

Interstate 80 Reconstruction
Narrative Summary
Data Collection through Existing Conditions Analysis
July 15, 2013

Tasks associated with scheduling the project traffic data collection were performed in March 2013. A typical week with no holidays or special events was identified early enough in the month of April so as to allow adequate time for recount during the academic semester (if needed as a result of equipment malfunction). PennDOT personnel and local authorities were notified of the scheduled week of data collection. Tri-State Traffic Data, Inc. was responsible for the field traffic data collection.

Tube, video, and radar technology alternatives were evaluated for collecting traffic data on Interstate 80. Considerations included costs, limitations of the methods, and physical constraints at the count sites. PennDOT's permanent count station was not available due to the loops being inactive at the time of the data collection. It was determined that Wavetronix radar would be utilized for obtaining volume counts on the interstate. Because this method is less accurate for classifying vehicles, historical vehicle classification data was provided by the PennDOT Bureau of Planning and Research. Tube counters were employed for all non-interstate roadway count locations.

Continuous automatic traffic counts were obtained on the following project area roadways for the one week period from Thursday, April 4, 2013 through Thursday, April 11, 2013:

1. Interstate 80 west of Interchange 303
2. Interstate 80 eastbound off ramp to SR 611
3. Interstate 80 westbound on ramp from SR 611
4. SR 611 east of the Interstate 80 ramps
5. Interstate 80 westbound off ramp to SR 209
6. Interstate 80 eastbound on ramp from SR 209
7. West Main Street (SR 2012/BR 209) east of the SR 209 overpass
8. Interstate 80 eastbound off ramp to West Main Street (SR 2012/BR 209)
9. Interstate 80 eastbound on ramp from West Main Street (SR 2012/BR 209)
10. Interstate 80 westbound off ramp to West Main Street (SR 2012/BR 209)
11. Interstate 80 westbound on ramp from West Main Street (SR 2012/BR 209)
12. West Main Street (SR 2012/BR 209) east of the Interstate 80 ramps
13. Interstate 80 eastbound on ramp from Dreher Avenue (SR 2004)
14. Interstate 80 westbound off ramp to Dreher Avenue (SR 2004)
15. Dreher Avenue (SR 2004) between the Interstate 80 ramps
16. Interstate 80 eastbound on ramp from Park Avenue (SR 611)
17. Interstate 80 eastbound off ramp to Park Avenue (SR 611)
18. Interstate 80 westbound on ramp from Broad Street (SR 191)
19. Interstate 80 westbound off ramp to Broad Street (SR 191)
20. Park Avenue (SR 611) north of the Interstate 80 ramps
21. Broad Street (SR 191) south of the Interstate 80 ramps

22. Colbert Street
23. Lenox Street
24. Interstate 80 east of Interchange 307

Manual turning movement counts were conducted using a combination of personnel and video cameras for the twelve hour period from 6:30 A.M. to 6:30 P.M. on Friday, April 5, 2013 at the following unsignalized intersections:

1. SR 611 and Interstate 80 eastbound off ramp
2. SR 611 and Interstate 80 westbound on ramp
3. SR 611 and Shoppes at Stroud side road
4. West Main Street (SR 2012/BR 209) and Interstate 80 eastbound ramps
5. West Main Street (SR 2012/BR 209) and Interstate 80 westbound ramps
6. Dreher Avenue (SR 2004) and Interstate 80 eastbound on ramp
7. Dreher Avenue (SR 2004) and Interstate 80 westbound off ramp
8. Park Avenue (SR 611) and Interstate 80 eastbound ramps/Barry Street
9. Broad Street (SR 191) and Interstate 80 westbound ramps

Traffic counts were collected at the signalized project area intersections in Stroud Township and Stroudsburg Borough in fall 2010 as part of PennDOT's NEPA 611 CCIP Phase II traffic signal upgrade project. Opening year 2012 peak hour traffic volumes were developed for that project by applying a growth rate to the year 2010 volumes at a time when actual traffic growth was nonexistent or decreasing. The year 2012 volumes from the CCIP Phase II project were compared to the year 2013 volumes at adjacent intersections (obtained for this Interstate 80 project) and it was found that the volumes from the CCIP Phase II project were generally of the same order of magnitude or higher. Thus, no adjustments were made to the year 2012 volumes to establish the existing year 2013 peak hour volumes at the signalized intersections.

Traffic volume maps were prepared depicting existing daily, A.M. peak hour, and P.M. peak hour volumes in the project area. Existing annual average daily traffic volumes for the roadways were calculated by taking the average weekday (Monday through Friday) volume and multiplying it by the applicable traffic pattern group factor for April day of month in Table 355 of *2011 Pennsylvania Traffic Data* (PennDOT Pub. 601, August, 2012).

Existing A.M. and P.M. peak hour Levels of Service for unsignalized intersections, freeway segments, ramp merges and diverges, and weaving were determined in accordance with procedures defined in the *Highway Capacity Manual* (Transportation Research Board, 2010) using the Highway Capacity Software HCS 2010 program. For signalized intersections, the Synchro models developed for PennDOT's NEPA 611 CCIP Phase II project were updated to Version 8 of the software. Timings were verified relative to the current traffic signal permit plans. The HCM 2010 signalized intersection capacity analysis output of Synchro was utilized to obtain Levels of Service, except for locations with overlap phasing, exclusive pedestrian phases, more than four approaches, or detection farther than 20 feet from the stop bar. As the HCM 2010 methodology does not support these conditions, the Levels of Service generated by Synchro were reported.