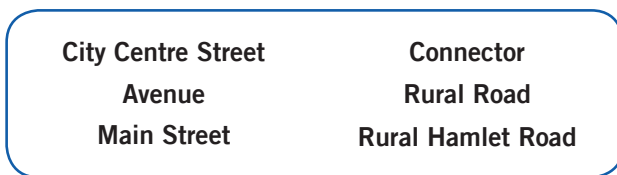


4.5 Transitions

Transitions occur when:

1. One road typology changes into another
2. The context changes from rural to urban (or vice versa)
3. The desired operating speed changes along a roadway

Transitions must be considered on all road typologies.



A transition area can be permanent or temporary. For example, a temporary transition would manage the phasing or staging of construction. Transitions may occur when major intersection improvements are planned and completed in advance of improvements to the sections of roadway on either side. In this case, the intersection designer needs to consider the future role of the road and design the intersection to accommodate known cross-sectional elements of future road improvements.

Permanent transitions can take place over a length of street or at an intersection, when typologies change. Designers need to understand the edges of York Region and edges of neighbourhoods, corridors, hamlets and towns to determine how

the street design should adjust and transition in response.

Objectives

Transitions give consideration to change in context and the various modes of travel, in addition to geometric design requirements. The objective is to manage transitions to give clear visual cues to vehicle operators that change is occurring and to ensure they can respond accordingly.

Transitions serve as visual cues of changes in:

- Functional emphasis from automobile-oriented to pedestrian-oriented
- Change in road typology or speed
- Width of road, either a narrowing/widening of lanes or decrease/increase in number of lanes
- Land use, such as a transition between a commercial and residential district

Cross-sectional changes, such as the overall curb to curb width of the street as appropriate for the context and street type, need to be managed in the transition area. Transitions from one speed zone to another should be introduced to give motorists adequate time to prepare for, and react to, changes in roadway design. Designers need to introduce transition design changes that will safely lower the speed of motorists who are changing from one context to another by sending a clear message to the driver that it is upcoming. Transitions are also ideal locations for entrance features or gateways. These design features mark a

boundary or change in jurisdiction or territory (e.g. entering or leaving a special district, main street, neighbourhood, town) or announce a special place or area.

Guidelines

- Transition areas need to accommodate changes in speed, context, cross-section and road typology, such as a change from a Connector to a Rural Road



A transition area along a roadway exists where one road typology, or context, transforms into another

Roadway Measures

- Transition areas should be located so decision site distance in accordance with the TAC Geometric Design Guidelines for Canadian Roads is achieved
- Where difference in the desired speeds between the two contexts is great, a transition speed zone is required to avoid large reductions in the speed limit by providing two or more speed limit reductions
- At minimum, speed-reduction zones use regulatory speed limit signs. Speed limit reductions should occur on tangent sections distant from intersections
- Differences in design speed at transitions should not be more than 20 km/h. Drivers should be warned well in advance of the transition
- Changes in speed zones can utilize other traffic control devices such as warning signs and beacons, or can utilize appropriate traffic calming measures such as changes in the cross-section
- Where the transition zone is particularly short, periodic measures, such as speed platforms or rumble strips in rural areas only, may be considered
- Changes in the width and number of travel lanes and the shoulder treatment can also serve to calm traffic
- The shortest transition can be achieved at an intersection by the use of a roundabout. The desired speed and contexts can be different on the various roads connecting to the roundabout

- When introducing a curb at the transition between a rural and urban cross-section, the curb on the urban section is normally flared out to match the edge of the shoulder on the rural section. Flare rates of 24:1 for a design speed of 80 km/h and 15:1 for 50 km/h are considered appropriate. The end of the curb is normally tapered down to be flush with the shoulder surface to prevent blunt impacts between the curb and vehicle tires or snow clearing equipment
- Means of reducing overall street and traveled way pavement width include, however are not limited to:
 - Reducing the number of lanes
 - Reducing lane widths
 - Dropping through-lanes as turning lanes at intersections
 - Providing on-street parking or bicycle lanes
 - Providing a raised curbed median
- The design of transition areas can include the changing of a shoulder on a rural cross-section to an edge zone on the urban cross-section

Boulevard and Built Form Measures

- Traffic calming measures can include element changes (e.g. street trees, lower street lights, curbs, textured paving, on-street parking) and periodic entrance features and coordinated street furniture
- Land use and building style can provide visual cues to transition, particularly street defining designs in commercial and retail areas such as buildings addressing the right-of-way, awnings and glazing
- Changes in building height and setback are also measures to calm traffic. Introducing taller buildings closer to the street helps to inform drivers of the change from a rural or suburban context to an urban context
- Vertical elements, such as street trees in which the height is equal to or greater than the street width, can also influence driver perceptions and behaviour
- Entrance features or gateways can contribute to traffic calming in transition areas. Such treatments can include streetscape features, planting beds, signage, way-finding, entrance architectural and building features, art and hardscape features such as medians, curb extensions, and decorative pavements



Transition elements into a neighbourhood include stop signs, a narrowing of the roadway and change in speed