



*162 m Siang Br in Upper Siang District dedicated to the nation by BRO*

**2<sup>nd</sup> ROAD SAFETY SEMINAR: BRO**

**SAFETY PRACTICES AT WORK SITE**

**15 DEC 2021**

# SEQUENCE OF PRESENTATION



## **RISKS**

- Risks to road safety
- Major causes of accidents and deaths

## **MITIGATION**

- Principles of safety management
- Types of mitigation measures
- Precautions for drivers
- Measures for constr workers
- Safety tips for immediate implementation

# RISKS



# SAFETY PRACTICES AT WORK SITE



- 90,000 lives are lost. Amounts to 2-3% of GDP
- BLS 2019 recorded 142 construction worker deaths
  - ✓ 83 were collisions with another vehicle
  - ✓ 34 were collisions with objects other than vehicles
  - ✓ 25 were from non collision incidents
- Change of perspective: human to road system
- Road system to be “**FORGIVING**”
- Improved roads meeting aspirations of speed and efficiency should also be **SAFE**
- Risk at construction site
- Effective mitigation techniques



# RISKS TO ROAD SAFETY



- **“CONE ZONES”** - highways marked by cones, barrels, signs
- Construction sites are **RECIPE** for extreme driving hazards for motorists and workers
  - Speed limits, impatient drivers & traffic congestion
  - Heat, driving stress & long stretches under constr
- Main causes of deaths and injuries are
  - ✓ Speeding traffic - **the number one cause**
  - ✓ Improper merging
  - ✓ Competition upto last second
  - ✓ Distraction by cellular phone calls
  - ✓ Inadequate signposting and lighting
  - ✓ Drivers failing to notice road workers
  - ✓ Absence of flaggers indicating to slow down
  - ✓ Drivers not paying attention to work zone signs

# **MITIGATION STRATEGIES**



# BASIC PRINCIPLES OF SAFETY MGMT



- **No. 1: Safety is top priority**
- **No. 2: Elimination of causes**
- **No. 3: Precautions**
- **No. 4: Compliance with relevant laws and regulations (Work Zone Traffic Management Plan) **IRC:SP:55-2014****
- **No. 5: Prevention of public accidents**
- **No. 6: Implementation of PDCA cycle for safety management**
- **No. 7: Sharing of information**
- **No. 8: Participation of all Project Stakeholders**





# MITIGATION STRATEGIES



## AWARENESS

- SAFETY PRECAUTIONS FOR DRIVERS
- SAFE PRACTICE BY CONSTRUCTION WORKERS
- PRESS AND RADIO RELEASES

## ENFORCEMENT

- INCREASED PENALTIES
- TOUGH MEASURES FOR TFC CALMING

## MANAGEMENT

- UNIFORMITY
- PROPER PLANNING
- PROPER USAGE/MAINT OF VEP
- EFFECTIVE SIGNAGES
- TRAINED PERSONNEL





# **AWARENESS SAFETY PRECAUTIONS**



## ➤ **DRIVERS/MOTORISTS**

- ✓ Avoid construction zones
- ✓ Turn on your lights
- ✓ Obey road crew flaggers
- ✓ Avoid distracting activities
- ✓ Expect abrupt halts esp from leading vehicle
- ✓ Exercise caution when approaching a cone zone
- ✓ Avoid abrupt driving maneuvers esp lane changes
- ✓ Observe all warning & caution signs esp speed limits
- ✓ Maintain a safe following distance to avoid tailgating
- ✓ Watch for construction equipments, workers & material
- ✓ Be patient and courteous
- ✓ **GOLDEN RULE : EXPECT THE UNEXPECTED**



# **AWARENESS SAFETY PRECAUTIONS**



## ➤ **SAFETY MEASURES TO PROTECT WORKERS**

- ✓ Modern flagging operations
- ✓ Use of concrete median barrier
- ✓ Rumble strips to alert motorists
- ✓ Bright orange cones and barrels to separate traffic
- ✓ Highly reflective sheeting on orange **“WORK ZONE SIGNS”**
- ✓ Reduced work zone speed limits with dedicated police enforcement

## ➤ **OTHER MEASURES**

- ✓ Protect from sunburn, dehydration and overheating
- ✓ Highly visible Reflective clothing to be used
- ✓ Use protective equipment and personal protective gear (such as hard hats and steel-toed shoes).
- ✓ Training on how to maneuver around massive pieces of equipment and how to set up safe work zones
- ✓ Road sense to never turn their back to oncoming traffic.
- ✓ **Workers should be constantly reminded to remain vigilant and alert!**

# **SAFETY TIPS**



# **CONSTR WORK ZONE SAFETY TIPS**



## ➤ **HAVE A PLAN**

- ✓ for tptn mgmt for keeping all workers safe and ensuring smooth flow of eqpt

## ➤ **HAVE A SITE SPECIFIC SAFETY PROGRAM**

- ✓ Every project is different and hence requires different precautions

## ➤ **START EACH WORKDAY WITH A SAFETY MEETING**

- ✓ Good idea to have a quick safety meeting before work begins
- ✓ Also a good time to ensure that all workers have and are wearing the proper PPE required for the work being done that day

## ➤ **WEAR PROPER SAFETY EQUIPMENT**

- ✓ Proper safety eqpt should be worn by all pers inside the work zone
- ✓ PPE incl hard hats, steel-toed boots, highly visible clothing and hearing protection if reqd
- ✓ All PPE should meet or exceed the National Standards
- ✓ All highly visible clothing should be bright fluorescent orange or lime/yellow and have visible reflective material



# **CONSTR WORK ZONE SAFETY TIPS**



## ➤ **HAVE A COMPETENT PERSON ON HAND**

- ✓ A competent person capable of identifying existing and predictable hazards in the surroundings is very much needed
- ✓ A competent person is needed to conduct hazard assessments and regular inspections of the worksite

## ➤ **WORKERS CONTROLLING TRAFFIC MUST BE TRAINED**

- ✓ Traffic controllers must know where to stand, how to slow or stop traffic, and how to coordinate public and construction traffic movements.
- ✓ Controllers should use two-way radio communication when visual contact between traffic controllers is not possible
- ✓ Traffic controllers and general road workers should wear suitable conspicuous clothing to ensure that they can be seen by motorists

## ➤ **PROPERLY CONTROL TRAFFIC**

- ✓ Through advance warning signs, transition area, buffer area, work area, termination area
- ✓ Traffic control devices whether it's cones, barrels, barriers, or signs should comply with std specn



# **CONSTR WORK ZONE SAFETY TIPS**



## ➤ **CREATE SEPARATE WORK AREAS**

- ✓ To avoid accidents, use cones, barrels, and barriers to clearly delineate specific areas of the work zone
- ✓ Create separate areas for material storage, heavy equipment, vehicle parking, and safe areas for workers on foot

## ➤ **BE AWARE OF YOUR SURROUNDINGS**

- ✓ Be mindful of what's going on around you
- ✓ Avoid walking behind any vehicles that maybe backing up or into the swing radius of heavy equipment.
- ✓ Have a spotter available for monitoring traffic to alert workers to any potential dangers

## ➤ **AVOID BLIND SPOTS**

- ✓ Vehicles and heavy equipment are constantly moving
- ✓ Operators should ensure that all mirrors and visual aid devices are attached and operating properly including backup alarms and lights
- ✓ Always stay in visual contact with the driver. **If you can't see them then they probably don't see you**



# **CONSTR WORK ZONE SAFETY TIPS**



## ➤ **STAY HYDRATED**

- ✓ Heatstroke, dehydration and heat exhaustion hits at the end
- ✓ Have water arrangements at work site

## ➤ **LAST THOUGHTS**

- ✓ Inform motorists of delays
- ✓ Speed limits should be consistent site operations
- ✓ Trucks are regularly used for transporting workers
- ✓ Unnecessary control signs or road markings must be removed
- ✓ A variety of devices and technology can provide information to motorists, including brighter, bigger electronic signs
- ✓ All-access points leading blasting works are carried out must be manned
- ✓ A systematic preventative maintenance program should be established for all trucks, plant and vehicles



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