

Nemec Coastal Permit Response

Project ID P6268

Water Analysis

1 (4). Analysis of water supply and demand

Native plant restoration landscape plan calls for the planting of 58 native plants.

First Year: The plants are to be watered at a rate of 15 gallons every three weeks during the dry season (May – Oct). $58 \text{ (plants)} \times 15 \text{ (gal.)} \times 8 \text{ (waterings)} = 6,860 \text{ gallons required.}$

Second Year: The plants are to be watered once every 4 weeks during the dry season

$58 \text{ (plants)} \times 15 \text{ (gal.)} \times 6 \text{ (waterings)} = 5,220 \text{ gallons required.}$

Third Year: The plants are to be watered once every 6 weeks during the dry season.

$58 \text{ (plants)} \times 15 \text{ (gal.)} \times 4 \text{ (waterings)} = 3,480 \text{ gallons required.}$

Lavender

90 plants. Lavender requires 1 gal. per week for the first year to establish.

First Year: 1 gal. per week for the first year to establish.

$90 \text{ (plants)} \times 1 \text{ (gal.)} \times 24 \text{ (waterings)} = 2,160 \text{ gallons required.}$

Second Year: 1 gal. every 2 weeks.

$90 \text{ (plants)} \times 1 \text{ (gal.)} \times 12 \text{ (waterings)} = 1,080 \text{ gallons required.}$

Third Year: 1 gal. every 3 weeks.

$90 \text{ (plants)} \times 1 \text{ (gal.)} \times 8 \text{ (waterings)} = 720 \text{ gallons required.}$

Fruit Trees

8 Fruit Trees require 15 gallons of water once a week.

$8 \text{ (plants)} \times 15 \text{ (gal.)} \times 24 = 2,880 \text{ gallons.}$ Water Catchment system:

Bolinas records an average of between 32" to 40" of annual precipitation. The formula for calculating the amount of water catchment of a roof is 623 gallons for every 1,000 sq. ft. of roof area for every inch of rain. The roof of the proposed barn is 770 sq. ft. It can therefore catch 480 gallons for every inch of rain. At 32" annual rainfall, the barn roof has the potential to store 15,360 gallons of water. At 40" annual rainfall, the barn roof has the potential to store 19,200 gallons of rain.

Because we are proposing to plant the native plants first and waiting three years until they no longer have watering requirements, the first year is the only year that the water requirements exceed the storage capacity. This is not taking into account the event of late rains when water may have already been drawn down from the tanks and they can be re-filled. We are proposing that the two 2,500 gal. tanks be filled only once, the first year during construction of the barn. With that one water delivery, all water needs in our proposal can be met by the two 2,500 gal. water tanks. We do not foresee having to purchase outside water more than once every couple of years. Most water delivery trucks carry between 150' and 300' of hose so the truck would not have to drive down the steep section of Laurel to deliver water. The truck can park uphill and run a hose to the tanks.

1(5). **Barn Space Requirements**

Lavender and Herb Drying Racks (in the rafters) – 300 sq. ft.

Bee Equipment Storage – Extra beehive boxes, frames, bottom boards & hive tops, bee suits and management equipment, swarm catching equipment, feeders: 100 sq. ft.

Garden Tools – Wheelbarrows, hoes, forks, shovels, rakes, pruning saws, weed whip, hoses, planting pots: 200 sq. ft.

Potting Area – Work counter for potting up seedlings. Area for soil and amendments. 80 sq. ft.

We also need a place to rest and protection from the weather when we are working our small farm. 50 sq. ft.

Total area needs: 730 sq. ft.

Some of these areas can overlap a bit so that we can make due with the 601 sq. ft. structure we are proposing.

Driveway:

3.(a) The driveway is necessary because beekeeping equipment is heavy, especially when filled with honey. Since no processing is being proposed onsite, we need to be able to load up heavy hive boxes as close to the hives as possible. Also, there is no where to park on the road. The driveway is partially a result of attempting to reduce the use of the road across from the neighbors driveway to be able to park vehicles inside our property, in addition to the practical use of access to the property a driveway provides. The driveway is of minimal size a

little over two car lengths to help accommodate less vehicles in front of the driveway and on the road. We are proposing an asphalt driveway as recommended by DPW.