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Department of Health and Environmental Sciences

STATE OF MONTANA HELENA, MONTANA 59601

ENVIRONMENTAL SCIENCES DIVISION
Board of Health Building
(406) 449-3946

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A. C. Knight, M.D.
Director

October 4, 1977

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Dear Reviewer:

The enclosed preliminary environmental review (PER) has been prepared for the proposed Riverwood Villas #1 subdivision in Cascade County. This PER is submitted for your consideration. Comments and questions will be accepted for 15 days after the date of this publication. If no communication occurs during the time period it will be assumed the person or agency does not have any comments. All comments should be sent to the Subdivision Bureau, Environmental Sciences Division, Helena, MT, 59601.

Sincerely,

Edward W. Casne, Chief
Subdivision Bureau

EWC:TME:dmg

PRELIMINARY ENVIRONMENTAL REVIEW
Department of Health and Environmental Sciences

Division/Bureau Environmental Sciences Division/Subdivision Bureau
 Project or Application Riverwood Villas #1, Trans-Montana Corporation
 Description of Project The proposed subdivision would be 455 acres, with 20 acres dedicated as a public area. The 81 lots would be a minimum of 5 acres. The proposed development is located in the N ½ of Sec. 2 and W ½ of Sec. 1, T19N, R3E, South of Great Falls, Montana.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial and aquatic life and habitats	XXX					P. 1
2. Water quality, quantity and distribution			XXX			P. 2
3. Geology and soil quality, stability and moisture			XXX			P. 3
4. Vegetation cover, quantity and quality		XXX				P. 3
5. Aesthetics	XXX					P. 3.
6. Air quality			XXX			
7. Unique, endangered, fragile, or limited environmental resources				XXX		
8. Demands on environmental resources of land, water, air and energy			XXX			
9. Historical and archaeological sites		XXX				P. 4

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores				XXX		
2. Cultural uniqueness and diversity				XXX		
3. Local and state tax base and tax revenue			XXX			
4. Agricultural or industrial production	XXX					P. 4
5. Human health			XXX			
6. Quantity and distribution of community and personal income			XXX			
7. Access to and quality of recreational and wilderness activities			XXX			
8. Quantity and distribution of employment			XXX			
9. Distribution and density of population and housing			XXX			
10. Demands for government services			XXX			P. 4
11. Industrial and commercial activity			XXX			
12. Demands for energy			XXX			
13. Locally adopted environmental plans and goals				XXX		P. 5
14. Transportation networks and traffic flows			XXX			P. 5

Other groups or agencies contacted or which may have overlapping jurisdiction. Individuals or groups contributing to this PER.

County: commission, staff, planning board; SCS; F&G; Dept. of Anthropology, UM; Soil Con. Dist.; Earth Sci. Services, Inc., and developer.

Recommendation concerning preparation of EIS.

EIS not warranted

PER Prepared by:

Tom Wing, P.E. and Tom Ellerhoff

DATE: October 4, 1977

PRELIMINARY ENVIRONMENTAL REVIEW

RIVERWOOD VILLAS #1

PHYSICAL ENVIRONMENT

1. Terrestrial and Aquatic Life and Habitats

The rolling, grass covered hills support a variety of wildlife. A herd of pronghorn antelope roam the area along with other game species such as deer, rabbits, pheasants, sharp-tailed grouse and partridges. Non-game species in the area include gophers, ground squirrels, mice, song birds and birds of prey.

A great deal of discussion has been generated concerning the impact the proposed development might have on the antelope in the area. The Department of Fish & Game's regional office in Great Falls sent the following comments to the county planning board:

Review of the materials on Riverwood Villas No. 1 reveals inaccuracies relevant to wildlife under Section E, Page 3. There are key wildlife areas within the subdivision, primarily for pronghorn antelope and sharp-tailed grouse. The proposed subdivision will definitely disrupt the wildlife in the area. Most affected will be pronghorn antelope, which will be forced out of the area by building and associated human activity. The aesthetic value of the present herd of antelope is very high to the people that see them. This value should be considered before a decision is made on the proposed subdivision site. Small game and birds will no longer have sanctuary in the heavily grassed areas if the buyers graze horses as permitted in the restrictive covenants.

Committing 455 acres of cropland and grassland to 81 lots so close to town does not seem to be a judicious use of the land. If the area has to be subdivided, lot size should be much smaller and a centralized sewer system installed. It appears that the subdivider has purposely planned the area to make a maximum amount of money with a minimum of financial commitment.

...this proposed subdivision should not be approved as currently proposed.

The development corporation and the county commission disagreed with the Fish & Game Department's assessment. The developers said:

There are no key wildlife areas within the subdivision.... Since there are some dwellings within the area and part of the area has been used for agricultural purposes, it is not anticipated that the subdivision will disrupt the wildlife. The big game animals roam over the entire area from the Missouri River to the south, east and west up into the Rolling Hills subdivision to the north. The small game and birds will continue to have sanctuary in the ravines and heavily grassed areas as they now exist.

In its findings of fact, the commission said the proposed subdivision "...will have no substantial adverse effect upon wildlife or wildlife habitat."

The introduction of a subdivision to an undeveloped area will change the pattern of wildlife use. Most likely the smaller animals will be able to adapt better than the larger. It is almost certain the antelope and deer will seek more secluded areas.

The urbanization of the area will also introduce domestic pets, such as dogs and cats, which will have an pronounced effect on the type of wildlife which will remain in the area.

2. Water Quality, Quantity and Distribution:

There are no flowing streams on the property. If future home builders take precautions not to obstruct or alter road ditches or gullies there should be little chance of altering surface water quality.

The question of an adequate supply of groundwater for domestic use was discussed for the development corporation by Virgil Chamberlain, consulting geologist and engineer. Chamberlain's report, Geology and Hydrology, Riverwood Villa Area, Cascade, County, Montana, was subsequently reviewed for the department by Darrel Dunn, geologist and hydrologist, Earth Sciences Services, Inc., Bozeman. Dunn concluded his analysis by saying:

Information in Chamberlain's (1977) report and calculations based on specific capacity in the nearest Madison water well indicate that adequate water is probably available for domestic use within the subdivision. However, some lots could conceivably have inadequate wells because of variability of the aquifer characteristics from place to place. The risk seems normal and acceptable. Owners should not build homes before their well has been properly tested.

There is a moderate hazard that wells in the subdivision would not be capable of supplying water for generous irrigation of lawns and gardens. Again, the risk seems acceptable; but some lot owners may need to limit their irrigation to stay within the capacity of their wells. Because of the variability of the aquifer, it is also possible that some very high capacity wells could be drilled within the subdivision boundaries.

If there are any existing marginally productive water wells near the subdivision, they might eventually be adversely affected by the draw-down caused by subdivision wells. Some field investigation would be required to evaluate this hazard.

The Madison aquifer may be considered safe from contamination by septic seepage, if the water wells are adequately sealed while in use and properly plugged when they are abandoned.

The information available indicated that the depth to the aquifer may vary from approximately 200 feet near the river to in excess of 400 feet on the higher lots.

In terms of water quality, there is an unusually high amount of sulphur in the water, which, for some persons, will result in a slight case of diarrhea until the person becomes accustomed to the water.

3. Geology and Soil Quality, Stability and Moisture:

Soil tests showed some of the 81 lots, as currently platted, may not be approved because rock formations near the surface prevent the proper installation of septic tanks and drainfields.

Before final approval will be given, the development corporation must either eliminate or redesign lots which do not meet state standards.

4. Vegetation:

The native vegetation in the proposed subdivision is typical of a prairie ecosystem. The predominant vegetation is grasses, such as: blue gramma, green needle, prairie, fescues and wheat grasses. There are some deciduous shrubs in the gullies, but the majority of the deciduous growth is east of the proposed development along the banks of the Missouri River.

Most of the land adjacent to and including the development is being used for dry-land farming. The principal crops are wheat and barley.

The native grasses are found in the untilled areas, along road right-of-ways, bottom lands and to some extent, pastures.

The proposed development could result in a significant change in the type of vegetation found in the area. Future lot owners will likely sod or seed their lawns, thus changing the vegetation from native to turf grasses.

Since these are five acre tracts there is the possibility that only a portion of the land will be used for lawns and the rest left unmaintained. This could (and has in other areas) result in such problems as noxious weeds, over grazing and wind erosion.

5. Aesthetics:

The proposed development is situated in rolling hills west of the Missouri River. The hills are grass covered, with occasional patches of underbrush scattered throughout the gullies. The land east of Riverwood Villa slopes down to the tree covered river bottom.

Man's influence on the prairie landscape is evident. The land north, south and west of the subdivision is being used for agricultural purposes, while to the east, there are homes scattered along the east bank of the river.

From the aesthetic point of view, farming has altered the native prairie, but not radically. The introduction of a housing development would permanently change the visual qualities of the landscape.

According to the Department of Fish & Game, the aesthetic alteration includes the likely change in range for a herd of antelope. For the people who enjoy seeing the animals, the loss will compound the aesthetic change of the area.

9. Historical and Archaeological Sites:

According to the Montana Historic Preservation Plan there are no historical sites on or adjacent to the proposed development, however, according to Dr. Dee C. Taylor, professor of Anthropology, University of Montana, archaeological resources have been identified in the two sections of land spanned by the proposed development. In a letter to the department Dr. Taylor said:

Our records indicate that the following archaeological sites are located in Section 1, T19N, R3E:

24CA21 ... occupation site
24CA64 ... rock structure (eagle catching pit)
24CA65 ... tepee ring

In section 2 there is one site known: 24CA12 --- "Three Towers Trail," close to the river on Ayershire Dairies land.

The sites were not reported as part of professional survey, so there is no assurance that we know of all materials present...

HUMAN ENVIRONMENT

4. Agricultural or Industrial Production:

Half of the proposed development is being used for dry-land wheat farming (producing between 21 and 25 bushels of wheat per acre, slightly less than the county average of 28 bushels per acre on non-irrigated land) and the other half is grassland.

According to a Cascade County planning staff report and Soil Conservation Service and Soil Conservation District officials the loss of about 200 acres of wheat land may be insignificant, however, it appears to be part of a general trend of changing land use in Cascade County. The cumulative effect of changing land from agricultural to residential in the county has totaled thousands of acres in the last decade.

Since this will be the first subdivision in the immediate area it will set a precedent for future land use and will make it easier to rationalize further development of land adjacent to Riverwood Villa #1.

10. Demands for Government Services:

Providing adequate fire protection to the residents was initially a problem, however, steps were taken to resolve the situation.

The proposed development is in a rural fire district which is headquartered in Ulm. To respond to a fire in the development, fire trucks would have to drive to Great Falls and down Fox Farm Road. The time and distance involved prompted the search for a different solution.

When the county commission conditionally approved the preliminary plat it said the development corporation should attempt to create a fire protection district for the subdivision and surrounding area and include in its restrictive covenants a waiver of protest for the creation of a fire protection district.

The corporation's attorney, Charles Lovell, said a 20-acre site adjacent to Riverwood Villas #1 will be conveyed to the homeowners association for use by the rural fire department. One of the activities of the association will be to participate in fire protection.

13. Locally Adopted Environmental Plans and Goals:

There are no county zoning or land use controls in the area of the proposed subdivision. Additionally, there is no adopted comprehensive land use plan, however, the development comes under the jurisdiction of the Cascade County Subdivision Regulations.

14. Transportation Networks and Traffic Flows:

A number of local residents were concerned with how the proposed development would effect the amount of traffic on Fox Farm Road. The highway is a narrow, two-lane surfaced road which, due to residential development, is rapidly becoming a major traffic arterial.

In an attempt to prevent future problems, the commission required the development corporation to amend its protective covenants to state that the right of protest will be waived for a properly created rural road improvement district to improve Fox Farm Road immediately adjacent to Rolling Hills Estates subdivision, about a mile north of the proposed subdivision.

