Equipment Utilization Overview

Tommy Strowd, Director, Operations & Maintenance
Anthony LasCasas, Asst. Director, Facilities & Maintenance

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Background

- Since 2013, Board has provided resources allowing staff to focus on business and operational efficiencies to increase production with current staff resources
  - Replacing older, high-maintenance equipment with new machines (lease and purchase)
  - Adding new technologies to the equipment portfolio
    - Grinder/Skid-Steer
    - Fecon (2)
  - Redirected staff to focus on priorities
  - Solicited contract services
    - Mowing pilot projects
    - Tree removal
Background

- Implemented tools to assist with tracking work production and equipment usage in order to evaluate operational efficiencies
  - GPS Insight
  - Fuel reporting software
  - Operational metric reports
- Goal is to increase production without added staff
- Adequate justification for future purchase or lease of new equipment
Equipment Usage

- Focus on ‘excavators’ – LWDD workhorses
- Traditionally, retained some machines for back-up/emergency purposes
- Operational challenges that reduce efficiency
  - Geographical issues, start/stops
    - 500 miles of canals over a 200 sq-mi area
    - Requires frequent mobilization / de-mobilization
  - Property disputes
  - Encumbrances
Annual Equipment Usage

- No utilization records prior to 2010
- 4 excavators (2011-2013) – 2,874 hrs/yr Avg
- 8 excavators (2014-2016) – 5,590 hrs/yr Avg
  - Doubled number of machines as well as total annual machine hours since 2013 (work)
  - Approximately 10% increase in annual utilization
Annual Equipment Usage (con’t)

- Increased both total equipment hours and utilization without hiring additional employees
  - Limit of work assignments vs. staff qualification
  - Re-allocated current staff to priority functions
    - Shop → Operators
    - Redirected Positions (Vacancies) → Tree Crew
Lease vs. Purchase Considerations

- Maintenance as machinery ages (costs)
- New technology (improved performance)
- Machine type (excavation, grinders, etc.)
  - Additional hours included for emergency purposes
  - Leased machine have utilization limitations (~58%)
    - Over utilization trips increased hourly lease fees ($50/hr)
- Need for excavators may be reduced in the future
  - Large clearing projects will be completed; may not need after lease or useable life
Efficiency Improvement Considerations

- **Employee performance incentives**
  - Merit increases based on overall employee performance currently in place
  - Balance consideration
    - Production vs. safety
    - Fairness / equity to operators given external obstacles, delays, etc.

- **Overtime / split-shifts**
  - Hourly rates increased (including benefits, etc.)
  - Additional support staff may be necessary (supervision, fuel, etc.)
    - Increased salary/benefits budget, training, liability
  - Potential off-hour conflict with adjacent residents

- **Contracted services**
  - Reduced need for District-owned equipment and staff

- **Staff commuting**
  - Time accounting - Clock-in / clock-out procedures
Annual Work Hours (excluding overtime)

- 40hrs /wk x 52 wks => 2080 hrs
  - Less paid holidays => -96 hrs
  - Sick & annual leave => -100 hrs
  **Max. Utilization:** 1,884 hrs → 91%

- Additional considerations
  - Travel time to/from work sites (~1hr/d) → 208hr
  - Routine staff & safety briefing, supplies, etc. (~.5hr/d) → 104hr
  - Equipment fueling, greasing, safety check, etc. (~.5hr/d) → 104hr
  - Mobilization (2-4 staff, 2-4hrs/mobilization/15 moves/yr) → 135hr
  - Routine maintenance (~2d/qtr.) → 80hr
  - Break/fix and repairs (~30hr/yr) → 30hr
  - Training, administration & staff events (~60hrs/yr) → 60hr

1,884 - ~831 = 1,053 hrs → 51%

- Current Lease Agreement 1,200 hrs/yr → 58%
Equipment Utilization Statistics
Current Effective Utilization
1st Quarter of 2017 (Jan- Mar)

Crnt Hrs – Percentage of operation hours
Maint – Percentage of maintenance and shop hours
3rd Party – Percentage as a result of warranty work or parts delivery delay
OPT- Percentage of defined operational duties including, mob/de-mob, scheduled training & other misc. administrative activities
UN – Percentage of un-defined time including travel time, safety checks, routine greasing, fueling and similar activities
Quarterly Equipment Utilization (Jan-Mar ‘17)
Equipment Utilization (Production Units)
Mower Net Utilization

Quarterly Mower Utilization (Jan-Mar ‘17)

M-65, M-66, M-70, M-76, M-79, M-82, M-83, M-84, M-86, M-87
Proposed Utilization Improvements
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- **Overtime work** ($2500-$5000/mo)
  - Mobilization to the extent possible & practical
    - Reduce downtime of equipment and manpower
  - Ancillary activities (including installation of gates, removal of isolated shoaling or erosion and other non-routine activities)
    - Production equipment stays on key projects
    - Offers opportunity for training additional operators

- **Split-shift** (no additional cost)
  - One (1) Mechanic
    - Performs routine maintenance
    - Provides support for OT teams as may be necessary
Proposed Utilization Improvements

- **Take home vehicles** ($550/mo for 4 staff)
  - On a trial basis for limited equipment
    - Assign take home vehicles to operators
    - Operators shall report to yard each morning
    - Operators shall continue to fuel equipment
    - Operators shall work until end of shift and go straight home
  - Result in 30 to 45 min additional work (~.75 percentage points)

- **Review option for 3rd Party or after hour fueling**
  - Reduce downtime related to fueling auxiliary tank and associated equipment
  - Facilitate operators going directly to job site
  - Several logistical issues remain, including limitations, costs, monitoring, etc.
Next Steps

- Evaluate improvements
- Quarterly reports to Board
  - Next report July 2017