**Webots Simulation Plan**

**Simulation Environment Setup**

* Model a highway construction zone with road features and barriers.
* Include models of an equipment and a worker.

**Sensors**

* Add GPS and IMU sensors on the equipment and worker.

**Hazard Zone Modeling**

* Integrate a bivariate Gaussian distribution based dynamic hazard zone around the equipment.

**Test Scenarios Development**

**Scenario 1: Variable Speeds**

* Test hazard zone changes with the equipment’s varying speeds.

**Scenario 2: Directional Change**

* Assess hazard zone updates during directional changes of the equipment.

**Scenario 3: Reversal Movement**

* Evaluate hazard zone response to the equipment reversing.

**Scenario 4: Worker Proximity Interaction**

* Simulate direct, lateral, rear, and crossing path approaches by the worker towards the equipment.
* Compare hazard zone effectiveness with traditional static circular zones.