

# 1 Problem

|              |                            |   |
|--------------|----------------------------|---|
| <b>What</b>  | Problem(s)                 | Landslide                                     |
| <b>When</b>  | Date                       | December 20, 2015                             |
|              | Different, unusual, unique | Many unregistered migrant workers in the area |
| <b>Where</b> | Facility, site             | Shenzhen, China                               |
|              | Unit, area, equipment      | Construction waste dump (former quarry)       |
|              | Task being performed       | Piling dirt, construction debris              |

## Impact to the Goals

|                             |                                       |
|-----------------------------|---------------------------------------|
| <b>Safety</b>               | 58 confirmed dead; ~25 still missing  |
| <b>Environmental</b>        | Spread of waste over significant area |
| <b>Customer Service</b>     |                                       |
| <b>Regulatory</b>           | 11 detained; criminal investigation   |
| <b>Production/ Schedule</b> | ?                                     |
| <b>Property/ Equipment</b>  | 33 buildings destroyed                |
| <b>Labor/ Time</b>          | >10,600 involved in rescue effort     |

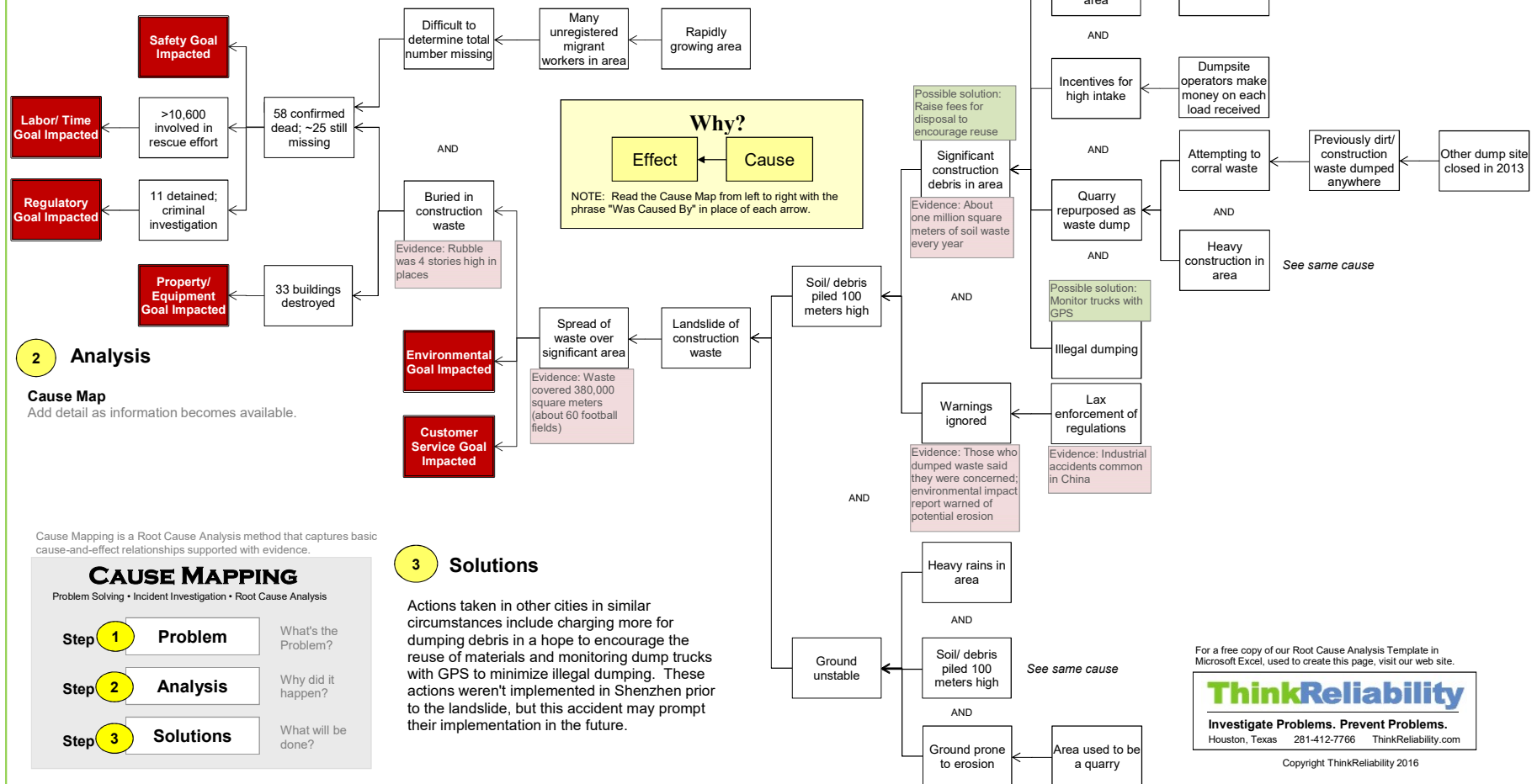
# DOZENS KILLED IN LANDSLIDE Cause Map

## 60 football fields worth of construction waste buries town

Construction waste at a dump site in Shenzhen, China reached 100 meters high before heavy rains fell, and it slid onto the surrounding city, killing at least 58 and destroying 33 buildings. The height of the debris covering the town reached 4 stories high. More than 10,600 rescuers continue to work to free those trapped and clean up the town.

"This disastrous slide involved the slipping of an accumulation of construction waste, not the sliding of a hill. This was not a natural geological disaster, but an industrial safety accident."

- Investigators, as reported by Xinhua, China's official news agency



# 2 Analysis

**Cause Map**  
Add detail as information becomes available.

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 | <b>Problem</b>   | What's the Problem? |
| Step 2 | <b>Analysis</b>  | Why did it happen?  |
| Step 3 | <b>Solutions</b> | What will be done?  |

# 3 Solutions

Actions taken in other cities in similar circumstances include charging more for dumping debris in a hope to encourage the reuse of materials and monitoring dump trucks with GPS to minimize illegal dumping. These actions weren't implemented in Shenzhen prior to the landslide, but this accident may prompt their implementation in the future.

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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