Evaluating the Use of a Near-Miss Reporting Program to Enhance Employee Safety Performance

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Kentucky Transportation Center
College of Engineering, University of Kentucky, Lexington, Kentucky

in cooperation with
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Commonwealth of Kentucky

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University of Kentucky

Research Report
KTC-24-03

Evaluating the Use of a Near-Miss Reporting Program to Enhance Employee Safety Performance

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16. Abstract

Using safety incidents and crashes to improve safety performance is an outdated and reactive practice in safety and health programs. One component of a modern approach to safety is a near-miss reporting program. This type of program tracks close calls or near misses that do not result in an incident or crash, but which often can be an early indicator that one may happen. While most construction companies have implemented some methods for reporting near-miss events, many agencies, such as the Kentucky Transportation Cabinet (KYTC), struggle getting employees to report near misses. To fill this gap, potential factors that result in a lack of reporting are identified through a synthesis of existing literature, areas for improving existing near-miss reporting systems are discussed, and a survey was administered to KYTC maintenance superintendents. Results of this study suggest that many of the barriers that lead to a lack of near-miss reporting stem from the management level. Proposed suggestions to overcome barriers related to near-miss reporting include providing and/or requiring better near-miss training, making KYTC's web-based reporting tool more well-known and accessible, and taking more visible corrective actions once near misses are reported. Future work should address the causes of near-miss events and strategies to reduce near-miss incidents on jobsites.

17. Key Words construction safety, near miss, reporting, web tool, policy and procedures		**18. Distribution Statement** Unlimited with approval of the Kentucky Transportation Cabinet	
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Table of Contents

List of Figures

List of Tables

Executive Summary

Workers are exposed to many hazards on the job every day without being injured and can use their experiences to improve safety outcomes. Having information on near misses — a leading indicator of workplace safety — is critical for preventing incidents. For every 300 near-miss incidents reported, 29 result in minor injuries, and one in a significant injury. Near-miss reporting can serve as a useful tool for managing safety as it allows workers to identify and managers to address potential risk factors on work sites. Most high-hazard organizations have implemented some method for reporting near-miss events, including the Kentucky Transportation Cabinet (KYTC), which has recently rolled out a Safety Opportunity Reporting tool to improve near-miss reporting. This project facilitated that rollout by (1) investigating near-miss programs used at other state departments of transportation (DOTs); (2) identifying the current level of use of the Cabinet's near-miss reporting program; and (3) creating policy language and documentation for the effective use of the KYTC near-miss program. Results of a literature review and statewide survey of maintenance superintendents indicated four primary issues that reduce reporting are worries about confidentiality, concerns over the lack of corrective actions, uncertainty over the definition of a near miss, and minimal sharing of lessons learned.

Based on these findings, researchers recommend that KYTC (1) adopt a Safety Opportunity Reporting Framework (Figure 6.1) for executive-level communication, (2) share a Safety Opportunity Reporting Workflow (Figure 6.2) to improve transparency, and (3) track, measure, and publicize the success of the Safety Opportunity Reporting program using the BOOTS Safety Management System. Embedded in the Safety Opportunity Reporting Framework are two definitions of a near-miss event that can be used on a situational basis. One is a technical, formal definition and the other is an informal definition that can be used in daily communication and coaching. The technical, formal definition is *an unplanned event or unsafe condition that has the potential to cause injury or illness or which can damage property or the environment*. The informal definition is *an event that makes someone think something was not right or that something abnormal has occurred*. Researchers also developed a Safety Opportunity Reporting program evaluation tool (Figures 6.3 and 6.4) to support ongoing evaluations of the program. This tool is in the form of a macro-based Microsoft Excel workbook.

Chapter 1 Background and Scope of Work

1.1 Introduction

As construction environments rapidly change, accidents are a common occurrence, leading to many injuries worldwide (Karthick et al., 2022). In 2019, across the United States 20% of worker fatalities (1,061) were related to the construction industry (Namian et al., 2022). This was the highest number since 2007, when 1,024 workers died (Namian et al., 2022). Highway work zones are considered extremely hazardous for drivers and the workers who build, repair, and maintain them. From 2003 to 2017, 1,844 workers died at road construction sites — an average of 123 per year (NIOSH, 2019).

The causality of occupational accidents in highway construction is complex, so many researchers have devoted considerable time and effort to identifying and preventing them. In spite of numerous attempts, there has been little research to identify effectual factors on workers' safety performance. Near-miss information is considered an important lesson for preventing accidents since workers are exposed to many accidents without being injured every day and can use their experience to improve their safety skills(C. Zhou et al., 2019). Near-miss events occur more frequently in the construction industry than serious incidents and, under marginally different conditions, could lead to damages, injuries, or fatalities (Cambraia et al., 2010).

Some events are not as evident as others, yet all should be considered significant as they have associated health risks. Near-miss reporting can serve as a valuable tool for managing safety as it allows workers to identify and managers to address potential risk factors on project sites. Compared to the lagging indicator of reporting injuries after they occur, reporting near misses can serve as a leading indicator of how to fix problems before injuries or fatalities occur (Aulin[1] and Linderbäck, 2014). Reporting and investigating injuries may provide a more detailed picture of events and alert organizations to a failure in an area of their safety and health programs or to the existence of a hazard. Near misses can also inform organizations whether their safety and health programs are efficient at preventing incidents.

1.2 Problem Statement

Using safety incidents and property damage to improve safety performance is a reactive practice many safety and health programs rely on. One component of a modern safety approach is a near-miss reporting program. Such a program seeks to track close calls or near misses, events that do not result in an incident or damage, but often can be an early indicator that one happens soon. Research has shown a well-defined, comprehensive near-miss reporting program leads to lower Total Recordable Incident Rates (TRIR), increases communication and trust about safety, and helps workers identify hazardous conditions and unsafe worker behavior. A Recently completed study (SPR 19-568) on the use of safety metrics found that KYTC's safety program could benefit from increased employee engagement efforts, and a well-executed near miss reporting program helps address that issue.

Research studies have indicated a correlation between the frequency of near misses, minor injuries, and major injuries on worksites (Heinrich, 1941). Findings from Wu et al. (2010) reveal that only 0.3% of accidents led to worker injuries, with 90% of incidents resulting in no injuries and 9% involving minor injuries. Specifically, for every 300 near-miss accidents, approximately 29 incidents resulted in minor injuries, while one incident escalated to a hazardous occurrence (Wu et al., 2010). Throughout the years, safety professionals have enhanced the model, expanding beyond the original triangle by incorporating additional incident categories. This adaptation implies that unsafe acts and conditions create circumstances that contribute to the occurrence of near misses, first-aid cases, recordable incidents, lost time incidents, and fatalities (Figure 1.1) (McSween, 2003). These developments, as highlighted by McSween (2003), underscore the importance of near-miss accidents in effectively managing Jobsite injuries.

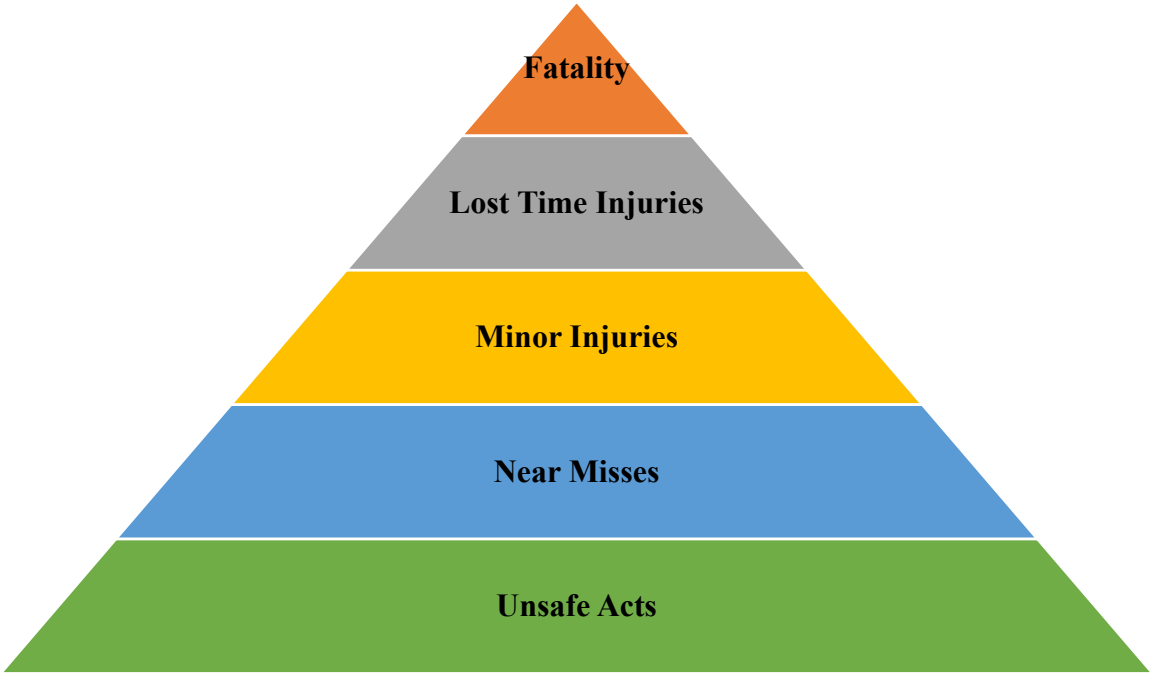


Figure 1.1 Expanded Version of Traditional Safety Triangle

1.3 Objectives

The KYTC Secretary's Office of Safety has a near-miss reporting system that uses GIS to create location information and an incident description. This reports explores opportunities to (1) further advance the program through documented, successful approaches from other industry sectors and (2) evaluates the perception and impact of a more comprehensive near-miss reporting program. Ultimately, this report assesses how a near-miss reporting program helps identify gaps, gives workers the knowledge they need to learn from near misses, and improves safety performance. Objectives addressed by the report include:

- Investigate near-miss programs used at other state departments of transportation (DOTs)
- Identify strategies KYTC can readily adopt to increase use of its existing near-miss program
- Document administrative policy language and procedures to effectively use the near-miss program

Chapter 2 Literature Review

2.1 Common Shortcomings of Near-Miss Reporting

To increase the rate of valuable near-miss reporting in high-hazards industries, the shortcomings leading to a lack of reporting must be identified and analyzed. A recent case study was performed to identify these shortcomings. In this study, new employees of a construction company were provided near-miss training at their orientation. Upon completing the training, in-depth discussions were carried out amongst the new employees and the safety team. After these discussions, the safety team established "Five Fatal Flaws" that they believe bury near-miss programs in the industry:

1) Upper management believes in the program and provides financial support, but managers are not engaged and do not know how to be.
2) Safety professionals, who have the technology to be successful, struggle to effectively teach the organization that which is intuitive to them.
3) Supervisors, who do not want workers to get injured, are overburdened and do not want more nonvalue added (questionable worth) work forced on them.
4) Hourly employees, who want to be safe, wonder "what's in it for me" for reporting a near-miss.
5) Data management can be red herring. When no or few reports are received, there are no data to analyze, and problems remain unknown. (Williamsen, 2013)

If they remain untreated, these general flaws slowly generate numerous barriers to near-miss reporting.

An initial barrier believed exacerbate the lack of near-miss reporting is the lack of common understanding and universal definition of near miss among construction workers. Because a common definition is not consistently recognized, near misses often go unidentified by workers. According to a recent study, "Identification errors are those where personnel are exposed to an unsafe condition or behavior and simply did not realize the potential for harm. Interestingly, hazards not identified are one of the most commonly used root causes identified in incident investigations after the occurrence of recordable injuries" (Mckay, 2013). However, other studies suggest that construction workers are at least somewhat aware and have a basic understanding of near misses. A study was performed to determine how informed construction employees are in regard to near misses. In this study, a group of 37 construction workers were interviewed and the researchers drew conclusions from their conversations. Results indicated that a majority of the interviewees were familiar with the definition of a near miss and routines of reporting, yet the willingness to report near misses was still low (Aulin[1] and Linderbäck, 2014). According to a focus group discussion study, workers in the construction industry can make a clear-cut distinction between near misses and injuries and believe their greatest protections from both stem from the employee level (Santiago et al., 2020). So, if most construction workers are familiar with the definition of a near miss as well as their responsibility in reporting these events, additional barriers must contribute to the industry-wide lack of reporting.

Multiple studies have identified one of these additional barriers as the fears instilled by supervisors and coworkers. Specific concerns include the fear of punishment, retaliation, and peer pressure. According to the previously mentioned case study performed by Williamsen (2013), the new employee near-miss training revealed a genuine fear of punishment and retaliation: "Site managers and supervisors wondered how more near-misses would make them look. Employees wondered whether supervisors think the reports make supervisors and employees look bad and what response might be expected" (Williamsen, 2013). Another study was performed to fill in the gap of the lack of comprehensive understanding of what near-miss information means in the context of construction safety management (Z. Zhou et al., 2019). This study used multiple research methodologies to develop eight stages of near-

miss management. One of these stages discussed how to report near misses. Looking at the findings of this study, the researchers identified one of the obstacles to reporting is worrying about the penalty after reporting (Z. Zhou et al., 2019). Peer pressure from coworkers also plays a role in the fear of reporting near misses. Reporting near misses is typically viewed negatively by coworkers, especially when the report involves them. In turn, peers frequently discourage reporting and call those who report names such as "management's best friend" (Williamsen, 2013). Therefore, construction workers often fail to report near misses because they believe the benefits of reporting an event that resulted in no injuries and which nobody else knows about does not outweigh the risk of trouble.

Another barrier to near-miss reporting is the lack of recognition and feedback after reporting. This issue stems from the management level. Workers are not encouraged to report if there are no changes to make the jobsite a safer place based on their input: "Management must take purposeful, intentional, and visible actions that demonstrate and prove that good outcomes happen when near-misses are reported. Nothing is more frustrating than to be told something is important, only to learn that no one gets a response or feedback for their efforts" (Williamsen, 2013). This issue was also identified as an obstacle to the reporting stage of near-miss management. Workers do not think that near-miss reports are useful for safety because they have yet to see positive results from them (Z. Zhou et al., 2019). This lack of recognition and feedback leads workers to question if completing a report is even worth them time.

Such questioning results in an added barrier to near-miss reporting: a desire to avoid work interruption and red tape. The construction industry has many moving parts and deals with tight deadlines. That said, near misses occur often. Workers have to decide whether a perceived risk or near miss can wait or if immediate attention is necessary (Williamsen, 2013). Also, the amount of red tape that entangles a worker if they turn in a report is put into question. How long it takes to complete a report is also a key factor for workers in deciding whether to report a near miss (Williamsen, 2013). More often than not, workers consider the reporting process too complex and time-consuming (Z. Zhou et al., 2019). Combined with other barriers, the desire to save time and avoid extra work can be attributed to nearly all cases where near misses go unreported.

While identifying these factors that contribute to the lack of near-miss reporting is beneficial, major issues can also result from improper reporting. A recent study was performed on a construction project in the United Kingdom in which a safety observation reporting (SOR) system was implemented. Everyone onsite was encouraged to report unsafe acts or conditions, either via computer or handwritten cards, for subsequent action by a health and safety team (Oswald et al., 2018). Due to improper motives of its implementation, problems arose from this reporting system. These problems included "significantly increased administration to deliver predictable data; poor data quality; an unwelcome focus on the number rather than content of the reports; their use as a tool to ascribe individual or organizational blame; and the perception that the SOR forms were being censored before they reached the health and safety team, which ultimately eroded trust between the workforce and management" (Oswald et al., 2018). That said, it is important that near-miss reporting systems be appropriately designed to improve workplace safety by identifying and addressing accident risk factors. Simply looking to increase reporting rates without the correct intentions is insufficient for improving workplace safety.

2.2 Potential Solutions to Shortcomings

How can a company design or improve upon their near-miss reporting system? According to Williamsen (2013) a good starting point to is to use the following six criteria of safety excellence: "1) Top management is visibly committed to the process. 2) Middle management is actively involved in the program. 3) Supervisor performance is focused. 4) Hourly employees are actively participating. 5) System is flexible to accommodate site culture. 6) System is perceived as positive by the hourly workforce." Moving through these criteria can help determine the

appropriateness of solutions for the lack of near-miss reporting in the construction industry. If a proposed solution meets all six criteria, it should be considered appropriate.

Solutions should be developed to address specific barriers to near-miss reporting. To overcome the barrier of a lack of common understanding of a near miss, construction companies should choose a broad, all-encompassing definition. Companies should encourage their workers to report any unsafe event they encounter as a near miss. To help overcome the fear of punishment, retaliation, and peer pressure, companies should propose relevant regulations for rewards and punishments related to near-miss reporting (Z. Zhou et al., 2019). Regulations should be put in place to not only prevent retaliation from management on those who report, but also to effectively incentivize proper reporting. To overcome the barrier of lack of recognition and feedback, management should disseminate widely the importance of near misses (Z. Zhou et al., 2019). Workers should be made aware that their input is valued and meaningful for improving safety within their company. Finally, a key component in removing barriers is making the near-miss reporting process simple and convenient for workers (Z. Zhou et al., 2019). The more simple and convenient the process is, the better the reporting a company will receive from its workers.

An additional way to improve near-miss reporting rates is by implementing more technologically advanced, readily accessible, and easier-to-use reporting systems. For example, state DOTs thought to be leaders in occupational safety, including California, Tennessee, and Texas, have all implemented online forms and tools that foster easy and convenient reporting as well as secure databases to store information and analyze trends. While statistics were inaccessible, these DOTs have seen an increase in reporting and improved their analysis of near misses with the implementation of these tools. Additional research has been done to provide a framework for near-miss data collection and visualization within a BIM platform (Shen and Marks, 2016). This framework lets workers input details of a near-miss event and visualize it alongside other similar events. Managers can then pinpoint high-frequency and high-severity areas and events to adopt practical hazard mitigation techniques.

While understanding these shortcomings and the recommendations for improving near-miss reporting is beneficial, further research is needed to maximize the effectiveness of near miss-reporting in the construction industry. To date, many studies have been performed within induvial companies. Thus, results of these studies may be indicative of only the safety culture of the companies in question rather than the construction industry writ large. To get a better understanding of the major industrywide near-miss reporting issue, studies should sample numerous companies, both individually and collectively, and compare the findings. Additionally, future research should be performed to quantify the difference between near misses that occur and near misses that are reported. While it is evident that near misses go unreported, there is little research on how many events go unreported and how incidence rates change as the number of unreported events increases. Regardless of the reasons for not reporting, the inability to analyze 100% of near misses limits the utility of results and thus the potential for increased jobsite safety (Haas et al., 2020). Lastly, future research should attempt to get a better understanding of the role that demographics play in near-miss reporting. For example, a greater risk tolerance is associated with longer tenures of workers in hazardous industries (Haas et al., 2020), such as the construction industry. Additional research that determines how tenure, as well as other worker demographics, affect near-miss reporting rates may be useful for defining and combating the problem at hand: “Being able to associate individual factors with the severity and actions of near-miss reports may have further informed individual-level interventions that companies can use within their management systems”(Haas et al., 2020).

Chapter 3 Methodology

The main objectives included investigating near-miss programs used at other state DOTs, documenting KYTC's current approach to near-miss reporting and tracking, and identifying perceptions of the agency's current near-miss program. Such perceptions should include awareness of near misses, value of the program, barriers to its use, and other factors.

3.1 Investigating Near-Miss Programs of Other State DOTs

The investigation of near-miss programs and tracking began with a search of other state DOT websites. Agency websites were searched for safety manuals that mentioned near-miss reporting as well as near-miss report forms. Most state DOTs do not to discuss any form of a near-miss program or near-miss reporting form/tool. Therefore, the search was narrowed down to a few state DOTs viewed leaders in the field of occupational safety — California, Connecticut, Florida, New York, Pennsylvania, Tennessee, and Texas. Table 3.1 was created to organize and compare data from each state.

Table 3.1 Blank State DOT's Near-Miss Information Table

State	Near-Miss Policy and Procedure	Accessible Near- Miss Reporting Form/Tool?	Applicable Links
California			
Connecticut			
Florida			
New York			
Pennsylvania			
Tennessee			
Texas			

3.2 Documenting Current Near-Miss Program of KYTC

After compiling data on near-miss programs, the research team performed a similar investigation of KYTC's current near-miss program. KYTC's website was thoroughly search to collect information on near misses. Specifically, KYTC's *Employee Safety and Health Manual* was reviewed to gather information on the existing near-miss program and near-miss reporting opportunities.

Additional information on KYTC's current near-miss program was documented from conversations that the research team had with Cabinet administration and safety personnel. These conversations provided the research team with supplemental information that is not easily accessible via an internet search.

3.3 Identifying Perceptions of Current KYTC Near-Miss Program

The research team administered a survey to KYTC maintenance personnel on their experience with the agency's near-miss reporting program. This survey let researchers present questions and prompts in multiple formats (e.g., multiple choice, sliding scale, free response). This method also allowed for conditional questions and prompts based on a respondent's answer to previous questions.

The survey was distributed via Qualtrics to all KYTC maintenance Superintendents I and Superintendents II. Respondents were informed that all of their answers would remain anonymous. The survey was completed by 73

respondents. Responses were used to calculate summary statistics at the district and statewide levels to identify trends and pinpoint common employee perceptions that could warrant greater attention.

When creating the survey, researchers wrote questions and prompts that can be grouped into three categories. The first included questions pertaining to demographics and overall experience. These questions established the respondent's work location, years of experience with KYTC, and safety training experience. The second category of questions pertained to the respondent's near-miss knowledge and experience. Questions in this category helped determine if the respondent knew what a near miss is, how to report a near miss and the importance of doing so, and if the respondent has ever experienced a near miss. The final category concerned the respondent's knowledge and experience with KYTC's current near-miss program. Questions sought to understand the respondent's knowledge of KYTC's near-miss reporting methods, their experience with these methods, and their perceptions of and recommendations for improving the methods. The survey can be found in Appendix A.

Chapter 4 Results

4.1 Investigating Near-Miss Programs of Other State DOTs

Most state DOTs do not discuss any form of a near-miss program or near-miss reporting form/tool on their websites. This suggests that many agencies struggle with creating a satisfactory near-miss program and/or documenting administrative policy language and procedures for effective use of such a program. That said, the research team determined KYTC is likely to benefit most from the investigation of near-miss programs of state DOTs that are considered leaders in occupational safety. States that are leaders in occupational safety include California, Connecticut, Florida, New York, Pennsylvania, Tennessee, and Texas. Information obtained during this investigation is presented in Table 4.1.

Table 4.1 State DOT's Near-Miss Information

State	Near-Miss Policy and Procedure	Accessible Near-Miss Reporting Form/Tool?	Applicable Links
California	As described in Chapter 2, "Safety Meetings," of the Caltrans Safety Manual, "close-call incidents are incidents that did not result in contact, injury, or damage." Close calls are reported via the mobile app for the Major Construction Incident Notification form using a smart phone or tablet and then tracked in a database where information is collected and stored.	Yes	https://forms.dot.ca.gov/v2Forms/servlet/FormRender_er?frmid=CEM0603 https://dot.ca.gov/programs/construction/construction-manual/section-2-1-safety
Connecticut	No information found on near-miss or near-miss reporting.	No	N/A
Florida	No policy or procedure found on near-miss or near-miss reporting in FDOT Highway Safety Manual. However, FDOT does provide an online tool for reporting near-misses directly on their website. Reporting tool link provided.	Yes	https://www.fdot.gov/materials/crashreport/index
New York	Employees shall also report to supervisors all "near-miss" accidents which could have resulted in an injury, death and/or property damage. The only difference between an accident and a "near-miss" is the consequences. Management must know about "near misses" to identify and correct safety problems that could have led to more serious consequences, but fortunately did not.	No	https://www.dot.ny.gov/divisions/engineering/structures/repository/manuals/NYSDOT_Br_Insp_Safety_Manual_2018.pdf

State	Near-Miss Policy and Procedure	Accessible Near-Miss Reporting Form/Tool?	Applicable Links
Pennsylvania	A near miss is an event that was observed to have had the potential to be categorized as an accident, but did not result in property damage, an injury or illness requiring professional medical attention, or a fatality. This may include, but is certainly not limited to, work zone intrusions that do not result in an accident. The Accident Investigation Report (P-25) and witness statement forms shall be completed to document near misses.	Yes	https://www.dot.state.pa.us /public/PubsForms/Publica tions/PUB%20445.pdf
Tennessee	No state unique policy and procedure found on near-miss or near- miss reporting. TDOT references the Occupational Safety and Health Act (OSHA) of 1972 which provides employees and/or their representatives the right to file complaints and request inspections if concerned with the possible existence of safety and health hazards. However, TDOT does provide online tools for reporting near-misses directly on their website. Reporting tool links provided.	Yes	https://www.tn.gov/workfo rce/employees/safety-health/tosha-redirect/file-a- safety-complaint/file- safety-health- complaint.html https://stateoftennessee.for mstack.com/forms/notice of alleged safety health hazards
Texas	Near-Miss Events are unplanned events involving Department personnel, equipment, or operations that clearly demonstrate the potential for injury or property damage but that do not produce these results. All near-miss events are those incidents in which equipment failures or deficiencies are known, or suspected cause factors exist. Report all incidents to OCC. Reporting other types of near-miss events to OCC is encouraged but not mandatory.	No	http://onlinemanuals.txdot.gov/txdotmanuals/cah/violations.htm?ok=+++ok

The content of near-miss reporting forms and tools vary between states. Therefore, the research team reviewed accessible reporting forms and tools to better understand the differences between them. Figures 4.1 and 4.2 are images of the online reporting tools utilized by Florida DOT and Tennessee DOT, respectively.

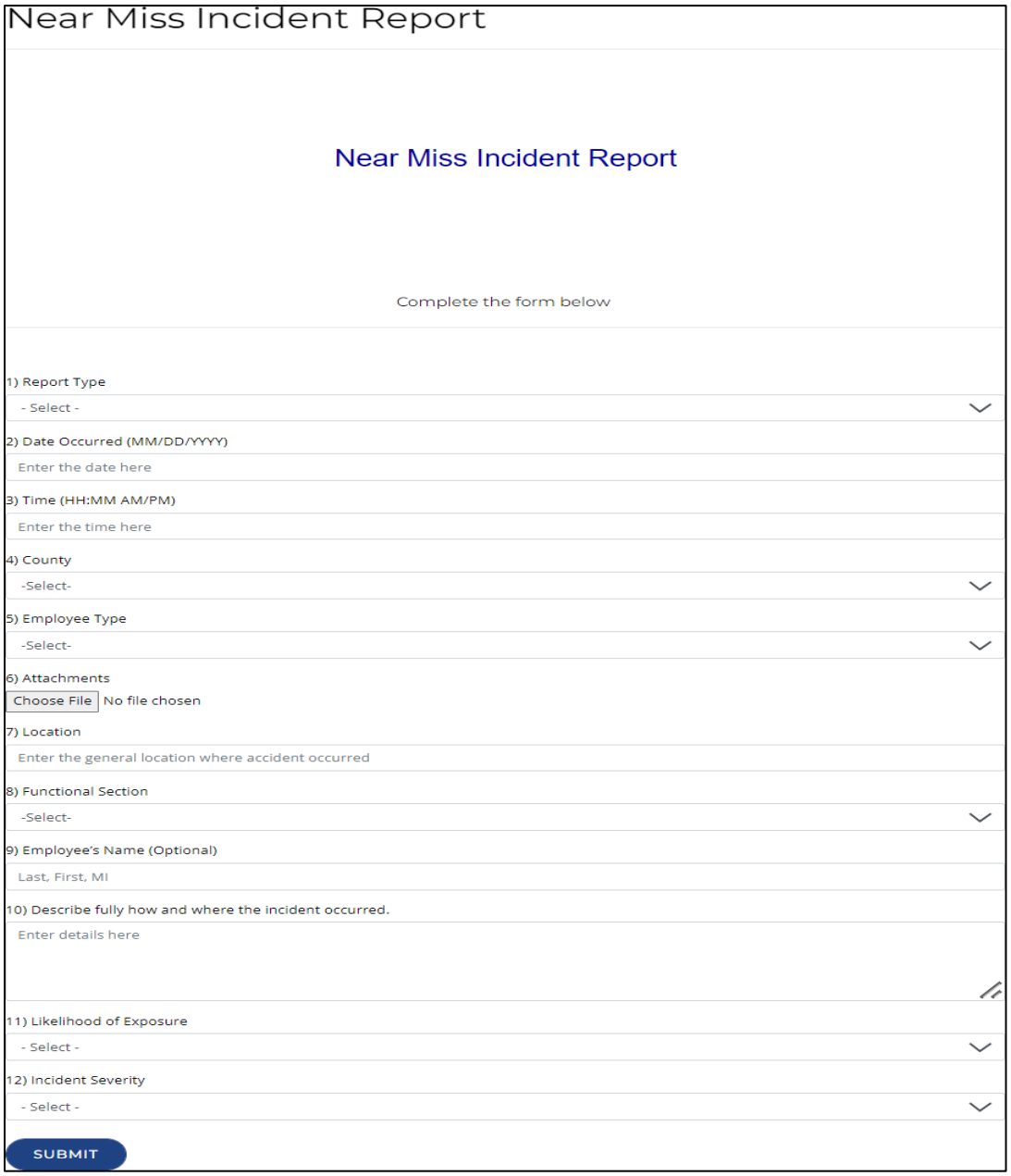


Figure 4.1 Florida DOT Near-Miss Incident Tool

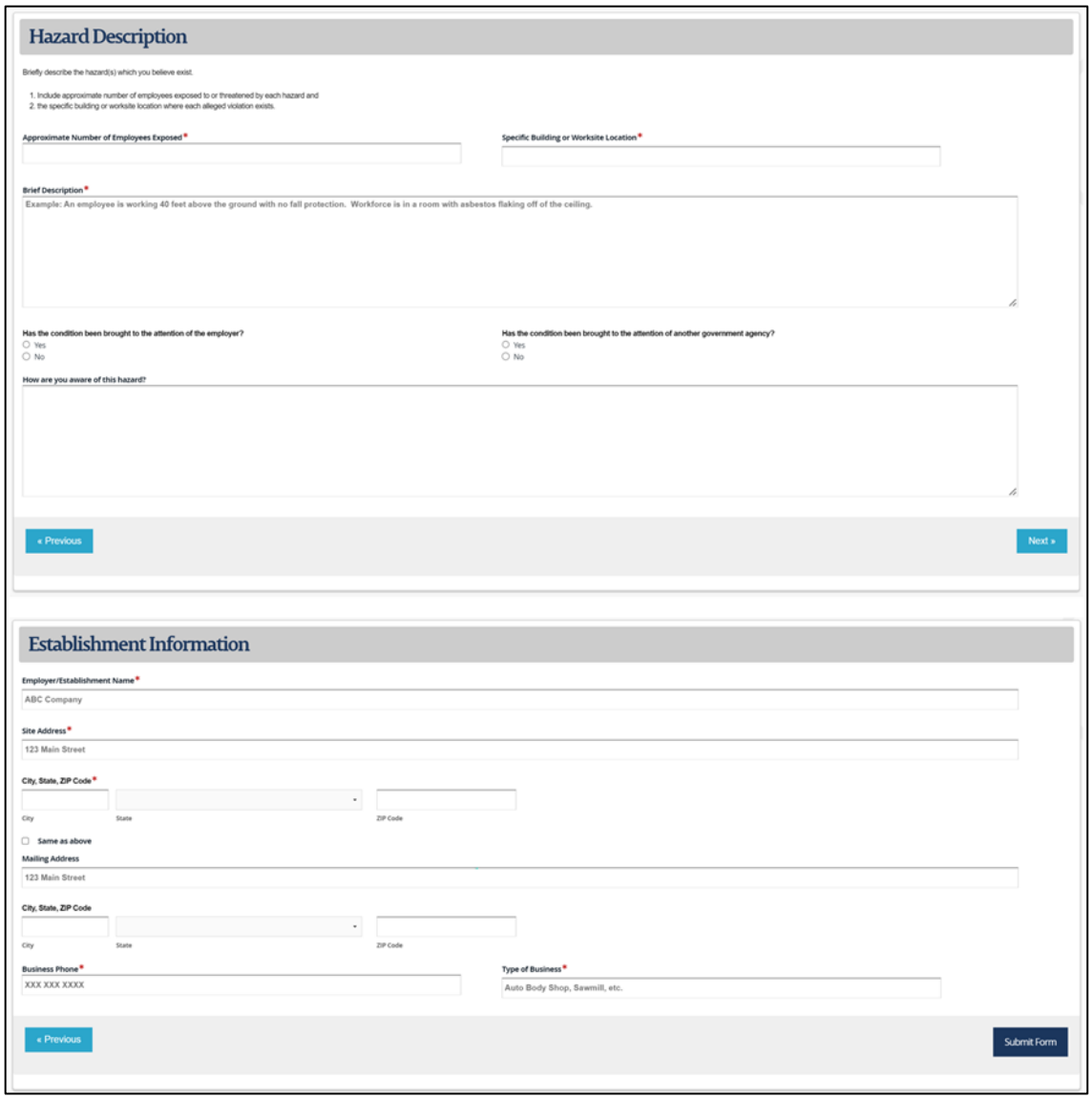


Figure 4.2 Tennessee Notice of Alleged Safety or Health Hazards Tool

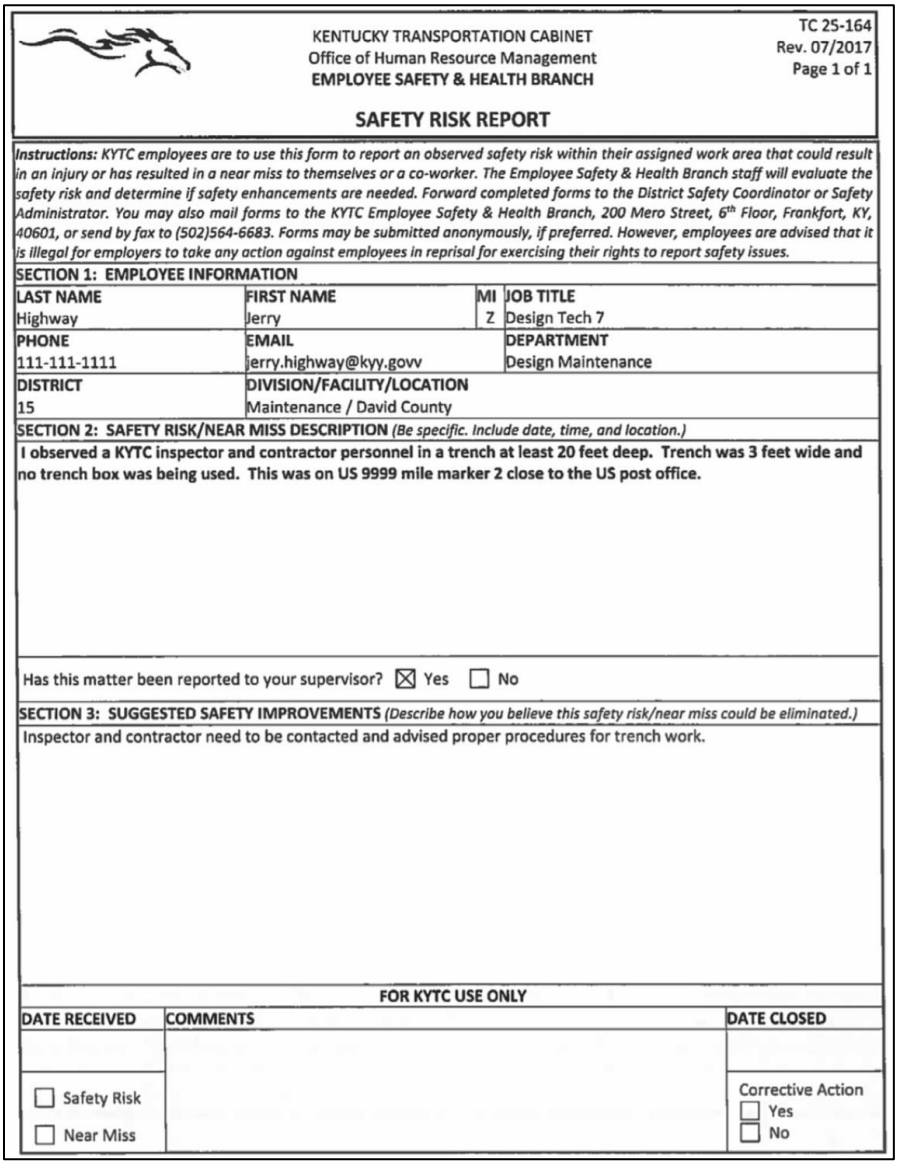
4.2 Documenting Current Near-Miss Program of KYTC

Information found on near-miss and/or near-miss reporting was in KYTC's *Employee Safety and Health Manual*. However, this manual provides minimal policy and procedure on the subject:

> "Safety risk reports establish a process for workers to report close calls/near misses, hazards, and other safety and health concerns. Reports may be submitted anonymously, if preferred; however, employees are advised that it is illegal for employers to take any action against employees in reprisal for exercising their rights to report safety issues.
>
> KYTC employees should complete a TC 25-164 form, Safety Risk Report, to report an observed safety risk within their assigned work area that could potentially result in an injury or that has resulted in a near miss to themselves or a co-worker (SHA-9013).

Completed forms shall be forwarded to the district safety coordinator or regional safety administrator. The district safety coordinator shall share the risk report with their immediate supervisor."

A sample Safety Risk Report (Form TC 25-164) referenced in the *Employee Safety and Health Manual* can be seen in Figure 4.3.



KENTUCKY TRANSPORTATION CABINET
Office of Human Resource Management
EMPLOYEE SAFETY & HEALTH BRANCH

TC 25-164
Rev. 07/2017
Page 1 of 1

SAFETY RISK REPORT

Instructions: *KYTC employees are to use this form to report an observed safety risk within their assigned work area that could result in an injury or has resulted in a near miss to themselves or a co-worker. The Employee Safety & Health Branch staff will evaluate the safety risk and determine if safety enhancements are needed. Forward completed forms to the District Safety Coordinator or Safety Administrator. You may also mail forms to the KYTC Employee Safety & Health Branch, 200 Mero Street, 6th Floor, Frankfort, KY, 40601, or send by fax to (502)564-6683. Forms may be submitted anonymously, if preferred. However, employees are advised that it is illegal for employers to take any action against employees in reprisal for exercising their rights to report safety issues.*

SECTION 1: EMPLOYEE INFORMATION

LAST NAME	FIRST NAME	MI	JOB TITLE
Highway	Jerry	Z	Design Tech 7
PHONE	**EMAIL**		**DEPARTMENT**
111-111-1111	jerry.highway@kyy.govv		Design Maintenance
DISTRICT	**DIVISION/FACILITY/LOCATION**		
15	Maintenance / David County		

SECTION 2: SAFETY RISK/NEAR MISS DESCRIPTION *(Be specific. Include date, time, and location.)*

I observed a KYTC inspector and contractor personnel in a trench at least 20 feet deep. Trench was 3 feet wide and no trench box was being used. This was on US 9999 mile marker 2 close to the US post office.

Has this matter been reported to your supervisor? ☒ Yes ☐ No

SECTION 3: SUGGESTED SAFETY IMPROVEMENTS *(Describe how you believe this safety risk/near miss could be eliminated.)*

Inspector and contractor need to be contacted and advised proper procedures for trench work.

FOR KYTC USE ONLY

DATE RECEIVED	COMMENTS	DATE CLOSED
☐ Safety Risk ☐ Near Miss		Corrective Action ☐ Yes ☐ No

Figure 4.3 Sample KYTC Risk Report Form

KYTC has created an online web tool for employees to report near-miss events. The reporting tool was created using the ArcGIS Survey123 program and is named the *KYTC Safety Opportunity Report*. The reporting tool can be found at the following link: https://survey123.arcgis.com/share/7c81f18d4d1846dda1c3fb3cf9c45b1c. Figure 4.4 captures the tool's layout.

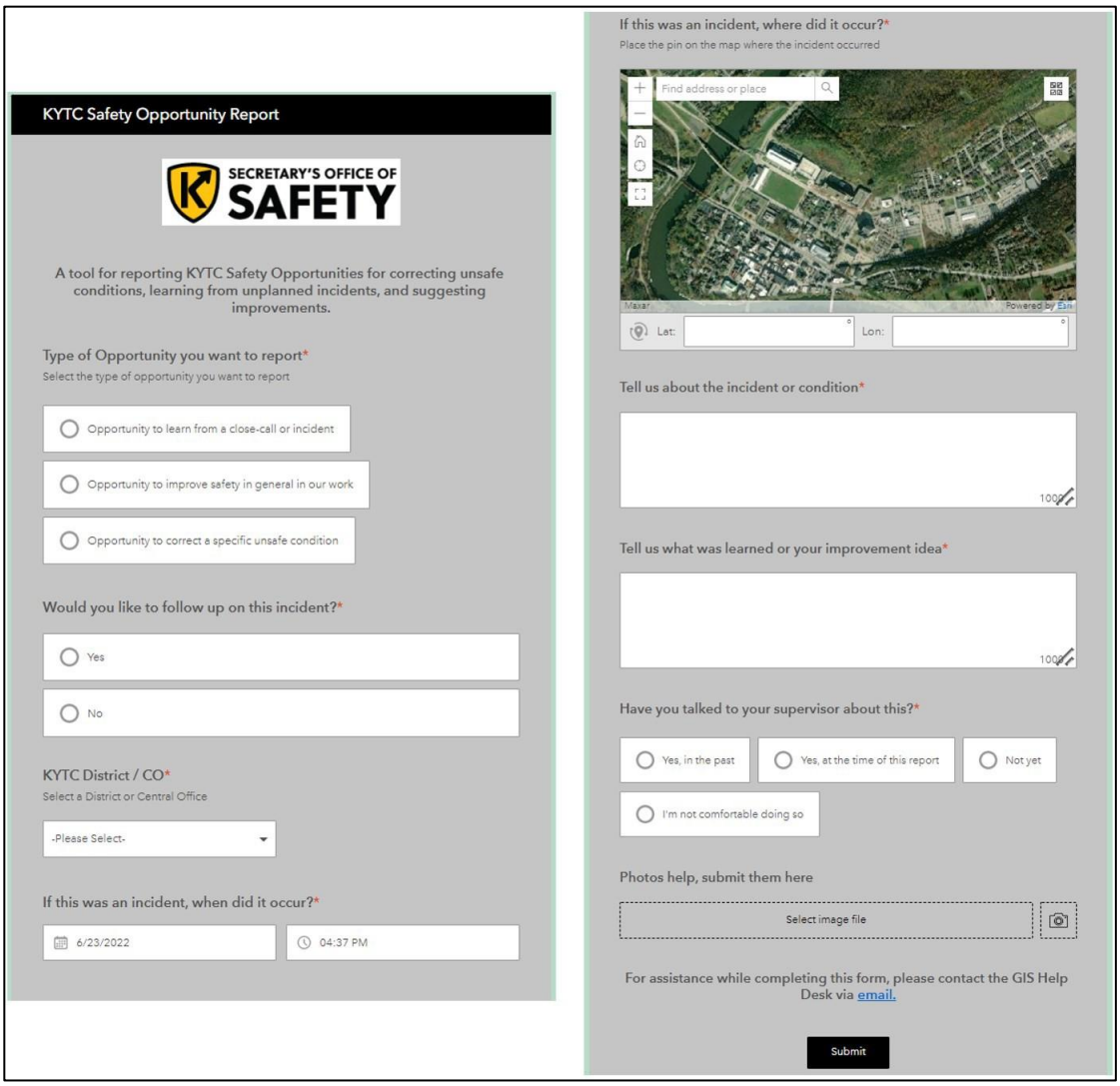


Figure 4.4 KYTC Safety Opportunity Report Tool

4.3 Identifying Perceptions of Current KYTC Near-Miss Program

Survey results can be used to identify trends and determine common employee perceptions of KYTC's current near-miss program. This information can be used to improve the existing near-miss program and establish appropriate policies and procedures for near-miss reporting. The survey was completed by 73 respondents. Some questions did not elicit responses from all respondents.

4.3.1 Demographics and Overall Experience

The first question asked respondents to select which KYTC district they currently work in. All districts had at least two respondents complete the survey. The district with the most respondents was District 6 (Figure 4.5).

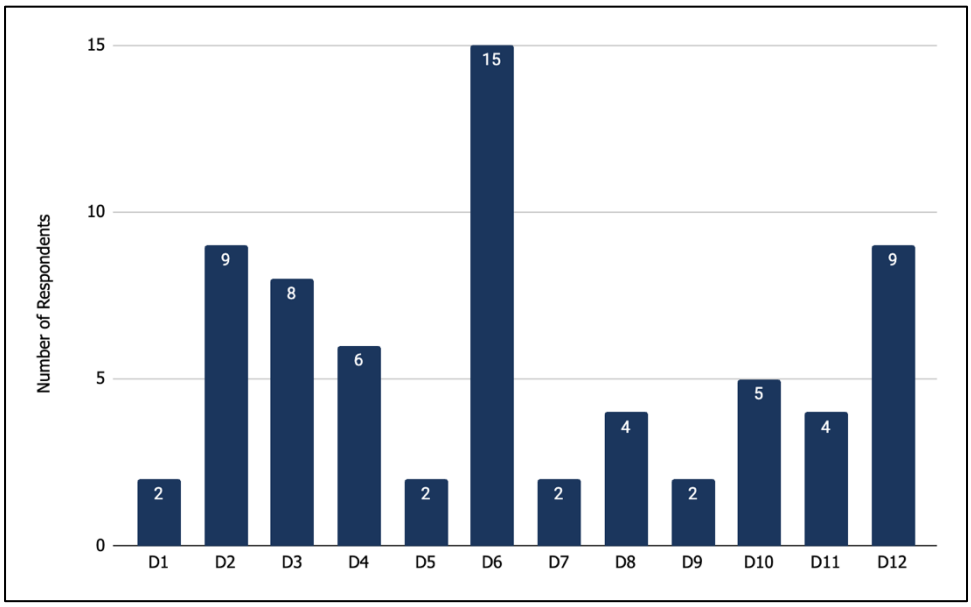


Figure 4.5 Respondents' Current Districts

An overwhelming majority of respondents have at least 10 years of experience with KYTC (Figure 4.6).

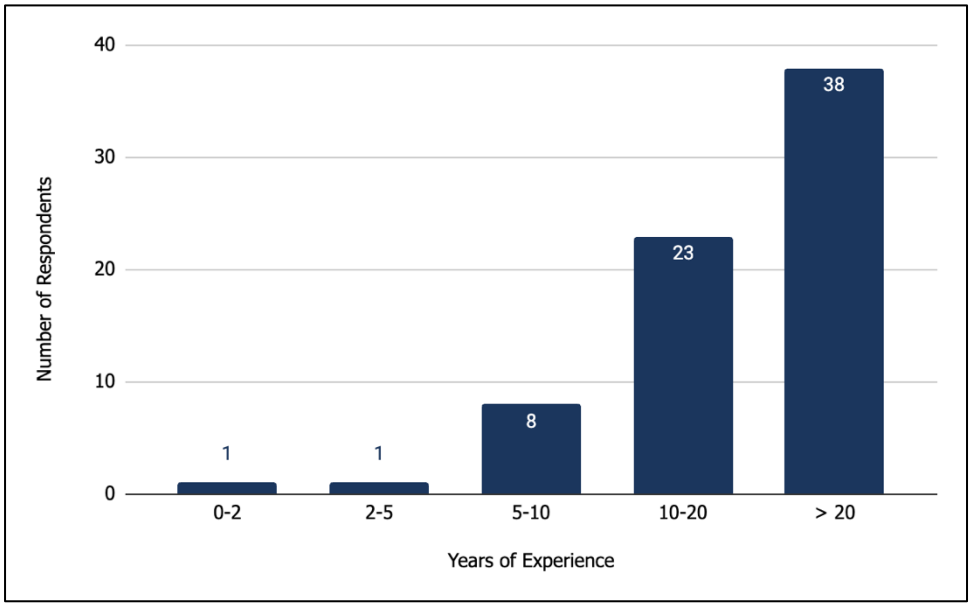


Figure 4.6 Years of Experience with KYTC

Figure 4.7 identifies training programs completed by each respondent. Safety Opportunity / Near-Miss Reporting Training has been completed by 25 respondents.

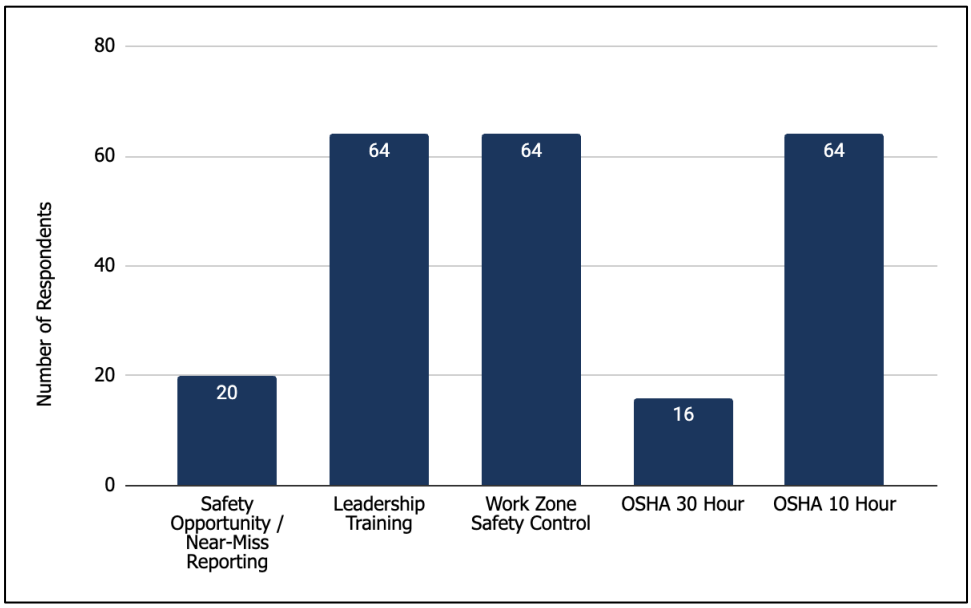


Figure 4.7 Completed Safety Trainings

Most of the respondents who have completed the Safety Opportunity/Near-Miss Reporting Training said it is somewhat adequate or extremely adequate (Figure 4.8).

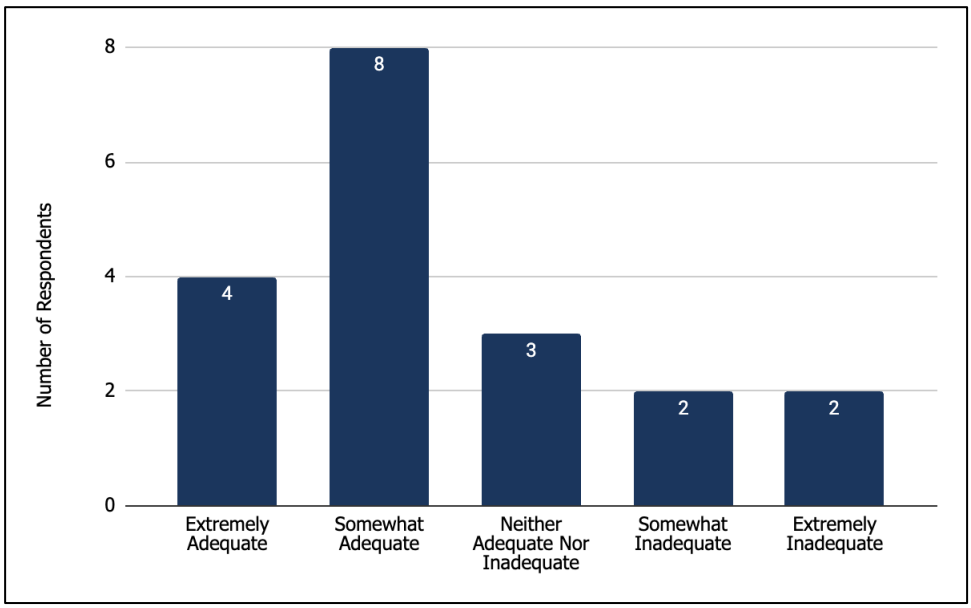


Figure 4.8 Rating of Safety Opportunity/Near-Miss Training

Respondents who have taken the Safety Opportunity/Near-Miss Training were asked to comment on strengths and/or opportunities for improvement. Two respondents provided answers:

- "As far as my experience with safety reporting is that it's not done because nothing is ever done about it. In my facility alone there has been several, what I think is hazards reported and yet nothing is done."
- "It is a good program, as it is."

4.3.2 Near-Miss Knowledge and Experience

The first question in this category asked respondents if they are aware of the definition of a near-miss or close call event. Over 75% of respondents said they can define a near-miss, while only six percent of respondents claimed they had no knowledge of the definition (Figure 4.9).

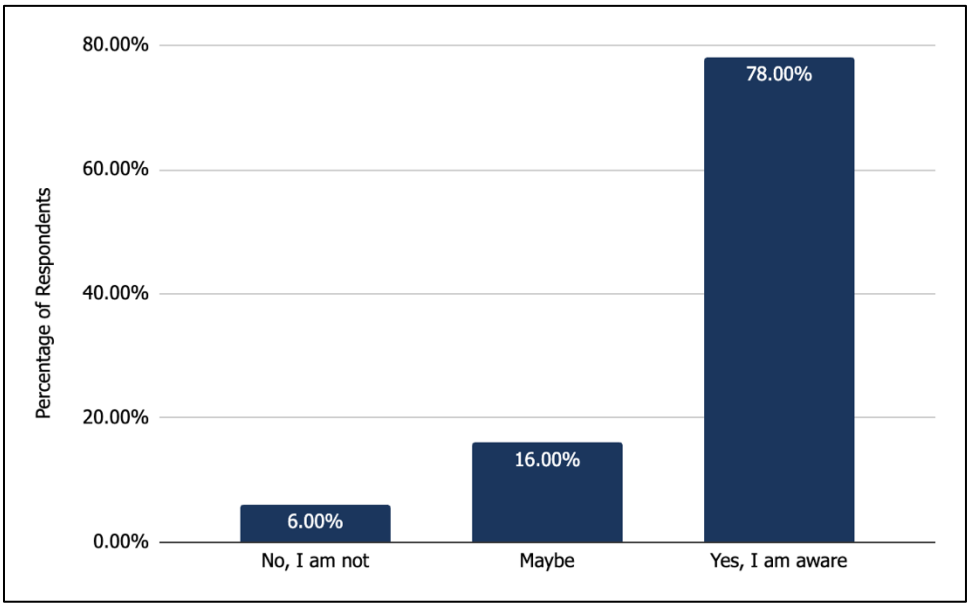


Figure 4.9 Awareness of Near-Miss Definition

Most respondents said they have experienced a near miss while working at KYTC, but only once or twice. Under 10% of respondents claimed to have never experienced a near-miss while at the Cabinet (Figure 4.10).

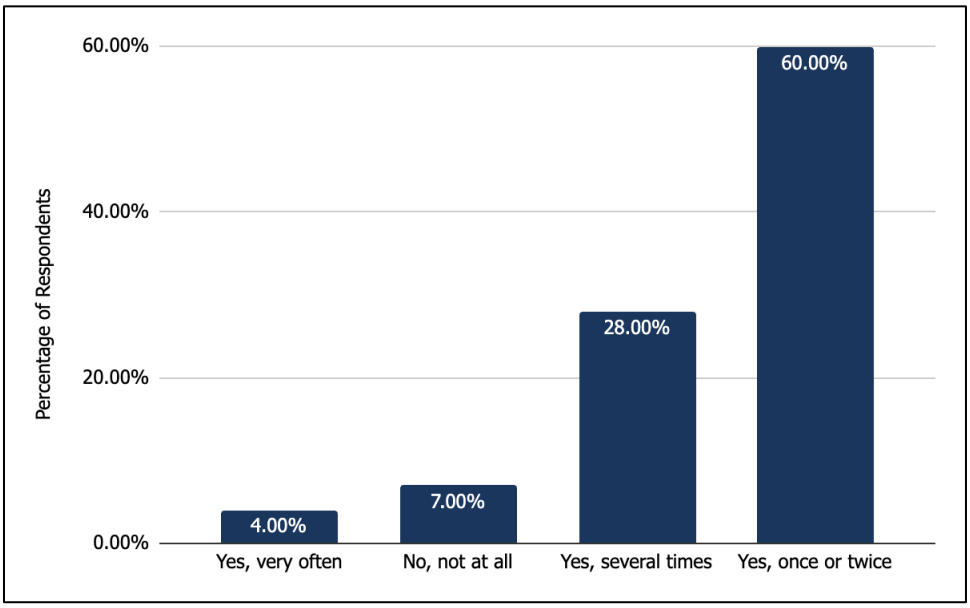


Figure 4.10 Distribution of Respondents' Near-Miss Experience at KYTC

Most respondents said they consider reporting every near-miss event to be extremely important while only two respondents (3%) do not regard this as important (Figure 4.11).

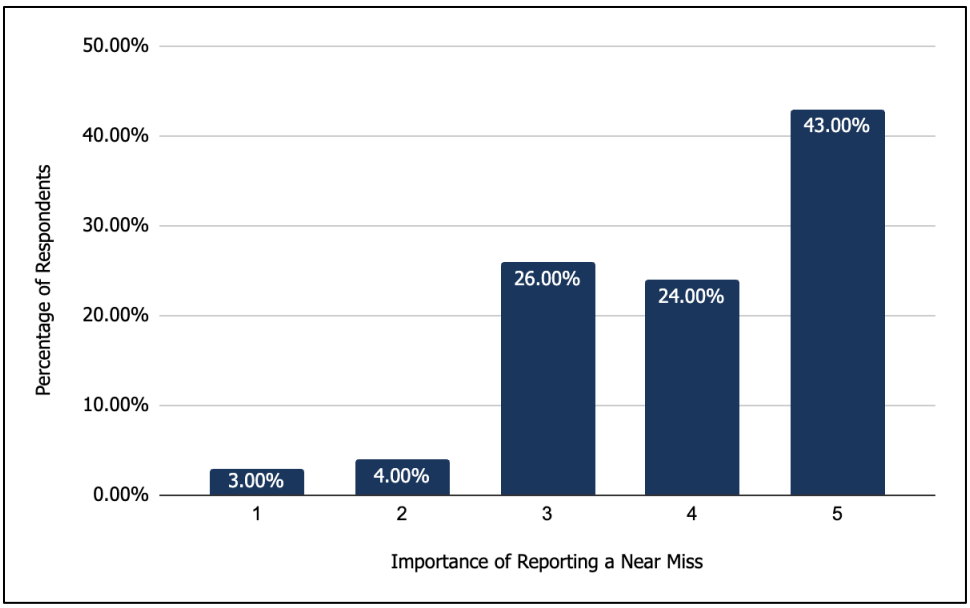


Figure 4.11 Rating of Near-Miss Reporting Importance

4.3.3 Knowledge and Experience of KYTC's Near-Miss Program

Most respondents said they know how to report a near miss. But approximately a 20% of respondents do not know how to report a near-miss event (Figure 4.12).

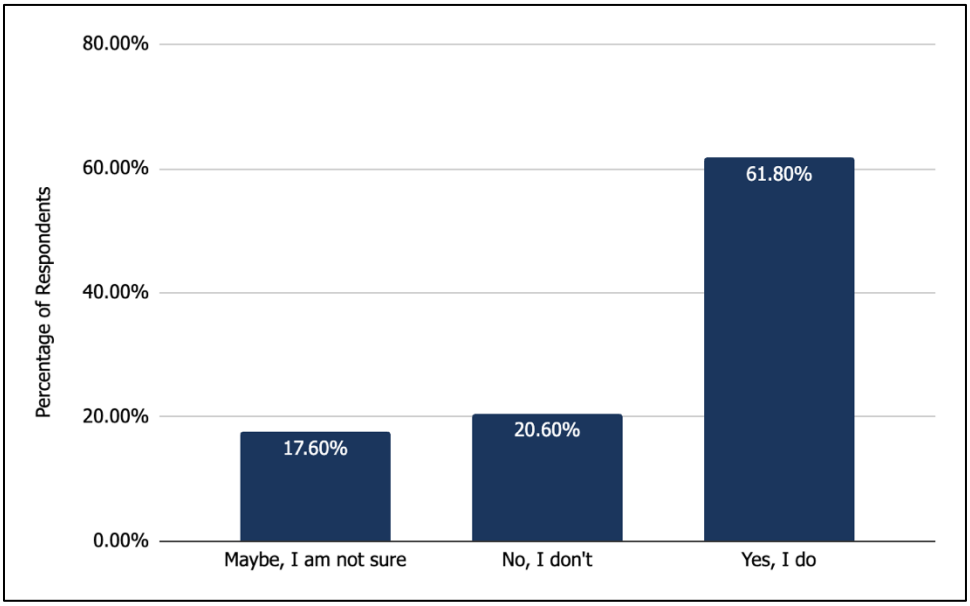


Figure 4.12 Awareness of How to Report a Near-Miss

A slight majority of respondents said they are aware of KYTC's web tool for reporting near misses. Nearly 30% said they were not aware of this tool (Figure 4.13).

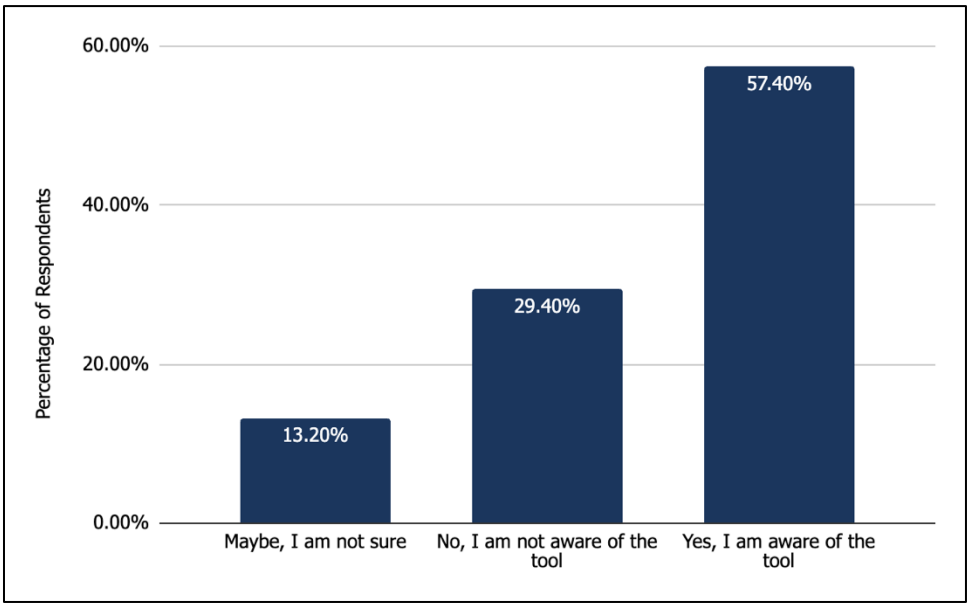


Figure 4.13 Awareness of KYTC's Web-Based Reporting Tool

However, the vast majority of respondents have never used the web-based tool to report a near-miss (Figure 4.14).

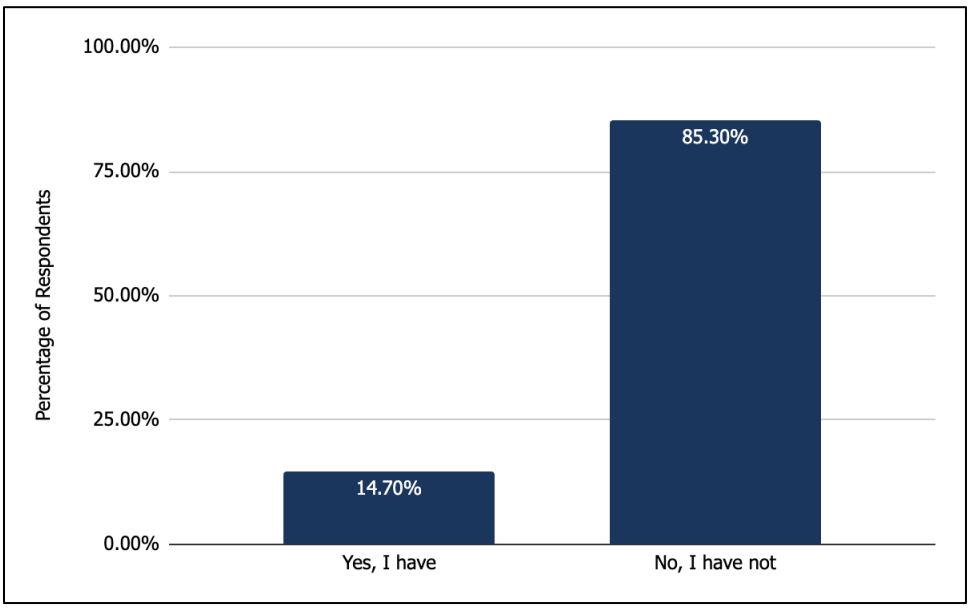


Figure 4.14 Use of KYTC's Web-Based Reporting Tool

The following question asked respondents who have used the web- based reporting tool to share what they liked and/or disliked about the tool. Responses are listed below.

- Easy to use
- I appreciate the information is shared at the highest level of KYTC.
- Easy to navigate

- The ability to report an unsafe act or near miss from a personal cell phone.
- Very easy to use and you could give precise location with pictures with my iPhone.
- Train everyone on the uses and importance
- All info can be entered in one place.
- It helps focus on the areas we need to watch to prevent accidents.
- Easy to use but nothing is done about it.

Next, respondents ranked their preferred method for reporting near-miss events. As shown in Figure 4.15, most respondents ranked the web tool as their first choice, followed by in-person using a paper form. However, reporting in person using a paper form was also ranked the least preferred option by the most respondents. This question also provided another option where respondents could suggest other methods for reporting near-miss events. The three unique responses for this field included always informing the safety coordinator, using an app, and none of the above.

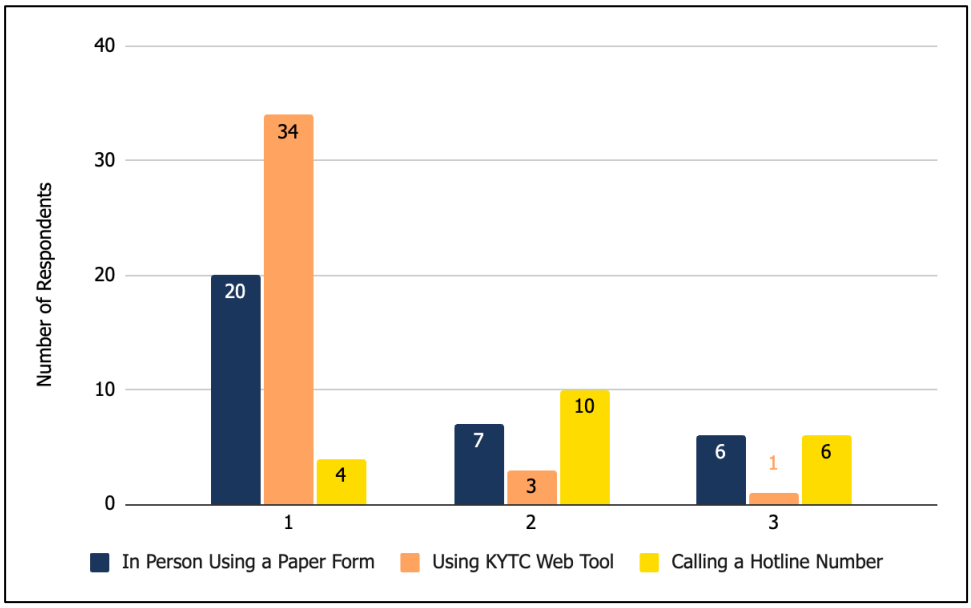


Figure 4.15 Rank of Preferred Near-Miss Reporting Method

Respondents next selected all the reasons that prevent them from reporting a near-miss using the paper form. All seven reasons for not reporting using the paper form were selected by multiple respondents (Table 4.2). A lack of corrective actions from past suggestions was the most selected reason (nearly 40% of respondents). A lack of anonymity was chosen least often.

Table 4.2 Reasons for Not Reporting Near Misses Using a Paper Form

Reason for Not Reporting	Percentage of Respondents
Haven't seen corrective actions from past suggestions	38.6
I don't know where to find the paper form	28.1
I don't know how to report a near-miss incident using a paper form	22.8
I am not sure what a near miss or close call entails	15.8
Concern about getting a coworker in trouble	14.0
I don't have time to complete the form	8.8

Reason for Not Reporting	Percentage of Respondents
I believe I can be identified if I filled out the paper form	5.3

Respondents then selected all the reasons that prevent them from reporting a near-miss using the web tool. Again, all seven reasons for not reporting using the web tool were selected by multiple respondents (Table 4.3). A lack of corrective actions from past suggestions was again the most-cited reason (30% of respondents). Not having time to compete the form was the reason chosen least often for not using the web tool.

Table 4.3 Reasons for Not Reporting Near Misses Using KYTC's Web Tool

Reason for Not Reporting	Percentage of Respondents
Haven't seen corrective actions from past suggestions	32.7
I don't know where I can access the tool	27.3
I don't know how to report a near-miss incident using the web-based tool	21.8
I believe that online reporting is not totally anonymous	20.0
Concern about getting a coworker in trouble	10.9
I am not sure what a near miss or close call entails	9.1
I don't have time to complete the web-based form	5.5

Other reasons for not using both the paper form and web tool included being told to report near misses directly to supervisors, observing too many near mises to report, and not experiencing a near miss since the web tool's creation, among others.

Respondents offered suggestions on improvements they believe can be made to the KYTC Safety Opportunity Tool. The responses for this question along with the number of times in which they were received are presented in Table 4.4.

Table 4.4 Recommendations for KYTC's Web-Based Reporting Tool

Recommendation	Count
• Nothing	11
• Have more accessible	1
• Good	2
• Not all people are comfortable using a computer or web-based things and • don't want to use them they prefer a phone call or paper form.	1
• A line item for the weather conditions at time of near miss	2
• You would become a target from office if you went outside of their Protocol.	1
• Make the knowledge of it more available	3
• Don't know	1
• People have to know how to do it	1
• Training people how to use the program and basic information on what a near miss is	1
• Action Items created	1
• More specific training on importance to report every incident	2
• No answer	3

Recommendation	Count
• Leave off the map section, since it supposed to be completely anonymous anyways.	1
• Showing near miss incidents from all districts will help employees be proactive in same situations	1
• Accountability by those it's reported to if nothing is done.	1
• First time seeing this	1
• I think we have become fixated on safety talks and checking boxes all that the crew's aren't hearing what's being said. I believe the stand down for was a really good talk but I believe it fell on a lot of deaf ears again because of daily tasks safety briefings weekly bimonthly it loses its importance to people.	1
• We need to hold employees and supervisors accountable for all safety, real • punishment for employees that don't follow guidelines! Reward those who do	1
• Improved communication from front line supervisors encouraging employees to use the Safety Opportunity App	1
• Including what the weather was like	1

The final question asked respondents if they have any other comments or feedback on the survey or web tool. Responses for this question along with the number of times each was mentioned are presented in Table 4.5.

Table 4.5 Final Comments on Survey and KYTC's Web-Based Reporting Tool

Recommendation	Count
• None	16
• I believe the tool works well as it is	1
• Training	1
• I think safety in all forms is very important. I just don't think that sentiment is carried by those in policy making positions. I think that safety takes a back seat to cost.	1
• Safety precautions should be shared throughout the state. Near miss situations can be prevented with the correct training. Examples of near miss situations that have already happened can educate employees, make them aware and be more proactive.	1
• I like it, but a lot of the people at KYTC are older and do not know how to use that advance of technology	1
• Put access to this in KHRIS and the App that a lot of employees use.	1

Chapter 5 Findings and Analysis

5.1 Investigating Near-Miss Programs of Other State DOTs

The main purpose of investigating near-miss programs of other state DOTs was to review and document other strategies for near-miss reporting and tracking that may prove beneficial for KYTC.

Many state DOTs do not have or do not provide public access to any near-miss program or policy. Therefore, it can be difficult to discover common near-miss program strategies and policy language. This in turn results in a small sample size of state DOT near-miss programs and an inability to identify common practices. However, some larger states and states that are considered leaders in occupational safety use and provide information on near-miss reporting programs.

Most of the reviewed state DOTs include a definition of near-miss in their policies and procedures. One of the barriers that leads to a lack reporting is the lack of common understanding and universal definition of a near miss. Therefore, many agencies provide a general definition of near miss within their policy and procedures for employees to reference. The definition of near miss varies only slightly from state to state.

Some state DOTs (e.g., New York, Texas) require employees to report near misses directly to their supervisor or safety coordinator. This method of reporting allows near misses to be handled internally within a crew or department. This may prove beneficial for promptly dealing with unsafe conditions without having to expend a lot of time and resources. However, given its verbal communicative nature, this method leads to many near misses going undocumented. If near misses are not documented, it is nearly impossible to collect data and identify common trends within an organization.

Other state DOTs (e.g., Pennsylvania) rely solely paper forms for near-miss reporting. There are advantages to paper forms, including documentation and recordkeeping, ease of process, and anonymity. While paper forms allow for documentation and recordkeeping, they are susceptible to getting lost and never getting into the hands of management. Also, while employees normally appreciate the ease of this process and anonymity, filling out additional paperwork is often considered a waste of time and thus near-miss events may go unreported.

Other state DOTs (e.g., Florida, Tennessee) have moved to online near-miss reporting tools. Some agencies, such as Caltrans, have created mobile apps for reporting near-miss events. Within such online tools and mobile apps, near misses can be tracked in a database, where information is collected, stored, and analyzed. A major advantage of these reporting tools is their accessibility. In theory, because online tools and mobile apps can be accessed at nearly all times, more near-miss events can be reported in real time. In general, it is thought that online reporting conserves time, money, and energy. However, online reporting tools may be a barrier for older and/or less technologically sophisticated employees.

Uncertainty remains with respect to near-miss programs at other agencies. While many states investigated in this study are considered leaders in occupational safety, it is unclear how often their employees actually use their near-miss reporting programs. Therefore, further investigation should be done to determine reporting rates at the state level to get a better idea of which near-miss programs are most successful.

5.2 Documenting Current Near-Miss Program of KYTC

KYTC currently has little policy language on near- misses and offers both a paper form and online tool for reporting near misses. Relative to most states which provide no information on near-miss reporting, KYTC's near-miss program

is somewhat comparable. However, there are many areas for improvement. Some of these areas can be improved upon by referencing near-miss programs discussed in the previous section.

One area for improvement involves establishing a standard definition of near miss. While KYTC's *Employee Safety and Health Manual* provides a few paragraphs on how to report a near miss, it does not define the term *near miss*. The lack of common understanding and universal definition of near miss is a barrier that leads to a lack of reporting. Revising the policy language of the *Employee Safety and Health Manual* to define near miss may educate more employees on the topic and in turn increase reporting rates.

Additional revisions to the policy and procedures in the *Employee Safety and Health Manual* may necessary based on the reporting method(s) that KYTC elects to proceed with. The manual currently includes procedures for reporting near misses via the Safety Risk Report paper form only. Therefore, if KYTC administration and safety personnel elect to use only the online Safety Opportunity Report tool or both the paper form and online tool, revisions to the *Employee Safety and Health Manual* to include procedures for reporting near misses via the online tool are necessary.

There are advantages and disadvantages to both of the existing reporting methods. The paper form allows an employee to provide as little or as much detail as they prefer. This lets employees remain anonymous if desired. While the online tool does not ask for an employee name, it requires the employee to note the district in which they work, the date and time of the near miss, and a pinpoint location on a map of where the near miss occurred. Providing these details may make an employee think that they will be easily identifiable. This could potentially discourage reporting.

The online tool allows for instant storage and analysis of information upon submission. In contrast, the paper form may take time to reach the proper staff in order to be considered and acted upon. Paper forms also often get lost, resulting in no corrective action. No corrective action may also discourage reporting.

Each method asks the employee to describe the near miss and provide suggestions for improvement. The online tool presents a few additional minor questions. One big addition the online tool provides is the ability to place a pinpoint location on a map of where a near-miss event occurred. It also allows an employee to upload pictures of the near-miss condition if applicable. To provide these additional items with a paper form, copies of maps and photos would have to be attached to the form, requiring more effort and time. The online reporting tool used by KYTC is also very similar to the Florida and Tennessee DOT's online tools with minor differences in the written language.

5.3 Identifying Perceptions of Current KYTC Near-Miss Program

Survey results were analyzed using the Chi-Square of Equal Likelihood Test and Chi-Square Contingency Table Test. The Chi-Square of Equal Likelihood Test, tests the null hypothesis is that each response has an equal likelihood. The alternative hypothesis is that all responses do not have an equal likelihood. For a Chi-Square Contingency Table Test, the null hypothesis is that the row variable and column variable are independent of each other. The alternative hypothesis is that the row and column variables are dependent upon each other. Key findings are summarized in bulleted format below.

Awareness of Near-Miss Definition

- Employees are significantly more likely to be aware of the definition of a near miss than not. Thus, not knowing how to define a near miss is likely not the biggest barrier to reporting at KYTC.

Near-Miss Experiences

- Employees are significantly more likely to have experienced a near miss than not. Therefore, a lack of near-miss events occurring is likely not a major barrier to near-miss reporting at KYTC.
- An employee's experience of near-miss events does not hinge on their awareness of the definition of near miss and vice versa.

Awareness and Use of KYTC Web Tool

- Employees are just as likely to not be aware of the web tool's existence as they are not.
- Employees are significantly more likely to have used the web-based near-miss reporting tool than not.
- An employee's use of the web tool depends on whether they are aware of its existence.

Knowledge of Near-Miss Reporting

- Employees are just as likely not to know how to report a near miss as they are to know how to do so.

Length of Employee Tenure and Reporting Preference

- Longer-tenured employees were not less likely than shorter-tenured employees to use the web tool.

There are minimal issues with respect to respondent experience and knowledge of what a near miss is. Additionally, while most respondents have over 20 years of Cabinet experience they are just as likely to prefer using the web tool for reporting as those who have been with KYTC for less than 20 years. While research shows that many organizations struggle with defining a near miss, this not an evident barrier at KYTC

In terms of what prevents employees from reporting near misses, lack of time was selected by a few respondents for both the paper form and web tool. While this barrier may be present on a small scale, it is likely not the leading driver of poor reporting. KYTC employees are just as likely to not know how to report a near miss as they are to know. To improve reporting, the likelihood of an employee knowing how to report a near miss should be greater than the likelihood that they do not. This lack of knowledge was reiterated by respondents in open-ended responses. A solution may be management providing and/or requiring employee training on near-miss reporting that focuses on proper reporting procedures, as many responses suggested that supervisors advise staff not to report a near miss and rather just inform them when one occurs. Multiple respondents also recommended increased training. Only 25 respondents have completed the Safety Opportunity/Near-Miss training.

Another barrier that reduces near-miss reporting is that many staff do not know about KYTC's web-based reporting tool. One way to address this barrier is that management should provide access to the web-based tool on employee KHRIS accounts, which are used to perform many other routine tasks.

A final barrier to near-miss reporting is that respondents do not feel that reports lead to corrective action. This was the most common reason cited by respondents for not reporting incidents using both the paper form and the web tool. To improve reporting rates, management must make visible efforts to correct the conditions which cause near misses and hazards.

Chapter 6 Conclusion, Recommendations, and Future Work

A near-miss reporting system is critical for maintaining a healthy and safe workplace. Some organizations have developed and promoted near-miss reporting programs to collect data for improving safety, however, it is difficult for them to compile enough data to prevent future injuries and illnesses. KYTC initiated its safety program by generating a vision for a zero workplace safety incidents. To help the Cabinet achieve the goals outlined in its zero-incident plan, research was conducted to investigate near-miss programs used by other state DOTs, identify effective strategies for increasing the use of its current near-miss program, and develop administrative policy language and procedures to ensure effective implementation of the near-miss program.

Researchers found that KYTC's organizational status quo is the primary barrier preventing employees from reporting near-miss events. Employees do not believe that upper management is committed to safety and will not adopt corrective actions based on reported near-miss incidents. Many staffers have experienced near misses, but only 25 survey respondents have completed the Cabinet's Safety Opportunity/Near-Miss training.

To improve near-miss reporting and increase employee engagement, employees must be educated and empowered about the importance of near-miss reporting and receive incentives and recognition for their efforts. Improving the awareness and accessibility of KYTC's web-based reporting tool will strengthen near-miss reporting and enhance organization-wide safety. Future work should concentrate on high-engagement training and consider employee literacy, language barriers, and the amount of time required to report incidents.

Improving employee safety requires staff to report problems, describe reasons underlying problems, and for the Cabinet to implement effective interventions. At KYTC, near-miss incidents are common, which is a warning sign. Future research should identify the causes of high near-miss reporting and develop effective strategies to reduce their numbers. Implementing a comprehensive safety management system (SMS) can help the Cabinet electronically report, manage, control, and audit issues related to employee safety. This will generate additional insights and lead to improvements in safety.

This research has led to the following recommendations related to KYTC's Safety Opportunity reporting.

Recommendation 1: Adopt the following safety opportunity reporting process, which is based on CII RT 301 (CII, 2014)

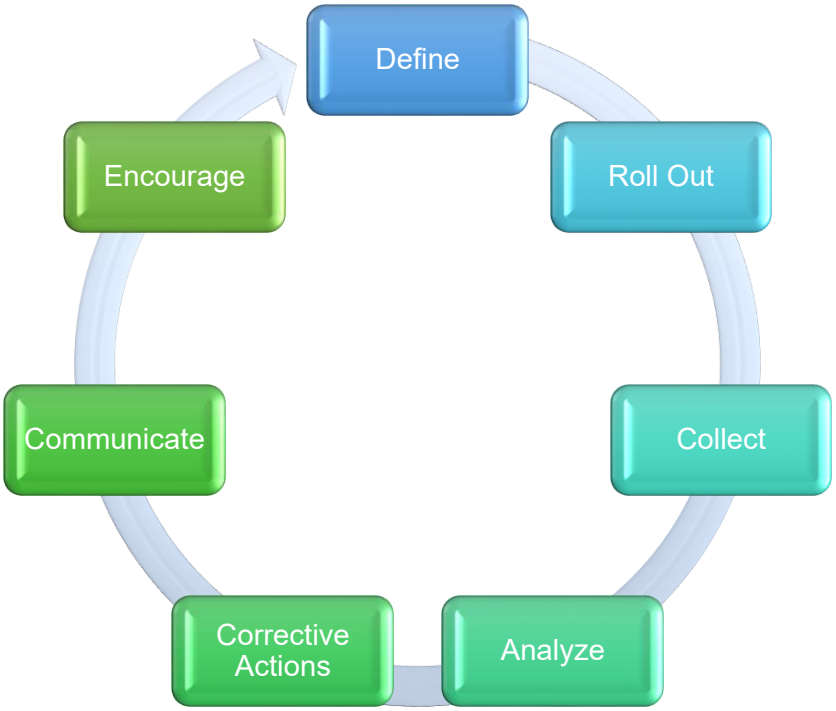


Figure 6.1 KYTC Safety Opportunity Reporting Executive Focus

- Define: Outline the objectives of the safety opportunity reports and clearly define a near miss. There are two recommended definitions. One is a technical, formal definition informed by the academic and industrial literature, and the other is a less formal definition that can be used in informal communication with field employees who are unsure of what a near miss event is. The formal definition is: *an unplanned event or unsafe condition that has the potential to cause injury or illness or which can damage property or the environment*. The informal definition is *an event that makes someone think something was not right or that something abnormal has occurred*.

- Roll Out: Demonstrate commitment by leadership, dedicate resources, have a champion, develop and deliver trainings.

- Collect: Determine who reports near misses, specify data collection methods, reinforce required information, stop work authority, and required mitigation hazards. Be mindful of language barriers.

- Analyze: Determine near-miss severity, contributing factors, causes, and trends. Be timely and responsive.

- Corrective Actions: Address the causes of near misses, develop an implementation plan, reevaluate training, have leadership commit to a corrective action plan.

- Communicate: Communicate results with employees through job briefings, toolbox talks, newsletters. Provide direct feedback to the safety opportunity reporter if known. Use clear, concise language and address language barriers.

- Encourage: Have leadership recognize employees/groups and celebrate successes. Emphasize goals to promote active learning and drive continuous improvement.

Recommendation 2: Communicate the Safety Opportunity Reporting Workflow for Transparency. The workflow in Figure 6.2 will inform employees of what happens once they provide information. Stress that reporter anonymity is maintained.

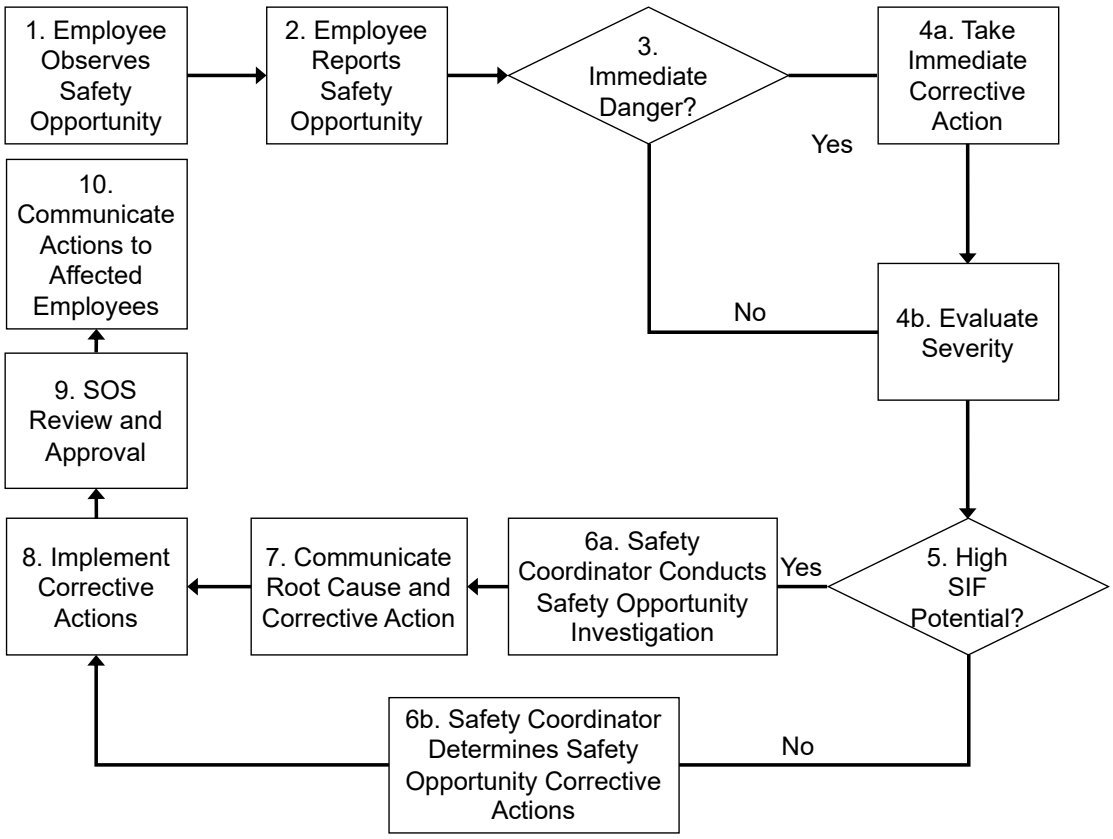


Figure 6.2 KYTC Safety Opportunity Reporting Workflow

Recommendation 3: Track, measure, and publicize program success through quality, not quantity, of data. A Safety Opportunity Reporting Evaluation Tool has been developed and is included as a separate Excel-based workbook. Quantitative success metrics can include the number of safety opportunity reports submitted per field employee, number of safety opportunity reports submitted per field employee hour, and number of safety opportunity investigations per safety opportunity report submitted. A screenshot of the evaluation tool can be seen in Figure 6.3.

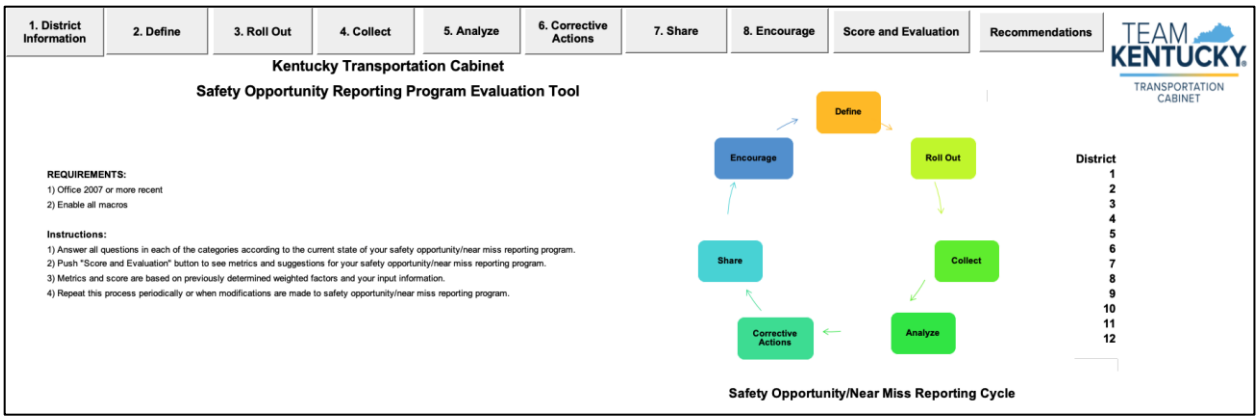


Figure 6.3 KYTC Safety Opportunity Reporting Program Evaluation Tool

Based on survey data, conversations with KYTC personnel, and information captured through focus groups and conferences, researchers evaluated KYTC's Safety Opportunity reporting program using the evaluation tool. The overall program score was a 67, approaching a green-level score (Figure 6.4). The primary strengths are in efforts to define a safety opportunity, rollout of the overall program, and efforts to collect safety opportunity data. Areas of opportunity include corrective actions and the distribution of knowledge from the safety opportunity reports. The upcoming safety management system (Boosting Occupational Outcomes in Transportation Safety — BOOTS) will help KYTC leverage areas of opportunity.

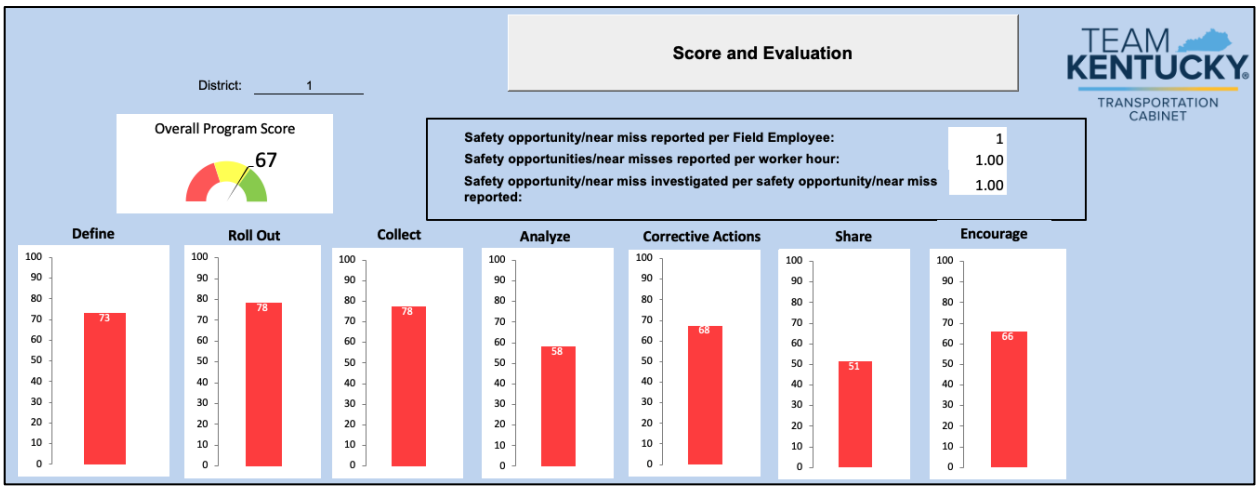


Figure 6.4 Results of KYTC Evaluation using the Safety Opportunity Evaluation Tool

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Appendix A KYTC Near-Miss Reporting Survey

University of Kentucky

KYTC Near-Miss Reporting Survey

This anonymous and confidential survey is intended to capture your perception of near-miss/close call reporting within KYTC. Your answers will be completely anonymous and will not be linked to you personally. To the degree identifiable questions are asked, they are strictly intended to understand information about where these perceptions originate generally. Your answers will directly go to researchers at the Kentucky Transportation Center at the University of Kentucky and no one from KYTC will be able to see them. When results are presented, they will be aggregated and anonymous, so that we, again, protect your confidentiality. Please complete and submit this survey as soon as possible. We estimate that it should take no more than 10 minutes to complete. If you have any questions or problems with operation or access to the survey, please contact the project lead, Gabe Dadi, at (859) 257-5416 or at gabe.dadi@uky.edu. Thank you for your time and expertise in completing this survey. This will help us advise KYTC on how to better capture near-miss information to help avoid incidents from occurring in the future.

Please select the district that you currently work in.

Please select how many years of work experience you have with KYTC.

- 0-2 years
- 2-5 years
- 5-10 years
- 10-20 years
- More than 20

What safety training programs have you completed before? (Check all that apply).

- OSHA 10 Hour
- OSHA 30 Hour
- Work Zone Safety Control
- Leadership Training
- Safety Opportunity / Near Miss Reporting
- Other (Please Specify)

Are you aware of the definition of a near-miss or a close-call event?

- Yes, I am aware
- Maybe
- No, I am not

A near miss event is defined as "an unplanned event that did not result in injury, illness, or damage to a person(s), equipment, or property– but had the potential to do so". Similar terms are "close call", "narrow escape", "near collision", or a "near hit".

Have you ever experienced a near-miss or a close-call event while working with KYTC?

- Yes, once or twice
- Yes, several times
- Yes, very often
- No, not at all

In your opinion on a scale from 1 to 5 (where 1 is not important and 5 is extremely important), how important is it that every near-miss or a close-call event be reported?

1 2 3 4 5

Please select

Do you know how to report a near-miss or a close-call event at work?

- Yes, I do
- Maybe, I am not sure
- No, I don't

Are you aware that KYTC has a web-based Safety Opportunity Report tool (screenshot above) that can be used on any device by any worker anonymously to report a near-miss event, close-call, or incident?

- Yes, I am aware of the tool
- Maybe, I am not sure
- No, I am not aware of the tool

Have you used the KYTC Safety Opportunity Tool to report a near-miss event that happened to you or to one of your coworkers during your work with KYTC?

- Yes, I have
- No, I have not

How would you prefer to report a near-miss or a close-call incident? Please drag and rank with your most preferred option (1) to your least preferred option.

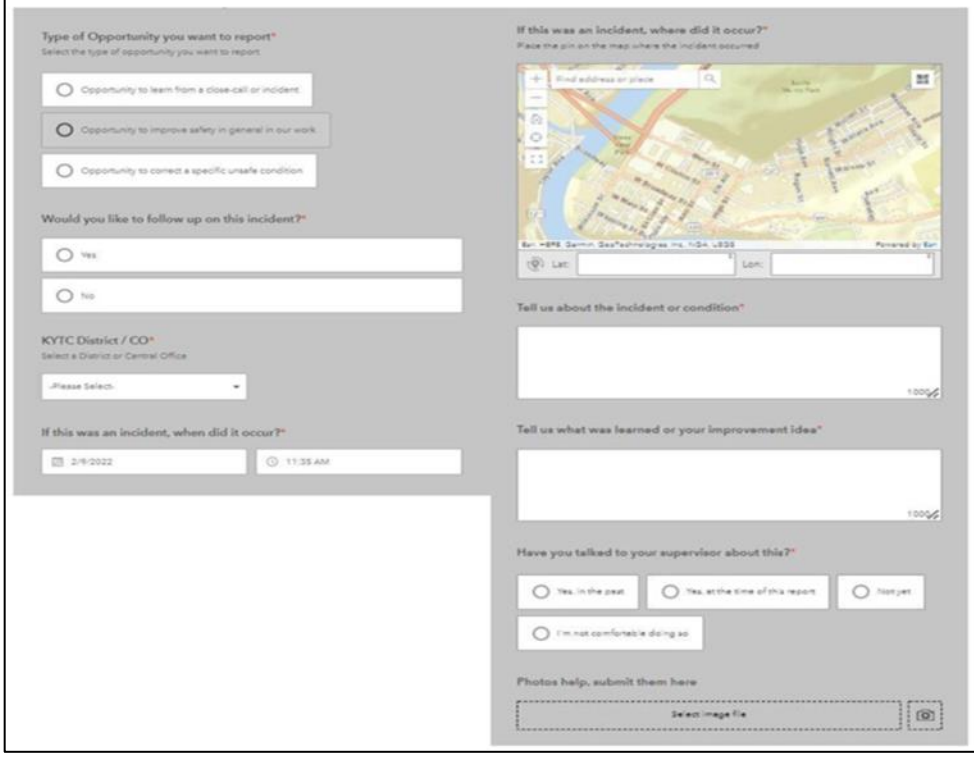
Items	Preferred reporting method
In person using a paper form	
Using the web-based KYTC Safety Opportunity tool	
By phone, calling into a reporting hotline number	
Other (please elaborate)	

Please select all the reasons that prevent you from reporting a near-miss or a close-call incident using the paper form (please select all that apply).

- I am not sure what a near-miss event or a close-call entails
- I don't know where to find the paper form
- I don't know how to report a near-miss incident using the paper form
- I don't have time to complete the form
- I believe that I can be identified if I filled the paper form
- Concern about getting a co-worker in trouble.
- Haven't seen corrective actions from past suggestions
- Other (Please elaborate)

Please select all the reasons that prevent you from reporting a near-miss or a close-call incident using the web-based KYTC Safety Opportunity tool (please select all that apply).

- I am not sure what a near-miss event or a close-call entails
- I don't know how I can access the tool
- I don't know how to report a near-miss incident using the web-based tool
- I don't have time to complete the web-based form
- I believe that online reporting is not totally anonymous
- Concern about getting a co-worker in trouble.
- Haven't seen corrective actions from past suggestions
- Other (Please elaborate)



In your opinion, what do you think is missing or could be improved with the KYTC Safety Opportunity tool?

Do you have any other comments or feedback on the survey or the KYTC Safety Opportunity tool?