



**INTER-AGENCY
COLLABORATION TO ENHANCE
PEDESTRIAN SAFETY**



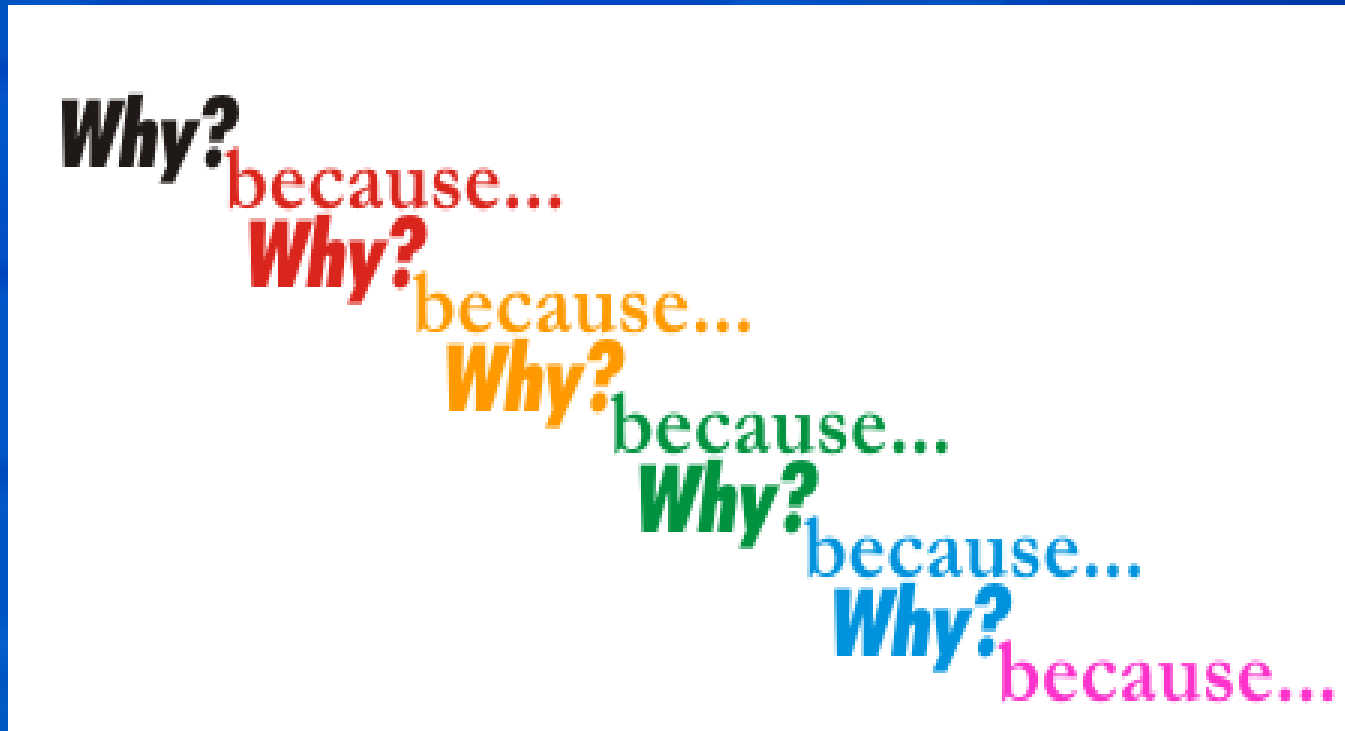


We have all heard time and time again about how treating the symptom of a problem doesn't do anything to cure the cause of the problem.

For instance, a fever might be the symptom of a disease, but artificially lowering the fever isn't going to do anything at all to change the illness.



Root Cause Analysis



Tracing a Problem to its Origins

- **Root cause analysis (RCA) is the process of discovering the root causes of problems in order to identify appropriate solutions.**
- **RCA assumes that it is much more effective to systematically prevent and solve for underlying issues rather than just treating specific symptoms and “putting out fires.”**

- Looking beyond superficial cause and effect, RCA can show where processes or systems failed or caused an issue in the first place.
- RCA is often used as a reactive method of identifying an events cause, revealing problems and solving them. Analysis is then done after an event has occurred. RCA is particularly useful as a preemptive method because it can be used to forecast or predict probable events, even before they occur.



“If you don’t ask the right questions, you don’t get the right answers. A question asked in the right way often points to its own answer. Asking questions is the ABC of diagnosis. Only the inquiring mind solves problems.”

– Edward Hodnett

“A good problem statement often includes: (a) what is known, (b) what is unknown, and (c) what is sought.”

– Edward Hodnett

- **A great technique for getting to the root cause of a problem is to ask the question “Why” five times.**
- **By repeatedly asking the question “Why”, you can peel away the layers of symptoms which can lead to the root cause of a problem.**
- **Although this technique is called “5 Why’s,” you may find that you will need to ask the question fewer or more times than five before you find the issue related to a problem.**

Note:

The 5 Why's use "counter-measures," rather than solutions. A counter-measure is an action or set of actions that seeks to prevent the problem arising again, while a solution may just seek to deal with the symptom. As such, counter-measures will more likely prevent the problem from recurring.

How to Run a 5 Why's Analysis

There are five key steps in the process.

Step 1: Identify the problem

Step 2: Get the right people in the room

Step 3: Ask “Why Did This Happen”

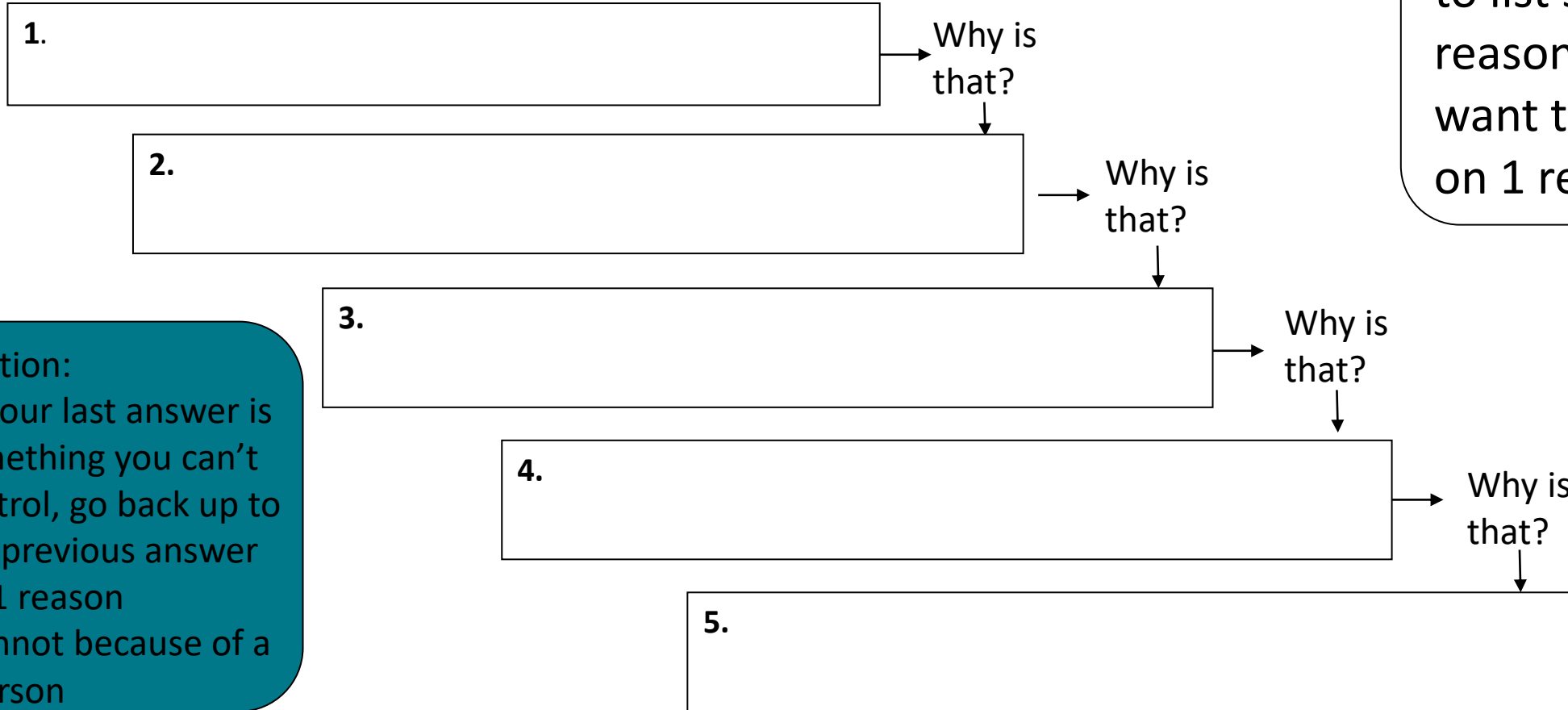
Step 4: Check – Is This a Root Cause?

Step 5: Fix the underlying cause, and correct the symptom

5 Why's Worksheet

Define the Problem:

Why is it happening?



You don't want to list 5 different reasons; you want to go deep on 1 reason.

Caution:

- If your last answer is something you can't control, go back up to the previous answer on 1 reason
- Cannot be because of a person

Action:

How do I know if I've gotten to the root cause?

Follow these steps to decide if you've identified the source of the problem:

1. **Conduct a deliberate, methodical root-cause analysis. As you move through the analysis, be sure to ask enough "why" questions. For example:**
 - Why does the problem exist?
 - What might be causing the problem?
2. **When you have answers to these questions, keep asking them about every possible cause, until you are certain that asking "why" one more time won't help.**
3. **Once you've identified one or more likely root causes and begin to evaluate them, ask for feedback to ensure that you're on the right track.**
4. **When you believe you've reached the root cause and not another contributing factor, check your work by asking:**
 - a) **Would the event have occurred if this cause was not present?**
 - b) **Will the problem happen again if this cause is corrected or eliminated?**

5 Why's Worksheet (Example #1)

Define the Problem:

Problem Statement: My bus will not start

Why is it happening?

1. The battery is dead.

Why is that?

2. The alternator is not functioning.

Why is that?

3. The alternator belt has broken.

Why is that?

4. The alternator belt was well beyond its useful service life and has never been replaced.

Why is that?

5. The bus has not been maintained according to the recommended preventative maintenance schedule.

You don't want to list 5 different reasons; you want to go deep on 1 reason.

Caution:

-If your last answer is something you can't control, go back up to the previous answer on 1 reason
-Cannot because of a person

Action:

Research preventative maintenance schedule and institute policy to ensure preventative maintenance schedule is followed in a timely fashion.

The Incident:

- Video

Possible Causes

- **Driver Inattention**
- **Pedestrian walking across bus lanes**
- **Glare – was sun glare a factor**
- **Other?**

Root Cause Analysis

- We want to assess the root cause of the accident from the perspective of the transit system and/or the bus driver
- We worked backward – ask “and why was that?” until we felt the root cause was identified

We Began with - What Happened?

- **Our bus struck a pedestrian**
- **The bus driver didn't see the pedestrian**
- **The bus driver did not keep a proper outlook**
- **The bus driver did not expect to see a pedestrian in that area**
- **Pedestrian was crossing the bus-only lanes**
- **Pedestrian evidently thought it was ok to take a short cut across the bus lanes**
- **There were no signs clearly stating pedestrians not allowed to cross the bus lanes**

What was the Root Cause?

Inadequate or missing pedestrian signage at the transfer station

Simple Solution – install signage!

But who has authority to do it, and how can we gain their cooperation?

Collaboration

- The VTLP team worked with teams from the two involved agencies - both large, urban systems
- We set up a meeting onsite to discuss solutions
- We generated minutes to the meeting with action items assigned
- We tried to focus on simple, cost-effective solutions
- We prepared mock-ups illustrating our recommendations
- We followed up diligently with all parties

The Result:



New Stop Bars



Was the Project Finished?

- **Root Cause Analysis teaches us to look for other places with similar situations and to remedy them before an accident takes place**
- **We went to our member for help in identifying similar situations**
- **Next up – Huntington North Station**

Followed the same steps

- **Contact our upper management at the two agencies involved**
- **Scheduled a meeting onsite to discuss issues and possible solutions**
- **Distributed minutes of the meeting identifying action items and owners**
- **Prepared diagrams illustrating our recommendations**
- **Followed up diligently**

The Result:



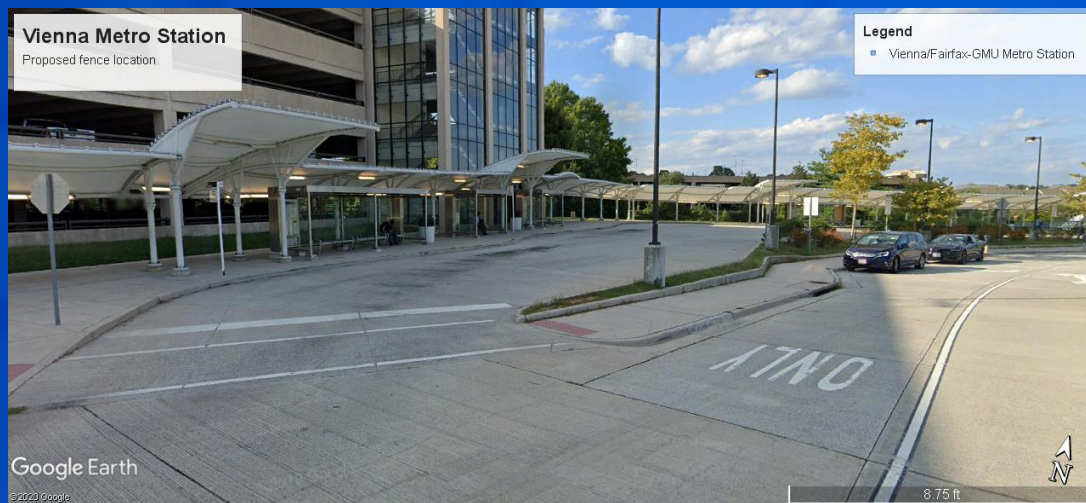
And More:



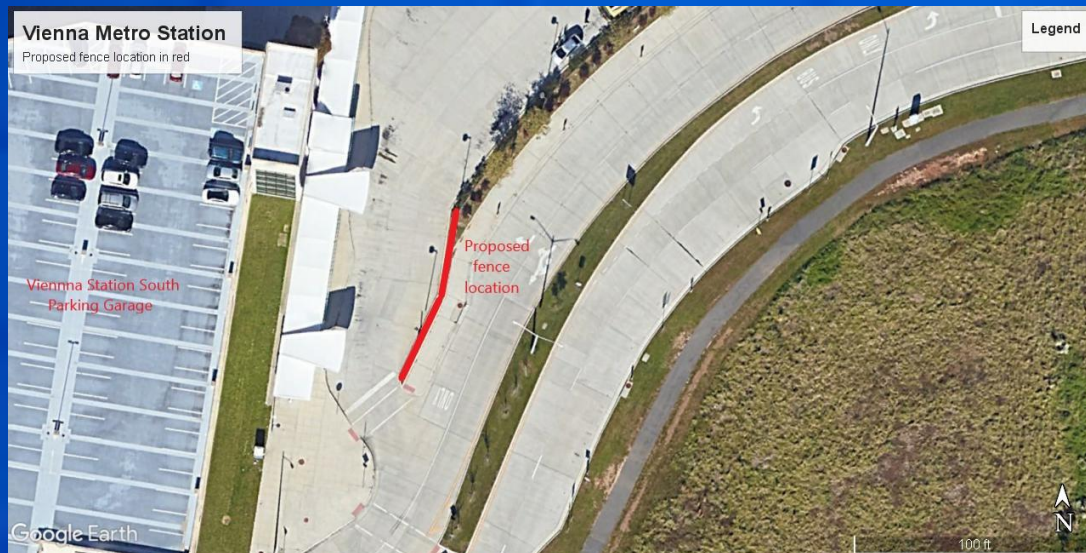
Was the Project Finished? No – we repeated the process again..

- Identified another Station with Similar Characteristics
- Went to upper management at involved agencies for buy-in
- Scheduled onsite meetings of the teams involved
- Distributed minutes with specific action items and owners
- Prepared mock-ups which illustrated our recommendations
- Followed up diligently

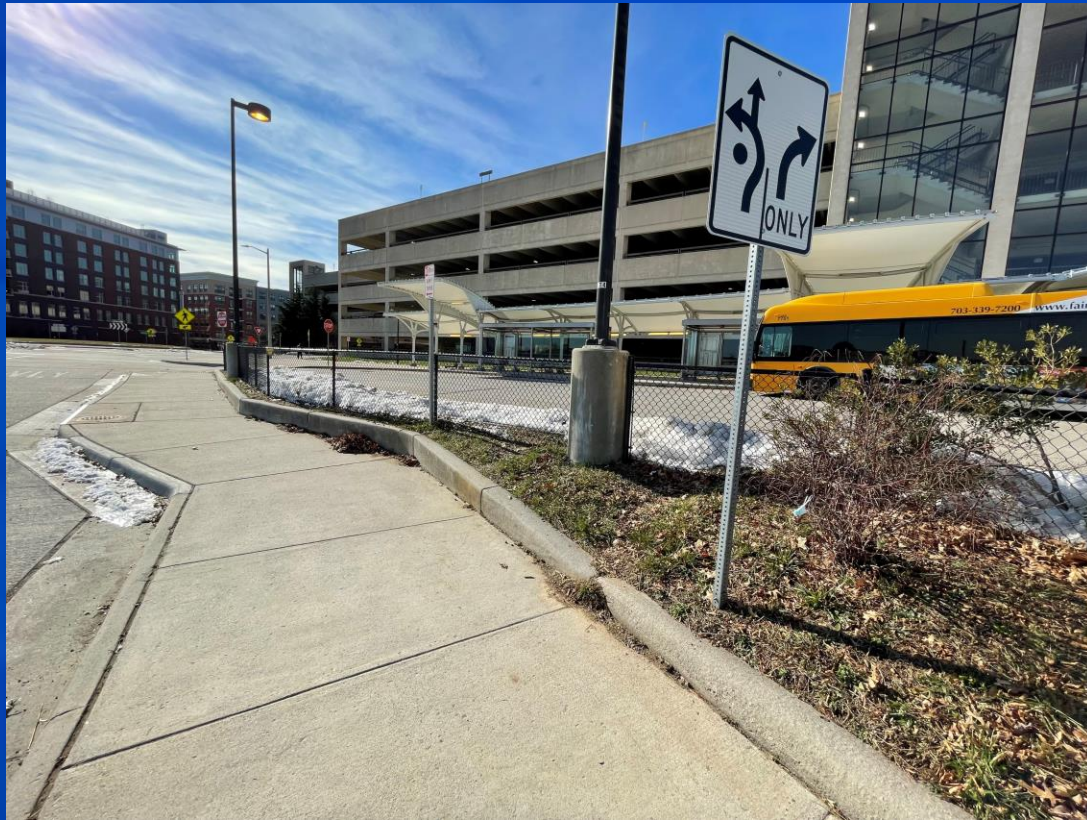
Before:



Mock-ups for Illustration:



Finished Project:



Overview

- **Applied Root Cause Analysis to an Incident**
- **Identified Similar Locations**
 - **With help of Member**
- **Obtained Collaboration between Involved Agencies**
 - **Obtained buy-in from senior staff of both agencies**
 - **Organized meetings, issued follow up minutes and action items**
 - **Focused on solutions that were relatively simple and cost effective**
 - **Maintained frequent, open communication**
- **Result - Improved Safety at the Locations Identified**

Questions?

Thank you!