

**SULTAN CITY COUNCIL
AGENDA ITEM COVER SHEET**

ITEM NO: D-2

DATE: October 28, 2010

SUBJECT: Pilot Project to Allow Joint Equestrian/Pedestrian Trails in Osprey Park

CONTACT PERSON: Deborah Knight, City Administrator

ISSUE:

The issue before the council is to consider a 9 month pilot project to allow joint equestrian/pedestrian use of specific trails within Osprey Park. The pilot project would be effective from January 1, 2011 to September 30, 2011.

City staff would return to the council in the fourth quarter of 2011 with an analysis of the impacts to trails, wetlands, and park users. The council could make a decision at anytime to stop the pilot project, extend the project, or modify the conditions for joint use.

STAFF RECOMMENDATION:

Review the proposed single-purpose and shared trails submitted by the equestrians (Attachment A). Evaluate the pros and cons of approving a pilot project for joint use trails in Osprey Park.

Provide direction to staff on whether to initiate a 9-month pilot project effective January 1, 2011.

SUMMARY:

At the May 27, 2010 council meeting, Alyssa Stenchever spoke during the public comment period and requested the city council change the ordinance that prohibits horses in city parks. Ms. Stenchever represents the equestrian groups in Sultan that have been riding on the trails in Osprey Park for years.

In 1979 the City passed an ordinance to prohibit horses in the park. Signs were posted and but no one had problems with the horses until recently when the city received complaints. When the trails became part of the park, the horses were no longer allowed. Ms. Stenchever asked the council to direct staff to work with equestrian community to provide trails for horses.

At the city council's direction, city staff have been working with Ms. Stenchever and a group of Sky Valley equestrians to review the trail system within Osprey Park and determine if there was an opportunity for joint equestrian/pedestrian use.

The first order of business was to "map" the trail system in Osprey park. The equestrian group completed the trail mapping expertise in June.

Approximately 10 members of the equestrian community attended the Park Planning open forum on Tuesday June 29th from 4:30 to 7:30 pm.

Ms. Stenchever met with Councilmember Jeffrey Beeler, Chief Brand and Public Works Director, Connie Dunn to review the equestrian's proposed trail system.

Ms. Stenchever attended the council subcommittee on August 26, 2010 and shared the equestrian community's shared trail proposal. The council subcommittee directed staff to evaluate the impacts on the city's shoreline and consistency with the Sultan Shoreline Master Plan (Attachment A) and bring the proposal to the full council for consideration.

The full city council discussed the joint use trail proposal on September 23, 2010 and directed staff to move forward with a detailed pilot project for council consideration.

ANALYSIS:

Comprehensive Plan

The city's 2008 Revised Comprehensive Plan includes policies that support developing equestrian trails in Sultan. The 20-year capital facilities plan identifies future equestrian trails. The question for the city council is whether equestrian trails are a level-of-service the council wants to provide within the city's park system or as a separate trail system at some future date.

Alyssa Stenchever has taken the time to review the existing trails in Osprey Park. She has identified trails that could be jointly used by pedestrians and equestrians (Attachment A). These trails will be identified in the pilot project as "equestrian shared use trails". Equestrians will be directed to use the shared use trails only". Documented deviation from the shared use trails will be included in the analysis at the end of the pilot project.

Shared Trail Design

Most of the staff research conducted on shared equestrian/pedestrian trails¹ indicate that shared or joint use trails hosting multi-users are common if there is sufficient trail width.

In the context of trail systems, the concept of sharing means:

¹ <http://www.nttp.net/resources/horse/index.html>

- Tolerance of others who wish to use the trails in a reasonable but different manner,
- Respect for the values of other users, and
- Demonstration of support for uses other than that of your own interest group.

Trail design guidelines recommend a vertical clearance of 10-12 feet and a corridor clearance of 5-6 feet (one lane). Several of the trails within Osprey Park meet these design guidelines

Shoreline Master Plan and Critical Areas Ordinance

Members of the council subcommittee asked whether the proposal to allow equestrians use the trails in Osprey Park is compliant with the city's shoreline and critical areas regulations. Community Development Director, Bob Martin reviewed the city's zoning, development, critical areas and shoreline codes. Attachment A is Mr. Martin's analysis. In summary, use of existing trails in any portion of Osprey Park by pedestrians and/or equestrians is allowed by the Shoreline Master Program and the Critical Areas Ordinance without application or review within either code.

Review within either or both codes may be required for expansion or upgrading the existing trail system or construction of new trails. The location and extent of new construction would determine what level of application, review and permit is applicable to any particular proposal.

The city council is free to determine that any or all of the existing trails in Osprey Park, or any of the city's other parks, are available for equestrian activity without reference to the zoning code, the shoreline master plan, or the critical areas ordinance.

FISCAL IMPACT:

Potential impacts include additional trail maintenance; bridges designed for creek crossings and water quality; signage and enforcement of park rules. Currently, trail maintenance is jointly managed by city staff and volunteers. One opportunity is to invite equestrian users to maintain the shared trails. This would create another user group and base of volunteers for Sultan parks.

The city council considered and rejected the proposal to add 2 part-time park employees in 2011. Without additional staff dedicated to parks there may not be sufficient resources to maintain the system of trails within Osprey Park. If this is the case, city staff may return to council before the pilot project is complete and recommend discontinuing the program.

The city council should also consider investing in specific shared use and directional signs to ensure that park users are clear about purpose and use of specific trails. There is \$5,000 in the 2011 parks budget for a variety of signs.

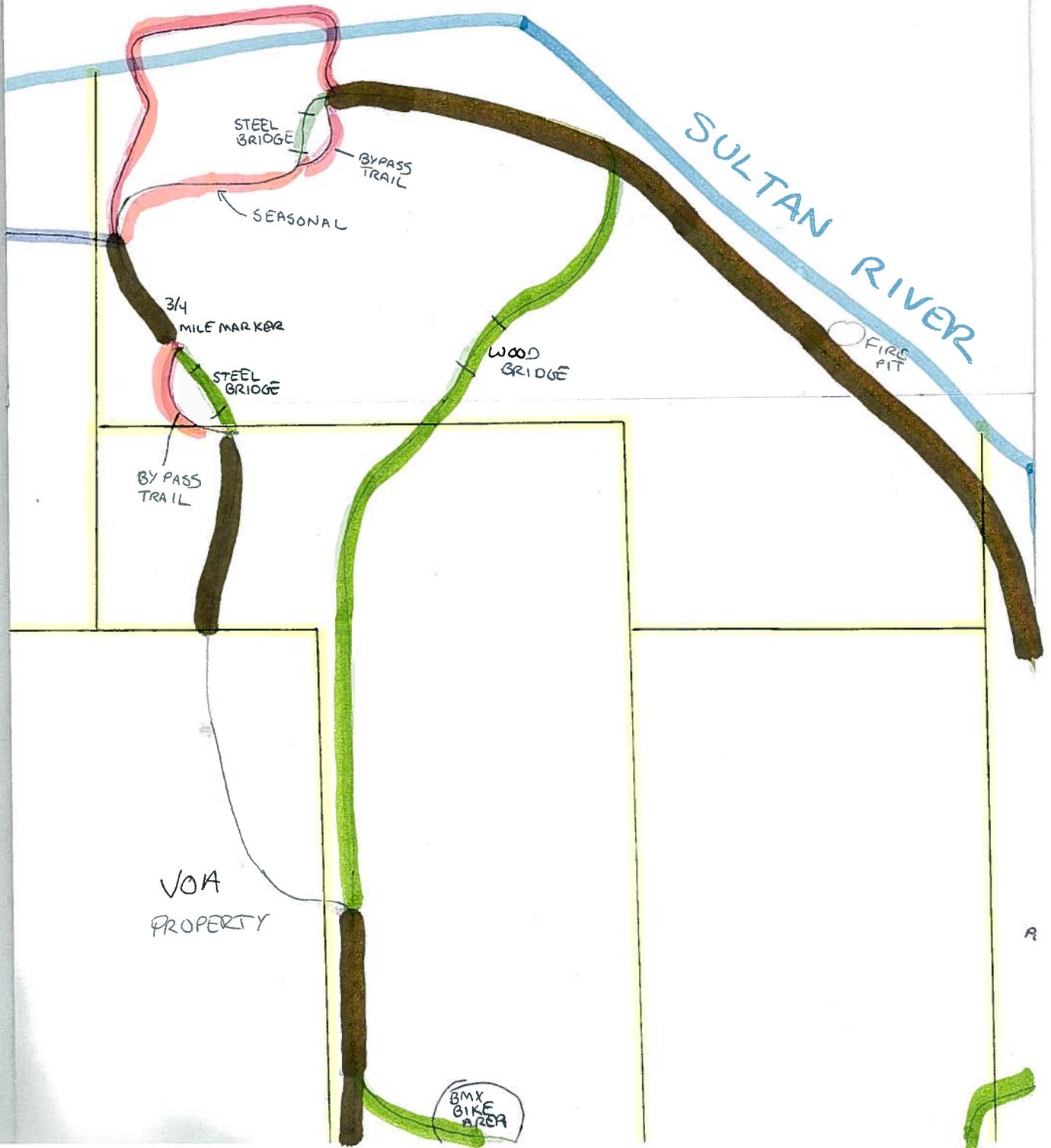
RECOMMENDED ACTION:

Review the provided information. Consider a 9-month pilot project from January 1, 2011 through September 30, 2011. Provide direction to staff.

ATTACHMENTS:

- A – Proposed shared use trails for pilot project
- B- Bob Martin - Memorandum Equestrian Use of Osprey Park (September 13, 2010)
- C – Knuckey comments to council subcommittee (August 26, 2010)
- D – Equestrian Trail Design

-  High Volume combined areas
-  Horse only
-  People only
-  River bank
-  Property lines



MEMORANDUM

TO: Deborah Knight, City Administrator
FROM: Bob Martin, Community Development Director
DATE: September 13, 2010
SUBJECT: Equestrian Use of Osprey Park

Various perspectives have been put forth regarding laws that may control equestrian activity within the Public and Institutional Zone, the Designated Shoreline, and the Designated Critical Areas in the City of Sultan in general, and in Osprey Park in particular. The following provides an analysis of these issues.

SUMMARY:

Use of existing trails in any portion of Osprey Park by pedestrians and/or equestrians is allowed by the Shoreline Master Program and the Critical Areas Ordinance without application or review within either code.

Review within either or both codes may be required for expansion or upgrading of the existing trail system, or construction of new trails. The location and extent of new construction will determine what level of application, review, and permit is applicable to any particular proposal.

The Council is free to determine that any or all of the existing trails in Osprey Park, or any of the City's other parks, are available for equestrian activity without reference to the Zoning Code, the Shoreline Master Program, or the Critical Areas Ordinance. This legal reality notwithstanding, hiking activity in sensitive environments, whether human or horse, can cause environmental damage such as "braided trails", collapsed river banks, and accelerated erosion. All those who use the trail system need to put themselves in the role of environmental stewards to maintain the resource for the benefit of the entire community.

ANALYSIS:

Q. 1: Does the Zoning Code (Sultan Municipal Code (SMC) Title 16) address the issue of trails in city parks? What restrictions Apply?

A. 1: Yes. The newly adopted Public & Institutional Zone applies to Osprey Park and other city parks. SMC 19.12.070 B. 5. Lists "Public Access Trails and Interpretive Facilities & Wildlife Exhibit" as a Permitted Use in the zone. This means that existing trails can be used for normal trail purposes without regard to restriction on equestrian activity. Construction of new trails would be allowed as an outright use in Title 16 meaning that a Development Authorization would be required to verify compliance with

development standards, but the permit would not be subject to a Conditional Use approval.

Q. 2: Does newly-sanctioned use of the existing trail system by horses constitute “development”?

A. 2: No. As detailed below, the Shoreline Master Program (SMP) and the Critical areas Ordinance (CAO) contain provisions that allow for ongoing use, operation, and maintenance of parks and trails.

- The Shoreline Management Act (RCW 90.58.030(3a)) defines “Development” as: "Development" means a use consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel, or minerals; bulkheading; driving of piling; placing of obstructions; or any project of a permanent or temporary nature which interferes with the normal public use of the surface of the waters overlying lands subject to this chapter at any state of water level;

Allowing horses on the existing trail system does not involve activity that is defined as “development”.

- The Sultan Critical Areas Ordinance (CAO) (SMC 16.80.050) as approved by the Department of Ecology, provides for exemptions from provisions of the CAO. Item D of the exemptions reads as follows:
The following are exempt from the provisions of this chapter:
D. Maintenance, operation, or repair of parks, trails and publicly improved recreation areas as long as any such alteration does not involve the expansion of improvements into previously unimproved areas or new clearing of native vegetation beyond routine pruning and related activities.

Q.3: What Shoreline Designation applies to Osprey Park?

A.3: Osprey Park is in the Shoreline designation called “Natural Environment”. This is comparable to a zone in the zoning code. The “Natural Environment” designation is intended to:

“... protect those shoreline areas that are relatively free of human influence or that include intact or minimally degraded shoreline functions intolerant f human use.”

Osprey Park is specifically named (along with Reese Park) as one of two large public ownerships included in the “Natural Environment” designation. (*SMP Chapter 5, pg 8.*)

Q.4: Is trail use allowed in the “Natural Environment” designation?

A.4: Yes. Allowed use #5 in the “Natural Environment” designation reads as follows:
5. Scientific, historical, cultural, educational research uses, and low intensity water-oriented recreational access uses may be allowed, provided that no significant ecological impact on the area will result.

(Note: “Significant Ecological Impact” is not a term defined in the code. Some combination of qualification for an “Exempt” declaration and the applicant’s defense that the proposed project does not result in a “Significant Ecological Impact” would have to be reviewed by the Shoreline Administrator. An administrative determination would have to be made based on submitted information.

This determination would only need to be made if new trail construction were proposed within the Natural Environment Designation. Use and maintenance of existing trails would not need to be reviewed for conformance with this standard.)

Q. 5: Do existing trails qualify as low-intensity water-oriented recreation?

A. 5: Yes. The Sultan SMP “Definitions and Acronyms” defines the term “Water-enjoyment Use” as follows (in part):

Primary water-enjoyment uses may include, but are not limited to:

- *Parks with activities enhanced by proximity to water;*

The Sultan SMP “Definitions and Acronyms” defines the term “Water-oriented Use” as follows:

A use that is water-dependent, water related, or water-enjoyment, or a combination of such uses.

Trails in the vicinity of the shoreline provide a clearly distinctive and enhanced water-oriented experience.

Q. 6: Does the CAO or the SMP distinguish between trails for strictly pedestrian use, and those available for equestrian use?

A. 6. No. The terms horse, equestrian, or related terms are not used anywhere in the codes. Equestrian uses can cause “ecological impact” but so can human hikers. The distinction drawn in the codes is not the use, but the damage caused by that use. If equestrian uses demonstrably increased the ecological impact to the site, the use would have to be assessed for mitigation or possible discontinuance.

Ecological impact from equestrian activity on the stream bank itself can be severe. Under the above provisions, equestrian activity would be presumed to be prohibited on the stream bank. This would require permitted horse activity to be on the upland away from the easily disturbed and erodible saturated soils of the stream bank.

Q. 7: Would trail improvements to accommodate either people or horses be allowed in the “Natural Environment”?

A. 7: Yes. Both the CAO and the SMP provide standards for development of trails and public access systems in buffer areas and shoreline areas.

The Critical Areas Ordinance SMC 16.80.160 C.1. provides standards for pedestrian walkways or trails in wetland buffer areas. The wetland buffer area applicable to Osprey Park is 150 feet from ordinary high water (OHW) (SMC 16.80.150 A.).

(Note: This determination would only need to be made if new trail construction were proposed within the buffer area. Use and maintenance of existing trails would not need to be reviewed for conformance with this standard. Portions of the main north-south trail closest to and parallel to the Sultan River are within the buffer area.)

The Sultan Shoreline Master Program provides Public Access Regulations on pages 18 to 21 of Chapter 6. Access provision 7 on page 19 of Chapter 6 provides, in part, as follows:

Except for access to the water, the preferred location for placement of public access trails is at the furthest landward edge of the riparian management zone (RMZ).

The “riparian management zone” referred to above is the vegetation complex rooted in the stream bank at the OHW and continuing landward to include any vegetation, such as large cottonwood trees, that provide shade and/or overhanging cover to the regulated stream itself.

In the case of Osprey park, the only part of the trail system that is in the RMZ is the trail that parallels the Sultan River. Parts of this trail are in the RMZ and parts move further inland. Trails that cross the flood channels that are wet during floods or extreme high water are not in the RMZ of the Sultan River. The sensitivity of these channels would need to be assessed on an individual basis if development proposals were made for construction within their banks.

Shoreline Permits would be required for additional trail/bridge development in the Park. Shoreline Permits fall into one or more of the following categories:

- Exempt Development: A project with a value of less than \$5,719 which does not materially interfere with the normal public use of the water or shorelines of the state. (See SMP Chapter ; pages 3,4, & 5).
- Shoreline Substantial Development: A development allowed in the “Shoreline Environment” that applies to the property, and that exceeds the standards of an “Exempt Development”. (See SMP Chapter 7; pages 7 and 8.)
- Shoreline Variance : A project that proposes relief from strict adherence to bulk, dimensional, or performance standards required in the SMP. (See SMP Chapter 7; pages 8 -13).
- Shoreline Conditional Use: A project that proposes to achieve compliance with the requirements and development standards of the SMP in a creative way that warrants flexibility in implementation of these standards.

Improvement of existing trails or development of new trails or bridges are projects that would require submittal of a Shoreline Permit Application as provided by the procedures in SMP Chapter 7; page 5 – 7. The Shoreline Administrator will then determine the process applicable to the application according to the procedure hierarchy outlined above.

August 26, 2010

Council sub committee on Equestrian Trail Development.

In your consideration of letting Equestrians use Osprey Park Trails for their purposes I would ask that you consider the following.

Teresa & I, over the last 6 years, have removed around five hundred bags of garbage, including horse poop, from the trails in Osprey Park. We have removed trees that blocked some of the trails for over a year. We have removed all of the destroyed benches and informational signs as best we could. We have cut back and widened the trails where possible and made trails that were no longer usable, usable. During that time neither of us has ever seen anyone else, other than city workers, and the high school cross country team (about three years ago) helping to maintain the park trails.

My Web search on Equestrian trails in Snohomish County did not find any City in Snohomish County that provides Equestrian Trails. There appears to be a multiuse trail between Everett and Lynnwood that is OK for equestrian use. It does show that Snohomish County has over 17 miles of horse trails parallel with the Centennial trail. Lords Hill regional Park has many acres and miles of trails for horses some of them are exclusive to horse use. I'm told that there are hundred's of acres and miles of trails for horseback riding at the end of Mann road less than six miles from Sultan.

While working on the trails this year we have noticed a much higher use of the trails than before. Encountering dog walkers, runners, baby carriages, and seniors out for a daily stroll is not uncommon anymore. Teresa and I do not believe that horses will fit well into this mix.

Please also read attachments (A) An email from Ralph Svrjcek (DOE) regarding horses on trails.

Attachment (B) **Water Quality Protection Horse Owners.** (horsehints.org posted Feb 11 2010)

Thank you for your consideration on this matter.

Bob & Teresa Knuckey

Teresa Knuckey

From: "Svrjcek, Ralph (ECY)" <RSVR461@ECY.WA.GOV>
To: "Teresa Knuckey" <teknuck@verizon.net>
Sent: Wednesday, April 28, 2010 4:29 PM
Subject: RE: horses along are waterways

Thanks for the question Teresa.

There are a few core principles to focus on when considering activities near water: how is water pollution prevented and how are riparian (streamside vegetation) protected.

State law is pretty clear that putting polluting matter into a stream is not allowable (Revised Code of Washington (RCW) 90.48.080). There are also Critical Areas Ordinances that regulate activities next to waters. Depending on who oversees the streamside land (City of Sultan?, Snohomish County), you would want to check with those authorities.

Riparian vegetation is an important part of the salmon food web. It also provide shade to keep water cool and stabilizes stream banks. Horses will need to stay on the trail. The trail should also be designed to withstand the weight of horses under the seasonal conditions it will be used. You do not want to produce mud or create land features that concentrate rainwater that leads to erosion or surface water runoff.

Whatever is developed, the trail should be set back from the Sultan River to ensure no stormwater runoff will reach surface waters. Horse manure will need to be managed properly to prevent its entry into the river. In most settings, Ecology wants to see an absolute minimum 35' setback from a stream edge to provide filtering of pollution...we prefer to see more. That means that the views of the water need to be done from a distance. I know that "close to the river's edge" is a relative term. I can only tell you that trails should not be close. You might want to look at the topography as you design your trail system to incorporate periodic views from a distance...there is lots of beauty in the forest even without a water view. The bottom line is that no sediment or manure should make its way to the water, especially when it rains.

If there are stream crossings of any kind, you will need to work with WA Fish and Wildlife to make sure you are not affecting fish, as well as preventing any bank erosion or entry of pollutants.

I know that sounds like a lot and I wish you success on your project. Right now, I am preparing to go home and feed my wife's quarter horse named "Good"and to clean up after him as well.

Please feel free to email or call me (425-649-7165) if you would like to discuss this more.

Ralph

From: Teresa Knuckey [mailto:teknuck@verizon.net]
Sent: Tuesday, April 27, 2010 1:47 PM
To: Svrjcek, Ralph (ECY)
Subject: horses along are waterways

Dear Ralph Svrjcek
 Department of Ecology

A

4/28/2010

Water Quality Protection Horse Owners

My husband and I attended a Seminar on Thursday, January 28, 2010, at the Mare and Foal Center in Middleburg, VA. It was an excellent program. Horse Owners Guide to Water Quality Protection was one of the handouts in the packet. It contains a lot of useful information. The publication was put out by DCR (Department of Conservation & Research) of the Environmental Protection Agency. The publication was written by the Council of Bay Area Resource Conservation District in California and was reprinted with their permission. There is no copyright on it and the brochure was reproduced with your tax dollar.

A conservation practice is any activity that improves, protects or restores a natural resource. To implement conservation practices that protect water quality:

- Identify the source of pollution
- Determine how pollutants reach the water
- Select a conservation practice or a combination of practices, to cost effectively reduce the adverse impact to water quality
- Monitor and evaluate its effectiveness in achieving the desired result
- Make any necessary changes based on the evaluation

Horse owners should consider the following points to protect water quality:

Horse Waste Management

Clean up manure and soiled bedding on a regular bases especially during wet weather, to limit seepage of salts and nutrients into ground water or runoff of manure into water bodies. After clean up during the arid summer, use a bucket, hose, or sprinkler to water areas where horses frequently deposit manure. Watering maintains the moist environment bacteria need to decompose residual waster.

Store horse waste on an impervious surface (a concrete pad or plastic tarp) during rains to prevent leaching or runoff of contaminants. Locate storage areas away from waterways so that floods or runoff will not wash away waste. Do not dump horse waste on the edge or directly into stream channels.

Disposal fees are expensive. Manure composts into an excellent soil amendment. perhaps neighbors or local gardeners will want your raw material. Keep compost piles moist and well aerated to aid in conservation of urea and ammonia compounds to more useable, less toxic nitrates. Be innovative and establish a disposal solution rather than create a disposal problem.

Facility Siting

Keeping horses close to streams, in flood prone areas, or on steep hillsides increases the potential for the runoff of manure and sediment. One does not always have an ideal site, given the constraints of topography, soil, rainfall patterns or existing structures; but conscientious management can often offset site shortcomings. New facilities should be sited and designed to address water quality concerns. Work to upgrade existing facilities.

- Keep "clean water clean." Use grassed ditches, berms, or subsurface drains to divert "clean" runoff around barns, manure storage areas, and paddocks.
- Install and maintain a system of properly sized roof gutters, downspouts, and drains to prevent "clean" roof water from becoming "contaminated" by mixing with barnyard manure and sediment.
- Divert "contaminated" runoff from manure areas away from waterways and to low gradient vegetated buffer areas.

(B)

- Separate barnyards, paddocks, and manure storage areas from any waterway with buffer strips of vegetation to filter sediments and absorb nutrients to runoff.
- Construct or repair trails, arenas, roads, parking areas, their associated ditches, and culverts to drain water in a non-erosive manner.
- With a little training, horse owners can use simple water quality test kits to monitor their operations.
- Additional benefits of runoff management include a drier barnyard, a healthier horse environment, and better working conditions.

Pasture and Paddock Care

Vegetation protects water quality by slowing the rate of storm water runoff, which increases absorption into soil, increases bacterial conversion of toxic or consumptive constituents, and lessens the risk that soil and manure solids will be carried into streams.

Grazing Management - Maintain pasture productivity by controlling the number of horses and the amount of time they spend on a pasture. In most cases, pastures provide an exercise area and not the primary food source. For this reason, pasture management should focus on protecting the pasture's soil and vegetative cover. Prevent bare areas from forming. Allow grass time for regrowth. Cross fence to divide pastures into smaller areas, which can be grazed in rotation. Inexpensive and moveable electric fence works well to define grazing areas. During the growing season, graze grass to a height of 3-4 inches before returning horses to the pasture. Manage grazing so that a cover of dry residual vegetation protects soil from the first rains.

Soil Compaction - A porous soil improves plant vigor by allowing the infiltration of water, air, and nutrients. Hoof impact and machinery operation on water saturated land compact soil particles and cause loss of porosity.

- Use turnout paddocks as "sacrifice areas" to preserve pastures. This strategy reduces churning and compaction of wet soils and over grazing when pasture requires rest. If possible, locate paddocks back from waterways, and avoid swales where overland flows can wash away bare soil or manure. Maintain a vegetated border around paddocks to help filter contaminants. Be sure paddocks provide horses with adequate exercise room.

Protection of Resource Protection Areas and Other Waterbodies

Riparian Buffer Strips - Protect or restore a vegetated riparian (streamside) corridor with grass, trees, shrubs, and/or ground cover to filter sediments and horse waste, stabilize stream banks, reduce solar heating of the water, and enhance aquatic habitat.

Limit Horses' Access to Waterways - Provide other sources of water and shade. The direct deposit of manure into water can harm aquatic life. Trampling physically breaks downstream banks and destroys vegetative cover, which can increase sedimentation. The loss of streamside vegetation may also result in excessive solar heating of the water, which can harm cold water fish. Design stream crossings to minimize erosion. Exclusionary fencing and seasonal grazing of riparian corridors are possible management choices.

Protect Small Tributaries - Ditches and drainage swales carry a large amount of rain runoff. These tributaries also require vegetation to filter sediment and reduce the erosive energy of water. Fencing may be necessary to exclude horses from these smaller waterways.

Wetlands naturally filter contaminants from water and provide excellent wildlife habitat. Protect wetlands from grazing and trampling during the rain season.

Chemicals in horse grooming and health products, detergents, disinfectants, herbicides and pesticides can harm aquatic life. Follow instructions for correct application. Minimize use whenever possible. Be careful to avoid direct application or airborne transport of sprays to water bodies. Do

not let horse wash water drain directly into waterways.

How Can Horse Waste Impair Water Quality?

Although horse wastes (manure, urine and soiled bedding) are organic, biodegradable materials, many of their biological and chemical properties can be detrimental to fish, insects, and other aquatic life if those wastes get into local waterbodies.

All aquatic life depends on the small amount of dissolved oxygen that naturally exists in water. The atmosphere contains 20% oxygen, but water saturated with oxygen contains only 11 parts per million (ppm) at 50 degrees F, and even less, 9 ppm, at 70 degrees F. The addition of any decomposable organic material to water stimulates the growth of aerobic bacteria that break down or consume the organic matter. The respiratory demand of the resultant bacterial population can become large enough to overwhelm the water's oxygen dynamics, leaving little or no dissolved oxygen for other aquatic life.

Many of the nutrients ingested by animals, not just horses, return to the environment in feces and urine. On land, moisture and atmospheric oxygen support the bacterial conversion of these wastes to nutrients available for plants. However, when carried by stormwater runoff to streams and lakes, excessive amounts of these same nutrients available for plants. However, when carried by stormwater runoff to streams and lakes, excessive amounts of these same nutrients can stimulate unwanted algae blooms. Algae produce oxygen by photosynthesis, but only during sunny times of the day do they produce more oxygen than they consume. Thus, algal respiration, like the bacterial decomposition of organic material, uses up dissolved oxygen in water.

Ammonia is an intermediate byproduct of bacterial conversion of urea, a principal constituent of urine and other nitrogenous materials excreted by animals. A very small amount of ammonia dissolved in water can kill fish. State, Federal, and International criteria recognize that waters which support a balanced population of fish and aquatic life have an almost undetectable un-ionized ammonia concentration of 0.025 parts per million or less.

Salts contained in all animal waste do not break down and can be carried by rain runoff into local surface and ground waters. The presence of salts in soils of animal confinement areas can increase the salt load to local streams, limiting the species of fish, amphibians, and invertebrate life.

Bacteria and viruses in horse manure rarely cause health problems for people. However, the potential for spread of disease to other horses or susceptible wildlife through water may be of concern.

How Does Erosion Affect Water Quality?

Activities, such as over grazing or trampling, that remove the soil's vegetative cover and thus expose the soil surface to the energy of raindrops, water runoff, and wind, accelerate the natural process of erosion. Once mobilized into a stream, excessive sediment can fill pools, smother fish spawning beds, cover or obscure food supplies, reduce the amount of sunlight reaching aquatic plants, increase water temperature, and clog fish gills. In addition, heavy metals and other toxic contaminants can temporarily bind to sediments and be carried along into water.

Horses in the wild may roam up to twenty-five miles a day for food, water and shelter. Their continual movement disperses manure and urine and allows for regrowth of vegetation. However, with domestic horses, thoughtful owners provide food and shelter, and consequently, relatively large numbers of horses can be kept in a small area. If not carefully managed, horse waste and sediment from horse facilities could enter waterways or infiltrate ground water to create conditions detrimental to drinking water supplies, recreational activities, and the environment.

What Can Horse Owners Do to Minimize Adverse Water Quality Impacts?

Be informed and proactive. Analyze possible water quality impacts of your operations before and during

rains. Learn how to perform simple water quality monitoring tests. Implement conservation practices if necessary. Carefully consider potential water quality problems before expanding your facility. Schedule a workday at your stables to install roof gutters, improve drainage channels, set up a new manure storage system, or revegetate a creek. Volunteer to maintain public trails. Encourage your friends and horse clubs to do the same.

Remember, any complaint about horses reflects on all horse owners. Realize that not everyone loves horses. Consider yourself an ambassador for horses by demonstrating good stewardship of land and water resources. Care of natural resources in your local area will initiate an expanding ripple.

With an expanding urban environment, horse owners must diligently protect water quality and present a good image to their neighbors.

What Is Voluntary Compliance?

Both State and Federal laws, such as the Chesapeake Bay Preservation Act and the Clean Water Act set standards for handling of animal waste to provide protection of surface and underground water resources. Currently, regulatory and enforcement agencies encourage owners and managers of animal feeding or confinement operations, as well as individual horse owners, to follow a program of "voluntary compliance" to achieve these "clean water" standards without more formal regulatory actions.

Voluntary compliance means *voluntarily undertaking the necessary and appropriate management practices to minimize the release of pollutants into local waters without the necessity of obtaining site-specific waster discharge requirements*. Horse owners and facility managers should evaluate the effectiveness of their existing erosion control, stormwater management, and waste management practices to minimize transport of pollutants. Voluntary compliance allows the horse community the opportunity to demonstrate responsible stewardship of natural resources while avoiding stricter enforcement of regulations. Voluntary compliance does not mean that water quality concerns can be ignored.

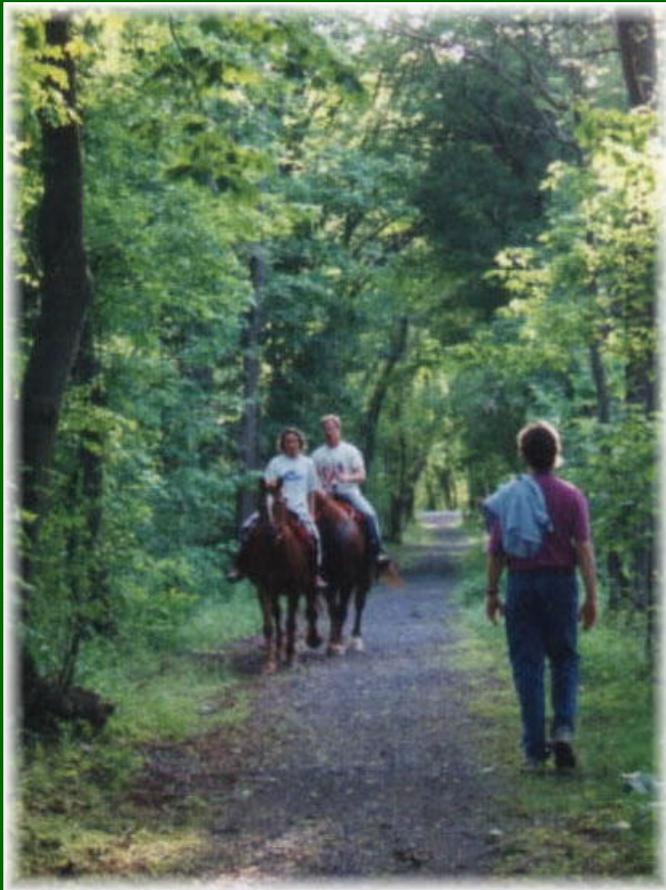
Conservation practices that protect water quality at horse facilities increase property value promote horse health, build good relations between neighbors, and discourage new regulations. Horse operations can contribute to the total pollutants entering local waterways. Therefore, horse owners and facility managers bear the responsibility to minimize water pollution through:

1. Facility design and siting
2. Horse waste management
3. Stormwater runoff management
4. Pasture and paddock care
5. Waterbody protection

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Designing Shared-Use Trails to Include Equestrians

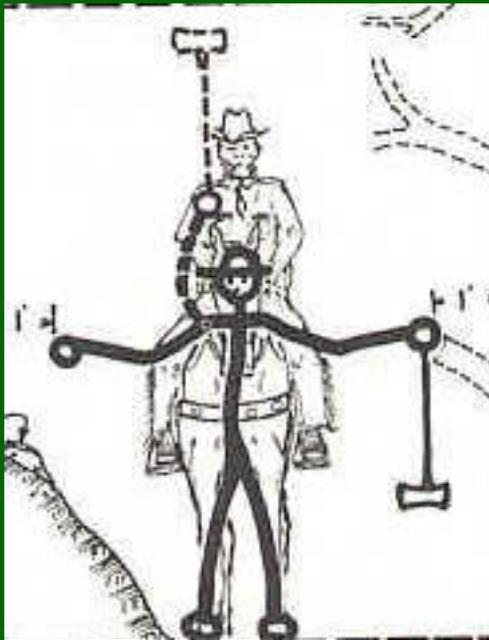


Anne M. O'Dell

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<http://www.aiusa.com/anneodel/Advocacy.htm>

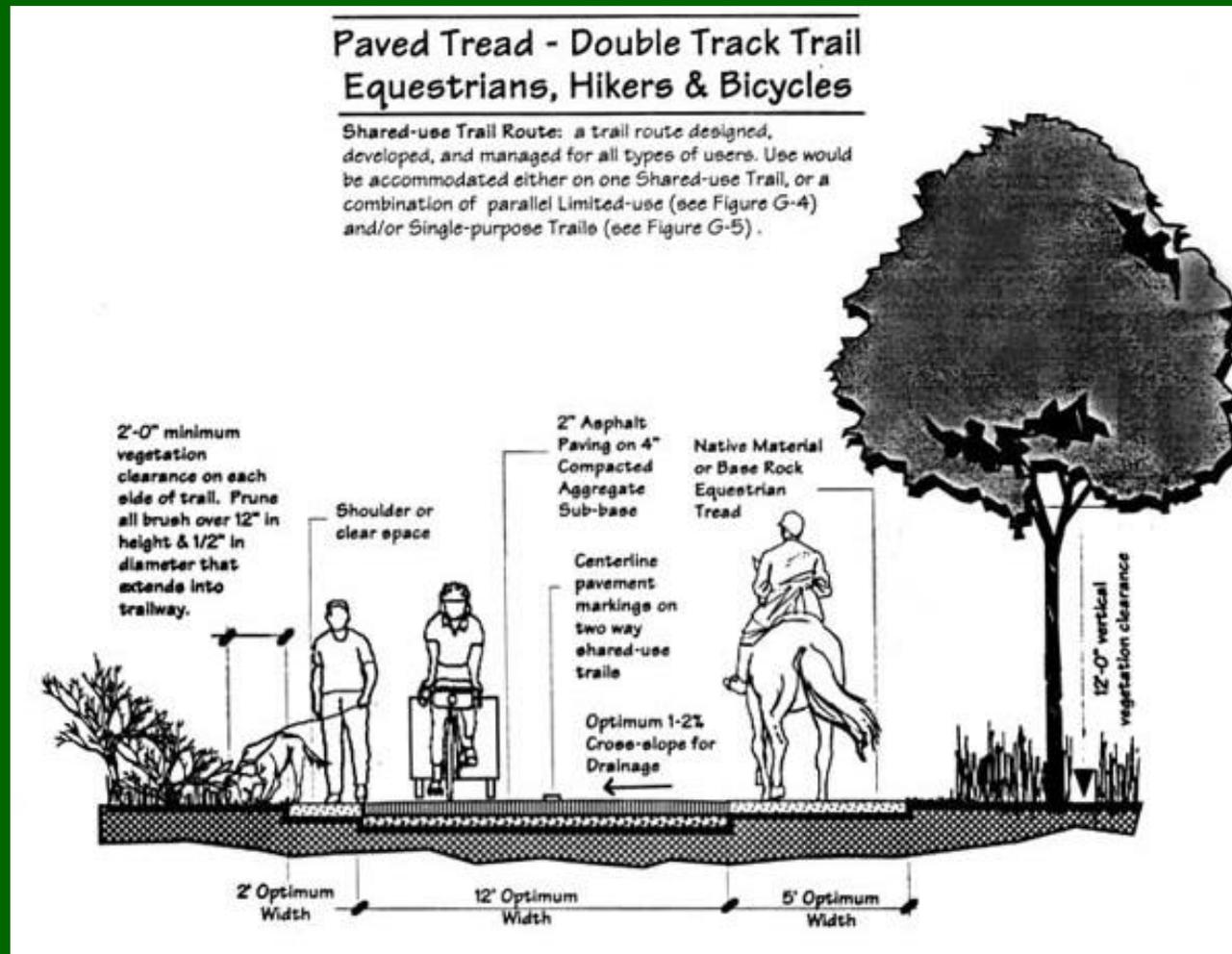
Trail Design Guidelines



- Vertical Clearance:
10 – 12 feet
- Corridor Clearance:
5 – 6 feet (one lane)
- Tread Width:
18 – 30 inches (one lane)

Drawing courtesy Equestrian Trails, Inc.

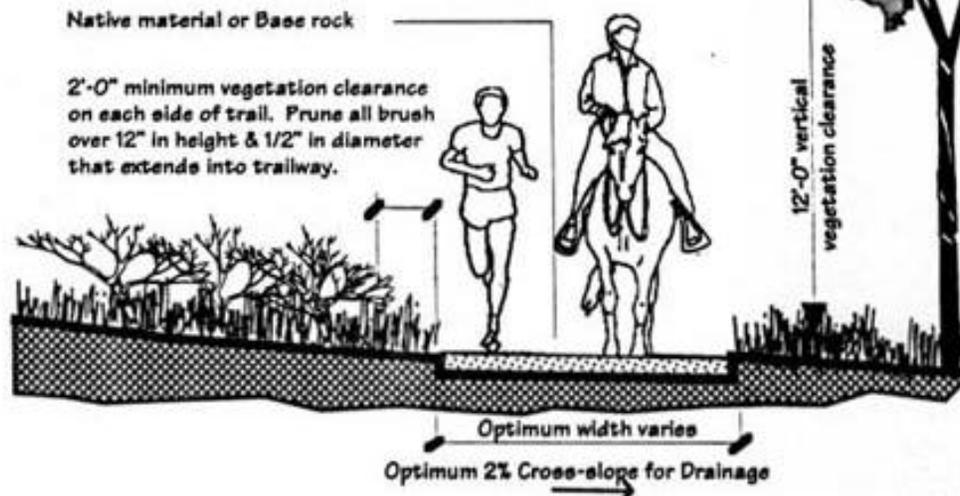
Ideal Shared-use Corridor



Natural Tread Shared-Use

Shared-use Trails Natural Tread -Double Track Trail Equestrians, Hikers & Bicycles

Shared-use Trail Route: a trail route designed, developed, and managed for all types of users. Use would be accommodated either on one Shared-use Trail, or a combination of parallel Limited-use (see Figure G-4) and/or Single-purpose Trails (see Figure G-5).



Limited-use Trails

Limited-use Trails

Limited-use Trail Route: a trail route designed, developed, and managed for more than one, but not all types of users. See also: Shared-use Trail, (Figures G-2 and G-3) and/or Single-purpose Trails (Figure G-5).

Natural Tread - Single Track Trail

