

PROJECT I.D. 2788-00-02/2788-02-00

West Waukesha Bypass Summit Ave (USH 18) to Rolling Ridge Drive

West Waukesha Bypass

LANE CAPACITY

$$Ca = (1,550 \div (1 - R)) \times f_{HV} \times f_{LS} \times N$$

- a. Percent trucks (P_T) = 7.8% (Based on FDM estimates for Wisconsin freeways from Forecast)
- b. $E_T = 2.5$ (Highway Capacity Manual rolling terrain factor)
- c. Work zone lane capacity = 1550 passenger cars per hour (Rural w/ crossover - FDM 11-50-30.5)
- d. f_{HV} = Heavy vehicle adjustment factor = $f_{HV} = (1 / (1 + P_T(E_T - 1)))$
 $f_{HV} = (1 / (1 + .078(2.5 - 1))) = 0.89$
- e. $f_{LS} = 1$
- f. Adjusted lane capacity with heavy vehicles = (1550 cars per hour) $\times$ (0.89) $\times$ 1 = 1380 vehicles per hour