Urban Design Guidelines for Gas Stations

May 2006

Compte tenu de la nature de ce document, il n'est disponible qu'en anglais. La Ville pourra, sur demande, traduire ce document au complet ou en partie. Les demandes de traduction doivent être présentées à la Division des services en français (DSF-FLSD@ottawa.ca; par téléphone au 580-2424, poste 21536).

Due to its technical nature, this document is available in English only. The City of Ottawa may translate this document or parts thereof on request. Requests for translation should be forwarded to the French Language Services Division (DSF-FLSD@ottawa.ca or 580-2424, ext. 21536).

A gas station is a facility where gasoline or other fuels are sold and where maintenance and minor automobile repair services may be conducted. A gas station consists of a gas bar with gasoline outlets and typically other associated facilities such as car washes, automotive services, convenience stores and food services.

Purpose and Application

The purpose of these guidelines is to provide urban design guidance at the planning application stage in order to assess, promote and achieve appropriate development of gas stations. Specific site context and conditions will be reviewed in conjunction with these guidelines.

These guidelines are to be applied throughout the city for all gas station development. When gas stations are located in areas identified as Mainstreets, the guidelines for Mainstreets also apply. When gas stations are located together with drive-through facilities, the guidelines for drive-through facilities also apply. Where a Community Design Plan or relevant planning study exists, these guidelines will augment those documents. They will also be used to help inform the preparation of new Community Design Plans.

Objectives

- To promote compatible gas station development that improves its existing or planned context;
- To protect and enhance the character and quality of the districts and neighbourhoods where gas stations are located;
- To enhance the public streets and contribute to a high quality public space;
- To create safe and controlled traffic circulation that balances the needs of vehicles and pedestrians; and
- To minimize impacts on adjacent land uses that could be caused by on-site activities.

Official Plan and By-law Direction

The Official Plan identifies compatibility as a key design objective for the built environment over the next 20 years. As per sections 2.5.1 and 4.11 of the Official Plan, achieving compatibility of new development, such as gas stations, will involve not only considerations of built form, but also of operational characteristics and the development context.

Annex 1 of the Official Plan identifies the protected rights-of-way sufficient to provide enough area for the streetscape elements and meet the needs of pedestrians and cyclists.

Annex 3 of the Official Plan contains a number of design considerations that provide suggestions for how to meet the Design Objectives and Principles in section 2.5.1 of the Official Plan. All other policies of the Official Plan and applicable regulations, such as the Private Approach By-law, the Signs By-law and the Zoning By-law must be met.

Context and Challenges

Numerous trends in the industry are affecting the design of gas station sites. Gas stations often operate 24 hours and tend to locate on larger sites, and contain an increased number of gas pumps. Auto services associated with gas stations are shrinking, while other services such as convenience stores, car washes, banking machines, retail units and drive-through services are increasing, which results in getting consumers out of their vehicles and circulating around the site on foot. Additionally, major petroleum companies have adopted a set of standard building and canopy types to assert a cohesive image and presence in the marketplace.

As a result of these trends, the design of gas station sites presents several challenges, including incorporating prototypical building designs and corporate image elements into the immediate context; addressing the complexity of large sites and the requirements of the many different uses; designing a circulation pattern to meet the needs of both vehicles and pedestrians; supporting a pedestrian-friendly environment along public streets; and using landscape areas effectively to improve the overall environmental and visual quality of the area.

Other Available Guidelines

- Urban Design Guidelines for Large-Format Retail (2006);
- Urban Design Guidelines for Development along Traditional Mainstreets (2006);
- Urban Design Guidelines for Development along Arterial Mainstreets (2006);
- Urban Design Guidelines for Drive-Through Facilities (2006);
- Urban Design Guidelines for Outdoor Patios (2006);
- Infill Housing Design Guidelines - Low-Medium Density (2005) and
- Regional Road Corridor Design Guidelines (2000).

Urban Design Guidelines

The urban design guidelines for gas stations are organized into the following six sections:

1. Streetscape and Built Form
2. Pedestrians and Cyclists
3. Vehicles and Parking
4. Landscape and Environment
5. Signs
6. Servicing and Utilities

1. Streetscape and Built Form

Guideline 1: Respond to the positive elements of the context through such means as building height, setbacks, building orientation and architectural styles (Figure 1).

Figure 1:
The architectural treatment of this gas station canopy reflects the context.

Guideline 2: Locate building structures (such as car washes, convenience stores, and canopies) close to the street to help define the street edge (Figures 2 and 3).

Figure 2:
A convenience store close to the street contributes to a well-defined street edge.

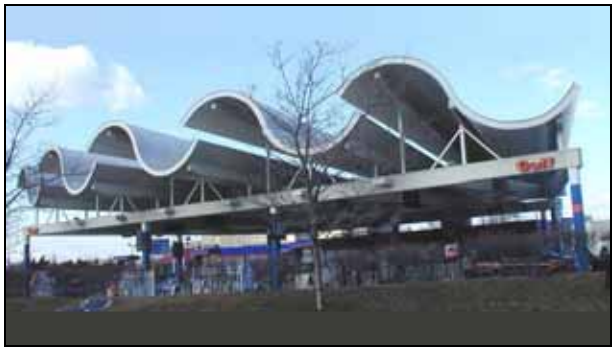


Figure 3:
The canopy design creates an interesting streetscape in a commercial context.

Guideline 3: Provide ample landscaping, in combination with building orientation, to enhance the streetscape and define the street edge when setting building structures back from the street is unavoidable (Figure 4).

Figure 4:
Ample landscaping in the front yard enhances the streetscape while still allowing for views into the site.

Guideline 4: Design all sides of buildings and pump islands with a consistent architectural style to enhance the streetscape (Figure 5).

Figure 5:
The detail of this gas station building contributes to an interesting and visually pleasing streetscape.

Guideline 5: Provide transparent windows and doors for retail buildings to ensure visibility between the store, the pump islands and surrounding streets.

Guideline 6: Use clear windows for the car wash façades facing public streets. They animate the street by providing views into the car wash and act as poster cases for advertising (Figure 6).

Figure 6:
The glass windows of this car wash face the public areas.

2. Pedestrians and Cyclists

Guideline 7: Provide an unobstructed 2.0 metre wide pedestrian walkway between the public sidewalk (and/or parking areas) and building entrances (Figures 7 and 8).

Figure 7:
The pedestrian walkway makes the site easily accessible for pedestrians.

Figure 8:
On this site, pedestrian walkways link different components on the site.

Guideline 8: Provide an unobstructed 2.0 metre wide sidewalk in the public right-of-way across private access driveways. Ensure little or no change in elevation (Figure 9).

Figure 9:
The public sidewalk across the private driveway provides a pedestrian zone.

Guideline 9: Distinguish walkways from driving surfaces by using varied paving treatments and by raising walkways to curb level.

Guideline 10: Locate required bicycle parking close to the building entrance in a manner that does not impede pedestrian movement (Figure 10).

Figure 10:
The bicycle parking is located close to the store entrance.

3. Vehicles and Parking

Guideline 11: Locate vehicular access points to the site as far away as possible from street intersections.

Guideline 12: Minimize the number and width of driveways from the public street while ensuring that they meet the requirements of the Private Approach By-law. Avoid conflicts with pedestrians along the street by defining a narrower car entrance while allowing for tanker truck turning (Figure 11).

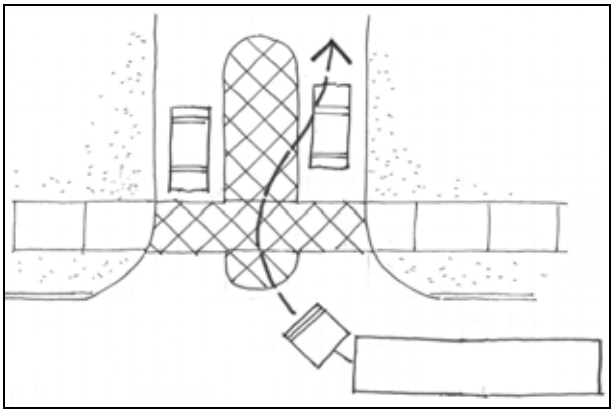


Figure 11:
The car entrance and pedestrian crossing are clearly defined; flush contrasting paving allows for tanker truck turning.

Guideline 13: Locate stacking lanes away from adjacent sensitive uses, such as residential and outdoor amenity areas, to reduce the impacts of noise and pollution that could be caused by stacking cars on such uses. Use landscaping and fencing to help buffer potential impacts.

Guideline 14: Locate access points for stacking lanes away from public streets and driveways so that queued vehicles do not block the traffic along public streets or the movement of other vehicles on site (Figure 12).

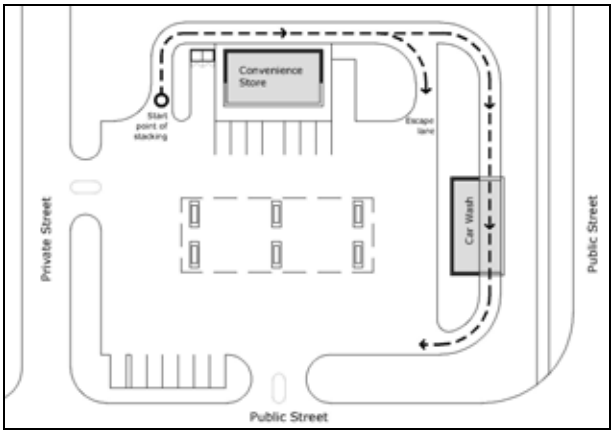


Figure 12:
The start point of car wash stacking is located away from the public streets and other on-site traffic.

Guideline 15: Provide escape lanes and the appropriate number of queuing spaces as required by the Zoning By-law to create efficient stacking lanes and to minimize on-site conflicts (Figure 13).

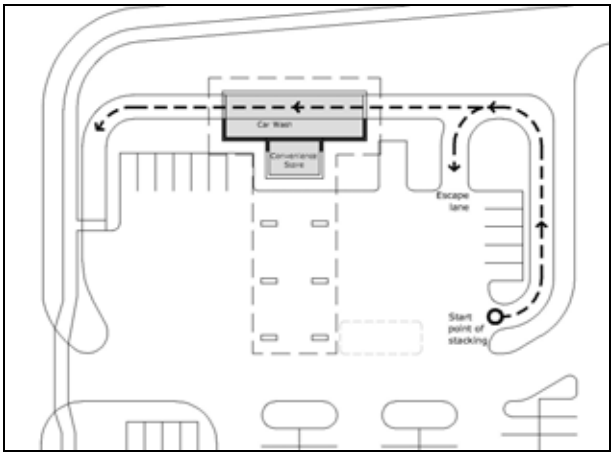


Figure 13:
The escape lane allows cars to get out of a queue.

Guideline 16: Allow a sufficient driving distance from the car wash exit to the public street to minimize tracking water onto the street during winter conditions.

Guideline 17: Provide separate stacking lanes when two drive-through uses (such as a car wash and a drive-through convenience store) exist on the same site.

Guideline 18: Separate stacking lanes from parking areas and driveways by using such as landscaped islands, decorative pavement, pervious islands and painted lines (Figure 14).

Figure 14:
Landscaping helps define stacking lanes.

Guideline 19: Design the on-site circulation to minimize the conflicts between pedestrians and vehicles.

Guideline 20: Design the on-site circulation to facilitate unobstructed forward movement by tanker trucks and the safe unloading of fuels. Provide adequate clearance for fuel delivery trucks under canopies.

Guideline 21: Provide only the minimum number of required parking spaces required by the Zoning By-law.

4. Landscape and Environment

Guideline 22: Plant street trees between 7.0 and 10.0 metres apart along public streets. Plant trees in permeable surface areas, with approximately 10.0 square metre of soil area per tree.

Guideline 23: Select trees, shrubs and other vegetation considering their tolerance to urban conditions, such as road salt or heat. Give preference to native species of the region that are of equal suitability.

Guideline 24: Provide a minimum 3.0 metre wide landscape area along the edge of a site where parking areas, driveways or stacking lanes are adjacent to a public street. Use trees, shrubs and low walls to screen cars from view while allowing eye level visibility into the site (Figures 15 and 16).

Figure 15:
The low wall helps screen paved areas while still allowing visibility into the site.

Figure 16:
The landscaping along the edge of this site screens driveways from view.

Guideline 25: Provide significant architectural or landscape features at the corner on corner sites in order to emphasize the public streets and enhance the streetscape (Figure 17).

Figure 17:
Landscaping at the corner strengthens the streetscape without blocking views.

Guideline 26: Provide a minimum 2.5 metre wide landscape area along the site's side and rear yards in order to provide screening and enhance site environmental benefits.

Guideline 27: Provide a minimum 3.0 metre wide landscape area, which may include a solid wall or fence in addition to planting, at the edges of sites that are adjacent to residential or institutional properties.

Guideline 28: Protect and feature heritage, specimen and mature trees on site by minimizing grade changes and preserving permeable surfaces.

Guideline 29: Use sodded areas and shrub beds to collect, store and filter stormwater in order to improve groundwater recharge (Figure 18).

Figure 18:
The planting island collects and stores stormwater.

Guideline 30: Use green building technologies such as green roofs, drip irrigation, and other Leadership in Energy and Environmental Design (LEED) approaches.

5. Signs

Guideline 31: Use pavement markings and directional signage to enhance clarity and ease of movement patterns on site.

Guideline 32: Design buildings to include defined spaces to accommodate signs that respect building scale, architectural features, signage uniformity and established streetscape design objectives.

Guideline 33: Locate and design ground-mounted and wall-mounted signs to complement the character and scale of the area and promote an active, pedestrian friendly environment. Integrate landscape features with ground-mounted signs (Figures 19 and 20).

Figure 19:
The ground-mounted sign and the building-mounted sign are in proportion to the building scale without dominating the public space.

Figure 20:
The ground-mounted sign is incorporated into the landscaping at the entrance to the site.

Guideline 34: Restrict temporary and portable signs. Prohibit billboards, revolving signs and roof signs on private property.

Guideline 35: Design sign illumination to be task-oriented and avoid glare/light spillover toward adjacent land uses.

6. Servicing and Utilities

Guideline 36: Locate noise-generating areas, including auto service bays, car wash openings, vacuum stations, outdoor loading areas, garbage storage and stacking lanes, away from sensitive uses such as residential areas and schools.

Guideline 37: Buffer potential noise impacts with solid attenuations. These could be building structures, landscaped berms or attenuation fencing (minimum 1.8 metre in height) complemented with landscaping.

Guideline 38: Enclose all utility equipment within buildings or screen them from both public streets and private properties to the rear. These include utility boxes, garbage and recycling container storage, loading docks and ramps, and air conditioner compressors.

Guideline 39: Design garbage enclosures that are external to the building with the same materials as the building and ensure that the wall height is sufficient to completely conceal garbage dumpsters.

Guideline 40: Design lighting so that there is no light spillage, glare or light cast over adjacent uses. Direct and/or shield lighting sources away from adjacent residential properties and provide screening as necessary (Figure 21).

Figure 21:
Structures such as canopies can be used as light buffers.

Guideline 41: Use efficient white light sources to reduce energy costs and to create a natural colour balance for safety and security.

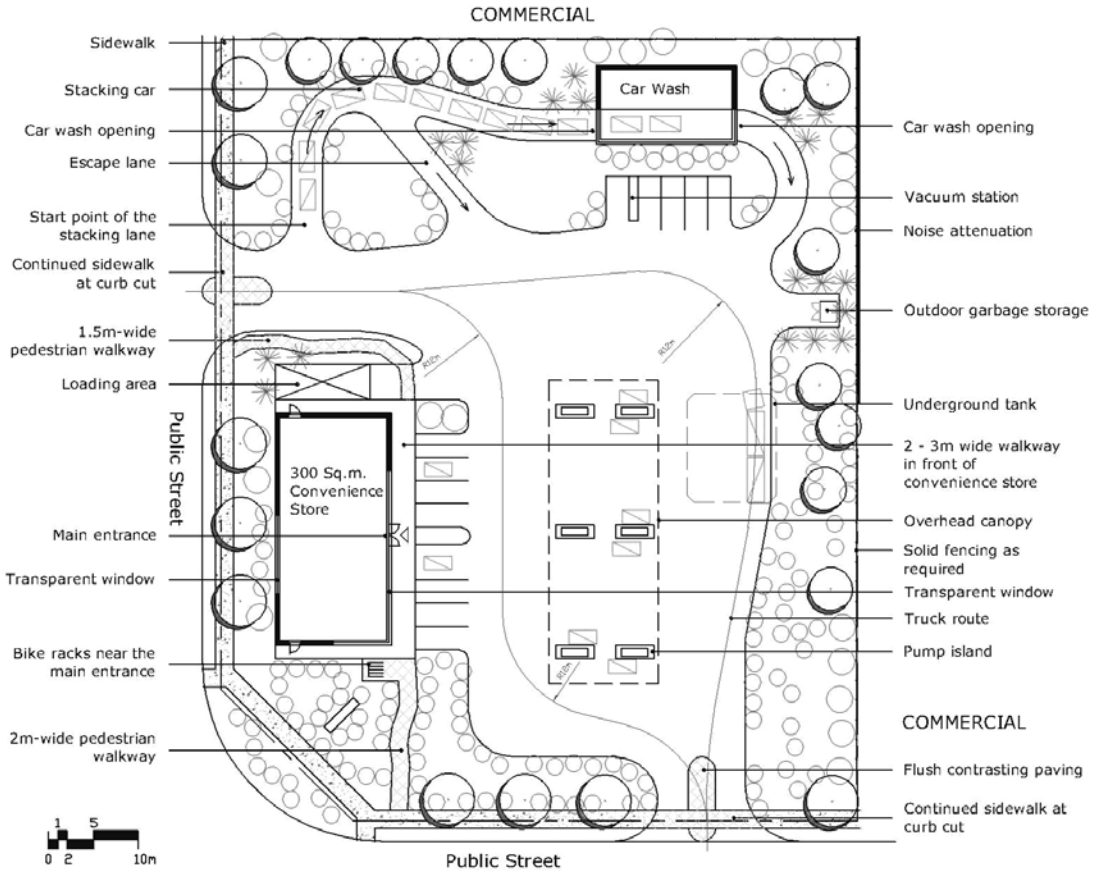
Guideline 42: Provide views and clear sightlines between the site and surrounding uses and public streets to ensure sufficient safety and comfort levels.

Guideline 43: Plan the site to include areas for temporary snow storage without conflicting with site circulation, landscaping and utility boxes.

Guideline 44: Set rooftop mechanical equipment back from the edge of the building and screen it to minimize the visual impact.

Glossary

The following figure illustrates many of the elements discussed in the guidelines and defined in the glossary. It is for illustrative purposes only since the specific site context and characteristics will determine the relationships among these elements for an actual site.



Amenity: something that contributes to an area's needs, whether social, environmental or cultural

Built form: buildings and structures

Character: the unique identity of a place

Compatible / Compatibility: when the density, form, bulk, height, setbacks, and/or materials of buildings are able to co-exist with their surrounding

Driveway: a private way across land used for vehicular access from a public street - includes a private right-of-way

Façade: the principal face of a building (also referred to as the front wall)

Front yard: the space between the property line and the building facing the public street

Gas bar: place that sells automotive fuel along with small amounts of other automotive-related products such as pre-packaged motor oil or wind-shield washer fluid

Hard landscape: landscape features other than plant materials (e.g. decorative pavers, planter boxes, walks, fences, retaining walls, etc.)

Impervious surface: surface of land where water cannot infiltrate back into the ground (e.g. roofs, driveways, streets and parking lots)

Landscape buffer: a landscape area located along the perimeter of a lot intended to separate land uses either from one another or from a public street

Lane: a narrow street at the back of buildings, generally used for service and parking

Parking lot: a lot or other place used for the temporary parking of four or more passenger vehicles

Pedestrian walkway: sidewalk on private property

Permeable surface: a surface formed of material that allows infiltration of water to the sub-base

Property line: the legal boundary of a property

Public realm: the streets, lanes, parks and open spaces that are free and available to anyone to use

Right-of-way: a public or private area that allows for passage of people or goods, including, but not limited to, freeways, streets, bicycle paths, alleys, trails and walkways

Scale: the size of a building or an architectural feature in relation to its surroundings and to the size of a person

Screening: vegetation, landforms or structures that serve to reduce the impact of development on nearby properties

Setback: the required distance from a road, property line, or another structure, within which no building can be located

Sidewalk: unobstructed concrete or paved area for pedestrian travel in the public right-of-way

Stacking lane: an on-site queuing lane for motorized vehicles, which is separated from other vehicular traffic and pedestrian circulation by barriers, markings or signs

Streetscape: the overall character and appearance of a street formed by buildings and landscape features that frame the public street. Includes building facades, street trees and plants, lighting, street furniture, paving, etc

Urban design: the analysis and design of the city's physical form

Figure Credits

Figure 1: North Carolina, USA. The Conservation Fund

Figure 2: South Carolina, USA. The Conservation Fund

Figure 3: New Jersey, USA. www.agilitynut.com

Figure 4: Ottawa, Ontario. City of Ottawa

Figure 5: Ottawa, Ontario. City of Ottawa

Figure 6: Ottawa, Ontario. City of Ottawa

Figure 7: Markham, Ontario. Bousefield Inc.

Figure 8: Markham, Ontario. Bousefield Inc.

Figure 9: Ottawa, Ontario. City of Ottawa

Figure 10: Ottawa, Ontario. City of Ottawa

Figure 11: N/A. City of Ottawa

Figure 12: N/A. City of Ottawa

Figure 13: N/A. City of Ottawa

Figure 14: Ottawa, Ontario. City of Ottawa

Figure 15: Montreal, Quebec. City of Ottawa

Figure 16: Ottawa, Ontario. City of Ottawa

Figure 17: Ottawa, Ontario. City of Ottawa

Figure 18: Unknown. US Environmental Protection Agency.

Figure 19: Ottawa, Ontario. City of Ottawa

Figure 20: Markham, Ontario. Bousefield Inc.

Figure 21: Unknown. Ir Grootveld Architects.