CRANE COLLAPSE KILLS ONE  Cause Map

Workers were in process of securing crane on windy day
A crane that collapsed in New York City February 5, 2016 killed one, injured three, and damaged two city blocks. While an investigation is underway and the causes of the crane collapse have not yet been determined, the city has already implemented new rules to make crane operations safer.

"No building is worth a person's life. We have a responsibility to keep the men and women who are building New York City safe. We are ramping up inspections and oversight to make sure that our workers have added protections. We do not accept any loss of life in this business as inevitable or acceptable."
- New York City Mayor Bill de Blasio

**Cause Mapping**
Problem Solving • Incident Investigation • Root Cause Analysis

**Step 1. Problem**
What's the Problem?
Why did it happen?
What will be done?

**Step 2. Analysis**

**Step 3. Solutions**

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

- **Why?**
  - **Effect**
  - **Cause**

- **Temporary Solution:**
  - **Area secured by construction workers**
  - **Light tower required to be secured**
  - **Light tower not required to be secured**

- **Frequency:**
  - 13 fatal crane accidents investigated by OSHA in the past 5 years

- **Impact to the Go**
  - **Safety**
  - 1 death, 3 injuries
  - **Environmental**
  - Water leaks
  - **Customer Service**
  - Closures in area
  - **Regulatory**
  - **Production/ Schedule**
  - 418 cranes secured in area
  - **Property/ Equipment**
  - Damage to crane, 2 city blocks
  - **Labor/ Time**
  - Response, removal of damaged crane

- **Problem(s):**
  - February 5, 2016
  - ~8:30 AM
  - Accelerating winds
  - New York City, NY
  - Crawler crane
  - Securing crane due to wind speed

- **Impact to the Goals:**
  - **Safety Goal Impacted**
  - 1 death, 3 injuries
  - **Environmental Goal Impacted**
  - Water leaks
  - **Customer Service Goal Impacted**
  - Closures in area
  - **Regulatory Goal Impacted**
  - **Production/ Schedule Goal Impacted**
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  - Response, removal of damaged crane

- **Effect:**
  - People in area of crane collapse
  - Inadequate securing of area
  - Workers also securing crane

- **Cause:**
  - Human error?
  - Evidence: Still under investigation
  - AND/OR
  - Structural/ equipment problems?
  - Evidence: Still under investigation

- **Solution:**
  - **Temporary Solution:** Uniformed personnel will help enforce closings related to crane use.
  - Area secured by construction workers

- **Why?**
- **Effect**
- **Cause**

- **Temporary Solution:**
  - **In process of securing crane**
  - Begin securing at beginning of workday
  - Crane not secured
  - **AND**
  - **Damaged crane**
  - **Inadequate securing of area**
  - **Workers also securing crane**

- **Temporary Solution:**
  - **Crane not required to be secured**
  - **City rule limits crane operation for wind >30 mph**
  - **Working under wind limit of 20 mph**
  - **Evidence: Individual manufacturers sometimes set stricter standards**
  - **Crane not required to be secured**
  - **Wind speed >30 mph or gusts >40 mph**

- **Weather:**
  - Heavy wind gusts in area
  - **Wind speed >25 mph**

- **Step 3. Solutions**
- **Solution:**
  - **Temporary Solution:**
    - **418 cranes secured in area**
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- **Step 4. Notes**
- **Step 5. Summary**

- **Step 6. Risk Assessment**

- **Step 7. Implementation**

- **Step 8. Evaluation**

- **Step 9. Closeout**

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