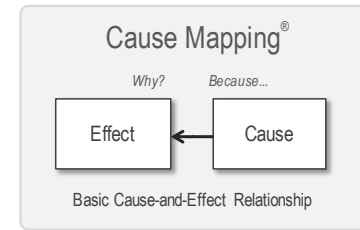# Baltimore Ransomware Attack

On May 7, 2019, Baltimore was hit with a ransomware attack. The hackers took control of the city's computer systems and demanded about 13 bitcoins. The value of bitcoins varies, but the demanded ransom is somewhere in the neighborhood of $100,000. Baltimore officials refused to pay the ransom and the city battled the impacts for weeks. Thankfully, the attack did not affect emergency services, but residents were impacted in multiple ways with nearly every city service touched by the cyberattack.
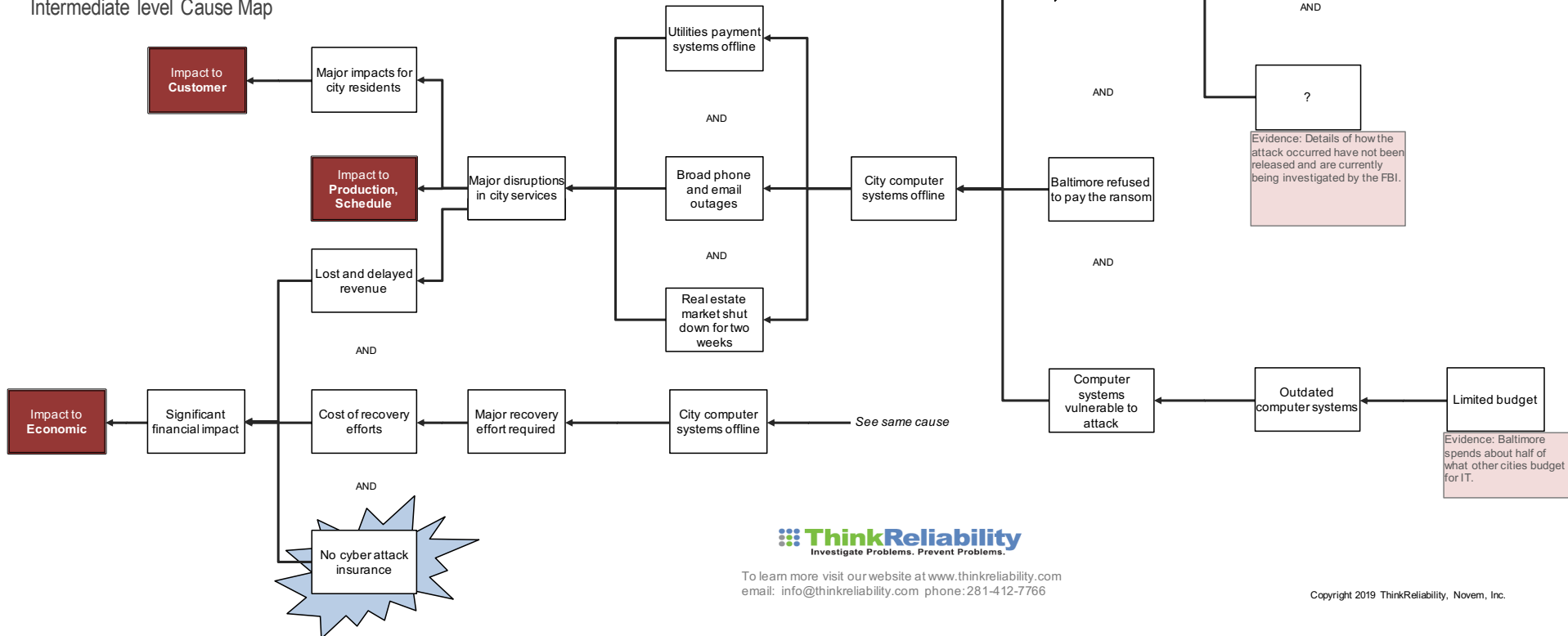
Ignored warning signs

One of the other interesting elements of this incident is that there were many warnings signs leading up to this massive cyberattack. More than 20 municipalities were targeted by cyberattacks by May 2019. In fact, this was not the first time Baltimore has been targeted by a ransomware attack. Baltimore's 911 system was temporarily shut down after it suffered a ransomware attack in 2018 while some firewall settings were disabled for maintenance.

There were other warnings of potential danger as well. Baltimore's information security manager warned of the need for an insurance policy during budget hearings in 2018, but it was not part of the funding approved in the final budget.

Cause Mapping®

Why? → *Because…*

Effect ← Cause

Basic Cause-and-Effect Relationship

Intermediate level Cause Map

Targeted by hackers

Evidence: Cities tend to be particularly vulnerable to cyber attacks because their computer systems are generally usually older and more complicated than those used by private-sector organizations.

Baltimore hit by RobbinHood ransomware

AND

?

Evidence: Details of how the attack occurred have not been released and are currently being investigated by the FBI.

Impact to Customer ← **Major impacts for city residents** ← **Utilities payment systems offline**

AND

Broad phone and email outages ← **City computer systems offline** ← **Baltimore refused to pay the ransom**

Impact to Production, Schedule ← **Major disruptions in city services**

AND

Real estate market shut down for two weeks

Lost and delayed revenue

AND

Impact to Economic ← **Significant financial impact** ← **Cost of recovery efforts** ← **Major recovery effort required** ← **City computer systems offline** ← *See same cause*

Computer systems vulnerable to attack ← **Outdated computer systems** ← **Limited budget**

Evidence: Baltimore spends about half of what other cities budget for IT.

AND

No cyber attack insurance