METROLINX

DESIGN GUIDELINES

DGL-00 FRONT-END

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Metrolinx Design Guidelines
Front-End Design Guideline

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1 PURPOSE

The Front-End Design Guideline is the first document in the suite of design guidelines and serves two functions as follows:

1. Provides an overview on the purpose and use of the suite of design guidelines.
2. Acts as a repository for customer-focused design frameworks that inform and streamline design solutions across the project lifecycle.

2 HOW TO USE DESIGN GUIDELINES

2.1 PURPOSE OF DESIGN GUIDELINES

Design guidelines provide the design thinking and approach to support and achieve positive customer experience outcomes while acknowledging the evolving operational, financial, and governance needs of the organization in delivering transit infrastructure across the Greater Golden Horseshoe region.

Design guidelines serve a range of stakeholders early in the design process. They support project-appropriate, consistent, and optimal design solutions as well as early decision-making that reduces risk in later stages of design.

In summary, design guidelines:

a) Provide guidance on customer-focused, lifecycle, and functional outcomes and a framework to support decision-making,

b) Provide direction for qualitative parameters such as the quality of urban design, community benefits, and the transfer experience,

c) Provide measures such as background information, design priorities, or intended function in the early stages of a project lifecycle informed by best practices, and

d) Supplement prescriptive or performance requirements laid out in technical standards to support documentation in schematic and detail design and delivery stages in the following ways:

   1. As proof of concept through demonstration designs,
   2. By helping designers understand the purpose of a requirement, or the underlying operational or customer need.

2.2 RELATIONSHIP WITH OTHER DOCUMENTS

Design guidelines provide a bridge to other existing requirements and standard documents published by Metrolinx, namely:

1. Design standards (DS-series),
2. Design Requirements Manual (DRM), and
3. all other documents and technical standards published in the link below:

   http://www.gosite.ca/engineering_public/

The suite of Metrolinx standards provide prescriptive and performance requirements, and the design guidelines supplement these requirements by providing qualitative guidance to achieve the desired customer-focused, lifecycle, and functional outcomes. Design guidelines also provide designers with sufficient context on the underlying operational and customer needs of performance requirements, to best inform design solutions.

Metrolinx design guidelines should be read in conjunction with Metrolinx standards as well as all other applicable codes, standards, and regulatory requirements. While standards will not be referenced repeatedly, select content from relevant standards documents may be repeated in some sections of the design guidelines to provide context.

Examples of Metrolinx standards documents

2.3 GUIDELINE IMPLEMENTATION PROCESS MAP

To support the best outcomes in project delivery, the inclusion and implementation of design guidelines must commence early when the project scope and requirements are defined in Stages 0-2.

In stages 0-2 where the project scope and requirements are defined, design guidelines serve two purposes. They act as a key input to inform early operational and commercial negotiations as well as to aid in defining the project scope through the development of project-specific base documents such as Functional Station Requirements, design briefs, basis of design reports, drawings, and outline specifications.

In stages 3-4 where the project is designed and built, while the responsibilities are assigned through the RACI (Responsible, Accountable, Consulted, and Informed) matrix and agreements are finalized, design guidelines serve as a continual reference document for project delivery teams to streamline the design solutions.

The influence of design guidelines is strongest in stages 0-2. In later stages of project delivery, they act as a reference document to ensure initial project design intent is maintained, particularly as changes occur due to cost constraints or other factors. At key project milestones, relevant feedback is gathered and incorporated into future updates of design guidelines.

Figure 1 on the following page is the recommended guideline implementation process map to support best outcomes. It was developed by the Metrolinx Design Division with input from Commercial Management and Operations.

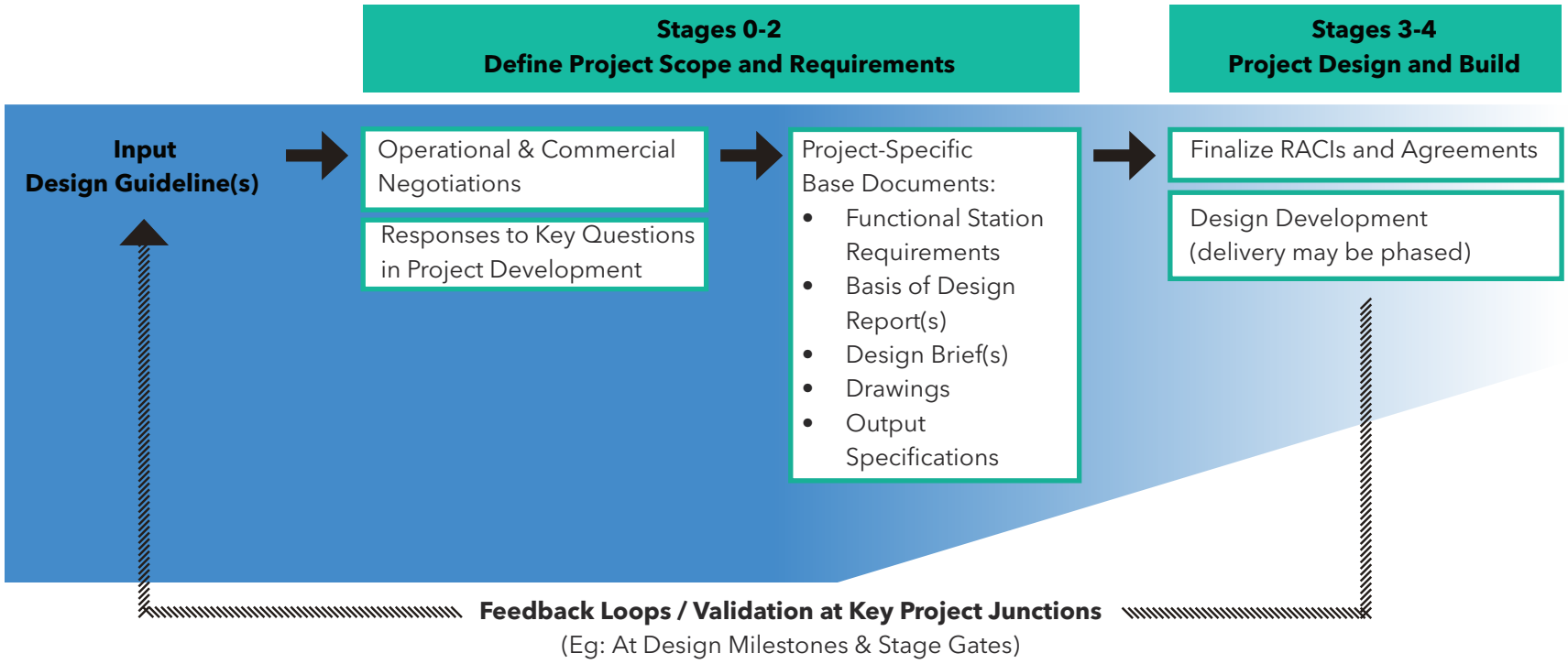

Figure 1. Design Guideline Implementation Process Map

3 THE DESIGN FRAMEWORKS

The three design frameworks outlined in the following sections of this guideline each highlight customer-focused principles and priorities. The frameworks, summarized in Table 1, are applicable across the project lifecycle and project stages. Below is a brief description of each framework to help guide how they are useful to your project:

- The **End-to-End Customer Journey** is a simple diagram that highlights journey touchpoints for a customer taking transit across any mode. This diagram supports customer-focused thinking and framing of their needs along journey touchpoints for broad project scopes.
- The **Core Customer Experience Pillars** identify customer expectations across 8 pillars to achieve customer satisfaction. These pillars act as a continual reference to support the holistic delivery of transit environments across station design, operations, and the digital experience to achieve customer-focused outcomes.
- The **Metrolinx Design Principles** respond to customer expectations identified in the Core Customer Experience Pillars through 6 design-focused principles. These overarching principles drive strategic thinking in the design of transit environments along the project lifecycle and apply across all modes.

Section	Framework	Purpose	Metrolinx Business Owner
3.1	**End-to-End Customer Journey**	**Supports customer-focused thinking** and framing of their needs along journey touchpoints for broad project scopes.	Base material owner - Marketing
3.2	**Core Customer Experience Pillars**	**Identifies customer expectations** to support the holistic delivery transit environments to achieve customer-focused outcomes.	Marketing
3.3	**Metrolinx Design Principles**	**Responds to customer expectations through design principles** that drive strategic thinking in transit environment design across all modes.	Design

Table 1. The Design Frameworks

3.1 THE END-TO-END CUSTOMER JOURNEY

The End-to-End Customer Journey is a framework to consider every step a customer might take along their travels from planning their trip to getting to their destination. The base material for the framework was developed by Metrolinx Customer Insights in the Marketing Division.

This diagram keeps the customer journey top-of-mind during the design of transit environments, and allows designers to locate appropriate programming and infrastructure along the journey touchpoints to achieve consistency and clarity in placement and adjacencies across the project scope.

Figure 2 below is a high-level diagram of the steps a customer might take along their end-to-end journey while taking transit in the region. Each of these journey touchpoints are described on the following page.

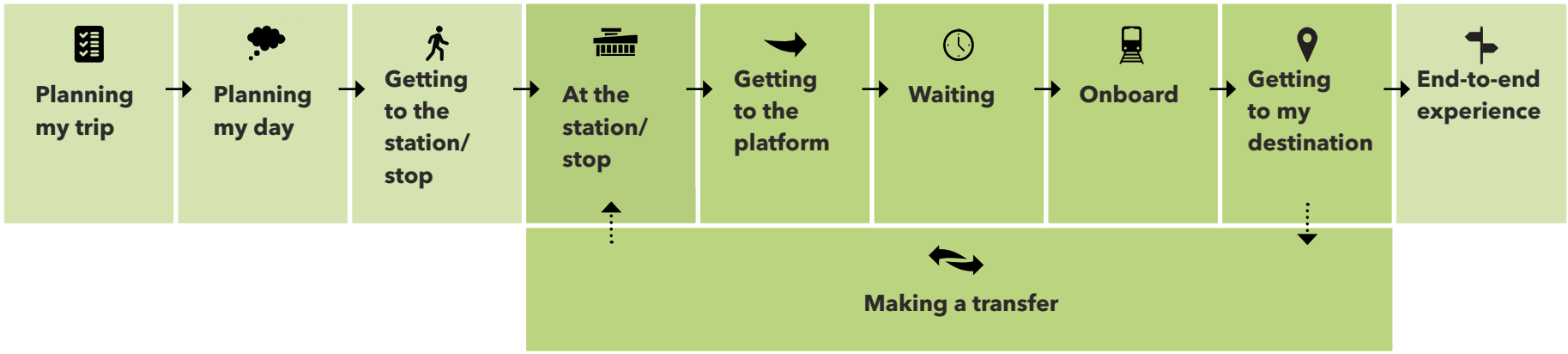

Figure 2. The End-to-End Customer Journey

a) When a customer decides to travel to a destination, they **plan and prepare for their trip.** They are likely to use trip planning apps or websites and compare travel options, considering trade-offs such as travel time, costs, walking distances, modes available, and number of transfers to decide their preferred travel method.

b) In **planning their day**, a customer may confirm their trip details, check their PRESTO balance and load funds, and monitor for service alerts on social media, CP24, websites, or third-party apps.

c) In the first mile of their journey, customers may **get to their station or stop** by a range of modes. They may walk, bike, take a ride-hail service, specialized transit, drive, or be dropped off by a loved one or acquaintance.

d) **At the station or stop**, customers may take a range of actions prior to boarding their transit mode - subway, train, bus, or light rail. These actions would depend on each customer's needs and behaviours as well as the amenities and features available within the station or stop. They may purchase and pay their fare, receive assistance, confirm when their mode will arrive and if there are any service disruptions, use the washroom, or buy a beverage.

e) Customers **get to the platform** when most of their needs prior to boarding are met. They may confirm which platform to go to and take the escalators, stairs, or elevators to get there.

f) Customers **waiting** on the platform may check when their mode will arrive, and they may stand and line up or find a seat. In inclement weather, they are likely to find sheltered or shaded areas as they wait.

g) **Onboard**, a customer may pay their fare, find a seat or stand. If they are travelling with a pet, bike, stroller, or mobility device, they may look for an appropriate place onboard to park.

h) Depending on the nature of their trip, customers may make one or more transfers to get to their final destination. When **making a transfer**, customers may repeat similar actions at the station or stop and would likely want to get to the platform as quickly as they can.

i) Following the transfers, to **get to their destination**, customers may complete their last mile of the journey by walking, biking, taking a ride-hail service, specialized transit, or be picked up by a loved one or acquaintance.

j) Finally, customer may evaluate their **end-to-end experience** at any time, providing feedback across various channels, be it social media, surveys, or calling the customer contact centre. They may also check their PRESTO balance and troubleshoot travel challenges.

Based on the nature of a customer's trip, their journey may only entail a few of the steps identified or all of them.

3.2 CORE CUSTOMER EXPERIENCE PILLARS

Developed by the Metrolinx Marketing Division, there are 8 core pillars of the customer experience that must be delivered upon to meet customer expectations and drive customer satisfaction, ridership, and revenue.

These pillars should be referenced along the project lifecycle to ensure the design of transit environments as well as the service delivery model are meeting and delivering upon customer expectations.

The Core Customer Experience Pillars are as follows:

1. **Safety:** Keep me safe when I travel across the network.
2. **Service:** Get me where and when I need to go.
3. **Communication:** Communicate with me.
4. **Navigation:** Help me find my way.
5. **Payment & Fares:** Help me successfully pay for all aspects of my trip.
6. **Customer Service:** Provide me with great customer service.
7. **Comfort and Amenities:** Keep me comfortable.
8. **Universal Accessibility:** Provide an equitable experience.

Figure 3 on the following page describes each core customer experience pillar in further detail. Success across all pillars must ensure an equitable service experience for all customers regardless of age, gender, ethnicity, income level, or ability.

Refer to the GO Hierarchy of Customer Needs produced by the Metrolinx Marketing Division for more details.

Pillar: SAFETY Keep me safe when I travel across the network by ensuring:	**Pillar: SERVICE** Get me where & when I need to go by ensuring:	**Pillar: COMMUNICATION** Communicate with me by ensuring:	**Pillar: NAVIGATION** Help me find my way by ensuring:
- I will be personally safe (overall safety of myself & my belongings). - I will be physically safe (free from physical harm/assault). - I will be psychologically safe (free from discrimination, harassment, etc).	- I can go where and when I need (frequent service). - I will be on time. - I will make my connection.	- I will get the information I need to make the right decision for me (the correct, real-time info at the right time). - I will find the information I am looking for where I want to look (preferred channel(s)). - I will receive consistent and accurate information no matter what channels I use. - I will receive information in a language or medium I can understand.	- I will be able to find my way (physical navigation at/around a location). - I will be able to find what I am looking for (physical navigation + digital navigation of websites, apps etc.).
Pillar: PAYMENT & FARES Help me successfully pay for all aspects of my trip by ensuring:	**Pillar: CUSTOMER SERVICE** Provide me with great customer service by ensuring:	**Pillar: COMFORT & AMENITIES** Keep me comfortable by ensuring:	**Pillar: UNIVERSAL ACCESSIBILITY** Provide an equitable experience by ensuring:
- I know where to pay (e.g. where devices are at the station). - I know how to pay and what I am paying for (e.g. how to use the TVM/AVM or e-tickets). - I know why my trip costs what it does.	- I can get the info I need regardless of where I am in my journey/network. - I can get help when I need it (helpful staff). - I am helped by someone friendly (friendly staff).	- My basic needs are met (e.g. access to washrooms and water). - I receive the experience I have come to expect regardless of where I am in my journey/network (e.g. retail, wi-fi, warm & well-lit waiting spaces).	- I have a barrier-free journey (e.g. functioning elevators, accommodations etc.). - The service meets my unique needs while making me feel comfortable and welcome (e.g. gender, race, economic status, language etc.).

Figure 3. Core Customer Experience Pillars

3.3 METROLINX DESIGN PRINCIPLES

Metrolinx is mandated to build a world-class transit and transportation system in the province. We are undertaking the most significant transportation investment in Ontario's history to fulfill our vision of "Getting you there better, faster, easier" and our mission to connect communities across the Greater Golden Horseshoe region.

To enable our mandate and vision we are working towards delivering a seamless, integrated, end-to-end customer experience that is safe, brings value, and supports diversity and inclusion. To achieve these goals, Metrolinx will:

- Enable easier first and last-mile options that are more seamless;
- Encourage and support increased cross-boundary travel and transfers;
- Support a shift in primary trip purpose from commuting to a broader range of trip purposes; and
- Build ridership and revenue across the network.

Our objective is to achieve a One Network experience that feels like a seamless trip – from planning, fare purchase, payment, access, use, and transfer to arrival at the destination. The One Network experience will support the Core Customer Experience Pillars identified in Section 3.2 of this document.

The following Metrolinx Design Principles have been developed collaboratively across Metrolinx to represent our overarching values towards a One Network experience.

The Metrolinx Design Principles are:


Seamless


Intuitive


Inclusive


Safe


Reliable


Thoughtful

These six design principles focus on understanding and thoughtfully addressing the customer experience across all touchpoints of the transit journey and all modes: GO rail, subways, light rail and bus rapid transit, bus, active modes, and transit-oriented communities (TOC). The principles integrate the end-to-end customer journey's physical, human, and digital aspects. At the same time, the principles balance the needs of our passengers alongside the needs of owners/operators, and third-parties (developers/transit-oriented communities, municipalities, indigenous relations, etc.) to derive shared value.

These Design Principles form the foundation of our holistic design process and should be referenced along the project lifecycle. With a strong focus on lifecycle, functionality, and community, they inform and guide the development of Metrolinx design guidelines and standards and should be applied across all projects.

3.3.1 SEAMLESS

The end-to-end customer experience should be well-connected, convenient, and friction-free to keep customers 'on the move.'

a) Transit access from all modes (walking, biking, transit, micro-transit, private vehicles) should be easily recognizable, clearly identified, and well-integrated in the public realm and right of way;

b) Where multiple modes or operators intersect in a transit environment, the customer lens should be applied to create an effective integrated station master plan that facilitates transfers across the region and the transit network, independent of who builds, maintains and operates the various elements and components;

c) Maximize opportunities to seamlessly integrate station components into the surrounding community. Consider relationships to all existing and future transit connections within the urban and suburban fabric; and

d) Design information and notification experiences to support the diverse needs of customers:

1. Infrastructure should support the end-to-end customer information and travel notifications experience, including static, digital, reliable Wi-Fi connectivity, and onboard strategies.

2. Align physical and digital messaging and alerts, both on-site and on-the-move.

3.3.2 INTUITIVE

The end-to-end navigation experience should be simple, predictable and consistent throughout the region.

a) Integrate the station(s) within the community they serve and prioritize transit access. Station and transit access should be located at key intersections, be clearly recognizable, visible, prominent, and clearly identified.

b) The composition of elements and their visual hierarchy reinforce a sense of order and help customers find their way. Designs should present balanced, clutter-free spaces that are legible and easily understood by all users:

1. Station(s) should be integrated into site context in a way that is prominent and provides presence on the street through design, including architectural form that supports intuitive wayfinding and customer access.

2. Consistent design treatments applied along major pedestrian and bike routes should provide recognizable experiential cues to customers, guiding them toward the station, facility, and platform. Pathways create seamless connections through the station environment or facility and support station or facility identification for customers;

3. Architectural expression as well as look and feel of infrastructure should be similar with a systematic and codified use of colour, modularity, materials, finishes, and pattern that integrates with the existing transit infrastructure or system as applicable. A consistent approach to materials, architectural elements, design expression, and detailing should be utilized;
4. Space plans should support wayfinding simplicity and accessibility, and aid in clarity of the locations of fare purchase and payment devices;
5. Visual cues, features, and/or elements should support intuitive wayfinding and highlight key decision-making points, such as access points, vertical circulation etc. through the use of lighting, colour, or materiality;
6. Simplified volumes and forms constructed along consistent horizontal and vertical datums should be applied. A consistent approach to form-making, building volumes, and detailing should reinforce an architectural identity that is recognizable across the system;
7. A modular approach to design and material application generates an organizational structure and cleanly integrates all building systems. Structural, mechanical and electrical elements should be less visually prominent, and a systematic approach should be applied to how architectural, structural, mechanical, and electrical designs are expressed;

c) Limit visual clutter, distractions, and conflicts with other visual elements;

d) Services should be concealed and cleanly integrated with surrounding finishes, with a focus on ease of maintenance and access by operations and staff;

e) Create a sense of order, comfort, and security to ensure a straightforward, enjoyable customer experience; and

f) Signage and wayfinding placement strategy and customer information take precedence over advertising but should be coordinated together.

3.3.3 INCLUSIVE

The end-to-end customer experience should serve the diverse needs of all travelers regardless of age, gender, income level, ability, or familiarity with the system.

a) Providing an equitable, inclusive experience for all customers should be at the forefront of informing the design;

b) Designs should be an integrated, convenient, and safe experience for all customers with regard to ability, age, gender, identity, language, income level, and familiarity with the transit system;

c) Follow principles of Universal Design and prioritize step-free routes as the main path of travel that is as short and direct as possible;

d) Minimize travel and transfer distances for all customers at all journey touchpoints and be along clear, intuitive, direct routes;

e) Consistently and prominently place elements, services, and amenities that serve the full spectrum of customers in locations that do not impede the passenger flow; and

f) Designs should respond to the spectrum of human difference and preference in a holistic manner that expands the reach to all customers.

3.3.4 SAFE

The experience should be designed to ensure all customers feel as safe as possible throughout their end-to-end journey, at any time of day and at any location.

a) Ensure safety and security for all (customers, staff, and the wider community) in the design, construction, and operational phases;

b) Adopt the Crime Prevention Through Environmental Design (CPTED) principles throughout, to support customer safety, both actual and perceived:

1. Optimize visual transparency to, from, and between the infrastructure components to increase safety and security and promote ease of wayfinding;
2. Emphasize transparency and openness along all public-facing façades, or façades facing open spaces, while considering building energy performance;
3. Where underground connections are provided, minimize walking distances to ensure connections are and feel safe.
4. Provide alternative routes as much as possible to and from fare paid zones to provide customers with choice to safely navigate the environment.
5. Carefully consider locations of customer-serving equipment, such as fare payment devices and vending;
6. Carefully consider locations and functions of safety devices, such as Passenger Assistance Intercoms (PAI) around station sites or facilities, in support of customer safety;
7. Lighting placement and selection that enhances the sense of safety and security with emphasis placed on areas where customers may feel vulnerable, including but not limited to point of fare purchase, facility entrances, and designated waiting areas.

c) Provisions should be made to prevent any potential conflicts between pedestrians, cyclists, and vehicles in open spaces, pedestrian and cycling routes, and where pedestrians may wait before crossing or transferring across the site and adjacent public realm areas;

d) Support a touchless experience for customers across all touchpoints, including transfers, in all building infrastructure;

e) Facilitate passenger flows through transit access, transfers, and connections:

1. All passenger amenities, services and security items should be thoughtfully consolidated to achieve maximum visibility, circulation space and clear, direct pedestrian flow;
2. Sufficient sizing of all elements (eg. vertical circulation), considering human factors to facilitate access in day-to-day operations, typical service disruption scenarios, emergencies, and high-volume special events.
3. Sufficient and safe egress, aligned with egress scenarios;
4. A clear strategy for organizing the hierarchy and consistency of customer amenities, including but not limited to fare equipment and devices, seating, and waste receptacles;
5. Weather protection of vertical circulation elements and access points to avoid slips and falls;

f) Provide a safe and comfortable space from the perspective of the environment, including air quality, weather protection, thermal comfort, acoustics, etc.;

g) The design should enable and consider crowd management, including special events, unforeseen events, extreme situations (extreme weather, threats and attacks, service disruptions, organized acts of violence), and after-hours safety;

h) Assess, analyze, and minimize all safety risks through the project lifecycle; and

i) Ensure organizational agreement and sign-off on any and all risk items.

3.3.5 RELIABLE

Public transit should be a trusted choice for travel in the region. The system should be designed to support reliability through ease of maintenance and operations, durable assets, and a consistent customer experience from end-to-end. The journey should include real-time, location-based information, and on-time service that is clean, durable, and comfortable.

a) Design for long-term operational efficiencies;

b) Design for a resilient and sustainable station that facilitates operations in alignment with operator requirements and priorities;

c) The design should reflect the heavy everyday use of a busy transit system with the application of robust, durable, and high-quality materials that enhance the quality of the transit environment and prioritize low life-cycle environmental impacts, material recycling, and other sustainable initiatives;

d) Design for a LEAN station that optimizes lifecycle costs and allows for future flexibility. Consider how asset lifecycle costs, adaptability, flexibility, ease of operations and maintenance are demonstrated in all aspects of the specifications, design, and detailing by applying the following:

   1. Optimum simplicity in the appearance of the infrastructure to conceal systems and prevent vandalism;

   2. Materials, finishes, and assemblies should be durable and resistant to vandalism through the provision of tamper-proof design, including graffiti-resistant, easy-to-clean surfaces;

   3. Implement a clear strategy for detailing repeated architectural elements using a kit-of-parts to aid a customer's recognition of essential journey touchpoints;

   4. Apply simplified, integrated, and modular materials and hardware design that is consistent across the line;

   5. The design should be of high quality with simplicity in detailing and carefully resolved material intersections, connections, and transitions;

   6. Provision for consistent elements, placement, and installation methodology;

   7. Use simple, repeated modules, and concealed fasteners throughout the system;

   8. The visual appearance of finishes and textures should be organized and consistent;

   9. Provisions should be made to promote ease of maintenance and a uniform, consistent, and current appearance that provides a sense of order, comfort, and security;

e) Organized and integrated customer amenities:

   1. Consolidate customer amenities to avoid visual clutter while facilitating ease of use and maintenance, including the ability to clean or replace components;

   2. Integrate amenities near intended use, and group amenities where appropriate to avoid redundant provisions;

3. Customer amenities provided across a mode should be consistent and systematized so that customers can rely on a consistent service across their end-to-end journey;

f) Sustainability and environmental factors should be considered, ensuring climate resiliency and redundancy for continuous access to all public areas in the station or facility (for example, in a storm or flood event):

1. Design infrastructure to reduce climate vulnerabilities over a projected asset lifecycle and consider current strategies in place to address these concerns;
2. Architecture and landscape design should support a robust transportation system that contributes significantly to regional sustainability goals and initiatives;
3. The design should consider climate change and adaptation; and
4. Emphasis should be placed on energy efficiency, incorporating natural daylight, managing stormwater, and mitigating regional environmental impacts.

3.3.6 THOUGHTFUL

The customer experience should be traveler-centric, personalized, and future-ready. Thoughtful consideration should be given to addressing pain points and creating a positive, innovative, and delightful experience.

a) Design for a consistent customer experience;

b) Design to draw increased ridership (for example, include or allow for future multiple access points to increase community connectivity);

c) Design to pre-established target design year. Accommodate for future change including changing climatic conditions, development opportunities, socio-economic trends, customer profiles and behaviour, and the evolution of mobility service delivery;

d) Customer and public-facing infrastructure should be timeless and enduring, with a design strategy that responds to the existing and planned context, the character of the municipalities, and the respective diverse neighbourhoods along the corridor:

1. As part of the elements of consistency and variability of a particular transit line or of the GO network, the stations and facilities design strategy should understand the unique history and context of the site. The design strategy should embody the values and character of its community by celebrating locality, heritage, and highlighting unique landscapes; and

2. Siting concepts should be responsive to the neighbourhood and municipal stakeholder considerations and thoughtfully address civic amenities, retail, and other services that respond to local community needs.

e) Implement a clear strategy for detailing repeated elements using a kit-of-parts to aid a customer's recognition of essential journey touchpoints;

f) Systems and building operation components of the design, including but not limited to vents, mechanical elements, electrical, and IT system cabinets should be screened from public view using a consistent architectural material palette that is part of the overall network or line-wide language;

g) The landscape vision and design should be consistent and include a primary strategy that complements the site and architecture design. Trees and landscaping should be used to frame views and circulation routes, giving them prominence on the site and making them part of the customer journey and experience;

h) Provide customer comfort through protection from rain, wind, snow, and sun, maintaining customer thermal and acoustical comfort levels, and avoiding extremes in temperatures;

i) Provide the flexibility to allow for future technologies and recognize key trends in transportation technology to ensure station or facility environments remain responsive and relevant in the future;

j) Consider programmatic and site-specific constraints of the project in the final design and the construction phase. Right-size, optimize, and consolidate functional programs to the most efficient build;

k) Plan for a seamless construction phase with clear impact assessment and management of concerns as they relate to customers, staff, transit operations, neighbours, stakeholders, and the larger public;

l) Respond to the impact of local site conditions, including during the construction stage (for example, properties impacted and demolished for the project should be left in an interim state that includes a primary landscape strategy that limits the need for fencing); and

m) Locate all infrastructure, including ancillary structures, to support the potential for future development and minimize impact to communities to support transit-oriented communities (TOC).

4 DOCUMENT BACKGROUND

Section	Framework	Metrolinx Business Owner	Year of Last Update
3.1	**End-to-End Customer Journey**	Base material owner - Marketing	2023
3.2	**Core Customer Experience Pillars**	Marketing	2023
3.3	**Metrolinx Design Principles**	Design	2023