Work Smart ~ Work Safe

Safety Incidents and Lessons Learned

NDACE County Roads Conference
1/31/2020

County Employer Group

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Big Hairy Audacious Goal:
- Zero

Goal:
- To raise awareness of potential safety hazards by looking at recent past incidents

Objectives:
- Identify and understand the root causes of recent incidents
- Commit to the implementation of effective corrective actions
Fatal Incident

Who: 2 Road Department Employees, 1 member of public

What: Placing “Bump” signage on the sides of the road

When: 3/26/19, 6:30 am

Where: Two-lane blacktop highway

How: Struck by a van as it entered the ditch

Why:
Proximal Root Causes

- The driver of the van did not know what was going on in front of them.
  - County truck was parked with headlights on facing south in the northbound lane.
  - Thought it was oncoming traffic in SB lane.
  - Amber beacon on the top of the work truck may or may not have been working.
  - No signs/signals other than beacon warned of upcoming work.

- The driver of the van did not see the workers in the ditch.
  - One employee was not wearing any hi-vis garments, the other was wearing insufficient garments.
Root Causes

- **Supervisor/Management Concerns:**
  - Policies inadequate/need improvement:
    - Policies regarding the wear of hi-vis garments were inadequate
    - Policies regarding the establishment of a temporary traffic control zone were inconsistent with consensus standards
  - Lack of policy enforcement:
    - Existing policies regarding the wear of hi-vis garments were not adequately enforced
  - Poor safety culture:
    - Involved employees failed to take reasonable actions to safeguard their own health and safety
Action #1

- Establish a written policy that mandates the use of appropriate hi-vis garments:
  - All employees
  - Working within the right of way of a road; “fence to fence”
  - Completing any task outside of a vehicle

- Garments will be:
  - Type R Class 3

- All employees must be trained on this policy, and all supervisors must enforce this policy.
Action #2

- Establish a written policy that mandates that all vehicles be parked and travel with the flow of traffic:
  - All employees
  - When parked on or near a roadway
    - With Public Safety exemption

- Public safety exemption:
  - Allow law enforcement and other employees to park/stop/travel against the normal flow of traffic in the interest of officer/public safety
    - In accordance with other County policies/procedures and any applicable local/state/Federal rules/laws

- All employees must be trained on this policy, and all supervisors must enforce this policy.
Action #3

- The County should require all passenger vehicles should use light bars equipped with traffic advisor technology.
Action #3 cont.

- Policy would require the use of the traffic advisor light bar whenever the equipped vehicle is stopped on or near the roadway and/or traveling at reduced speeds.

- Exemptions:
  - Heavy equipment
  - ATV/UTV
  - Other specialized equipment

- Must strive to identify other alternatives to increase visibility
  - Signage/triangles/lighting

- All affected employees should be trained on when and how to use this equipment, and the use of this equipment should be enforced by all supervisors.
Action #4

- Stop Work Authority:
  - All employees have the obligation to stop-work whenever a perceived unsafe condition or behavior may result in an unwanted event.
  - All employees should be empowered to use Stop Work Authority when warranted.
  - All employees should be free from any kind of reprisal or negative consequence for using Stop Work Authority.
Near Hit Train Strike
Near Hit Train Strike

Who: County Operator and a train crew

What: Motor Grader and a train

Where: County Road crossing 3-tracks; 1-main line and 2 sidings near a windmill factory and an elevator

How: Operator saw parked train cars on siding, did not see train moving on main line

Why: Uncontrolled crossing
Rough crossing, requiring slow movement (1-2 mph)
Cluttered picture
Fatigue (70 hrs that week), hard at it since December
Recommended Actions

- **Training:**
  - Operation Lifesaver
    - Kathy Zander at the NDSC or through the CEG
  - Clear Roads PPT-based Training
    - Clear Roads is a national research consortium focused on rigorous testing of winter maintenance materials, equipment and methods for use by highway maintenance crews. NDDOT participates.
  - LTAP
Recommended Actions

- Effective Fatigue Management Policies:
  - Breaks/Naps
  - SWA
  - Shift options
  - Personal Interactions

- nfamp.org – North American Fatigue Management Plan
- cmvdrivingsafety.org – fatigued driving module
Clear Roads

22 Modules on:

- Plowing Procedures
- Truck Operations
- Spreaders
- Material Use
- Pre-wetting
- Brine Production
- Deicing
- Anti-icing
- Safety
- Deicer Agent Management
- Level of Service
- Principles of Ice Formation
- Science of Freeze Point Depressants
- Environment
- Drift Control
- Weather Basics
- Bridge Frost
- Avalanche Management
- Supervisors and Winter Maintenance
- Record Keeping
- Getting Ready for Winter
- Drivers Education
Summary

- Learn from the mistakes of others!
- Commit to ZERO!
- Safety is a management function!
  - Ensure you have effective policies/procedures
    - Enforce them
  - Invest in your employees
    - Involve them, empower them, train them
Questions/Comments

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