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DEPARTMENT OF STATE LANDS

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December 9, 1974

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ENVIRONMENTAL QUALITY
SECTION

TED SCHWINDEN
COMMISSIONER

Submitted herewith is a detailed statement on the environmental effects of an easement request submitted by the National Park Service to the Department of State Lands for the construction of a portion of the proposed Big Horn Canyon National Recreation Area Transpark Road. This statement is required by Section 69-6504(b)(3) of the Montana Environmental Policy Act.

The National Park Service has issued a Final Environmental Impact Statement - "Proposed Transpark Road, Big Horn Canyon National Recreation Area" (FES74-17) on the total road project. The Park Service statement should be considered as an appendix to the attached Department of State Lands statement. A limited number of copies of the Park Service statement are available from the Department of State Lands.

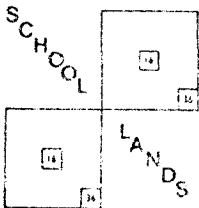
The easement request of the National Park Service will be on the agenda of the meeting of the Board of Land Commissioners scheduled for December 16, 1974.

Sincerely,

Ted Schwinden, Commissioner

Enc.

RSD:TS/aj



A
RESOURCE
FOR THE
PRESENT

AN
OPPORTUNITY
FOR THE
FUTURE

DETAILED STATEMENT
of
ENVIRONMENTAL IMPACT

ADMINISTRATIVE ACTION - Proposed Easement to the
National Park Service for Construction of a Segment
of the Transpark Road of the Big Horn Canyon National
Recreation Area across
Section 36, T8S, R28E, Carbon County, Montana

Submitted Pursuant to the Montana Environmental Policy Act
Section 69-6504 (b) (3), R.C.M. 1947

Prepared by
MONTANA DEPARTMENT OF
STATE LANDS

HELENA, MONTANA
December, 1974

DESCRIPTION OF ACTION

On October 15, 1974, the National Park Service applied for a right-of-way easement across the NW $\frac{1}{4}$ and N $\frac{1}{2}$ SW $\frac{1}{4}$, Section 36, T8S, R28E, a section of state land in Carbon County, Montana. The Park Service proposes to reconstruct and pave an existing dirt road as part of the Transpark Road Project for the Big Horn Canyon National Recreation Area. The Department of State Lands must make a recommendation to the Board of Land Commissioners to grant or deny the easement application. The Land Board must then approve or disapprove the easement.

The National Park Service prepared a draft environmental impact statement on the proposed road which was made public on March 29, 1973. In accordance with the provisions of the National Environmental Policy Act, comments on the draft environmental impact statement were formally requested from numerous public agencies and private organizations. After consideration of the comments received, the Park Service issued a final environmental impact statement on April 24, 1974 (Document Number FES 74-17, Department of Interior, National Park Service).

Road and right-of-way

The easement application is for a 200 ft. wide right-of-way covering a total of 19.91 acres on the state land. (See Road Alignment Map.) The dirt road is to be replaced with a two-lane bituminous highway with two eleven (11) foot travel lanes and four foot stabilized shoulders. A sloped shoulder of six feet on both sides of the road will make the total road 42 feet wide. Design speed of the road is 45 miles per hour.

The total length of the proposed Transpark Road is 42 miles including spurs to recreational facilities. The road is to be constructed in three phases. The first 9.2 mile segment from the Devils Canyon turnoff to Barrys Landing is designed to cross the state land parcel.

DESCRIPTION OF STATE LAND

The land is characterized by broken and rough toe slopes, sloping terraces, and benches. Two drainages intersect the proposed road, both of which carry intermittent streams. (See road alignment map.) The south fork of Trail Creek drains approximately 1014 acres; the other drains about 60 acres.

Vegetation

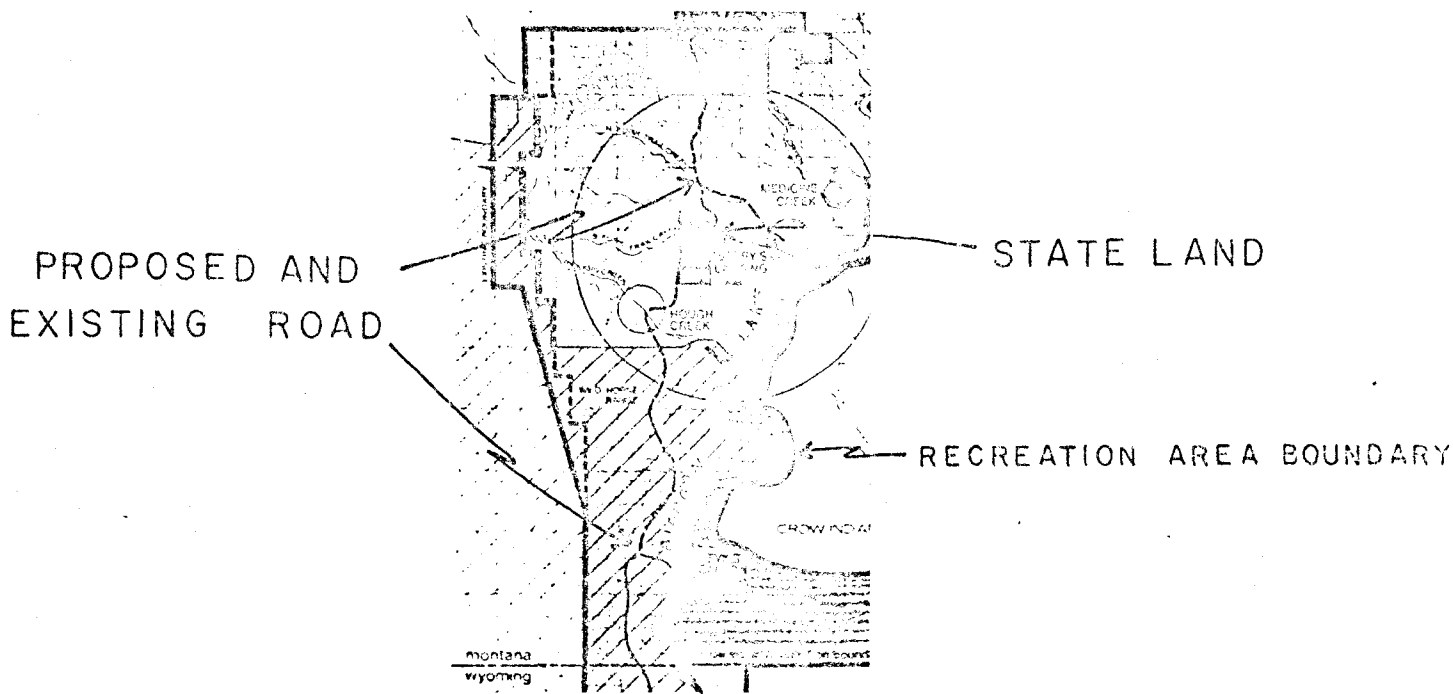
The predominant vegetation community on the tract is a juniper-grassland community, with the principal plants including juniper (*Juniperus osteosperma*) and Bluebunch wheatgrass (*Agropyron spicatum*). Juniper is the dominant species, showing solid to light crown densities. The herbaceous vegetation occupies the open areas near the juniper trees.

The community on this tract, based on the dominance of old growth juniper trees, indicates an edaphic climax type. The low incidence of fires and heavy grazing on the perennial grasses have contributed to the dominance of the juniper especially on the bench areas and drier sites.

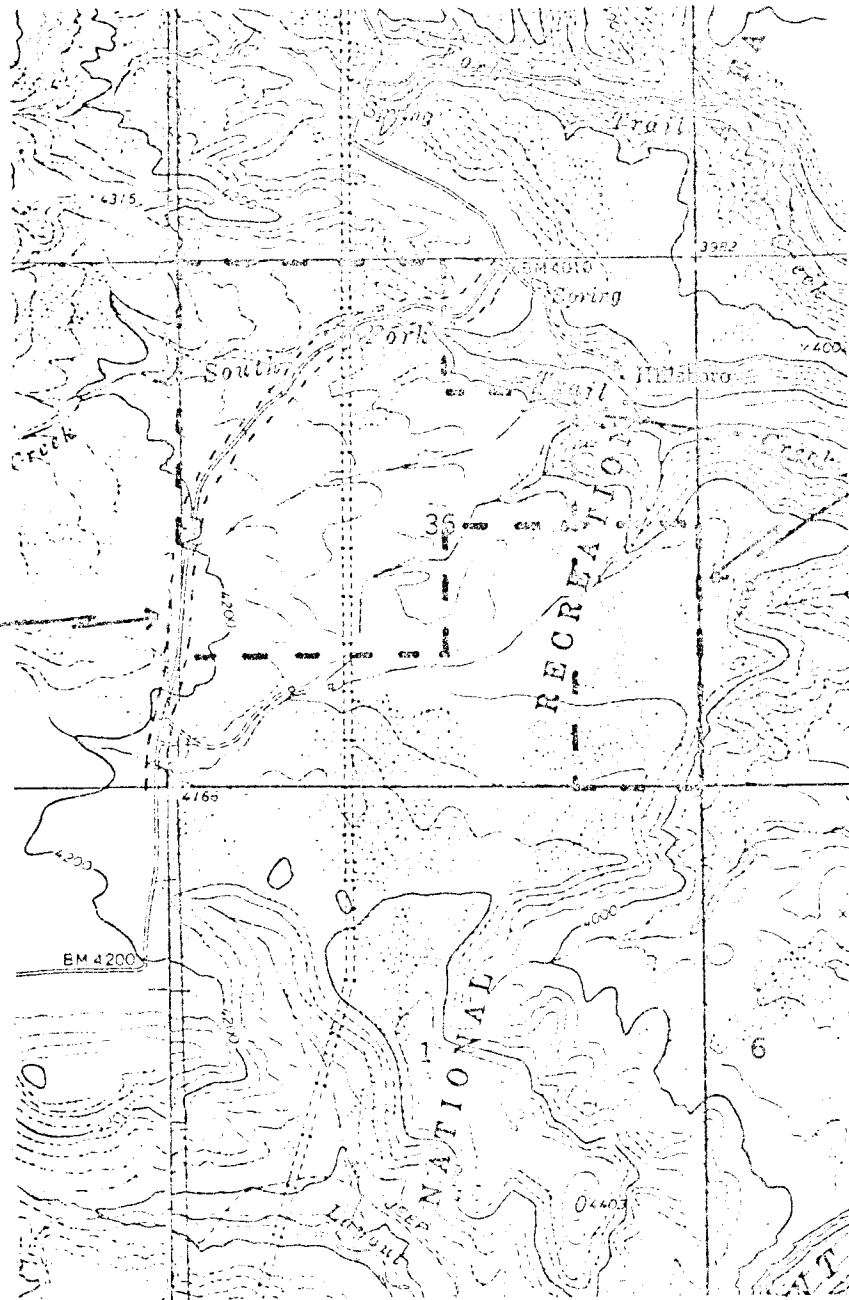
Wildlife

Wildlife is found in moderate numbers on the state tract. Mule deer are present, particularly in the spring and fall. Small

STATE LAND LOCATION MAP



ROAD ALIGNMENT



EXISTING ROAD
AND PROPOSED
RIGHT OF WAY

STATE LAND

mammals are relatively abundant on this land, especially cottontails and other rodent species. These populations attract both coyotes and bobcats as predators.

Soils

Extensive shale outcroppings composed of soft shales and sandstones on convex ridges characterize this land. Loams, sandy loams above bedrock limestone, clay loams above hard shale, and silty clay loams above shale bedrock are also present.

Permeability of the soil ranges from moderately slow to moderately rapid. Organic content and fertility is low.

Recreational and aesthetic value

Because of the proximity of the state land to the Yellowtail Reservoir, it has recreational value. There are, however, no recreational facilities on or proposed for the state land. During the summer of 1974, the Department, utilizing a standardized evaluation system, evaluated the parcel for its recreational development potential and its aesthetic value. A copy of the evaluation record is attached. The tract scored low on the scale for recreation potential because of the lack of variety and water resources. The scenic evaluation score was lowered by the intrusion of the existing dirt road on the parcel and a powerline right of way. Although the parcel is within the Big Horn Canyon Recreation Area and, therefore, has recreational and aesthetic value, the parcel, by itself, does not appear to be of significant value for those purposes.

Historic Values

The state land in Section 36 is in a region with historic and cultural values, both Indian and non-Indian. The right-of-way

alignment on the state land and the state land parcel have been evaluated for archaeological and historic sites by the National Park Service in cooperation with Dr. Lawrence Loendorf and Western Interpretation Services (Sheridan, Wyoming). There is no known surface evidence of archaeological or historic sites on the state land or the right-of-way.

Land Use

The state land is presently leased for grazing. The land has been evaluated as land which requires 8.9 acres per animal unit month (AUM). In other words 44.4 acres would be required to support one cow and calf for a 5 month grazing season. The 360 acres of state land in Section 36 would support 8 cows with calves for a 5 month grazing season. The 19.91 acre right-of-way would produce approximately 2 months of grazing for a cow and calf.

ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

State Land

Construction of a new road over this parcel of land, superimposed over the existing dirt road, would have some impact. Trees and vegetation would be removed in widening the existing road especially where cut and fill slopes are created. Expected heavy increased visitation due to improved access to Barrys Landing would increase impacts of noise, sight and smell, while littering and human impact due to sheer numbers would increase.

Big Horn Canyon Recreation Area

The Park Service statement discusses in detail the impact of the road project on the Recreation Area.

Of some concern to the Department of State Lands is the effect of increased visitor activities on two parcels of state land near the northern end of the transpark road. These parcels (Sec. 1 & 2, T6S, R30E) are located within ¼ mile of the proposed road near the northern end. Although the parcels are outside the Recreation Area boundary, they contain the well known Grapevine Buffalo Jumps which are eligible for nomination to the National Historic Site Register. Even with the present limited access provided by the dirt road the sites are being vandalized since no agreements or arrangements have been made to protect these sites. Increased vandalism due to increased visitor rates is a probable major impact of the proposed road.

ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

State Land

Topographic disturbance, vegetation removal and loss of grazing land would be unavoidable effects.

Big Horn Canyon Recreation Area

The Park Service Impact Statement discusses in detail unavoidable impacts.

ALTERNATIVES TO PROPOSED ACTION

Alternative Routes

The Alternative Route Map shows the two most likely route alignments to the east (route "C") and west (route "B") of the state land. Alternative route "A" is the proposed alignment across the state land. The following table compares the impacts of these routes.

	ROUTES		
	<u>A</u>	<u>B</u>	<u>C</u>
<u>Length</u>	2.03 miles	1.81 miles	3.84 miles
<u>Ratio of new land disturbance</u>	1	1.38	1.42
<u>Ratio of 20 ft. topographic contour lines per mile</u>	1	1.86	1.50
<u>Ratio of relative costs</u>	1	1.84	5.27

Engineering difficulties for the 3 routes are summarized below:

Route "A" (Proposed): The maximum grade is 5.9%, the largest cut is 40 ft. and the largest fill is 24 ft. The sharpest curve for the alignment is 10°30'. Both grade and curvature limit the design speed for this alignment to 40 m.p.h.

Route "B", to the west: Fills that would be encountered on this route, to the south of the ridge, would have a maximum height of 30 feet. In crossing over the ridge there would be cuts and fills of 50 feet, and to the north on a downgrade of 8 percent, there would be a major cut of 50 feet with several small drainages to cross with average fills of 20 feet. Grade and alignment on this route would limit the design speed to 30 m.p.h.

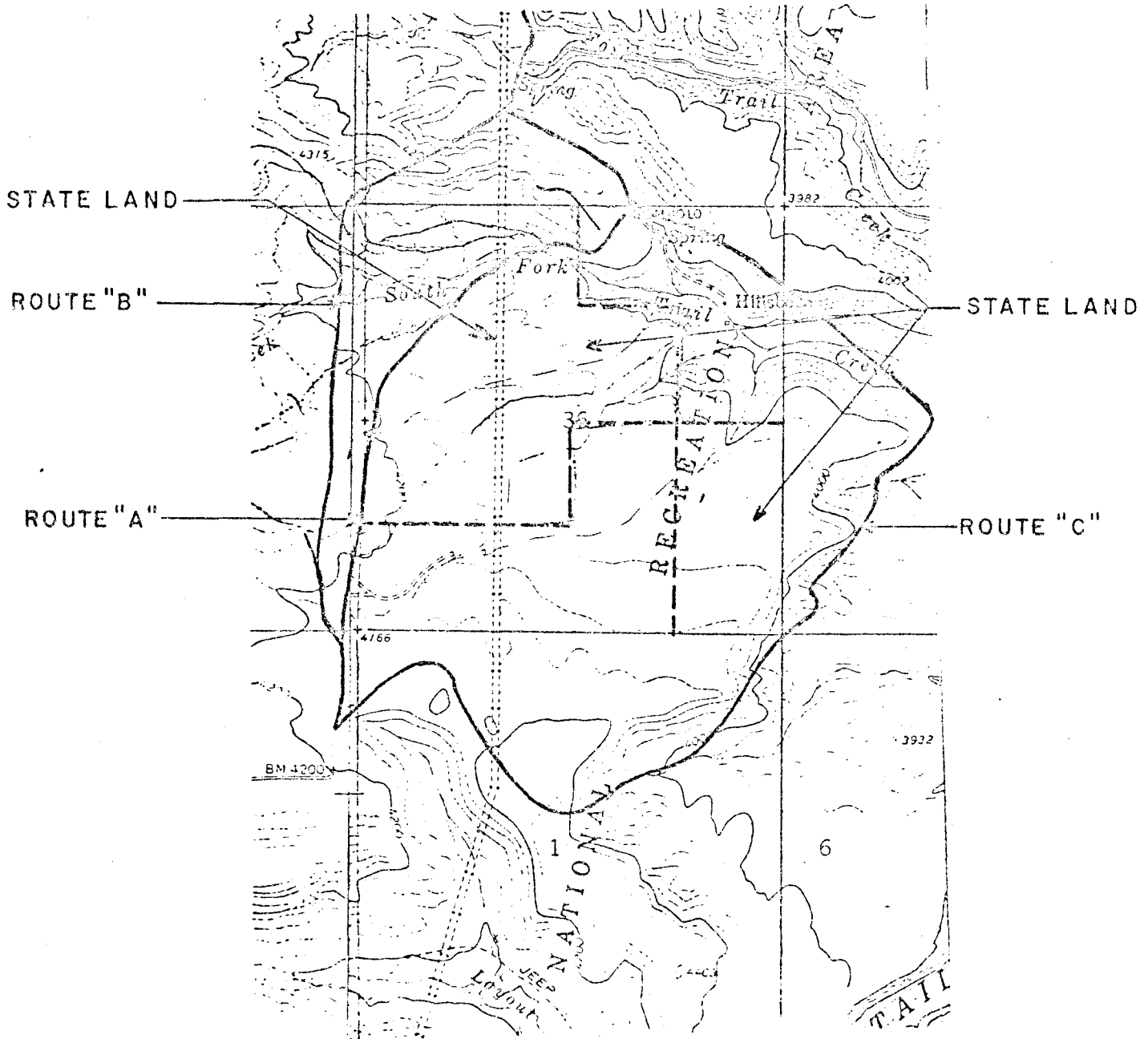
Route "C", east: While this alignment starts from the south on fairly flat terrain for some distance, it would break over the crest of a hill with 30-35-foot cuts and follow the side of the hill down a draw at a grade of 8 percent for 4,000 feet. It then would wind along the toe of the slope cutting across small ridges and drainage areas. In several areas the cuts would exceed 45 feet and fills would be 35 feet. A 200-foot-long, 40 foot high bridge would be required near the Hillsboro Ranch to cross Trail Creek. From there the route would climb at a grade of 8 percent for 2,400 feet to return to the preferred alternate "A" staked line. Both grade and curvature on this alignment would limit the design speed to 30 m.p.h.

Archaeologic and historic resources would be affected as follows:

Route "A": No known archaeologic or historic resources affected.

Route "B" (west): This route would bisect the Bad Pass Trail in Section 35, T8S, R28E and would thus diminish the integrity of the trail at this one crossing. The Bad Pass Trail has been nominated to the National Register of Historic Sites.

ALTERNATIVE ROUTES



Route "C" (east): This route would visually impact the historic Hillsboro site thus reducing the historical integrity of the site. The Hillsboro site has been nominated to the National Register of Historic Sites.

RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

State Land

Larger numbers of people will visit the recreation facilities; for some, the aesthetic and wilderness quality of the experience will be diminished.

Big Horn Canyon Recreation Area - Transpark Road

The U.S. Congress has decided to designate the Big Horn Canyon area for recreational use. This decision means a commitment of land resources to a particular use. The decision of the Park Service to develop this recreational use by construction of the transpark road will mean irreversible commitment of resources including:

- destruction of 155 acres of vegetative cover
- damage to landscape
- destruction of archaeological resources
- deterioration of visual resources
- utilization of mineral aggregates and other construction materials and fuels.

Energy consumption promises to be one of the most critical resource allocation problems facing the state, the nation, and the world in the years ahead. The irreversible decision to allocate a portion of our energy resources to the construction and use of a recreational highway is a decision of considerable interest. For this reason a discussion of the magnitude of this commitment is of particular interest to the public and the decision makers who must weigh the relative merits of any segment of the Transpark Road. The energy allocation for the road can be divided into three basic

components: (1) energy required for road construction materials; (2) energy required for road construction; (3) energy required for road use.

Energy for Construction Materials

The primary energy usage in this component involves the asphalt for the road surface. The 3" deep 22 ft. wide road will require an estimated 726 barrels or 22,869 gallons of asphalt per mile for the bituminous road surface.¹ For the 42 mile road this would mean the irretrievable commitment of 30,492 barrels or 960,498 gallons of petroleum resources for the road surface.² Energy needed to produce culverts, bridges, fences, guardrails and signs is unknown.

Energy for Road Construction

The contractor has estimated a fuel requirement of 211,000 gallons of diesel fuel for the construction of the first 9.2 mile road segment or an average of 22,935 gallons per mile. If this average is the same for the entire road project 963,270 gallons of fuel would be required.

Energy for Road Use

The proposed transpark road will be used primarily for recreational travel. Commercial vehicles, except for farm and ranch trucks, will be prohibited from using the road. The road therefore will increase fuel consumption for pleasure driving. The following table details an estimate of this increase after complete development of the recreation area.

¹Based upon 94% aggregate - 6% asphalt mix.

²Asphalt can be refined to produce 85% petroleum resources and 15% coke.

ESTIMATE OF RECREATIONAL FUEL CONSUMPTION - 1980

	<u>Case I(10%)</u>	<u>Case II(25%)</u>	<u>Case III(40%)</u>
No. of visits ¹	242,503	606,260	970,017
No. of vehicles ²	67,362	168,406	269,449
No. of miles ³	6,736,200	16,840,600	26,944,900
No. of gals. of fuel consumption ⁴	561,350	1,403,383	2,245,408
Equivalent Grain Production ⁵	2,120,656 bu.	5,301,669 bu.	8,482,652 bu.

¹The Park Service has estimated the number of annual visits by 1980 based upon percentages of present visits to Yellowstone Park. Cases I, II and III are at 10%, 25% and 40% of Yellowstone Park visits.

²The Park Service has determined that there is an average of 3.6 persons per vehicle visiting National Parks.

³Based on estimate of 100 miles travel per vehicle.

⁴Based on national average of 12 miles per gallon.

⁵The estimate of Equivalent Grain Production is an estimate of the number of bushels of winter wheat which could be planted and harvested in Montana using the gasoline consumed by recreational driving on the proposed road. The estimate is based on a use of 9 gallons of fuel per acre for summer fallow, seeding, applying herbicides and fertilizers and harvesting. The production estimate is 34 bushels per acre.

Energy Consumption Summary

Estimates for increased energy consumption for facilities construction and operation are not available. Additional fuel will be consumed by motor boats and other small recreational vehicles as well as by park administration operations. The total estimate using the three major components can be summarized as follows: