Arizona SWANA Chapter
COLLECTIONS SAFETY

October 17, 2018
We Will Be Focusing On:

• Solid Waste Industry Safety in Collections
  – With some discussion of landfills, transfer stations, and more...
SAFETY, Safety, safety...

• Think Safe
• Work Safe
• Be Safe

• Safety First
• Safety Last
• Safety Always

If Safety was a slogan, we’d be the safest industry in the world...

How’s it working for you?
In Our Industry
...not so good

- The solid waste industry is the 5th most dangerous injury in the U.S. ...in terms of fatalities (per capita worker)
- Landfill Fatalities ...1 per month
- Waste Industry ...40 per year

*It’s not working very well...*
When it Comes to Safety

• You don’t know what you don’t know

• And I contend that as an industry ... We don’t know our operations!
Have you ever?

- Who here has driven a heavy truck?
- How far in advance do you anticipate?
- Aren’t you constantly thinking: “what if this?” or “what if that?”
- Sure
Why do Truck Drivers Anticipate?

• They’ve seen what can happen
• They are avoiding problems by identifying them early
• And they plan out their response ahead of time

• *They know the risks!*
Would You be a Good Truck Driver?

• Do you know the risks?
• Have you seen what can happen?
• Do you avoid problems by identifying them early?
• Do you plan out your response ahead of time?
Let’s Talk About Risk

• First, everything has risk.
  – In Italy, a man and a boy were having a spitting contest. The man, trying to add momentum, ran up to the edge of the 2nd story balcony, spit, and fell to his death.

• Please ...no spitting!
Is it risky ...or just scary?

• So, is it risky ...or just scary?

• Do you even know?
Scary vs. Risky

• Which picture is scariest?

• Which has the greatest risk if injury or death?
They aren’t the Same

• Remember, scary and risky aren’t the same thing. They’re only perceived to be the same.
What are the Odds?

• Bowling a 300 game: 1 in 12,000
• Being an astronaut: 1 in 13,000,000
• Struck by lightning: 1 in 600,000
• Being killed by a Shark: 1 in 4,000,000
• Dying in an Auto accident: 1 in 80
• Dying from external cause: 1 in 22
An Honest Look at Risk

• There are things we do at work everyday that pose significant risk to our health ...even to our life.

• Let’s deal with those things.
Forget the Shark

• In our industry sharks pose virtually no risk.
Tradition is the Problem

• 8 out of 10 solid waste managers say that tradition is the biggest hindrance to operational improvement

• We keep doing the same old thing ...without thinking about the result
Insanity is…

• “Insanity is doing the same thing over and over again…and expecting different results.”

Albert Einstein
OH My!
Bad Judgment?
Non-compliant PPE
Normal Operations
Normal Operations
Normal Operations
Normal Operations
Tradition looks Normal

• We aren’t improving operational efficiency and safety as quickly as we might
  • ...because we don’t see the problem.
  • ...we don’t see the need for systems.

• We are so used to the same old way of doing things ...it all looks normal.
Safety is Simple

1. Identify Risks
2. Create Procedures to Mitigate
3. Follow Procedures

So why don’t we do it?
Safety is Simple

...People are Complicated

- Personal Issues
- Workplace Stress
- Lack of Order (i.e., Procedures)
It’s Not As Simple as…

• OSHA requires certain plans
• Industry Standard requires plans
• You need site-specific plans

• But it’s still not that simple, there is a lot we don’t understand ...yet
Fatal work injuries and hours worked, by gender of worker, 2013*

Females 7%
Males 93%

Fatal work injuries = 4,405

Females 43%
Males 57%

Hours worked = 268,127,180,000

A disproportionate share of fatal work injuries involved men relative to their hours worked in 2013.

*Data for 2013 are preliminary.
Fatal work injury rates, by age group, 2013*

Fatal work injury rate
(per 100,000 full-time equivalent workers)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Fatal work injury rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 to 19</td>
<td>2.4</td>
</tr>
<tr>
<td>20 to 24</td>
<td>2.1</td>
</tr>
<tr>
<td>25 to 34</td>
<td>2.4</td>
</tr>
<tr>
<td>35 to 44</td>
<td>2.7</td>
</tr>
<tr>
<td>45 to 54</td>
<td>3.3</td>
</tr>
<tr>
<td>55 to 64</td>
<td>3.9</td>
</tr>
<tr>
<td>65 and over</td>
<td>8.8</td>
</tr>
</tbody>
</table>

All worker fatal work injury rate = 3.2

Fatal work injury rates for workers 45 years of age and over were higher than the overall U.S. rate, and the rate for workers 65 years of age and over was more than 2 times the rate for all workers.

*Data for 2013 are preliminary.
Note: Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. For additional information on the fatal work injury rate methodology, please see [http://www.bls.gov/iif/oshnotice10.htm](http://www.bls.gov/iif/oshnotice10.htm).
Figure 4-4. Effect of work schedule on efficiency.
Biggest Risk:
Old Guys Working Overtime

• The most dangerous demographic based on this information is:
  – Old
  – Male
  – Working overtime

• There are many other factors, but it does make you think
Why Solid Waste Safety?

• Our industry has unique safety concerns
Poll Question #1

The most significant serious incident you are familiar with was caused by:

1. Violation of common OSHA requirement such as LO/TO, Confined Space, Bloodborne Pathogen, PPE, Hearing Conservation...
2. Someone run over ... or run into by truck/tractor
3. A total surprise incident that was never hinted at by a previous event or near miss
2013-2016 Solid Waste Industry Fatality Statistics

- 5th Most Dangerous Industry (Bureau of Labor Statistics)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupation</th>
<th>Fatal injuries per 100,000 workers</th>
<th>Total deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Logging workers</td>
<td>135.9</td>
<td>91</td>
</tr>
<tr>
<td>2</td>
<td>Fishers and related fishing workers</td>
<td>86</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>Aircraft pilots and flight engineers</td>
<td>55.5</td>
<td>75</td>
</tr>
<tr>
<td>4</td>
<td>Roofers</td>
<td>48.6</td>
<td>101</td>
</tr>
<tr>
<td>5</td>
<td>Trash and recycling collectors</td>
<td>34.1</td>
<td>31</td>
</tr>
</tbody>
</table>
2015-2016 Solid Waste Industry Fatality Statistics

• According to SWANA, 98 solid waste fatalities between July 2015 – June 2016

**SWANA: 98 deaths recorded in 2015-2016 industry fatality data**

After employee's death, Laurel Public Works urges drivers to 'Slow Down to Get Around'
2017 Solid Waste Industry Fatality Statistics

• SWANA reports 132 recorded fatalities in 2017.

Landfill agrees civil penalty after death of worker

Solid waste collection still among USA’s Top 5 deadliest jobs

U.S. waste industry deaths up 18% in 2017
2018 Solid Waste Industry Fatality Statistics

• As of August 17, SWANA reports 98 recorded fatalities so far in 2018.

New Year Begins with Several Industry-Related Deaths
SWANA Calls for Renewed Safety Focus & Efforts in 2018

Landfill Employee's Death In Shredder Appears Accidental

Sanitation worker dies after dump trucks collide near Dallas landfill
These Are Just Fatalities...

• Not including injuries and illnesses
  – Minor Injuries
  – Major Injuries
  – Reassignment
  – Time away from work
Is Safety An Issue?

YES
Where We Are

• Some real incidents:
  1. Truck driver talking on cell phone
  2. Backing into position without spotter
  3. Route truck backed over spotter
  4. Route driver crushed by doze
  5. Water truck tips over on wet road
  6. FEL crushed by semi-end dump
  7. Dozer pushed stuck truck with driver under
  8. Homeless in Dumpster
But You Know That Already...

- We know we need to improve
- We want to get out of the top 5 deadliest industry
- If there was an easy answer, we’d be doing it already
Where Do We Start?

• Let’s talk about what we are doing... and what we should be doing.
The Shocking Truth
National Surveys indicate that 90% of solid waste facilities DO NOT have safety planning documents and in-place up-to-date!
Do These Look Familiar?

Shelves full of:
- Binders
- Folders
- Plans
- Programs
Do You Use This Information?

- When was the last time one of these binders was pulled off the shelf?
- When was the last time one of them was revised?
- Does your crew know what’s in these binders?
- *Do you have all the plans/programs you need?*
What Do I Need?

• Plans
• Programs
• Documentation

• We will focus on solid waste industry Best Management Practices (BMPs)
Key Safety Planning Documents

• Injury & Illness Prevention Plan
• Health and Safety Plan
Injury & Illness Prevention Plan

- OSHA strongly recommends that all employers have an IIPP
- Approximately 34 of U.S. States require or incentivize an IIPP
- So, what is an IIPP?
Definition: IIPP

• An IIPP is the umbrella plan that sets forth the responsibilities of your facility’s safety program
The IIPP

• The IIPP may cover multiple facilities and/or operations
• It is the organizational plan for how to proactively prevent employee injury
Key Elements

1. Commitment to Safety
2. Safety Responsibilities
3. Compliance and Communication
4. Hazard Assessment and Control
5. Incident Investigation
6. Education and Training
7. Recordkeeping
How vs. What

• The IIPP is the strategic plan that identifies **How** Safety Works

• The Health and Safety Plan explains the details of **What** your safety rules and policies are
Health and Safety Plan

- Site-specific safety concerns
Health and Safety Plan

• Site-specific safety concerns
• OSHA required topics
  – Lockout Tagout
  – Blood Borne Pathogens
  – Etc.
Health and Safety Plan

- Site-specific safety concerns
- OSHA required topics
- Solid waste operation topics
  - Handling Waste Material
  - Heavy Equipment Operation
  - Etc.
Where Bad Things Happen

• Inattentive bulldozer operator runs over man who is scavenging
• Dozer hits driver who was cleaning out in the wrong place
• Truck driver runs over spotter who was not watching
• Driver gets hit by truck door in high winds
• Distracted haul truck runs over customer
• Customer climbs into stationary compactor to get dropped cell phone

None violated specific (common) OSHA regulations
The Bottom Line on Safety Planning

- Safety planning should explain how to do the things your crew does ...safely

- If your plan isn’t getting down to the nuts and bolts of your operation, you may be in compliance ...but it’s not doing its job
We Still Have Incidents

- Lock-out/Tag-out ... OSHA Rule
  - ...But not always followed
- No Scavenging Policies
  - ...But people still scavenge
- Substance Abuse Programs
  - ...But alcohol causes \( \frac{1}{2} \) of all traffic fatalities
  - 60% of tardiness and absenteeism is caused by alcohol abuse
2 Types of HASP Documents

- Safety Documents required by regulation (i.e., OSHA)
- Additional Safety Documents required by specific risks in our industry
To Comply with OSHA

• Sure, you have:
  • Confined Space;
  • Hazard Communication;
  • Hearing Conservation;
  • Lock-out/Tag-out;
  • Bloodborne Pathogens, ...etc.

But when’s the last time you heard of a MSW worker who died from hepatitis? ...or from hearing loss?

Most fatalities happen at the MMI
What is the MMI?

• The **Man-Machine** Interface. It’s where people and machines occupy the same area.
• Yes, it could be the **WMI**: the Woman-Machine Interface
• Or the **OGWOMI**: the Old Guy Working Overtime Machine Interface

...You Get the Idea
At Your MRF

If somebody gets hurt or killed at your MRF, it will happen here...
At Your Transfer Station

If somebody gets hurt or killed at your transfer station, it will happen here...
On Your route

If somebody gets hurt or killed on your route, it will happen here...
At Your Landfill

If somebody gets hurt or killed at your landfill, it will happen here...
Getting Out of The Top 5

• Safety Planning
  – OSHA requirements
  – Solid waste industry best management practices
What’s an SOP Again?

Standard Operating Procedures (SOPs):

• Are detailed procedural instructions of how to apply IIPP & HASP principles to a specific task
The Problem - Variability

Without standardized procedures, there is variability. This results in:

- Chaos
- Confusion
- Unpredictable and unsafe operations
- Morale issues
- Inefficiency
- Greater risk!
Not Sure You Agree?

- Look at the importance of establishing a standard procedure
- Where to park for unloading...?
Where Would You Park?

You are driving a garbage truck...where would you park to unload?

Make a Mental Note...
Poll Question #2

So, where did you decide to park?

1. Space No. 1
2. Space No. 2
3. Space No. 3
Where Did We Park?

• Did we all decide to park in the same place?

• What is the result of this variability?
Without a Plan
With a Plan – for the Spotter
With a Plan – for the Trucks
Solid Waste SOPs

• The solid waste industry has many repetitious tasks that are relatively easy to proceduralize.
  – Tipping Patterns
  – Spotter duties
  – Load Checks
Standard Operating Procedure

• Safety Advantages:
  – Everyone knows the plan
  – Know where to look for fellow employees and public/customers
  – Equipment proximity and pattern
  – Removed variability
SOP Considerations

SOPs should:

• Not be generic or vague
• Be industry, facility and task specific
• Be developed by someone who has a clear understanding and specific knowledge of the specific task being proceduralized.
Getting Out of The Top 5

• Safety Planning
• Standard Operating Procedures
  – Practical, industry specific procedures that instruct employees how to safely perform their jobs
Training

- Plans, programs, and procedures can fail if employees aren’t trained.
- This requires Initial & Ongoing Training
Initial Training

• Verify that employees receive initial training on all topics
• All new hires regardless of prior experience level
• Don’t depend on past employer’s training
Ongoing Training

• Verify all employees receive ongoing instruction to perform at highest level of safety

• Include ongoing assessment of individual safety skills
  – Allows supervisors to provide focused training to individual employees.
In-house Training

• Many employees are trained by receiving “On the job” (OTJ) training from a coworker or supervisor.

• This approach can perpetuate historically unsafe and inefficient practices.
How Do You Train Drivers?

• Let’s get down to it. How do you train your drivers?
“That’s how we’ve always done it”
3rd Party Training

- Often facilities are isolated (on an island) and staff only know what they know.
- Third party trainer can bring a different perspective and fresh ideas.
- Needs to be tailored to industry and site.
Collections
Who is Most Productive?

1. Joe: Has earliest route completion
2. Bill: Gets highest payloads
3. Mike: Makes the most lifts

We Don’t Know ... Yet
To Find Out, We Need To:

• Compare apples to apples
• Measure against similar units
  – Tons
  – Hours
  – lifts
• Adjust for conditions
  – Weather
  – Terrain
  – demographics
• Identify *Hidden Factories*
Factory: WIDGETS, INC.

- Raw Materials go in ...widgets come out

- Is it 1 factory ...or several?
It is Several Factories ...some are Hidden

• On the final assembly line, 20% of the widgets that come to Betty have loose screws
• Betty sends them back to Sally to tighten screws
• Sally tightens screws ...sends again to Betty
• Betty re-checks and approves
• The assembly line has 100% pass rate

...But does it really?
Your Routes have Hidden Factories

• Missed lifts
• Tipped cans ...requiring driver to exit truck
• Blocked FEL bins ...driver has to return
• Extra trips because body packs weak
• Broken gate requires extra FEL driver time
• Tweaked tailgate requires big hammer
• Broken *(automated arm)* camera leads to spills
Cost of Hidden Factory

- Spilled can during lift
- Truck & driver $120/hr
- 3 minutes $6
- 11 spills/day $66/day

...$17,160/yr

$17,160/yr ...for every route!
Production Rates

1. Total Tons
2. Total No. Routes
3. Total Miles
4. No. Lifts
   - Miles per Route
   - Tons per Route
   - Hours per Route
   - Lifts per Route
   - Lifts per Mile
   - Tons per Hour
   - Lifts per hour
   - Pounds/lift (lifts/ton)
   - Tons / LF or TS trip
Let’s Look at 3 Examples

• Hours per Route
• Pounds per Lift (lifts/ton)
• Dumping at LF or TS
Example: Hours per Route

- What does this really measure?
- Depends on how it is set up
  1. Finish the route then go home?
     - Will most likely show the shortest times and highest productivity
     - ...particularly on Friday, day before vacation, etc...
  2. Finish the route then do something else?
     - Is it something desirable ...or not
     - Is there variation?
     - Where is the variation?
TIP

• Variation almost always indicates inefficiency
A Quick Poll...

To what do you attribute the most variation in your collections system?

a) Individual attitude (hustle v. laid back)

b) Equipment limitations

c) Traffic

d) Delays at landfill or transfer station
Example: Pounds/Lift \((\text{lifts per ton})\)

- There can be lots of variation – especially when large bins are shared by multiple residences (or multi-unit housing)
- Need to monitor usage and match with appropriate number of bins
Single & Multi-Unit Residence

*Can Size v. Number of Cans*

- Larger bin means:
  - Fewer overloads
  - Less spillage
  - Less moisture (from rain/snow) \( \because \) because lid closes
  - Higher charge rates
  - No change in lifts

- More bins means:
  - More lifts
  - Increased risk of empties
  
  \( \ldots \) but you gotta lift every single one
Can Capacity

- Community has 96-gal and 300-gal cans
- Cans were added somewhat arbitrarily
- Some for:
  - Single residence
  - Multi-unit
- What do you think?
Data?

• Community did not know:
  – How many cans were out
  – Where they are
  – Weight per can
  – Cans per route
Not All Cans are Used...But Every One is Lifted!
Drill Down ...To Identify

- Conduct a route audit
  - No. of cans
  - Location of cans
  - Size of cans
  - Cans per route
  - Weight per can
Dumping at Landfill or Transfer Station

- Our studies indicate that unloading takes 7-10 minutes
- Is it that simple?
- Will your drivers tell you if it isn’t?
This is a small Hidden Factory

- But it may run 9 times per day
- And wastes 5 minutes each time
- 45 minutes per day
- This Hidden Factory costs $23,400/yr
Container Sites
Applies to Container Sites

- Container Sites may be part of regular route
- To prevent overfilling, we place extra bins
- But if we had 10 ... with some spillage
- Now we have 20 ... and have to dump every one!
Do a Bin Survey

• Use tablets to track:
  • GIS Data
  • GPS Location
  • Results of Survey
    – Can full
    – Can empty
    – Etc…

110
A New Technology

• Or you can go with a new technology ...something a bit more automated.

• How full
• Contamination
• Person

Compology.com
Set a Pattern for Customers

- Left to Right
- Clockwise
- Etc...
Commercial Collections

• Put all customers into a 5-day week by providing larger/more bins for Saturday customers
• Streamline Routes based on direct-haul to landfill
Consolidate

• Reduce days of service (No Saturday)
• Reduce No. of visits (5x/week ...to 3x/week)

• How?
  • Install larger FEL bins
  • Install more FEL bins
It’s More than the Route

• It Breaks down to:
  1. Start-up, including pre-trip inspection
  2. Drive to start of route
  3. Individual lifts
  4. Drive to Transfer Station or Landfill
  5. Return to Route …or to Yard
  6. Shutdown Procedure
Individual Lifts

A. Target the can
B. Decelerate
C. Grab
D. Lift
E. Dump
F. Re-set

G. Identify next can
H. Accelerate

...Target the can
What’s the Big Deal?

A. Grab
B. Lift
C. Dump
D. Reset

Cycle Time

• Let’s Assume: 950 customers (lifts) per day
• Save 9 seconds per lift
• That’s 2.63 hours per day

...every day, 5 days per week at $120/hour

Potential Savings: $82,000 per year (per route)
It’s More than the Route

• It Breaks down to:
  1. Start-up, including pre-trip inspection
  2. Drive to start of route
  3. Individual lifts
  4. Drive to Transfer Station or Landfill
  5. Return to Route ...or to Yard
  6. Shutdown Procedure
Drive to LF or TS

A. Scale Process
B. Wait in Line
C. Spotter
D. Position to Dump
E. Dumping Process
F. Clean-out
G. Exit Site
What’s the Big Deal?

F. Clean-out

• Let’s Assume: 2 clean-outs per day
• Our Studies: Each one takes 4-20 minutes
• That’s 0.13–0.67 hours per day

...every day, 5 days per week at $120/hour

Potential Savings: $4,160 to $20,800 per year (per route)
Other Factors

- Weather
- Traffic
- Delays at landfill or transfer station
- Inaccessible bins or cans
- Wrong machine(s)
- Poorly-maintained machine(s)
Cause & Effect Diagram

• Also referred to as fish-bone diagram
• Forces detailed thinking about root causes to problems
• Brings team together for solution
Routes Not Productive

Access
- Bad Truck

Lift Rate Too Slow
- Driver Too Slow

Delays at LF/TS
- Light Payload

Traffic
- Routes not Balanced
Access

Lift Rate Too Slow
- Empty cans
- Spilled cans
- Inexperienced driver
- Arm issues

Delays at LF/TS

Traffic

Bad Truck

Driver Too Slow

Light Payload

Routes Not Balanced

Routes Not Productive
Getting Out of The Top 5

• Safety Planning
• Standard Operating Procedures
• Training
  – Ongoing solid waste industry training for all staff, regardless of experience level
Who Are Customers?

• They could be the stops on our route
• At the landfill, the route drivers are the customers
• What do you know about landfill operations?
Who Are Customers?

- Guys unloading their pickup at the landfill on Saturday morning
Who Are Customers?

• A pedestrian crossing the street behind a collections truck
Who Are Customers?

- A contractor who unloads at the transfer station several times each day
2015-2016 Solid Waste Industry Fatality Statistics

According to SWANA, of the 98 solid waste fatalities between July 2015 – June 2016:

- 61% were customers
2017 Solid Waste Industry Fatality Statistics

• SWANA reports 132 recorded fatalities in 2017.
  – 94 general public/customers
  – 38 solid waste employees

• 71% customers
2018 Solid Waste Industry Fatality Statistics

- As of August 17, SWANA reports 98 recorded fatalities so far in 2018.
  - 39 solid waste employees
  - 59 customers
- 60% customers
Solid Waste Industry Statistics

• In recent years, customers are consistently the majority of solid waste industry fatalities.
  – 61% in 2015-2016
  – 71% in 2017
  – 60% so far in 2018
Customer Safety Training

• That’s right... giving your customers safety training
Employee vs. Customer Safety

Employees
- Industry Professionals
- Have years of experience
- Understand the operation

Customers
- Rookies
- Little to no experience
- Don’t understand operation
# Employee vs. Customer Safety

**Employees**
- Industry Professionals
- Have years of experience
- Understand the operation
- Receive safety training on industry dangers
- Required to wear PPE

**Customers**
- Rookies
- Little to no experience
- Don’t understand operation
- No safety training
- No PPE
Professionals
Rookies
Rookies
Customer Safety Training

• With some thought, it’s easy to see **WHY** we need customer safety training, but **HOW** do we do it?
• Is it practical to provide training to all customers?
• Is it even possible?
Commercial Airline Customer Safety

• According to the FAA:
  – Over 2.5 million commercial airline customers – Every Day
  – 42,000 flights – Every Day
  – 5,000 flights in the air at any given time

• Each customer receives safety training every time they fly
Commercial Airline

Customer Safety

Training topics include:

• PPE
  – Seat belts
  – Respiratory protection
  – Life vests

• Warning signals (seatbelt sign)

• Evacuation Procedure
Commercial Airline

Customer Safety

How is this information communicated?

• Flight Attendant Instruction
• Video
• Information Card
• In-flight magazine
• On-going messages from the pilot
Solid Waste Industry
Customer Safety Training

Customer Safety Training CAN BE DONE!

Learning from this example, we need to determine:
1. What safety training topics we need to provide to solid waste customers
2. How to communicate this information to solid waste customers
Customer Safety Training

Topics Summary

• General site/operation information
• Safety Policies/Rules
• Personal Protection Equipment
• Safe Operations

ALL CELL PHONES MUST BE PUT AWAY!
Customer Safety Training

Communication

• Like our commercial airline example, it will take multiple methods of communication.

• What kind of methods are there?
Safety Training Methods

- Printed handout
- Mail
- Posters
- Scalehouse attendant
- Employee communication
- Safety event
- Email
- Social Media
- Signage
- Local Public Television
- Radio Ad
- Local newspaper/magazine articles
- Safety Training Video
- Training Session
- Etc.
Customer Safety Video

• Create a site-specific safety video
• Disperse through social media, YouTube, etc.

• See a sample at:

https://vimeo.com/270215224
Getting Out of The Top 5

• Safety Planning
• Standard Operating Procedures
• Training
• Customer Safety
  – Provide industry rookies safety training, PPE, and tools they need to minimize safety risk
In Summary

We have to make safety improvements to get out of the Top 5 Deadliest Industries.

“Nothing we do is more important”

Where to start:
• Safety Planning
• Standard Operating Procedures
• Training
• Customer Safety
That’s the End!

- Questions, discussion?

- Thanks for attending!

  - Kasem@blueridgeservices.com
Anatomy of an Accident
But it Does Depend on You

• In most cases, the cause of an accident, injury or fatality can be traced to a specific act ...or the omission of an act.

• Sure, we can attribute some accidents to mechanical failure or some other unavoidable event, but in most cases, it’s people.
Many Factors

Most accidents are a result of many factors aligning in a Perfect Storm scenario
The Perfect Storm

• When these things all happen at the same time at the same place...it’s the Perfect Storm.
• I’ve been an expert witness on nearly 60 solid waste cases. Most were related to an injury or fatality
• Most had multiple causes
Here’s a Typical Example

*(Hypothetical)*

A landfill spotter was run over by a route truck. What was the cause?

...Or rather, what were the causes?
Contributing Factor 1

Unplanned staffing shortage rushed spotter into the field

The landfill had a policy for training new workers. But this guy had some prior construction experience... Does it matter?
Contributing Factor 2

Spotter Was Not Trained

The spotter did not receive the normal round of training prior to going to work.
Contributing Factor 3

Training Slipped Through the Cracks

Management assumed foreman had conducted training

Foreman assumed management had conducted training
Contributing Factor 4

Worker was Scavenging

The worker was apparently scavenging. Even though there was a no scavenging policy – he did not follow the policy.
Contributing Factor 5

Truck Driver Did Not Follow Procedure

The truck driver knew there was a spotter in the vicinity, but when he did not see the spotter ...he kept backing anyway
Contributing Factor 6

No Standard Work Pattern

There was no standard pattern for how trucks were supposed to park and dump
Contributing Factor 7

No Rapid Warning System

Adjacent truck driver saw event unfolding
...but could not prevent it
Contributing Factor 8

Inadequate PPE

Spotter did not have appropriate PPE – even though there was a written policy requiring PPE.
Contributing Factor 9

Backup Alarm Was Not Working

The backup alarm on the route truck was found to be inoperable
Contributing Factor 10

Operator was a Cowboy
The truck driver had a history of being a cowboy ...but there was no related history of discipline or re-training.
A Chain of Events

These factors represent a chain of events that all had to connect to lead to the accident.
Are There Any Key Factors?

Which of these factors, if eliminated, might have prevented this accident?

Let’s take another look...
### Are There Any Key Factors?

1. Unplanned Staffing Shortage  
2. Spotter was not Trained  
3. Slipped through the Cracks  
4. Spotter was Scavenging  
5. Driver did not Follow Procedure  
6. No Standard Traffic Pattern  
7. No Rapid Warning System  
8. Inadequate PPE  
9. Backup Alarm Not Working  
10. **Driver** was a Cowboy
Who Contributed?

1. Unplanned Staffing Shortage – Management/H.R.
2. Spotter was not Trained – Management/Foreman
3. Slipped through the Cracks – Management/HR
4. Spotter was Scavenging – Management/Foreman/Spotter
5. Driver did not Follow Procedure – Driver
7. No Rapid Warning System – Foreman/Management
8. Inadequate PPE – Office (supply)/Foreman/Management
9. Backup Alarm Not Working – Driver/Mechanic
10. Driver was a Cowboy – Driver/Management
Who Could Have Prevented?

1. Management
2. HR (Human Resources)
3. Foreman
4. Spotter
5. Driver
6. Office Staff
7. Mechanic

...Anyone
Someone ...Anyone

- Almost anyone could have prevented this accident ...but nobody did
- Why didn’t they?

- “Hey man, it’s not my job...”
Caused by Culture

• This hypothetical (yet typical) accident was caused by a number of factors.
• The operation was sloppy
• There were simply too many things being done wrong

...It was caused by the culture