

# Kentucky FACE Program Annual Report 2010



**KENTUCKY INJURY PREVENTION AND RESEARCH CENTER**

The Kentucky Fatality Assessment and Control Evaluation (KY FACE) Program is an occupational fatality surveillance project of the Kentucky Injury Prevention and Research Center (KIPRC)\*. The goal of KY FACE is to prevent fatal work injuries by studying the worker, the work environment, the energy exchange resulting in fatal injury, and the role of management, engineering, and behavioral changes in controlling the interaction of these factors. KY FACE investigators evaluate information from multiple sources including 1) interviews of employers, coworkers, witnesses and other investigators; 2) examination of the work site and equipment; 3) review of Occupational Safety and Health Administration (OSHA) reports, police reports, and medical examiner reports; and 4) employer safety procedures. The FACE program does not seek to determine fault or place blame on companies or individual workers. Findings are summarized in narrative reports that include recommendations for preventing similar events in the future.

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\*Organizationally, KIPRC is located in the University of Kentucky College of Public Health and is a bona fide agent of the Kentucky Department for Public Health (KDPH). Funding for the KY FACE Program is provided by the National Institute for Occupational Safety and Health (NIOSH) Cooperative Agreement Number 5U60OH008483-07.

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## EXECUTIVE SUMMARY

1. The KY FACE Program identified 64 fatal occupational injuries that occurred during 2010, compared to 93 recorded in 2009.
2. The mean age of the fatally injured worker was 46.3 years of age; 58 were male and 6 were female. Fifty-eight percent were married and 20% were never married; 61% graduated high school or beyond. The majority of those fatally injured at work were born in the United States and 86% were Kentucky residents. Nearly all of the decedents spoke English as their primary language.
3. Kentucky's occupational fatality rate was similar to the national rate (3.4 Kentucky worker deaths/100,000 workers compared to 3.5 US worker deaths/100,000 workers) in 2010.
4. The Agriculture, Forestry, Fishing and Hunting sector recorded the most work-related deaths in Kentucky in 2010 ( $n = 12$ , 19% of total fatalities). Eight of the decedents were self-employed farmers. All were male.
5. The Transportation and material moving occupation accounted for 16 (25%) of the 64 total fatalities in 2010, with a corresponding fatality rate of 10.8 fatalities/100,000 workers.
6. Nineteen (30% of the total) work-related deaths were due to motor vehicle collisions. Twelve of the victims were from the transportation occupation. Eight collisions involved semi-tractor trailers.
7. The highest number of fatalities occurred in Jefferson County in both 2010 and 2009.
8. There were two occupational homicides in 2010 compared to nine in 2009.





## INVESTIGATION PROGRAM

The KY FACE Program completed three on-site investigations of selected occupational fatalities in 2010. The fatality report narratives follow:



Photograph of location where car topped hill and lost control.

**Case 09KY079:** One late fall day in 2009, at approximately 3:30 PM, two land surveyors had completed surveying tasks for the day and were walking north, on opposite sides of a two-lane rural state highway. They were returning surveying equipment to the company truck. Surveyor 1, the company owner, was walking with traffic on the east side of the road, in the grass, a few feet to the right of the pavement. Surveyor 2 was walking on the edge of the pavement on the west side of the road. Both men were on the road on the blind side of a hill and there were no emergency shoulders. A passenger car traveling north, driven by a young driver, crested the hill. After cresting the hill, the driver saw the pedestrians, applied the brakes, and lost control of the vehicle. The vehicle skidded off the

pavement toward Surveyor 2 on the left side of the road. Surveyor 2 saw the vehicle coming towards him and ran down the embankment away from the oncoming vehicle. The car left the pavement, became airborne, and landed on top of Surveyor 2. Emergency services were called. Upon arrival of EMS personnel, Surveyor 2 was transported via helicopter to the nearest trauma hospital where he died later that same day. He was 47 years old.



Photograph of hopper from which Collector fell.

**Case 10KY006:** On a spring day in 2010, a 41 year-old male solid waste collector, was riding in the hopper area of a solid waste truck when he fell out and struck his head on the pavement. He was riding in the hopper area because the step he usually rode, located at the rear driver side, was broken. Another worker rode the rear step on the passenger side of the vehicle, and a third worker, the driver, drove. After approaching a stop, the driver looked into the rearview mirror and saw the decedent on the pavement. The driver stopped the truck, and he and the other solid waste collector tried to assist the decedent. There was no cell phone service in the area so the driver drove the

truck four miles to a store and called emergency medical services and his supervisor. Emergency medical services arrived at the scene and transported the worker to the nearest trauma hospital where he died six days later.



Site where semi tractor-trailer struck two tree trimmers.

**Case 10KY009:** One spring morning in 2010, three male tree trimmers set up a work site at a highway intersection at the base of a mountain. As one tree trimmer removed equipment from the truck, two other tree trimmers, 21 and 23 years old, posted signage at the intersection. The two tree trimmers were located on the shoulder of the highway. A semi tractor-trailer was driving down the mountain toward the intersection when its brakes failed. To avoid hitting vehicles in front of the semi, the driver steered to the left, and crossed the intersection, striking both tree trimmers with the semi tractor-trailer. Both tree trimmers died at the scene.

# Kentucky Hazard Alerts

The KY FACE Program completed three HazAlerts of selected occupational fatalities in 2010. The HazAlert case summaries are as follow:

## WORKERS KILLED WHILE WORKING WITH FORKLIFTS



During 2009, four workers were killed while working with forklifts. Following are the case descriptions for the four forklift-related deaths:

**Case 1:** A 39-year-old male temporary employee was working in a warehouse placing a roll of carpet padding into a shelving unit. The employee stepped from a ladder onto the pallet that was being raised by a forklift to push the padding into the shelving unit. The pallet then flipped off the forks and the employee fell 12 feet to the concrete floor below. The victim was declared dead at the scene by the coroner.

**Case 2:** A 57-year-old male factory supervisor was killed when the forklift he was operating overturned on him. The supervisor was moving bundled recycled paper within the facility when the load shifted and overturned. The forklift pinned the victim's left arm and neck. The victim was transported to the nearest hospital then transferred to the nearest trauma center where he died four days later.

**Case 3:** A 57-year-old male fork truck driver died after he became caught between two forklifts in a warehouse. The victim's right lower extremities were crushed and he died three days later.

**Case 4:** A 65-year old male retail store worker was using a walk-behind hand pallet jack to remove product from a shelf with the forks fully elevated. The pallet struck an apparel rack, which fell off the shelf and hit the employee on the head. The employee was transported to the nearest hospital where he died two days later from blunt force trauma to the head and neck.

## WORKERS KILLED WHILE COLLECTING SOLID WASTE



From January 2010 through May 2010, three solid waste collectors were killed while working in the solid waste collection industry. Following are the case descriptions for the three worker deaths:

**Case 1:** A 41-year-old male solid waste tipper who worked for the local municipal government was injured when he fell off the back of the solid waste collection vehicle at approximately 11:30 am. The decedent was riding in the back of the truck because the step on the side was broken. The decedent fell out of the truck 50 feet before the next stop and hit his head. He was airlifted to the

nearest trauma center and died six days later. Preliminary postmortem toxicology results indicated the presence of oxycodone.

**Case 2:** A 51-year-old female solid waste tipper who worked for a local municipal government died after she was struck by a solid waste collection vehicle at 3:30pm, the end of her work shift. She was employed by the solid waste management division for approximately one to two years. The decedent was riding on a step at the back of the truck with another employee and stepped off when the vehicle parked in the yard lot. She walked in front of the vehicle in the yard lot; the driver did not see the decedent walk in front of the vehicle and struck her. The solid waste collector was declared dead at the scene.

**Case 3:** A 27-year-old male solid waste heavy equipment operator, employed in the private sector, died after being crushed by a dumpster at 11am. The decedent had been employed by the company for less than one year. While stacking one dumpster within another dumpster, the chain securing the top dumpster became entangled. The decedent crawled into the bottom dumpster to free the chain and the top dumpster pinned him. The decedent was transported to the hospital where he later died.

## RESIDENTIAL TREE TRIMMERS KILLED WHILE WORKING



During 2009, four tree trimmers were killed on residential properties in Kentucky. Following are the case descriptions for the four tree trimmer deaths:

**Case 1:** A 25-year-old male tree trimmer, whose primary occupation was heavy equipment operator, was killed when the tree he was cutting fell on him. The decedent was declared dead at the scene.

**Case 2:** After an ice storm, a 48-year-old male tree trimmer who was a part-time employee in a construction company was killed when a tree limb he was removing from a house struck him in the neck and knocked him off his

ladder. The victim was transported to the nearest hospital and died in the emergency department.

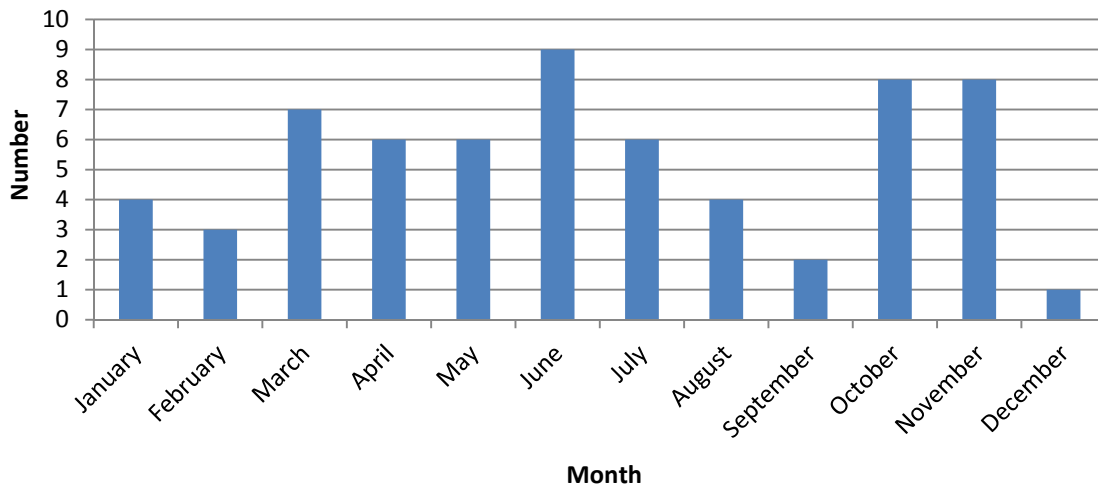
**Case 3:** A 43-year-old male rental property owner whose primary occupation was public speaker was trimming a tree on his rental property after an ice storm when one of the tree limbs fell and struck him in the head. The victim was transported to the nearest hospital where he was pronounced dead in the emergency department.

**Case 4:** A 30-year old arborist was hired by a private property owner to remove trees from a yard. At approximately 5:00 PM, the arborist, along with a ground person, arrived at the residence. With a climbing line and spurs, the arborist climbed the first tree. After trimming limbs from the tree trunk, the arborist began cutting the tree trunk one section at a time. The arborist was working at the fork of the tree and had cut a section of tree trunk which he had secured with a pull rope. The arborist then signaled his ground person that the section was free to be lowered to the ground. The arborist did not notice that his safety rope was connected to the tree trunk section to be lowered and he fell to the ground with the tree trunk section. The local coroner arrived and declared the arborist dead at the scene.

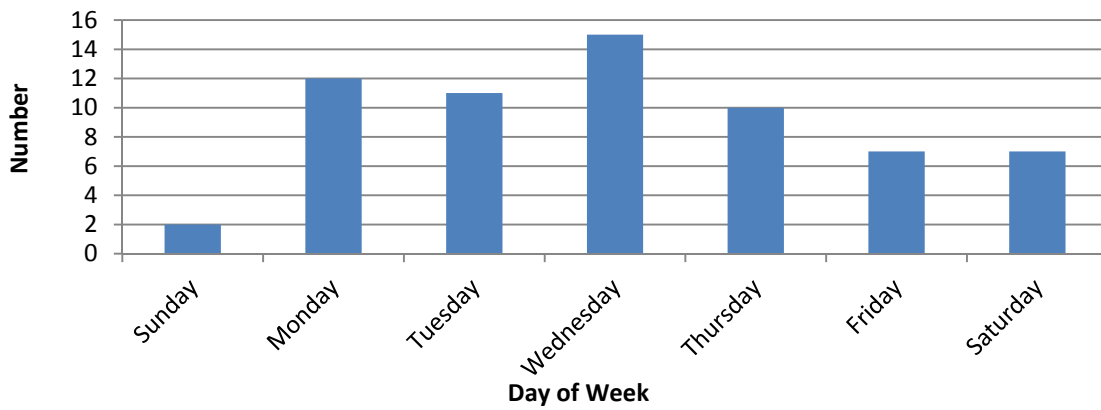


## Quantitative Analysis

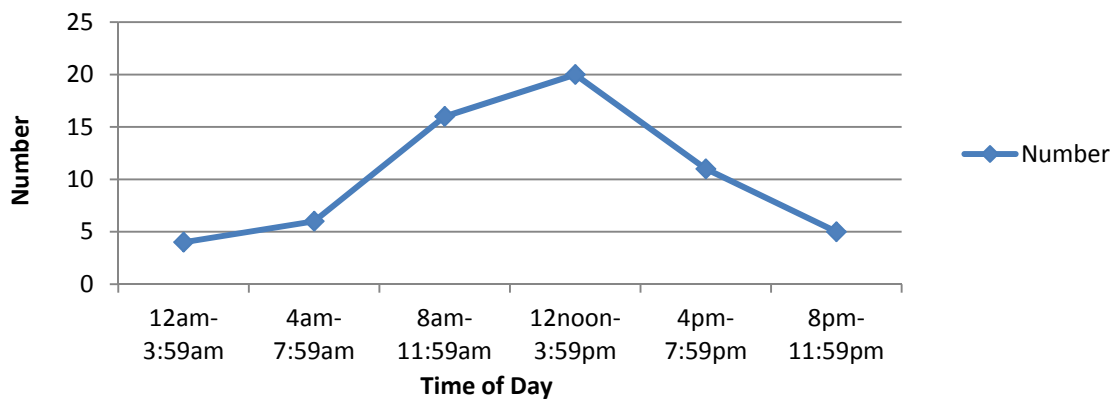
**Kentucky Occupational Fatalities by Month of Death – 2010.**



**Occupational Fatality Incidents by Day of Week – 2010.**



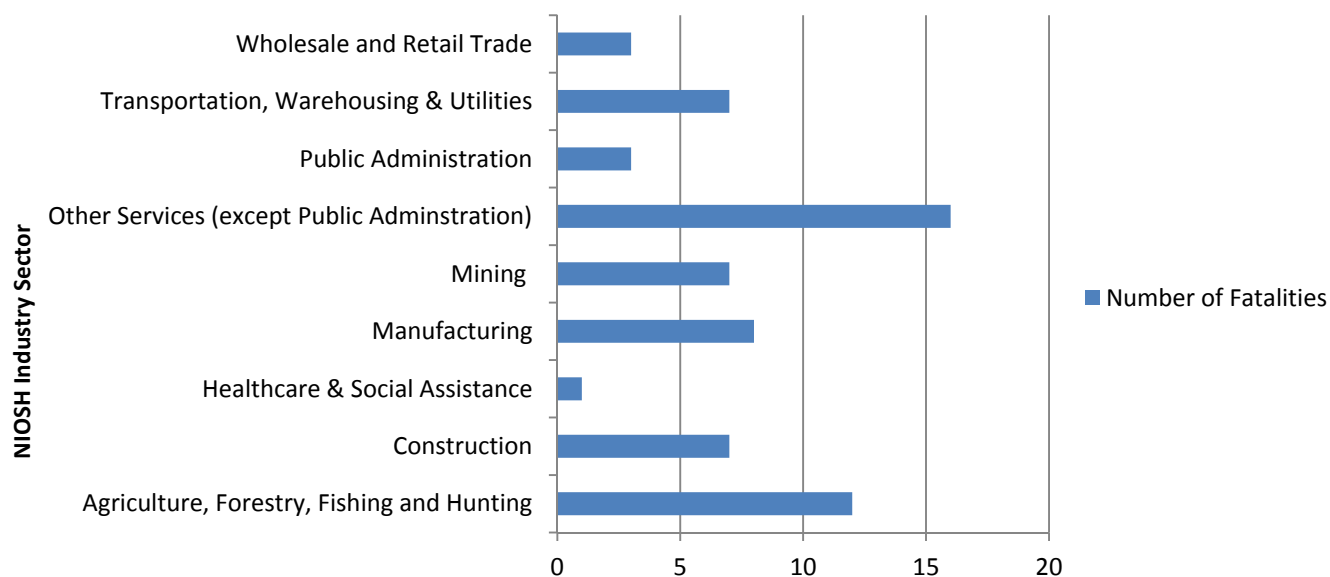
**Fatal Occupational Incidents by Time of Day – 2010.**



**Table 2. Demographic Characteristics of Fatally Injured Workers – 2010.**

<b>Characteristics</b>		<b>Number</b>	<b>Percent</b>
<b><u>Total Fatalities</u></b>		64	100
<b><u>Sex</u></b>			
	Male	58	91
	Female	6	9
<b><u>Race</u></b>			
	White	58	91
	Other	<5	
<b><u>Age</u></b>			
	20-29	13	20
	30-39	10	16
	40-49	18	28
	50-59	9	14
	60-69	7	11
	70-79	<5	
	80-89	<5	
<b><u>Marital Status</u></b>			
	Married	37	58
	Never Married	13	20
	Widowed	<5	
	Divorced	8	13
<b><u>Education</u></b>			
	Less than High School	<5	
	Some High School	11	17
	Finished High School	25	39
	Some College	8	13
	College Graduate	6	9
	Unknown	10	16
<b><u>Country of Origin</u></b>			
	United States	62	97
	Mexico	<5	
	Other	<5	
<b><u>Primary Language</u></b>			
	English	63	98
	Spanish	<5	
<b><u>State of Residence</u></b>			
	Kentucky	57	89
	Other	7	11

## Occupational Fatalities by NIOSH Sector (NAICS code) – 2010.



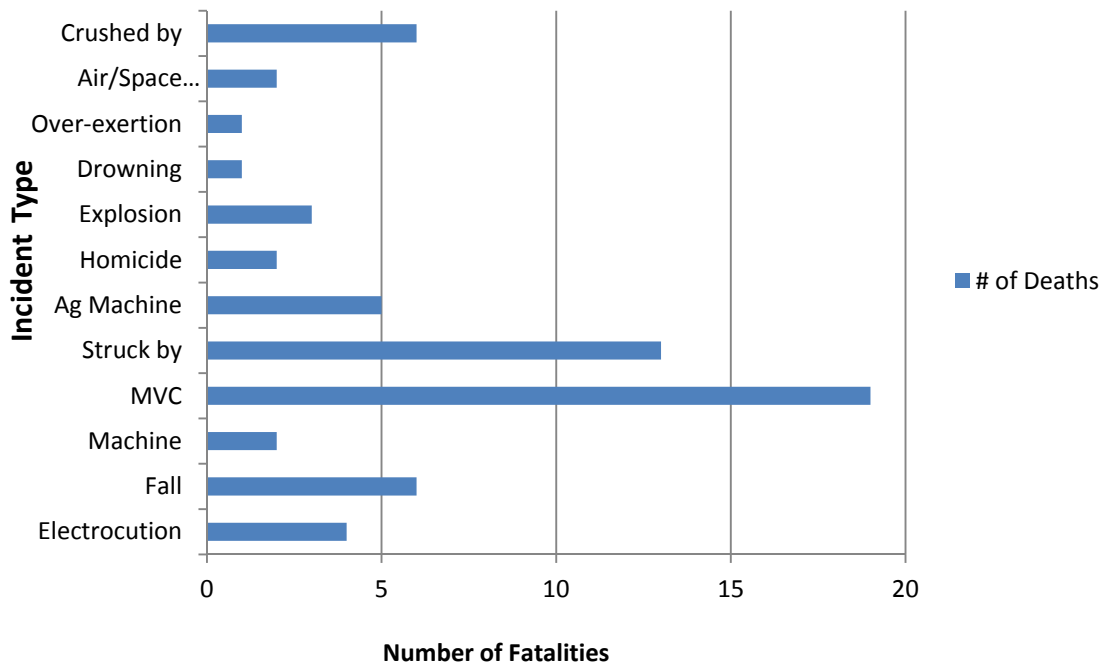
## Occupational Fatalities by NIOSH Sector (NAICS code) – 2010.

(Rates calculated per 100,000 workers).

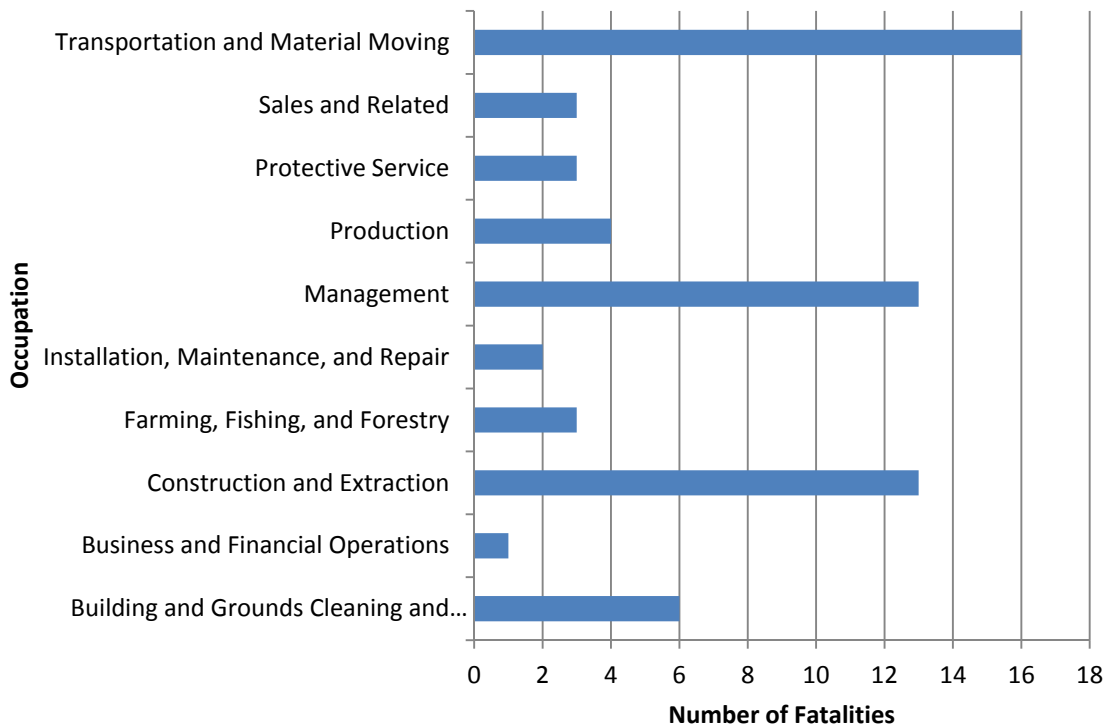
Industry	# of KY Deaths In 2010	2010 KY Fatality Rate <sup>a</sup>
Agriculture, Forestry, Fishing and Hunting	12	37.4
Construction	7	5.6
Healthcare & Social Assistance	1	-
Manufacturing	8	3.3
Mining	7	43.8
Other Services (except Public Administration)	16	18.3
Public Administration	3	-
Transportation, Warehousing & Utilities	7	10.3
Wholesale and Retail Trade	3	-
Total	64	3.4

<sup>a</sup>Kentucky Cabinet for Workforce Development and KY Census Data. <http://www.uscensus2010data.com/21-kentucky-employment-statistics-and-income-demographics>

## Occupational Fatalities by Type of Incident – 2010.



## Work-Related Fatalities by Occupation (SOC) – 2010.





### Work-Related Fatalities by Major Occupational Classification – 2010.

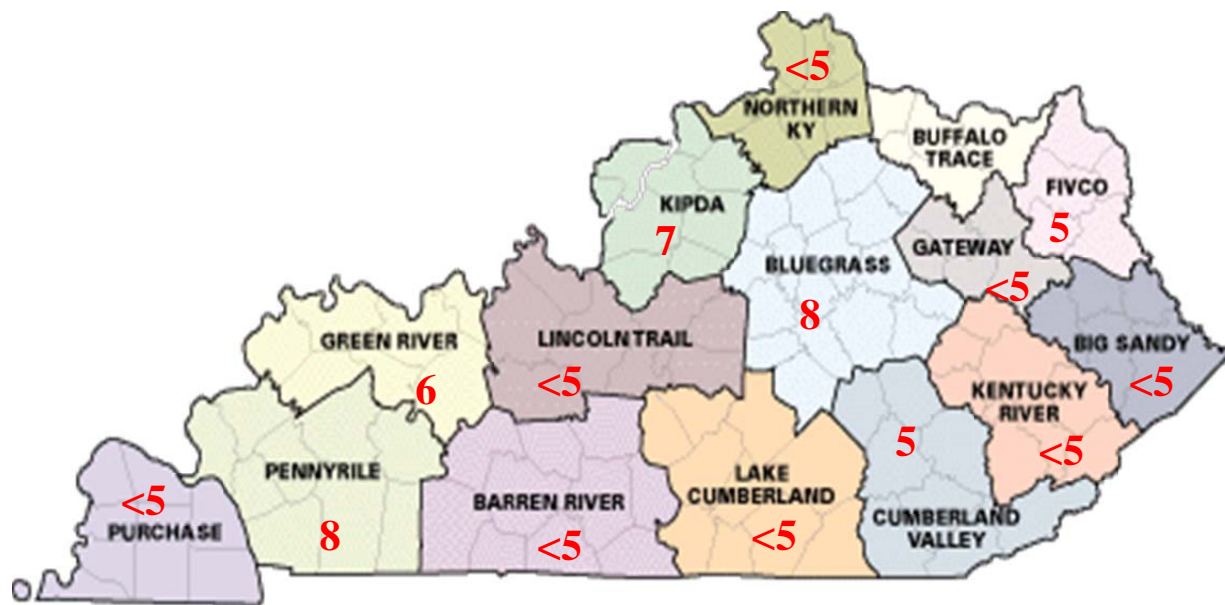
Occupational Classification	Number of Fatalities	2010 KY Rate
Building and Grounds Cleaning and Maintenance	6	12.0
Business and Financial	1	-
Construction and Extraction	13	16.4
Farming, fishing, and Forestry	3	-
Installation, Maintenance, and Repair	2	-
Management	13	15.7
Production	4	-
Protective Service	3	-
Sales and Related	3	-
Transportation and Material Moving	16	10.8
Total	64	3.4

<sup>a</sup> Kentucky employment figures obtained from *Kentucky Cabinet for Workforce Development*

<sup>b</sup> US occupational fatality numbers obtained from the Bureau of Labor Statistics

<sup>c</sup> fatality rates were not calculated due to small numbers of fatalities

### Occupational Fatality Incidents per Area Development District (ADD) – 2010.



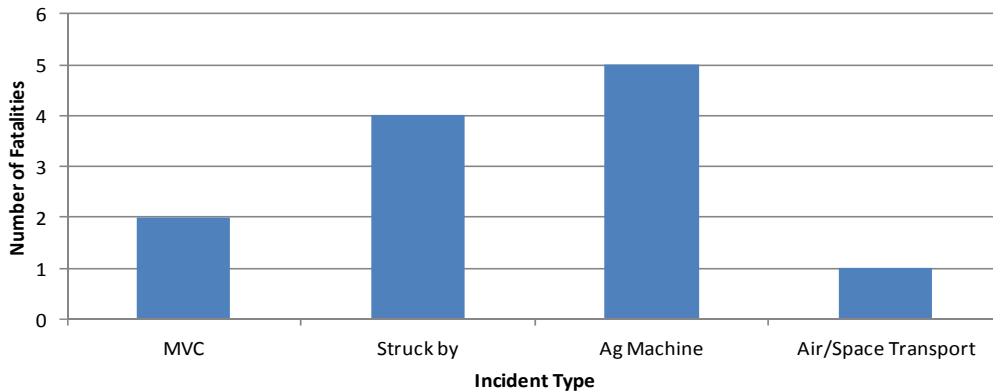
## SPECIAL TOPICS

### Agriculture, Forestry, Fishing, and Hunting Industry

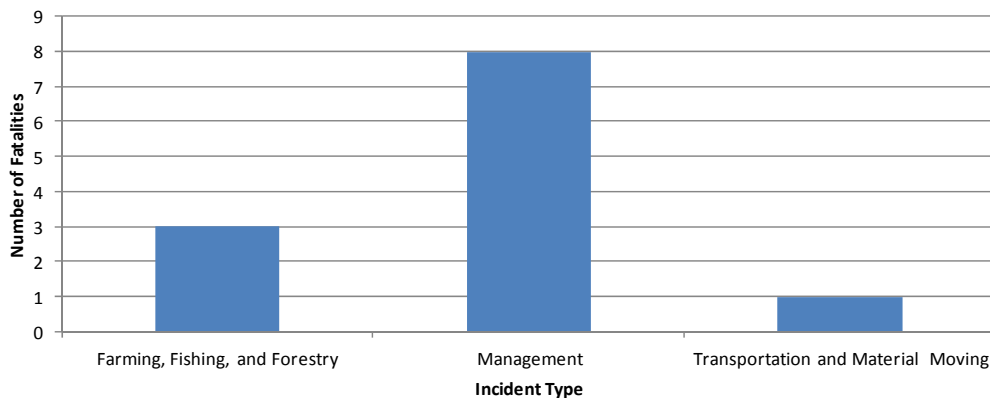


The Agriculture, Forestry, Fishing and Hunting industry accounted for 12 (19%) of the 64 total work-related fatalities in 2010. All of the victims were male. Eight were married, one was never married, two were widowed and one was divorced. Eight of the victims were self-employed at the time of death. Two of the 12 had less than a high school education and five had a high school education; all of them spoke English as their primary language. Following are the fatality narratives for the cases.

#### Agriculture, Forestry, Fishing, and Hunting Fatalities by Incident Type – 2010.



#### Agriculture, Forestry, Fishing and Hunting Fatalities by Occupation (SOC) – 2010.



### **Agriculture, Forestry, Fishing, and Hunting Industry case narratives**

10KY003: The victim was driving an ATV while checking on the farm owner, who was felling trees. The victim didn't see a falling tree, drove under and was crushed by the falling tree.

10KY005: The victim was a farmer whose sleeve became entangled in the tractor power take-off.

10KY010: The victim was driving a tractor and turning into a field when he was hit from behind by a car.

10KY011: The victim was killed while attempting to dislodge a tree which didn't fall after he cut it. He cut another tree to hit the lodged tree and the second tree fell on him.

10KY014: The wheel of the tricycle tractor dropped into a hole as the victim was moving between fields. The tractor turned over, killing the driver.

10KY019: The victim was killed while towing another tractor uphill. The tractor he was driving overturned and he was pinned underneath.

10KY029: The victim was spraying fungicide and fertilizer on a farm field when his helicopter struck power lines. The helicopter crashed and burned.

10KY036: The victim was bush hogging in a field in which he kept livestock. The tractor rolled while on a slight incline and overturned. The victim was pinned under the tractor.

10KY046: The victim was pulling a piece of machinery while talking on a cell phone, and drove the tractor over rail road tracks. Victim was killed by an oncoming train.

10KY058: The victim was knocked down and run over by a hay baler while working in a field.

10KY064: The male victim was killed in a tractor rollover, and died from respiratory arrest due to blunt force trauma from a collapsed lung.

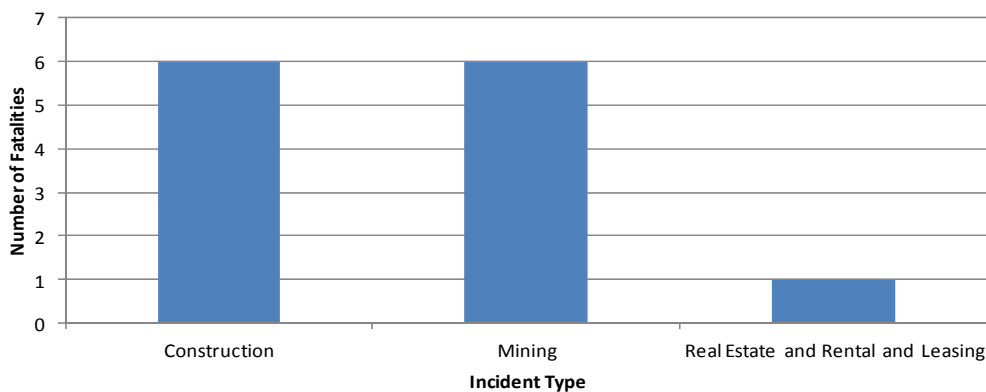
10KY065: the victim was cutting a tree on a 45 degree slope and was killed when the tree kicked back and struck him.

## Construction and Extraction Occupations

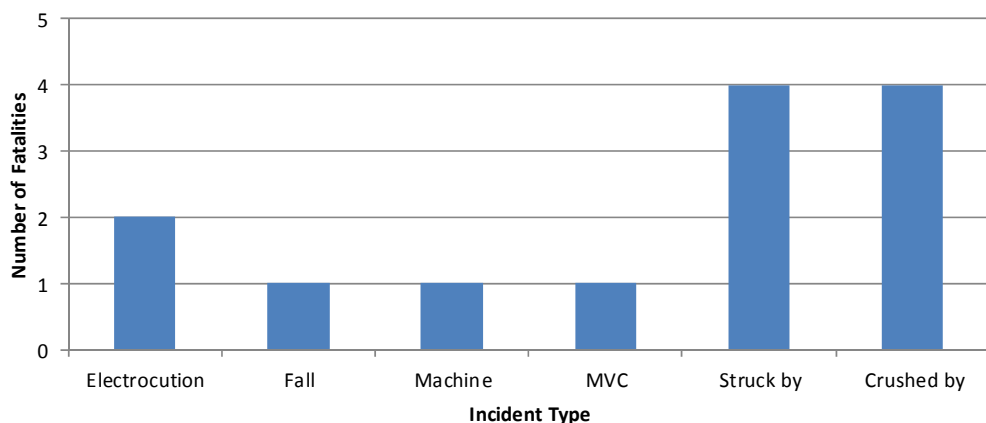


The Construction and Extraction occupations accounted for 13 (20%) of the 64 total work-related fatalities in 2010. All of the 13 victims were male. Nine were married, two were never married and two were divorced. Twelve of the victims were known to be white and 11 were known to not be of Hispanic origin. Ten had a high school education or beyond and 12 spoke English as their primary language. Following are the fatality narratives for the cases.

### Construction and Extraction Occupation (SOC) Fatalities by Industry (NAICS) – 2010.



### Construction and Extraction Occupation (SOC) Fatalities by Incident Type- 2010.





### **Construction and Extraction case narratives**

10KY001: A pillar supporting the mine roof gave way; the victim was struck by falling debris.

10KY012,01: The victim was crushed by rock when a roof collapsed.

10KY012,02: The victim was crushed by rock when a roof collapsed.

10KY020: A section of rib wall fell, knocking over a 100-ton rated jack and striking the victim in the head.

10KY023: The victim was caught between the wall and the continuous mining machine he was operating.

10KY038: The victim was fatally injured while installing a drop pole in an office cubical. The victim was wiring the whip for the power pole while the pole was energized.

10KY043: The victim was shooting grade for bridge brackets and fell approximately 30 feet to the ground below. The employee was wearing a fall protection harness, but was not tied off.

10KY044: The victim was a miner helper and was struck by a shuttle car.

10KY045: The victim was doing routine maintenance on a high track dozer when a spring came loose, shot out of its housing and struck the victim in the chest.

10KY048: The victim suffered an electrical shock while repositioning an aluminum ladder. The ladder created an arc from the overhead power lines.

10KY051: The victim was pinned between an elevator car and a fixed ladder.

10KY053: The victim was on his way to a meeting when his car was hit head-on by an oncoming pick-up.

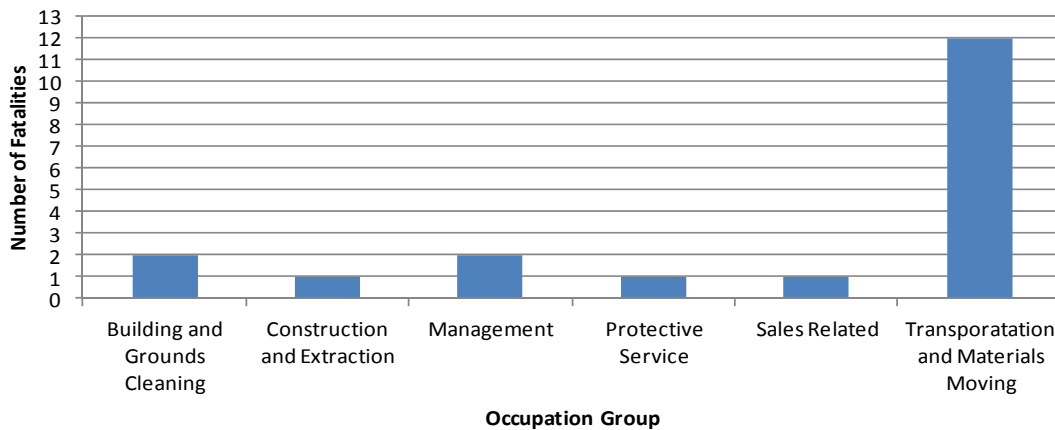
10KY060: The victim was a tree-trimmer who was struck by a limb while helping cut branches from a tree.

## Motor Vehicle Collisions

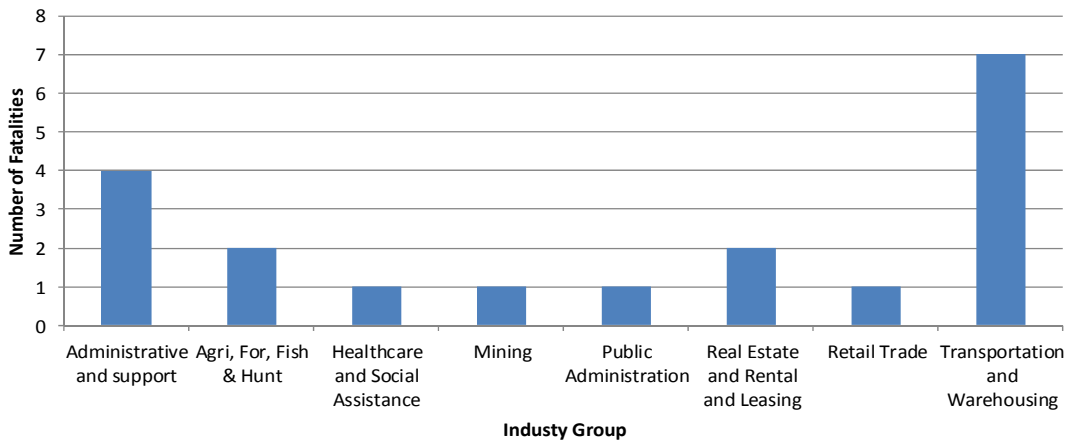


Of the 64 total work-related fatalities in 2010, 19 (30%) of them were motor vehicle collisions. All of the MVC victims were white and of non-Hispanic origin. All of the victims spoke English as their primary language and the majority of the victims had the United States as their country of origin. The majority of them were male. The case narratives follow.

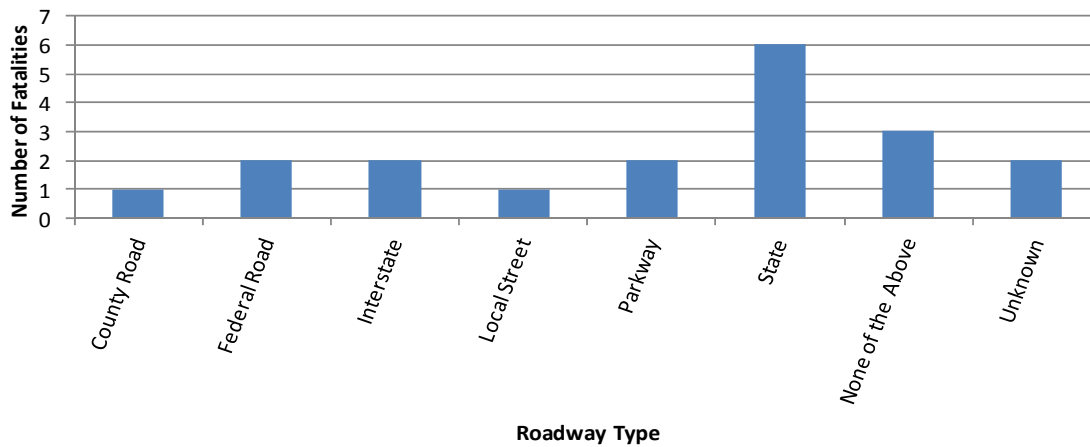
### MVC Incidents by Occupation Group (SOC) – 2010.



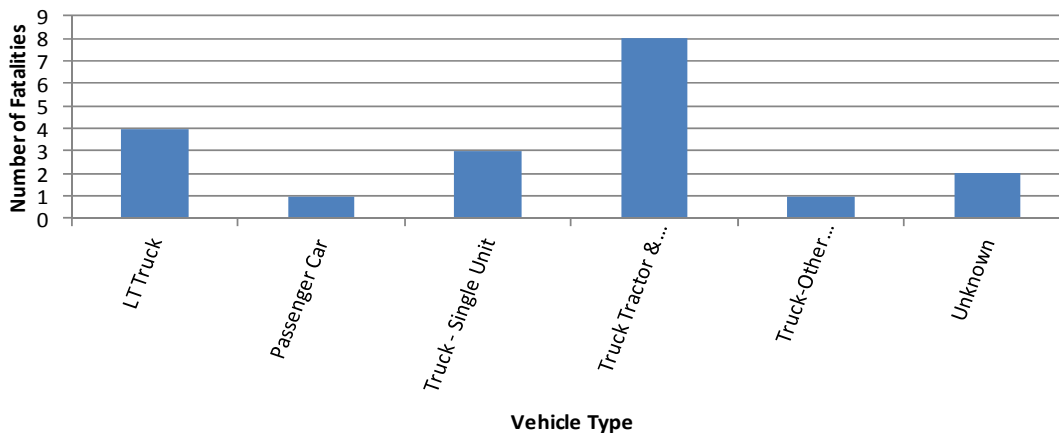
### MVC Incidents by Industry Group (NAICS) – 2010



## MVC Incidents by Roadway Type – 2010.



## MVC Incidents by Vehicle Type – 2010.



## Motor Vehicle Collision case narratives

10KY008: A semi truck and trailer veered across interstate median and struck a van, killing eleven people including the semi truck driver. The crash resulted in a fire.

10KY009,01: Two workers who were setting up traffic demarcations along a highway were struck by a tractor-trailer whose brakes failed.

10KY009,02: Two workers who were setting up traffic demarcations along a highway were struck by a tractor-trailer whose brakes failed.

10KY010: The victim was driving a tractor and turning into a field when he was hit from behind by a car.

10KY016: The victim and co-worker were riding the back of a garbage truck. They exited the truck in a parking lot; the victim walked in front of the truck and was hit.

10KY024: The victim's tractor-trailer traveled off the roadway onto the right shoulder of the road, striking a

parked pick-up truck. Both vehicles went over an embankment and the tractor-trailer overturned.

10KY025: The victim's tractor-trailer crashed into another tractor-trailer that was parked in the emergency lane.

10KY028: The victim was walking to her car after work, when another employee pulled his truck out to leave and struck her. The victim died 2 days later.

10KY031: The victim was killed when the loaded log truck he was driving slipped off the side of the road and turned over.

10KY034: A vehicle pulled into the path of the victim who was driving a gravel truck. Both drivers died.

10KY037: The victim was driving a company pickup truck, drove onto the railroad tracks, and was hit by an oncoming train.

10KY046: The victim was pulling a piece of machinery, talking on cell phone, and drove a tractor onto railroad tracks. The victim was killed by an oncoming train.

10KY049: While driving a truck into the active work area of a mine, the victim lost control and either jumped or was ejected. The truck overturned and crushed the victim.

10KY053: The victim was driving to a meeting when his car was hit head-on by an oncoming pickup.

10KY054: The victim was driving a semi-tanker truck filled with gas which drove into a median and overturned. The driver was ejected, thrown into the oncoming lane of traffic, and run over by an SUV.

10KY057: The victim's jeep moved into the lane of an oncoming dump truck resulting in a head-on collision.

10KY061: The cargo van the victim was driving sideswiped an oncoming dump truck; the van spun around and collided head-on with a coal truck.

10KY063: The victim was driving a milk truck that ran into a three-foot ditch before turning over into a field, entrapping and crushing the driver. The truck apparently failed to negotiate a curve due to dense fog.

10KY066: The tires of a dump truck dropped off the road; the vehicle went out of control and the driver was ejected.



## **CONCLUSIONS**

The transportation and material moving occupation and motor vehicle collisions continue to be the leading cause of death among working Kentuckians. Occupational injury prevention efforts will be focused on the development of interventions for use by transportation industry employers, including fatality reports, hazard alerts, tool kits, and videos for training purposes. In addition, due to the increased number of agricultural fatalities reported in 2010, the use of the rollover protective structure will be promoted among farmers through agricultural extension agents and other partners. The KY FACE program would like to acknowledge its partners in the prevention of occupational injuries in Kentucky.