

Joining Impact Models of the Built Environment (JIBE)

Glossary of key terms

Concept	Definition
20 minute neighbourhood	A concept focused on urban planning where residents can access most of their daily needs within a 20-minute return walk from home, emphasising safe cycling and local transport options.
Access points	Points indicating how every activity location can be reached on the network, providing information on accessibility.
Accessibility analysis	Examination of how easily individuals can reach various destinations, often considering factors such as distance, transportation options, and infrastructure.
Active travel	Modes of transportation that involve physical activity, such as walking or cycling.
Activity centres	Places where various activities (e.g., work, shopping, recreation) occur, often serving as focal points for transportation planning.
Address level	Precise geographic coordinates of a location, often used for detailed mapping and analysis.
Agent-based transport model	Modeling approach that simulates the behavior of individual agents (e.g., people, vehicles) to understand system-level outcomes.
Background concentration	Ambient level of a substance (e.g., air pollution) in a given environment.
Base case	A scenario representing the current state or situation, often used as a reference point for comparison in analyses.
Base year	A specific year used as the starting point for analysis or comparison in a study.
Behavioural modification	Interventions aimed at altering human behavior to achieve desired outcomes.
Binary scoring method	A method assigning a score of 1 or 0 based on whether a condition is met or not.
Body mass index (BMI)	A measure of body fat based on height and weight, commonly used to assess health and risk of disease.
Built environment	Human-made surroundings where people live, work, and recreate, including infrastructure like buildings, parks, and transportation networks.
Built environment outputs	Modelling outputs related to the built environment, such as cycling infrastructure, measures of local accessibility, multi-modal road network

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Catchments (for activity centres)	Areas surrounding activity centers that capture the population or demand for services.
Chronic disease	Long-lasting medical conditions requiring ongoing management or treatment.
Comparative risk assessment	Methods developed by the World Health Organization to assess the population health burden of exposure to risk factors
Congestion level	Degree of traffic congestion on roadways or transportation networks, often measured by factors like travel time or vehicle density.
Cycling infrastructure	Facilities and amenities designed to support cycling, such as bike lanes, bike paths, and bike racks.
Cycling stress	A measure used to predict how suitable different roads on the network are for cycling.
Daily living destinations	Locations where people regularly go for daily activities such as work, shopping, or recreation.
Dedicated bike lanes	Segregated lanes reserved for bicycles, separate from motor vehicle traffic.
Demographic events	Significant demographic changes or milestones in individuals' lives, such as births, deaths, marriages, or job changes.
Demographic model	A model that simulates population dynamics and characteristics, often used in forecasting or planning.
Digital surface model	A digital model representing the Earth's surface including natural and built features, often used for terrain analysis or mapping.
Digital terrain model	A digital model representing the bare Earth's surface, often used for elevation analysis or mapping.
Directed graph structure	A mathematical representation of a network with edges indicating directional connections between nodes.
Disease specific occurrence	Incidence or prevalence of a specific disease or health condition within a population.
Dose response function	Relationship between a behaviours, exposure to a substance or factor and the likelihood or severity of a health outcome.
Dying prematurely/ premature death	Death occurring at a younger age than expected, often due to preventable causes or health issues.
Edge effects	Effects resulting from people traveling in and out of the border or boundary of a defined area.
Edges (of network)	Connections or links between nodes in a network, representing transportation routes or pathways.
Elevation data	Information about the height or elevation of terrain features, often used in geographic analysis or mapping.
Environmental outputs	Results or outcomes related to the environment, such as emissions, air pollution and noise pollution.

Concept	Definition
Exposure simulations	Simulated scenarios or models representing potential exposures to hazards, pollutants, or other factors.
Eye-level greenness visibility	Visibility or presence of green spaces or vegetation at eye level, often used in environmental or urban planning.
Features of urban design	Characteristics or elements of urban environments, such as population density, land use mix, or transportation infrastructure.
General Transit Feed Specification (GTFS)	A standard format for public transportation schedules and related geographic information.
Geographic database/geodatabase	A database containing geographic data, often used for mapping, analysis, or modeling purposes.
Gradient	The rate of change of elevation over distance, often used to describe the steepness of terrain features.
Health adjusted life years	A measure of overall disease burden, combining the impact of mortality and morbidity on quality of life.
Health Economic Assessment Tool	A tool developed by the World Health Organization (WHO) for assessing the health and economic impacts of active transport scenarios.
Health exposures	Factors or conditions that influence health outcomes or risks, such as air pollution, physical activity, or access to healthcare.
Health impact models	Models that simulate or predict the health effects of various factors or interventions, often used in public health or policy analysis.
Health inequalities	Disparities or differences in health outcomes or access to healthcare between different population groups.
Health outputs	Results or outcomes related to health, such as disease incidence, mortality rates, or years of life lost.
Health pathways	Ways in which the built environment influences health, including factors such as physical activity, exposure to pollutants, social connections, and access to healthcare.
Health trajectory	The expected course or pattern of health status or outcomes over time, often influenced by factors such as lifestyle, environment, and healthcare access.
Individual travel activity plan	A plan or schedule detailing an individual's travel activities, including destinations, modes of transportation, and timing.
Intervention	An action, policy, or program implemented to achieve a specific outcome or address a particular issue or problem.
Junction stress	The level of stress or difficulty experienced by cyclists at road junctions or intersections, often influenced by factors such as traffic volume, design, and signage.
Knowledge translation	The process of synthesizing, disseminating, and applying research findings or knowledge to inform decision-making, policy development, or practice.

Concept	Definition
Land use database	A database containing information about the distribution and characteristics of land use, often used in urban planning, environmental analysis, and transportation modeling.
Latent demand scenario (cycling intervention)	Hypothetical situations or scenarios representing unmet or latent demand for cycling infrastructure or opportunities.
Life expectancy	The average number of years a person is expected to live, often used as a measure of population health and well-being.
Life year	A unit of measure representing one year of life, often used in assessing the impact of diseases, interventions, or policies on mortality.
Link concentration	The density or concentration of transportation links or connections within a network, often used in network analysis or optimization.
Link stress	The level of stress or difficulty experienced by cyclists or pedestrians on specific road links or segments, often influenced by factors such as traffic volume, speed, and design.
Marginal metabolic equivalent of task	A measure of energy expenditure or physical activity intensity, often used in health and fitness assessments.
MATSim	Multi-Agent Transport Simulation, a framework for simulating individual travel behavior and interactions in transportation networks.
Microsimulation	A modeling technique that simulates individual entities or agents and their interactions to understand system-level behavior or outcomes.
Mobility outputs	Results or outcomes related to mobility, such as congestion, travel times, travel stress.
Mode choice	The selection of a transportation mode for a given trip or journey, often influenced by factors such as distance, time, cost, and convenience.
Mortality risk	The likelihood or probability of death within a population or group, often influenced by factors such as age, gender, lifestyle, and health status.
Multimodal network	A transportation network that accommodates multiple modes of transportation, such as walking, cycling, public transport, and driving.
Multistate life table	A statistical tool used to estimate life expectancies and mortality rates for different states or conditions within a population.
Network assignment	The process of allocating or assigning travel demand to specific routes or paths within a transportation network, often used in transportation planning and modeling.
NO2	Nitrogen dioxide, a common air pollutant produced by combustion processes, industrial activities, and vehicle emissions.

Concept	Definition
Nodes (of network)	Points or locations within a transportation network where connections or links converge, diverge, or intersect.
Non-occupational physical activity	Physical activity performed outside of work or occupational settings, such as exercise, recreation, or active transportation.
OpenStreetMap (OSM)	An open-source mapping platform and database containing user-generated geographic data, often used for mapping, navigation, and analysis.
Optimization procedure	A method or algorithm used to find the best or most efficient solution to a problem, often used in transportation planning and network design.
Physical activity	Any bodily movement produced by skeletal muscles that requires energy expenditure, often associated with health benefits and disease prevention.
PM2.5	Particulate matter with a diameter of 2.5 micrometers or less, a common air pollutant generated by combustion processes, industrial activities, and vehicle emissions.
Points of interest	Specific locations or landmarks that may be of interest to travelers, such as tourist attractions, restaurants, or parks.
Risk factor	Any attribute, characteristic, or exposure that increases the likelihood of developing a particular disease or health condition.
Road classifications	Categorization of roads based on factors such as size, capacity, and function, often used in transportation planning and management.
Road segment	A specific section of road between two distinct points, often used in transportation analysis and modeling.
Route level indicators	Metrics or measures associated with specific travel routes, such as distance, travel time, safety, or comfort.
Routing	Process of determining the best or optimal path or route from one location to another, often used in navigation systems or transportation planning.
Satellite data	Information collected by satellites orbiting the Earth, often used for various purposes such as mapping, monitoring, and environmental analysis.
Simulation model	A model or system that replicates the behavior or characteristics of a real-world process or system, often used for analysis, prediction, or training.
Social demographic attributes	Characteristics of a population related to social and demographic factors, such as age, gender, income, and education.
Spatial analysis	Analysis of geographic data and relationships between spatial features or phenomena, often used to identify patterns or trends.

Concept	Definition
Spatial equity	Fair and equitable distribution of resources, opportunities, and services across geographic areas or populations.
Spatial/temporal resolution	Level of detail or granularity in spatial and temporal data or analysis, often related to the size of geographic units or time intervals.
State transitions model	A model representing how individuals transition between different states or conditions over time, often used in health or demographic analysis.
Statistical Area 1 (SA1)	A geographic unit used for statistical purposes, typically containing a population of 200 to 800 people, defined by the Australian Bureau of Statistics.
Statistical Area 2 (SA2)	A larger geographic unit used for statistical purposes, typically containing a population of 3,000 to 25,000 people, defined by the Australian Bureau of Statistics.
Street connectivity	Measure of how well-connected or accessible streets are within a network, often used in urban planning and transportation analysis.
Street level attributes	Characteristics or features associated with streets at ground level, such as width, pavement condition, or amenities.
Synthetic agent	Simulated or artificial entity representing an individual or entity in a model or simulation.
Synthetic population	Artificial population created for modeling or simulation purposes, often based on statistical or demographic data.
The integrated Transport and Health Impact Model (ITHIM)	A modeling framework used to assess the health impacts of transportation policies and interventions.
Traffic volume	The amount or volume of vehicular traffic on roadways, often measured as the number of vehicles passing a point within a specific time period.
Transition probability (between health states)	The likelihood or probability of transitioning from one health state or condition to another over a certain period.
Transport behaviors	Patterns or actions related to transportation choices and activities, such as mode choice, route selection, and travel frequency.
Transport model	A representation of transportation systems, behaviors, or outcomes, often used for analysis, planning, or simulation.
Transport network	The infrastructure and pathways that enable movement of people or goods, often represented as a network of nodes and edges.
Transport system	The overarching framework or structure governing transportation operations, policies, and infrastructure.
Transport scenario	A hypothetical or projected situation or condition related to transportation, often used for planning or policy analysis.
Travel behaviour model	A model representing the choices and behaviors of individuals or groups related to travel and transportation.

Concept	Definition
Travel demand	The need or desire for travel by individuals or groups, often influenced by factors such as work, recreation, and social activities.
Travel times	The duration or length of time required to travel between two locations, often a key factor in transportation planning and decision-making.
Under-utilised capacity analysis	Examination of unused or underutilized capacity within a system or infrastructure, often to identify opportunities for improvement or optimization.
Vehicle traffic	The movement of vehicles on roadways or transportation networks, often measured by factors such as volume, speed, and density.
Viewshed greenness visibility index (VGVI)	An indicator of the visibility or perceptibility of green spaces or vegetation within a specified viewshed or area.
VISTA data	Data collected or generated by the Victorian Integrated Survey of Travel and Activity, often used for transportation planning and analysis.
Years lived with disability	A measure of overall disease burden accounting for the impact of disability on quality of life and functioning.
Years of life lost	A measure of premature mortality, representing the number of years lost due to death at an earlier age than expected.