Safe System for Universities

Module 3 Project

Identifying and managing risk

Revision	Date	By	Revisions
1.0	01 Jul 2020	C Stokes	First release

Introduction:

Safe System Assessments (SSAs) provide a novel way to identify risk to road users, and appreciate the effectiveness of treatments that can be used to reduce or eliminate this risk. In this project, you will learn to apply the SSA to a part of the road network that you encounter every day.

Instructions:

Students should undertake this project while reviewing Module 3 of Safe System for Universities. This project can be undertaken individually or in small groups.

We all use the road transportation system, even if we do not drive. You may walk, cycle, or use public transport. For this project, select a location that you are familiar with. This could be an intersection that you often drive through or walk across, or a short section of road along which you travel. When selecting a location, choose a discrete location, such as an individual intersection or a uniform section of road between two intersections.

Steps:

1. For your selected location, populate the Safe System Assessment (SSA) matrix by scoring each of the seven crash types/road user types, for each of the risk factors (exposure, likelihood, severity).

   Tips: Refer to the Safe System Assessment framework report[1] when undertaking the SSA scoring. Remember, the SSA is a subjective tool and so there is no "wrong" answer, but it is important to be consistent and note down why you have given each particular score. For example, when scoring the risk of intersection crashes, a higher speed limit through an intersection may increase the severity score, while the use of fully controlled right turns may lower the likelihood score. Google Maps[2] can be a useful source for viewing the design and operation of your chosen location. You may need to visit the road itself and, from a safe location, count the number of vehicles, motorcycles, pedestrians and cyclists to gain a more accurate estimate of exposure – be sure to ask your teacher and follow institutional safety procedures before conducting an on-site visit. Quantitative sources, such as the speed-injury risk curves provided in Snippet 6 of Module 2, may provide help to identify scores for severity.

[1] Turner, B., Jurewicz, C., Pratt, K., Corben, B. & Woolley, J. (2016), *Safe System assessment framework*, Report no. AP-R509-16, Austroads, Sydney, Australia. https://austroads.com.au/publications/road-safety/ap-r509-16

[2] www.google.com/maps

2. Use the SSA outcomes to identify which crash types/road user types are at greatest risk of a fatal or serious injury crash. Rank the top three crash types/road user types that should be focussed on when developing a treatment strategy for treating the risk of fatal and serious injuries.

   Tips: While the overall score for each crash type/road user type will give insight into which are at greatest risk of a fatal or serous injury crash, try to look in more detail to identify why this risk is present. For example, crashes at a signalised intersection may have a low likelihood of occurring, but substantial exposure and a high severity outcome from crashes result in a substantial risk of a fatal or serious injury crash. As another example, there may be few pedestrians trying to cross a road (low exposure), but the speeds of vehicles (high severity) and a lack of formal crossing facilities (high likelihood) could increase the risk of a fatal or serious injury crash.

3. Develop a treatment strategy for treating the top three crash types/road user types at risk of fatal and serious injury outcomes.

   Tips: Use the treatments identified in snippets 2-4 of Module 3 to develop your treatment strategy. You may wish to use several different elements to create one strategy that treats all three of your greatest risks. For example, a roundabout with formal pedestrian crossings and a separated bikeway. It may be helpful to draw out your treatment so you can assess whether a certain design will work. For example, how will vehicles turn into and out of side roads, or how will pedestrians cross the road, if a centreline road safety barrier is installed?

   You can improve the survivability of crashes by focussing on primary treatments that reduce the severity of crashes. Remember to use your SSA scores as a guide for which treatments to select. You can reduce the risk of fatal and serious injury crashes by select treatments that reduce the scores for all three factors, or by selecting treatments that substantially reduce or even eliminate the risk from one of the three factors. For example, providing a physically separated bikeway along a high speed, high volume roadway will almost certainly eliminate the risk of fatal and serious injuries to cyclists, as the likelihood of a crash occurring between a car and cyclist is nearly zero.

4. Re-apply the SSA to your location while considering the treatment strategy that you have developed. Does the treatment strategy improve safety in the way that you expected it to? Are there remaining safety risks that your treatment strategy does not deal with?

   Tips: Re-apply the SSA for all crash types/road user types, and not just the ones for which your treatment strategy was designed to deal with. You may find that the treatment strategy has helped other crash types/road user types. This process is also useful for identifying safety risks that have not been treated, or may have even been made worse by the implementation of the treatment. For example, despite their safety advantages for vehicle occupants, roundabouts can be dangerous for cyclists as drivers may not see cyclists already in the roundabout, or may try to overtake cyclists on entry or even in the roundabout – an SSA can help to highlight the need to provide additional facilities for cyclists when roundabouts are installed on high volume and high cyclist priority routes.