

## 160 Acre Center Pivot Example Estimating Annual Irrigation Operation Costs

Standard 160 acre system and end gun with actual irrigated area of 132 acres installed at a cost of \$48,000 with a power and water source and connecting equipment cost of \$30,000.

### Ownership Cost

Depreciation:  $(\text{original cost} - \text{salvage value}) / \text{years of use}$   
 $(\text{pivot cost} + \text{installation cost} - \text{salvage value}) / 10 \text{ years} =$   
 $(\$48,000 - 15,000) / 10 = \$3,300$

$(\text{well cost} - \text{salvage value}) / 20 \text{ years} =$   
 $(\$30,000 - 10,000) / 20 = \$1,000$

Interest:  $\text{interest rate} * \text{average investment value}$   
 $9.5\% * (\text{original cost} + \text{salvage value} / 2) =$   
 $9.5\% * (\$78,000 + \$25,000 / 2) = \$ 51,500$   
 $9.5\% * \$51,500 = \$4,893$

Repair: estimated to between 2 to 5% of original cost  
 $\text{well cost} * 2\% =$   
 $\$30,000 * 2\% = \$600$   
  
 $\text{pivot cost} * 3\% =$   
 $\$48,000 * 3\% = \$1,440$

Taxes: no personal property tax in Michigan  
the addition irrigation equipment should not increase property taxes

Insurance: estimated at  $0.5\% * \text{Average Investment Value}$   
 $0.5\% * (\text{original cost} + \text{salvage value} / 2)$   
 $0.5\% * (\$78,000 + \$25,000 / 2)$   
 $0.5\% * (\$ 51,500) = \$258$

**Total Ownership Cost** =  $\$4,300 + \$4,893 + \$2,040 + \$258 = \$11,491$   
 $\$ 11,491 / 132 \text{ acres} = \$87.05 / \text{irrigated acre/year}$

### Operating Cost (per acre) or total actual annual cost

These costs are best handled annually calculated using actual costs at the end of season.

Power: use actual fuel or power bill is recommended  
estimated power cost:

$\$3.50 / \text{acre in.} * 6 \text{ in.} * 132 \text{ acres} = \$2,772 \text{ annually}$   
 $\$3 \text{ to } \$5.50 / \text{acre in. range}$

Labor cost: recommend use of actual labor bills  
Range of  $\$1 \text{ to } \$3.50 / \text{acre in.}$   
 $\$1 * 6 \text{ acre in.} * 132 \text{ acres} = \$792 \text{ annually}$

**Total Operating cost annually** =  $\$ 3,564$

**Grand Total Estimated Annual Cost** =  $\$3,564 + \$11,491 + = \$15,055$   
 $\$15,055 / 132 \text{ acres} = \$114.05 / \text{acre at } 6''$