

Challenges of Asphalt Paving at Night and Safety of Workers & Inspectors



Overview

- Definition of a work zone
- Reasons for asphalt construction at night in urban areas
- Challenges of asphalt construction at night
- National and local work zone crash statistics
- Provide a flavor of what KDOT has noticed at night in work zones
- Safety measures that can be evaluated/considered to improve nighttime work zones

Work Zone Definition

- What is a work zone?
 - A work zone can be defined as any section of road where work is being performed. The Federal Highway Administration (FHWA) defines a work zone as “That part of the highway being used or occupied for the conduct of highway work, within which workers, vehicles, equipment, materials, supplies, excavations or other obstructions are present.”

Asphalt Paving at Night in Urban Area

- Less traffic traveling through the work zone
- Reduce traffic congestion and delays
- More convenient for highway users
- Improved productivity
- Reduced costs from travel delay and fuel consumption
- Less disruption for local businesses
- Cooler nighttime air temperatures

Asphalt Paving at Night Challenges

- Designing and setting up safe and effective work zones is a complex challenge
- Poor visibility for motorists and highway workers
- Communication difficulties between shifts
- Possibility of encountering impaired or drowsy drivers increases
- Physical and social disruptions for highway workers and inspectors
- Accurate implementation of work zone plan
- Managing public perception and satisfaction

National Work Zone Statistics



Kansas Work Zone Crash Summary

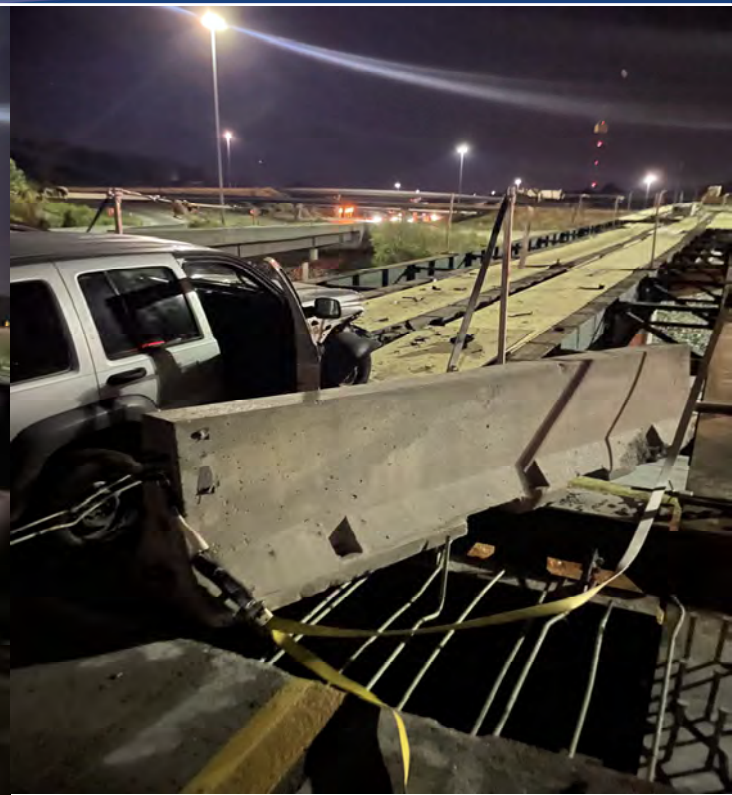
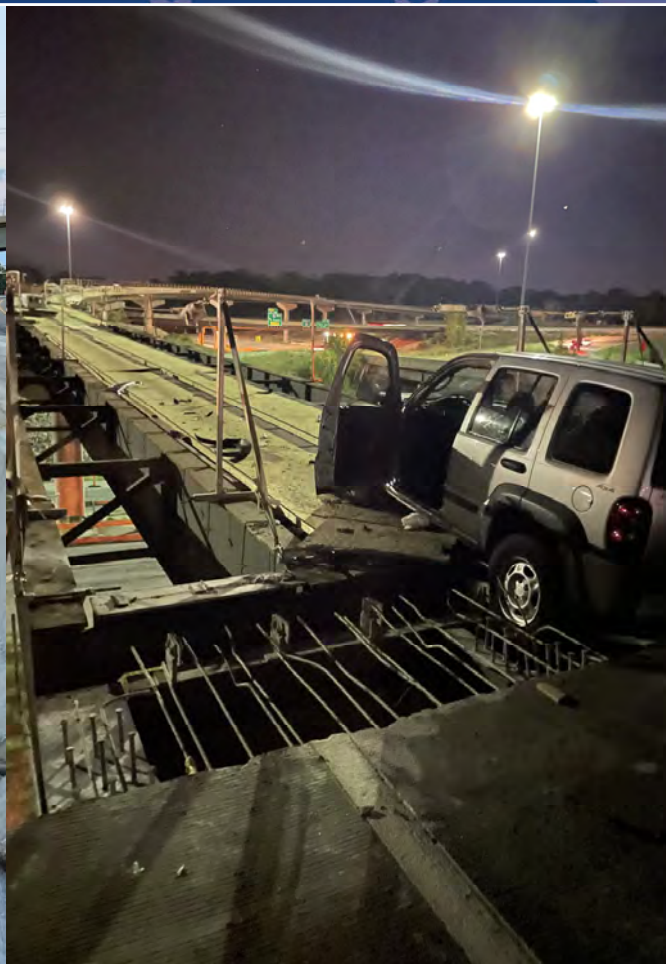
Work Zone Crash Summary

Year	Crashes				People	
	Total	Fatal	Injury	PDO	Deaths	Injuries
2013	1,133	5	273	855	6	386
2014	1,354	7	301	1,046	7	414
2015	1,728	4	359	1,365	4	495
2016	2,112	5	492	1,615	5	703
2017	1,818	8	370	1,440	12	504
2018	1,402	4	298	1,100	5	400
2019	1,406	7	302	1,097	7	437
2020	1,283	1	308	974	2	415
2021	1,238	5	276	957	6	385
2022	1,232	10	277	945	12	375
Total	14,706	56	3,256	11,394	66	4,514

2023 Night Work Zone Incidents – KC Metro

- One construction worker struck in I-70 work zone
- One arrow board struck in I-70 work zone
- Several work zone violations by motorists driving through work zones
- One traffic control truck was struck in an I-35 work zone
- Several overhead trusses impacted on I-70 and I-35 with raised truck beds

Work Zone Incidents – KC Metro



Work Zone Incidents – KC Metro



Safety Measures – Contractors

- Closely spaced Type III barricades in the drop lane
- Tighten up channelizers
- Add red and blue lights facing backwards on vehicles
- Additional PPE (helmets & personal lighting)
- Additional signing for overhead utilities/structures
- Law Enforcement presence

Safety Measures

CenCom Core™: DVI™ + V2V Sync – YouTube

<https://youtu.be/NSX7-Mdb5-o>

<https://youtu.be/iDpVtCRBWro>

Safety Measures

- High Visibility Reflective Apparel (ANSI Class III shirts, pants, or leggings)
- Vests with reflective cross across the back
- Work Zone Safety Review
- Drone Radar
- Equipment & Vehicle positioning
- Tightening channelizer spacing
- Keep paving train as compact as possible

Safety Measures

- Explore weekend closures for resurfacing to accelerate construction
- Nighttime lighting specifications
- Law Enforcement Presence
- Collection of Nighttime Work Zone Crash Data for Analysis

Questions?

