CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Valley Garden Ranch Ditch repair/reconstruction
Proposed Implementation Date:	April 2010
Proponent:	Steve Burke, Valley Garden Ranch
Location:	Township 5 South, Range 1 West, Section 16
County:	Madison
Trust:	Common Schools

I. TYPE AND PURPOSE OF ACTION

The proponent has applied for a license that would allow for the repair/reconstruction of a ditch that crosses State Land. The ditch has downcut 4 to 6 feet below existing ground, and has become too deep to efficiently flood irrigate. The downcutting has created steep banks with little to no vegetation, and erosion and sedimentation problems.

Granting a license would allow for permanent irrigation grade control structures to increase the water level, and a new hardened ditch channel to prevent future downcutting.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

Steve Burke, Lessee
Patrick Rennie, DNRC Archaeologist
Montana Natural Heritage Program, Animal Species of Concern
Montana Fish, Wildlife, and Parks, Mike Vonn: concerns/issues would be the work creating sedimentation and 'mucking stuff up', could be mitigated by keeping machines out of the water and working in dry conditions.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

None.

3. ALTERNATIVES CONSIDERED:

Grant Land Use License: Grant the License to allow for the repair/reconstructions of the ditch.

No Action: Do not grant the license to allow for the repair/reconstructions of the ditch, leaving the ditch as is.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Soils at the project site consist mainly of non-cohesive, fine grained, silty loams. Theses soils are particularly susceptible to erosion from running water and to slumping and / or mass failure. Existing ditch conditions have caused substantial erosion and downcutting which in turn has created over-steepened banks which are actively sloughing into the ditch bottom (Photo 1). Downcutting has resulted in a ditch elevation that is below the water table and functions as a drain, thus reducing soil moisture in the area of the ditch.

Photo 1. Typical existing conditions of the ditch near the project site.

Benefits to soil stability and soil moisture will both result from the proposed project. The project will raise the base level of the ditch which in turn will prevent downcutting the subsequent bank erosion problems. In addition, raising the base level will eliminate the draining function, thus restoring soil moisture to a more natural condition in the project area.

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5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

The proposed project will improve water quality in the ditch and downstream in Ennis Reservoir by eliminating the existing downcutting and erosion problems and therefore reducing excessive sedimentation. In addition, by eliminating the current drain function, the project will restore the groundwater table to a higher, more natural condition.

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6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

None.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

Vegetation cover, quantity, and quality at the project site will improve significantly as a result of the proposed project. Currently, ditch banks have very little vegetative cover on both the upper and lower banks. The upper banks are vegetated with a combination of upland cultivars (i.e. garrison creeping foxtail) and native upland species. The middle and lower banks and very poorly vegetated overall and are often completely devoid of any vegetation. When vegetation does exist on the middle banks (~ 25% of middle bank area), it is a combination of upland cultivars and native upland species. When vegetation exists on the lower banks (< 5% of lower bank area), it is typically a combination of wetland / riparian species dominated by Nebraska sedge but also including a few different sedges and rushes.

The proposed project will increase the amount of total vegetative cover and will improve the quality of the vegetation by restoring native riparian vegetation. Disturbed and un-vegetated areas will be planted with nursery stock containerized native wetland plants or will be seeded with a native wetland and/or upland seed mix. Wetland sod mats harvested from adjacent wetlands will also be used to revegetate disturbed areas. In addition, willow cuttings will be planted to complement the revegetation efforts and stabilize ditch banks and the earthen grade control structures. Finally, the restoration of the water table and improvement to the flood irrigation practices will greatly improve vegetative conditions in the adjacent filed.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

The existing ditch provides very little terrestrial, avian, or aquatic habitats. The existing ditch has little to no terrestrial, avian, or aquatic habitats, thus the proposed project will have little to no negative effects to these marginal ditch habitats. However, fish and aquatic habitat downstream in the watershed should benefit from the proposed project as the current downcutting and bank erosion problems are addressed and remedied. In addition, terrestrial and avian species which utilize riparian areas will benefit from the restored and created riparian margins.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

The Montana Natural Heritage Program listed ten species of birds and one fish as species of concern in the Township and Range this license would effect. The limited size of the project should have no effect on unique, endangered, fragile or limited environmental resources

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine effects to historical, archaeological or paleontological resources.

A Class I (literature review) level review was conducted by the DNRC staff archaeologist. This entailed inspection the DNRC's sites/site leads database, land use records, General Land Office maps, and control cards for potential cultural resources in the proposed project area. That series of searches indicated that no cultural or paleontological resources have been identified in the project area of potential effect. No additional archaeological investigative work is recommended. Proposed ditch rehabilitation activities are expected to have *No Effect* to *Antiquities*.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

The project is not on a prominent topographic feature, and is not visible from populated or scenic areas. Nonetheless, aesthetics will be improved greatly as a result of the elimination of the deeply incised ditch and eroding banks and through the native riparian revegetation efforts.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

None.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

To our knowledge, no pertinent environmental documents (studies, plans, or projects) exist for this particular tract. However, there was a recently completed stream restoration project on the adjacent private land. The project took place in 2009 on an ~18,000 foot reach of Moores Creek and included: stream channel restoration, riparian restoration and revegetation, culvert replacement and installation, and water gap installation. Permits acquired for the project included: 310 (Madison Conservation District), Section 404 (U.S Army Corps of Engineers), and 318 Authorization (Department of Environmental Quality).

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

None.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

None.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

None.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

None.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

None.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:
List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

None.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

No effect.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

None.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

None.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

No affect.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

The easement would generate $...in revenue for the School State Trust Land, and improve access to the ditch for the State's stock water right.

EA Checklist Prepared By:	**Name:** Katie Svoboda/s/	**Date:** 04/22/2010
	Title: Bozeman Unit Office Manager	

V. FINDING

25. ALTERNATIVE SELECTED:

Grant Land Use License: Grant the License to allow for the repair/reconstructions of the ditch.

26. SIGNIFICANCE OF POTENTIAL IMPACTS: After reviewing the analysis for the Repair and reconstruction of the ditch I have concluded that no significant impact would be expected.

There may be a short term sediment delivery to Ennis lake during construction, but that would be mitigated by the reduction of continuous sediment delivery over time. Once completed the ditch should become more stable

and provide benefit into the future.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

[ ] EIS	[ ] More Detailed EA	[X] No Further Analysis

EA Checklist Approved By:	**Name:**	Craig Campbell
	Title:	Bozeman Unit Manager
Signature: Craig Campbell/s/	**Date**:	04/28/2010