# Bridge Design Details 2B October 2019

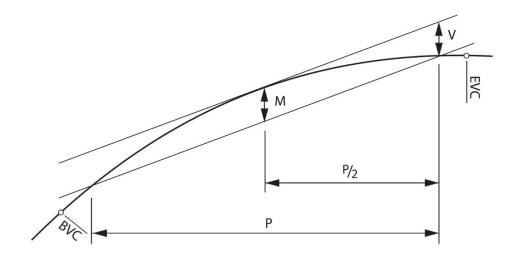

**Figure 2A.B.1 Middle Ordinate Formula**

Combining equations (1) and (2) given in *Bridge Design Details*: 2A, the Middle Ordinate is derived and equation (4) is as follows:

$$(4) \ V = \frac{^R/_C \times L^2}{2}$$

For Length = $^P/_2$, then: $V = \dfrac{^R/_C \times (^P/_2)^2}{2}$

Using the figure and equation above, set M equal to V to get the following:

$$V = \frac{^R/_C \times (^P/_2)^2}{2} = M$$

Then simplify to get: $M = \dfrac{^R/_C \times P^2}{8}$

(P) measured horizontally

(M) measured vertically