Implementing an Equipment Condition Assessment Program at Utah Department of Transportation

2016 NATIONAL CONFERENCE
EQUIPMENT FLEET MANAGEMENT

by
Henry Canipe
Asset Management Associates, PLLC

June 28, 2016

Client Overview

- Total fleet of more than 5,000 units
- Replacement value of 200 million dollars
- 500 Class 8 snow plow trucks
  - 2009 average age of 8.4 years
  - 2015 average age of 10.3
  - Oldest trucks over 17 years old
- Light duty fleet provided by General Services

Original 2015 Project

- Six tasks, three key questions:
  1. When should UDOT to replace its Class 8 snowplow trucks?
  2. What year-by-year funding is needed to achieve the target class age over 3, 4 or 5 years?
  3. How should UDOT address the units with cracked frames (or likely to develop such problems)?
- TRB presentation on project is available on EMTSP website

Current Project

- Three (3) follow-on initiatives from initial project:
  1. Expand Snowplow unit replacement criteria (age and miles) to include equipment condition (Condition Assessment Process – CAP)
  2. Review/recommend alternate sourcing strategies to help reduce class age
  3. Identify alternate financing strategies to address budget constraints
- Focus of presentation is the CAP initiative

CAP Objectives

- Qualify and quantify corrosion damage to support equipment replacement requests (a major weakness in initial report)
- Create a process that would support ranking equipment replacement priority
- Provide maximum “value” to UDOT (perceived benefit versus time/cost)

Initial Workshop

- Held November 2015 workshop with regional shop managers
- Identified initial design ‘strawman’ for CAP process
  - Use letter grades (A-F) for scoring
  - Have different weighting for various vehicle categories/components
  - Be able to extrapolate CAP scores into cost estimates
  - 1-hour per vehicle maximum time target for CAP
  - Initially identified CAP process to be performed by field shop personnel
- Identified project next-steps
  - Creation and review of a spreadsheet-based design model
  - Collection of component condition pictures to create a training manual

Initial CAP Model Design

- Provided Excel-based initial CAP design model to workshop participants in January 2016
  - Initial model was based on PM inspection form
    - Had 15 categories and 74 items
    - Determined to be too long and included items that would be fixed as part of normal PM/repair activities
- Involved UDOT IT staff to determine how best operationalize CAP process (data capture and storage)
- Went through multiple revisions of CAP model design during January-March period
- Initiated creation of a CAP training manual

Pilot Training Workshop

- Held in late March 2016
  - Participants independently scored same three (3) trucks using a paper form
  - Consultants compiled scores presented results
  - Walked through each truck and discussed scoring variations and logic
  - Reached consensus on scoring logic
  - Performed group exercise on scoring three (3) additional trucks

Outcomes from Pilot Workshop

- Additional streamlining/revision of model
  - Further reduction of components and categories
  - Revised category weightings
- Decided that CAP evaluations to be performed by traveling crews rather than field shop personnel
  - Greater scoring consistency
  - Simplified training demands
  - Annual inventory requirements already involved an effort that could incorporate CAP process
- Decided to exclude newer units (<4 years) from CAP

Additional Updates

- Model revised to include corrosion damage estimates based on component condition scores
- UDOT IT has resumed development of application after fiscal year-related budget delay
- Evaluated over 200 trucks in two (2) regions paper-based CAP evaluation forms
    - Scores to be entered into CAP application when completed
    - Information to be used to support equipment funding request and prioritization

Lessons Learned

- Employ change management principles when undertaking a significant effort of this type
  - Involve stakeholders
  - Build consensus
  - Solicit feedback
  - Be flexible
- Provide checkpoints and incorporate pilot activities as early and frequently as possible

Lessons Learned (continued)

- Fleet personnel are often ‘hands-on’ learners
  - Helpful to be able to create workshops where they can ‘walk though’ proposed changes/processes
- Recognize the desirability of accepting trade-offs between detail/accuracy and time
  - Minimizing time demands is key to ensuring that such initiatives do not become ‘pencil-whipping’ exercises
- Major initiatives take time to implement and success is not guaranteed but the alternative is to accept the status quo

UDOT Sourcing Initiative

- UDOT is actively pursuing alternate sourcing options for Snowplow units
  - Leasing
  - Guaranteed buy-back
  - Turn-key purchasing
- Working with dealers/manufacturers to improve equipment residual values
  - Exploring revised truck specifications
  - Determining cost/performance trade-offs
- UDOT has requested a EMTSP survey to support

UDOT Financing Initiative

- Exploring options to leverage available funding
  - Low interest rates encourage financing to stretch available dollars
  - Use operational dollars to rent/lease equipment versus constrained capital funds
  - Potential use of Utah Department of Administration light-duty fleet leasing vendor to provide heavy duty vehicles

Questions?

Thank You!

Provide questions / comments to:

Henry Canipe

hcanipe@ama-performance.com

336/210-7015