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## Collisions Involving Pedestrians and Bicycles

*By The Warren Team*

Just as when two or more vehicles collide, decision makers need to know how fast were the individuals traveling? What were the visibility issues? Did someone fail to yield? Was the collision avoidable? Ultimately, who was responsible for injuries and property damage sustained in the collision? The same questions apply when vehicles or bicycles and pedestrians collide.

These questions can be answered in much the same way as they are in car crashes. The engineer who is reconstructing the collision will look for data that will help establish where the collision occurred and where the pieces involved in the collision came to rest. For example, when a vehicle collides with a bicycle, the bicycle is usually knocked down. When that happens, the bicycle axle shafts or pedals will often leave gouge marks on the pavement. Those gouge marks then show where the collision occurred.

When a bicyclist or a pedestrian is struck by car, the person is usually thrown for some distance. A careful inspection of the scene may reveal marks such as blood or torn clothing that indicate where the person first landed. Then, bodies usually tumble, roll, or slide some additional distance. With knowledge of the distance between where the collision occurred and where the body landed and or came to rest, an engineer can calculate the velocity the body had to have in order to travel those distances. Then the engineer can calculate how fast the car or truck that hit the person was traveling at the point of collision.

Just as in the reconstruction of any collision, knowing that geometry of the roadway and the topography of the vicinity where the collision occurred are useful for determining how the individual elements involved arrived at the collision point.



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