The LRT Expansion Plan will deliver a high quality, fully accessible, safe, efficient and environmentally sustainable LRT network that maximizes Passenger convenience and supports the City’s continuing economic prosperity, serving and in turn being served by, transit-oriented land use policies.

-CITY OF EDMONTON’S GUIDELINES FOR URBAN STYLE LRT (JUNE 2, 2011)
CONTENTS

How to Use this Document .......................................................... 5
Document Structure ..................................................................... 5
Relationship to Other Project Documents ................................... 5

PART ONE: INTRODUCTION
1.1 Sustainable Urban Integration .................................................. 7
1.2 Key Values ............................................................................ 8
1.3 Valley Line System Components ............................................. 9

PART TWO: LIGHT RAIL VEHICLES
2.1 Introduction ........................................................................... 11
2.2 LRV Body ............................................................................ 12
2.3 Interior Design Language ....................................................... 14
2.4 Lighting, Passenger Information System & Safety ................ 16
2.5 Design Features .................................................................... 17

PART THREE: GENERAL CORRIDOR DESIGN
3.1 Urban Realm ......................................................................... 23
3.2 Support Systems ................................................................... 26
3.3 Stops - General .................................................................... 34
3.4 Structures ............................................................................. 37

PART FOUR: SPECIFIC CORRIDOR DESIGN
4.1 Introduction ........................................................................... 45
4.2 Downtown Character Zone ...................................................... 46
4.3 River Valley Character Zone ................................................ 56
4.4 Mill Creek Character Zone ..................................................... 66
4.5 Davies Industrial Character Zone ......................................... 76
4.6 Southeast Edmonton Character Zone ................................. 82
HOW TO USE THIS DOCUMENT

This document is intended to be used by Project Co. as a guide to understand and successfully interpret the City's aspirations for the Project. The contents of this Guide are intended to complement functional and technical requirements as set out in the Project Agreement. As such, it illustrates the concepts and aspirations of the Project that are expressed by the Project Requirements. The intention of the Design Guide is to communicate some of the Sustainable Urban Integration (SUI) requirements that fulfill the City's desire to create a sustainable Light Rail Transit (LRT) system that is integrated into the urban fabric.

DOCUMENT STRUCTURE

This document comprises four parts:

Part 1: Introduces the concept of SUI and key values that the Project is built on. It also introduces key components of the LRT Corridor that are addressed in subsequent parts of the document.

Part 2: Addresses the design objectives of the Light Rail Vehicles.

Part 3: Describes the design objectives of the LRT Corridor as they relate to overarching elements such as streetscape, Stops, Support Systems and Structures.

Part 4: Describes the design objectives specific to the Opportunity Areas, Stop Public Information (D) themes, and Character Zones identified along the LRT Corridor.

RELATIONSHIP TO OTHER DOCUMENTS

This document shall be read in conjunction with the Project Requirements. It has been structured to reflect and illustrate key objectives embedded in the Project Requirements, and to serve as a guide to inform Project Co.'s interpretation of the Project Requirements.

All terms in this Design Guide that are defined in the Project Agreement and are not otherwise defined in the Design Guide shall have the meaning ascribed to such terms in the Project Agreement.
1.0

INTRODUCTION

The City is developing the Valley Line LRT to enhance the city-wide transit network as well as accommodate growth and support the development of more sustainable, transit oriented communities. The City aspires to build a sustainable network that is integrated with the communities it serves, and supports an improved quality of life and healthy, sustainable, communities across Edmonton.
1.1 SUSTAINABLE URBAN INTEGRATION

Edmonton is a city in transition. As its population rapidly climbs towards one million residents, the City has identified a shift in its transportation modes as key to its ability to grow and thrive. Leading this shift will be the Valley Line.

SUU refers to the integration of the Valley Line into the urban context in which it exists. Transit systems that are integrated with their contexts create urban form and spaces that encourage greater use of the system thus reducing the need for travel by automobiles. Well designed LRT corridors also play a role in promoting safety and walkability in the community and help areas become attractive places for people to live, work and interact. In addition, SUU also contributes to economic development of the City by improving the vibrancy of the public realm, thus attracting people and jobs. Creating a vibrant place is a key goal of Transit Oriented Development (TOD), which is becoming increasingly important to achieve a sustainable urban future.

Successful SUU can be challenging and complex. This guide therefore aims to provide clarity and guidance to Project Co with respect to the seamless integration of SUU throughout the LRT Corridor.

1.1.1 Design Guide – Purpose

The Design Guide complements the Project Requirements provided that in the event of a conflict between the Design Guide and the Design and Construction Requirements, the Design and Construction Requirements shall govern. The Design Guide captures certain SUU requirements identified through public consultation that have informed the City’s overall vision for a seamless transit experience; an experience integrating the urban realm with a world-class LRT service, providing a compelling and attractive choice for the people of Edmonton.

Additionally, the Design Guide responds to, and is influenced by, the wider context surrounding the LRT Corridor. Its purpose is twofold:

1. To help understand areas of potential change surrounding the LRT Corridor, where intensification, new development, and investment in the public realm are expected to support transit use and
2. To inform the design, so that desired growth and change within adjoining neighbourhoods is supported by the design of appropriate infrastructure.

1.1.2 Design Guide – Application

This Design Guide applies to the lands along the entire length of the 13 kilometre LRT Corridor. The LRT Corridor crosses through a diversity of neighbourhoods, from stable communities to areas with great potential for change. The LRT Corridor also connects a number of major destinations from Southeast Edmonton to Downtown, through the various Character Zones described in this document.

The project scope includes Character Zones as described in Schedule 5 of the Project Agreement and elaborated in Part 4 of this Design Guide. Each Character Zone contains Opportunity Areas with identified features and characteristics of adjoining neighbourhoods that are required to inform and be reflective of the design of the infrastructure.
1.2 KEY VALUES

1.2.1 Pedestrians First

Apply a "Pedestrians First" approach that provides safety, facilitates convenient access to the system, and creates a vibrant public realm.

Furthering this idea, the City recognizes that every passenger is a pedestrian first. An individual's experience of Edmonton's neighbourhoods will be influenced by the quality and character of the LRT Corridor as a whole, as they travel to and from the Stops and Station, and as they engage and enjoy the amenities associated with TOD.

1.2.2 Sustainable

Conservative and connect to Edmonton's natural heritage system, support the City's goals of sustainability and resilience, and integrate sustainable technologies and materials wherever possible.

The Valley Line joins many of Edmonton's environmental assets, including natural corridors and features. The Project should act as a catalyst to support the enhancement of Edmonton's beautiful landscapes and cherished natural environments, helping to deliver the City's long-term goals for a more sustainable and resilient Edmonton. The system is intended to help Edmontonians stay connected with the natural environment throughout the length of the LRT Corridor.

1.2.3 Integrated and Multi-Modal

Integrate with existing and planned neighbourhoods, by creating or improving pedestrian, and cycling infrastructure and connections between System facilities and adjacent neighbourhoods and destinations.

The Valley Line passes through a diverse range of neighbourhoods, and will play a role in supporting the enhancement or preservation of a cherished character of place along the LRT Corridor. The Valley Line should not feel foreign, or imposed, but rather give homage through design to the disposition of each community.

Intermodal integration is one of the objectives of the Project, providing for an optimal interface between the Valley Line and other forms of transit that connect to it. The LRT Corridor shall be designed to encourage a variety of transportation options including active forms such as walking and cycling.

Connectivity is important to facilitate community integration and the success of a multi-modal transportation network. Much of Edmonton's existing urban fabric is characterized by small blocks, demarcated by a prominent grid. This provides multiple routes to destinations and encourages active forms of transportation. For this reason, the design of pedestrian crossings, corridor connections, and bike lanes are key to the goal of supporting greater connectivity.

1.2.4 Flexible and Adaptable

Incorporate design elements and systems that are flexible, adaptable and capable of responding to future conditions.

Successful transit systems are designed to adapt to changes over time, including T&O changes in technology, travel patterns, levels of density, increases in trip diversification and land use, and demographic shifts.
1.3 VALLEY LINE SYSTEM COMPONENTS

SLI requirements need to be integrated into the design and functioning of all components of the Valley Line. The following sections further elaborate on key components of the Valley Line and explain how each can balance the concept of a single coherent system with the requirement to integrate with the distinct character of the Character Zones.

1.3.1 Light Rail Vehicles (LRVs)

This Design Guide illustrates the requirements as set out in the Project Agreement for a fleet of modern, sleek LRVs with a sense of style and personality for the City of Edmonton. The images in Part 2 (Light Rail Vehicles) are illustrative and Project Co is required to use this document as a guide for its own interpretation of the SLI requirements for the LRV.

1.3.2 Urban Realm

The urban realm is structured around Character Zones in recognition of how Edmonton’s unique existing neighbourhoods and varying forms of planned development will inform the design of the Valley Line. The Design Guide also defines the boundaries of the Pedestrian Priority Zones (PPZs) and describes key opportunities to be incorporated within the design of the streetscape to enhance pedestrian access and movement.

1.3.3 Support Systems

Several types of support systems will be located along the LRT Corridor, such as Utility Complexes, vehicle storage, drainage, and Wayside Equipment Enclosures. The SLI requirements of these support systems are described in Part 3 (General Corridor Design) of this document. Where possible, support systems shall be located to minimize their presence on the streetscape. Their design shall balance consistency in architectural elements with enhancement of the public realm and response to urban context.

1.3.4 Stops & Stations

The Valley Line consists of 11 Stops and 1 Station (Davies Station). StOPS have at-grade Platforms, accessible directly from an adjacent public right-of-way. Station Platforms are not at grade and therefore include vertical circulation elements such as stairs/escalators and additional infrastructure. The design of each Stop and Station is informed by the Character Zones within which it is located, while also reflecting a high degree of consistency in design, as illustrated in Part 4 (Specific Corridor Design). In addition to responding to their Character Zone and Opportunity Area, each Stop and Station is required to reflect their respective Stop PI Themes.

1.3.5 Structures

The LRT Corridor contains three segments that are at-grade, one below-grade segment, and one elevated segment. These segments are connected to each other through a series of Structures such as bridges and tunnel approaches. At-grade and elevated sections are highly visible pieces of the City’s infrastructure and therefore demand a sophisticated design response that showcases the high profile role of the Valley Line in order to integrate successfully with the communities they serve.
LIGHT RAIL VEHICLES (LRV)

One of the most visible elements of the System will be its LRVs. These LRVs will not only need to cater to Passengers’ day-to-day needs, they will represent a symbol of the City’s attitude towards public transit. The public will compare the LRVs to all other modes of transport and thus LRVs shall be competitively and attractively designed in order to engage and be truly successful. This section illustrates the themes, colours, imagery and aesthetics for a fleet of modern, sleek LRVs with a sense of style and personality.
2.1 INTRODUCTION

As the City extends the benefits of LRT to new parts of Edmonton, it aims to provide a compelling level of service, which not only meets the expectations of its Passengers, but also showcases the potential of the urban style low-floor LRT system. The vision for the System is to use the SUI approach to create a well integrated and attractive system identity for the LRVs.

The LRVs shall demonstrate a modern, attractive and enduring identity that synthesizes with the aim of "The Way We Move", the City’s Transportation Master Plan. Given Edmonton’s 30+ year history of light rail transit, the LRVs shall meet Passengers’ expectations for security, sustainability, accessibility, comfort and convenience of use, and create a new, exciting identity for the System that differentiates it from the existing high-floor LRT system.

A high quality level of design, coupled with environmental values are a compelling package for the Passenger and the public in general. Attention to detail is likely to significantly improve customer perception and create a competitive product, to position the LRV above other modes of transport.

Using integrated design concepts, the LRV for the Valley Line shall be modern, purposeful and aspirational.

2.1.1 Approach

The LRVs must be accessible by mobility challenged passengers and shall comply with the accessibility requirements, stated in the Project Requirements. The City recognizes that decisions to use public transit often hinge on its ease-of-use and general accessibility to all citizens, including those with physical, sensory and cognitive challenges, the elderly, and Passengers with young children. The goal is a transit system that works for all.

Travel on the LRV forms only part of a Passenger's journey on the Valley Line. Clear and reliable Passenger information and journey planning, coordinated with the wayfinding at Platforms and throughout the wider urban realm, shall be recognized by Project Co.

The development of the new fleet will also benefit from working closely with local stakeholders to consider challenges relevant to Edmonton’s communities, environment and winter climate.

2.1.2 Passenger Experience

Capturing the Passenger’s requirements has been a big part of the SUI approach. Passenger wants and needs are important factors behind any successful transport system. Project Co shall understand and be able to demonstrate how Passenger needs and expectations will shape its new low-floor LRVs.

In summary, the City envisions to deliver a safe, accessible, reliable and modern LRT system to its citizens. Project Co will achieve this through careful attention to detail and a seamless delivery of the service with a high quality low-floor LRV fleet, which will not only be functional, but measurable for its Passenger’s to use.
2.2 LRV BODY

2.2.1 External Appearance

The LRV body shall present a compelling, elegant and sleek design that is architecturally timeless and enduring, and clearly identifiable as part of the Edmonton LRT System identity. The LRV body shall incorporate curved and flat surfaces reconciled with style.

The LRVs shall be distinctly unique from the existing LRT fleet, while also being easily recognizable as part of the LRT system.

Figure 11 presents generic design directions to illustrate a range of potential LRV body design solutions. The design shall be inspired by cues taken from the images illustrated within this section and applied to the selected LRV model. The images show the LRV with an understated livery, indicative of the approach required for the Valley Line fleet. In particular, window surfaces are shown in black. The proposed LRV shall comply with the transparency requirements for windows as set out in Part 7 (LRV) of Schedule 5 (Design and Construction Technical Requirements) of the Project Agreement.
2.2. Livery and Colours

The livery shall give the LRV a high quality appearance that stands out and communicates it as being a modern presentation. The proportion of ETS blue on the vehicle and the possibility of a predominantly blue vehicle presentation shall be explored. The ETS blue and white colour specifications are shown in Figure 12.

The use of livery shall not diminish or negatively affect branding or identity. Any Valley Line promotion shall be visually integral to the overall livery. Identity shall be created through a livery that compliments the LRV body.

2.2.1. Doors

The door architecture, materials and finishes are an important passenger interface. The functionality and reliability of the doors shall be maximized. The colour contrasted doors shall be easily visible under all lighting conditions to provide ease of use and recognition.

Door colours shall reconcile livery design with colour contrast functionality.

Means to achieve improved door contrast may include the use of edge lighting, contrast edge surfaces and lens print techniques. Door controls shall be coordinated with the bodywork and be clearly identifiable based on design, colour contrast and position. Figure 12 illustrates design directions for doors and co-ordination with the bodywork.

![Diagram of LRV doors with livery and colour specifications](image-url)
2.3 INTERIOR DESIGN LANGUAGE

2.3.1 Wheelchair Space

Figures 15A and 15B show sample floor plans, accommodating the minimum required number of wheelchair spaces per LRV.

Wheelchair spaces will also be used by other users, including cyclists with bicycles, families with strollers and other passengers. It is, however, imperative that the design reflect the primary role to accommodate a wheelchair user and their care, quickly, safely and efficiently. A transverse panel, similar to the illustration in Figure 14 is required to permit a wheelchair to be secured by use of its brakes only.
2.3.2 Interior Materials and Finishes

Colour contrast is required to assist passengers, including those who are visually impaired. The interior surfaces where colour contrast is important are illustrated in Figure 14, 15, and 16 and include:

- floor covering colours to distinguish entrance areas from passenger areas
- grab handle contrast with adjacent surfaces
- seat colour/fabric contrast with floors and walls
- door surfaces relative to walls

Figure 14 shows the use of different fabrics, to differentiate priority seats from other seats. The approach is ‘one design which works for all’. Figures on this page also show potential colour swatches and other detailing.

The LRV interior is an open space with most of the design impact provided by lighting, floor finish and seating colours. Contrasting handrails at doorways and seat back grab handles shall be used to overcome the use of limited ‘mass’ colours across similar surfaces, whilst maintaining compliance with Project Requirements relating to accessibility.

To encourage modal shift, the LRV shall compete effectively with other modes of transport, most notably private automobiles. An LRV can be well positioned relative to other modes of travel, if carefully designed. Figure 15 shows potential seating arrangements and detailing. The interior environment, openness, colour, materials, and finishes play a valuable role in the overall interior design quality and positioning of the LRV. The City encourages the use of integrated design to create a clean uncluttered interior which is easy to understand and a pleasure to use. Seating and comfort is a passenger interface that is an important part of the transit experience.

Therefore the LRV seating design shall:

- promote good ergonomic principles for the full demographic range of passengers
- provide optimum comfort within spatial constraints
- be formed from sustainable materials
- achieve to high levels of comfort set by other modes of transport

Interior finish suggestions:
Blue and satin/silver interior;
Metallic forms use bead blast stainless finishes.

Major Finishes:
- Bead blast
- Stainless steel
- Moquette or flat cloth fabric

Ambience:
- Underrated
- Welcoming
- Calming
- Cool in summers; warm in winter

Figure 16: Fabric patterns and interior details

Figure 17: LRV interior

Desirable: Clearly visible and colour contrasting door control
Desirable: LRV is fitted with comfortable and modern seats; colour contrasting priority seats
Desirable: Wind screen; height to be determined by Project Co
Desirable: Clearly visible attention indicator
Desirable: Conveniently located and colour contrasting handholds
Desirable: Contrasting seat handle
Desirable: Contrasting vestibule and saloon floor surfaces
2.4 LIGHTING, PASSENGER INFORMATION SYSTEM, SAFETY AND SECURITY

2.4.1 Lighting

Lighting systems shall contribute to the ambience, safety and sustainability of the LRV.

The character and presentation of the lighting system shall be used to create an open, inviting, smoke-free environment which will not be distracting or uncomfortable, under any conditions.

Lighting technology shall be adjustable to meet local, seasonal and operational conditions.

2.4.2 Passenger information

The Passenger Information Systems shall provide clear and reliable information in coordination with its wider wayfinding functions. It shall have good colour contrast, high quality resolution and wide viewing angles to deliver maximum coverage for all passengers. It shall be well coordinated with other on-board signage, with clear and timely passenger announcements.

2.4.3 Safety and Security

Safety and accessibility on the LRV is paramount at all times, specifically in slippery conditions. The proper choice of materials and consistency will help minimize risk at the LRV-Platform interface. Good threshold lighting and high visibility doorway thresholds will ensure reliable boarding/safety at all stops and stations. The use of simple and intuitive features, such as push buttons and interfaces (passenger emergency alarms, for example), when consistently applied, will help to maintain a high level of safety and an easily navigable environment. The LRV shall create a welcoming, comfortable, safe and secure environment for all passengers using the Valley Line.
2.5 DESIGN FEATURES

2.5.1 Coupler Covers

Coupler covers serve two important functions:

1. Coupler covers protect the couplers and thus eliminate a safety hazard for road traffic, pedestrians, and cyclists.

2. Coupler covers conceal an important but visually undesirable feature and thus improve the presentation and impact of the LRV. LRVs with covers appear modern, sophisticated, fast and desirable.

![Coupler Covers Diagram](image)

- Desirable: Extendable couplers and covers required for consist operation
- Undesirable: Exposed coupler at vehicle ends, creates a visual distraction and a hazard to people
- Desirable: Coupler cover fully integrated with the body of the LRV
2.5.2 Other Design Features

Figures 23 to 29 illustrate desirable and undesirable examples of under-run protection, cameras, mirrors, and headlights.

**Undesirable:** Under-run protection not integral to the design of the LRV.

**Desirable:** Discrete, unobtrusive and integrated under-run protection.

**Desirable:** Integrated head lights and concealed fixings.
Desirable: High level rear facing camera, integrated with bodyside.

Undesirable: Rear view mirror not integrated in overall design.

Desirable: Sleek and integrated camera housing.

Undesirable: Rear facing camera not fully integrated with LRV body.
2.5.3 General Body Shape

Figures 30 to 33 illustrate desirable and undesirable examples of general body shape.
3.0 GENERAL CORRIDOR DESIGN

This part of the Design Guide contains information that is generally applicable to the LRT Corridor as a whole. It includes design considerations for streetscapes, systems and Structures, occurring throughout the LRT Corridor. This section also includes guidance on how to integrate elements such as piping, conduits and cables so as to minimize their visual impact.
3.1 URBAN REALM

3.1.1 Streetscapes

Pedestrian Priority Zones

PPIs are intended to encourage the safe and comfortable movement of pedestrians and cyclists around stops, the Davies site and other major destinations.

Enhanced Hardscape Zones, which include Track Walls, Pedestrian Crossings, and Platforms, are zones with enhanced finishes within PPIs and are illustrated on the aerial plan figures in Part 4 of this Design Guide.

Streetscapes are divided into the areas shown in Figure 35 and 36. Each of the above areas have a "typical" and enhanced version applying to the landscape plantings, as described in Part 2 (Sustainable Urban Integration) of Schedule 5 (Design and Construction Technical Requirements) of the Project Agreement and further illustrated on Page 24 of this guide. Locations for "typical" and "enhanced" streetcape treatments are identified in Part 4 of the Design Guide. The aim of delineating zones and design treatments is threefold:

- to obtain streetscapes that create a safe, attractive, and comfortable environment for walking and cycling that connects to key destinations;
- to differentiate the design of the street from one area to another and to reflect and support the unique needs of a variety of settings, such as busy urban centres, quiet residential neighbourhoods, and other unique places along the LRT Corridor; and
- to visually highlight areas of anticipated high volumes of pedestrian use through the design of the streetscape.
STREETSCAPE PLANTINGS

Paving Material Types for Hard Surfaces

Typical

Figure 39: Broom Finish - Natural Colour
Concrete (City of Edmonton Typical)

Paving Types:
- Broom finished, natural color
- Concrete (City of Edmonton Typical)

Enhanced

Figure 40: Concrete Paving Stone

Paving Types:
- Concrete paving stone
- Stamped, saw cut scoring, integrally coloured cast-in-place concrete
- Toned finished, saw cut scoring, integrally coloured cast-in-place concrete
- Sandblast finished, saw cut scoring, integrally coloured cast-in-place concrete

Figure 41: Broom Finish - Earth Tone, Integrally Coloured

Figure 42: Sandblast, Earth Tone, Integrally Coloured

Figure 43: Broom Finish - Earth Tone, Integrally Coloured

Figure 44: Broom Finish - Earth Tone, Integrally Coloured

Paving Colours for Enhanced Hardscape Zones

All Character Zones, Except the Downtown Character Zone

Downtown Character Zone

Figure 45: A Typical Streetscape Example

Figure 46: An Enhanced Streetscape Example

Figure 47: Example of Typical Streetscape Planting
Repeating patterns of mass planted shrubs provide continuity and interest at the motorist and passenger scale.

Figure 48: Example of Enhanced Streetscape Planting
A finer scale of landscape design, focused on texture and color, provides interest at the pedestrian scale.
3.1.2 Safety Cues, Separations and Barriers

Safety cues, separations and barriers are used for public safety and may include visual, auditory and tactile cues, safety barriers, fences, collision barriers, Protection Railings and other separations. The following images illustrate desirable characteristics of Protection Railings, fences and collision barriers.

**Desirable: Protection Railing with curved post profile and horizontal cables, providing a light appearance.**

**Desirable: Fences have only vertical and horizontal elements when viewed in elevation.**

**Desirable: Collision Barrier with curved post profile and horizontal rails.**

**Desirable: Noise shields are fully integrated with the Protection Railing.**

**Undesirable: Scallop shape and loops along top of fence provide a cluttered appearance.**

**Desirable: Visual continuity of Protection Railing at transition between barriers.**
3.2 SUPPORT SYSTEMS

3.2.1 General Support System Design Principles

Integration of support systems requires a broad, comprehensive understanding of the extent and complexity of the servicing requirements of the system, as the latter must connect to or move through, around, under and over structures.

1. Coordinate all affected systems and disciplines to provide integration at the appropriate scale and to the appropriate level of detail.

2. Systematically integrate solutions from concept to construction, from the standpoint of constructability, safety, durability and maintainability.

3. Eliminate ad-hoc, additive or tertiary-level elements whether as an addendum or appliqué (e.g. “scabbed-on”) or requiring non-integrated concealment.

4. Avoid the need for partial demolition, deconstruction or complete removal for inspection, maintenance, or replacement of systems.

Designs shall be technically and aesthetically well resolved. Accord to the Design and Construction of all systems a level of synthesis and integration that is commensurate with the scale, visibility, and overall quality of the affected component or assembly, be it a Building Structure, Transportation Structure, or other Structure, interior or exterior.
Desirable: Wrap used to conceal Wayside Equipment. Provides better context and directs focus.

Desirable: Landscape screening to conceal Wayside Equipment. Enclosures are not concealed or integrated with site context.

Undesirable: Wayside Equipment Enclosures are not concealed or integrated with site context.
3.2.2 Utility Complexes

Typical Utility Complex

- Brick colour shall reflect the Character Zone and integrate with the site context.
- Wood finish
- Landscape shall screen the screening wall, except at openings or where Public Art will be provided.
Above-Grade 95th Street Utility Complex (if applicable)

FIGURE 02: CONCEPT RENDERING ABOVE-GRADE 95TH STREET UTILITY COMPLEX - PERSPECTIVE VIEW

FIGURE 03: CONCEPT RENDERING ABOVE-GRADE 95TH STREET UTILITY COMPLEX - NORTH ELEVATION

FIGURE 04: CONCEPT RENDERING ABOVE-GRADE 95TH STREET UTILITY COMPLEX - EAST ELEVATION

FIGURE 05: CONCEPT RENDERING ABOVE-GRADE 95TH STREET UTILITY COMPLEX - SOUTH ELEVATION

FIGURE 06: CONCEPT RENDERING ABOVE-GRADE 95TH STREET UTILITY COMPLEX - WEST ELEVATION
Above-Grade Muttart Utility Complex

Figures of the above-grade Muttart Utility Complex to be provided upon the final design of the Muttart Storage Building.
11.3 Overhead Catenary System:

Figures 67 and 71 illustrate desirable examples of OCS.

![Diagram of Overhead Catenary System](image-url)

**Figure 67:** System Typical OCS Support Arm

Desirable: Elegant shape of OCS support arms for a low profile catenary system.

**Figure 68:** Catenary Typical OCS Pole with Lighting

Desirable: Elegant shape of light arm.

Desirable: Enclosed wiring.

Desirable: Multi-use pole suitable for street lighting, OCS and pedestrian lighting connection.

Desirable: Pedestrian light matches street light.
Desirable: Shared-use OCS pole complete with street lighting, pedestrian lighting, traffic signals and OCS.

Desirable: Shared-use OCS pole for street lighting, pedestrian lighting, traffic signals, OCS and neighbourhood banners.

Pedestrian light poles are consistent in shape, colour and texture with the shared-use poles shown in Figure 69.

OCS pole with concealed balance weights.
3.3 Stops - General

The following graphics demonstrate possible design responses to 3U1 requirements for a typical Neighbourhood and typical Urban Stop. Further illustrations are provided in Part 4 of this Design Guide.

3.3.1 Neighbourhood Stops
3.3.2 Urban Stops
3.4 STRUCTURES

3.4.1 General

The overall configuration of each Structure shall reflect a simple elegance without applied decoration. Elements, such as Protection Railings, collision barriers, reveals, and shadow lines, shall be consistent and flow together to provide visual continuity, particularly at transitions between Structures and at terminations.

Figures 78 to 80 illustrate desirable and undesirable examples of Structures.
General Wall Design Principles

The following design principles shall be reflected in the design of walls:

Proportion: Geometric proportions of design elements and patterns are used to reduce the visual scale of walls by balancing height and length of walls.

Rhythm: Regularly reappearing elements of similar visual characteristics are used to create rhythm and visual movement. Rhythm is an especially important design consideration for long expanses of walls primarily viewed by observers travelling at vehicle speeds. Rhythm can also be achieved using long unbroken horizontal elements.

Integration Intent: Walls can be either a visual feature, integrated with another structure or recede into their site context. The design shall reflect the applicable Integration intent.

Contrast: The dynamic relationship of complementary, opposing elements relieves and creates focal points. Contrast may be used as a means to provide focus at Stages, Stations and within zones.

Scale: The size of features in relationship to one another, the overall structure, the landscape context and the observer create an overall sense of scale. The speed of the observer (pedestrian or vehicle) is relative to the observer’s sense of scale and shall be considered in design. Areas principally viewed by pedestrians require a finer grained scale of design. Areas principally viewed from vehicles require a larger grained scale of design.

Order and Harmony: All wall components and design elements shall appear to be in their proper place and with forms that provide a complementary relationship to each other within the overall wall design.

Unity: Unity gives a viewer a sense of visual completeness. It is the result of integration of the above design principles.

Architectural Design Considerations

Design walls with texture and colour appropriate to the Character Zone and the design objective of the wall to “recede” visually by blending into the community. Viewcase, or to become a visual feature intended to draw attention. All walls shall receive treatments which provide visual interest, of a scale appropriate to the speed and proximity of the observer. Where a wall is designed for multiple observer scales and speeds, for instance, where an SLR is adjacent to a wall pedestrian scale, close proximity, slow travel speed) and also parallel to a vehicle corridor (larger scale features that can be read at higher travel speeds), both observers shall be accounted for in the wall texture design.

Wall Architecture Examples

Figures 81 to 85 illustrate desirable and undesirable examples of walls.
Desirable: Pattern draws the observer's attention away from the distinct panel joints which would otherwise be disruptive.

Desirable: Scale of design is appropriate for a fast or far observer scale.

Desirable: Treatment of panels helps to conceal panel breaks.

Desirable: Horizontal patterning helps to de-emphasize the height of the wall.

Undesirable: Design would not be suitable in a natural setting.

Desirable: Design is appropriate for a fast or far observer scale.

Desirable: Different colour shades break up monotony.

Desirable: Wall base breaks up height of wall.

Desirable: Wood finish blends in with site context.

Undesirable: Steps in wall break up flow (not permitted for cast-in-place concrete walls).

Undesirable: Purpose of caps on wall is unclear.

Undesirable: Large pillar at base of wall is distracting and visually unappealing, purpose of pillar is unclear.

Undesirable: Rippled surface, bolts, and assemblies are not concealed within the wall or wall base and are visually unappealing.

Undesirable: Rippled surface creates horizontal flow along wall.

Desirable: Wood finish blends in with site context.
4.0

SPECIFIC CORRIDOR DESIGN

This section describes the SUI requirements for the Character Zones, which recognize how Edmonton’s unique neighbourhoods and variations in form are to be integrated into the design of the Valley Line. Each Character Zone includes Opportunity Areas that capture the identity of local neighbourhoods and provide information on the immediate context to inform the design of the Valley Line.
4.1 INTRODUCTION

This part of the Design Guide provides a coordinated illustration of key SUI characteristics associated with the design of the public realm along the LRT Corridor.

4.1.1 SUI Visualisations

The renderings and images in this section of the Design Guide consolidate visualizations produced during the preliminary engineering phase of the Project, to inform and emphasize the qualitative expectations of performance of the Stops, Station, Tunnel, Approaches, Bridges and other depicts infrastructure.

Where applicable, those Visualizations are intended to inform the submissions process, by demonstrating the design intent, features, and approach to addressing key design challenges. Figures have also been included providing general direction on the look and feel of sulfur elements such as seating/benching, waste and recycling receptacles, protection railings and platform paving materials as per feedback obtained from Public Involvement (PI) sessions reflected in the Stop PI Themes. The colours shown for benches, receptacles, and paving materials are indicative and may be adapted to suit the specific Character Zone, Opportunity Area, or Stop PI Theme.

4.1.3 SUI Annotated Aerial Plans

The aerial plans and corresponding sections graphically show the LRT Corridor, urban realm components including the extents of PIZs and Enhanced Landscape Zones, plantings and frontages.

Note that Project Co is only responsible for incorporating SUI requirements in areas within the lands. Where images show treatments beyond the lands, such treatments are only intended to provide additional context related to the specific Character Zone or Opportunity Area and are for Project Co's reference so that interventions at Land edges can be designed accordingly for future integration. For example, while Project Co is only responsible for designing PIZs within Lands, it is important to recognize that the impact of these zones extend beyond Lands, and therefore design of these areas must take broader impacts into account.
4.2 DOWNTOWN CHARACTER ZONE

4.2.1 Character Zone Description

The Downtown Character Zone extends from the Project limit on 102 Avenue to the end of 96 Street, north of the North Saskatchewan River. Key defining features of this Character Zone include the Art Gallery of Alberta, Sir Winston Churchill Square, City Hall, Winspear Centre for Music, numerous corporate offices, squares, galleries, multifamily residential buildings, City Centre Mall and the currently under construction Royal Alberta Museum and Rogers Place. The Character Zone consists of a mix of urban styles resulting from incremental changes in land use and development patterns over time.

The Valley Line is expected to assist in transforming the Downtown Character Zone into a pedestrian first environment, with wider boulevards, ornamental plantings, and with connections to all of the regional destinations in the core of Edmonton and places for social exchange. The increases in density, commercial and cultural activity supported by the new urban style LRT are expected to inject vibrancy into the downtown core, providing activation and animation of the streets and downtown festival spaces.

There are two Opportunity Areas in this Character Zone. They are:

- Downtown Opportunity Area
- Quarters Opportunity Area
New Donor Plaza in Sir Winston Churchill Square - Design Examples

Desirable: Plaza definition through the use of material scale and texture changes. Clear division of zones through the use of concrete banding. Differing patterns complement each other. Durable materials with similar coefficients of friction.

Undesirable: Steps and changes in grade present a tripping hazard.

Desirable: Different scales created through the use of paving patterns, changes in material and changes in material scale.

Desirable: Zone differentiation through use of paving scale, texture patterns. Different paving patterns complement each other.

Desirable: Subtle integration of all additional elements to define a zone. Complements surrounding paving pattern with similar textures, scale, durability, colour, friction coefficient.

Desirable: Lettering etched into hard surfaces. Also maximizes legibility through font size.

Undesirable: Lower case lettering.

Desirable: Pin mounted metallic lettering; contrast against backup surfaces.
4.2.3 Quarters Opportunity Area

The Quarters Opportunity Area extends from 97 Street to the end of 99 Street north of the North Saskatchewan River and is located immediately east of the Downtown Opportunity Area. The area consists of a number of low-rise commercial buildings with minimal retail at-grade, interspersed with some residential areas and parking lots. The area is currently undergoing a redevelopment planning process (the Quarters Area Redevelopment Plan). The Plan will build on the area’s strengths, such as the existing community character, heritage buildings and churches, while addressing areas for change such as the large number of surface parking lots, and underutilized industrial and commercial sites within the district. Significant new mixed-use development is planned over the long term. This Opportunity Area includes the following SUT elements:

- Quarters Stop
- 102 Avenue Tunnel Approach
4.3 RIVER VALLEY CHARACTER ZONE

4.3.1 Character Zone Description:
The River Valley Character Zone extends from the north end of the North River Bank Tunnel Approach to the intersection of Connors Road with 95 Avenue and includes the community of Cloverdale, the Louise McKinney Riverfront Park, the NSRV area, Henriette Maix Edwards Park, the Mutart Conservatory, and the NSRV Ski Hill as well as an extensive SUP and trail system. The presence of these various natural features enhances the Character Zone’s civic importance for Edmonton.

There is one Opportunity Area in this Character Zone:
- Mutart Opportunity Area

North of the Mutart Opportunity Area, the River Valley Character Zone includes the following SUI elements:
- 95th Street Utility Complex, if applicable
- North River Bank Tunnel Approach
- Tawatina Bridge

4.3.2 Mutart Opportunity Area
The Mutart Opportunity Area extends from 95 Avenue to the LRT crossing of the Mutart south access road. This Opportunity Area includes the following SUI elements:
- Mutart Stop
- Mutart Utility Complex, if applicable

South of the Mutart Opportunity Area, the River Valley Character Zone includes the following SUI elements:
- Kiihekkiihk Bridge
- Connors Road Track Slab Structure and retaining walls, including the Wildlife Underpass Structure
- Noise Walls to the south of Connors Road and west of 95 Street
Above-grade 95th Street
Utility Complex (if applicable)

Desirable: Wall flush with
portals close-off space
between the two tunnel
shafts. Utility Complex, if
applicable, screened by wall

Desirable: North River Bank
Tunnel Approach walls closely
follow the natural slope of
the bank. Structure is simple,
minimalist, and does not
demand attention

Desirable: Shape of retaining
wall along access road
matches that of the existing
retaining wall
The Tawatinâ River Bridge will be one of the premier “postcard views” of the City of Edmonton.
Consider the pedestrian experience under, adjacent to and accessing the bridge integrally with the bridge design. A sense of welcoming, warmth, and design quality commensurate with the setting and level of investment shall be evident.

The design aspires to create an elegant architectural landmark for Edmonton without overwhelming the views of the NSRV.
Refer to River Valley Landscape Drawings for plantings within the HSRV

Mutart Storage Building (by others)

Mutart Conservatory

South River Valley Elevated Goldenway/B8 Avenue Bridge

Mutart Storage

Figure 112: Mutart Stop Aerial Plan
The Kahasinskiak Bridge shall demonstrate clean lines and simple elegance, appearing slender and uncomplicated in elevation with a minimal visual mass, enabling it to blend into the NSRV context.
Integrate OCS protection screening, if applicable, into the design language of the bridge.

Desirable: width of pier does not project a sense of massiveness.

Desirable: Structure appears slender and uncomplicated in elevation, allowing it to blend in with the site context.

Desirable: Clean lines and simple elegance providing transparency.

Desirable: Horizontal member is integrated with top of bridge deck, without a gap between horizontal member and bridge deck.
4.4 MILL CREEK CHARACTER ZONE

4.4.1 Character Zone Description

The Mill Creek Character Zone extends from the intersection of Connors Road and 96 Avenue to Argyll Road. The Character Zone is home to a predominantly low-rise residential neighborhood, interspersed with some retail activity along street frontages. The presence of trees and green spaces also provides a park-like setting to the Character Zone. Landmarks in this Character Zone include the Silver Heights Park, Strathcona United Church, St. Luke’s Anglican Church, École Publique Gabrielle-Ray, Church of Jesus Christ of Latter-day Saints, Idylwyld Park and the Bonnie Doon Shopping Centre.

This Character Zone contains three Opportunity Areas:
- Strathcona Opportunity Area
- Bonnie Doon Opportunity Area
- Argyll Opportunity Area

4.4.2 Strathcona Opportunity Area

The Strathcona Opportunity Area extends from the intersection of Connors Road with 95 Avenue to the area south of Hollywood Stop and includes the following 5UI elements:

- Strathcona Stop

The Strathcona Stop is located along 95 Avenue near 89 Street. It is immediately adjacent to two significant community facilities, the Strathcona Community League building and facilities, and École Publique Gabrielle-Ray, a regionally significant French public school.

- Hollywood Stop

The Hollywood Stop is located at the intersection of 89 Street and 93 Avenue. Although in a residential area, the stop is located on a wide and busy boulevard.
The Stops and Station are the primary interface between the public and the System. Accordingly, each Stop and Station shall be designed to optimize the user experience, and integrate into its urban context, such that it presents a positive contribution to the built environment for Passengers, neighbours, and passersby.
4.4.3 Bonnie Doon Opportunity Area

The Bonnie Doon Opportunity Area extends from the area south of Holyrood Street to 82 Avenue and stretches along an extensive commercial corridor. Landmarks in this Opportunity Area include Bonnie Doon Shopping Centre, King Edward Park, St. James Catholic School and the future Bonnie Doon Campus Park. This Opportunity Area includes the following SAF elements:

- Bonnie Doon Stop
4.4.4 Argyll Opportunity Area

The Argyll Opportunity Area extends from 82 Avenue to Argyll Road. The area is bounded by Argyll Road to the south and Mill Creek Ravine to the west. It consists of mostly suburban-styled residential, commercial and retail single story buildings with surface parking in front. This Opportunity Area includes the following 5U elements:

- Avonmore Stop
  The Avonmore Stop is located at the intersection of 83 Street and 73rd Avenue. The Stop is located in between several schools, the Community of Christ church and Mill Creek.
- Northern end of the Davies Elevated Guideway
Ramp walls will be enhanced by Public Art.

Line of box girder deck edge, top of curb, and barrier are parallel and continuous down the ramp, emphasizing horizontal continuity.

Expression of piers is maintained through the transition in height down to grade.

Deck overhang of the box girder creates shadow lines which minimize the girder's visual mass in elevation.

Abutment height is minimized, reducing the visual mass of the ramp walls.

Traffic barriers and transitions are integrated with the design of the ramp.
4.5 DAVIDS INDUSTRIAL CHARACTER ZONE

4.5.1 Character Zone Description

The Davies Industrial Character Zone extends from Argoil Road to Whitewood Drive. The Character Zone is mostly an industrial area, however it contains a park (W.P. Wagner Park) and a school (W.P. Wagner High School). The creek bed of Mill Creek is in its natural configuration within W.P. Wagner Park. The road network consists of large blocks bordering commercial and industrial sites with private service access. There is one Opportunity Area in this Character Zone:

- Wagner Opportunity Area

4.5.2 Wagner Opportunity Area

The Wagner Opportunity Area extends from W.P. Wagner Park to the CNR crossing at 76th Street. This Opportunity Area contains the following SUI elements:

- Davies Elevated Guideway
- Davies Site, including Davies Station
- South of the Wagner Opportunity Area, the Mill Creek Character Zone includes the following SUI elements:
  - Gary Wright DMF
  - Whitewood Drive LRT Bridge
  - Whitewood Drive Pedestrian Bridge
Stormwater management features are landscaped and integrated with the site design.

Canopy trees and landscape plantings reduce heat island effect and reduce scale of parking lot.

Davis Transit Centre and pedestrian areas sheltered with large canopy trees.

Strong pedestrian connections between parking areas and transit areas sheltered with large canopy trees.

Perimeter landscaping creates welcoming entrances into the site.
High ceiling provides a comfortable sense of space within the full-coverage canopy.

Provide access to natural light for the full length of the platform while simultaneously providing a full-coverage canopy.

Provide a sense of warmth for patrons by use of wood and integral lighting throughout the Station.

Integrate drainage and other services into the design of Station elements. Avoid "scabbed on" solutions which appear as afterthoughts.

Use of glass as primary cladding material reduces visual mass of the Station and addresses CPTED requirements.

Smooth transition between girder and platform.

Structural features incorporated into beams and Platform girders are integrated with the overall expression of the Station.

Reuse of stormwater for irrigation of plantings.

Provide wayfinding queues integral with the design, such as prominent Station entrances.
FIGURE 14: EXISTING CONDITION (LEFT) AND CONCEPT RENDERING (TOP) OF THE WHITSAUL LRT BRIDGE, LOOKING SOUTHWEST

FIGURE 14a: EXISTING CONDITION (LEFT) AND CONCEPT RENDERING (TOP) OF THE WHITSAUL ROADSTRAIN BRIDGE, LOOKING NORTHEAST

FIGURE 14b: STREET SECTION (LOOKING SOUTH) - SECTION J
4.6 SOUTHEAST EDMONTON CHARACTER ZONE

4.6.1 Character Zone Description

The Southeast Edmonton Character Zone extends from Whitmid Drive to the project limits east of Mill Woods Road. It is a predominantly residential district with a variety of housing types including single detached houses, row houses, rental apartments and apartment-style condominiums, and duplexes. Most of the construction took place during the 1970s and 1980s with more recent developments in the Hillview, Kenzey, and Mill Woods Town Centre area having taken place since the 1980s.

The street network is conventionally suburban. Mill Woods Town Centre is a commercial and retail centre integrated with emerging medium to high rise residential developments. The defining features of this Character Zone include the suburban residential form, Michaels Park, Mill Woods Golf Course, Grey Nuns Community Hospital, Grant MacEwan University South Campus, Mill Woods Town Centre, and the extensive amenities provided in Mill Woods Park.

There are two Opportunity Areas in this Character Zone:

- Millbourne Opportunity Area
- Mill Woods Opportunity Area

4.6.2 Millbourne Opportunity Area

The Millbourne Opportunity Area extends from Whitmid Drive to 34 Avenue. A majority of the existing landscape on the west side of 66 Street is expected to be retained, except where construction of SUPs requires landscape removal. Landmarks in this Opportunity Area include the Grey Nuns Community Hospital and the South Edmonton Alliance Church. This Opportunity Area contains the following SUP elements:

- Millbourne/Woodvale Stop
- Grey Nuns Stop
- Noise walls along portions of 66 Street
4.6.3 Mill Woods Opportunity Area

The Mill Woods Opportunity Area extends from 34 Avenue to the Project limits east of Mill Woods Road. Mill Woods Town Centre is a commercial and retail centre integrated with emerging medium to high rise residential developments. Landmarks in this Opportunity Area include Mill Woods Town Centre and the future Mill Woods Station Area Redevelopment. This Opportunity Area contains the following key elements:

- Mill Woods Stop
- Noise walls along portions of 66 Street
### IMAGE SOURCES

Sources for images in the Design Guide are as per below:

<table>
<thead>
<tr>
<th>Number</th>
<th>Figure Title</th>
<th>Image Source(s) (URL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIGURE 37</td>
<td>EXAMPLE OF TYPICAL STREETSCAPE PLANTING</td>
<td><a href="http://www.avisits.co.uk/low-bill-unwind-landscape-improvement-ideas">http://www.avisits.co.uk/low-bill-unwind-landscape-improvement-ideas</a></td>
</tr>
<tr>
<td>FIGURE 38</td>
<td>EXAMPLE OF ENHANCED STREETSCAPE PLANTING</td>
<td><a href="http://www.avisits.co.uk/research/article/10810">http://www.avisits.co.uk/research/article/10810</a></td>
</tr>
<tr>
<td>FIGURE 39</td>
<td>BROOM FINISH-NATURAL COLOUR</td>
<td><a href="http://www.avisits.co.uk/products">http://www.avisits.co.uk/products</a></td>
</tr>
<tr>
<td>FIGURE 40</td>
<td>CONCRETE PAVING STONE</td>
<td><a href="http://landscapeconcrete.com/gallery/4.html">http://landscapeconcrete.com/gallery/4.html</a></td>
</tr>
<tr>
<td>FIGURE 41</td>
<td>BROOM FINISH, EARTH TONE, INTEGRALLY COLOURED</td>
<td><a href="http://www.avisits.co.uk/chromic_samples.html">http://www.avisits.co.uk/chromic_samples.html</a></td>
</tr>
<tr>
<td>FIGURE 42</td>
<td>SANDERLIFT, EARTH TONE, INTEGRALLY COLOURED</td>
<td><a href="http://www.avisits.co.uk/chromic_samples.html">http://www.avisits.co.uk/chromic_samples.html</a></td>
</tr>
<tr>
<td>FIGURE 43</td>
<td>BROOM FINISH, EARTH TONE, INTEGRALLY COLOURED</td>
<td><a href="http://www.avisits.co.uk/chromic_samples.html">http://www.avisits.co.uk/chromic_samples.html</a></td>
</tr>
<tr>
<td>FIGURE 45</td>
<td>AN ENHANCED STREETSCAPE EXAMPLE</td>
<td><a href="http://www.avisits.co.uk/projects/luma-elevens/density/urban-design">http://www.avisits.co.uk/projects/luma-elevens/density/urban-design</a></td>
</tr>
<tr>
<td>FIGURE 48</td>
<td>FENCE A</td>
<td><a href="http://www.products.com/areas/gallery_products/elite.jpg">http://www.products.com/areas/gallery_products/elite.jpg</a></td>
</tr>
<tr>
<td>FIGURE 50</td>
<td>COLLISION BARRIER I</td>
<td><a href="http://www.avisits.co.uk/project/pictures_sub.asp/project-30">http://www.avisits.co.uk/project/pictures_sub.asp/project-30</a></td>
</tr>
<tr>
<td>FIGURE 51</td>
<td>FENCE B</td>
<td><a href="http://www.images.gallery/products/elev.jpg">http://www.images.gallery/products/elev.jpg</a></td>
</tr>
<tr>
<td>FIGURE 54</td>
<td>PART OF GENERAL SUPPORT SYSTEM DESIGN EXAMPLES SET 2</td>
<td><a href="http://www.image360.com/richmond/index.htm/Products/Custom/Graphics/Custom-Decor-and-Lettering/">http://www.image360.com/richmond/index.htm/Products/Custom/Graphics/Custom-Decor-and-Lettering/</a></td>
</tr>
<tr>
<td>FIGURE 55</td>
<td>PART OF GENERAL SUPPORT SYSTEM DESIGN EXAMPLES SET 2</td>
<td><a href="http://www.avisits.co.uk/printing-products/images-silica/">http://www.avisits.co.uk/printing-products/images-silica/</a></td>
</tr>
<tr>
<td>FIGURE 56</td>
<td>PART OF GENERAL SUPPORT SYSTEM DESIGN EXAMPLES SET 2</td>
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</tr>
<tr>
<td>FIGURE 57</td>
<td>PART OF WALL ARCHITECTURE EXAMPLES - SET 1</td>
<td>Google Maps API</td>
</tr>
<tr>
<td>FIGURE 59</td>
<td>PART OF WALL ARCHITECTURE EXAMPLES - SET 1</td>
<td><a href="http://www.baxterprecast.com/sound-walls/">http://www.baxterprecast.com/sound-walls/</a></td>
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<tr>
<td>FIGURE 60</td>
<td>PART OF WALL ARCHITECTURE EXAMPLES - SET 2</td>
<td><a href="http://www.concretehinkler.com/images/10/maryland_2.jpg">http://www.concretehinkler.com/images/10/maryland_2.jpg</a></td>
</tr>
<tr>
<td>FIGURE 61</td>
<td>PART OF WALL ARCHITECTURE EXAMPLES - SET 2</td>
<td><a href="http://www.avisits.co.uk/article/8736/lessons-in-large-retaining-walls">http://www.avisits.co.uk/article/8736/lessons-in-large-retaining-walls</a></td>
</tr>
<tr>
<td>FIGURE 63</td>
<td>PART OF WALL ARCHITECTURE EXAMPLES - SET 3</td>
<td>Google Maps API</td>
</tr>
<tr>
<td>FIGURE 64</td>
<td>PART OF WALL ARCHITECTURE EXAMPLES - SET 3</td>
<td><a href="http://www.reinforceconcrete.com/sites/default/files/gallery/10187_4.jpg">http://www.reinforceconcrete.com/sites/default/files/gallery/10187_4.jpg</a></td>
</tr>
<tr>
<td>FIGURE 65</td>
<td>PART OF WALL ARCHITECTURE EXAMPLES - SET 3</td>
<td><a href="http://www.avisits.co.uk/69023/servicio-joindouble-en-espana/">http://www.avisits.co.uk/69023/servicio-joindouble-en-espana/</a></td>
</tr>
<tr>
<td>FIGURE 66</td>
<td>LED BRIDGE LIGHTING EXAMPLE - ANCIENT HELIX PEDESTRIAN BRIDGE, SEATTLE, WASHINGTON</td>
<td>Flickr.com; Username: Ervin Vite</td>
</tr>
<tr>
<td>FIGURE 67</td>
<td>LED BRIDGE LIGHTING EXAMPLE - TRADESTON PEDESTRIAN BRIDGE, GLASGOW, SCOTLAND</td>
<td><a href="http://static.avisits.co.uk/static/5953d68f4a9f308e8553bedd/LW/088657/cb44eeaa8e577baa6e4a/1350/61627513/tradeston_bridge_at_night_glasgow.jpg">http://static.avisits.co.uk/static/5953d68f4a9f308e8553bedd/LW/088657/cb44eeaa8e577baa6e4a/1350/61627513/tradeston_bridge_at_night_glasgow.jpg</a></td>
</tr>
<tr>
<td>FIGURE 142</td>
<td>EXISTING CONDITIONS AT DAVIES STATION</td>
<td>Google Maps API</td>
</tr>
</tbody>
</table>

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