
Range of uses:

- Derived / combined dimensions
- Benchmarking
- Research questions
- Etc.

Why count pedestrians? (2)

Management / Monitoring

Design / Planning / Modelling

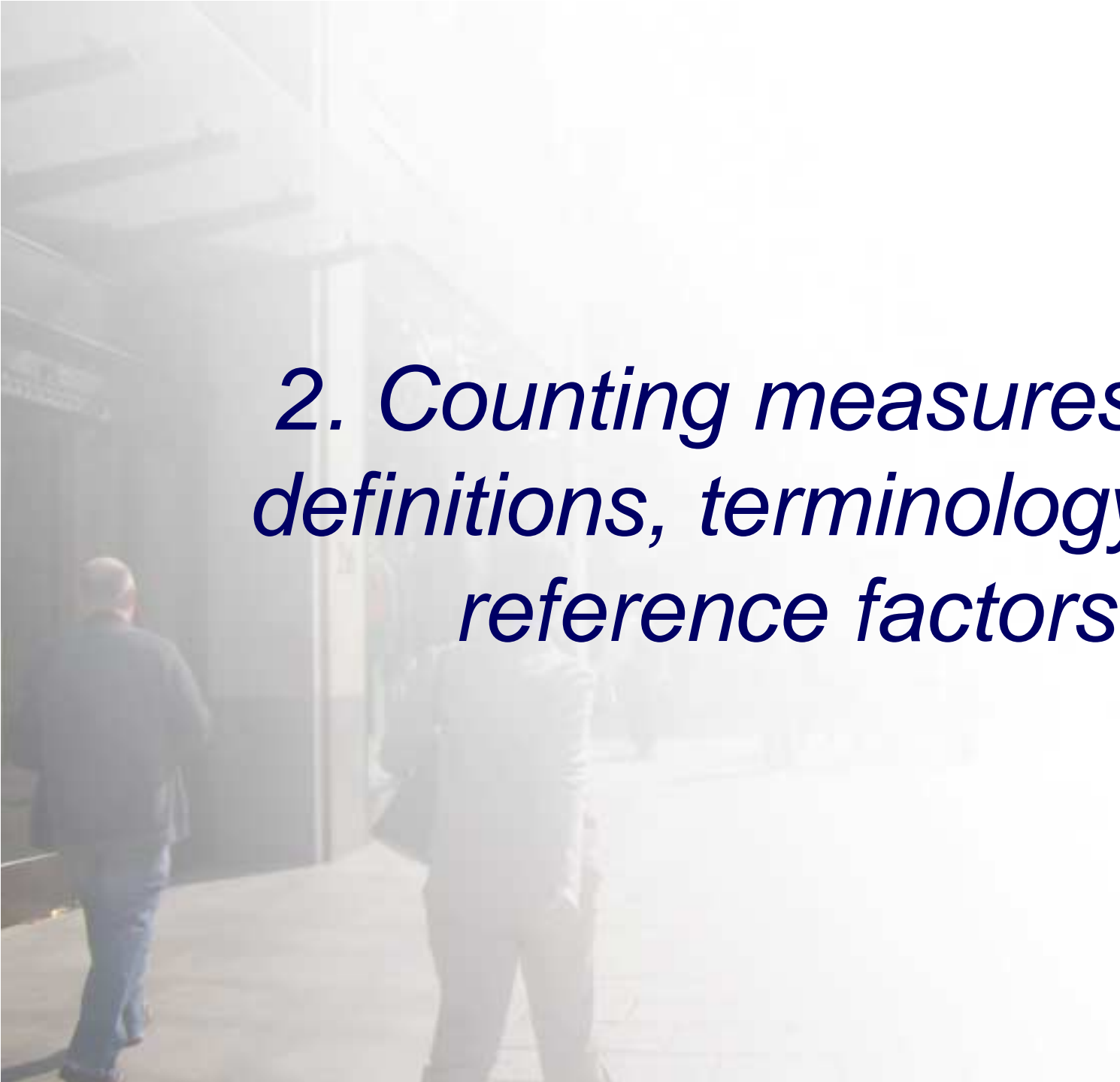


Management & monitoring

	<i>Longitudinal / cross-sectional</i>	<i>Precision required (Low, medium, high)</i>	<i>Harmonisation desirable / essential</i>
Internal performance measurement	L	M	D
Before / after monitoring	L & C	H	E
Benchmarking	L & C	M / H	E
One-off research	Depends	Generally high	D
Economic appraisal	(C)	L / M	D
Multi-modal counts	L & C	M	May be difficult
Other?			

Design, planning, modelling

	<i>Longitudinal / cross-sectional</i>	<i>Precision required (Low, medium, high)</i>	<i>Harmonisation desirable / essential</i>
Movement flow analysis	C	L / M	D
Capacity (Fruin) analysis	(C)	Potentially high	E
Pedestrian model calibration	(C)	M	E
Multi-modal modelling	(C)	M	May be difficult
Other?			



*2. Counting measures:
definitions, terminology and
reference factors*

Definition of a pedestrian (1)



Definition of a pedestrian (2)



Reference factors (1)

Peak hour

Capacity

Intensity

Volume counts

Longitudinal trends

Seasonal trends

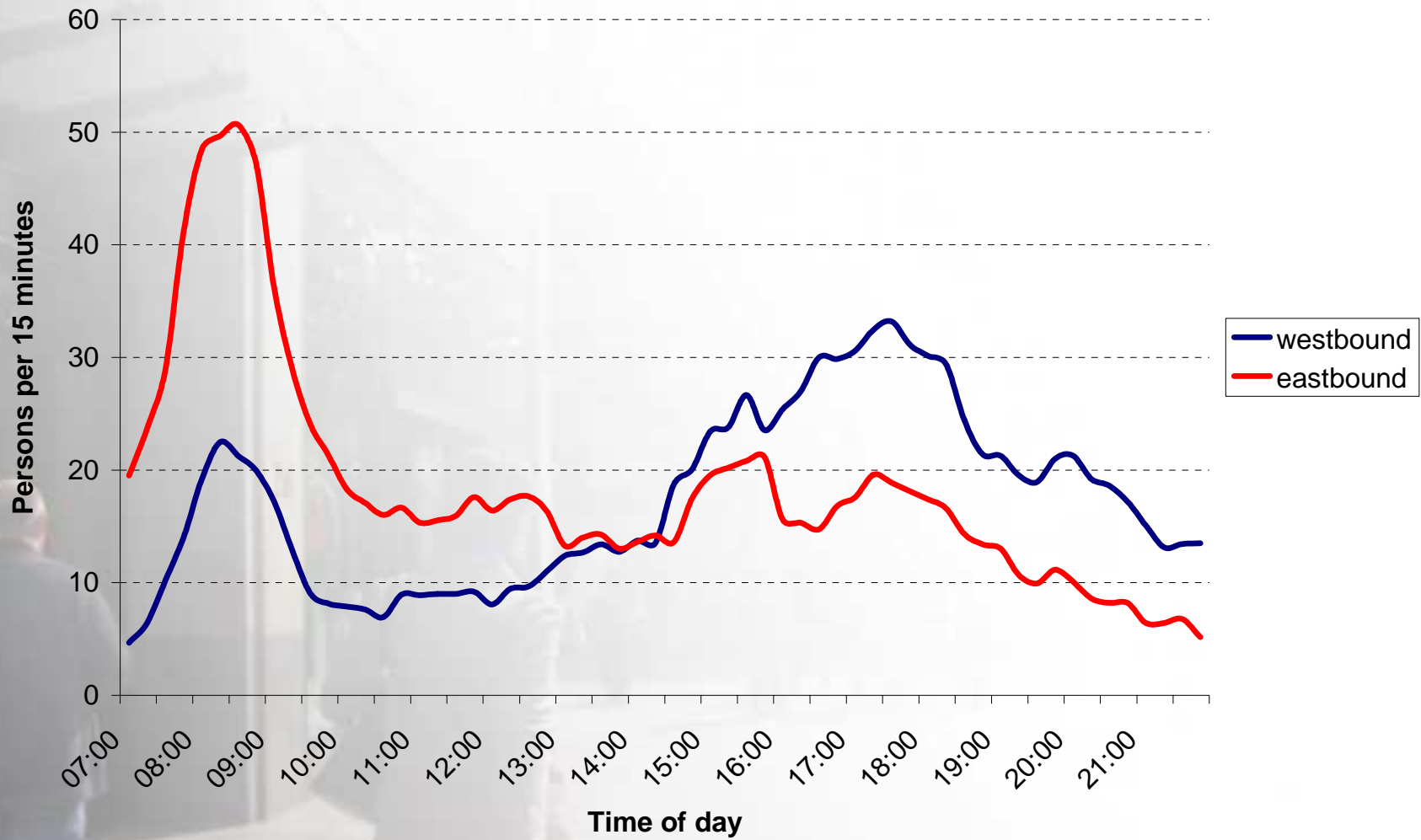
Daily flow curve

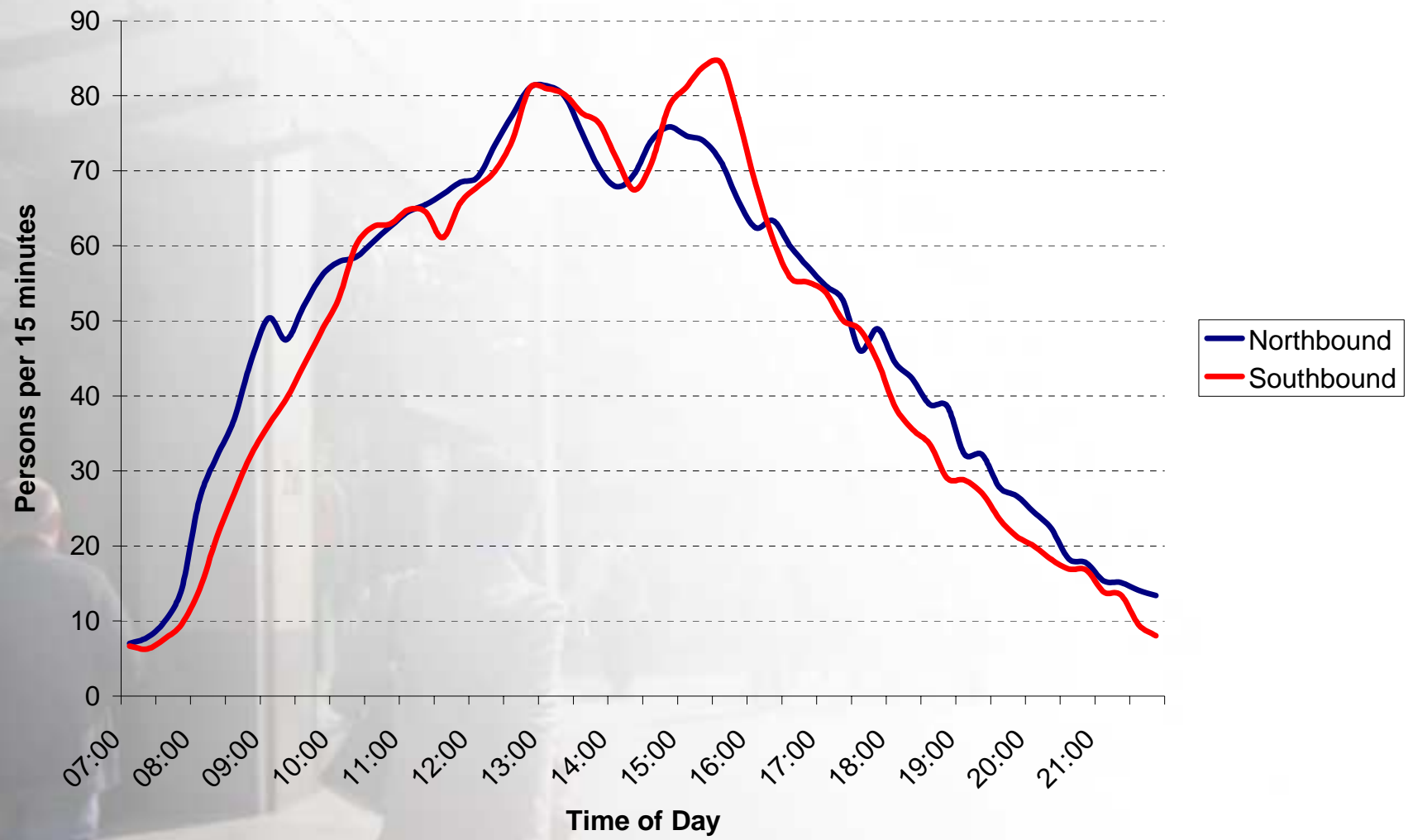
Movement patterns

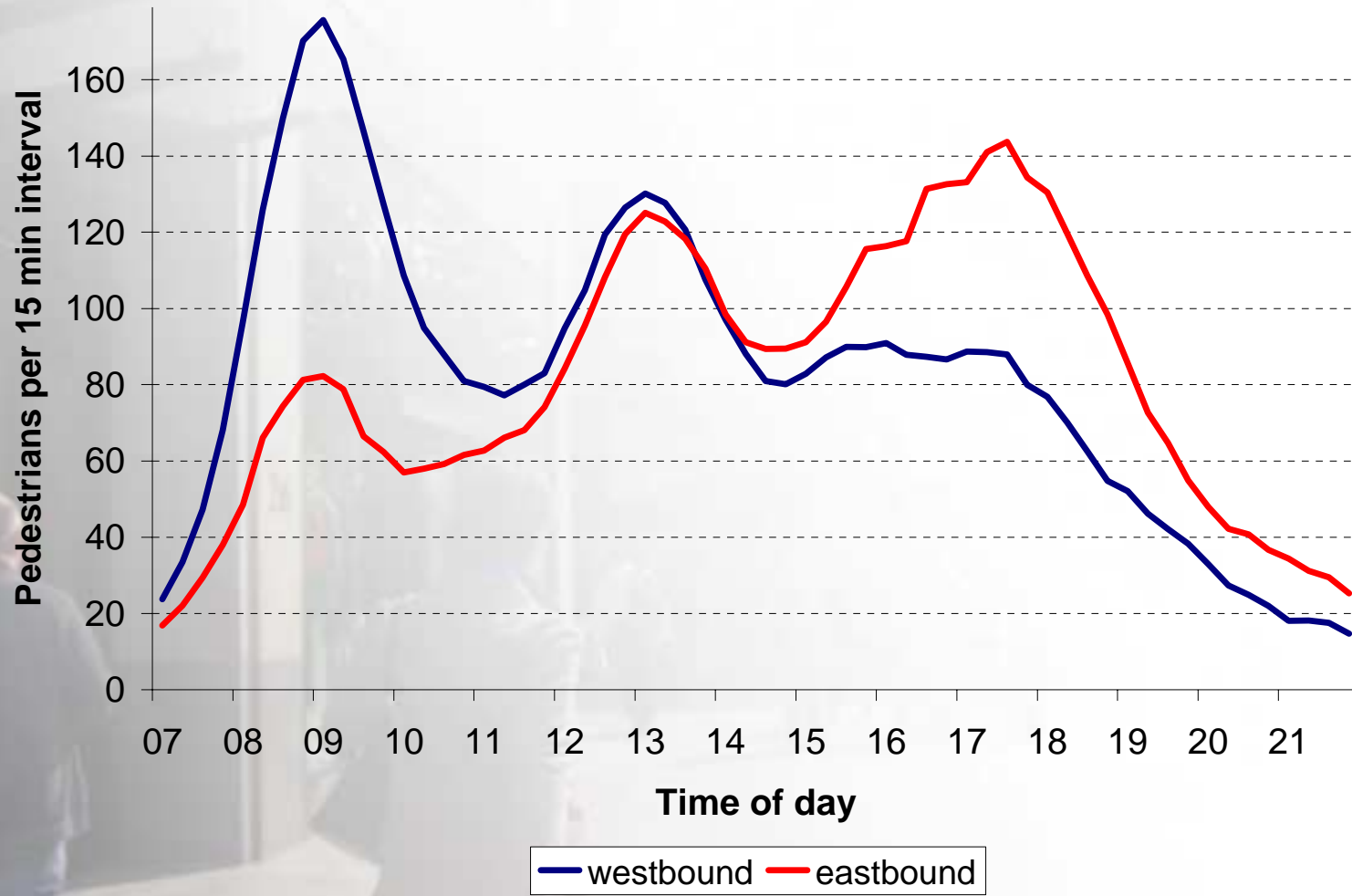
User segmentation

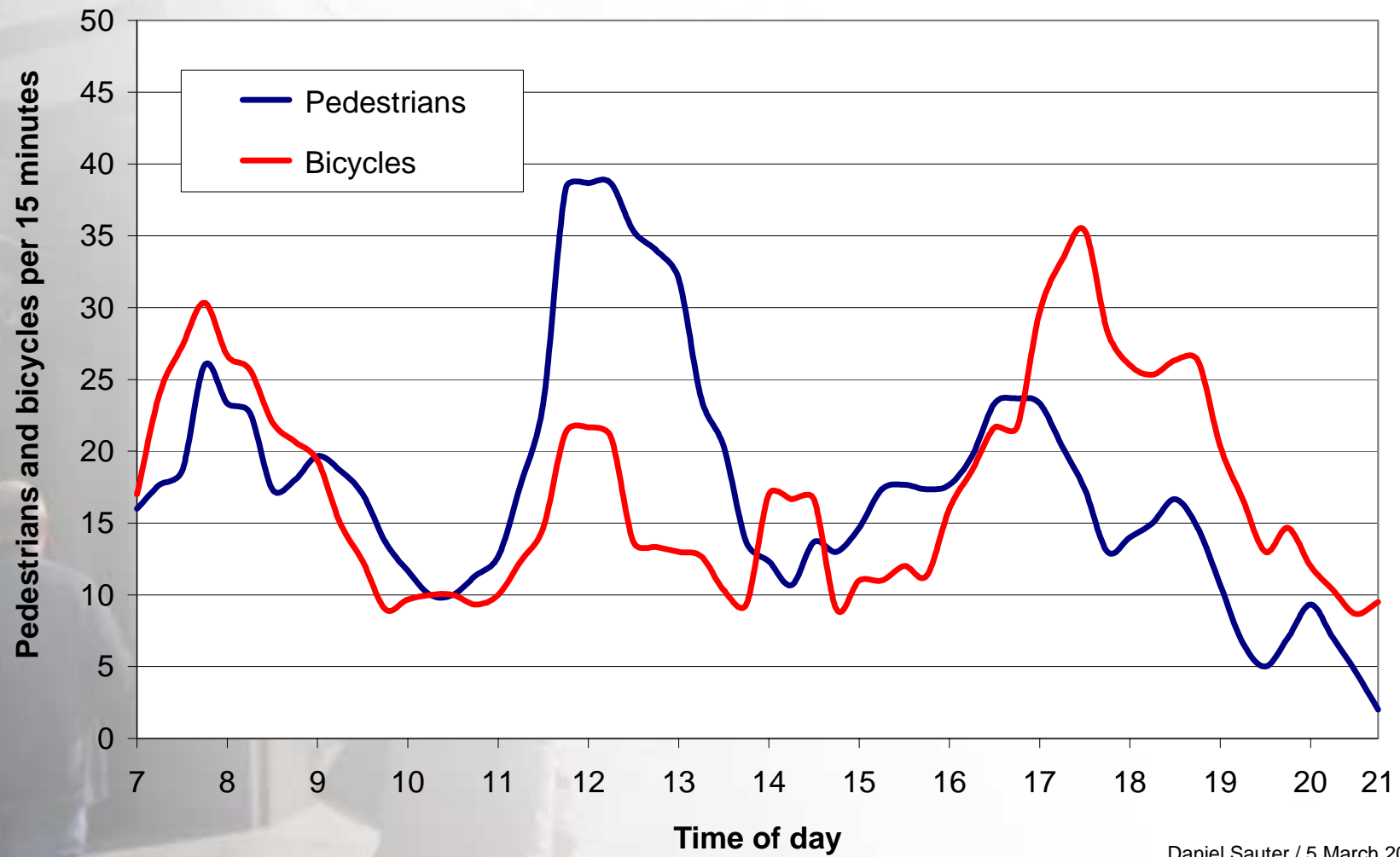
Reference factors (2)



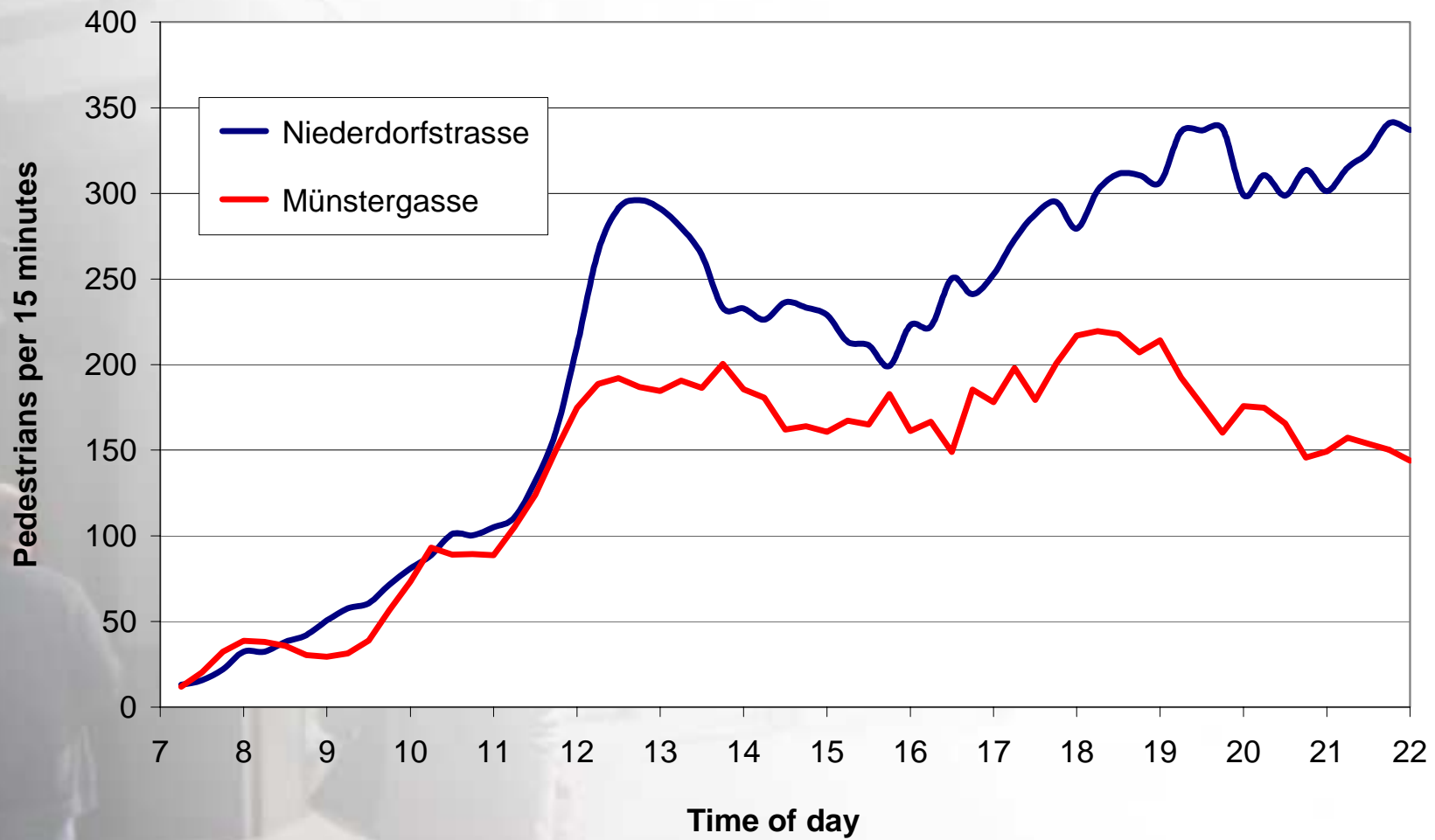








Daniel Sauter / 5 March 2008



Daniel Sauter / 2 June 2004

A faded background image of a modern building with people walking on a sidewalk. The image is semi-transparent, allowing the text to be clearly visible over it. The scene shows a person in a dark jacket and blue jeans walking away from the camera on the left, and another person in a light-colored jacket walking towards the camera in the center. The building has a dark facade and a large glass window. The overall atmosphere is bright and slightly hazy.

3. Technical guidance

Choice of count site (1)

The 3 P's:

Permanent

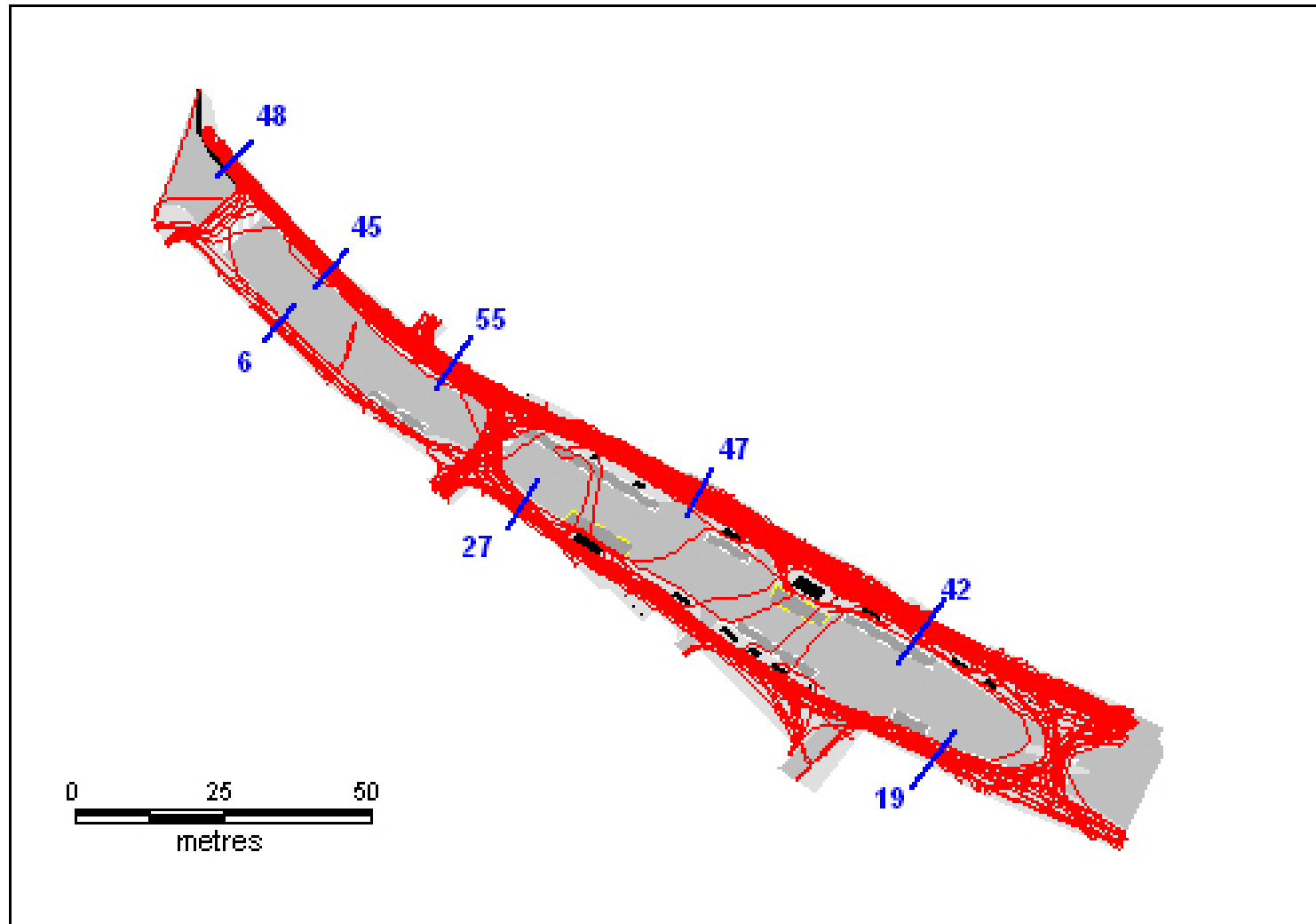
Periodic

Project-based



Calibration

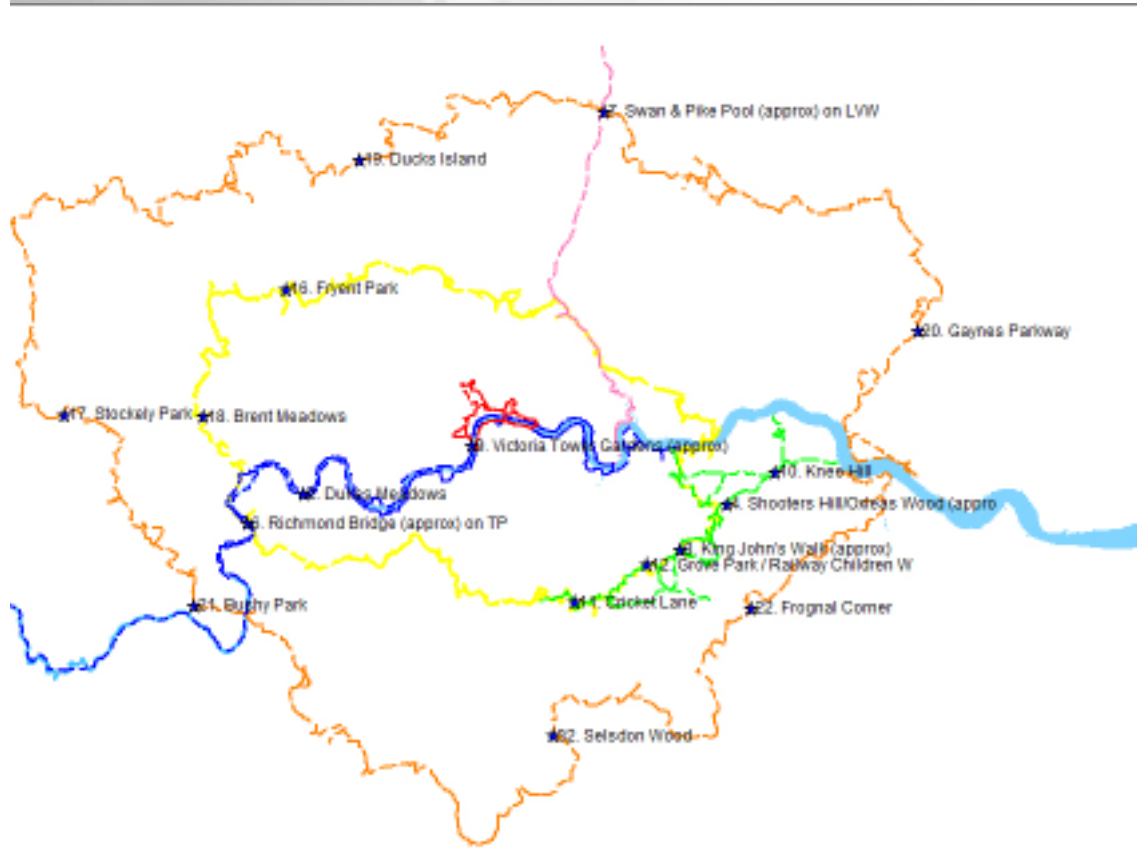
Choice of count site (2)



Choice of count site (3)

Representative aggregation:

- Selection of cordon sites
- Aggregation of count sites



Variation and sampling (1)

Approach:

- Multi-level recommendations
- For defined accuracy requirements

Gaps and opportunities:

- Peak hour variability
- Daily flow curve – trials of diver sampling, zipper method

Variation and sampling (2)

	Quality Level 1	Quality Level 2	Quality Level 3
<i>Useful for</i>	Initial estimate	Cross-sectional comparison	Longitudinal change
<i>Confidence interval</i>	90%	90%	95%
<i>Margin of error</i>	+/- 25%	+/- 5%	+/- 4%
<i>Method</i>	1 weekday 10-11 and 16-17	1 weekday Rotating 15mins	3 weekdays 7-22
<i>Multiplication factors to 24hr</i>	750%	525%	105%
<i>Reporting period</i>	5 years	2 years	Annual

Weather and seasonal variation

- Seasons: Spring and autumn
- Days: Tuesday, (Wednesday) and Thursday
- Weather conditions

Other issues

- Directions / side of street
- Basic demographics (age, gender, children accompanied)
- Modal share
- Other footway users (e.g. bicycles)
- ...

A blurred background image showing two people walking on a sidewalk. The person on the left is wearing a dark jacket and blue jeans, walking away from the camera. The person on the right is wearing a light-colored jacket and dark pants, walking towards the camera. The background is a bright, overexposed outdoor setting with a building on the left and a street on the right.

4. Format and purpose of the guidance

Requirements

- Essential / desirable
- Quality levels
- Structure
- Updatable
- Basic dimensions and some key derived dimensions to serve as benchmarks?

Data sharing solutions

Open sources

Data sharing

Central database

Ownership

Management

Updating / promotion

A faded, high-angle photograph of a city street. In the foreground, two people are walking away from the camera. The person on the left is wearing a dark jacket and blue jeans. The person on the right is wearing a light-colored jacket and dark pants. The street is paved, and there are buildings and other pedestrians visible in the background, though they are out of focus and faded. The overall tone is light and airy.

5. Dissemination channels

Potential channels

- International guidance
- National / regional / city
- Pedestrian counter suppliers
- Pedestrian modelling software
- Commercial users / counting companies / consultants
- Tourism / economic development agencies

Overcoming potential barriers

Don't know



Promotion

Dissemination channels

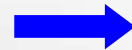
Can't



Stakeholder buy-in

Dissemination channels

Don't want



Stakeholder buy-in

Multi-level approach



*The
next
steps?*