

Swept Path Analysis



WHAT IS A SWEEP PATH ANALYSIS?

A Swept Path Analysis is used to confirm that the proposed emergency access route is functional for emergency response vehicles. The Swept Path Analysis simulates the turning movements of the model vehicle, and is used to ensure that the length of the access route is unobstructed.

WHEN IS A SWEEP PATH ANALYSIS REQUIRED?

It is **strongly recommended** that all Major Development Permit Applications include a Swept Path Analysis as part of the Fire Access Plan. Including a Swept Path Analysis with your Development Permit submission package supports a timely review by Fire Rescue Services. A Swept Path Analysis may not be required when the proposed emergency access is a straight run with only one simple 90 degree turn.

WHAT NEEDS TO BE SHOWN IN THE SWEEP PATH ANALYSIS?

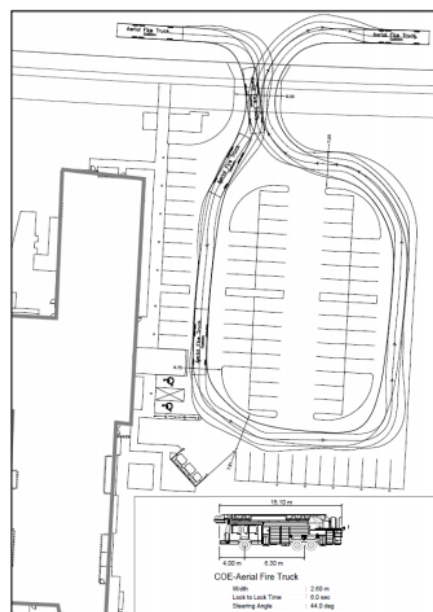
The analysis should show the turning movements of the Fire Rescue Model Vehicle (inset below), along with the swept path encountered by vehicle overhangs. It should **clearly** show that no obstacles or obstructions exist along the vehicle's movement path. Please ensure **all** of the following items are considered:

- Parked vehicles must be considered/shown on narrow roads
- If multiple paths cross each other, please use different colours for tires/overhang to improve readability
- The path must show **continuous** movement; no "corners" should be seen on the tire/overhang trajectories
- Carefully review the trajectories - **only** submit a Swept Path Analysis that confirms **unobstructed travel**

The analysis **must** use the Edmonton Fire Rescue Services' vehicle dimensions (inset below); include an annotation on the drawing indicating the model inputs used (shown in example).

For more information on emergency access routes, please refer to sections 3.2.5.5 and A-3.2.5.6(1) of the National Building Code - Alberta Edition.

<p>Aerial Fire Truck</p> <p>Overall length: 15,100 mm</p> <p>Overall width: 2,600 mm</p> <p>Wheel base (tandem rear- centre of axle group): 6,300 mm</p> <p>Steering lock angle: 44°</p> <p>Rear overhang: 4,800 mm</p> <p>Front overhang: 4,000 mm</p> <p>Lock to lock time: 6 seconds</p> <p>GVW (largest): 81,500lb</p>



A-3.2.5.6(1) Fire Department Access Route. The design and construction of fire department access routes involves the consideration of many variables, some of which are specified in the requirements in the Code. All these variables should be considered in relation to the type and size of fire department vehicles available in the municipality or area where the building will be constructed. **It is appropriate, therefore, that the local fire department be consulted prior to the design and construction of access routes.**