

## **2.5M Sight Distance**

### **2.5.2M Criteria Used in Calculating Sight Distance**

#### **2.5.2.1M Object Height**

The TAC Subsection **2.5.2.1** is applicable to the Department's highways with the following substitution and elaboration:

The table below provides recommended guidelines for the selection of object heights for use in the design of highway facilities under Department jurisdiction and replaces Table 2.5.1.

**Table 2.5.1M Object Height Design Domain**

<b>Object Height (m)</b>	<b>Applicability</b>
0.00	<ul style="list-style-type: none"> <li>Decision sight distance</li> <li>Desirable intersection sight distance (see below for explanation)</li> </ul>
0.15	<ul style="list-style-type: none"> <li>Stopping sight distance that could be considered for low volume, remote roads where the risk of fallen trees or debris is significant.</li> </ul>
0.38	<ul style="list-style-type: none"> <li>Stopping sight distance</li> </ul>
1.15	<ul style="list-style-type: none"> <li>Intersection sight distance</li> </ul>
1.30	<ul style="list-style-type: none"> <li>Passing sight distance</li> </ul>

The primary object height for use in Department roadway design is 0.38 m, which corresponds to the minimum taillight height in Manitoba. It should remain the standard object height for Department designs, as it applies to stopping sight distances for most road alignments. Though considered conservative by TAC, it aligns with higher driver expectations of unimpeded sight lines due to the flat topography and lower development levels in most rural areas in the province.

Another difference from the TAC recommendation is the wider use of a 0.00 m object height, again due to the driver expectation mentioned above. Decision sight distance, especially at intersections and interchanges with auxiliary lanes and ramps, should use a 0.00 m object height. This height corresponds to the visibility of pavement markings, which often prompt driver decisions and maneuvers. Therefore a 0.00 m object height is the appropriate design parameter.

Similarly, the desirable intersection sight distance should be based on a 0.00 m object height. This object height visibility should be provided over the entire sight distance and not just at the extreme limit. The goal is to allow visibility of the entire road surface between a vehicle making a turning maneuver at an intersection and a conflicting vehicle movement.

This guideline is significantly more generous than the TAC recommendation of a 1.30 m object height for intersection sight lines. However, there have been numerous examples in the province where intersections designed to TAC recommendations have resulted in significant perceptual problems. Where a driver cannot see the entire extent of pavement in the conflicting direction, it can lead to the misconception that a vehicle could be hidden beyond the point where pavement visibility is lost. This in turn can lead to abrupt entrance maneuvers or reduced intersection capacity due to increased hesitancy on the part of the turning drivers. Providing sight lines for the entire pavement within intersection sight distance eliminates this problem.

It is the Department's practice to use a depth of 150 mm below the nominal vehicle height to allow greater opportunity for a driver to perceive an on-coming through vehicle. Therefore, the minimum object height for through vehicles at an intersection is 1.15 m.