Green Transport

Green transport facilities include eco-friendly methods of travel, such as walking, cycling, electric vehicles (EVs), public transport (buses, trains, metro), and carpooling, all designed to reduce greenhouse gas emissions, pollution, and reliance on fossil fuels.

Types of Green Transport Facilities

- **Electric Vehicles (EVs)**: Cars, bikes, buses, and trucks powered by electricity, which produce zero tailpipe emissions when using renewable energy sources.
- **Public Transportation**: Large-capacity buses, trains, and metros that can be powered by renewable energy or clean fuels, making them a sustainable option for large populations.
- **Bicycles**: A completely emission-free and affordable mode of transportation that also provides health benefits.
- **Walking**: The most basic and eco-friendly form of transport, offering physical activity and zero emissions.
- **Carpooling**: Sharing multi-occupant vehicles to reduce the number of cars on the road, thereby cutting down on traffic and pollution.

Green Transport

Benefits of Green Transport Facilities

- **Climate Change Mitigation**: Significantly reduces global greenhouse gas emissions.
- **Improved Air Quality**: Lowers air pollution by decreasing harmful pollutants and particulate matter.
- **Enhanced Public Health**: Promotes physical activity through walking and cycling, and improves respiratory health by reducing air pollutants.
- **Reduced Congestion**: Makes cities more livable by reducing traffic jams, which waste time and cause economic loss.
- **Sustainable Development**: Contributes to creating cleaner, healthier, and more sustainable urban environments.
- Reduction of Accident rate: severe accident reduction, collision reduction etc.

Walking - Footpath Features

Accessible, safe, comfortable and well-maintained footpaths enhance walking experience and promote walking as a mode of transport for short-distance commuting.

Walkway Design Principles

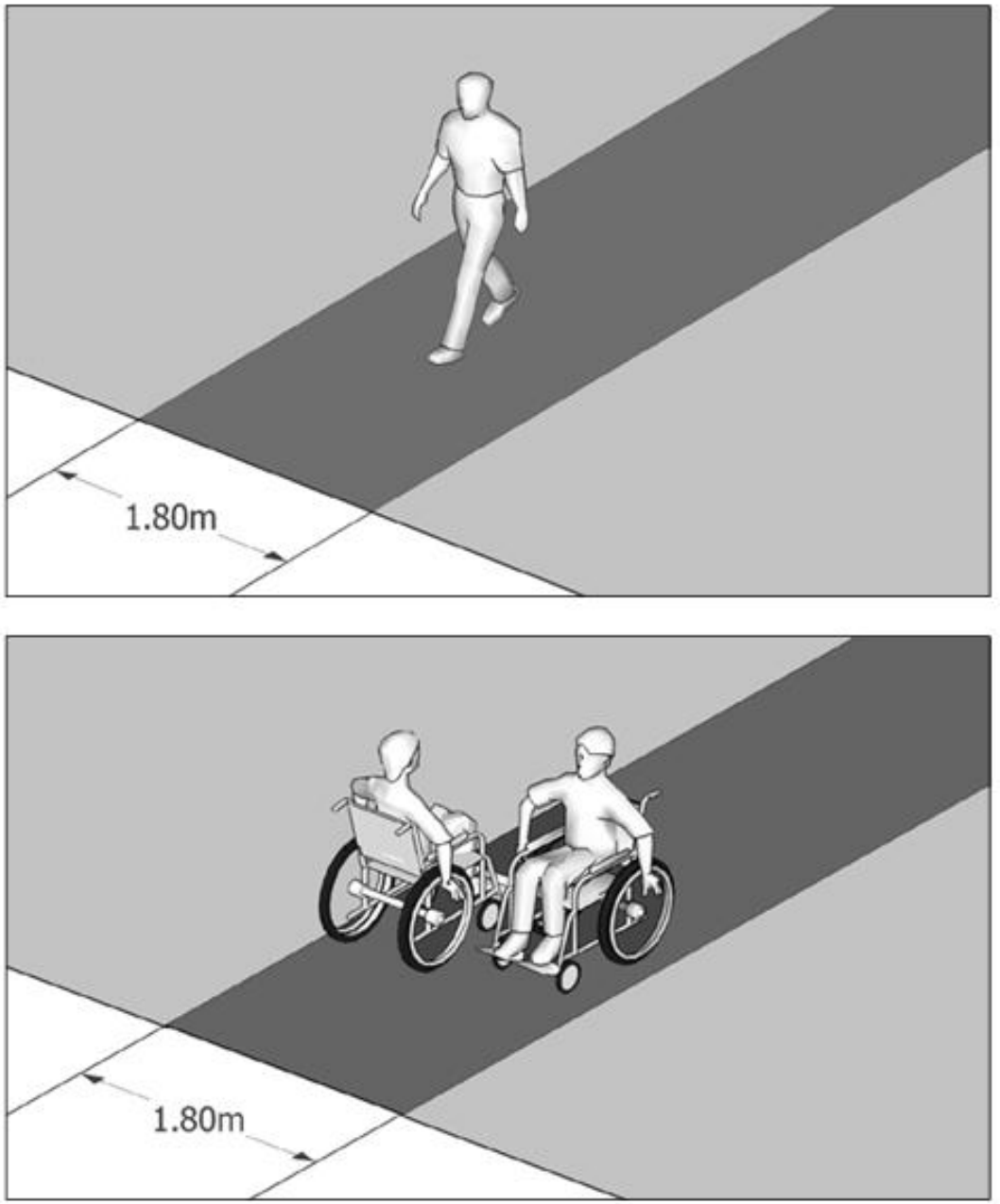
- **Functionality and aesthetics.** A primary consideration is the flow of movement, which should be intuitive and unobstructed. This involves understanding pedestrian behavior and anticipating natural paths.
- **Safety and comfort.** Safety encompasses physical and psychological elements. Adequate lighting; slip-resistant surfaces; gentle curves and slopes enhance safety and comfort.
- **Environmental considerations.** Sustainable practices, like using permeable materials, help manage stormwater runoff and reduce the urban heat island effect. Integrating native vegetation supports local ecosystems, provides shade, and adds aesthetic appeal, benefiting the environment and creating a pleasant user experience.

Footpath Features

Standalone Footpath Width:

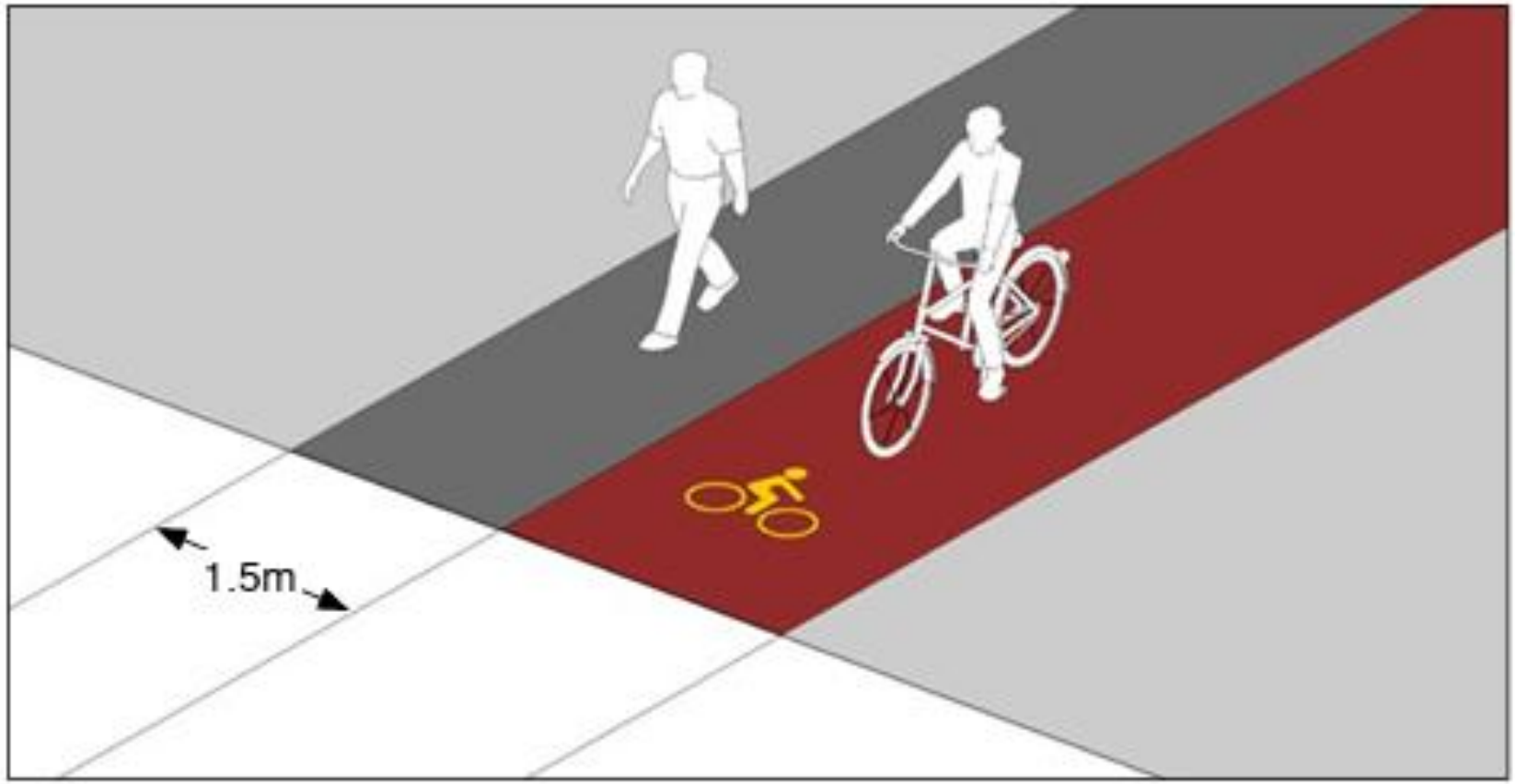
- With the increased use of Pedestrian Mobility Aids (PMAs), (wheelchairs, mobility scooters, etc.) width have been increased from **1.5m to 1.8m**, which is the adequate width for two typical wheelchairs to pass each another
- However, where there are observed or projected high pedestrian volume, footpath widths of **more than 1.8m** would be considered.

Footpath next to Cycling Path: **1.5m** is adopted as the dedicated pedestrian width



ABOVE: Design considerations for 1.8m standalone footpath

Footpath Features



ABOVE: Dimension of footpath is 1.5m when sited next to a cycling path

Footpath Features

Materials:

Concrete is used because of its skid resistant property and durability.

Good levelling and workmanship of floor finishes should be ensured to avoid undulation and protrusions that may result in trips and falls.

Regular maintenance and renewal of footpaths and pavement surfaces is important to ensure a non-slip and level surface.



ABOVE: Typical roadside footpath made with concrete

Footpath Features

Features for Pedestrians with Vision Impairment:

Tactile tiles and kerb ramps are provided at areas near crossings to remind pedestrians, especially pedestrians with vision impairment, to be vigilant while crossing the road



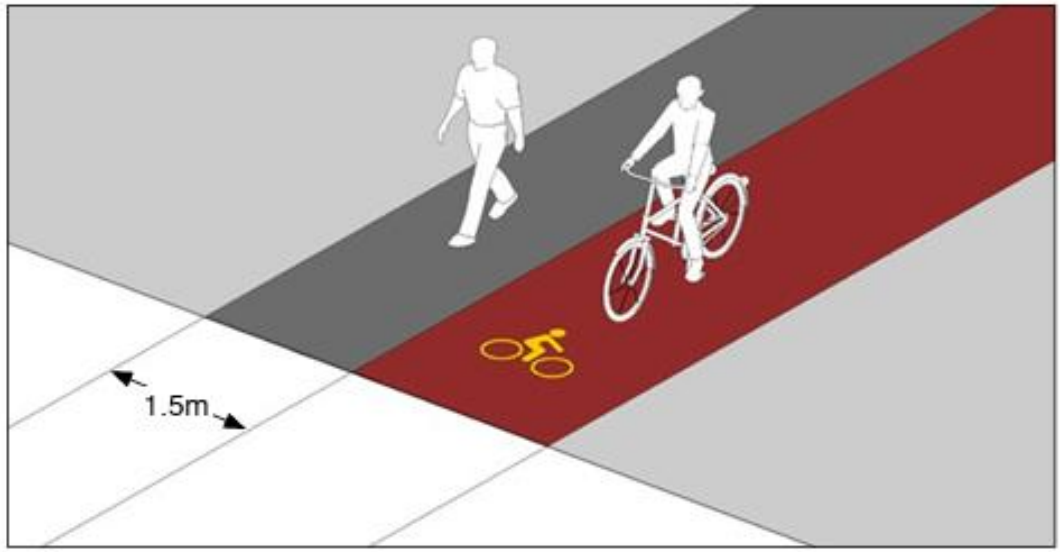
ABOVE: Tactile tile



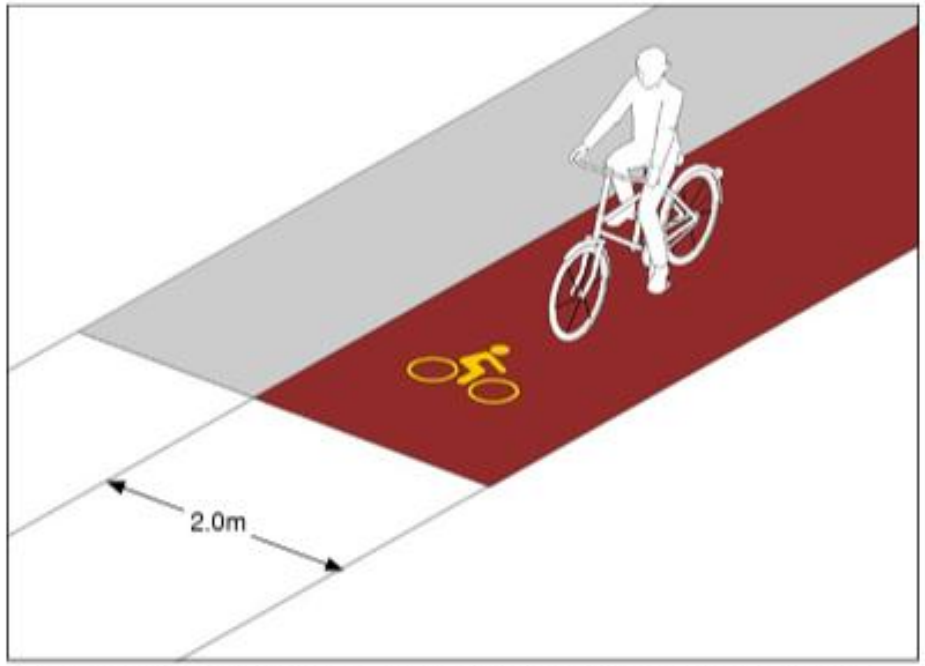
ABOVE: Placement of tactile tiles at crossing

Bike Path/Cycling Path

For safety, cycling paths are designed to be separated from vehicular traffic on a different level. These paths are designed to separate the pedestrians and cyclists to minimize conflict.



ABOVE: Dimension of footpath is 1.5m when sited next to a cycling path



ABOVE: Intra town cycling path requires minimally 2m width for bi directional movements.

Types of Bike path

- **Class I (Multi-Use Trail or Path):** A separated path designed exclusively for bicycles and pedestrians, located off-street and away from vehicle traffic.

- **Class II (Bike Lane or Buffered Bike Lane):** A designated on-street lane for exclusive use by bicyclists, marked by stripes and signage.

- **Class III (Bike Route):** A lower speed roadway where bicycles and motor vehicles share the same lane, indicated by signs or shared lane markings (sharrows).

- **Class IV (Separated Bikeway):** A protected bike lane that is physically separated from vehicle traffic by vertical barriers such as curbs, bollards, or planters.

Types of Bike path











Covered Linkway

Covered linkways are shelters over footpaths to shield pedestrians from the weather while travelling from one place to another.

According to studies, weather protection is often one of the most important factors that affects people's decision to walk. Hence, to promote active mobility, the implementation of covered linkways at key locations is important

