

1 Problem

What	Problem(s)	Passengers killed, train derailed
When	Date	December 1, 2013
	Time	7:20 AM
	Different, unusual, unique	??
Where	Facility, site	Right outside the Spuyten Duyvil station
	Unit, area, equipment	Metro-North train traveling from Poughkeepsie south to Grand Central Terminal
	Task being performed	Commuting

Metro Train Derails in the Bronx, Killing 4 and Injuring More Than 60

Four passengers were killed and dozens more sent to the hospital after a metro train derailed in the Bronx early Sunday, December 1, 2013. At the time of the accident, the train was carrying about 150 passengers and was traveling to Grand Central Terminal in New York City. The aftermath of the accident was horrific with all seven cars of the commuter train derailling. Metro-North has been operating for more than 30 years and this was the first accident that resulted in passenger deaths.

Impact to the Goals

Safety	4 killed, 60+ injured
Customer Service	Negative publicity for rail line Major impact on commuters
Production/ Schedule	Major delay in rail schedule
Property/ Equipment	Significant damage to metro train
Labor/ Time	Significant clean-up and investigation effort required

2 Analysis

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

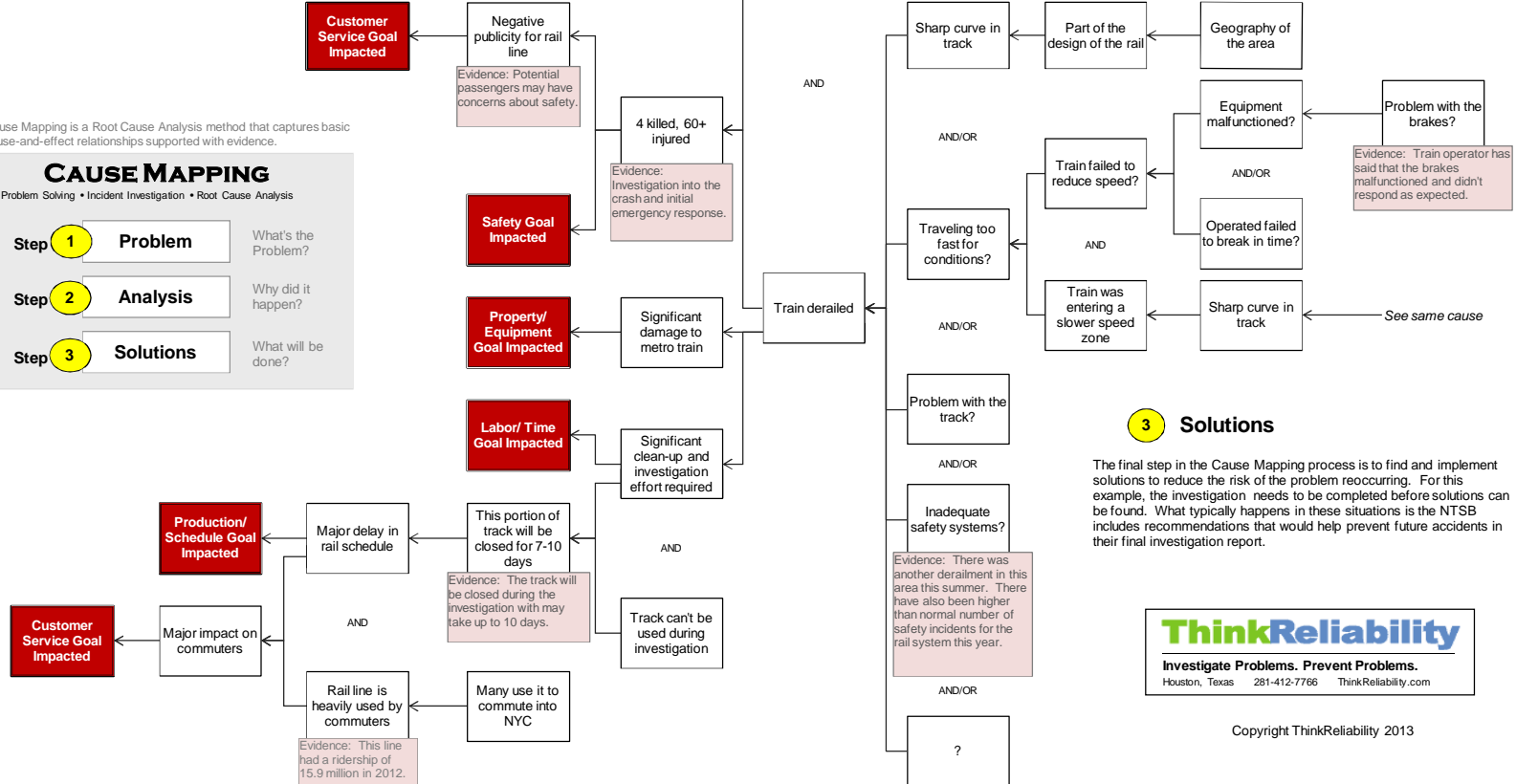
CAUSE MAPPING

Problem Solving • Incident Investigation • Root Cause Analysis

Step 1 Problem What's the Problem?

Step 2 Analysis Why did it happen?

Step 3 Solutions What will be done?



3 Solutions

The final step in the Cause Mapping process is to find and implement solutions to reduce the risk of the problem reoccurring. For this example, the investigation needs to be completed before solutions can be found. What typically happens in these situations is the NTSB includes recommendations that would help prevent future accidents in their final investigation report.

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