

6.0 CROSS-SECTIONAL SPATIAL NEEDS

6.1 TYPICAL CROSS-SECTIONAL ELEMENTS

There are in the order of twenty cross-sectional elements that need to be considered within the available right-of-way. The spatial needs of some of these elements vary while others are fixed and some are within other elements. These are summarized in **Table 6-1**.

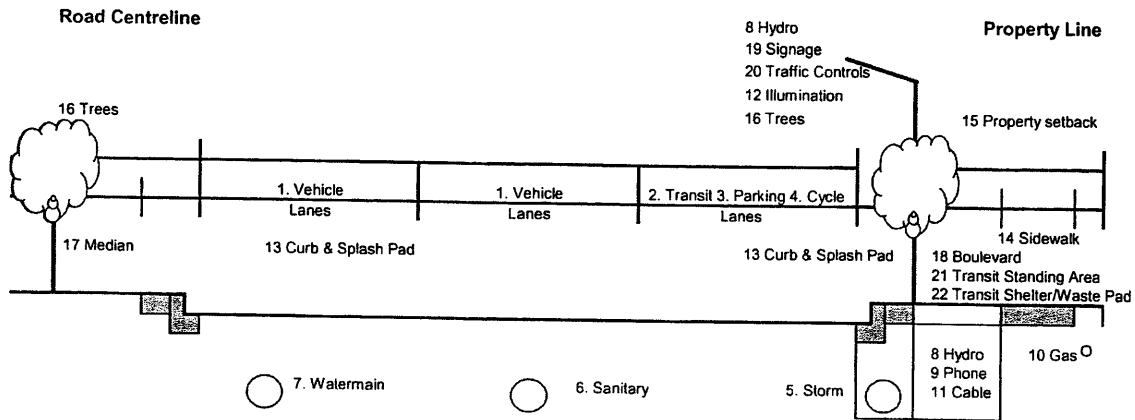
Table 6-1
Typical Cross-Sectional Elements

Typical Elements	Characteristics
1. Vehicle Lanes	Variables
2. Transit Lanes	Variables
3. On-Street Parking	Variables
4. Bike Lanes	Variables
5. Storm Sewers	Within Other Elements
6. Sanitary Sewers	Within Other Elements
7. Watermain	Within Other Elements
8. Electrical Power *	Within Other Elements
9. Telephone	Within Other Elements
10. Natural Gas	Within Other Elements
11. Cable	Within Other Elements
12. Illumination	Within Other Elements
13. Curb & Splash Pad	Constants
14. Sidewalks	Variables
15. Property Setback	Constants
16. Trees	Within Other Elements
17. Median	Variables
18. Boulevards	Variables
19. Signage	Within Other Elements
20. Traffic Controls	Within Other Elements
21. Transit Passenger Standing Area	Within Other Elements
22. Transit Shelter and Waste Pad	Within Other Elements

* Above ground hydro poles, or buried hydro lines in key locations. It should be noted that there would be additional costs associated with burying existing hydro lines.

Figure 6-1 illustrates these elements.

**Figure 6-1
 Typical Cross-Sectional Elements**



As noted, some elements can be located within the same area as other elements. For example, utilities can be located within the same area as other elements. For example, utilities can be located below pavement, below the boulevard, or within the median. Similarly, illumination can be located within the boulevard, or in line with landscape elements. Trees can be within boulevards, and/or within medians.

6.2 BASIC RIGHT-OF-WAY FUNCTIONS VERSUS DESIRABLE FUNCTIONS

Basic functions of the street right-of-way include movement of people and goods, as well as allocation of spaces for services and public and private utilities, these being the main users of the ROW. At minimum, these functions would need to be accommodated within the right-of-way.

As noted in Section 2.2, the Region is facing increasing pressures to meet and balance the various competing needs including those related to goods movement to sustain the economy, transit riders, cyclists, pedestrians, as well as auto drivers and their passengers. In addition, it would be highly desirable for the right-of-way to serve other functions in addition to the basic functions, in recognition of the important functions which Regional streets can serve. For instance, a wider median with landscaping features can improve the streetscape and enhance the aesthetics of the corridor. Similarly, a wider boulevard with wide sidewalks along both sides of the street can create a pedestrian friendly and aesthetically pleasant environment. This would facilitate alternative modes of travel, such as walking. In addition, an exclusive bike lane, or a wider curb lane, can better accommodate cyclists. Last but not least, dedicated HOV or transit lanes can make auto travel with higher occupancy, as well as the use of transit services, more attractive. Higher vehicle occupancy achieved through a combination of transit and private vehicles, can increase the number of person trips that can be accommodated, using the same infrastructure, thus making more effective use of this infrastructure.

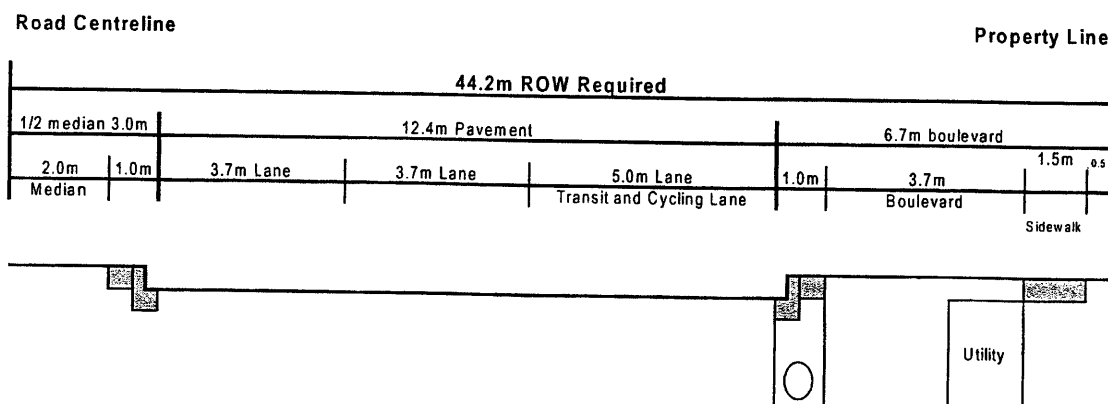
For most of the four lane Regional streets that are proposed to be widened to 6 lanes, the available space is limited to a 36 metre right-of-way. All the various cross-sectional elements are competing for the same limited right-of-way.

6.3 NEED FOR WIDER RIGHT-OF-WAY

If all needed and desirable functions of the roadway are to be included within the right-of-way at minimum, a 44.2 metre right-of-way would be needed.

This is illustrated in **Figure 6-2**.

Figure 6-2
Wider ROW required



This wider right-of-way would be required to allocate more space to the boulevard to accommodate sidewalks and landscaping features, transit and cycling lanes to encourage alternative modes of travel, a 6 metre median to accommodate landscaping, as well as the existing typical 3.7 metre wide travel lanes.

6.4 PROTECTION FOR WIDER RIGHTS-OF-WAY

It is clear that the 36 metre right-of-way imposes many spatial constraints to the inclusion of some desirable cross-sectional elements. As noted, in order to accommodate all the basic and desirable functions of the roadway, at minimum a 44.2 metre right-of-way would be required.

However, acquiring additional right-of-way in many existing urbanized areas where land uses are set and not expected to be redeveloped, is not feasible (e.g. stable residential areas). As noted, in these circumstances, the best use must be made of the limited 36 metre right-of-way, recognizing that some trade-offs will be required (e.g. public and private utility placement, reduced lane widths, landscaping locations). In some typologies, some features will need to be shared between the Regional right-of-way and

private property in order to accommodate a double row of trees and/or a wider sidewalk (as detailed in Section 9).

On the other hand, in newly developing areas where land uses have not been set as yet, ideally a wider right-of-way, should be protected, in order to avoid these space constraints 30 or 40 years from now when consideration is being given to widening these Regional streets. With reduced pavement widths, a 42.6 metre wide right-of-way would be adequate, as compared to the 44.2 metre right-of-way illustrated in Figure 6-2.

It is recommended that as part of the next Official Plan review, consideration be given to the designation of wider rights-of-way (e.g. 43 to 46 metres) for Regional roads, to allow these various competing spatial requirements to be better accommodated