DEFINING THE STREETSCAPE
Context Sensitive Design

The structuring elements of streetscapes for the City of Vaughan are road classification, streetscape type and level of service. These elements are useful tools to understand the proper design of streets to respond both to the local context and the context of the greater regional area. It is important that the streetscape is designed with consideration of the context of the street in the overall street network, the functionality of the roadway, the functionality of the pedestrian boulevard, the adjacent land uses, and the future development of the area.

The road classification and streetscape type are useful to understand the basic function of the streetscape to provide additional guidance during the selection of design elements and funding potential. The level of service concept is described in detail in Section 4.

Streetscape Structuring Elements
The engineering road classification establishes the role of the street in the overall street system of a city and region. It is characterized mostly by the structure of a roadway (for example the number of traffic lanes) and as a result has a strong focus on vehicular functions, which is moving towards a focus on multi-modal functions. The function of the roadway plays a large part in the experience of pedestrians in the streetscape. The type and ownership of streets in the overall road classification also affects the potential funding options available.

**Ownership**

Streets in Vaughan are either regionally or municipally owned. While most streets are municipally owned, there are examples of streets owned by the Region which play an important part in the overall connectivity of the street network. Major arterials are regionally owned while minor arterials, collectors and local streets are municipally owned. On regional roads, the municipality has jurisdiction over pedestrian sidewalks (the pedestrian clearway). While there are instances of public / private streets, this manual focuses on the public realm.

**Road Classification**

The road classification in Vaughan is comprised of four types of streets with five sub-categories. These include:

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The function of the roadway plays a part in the experience of pedestrians in the streetscape.
Arterials
Arterials are large streets that focus on the movement of mixed traffic at the regional and city-wide scale. These streets facilitate higher traffic speeds for longer trips, regional public transportation, and the transportation of goods. Arterials are subdivided into two categories: major and minor. Major Arterials are owned and operated by York Region. Minor Arterials are municipally-owned.

Major Arterials will be affected by the York Region's Great Streets program which is currently developing a Context Sensitive design approach to design to complete street standards and guidelines that are sensitive to the context in which the streets exist. The Region's most urbanized areas, including the City of Vaughan’s Urban Intensification Areas, prioritize active transportation and public transit.

Collectors
Collectors are medium-sized municipal streets that connect the arterial street network to the local street network. Collectors are characterized by a balance of access and mobility. The three categories of Collectors are: Major, Minor and Special. Special Collectors are feature destination streets surrounded by pedestrian activity-generating land uses, and subsequently, greater emphasis is placed on supporting pedestrian, bicycle and transit activity.
Local Streets
Local streets are smaller-scale municipal streets with slower speeds and provide easy access to individual properties. They generally connect traffic between collector streets and their destinations. Their smaller scale and slower speed is comfortable for walking and bicycling.

Mews
Mews are part of a public private network allowing public traffic on private development lands. Mews are pedestrian-oriented but may also be designed to accommodate vehicles. Mews are a unique opportunity to create fine grained connectivity in the overall vehicular and pedestrian network, creating versatility in the movement of vehicular and pedestrian traffic.

Typical Local Streetscape

Typical Mews Streetscape
To supplement the road classifications, streetscape types consider how streets interact with adjacent land uses and context, which influence how a street is used and experienced.

Each streetscape type prioritizes users and various design elements, with pedestrian needs and active transportation as an integral planning feature. The types and spacing of street trees, location, quantity and character of streetscape elements, types of surface treatments, sizes of areas, and lighting all affect the character and experience of a pedestrian within a streetscape. The varying requirements for streetscape components, such as bicycle stands, benches or pedestrian-scale lighting, as well as the width of a sidewalk is influenced by the land uses associated with a streetscape.

Streetscape types may change along the length of a street as surrounding land uses or road functions change.

The streetscape types identified in the City-Wide Streetscape Implementation Manual apply to urban intensification areas:

- Mixed-Use Commercial
- Transit Intensification Corridor
- Technology / Office
- Neighbourhood

**York Region**

York Region’s Centres and Corridors Program is an integrated approach that combines the planning of urban pedestrian-friendly / walkable communities with the construction of new rapid transit lines and stations.

The Region’s Great Streets program is currently developing a Context Sensitive Solutions (CSS) design approach to street design with the following goal: “To create vibrant streets for York Region that provide a range of safe and reliable transportation options while being sensitive to the adjacent land uses and the needs of the community.” The Region’s CSS Guiding Principles are:

1. Tailor solutions to fit the context
2. Tailor the process to reflect the transitioning role of the road
3. Plan projects in collaboration with the local community
4. Plan for multiple transportation modes to promote sustainable, flexible solutions
5. Use sound professional judgement to determine priorities for the road design

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**Streetscape Types**

Streetscape types may change along the length of a street as surrounding land uses or road functions change.
**Mixed-Use Commercial**

Mixed-Use Commercial represents the most active and diverse of the streetscape types being applicable in most urban scenarios. These streetscape types will accommodate high pedestrian, active and transit transportation levels including zones which call for specific interaction between the roadway and pedestrian boulevard, including passenger pick-up / drop-off streets.

**Typical Context:**
- Mixed-Use
- High Intensity Retail / Commercial
- High Density Residential
- Restaurants & Sidewalk Cafes
- Cultural and Entertainment
- Institutional
- Pick-Up / Drop-Off
- Mews
- Parks & Public Spaces

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**Transit Intensification Corridor**

Transit Intensification Corridor streetscape types typically occur along regional arterial roads running through Urban Intensification Areas. These roads serve as regional connections between urban intensification centres for vehicular traffic. Right-of-ways (ROWs) are typically larger along transit intensification corridor streetscapes and require additional design amenities to protect pedestrians from vehicular traffic, vehicular noise and other micro-climate considerations.

**Typical Context:**
- Retail / Commercial / Office
- Mixed-Use
- High Density Residential
- Parks & Public Spaces
- Mews
Technology / Office
Technology / Office streetscape types occur in urban employment areas fronting office, technology and commercial land uses. Lower to medium pedestrian activity and traffic generally occurs on technology / office streetscapes. Commercial truck traffic may be diverted along these streetscapes in Urban Intensification Areas requiring design provisions to address noise, water and air pollution.

Typical Context:
- Commercial / Office
- Low Intensity Retail
- Employment
- Parks and Public Spaces
- Mews
- Convention Centre / Hotel
- Institutional

Neighbourhood
Neighbourhood streetscape types primarily front urban medium density residential land uses, parks and heritage areas. These streetscapes support local pedestrian activity, including children playing, community socializing and are designed to promote walkability. The design focus occurs at the transition across the ROW between the frontage zone (see Page 39) and either the private property or public park. While residential streets will provide a semi-public / private transition across the ROW, parks will provide seamless transition between the pedestrian boulevard and the public park.

Typical Context:
- Residential
- Local Retail
- Institutional
- Parks & Public Spaces
- Mews
A typical street, following Vaughan’s existing engineering standard, is generally broken into two parts: the vehicular roadway and the pedestrian boulevard. The two parts are found within the public right-of-way which is owned by either the region or municipality.

**Existing Engineering Standard**

As an example, Vaughan’s existing engineering standard for a typical major collector road shows 4 lanes of traffic with 2 lanes in each direction. Often the lanes closest to the pedestrian boulevard can be substituted for lay-by parking. Each lane is approximately 3.5 m wide making the roadway typically 14 m wide. On either side of the roadway are pedestrian boulevards, adjacent to the public right-of-way. The engineering standard dictates a 1.5 m concrete sidewalk or multi-use pathway in the pedestrian boulevard with lighting and trees facing a hardscaped continuity strip and roadway.
**Roadway**
The movement of transit, vehicles and bicycles are prioritized in the roadway, with the exception of flexible streets, pedestrian priority streets, or pedestrian streets. Interactions between pedestrians and the roadway occur primarily where there is on-street parking, pedestrian crossings and transit stops.

**Pedestrian Boulevard**
Located on each side of the roadway are the pedestrian boulevards. Vaughan’s Existing Engineering Standard shows the pedestrian boulevards to be typically 6m wide. The pedestrian boulevard is primarily for pedestrians and fulfills a variety of functions including pedestrian movement, amenities for the pedestrian transit stops, access to the roadway and to adjacent land uses, wayfinding for both pedestrians and motorists and location for utilities.

**Private Setback**
The private setback provides space between the building of adjacent land uses and the public right-of-way. It is useful as a transition / separation zone between the public pedestrian boulevard and private uses. Retail and services often use the setback as space for outdoor seating areas, retail displays and restaurant / cafes.

**Median**
The median functions mostly as a vehicular traffic separator while provided streetscape aesthetics and as a refuge for pedestrians while crossing the roadway.

![Typical Structure of a Street](image-url)
Defining a Streetscape Structure

The streetscape can be separated into five zones. In the pedestrian boulevard, typically 5.5 – 6.0 m in Vaughan, is the frontage zone, the pedestrian clearway zone, the amenity zone and the continuity strip. Where applicable, the streetscape could include the median zone as the fifth zone.

**Streetscape Zones**

It is useful to consider the streetscape in terms of zones for ease of design. Each zone has typical widths and elements in the streetscape with room for change depending on the needs or functions of the streetscape. The streetscape elements can be chosen from a “kit-of-parts” and placed in their appropriate locations. The streetscape zones are particularly useful with regards to the level of service concept, introduced in Section 4, where a Streetscape Component Selection Matrix (located in Appendix H) helps to determine which components are available for the determined streetscape level of service.

It should be noted that special cases arise where certain zones may not be used. For example, in areas where the right-of-way is constrained, the continuity strip or frontage zone may be excluded. In other cases, where there is more room allowed in the right-of-way, an additional amenity zone or pedestrian clearway zone may be added to accommodate the use of low impact development measures, an additional row of street trees, or a multi-use track. While these zones are typical for streetscapes, they ultimately should not limit the designer.
Frontage Zone

**Location**
The frontage zone is located directly adjacent to the right-of-way limit and the private setback.

**Description**
The frontage zone is a transition zone between the pedestrian boulevard and adjacent private land uses. Hardscape or softscape elements are typically utilized in the frontage zone including concrete, unit pavers, natural stone, sod, shrubs, and grasses.

**Function**
The frontage zone provides a transition, separation or buffer between public and private lands. Shrubs provide a semi-transparent boundary, whereas unit paving facilitates seamless movement across the frontage zone. For example, retail uses will typically benefit from a seamless transition between the pedestrian sidewalk and the retail fronts to welcome customers. In other cases, planting may be used to provide privacy in residential land uses.
Pedestrian Clearway Zone

Location
The pedestrian clearway zone is located typically between the amenity zone and the frontage zone.

Description
The main organizing element in the pedestrian boulevard is the pedestrian clearway zone, otherwise known as the sidewalk. The pedestrian clearway zone is typically made up of paving materials such as concrete, unit paving or natural stone.

Function
The function of the pedestrian clearway is to facilitate pedestrian movement and traffic with a path clear of obstructions and obstacles. The pedestrian clearway can be used as a design reference relating to adjacent land uses. For example, retail streets require larger pedestrian clearways to support higher pedestrian volumes and activity. In special cases, the pedestrian clearway zone may be connected seamlessly into public spaces to read as single large spaces.
Amenity Zone

**Location**
The amenity zone is typically located between the pedestrian clearway and the continuity strip zone.

**Description**
The amenity zone plays a large part in determining the character of the streetscape. The amenity zone may be sodded or paved and may include items such as street trees, street and pedestrian lights, planters, perennials and ornamental grasses, benches, waste receptacles, information kiosks, bicycle stands, and low impact development measures.

**Function**
The function of the amenity zone is to provide visual, functional, and environmental pedestrian amenities. The amenity zone may also act as a buffer between pedestrians and the vehicular roadway. Specialized streets may also contain additional amenity zones such as green streets with double rows of trees. Additional amenity zones are dependent on right-of-way restrictions.
Continuity Strip Zone

Location
The continuity strip zone is located between the amenity zone and the vehicular roadway.

Description
The continuity strip is a relatively small strip in the pedestrian boulevard and may be treated with softscape (sod) or hardscape (unit paving or poured in place concrete).

Function
Located next to the vehicular roadway, the continuity strip provides a safety clearance for the doors of parked or idling vehicles so they do not interfere with furniture and planters in the amenity zone. The continuity strip provides potential space for street lights, wayfinding signage and utility poles. In addition to the road curb, the continuity strip helps to define the division between the roadway, the pedestrian boulevard, and the rapid clearway (if adjacent to a bike lane on the street), and provides an area for snow storage.
Median

Location
Medians are located in the middle of the vehicular roadway between opposing traffic directions.

Description
Medians are separate entities from the pedestrian boulevard and typically do not carry pedestrian traffic parallel to the roadway. Medians can come in different forms from thin concrete barriers to wide vegetated areas. In large roadways acting as signature avenues and boulevards of cultural importance, the median may become a large public space with monuments, public art and seasonal / temporary installations, paving and planting.

Function
The function of the median is to separate vehicular traffic going in opposing directions. For pedestrians, the median provides opportunities for visual stimulation and refuge while crossing particularly large roadways. The median zone can also be utilized as left turn lanes at traffic intersections.
Intersections

The general condition in a streetscape is the segregation of vehicular traffic and pedestrian traffic by the streetscape zones and elements. Intersections are locations where the paths of perpendicular roadways cross. At the intersection, the normal streetscape separation is eliminated with vehicular and pedestrian traffic coming into direct interaction. Cyclists, a third mode of transportation, crossing the intersection interact with both vehicles and pedestrians. Pedestrians are most vulnerable at these locations, which highlights the importance of intersection treatment. As the streetscape character of the street blocks change, intersections provide a transition point from one streetscape type to another.

Structure

When designing intersections four areas need to be considered:

• Mid-block condition
• Transition zone
• Pedestrian corner treatment
• Crosswalk

Mid-Block Condition

Mid-block conditions are the general conditions of the streetscape where the vehicular roadway and pedestrian boulevard are parallel. Pedestrian and vehicular traffic is separated with generally minimal interaction.

Transition Zones

Transition zones combine with the pedestrian corner treatment to form the intersection in major intersections. Transition zones are located between the mid-block condition and the pedestrian corner treatment. In the transition zone, the rhythm of street trees, paving materials and patterns change in character to signal to pedestrians they are approaching an intersection where more attention is required.

As the streetscape character of the street blocks change, intersections provide a transition point from one streetscape type to another.
Pedestrian Corner Treatment

Pedestrian corner treatments make up the entire intersection in minor intersections, but are combined with a transition zone in major intersections. The pedestrian corner treatment is located at each corner of crossing roadways providing a refuge area for pedestrians to await crossing the roadway to reach the other side. Pedestrian corner treatments are typically treated with hardscape paving materials and make ideal locations for public art and public space. Proposed softscape and planting should promote seasonal interest, xeriscape principles and accommodate winter snow removal operations and storage.
**Crosswalks**

Crosswalks are located directly on the vehicular roadway and run perpendicular to the direction of vehicular traffic. The crosswalk is where the pedestrian is most vulnerable. The purpose of the crosswalk is to clearly indicate to both pedestrians and vehicles where pedestrians are allowed to cross the roadway. The clear delineation of the crosswalk is done through painted lines on the asphalt, different paving materials, printed patterns, and raised crosswalks.

![Crosswalk with Coloured Pattern and AODA Tactile Paving](image)
Intersection Types

The delineation between the intersection and mid-block differs based upon the type of intersection. There are two main types of intersections:

- Major intersections
- Minor intersections

Gateway intersections are a sub-type of major intersections.

Major Intersections

Major intersections are typically found in locations where two major roads with high vehicular and/or pedestrian traffic cross. The crossing roads in major intersections can be of cultural or regional value or are arterial roads with large right-of-ways and many lanes of vehicular traffic. The wide right-of-ways and busy vehicular traffic in major intersections create a scale larger than characteristically comfortable for the pedestrian realm. A transition zone is added between the mid-block condition and intersection condition as an outcome of the large scale. Major intersections have a pedestrian corner treatment area of approximately 30 m from curb and a transition zone which varies from approximately 8 m to 20 m. This means that the mid-block condition starts from approximately 38 m to 50 m from the intersection curb. It should be noted that VIVA standards call for an approximately 65 m intersection. However, this condition is only effective with large block sizes found in places such as Highway 7.
**Gateway Intersections**

Gateway intersections share the same structural framework as major intersections within the ROW. Gateway intersections differ from major intersections by having specific branding elements in the streetscape including character district branded pavers, branded banners on street poles and branded street furniture. Buildings located at gateway intersections should provide space for a public / private zone within the private setback zone which could include public art and other public activities.
**Minor Intersections**

Minor intersections are smaller in scale than major intersections but still can have a high volume of pedestrian traffic. They do not typically have the high vehicular volumes of major intersections and are more favourable to the pedestrian scale. There is no transition zone found in minor intersections due to the smaller scale. The pedestrian corner treatment of minor intersections measure approximately 10 m from the curb to mid-block condition depending on context and scale.
Components

Several typical components are located within the zones of the streetscape. While the components can be typically found in any streetscape, it is the combination, design, colour, material, construction and texture which make up the streetscape character. The combination of these elements also determines the functionality of the streetscape to respond to the adjacent land use and roadway. A simple way to think of the streetscape components is as a “kit-of-parts”. The components are mixed and matched to meet the needs of the streetscape. The general components of a streetscape can be broken down into five categories:

- Paving
- Planting
- Illumination Elements
- Site Furnishings
- Innovation
Paving

The most prevalent of the streetscape components is paving, otherwise known as the hardscape. Paving provides a flat surface, which is easily maintained, that can be easily navigated by pedestrians and easily used to define areas and zones. The most common location for paving is in the pedestrian clearway zone (i.e., the sidewalk). However, in an urban setting, paving is also commonly found in the continuity strip, amenity zone, frontage zone and median. Paving is often divided into ‘field paving’ and ‘accent paving’, where field paving represents the most predominant material and colour, while accent paving provides additional design and definition. Paving designs are a simple and effective way to define the zones in the streetscape.

Typically paving materials include:

- Poured-in-place concrete
- Precast unit pavers on concrete base
- Precast unit pavers on granular base
- Permeable paving
- Natural stone
- Tactile paving

Planting

Planting represents the main visual amenity component found in the streetscape. Planting is generally used to create a visually appealing and comfortable pedestrian environment and act as a buffer from vehicular traffic. Planting plays a large part in forming the character of a streetscape. In an urban context, planting is mostly found in the amenity zone; however, in a low density context it can be found in all of the other zones, with the exception of the pedestrian clearway. Sod or grass often replaces paving as a ground element in low density areas. Street trees are one of the most utilized streetscape planting elements and provide a number of functions beyond the aesthetic, including providing shade and a buffer from the vehicular roadway.

Typical planting components include:

- Street trees
- Sod
- Shrubs
- Perennials and ornamental grasses
- Seasonal planting
- Tree grates
- Planters
Site Furnishings

Site furnishings are generally physical streetscape amenities as opposed to aesthetic amenities. Benches provide places for pedestrians to sit and rest, while waste receptacles provide places for refuse to keep the streetscape clean. Bicycle stands provide parking for active transportation, similar to lay-by parking for vehicles. Site furnishings, mostly located in the amenity zone, vary depending on the level of pedestrian activity in the streetscape.

Typical site furnishings include:

- Bench
- Waste receptacle
- Bicycle stand
- Banners
- Wayfinding signage
- Bollard

Illumination Elements

The most common and basic illumination elements are street lights. In general, lighting is a safety feature providing illumination for pedestrian and vehicular movement during the night. Street lights are primarily concerned with roadway illumination. Pedestrian lights provide security, safety from hazards, wayfinding and decorative functions for urban areas where there are pedestrians likely to be traveling the streetscape at night. Pedestrian lights may be installed on pedestrian scaled poles or in combination with street light poles. Accent or specialty lighting can add additional safety to the streetscape and provide versatile visual aesthetics. Street lighting is generally found in the continuity strip or amenity zone, while pedestrian lights can be found in the amenity zone or frontage zone.

Illumination elements can include:

- Street lighting
- Pedestrian lighting
- Bollard lighting
- Paving lighting
- Accent lighting
- Seatwall lighting
- Tree up-lighting
- Wall wash lighting
Innovation

The purpose of innovation components is to include a broad range of non-typical state-of-the-art elements as part of the streetscape. These include unique installations and infrastructure which have not been implemented before in Vaughan. Innovation components are often part of pilot projects to test feasibility and impact on the streetscape. The most common innovation components include low impact development measures such as storm water management rain gardens, bioswales and bio-retention ponds. Innovation components are not limited to the two described above and can include a wide variety of innovative initiatives.

Potential innovation components include:

- Low impact development measures
- Public art
- Digital media and communication installations
- Flexible street design with rolled curbs
- Planting strategies