

# ***Risk Management Safety Toolkit***

## **Leading Indicators**

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# Introduction to Leading Indicators

## Leading Indicators – Proactive and Continuous Approach to Safety Improvement

Measuring safety performance is critical to sustainable safety success. As with any process in your organization, it is important to evaluate the effectiveness of your safety program and progress toward your goals. This is often accomplished using key performance indicators. This toolkit was developed to help your organization understand how to effectively incorporate leading indicators into the workplace to improve safety and health outcomes. In the following pages you will find numerous resources, examples, and tools to get you started in integrating leading indicators into your safety program.

Most organizations rely heavily on “lagging indicators”—those based on events that have already occurred—such as the number of accidents, workers’ compensation costs, or OSHA TRIR or DART rates. While these lagging indicators provide valuable insight, organizations often put too much emphasis on them. Lagging indicators measure the failures or absence of safety and do not reflect the success of a safety program. They tell you the number of people hurt and how badly, but they do not capture the ways an organization works to prevent accidents. Just because someone has not gotten hurt does not mean a safety program is solid or that the exposures are not there. Is your organization just lucky? To effectively determine the strength of your safety program, you need to utilize both lagging and leading indicators.

Leading indicators are defined by OSHA as “proactive, preventive, and predictive measures that provide information about the effective performance of your safety and health activities.” They measure the activities and events carried out to prevent and control injuries, illnesses, and other incidents before they can occur. Leading indicators encourage continuous improvement and aim to reveal potential problems in your safety and health program to allow you to intervene. In short, leading indicators measure what you’re actively doing to improve safety in your workplace, while lagging indicators measure what has already happened.

A good program uses leading indicators to drive change, and lagging indicators to measure effectiveness.

Whether you are just getting started or have a mature safety program, leading indicators are a valuable tool. The development, deployment, application and review of leading indicators will vary based on where your organization’s current safety program stands. They can be used to develop new programs or monitor the success of existing programs.



Image Source: Getty Images



# Introduction to Leading Indicators

## Creating Effective Leading Indicators and Goals

Many people are familiar with the “SMART” goal setting process, which highlights that goals should be Specific, Measurable, Achievable, Relevant, and Timely. This is an excellent way to start creating effective leading indicators.

- **Specific:** Does your leading indicator provide specifics (who, what, when, where, etc.) for the action you will take to minimize risk from a hazard or improve a program area?
- **Measurable:** Is your leading indicator presented as a number, rate, or percentage that allows you to track and evaluate clear trends over time?
- **Achievable:** Can you reasonably achieve the goal that you set for your leading indicator?
- **Relevant:** Is your leading indicator tracking something that is relevant with your mission, values, and long-term goals?
- **Timely:** This is two-fold. First, are you tracking your leading indicator regularly enough to spot meaningful trends from your data within your desired timeframe? Second, have you established timeframes?



Image Source: Getty Images

## SMART Goal Example

**Leading Indicator:** Employee participation in a biannual safety perception survey.

**Goal:** Every six months, employees will complete a safety perception survey with at least 90% participation rate.

**Specific:** This is specific because it clearly identifies what the activity is and who is expected to participate.

**Measurable:** This is measurable because you can track the number of fully completed surveys every six months.

**Achievable:** The goal is a 90% participation rate. The 90% goal is achievable because workers will be given time to complete this survey during work hours, it will only be given to those who are scheduled to work that specific week, and they will have a week to turn in the survey to their supervisor.

**Relevant:** Receiving honest feedback from your most valuable resource—your employees—will help identify areas where the company can better focus your safety efforts.

**Timely:** The intention is to offer the survey on a biannual basis. This is timely because workplace safety and perceptions can be a challenge to change, and biannual frequency provides sufficient time to address safety concerns brought to light by a survey.



# Introduction to Leading Indicators

Next, use Eastern's N3L3 continuous improvement cycle to achieve the goal(s) that your organization outlined.

- ✓ Assess your current safety system to determine areas of improvement. Anticipate failure!
- ✓ Choose a leading indicator.
- ✓ Set a goal using the SMART goal model.

- ✓ Now that you have a plan in place, it's time to implement that plan. This is your response to what you anticipate!
- ✓ Clearly communicate the process, expectations, and progress to all.



- ✓ What are the results of your leading indicator?
- ✓ What did you learn?
- ✓ What worked, what didn't, where can you improve?

- ✓ Continually evaluate data, monitor progress, and adjust as necessary.
- ✓ What's working, what's not?
- ✓ Is your safety system improving?

**Anticipate.** Know what to expect and be able to anticipate failure. Using safety perception surveys, accident and near-hit investigations, JSA's, risk assessments, meaningful conversations between management and employees with the intent to learn from each other, etc., can provide you with valuable information related to the gaps in your safety system. With this information, choose a leading indicator and set a goal using the SMART goal model.

**Respond.** You've already identified where you anticipate failure and you've set a plan to address this safety concern, so now it's time to put your plan into action. Communicate your plan, goal, and expectations to everyone within the organization. Be sure to provide necessary education and training related to the leading indicator goal.



# Introduction to Leading Indicators

**Monitor.** Monitoring must cover all system aspects related to the leading indicator goal. It is crucial that you gather safety performance data and statistics specific to the goal, determine if you're still on track to accomplish your goal or if you have strayed, what's working and what's not, etc... You can make changes, tweak, and adapt in this phase if necessary.

**Learn.** Learning is necessary for continual safety improvement. Learning must occur throughout all of the steps for change to occur. During the process, what did you learn from accident investigations, near-hits, review meetings with supervisors, JSA's, N3L3 moments, meetings with workers, the safety committee, observations, demonstrations, etc.? Did you meet your goal? If you met your goal, what went right? If you didn't meet your goal, why not? Did you improve safety in the workplace? What can you do better next time? What's the next step? Do you need to tweak the leading indicator goal and try again, or should you move forward with a new leading indicator goal?

## Leading Indicator Examples

### Manager and Supervisor Opportunities to Participate and Lead

- How often managers and supervisors attend mandatory safety training with their workers
- Average score on the safety perception survey
- Number of safety meetings held by managers and supervisors
- Number of reported hazards that managers and supervisors respond to and correct in a timely manner
- Total number of safety-related items in the annual budget
- Amount of money allocated to safety in the annual budget
- Amount of money allocated in the annual budget specifically for safety education
- Number of safety committee meetings that a manager or supervisor voluntarily attends as a guest
- Number of teachable moments (stop work to provide education to an employee(s))
- Number of education hours that managers and supervisors receive each month.
- Number of times the safety program is reviewed with the intent to update it and make it better



Image Source: Getty Images



# Introduction to Leading Indicators

## Hazard Identification Initiatives

- Number of safety walkthroughs completed
- Number of hazards identified
- Number of safe vs. unsafe observations
- Number of times that safety concerns and frustrations were actively sought, through conversation with workers, during safety walkthroughs
- Percent of safety walkthroughs that included a follow-up to ensure certain hazards were corrected
- Number of JSA's completed
- Number of near-miss investigations completed
- Number of accident investigations completed
- Number of contributing factors identified during the near-hit / accident investigation process
- Number of work observations, with the intent to learn, completed
- Number of near-hits reported
- Number of times "stop work" authority was used
- Number of hazards reported to supervisors and managers
- Number of times non-routine work was identified
- Number of employees educated in the hazard identification process

## Worker Involvement in the Company's Safety Process

- Number of workers involved in near-hit and accident investigations
- Number of times a worker's knowledge of a job or task was sought for the purpose of improving safety
- Number of workers participating in safety walkthroughs
- Number of workers providing mentorship to new or transferred employees
- Number of workers who participated in department safety talks
- Number of safety suggestions submitted
- Number of safety talks led by a worker
- Rate of participation in the safety perception survey
- Number of employees involved in the creation of safety programs, policies, and procedures





# Introduction to Leading Indicators

## Safety Worksheet Activities

- Number of “Pre-accident Investigation” worksheets thoroughly completed
- Number of “Preventing F&LC with New Employee” worksheets thoroughly completed
- Percent of “Weekly Vehicle Safety Checklists” turned in
- Number of “Work as Imagined vs Work as Done” worksheets thoroughly completed
- Number of “Job Safety Analyses” completed
- Number of “Daily Jobsite Safety Planning” worksheets thoroughly completed
- Number of “Job Hazard Analyses” completed



Image Source: Getty Images

## Worker Education

- Number of education and training hours each month
- Number of new and transferred employee safety education and mentoring hours
- Number of safety talk / toolbox talk hours
- Number of opportunities provided to workers for education and training
- Number of workers trained to be a mentor for new employees

## Other

- Number of safety goals achieved
- Number of conversations about safety with subcontractors
- Number of safety conversations with staffing agency contact
- Percent reduction of overtime hours
- Percent reduction of employee turnover rate
- Percent or number of safety-related goals that are met





SAMPLE/DRAFT

**(Company Name)**

# **Leading Indicator Safety Incentive Program**



# Leading Indicator Safety Incentive Program

## PURPOSE

The purpose of this safety incentive program is to promote safety awareness in the workplace by incentivizing workers to participate in all aspects of **(Company Name)'s** safety and health program. This is a leading indicator-based program which means that employees will be rewarded for safe acts, safety participation in various forms, reporting of hazards, reporting of injuries and near-hits, and providing detailed investigations into those injuries / near-hits. This proactive approach to safety will elevate the company's safety program with continuous monitoring and improvement.

## SCOPE

All employees at **(Company Name)** will be eligible to participate in this safety incentive program. This program will run for the course of one year. After one full year, a formal evaluation of the program will be completed to determine if any changes should be made. The **(safety committee)** will seek the input of all employees who participated in the program throughout the year for this evaluation.

## ADMINISTERING THE PROGRAM

Essentially, the program works as follows:

- Any employee who participates in a leading indicator activity, as described in the "Qualifying Actions/Behaviors" section below, will have the potential to be entered into the safety drawing / reward program.
- The program will provide safety awards on a **(monthly, quarterly, or annual basis)**.
- **(The safety committee)** will be tasked with evaluating each submitted safety action / behavior in order to determine if it meets the criteria to be entered into the program.
- If it is determined that the submitted action / behavior does not meet the drawing entry criteria, the reasoning will be explained to the entrant.
- At the end of each award period there will be a drawing from those names that entered a qualifying safe action / behavior.
- There will be **(two)** winners each award period.
- Once the winners have been chosen, those names are removed from the drawing and a new cycle begins.
- In order to have a chance of winning each period, you must submit a qualifying safe action / behavior in the appropriate time frame.
- Prizes will be determined by **(Company Name)'s** management. Prizes could include **(PTO, gift cards, hats, jackets, tee shirts, coffee mugs, lunch, etc.)**.



# Leading Indicator Safety Incentive Program

**EXAMPLES OF QUALIFYING ACTIONS** *(all of the following are suggestions; you should develop a program specific to your company's operations, pressure points, and safety goals.)*

All submitted safety actions / behaviors will be reviewed and voted on for eligibility by the **(safety committee)**.

1. Provide safety suggestion(s) leading to change.
2. Complete the "F&LC with New Employees" worksheet and use it as part of your mentoring and training of a new employee. Added benefit - once completed, these worksheets can be kept on file for future training and education of new employees, which can also be a qualifying action.
3. Identify and report hazards to your supervisor and offer suggestions for improvement.
4. Actively participate in safety meetings. "Actively" meaning: participating in the meeting through discussion, volunteering ideas, talking about what's working and what's not, where safety improvements can be made, etc. "Actively" does not mean simply showing up for a required meeting.
5. Voluntarily conduct safety toolbox talks. Instead of managers, supervisors, or foremen performing the regular safety talks, employees should conduct the safety talks on work topics of their choice (what their safety concerns are).
6. Report hazardous actions or near-hits that occurred to you personally, and submit an accident review form with each near-hit reported.
7. Offer ideas and voluntarily participate in the development of safety policies, procedures, toolbox safety talks, or safety tip sheets for the company.
8. Complete a job hazard analysis for a routine or non-routine job. The findings can be used to fill your system's safety gaps, for employee education, and as a safety talk.
9. Conduct formal workplace safety inspections. Inspections can be completed on-site or at off-premises jobsites. Thoroughly completed results should be turned in for review.
10. Complete / participate in an accident review for an accident or near-hit that occurs in your department.
11. Pursue safety training / education on the employee's own time – verification must be provided.
12. Thoroughly complete the "Work as Imagined vs. Work as Done" worksheet for your job.
13. Thoroughly complete the "Pre-Accident Investigation" worksheet.





# Leading Indicator Safety Incentive Program

14. Turn in a thoroughly completed weekly vehicle safety checklist each week, for the entirety of the qualifying period.
15. Per company policy and expectations, demonstrate safe driving measured by a lack of triggering alerts from telematics systems.
16. Identify and report safety-related vehicle maintenance issues.
17. Provide specific opportunities for improving the fleet and vehicle safety program.
18. Use a template to develop a machine-specific Lockout / Tagout procedure.
19. Complete a real-time audit of a Lockout / Tagout procedure and effectively communicate positive findings and / or opportunities for improvement.
20. Suggest other safety incentive qualifying criteria that is then implemented into the incentive program.
21. Identify and assist with development and delivery of a current health and safety topic – delivery method can include a blitz, campaign, stand-down, toolbox talk, poster, etc.
22. Share a personal testimony about work or home safety in a group setting (safety meeting, department meeting, pre-shift, etc.) – this initiative can be repeated during consecutive months.
23. Complete an audit of chemical products in a “work area” against availability of Safety Data Sheets (SDSs), inclusion on chemical list, labeling, and proper storage practices.
24. Select and review a health and safety program, policy, procedure, or practice for completeness and effectiveness to mitigate risk or exposure, and provide comments for accuracy or improvement.
25. Per our Stop Work Program, use this policy to effectively address a substandard safety-based practice; this initiative can be repeated during consecutive months.
26. Volunteer to mentor recently hired individuals, transferred employees, or newly assigned employees.
27. Participate in a company-sponsored wellness initiative: blood screening, smoking cessation program, weight loss, flu shot/vaccine, blood donation, COVID-19 vaccine, etc.



Image Source: Getty Images



# Safety Incentive Submission Cards

**Safety Incentive Submission Card**

Name: \_\_\_\_\_

Date of Safe Action / Behavior: \_\_\_\_\_

Witness(s): \_\_\_\_\_

**Description of Safe Action / Behavior**

\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_

**Safety Incentive Submission Card**

Name: \_\_\_\_\_

Date of Safe Action / Behavior: \_\_\_\_\_

Witness(s): \_\_\_\_\_

**Description of Safe Action / Behavior**

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**Description of Safe Action / Behavior**

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Date of Safe Action / Behavior: \_\_\_\_\_

Witness(s): \_\_\_\_\_

**Description of Safe Action / Behavior**

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\_\_\_\_\_



# Safety Perception Survey

Employee Name:

Workplace safety perceptions can be **Real** or **Perceived**, either way they speak directly to the system as it relates to employee safety. Any unsatisfactory perception(s) should be thoroughly researched with the intent to eliminate those perceptions and better the organization.

Survey Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Safety is a top priority in the organization.					
In regards to safety, company management always leads by example.					
In regards to safety, my supervisor leads by example.					
My supervisor regularly speaks with me about the importance of workplace safety.					
I am comfortable bringing up safety concerns with my supervisor and / or management.					
The company promptly corrects workplace hazards.					
All accidents and near misses at our workplace / jobsite are investigated.					
I feel comfortable speaking up about something being unsafe, or using my "stop work" authority.					
I am provided with the necessary time to complete my job in a safe manner.					
I am provided with all of the proper tools and equipment to do my job safely.					





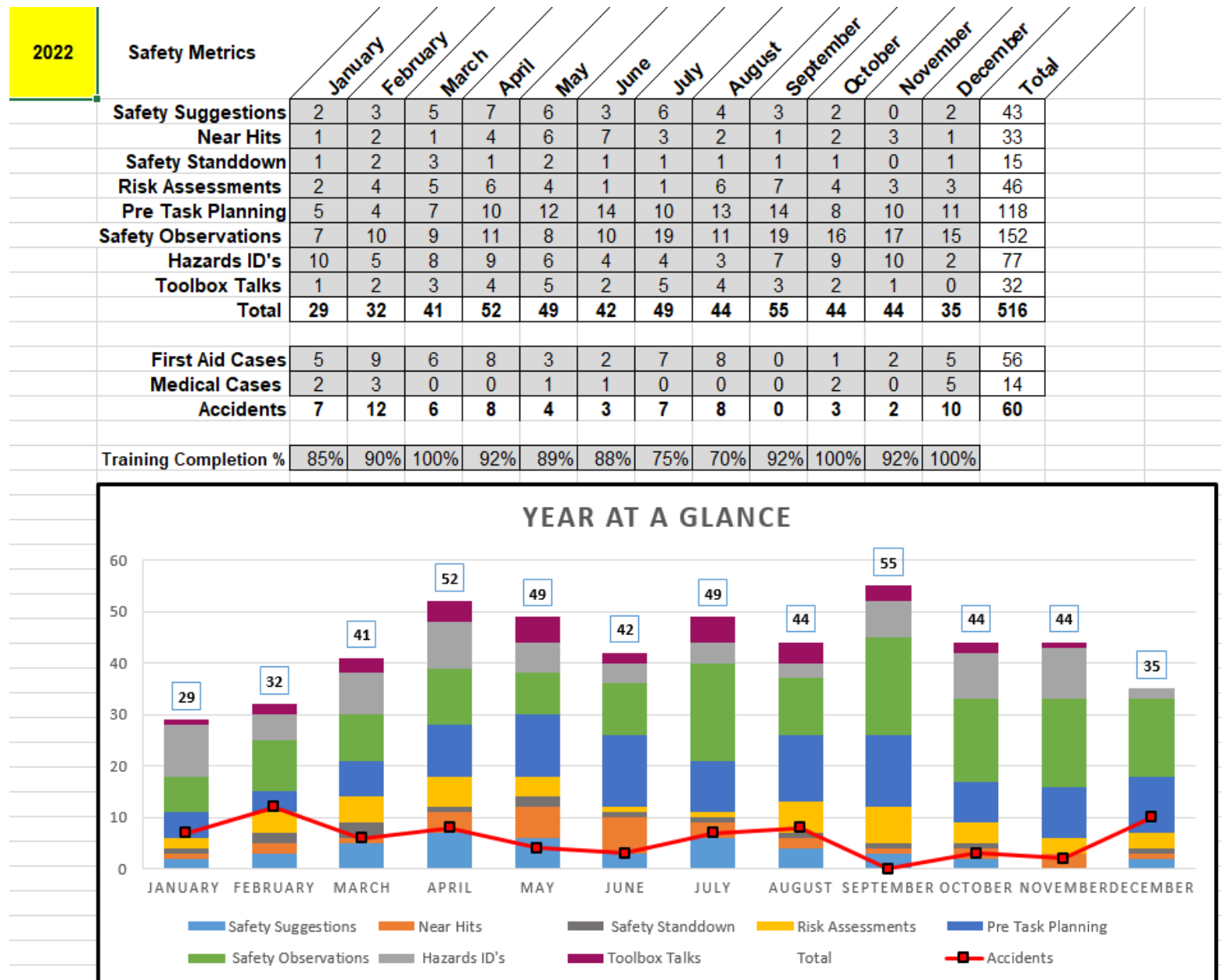
# Safety Perception Survey

Survey Question	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
The company makes certain to maintain tools and equipment in good repair.					
Safety is sometimes overlooked in order to get the job done.					
I learned everything I needed during my new employee orientation.					
I receive adequate ongoing job training.					
Our organization has an effective safety committee.					



Image Source: iStock

Available with your Leading Indicator toolkit is a safety metrics dashboard and associated graphs in Microsoft Excel format. This simple tool can be used to track your leading indicator initiatives, and workplace incidents. Ideally, with more leading indicator activities completed each month, you should see your incidents being reduced throughout the year. The following is a screenshot of safety metrics dashboard, as well as instructions to add additional years to the tool.



1. On Safety Metrics tab, enter the year in the yellow box.
2. Enter the data for safety metrics each month in the gray boxes.
3. Charts will populate.
4. To create a new year, right click on the sheet name. Select "Move or Copy" (see [FIGURE 1](#)).
5. In the box that appears, check "Create a Copy" and then "Ok" (see [FIGURE 2](#)).
6. The new tab/sheet should open and the name will be the same as your previous sheet with a (2) at the end. Rename to reflect the year for the data to be entered. To do this, right click on the tab and select "Rename" (see [FIGURE 3](#) and [FIGURE 4](#)). In the example, we changed the sheet name to Safety Metrics 2021. This ensures the graphs update with the associated sheet.

FIGURE 1

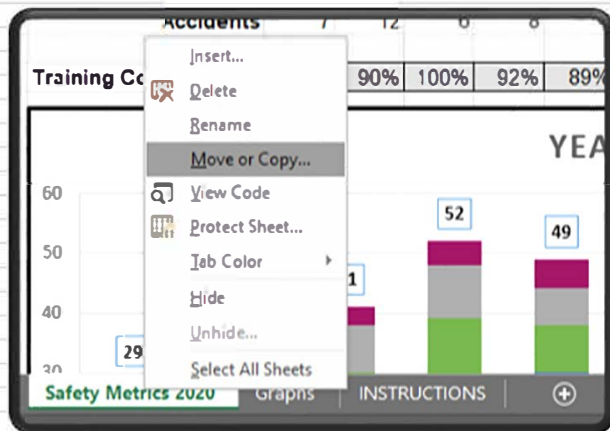


FIGURE 2

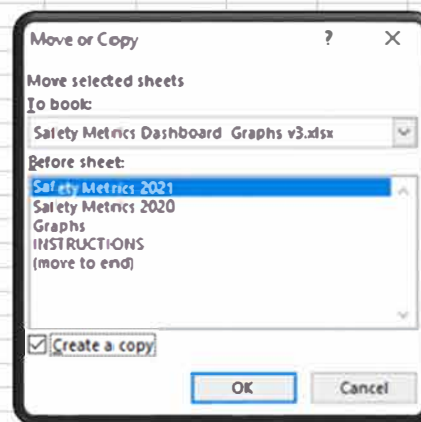


FIGURE 3



FIGURE 4





# Leading Indicator Resources

## Looking for tools to go with the activities outlined in your Leading Indicator Program?

Eastern has many tools available. Examples include:

- *Pre-Accident Investigation Worksheet*
- *Work as Imagined vs. Work as Done*
- *Job Safety Analysis (JSA)*
- *Job Hazard Analysis (JHA)*
- *LOTO Machine-Specific Procedures*
- *Vehicle Inspection Sheet*

**Contact your Risk Management Consultant for more information and additional resources available to you.**

### Other Resources:

OSHA - <https://www.osha.gov/leading-indicators>

CDC - <https://blogs.cdc.gov/niosh-science-blog/2016/02/17/leading-indicators/>

The Campbell Institute - <https://www.thecampbellinstitute.org/research/>

EHS Daily Advisor - <https://ehsdailyadvisor.blr.com/2019/08/oshas-guide-to-leading-indicators/>

ASSP - <https://www.assp.org/news-and-articles/how-to-implement-and-evaluate-leading-indicators>

ASSP - <https://www.assp.org/news-and-articles/leading-with-safety-and-health-metrics>

National Safety Council - <https://www.nsc.org/safety-first/leading-indicators-as-warning-signs>

National Safety Council - <https://www.nsc.org/getmedia/aac0774d-88af-4211-a796-292e19179cd1/leading-indicators.pdf>

Safety & Health Magazine - <https://www.safetyandhealthmagazine.com/articles/13821-the-campbell-institute-what-are-safety-leading-indicators>

Safety & Health Magazine - <https://www.safetyandhealthmagazine.com/articles/9846-get-started-leading-indicators>

EHS Today - <https://www.ehstoday.com/safety-leadership/article/21919271/optimizing-safety-through-leading-indicators>

CCOHS - <https://www.ccohs.ca/newsletters/hsreport/issues/2016/04/ezone.html>