

# Total Cost of Ownership



# Mulch & Soil Council

# Safely Home. Everyone. Every Day

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## • EMERGENCY

In case of emergency call **911**.  
Who knows First Aid or CPR?



## • FIRE –

In the event of a fire, exit the building and meet in the parking lot.



## • TAKE COVER –

In the event of severe weather, proceed to the stairwells, restrooms or other internal rooms and wait for further management instructions.



## • ROOM HAZARDS

Watch for power cords on the floor, slip / trip hazards and protruding objects.

# SAFETY = \$

- Single quickest way to improve your Total Cost of Ownership is \$afety.

**Table 1. Work-injury ratios by age<sup>1</sup>**

| Age   | Percent employment distribution <sup>2</sup> | Percent work injury distribution | Work injury ratio <sup>3</sup> |
|-------|--|----------------------------------|--------------------------------|
| 16-17 | 3.2  | 1.9                              | .59 <sup>4</sup>               |
| 18-19 | 5.3  | 6.8                              | 1.28                           |
| 20-24 | 15.2   | 21.0                             | 1.38                           |
| 16-24 | 23.7   | 29.7                             | 1.25                           |
| 25-34 | 26.4   | 30.3                             | 1.15                           |
| 35-44 | 18.7   | 16.7                             | .89                            |
| 45-54 | 17.6   | 13.6                             | .77                            |
| 55-64 | 11.4   | 8.8                              | .77                            |
| 65+   | 2.2  | 0.9                              | .41 <sup>4</sup>               |

<sup>1</sup> Based on current cases in 26 States. Includes illnesses.

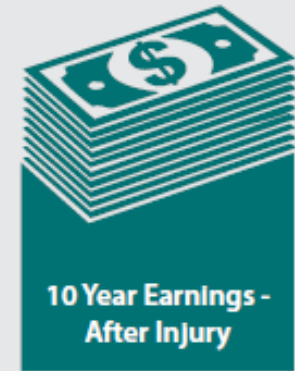
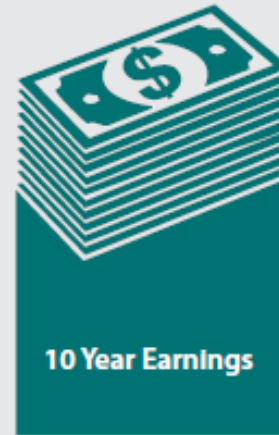
<sup>2</sup> Industry employment source CPS data, 1977.

<sup>3</sup> The ratio computation is column 2 divided by column 1.

<sup>4</sup> Because of the relatively small magnitudes associated with one or both components in these ratios, the relative errors for these age groups would be larger than those for the other age groups.

## -15%

Workers earn \$31,000 (15%) less over 10 years following an injury<sup>9</sup>



# How to value?

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- Parts availability - If the parts are not available then you have to include waiting for parts time in your % uptime calculation
- Service response time – Again, waiting for service needs to be included in your % uptime calculation
- TRUST – Do you have equipment partners or equipment vendors. Do you put a value on it?? Is a trusted partner? - Is this a cost or a benefit?

Effects your TCO calculation but not your Lease vs. Buy calculation

# Big 5 Categories of Owning & Operating Cost

## Purchase price

- Must account for residual value

## Fuel & Preventive Maintenance Costs

- Can equal or exceed original purchase price

## Interest & insurance expense

- 5 to 10 percent of original purchase price (or more 😊)

## Downtime

- Revenue per machine/hours.  
Lost time is lost revenue is a cost
- Parts availability, Service availability

## Operator

- Wages, benefits, vacation, sicktime

**On average, purchase price only represents 10 to 15 percent of TCO**

# Preventive Maintenance Costs

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1. Cleaning
2. Oil analysis
3. Inspections
4. Testing
5. Sampling
6. Measurements
7. Adjustments
8. Engine oil
9. Engine filter
10. Hydraulic oil
11. Hydraulic filter
12. Fuel filter
13. Coolant
14. Grease / Lubricants
15. Tires
16. Tracks
17. Belts
18. Labor
19. Wear parts

# Damage

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## 1. Visibility

- 811, Obstacle Identification, Other Personnel, Backing up (blind spots)

## 2. Slope Work (up/down, side/side)

## 3. Tight spaces

## 4. Training

## 5. Weight

## 6. Task, Tool, Machine selection

## 7. Maintenance

## Questions

- “I am only digging a 6 inch hole and I should call 811??”
- “I get all that, but why do I have to put cones out?”
- “When do I need a ground guide”
- “Can I just angle the machine to dig this one hole?”
- “Doesn’t this one operate just like last year’s machine?”
- “It will work if I just angle the bucket like this, won’t it?”

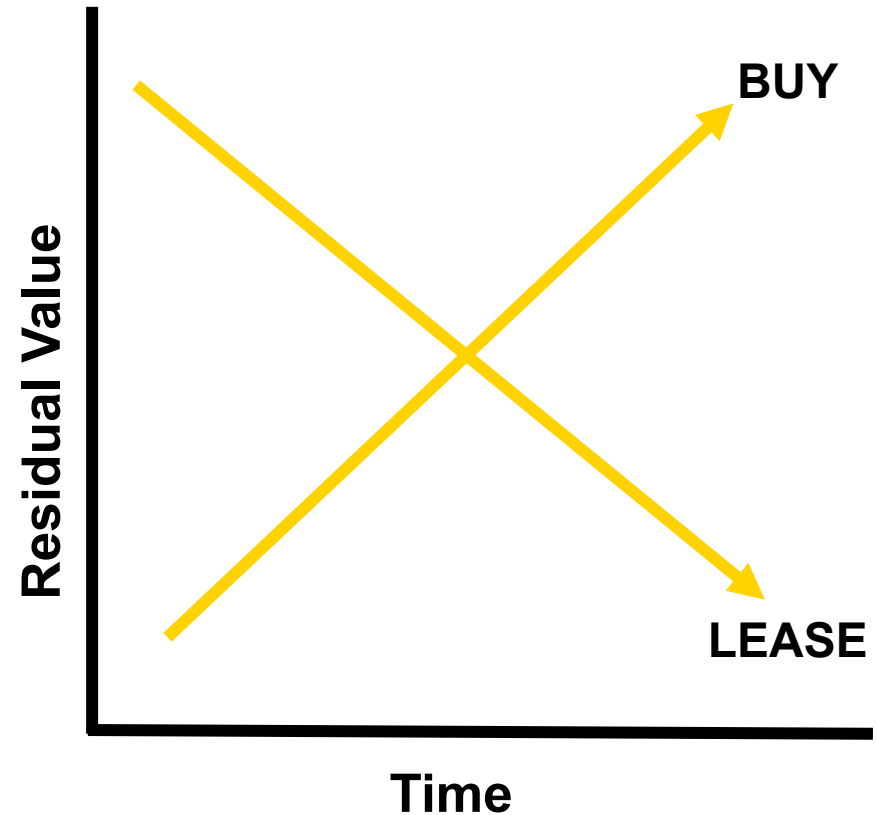
# Driving Factor – Residual Value

## Increasing residual values

- Low demand for new equipment (Tier 5?)
- Low availability of new equipment (manufacturing shortages)
- Strong GDP growth
- Population increases

## Decreasing residual values

- Too much leased equipment in the market
- Oversupply of used equipment
- Oversupply of new equipment
- Easing regulations





# Buy – Better when residuals are rising

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## PRO

- Build equity
- Manage your own maintenance
- Section 179 if you qualify
- Have control and ownership

## CON

- Higher initial cost
- Stuck with current technology
- Less predictive costs

# Lease – Better when residuals are falling

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## PRO

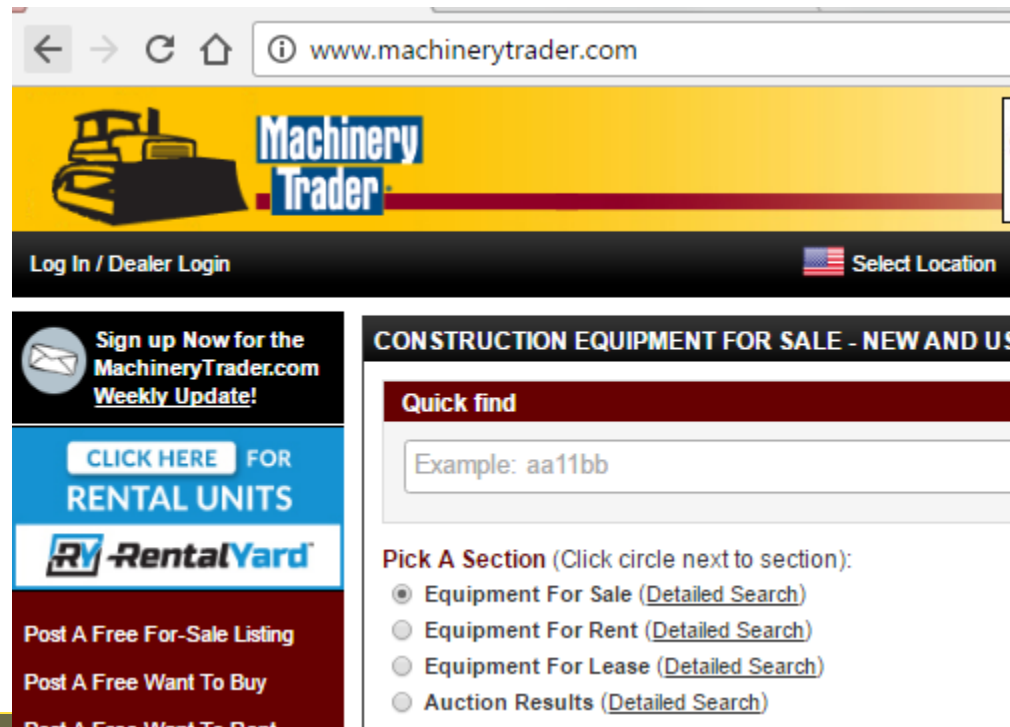
- High level of technology changes
- Smaller up front charges
- If operational expense then rule 179
- More predictive costing

## CON

- Higher TCO
- No equity build
- Hours/miles limits

# Residual values

- <http://www.machinerytrader.com/> - Independent third party
- Always utilize auction results for comparative analysis



# Numeric Analysis

5 Min Manager - C

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|    | A   | B                      | C            | D |
|----|---|------------------------|--------------|---|
| 1  | <b>Comparative Capital Investment Analysis - 5 min</b>  |                        |              |   |
| 2  | Description   |                        |              |   |
| 3  | <b>Estimated Price*:</b>  |                        |              |   |
| 4  | <b>Tax savings from depreciation assuming 33% tax bracket**:</b> ASK YOUR CPA   |                        |              |   |
| 5  | <b>Machinery Trader Average Auction Result - 36 MOS</b>   |                        |              |   |
| 6  | <b>Fuel + PM cost during 3000 hour machine life.</b>  |                        |              |   |
| 7  | <b>Machinery Uptime: Percent of Time * Revenue Per Hour</b>   |                        | <b>\$100</b> |   |
| 8  |   | Machine 1 Equiv. Rate: | <b>3.9%</b>  |   |
| 9  | <b>Interest expense over life of loan:</b>  | Machine 2 Equiv. Rate: | <b>3.9%</b>  |   |
| 10 |   | Est. down payment:     | <b>10.0%</b> |   |
| 11 | <b>Financing Term in months: Note: If terms are different, adjust rate of shortest contract to equivalent rate of the longer contract</b> |                        | <b>36</b>    |   |
| 12 | <b>Premium deserved by dealer for unmatched parts availability, service capability, stability, and customer satisfaction focus.</b>       |                        |              |   |