

Wisconsin Department of Transportation (WisDOT) Manual Traffic Count

The working formats and guidelines for the manual traffic counts (aka turning movement counts)

Disclaimer: Utilize the count type specifications and procedures below for guidance only. Prior to performing any data collection, contact the WisDOT regional traffic staff to define the explicit count specifications and methodologies. Contact information is available in the [WisDOT Transportation Planning Manual \(TPM\), Chapter 9, Section 70](#).

Count Type Specifications

1. Typical manual counts refer to either the 12-hour (6:00 AM to 6:00 PM) or the 13-hour (6:00 AM to 7:00 PM) weekday count. This does not include weekend counts or holiday counts.
 - a. The count season starts March 1 and ends the last full week before Thanksgiving.
 - b. Counts may start no earlier than 12:00PM (noon) of the first working day of the week and shall not extend past 12:00PM (noon) of the last working day of the week.
 - c. Counts taken on Fridays require prior approval from WisDOT.
 - d. Typical counts shall not take place the day prior to or the day after a holiday. Urgent counts may take place the day prior to or the day after a holiday with prior approval from WisDOT.
 - e. Consultants should complete counts in one single working day or within two consecutive days; but in all circumstances, they shall complete the typical weekday count within 7 days of the initial onset of the count. The Consultant shall obtain prior written permission from WisDOT to exceed this timeline.
 - f. Consultants shall submit all count data in 15-minute intervals.
2. Special counts refer to any other count besides the typical 12-hour or 13-hour count or intersections with irregular geometry.
 - a. Examples include longer counts, 15/16-hours, Peak hour counts, Weekend counts, etc. ...
 - b. Irregular geometry specifically refers to offset T-intersections. Any offset T-intersection whose legs are $\leq 100'$ apart should be counted as one intersection, and those separated by more than 100' should be counted as two separate intersections.
 - c. WisDOT will provide required hours for special counts or instructions for intersections with other irregular geometries.
3. Standard vs. Urgent: Standard and urgent describe turn-around time. The Consultant shall return a standard count, or any count not specified as urgent to WisDOT within 20 business days of the count data collection. The Consultant shall return an urgent count to WisDOT within 10 business days of the count data collection. A classification of urgent may apply to a typical or special count.

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Count Procedures

4. The Consultant shall adhere to the manual count instructions.
 - a. WisDOT may deliver instructions through E-mail or the DT2184 Request Form.
 - b. WisDOT requires consultants to notify WisDOT of conflicts in data or information WisDOT provides. It is the consultant's responsibility to clear up any confusion or conflicts prior to initiating the count data collection. WisDOT maintains the final authority on the resolution of conflicts.
 - c. If the DT2184 provides a checkmark by "School in Session", consultants shall perform counts during regular school days. Identify school bus volume by peak period in the consultant's notes.
 - d. If the DT2184 provides a checkmark by "Pedestrians" or "Bicycles", the consultants shall perform counts from April to mid-October. Weather should be favorable for pedestrians and bicyclists during these counts. Document weather and other site conditions in the consultant's notes.
 - e. Consultants shall be attentive to times when they shall not collect counts should be cognizant of any specific deadlines.
 - f. From time to time, WisDOT may reclassify a typical or standard count to an urgent count. WisDOT will notify the consultant when this occurs.
 - g. To account for 15-minute break times, use the average of the counts from the two 15-minute intervals surrounding the break and adjust the count report summary accordingly.
 - h. For the typical 12-hour or 13-hour count, the consultant shall not take any breaks during the morning peak (7:00 – 9:00 AM), midday peak (11:30 AM – 1:30 PM), evening peak (4:00 PM – 6:00 PM), or other periods as specified by the requester in the Request Form.
5. WisDOT will notify consultants of count requests and explanations
 - a. Typical count notification to the consultant occurs via the work order request process. Notifications typically include the DT2184 request form e-mailed to the consultant.
 - b. Ongoing WisDOT projects and Construction Maps are available through the Wisconsin 511 website. The consultant shall check for WisDOT or local (municipal, county) construction and detour routes, which may affect a count location. The consultant shall maintain written records of contact with local agencies that includes dates, times, names, and information gathered. Should a local project conflict arise, this information will help WisDOT determine whether WisDOT or the consultant will be responsible for the costs of any recounts. Consultants should work to adjust count schedules and immediately notify WisDOT of any construction conflicts.

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- c. WisDOT provides staff levels needed to conduct a count. The Consultant shall obtain permission from WisDOT to use a different staff effort if needs differ from the estimate.
- d. Request location information if the request is unclear.
- e. Combine counts for freeway interchanges and offset intersections.
 - i. Count each intersection on the same day and at same time.
 - ii. There is no need to count one directional free-flow ramps after the intersection or interchange. WisDOT assumes these movements occur as part of the WisDOT coverage count program. Further, the consultant may calculate the volume for the one-directional free-flow ramp between intersections from the surrounding intersections' exiting and entering volumes. Show these volumes with a "C" and notify WisDOT of these situations.
 - iii. Unless otherwise instructed, show all possible movements for an intersection regardless of whether a volume exists (counted or calculated).
 - iv. Submit the count report as one single file in PDF format with an Excel file for each intersection. Submitted documents should utilize the WisDOT intersection count template.
- f. It may be necessary to count multiple intersections, closely spaced along a corridor, on the same day at the same time; however, do not consider these as "one" intersection. The instructions will specify the need for these counts.

Count Reports

6. Count Report submission
 - a. A Count Report means all traffic count data collected for a specific location, at a specific time, and prepared in the WisDOT intersection count template, which will be provided on request. The Consultant shall submit all traffic count reports to WisDOT electronically in Excel and PDF formats. The Consultant shall keep the original report and make it available to WisDOT upon request.
 - b. Fill in all fields on the first page of the WisDOT intersection count template. WisDOT may require resubmission of reports if fields contain incomplete or inaccurate information.
 - c. Stop the count immediately if a traffic incident occurs affecting traffic flow during the manual count. Discard all data within the 15-minute period that the incident occurred. Complete the remainder of the count as described in "1e", but not before resolution of the incident. An incident is a crash, traffic diversion (on or off the roadway under study), or road closure due to an unforeseen event (major storm, parade, presidential visit, etc.) that will create unexpected or atypical results.

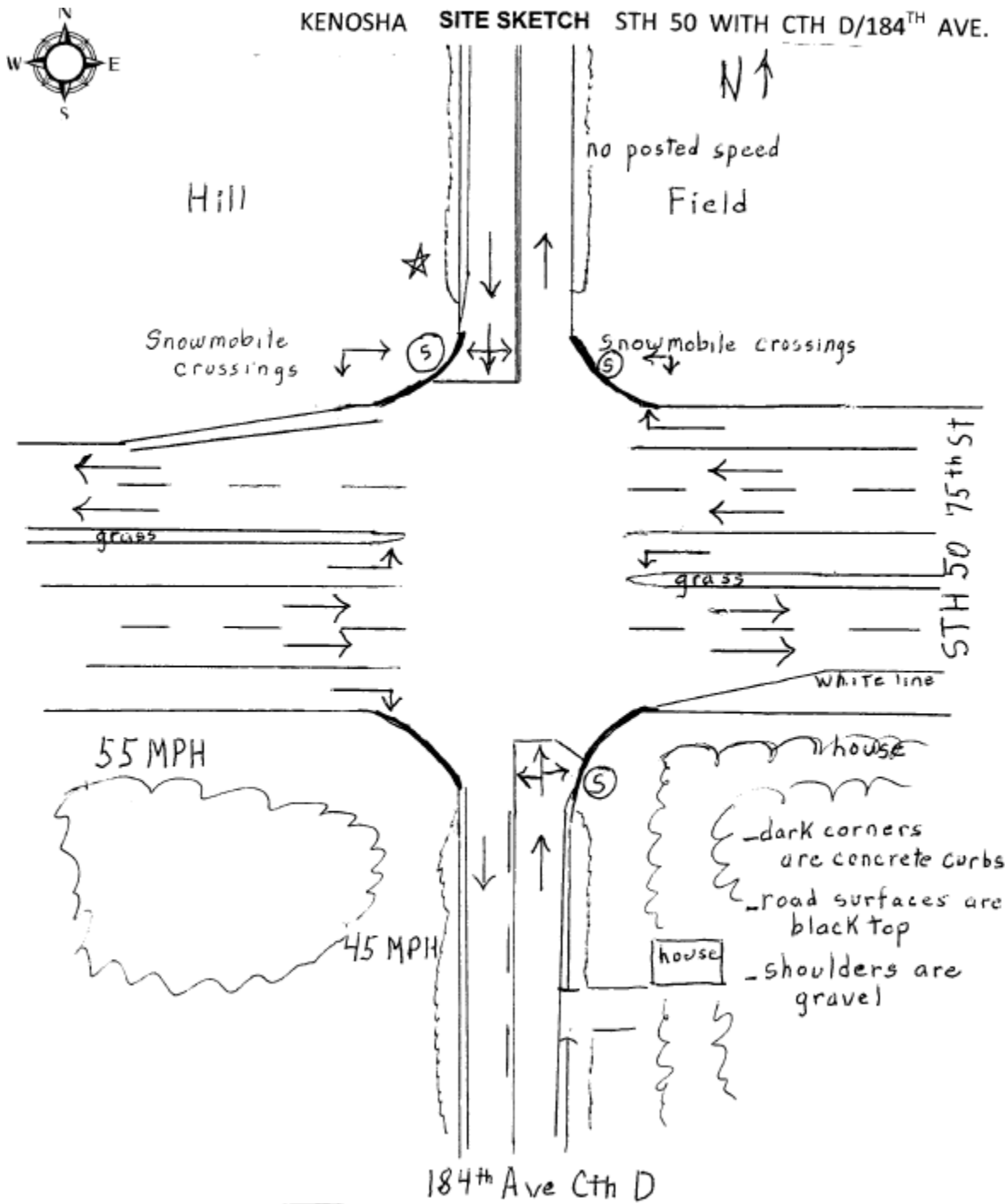
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- d. Reports shall be submitted with the following page order to ensure consistency.
 - i. Graphical Summary Sheet page layout for reporting multi-intersection counts
 - ii. Aerial layout marking locations counted for the specific count report.
 - iii. “Base Information” sheet from WisDOT provided format.
 - iv. “Peak Hour Graphical Summary” sheet from WisDOT provided format.
 - v. DT2184 – Intersection Traffic Count Request. Complete the DT2184 and include with the report if not included.
 1. A few means 3-5 during a peak period (AM, MD, PM)
 2. Several means 6-11 during a peak period (AM, MD, PM)
 3. Many means 12 or more during a peak period (AM, MD, PM)
 4. Include school bus counts by peak period for “School” counts.
 - vi. Intersection sketch
 1. Geographic North
 2. Roadways with names and number of lanes with traffic flow direction and medians
 3. Traffic signs and signals around the intersection
 4. Location of the personal counters, cameras, and mechanical counters
 5. Names of the business / types of land use adjacent to the intersection
 - vii. Statements of Issues / Resolutions – if applicable.
 - viii. The remaining sheets from the WisDOT provided format from “Peak Hour Volume Summary” through “Ped & Bicycle” in the same order.
 - ix. Repeat “iv” to “viii” for each individual intersection within the multi-intersection report.
- e. See below for site sketch examples.

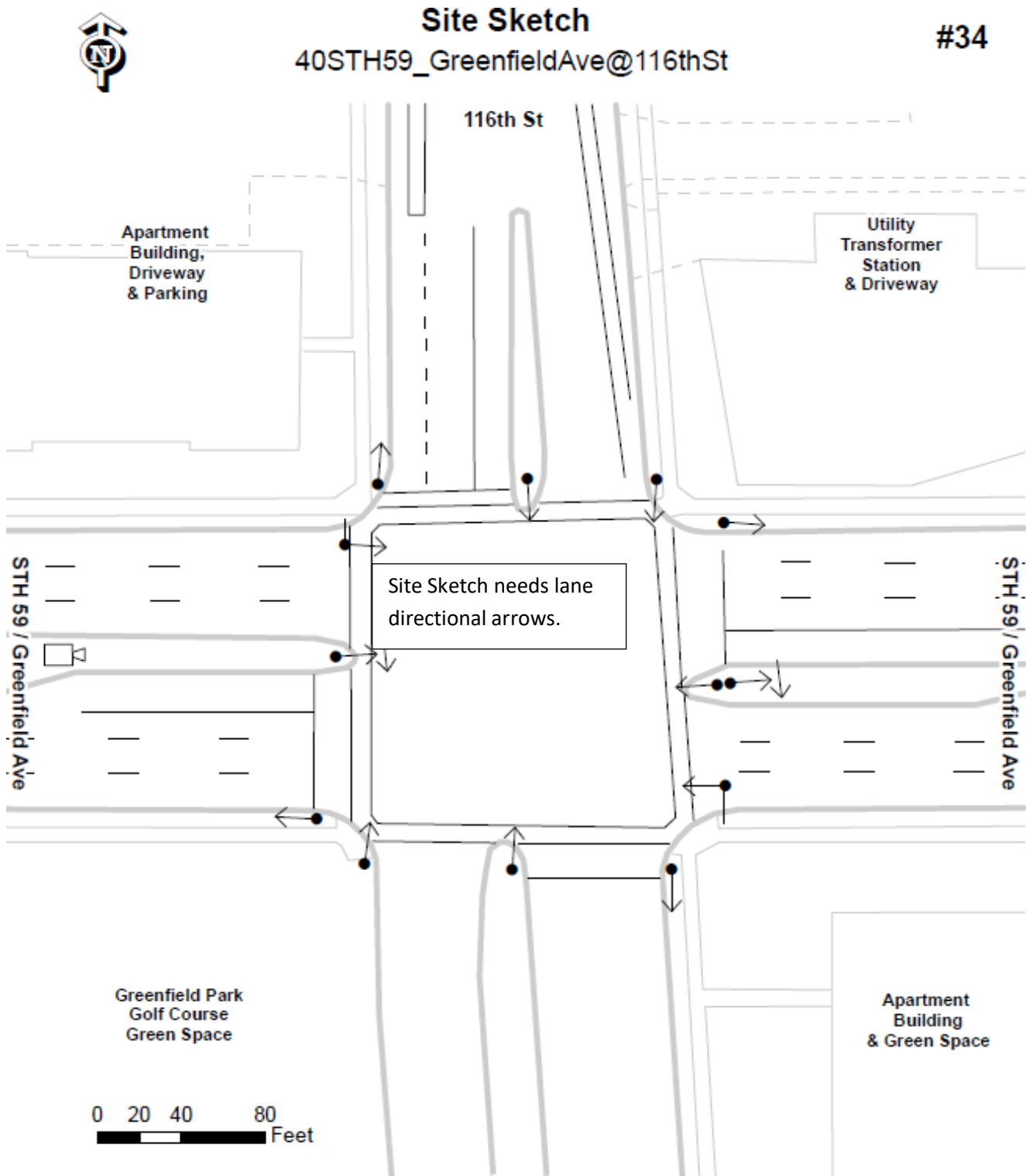
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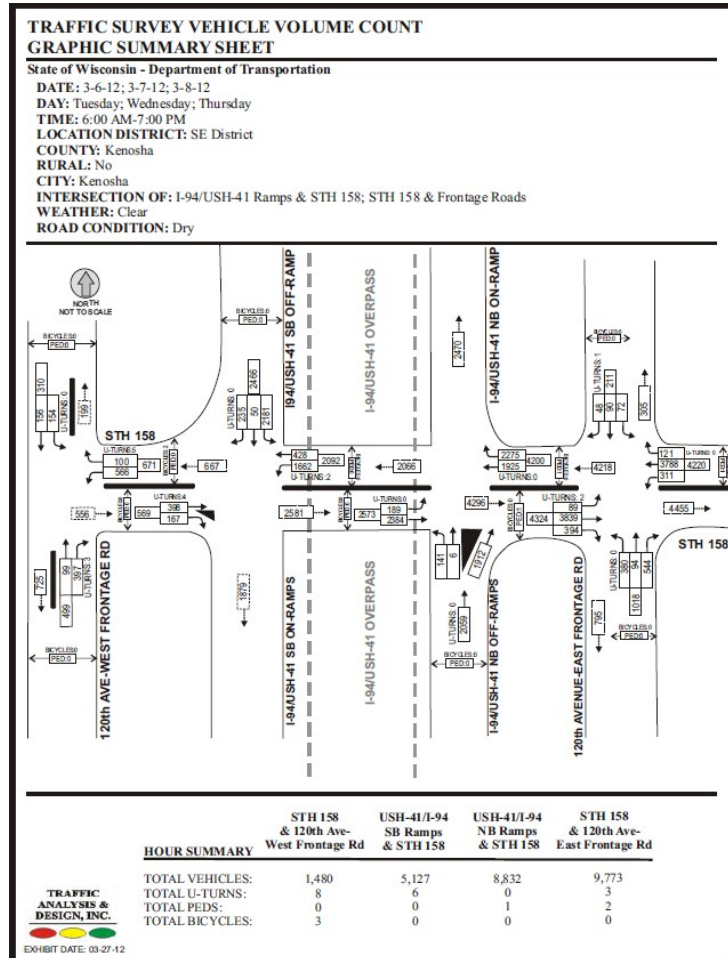
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- f. Utilize a Graphical Summary Sheet page layout for reporting multi-intersection counts. Example below.



- g. Additional written instructions (for some changes) may be given in the work order or during the contract period.
 - h. WisDOT will decide final resolution of discrepancies. Any issue/resolution items shall be documented as a separate sheet to the report. Please contact WisDOT with any questions at any point of the count process.
7. Vehicle Classification Information is based on three categories of vehicles for manual turn counts as provided by the July 22, 2011 “A Visual Guide for Vehicle Classification in Manual Intersection Turing Movement Counts”, produced by WisDOT Bureau of Traffic Operations (BTO). Classify vehicles from a count based on the photos and descriptions follow.

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- a. **Auto.** This category includes most of the vehicles that people drive for personal transportation, such as motorcycles, cars, and SUVs. It also includes vans and pick-ups that have single rear tires. Small delivery vans such as the ones used by the Post Office can also go in this category.



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- b. **Straight Truck or Bus.** This category includes delivery vans with dual rear tires, box trucks, dump trucks (loaded or empty), concrete mixers, large recreational vehicles (RVs), school buses, city buses, and motor coaches (Greyhound type buses). Autos with trailers should also go in this category. This should also include semi-trucks without a trailer.



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- c. **Semi or Articulated Bus.** This category is for the largest commercial vehicles: tractor-trailers (semis) and “bendy busses”. Trucks pulling oversize or overweight loads should also go in this category.

