

HEALTHY ACTIVE BY DESIGN GUIDE

Each design feature has a high level objective set out below.



PUBLIC OPEN SPACE - a network of walkable, appealing and public open spaces helps meet recreational, play and social needs.



COMMUNITY FACILITIES - co-located and integrated facilities, such as schools and recreation facilities, maximise community interaction.



BUILDINGS - design buildings and sites that specifically support increased levels of physical activity, whether incidental or deliberate and healthy food access.



DESTINATIONS - compact mixed-use neighbourhoods, which include employment, education, public transport and fresh food outlets, forge vibrant and active neighbourhoods.



MOVEMENT NETWORKS - facilitate safe and convenient travel within neighbourhoods through an accessible, integrated and connected walking, cycling and public transport routes.



HOUSING DIVERSITY - dwelling choices, through a range of housing and occupancy types, meet the needs of a diverse community throughout members' life stages.



SENSE OF PLACE - a sense of community emerges when residents have opportunities to meet and interact in community places of interest, through use of local building materials highlighting local stories and history and responding to the local climate.



HEALTHY FOOD - Planning for food demands focus on planning and design of food environments, retail and promotion; production space, transport infrastructure and availability of and access to healthy food outlets.

INTENDED USERS

WHEN TO USE HEALTHY ACTIVE BY DESIGN

PLANNERS/ URBAN DESIGNERS/ TRANSPORT ENGINEERS

Inform design choices when creating and preparing design and development proposals.

Assist in assessing or evaluating applications and development proposals.

Provide a screening tool to evaluate proposals and inform town planning schemes and supporting policy.

Guide strategic decisions and policy and assist in consultation and collaborative partnerships with stakeholders.

DEVELOPERS

A list of questions developers and proponents can ask themselves across the development process, from concept to delivery.

Identify considerations regarding healthy community design and provide a screening tool to help assess the impact of the proposal on health and wellbeing.

Promote the benefits of HAbD with best practice case studies.

ELECTED OFFICIALS

A list of questions to be considered when assessing and making determinations on development and policy proposals.

Guidance in assessing the impact of a proposal on health and wellbeing of the community and funding priorities.

Provide a screening tool to evaluate proposals and inform town planning schemes and decisions.

HEALTH PROFESSIONALS AND ADVOCATES

Guide strategic decisions and policy, including public health planning, and assist in consultation with stakeholders.

Identify considerations regarding healthy community design and set out a summary of evidence and related current research, both nationally and overseas.

COMMUNITY DEVELOPMENT OFFICERS

Provide a screening tool to evaluate proposals and assist in the preparation and review of strategic community/corporate business plans.

Evaluate the impact of projects and policy initiatives on health and physical activity.

SPORT AND RECREATION OFFICERS

Guide strategic decisions on infrastructure development and funding priorities and assist in consultation with stakeholders.

COMMUNITY MEMBERS

Guide comments and responses to community development and policy proposals out for public comment.

Facilitate consultation at public meetings or other community forums where proposals are under consideration for community infrastructure, land-use planning and development.

Inform the community on the opportunities to be healthy and active in their community with best-practice case studies.



PUBLIC OPEN SPACE

A NETWORK OF WALKABLE, APPEALING AND PUBLIC OPEN SPACES HELPS MEET A COMMUNITY'S RECREATIONAL, PLAY AND SOCIAL NEEDS.

ACCESS - Public use of open spaces can be improved by ensuring that they are easily accessible to, and by, all members of the community

- Do all community members have at least one open space within a 400m-800m walk?
- Are there clear pedestrian and cycle routes, designated crossings, and suitable ramps to, and within, the open space?
- Are the public open spaces accessible to people of all ages, genders and cultures, including those with disabilities and limited mobility?

FUNCTION - Open spaces assist in meeting the physical, recreational and social needs of a community.

- Have the open spaces been designed to meet the diverse needs of the community? How were those needs identified?
- Are there a range of uses that promote physical activity and community interactions? How do these uses generate activity throughout the week and day and night?
- How are the open spaces and supporting infrastructure managed and maintained?

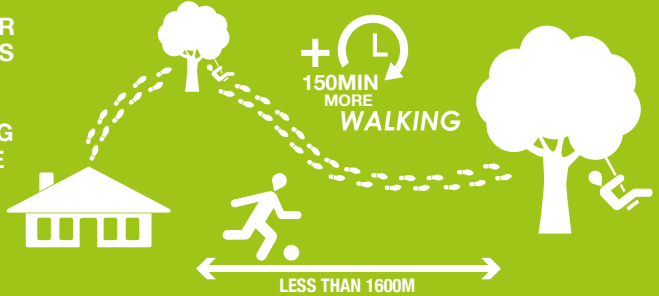
DESIGN - Open space designs that respond to their surrounds can enable a strong connection to the community and the environment.

- Does the open space reflect the cultural heritage and identity of the site, and the character of the surrounding community?
- How well do the surrounds contribute to safety? Do nearby buildings and streets overlook the space? Is there adequate lighting within the space?
- How does the open space respond to existing environmental conditions such as drainage, slopes and retaining trees?



PUBLIC OPEN SPACE

RESIDENTS WITH LARGER NEIGHBOURHOOD PARKS WITHIN 1600M ENGAGE IN 150 MINUTES MORE RECREATIONAL WALKING PER WEEK THAN THOSE WITH SMALLER PARKS.



Source: Giles-Corti B, et al. Increasing walking: How important is distance to, attractiveness, and size of public open space? *American Journal of Preventive Medicine*. 2005;28(2, Supplement 2):169-76.



WALKERS EXERCISING IN URBAN PARKS REPORT GREATER HAPPINESS AND LOWER ANGER AND DEPRESSION SCORES.

Source: Hartig T, et al (1991). Restorative Effects of Natural Environment Experiences. *Environment and Behaviour*. 23 (1): 3-26.



16% LOWER HEART PROBLEMS



37% LOWER HOSPITALISATION

ADULTS WITH A WIDE RANGE OF GREEN SPACES AROUND THEIR HOME REPORT 37% LOWER HOSPITALISATION RATES AND 16% LOWER SELF-REPORT RATES OF HEART DISEASE OR STROKE.

Source: Pereira, G., et al. (2012). "The association between neighborhood greenness and cardiovascular disease: an observational study." *BMC Public Health* 12: 466.



COMMUNITY FACILITIES

CO-LOCATED AND INTEGRATED FACILITIES, SUCH AS SCHOOLS AND SPORTING AMENITIES, MAXIMISE COMMUNITY INTERACTION AND EFFICIENCY OF TRAVEL NETWORKS. THEY ALSO ENHANCE SERVICE PROVISION IN AN AREA AND PROMOTE PASSIVE SURVEILLANCE, WHICH ENCOURAGES PHYSICAL ACTIVITY.

COMPOSITION - The layout or position of community facilities that enable multiple uses can provide health and socio-economic and economic benefits.

- Have community facilities been co-located with amenities of a similar or complementary nature? (e.g. schools with libraries, sport and recreation centres and day care facilities)?
- Does the design of community facilities allow for the public and independent operators to access communal spaces and services (e.g. parking, toilets and function halls)?
- Has the positioning of facilities been planned to enable passive surveillance?

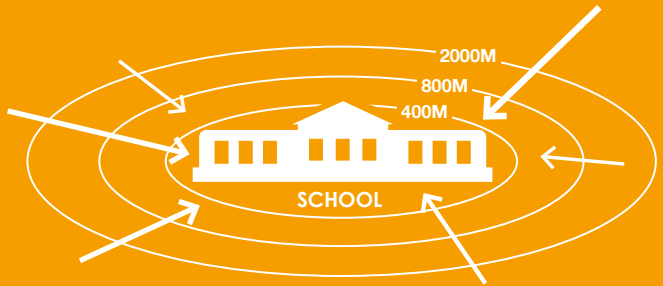
FLEXIBILITY - Facilities that can accommodate multiple functions may better serve the community and encourage greater use.

- Do the facilities provided offer a range of activities that meet the needs of the community?
- Are there sufficient activities to ensure the area is lively, and the community has an opportunity to be engaged, day and evening and every day of the week?
- In developing areas, has the community facility been organised to allow for interim uses while the area is established?



COMMUNITY FACILITIES

SCHOOLS ARE OFTEN CENTRALLY LOCATED WITHIN A COMMUNITY. THE FACILITIES AND SPACES THEY CONTAIN CAN PROVIDE OPPORTUNITIES FOR RESIDENTS TO BE PHYSICALLY ACTIVE.



EXTENDED FACILITY ACCESS



CHILDREN AND ADOLESCENTS WITH ACCESS TO EXISTING SCHOOL RECREATIONAL FACILITIES OUTSIDE OF REGULAR SCHOOL HOURS ARE MORE LIKELY TO BE ACTIVE.

Source: Active Living Research. Active Living Research (2012). Promoting Physical Activity through Shared Use of School and Community Recreational Resources. San Diego.



THE AVAILABILITY AND PROXIMITY OF RECREATION FACILITIES HAS BEEN ASSOCIATED WITH GREATER PHYSICAL ACTIVITY AMONG ADULTS, ADOLESCENTS AND CHILDREN.

Source: Sallis, J. F., et al. (2012). "Role of Built Environments in Physical Activity, Obesity, and Cardiovascular Disease." *Circulation* 125(5): 729-737.



BUILDINGS

DESIGN BUILDINGS AND SITES THAT SPECIFICALLY SUPPORT HEALTH, INCLUDING HEALTHY FOOD ACCESS AND INCREASED LEVELS OF PHYSICAL ACTIVITY, WHETHER INCIDENTAL OR DELIBERATE.

CONTEXT - Well-designed buildings can improve health outcomes by engaging with their surrounds.

- Has the building been designed to contribute to street activation and allow natural surveillance of the surrounding community?
- Are street-level pedestrian and cycle entries visible, well-lit and connected to the street?
- Has walking and cycling been prioritised over vehicle access?
- Where appropriate, have awnings or verandahs been provided on the exterior of the building to provide shade and shelter over footpaths?

INTERIOR - The provision of specific services and facilities within a building, and the overall design of the building itself, can encourage a healthier lifestyle.

- Have facilities that promote and support physical activities, such as a gymnasium, exercise classes and end-of-trip facilities (lockers/showers/ change rooms) been provided?
- Has the building been designed to promote incidental physical activity and laid-out to encourage movement and social interactions (e.g. choosing stairs over elevators)?
- Does the design accommodate all users, including those with mobility issues?
- Has the building been designed to provide for the comfort of the occupants?



BUILDINGS

THE PROVISION OF SECURE BICYCLE PARKING AND SHOWERS AT WORKPLACES HAS BEEN SHOWN TO POSITIVELY IMPACT ON WORKERS DECISIONS AND BEHAVIOURS TO CYCLE TO WORK.

Source: Buehler, R. (2012). Determinants of bicycle commuting in the Washington, DC region: The role of bicycle parking, cyclist showers, and free car parking at work. Transportation Research Part D: Transport and Environment 17 (7): 525-531.



THE THERMAL COMFORT, AIR QUALITY AND VENTILATION SYSTEMS, LEVELS OF LIGHTING, SPATIAL LAYOUTS, ACCESS TO NATURE, VIEWS AND DAYLIGHT, COLOUR, NOISE CONTROL, EMPLOYEE ENGAGEMENT AND DENSITY IMPACTS ON WORKERS PERFORMANCE, PRODUCTIVITY AND SATISFACTION.

Source: Vischer J. 2003. Designing the work environment for worker health and productivity. Design and Health: International Academy for Design and Health.



20+ FLOORS PER WEEK

20% LOWER RISK OF STROKE

CLIMBING STAIRS HAS A RANGE OF POSITIVE HEALTH BENEFITS. PEOPLE WHO CLIMB AT LEAST 20 FLOORS PER WEEK HAVE A 20% LOWER RISK OF STROKE.

Source: Paffenbarger RS, Jr., Hyde RT, Wing AL, Hsieh CC. (1986). Physical activity, all-cause mortality, and longevity of college alumni. The New England journal of medicine. 314(10):605-613.



DESTINATIONS

CREATE COMPACT MIXED-USE NEIGHBOURHOODS WITH A VARIETY OF DESTINATIONS, FACILITIES AND FOCAL POINTS. TOGETHER, THEY CREATE OPPORTUNITIES FOR HEALTHY AND ACTIVE LIVING THROUGH DAY AND EVENING.

DIVERSITY - An

interesting choice of local destinations encourages neighbourhood walkability and fosters residents' physical activity and social connections.

- Does the destination offer a mix of uses that will always ensure there are reasons for groups of people or individuals to visit?
- Are activities offered both day and evening?
- Would usage be increased if there were community and cultural facilities, open spaces or sporting activities?

ACCESS - A selection of destinations within walking distance of home makes active transport, such as walking, cycling or use of public transport more viable and makes it easy to reduce car use.

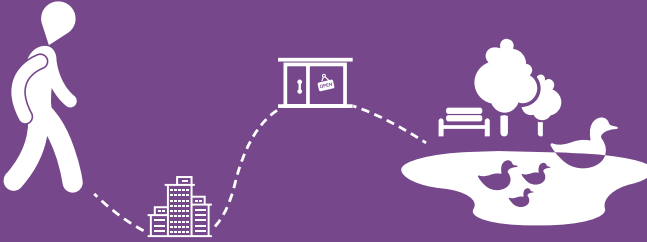
- Are the destinations within a safe and easy (400m to 800m) walking distance?
- Are there paths and cycle routes connecting the destination to the surrounding community?
- Has public transport been considered? Where are the stops located and do they connect to other movement networks?

DESIGN - The design of the public realm is important in determining how people reach the destination, as well as how they move through it and interact with it.

- Does the design put the pedestrian first, and is it at a comfortable scale?
- Does the destination have a space that encourages activity and interaction across the community?
- Does the design encourage people to linger? Is it made of high-quality materials and does it offer shade, seating, lighting, planting and artwork?



DESTINATIONS



LIVING WITHIN CLOSE PROXIMITY (400-800M) OF A MIX OF DESTINATIONS IS ASSOCIATED WITH HIGHER LEVELS OF ACTIVE TRANSPORT (WALKING AND CYCLING) ACROSS ALL AGE GROUPS.

Source: Sallis, J. F., et al. (2012). "Role of Built Environments in Physical Activity, Obesity, and Cardiovascular Disease." *Circulation* 125(5): 729-737.

PEOPLE LIVING WITHIN 1600M OF A CONVENIENCE STORE, SHOPPING CENTRE OR NEWSAGENT ARE TWICE AS LIKELY TO REGULARLY WALK.

Source: McCormack, G. R., et al. (2008). "The relationship between destination proximity, destination mix and physical activity behaviours." *Preventive Medicine* 46(1): 33-40.



LIKELY TO WALK 7x

LIKELY TO WALK 3x

PEOPLE WITH ACCESS TO 'MAIN-STREET' CENTRES ARE OVER 7 TIMES MORE LIKELY TO WALK FOR OVER AN HOUR EACH WEEK. PEOPLE LIVING WITHIN 1600M OF A 'BIG-BOX' SHOPPING CENTRE ARE 3 TIMES MORE LIKELY TO WALK WITHIN THE NEIGHBOURHOOD.

Source: Hooper, P., et al. (2015). "The building blocks of a 'Liveable Neighbourhood': Identifying the key performance indicators for walking of an operational planning policy in Perth, Western Australia." *Health & Place* 36: 173-183.



MOVEMENT NETWORKS

FACILITATE SAFE AND CONVENIENT TRAVEL WITHIN NEIGHBOURHOODS THROUGH AN ACCESSIBLE AND INTEGRATED MOVEMENT NETWORK. THIS SHOULD CONNECT WALKING, CYCLING AND PUBLIC TRANSPORT ROUTES AND LINKS THEM TO A RANGE OF DESTINATIONS.

CONNECTIONS

- Movement can be enhanced through the provision of safe, connected, convenient, continuous, easily navigated and attractive links.

- Do the streets, footpaths and cycle ways connect to each other and to destinations?
- Are these connections well lit, with shade and shelter, as well as directions or signposts, to encourage their use?
- Is there more than one route between destinations to provide variety in active transport options and experiences?

STREETScape

DESIGN - Streets that have been designed to accommodate all transport users encourage more movement.

- Does the street design work for all users, including pedestrians, cyclists, public transport and cars?
- Have the streets been designed in response to their surrounds?
- Do roads narrow near schools with footpaths becoming wider? Are there crosswalks and pedestrian crossing points to connect movement networks?

INFRASTRUCTURE

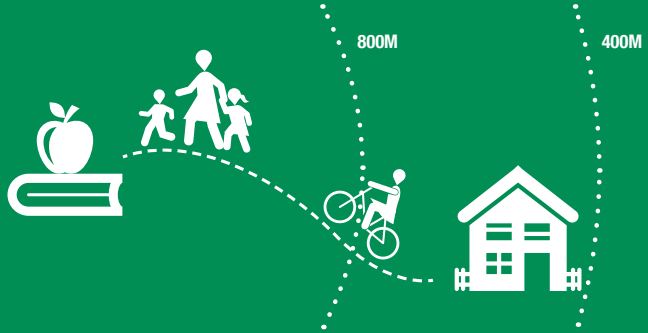
- The inclusion of safe, functional and highly visible infrastructure encourages a range of travel options.

- Are facilities such as bike racks, drinking fountains, change rooms and lockers provided at destinations?
- Are public transport stops provided within suitable proximity to dwellings and destinations?
- Have stops along routes been provided offering shade/shelter, seating and lighting?
- Have facilities been designed for all users including the young, the elderly and those with disabilities?



MOVEMENT NETWORKS

CHILDREN WHO LIVE WITHIN 800M OF THEIR SCHOOL ARE MORE LIKELY TO WALK OR CYCLE TO SCHOOL.



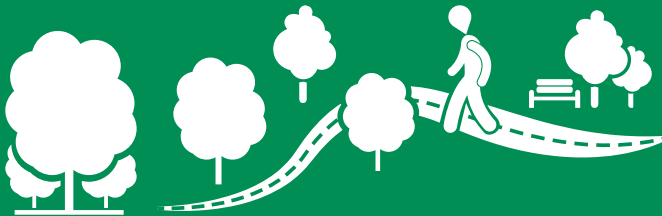
Source: Merom D, et al. (2006) Active commuting to school among NSW primary school children: implications for public health. *Health & Place*. 12 (4): 678-687.



MORE LIKELY TO ACHIEVE

29% OF PUBLIC TRANSPORT USERS ACHIEVE ≥30 MINUTES OF DAILY PHYSICAL ACTIVITY SOLELY BY WALKING TO AND FROM PUBLIC TRANSPORT.

Source: Besser LM, et al (2005). Walking to Public Transit: Steps to Help Meet Physical Activity Recommendations. *American Journal of Preventive Medicine*, 29(4): 273-280.



THE MORE STREET TREES ALONG THE FOOTPATH NETWORK, THE MORE LIKELY RESIDENTS ARE TO WALK FOR 60 MINUTES EACH WEEK.

Source: Hooper, P., et al. (2015). "The building blocks of a 'Liveable Neighbourhood': Identifying the key performance indicators for walking of an operational planning policy in Perth, Western Australia." *Health & Place* 36: 173-183.



HOUSING DIVERSITY

PROVIDING CHOICE, THROUGH VARIOUS HOUSING AND OCCUPANCY TYPES, MEETS THE DWELLING NEEDS OF A DIVERSE COMMUNITY AND HELPS CREATE ACTIVE AND VIBRANT PLACES.

DIVERSITY - A mix of dwelling types can increase density and attract a broad demographic, creating a resilient neighbourhood that caters for a diverse range of household structures, ages and tenures.

- Does the neighbourhood offer a range of dwelling choices that are suited to the needs and character of the area?
- Does the neighbourhood offer dwelling choices that provide for a diverse community and enable residents to remain within their community across each stage of life?

DESIGN - The design of a dwelling can have a positive influence on its surroundings and inhabitants. It can lead to safer and more engaged communities - and healthier lifestyles.

- Are the dwellings designed to engage with the street and/or adjacent open space?
- Do they provide passive surveillance by locating active spaces such as living areas and balconies overlooking streets and open spaces?
- Are the dwellings designed or oriented to maximise natural light, ventilation, heating and cooling and to address noise management?
- Are the dwellings sited on the lot to allow for future intensification?



HOUSING DIVERSITY



4.8%
OBESITY
DECLINE

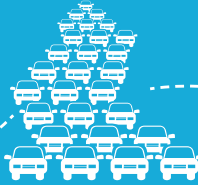


PER KM WALKED

EACH ADDITIONAL KILOMETRE WALKED PER DAY IN MIXED USE ENVIRONMENTS WAS ASSOCIATED WITH A 4.8% REDUCTION IN THE LIKELYHOOD OF OBESITY. AN INCREASE IN LAND USE MIX IS ASSOCIATED WITH A 12.2% REDUCTION IN THE LIKELYHOOD OF OBESITY.

Source: Frank L. et al. Obesity Relationships with Community Design, Physical Activity and Time Spent in Cars. American Journal of Preventive Medicine. 2004;27(2):87-96.

INCREASED
ACTIVE TRANSPORT



REDUCED TRAFFIC CONGESTION



MORE AFFORDABLE HOUSING

INCREASED DENSITY, WHEN CAREFULLY PLANNED, CAN PRODUCE NUMEROUS BENEFITS TO THE ENVIRONMENT AND HEALTH OF THE COMMUNITY.

Source: Giles-Corti B, et al. Increasing density in Australia: maximising the health benefits and minimising harm. Perth, Western Australia: National Heart Foundation of Australia, 2012.

STREETS WITH DWELLINGS DESIGNED TO HAVE INCREASED OPPORTUNITIES FOR PASSIVE SURVEILLANCE, ARE 60% LESS LIKELY TO HAVE INCIDENTS OF GRAFFITI, LITTER, VANDALISM AND BROKEN WINDOWS.



PASSIVE
SURVEILLANCE



Source: Foster, S., et al. (2011). "Creating safe walkable streetscapes: Does house design and upkeep discourage incivilities in suburban neighbourhoods?" Journal of Environmental Psychology 31(1): 79-88.



SENSE OF PLACE

PROVIDING OPPORTUNITIES FOR INTERACTION, PRESERVING PLACES OF INTEREST, USING LOCAL BUILDING MATERIALS, HIGHLIGHTING NEIGHBOURHOOD STORIES AND HISTORY, MEETING THE COMMUNITY'S NEEDS AND RESPONDING TO THE LOCAL CLIMATE ARE ALL WAYS OF DEVELOPING A SENSE OF PLACE.

HERITAGE AND CULTURE -

Understanding the built and cultural heritage of a place can provide insights for designs that strengthen ties to the community.

- Is the heritage of the place evident through the use of local building materials, colour schemes and vegetation choices?
- Have design choices been informed by the cultural identity of the place, based on the social, economic, environmental and indigenous history?
- Have heritage and cultural features been acknowledged, integrated or protected?

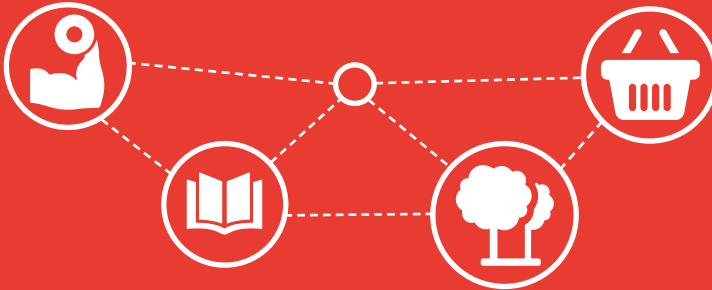
CONSULTATION - Encouraging both current and future communities to participate in design and development decisions contributes to a sense of place and builds ownership and respect.

- Has community consultation been employed to determine infrastructure needs and desires?
- Has the community been engaged and involved in the design of the public realm, civic buildings and public art?



SENSE OF PLACE

NEIGHBOURHOOD DESIGNS THAT ENTICE PEOPLE OUTDOORS THROUGH DIVERSE LOCAL DESTINATIONS AND CONNECTED ROUTES ENCOURAGE AND CREATE NATURAL SURVEILLANCE WHICH ENHANCES NEIGHBOURHOOD CONTACTS AND PROMOTES NEIGHBOURLY INTERACTIONS, SOCIAL CAPITAL AND SENSE OF COMMUNITY.



Source: Leyden KM. (2003). Social capital and the built environment: the importance of walkable neighborhoods. *American Journal of Public Health*, 93(9): 1546-1551.
Lund H. (2002). Pedestrian Environments and Sense of Community. *Journal of Planning Education and Research*, 21 (3): 301-312.

FOR MOTHERS WITH YOUNG CHILDREN, LOCAL AMENITIES PROVIDE OPPORTUNITIES TO INTERACT WITH OTHER RESIDENTS AND FAMILIES, INCLUDING PARENTS AND CHILDREN, HELPING TO BUILD A SENSE OF BELONGING IN A NEW NEIGHBOURHOOD.

Strange, C., et al. (2014). "The essence of being connected: the lived experience of mothers with young children in newer residential areas." *Community, Work & Family*: 1-17.





HEALTHY FOOD

PLANNING FOR HEALTHY FOOD DEMANDS FOCUS ON PLANNING AND DESIGN OF FOOD ENVIRONMENTS, RETAIL AND PROMOTION, PRODUCTION SPACE, TRANSPORT INFRASTRUCTURE AND ENSURING HEALTHY FOOD OUTLETS ARE BOTH AVAILABLE AND ACCESSIBLE TO COMMUNITY RESIDENTS.

ACCESS - Activity centres that provide fresh and healthy food opportunities to promote healthier diets.

- Does the destination include flexible spaces that accommodate a range of temporary healthy food activities, such as farmers' markets?
- Do activity centres facilitate healthy food opportunities being provided as part of the land-use mix?
- Are community facilities, recreation areas and housing located within an 800m walk of healthy food opportunities and local food growing locations?

PRODUCTION - Providing space for production of healthy food which promotes healthy food intake.

- Are mechanisms in place to encourage the use of public open space or school grounds for fresh healthy food production?
- Has the use of spaces been made or encouraged, or new space and resources allocated (e.g. water, soil, access to sunlight) for the establishment of community gardens with community access?
- Do streets enable the planting of street verges for local food production?

FOOD SUPPLY - Planning systems and places support local commercial and community food systems.

- Is the urban environment or regional area supported by food growing areas nearby, accessible by good supply-transport links?
- At a regional scale, how can the city be designed to encourage distribution of locally-grown food to markets or other fresh food services within the local community?
- Does the centre zoning, town planning scheme, structure plan or land use planning policy provide / promote a mix of healthy food stores and local food growing opportunities?



HEALTHY FOOD

**HEALTHY FOOD OPTIONS
LOCATED WITHIN 800M
OF HOME, SCHOOL
AND WORK INCREASES
HEALTHY FOOD UPTAKE.**

Source: Trapp, G., Hickling, S., Christian, H., Bull, F., Timperio, A.F., Boruff, B., Shrestha, D., Giles-Corti, B., Individual, Social, and Environmental Correlates of Healthy and Unhealthy Eating. Health Education and Behaviour, 2015, 42(6): p. 759-768.



**IMPROVED TRANSPORTATION ACCESS AND WALKABILITY
TO HEALTHY FOOD PROMOTES HEALTHY EATING,
ESPECIALLY FOR THE DISADVANTAGED.**

Source: Caraher, M., Dixon, P., Lang, T., Carr-Hill, R., Access to healthy foods: Part I. Barriers to accessing healthy foods: Differentials by gender, social class, income and mode of transport. Health Education Journal, 1998, 57(3): p. 191-201.



**COMMUNITY GARDENS
AND EDIBLE LANDSCAPES
INCREASE COMMUNITY
INTERACTION AND
PROMOTE MENTAL,
PHYSICAL AND
ENVIRONMENTAL BENEFITS.**

Source: Lovell, R., Husk, K., Bethel, A., Garside, R., What are the health and well-being impacts of community gardening for adults and children: a mixed method systematic review protocol. Environmental Evidence, 2014, 3(20): p. 1-13.