

University of Alaska System
Land Management Strategic Plan
2017 to 2030

UA Facilities and Land Management

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Approved by the University of Alaska
Board of Regents on June 2, 2017.



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Introduction

The “Land Management Strategic Plan” for the University of Alaska (UA), 2017 to 2030 was prepared by University of Alaska, Facilities & Land Management Office (FLMO). It is approved by the University Board of Regents to provide policy guidance for earning revenue from University lands and natural resources, and to address the challenges and opportunities for the University of Alaska as a land grant institution.

The purpose of the federal land grants that accompanied the creation of the Alaska Agricultural College and School of Mines, the predecessor of the current University of Alaska system, was to provide the University with a way to generate revenue to support higher education. This responsibility continues to be the primary purpose for the FLMO staff and remains the focus of this Strategic Plan.

This Strategic Plan outlines how UA Facilities and Land Management responsibilities help to achieve the overall University system goals. It assesses the challenges and opportunities that face the FLMO staff in future years and, more specifically, over the near term five plus years. This plan identifies obstacles to overcome and strengths on which to build. It also includes specific tools and measurements to evaluate progress in implementing the strategies. While this document provides policy guidance for University staff, the intended audience is also public and private sector land managers, developers, and elected officials.

The FLMO coordinates with other agency and private land managers to improve efficiency of operation and increase net revenue. This plan demonstrates that the University takes its responsibility for stewardship seriously.

Appendix A - Provides historical Facilities and Land Management gross revenues and projects future revenue.

Appendix B – Lists the University Land Grants (in acres) by state.

Appendix C – Chart of the historical gross revenues and revenue projections for Facilities and Land Management.

Executive Summary

The primary purpose of the Strategic Plan is to outline the University of Alaska Facilities and Land Management Office's (FLMO) responsibilities and identify future actions to help achieve the overall University system goals.

The plan identifies seven asset classes (land; forest resources; oil, gas, coal, and coalbed methane; minerals and materials; real property; renewable energy; mitigation marketing); and multiple means of earning revenue from those assets. Each non-cash asset is assigned to a primary and secondary asset class. The asset class is entered in the FLMO database and modified as more information is gathered about the property, or external factors affect its highest and best use designation(s).

By approving this plan, the Board of Regents and the University Administration are providing policy direction and general support for specific priorities and actions in the next five years.

The policy priorities are:

1. Complete the University of Alaska Land Grant Initiative to increase the university land inventory and natural resource asset base,
2. Evaluate land holdings and identify opportunities for natural resource harvest and extraction and for commercial real property,
3. Continue to lease and develop parcels with on-going revenue potential rather than sell them outright,
4. Take the risk appropriate for each asset class,
5. Continue to collect data that supports classification of parcels into asset classes. Develop geographical software for planning and development,
6. Invest in the people and tools to enhance operating functions

The primary actions are:

1. Build working relationships with other land management agencies to reduce administrative overhead and increase scale of operation and financial return,
2. Pursue commercial development (for land and natural resources) using partnerships with corporate land managers to increase revenue,
3. Build working relationships with UA researchers to enhance knowledge of marketable natural resources associated with university parcels,
4. Diversify marketing approaches to increase awareness of land availability and opportunities for development,
5. Assign remaining parcels to asset classes to improve the university's understanding for revenue potential,
6. Encourage the University of Alaska Foundation to seek appropriate land and real property donations.

A detailed outline of the priorities and actions are listed within the "Five Year Specific Strategies" contained on pages 16-19 of this plan. On an annual basis, FLMO will evaluate the action plan, assess its current needs and identify actions and changes necessary to address those needs. This annual evaluation will be summarized and presented in a status report to the Board of Regents Facilities & Land Management Committee.

The University of Alaska: Land Grant Institution

UA Mission, Values, and Goals

The mission of the University of Alaska System is to inspire learning, and to advance and disseminate knowledge through teaching, research, and public service, emphasizing the North and its diverse peoples.

UA Values

Unity in promoting communication and collaboration.

Accountability to our students, faculty, staff, alumni, and the diverse peoples of Alaska.

Leadership for Alaska's people and institutions.

Excellence in our programs and services.

Accessibility for all Alaskans.

Dedication to serving community needs.

Stewardship of our resources.

Recognition of the University's role as an important and vital economic force in the State of Alaska has been significantly enhanced over the last several years. The University administration has implemented programs reflecting University values and has built positive public and legislative relationships. The University is positioning itself to help lead the State out of its current economic recession.

The Strategic Pathways framework was introduced in January 2016 to strengthen UA's service to the state. Facilities and Land Management has a role to play in achieving the Core Principles of the Strategic Pathways Framework: Access, Excellence and Fiscal Sustainability. Specifically, the income from FLMO management activities helps diversify the University's revenue and provides funds for student scholarships.

Federal and State Land Grants

In 1915, federal legislation granted land to the Territory of Alaska to support the "Territorial Agricultural College and School of Mines" along with each Section 33 (640 acres per section) located in each township of the Tanana Valley. In 1929, federal legislation granted an additional 100,000 acres of land to the Territory of Alaska, for the exclusive use and benefit of the Agricultural College and School of Mines.

With the passage of the Alaska Statehood Act in 1958, the 1915 Act was repealed. In 1959, when Alaska became a state, only a small percentage of the Federal grant lands from the Acts of 1915 and 1929 had been conveyed to the University. Consequently, the State of Alaska received over 104 million acres from the Federal Government, more than any other state, as shown in Appendix B. As a result, the University received a smaller land grant for higher education than any other state except for Delaware. Securing additional land grants would significantly enhance FLMO's ability to generate investable income to support University programs.

Land Grant Endowment Trust Fund

Land development is necessary to convert trust land assets into financial assets for the benefit of the University's mission. The net revenues from the sale, lease, development, and other income generated from trust lands are deposited into the University's Land Grant Endowment Trust Fund (Fund). This Fund along with the University's trust land and natural resource assets comprise the Land Grant Trust. The Fund represents the University's original land grant, invested proceeds from the development of these resources and appreciation of invested funds. The Inflation-Proofing Fund represents reinvested earnings of the Land Grant Endowment Trust Fund and net proceeds of non-trust real property transactions designated for preservation of the long-term purchasing strength of the endowment. The Natural Resources Fund represents spendable funds designated by Regents' Policy to provide support for agriculture, forestry, fisheries, mineral, and other University programs.

The University of Alaska Foundation Trustees manage the Fund as an endowment fund, at the direction of the University of Alaska Board of Regents. The Fund currently totals approximately \$134 million at December 31, 2016. It is managed under standard endowment accounting practices with 4.5% of the trailing five year average made available for expenditure on an annual basis. The current contribution of Fund earnings to University programs is modest (\$5.8 million for FY17) in comparison to legislative appropriations (\$325 million in FY17). The importance of this contribution will grow as the University receives additional federal and state entitlement land to complete its land grant and UA FLMO continues to successfully convert the University's natural resources, land, and real property assets into investible income.

Earnings from the Land Grant Endowment Trust Fund

The Board of Regents has adopted a policy for how the earnings from the Fund are to be used. Among other things, the earnings support the UA Scholars Program. This program offers a \$12,000 scholarship to the top 10% of the graduates from Alaska high schools each year. It is the cornerstone of the University's effort to retain in the state and to educate Alaska's brightest graduating high school seniors. The program has been successful and currently has 1800 active participants. In FY16, the annual cost of this program was about \$3.8 million. Earnings from the Fund also help to finance an array of important initiatives and the day-to-day operations of UA FLMO.

Land and Property Management

University of Alaska Lands and Properties

The University of Alaska owns approximately 151,000 acres of land throughout the State. This includes approximately 12,000 acres designated as educational property and 139,000 acres designated as investment property. Educational property includes the three main campuses in Fairbanks, Anchorage, and Juneau, over a dozen branch campuses, and numerous research sites and facilities. All land not specifically designated as educational property is designated as investment property.

UA Facilities and Land Management Mission

The primary role of UA FLMO is to convert the University's grant land assets to investable income to support the University's educational mission and to prudently manage land dedicated for educational purposes consistent with campus goals and objectives. In addition, UA FLMO is responsible for managing non-trust land assets, which include purchased and donated properties.

University trust land designated for investment purposes includes approximately 125,000 acres owned in fee simple, 12,000 acres of surface rights, 14,000 acres of subsurface rights, and 62,000 acres of timber harvesting rights. An additional 2,000 acres of land donations and purchases are also managed as investment lands. UA FLMO development activities include residential subdivisions, recreational and commercial parcels, timber sales, gravel extraction sales, land and building acquisitions and sales, residential and commercial leases, mineral leases, oil and gas leases, property easements, and permits.

UA FLMO is responsible for managing grant land designated for educational purposes and acquiring additional lands necessary to develop and maintain the campus programs. In addition, FLMO coordinates, secures and maintains hundreds of leases, permits, and other real estate interests with other agencies and entities on behalf of faculty, scientific researchers and the campuses on a yearly basis.

UA Facilities and Land Management Development Guidelines

The Board of Regents sets policies consistent with Alaska Statutes for management of University lands through a hierarchy of plans, beginning with the overarching Strategic Plan, followed by Development Plans, and Disposal Plans of specific projects. The University seeks public comment through a public notice of its Development Plans and Disposal Plans in accordance with Board policy. Development projects and specific project plans can also be subject to local, state, and federal government regulations. In addition to the requirements of Board policy and of local, state, and federal laws, FLMO commonly holds public workshops to address local impacts, and when relevant, for development issues such as density, lot sizes, road maintenance, covenants, trail systems, and architectural standards.

University investment lands are managed for the economic benefit of the Fund, not the public at large. While the University will accommodate public uses through permitting processes, this focus may conflict with priorities of various public and private user groups. University education lands are managed for the benefit of the campus community (students, faculty and staff) and the University system overall, then accommodating public use to the extent it does not inhibit development to meet the education needs of the University. Each campus maintains a campus development plan approved by the Board of Regents and coordinated with local governing agencies as appropriate.

Mitigation of liability associated with development of natural resources requires careful risk and reward evaluation before a final decision to commence a development project is made. FLMO makes every effort to manage development using the best data available.

Challenges of Managing University Land

The main constraint the University of Alaska faces when trying to maximize revenue for the Fund is the modest amount of land it owns when compared to other large landowners, such as the State of Alaska or the Alaska Mental Health Trust Authority. The State of Alaska is entitled to over 103 million acres of land

and the Alaska Mental Health Trust Authority holds title to one million acres with a mandate similar to the University - to earn revenue for its beneficiaries. Currently, with only 139,000 acres of investment property, the University has insufficient land to make a significant contribution to support of university programs. Completing the entitlement would improve the University's ability to increase revenue.

The University's properties are, for the most part, small parcels scattered throughout the state. The holdings of large landowners such as municipalities are likely to be centralized in particular geographic areas where they can be more efficiently managed. This concentration also makes it possible for the landowner to have greater influence over development decisions in the locality.

National and local environmental groups often oppose development of University parcels, particularly natural resource extraction projects. The University makes considerable effort to develop its property in sustainable and environmentally responsible ways. Recent examples of this are the timber harvests at Wrangell Narrows, South Mitkof, and Blank Inlet which were conducted using helicopters after several meetings with local officials and addressing residents' concerns from nearby communities. Now completed, there is little visible evidence of harvest.

A challenge facing all landowners is having access to personnel knowledgeable in managing all the asset classes. FLMO began building relationships with UA researchers, other state and local land and natural resource management agencies, and private owners such as native corporations to strengthen UA's ability to make the best data-driven decisions about development projects and ensure efficient administration of contracts.



Banana Point, South Mitkof, Mitkof Island Alaska



Helicopter harvest operations, Mitkof Island, Alaska

Competitive Advantage

UA FLMO development projects must compete with a variety of land and resource offerings from the state and municipal governments, native corporations, and private landowners. UA FLMO's competitive advantage is its ability to respond quickly to resource development opportunities. This allows the FLMO to seize opportunities, resulting in greater income from the University's land grant assets.

Responsibility comes with this flexibility. FLMO must accurately assess the social, economic, and environmental consequences associated with development of its land grant assets to ensure that the University's value of stewardship is fulfilled. Good stewardship is further reinforced through the University's public notice requirements and working with adjacent landowners. UA FLMO must be accountable to the University community and all Alaskans for the actions it takes on their behalf. Fulfilling these responsibilities means that FLMO staff must engage in on-going education, business and community networking, and self-evaluation.

The Strategy

Long-Term Strategic Plan Overview

UA FLMO's focus for the longer term is conversion of land and resource assets to investible and spendable financial assets in support of the University's educational goals. Each of the seven main asset classes discussed in Appendix A (land; forest resources; oil, gas, coal, and coalbed methane; minerals and materials; real property; renewable energy; and mitigation marketing) has its own characteristics and constraints for both near and long-term development potential.

With few exceptions, development of surface and subsurface resources, paired with diversified investment of the proceeds from resource and real property sales, far exceeds the price appreciation for sale of raw land. While resource development can take up front capital and evaluated for risk factors, (many of which may be outside FLMO's control) the overall financial return to the University can be significant. Examples include over \$45 million raised from past timber sales and the \$2.9 million raised from sales of subsurface agreements and royalties. With completion of the University's land entitlements, future projection for revenues from lands, resources, and sale of timber could be upwards of \$100 million over 20 to 30 years. The actual returns can be highly variable to predict at a current time since they will be directly associated with supply and demand, and global market conditions present at the time of sale.

Historically, sale of land has been the most reliable, low-risk source of revenue generated by FLMO. Forest timber sales have generated substantial revenues to the University and some parcels harvested in the past will be nearing the second growth harvest potential in the future. Success in the resource asset classes requires time, knowledge, planning, in some cases up front capital for access, as well as, coordination with many parties and agencies to be successful. While development of University resource investments have had a higher return, they require active management and involve some risk.

FLMO will continue to invest in the staff and technology necessary to manage and market the University's grant lands and resources. In discussing the strategies for each asset class, this strategic plan considers that the University may receive a significant grant of additional investment land during the first five years. Revenue from sale of natural resources such as timber, oil and gas, minerals, and gravel can be less predictable; however, the above revenue projection is based on FMLO financial history of the past 4-5 years. Active development of these resources have potential to return more than land sales over the long term, particularly if additional lands are granted, and received by the University.



Mat-Su Schrock Road Property

The small size and remote nature of the University’s current land grant holdings means the FLMO must be prepared to respond quickly to arising opportunities in a responsible manner. As an example, FLMO was able to leverage recent material sales at Point MacKenzie and Broad Pass, by taking advantage of area construction contracts to generate significant revenue. Additionally, through close partnerships with the Alaska Division of Forestry, multiple small-scale timber sale opportunities were coordinated in Southeast and Fairbanks areas. Assuming that the University receives a grant of additional lands, FLMO must be prepared to assess the revenue potential of the resources offered, select land best suited for the University’s portfolio, and offer those resources as markets warrant. UA FLMO’s relationships and professional way of doing business can also significantly enhance the University’s reputation for excellence.

Although the primary focus of FLMO is to transform grant land assets into cash assets; its responsibilities in performing non-revenue generating property transactions associated with University educational and administrative programs take up a large proportion of staff time. Significant resources, technical expertise, and time is needed to perform required transactions (i.e. obtaining permits, obtaining & negotiating leases, responding to inquiries, granting easements, addressing trespass activities) for UA’s educational properties, and FLMO provides a valuable benefit to the campus and academic programs regardless of revenue generating potential. Efforts will continue to streamline and increase efficiency in performing this management responsibility without detriment to the programs, in order for FLMO staff time to focus on revenue-producing activities.

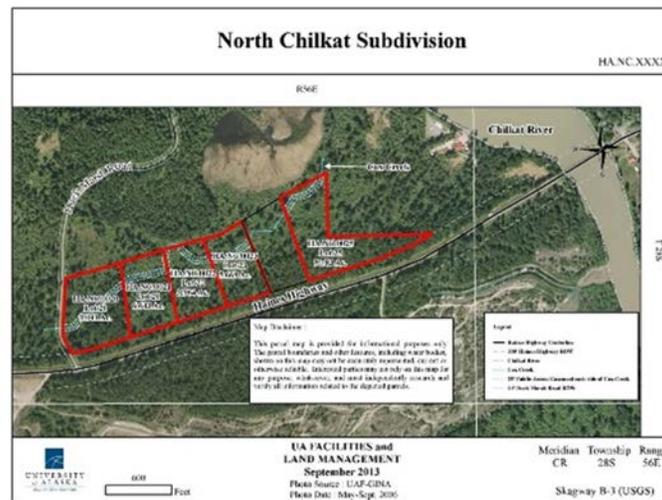
Asset Classes

University owned properties are categorized as educational or investment. Those that are investment are further identified with an associated asset class(es). At the current time, the majority of investment parcels are classified where there is adequate information. Appendix A provides further historical gross revenue and projected future revenue expectations of properties in the seven asset classes, through a summary scan of relevant data compiled from state and national agencies. This led to development of strategies for FLMO to implement in near term. Following are specific strategies for addressing the high priority opportunities associated with each asset class and the goals that will be the focus for FLMO staff for the next five-years and on. Each goal lists specific measures for evaluating success.

LANDS

Revenue from the sale of subdivision lots developed by UA FLMO is expected to remain stable, and significantly reduced from earlier land sale years. The University's easily accessed and most desirable lands have already been sold, with a majority of remaining parcels remote and inaccessible. FLMO has historically developed and offered subdivision lots in areas of high demand and easy access first. These projects generally required modest development costs and provided favorable returns.

The University's current inventory of large parcels that can be easily developed and other desired attributes is limited. Most all new projects will require increased expense for planning, design, and construction of infrastructure, access, and additional time for agency reviews and public involvement.



Sample Subdivision Map

These challenges could slow the project completion time and represent some risk for capital investment recovery in the current economic downturn and Alaska recession. However, eventual returns will likely remain comparable to historic earnings. Some of the more ambitious subdivision developments on the horizon include projects in Prince William Sound near Whittier, Waterfall on Prince of Wales Island, Wrangell Narrows near Petersburg, lake front property near Big Lake, and residential development in the Fairbanks area.

Historic gross revenues from land development, including sales and leases, is characterized by occasional fluctuations due to spikes from large transactions or the lag time between starting a development and offering the lots for sale. It can take two years from the time a parcel is proposed for development by FLMO to the time the lots are offered to the public. The opportunity for large parcel sales, such as the sale of the Copper Center hotel site to Alaska Hotel Properties, Inc. or the sale of land for a Mat-Su road project, is limited. While large parcel transactions have a significant impact on revenue, they can take years to negotiate and depend on market factors, including a strong overall state economy. Parcels suitable for commercial development are also limited. Should the port at Point MacKenzie generate more traffic, the University owns substantial acreage that could be leased to provide an annual revenue stream from sale of materials and/or commercial development.



Mountain Point Lighthouse Subdivision Lots, Petersburg, Alaska

Unfortunately, as lot sales decline from sale contracts, interest revenue due to the reduction in land sale contracts is declining substantially (from \$600,000 annually to \$175,000).



Bunnell Park Subdivision, Fairbanks, Alaska

In the past, the University has sold or leased a few parcels of land for agricultural uses. In the last two years, interest is once again being shown in land suitable for crop farming or animal rearing. The University's strategy is to lease this type of land long term, if possible. During FY16 the University was successful in obtaining full title including subsurface estate for lands previously granted only for agricultural rights. This improved the options for highest and best use(s) of those parcels over time. The FLMO is also pursuing the subsurface rights to other parcels transferred without those rights to the University via previous state settlements.

The receipt of a grant of additional land will be sought in FY17. Historically, the sale of land raised almost \$98 million for the Fund. However, without receipt of additional land, this magnitude of revenue will not be possible, as evidenced by the average annual sale proceeds since 2011, which have reduced from \$4M

to \$1.5M. The University will continue its practice of retaining subsurface estate for any lands sold, as well as shifting focus to long-term leases rather than outright sales.

FOREST RESOURCES

A large proportion of UA FLMO's historic gross revenues have been derived from the sale of timber. Management of forest resources, particularly timber harvesting, focuses on long-term sustainability whether in southeast, southcentral, or interior Alaska. Cooperative management agreements and coordinated joint sales with other agencies will continue to be utilized in order to improve marketability, revenue, access, and lower contract administration costs.



Survey Creek, Edna Bay, Kosciusko Island, Alaska



South Mitkof, Mitkof Island, Alaska

Firewood permits were initiated as a measure to make a renewable energy resource available to rural households and manage trespass violations on lands throughout Alaska. This strategy will continue and may expand in some areas if there is interest on the more accessible parcels.

Forests are a renewable resource and when managed sustainably can provide annual revenue for generations and local jobs. With the federal government driving the switch from old growth to young growth harvest, UA FLMO is positioning the University to joint manage its forestry resources with other agencies. This will enable less costly management, a more predictable timber source for small local companies needing material, and annual resource revenue for the University. Achieving this goal depends heavily upon completing the land grant entitlement. To this end, UA is seeking up to 250,000 acres of timbered lands that could potentially generate up to \$2 to \$7 million yearly. Timber revenue is of course dependent on the market, companies being available to harvest, access, volume, tree species, and age.

Some parcels once harvested, may provide increased value for lots, tourist facilities and recreation.

OIL, GAS, COAL, AND COALBED METHANE

Facilities and Land Management anticipates nominal revenue generation from oil and gas leasing from FY18 through FY22. These revenues include leasing fees, royalties, and related administrative fees. A significant increase in oil and gas revenue could begin if industry begins or increases production on or near lands owned by the University. An example could be oil and gas interests located on the Kenai Peninsula

where the University has a few parcels of land. These lands are located in areas where there are some existing and newer initial exploration has indicated significant gas reserves.

Future oil, gas, and coal bed methane related revenue predictions are difficult to estimate because the exact locations and extent of proven reserves have not been determined. Future construction of a Sterling Highway gas pipeline will be required to bring some gas to market and has the potential to provide royalty payments to the University.

If oil and gas reserves were developed on or near University lands, the potential revenue would be a significant addition to the Land Grant Endowment Trust Fund. Lands with oil and gas potential are highly desirable for selection under any state or federal land grant bill.

The University derives a small amount of revenue from coal leases, and it does not appear likely that additional contracts will be forthcoming in the near term. There is interest by the state in coalbed methane development to supplement natural gas supplies until such time as the LNG pipeline is constructed. This may be a future opportunity for the University.

MINERALS AND MATERIALS



Port MacKenzie Reclaimed Material Site

Historically, revenue from mineral leases and material sales on University land has been insignificant. Global mineral market demands remain stable although there are some indications that the market for rare earth elements is growing at 6-7% per year and in 2013 was valued at \$3 billion (124,000 tons). The University owns acreage with mineral potential, particularly in areas of southeast Alaska where new data exists. The development of these properties is hindered by the lack of infrastructure and data demonstrating proven reserves.

The FLMO is aggressively exploring (with UA researchers) cost-effective ways to obtain this data, such as the use of hyperspectral imaging. Entering into agreements with individuals interested in exploring University lands for minerals requires improved data regarding location and estimated quantity of high value minerals. Mineral exploration and extraction operations generally require large capital investment. Should exploration occur, adequate insurance and performance bonds to protect the University in the event of environmental or operational damage to the property are necessary. Unless the University is able to partner with an experienced private investor, and aggressively negotiate favorable royalty

payment terms, the potential for risks associated with mineral mining activities may not be commensurate with potential returns. Evaluation of specific opportunities and related challenges are required.



Peat Pit Site, Fairbanks, Alaska



Broad Pass Material Site, jointly managed with Ahtna Corp

The University's ownership pattern of lands with high gravel potential does not dominate in any particular area of the state. Large construction projects such as the Gas Pipeline, Knik Arm Bridge, and other major civil projects could increase the demand for gravel, although many potential suppliers exist in some areas. FLMO has increased material sales over the past six years from an average of about \$50,000 annually to just under \$250,000. Significant increases in material revenues are not anticipated within the next five years. The University has entered into joint management agreements in southcentral Alaska to reduce administrative costs of managing material sales contracts.

REAL PROPERTY

For purposes of this document, real property assets include surface estate plus a material investment (physical improvement such as a building) intended to add value to raw land. Raw land was covered previously and listed under the asset class of Land and related strategy. Currently the University owns fewer than a dozen income-generating real properties (example: Bragaw Office Center with commercial office leases), some of which provide leasing revenue to support campus programs (example: Orca Building in Seward).



Commercial Permit



Commercial Lease

The FLMO will evaluate real property investments particularly in the more urban areas of Alaska. These would need to demonstrate a positive cash flow and capitalization rate, especially during periods of economic downturn when a return on investment may be greater.

The University has very few real property assets outside Alaska. Those currently owned result from donations or acquisitions. Acquisition of additional such properties would require the property to make sufficient revenue to contract for local management services.

RENEWABLE ENERGY

The University owns parcels that may have potential as sites for wind, solar, geothermal, and hydropower projects. However, due to lack of any projects being discussed currently, no revenue is projected for this asset class over the next five years.



Bristol Bay Campus Solar Panels



Bristol Bay Campus Wind Turbine

Potential revenue earnings could be made in the future by leasing land to utility companies for the purpose of generating renewable energy, particularly from wind, solar, and geothermal sources. Currently, working with its researchers, the University has established wind and solar generation on the Bristol Bay and Fairbanks campuses.

MITIGATION MARKETING

Currently wetlands banking and carbon credits are the main ways to protect the environment and create a revenue stream from land that may have no other highest and best uses. Both options carry risks, partly because of unknowns associated with those markets having not fully matured, lack of transparency and efficiency, and high degree of variables because the rules associated with operation of projects that qualify for wetlands banking and carbon credits can be changed by federal and state oversight agencies even after a landowner has committed to a project. While various agencies regulate wetlands mitigation banking, there is no clear regulation and banking system for carbon credit trading.



The Alaska Department of Natural Resources has applied to the Corps of Engineers for authorization of wetlands banking and is working on an in-lieu fees process to aid developers. The University is welcome to join their efforts, earning income from that collaboration. There is more experience in Alaska selling credits for wetlands mitigation than for selling carbon credits.

The University owns acreage that could be used to establish a wetland mitigation bank and, with assistance from UA researchers, land that could be managed to provide carbon credits.

University 'inholding' parcels surrounded by federal park, wilderness or other federal ownership may be of advantage value in mitigation, adjacency, and potential opportunity for swapping of land(s) of higher value.

Mat-Su Schrock Road, Property

Five Year Revenue Projections

The following gross revenue projections for each of the seven asset classes are based on the historical data presented in Appendix A, knowledge of the projects currently under development, and evaluation of the role FLMO can play in the land and resource markets. The projections do not take into account the receipt of any new land being granted.

Asset Class	Gross Revenue Projections				
	FY18	FY19	FY20	FY21	FY22
Land, Real Property*	5,500,000	5,750,000	5,500,000	5,000,000	4,500,000
Sale Contract Interest**	150,000	150,000	150,000	100,000	100,000
Forest Resources***	1,000,000	1,000,000	0	0	0
Oil, Gas, Coal, and Coalbed Methane	30,000	30,000	30,000	30,000	30,000
Minerals and Materials	150,000	150,000	150,000	150,000	150,000
Renewable Energy, Mitigation Mgmt.	0	0	0	0	0
Totals =	6,830,000	7,080,000	5,830,000	5,280,000	4,780,000

* Land sales have flattened as inventory and quality has decreased- it could return with addition of granted lands.

** Interest income has fallen from \$600,000 annually- it could return to this level with grant of additional lands.

***Could be upwards of \$2-7,000,000 annually if additional lands with timber are granted to UA.

Five Year Specific Strategies

Land and Real Property Asset Classes: Of the seven types of asset class, development opportunities, land and real property sales and leases have had the greatest revenue potential and have been the most stable over time. A shrinking pool of developable and marketable grant land limits land sale and lease opportunities in the future. The economy, competing developments, and regulatory requirements can significantly affect total return. How can revenues from the (current and future) University land inventory be increased?

1. Increase the University's overall land inventory and natural resource asset base.

- a. Advocate for and secure transfer of new state and federal land grants. Continue to demonstrate responsible development and land stewardship. Gain recognition for that land stewardship by building on current working relationships with communities, agencies, and businesses.
- b. Work with Congressional delegation and the Alaska Legislature to complete the University land grant entitlement. Develop draft legislation, secure bill sponsors, and advocate for bill passage. Consider alternative means to complete the land grant entitlement, such as annual deposits and appropriations by the legislature using the Alaska Public School Trust Fund or creation of a Land Development Income Fund. Pursue designation of a percentage of royalty revenue from federal oil and gas leases in proximity to Alaska with the congressional delegation.
- c. Encourage the University of Alaska Foundation to seek appropriate land and real property donations. Work with the UA Foundation to establish publishable donation guidelines and evaluate properties offered for consideration. FLMO will continue its practice of being reimbursed by the foundation for expenses associated with acceptance of donations of land and real property.

2. Evaluate land holdings to identify opportunities for enhancing value and converting land assets to investible income.

- a. Evaluate and field-inspect parcels in at least one asset class each year using cost-effective means such as drones or hyperspectral photography. Enter the resulting information into databases and property files and use it to identify specific parcels warranting more detailed review, development and/or disposal.
- b. Develop one new subdivision per year from the priority list identified in the asset class section on land.
- c. Pursue commercial real property opportunities for hotels, housing, retail, and other purposes.
- d. Improve the quality of existing holdings. Identify and initiate purchase, sale, or exchange of property to solve access problems, achieve economies of scale, or improve overall land value. Identify, monitor, and resolve clouds on title to existing properties, including Native allotment adjudications. Monitor and address any environmental issues affecting properties.

- e. Monitor Campus Master Plans and assist in the development of Campus Land Acquisition Plans to identify adjacent property needed for University purposes and remain aware of campus planning and program changes.
- f. Build public and private partnerships to develop property. Continue to invite private participation. Interact with developers to help identify barriers to participation and work to remove any constraints.

3. Diversify marketing approaches.

- a. Hire real estate broker(s). Utilize brokers to market properties and reduce vacancy rate in commercial buildings.
- b. Attract buyers online. Continue to improve the website to support user-friendly access to information on all University investment parcels. Identify and make use of other websites that could direct potential buyers to UA's site. Incorporate use of social media to inform potential buyers of UA offerings.
- c. Emphasize the Land Grant mission in marketing strategy. Using campus examples, provide short descriptions of the success stories from the UA Scholars' Program and identify resource-related educational and research projects on the FLMO website and brochures.
- d. Enhance Public Relations. Develop and distribute a public relations brochure that explains the University of Alaska land grant history, FLMO development projects, project guidelines and stewardship principals, and use of Land Grant Trust Fund Endowment proceeds, including examples of the University's demonstrated commitment to excellence and accountability in resource management.
- e. Participate in relevant local and national resource development organizations to monitor marketing opportunities to identify competing or complementary projects.

4. Improve Facilities and Land Management's capacity to do business. Invest in the people and the tools to develop and sell real estate. Enhance operating functions to be flexible and responsive.

- a. Invest in human resources. Continue to provide training in resource management and development topics. Provide in-house mentoring and cross training of all staff. Build on the external level of expertise of related professional disciplines such as law, title, land planning, surveying, and engineering.
- b. Continue to build and strengthen working relationships with government agencies and private companies to create less costly development, sale, and management processes.
- c. Convert FLMO's database and mapping. Upgrade the LIS/GIS to maintain adequate functionality. Convert to a geographical interface for mapping consistent with the easily manipulated mapping software system used by Alaska Mental Health Trust Authority's Trust Land Office ("TLO").
- d. Increase ability to respond to market opportunities.

- Participate in land planning and development-related forums to better identify and enhance University land portfolio opportunities.
- Implement mapping technology consistent with that used by TLO to provide improved data collection and manipulation for, and online access to, maps of University lands.
- Identify and prioritize properties that would benefit from limited enhancements such as site clearing, improved access, and core drilling. Enhance one or two parcels per year to better position them for market opportunities.

Natural Resource Development Asset Classes: Revenue from Timber, Oil and Gas, Minerals and Materials, Renewable Energy, and Mitigation Management is largely determined by external conditions beyond UA Facilities and Land Management’s control. How can FLMO optimize its returns from these resources?

5. Improve Facilities and Land Management’s capacity to do business.

- a. Build working relationships and share non-confidential data with appropriate Alaska Department of Natural Resources divisions, other land management agencies, and large private land managers.
- b. Build teams to make sale of natural resources more efficient and cost effective. Enter contracts with other agencies to take advantage of their expertise and services as well as share FLMO expertise. Enhance operating functions to be efficient, flexible, and responsive.

6. Monitor external conditions for resource revenue opportunities and take appropriate action to capture revenue for the Land Grant Trust Fund.

- a. Monitor national and international resource markets. Initiate contact with firms that dominate resource development in the geographic locations of University investment properties.
- b. Continue discussion of timber management and planning for structured sales with the Alaska Forest Association, US Forest Service, Alaska Division of Forestry, and potential industry partners to implement further short-term and long-term sale opportunities.
- c. Issue timber sale offers for public bid and award long-term contracts.
- d. Support creation of state forests and joint management efforts between state agencies and institutions.

7. Utilize UA researchers to learn more about mining deposits and extraction opportunities on UA lands. Use data to encourage private partner exploration and development. Focus on parcels in areas of the state where nearby deposits have been identified.

8. Identify resource potential and designate the associated asset class for all new land transfers. Maintain and expand resource assessments on University investment parcels. Periodically review the Alaska Department of Natural Resources’ new acquisitions list, the Bureau of Land Management’s surplus list, and changes to federal Public Land Orders.

In addition to strategies for the asset classes, FLMO must manage work planning and staff allocation to maximize revenue opportunity. This requires efforts to lessen the staffing time and resources spent on non-revenue producing activities associated with campus educational properties, while still being responsive to campus needs and other important support activities.

- a. Continue to develop an annual Work Plan and Budget for revenue and non-revenue activity. Carefully budget, monitor, and manage the allocation of resources to revenue and non-revenue tasks. Produce management reports throughout the budget year for senior managers to indicate revenues and expenses to date.
- b. Make process efficiency improvements. Evaluate all non-revenue activities to determine what can be simplified, eliminated, or re-assigned.
- c. Continue to collect reimbursement from campuses for all land transactions related to capital projects, as well as for services provided for sales or leasing of campus property assets, thereby reducing the amount of non-revenue activity required by UA campuses.
- d. In the FLMO Annual Financial Report, record allocation of resources to non-revenue producing activities, including: transaction assistance offered to campus facilities managers for governmental agency permits, educational permit requests from the faculty, risk mitigation assessment from the University's legal department, and proper management of educational properties and lands with deferred or long-term revenue generating investment potential.

Appendix A: UA Resources and Revenue Projections

This section reviews the historical gross revenues and projected future revenue expectations from management of the lands and resources entrusted to the University. FLMO historically defined the asset classes under its management within four resource types. For this plan, three new asset classes have been identified items 5-7 below, that do not have historical revenue data yet. These new additions bring FLMO asset classes to a total of seven. These asset classes better define and characterize UA assets for planning potential revenue opportunities that may occur in the long term.

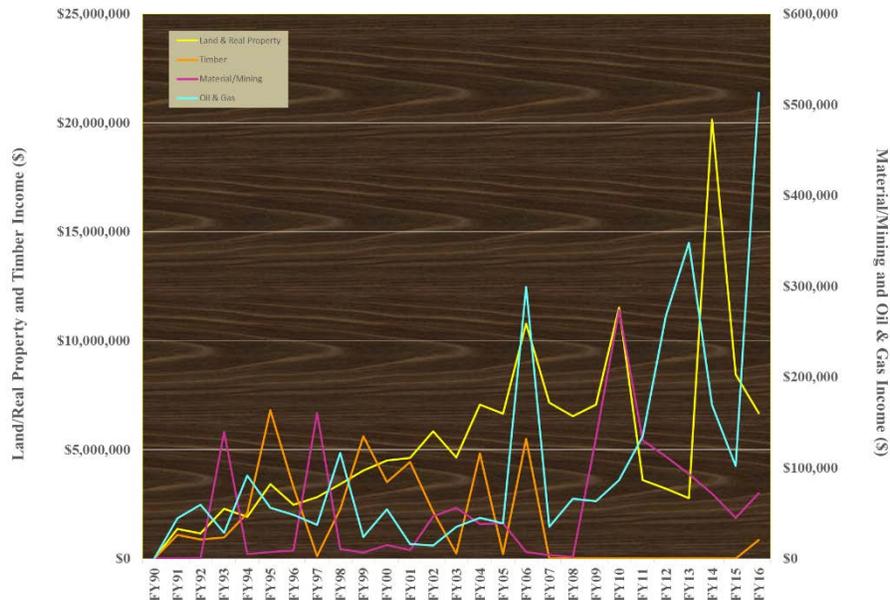
1. Land
2. Forest Resources
3. Oil, Gas, Coal and Coal Methane
4. Mining and Materials
5. Real Property (previously considered part of land asset class)
6. Renewable Energy
7. Mitigation Marketing

Conditions for each of the new asset resource types has been assessed where there is specific data and information available for the UA existing properties. External conditions, circumstances, and data are not controlled by FLMO and these specific asset class qualities can have the capacity to be constraints or opportunities in any future development and revenue potential.

The typical approach to forecasting revenues is to generate a trend line based on past performance. The historical FLMO gross revenues from FY1990-2016 are represented in the chart in Appendix C. During a time of expected significant change in opportunity and development strategy, it is more appropriate to project future revenues based on what is expected, not trends. This projection does not take into account the revenue that could be expected should the University's land grant entitlement be completed.

The trend line approach to forecasting future revenues can be misleading because it does not consider several key variables. All of the asset classes exhibit extreme volatility and a disparate range of revenue capacity. Extreme shifts in external conditions are not accommodated in projecting revenue. Note that the vertical axis of revenues displays two scales indicating the range of historical revenues. The one on the left is for land, real property, and timber, while the one on the right is for material, mining, and oil & gas.

Historical Gross Revenues FY90 - FY16



Impacts to Projected Revenue – GENERAL

External Conditions

- The Alaska Department of Labor projects the population of Alaska will continue slow growth (1.0% annually from 2014 - 2042) and will also continue to age as fewer elderly leave the state. The state is still dependent on government and oil support, with little diversification in revenue sources in the last 25 years.
- The Alaska Native population is anticipated to grow 31% between now and 2042 as life expectancy increases and infant mortality decreases. New residential and health services development to support this growth is likely.
- The fastest growing segment of the state’s population is the cohort over the age of 65, which is expected to increase from 65,000 to 120,000 by 2042 and may result in an increasing demand for senior housing options.
- The number of working age adults (18-64) in the state is expected to increase only 14 % by 2042, which is significantly lower than in the previous three decades. This age group is most likely to purchase land for home construction, recreational use, or business development.
- The youngest age cohort is projected to grow 27% by 2042 ensuring the working age cohort remains stable.
- While the average annual household income in 2016 ranked fifth in the nation, the cost of living also remains high, ranking fourth in the nation. Alaskans have a higher household income;

however, real per capita income is forecast to continue to decline and the unemployment rate is forecasted to be higher than the national average. In 2016, Alaska's unemployment rate was 6.8%, highest in the nation.

- The severe reduction in state capital investment (no longer offset by increases in federal spending), the current recession likely to last until Alaska's revenues are diversified, and other financial concerns could negatively influence the likelihood of new infrastructure to support expanded development in any asset class.

Impacts to Projected Revenue – LAND

External Conditions

- There is increased competition for land sales from other land trusts, boroughs, native corporations, and state and federal agencies.
- Kenai and Mat-Su are experiencing an increase in housing development so subdivision lot sales could increase if offered.
- In Anchorage, large blocks of quality commercial space are difficult to find. Continued growth in the health care industry makes the area surrounding the University and Medical District (U-MED District) likely to remain a strong commercial market even in the current economic downturn.
- Increasing environmental pressures constrain all land managers. There is heightened national and Alaskan sensitivity to the social values of wilderness, the environmental threats of pollution and recreational use, and the regulations governing natural resource extraction. There are significant costs associated with public controversy, litigation, and delayed development.

Projected Revenue Assumptions

Land revenues have flattened and will decrease further over this period because of the declining quality of available land inventory, slowing population and employment growth, aging of the Alaska population, and slow recovery of state and local fiscal environment due to Alaska's current recession. Revenue from land sale financed interest income has declined substantially. It will not increase until additional land sale contracts become possible. If the remaining lands grant is received, revenues in this asset class would likely increase again over the total time frame of this plan.

Impacts to Projected Revenue – Forest Resources

External Conditions

- The federally mandated policy change from old growth harvest to young growth requires different forest management practices by landowners and industry, change in industry plant infrastructure, and different sale terms.
- Insufficient timber is being offered (by all landowners) to sustain the timber industry in Alaska.
- The demand for kiln-dried engineered wood products cannot be met by the current Alaskan product and process.
- Environmental constraints continue to increase production costs.

- Logs are now a commodity rather than a specialty market resulting in a decreased value of product.
- Market pricing for products derived from timber in southcentral and interior Alaska hinder creation of a thriving industry for this resource.
- Alaska logs will be valuable on the world market due to slower growth and tighter ring count, which produces higher structural quality logs. Plantation forestry around the world is producing a higher percentage of immature fiber and lower quality logs.
- China will continue to buy logs from wherever they are available to improve housing for a large number of people and improve existing poorly built infrastructure. With rail service now available from China to Europe, there is the possibility that Alaska can supply wood for high quality products made in China and marketed to Europe.

Projected Revenue Assumptions

Timber harvest continues under current contracts but at a decreasing rate of harvest unless further sales contracts are offered and executed. If additional land is granted projected annual revenue can increase substantially.

Impacts to Projected Revenue - OIL and GAS

External Conditions

- The average price of Alaska oil has recently been in the range of \$40 to \$50 per barrel with barrels per day steadily declining.
- Oil prices have a direct influence on exploration and development activities, which have a direct influence on the economy of Alaska.
- The state has tremendous oil and gas potential. However, the general lack of infrastructure and the high costs of operation at remote sites, combined with the distance from markets and flat market prices, mean that only large sites or sites close to infrastructure can be developed successfully. Canadian and North Dakota finds have, until recently, significantly reduced exploration and development in Alaska.
- Facilities and Land Management has existing leases in Kenai and Mat-Su. Kenai is in active exploration status.

Projected Revenue Assumptions

University oil and gas revenues have begun a steep decline because no oil or gas exploration takes place and no discoveries are made on University land. No new sales of oil and gas leases replace expired leases. This could be changed for the positive with completion of the land grant entitlement.

Impacts to Projected Revenue – MINING AND MATERIALS (primarily gravel)

External Conditions, Materials

- Population density influences the demand for public works and private construction projects that typically require aggregate (gravel) materials. Population density also influences the incidence rate of conflicting land uses that can affect the development of such resource sites.
- The state's historical glacial activities have left an ample supply of local sources of sand and gravel materials in most areas. The exception is the Yukon-Kuskokwim Delta area, where materials must be brought in by barge from the Alaska Peninsula, the Seward Peninsula, Southcentral Alaska, or even Seattle, depending on the type of material required.
- There are many sources of aggregate (gravel) available in Alaska from DOT&PF, regional and village native corporations, and federal ownership, as well as University parcels. The mining and sale of gravel is determined by proximity to the development site.
- As gravel sales are linked to development at a specific site, repeat business is rare unless the area supports on-going development. An example of repeat business would be materials extraction from University parcels at Point MacKenzie.

External Conditions, Mining

- Recent discovery of rare earth minerals makes it plausible to gain long-term revenue from mining activity. World markets are strong and new data provides better information about types, quality, and quantity of those mineral finds.
- Market demand for minerals is driven by uses for the commodities, population (growth) driving consumption of products utilizing them, and the standard of living across that population.
- Subsurface and open pit mining activities can generate public controversy even when careful management of extraction and extensive mitigation is planned.
- Facilities and Land Management holds lands, which have the potential for gold, and other mineral production.

Projected Revenue Assumptions

The increase in mining and material revenues is due to infrastructure development adjacent to UA resources. If new land is transferred from the state and federal government there will be increased opportunity for minerals mining beyond aggregates. Mining revenues are projected to be a small portion of total revenues for this time period. There could be a decrease in mining revenues due to a deteriorating economic and fiscal situation in the state.

Impacts to Projected Revenue – Real Property

External Conditions

- The commercial and residential real estate market is considered stable with some softening expected.
- Office vacancy rate is expected to rise requiring rent concessions by landlords but with rates remaining stable.

- Alaska is experiencing a recession, as reflected in the slowdown of economic growth and an out-migration of population, as jobs are lost in the oil industry.

Projected Revenue Assumptions

Due to slowing market, the next five years could provide good opportunities to purchase real property at below market price.

Impacts to Projected Revenue – Renewable Energy

External Conditions

- With the signing of the Paris climate agreement the world is moving slowly toward substantial reliance on renewable energy.
- Alaska is well positioned to develop reliance on renewable energy as evidenced by the Kodiak Island switch from non-renewable energy to renewable energy power generation.
- Hydrologic and tidal harnessing opportunities through historical and emerging technologies continue to be developed, tested, and utilized as fuel and electrical costs fluctuate widely in Alaska's remote areas without regional grids.
- Solar and wind opportunities have been growing in locations that were previously considered improbable due to equipment refinements, reduction in cost, and changing weather patterns.

Projected Revenue Assumptions

The FLMO staff should work closely with agencies Alaska Center for Energy and Power (ACEP), Alaska Energy Authority, and others, as well as private interests and businesses to develop revenue opportunities at the same time that such projects will benefit communities that are heavily reliant on high cost fossil energy for heat, light, and power. No revenues are yet projected for this asset class but would require FLMO nimbleness and flexibility to be implemented.

Impacts to Projected Revenue – Mitigation Management

External Conditions

- The State of Alaska is already applying with Corps of Engineers to establish wetlands banking. The University has been invited to participate in that process if they wish.
- Carbon credits require setting aside lands for active management. At this time, it is an unregulated process for selling and meeting obligations for long-term management. This carries higher risk level than wetlands banking.
- Environmental compliance credits in such areas as water and air quality for local air sheds and Title V permits to industrial operator's for ambient and stack air pollutants discharges from fossil fuel carbon, carbon monoxide (CO), particulates, and other materials can be bought, sold, and traded.
- The University System is large enough with its building facilities, boilers, and coal power plant to potentially utilize, sell, and or leverage environmental compliance credits for future development and operations.

Projected Revenue Assumptions

The FLMO staff may be able to leverage mitigation management concepts to reduce environmental permitting costs, increase revenue, and leverage development opportunities with public and private entities. They should work closely with area agencies, University Campus development plans, and businesses in the area. Implementation of such measures requires awareness of prospective capital projects and opportunities, knowledge of compliance, key timing, and inter-agency connections. No revenues are projected for this asset class until more is known about the risk-reward equation, and the timing of range of prospective developments.

Conclusions

Review of the resource scenarios and revenue projections reveal key variables governing the basis for the strategies in this plan.

- Land is the most stable of all the resource types, holding or appreciating its value over time.
- Land sale or lease revenues are the most susceptible to FLMO control.
- Timber revenue can be influenced by receipt of additional lands, cooperative management, and the willingness to take some risk.
- Oil and gas and mining revenues are largely determined by external exploration, discovery, and private investment decisions.
- If new lands are granted, timber has the potential to produce substantial revenues once again.
- Land, timber, oil, and gas are potentially high revenue generators.
- Mining is a nominal revenue generator but has significant potential for future revenue from extraction of rare earth minerals.

Appendix B: University Land Grant Chart by State

UNIVERSITY LAND GRANTS (IN ACRES)

STATE	UNIVERSITY LAND GRANT	TOTAL STATE LAND GRANT	UNIV PERCENT OF TOTAL STATE LAND GRANT
1. New Mexico	1,346,546	12,794,718	10.52%
2. Oklahoma	1,050,000	3,095,760	33.92%
3. New York	990,000	990,000	100.00%
4. Arizona	849,197	10,543,753	8.05%
5. Pennsylvania	780,000	780,000	100.00%
6. Ohio	699,120	2,758,862	25.34%
7. Utah	556,141	7,501,737	7.41%
8. Illinois	526,080	6,234,655	8.44%
9. Indiana	436,080	4,040,518	10.79%
10. Montana	388,721	5,963,338	6.52%
11. Idaho	386,686	4,254,448	9.09%
12. Alabama	383,785	5,006,883	7.67%
13. Missouri	376,080	7,417,062	5.07%
14. South Dakota	366,080	3,435,373	10.66%
15. Massachusetts	360,000	360,000	100.00%
16. Mississippi	348,240	6,097,997	5.71%
17. North Dakota	336,080	3,163,552	10.62%
18. Washington	336,080	3,044,471	11.04%
19. Wisconsin	332,160	10,179,804	3.26%
20. Kentucky	330,000	354,607	93.06%
21. Tennessee	300,000	300,000	100.00%
22. Virginia	300,000	300,000	100.00%
23. Iowa	286,080	8,061,262	3.55%
24. Michigan	286,080	12,142,846	2.36%
25. Georgia	270,000	270,000	100.00%
26. North Carolina	270,000	270,000	100.00%
27. Louisiana	256,292	11,441,955	2.24%
28. Minnesota	212,160	16,422,051	1.29%
29. Maine	210,000	210,000	100.00%
30. Maryland	210,000	210,000	100.00%
31. New Jersey	210,000	210,000	100.00%
32. Arkansas	196,080	11,936,834	1.64%
33. California	196,080	8,825,657	2.22%
34. Florida	182,160	24,214,722	0.75%
35. Connecticut	180,000	180,000	100.00%
36. South Carolina	180,000	180,000	100.00%
37. Texas	180,000	180,000	100.00%
38. Kansas	151,270	7,794,669	1.94%
39. New Hampshire	150,000	150,000	100.00%
40. Vermont	150,000	150,000	100.00%
41. West Virginia	150,000	150,000	100.00%
42. Colorado	138,040	4,471,604	3.09%
43. Oregon	136,165	7,032,847	1.94%
44. Nebraska	136,080	3,458,711	3.93%
45. Nevada	136,080	2,725,226	4.99%
46. Wyoming	136,080	4,342,520	3.13%
47. Rhode Island	120,000	120,000	100.00%
48. Alaska	112,064	104,569,251	0.11%
49. Delaware	90,000	90,000	100.00%

Source: U.S. Dep't of Interior, Bureau of Land Management, Public Land Statistics 1984, Table 4. (BLM ceased publication of that particular table in 1985.) Hawaii received a monetary permanent endowment (~\$6 million) for its University in 1961-62 in place of land acreages.

Appendix C: UA Land Historical Gross Revenues and Projections

**Actual Gross Revenues, by Resource Category for FY87 - FY16
with Revenue Projections, by Resource Category for FY18 - FY22**

Note: Prior to FY99, interest was reported together with Land Sales

