

Peak Hour Factors

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Peak hour factors should be applied in most capacity analyses in accordance with the Highway Capacity Manual, which selected 15 minute flow rates as the basis for most of its procedures. It is especially critical to examine the peak 15 minute period when potential queue lengths may become an issue, and at locations with sharp peaking characteristics such as employment sites and locations with low peak hour factors (less than 0.90).

Calculation

The PHF is typically calculated from traffic counts. It is the average volume during the peak 60 minute period divided by four times the average volume during the peak 15 minuter period, or

$$PHF = \frac{\text{Avg. Volume During Peak 60 Minute Period}}{4.0(\text{Avg. Volume During Peak 15 Minute Period})}$$

Counts not Available

The Highway Capacity Manual advises that in the absence of field measurements, reasonable approximations for the PHF may be made as follows:

- 0.95 for congested conditions
 - 0.92 for urban areas
 - 0.88 for rural areas
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Future PHF

General guidelines for determining future peak hour factors can be found in the Development Review Guidelines, and are summarized as follows:

- 0.85 for Minor Street inflows and outflows,
 - 0.90 for Minor Arterials,
 - 0.95 for Major Streets,
 - unless better information is available
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Movements or Approaches

Typically the average PHF for the intersection as a whole is applied. However, the PHF for an individual vehicular approach or movement should be applied when that approach or movement has sharp peaking characteristics in comparison to the intersection as a whole.

Peak Hour Factors, Continued

Special Cases

Signal Warrants

- For purposes of determining traffic signal installation recommendations, the peak 15 minute period is not a typical consideration, as signal warrants are typically based on longer time frames such as eight hour, four hour, or one hour durations (minimum).

SIGCAP2

- SIGCAP2 does not directly apply a PHF. This program is most useful for preliminary signalized intersection analysis, such as to determine whether more detailed analysis is warranted, using other software that incorporates a PHF.

Other Time Periods

- Some situations may call for time periods other than the 15 minute peak to be evaluated (including shorter time periods, such as preemption time during train crossings).
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