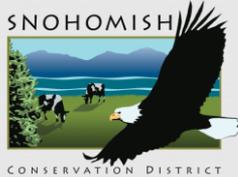


## Heavy Use Area (HUA) How-To and Essentials

*How to properly construct and maintain a HUA*

Michael Hipp, Farm Planner  
[www.snomishcd.org](http://www.snomishcd.org)  
425-377-7019

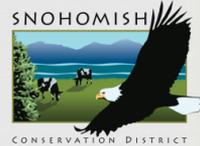


Hipp Ranch, Stratford, Texas 2014

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## District Services that help you and your horse:

- Farm visit consultations if needed
- Workshops and Farm Tours
- Habitat, Wetland and Streamside Restoration
- Newsletter and Website [www.snomishcd.org](http://www.snomishcd.org)

*Conservation Districts are non-regulatory,  
and provide free technical assistance  
and education.*

3



## Heavy Use Area:



- Is an area that gets the most use from your horse or equipment or both
- Not growing grass in that area.
- Used to protect pasture.
- Used to protect your horse's hoof health in winter

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## Heavy Use Areas are ESSENTIAL

Heavy Use Areas (HUA) are an essential tool that can be used to keep your horse in a safe manner when the rains and winter wet make our pastures a dangerous place hoof-wise for a horse to stay.



*A properly built and maintained HUA can save you hundreds or even thousands of dollars in vet and farrier bills!*

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## Worst Case Scenario



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## Reduce Risk & Improve Sustainability

*Heavy Use Areas are a vital component to keep your pasture healthy as well as your horse!*

Heavy Use Areas (HUA):

- Provide a safe place for your horse to be away from wet pastures that can easily turn into mud in winter.
- When properly constructed will last ten years or more depending on use and maintenance



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## Heavy Use Area Essentials



- "Road Cloth" or "Geotextile" that meets or exceeds MS-209 Class 1 for Fabric Specs.
- 5/8 minus at a 6" min. depth.
- Ground cleared and graded at least 1%-2% (1.25" over 10 feet).
- Border (either pressure treated wood, or geotextile fabric folded upward on edges) to prevent horizontal loss of gravel.

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## HUAs are the KEY to mud prevention and good pasture management

- Locate on higher/drier ground
- Not adjacent to a waterway
- No drainage through it
- Direct surface water around area
- Safe fencing
- Easy access for delivery trucks - wide gates
- Size - minimum 750 to 1000 square feet per horse (2000 sq. ft. for hot-blood horses)
- Good outdoor lighting



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## Footing Comparisons - 5/8 minus is best!

- 5/8"-minus gravel
  - at least six inches deep
  - geotextile fabric (road fabric) underneath
  - advantage or disadvantage: permanent
- Hog fuel/ woodchips
  - at least one foot deep
  - no fabric underneath
  - disadvantage: needs replacement frequently, when wet no better than wet pasture
- Sand
  - geotextile fabric underneath
  - medium to coarse and angulated sand
  - advantages: Good for hooves, can lie down in it.
  - disadvantages: breaks down, tracks into stalls, shouldn't feed on it, odor builds up



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## How To Build a Proper HUA

### Step 1

### Select The Best Site

Site selection for your HUA is a critical first step. The best sites are on the highest and driest locations on your property away from water features like streams or wetlands. It should be located adjacent to your barn or stable, where your horse can have access to it from their stall. It should also be in a position to be easy to clean manure from and be in a fairly level place, not on steep slopes.

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## How To Build a Proper HUA Step 2 Sizing Your HUA

Determining the size of your HUA is dependent on a lot of factors: the amount of land you have available, the age and activity level of your horse, and any other particular behavior issues your horse may have (is your horse nervous near the forest's edge, or do they need to be able to see your house to not pace?). As a rule of thumb the average, 15 hand tall horse should have at least 700 square feet of space. For the typical barn, with 12 ft wide stalls, that would mean an area of approximately 12 ft wide x 60 ft long. If you will have multiple horses in one area you will need to multiply that by the number of horses. Again, sizing is dependent on many factors, so reach out to us for specific advice when you are ready.

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Gravel recommended at stall doors, gates, watering and high traffic areas.

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## How To Build a Proper HUA Step 3 Eliminate Water Intrusion

The goal in this step is to eliminate as much intrusion of water onto and through your new HUA. A good HUA is designed to withstand hard rain, but it will not stand up very long with a constant flow of water across it or through it like a small stream created from a downspout. Make sure you have gutters on your shelter to prevent roof runoff from falling onto your HUA, and channel the downspouts away from the HUA, or connect them to an underground outlet that takes the water away to a safe place.

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## Roof Water Management



Courtesy of [www.horsesforcleanwater.com](http://www.horsesforcleanwater.com)

Managing the rainwater coming off your roof is essential to maintaining your HUA!

Even a small 30 x 50 barn in Snohomish County (32 inches of rain annually) can shed 29,904 gallons!

The best constructed HUA cannot withstand constant input of rain from an un-guttered roof.

$$\text{Shed Water (gal.)} = (\text{Catchment Area (sq. ft.)} \times \text{Rainfall Total (in.)}) \times 0.623$$

<http://rainwaterharvesting.tamu.edu/catchment-area/>

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## Gutters, Downspouts and Underground Outlets are Essential to Maintain Your HUA



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## Underground Outlet



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## Outlet Area



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## Protect with PVC pipe



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## How To Build a Proper HUA Step 4 *Grade The Area*

This is another vital step that will help preserve your HUA and make it function as intended. You will want to dig down 6 inches and then grade that area. Or, if you chose, you can grade the surface and use a retention frame of some kind, because the footing material will need to be at least 6 inches deep. When you grade the HUA make sure it has at least a 1 - 2% slope away from your barn or shelter. That means the soil must drop about 1.25 - 2.50 inches every 10 feet. This will ensure the rain will come through the gravel, hit the geotextile fabric, and shed off properly, keeping the HUA dry. Make sure the grading will send the water to a place it can safely go and be absorbed by the soil.

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## How To Build a Proper HUA Step 5 *Install Geotextile Fabric*

You will want to lay the fabric down with the slope keeping in mind how the water will flow, like the shingles on your house roof. The fabric may have to overlap, in which case it should overlap at least 2 ft to allow for any shifting. Make sure the end at the bottom of the slope extends beyond the HUA so you can cover that end with earth. Use garden staples to secure the fabric to the ground.

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## How To Build a Proper HUA Step 6 *Use a Retention Perimeter*

Install a retention perimeter of some kind - pressure treated lumber, for example - or extend the cloth out so it can be wrapped upward to retain the base. This can be vital in most situations to prevent the gravel base from migrating horizontally into the soil and thus losing your base. Be sure to leave 1 - 2 inch gaps in places that will allow for water to escape and migrate.

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## How To Build a Proper HUA Step 7 *Spread the Footing*

Spread the footing at least 6 inches deep, compacting it with a hand compactor (available at most equipment rental places), compacting at 4 inches and then again when you reach the final 6 inches. Use a water hose to wet the area and compact it until the surface is firm.

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## How To Build a Proper HUA Step 8 Create and Maintain a Filter Strip

Since the water from your HUA needs to go somewhere and be absorbed so it won't create a muddy condition, I recommend keeping an area where the water sheds off the HUA that you can allow grass to grow and where your horses can't disturb it, called a "filter strip". Keep in mind that your HUA will be capturing a lot of water that has been contaminated by horse manure (a 700 sq ft HUA could potentially capture 14,000 gallons or more in a season!), and the best way to treat that water is by allowing a good grass filter strip to absorb it.

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## Grid & Footing Cells



Products perform the functions:

- hold gravel in place
- reduce compaction

Compare pros/cons of all products for your particular situation

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## Manure Management in Your HUA

- Manure can compromise your HUA as fast as roof runoff can.
- Manure left in an HUA can turn to mud in just one day of rain.
- Create a HUA large enough for the horse but small enough to pick manure.
- Pick manure daily or at least every three days, or lose the battle with mud.  
(Horse produces 30 lbs of manure and 20 lbs urine/day.)
- Place manure storage near HUA for chore efficiency.

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If you have any questions or need assistance, please contact me at any time!

**Michael Hipp - Farm Planner / Sound Horsekeeping**  
(425) 377-7019  
[mhipp@snohomishcd.org](mailto:mhipp@snohomishcd.org)

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