

By

The Study Group

Sponsored By

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Department of Agricultural and Applied Economics**

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Executive Summary

Introduction

This feasibility study was conducted to determine if using money from the State School Land Trust to buy certain types of real estate would be a wise economic investment. Specifically, the study focused on using trust funds to buy “high-amenity” lands in the form of existing ranches, farms, or blocks of land, which could be leased as complete units to generate greater lease fees and to obtain appreciated land values over time. A significant portion of the State School Land Trust, or asset portfolio, is in land. If this is to continue, then it is important to receive increased economic benefits from these lands for the beneficiaries.

Study Description

A group consisting of 15 Wyoming citizens, representing a wide array of values and interests, associated with State School land conducted the study. **The Study Group (SG) immediately agreed that any investment of school trust funds must provide increased economic benefit to the trust and its beneficiaries. The group also agreed that it is acceptable and desirable that other benefits to citizens of the state be realized whenever possible.**

To evaluate the economic effects of buying a block of high-amenity land, the group evaluated three investment scenarios: 1) a prototype ranch, labeled the River Ranch, with high-amenity value; 2) a typical grazing lands scenario, which simulates the return of current grazing leases; and 3) a financial portfolio that emulates recent returns from state investments. The scenarios were analyzed for a 25-year period because it was determined that a lease of that duration would be necessary to attract stable, competent lessees. The SG assumed that the lease for this type of land would be sufficiently different from a standard agricultural lease so that it would qualify for a 25-year lease. These scenarios and the economic methods used are explained in the chapters that follow. The results are summarized in Table A.

Table A. Income and asset appreciation estimates for three scenarios for 25 years.			
	River Ranch	Grazing lands	Financial portfolio
1. Total annual revenue	\$1,125,000	\$725,000	\$2,513,000
2. Rate of return/lease fee	<i>3 percent</i>	<i>1.9 percent</i>	<i>6.7 percent</i>
3. Appreciated asset value	\$7,242,000	\$2,499,000	\$1,500,000
4. Avg. annual appreciation rate	<i>6.5 percent</i>	<i>2.1 percent</i>	<i>0 percent</i>
5. Total of revenue and appreciation	\$8,367,000	\$3,224,000	\$4,013,000
6. Net Present Value (NPV) (6 percent discount rate)	<i>\$629,000</i>	<i>-\$580,000</i>	<i>\$108,000</i>

Note: All values rounded to nearest thousand.

In the table, row five shows that the River Ranch returns significantly more revenue when appreciation of the assets is taken into account. This occurs in part because of the high appreciation rate for high-amenity lands in the West. The sixth and final row gives the Net Present Value (NPV) for each of the scenarios. The NPV for the ranch lands investment is significantly higher than for the other two scenarios, indicating it is the more financially attractive of these three investment possibilities.

Conclusion

The SG concluded that diversification of state funds into real estate with high appreciation potential will increase the value of the State School Land Trust. State statutes and rules adopted by the board already allow for the purchase of real estate. According to the existing rules, once an option on a piece of property is secured, then a detailed economic analysis and other factors are to be considered prior to completion of any transaction. Therefore, the entire land acquisition process suggested here would be open to the public for full and thorough scrutiny before any purchase is finalized.

The SG suggests that if the board undertakes this project, it might want to appoint an advisory committee to assist the Office of State Lands and Investments (OSLI) in the process of selecting a high-amenity block of land. Such an advisory committee could continue researching the issues identified in this study. It also could gather public comment on the project. An advisory committee could ensure that sufficient information

and opportunities for involvement are afforded the public so people can confidently support the state's action.

Chapter 3.0 lists a number of issues that may need to be considered if the recommended project is undertaken. The SG did not believe that it should recommend solutions to these issues, but rather that some sort of collaborative or advisory committee to the board should find those solutions. In the group's opinion, the types of purchases suggested in this study would not lead to any significant changes in the net acreage of state-owned lands.

1.0 Managing the Land Base for Increased Revenue

Background

This report summarizes the results of a feasibility study that was conducted to determine if using money from the State School Land Trust to buy certain types of real estate would be a wise economic investment. Specifically, this analysis focuses on using State School Land Trust funds to buy either existing ranches, farms, or large blocks of land, which could be leased as complete units to generate greater lease fees and to obtain appreciated land values over time. The study also examines the social and political benefits that could result from this course of action.

The State School Land Trust, or “portfolio,” consists of land, minerals, and the permanent investment fund that has been generated from sale of the first two components. Currently, the majority of State School lands (also called “school lands”) are relatively small, isolated, and scattered parcels of grazing land that generate modest rental income on a per acre basis. The current Land Board and most previous Land Boards have taken the position that the portfolio should continue to hold land as a significant component of the State School Land Trust in order to guard against inflation, the vagaries of the stock market, and ultimate depletion of the minerals. But if a significant portion of the wealth in the school portfolio is to continue to be held in land, then it is important to maximize rents and appreciated land value for the benefit of the schools and other designated beneficiaries.

To envision ways to realize greater economic returns to the State School Land Trust, it is useful to consider all types of real estate. Monies from the State School Land Trust could be used to buy numerous types of real estate, which may yield greater rents than the current scattered agricultural land parcels. Real estate possibilities include commercial buildings, development property—both commercial and residential— industrial parks, recreation sites, and large and small ranches and farms. Currently, the OSLI is not organized or staffed to manage any types of real estate other than agricultural lands. Buying high-amenity land would be a new activity for the Land Board. If the Land Board chooses this course of action and it proves possible and profitable, the board may

wish to consider other types of real estate investments. This will require major changes in the way the OSLI is organized, funded, and staffed.

The Three-Legged Stool of the School Lands Portfolio

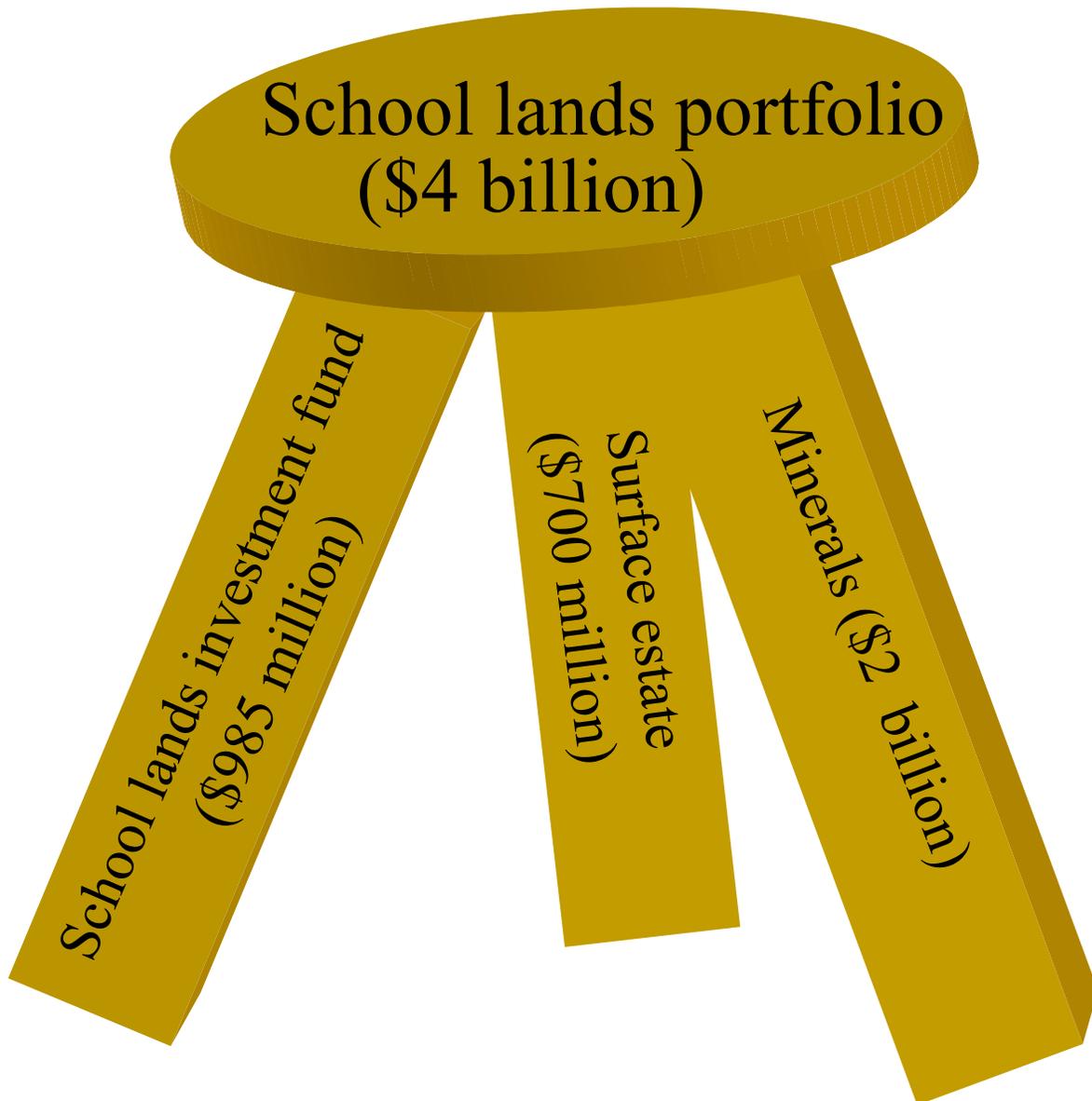
The State School Land Trust Fund is actually an asset portfolio made up of three components—land, minerals, and the investment fund. It is useful to think of the portfolio as a three-legged stool. The portfolio management goal is to keep all three legs functioning well.

Figure 1 depicts the stool and estimates the value of each component. As of September 30, 2001, permanent land funds amounted to \$984,753,597. The value of the surface estate is estimated to be about \$700,000,000, and the minerals are estimated at about \$2,000,000,000. Therefore, the value of the permanent land fund total asset is nearly \$3,700,000,000. In comparison, the value of the Permanent Mineral Trust Fund is approximately \$1,840,000,000. The assets held in trust for the benefit of public schools and institutions comprises one of Wyoming's largest funds, and its management should be carefully considered.

In the fiscal year 2000-2001, the total distribution to schools and other beneficiaries was \$75,540,230. Of this amount, \$62,748,520 came from investment earnings on the permanent investment funds. Income from surface-related activities, including leases, permits, and timber, amounted to \$4,229,929. Mineral-related transactions contributed \$8,561,781 to the schools and other beneficiaries. Return on the estimated value of the surface estate is less than 1 percent; however, the land also is appreciating in value and providing the trust with a hedge against inflation. The value of the mineral estate, which involves non-renewable resources, is dynamic and largely dependent on world markets and new technology. However, over time the value of the mineral estate generally appreciates in value. Recent legislation is designed to protect the investment fund from the effects of inflation. In accordance with W.S. 9-4-305, the state treasurer reinvests a portion of the earnings back into the corpus to offset the negative effects of inflation. Protections are being phased in over a 20-year period, so currently the fund is only partially protected. Furthermore, W.S. 9-4-713 establishes a

spending policy for earnings on permanent fund investments designed to protect the corpus against inflation.

Figure 1: State Trust Lands Portfolio –The Three Legged Stool



Source: Office of State Lands and Investment, 1st quarter 2001

Rationale for the Study

For this study, the group decided to focus on only the buying of ranches, farms, or large parcels of land that could be leased for farming, grazing, ranching, and other compatible uses. This project was conceived after several seemingly related needs were recognized in Wyoming:

- The Land Board wants to realize as much revenue for the schools and other beneficiaries as possible.
- There is growing concern throughout the state about the need to preserve open spaces for wildlife habitat, recreation, and other uses.
- Numerous landowners, including ranchers and farmers, are faced with the prospect of either having to sell their operations or at least subdivide and sell some of their land in order to stay in business.

It may be possible to address several of these needs simultaneously by using funds from the State School Land Trust to buy blocks of land or entire farms and ranches. A ranch, farm, or block of land could be bought and then leased back to the sellers (or other potential lessees) for rents that would equal or exceed other investment possibilities for the school funds. This investment strategy has the advantage of preserving some farms and ranches, while creating open spaces and opportunities for better wildlife habitat and public access for recreation. **In the succeeding chapters of this report, the Study Group documents the economic feasibility of investing trust fund monies in specific types of land and examines the other benefits this course of action could achieve.**

Funding and Formation of a Study Group

The Institute for Environment and Natural Resources (IENR) at the University of Wyoming funded the study. The maintenance of open spaces is one of the main goals of IENR, so the institute issued a request for competitive proposals focusing on ways to achieve this goal. Several authors of this report responded with a proposal for the current project, which was subsequently funded. The proposal called for the formation of a Study

Group (SG) composed of local citizens and researchers from the University of Wyoming and elsewhere. Such a SG was formed and worked for more than seven months to produce this report. There were 15 members representing most values and interests related to the school lands. Many members have firsthand knowledge of the school lands. The SG members are listed in Appendix A, and all members have endorsed the recommendations contained in the final chapter. It should also be noted that members of the Study Group participated as individuals, not as representatives of their affiliated organizations or interest groups. The views presented in this report are those of the combined efforts of the Study Group and do not reflect the entire value set of all participants.

Selection of a Study Site: The River Ranch

In order to conduct a valid study, the SG realized that it would need to study an existing ranch or farm. Trying to study these ideas in the abstract proved too elusive. Therefore, the group selected an actual Wyoming ranch that met many of the identified criteria. The owners of this ranch had previously approached the OSLI to see if the Land Board had any interest in buying all or part of the ranch. The family had been confronted with a situation common among many landowners in the state; they needed to get some of the equity out of the ranch without subdividing it. (The family and the ranch will not be disclosed in this study for obvious reasons.)

The ranch had high-amenity values such as frontage on a quality fishing river, trees, and other aesthetic characteristics to make the land attractive to a variety of potential lessees. It was located so that it had relatively easy access from a major urban area. The SG had identified these characteristics as necessary to increase economic returns.

The ranch has 720 deeded acres, approximately 420 acres of state school lease, and about 2,500 acres of BLM lease. The deeded and school lease acres provide about three to four miles of river frontage on a Class Two fishing river. Additional characteristics of the ranch are outlined in Chapter 2.0.

Additional Benefits or “Non-Market Values”

Part of the appeal of buying large acreages with state school funds is that additional benefits, or “non-market values,” may be secured for all citizens of the state, in addition to school children and other direct beneficiaries. **Any investment of school trust funds must be able to provide increased economic benefit to the trust and its beneficiaries. It is acceptable and desirable that other benefits to citizens of the state can be realized, as well.**

Buying the types of real estate described in this report can secure a variety of additional benefits. The ranch prototype used as an example in this study illustrates that it might be possible to secure open space, provide habitat for wildlife, increase access for both consumptive and non-consumptive recreation, and prevent valuable lands from being subdivided, while at the same time providing increased revenue to the trust. This report focuses primarily on analyzing the potential direct economic returns that could accrue to the trust. **The SG assumed that any real estate investment should provide comparable or greater economic returns to the trust than other types of investments available to the trust, and there would need to be careful consideration of each such investment.**

The remainder of the report is organized into three chapters. Chapter 2.0 compares the economic returns of a prototype ranch, the River Ranch, to returns from scattered grazing parcels and to returns from the investment fund. Chapter 3.0 details many issues that may be associated with investing funds in this kind of real estate. The final chapter summarizes observations of the SG and suggests further actions the board may want to consider if it decides to proceed with buying a high-amenity block of land.

2.0 Economic Analysis and Comparison

Introduction

The SG realized early that the most important question to be answered was whether real estate investments could generate economic returns that compared favorably to other revenue generating activities used by the OSLI. The group's goal was to develop economic analysis procedures that could be used to compare the returns of different types of properties and investments, and they used an Excel workbook to evaluate and compare different types and sizes of land parcels. The workbook is specific to the River Ranch, but it can be adapted to other sites.

The SG had to work with the usual constraints of time, manpower, and money. For example, the valuation of non-market goods is still evolving in the discipline of economics. There is still significant distance between what is perceived to be the value of a good (such as a riparian zone) and the ability to measure people's willingness to pay for such a good. The group wrestled with these questions, eventually accepting that there are significant non-market values that are not specifically captured in this analysis.

Methodology

Three investment scenarios were chosen for the economic evaluation:

- **A prototype ranch property**, labeled the River Ranch, because it represents the types of amenity values and growth associated with these types of properties within the state;
- **A grazing lands scenario**, which consists of dry pastureland similar to the current "school sections" found throughout the state and the productive capacity of a typical eastern Wyoming prairie; and
- **A financial portfolio** that assumes the state's projected rate of return on investments. (This scenario was included to compare an "investments" option to a "real estate" option for the trust.)

The SG believes that these scenarios represent major economic issues involved in state lands and sources of income for the beneficiaries. The tables in this chapter summarize the analysis.

Scenario One: The River Ranch

The study property consists of the River Ranch. (Parameters are shown in Table 1.) This ranch represents the type of property that might appeal to the OSLI as a test case for this type of investment. The ranch currently supports approximately 100 head of cattle, but this is not a large enough operation to support a family.

The most attractive feature of this property is its amenity value. The river bottomland, attractive location, and log home enhance both the purchase value of the property and its appreciative value. By combining all these features in a single property of this type, increased income for the school land beneficiaries can be generated, management requirements for the OSLI can be eased, and open space and an agricultural lifestyle can be preserved. The River Ranch allows the introduction of a real world perspective to the project.

Table 1. River Ranch Parameters.

<ul style="list-style-type: none">• 720 deeded acres• 420 acres state lease• Approximately 3 miles of river bottom, both banks• 2,500 acre BLM lease• Approximately 85 acres of native hay meadow• Territorial water rights• Historic log home, built circa 1880, newly remodeled• Approximately 100 cow carrying capacity

The SG chose a basic scenario, which assumed that the OSLI would purchase the property from a family and then lease the property back to them on a 25-year lease. Since the family members would not be able to support themselves with the agricultural

operation alone, and with much of the family’s equity tied up in real estate, the family needed to realize some financial liquidity. By selling the property to the state, the family could use this revenue or capital to invest and generate income to pay the lease. As lessees, the family could build a financial portfolio that would pay the lease and allow them to remain on the ranch, maintaining open space and an agricultural lifestyle with proceeds from their investments.

Table 2 summarizes the lessees’ income potential from the ranch and investments. The scenario assumes the lessees would harvest the hay themselves and lease pasture in the summer. This type of operation lends itself to a stocker operation where the lessees own cattle (or leases out the pasture) for only the summer months and sells the hay produced in the fall.

Table 2. Estimated lessee income potential (first year).

Net revenue from haying	\$6,488
Net revenue from pasture lease	\$4,473
Net return on invested ranch proceeds	\$58,380
Total return to lessee	\$69,341

The lessee’s principle income, with which to pay the ranch lease, would be from the investment of monies received by the sale of the ranch to the state. The average long-term rate of return for the Standard and Poors 500 Index is more than 12 percent (1951-2000), but since this is an average, most individual investors will not see this type of return. Therefore, a conservative average long-term rate of return of 7 percent was used to calculate the potential annual returns. Thirty percent was deducted for taxes, leaving the residual to fund the lease. The state would lease back the ranch on a fixed-lease basis based on a percentage of the ranch’s sale price. The group used an appraised value of \$1,500,000 and deducted 20 percent for capital gains tax, leaving \$1,200,000 for investment.

Table 3 summarizes potential annual lease payments from 1 to 10 percent in column two. Column three summarizes estimated annual net returns to the lessee from all sources, including reinvestment of equity from the sale, haying, and pasture revenues

(Table 2). The actual lease amount would have to be negotiated between the parties, but for purposes of analysis, 3 percent was chosen for the scenario. The table shows that breakeven for the lessee is essentially at 5 percent; however, given that equity markets do not give stable annual returns, it is unlikely that a lessee would agree to such a high amount. The SG felt that the 3 percent rate offered the most compelling option for both the lessee and the state.

Table 3. Breakeven analysis of lease rates and lessee’s return.

Lease rates as a percent of sale price	Annual lease payment	Annual net return to lessee
1%	\$15,000.00	\$54,341
2%	\$30,000.00	\$39,341
3%	\$45,000.00	\$24,341
4%	\$60,000.00	\$9,341
5%	\$75,000.00	(\$5,659)
6%	\$90,000.00	(\$20,659)
7%	\$105,000.00	(\$35,659)
8%	\$120,000.00	(\$50,659)
9%	\$135,000.00	(\$65,659)
10%	\$150,000.00	(\$80,659)

The amenity value of the ranch is included in the economic analysis in a somewhat indirect form. The ranch description section of this report covers the numerous amenities that are included in the ranch property. The group worked hard to come up with some way to value amenities that do not have readily available market values. Some group members felt the habitat value alone of some of the winter range is “priceless.” Yet the cold hand of economics shows there is a value at which this property will change hands and uses and that preserving the habitat included on the property, though important, has a price determined by the real estate market. In the end, the market price for the ranch property was deemed to include the sum total of non-market goods (amenities). Time and funding did not allow the group to distinguish the market values of recreation (i.e., hunting, fishing, and wildlife viewing) from the existence value of

ungulate winter range and riparian habitat. With more time, the SG could have estimated the market values of recreation, but the non-market values of attributes such as winter range and habitat are very difficult to estimate.

The question arose as to whether the prototype ranch could be leased at the suggested lease price of \$45,000 if the original owner vacated the lease. The group's assessment was that the type of ranch analyzed in this report could attract that lease price because of the value of the amenities, including both market and non-market values. But this issue will vary with each type of property considered, and the OSLI needs to consider future leasing value with different lessees in each case.

Scenario Two: The Grazing Lands Scenario

The grazing lands scenario assumes that the same amount of money used to purchase the prototype ranch, \$1,500,000, could be used to purchase grazing lands. The SG also assumed that by using this same amount of money, the market value of existing OSLI controlled property could be evaluated for income potential and appreciation value to compare existing OSLI lands (with these same potentials) to the prototype ranch. The results, using \$1,500,000 worth of grazing lands for income and appreciation over a 25-year period, are shown in Table 4.

The land type assumed for the grazing lands portion of the analysis was dry pastureland, analogous to the range productivity of such land in eastern Wyoming. The average range productivity is reported by Bastian et al (1999) as .46 AUMs per acre. Pastureland in this region was valued at \$129 per acre during the 1996-1998 time period. The appreciation rate for this type of land is difficult to estimate because each parcel has its own characteristics that are hard to value over time unless the same parcel is resold. An average annual appreciation rate of 2.1 percent was obtained by breaking down the rate of growth of unimproved eastern Wyoming dry pasture found in two survey-based reports (Stephenson and Vanvig 1978 and Bastian et al. 1999). This value was then corroborated through interviews with ranch brokers as being reasonable for parcels of grazing land that have mostly agricultural value.

Table 4. Estimated grazing lands income and appreciation value to the state.

Total lease income after 25 years	\$725,000
Land value after 25 years	\$2,499,000
Total value of asset and income at end of lease	\$3,224,000

Scenario Three: The Investment Portfolio

The SG felt that it was important to look at all types of investment opportunities currently used by the OSLI. Because the OSLI’s obligation is to maximize income to the beneficiaries from lands and assets under its management, another option would be to put the monies in financial instruments (stocks and bonds). With a booming stock market during the 1990s, there was strong pressure for the state to increase the rate of return from market investments to the investment fund. So, changes in investment strategies were made in 1997. However, the recent downturn in the market, exacerbated by the events of September 11, 2001, has cooled enthusiasm for this idea. Fortunately, the state treasurer did not invest the full 55 percent in equities allowed by law. Consequently, the returns on state investments have been modest but positive.

Since 1997, the overall annual rate of return has been 5.73 percent, but it is projected to reach 6.7 percent. The 5.73 value represents income from all types of investments and reflects the heavy influence of government bonds. The projected rate of 6.7 percent was used in this scenario to simulate returns to the state over the life of the lease from monies invested in the market instead of those held in real estate. For comparison, it is interesting to note that the state earned a 12.8 percent return during the fiscal year 2000 on the equities portion of its financial portfolio.

Comparison of Scenarios

The results of the analysis of the three scenarios are summarized in Table 5. From an annual income standpoint, the financial portfolio gives the highest return. However, because of the higher amenity value of the ranch, the ranch has a higher overall return when appreciation of the asset is considered.

Table 5. Income and asset appreciation estimates for three scenarios for 25 years.

	River Ranch	Grazing lands	Financial portfolio
Total annual revenue	\$1,125,000	\$725,000	\$2,513000
Rate of return/lease fee	<i>3 percent</i>	<i>1.9 percent</i>	<i>6.7 percent</i>
Appreciated asset value	\$7,242,000	\$2,499,000	\$1,500,000
Avg. annual appreciation rate	<i>6.5 percent</i>	<i>2.1 percent</i>	<i>0 percent</i>
Total of revenue and appreciation	\$8,367,000	\$3,224,000	\$4,013,000
Internal Rate of Return (IRR)	<i>7.9 percent</i>	<i>3.4 percent</i>	<i>6.6 percent</i>
Net present value (NPV) 3 percent discount rate	\$2,565,000	\$135,000	\$918,000

The next step is to compare the ranch to each of the other scenarios, individually, to see the marginal benefits of one over the other. Table 6 shows the financial portfolio subtracted from the ranch. The difference in income is negative because the financial portfolio returns more than the ranch in annual income.

The asset appreciation row in Table 6 shows that the ranch appreciates in value, whereas the financial portfolio does not. Once again, the OSLI is constrained to distribute all income annually; therefore, the principle cannot appreciate under current state law. The ranch, being a higher amenity property, appreciates at a higher rate than most agricultural property. The rate of 6.5 percent was determined by consulting with ranch brokers who conservatively estimated growth rate for this type of property at 6-7 percent per year.

Table 6. Comparison of ranch versus financial portfolio scenario estimates for 25 years.

	River Ranch	Financial portfolio	Total differential
Total annual revenue	\$1,125,000	\$2,513000	(\$1,388000)
Appreciated asset value	\$7,242,000	\$1,500,000	\$5,742,000
Total of revenue and appreciation	\$8,367,000	\$4,013,000	\$4,354000

The comparison of results between the prototype ranch and the grazing lands scenario are summarized in Table 7. The higher annual return of the ranch is due to the lease rate, which as noted, is 3 percent of the \$1,500,000 purchase price/market value of the ranch (\$45,000 per year). In contrast, the grazing lands generated an estimated \$18,900 in 2000 and are projected to grow at about 2 percent (1.9 percent) per year, reaching an estimated \$41,400 in annual income by 2025.

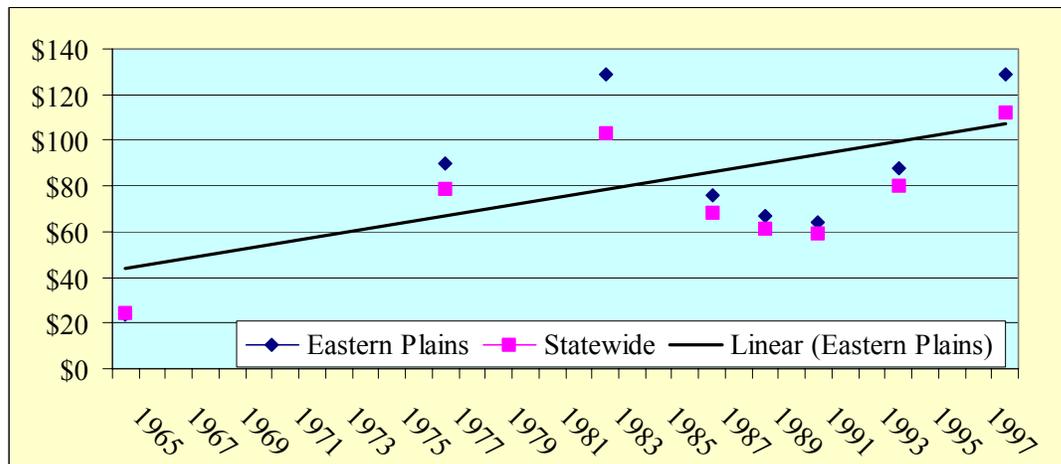
Table 7. Comparison of ranch versus grazing lands scenario estimate for 25 years.

	River Ranch	Grazing lands	Total differential
Total annual revenue	\$1,125,000	\$725,000	\$400,000
Appreciated asset value	\$7,242,000	\$2,499,000	\$4,678,000
Total of revenue and appreciation	\$8,367,000	\$3,224,000	\$5,078,000

The largest difference between the two scenarios comes with the appreciation of the asset (land). Ranch prices have been on the increase for more than 10 years, leaving many people believing that land values are dramatically increasing (which they are in aggregate). Conversations with ranch brokers and appraisers leave little doubt that this is the common perception. It is fair to say the consensus is that land values in Wyoming are currently growing at about 0.5 percent per month or 6 percent per year. Wyoming resale data obtained from Farm Credit Services for the latter half of the 1990s confirms this point of view; however, closer inspection of the data revealed that the growth rate on unimproved pasture is so low that it was not measurable with any confidence. Other categories of land, such as mountain pasture, meadowland, surface water, riparian zones, and building improvements, appear to drive ranch values. The effects of amenity values seem evident, but it was not possible to really separate these values. The small sample size and short duration of the data (approximately five years) did not make them suitable for longer-term analysis, but it lends insight into current market conditions for ranch property.

For a better perspective on long-term market conditions for unimproved pasture, the SG turned to previous survey-based publications from the University of Wyoming Cooperative Extension Service and the Agricultural Experiment Station: *Wyoming Rural Real Estate Market* (Stephenson and Vanvig 1978) and the *Wyoming Farm and Ranch Land Market* series (various 1982-1999). Although the data are limited, these publications illustrate that pastureland prices have not grown at a stable rate and can actually decline. Unimproved dry pasture prices for available dates in eastern Wyoming, along with the statewide average price and a trend line for eastern Wyoming, are shown in Figure 1. The trend shows a general increase; however, prices appear to have grown until the late 1970s or early 1980s (missing data, mid-1960 to mid-1970s). Prices declined sharply in the early 1980s and remained low until the early 1990s when more data became available. The trend in the last decade has been decidedly upward, but the slowing economy of 2000 and 2001 has started to soften the market. The overall annual appreciation rate in unimproved pastureland prices between 1977 and 1998 is about 2 percent. The SG used this value in the analysis because it roughly corresponds to the length of the lease being considered.

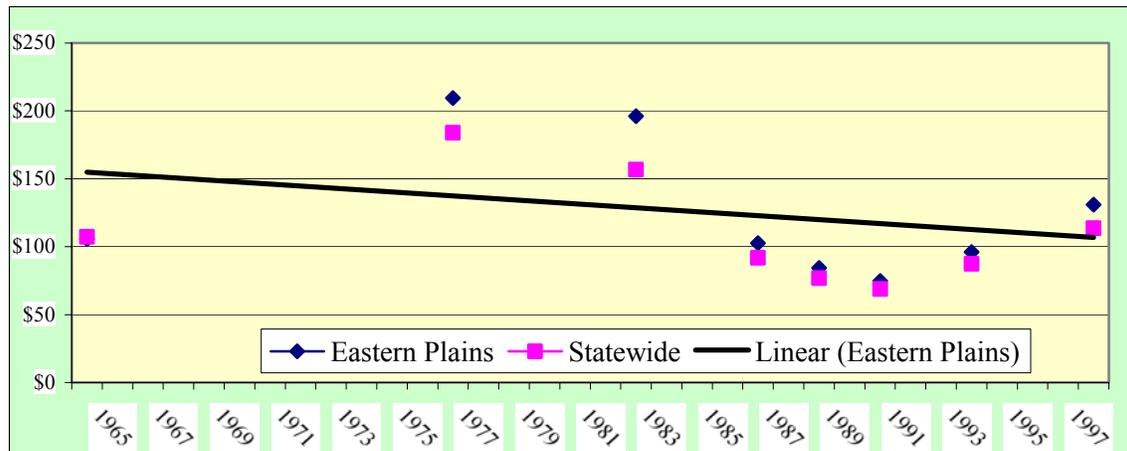
Figure 2. Grazing land prices for eastern Wyoming and statewide averages, 1965-1998.



Closer inspection of the data reveals that when adjusted for inflation, the real growth rate of pastureland is negative over the same period (1977-1998). Using the Gross Domestic Product (GDP) deflator produced by the Presidents Council of Economic

Advisors, the data were adjusted for inflation to 1999 dollars (Figure 2). The results show that pastureland purchased in 1965 grew at an anemic .72 percent per year in the eastern half of the state and at an even more dismal .18 percent for the statewide average. From 1977 to 1998, the picture is even bleaker. This was a time of high inflation and expanding globalization. Grain sales to the Soviet Union, oil shocks, and a cyclical high in the cattle market helped to push up pasture prices. Real prices for unimproved dry pastureland decreased 1.78 and 1.81 percent per year, respectively, between 1977 and 1998 for eastern Wyoming and for average land across the state.

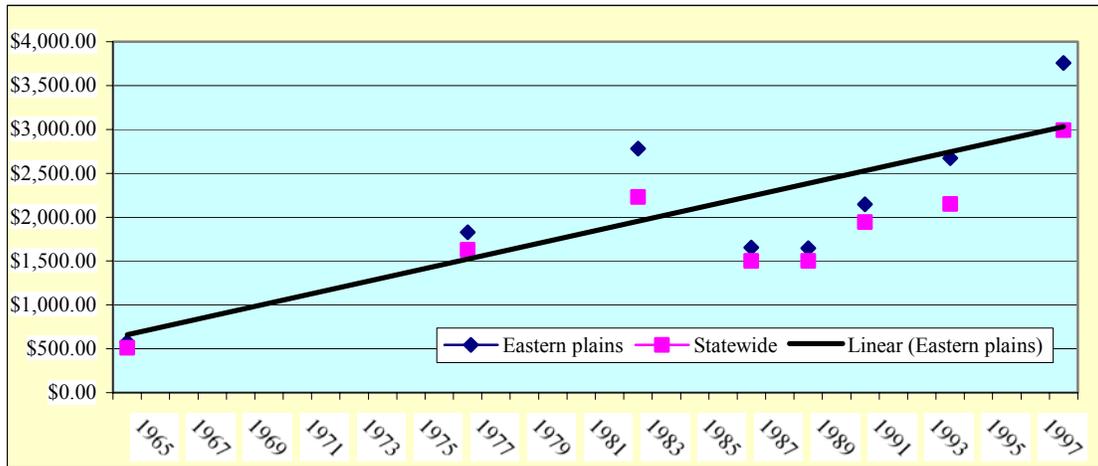
Figure 3. Grazing land prices for eastern Wyoming and statewide averages, 1965-1998, adjusted for inflation to 1999 dollars.



Intuitively, most people believe that ranch prices have been rising over time. Data from the same University of Wyoming studies used above shows this view to be correct. Figure 4 shows that Eastern Wyoming ranch prices in dollars per animal unit have risen 105 percent between 1977 and 1998. But as with grazing land prices, it has not been a straight-line advance. The same market forces acting upon grazing land prices impact ranch units as well. The difference is that ranch units contain not only grazing lands, but also the entire bundle of resources. This could include hay meadows, riparian areas, buildings, etc. as well as unimproved dry pastureland. Another way to view this is that the purchaser of a ranch controls the entire means of production and therefore has a more valuable asset as the ability to produce is more assured. Additionally, the amenity value

of the unit as well as the value of improvements could add significantly to the sale price and appreciation potential.

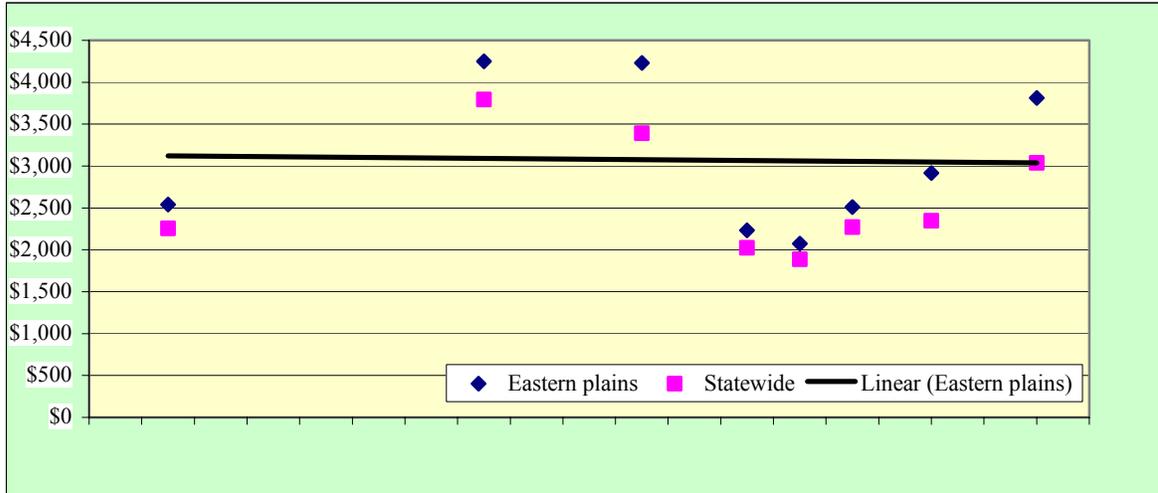
Figure 4. Ranch prices in dollars per animal unit, eastern Wyoming and statewide averages, 1965-1998.



Inflation has the same significant impact on ranch units as it has on unimproved pastureland prices. Yet the bundle of resources retains more of its value over time. Ranch prices in dollars per animal unit, adjusted for inflation are shown in Figure 5. Eastern Wyoming ranch prices in dollars per animal unit have declined 10.3 percent between 1977 and 1998 (note that 1977 was near the peak in the market cycle). The overall trend is flat to slightly downward showing that the ranch units have retained their value even through the boom and bust years of the 1970s and 1980s.

The important message is the comparison of real growth rates of pastureland and ranch units. Where pastureland alone is losing value over time, ranch units are holding steady. And, profitability depends on where in the market cycle, purchase and sale occur. In other words, Long-term trends are helpful making investment decisions, but there is still an element of market timing, that is, when the sale or purchase of the land asset occurs, that can have a major impact on the profitability of the venture.

Figure 5. Ranch prices in dollars per animal unit, eastern Wyoming and statewide averages, 1965-1998 adjusted for inflation to 1999 dollars.



By looking at a land status map of Wyoming, the connection between the data and the project can be seen. A large percentage of state school lands are located in the original scattered parcels designated by the township and range survey system more than a century ago. These parcels are mostly unimproved pastureland; their value on the open market would most likely reflect more agricultural than amenity value.

Two Measures for Comparison: The IRR and NPV

Two measures of value were calculated to compare the financial desirability of the scenarios. Net present value (NPV) and internal rate of return (IRR) are two measures often used to rank investment opportunities in order of financial attractiveness. Both measures account for the time value of money by discounting the income stream. NPV has the advantage in that a discount rate that is acceptable for all alternatives can be set and used as a point of comparison. For this study, the group chose a 6 percent rate of return.

Table 8 contains the results of the NPV calculations for the three scenarios. These calculations were made using only the income from each of the scenarios to show what that income would be worth as a lump sum today. The River Ranch is the leader by this measure due to the higher appreciation rate. Even though the financial portfolio

generates more annual income, the NPV is driven down by the fact that the principle does not appreciate. Grazing lands, with a low appreciation rate and a low annual return, fared the worst with this measure.

Table 8. Net present value (6 percent discount rate).

	Net present value
River Ranch lease income	\$629,000
Grazing lands income	-\$580,000
Financial portfolio income	\$108,000

The IRR, also known as the discounted cash flow rate of return (DCFROR), allows the comparison of markedly different investment opportunities under equal financial conditions. The IRR calculation does not impose a discount rate but allows each scenario to find its own. By calculating the IRR, at which the present value of the project's future income streams is equal to zero, disparate projects can be compared. Quite simply, a project with a higher IRR is a better investment than a project with a lower IRR. An IRR of 10 percent says that 10 percent is the discount rate that it takes to create a zero NPV of the project's annual cash flows. If the project has a 5 percent IRR, this indicates that the project's annual cash flows are less because it takes a lower discount rate to create a zero NPV. The IRR calculation emphasizes the time value of money because early cash flows are more valuable and less discounted than later cash flows. The results of the IRR calculations are shown in Table 9.

Table 9. Internal rate of return.

	Internal rate of return
River Ranch lease income	7.9%
Grazing lands income	3.4%
Financial portfolio income	6.6%

Table 9 shows how the higher amenity value of the ranch plays a critical role in increasing returns over the grazing land and financial portfolio scenarios. Because the financial portfolio is constrained by state laws requiring 100 percent annual distribution of income, there is no appreciated asset return. Additionally, the effects of the time value of money push down the IRR when there is no gain in principle. Indeed, it would be negative if the effects of inflation were calculated. Grazing lands fair only slightly better since they have a low annual appreciation rate. The high-amenity value of the ranch creates a higher long-term appreciation rate, so even with lower annual income than the financial portfolio, it produces a higher total investment rate over time. Using the IRR, it is reasonable to conclude that the ranch proposal, though it returns less on an annual basis, is the better long-term financial investment alternative.

Table 10. River Ranch scenario sensitivity to changes in long-term growth rates.

Appreciation rate	Ranch value
7.5%	\$10,273,000
6.5%	\$8,367,000
5.5%	\$6,845,000
4.5%	\$5,633,000
3.5%	\$4,670,000
2.655%	\$4,013,000
2.5%	\$3,906,000
1.5%	\$3,301,000
1.353%	\$3,224,000

A final test is to examine the sensitivity of the River Ranch scenario value to changes in the appreciation rate. As previously stated, the 6.5 percent annual appreciation rate is considered conservative for a high amenity property such as the River Ranch. This compares favorably with the eastern plains average annual appreciation rate of 5.0 percent found in the data (1977 to 1998). The question then becomes, at what rate would the ranch have to appreciate to equal the alternative scenarios? Table 10 shows an array

of interest rates and the associated ranch scenario values. To match the returns from the financial portfolio, the ranch would have to appreciate at 2.655 percent. To match the return of the grazing lands scenario, the ranch would have to appreciate at 1.353 percent.

Limitations

Every attempt was made in this analysis to use the most timely, accurate data available, including telephone contacts, personal interviews, and Internet research of state and federal databases. However, the results are limited by the accuracy of the data. This is especially true of growth rate percentages, which can be obtained from historical data but may not be reliable for projection into the future. **The goal of the project was not to actually estimate revenue to the OSLI but to compare the desirability of alternative forms of revenue generation. In that respect, the SG believes it has succeeded, but readers should view the actual revenue generation with caution because economic conditions may change over time.**

Summary

The SG developed three different scenarios to evaluate the possible financial returns on an investment by the OSLI in a higher amenity property. This type of investment could be a model for future purchases and/or consolidation of current OSLI holdings as a way of streamlining management and increasing revenue for the beneficiaries. The economic analysis shows that a traditional financial portfolio, generating the same rate as projected for the state's investment funds, would generate the highest annual revenue of the three scenarios over the long term. But this scenario lacks an element of diversification and also lacks the advantages of asset appreciation over time.

When asset appreciation is considered, the River Ranch option out-performs the financial portfolio scenario due to the appreciation rate of higher amenity property, which is more in demand than grazing lands. In spite of the fact that a long-term lease of the higher amenity property may not bring in as much annual revenue as a financial portfolio, the ranch would increase in value and then could be either sold or the lease renegotiated

at a higher price. **Diversification of state funds into real estate with higher appreciation value appears to make sense for the beneficiaries of the OSLI.**

3.0 Issues Related to Purchasing Agricultural Lands

If the Land Board decides to purchase high-amenity agricultural lands as proposed in the previous chapters, the SG recognizes there are many issues the board should consider. The group has identified the following important issues and suggests that these and others will need to be studied in depth before actual purchases are made.

Net gain or loss of public land in Wyoming

Stakeholders in Wyoming represent opposing views regarding the sale or purchase of public lands. Many people believe that no more private land should be transferred to public ownership. Others are opposed to shifting ownership of public lands to the private sector. Revenue from the sale of selected high-priced school lands (e.g., the proposed sale of state school lands within Teton County to the National Park Service) could be the source for the purchase of high-amenity agricultural lands as described in this study. In addition, some small, scattered, isolated parcels might be sold to provide revenue for the purchase of these lands. The type of purchases suggested in this study should not lead to any significant changes in the net acreage of State School lands.

Public access

Gaining more access for recreation, hunting, and fishing is a priority for many stakeholder groups in the state. The purchase of high-amenity land has the potential to provide increased public access to many different recreational opportunities. This type of purchase also might provide access to existing blocks of public lands. However, granting access to the purchased lands would have to be considered on a case-by-case basis. Some landowners might be unwilling to sell their ranches if unrestricted public access was a result. Also, some potential lessees might not be willing to lease lands with absolutely no restrictions on public access. For some lands, it might be desirable to consider creating special access opportunities for particular groups such as youth, the disabled, the elderly, or families only.

Creation of Demonstration Projects/Ranches

Closely related to the access issue is the idea that a ranch or large property owned by the state could become a demonstration project for the profitable management of public properties in the future. Natural resources and their multiple uses are becoming increasingly valuable; therefore, public lands need to be managed to realize the full value of the “bundle” of resources and opportunities. This bundle can include open space, preserving ranching culture, maintaining intact ranching families, maintaining and restoring riparian corridors, preserving view sheds, and avoiding sub-dividing important habitats.

In addition, a ranch such as the River Ranch could be used for a variety of educational purposes. As a working ranch, it could illustrate the cultural heritage of ranching while simultaneously showing people how to manage for multiple values such as habitat maintenance, fisheries development, and outdoor recreation. The bundle of resources and its management could be specified in the lease and would be specific to the particular site.

Lease arrangements

The SG examined several lease arrangements, including a lease for a state school lands ranch in another western state. It appears that there are several important aspects of the leasing arrangement that deserve careful attention, and they are listed below:

- The lease for a ranch or farm needs to be for about 25 years. This seems to be enough time to attract qualified lessees who would be willing to invest their time, labor energy, and personal capital in the project.
- Developing a thorough and appropriate lease agreement is critical to the success of the project. Purchasing a farm or ranch would probably increase the administrative workload for OSLI in the short run, but it would either increase or decrease the workload in the long run, depending on how the lease was written.

- Finding a lessee with the right qualifications to manage the property and maximize the resource potential is a high priority. This offers a unique opportunity for young families who are interested in maintaining an agricultural lifestyle and becoming involved in emerging management strategies for Wyoming public lands.

The SG assumed that the lease for this type of land would be sufficiently different from a standard agricultural lease so that it would qualify for a 25-year lease. But the time period for the lease is an issue that the board may have to consider. Legislative changes may be needed.

Ownership of BLM Leases

In the study's River Ranch, the existing BLM leases were integral and necessary components of the land block. Research suggests, however, that the state cannot hold BLM leases. A possible solution to this problem would be for the OSLI to create a private, non-profit corporation, which could hold the leases and sublease them to the lessee. Final resolution of this issue was not completed prior to printing this report. Further study will be required to ascertain the appropriate structure to enable the continued use to the BLM lease.

Conservation or Limited Term Easements

A major finding of the study is that land purchases could increase the revenue and the assets of the State School Land Trust and, at the same time, capture other values and resources for all citizens of the state. These values and resources include open space preservation, watershed protection, and recreation access. To preserve these values, it might be desirable to give the ranch or farm some status, such as a conservation easement or other restrictions on development, which would protect the integrity of the land for future generations.

Resale of Properties

A property bought under the auspices described in this study could be sold at a later date. As shown in preceding sections, carefully chosen properties should experience considerable appreciation. For example, a specific piece of property could appreciate in value very rapidly, and the board might want to sell the property and use the proceeds to enhance the trust in various ways. Part of the proceeds could be placed in the permanent fund and the rest used to buy another property with similar values but for less cost. The lessee might be given the opportunity to lease the new property or be paid a severance fee. This issue also brings up the question of leasing preference.

The Need for “Arms-Length” Transactions

The SG believes that total impartiality toward all parties involved in the potential sale of lands to the state must be maintained. The OS LI has rules and regulations covering land purchases, and these give all prospective sellers an equal opportunity.

Need for an Advisory Committee

In its final report (1996), the Select Committee on State Lands recommended that the board appoint a committee to advise “...on ways to implement a Total Asset Management Plan” (p. 13). The project proposed in this report is sufficiently complex so that the SG suggests the board would be well advised to create an advisory committee if it decides to proceed. The committee should consist of a wide range of citizens to ensure that all values and interests are considered as the project is developed. The use of an advisory committee on this project could serve as a test of the usefulness of an advisory committee for the larger work of the State School Land Trust.

Summary

The issues described in this report are not comprehensive but were offered as illustrations of the complexity of the potential project. Other issues would have to be considered, as well. All citizens should be given the opportunity, time, and information to consider all the issues related to the management of the State School Land Trust.

4.0 Observations and Conclusions

Observations

The 15 members of the SG worked for seven months to prepare this report. The group was primarily motivated by the desire to find ways to increase revenue to the beneficiaries by improving the risk profile of the existing land base.

Retaining a land base is important because the land and the natural resources on it can provide many additional benefits to the citizens of the state such as open space, recreation, wildlife habitat, and preservation of the ranching culture. **However, the group recognizes that any investment of school trust funds must be able to provide increased economic benefit to the trust and its beneficiaries.**

The study started with the assumption that buying certain types of real estate would be a wise economic investment. The analysis focused specifically on the advantages of buying a high-amenity agricultural land that could generate greater lease fees and appreciate in value over time. Three investment scenarios were chosen for an economic evaluation: 1) a prototype high amenity property, dubbed the “river ranch”, 2) a grazing lands scenario, and 3) a financial portfolio.

Conclusions

An economic analysis of these three scenarios showed the prototype ranch scenario with high-amenity values could outperform the other two scenarios in absolute economic terms. **Thus, the SG concluded that diversification of state funds into real estate with high appreciation potential will increase the value of the State School Land Trust.**

State statutes and rules adopted by the board already allow for real estate purchases. According to the rules, once an option on a piece of property is secured, then a detailed economic analysis and other factors are to be considered prior to completion of any transaction. Therefore, the entire land acquisition process suggested here would be open to the public for full and thorough scrutiny before any purchase is finalized.

Recommendation

The Board of Land Commissioners should consider purchasing a high amenity agricultural property based on the information and conclusions set forth in this study. If the board accepts this recommendation, the following actions should be initiated:

The OSLI should seek an option on a high amenity farm or ranch, basing the selection on the data and information contained in this study. An advisory committee should be formed to assist the OSLI in the process of selecting the high amenity farm or ranch. This advisory committee could continue researching issues identified in this study. It could also gather public comment on the land acquisition and ensure that sufficient information and opportunities for involvement are afforded the public so that it can confidently support the state's action.

If the Board should decide to proceed with the land acquisition described in this recommendation, some—or maybe even all—of the members of the Study Group are willing to continue with researching any and all aspects of the proposed project. It is also likely that the Institute for Environment and Natural Resources would fund continuation of this research effort.

References

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Appendix A

<i>Name</i>	<i>Location</i>	<i>Occupation</i>
Rex Arney	Casper	Attorney
Andrea Brandenburg	Lander	Facilitator
Roger Coupal	Laramie	Assistant Professor–UW
Tom Foulke	Laramie	Assistant Research Scientist–UW
Tom Gaddis	Laramie	Owner–Laramie Fire Extinguishers
Marguerite Herman	Cheyenne	League of Women Voters
Elizabeth Horsch	Casper	Educator–Retired/Consultant
Wayne Hubert	Laramie	Professor–UW
Bob Kayser	Douglas	Rancher
Christine Lichtenfels	Lander	Wyoming Outdoor Council
Fred Lindzey	Laramie	Associate Professor–UW
Tony Malmberg	Lander	Rancher
Erika Mazza	Laramie	Graduate Student–UW Agricultural and Applied Economics
David (Tex) Taylor	Laramie	Professor–UW
Jim Thompson	Laramie	Associate Professor–UW
Del Tinsley	Casper	Publisher–Wyoming Livestock Roundup
Jim Whalen	Cheyenne	Asst. Director–Office of State Lands and Investments and Ex-Officio Adviser to the Project