Procedure for Installation of New Traffic Signal

Purpose and Objective:
The purpose of this procedure is to establish in writing the process to be followed when considering the installation of a new traffic signal. The objective is to clarify and streamline the process so that it can be completed with improved efficiency and consistency. For convenience, this procedure is designed to be used as a form.

References:
Ohio Manual of Uniform Traffic Control Devices Section Four
Traffic Engineering Manual Section Four
District 7 Traffic Signal Warrants Policy

Process:
1) New traffic signal is proposed.
   Location: ____________________________________________________________ Date: __________________

2) Check files for historic data.
   Was location previously studied? Yes ☐ No ☐
   If yes, please answer the following questions:
      When was it studied? _____________________________________________
      What initiated the study? _________________________________________
      What were the results? __________________________________________

3) Obtain traffic counts for the intersection.
   Are recent counts available that will suffice for analyzing signal warrants? Yes ☐ No ☐
   Date counts were performed: ________________________________________
   Type of count (i.e. Turning Movement Count (preferred), Numetrics): ____________
   Length of count (minimum of 8 hours, 12 hours preferred): ____________
   Intersection ADT: ____________________ Percent Trucks: ____________
   ☐ Factorize Right Turns using Form 496-12 in the TEM.

4) Analyze crash data.
   Crashes must be run for the most recent three years. A collision diagram must then be made.
   Total Crashes: ____________________ Crash Rate: ____________________
   Crashes correctable by traffic signal during the most recent year available: ____________________
   Crash data beyond the three years required for signal warrant analysis may be helpful in determining the long term crash trends of the intersection. Judgment should be applied in deciding if this data is needed.
   Expanded Crash History Dates: ____________________
   Total Crashes: ____________________
   Crashes correctable by traffic signal: ____________________

5) Run Signal Warrants. Note: At least one of the Traffic Signal Warrants must be satisfied to justify traffic signal installation. Generally, District 7 prefers that either Warrant 1 or Warrant 2 is met.

<table>
<thead>
<tr>
<th>Area Type</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warrant 1: Eight Hour Vehicular Volume</td>
<td>Satisfied ☐</td>
<td>Unsatisfied ☐</td>
</tr>
<tr>
<td>Warrant 2: Four Hour Vehicular Volume</td>
<td>Satisfied ☐</td>
<td>Unsatisfied ☐</td>
</tr>
<tr>
<td>Warrant 3: Peak Hour</td>
<td>Satisfied ☐</td>
<td>Unsatisfied ☐</td>
</tr>
<tr>
<td>Warrant 4: Pedestrian Volume</td>
<td>Satisfied ☐</td>
<td>Unsatisfied ☐</td>
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<tr>
<td>Warrant 5: School Crossing</td>
<td>Satisfied ☐</td>
<td>Unsatisfied ☐</td>
</tr>
<tr>
<td>Warrant 6: Coordinated Signal System</td>
<td>Satisfied ☐</td>
<td>Unsatisfied ☐</td>
</tr>
<tr>
<td>Warrant 7: Crash Experience</td>
<td>Satisfied ☐</td>
<td>Unsatisfied ☐</td>
</tr>
<tr>
<td>Warrant 8: Roadway Network</td>
<td>Satisfied ☐</td>
<td>Unsatisfied ☐</td>
</tr>
<tr>
<td>Warrant 9: Intersection Near a Grade Crossing</td>
<td>Satisfied ☐</td>
<td>Unsatisfied ☐</td>
</tr>
</tbody>
</table>
6) Visit proposed traffic signal location in field.
   Date of Visit:
   ☐ Take photos (If needed – photos may have been taken for previous study.)
   ☐ Draw Condition Diagram (If already existing, check in field.)
   Is sufficient sight distance available for all stop approaches? Yes ☐ No ☐
   Area Description (i.e. Central Business District, Commercial, Residential, etc.)

   Is the signal in close proximity to a school, hospital, fire station or other traffic signals? Yes ☐ No ☐
   If yes, please describe: ________________________________________________________________

   Other applicable geometric or local conditions: ____________________________________________
   __________________________________________________________________________________

7) Consider any other applicable factors.
   Are traffic volumes expected to… Increase ☐ Decrease ☐ Not Change ☐
   Why?
   Have other changes recently been made that may improve the operation / safety of the intersection, but are new enough that impact is not yet known? Yes ☐ No ☐
   If yes, describe the changes and when they were completed: ______________________________________________

   Are there other more appropriate changes that should be made to the intersection such as conversion to a roundabout or four-way stop, installing turn lanes, etc. instead of installing a traffic signal? Yes ☐ No ☐
   If yes, please comment on other alternatives: _______________________________________________

   If a traffic signal is installed, are there other changes / improvements that would need to be made such as pedestrian signals, emergency preemption, etc.? Yes ☐ No ☐
   If yes, please describe: ________________________________________________________________

8) Make final decision.
   Apply engineering judgment to the data, site conditions, and other factors to determine if a traffic signal should be installed.
   Final Decision: ____________________________
   Justification for decision: ____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________

   Other Recommendations: ____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________

   Attached Documents:
   ☐ Initiating letter, study, etc. ☐ Signal Warrant Analysis
   ☐ Traffic Count Data ☐ Condition Diagram
   ☐ Crash Data, including Collision Diagram ☐ Photos
   ☐ Other Information: ________________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
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