ID#_____Name_____FFA Chapter_____

2B. Habitat Improvement Scenario (40 pts)

Land managers from the Bureau of Land Management (BLM) in southern Idaho, have recently acquired a 500 acre parcel of land. The vegetation is a mature sagebrush stand with cheatgrass and few perennial forage plants in the understory. One of their management goals is to reintroduce native forbs and perennial grasses into the stand to improve the forage resource for wildlife, specifically sage-grouse.

They have a limited budget to work with, so their goal is to treat 5% of the 500 acre parcel using a mosaic treatment pattern where "small islands" are treated across the larger parcel.

Under this management plan they will perform the following tasks: 1) use mechanical mowing to reduce brush cover and open up the understory, 2) apply Roundup herbicide treatment to eliminate weedy understory, 3) drill seed perennial grasses in the late-November directly into dead sagebrush, 4) plant forb seedling "plugs" next spring to increase forb survival rates.

Equipment:

- The mowing equipment required for the treatment will cost $35/acre.
- The Roundup herbicide application will cost $32.20/acre for chemical plus $35/acre for equipment, due to the slope and terrain of the landscape.
- The perennial grass seed drilling will cost $12.00/acre.

Labor:

- The work days will consist of 10-hour shifts and the BLM crew will be paid $15/hour.
- It will take a team of four people three days to mow the small patches of sagebrush.
- The same crew will spend one day on the herbicide application treatment.
- The crew will return for two days to drill seed the native perennial grasses.
- The same crew will come back for four days in the spring to plant native forb seedling plugs.

Planting:

- The perennial grass seed mix costs $25.60/acre. The rate of application will be 8 lbs/acre.
- Each forb seedling plug costs $1.25. The planting rate will be 100 plugs/acre.

How much will it cost for the BLM to perform this management plan?
***Show your calculations by category (equipment, labor, planting) with a grand total:*

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How much will it cost total for the BLM to perform this management plan?

Show calculations based on each financial category:

Equipment:

- Mowing treatment: $35 x 25 acres= $875
- Herbicide treatment: $35 x 25 acres= $875
- Round-Up herbicide treatment: $32.20 x 25 acres= $805
- Drilling equipment= $12 x 25 acres= $300
- **Cost of equipment= $2,855**

Labor:

- Mowing treatment: 4 people x 3 days (10 hour day) x $ 15= $1,800
- Herbicide treatment: 4 people x 1 day (10 hour day) x $ 15= $600
- Plug Planting: 4 people x 4 days (10 hour day) x $15= $2400
- Drill seeding treatment: 4 people x 2 days (10 hour day) x $15= $1,200
- **Cost of labor= $6,000**

Planting:

- Perennial grass seed mix: $25.60 per pound x 8 pounds per acre x 25 acres= $5,120
- Forb seedling plugs: $1.25 each x 100 plugs per acre x 25 acres= $3,125
- **Cost of planting= $8,245**

Total cost of management plan = $17,100