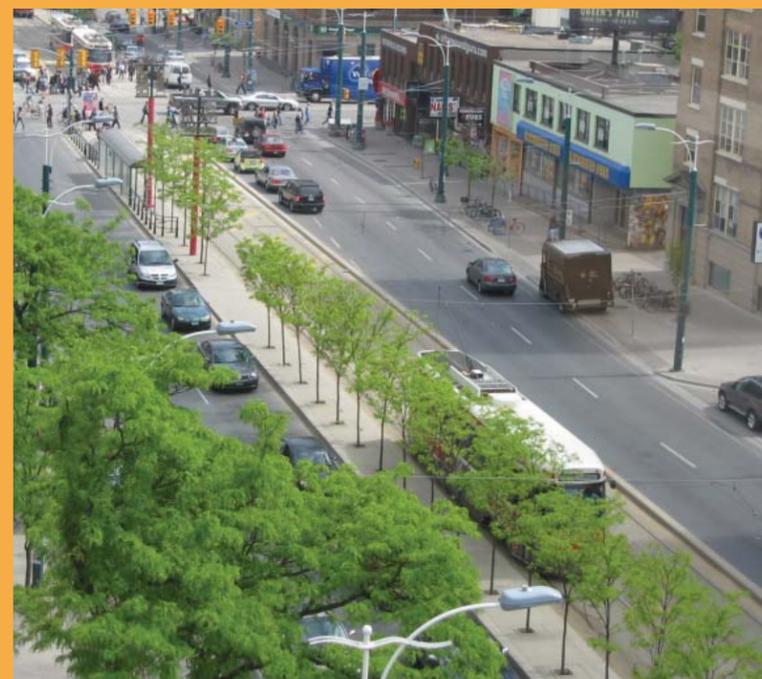


The successful integration and design of LRT will be critical to the success of the Corridor. It will impact how people perceive, access and utilize this investment; and create important 'lead-in' initiatives with an opportunity to set high standards for future development, streetscaping and pedestrian amenity. Station areas are both destinations and gateways in their own right - they are places of activity, should be both functional and inviting, must speak to the civic nature of transit, and should demonstrate the public benefit of LRT.

The following **10 key principles for station and LRT design** should be used during Preliminary Engineering and detailed design to ensure that LRT contributes not only to the city's transit network but makes a positive contribution to the quality, character and accessibility of the Corridor. This section concludes with a diagram demonstrating how the various principles could be combined within a station area.



Street trees planted along the median of this LRT line in Toronto, Ontario help to green a busy street.

Green

The LRT creates an opportunity to contribute to the greening of the Corridor through the application of a generous landscaping program and the demonstration of green infrastructure techniques. The unique environment that station areas will create along the Corridor presents an opportunity for the application of interesting and distinctive planting and landscape treatments.

Strategies to green the LRT may include:

- planting street trees, where feasible down the center of station platforms and in medians along the Corridor;
- using hanging baskets or other similar plantings where street trees are not feasible;
- using bump-outs or curb extensions at station intersections to provide additional planting of street trees;
- maximizing permeable surfaces, where possible, to allow for natural rainwater runoff into bio-swales and permeable planting areas;
- using recycled materials, where possible, to reduce waste and demonstrate more sustainable practices; and
- incorporating solar panels above stations to power station amenities.



A station platform that is flush with the sidewalk in Portland, Oregon provides easy access for people who may have impaired mobility.

Accessible

The LRT and its Stations are public places and should be designed to support the wide range of users who will pass through them on a daily basis.

Strategies to ensure an accessible LRT system may include:

- ensuring minimal ramping to station platforms to provide for easy access;
- using non-slip materials and smooth surfaces to allow for ease of movement;
- ensuring blended transitions between the sidewalk and crosswalk to facilitate wheelchair use;
- providing elevators at stations below or adjacent to the skyway system to facilitate access to and from the skyway;
- providing culturally-specific signage to assist those who may not speak English as a first language;
- providing clear, easy-to-read signage and Braille notices for the visually-impaired; and,
- using embedded track to ensure that pedestrian are able to easily cross the tracks.



A designated waiting area at this station in Toronto, Ontario contains additional lighting, seating and a direct intercom connection to the station manager.

Safe

The LRT, its stations and the areas around them should be safe, inviting environments that promote both a sense of security for those who use them and safety from passing motorists and transit vehicles.

Strategies to ensure a safe LRT system may include:

- incorporating pedestrian-oriented lighting to ensure that areas along the route and in particular stations and their surroundings are well-lit;
- providing designated waiting areas at stations with a higher standard of lighting for insecure or vulnerable users;
- creating pedestrian-oriented station zones to increase the awareness of passing motorists and pedestrians;
- incorporating larger pedestrian crosswalks around stations that pull cars back from the intersections to allow greater room for pedestrians;
- incorporating special paving treatments, bollards and signage to increase awareness of the LRT and promote caution; and
- incorporating principles of Crime Prevention Through Environmental Design (CPTED).



An LRT station in Calgary Alberta has been integrated into the adjacent building.

Integrated

LRT represents a significant investment in the many diverse neighborhoods, districts and communities along the route. Spreading this investment will require that the Central Corridor be an integrated part of the community, reflected not only in the scale and the character of the buildings around it, but also in the links and connections that it strengthens.

Strategies to ensure the LRT is integrated with its surroundings may include:

- encouraging higher development densities and a greater mix of uses adjacent to stations to facilitate a more pedestrian supportive environment and encourage ridership;
- providing open spaces adjacent to stations to underscore the public nature of LRT;
- improving linkages between existing bus routes to strengthen connections back into adjacent neighborhoods;
- using embedded track with decorative paving so that the LRT makes a positive contribution to the streetscape;
- incorporating landscape features and plantings that tie into an overall streetscape; and
- integrating stations and waiting areas into adjacent buildings.



Large color-coded signage at this station in Portland, Oregon helps to direct passengers.

Legible

In order for the LRT system to function properly it needs to be easy to understand. Ensuring that walking to LRT and transferring between bus and LRT is as convenient and straightforward as possible will be an important strategy in connecting the system with its surroundings. Establishing a palette of Central Corridor landscaping materials and transit signals will create a consistent branding and increase the profile of LRT in the city.

Strategies to ensure the LRT is legible may include:

- providing clear maps and signage at transit transfer points to facilitate ease of movement between LRT and bus routes;
- minimizing walking distances between routes to enable more convenient transfers;
- using higher-quality streetscaping around stations that will become associated with station areas;
- incorporating special paving treatments that identify pedestrian zones, crossings, and pedestrian bollards; and
- introduce identifiable “Transit” signage for the Central Corridor LRT to increase the profile of the LRT line and stations.



This shelter on the Hiawatha Line provides for passenger comfort with seating and an overhead heater for the winter months.

Comfortable

An enhanced pedestrian experience is an important strategy for increasing ridership and making transit a mode of choice among users.

Strategies to ensure that the LRT and its stations are comfortable may include:

- providing adequate shelter and weather protection/mitigation from the elements;
- incorporating pedestrian amenities such as seating, public art, garbage receptacles and pedestrian-oriented lighting;
- encouraging a mix of uses around stations to cater to commuters and pedestrians;
- coordinating the design and placement of station facilities and amenities to provide greater space for pedestrians on platforms and pedestrian priority crossing areas; and
- incorporating plantings and vegetation around stations for pedestrian enjoyment.



Bike facilities, including locking posts and lockers, help to improve the bike-friendliness of the Hiawatha Line.

Bike-Friendly

Creating bike-friendly LRT is an important strategy will encourage a greater range of users. Being able to bike to and from a station expands the area within which LRT can capture riders.

Strategies to ensure that the LRT and its stations are bike-friendly may include:

- providing weather-protected bike racks within or close proximity to stations;
- providing bicycle lockers within or close to stations for overnight storage and security;
- providing cameras or other such surveillance devices around bike storage areas to deter thefts and promote a sense of security;
- creating a network of designated and clearly marked bike routes that radiate from station areas to link surrounding neighborhoods with the LRT; and
- allowing for bike storage on trains.



An LRT line under construction in Calgary, Alberta. Planning ahead can save expensive construction costs down the line.

Adaptable

The LRT is one component of a larger system that will adapt and evolve over time.

Strategies to ensure that the LRT and its stations are adaptable over time may include:

- preserving the option for future stations at important intersections, such as Victoria and Western, by installing underground infrastructure to accommodate future stations;
- allowing for changing technologies over time, including possible switch to Smart Card Technology and changes in train design;
- ensuring station platforms are adaptable to changing use patterns and train frequencies over time; and
- incorporating adaptable furnishings that can accommodate a range of users and be modified over time as needed.



The use of high-quality materials on this LRT line in Portland, Oregon will result in less maintenance over time.

Maintainable

The development of LRT represents a significant investment in the Corridor, one that should be of benefit to the community for a very long time. Ensuring that this investment is one that can stand the test of time, be easily maintained and continue to be viewed as a positive addition to the streetscape is important to sustaining the system.

Strategies to ensure that the LRT and its stations are easy to maintain may include:

- using high-quality materials that will “stand the test of time”;
- incorporating high-quality streetscaping and pedestrian amenities that will stand up to use and demonstrate minimal “wear and tear”;
- incorporating features that allow for the efficient and easy maintenance of stations such as the use of larger interchangeable components; and
- avoiding delicate frills that may require continual maintenance over time.



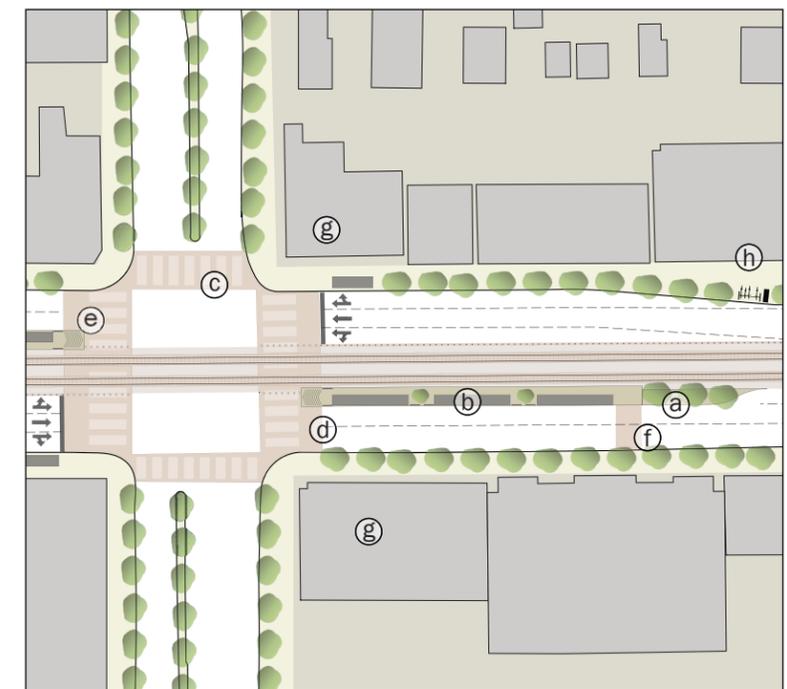
Public art, such as at this station along the Hiawatha Line, can help to instill a sense of place and celebrate each neighborhood’s cultural heritage.

Distinct

The Corridor is a diverse place with many different neighborhoods along its length. The LRT line and its stations are not simple pieces of infrastructure. Together they should contribute to the sense of place along the Corridor and be reflective of the unique communities within which they sit.

Strategies to ensure stations strengthen neighborhood identity and sense of place include:

- working with local communities to identify variations in station design to reflect local community features or characteristics;
- incorporating public art into stations;
- installing commemorative narratives to inform users of local area history;
- using landscape and public realm improvements to improve the character and quality of the route;
- incorporating public art into the catenary poles along the Corridor; and
- encouraging higher densities and a mix of uses around stations that will help to generate character and activity.



Demonstrating the Principles

The diagram above illustrates in plan how a number of the key principles could be combined within a station area.

Some of the strategies illustrated include:

- (a) Trees and planting on the station platform and median.
- (b) Shelters and weather protection for passenger comfort.
- (c) High-quality streetscaping to delineate pedestrian areas and promote awareness of LRT.
- (d) Large pedestrian crossings that keep cars pulled back from crossing areas.
- (e) A blended transition at the station entrances.
- (f) Clearly-marked secondary entrances at the far ends of the stations.
- (g) Higher-density uses adjacent to the station to define the street and encourage use of transit.
- (h) Bicycle facilities along a wider section of sidewalk.