

CE 467 / 567 Highway Safety and Operations
Homework 6

Due by the end of the day, Wednesday, November 22, 2006

For this homework, you may work in groups of two. However, submit only one report.

Note that this problem will take a bit of time and effort, particularly for the survey in (a) and the detailed recommendations in part (d). These parts will receive much more credit in the grading of this homework.

Select a roadway in the Tucson metropolitan area *that does not have curbs*. Note that this may mean using a collector or local street, or a more rural road or highway, that meets this criteria. With this roadway, select a segment, 0.25-0.5 mile long. Then, perform the following activities.

- (a) Collect the following data on site. You may find it useful to put together a schematic of the road segment.
 - (1) The speed limit.
 - (2) Any cross-slopes over 1V:20H (5%). Use your best judgment here.
 - (3) The location of any signs.
 - (4) The location of any other public infrastructure (utility poles, signal poles, mailboxes, other utility markers, culverts and related drainage facilities, etc.) along the roadway. We are looking for things that could be a hazard for vehicles departing the roadway.
 - (5) Any other obstacles that might be considered close enough to the roadway to be a substantial hazard (e.g., walls, fences, trees, boulders, etc.).
 - (6) Any safety devices (break-away features, barriers, cushions, markers, etc.) that may be used to improve the “forgiving” aspects of the roadside environment.
- (b) Estimate the AADT on the roadway. The best resource is probably the PAG traffic count database, on-line at: <http://www.pagnet.org/tpd/datatrends/TrafficCounts2004-2006.pdf>
- (c) Based on your answers from (a) and (b), determine the width of the clear zone for your road segment.
- (d) From your inventory in part (a):
 - (1) Identify any critical hazards still within the roadway clear zone *that have not yet been mitigated*.
 - (2) For each hazard, recommend 2-3 ways that the hazard could be mitigated. Briefly explain your recommendations.