

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

## Introduction:

Safe System assessments are becoming a common way to assess the degree of Safe System alignment that roads and road design projects possess. They are also a useful tool for identifying gaps in road safety and informing what solutions could be used to fill these gaps.

## Instructions:




### Part One

Students should review Module 3, Snippet 6, *Safe System design tools* of Safe System for Universities before undertaking this activity.

Form a group of 2-4 students. As a group, review the case study *Lance Creek Roundabout Safe System Assessment*. Three options are considered for this intersection and Safe System assessments were undertaken for each option (see table following page). As a group, discuss and answer the following questions while considering the Safe System assessment scores that are provided for each option:

### Questions

1. The Safe System assessment scores disaggregate the effect of each treatment to the most common crash types and road user modes. How well does each treatment affect the risk of harm associated with each crash type and road user mode?
2. To what degree/magnitude do you think each treatment deals with the need to eliminate fatal and serious injury crashes? Which treatment do you think best aligns with the objective of harm elimination?
3. How does each treatment reduce the risk of harm? Consider the way in which each treatment affects exposure, likelihood and severity.
4. Try to “reverse engineer” each Safe System assessment by identifying the key functions of each treatment that affect their respective Safe System assessment scores. What crash types/road user modes are not well catered for and how could this be improved?

Option	Notes	Safe System assessment scoring outcomes <sup>^</sup>							
		RoR*	HO*	Int*	Oth*	Ped*	BC*	MC*	
	Original intersection design with control signs and line marking to control minor road access across the intersection.								
		Exposure	3	3	3	3	1	1	3
		Likelihood	4	4	4	3	4	4	4
		Severity	3	3	4	2	4	4	4
		<b>Total score</b>	<b>36</b>	<b>36</b>	<b>48</b>	<b>18</b>	<b>16</b>	<b>16</b>	<b>48</b>
	Intersection upgraded with improved line marking, duplicated control signage and <a href="#">transverse rumble strips</a> along the minor road approaches to alert drivers of the intersection		RoR*	HO*	Int*	Oth*	Ped*	BC*	MC*
		Exposure	3	3	3	3	1	1	3
		Likelihood	4	4	3	3	4	4	4
		Severity	3	3	4	2	4	4	4
		<b>Total score</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>18</b>	<b>16</b>	<b>16</b>	<b>48</b>
	Intersection converted to a compact radius roundabout with vertical deflection (speed bumps) and traffic islands on all approaches to slow approaching vehicles and separate opposing traffic flows		RoR*	HO*	Int*	Oth*	Ped*	BC*	MC*
		Exposure	3	3	3	3	1	1	3
		Likelihood	3	2	3	3	4	4	3
		Severity	3	3	1	1	3	3	3
		<b>Total score</b>	<b>27</b>	<b>18</b>	<b>9</b>	<b>9</b>	<b>12</b>	<b>12</b>	<b>27</b>

<sup>^</sup>Note that Safe System assessment is for the intersection and approach roads in the immediate vicinity.

\*Crash types/modes considered are run off road (RoR), head-on (HO), intersection (Int), other crashes (Oth; predominantly rear end and side swipe), pedestrian (Ped), bicyclist (BC) and motorcyclist (MC).