

1 Problem

What When	Problem(s)	Parking garage collapse
	Date	June 23, 2012
	Time	2:18 PM
Where	Different, unusual, unique	Roof leaked since opening
	Facility, site	Elliot Lake, Ontario
	Unit, area, equipment	Roof of shopping center
	Task being performed	Used as parking lot

Impact to the Goals

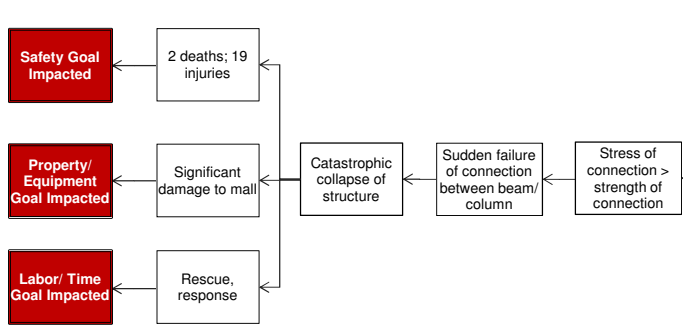
Safety	2 deaths; 19 injured
Regulatory	Criminal charge against engineer
Property/ Equipment	Significant damage to mall
Labor/ Time	Rescue, response

2 Analysis

More Detailed Cause Map - Add detail as information becomes available.

The problems that led to the collapse of a shopping mall's parking structure were present over its thirty-plus year history says the Report of the Elliot Lake Commission of Inquiry. Multiple opportunities to fix the problem were missed, culminating in the deaths of two on June 23, 2012.

Corrosion of a connection supporting the parking garage decreased its strength to 13% of its original capacity, meaning that on that fateful day, one car driving over it resulted in its fatal collapse. But the more important story is that of how the corrosion was allowed to increase unchecked, due to leakage that had been noted since the opening of the mall.



According to the report, the problem was never fully addressed with maintenance and repairs but rather pushed off with cheap, ineffective repairs or by selling the structure. For the most part, the local government did not investigate complaints or enforce building standards, apparently unwilling to interfere with the operation of a large source of local revenue and employment.

When the local government finally did get involved, the building owner appeared to provide deliberately false information that suggested that repairs were underway, leading to a rescinding of the order later that year. After an anonymous complaint in late 2011, an engineer performed a visual-only inspection and changed the contents of the report at the request of the owner, leading to the criminal charges against him for negligence.

In the report, the Commission discusses multiple suggestions for improvement - specifically clarifying, enforcing, and providing public information regarding building standards. Hopefully, the lessons learned from this tragic accident will allow for implementation of these solutions to ensure that thirty years of negligence isn't allowed to cause a fatal

MALL COLLAPSE

Cause Map

Corrosion after years of leakage results in failure

"Although it was rust that defeated the structure of the Algo Mall, the real story behind the collapse is one of human, not material failure . . . Some of these failings were minor; some were not . . . Occasional voices of alarm blew by deaf and callous ears . . . Warning signs went unseen by eyes likely averted for fear of jeopardizing the continuing existence of the Mall."

- The Elliot Lake Commission of Inquiry

"This Commission's role is not to castigate or chastise; its only purpose in finding fault, if it must, is to seek to prevent recurrence. Criticism of prevailing practices serves only to suggest their improvement or, if necessary, elimination."

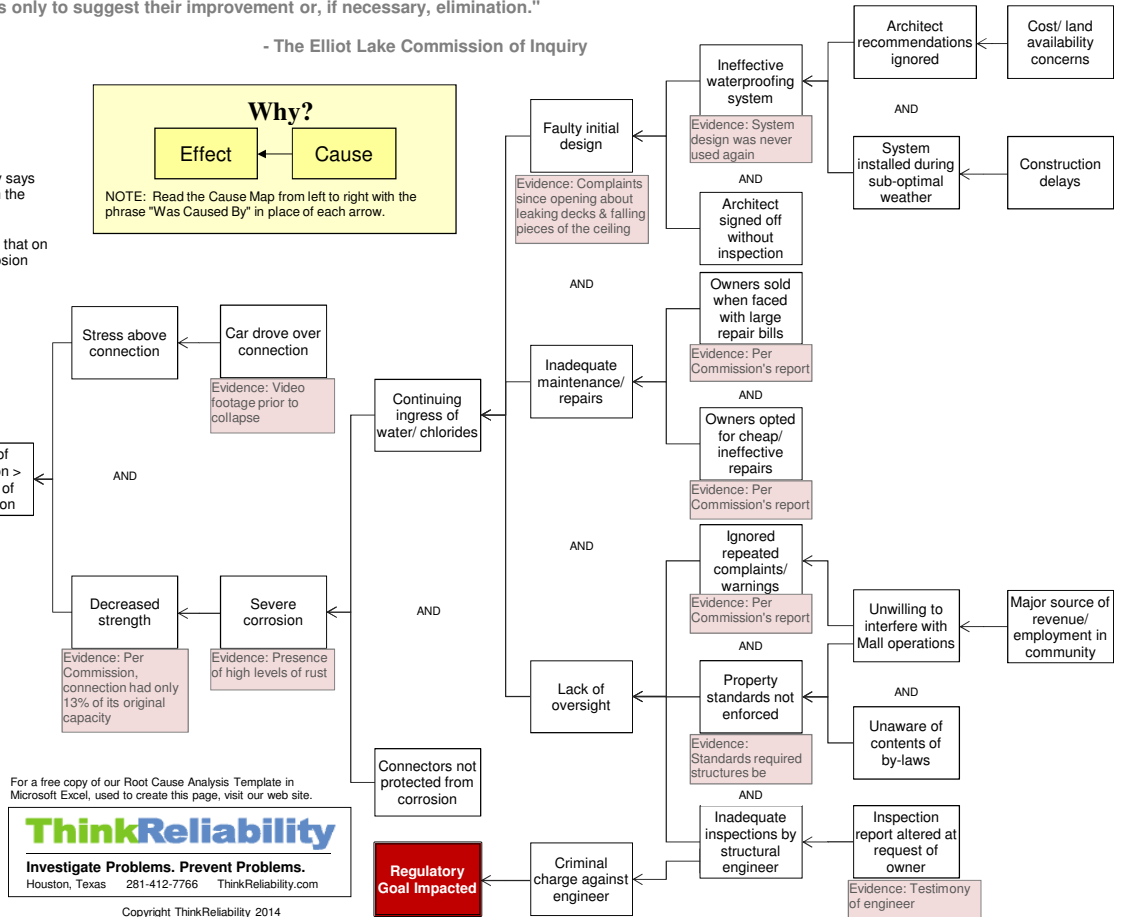
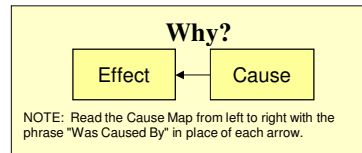
- The Elliot Lake Commission of Inquiry

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?



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



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