

1 Problem

What	Problem(s)	Guardrails may be adding to severity of some auto accidents
When	Date	Ongoing
	Different, unusual, unique	Changes were made to the guardrails in 2005
Where	Facility, site	Across the USA
	Unit, area, equipment	ET-Plus guardrails
	Task being performed	Driving

Impact to the Goals

Safety	5 deaths and other injuries associated with 14 accidents Potential for many more injuries/deaths
Environmental	N/A
Customer Service	N/A
Regulatory	Lawsuit against guardrail manufacturer
Production/ Schedule	3 states have banned use of affected guardrails
Economic	Significant potential financial impact
Labor/ Time	Manpower required for investigation

DANGEROUS GUARDRAILS?

Lawsuit Questions the Safety of Guardrails

A whistleblower lawsuit claims that tens of thousands of guardrails installed across the US may be unsafe. The concern is that the specific design of the guardrail in question, the ET-Plus, can jam when hit and puncture cars, potentially causing injury, rather than curling away as intended.

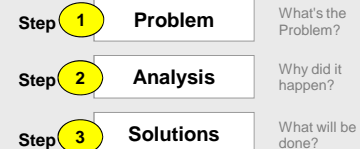
The primary concern about guardrail safety is centered on a design change made in 2005. The size of the energy-absorbing end terminal was changed from five inches to four. The modification was apparently made as a cost-saving measure. Initial reports are that the new design passed all required testing. However, the lawsuit alleges that federal authorities were never alerted to the design change so it never received the required review and approval.

Cause Map

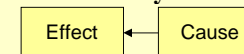
Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.

CAUSE MAPPING

Problem Solving • Incident Investigation • Root Cause Analysis

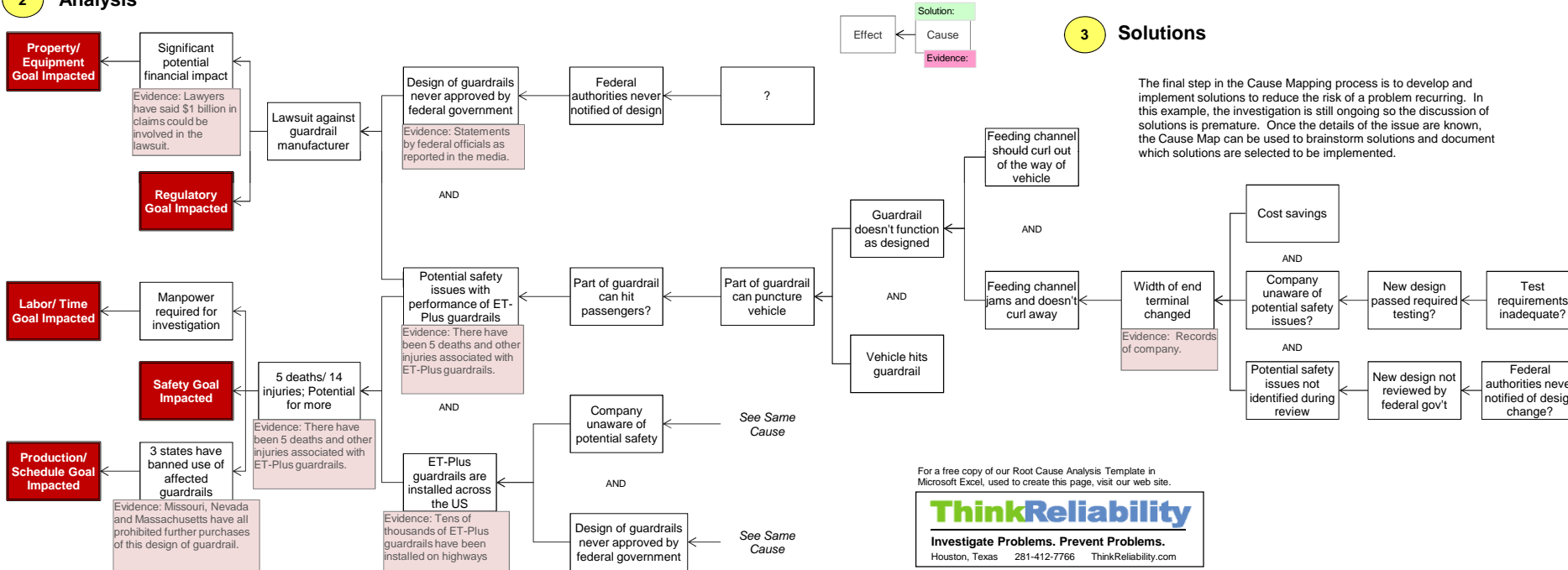


Why?



NOTE: Read the Cause Map from left to right with the phrase "Was Caused By" in place of each arrow.

2 Analysis



3 Solutions

The final step in the Cause Mapping process is to develop and implement solutions to reduce the risk of a problem recurring. In this example, the investigation is still ongoing so the discussion of solutions is premature. Once the details of the issue are known, the Cause Map can be used to brainstorm solutions and document which solutions are selected to be implemented.

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.

ThinkReliability

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