3.0 ROUNDABOUT DESIGN

The purpose of the Roundabout Design Guideline is to provide guidance for the geometric and aesthetic design of roundabouts. While these guidelines recommend certain limits for good roundabout design, they cannot direct the design engineer to a specific, optimal design.

Roundabouts need to be evaluated and designed on a case-by-case basis taking into consideration the physical characteristics of the location, orientation of the approaches to the circular intersection, proposed intersection operating conditions, planned land uses, plus the safety and mobility needs of all motorists, bicyclists, and pedestrians that will be using the facility.

3.1 Roundabout Layout Features

The City realizes that the use of roundabouts has become a desired alternative to the traditional intersection. The benefits of reduced delay and its traffic calming ability make it a good alternative. The City of Ontario has decided that roundabouts shall only be considered at intersections with single lane approaches.

Each roundabout creates a unique challenge to the designer, and no two roundabouts can truly be the same. Using the Federal Highway Administration (FHWA) technical publication *Roundabouts: An Informational Guide,* the City has chosen the Urban Single Lane Roundabout. The inscribed circular diameter of the proposed roundabouts shall range between 100 and 130 feet, and should be designed in 10-foot increments (100, 110, 120 and 130 feet). The center island shall have an 8-inch curb face, and may provide a traversable apron to accommodate truck traffic. The City has selected the design vehicle as the WB-50. Turning paths must be verified and provided to the City for approval of the roundabout. The circulatory roadway width shall provide a minimum of 2 feet between the outside edge of the design vehicle tire track and the curb line.

Some of the other features that the roundabout shall incorporate are raised splitter islands on all legs. All approaches shall provide a minimum 150-tangent from the yield line to the extended curb line of the first intersecting roadway. Also, there shall be no driveways within the roundabout or the 150-foot tangent approaches. Crosswalk locations shall be properly marked and shall be placed 25-feet behind the yield line, with splitter islands providing a 10-foot wide crosswalk cut. Adequate lighting shall be provided at the roundabout, crosswalks and approaches per City Standards. For additional guidance, see Figure 1: Roundabout Layout Detail.

3.2 Roundabout Landscape Features

Landscaping the central island of the roundabout can enhance the safety by making the intersection a focal point and by lowering speeds. For this reason, the City has developed some guidelines for the overall design of the central island. Using the FHWA technical publication *Roundabouts: An Informational Guide* for intersection sight distance, certain areas (or zones) within the central island have been identified as either “Restricted Landscape” or “Limited Use Landscape”. These zones vary depending on the size of the roundabout, and are defined on Figure 2: Roundabout Landscape Detail.

The Restricted Landscape Zone, which encompasses the outer edge of the central island, was identified to ensure the necessary sight distances are satisfied for vehicles using the roundabout. This area should have a slope no greater than 2%, with a mature plant height not to exceed 24 inches.

The Limited Use Landscape Zone, which is the inner portion of the central island, will allow for placement of fixed objects and landscaping such as trees. All landscape features and fixed objects proposed in this location are subject to review and approval by the City of Ontario Engineering, Planning and Facilities Departments. This area should have a slope no greater than 6:1 per the requirements of the AASHTO *Roadside Design Guide*.

Satisfaction of these guidelines does not guaranty approval, and each roundabout shall be reviewed by the City on a case by case basis. In addition to the guidance offered by this document, the design engineer shall also adhere to the specific roundabout design procedures and practices found in the following publications:

- FHWA technical publication *Roundabouts: An Informational Guide*
- Caltrans Design Information Bulletin Number 80-01 (DIB 80-01)