



HEALING STRIDES MASTER PLAN

"Horses Inspiring Hope"

Boones Mill, Va

December 2021



HILL
STUDIO



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INTRODUCTION & IMMEDIATE IMPROVEMENTS PLAN

MASTER PLAN DESCRIPTION

Healing Strides of Virginia's mission is to promote wellness for people with personal challenges who can benefit from Equine Assisted Activities and Therapies in a safe and supportive environment. The organization was formed in 1991, by a group of individuals who recognized the need for an adaptive approach to healing. They understood that horses are amazing creatures and had the power to inspire hope in individuals who were challenged with physical, emotional and/or cognitive disabilities.

Healing Strides is in Boones Mill, Virginia just south of Roanoke on 22 beautiful acres bordering the Maggodee Creek. The current facility is located on 0.1 acres (or 4,660 square feet) and has had a great success in the original creation and gradual additions to the facilities. The current facilities include the Harry and Lavon Webb indoor paddock, parking, pastures, and the Rotary outdoor riding arena.

In recent years the number of programs has grown immensely calling for an organized plan of expansion in the future. This document is composed to attempt to organize a reasonable expansion of the facility making it a safer more pleasant and effective grounds for people to understand horses and to partake in the numerous activities that are available on the grounds.

A dozen new initiatives are documented in this master plan, ranging from minor bricks and mortar improvements to miles-away enrichment activities. Although integrated with the entire facility, each of these initiatives is described as specific projects so that they can be used for fundraising and targeted toward specific grants. The final chapter deals with character guidelines to provide a general look and feel to make all the existing and new facilities consistent in their message of carrying forth the Healing Strides brand and then finally a vision for future expansion beyond the tenth of an acre, onto a much larger additional property should it become available.



Healing Strides leaders Carol Young and June House discussing future of the organization at community event

IMMEDIATE IMPROVEMENTS PLAN

Thirteen initiatives are listed in the Master Plan, seven specific initiatives are slated for the immediate improvements. These include:

1. Small indoor ring expansion
2. Walkway one
3. Roadway visibility grading
4. Obstacle course
5. Back of house structures
6. Manure composting facility
7. Green design/stormwater management

1. For immediate deployment, the first initiative is the expansion of the Mental Health Learning and Coaching arena into the paddock to the west. This will double the current 66' x 60' space into a large 66' by 120' length rectangular arena that will be partially shaded. This new addition will provide for accessible therapy riding. The immediate need can be met without great cost or interruption to other facilities on the site. It will allow for some of the therapeutic riding programs to immediately expand. This has been one of the core focus areas of Healing Strides and it provides for larger classes to be accommodated immediately.

2. Walkway one is a proposed covered walkway between the two indoor riding arenas. This will allow people to get tacked and mounted in one of the barns and move to the ring in the other barn without having to go out in the elements.

3. Roadway visibility grading can be accomplished along Naff Road by simply shaving the back of a knoll along the southern side of the roadway which is a sight impediment for drivers. Funds have been granted to a neighboring resident to address this roadway visibility issue.

4. The obstacle course is in immediate need, especially for veterans riding and for other more capable and adventuresome riders. Land has been apportioned near Maggodee Creek in the woods just north of the Harry and Lavon Webb Arena. The Obstacle Course is proposed to be a keystone project designed by America's premier obstacle course designer, Mark Bolender.

5. Back of the house structures: These small matching barns will allow a lot of clean-up activity along an organized service road, which will provide for better drainage, will lift equipment and hay off the ground and move it to a more fire-resistant facility and help with overall appearance and safety of the facilities. One of the most important benefits of this project is moving the feed room, hay/grain storage to a more practical location to create efficient use of labor.

6. Manure composting facility: Utilizing the existing excellent relationships with the local farmers, a concrete composting facility will allow for more sanitary use and better utilization for this resource for local farms.

7. Green-design stormwater management was originally one of the first goals of the master plan. The plan calls for much more integrated use of capturing stormwater on site, and gradually releasing it back into the soil will also for better drought resistance and flood control as well as benefits of the horses' feet on the facility.

These can be seen on the plan on page 8 and 9 and described in more detail starting on page 20.

IMMEDIATE IMPROVEMENTS PLAN







LONG TERM VISION MASTER PLAN

LONG TERM VISION PLAN

The long-term vision plan includes 6 additional improvements for Healing Strides, rounding out the built environment for today's needs. The long-term initiatives include:

1. Green design energy management
2. Future additional outdoor rings
3. Off-site roadway improvements
4. Front of house area
5. Other facility structures
6. Garst Veteran Riding Camp

Each of these initiatives is designed to further the mission of Healing Strides, and to be oriented toward particular interest areas and possibly corresponding grants. These facilities will help to make the facility safer, more environmentally-friendly and more efficient as additional people and potentially additional horses start to use the facility. The longer-term components include:

1. Green Design Energy management: with the responsibility now upon all of us for starting to curb global climate change, Healing Strides can take the lead on working on solar electrical and water heating facilities as well as shading heat-source areas on the property.
2. Additional outdoor arenas: The future additional outdoor arenas provide opportunities for the growing college and equestrian programs that are now being introduced to the site. Both Ferrum College and Roanoke College use the facility for their varsity sport. These arenas also provide for a much-needed and appreciated expansion for all the riders on the grounds.
3. Site roadway improvements: a system of clear and distinguishable 20' paths in and around the barns and ring complexes provides easy access for on-site personnel but more importantly for emergency personnel to access the site. A loop road system is provided for the long-term safety of the facility.
4. Front of house: a cleaned-up and organized front area is provided that is especially for visitors, dignitaries, guests, and first-time facility users. This area has the pleasantries of flowers and interpretive signage and introduces the visitors to the facility. It also contains the Veterans Memorial and isolates it in a place where it can be further understood and admired by all, and provides for more organized handicapped access parking, a staple for this facility.
5. Other facility structures: a perimeter fence encompassing the entire site along with improved indoor and outdoor lighting will enhance the functionality while providing increased beautification. In addition, better functioning large indoor fans as well as new interior doors and exterior sliding doors entering the facility will help improve accessibility for participants.
6. Garst Veterans Riding Camp: this off-site platform tent camping area is a special feature for veterans but can be enjoyed by others as they ride a several hour-long trail ride to the reach the facility up on Cahas Mountain. This will be a premier facility for all challenged riders and a special treat for overnight campers.

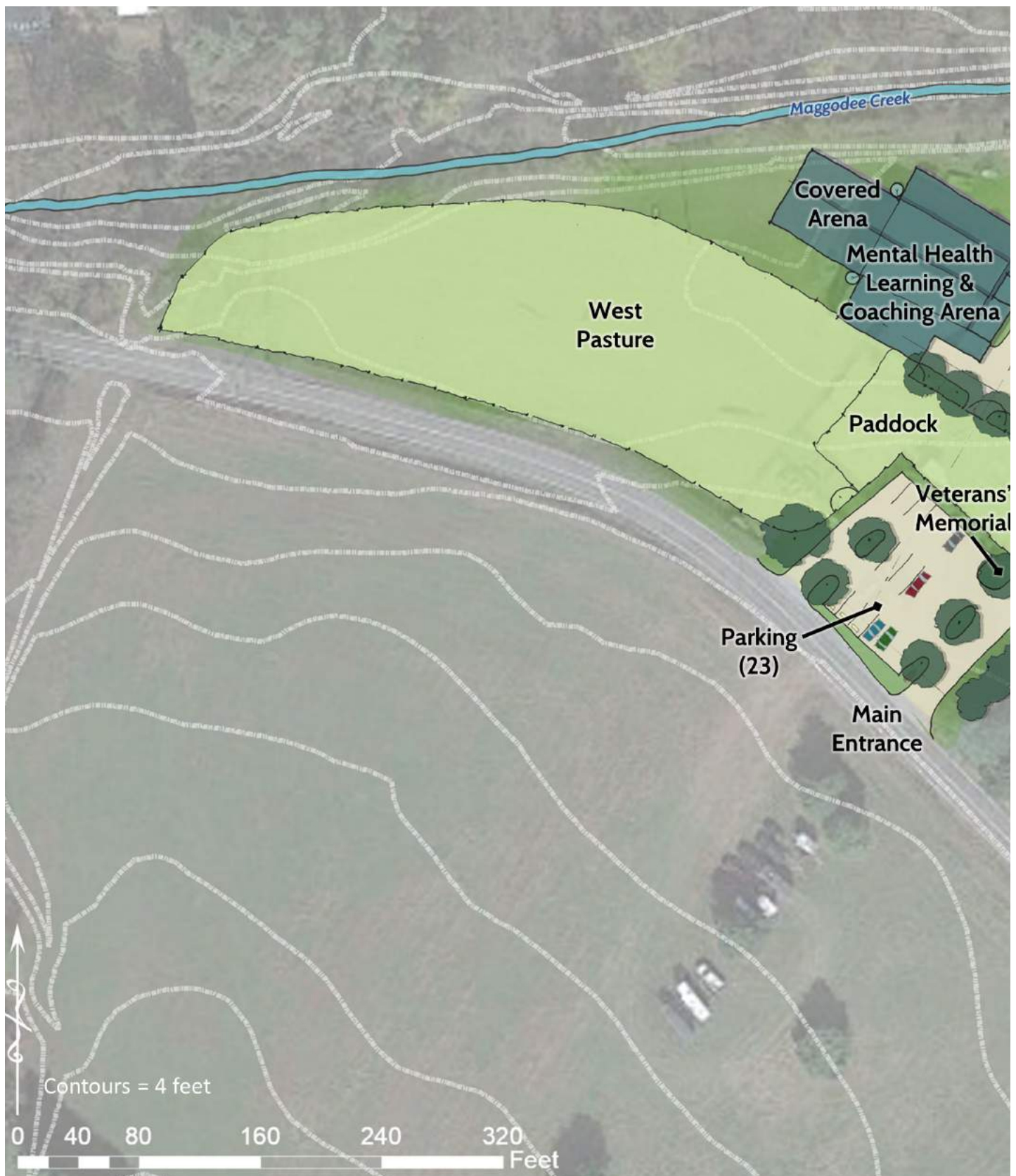


Front entrance to Healing Strides and the Harry and Lavon Webb Arena



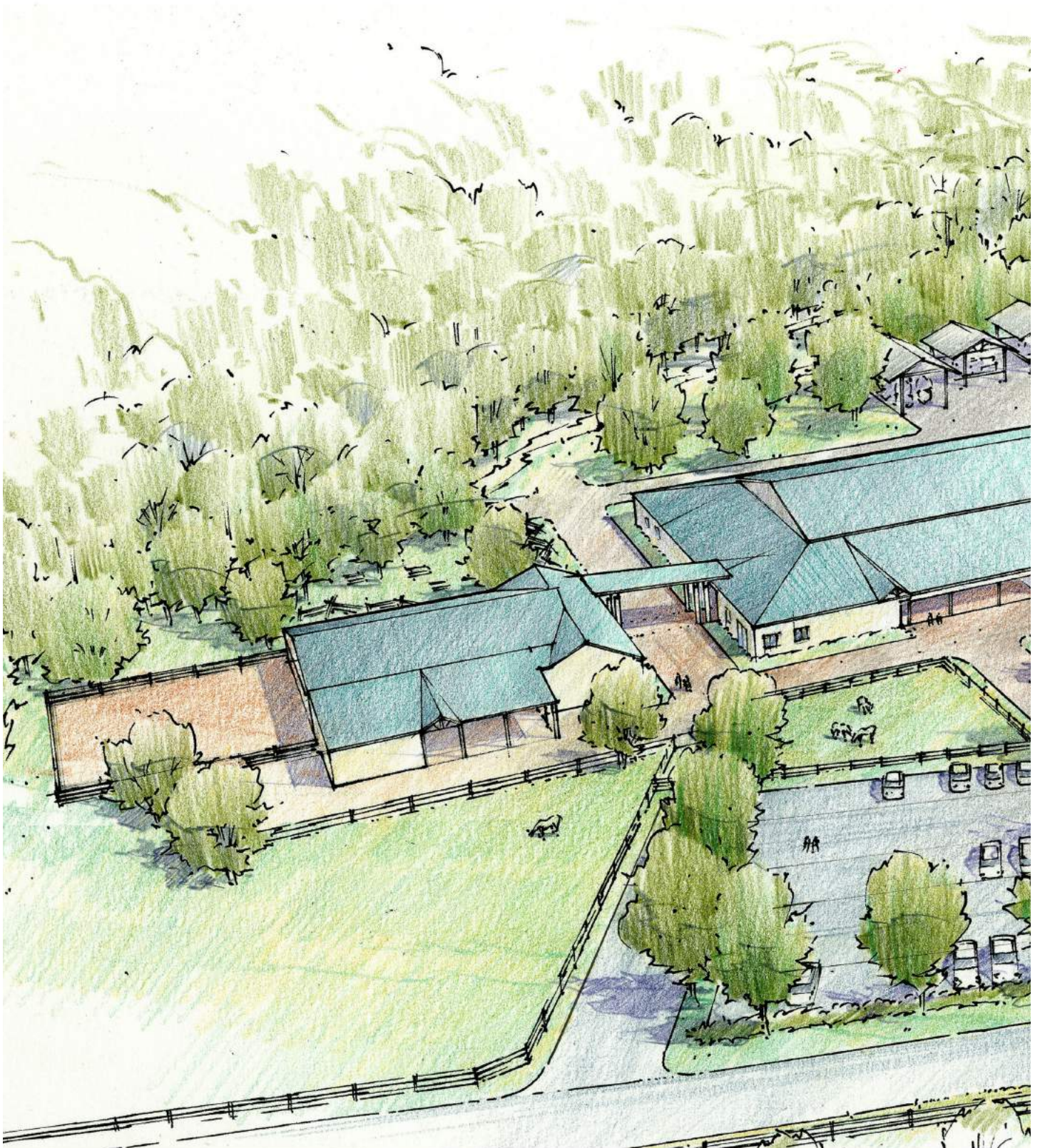
Existing Outdoor Rotary Arena

LONG TERM VISION PLAN





LONG TERM VISION ILLUSTRATION







MASTER PLAN INITIATIVES

SMALL INDOOR RING EXPANSION

BRIEF DESCRIPTION

The small Mental Health Learning and Coaching Arena expansion is recommended in two phases. As shown on the left below, the first phase is to simply add a new outdoor addition to the current ring, doubling its size. This will allow for the ring to accommodate twice the riders, with a shaded end and a sunny end. This expansion will allow for increased space in the Mental Health Learning and Coaching Arena for participants and staff to expand their programming capabilities.

The illustration of the expansion in its second phase is shown to the right. The existing barn does not have a covering on the western end.



GENERAL COST

The total project cost for this initiative is estimated to be \$480,480.

Phase 1 for the Small Indoor Arena Expansion is estimated to be \$197,120. Phase 2 is estimated to be \$283,360.

Detailed cost estimate can be found in Appendix B starting on page 62.



First phase of Mental Health Learning and Coaching Arena improvements and expansion

WALKWAY ONE

BRIEF DESCRIPTION

The Walkway 1 roof enclosure is proposed as a covered walkway between the existing Harry and Lavon Webb Arena and the adjacent semi-enclosed Mental Health Learning and Coaching Arena. This walkway is proposed to have columns at the outside edges providing 20 to 24 foot clear space between and having a roof where the structure starts at a minimum of 16' above the roadway.

The large clearance areas are provided so that the roadway between the two barns can be used as fire and emergency vehicle egress. Similarly, all materials are meant to be fire-resistant and to be generally kept out of the way of vehicles moving through the corridor at all times of the day.

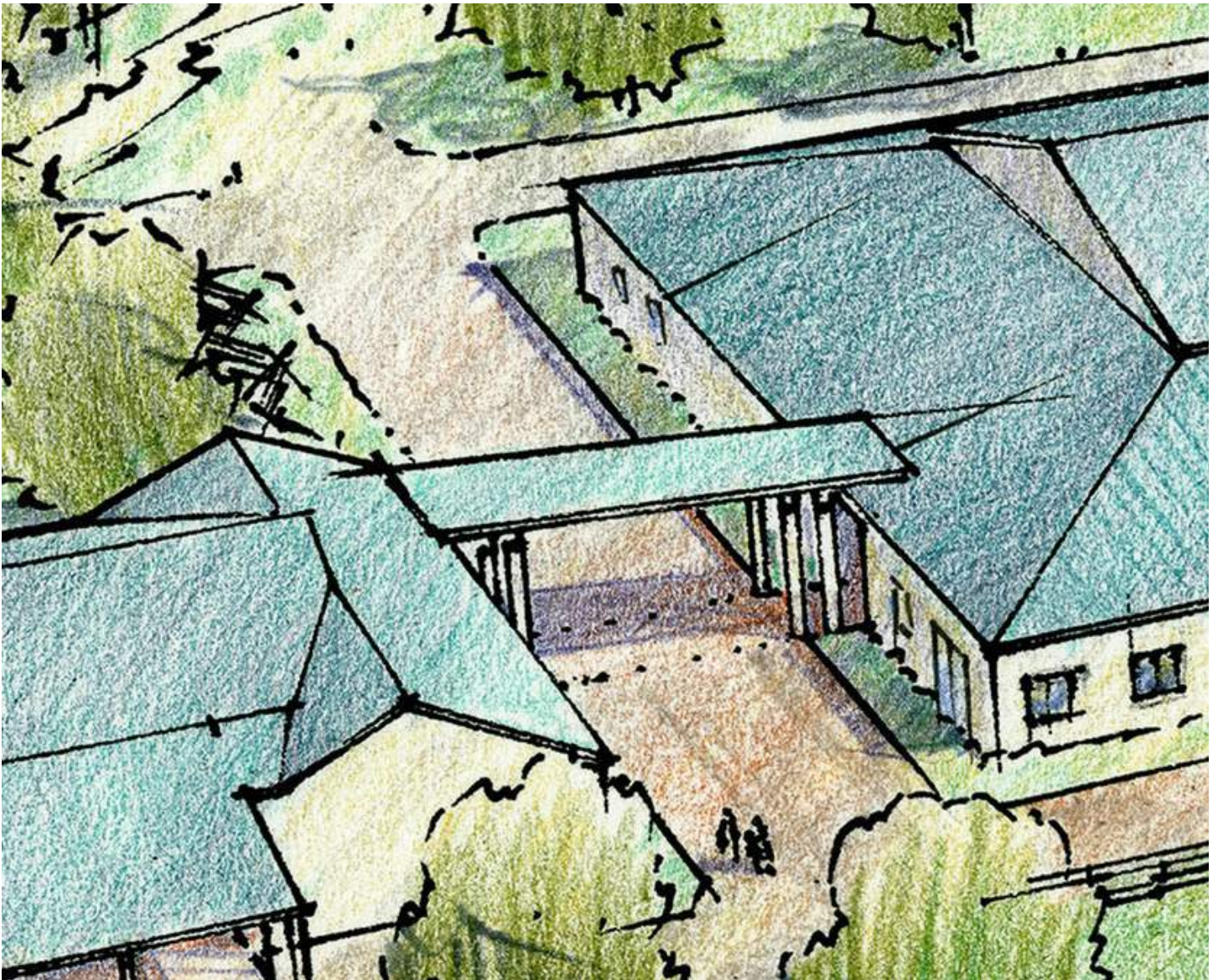
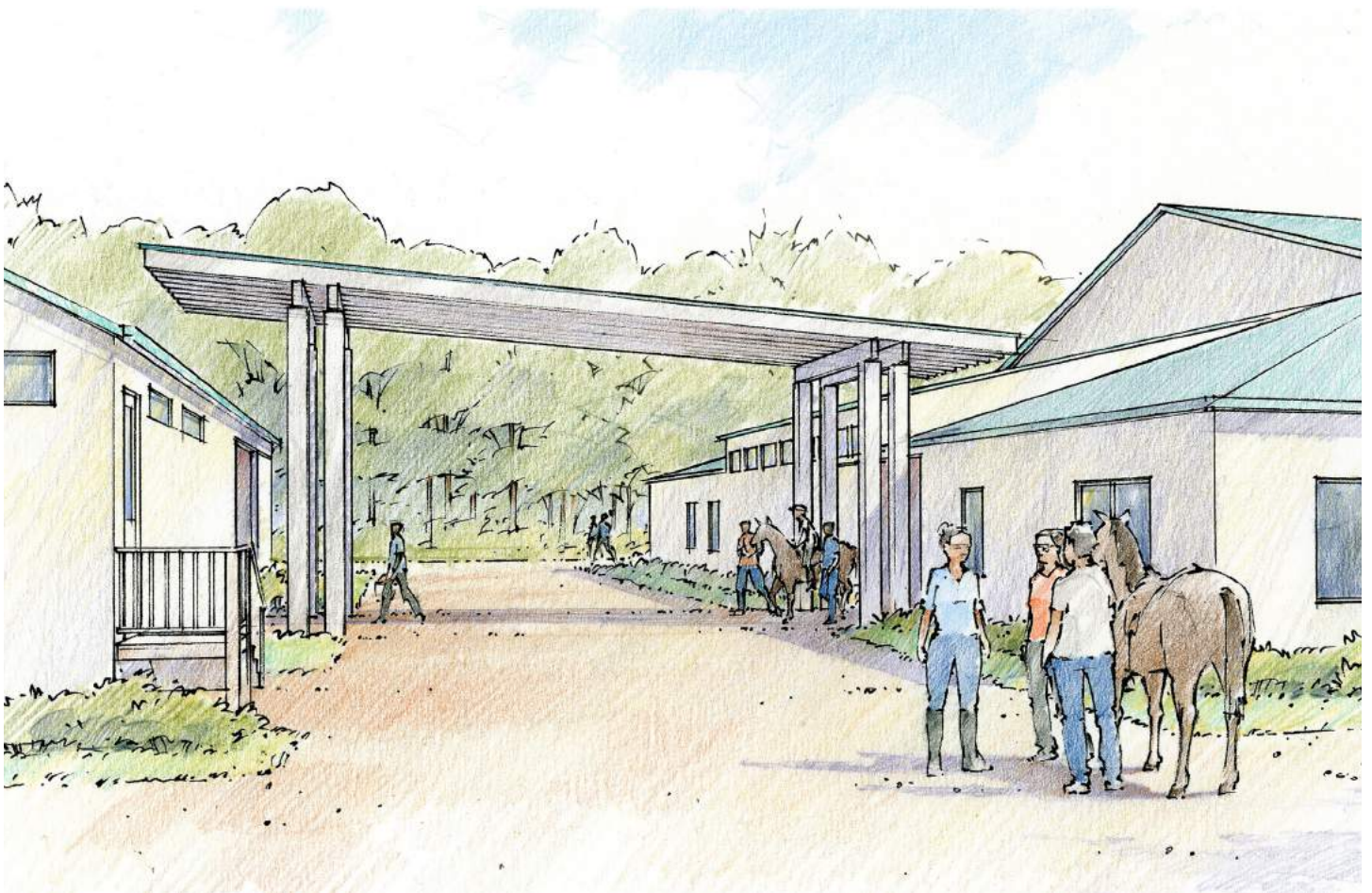


Illustration of proposed walkway between two existing arena facilities

GENERAL COST

The total project cost for this initiative is estimated to be \$67,424.

Detailed cost estimate can be found in Appendix B starting on page 62.



Ground view of proposed walkway between two existing arena facilities

ROADWAY VISIBILITY GRADING

BRIEF DESCRIPTION

This is a minor project from a cost perspective but is one of the most important safety projects in the master plan. Currently along Naff Road there is a grade approximately 6' in height and set back from the pavement about 8'. This cutbank is left over from roadway grading over the years and is a visual impediment for drivers as they approach the entranceway to the Healing Strides facility. The current posted speed limit for Naff Road at this curve is 35 miles per hour and leaves little time for cars or trucks to stop when approaching the Healing Strides entrance.

The Owner for this property has received grant funds to cover the cost of grading down the embankment. The work will simply consist of minor grading to lower the bank and make it more gracefully sloped and allowing the eye to see over the bank. An additional impact will be that the field to the south will slope more gracefully to the road and the ditch allowing for more use by the adjacent farmer.



Looking east toward facility entrance parking lot with obstructed views

GENERAL COST

The total project cost for this initiative is estimated to be \$15,478.

Detailed cost estimate can be found in Appendix B starting on page 62.



Looking west from facility entrance parking lot with obstructed views

OBSTACLE COURSE

BRIEF DESCRIPTION

“Veterans live for challenges. Once veterans have ridden around the ring a few times they say ‘What’s next?’” (Carol Young)

The general purpose of the obstacle course is to provide a continuously challenging set of achievements for both horse and rider to be built in the woods on the north side of the barn between the back-of-house area and the creek. The obstacle course can employ the large shade trees in the area and potentially parts of the creek. The obstacle course is proposed to be designed under the supervision of Mr. Mark Bolender, one of the foremost obstacle designers in the United States. His work has been heralded in literature for both rider, horse and instructor to learn as they encounter increasingly difficult challenges along the course.

(Photos on these pages from <https://www.bolenderhorsepark.com/>)



Obstacle course area behind main facilities

GENERAL COST

The total project cost for this initiative is estimated to be \$123,400.

Detailed cost estimate can be found in Appendix B starting on page 62.



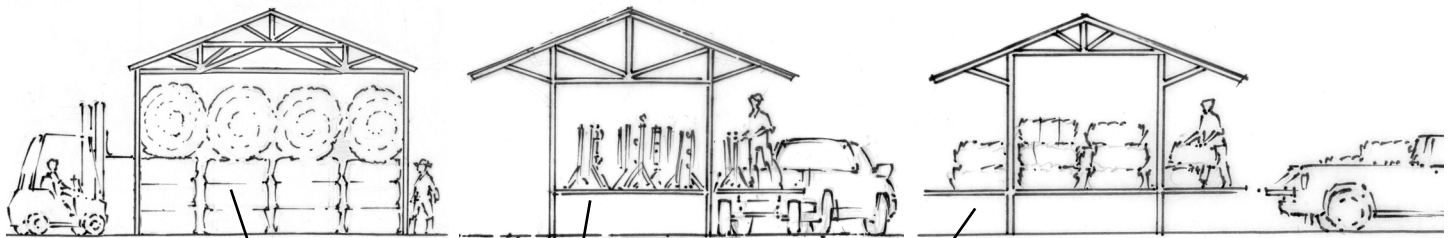
Example horse obstacles by Bolender Horse Park

BACK OF HOUSE STRUCTURES

BRIEF DESCRIPTION

Based on the simple pole barn heritage of the Franklin County tobacco barns and smokehouses, a series of back-of-house structures is proposed to be built on the north side of the Harry and Lavon Webb Arena along the woods edge. These structures will be set back 20' feet from each other and will include an unblocked 20' road between the arena and these structures. The principal uses of the structures are for hay, jumps, small hand tools, etc. Healing Strides is currently using approximately one bale of hay (4'x4') per day, service barns will allow for the dry storage of these hay bales. Each can be designed to house materials out of the weather and to ease loading on and off of trailers, carts and trucks. Side walls can also be considered for increased dry storage capacity or for multi-purpose use.

Generally, they will be clear-span structures with truss roofs and generally will be left open. Their large roof spans and consistent materials provide a way to hide a number of back-of-house things and bring order to the whole assembly area. They are clustered around the gravel work pad area.



Back of house service barns for storage along with manure recycling center

GENERAL COST

The total project cost for this initiative is estimated to be \$299,936.

Detailed cost estimate can be found in Appendix B starting on page 62.



Back of house service barns for storage along with manure recycling center

MANURE COMPOSTING FACILITY

BRIEF DESCRIPTION

Manure is sometimes considered a waste product at stables, but at Healing Strides it is considered a resource available to local farming community. Currently farmers come in with pickup trucks and remove the manure as quickly as it can be generated. To make this greener and more sanitary, a horizontal concrete silo form is proposed, that will feature a concrete floor for manure waiting to be loaded. It is proposed to be a two-level facility with the upper level at loading dock so manure can easily be pushed onto trucks or loaded with a bucket loader into trucks over the wall. This will help to keep manure out of the creek during flood times and will actually make more of it available to use for the local farming community. Care needs to be taken as this manure facility is sited generally in the location of the horse burial facility. More detailed research needs to be performed on the horse burial area with monumentation provided prior to excavating for the manure composting facility.



Existing manure pit

GENERAL COST

The total project cost for this initiative is estimated to be \$134,400.

Detailed cost estimate can be found in Appendix B starting on page 62.



Example manure manure composting station (<http://www.horsesforcleanwater.com/composting>)

GREEN DESIGN - STORMWATER

GENERAL DESCRIPTION

Three early and related projects are recommended to deal with the stormwater. An overriding issue has been that the barns have been sited traditionally on the lower slopes, providing for easy grading but water tends to just sheet flow into the barn facilities. During times of heavy rains, the front of house and back of house areas can be completely full of water which provides sanitary problems. Lots of mud can exacerbate hoof problems and is just a general mess. To alleviate this a three-project strategy is proposed.

1. Capturing the roof rainwater into cistern tanks (details are discussed on pg. 28). The northwest corners of the roofed arenas will be the catchment areas for roof drains from a guttering system to cistern tanks. These tanks take roof flow from all the large barns in the complex and will help to alleviate flooding. Water stored in the facility can be used in conjunction with a dust arresting trailer that provides water to the different outdoor rings and roads.

2. Capture parking lot and road runoff in a soaker bed. The plan proposes an improved parking lot which will add more spaces for the facility. This will create the need for additional water absorption techniques such as soaker beds to surround the lower sides of the lot between the paddock of the parking lot. In the bed, placement of a series of large stones and then later filter cloth and soil with special plantings that can absorb the water and remove any kind of pollutants. This will help in extremely wet conditions by providing storage for some of the stormwater before it gets to the paddock and the front-of-house area.

3. A diversion ditch along the high side of Naff Road as part of the detailing of the visibility grading (page 24). Flattening and grading of the diversion ditch can steer a lot of water that is coming off of the southwestern fields and over the road into the facility on into Upper Maggodee Creek, at the western property edge.



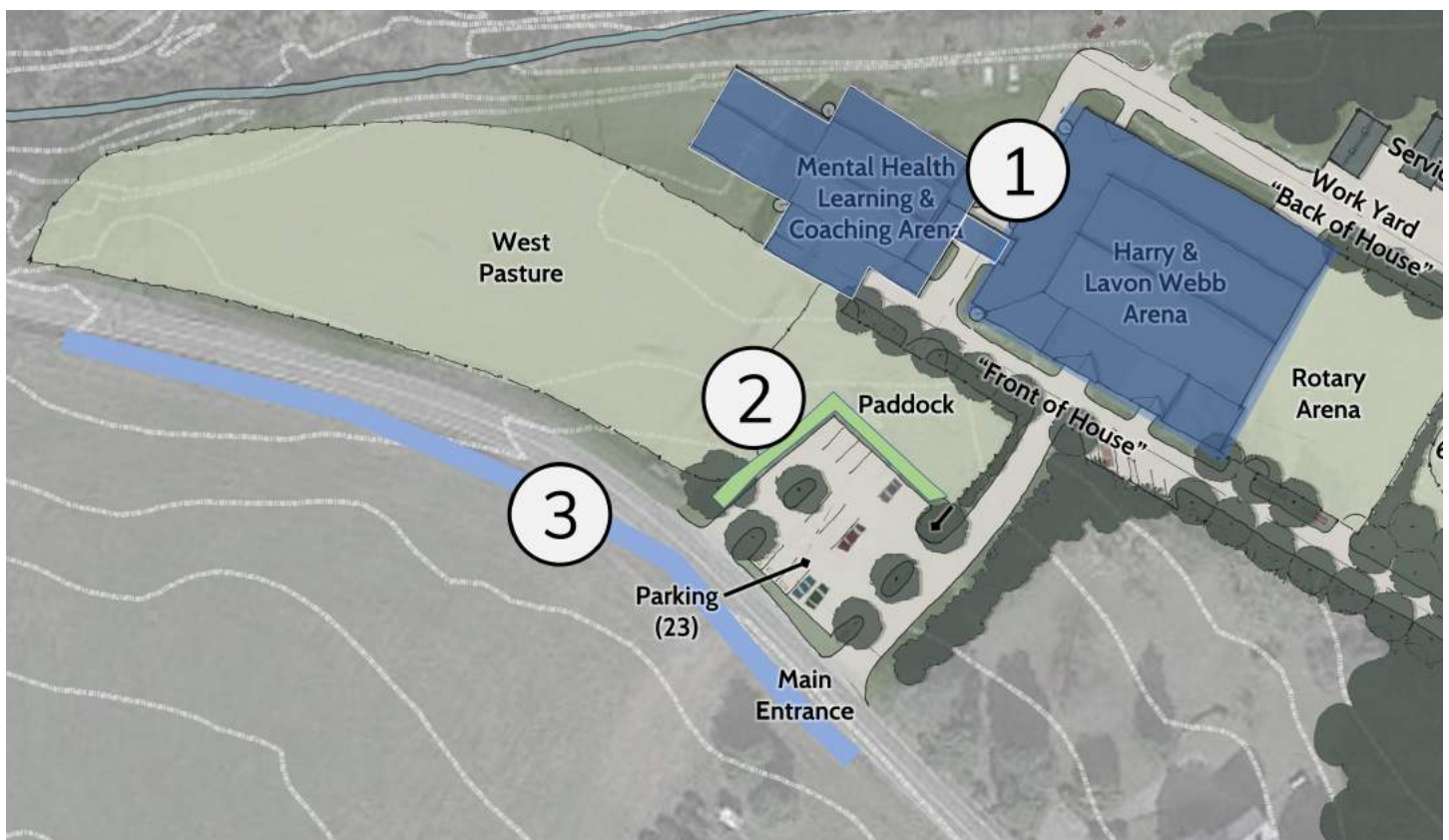
Example soaker bed (<http://sissonlandscapes.com/drainage/>)



Example diversion ditch (<https://geograph.org.uk/>)

STRATEGIES

1. Capture Roof rainwater for Cistern Tanks
2. Capture Parking Lot and Road runoff in soaker bed
3. Diversion Ditch on High Side of Naff Road



Sustainable stormwater design strategies

GENERAL COST

The total project cost for this initiative is estimated to be \$200,592.

Roof rainwater capture cisterns is estimated to be \$90,160; Parking Lot rainwater capture and soaker bed is estimated to be \$85,120; and Diversion Ditch is estimated to be \$25,312.

Detailed cost estimate can be found in Appendix B starting on page 62.

GREEN DESIGN - ENERGY

GENERAL DESCRIPTION

In order for Healing Strides to continue as a leader in the Roanoke Valley care of horses, people, and mental health, it also may venture into becoming a leader in the world of responsible community design. Several ideas are recommended for quick implementation:

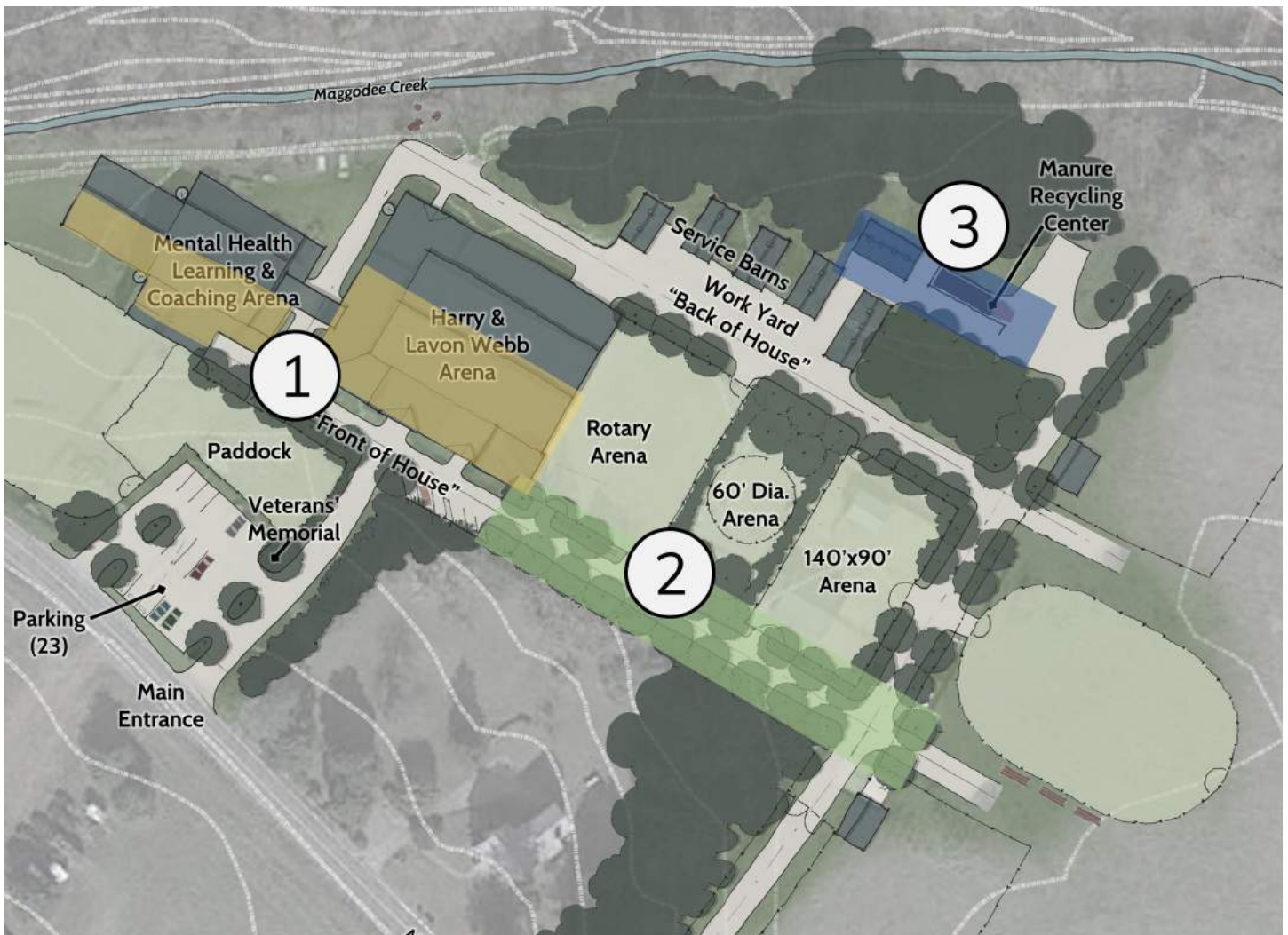
1. Solar panels: utilizing the southwestern facing slopes of the Harry and Lavon Web Arena, and the Mental Heal Leaning and Coaching Arena, a series of solar panels is recommended to be metered into the existing power system, positioning the barns as an energy generator as well as a current energy user. The reverse metering as allowed in the APCO service area allows for the energy to be provided into the energy grid during sunny times and to be pulled off the grid in times when the facility is using more energy than being generated. Overall, it should help to reduce the energy bill of the facility allowing resources for other needs.
2. Generally, shade trees are provided in the areas along the front and back of house and other roadways to keep the temperatures cool for both the horse's feet and starts to reduce solar gain on the property.
3. Manure composting and recycling: The largest potential waste generation product - the manure - is instead turned into a community resource for fertilization for local farming. This is discussed on page 30.



Solar arrays on agricultural facility

STRATEGIES

1. Solar Array
2. Shade Trees
3. Manure Composting & Recycling



Sustainable energy design strategies

GENERAL COST

The total project cost for this initiative is estimated to be \$227,179.

Solar Arrays on arenas is estimated to be \$64,600; Shade Trees are estimated to be \$28,179; and Manure Composting Facility (details on page 30) is estimated to be \$134,400.

Detailed cost estimate can be found in Appendix B starting on page 62.

FUTURE ADDITIONAL OUTDOOR RINGS

BRIEF DESCRIPTION

As Healing Strides continues to thrive a more organized system of outdoor arenas is designed to move to the southeast from the Harry and Lavon Webb Arena, cascading down the slope in approximately 5' terraces as it moves from the west to east. To accomplish this the current Rotary arena is compressed slightly on the southwestern end providing a 20' passage, leaving the well house clear. The next ring as it moves east is a training ring approximately 60' in diameter. A 140' x 90' square arena is provided and then to the southeast a future 120 x 200' outdoor show jumping oval arena is sized to handle varsity college jumping. In order to place these arenas, fences are generally moved and re-organized. The small paddock run-in sheds are relocated so that they are easy to access in the corners of future large paddocks and the area for the arenas is generally cleared of horses except when under saddle. The illustration below shows the rings when fully completed and in place.



Site plan of expanded outdoor rings and paddocks

GENERAL COST

The total project cost for this initiative is estimated to be \$457,162.

Detailed cost estimate can be found in Appendix B starting on page 62.



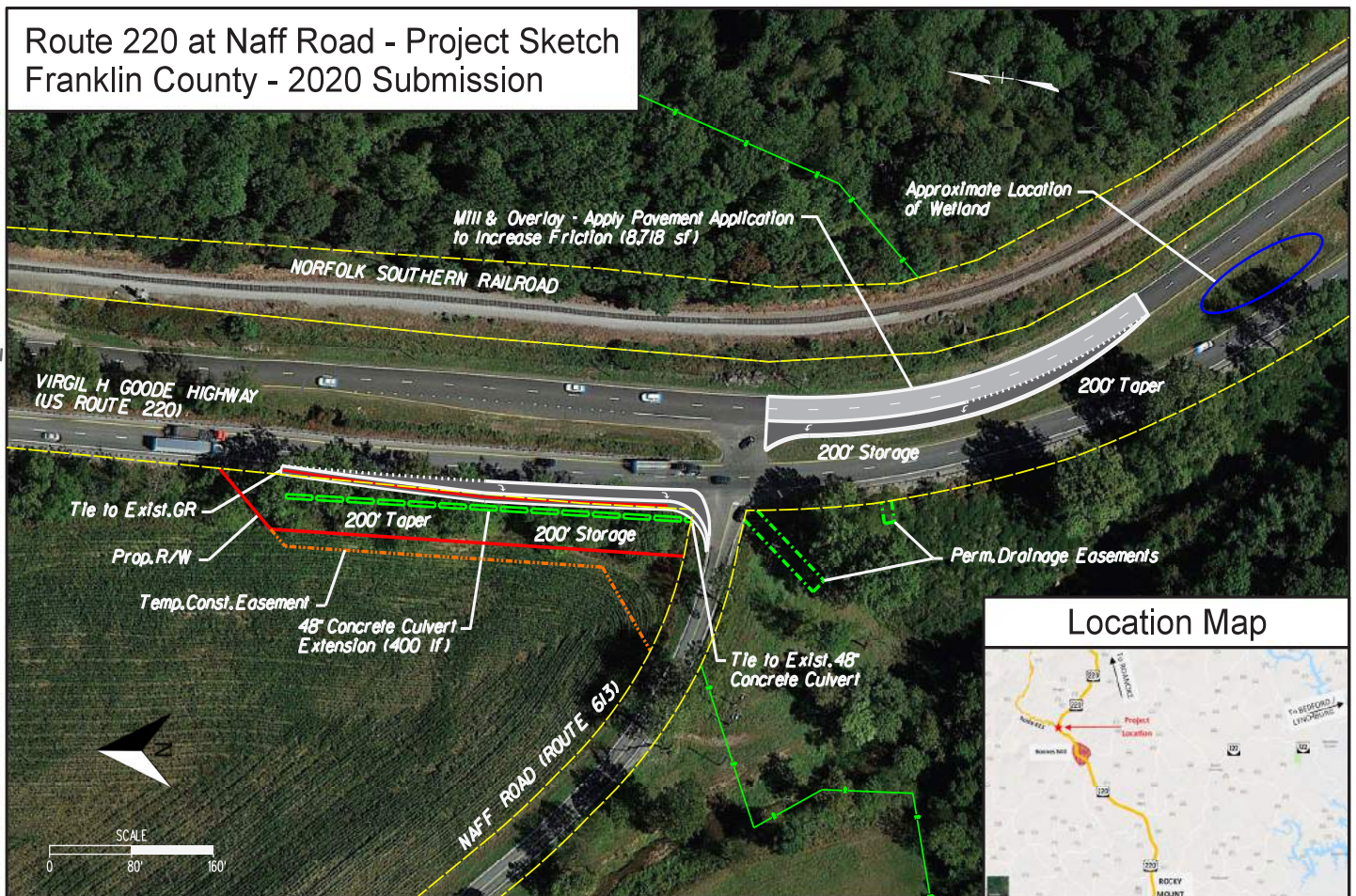
Birds-eye view of expanded outdoor rings and paddocks

OFF-SITE ROADWAY IMPROVEMENTS

BRIEF DESCRIPTION

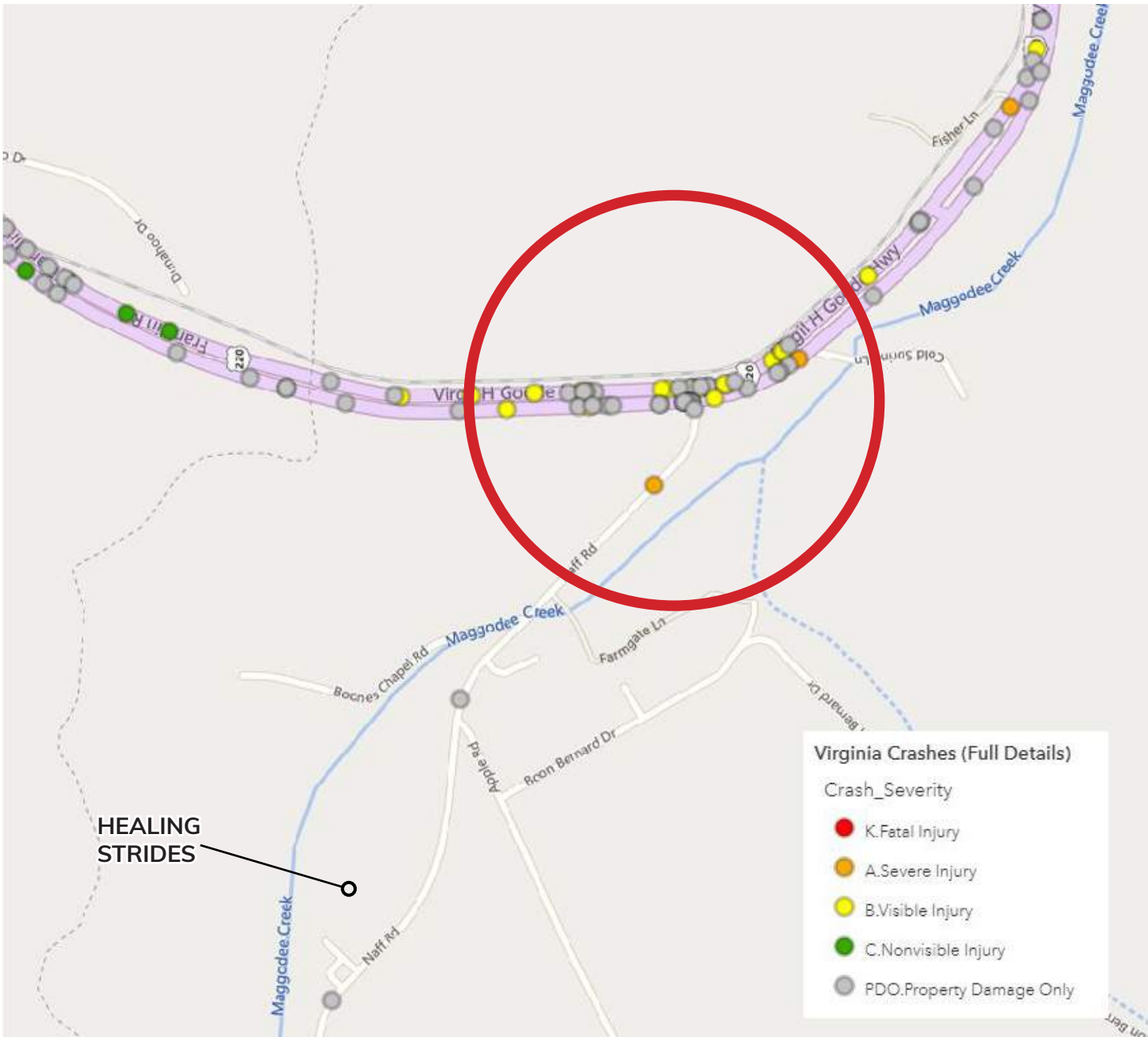
The single biggest safety improvements for Healing Strides may not even be on the grounds. We have discussed with the County and the County has discussed with VDOT the need to address the safety along Virgil Goode Highway.

This proposal provided by VDOT shows a new proposed protected turning lane for southbound traffic along 220 onto Naff Road. This project is proposed to be funded in Virginia's new smart-scale funding program and should receive design and construction monies in the next few years.



GENERAL COST

The entire project cost for this improvement is planned to be done by VDOT using funds from the Smart Scale funding system.



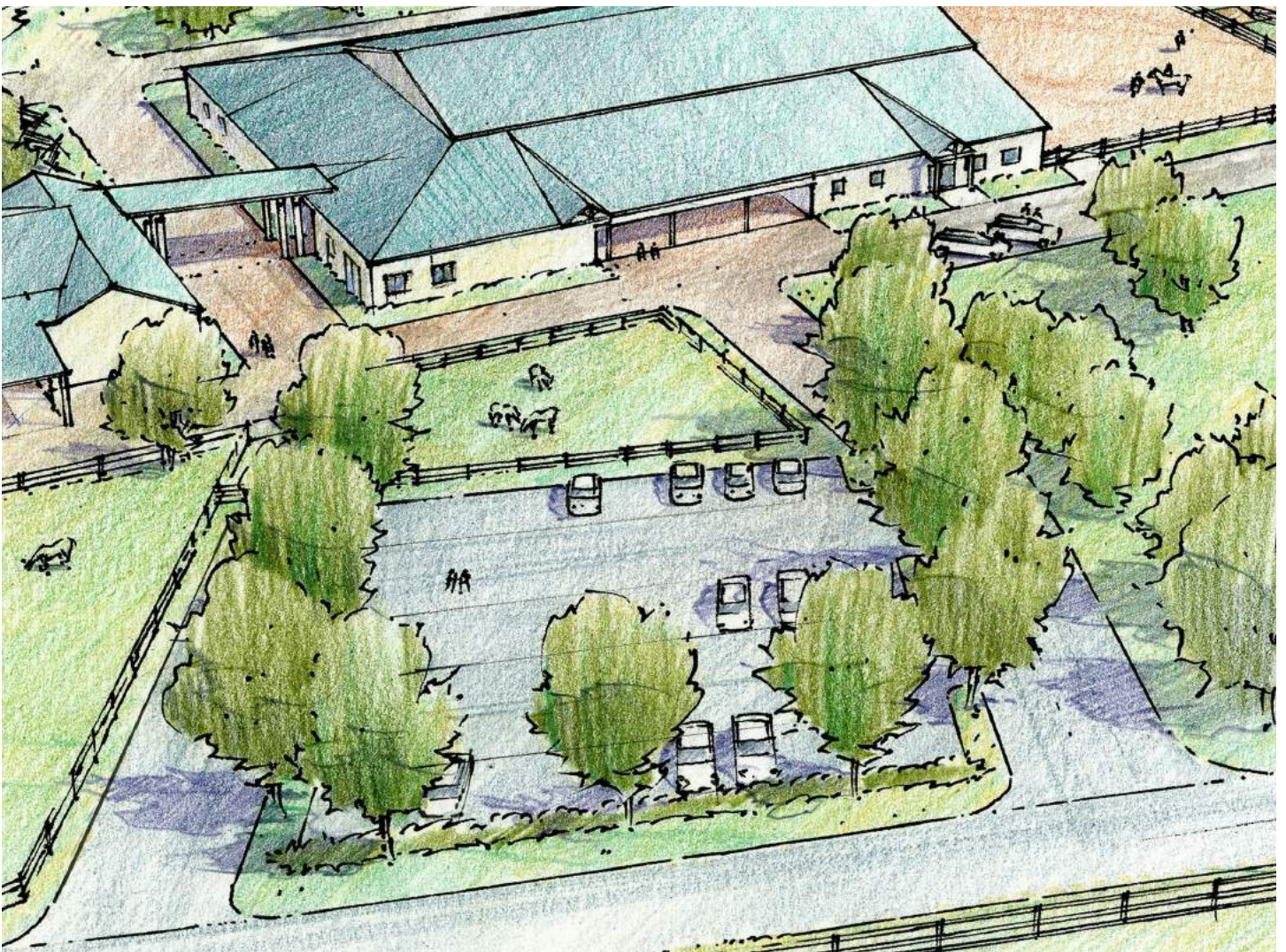
VDOT Crash Map of vehicle accidents at intersection (2013-2021)

FRONT OF HOUSE

BRIEF DESCRIPTION

Several improvements are shown in order to organize and clean up the front of house area. This is generally the area that is used for parking for all patrons and where people come to the stable for the very first time.

1. The illustration shows a more cleaned-up and revised parking lot with a hedge between Naff Road and the parking
2. The soaker bed on the west and north side of the parking lot covered in plantings.
3. A tree-lined parking lot for 23 cars, that transitions to a larger paved walking surface better aligned with the front arcade of the barn.
4. Handicapped parking on the right side of the drawing shown with the expanded front of house roadway and additional parking as future demands required leading down toward the cascading rings.
5. A Veterans Memorial is proposed at the intersection of the parking lot and entrance trail for participants to easily and clearly access the facility.



Birds-eye view of improved parking lot and facility gateway

GENERAL COST

The total project cost for this initiative is estimated to be \$173,824.

Detailed cost estimate can be found in Appendix B starting on page 62.

HARRY & LAVON WEBB ARENA UPGRADES

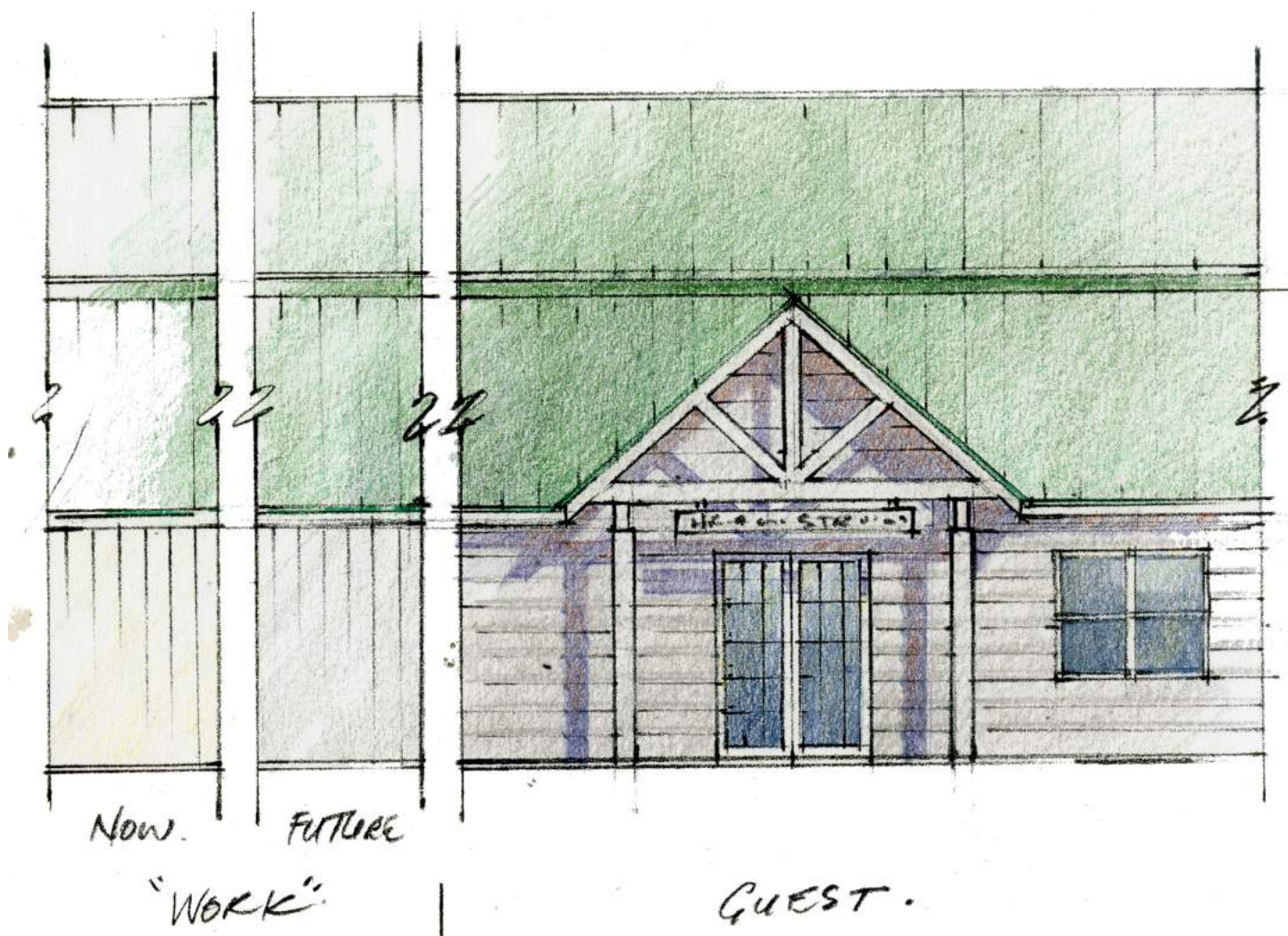
BRIEF DESCRIPTION

There are several daily-used items in the office and classroom areas that have not worn well over the years, and need replacing. Some of these light-duty items exist from the day the facility opened, and were not ever meant to handle the kind of use they have endured. These include the existing sliding glass doors, certain electrical devices, and the ventilation system in the arena.

The existing sliding glass doors, which are not universally-accessible, will be replaced by fully compliant French doors.

Many of the original light fixtures in the shared use offices and classroom spaces will receive newer low-energy task lighting, directed more toward the uses now in the spaces.

The arena will be upgraded with 2 Big Ass or similar large format fans, which can move the air in this large space.



Webb Arena showing new French Doors

GENERAL COST

The total project cost for this initiative is estimated to be \$80,640.

Detailed cost estimate can be found in Appendix B starting on page 62.



Webb Arena Upgrades showing Big Ass Fans. Photo Credit: www.bigassfans.com/au/industries/agriculture/equine/

GARST VETERAN RIDING CAMP

BRIEF DESCRIPTION

The proposed long-term adventure component of the property, and one which extends the reach far beyond the tenth of an acre. The Garst Veterans' Riding Camp is located on 5 acres of scenic mountaintop and is a tent platform overnight camping facility to be built adjacent to the Cahas Mountain national historic site. This facility is created especially for a riding trail to take veterans on a trail ride on up into the wilderness mountain are and to provide for overnight camping facilities which can provide for better horsemanship and understanding, better comradery and just general outdoor fun. Shown on the map on page 45, the trail emanates from the Harry and Lavon Webb riding arena, crosses Naff Road and then proceeds up a gravel road for about half a mile prior to turning off the gravel road and wandering up a much more narrow dirt path up the hollow. The trail terminates when it reaches a 2-acre corral at the top of the site and finally with its overnight stable at the southwest corner, the tent platform area is reached. The tent platform area is meant to be entirely handicapped accessible and includes a kitchen, a composting toilet and a campfire circle as well as 7 large group platform tents and a picnic area. In the far southwest corner of the very highest point of the property is a target practice area which is separate from the horses by about 300' and firing into the mountain side. Although the tent platform area is especially built for the veterans who are a frequent user of the facility, it can also be helpful to a number of different groups including younger riders and anybody that wants to enjoy the beautiful mountain and trail.



Birds-eye view of the Garst Veteran Riding Camp

GENERAL COST

The total project cost for this initiative is estimated to be \$1,250,088.

Detailed cost estimate can be found in Appendix B starting on page 62.



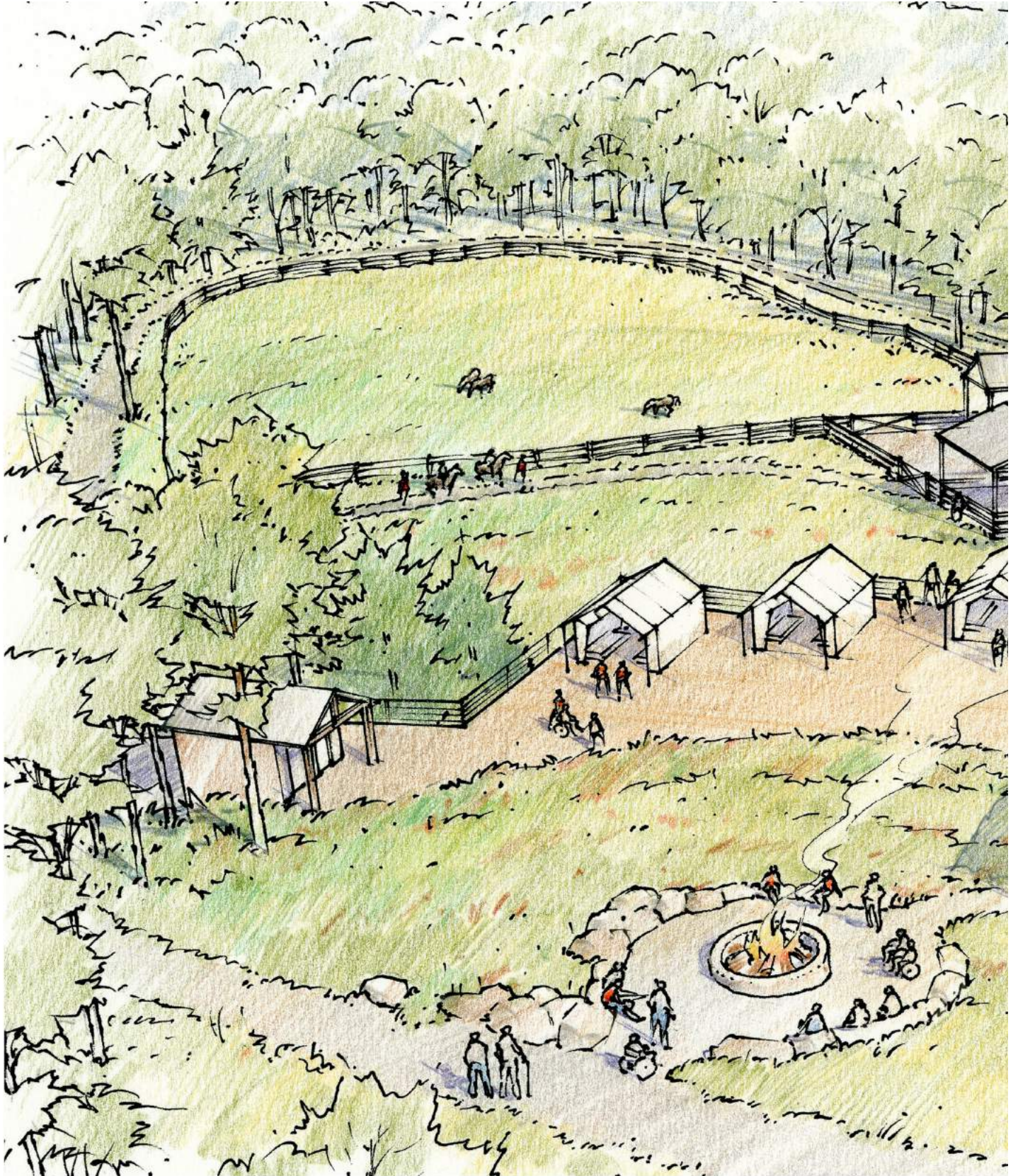
1.6 mile route from Healing Strides to the Garst Veteran Riding Camp

GARST VETERAN RIDING CAMP





GARST VETERAN RIDING CAMP







CHARACTER GUIDELINES FOR CONSISTENT IMPROVEMENTS

CHARACTER GUIDELINES

SITE STRUCTURES

As the Healing Strides facility builds over the years, a number of consistent character guidelines will help to guide future action so that the place continues to build consistent a brand and show its quality. This page shows character guidelines for the buildings. Buildings and built structure generally include:

1. Fencing: 4-board fence consistently 4 feet in height using pressure treated pine wood, painted black, 6" boards consistently set with 12 inches between with an 8" center post. This is proposed to extend around the entire perimeter of the property surrounding the main facility.

2. Roofs: Roofs are a consistent dark green metal panel. Use only forest green in color to match the existing roofs.



3. Siding: Siding is wooden board and batten vertically or horizontal log as well as metal on some exterior barns featuring these characteristics:

1. TWP cedartone log stain
2. Cream metal panels
3. Greystone wood stain

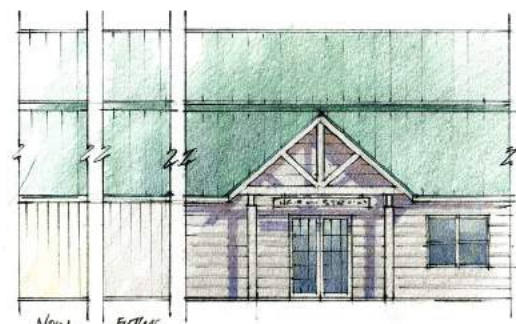
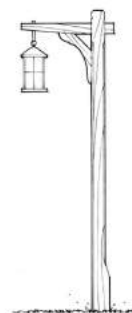


4. Lighting: Outdoor lighting is currently flood lights on posts consistent with the existing wooden light posts.

Use dark-sky friendly lanterns. Also with colors consistent with the barn siding.



Indoor lighting: Traditional rustic theme with high illumination



SURFACES

Trails materials are one of the most important items for a horse farm, for traction and appearance. Materials can include:

1. Number 10 gravel crush or run, gray in color
2. Fiber Soils company tilled in recycled plastic microfibers for handicapped accessible paths and for horse trails overseeded with grass.





VISION

VISION

VISION

The long-term vision for the master plan is to gradually create a building program that is representative of the general character and spirit of the Healing Strides mission. The vision is to provide a space that encompasses the level of work that is taking place on the property by the riding participants, staff, volunteers, and horses.

This kind of hospitality, hope and can-do-spirit needs to be conveyed by the buildings and the grounds as well. It is our hope that this master plan will be able to be built in a series of improvements over the years and can continuously keep Healing Strides at the fore front of the Roanoke Valley's nonprofit movement and at the forefront of sustainable and caring design.

Respectfully submitted,

Hill Studio
September 2021



Participant and staff member caring for horse



Children hard at work, volunteering on a "back of house" project



Happy children after riding event

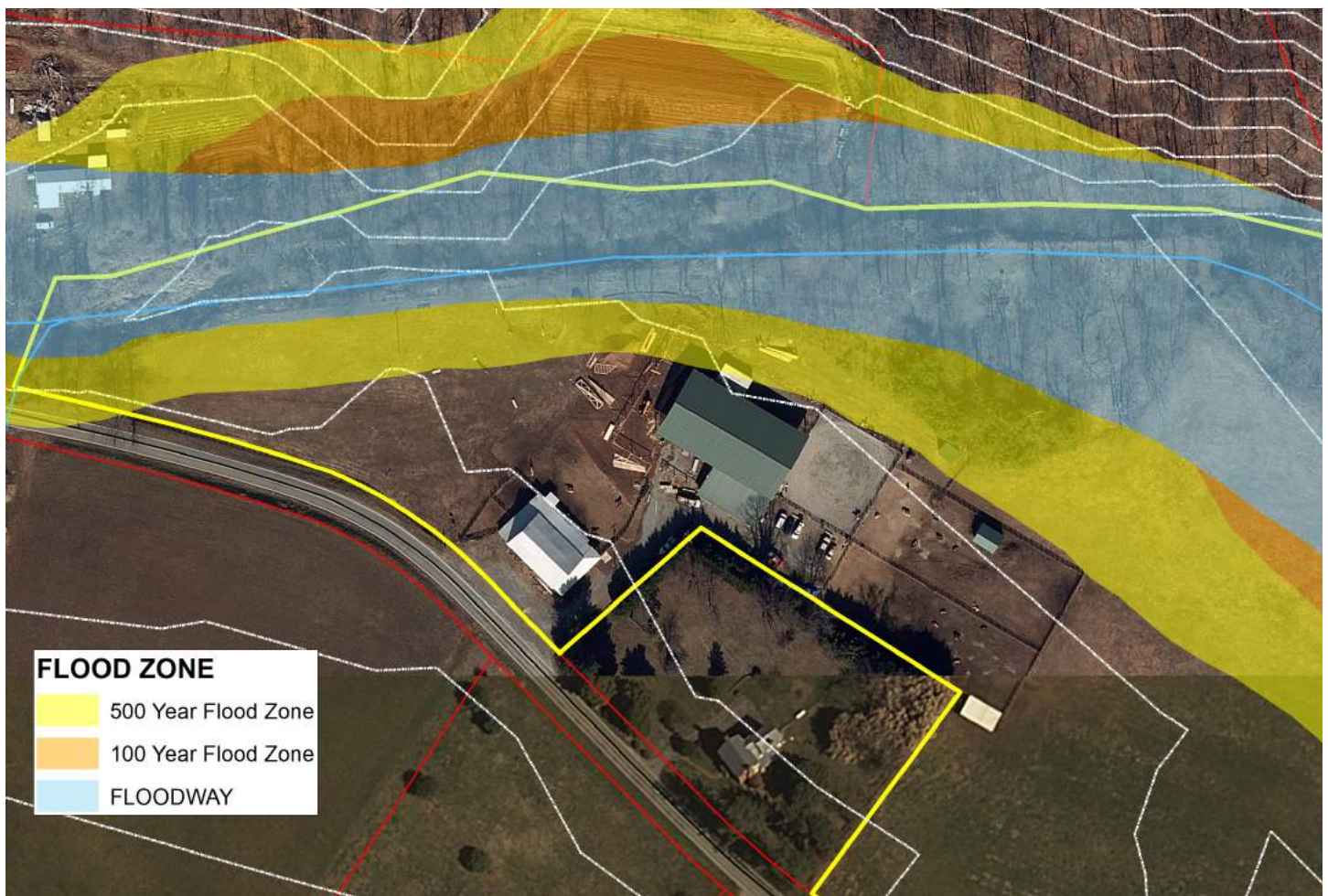


APPENDICES

APPENDIX A

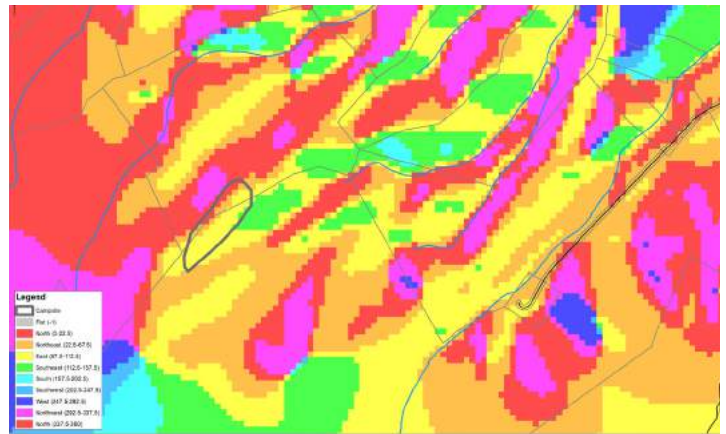
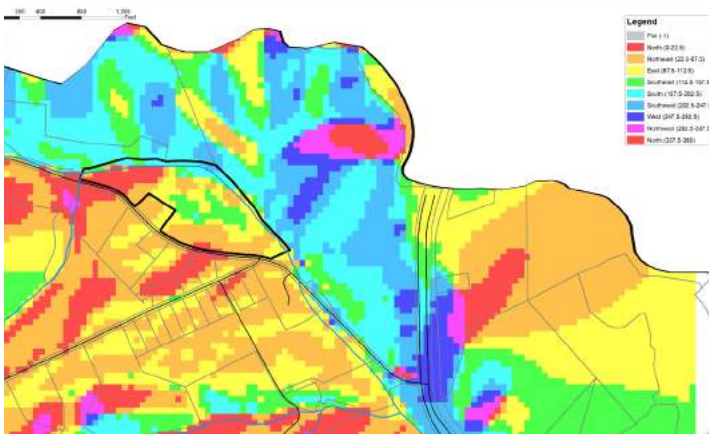
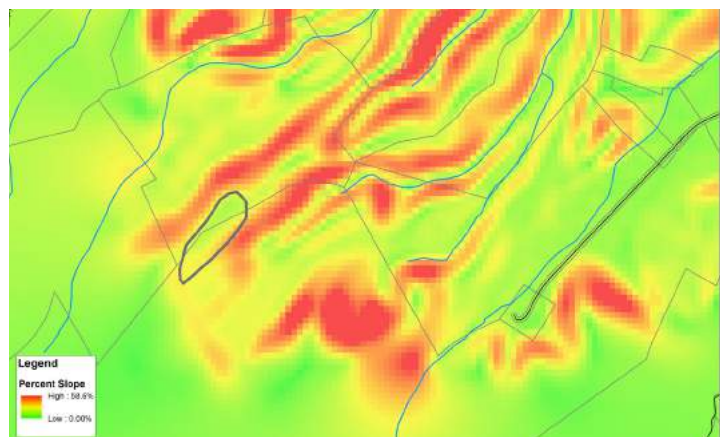
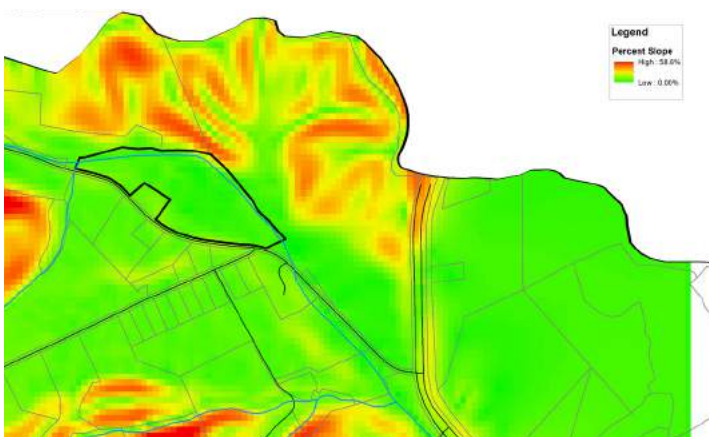
LAND SUITABILITY - FLOOD ZONES

The map below shows United States Flood Mapping provided by the Federal Emergency Management Agency (FEMA) that outlines three levels of flood hazard used for risk assessment. The **blue area** represents a typical floodway which is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. The **orange area** represents areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. Lastly, the **yellow area** represents the area of minimal flood hazard with only a 0.2% annual chance of flooding.



LAND SUITABILITY - SLOPE & ASPECT

The maps below show slope and aspect for the main Healing Strides site as well as the proposed Garst Veteran Riding Camp, both outlined in black. These data layers were derived from digital elevation models from USGS using GIS tools. The top two maps show the percentage of slope where **green** represents flat areas with little to no slope and **red** represents steep areas of approximately 59% slope. The bottom two maps show the aspect or orientation of slope which is the compass direction that a terrain surface faces. This is important for identifying constraints and evaluating potential environmental impacts related to landform alteration. In addition, slope aspect is important in understanding average daily sunlight for a site which can be used for various planning purposes.



APPENDIX B

INITIATIVE COSTS

					TOTAL COST
Healing Strides Master Plan					
December 27, 2021					
Small Indoor Arena Expansion					
Description of Work	Qty	Unit	Unit Cost	Estimated Cost	
Phase 1					
Misc Demo	1	allow	\$ 5,000	\$ 5,000	
Utilities - allow	1	allow	\$ 10,000	\$ 10,000	
Grading - Drainage in current hay storage area	800	cy	\$ 12	\$ 9,600	
4 Board Fence (or ring railings)	320	lf	\$ 20	\$ 6,400	
Addition to Barn	2400	sf	\$ 50	\$ 120,000	
Landscaping	1	allow	\$ 5,000	\$ 5,000	
Outdoor lighting	1	allow	\$ 10,000	\$ 10,000	
Signage	1	allow	\$ 5,000	\$ 5,000	
Temporary Construction Facilities and Erosion Control	1	allow	\$ 5,000	\$ 5,000	
			<i>Subtotal</i>	\$ 176,000	
Arch/Eng Survey and Design Services (10%)	1	%	\$ 176,000	\$ 21,120	
			TOTAL	\$ 197,120	
Phase 2					
Misc Demo	1	allow	\$ 3,000	\$ 3,000	
Utilities - allow	1	allow	\$ 5,000	\$ 5,000	
Addition to Barn	4200	sf	\$ 50	\$ 210,000	
Cisterns	2	allow	\$ 15,000	\$ 30,000	
Temporary Construction Facilities and Erosion Control	1	allow	\$ 5,000	\$ 5,000	
			<i>Subtotal</i>	\$ 253,000	
Arch/Eng Survey and Design Services (10%)	1	%	\$ 253,000	\$ 30,360	
			TOTAL	\$ 283,360	

					TOTAL COST
Walkway One					
Description of Work	Qty	Unit	Unit Cost	Estimated Cost	
Misc Demo	1	allow	\$ 1,000	\$ 1,000	
Utilities - allow	1	allow	\$ 2,000	\$ 2,000	
Surface for walkway	600	sf	\$ 12	\$ 7,200	
Structure	600	sf	\$ 75	\$ 45,000	
Landscaping	1	allow	\$ 1,000	\$ 1,000	
Outdoor lighting	1	allow	\$ 2,000	\$ 2,000	
Signage	1	allow	\$ 1,000	\$ 1,000	
Temporary Construction Facilities and Erosion Control	1	allow	\$ 1,000	\$ 1,000	
			<i>Subtotal</i>	\$ 60,200	
Arch/Eng Survey and Design Services (10%)	1	%	\$ 60,200	\$ 7,224	
			TOTAL	\$ 67,424	
Roadway Visibility Grading					
Description of Work	Qty	Unit	Unit Cost	Estimated Cost	
Misc Demo	1	allow	\$ 500	\$ 500	
Utilities - allow	1	allow	\$ 5,000	\$ 5,000	
Grading - cut	460	cf	\$ 12	\$ 5,520	
Seeding	6000	sf	\$ 0.30	\$ 1,800	
Temporary Construction Facilities and Erosion Control	1	allow	\$ 1,000	\$ 1,000	
			<i>Subtotal</i>	\$ 13,820	
Arch/Eng Survey and Design Services (10%)	1	%	\$ 13,820	\$ 1,658	
			TOTAL	\$ 15,478	

INITIATIVE COSTS (CNT'D)

					TOTAL COST
Obstacle Course					
Description of Work	Qty	Unit	Unit Cost	Estimated Cost	
Lumber package and misc. Parts	1	allow	\$ 33,000	\$ 33,000	
Equipment Rental - 6 days	1	ls	\$ 17,500	\$ 17,500	
Labor during 6 days	1	ls	\$ 14,000	\$ 14,000	
10 Large Logs	1	ls	\$ 3,000	\$ 3,000	
5 Loads of Large Rocks	1	ls	\$ 10,500	\$ 10,500	
50 Railroad ties	1	ls	\$ 900	\$ 900	
15 loads of 5/8" munis crushed stone	1	ls	\$ 10,500	\$ 10,500	
100 cy mulch	1	ls	\$ 3,000	\$ 3,000	
Plants	1	ls	\$ 2,000	\$ 2,000	
Pond Liner	1	ls	\$ 5,000	\$ 5,000	
Pond Grid	1	ls	\$ 4,000	\$ 4,000	
Misc. fees and Contingency	1	allow	\$ 5,000	\$ 5,000	
		<i>Subtotal</i>		\$ 108,400	
Arch/Eng Survey and Design Services - Lump Sum	1	allow	\$ 15,000	\$ 15,000	
		TOTAL		\$ 123,400	
Back of House Structures					
Description of Work	Qty	Unit	Unit Cost	Estimated Cost	
Misc Demo	1	allow	\$ 5,000	\$ 5,000	
Utilities - allow	1	allow	\$ 3,000	\$ 3,000	
Grading - leveling and raising to drain	2400	cy	\$ 12	\$ 28,800	
4 structures at 1600 sf	6400	sf	\$ 30	\$ 192,000	
Work pad - 4" gravel	6000	sf	\$ 4	\$ 24,000	
Outdoor lighting	1	allow	\$ 10,000	\$ 10,000	
Temporary Construction Facilities and Erosion Control	1	allow	\$ 5,000	\$ 5,000	
		<i>Subtotal</i>		\$ 267,800	
Arch/Eng Survey and Design Services (10%)	1	%	\$ 267,800	\$ 32,136	
		TOTAL		\$ 299,936	

INITIATIVE COSTS (CNT'D)

					TOTAL COST
Future Outdoor Rings					
	<i>Description of Work</i>	<i>Qty</i>	<i>Unit</i>	<i>Unit Cost</i>	<i>Estimated Cost</i>
	Misc Demo	1	allow	\$ 5,000	\$ 5,000
	Utilities - allow	1	allow	\$ 10,000	\$ 10,000
	Grading - 4000 cy cut and 4000 cy fill	4000	cy	\$ 12	\$ 48,000
	New roadways - 20' stabilized turf	1300	lf	\$ 100	\$ 130,000
	Arenas Specialty surfacing	4220	sf	\$ 20	\$ 84,400
	Arena lighting	1	allow	\$ 40,000	\$ 40,000
	2 New Run In Sheds	1200	sf	\$ 30	\$ 36,000
	4 Board Fence or Arena railing	1889	lf	\$ 20	\$ 37,780
	Seeding	40000	sf	\$ 0.30	\$ 12,000
	Temporary Construction Facilities and Erosion Control	1	allow	\$ 5,000	\$ 5,000
	<i>Subtotal</i>				\$ 408,180
	Arch/Eng Survey and Design Services (10%)	1	%	\$ 408,180	\$ 48,982
	TOTAL				\$ 457,162
Front of House					
	<i>Description of Work</i>	<i>Qty</i>	<i>Unit</i>	<i>Unit Cost</i>	<i>Estimated Cost</i>
	Misc Demo	1	allow	\$ 10,000	\$ 10,000
	Utilities - allow	1	allow	\$ 20,000	\$ 20,000
	New roadways - 20' paved with paved parking	4800	sf	\$ 9	\$ 43,200
	Outdoor lighting	1	allow	\$ 10,000	\$ 10,000
	Landscape	1	allow	\$ 25,000	\$ 25,000
	Signage	1	allow	\$ 15,000	\$ 15,000
	Entry Plaza - Veteran Memorial Area	1	allow	\$ 25,000	\$ 25,000
	4 Board Fence	100	lf	\$ 20	\$ 2,000
	Temporary Construction Facilities and Erosion Control	1	allow	\$ 5,000	\$ 5,000
	<i>Subtotal</i>				\$ 155,200
	Arch/Eng Survey and Design Services (10%)	1	%	\$ 155,200	\$ 18,624
	TOTAL				\$ 173,824

APPENDIX B

INITIATIVE COSTS (CNT'D)

					TOTAL COST
Harry and Lavon Webb Arena Upgrades					
Description of Work	Qty	Unit	Unit Cost	Estimated Cost	
Misc Demo	1	allow	\$ 1,000	\$ 1,000	
Change Sliding Doors to French Doors 2 sets	2	allow	\$ 6,000	\$ 12,000	
New Big Ass Fans in Arena - 2	2	ea	\$ 12,000	\$ 24,000	
Lighting upgrade in classrooms and Arena	1	allow	\$ 20,000	\$ 20,000	
Signage	1	allow	\$ 15,000	\$ 15,000	
	<i>Subtotal</i>			\$ 72,000	
Arch/Eng Survey and Design Services (10%)	1	%	\$ 72,000	\$ 8,640	
	TOTAL			\$ 80,640	
Garst Veteran Riding Camp					
Description of Work	Qty	Unit	Unit Cost	Estimated Cost	
Clearing	1	ac	\$ 7,500	\$ 7,500	
Utilities - well and piping allow	1	allow	\$ 15,000	\$ 15,000	
Utilities - Solar Array	1	allow	\$ 15,000	\$ 15,000	
Utilities - Electrical on-site	1	allow	\$ 20,000	\$ 20,000	
Composting Toilet	100	sf	\$ 250	\$ 25,000	
Grading - Barn and Kitchen Areas	3700	cy	\$ 12	\$ 44,400	
Road / Trail from Corral to target practice (strabilized turf)	1200	lf	\$ 75	\$ 90,000	
Overnight Stable, Run in and Target Practice shed	3350	sf	\$ 60	\$ 201,000	
Kitchen	750	sf	\$ 175	\$ 131,250	
Platform	9000	sf	\$ 55	\$ 495,000	
Tents	7	ea	\$ 2,000	\$ 14,000	
4 Board Fence	1200	lf	\$ 20	\$ 24,000	
Campfire Circle, Picnic Tables	1	allow	\$ 5,000	\$ 5,000	
Seeding	80000	sf	\$ 0.30	\$ 24,000	
Temporary Construction Facilities and Erosion Control	1	allow	\$ 5,000	\$ 5,000	
	<i>Subtotal</i>			\$ 1,116,150	
Arch/Eng Survey and Design Services (10%)	1	%	\$ 1,116,150	\$ 133,938	
	TOTAL			\$ 1,250,088	

