

Caltrain 2025 Preliminary Hazard Analysis Worksheets

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The following are the detailed Preliminary Hazard Analysis (PHA) worksheets developed for the Caltrain 2025 Preliminary Hazard Analysis. The format for the worksheet is given followed by worksheets for the PHA scenarios:

- A. EMU collision with auto driving around crossing gate
- B. EMU collision with highway truck driving around crossing gate
- C. EMU collision with pedestrian at grade crossing
- D. EMU collision with auto at non-gated maintenance of way crossing
- E. EMU collision with auto fouling tracks at gated grade crossing
- F. EMU collision with highway truck fouling tracks at gated grade crossing
- G. EMU in shared corridor strikes fright cargo that has dislodged
- H. EMU collision with FRA-compliant locomotive
- I. EMU collision with flat immovable object
- J. EMU collision with object (derailed train)

For a summary of the PHA analysis process and a description of the results, see Caltrain's Waiver Request to FRA to Operate Mixed Traffic on the Caltrain Corridor, Chapter 4.

Format of PHA Worksheets

The PHA analysis is summarized into worksheets for each scenario. A sample worksheet can be found as Table 1.

The format of the PHA worksheets is as follows:

- (1) PHA No: Hazard reference number
- (2) Hazard Scenario – Description of the hazard circumstances
- (3) Level – A scenario subset indicating speed at which the collision occurs
- (4) No. – Hazard reference number subset number
- (5) Hazard Description - Description of each postulated hazard
- (6) Potential Cause – Description of those causal factors that create the hazardous condition
- (7) Effect on the EMU - Description of the probable effect on the train passengers and crew and equipment in terms of severity
- (8) Probability/Severity – The probability and severity of the hazardous condition for the development of the Initial HRI