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ANALYSIS OF TRANSFERRING RESOURCES FROM NEW MEXICO'S LAND GRANT PERMANENT FUND TO EARLY CHILDHOOD EDUCATION

FINAL REPORT

SUBMITTED TO:

ST. JOSEPH COMMUNITY HEALTH

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EXECUTIVE SUMMARY

New Mexico can and should provide a 1.5% contribution from the Land Grant Permanent Fund (LGPF) to early childhood education. To date, the analysis of whether the LGPF could absorb the additional 1.5% has incorrectly focused only on the financial returns of the LGPF. This incomplete view overlooks the significant yearly contribution generated by the State Trust Lands (STL), thanks to its estimated $6 billion-plus in assets. The correct analysis shows that New Mexico can address its crisis in early childhood development while protecting the corpus of the LGPF.

New Mexico is facing a crisis in early childhood development. Nationwide, New Mexico has fallen from 49th to 50th place in the Annie E. Casey Foundation's overall ranking in children's well-being among the 50 states. Based on indicators such as education, health, economic well-being and family conditions, no other state's children have it worse than those in New Mexico. The Annie E. Casey's 2013 Kids Count report show that some leading indicators are worsening. The percentage of low-birthweight babies has increased (8.5% in 2005 to 8.7% in 2010), as has the percentage of families in which the household head lacks a high school diploma (21% in 2005 to 22% in 2011). Recent figures also show a spike in infant deaths: New Mexico's infant death rate was 6.9 per 1,000 live births in 2012, a 31% increase from the 2011 rate of 5.2 per 1,000 births.[1]

At the same time, the state of New Mexico has important and unique resources: the Land Grant Permanent Fund (LGPF), with net assets of $12.1 billion, as of June 2013, as well as the State Trust Lands (STL), with some 8.8 million acres of surface rights and about 13.4 million acres of subsurface rights. The STL assets are estimated at somewhat over $6 billion. Both the LGPF and the STL are meant to provide resources, directly or indirectly, to the beneficiaries of the LGPF.

The issue for New Mexico is how to effectively manage a balance between investing in human capital (its residents: parents and children), which includes early childhood education, versus investing in financial capital (the Fund). It must be borne in mind that in any investment portfolio, the different asset classes achieve different rates of return. In this case, early childhood education has proven to offer a return far in excess of the returns achieved by financial investments.

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[1]"New Mexico infant death rate spiked in 2012," the Albuquerque Journal, Nov. 27, 2013.

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Within individual households, a similar balance takes place, as families can invest in several asset classes, such as a 401(k) account for retirement, education for parents and children and real estate (their homes).

The key in both cases is achieving a balance. The present policy of the State of New Mexico results in an unbalanced allocation of resources.

Two proposals to channel more resources to early childhood education were analyzed in this study. One entails a 1.5% withdrawal rate of the average assets of the LGPF over the previous five years. The second one entails a withdrawal rate of 1%. Neither proposal would deplete or harm the LGPF, as it will continue to grow at rates higher than inflation. Thus, the Fund would remain healthy. The Executive Summary includes information only on the first proposal.

Two approaches were explored to assess the feasibility of increasing funding to early childhood education through an allocation from the LGPF: cash-flow approach and asset approach.

Cash-flow Approach

The inflows to the LGPF come from two distinctive sources:

(1) Gain and loss of the Fund itself. The LGPF is mainly invested in securities and other financial instruments.

(2) Contributions from the STL. This is mainly oil royalties and other kinds of returns from land owned by the STL.

The difference between the inflows and the withdrawals is the change in the value of the LGPF.

Actual financial returns of the LGPF (gain/loss) over the period 1990 through 2012 were 7.8%. The returns of the STL stood at 3.6% of the market value of the LGPF. The combination of the two inflows (11.4%) compares favorably with withdrawals of 5.7%. Subtracting withdrawals from inflows results in a 5.7% positive change in the value of the assets held by the LGPF.

This growth of 5.7% was about double the 2.8% inflation average for New Mexico during the same period. Therefore, the historic performance of the LGPF shows that there is ample margin to

increase withdrawals while protecting the value of the LGPF. Furthermore, if we take the historic LGPF change in value and subtract the proposed increase in withdrawals for early childhood education (1.3%), the adjusted change in value would stand at 4.4%, still much higher than New Mexico's historical 2.8% inflation rate.

At present, the annual target returns for the LGPF are 7.5%, which was the conclusion of an asset allocation study conducted by the New Mexico State Investment Council (NMSIC).[2] This annual target return is comparable to annualized returns from the S&P 500, which have averaged 7.3% in the last 64 years (1950-2013).[3]

A scenario was developed with the present financial conditions. Withdrawals were estimated at 4.9%, which is below the statutory figure (the legal requirement of 5.5%) because the base for the statutory figure is the last five-year average. This base (the average of the Fund's value over the last five years) is usually lower than the present-year market value of the LGPF. The same holds for the early childhood education withdrawals, which are estimated at 1.5% of the average of the Fund's value over five years, or approximately 1.3% of the Fund's value in the last year.

The results for the scenario were very similar to the historic trend. The Fund would grow at a rate of 5.5%, much higher than the long-term inflation rate projected by the Federal Reserve of 2%. Compared with the historic data, the assumptions were a lower return on investments (7.3% v. 7.8%), higher contributions from the STL in light of developments of recent years (4.4% v. 3.6%), and a higher withdrawal rate for the beneficiaries (6.2% v. 5.7%).

Thus, after the amendment, the corpus of the fund would be protected since the growth in the LGPF would be expected to exceed the inflation rate.

Value of Assets Approach

During the period 1990 to 2012, withdrawals from the LGPF averaged 5.7%. However, this percentage values the financial assets of the LGPF at market value and the land assets of the STL at zero.[4] This assumption is incorrect. The STL's land assets cannot be valued at zero because every

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[2]Investments and Pensions Oversight Committee, Minutes of Meeting, July 10, 2013, pg. 8
[3]Chicago Board Options Exchange (CBOE); http://www.cboe.com/micro/spx/historicaldata.aspx.
[4] The figure is the average for the period 1990-2012.

year they generate a stream of income of several hundred million dollars. Therefore, the land has great value.

Thus, a conservative assessment of the value of the STL's land assets must be performed to come to grips as to the real withdrawal level of the LGPF currently taking place. This indicates that while the LGPF stood at $10.7 billion in June 2012, if the STL is valued at $6.2 billion (using the cash-flow perpetuity formula), then total assets available for distribution stood at $16.9 billion. The withdrawals that year were $553 million, which was just 3.3% of the Fund's assets available to New Mexico.

If the proposed withdrawal of 1.5% of the average for the previous five years for early childhood education had been in effect, the withdrawals as a percentage of assets for 2012 would have been 4.1%.

Thus, assuming reasonable returns from assets under the management of both the LGPF and the STL, distributions from the LGPF are way below what would be necessary to protect the corpus of the Fund, even after adjusting for inflation.

It is worth noting an inconsistency in the policy of the LGPF. The Fund itself has made some investments in real assets (real estate plus other real assets). These investments are considered part of the assets when calculating the amount to be withdrawn from the Fund. However, if exactly the same real assets are owned by the STL, they are not considered in the calculation.

In other words, if at one point New Mexico decides to liquidate the STL, all the land in the STL would be sold for some $6.2 billion. These proceeds would be deposited in the LGPF, and then it would be considered prudent, under the current New Mexico public policy, to withdraw an additional $310 million annually, representing 5% of the new net asset value, for current investment in education. However, if New Mexico keeps the land as part of the STL, then under the current public policies, it would be considered inappropriate to withdraw one cent from the revenue generated by this land—everything must be deposited in the LGPF and nothing used for current distributions. The $310 million significantly exceeds the proposed withdrawal amounts from the LGPF for early childhood education.

Other financial issues

While the figures presented by Advantage are long-term trends, there could be volatility in the short run. Thus, a "safety valve" mechanism would be warranted. One possibility could be temporarily stopping additional distributions should the total assets at the end of fiscal year drop below $10 billion in the first two years after the amendment is enacted; $11 billion in years three to five; and $12 billion thereafter. However, it must be stressed that a large market correction, such as the one that occurred in fiscal 2008-2009, would result in a much bigger impact on the size of the Fund than the additional withdrawals proposed for early childhood education. Moreover, over its lifetime, the Fund has weathered such corrections. The simulation of what would have occurred with the LGPF over the last 23 years shows that if the amendment had been in place, the Fund would still have sustained its value vis-à-vis inflation.

Moreover, the diversification policies of the LGPF are aimed at minimizing volatility and fluctuations in returns. Thus, a rise in inflation would impact bonds negatively, but real assets would be protected. A recession would impact stocks negatively, but the expected decline in interest rates would boost the value of bonds. U.S. stocks may fall, but international stocks could be doing well at the same time.

A concern is that nothing in the documentation reviewed by Advantage shows that the diversification strategies of the LGPF take into account the STL. Thus, real assets are being purchased while the STL holds $6.2 billion in real assets. There does not seem to be a policy against investing in energy-related stocks. Further, there does not seem to be a policy regarding trading oil futures to stabilize the fluctuations in the income from the STL received by the LGPF. Advantage requested a meeting with the NMSIC, both through St. Joseph Community Health and Senator Michael Padilla, but it was rebuffed. To the extent that LGPF investment strategy does not take into account the STL indicates it is a generic strategy that is flawed, since it was not designed for the particularities of the LGPF with its contributions from the STL.

Most worrisome is a statement by the NMSIC to the Investment Oversight Committee that it could pursue the purchase of real assets in the energy field. This is the opposite of a diversification strategy. The minutes from the July 2013 meeting state (pg. 8): "*In keeping with its goal to reduce risk and volatility, the [NM]SIC has focused its strategy on shifting focus away from public equity risk and diversifying its investments. In particular, Mr. Smith indicated that the [NM]SIC is concerned with increasing exposure to income-*

producing investments that protect purchasing power and increasing investments that perform favorably when interest rates rise. Such investments could include floating rate debt, timber and energy."

In theory, actual inflation could exceed the Federal Reserve expectation of 2%. However, a higher inflation rate would most likely also increase the returns generated by the LGPF and the STL. In the short term, real assets such as those held by the STL (oil and gas royalties) and the projected 20% of real assets in the LGPF portfolio would perform well in a high inflation scenario.[5] In the long term, higher inflation would lead to a realignment of the returns of the different asset classes. Bondholders would require a return somewhat higher than inflation and shareholders would require an equity premium over the return of bonds.

It is important to benchmark New Mexico with other funds because this provides relevant examples of what other jurisdictions consider appropriate with regard to managing their own funds. However, for this comparison to be accurate, New Mexico's Fund must be compared with other funds that are also funded by natural resources.

University trusts are qualitatively different from other funds that are based on natural resources. University trusts lack a separate natural resources component as a significant source of revenue. The main revenue sources for university trusts are financial assets, such as stocks and bonds, as well as alumni contributions, rather than natural resources, such as oil and natural gas. Thus, comparing New Mexico's Fund with university trusts would be comparing apples with oranges.

Alaska and Wyoming are often considered good models to follow by policy makers in New Mexico and both are cited in the legislative record.[6] And yet, the policy in New Mexico with respect to the LGPF is more conservative than in either of these states. All of the new money coming from the STL is deposited in the LGPF. Alaska spends up to 75% of its oil revenues and deposits the remaining 25% in its fund. Wyoming spends around 58% of its oil revenues and deposits the remaining 42% in its fund.

Even after the allocations for early childhood education are implemented, New Mexico would still be more conservative in handling its fund.

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[5] NMSIC presentation to the Investment Oversight Committee, June 9, 2011.
[6] NM Legislative Education Study Committee Bill Analysis on Land Grant Balance & Distribution, CA, March 4, 2013.

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Need for early childhood education and its benefits

At the same time, New Mexico clearly has the most need for early childhood education among the jurisdictions evaluated above. New Mexico overall ranking is last among the 50 states in the Annie E. Casey's 2013 Kids Count report on early childhood indicators. Alaska's overall ranking is 44 and Wyoming is 15.

According to economist and Nobel laureate James J. Heckman:

"Investing in early childhood education to increase high school graduation rates would boost New Mexico's economy. For example, a 5% increase in male high school graduation rates is estimated to save New Mexico $38 million in annual incarceration costs and crime-related expenditures. If that same 5% not only graduated but went on to college at the same rate as typical male high school graduates, their average earnings would accrue an additional $20 million annually. If just one year's high school dropouts could be converted to high school graduates, New Mexico households would have an additional $3.1 billion in accumulated wealth over the lifetime of the students from the graduating class."[7]

According to the RAND Corporation, a review of nine early childhood programs found that the benefit-cost ratios varied from 1.80 to 17.07, meaning that the selected programs generated a benefit of $1.80 to $17.07 for each dollar invested.[8]

In terms of human capital, research at RAND has shown that investing in early childhood programs have "yielded benefits in academic achievement, behavior, educational progression and attainment, delinquency and crime, and labor market success, among other domains."[9]

Increasing funding for early childhood education, including home visiting programs and other prenatal care, would lead to a decrease in the state's infant death rate of 6.9 per 1,000 live births[10] and the 8.7% of low-birthweight babies.[11] In dollars and cents, every healthy newborn who is not admitted to a neonatal intensive care unit (NICU) represents savings for New Mexico of

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[7] "Invest in Early Childhood Development: Reduce deficits, strengthen New Mexico's economy." www.heckmanequation.org
[8] "What Does Economics Tell Us About Early Childhood Policy?" RAND Corporation Research Brief, 2008, and "Proven Benefits of Early Childhood Interventions," RAND Corporation Research Brief, 2005.
[9]"Proven Benefits of Early Childhood Interventions," RAND Corporation Research Brief, 2005.
[10]"New Mexico infant death rate spiked in 2012," the Albuquerque Journal, Nov. 27, 2013.
[11] Annie E. Casey Kids Count 2013

approximately $43,333 to $45,000.[12] This cost does not include expenditures to treat chronic health conditions as a result of premature births and low birth weight.

Providing easier access to quality preschool programs would lead to healthier children and enable many mothers to return to school and/or work. At the same time, the children of these parents would benefit by living in a healthier environment.

Regarding educational attainment alone, in dollars and cents, there is a 48% salary differential between a New Mexican resident with a high school degree versus one without. The average salary of a New Mexican resident with a high school degree is $25,349 a year, while a person who is not a high school graduate earns $17,091 a year.[13]

Channeling more resources to early childhood education today would help provide New Mexico's children and future generations with healthier families and more educated parents, along with a strong, albeit somewhat smaller, LGPF. The enhanced human capital of New Mexico's population would have major benefits, such as higher incomes along with higher income taxes generated by a better-educated population and lower government expenditures for healthcare and other government programs.

Investing in early childhood education will help to reverse New Mexico's negative trends in child well-being indicators. In addition, the Fund would protect its value for future generations. Moreover, investing 1.5% of the assets of the LGPF in early childhood education would yield a higher economic return to New Mexico than reinvesting the same 1.5% in financial assets. Thus, increasing the allocations for early childhood education in New Mexico is not only necessary, but also economically beneficial and feasible. Therefore, the proposed amendment is an appropriate balance between present needs and Fund stability.

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[12] According to published reports, the average NICU stay is 16 days and the average NICU cost is about $43,333 to $45,000. As cited by the New York Times, "In Search of Cuts, Health Officials Question NICU Overuse," The Texas Tribune, by Emily Ramshaw, March 19, 2011; and "Children's TeleICU –The Most Sophisticated in the U.S. – Finds its First Partner Hospital, D Healthcare Daily, by Steve Jacob, Oct. 21, 2013.

[13] Data on median earnings of New Mexico residents ages 25 and older, 2012 American Community Survey, one-year estimates, U.S. Census Bureau.

I.   INTRODUCTION

New Mexico faces a crisis in early childhood development. Nationwide, the Annie E. Casey Foundation now places New Mexico last, 50 out of the 50 states, in the well-being of its children. In fact, New Mexico has fallen from 49th to 50th place. Some leading indicators are worsening. The percentage of low-birthweight babies has increased (8.5% in 2005 to 8.7% in 2010), as has the percentage of families in which the household head lacks a high school diploma (21% in 2005 to 22% in 2011). Recent figures also show a spike in infant deaths: New Mexico's infant death rate was 6.9 per 1,000 live births in 2012, a 31% increase from the 2011 rate of 5.2 per 1,000 births.[14]

These leading indicators are negative harbingers of New Mexico's situation moving forward, since the link between early childhood development (health, education and socioeconomic well-being) and adult outcomes are well documented and widely accepted.

At the same time, the state of New Mexico has important and unique resources: the Land Grant Permanent Fund (LGPF), with net assets of $12.1 billion, as of June 2013, as well as the State Trust Lands (STL), with some 8.8 million acres of surface rights and about 13.4 million acres of subsurface rights. Both the LGPF and the STL are meant to provide resources, directly or indirectly, to the beneficiaries of the LGPF.

The revenue of the LGPF comes from two sources: (a) returns on the investment held by the LGPF and (b) royalties and land sales from the STL. The distribution rate to beneficiaries is set at 5.5% of assets per year until 2017 and 5% thereafter. The distribution is based on the five-year average ending value of net assets. However, the net assets for purposes of distribution are calculated as follows: (a) assets in the LGPF are valued at market price and (b) land and assets held in the STL are valued at zero.

This indicates that while the LGPF stood at $10.7 billion in June 2012, if the STL is valued at $6.2 billion (using the cash-flow perpetuity formula) then total assets available for distribution stood at $16.9 billion. The withdrawals this year were $553 million, which was just 3.3% of the LGPF assets available to New Mexico.

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[14]"New Mexico infant death rate spiked in 2012," the Albuquerque Journal, Nov. 27, 2013.

Thus, distributions from the LGPF are far below what would be necessary to protect the corpus of the Fund, even after adjusting for inflation.

Meanwhile, research indicates that the returns on investments in early childhood education are higher than the return on investments held in the LGPF. For example, the National Institute for Early Childhood Education Research estimated that the return on investment was $7 for every dollar invested. In fact, the funds transferred for early childhood education should not be considered expenditures, but rather a swap of a financial asset in the LGPF for a human capital asset in the people of New Mexico.

Increasing LGPF assets so that future children may have access to additional funds ignores the present generation's needs and the negative impact these unmet needs will have on New Mexico's future. This seems like a poor public-policy choice, since New Mexico's future children will have parents who also fall short of their potential. It is important to start breaking the cycle today.

This study analyzes the proposal to increase the distribution from the LGPF to support early childhood education over a 10-year period. This policy provides a crucial and unique resource (the LGPF) for New Mexico to move forward with education policies that should improve its poor performance in early childhood indicators, while sustaining the LGPF's positive change in value.

The balance between maximizing the market value of the LGPF versus using more funds to invest in much-needed early childhood education has been part of the public discourse in New Mexico during the past few years. This study seeks to shed light on important technical information that should help the New Mexican people make their decision.

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II. DESCRIPTION OF THE FUNDS AND TRUST

New Mexico has four permanent funds: The Land Grant Permanent Fund (the largest); Severance Tax Permanent Fund (STPF); Tobacco Settlement Permanent Fund; and Water Trust Permanent Fund. The New Mexico State Investment Council (NMSIC) is responsible for managing the state's permanent funds.

According to the NMSIC, the STPF receives severance taxes collected on natural resources extracted from New Mexico lands; the STPF was established as part of a legal settlement between most states and tobacco companies; and the WTPF distributes millions of dollars every year to "critically needed water projects."

The permanent funds represent the policy of replacing natural resource assets with financial assets. Such funds are successful when they both financially bolster the state's economy through strategic spending and continue to grow at a sustainable rate that is at least equal to that of inflation.

In fact: "The purpose of New Mexico's permanent endowment trust funds is to contribute recurring revenues for the operating budget of the state and to provide resources to various fund beneficiaries. The [State Investment Council] investment goals are to preserve the permanent endowment funds for future generations and to provide future benefits by growing the funds at a rate at least equal to inflation."[15]

Description of the Land Grant Permanent Fund

The LGPF is New Mexico's largest endowment and permanent fund. The fund was established through, and continues to be maintained in part, by leasing fees the state charges for 13.4 million acres of mineral resources and 8.8 million acres of surface land. The NMSIC manages day-to-day operations of the LGPF, including investments and distributions. Annually, the LGPF distributes more than half a billion dollars to the LGPF beneficiaries.

The LGPF was constitutionally created to allow New Mexico to save and invest the revenues it derives from the extraction of natural resources statewide. The Fund pursues the dual goals of

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[15]NMSIC website.

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increasing New Mexico's wealth and serving current and future generations by funding public education. The LGPF was created through the Ferguson Act of 1898 and New Mexico State Enabling Act of 1910. The proceeds from any minerals mined on and sold from New Mexico's public lands are deposited into the LGPF. Each acre of the land grant was designated to a specific beneficiary. The State Land Office (SLO) oversees all state land on behalf of the state and 20 other beneficiaries.

Under the New Mexico Constitution, LGPF beneficiaries currently receive a fixed distribution equal to 5.5% of the five-year average market value of the Fund. Beneficiary shares are based on the share of total Fund revenue generated by their designated allotments. The public schools are by far the largest single fund beneficiary, receiving roughly 84% of the distribution rate. The remaining 16% is distributed in fixed percentages to the other 20 beneficiaries. All earnings and additions to the LGPF (including interest, dividends and capital gains) are credited to the Fund.

The LGPF amounted to almost $11 billion by fiscal 2012. Data from the NMSIC indicates that the LGPF gained 13% for fiscal 2013 with assets reaching more than $12 billion.[16]

The following graphs show how the LGPF beneficiary shares are distributed, as of June 30, 2012 and the NMSIC investment policy allocations, as of June 30, 2013:

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[16] State of New Mexico State Investment Council news release:
http://www.sic.state.nm.us/PDF%20files/SIC%20AUG%2013%202013%20Investment%20performance%20PR%20Final.pdf

Beneficiary Share of Distributions (FY 2012)
Total $658.5 million

- 5.8%
- 3.5%
- 6.4%
- 84.2%

Legend:
- Public (Common) Schools
- Colleges & Universities
- Other Schools
- All Other Institutions

Source: New Mexico State Land Office

NMSIC Investment Policy

- 46%
- 38%
- 16%

Legend:
- Other Assets*
- Fixed Income
- Domestic and International Equity

Source: State of New Mexico Legislative Finance Committee, LFC Investment Report for the Quarter Ending June 30, 2013.

* Other Assets include: *real assets, real estate, absolute return, private equity.*

Twenty-one beneficiaries receive LGPF distributions that augment their operating budgets. These beneficiaries are the following:

LGPF Beneficiaries and their Respective % Ownership	
Institutions	% LGPF Ownership
Public (Common) Schools	83.20%
NM Military Institute	3.38%
NM School for the Deaf	2.07%
NM School for Visually Impaired	2.06%
NM State Penitentiary	2.02%
University of NM	1.60%
Public Buildings	1.17%
Water Reservoirs	1.15%
Miners Medical Center	1.04%
Charitable, Penal & Reform[3]	0.91%
NM State University	0.50%
Rio Grande Improvement	0.27%
NM State Hospital	0.24%
NM Institute Mining & Technology	0.21%
Eastern NM University	0.08%
Western NM University	0.03%
NM Highlands University	0.03%
Northern NM College	0.02%
NM Boys School	0.01%
UNM Saline Lands	0.01%
Carrie Tingley Hospital	0.00%
Total	**100.00%**

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[17] Charitable, Penal and Reform is shared equally by seven beneficiaries, five that receive separate distributions – Carrie Tingley Hospital, CYFD, Miners Colfax Medical Center, NM Behavioral Health Institute and the Penitentiary of NM – and two that receive only a share of the Charitable, Penal and Reform distribution – the Youth Diagnostic and Development Center and Los Lunas Community Program. The State Constitution identifies these beneficiaries as "the penitentiary at Santa Fe, the miners' hospital at Raton, the New Mexico state hospital at Las Vegas, the New Mexico boys' school at Springer, the girls' welfare home at Albuquerque, the Carrie Tingley crippled children's hospital at Truth or Consequences and the Los Lunas mental hospital at Los Lunas." Names have changed since this State Constitution section was last amended in 1960. New Mexico's State Land Office 2011-2012 Annual Report.

The inflows to the LGPF come from two distinctive sources:

- Gain and loss of the Fund itself. The LGPF is mainly invested in securities and other financial instruments. The annual target return for the LGPF is 7.5%, according to the NMSIC.[18]This annual target return is comparable to annualized returns from the S&P 500, which have averaged 7.3% in the last 64 years (1950-2013).[19]

- Contributions from the STL. This is mainly oil royalties and other kinds of returns from land owned by the STL. Average annualized contributions during the period 1990 to 2012 stood at $254 million, according to STL data.

Withdrawals are performed using the formula previously discussed (5.5% of the five-year average ending values of net assets). The difference between the inflows and the withdrawals is the change in the value of the LGPF. Again, no value has been assigned to the STL's land assets.

Actual financial returns of the LGPF (gain/loss) over the period 1990 through 2012 were 7.8%. The returns of the STL stood at 3.6% of the market value of the LGPF. The combination of the two inflows compares favorably with withdrawals of 5.7%. Withdrawals were particularly high in the period 1990 through 1995.

Subtracting withdrawals from inflows results in a positive change in value of 5.7%, but because of fluctuations in the base amounts throughout the 23 years, the actual change in market value is somewhat less.[20]

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[18]Investments and Pensions Oversight Committee, Minutes of Meeting, July 10, 2013, pg. 2.
[19]Chicago Board Options Exchange (CBOE); http://www.cboe.com/micro/spx/historicaldata.aspx.
[20] Change in market value for the period was 5.5%.

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The following graph illustrates the fund's inflows (revenues), outflows (withdrawals) and the change in value for the last 23 available years.

LGPF Historic Net Change in Value Flow Chart

% Values from 23-Yr Average (1990-2012)
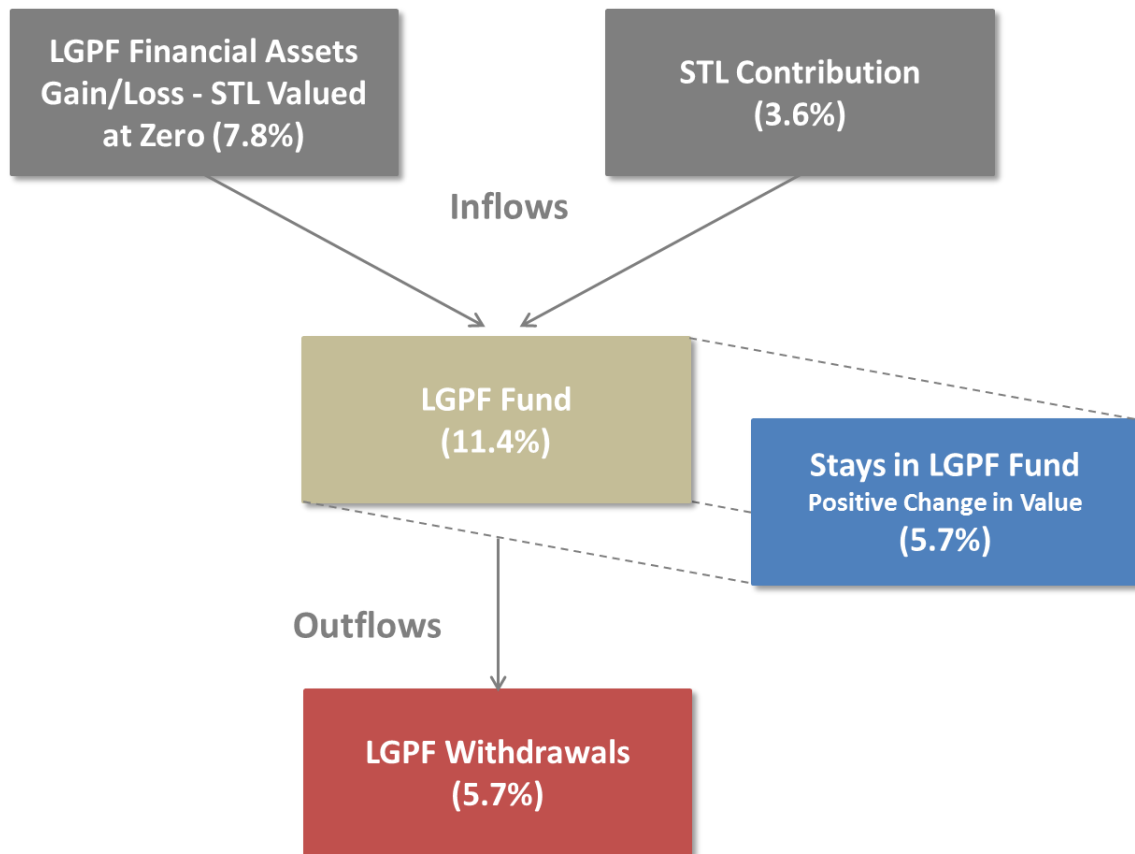
Thus, 7.8%+3.6% (inflows) = 11.4% - 5.7% (outflows) =5.7% (change in value).

The 5.7% stays in the fund to help it grow even further.

The following four tables show inflows, growth change and the historic performance of the Fund.

	Inflows to the LGPF (FYrs)			
Date	Beginning Market Value ($000)	Gain / Loss ($ 000)	STL Contributions ($000)	Inflows Before Withdrawals ($ 000)
1990	3,002,201	278,496	104,922	383,418
1991	3,126,658	354,364	121,159	475,523
1992	3,342,815	498,843	104,381	603,224
1993	3,684,074	455,701	122,950	578,651
1994	4,001,179	-9,996	115,598	105,602
1995	3,848,857	625,176	97,299	722,475
1996	4,323,230	495,049	100,171	595,220
1997	4,672,423	895,751	147,767	1,043,518
1998	5,464,713	1,115,799	129,981	1,245,780
1999	6,455,078	1,014,822	104,747	1,119,569
2000	7,312,227	745,209	217,905	963,114
2001	7,931,025	-516,236	325,947	-190,289
2002	7,418,583	-652,613	213,348	-439,265
2003	6,696,176	221,267	222,985	444,252
2004	6,807,644	959,800	269,743	1,229,543
2005	7,636,441	722,473	324,689	1,047,162
2006	8,251,104	860,293	465,306	1,325,599
2007	9,099,028	1,624,377	449,303	2,073,680
2008	10,673,196	-401,154	460,648	59,494
2009	10,270,455	-2,300,960	480,526	-1,820,434
2010	7,928,500	1,113,148	330,275	1,443,423
2011	8,846,410	1,966,650	411,496	2,378,146
2012	10,688,653	62,765	529,038	591,803
Average		**440,392**	**254,356**	**694,748**

Source: New Mexico State Investment Council

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	Inflows to the LGPF (FYrs)			
Date	Beginning Market Value ($000)	Gain / Loss	STL Contributions	Inflows Before Withdrawals
1990	3,002,201	9.3%	3.5%	12.8%
1991	3,126,658	11.3%	3.9%	15.2%
1992	3,342,815	14.9%	3.1%	18.0%
1993	3,684,074	12.4%	3.3%	15.7%
1994	4,001,179	-0.2%	2.9%	2.6%
1995	3,848,857	16.2%	2.5%	18.8%
1996	4,323,230	11.5%	2.3%	13.8%
1997	4,672,423	19.2%	3.2%	22.3%
1998	5,464,713	20.4%	2.4%	22.8%
1999	6,455,078	15.7%	1.6%	17.3%
2000	7,312,227	10.2%	3.0%	13.2%
2001	7,931,025	-6.5%	4.1%	-2.4%
2002	7,418,583	-8.8%	2.9%	-5.9%
2003	6,696,176	3.3%	3.3%	6.6%
2004	6,807,644	14.1%	4.0%	18.1%
2005	7,636,441	9.5%	4.3%	13.7%
2006	8,251,104	10.4%	5.6%	16.1%
2007	9,099,028	17.9%	4.9%	22.8%
2008	10,673,196	-3.8%	4.3%	0.6%
2009	10,270,455	-22.4%	4.7%	-17.7%
2010	7,928,500	14.0%	4.2%	18.2%
2011	8,846,410	22.2%	4.7%	26.9%
2012	10,688,653	0.6%	4.9%	5.5%
Compound Rate		7.8%	3.6%	11.4%

Source: New Mexico State Investment Council

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Ending Market Value Growth Change (FYrs)

Date	Beginning Market Value ($000)	Inflows Before Withdrawals ($ 000)	Withdrawals ($ 000)	Ending Market Value ($000)	Change Ending Market Value
1990	3,002,201	383,418	258,961	3,126,658	4.1%
1991	3,126,658	475,523	259,366	3,342,815	6.9%
1992	3,342,815	603,224	261,965	3,684,074	10.2%
1993	3,684,074	578,651	261,546	4,001,179	8.6%
1994	4,001,179	105,602	257,924	3,848,857	-3.8%
1995	3,848,857	722,475	248,102	4,323,230	12.3%
1996	4,323,230	595,220	246,027	4,672,423	8.1%
1997	4,672,423	1,043,518	251,228	5,464,713	17.0%
1998	5,464,713	1,245,780	255,415	6,455,078	18.1%
1999	6,455,078	1,119,569	262,420	7,312,227	13.3%
2000	7,312,227	963,114	344,316	7,931,025	8.5%
2001	7,931,025	-190,289	322,153	7,418,583	-6.5%
2002	7,418,583	-439,265	283,142	6,696,176	-9.7%
2003	6,696,176	444,252	332,784	6,807,644	1.7%
2004	6,807,644	1,229,543	400,746	7,636,441	12.2%
2005	7,636,441	1,047,162	432,499	8,251,104	8.0%
2006	8,251,104	1,325,599	477,675	9,099,028	10.3%
2007	9,099,028	2,073,680	499,512	10,673,196	17.3%
2008	10,673,196	59,494	462,235	10,270,455	-3.8%
2009	10,270,455	-1,820,434	521,521	7,928,500	-22.8%
2010	7,928,500	1,443,423	525,513	8,846,410	11.6%
2011	8,846,410	2,378,146	535,903	10,688,653	20.8%
2012	10,688,653	591,803	553,418	10,727,037	0.4%

Source: New Mexico State Investment Council

LGPF Historic Performance (FYrs)

Date	Beginning Market Value ($000)	Inflows Before Withdrawals	Withdrawals	Ending Market Value ($000)
1990	3,002,201	12.8%	8.6%	3,126,658
1991	3,126,658	15.2%	8.3%	3,342,815
1992	3,342,815	18.0%	7.8%	3,684,074
1993	3,684,074	15.7%	7.1%	4,001,179
1994	4,001,179	2.6%	6.4%	3,848,857
1995	3,848,857	18.8%	6.4%	4,323,230
1996	4,323,230	13.8%	5.7%	4,672,423
1997	4,672,423	22.3%	5.4%	5,464,713
1998	5,464,713	22.8%	4.7%	6,455,078
1999	6,455,078	17.3%	4.1%	7,312,227
2000	7,312,227	13.2%	4.7%	7,931,025
2001	7,931,025	-2.4%	4.1%	7,418,583
2002	7,418,583	-5.9%	3.8%	6,696,176
2003	6,696,176	6.6%	5.0%	6,807,644
2004	6,807,644	18.1%	5.9%	7,636,441
2005	7,636,441	13.7%	5.7%	8,251,104
2006	8,251,104	16.1%	5.8%	9,099,028
2007	9,099,028	22.8%	5.5%	10,673,196
2008	10,673,196	0.6%	4.3%	10,270,455
2009	10,270,455	-17.7%	5.1%	7,928,500
2010	7,928,500	18.2%	6.6%	8,846,410
2011	8,846,410	26.9%	6.1%	10,688,653
2012	10,688,653	5.5%	5.2%	10,727,037
Compound Rate		11.4%	5.7%	-

Source: New Mexico State Investment Council
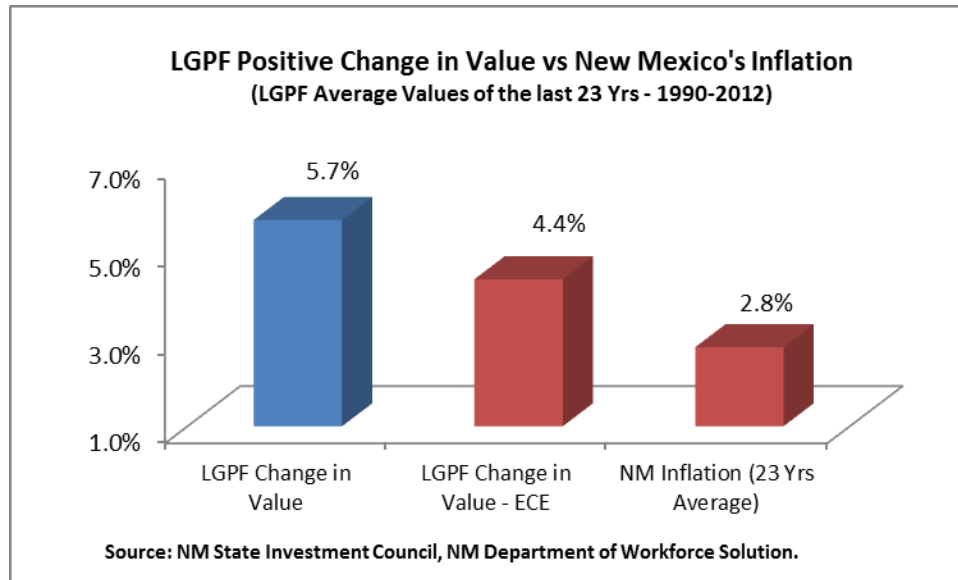
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Issue of Inflation

When a permanent fund such as the LGPF is managed, there are always concerns with the impact that inflation could cause to the real value of the Fund. The inflation adjusted value of money is the principle that a certain amount of money today has a different buying power (value) than the same amount of money in the future. The value of money at a future point of time would take into account inflation accrued over a given time period.

It is the objective of the people of New Mexico to fund education while preserving the value of the assets that support this funding. Thus, the LGPF should maintain its value adjusted for inflation.

The LGPF experience reflects a positive net change in value during the last 23 years. This growth of 5.7% was about double the 2.8% inflation average for New Mexico during the same period, as shown by the next graph. Therefore, the historic performance of the LGPF shows that there is ample margin to increase withdrawals while protecting the value of the LGPF. Furthermore, if we take the historic LGPF change in value and subtract the proposed increase in withdrawals for early childhood education, the adjusted change in value would stand at 4.4%, still much higher than the 2.8% inflation rate.

LGPF Positive Change in Value vs New Mexico's Inflation
(LGPF Average Values of the last 23 Yrs - 1990-2012)

Source: NM State Investment Council, NM Department of Workforce Solution.

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LGPF Positive Change in Value vs New Mexico's Inflation
(LGPF Average Values of the last 23 Yrs - 1990-2012)

Source: NM State Investment Council, NM Department of Workforce Solution.

The Federal Reserve projects inflation in the United States to be somewhat below 2% during the upcoming years and 2% as a long term average. These projections, along with other factors, are the bases used to establish the monetary policy of the United States.

Personal Consumption Expenditures (PCE) Projections					
Inflation Projections	2013	2014	2015	2016	Longer Run
Central tendency[1]	9 to 1.0	1.4 to 1.6	1.5 to 2.0	1.7 to 2.0	2.0
Range[2]	9 to 1.2	1.3 to 1.8	1.4 to 2.3	1.6 to 2.2	2.0

Source: Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents, December 18, 2013
[1]The central tendency excludes the three highest and three lowest projections for each variable in each year.
[2]The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.

In theory, actual inflation could exceed the Federal Reserve expectation of 2%. However, a higher inflation rate would most likely also increase the returns generated by the LGPF and the STL. In the short term, real assets such as those held by the STL (oil and gas royalties) and the projected 20% of real assets in the LGPF portfolio would perform well in a high inflation scenario.[21] In the long term, higher inflation would lead to a realignment of the returns of the different asset classes.

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[21] NM SIC presentation to the Investment Oversight Committee, June 9, 2011

Bondholders would require a return somewhat higher than inflation and shareholders would require an equity premium over the return of bonds.

Description of the State Trust Lands

The State Land Office (SLO) is responsible for the management of the State Trust Lands (STL). The SLO manages 8.8 million acres of surface and 13.4 million acres of subsurface land for the beneficiaries of the Fund. About 94% of SLO earnings support education.[22]

State Trust land is located in 32 of New Mexico's 33 counties. The goals of the Trust are to optimize revenues while protecting the health of the land for future generations.

Trust lands were granted to New Mexico by Congress under the Ferguson Act of 1898 and the Enabling Act of 1910. The latter act allowed New Mexico's admission to the United States upon voter approval of the state constitution.

Revenues from activities such as grazing, rights of way and commercial activities that do not permanently deplete the resource are distributed through the maintenance fund to the designated beneficiaries after the SLO covers its own expenses. The SLO base budget request represents only about 2.2% of the total revenue earned by the agency each year.[23]

Revenue generated from the sale of land depletes the resource and therefore is placed in the LGPF, which is then invested for the beneficiaries. In essence, a real-estate asset is swapped for a financial asset, maintaining the wealth of the beneficiaries.

The extraction of oil and gas, as well as mining, is considered by the STL to be a depletion of the resource. However, since some oil wells have been in operation for more than three-quarters of a century, the definition of "depletion" needs to be more properly ascertained. The industry standard measure is proven reserves, which takes into account prices and technology when assessing the inventory of existing and recoverable resources. According to the industry norm, the extraction of oil depletes the resource, but a change in technology, such as fracking, replenishes the resource
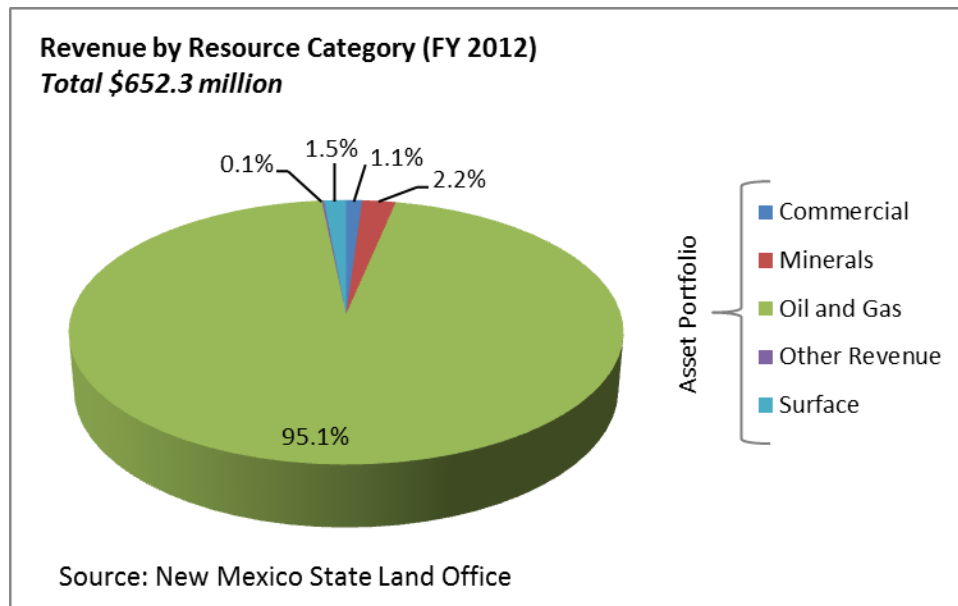
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[22]New Mexico State Land Office FY 2015 Appropriation Request, Presented to the Legislative Finance Committee, October 23, 2013.
[23] Ibid.

because oil that could not be extracted or was not financially attractive to extract, suddenly becomes proven reserves.
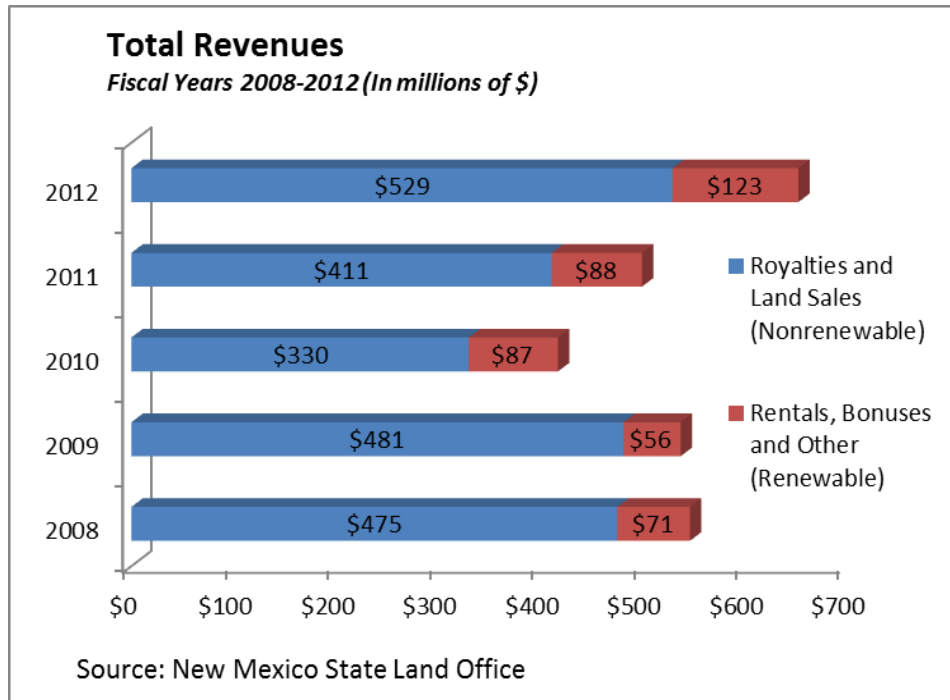
In 2013, the mineral-resources revenue for New Mexico amounted to more than $540 million, representing 95% of total revenue from the SLO's asset portfolio. Fiscal 2012 experienced strong conditions in sustained oil prices, increased oil production and strong interest in SLO oil and gas lease sales. Meanwhile, in 2013, the second highest revenue level was reported during the last five years. The SLO estimates that revenue in the next two years will rebound to levels similar to fiscal 2012 (a projected $640 million in fiscal 2014 and $629 million in fiscal 2015).[24]

The chart below outlines the SLO's sources of revenue based on its asset portfolio:

Revenue by Resource Category (FY 2012)
Total $652.3 million

- 0.1%
- 1.5%
- 1.1%
- 2.2%
- 95.1%

Asset Portfolio
- Commercial
- Minerals
- Oil and Gas
- Other Revenue
- Surface

Source: New Mexico State Land Office

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[24] Ibid.

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The graph below illustrates the SLO's total revenues in fiscal years 2008-2012.

Total Revenues
Fiscal Years 2008-2012 (In millions of $)

Year	Royalties and Land Sales (Nonrenewable)	Rentals, Bonuses and Other (Renewable)
2012	$529	$123
2011	$411	$88
2010	$330	$87
2009	$481	$56
2008	$475	$71

Source: New Mexico State Land Office

Revenues from renewable-energy leases are expected to be the largest growth area for commercial leasing in the near future. New Mexico is a leader in the nation in terms of potential wind-generated electric-power production capacity and second in the nation for solar-generated electric-power production capacity.[25]

The next table outlines revenues by source coming into the State Trust Lands.

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[25]New Mexico State Land Office 2012 Annual Report.

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STL Revenues by Source
Fiscal Years 2009-2013

	2009	2010	2011	2012	2013	5-Yr Total 09-13
RENTALS						
Sand & Gravel	6,373	5,994	9,481	6,095	5,179	33,122
Sand & Gravel Interest	359	2,471	33,473	-	-	36,303
Special Use Agreements	990	1,550	1,205	1,632	2,750	8,127
Potash	95,623	45,240	130,340	41,652	48,440	361,295
Grazing	7,427,345	5,216,784	5,918,144	5,429,688	5,968,412	29,960,373
Salt	530	190	22,806	1,448	1,215	26,189
Coal Rental	40,505	32,014	30,800	37,305	23,900	164,524
General Mining	263,370	98,959	105,277	59,993	52,366	579,965
Shut-in-Royalty	48,499	66,345	58,118	39,443	48,553	260,958
Oil & Gas Rental	2,248,154	2,196,337	2,229,131	2,194,148	2,149,594	11,017,364
Oil & Gas Bonuses	33,655,610	67,737,163	55,360,518	102,042,763	44,046,175	302,842,229
Oil & Gas Interest	1,807,271	3,462,079	12,013,542	3,061,813	2,509,395	22,854,100
Seismic Permits	40,600	25,400	15,140	49,600	-	130,740
Business Leases	2,659,604	2,166,607	3,107,845	2,609,611	6,193,179	16,736,846
Business Leases Interest	12,711	4,330	17,547	-	4,991	39,579
Business Lease Options	30,187	-	812,376	112,010	31,914	986,487
Land Use Restrictions			-	-	769,675	769,675
Billboards	73,263	66,884	142,038	176,155	105,551	563,891
Geothermal Rental	1,774	50	4,002	1,628	1,620	9,074
Water	632,588	779,306	906,977	834,243	743,995	3,897,109
Salt Water	782,302	1,554,701	1,710,315	1,957,651	2,743,712	8,748,681
Right-of-Way	4,270,727	2,220,899	3,782,073	3,159,709	5,251,352	18,684,760
Solar Energy	-	-	40,778	1,152	44,923	86,853
Wind Energy	-	-	10,000	219,196	17,505	246,701
Biomass	-	-	-	-	-	-
Energy Transmission	-	-	29,803	29,811	30,854	90,468
Land Contracts Interest	-	-	-	-	-	-
Land Contracts Penalty	-	-	-	-	-	-
Directional Drilling			-	-	-	-
Gas Storage Units	147,789	140,177	164,719	308,551	159,480	920,716
Fuelwood	20	780	880	2,050	470	4,200
SUBTOTAL	*54,246,194*	*85,824,260*	*86,657,328*	*122,377,347*	*70,955,200*	*420,060,329*
OTHER						
Fees & Copies	470,553	493,459	722,183	680,925	679,066	3,046,186
Interest on Cash Deposits	1,148,817	176,762	226,205	214,688	327,878	2,094,350
Other	32,702	14,771	109,951	37,224	46,922	241,570
SUBTOTAL	*1,652,072*	*684,992*	*1,058,339*	*932,837*	*1,053,866*	*5,382,106*
TOTAL RENTAL AND OTHER	*55,898,266*	*86,509,252*	*87,715,667*	*123,310,184*	*72,009,066*	*425,442,435*
ROYALTY						
Sand & Gravel	921,830	1,385,696	1,314,760	3,596,239	2,339,419	9,557,944
Potash	2,135,650	1,814,816	2,492,553	2,629,627	1,692,007	10,764,653
Salt	107,584	66,400	88,001	196,881	227,909	686,775
Caliche	460,447	499,715	573,906	850,285	1,347,871	3,732,224
Coal	13,596,611	7,652,203	7,335,878	7,064,806	5,496,992	41,146,490
General Mining	-	-	-	500	-	500
Oil & Gas	459,576,769	316,466,037	398,001,680	512,940,790	494,082,929	2,181,068,205
Land Contracts	3,736,233	2,317,742	1,506,864	1,567,500	-	9,128,339
Water	34,856	72,640	163,942	181,873	298,102	751,413
Geothermal	56,294	194	17,925	9,225	3,075	86,713
SUBTOTAL	*480,626,274*	*330,275,443*	*411,495,509*	*529,037,726*	*505,488,304*	*2,256,923,256*
GRAND TOTAL	536,524,540	416,784,695	499,211,176	652,347,910	577,497,370	2,682,365,691

Source: New Mexico State Land Office

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New Mexico Natural Resources Reserves

The following section describes the statistics of proven reserves for gas and oil for the state of New Mexico. The data presented includes the reserves for federal, state and private lands. There is no available data that shows the information separated in those three categories.

New Mexico's crude-oil proven reserves have fluctuated around 700 million barrels for the last three decades. From 1977 to 2001, the average proven reserves were 660 million barrels. Last decade, reserves grew almost 10% (723 million barrels on average), reaching a historic high of 866 million barrels in 2011.[26] This should lead to a more nuanced concept of depletion, considering that advances in technology and changes in prices prolong the life of natural resources, and thus, the state revenue source for future generations. The following graph outlines how the proven reserves have fluctuated from 1977 to 2011.

New Mexico Crude Oil Proved Reserves (Million Barrels)
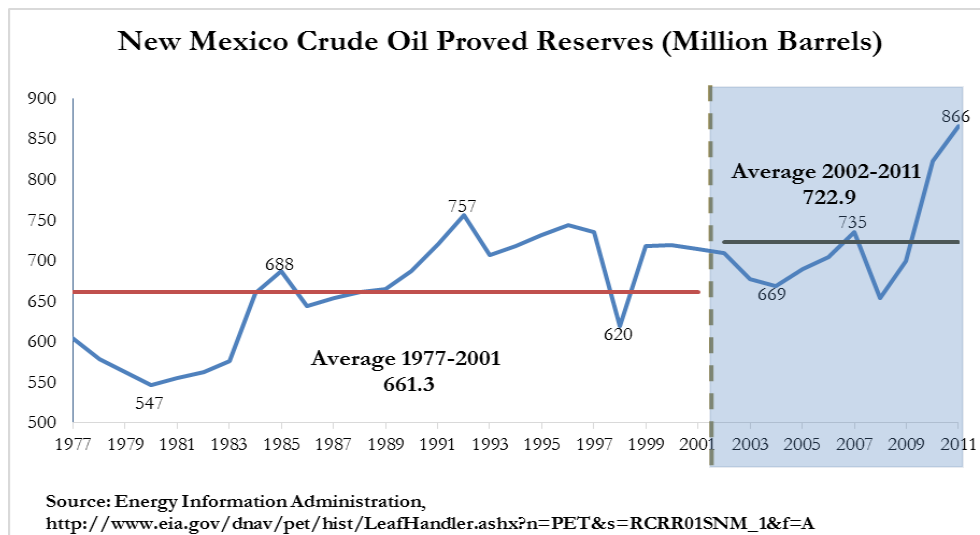
Source: Energy Information Administration,
http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RCRR01SNM_1&f=A

Based on information provided by the SLO, recent oil concessions from this agency are at higher royalty rates than historic average which implies positive expectations by the market.[27]

The most recent data from the U.S. Energy Information Administration (EIA) shows that New Mexico's proven natural-gas reserves were estimated to be 16,529 billion cubic feet (bcf) at the end of calendar year 2010, down from 18,509 bcf at the end of calendar year 2000, a decade earlier. Proven reserves are estimates of recoverable volumes under existing economic and operating conditions. They represent the narrowest measurement of energy resources.

During the 10-year period mentioned, reserves decreased about 1,980 bcf, while production was about 15,000 bcf. Additional reserves through new discoveries and revised estimates offset 87% of the production during the last decade. It is expected that new reserves will be discovered and/or unlocked; thus the proven reserves would continue to offset production and perhaps, as in the case of oil, grow in spite of production.

New Mexico's proven natural-gas reserves increased in the early 1990s due to exploration and development in coal seams that was triggered by a federal income-tax credit (Section 29 of the Internal Revenue Code). The credit was worth more than $1.00 per thousand cubic feet of production and grew with inflation, but it is no longer available for production occurring after 2002. In fiscal 2012, production from coal-seam formations accounted for approximately 27.4% of total statewide natural-gas production.

The next table presents EIA estimates of natural-gas proven reserves in New Mexico from 2000 to 2010.
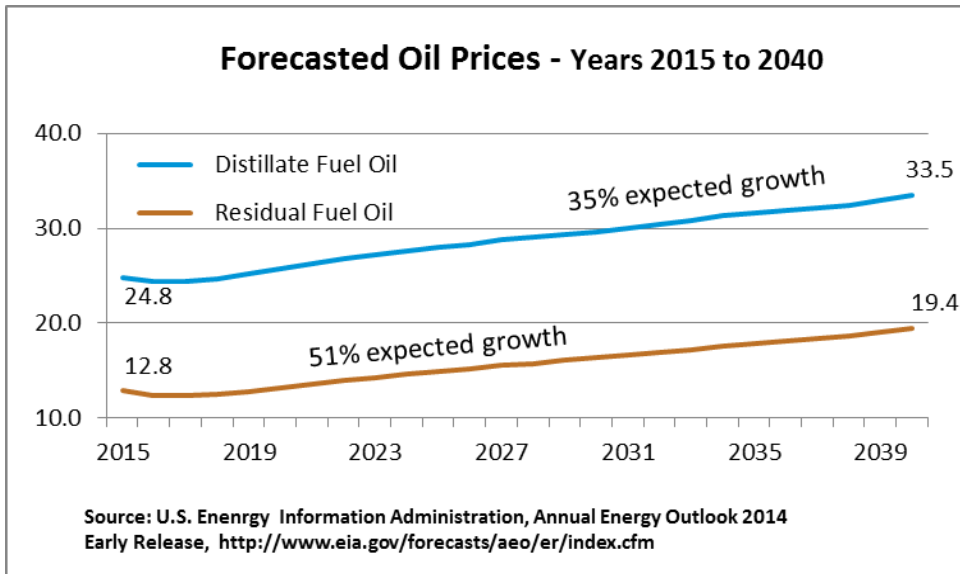

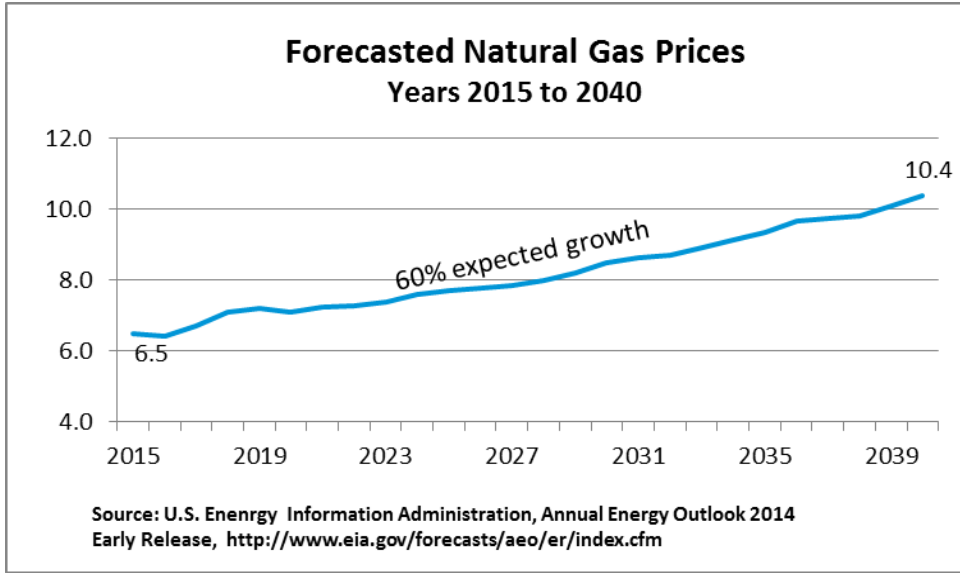[27]Interview with SLO officers on Aug. 16, 2013.

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New Mexico Natural Gas Reserves[1]
(Natural Gas numbers in billion cubic feet)

Calendar Year	Beginning Reserves	Net Additions/ Adjustments	Estimated Production	Ending Reserves
2000	16,750	3,405	1,646	18,509
2001	18,509	1,706	1,656	18,559
2002	18,559	1,493	1,599	18,453
2003	18,453	1,326	1,553	18,226
2004	18,226	3,011	1,550	19,687
2005	19,687	1,186	1,529	19,344
2006	19,344	1,301	1,541	19,104
2007	19,104	760	1,467	18,397
2008	18,397	353	1,403	17,347
2009	17,347	687	1,390	16,644
2010	16,644	1,197	1,312	16,529

1. As measured by wet after lease separation. Wet after lease separation represents the volume of natural gas that is marketable after exclusion of pentanes, hydrocarbons and nonhydrocarbons. The presence of these chemicals renders natural gas unmarketable.

Source: Department of Finance and Administration, U.S. Energy Information Administration.

The EIA forcasted prices for natural gas and oil showing strong growth for the next 25 years, indicating potentially higher royalty payments for the STL into the future. Moreover, higher prices lead to growth in proven reserves by promoting more exploration and allowing the explotation of resources that were previously unprofitable to extract.

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Forecasted Natural Gas Prices
Years 2015 to 2040

Source: U.S. Enenrgy Information Administration, Annual Energy Outlook 2014
Early Release, http://www.eia.gov/forecasts/aeo/er/index.cfm

Forecasted Oil Prices - Years 2015 to 2040

Source: U.S. Enenrgy Information Administration, Annual Energy Outlook 2014
Early Release, http://www.eia.gov/forecasts/aeo/er/index.cfm

III.   VALUATION OF THE STATE TRUST LANDS

During the period 1990 to 2012, withdrawals from the LGPF averaged 5.7%. However, this percentage values the financial assets of the LGPF at market value and the land assets of the STL at zero.[28] This assumption is incorrect. The STL's land assets cannot be valued at zero because every year they generate a stream of income of several hundred million dollars. Therefore, the land has great value. If the STL's land assets were to be valued conservatively, the estimated withdrawal figure from the LGPF would drop dramatically from the current 5.7% average to below 4%.

It is worth noting an inconsistency in the policy of the LGPF. The Fund itself has made some investments in real assets. These investments are considered part of the assets when calculating the amount to be withdrawn from the Fund. However, if the real assets are owned by the STL, they are not considered in the calculation.

Thus, a conservative assessment of the value of the STL's land assets must be performed to come to grips with the actual withdrawal level of the LGPF, now and in the future.

A precise valuation of the STL's land assets is not possible to perform because critical variables, such as proven reserves of oil and gas over time for the State lands, are not available. However, a general assessment of the valuation can be performed using the cash flow generated by the STL and deposited in the LGPF. This methodology (the cash-flow perpetuity formula) is generally accepted within the financial community.[29] The estimate clearly indicates that the STL's land assets are worth billions.

For fiscal 2012, the estimated value of the STL was between $6.2 billion and $6.4 billion, depending on the scenario used, which are both industry standards.[30] The following table illustrates these two scenarios, one assuming that the STL is in the real-estate business, leasing land, and another assuming that it is in the oil and natural-gas business, producing oil and gas through contracts with third parties.

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[28] The figure is the average for the period 1990-2012.

[29] Data on the STL's proven reserves, which are presently unavailable, would have allowed Advantage to refine the cash-flow projections and thus the valuation. Regardless, very conservative assumptions were used to value the STL.

[30] See Appendix for more details on the valuation methodology.

STL Estimated Value - FY 2012 (*in $ 000*)		
	Real Estate Scenario	**Oil & Gas Scenario**
Free Cash Flow[1]	$442,397	$442,397
WACC[2]	12.1%	12.3%
FCF Growth Rate (g)[3]	5.2%	5.2%
STL Estimated Value	**$6,430,183**	**$6,248,540**

[1] Free Cash Flow = STL 5 Yrs Average Contributions (2008-2012)

[2] WACC = Weighted Average Cost of Capital

[3] Long-term (30-year) U.S. Treasury Yield, FY 2012 + NMSIC
Real Return (3.21 + 2.00 = 5.21)

This is a conservative assessment. In the case of the estimated growth rate of 5.2%[31] it is lower than the historical figure of 7.3% for the period 1990 to 2012. In addition, recent contracts for oil extraction are at higher royalty rates than the average rates in the STL portfolio.[32] Finally, it is reasonable to assume that proven oil reserves in the STL fields are growing in line with proven oil reserves in the state of New Mexico and thus, a larger amount of oil would be extracted in the future.

Another conservative assumption is that the STL holds no debt. If the STL assets were to be sold in the open market, the buying entities would use debt and thus have a lower cost of capital.

Assuming that a 5% withdrawal rate is applied to the estimated value of the STL ($6.2 billion to $6.4 billion), the withdrawal amount in 2012 would be between $312 million and $322 million. These amounts significantly exceed the proposed withdrawal amounts from the LGPF for early childhood education.

In other words, if all the land in the STL were sold and about $6.3 billion deposited in the LGPF, then it would be considered prudent, under the current New Mexico State Investment Council policies, to withdraw $315 million annually, representing 5% of the net asset value, for current
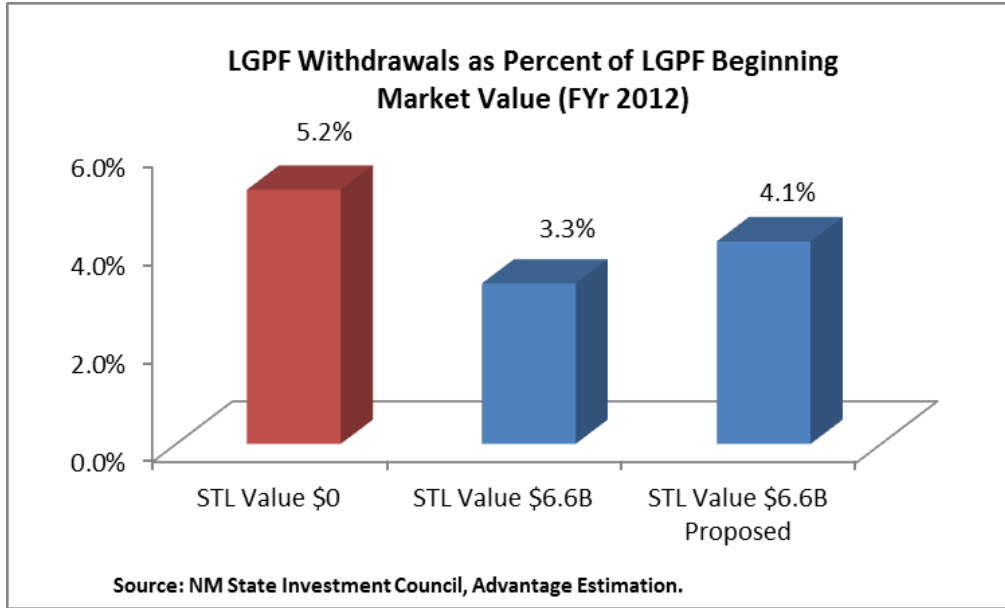
[31] NMSIC, Returns Expectations Analysis, July 27, 2011
[32] Meeting with STL officers on August 16, 2013

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distributions. However, if New Mexico keeps the land, then under the current public policies, it would be considered inappropriate to withdraw one cent from the revenue generated by this land—everything must be deposited in the LGPF and nothing used for current education spending.

Another way to assess the withdrawals from the LGPF is to compare the actual data for 2012 valuing the STL at zero with an estimation of the historical data valuing the STL at $6.2 billion. Once the STL estimated value is added to the LGPF value, the percentage of assets withdrawn drops to 3.3%. If the proposed withdrawal of 1.5% of the average for the previous five years for early childhood education had been in effect, the withdrawn assets for 2012 would have been 4.1%. The next table shows this calculation.

LGPF Withdrawals as Percent of Total STL Land Assets (FYr 2012)			
	STL Value at $0	STL Valued	STL Valued Proposed
Current Withdrawals	$553,418	$553,418	$553,418
Proposed Withdrawals	$0	$0	$145,222
Total Withdrawals	**$553,418**	**$553,418**	**$698,640**
LGPF Financial Assets	$10,688,653	$10,688,653	$10,688,653
STL Value	$0	$6,248,540	$6,248,540
Total STL Land Assets	**$10,688,653**	**$16,937,193**	**$16,937,193**
Withdrawals as % of Assets	**5.2%**	**3.3%**	**4.1%**

Source: NM State Investment Council, Advantage Estimation.

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LGPF Withdrawals as Percent of LGPF Beginning Market Value (FYr 2012)

Source: NM State Investment Council, Advantage Estimation.

IV.   DEVELOPMENT OF ALTERNATIVE FINANCIAL SCENARIOS

Two scenarios were developed to simulate the new amount that would be withdrawn from the LGPF for early childhood education, as per the proposal to increase the distribution over a 10-year period. The first scenario, with the STL valued at zero, assumes a 1.5% withdrawal of the five-year average of the financial assets of the LGPF for early childhood education. This has been a proposal presented to the New Mexico legislature in the past.

In the diagram below, withdrawals are 4.9%, which is below the statutory figure (the legal requirement of 5.5%) because the base for the statutory figure is the last five-year average. This base (the average of the fund's value over the last five years) is usually lower than the present-year market value of the LGPF. The same holds for the early childhood education withdrawals, which are estimated at 1.5% of the average of the fund's value over five years, or approximately 1.3% of the fund's value in the last year.

The projection of a 7.3% return on the LGPF's assets is conservative since the NMSIC's target return for the LGPF is 7.5%. In addition, the target for the New Mexico pension funds is 7.75%. As stated in the minutes of the Investments and Pensions Oversight Committee of July 2013:

"The investment strategies of the agencies establish weights, benchmarks and ranges for the investment asset classes. The Employee Retirement Board and the Public Employees Retirement Association require asset allocation plans expected to achieve an assumed overall rate of return on fund investments of 7.75 percent. The SIC's benchmark is 7.5 percent.[33]… In 2011, the SIC conducted an asset allocation study with assistance from advisors. As a result of its review of its portfolio target and risk level, the SIC ultimately determined that its return-on-investment target of 8.5 percent should be reduced to 7.5%"[34]

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[33] Investments and Pensions Oversight Committee, Minutes of Meeting, July 10, 2013, pg. 2.
[34] Investments and Pensions Oversight Committee, Minutes of Meeting, July 10, 2013, pg. 8

Recent years have produced very attractive returns among the NMSIC peers. The median returns of the Wilshire Trust Universe for three years ending on June 2013 were 10.6%.[35] Thus, the 7.5% targeted by the SIC seems reasonable and the 7.3% used in this study is conservative.

ALTERNATIVE FINANCIAL SCENARIO I: NET CHANGE IN VALUE FLOW CHART

% VALUES FROM 10-YR AVERAGE (2015-2024)
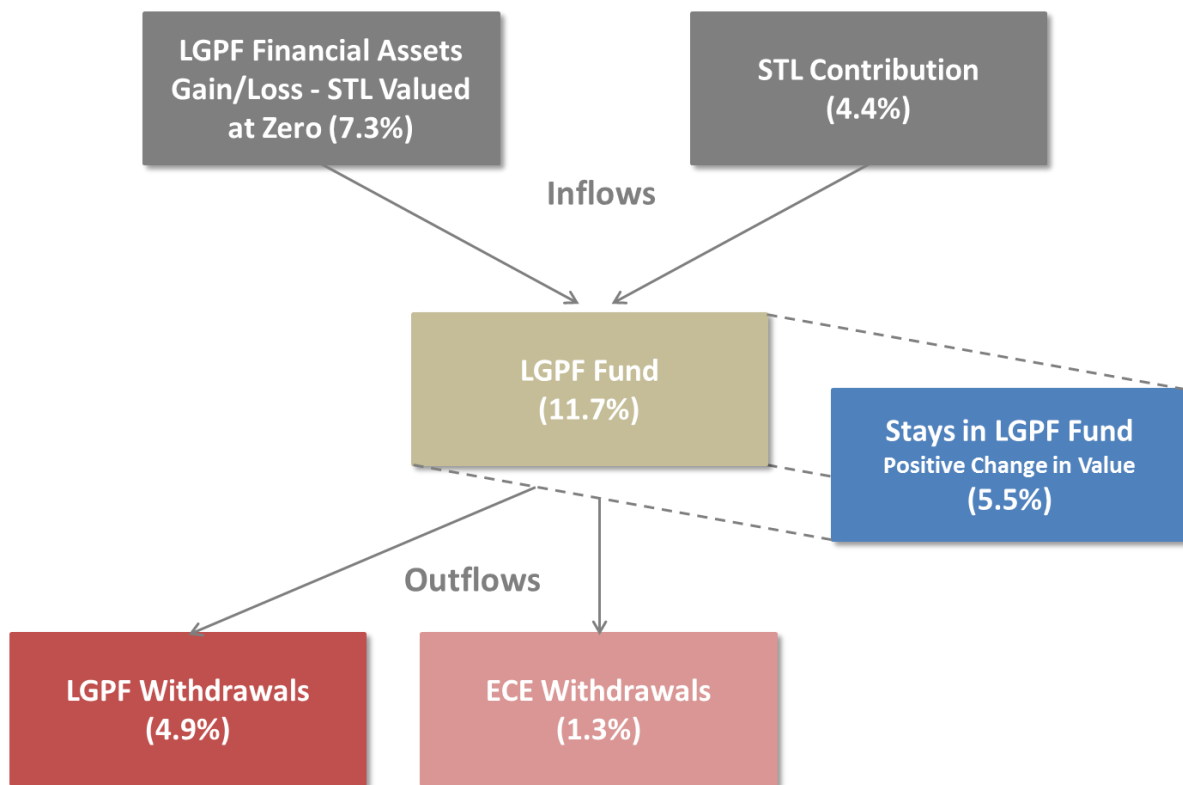
Thus, 7.3%+4.4% (inflows) =11.7% -4.9% -1.3% (outflows) =5.5% (positive change in value)

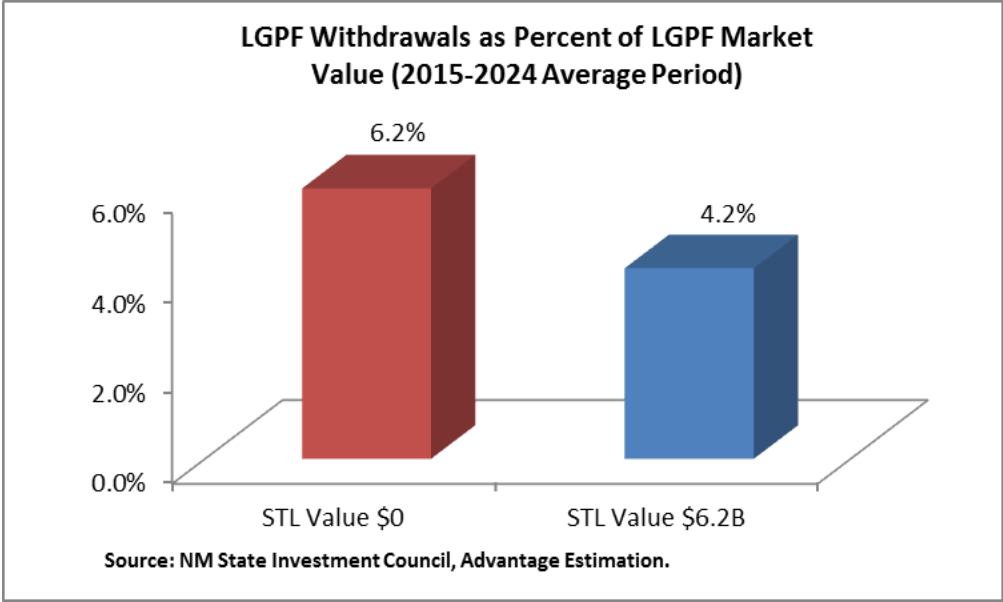The 5.5% stays in the fund to help it grow even further.

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[35] Olsen, Kevin, Pensions and Investments, August 6, 2013

The assumptions for the two inflows in the previous diagram are detailed in Appendix 2.

This scenario (with the STL valued at zero and a net withdrawal rate of 6.2%) reflects a positive net change in the LGPF's value of 5.5%, indicating a healthy growth rate. This rate of growth is double that of New Mexico's inflation average of the last 23 years and more than double that of the last five years, as shown below.
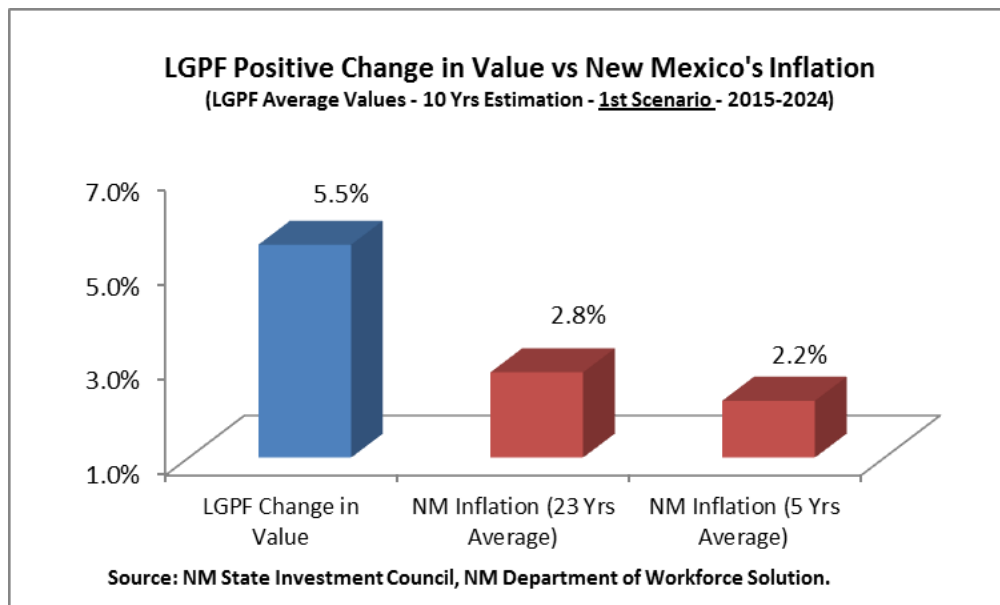

The more accurate way to assess the scenario is to calculate the withdrawal rate including an estimated value for the STL's oil, gas and real-estate assets of $6.2 billion. The withdrawal rate stands at 4.2%; no one has questioned the prudence of this withdrawal rate.

LGPF Withdrawals as Percent of LGPF Market Value (2015-2024 Average Period)

6.2%

4.2%

STL Value $0

STL Value $6.2B

Source: NM State Investment Council, Advantage Estimation.

The second scenario assumes a 1% withdrawal of the five-year average of the financial assets of the LGPF for early childhood education, or approximately 0.9% of the last year's assets. This withdrawal rate is lower than the proposal that was presented to the New Mexico legislature in the past.

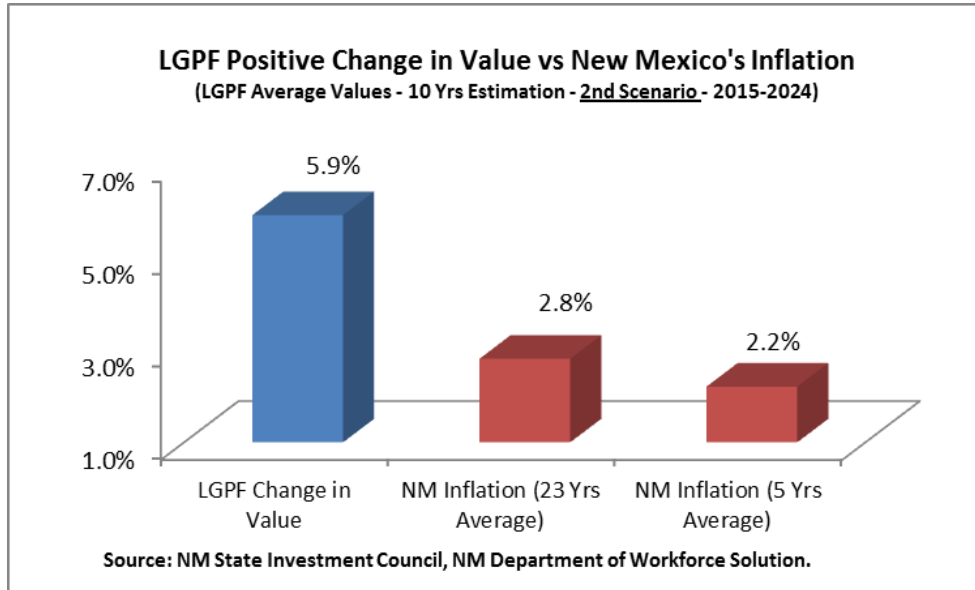**ALTERNATIVE FINANCIAL SCENARIO II: NET CHANGE IN VALUE FLOW CHART**

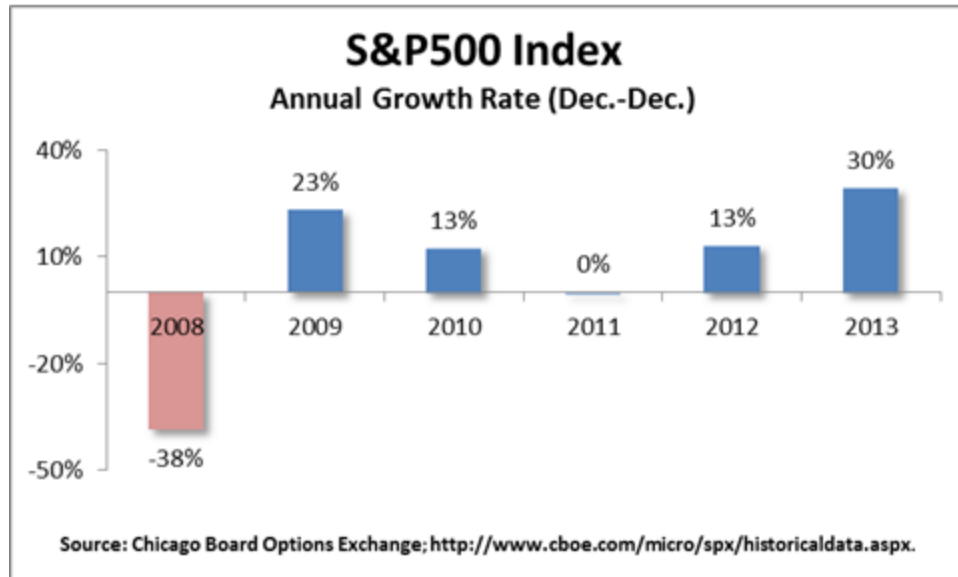*% VALUES FROM 10-YR AVERAGE (2015-2024)*
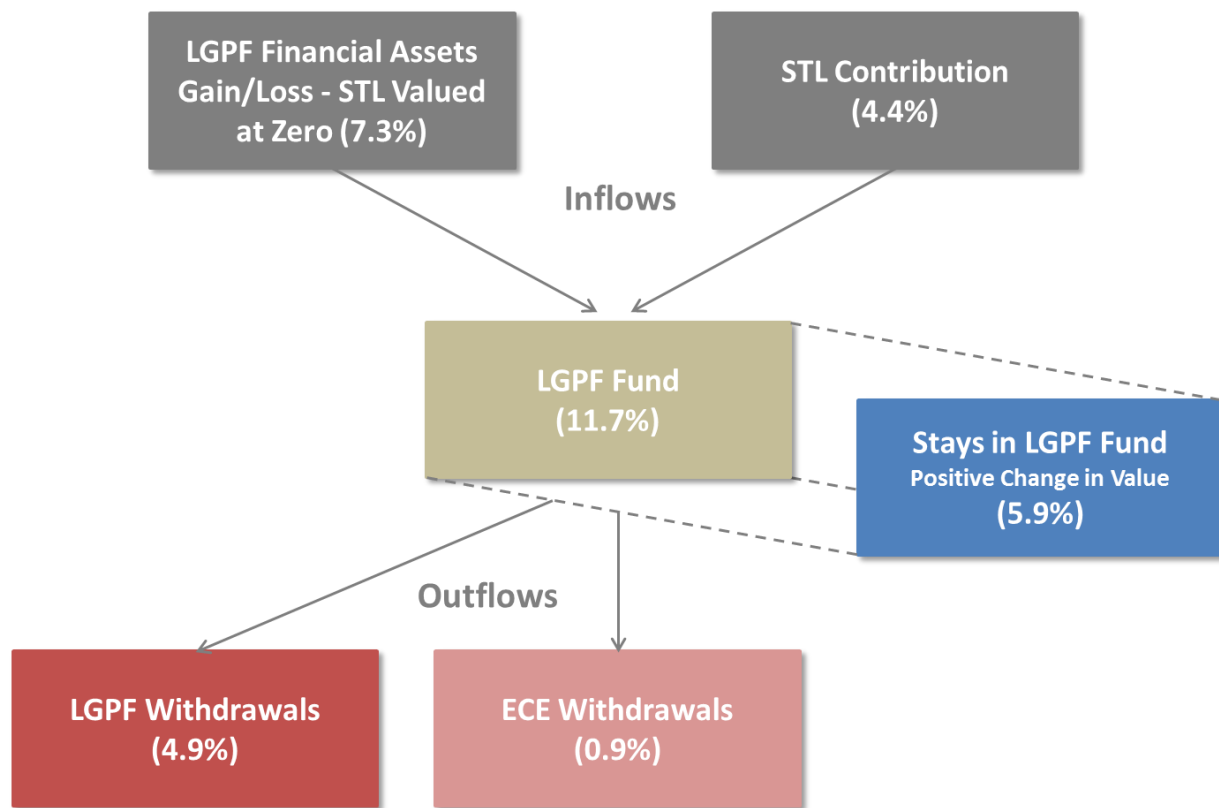
Thus, 7.3%+4.4% (inflows) = 11.7- 4.9% - 0.9% (outflows) = 5.9% (positive change in value).

The 5.9% stays in the fund to help it grow even further.

This scenario, as illustrated below, also reflects a positive net change in value of 5.9% that is significantly above inflation. Again, this reflects a healthy growth rate in the LGPF asset value.

LGPF Positive Change in Value vs New Mexico's Inflation
(LGPF Average Values - 10 Yrs Estimation - 2nd Scenario - 2015-2024)

- LGPF Change in Value: 5.9%
- NM Inflation (23 Yrs Average): 2.8%
- NM Inflation (5 Yrs Average): 2.2%

Source: NM State Investment Council, NM Department of Workforce Solution.

While the figures presented by Advantage are long-term trends, there could be volatility in the short run, as shown in the graph below.

S&P500 Index
Annual Growth Rate (Dec.-Dec.)

- 2008: -38%
- 2009: 23%
- 2010: 13%
- 2011: 0%
- 2012: 13%
- 2013: 30%

Source: Chicago Board Options Exchange; http://www.cboe.com/micro/spx/historicaldata.aspx.

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Thus, a "safety valve" mechanism would be warranted. One possibility could be temporarily stopping additional distributions should the total assets at the end of fiscal year drop below $10 billion in the first two years after the amendment is enacted; $11 billion in years three to five; and $12 billion thereafter. However, it must be stressed that a large market correction, such as the one that occurred in fiscal 2008-2009, would result in a much bigger impact on the size of the Fund than the additional withdrawals proposed for early childhood education.

Moreover, the diversification policies of the LGPF are aimed at minimizing volatility and fluctuations in returns. Thus, a rise in inflation would impact bonds negatively, but real assets would be protected. A recession would impact stocks negatively, but the expected decline in interest rates would boost the value of bonds. U.S. stocks may fall, but international stocks could be doing well at the same time. Low energy prices would depress STL contributions but boost returns from stocks.

A concern is that nothing in the documentation reviewed by Advantage shows that the diversification strategies of the LGPF take into account the STL. Thus, real assets are being purchased while the STL holds $6.2 billion in real assets. There does not seem to be a policy against investing in energy related stocks. There does not seem to be a policy regarding trading oil futures to stabilize the fluctuations in the income from the STL received by the LGPF. Advantage requested a meeting with the SIC both through St. Joseph Community Health and through Senator Michael Padilla, but it was rebuffed. To the extent that LGPF investment strategy does not take into account the STL indicates it is a generic strategy that is flawed since it was not designed for the particularities of New Mexico with its returns from the STL.

Most worrisome is a statement by the SIC to the Investment Oversight Committee that it could pursue the purchase of real assets in the energy field. The minutes form the July 2013 meeting state (pg. 8): "*In keeping with its goal to reduce risk and volatility, the [NM]SIC has focused its strategy on shifting focus away from public equity risk and diversifying its investments. In particular, Mr. Smith indicated that the [NM]SIC is concerned with increasing exposure to income-producing investments that protect purchasing power and increasing investments that perform favorably when interest rates rise. Such investments could include floating rate debt, timber and energy.*"

Both of the proposed alternative financial scenarios (a 1.5% and a 1% withdrawal rate towards early childhood education) will not deplete or harm the Fund, as it will continue to grow at rates higher than inflation. Thus, the Fund would remain healthy.

Obviously, under both scenarios, the corpus would grow slower than in the absence of withdrawals for early childhood education. However, maximizing the size of the financial assets of the LGPF is not the only objective of the Fund. If it were, then the withdrawals to current beneficiaries could be dropped from 5% to a hypothetical 1% and the LGPF financial assets would grow dramatically. It is the task of the Fund to balance current withdrawals with capital accumulation. Both alternative scenarios achieve this objective.

Finding the correct balance between maximizing the size of the financial assets versus increasing the withdrawal rate to finance strategic initiatives is a natural concern for the Fund managers. Within individual households, a similar balance takes place regarding in several asset classes: a 401(k) account for retirement, education for parents and children, and real estate (their homes).

The key for both New Mexico and individual families is achieving a balance. The present policy of the State of New Mexico results in an unbalanced allocation of resources.

Investing in early childhood education will help to improve New Mexico's negative trends in child well-being indicators. In addition, the Fund would protect its value for future generations. This is an appropriate balance between present needs and Fund stability.

The case for New Mexico will be how to effectively manage a balance between investing in human capital (its residents: parents and children) versus investing in financial capital (the Fund). In other words, the proposal to increase LGPF funding for early childhood education would not simply be expenditures.

As outlined in the Annie E. Casey Foundation's 2013 Kids Count report, New Mexico is ranked the lowest among the 50 states in such indicators as children living in poverty, children whose parents lack secure employment, children not attending preschool and low birthweight babies, among others. There is no doubt that allocating more funds today for early childhood education will help to reduce these statistics as well as future spending in education, welfare and health.[36]

Channeling more resources to early childhood education today would help provide New Mexico's children and future generations with healthier families and more educated parents, along with a strong, albeit somewhat smaller, LGPF. The enhanced human capital of New Mexico's population

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[36] See Chapter VI: Results of Early Childhood Development Programs, later in the document. Also, see Land Grant Permanent Fund: Opportunity for Early Childhood Investment. A summary of the Evidence and an Example of Possible Fund Uses, prepared by: Catherine F. Kinney, MSW, PhD, Kinney Associates, LLC, January 2012.

would have major benefits, such as higher incomes generated by a better educated population and lower government expenditures, as will be discussed further in Section VI.

New Mexico's overall ranking of last among the 50 states in child well-being indicators is shown below.

The Annie E. Casey Fundation / Child Well-Being Rankings

State	Overal Rank	Economic Well-Being Rank	Education Rank	Health Rank	Family and Community Rank
New Hampshire	1	7	4	16	1
Vermont	2	9	3	4	3
Massachusetts	3	13	1	11	7
Minnesota	4	6	7	15	5
New Jersey	5	18	2	13	9
North Dakota	6	1	16	25	4
Iowa	7	5	15	7	8
Nebraska	8	4	17	10	15
Connecticut	9	16	6	2	11
Maryland	10	14	5	8	20
Virginia	11	10	10	20	13
Wisconsin	12	12	12	3	18
Maine	13	20	20	1	6
Utah	14	11	30	14	2
Wyoming	15	2	26	39	12
Kansas	16	8	11	26	23
Pennsylvania	17	17	8	22	25
South Dakota	18	3	22	38	24
Washington	19	28	25	6	17
Idaho	20	23	29	28	10
Colorado	21	19	9	42	21
Delaware	22	21	23	19	28
Illinois	23	29	14	12	29
Ohio	24	27	18	24	31
Hawaii	25	34	33	18	16
Rhode Island	26	31	24	5	32
Missouri	27	22	21	32	26
Montana	28	15	13	50	14
New York	29	35	19	9	33
Indiana	30	26	34	21	30
Michigan	31	36	32	23	27
Oregon	32	41	37	17	22
Alaska	33	24	43	46	19
Kentucky	34	32	28	31	38
North Carolina	35	38	27	34	36
Oklahoma	36	25	40	43	39
West Virginia	37	33	47	27	34
Florida	38	45	35	37	35
Tennessee	39	37	42	33	37
Arkansas	40	39	36	30	45
California	41	46	39	29	42
Texas	42	30	31	36	48
Georgia	43	43	38	40	40
Alabama	44	40	44	35	44
South Carolina	45	44	41	44	43
Louisiana	46	42	45	41	47
Arizona	47	47	46	45	46
Nevada	48	48	50	47	41
Mississippi	49	50	48	48	50
New Mexico	50	49	49	49	49

Source: The Annie E. Casey Foundation / www.aect.org

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Finally, the investment in early childhood education will also provide an immediate and positive multiplier effect in the aggregate economy, generating employment and economic growth. Businesses and other organizations, such as nonprofits, would benefit from the increased demand in services for early childhood education. They would hire more people to provide these services and these newly employed residents would pay taxes, benefiting New Mexico's general fund.

V.   BENCHMARKING THE LGPF WITH OTHER FUNDS

It is important to benchmark New Mexico with other funds because this provides relevant examples of what other jurisdictions consider appropriate with regard to managing their own funds. However, for this comparison to be accurate, New Mexico's Fund must be compared with other funds that are also funded by natural resources. To do so would be comparing apples with apples.

University trusts are qualitatively different from other funds that are based on natural resources. University trusts lack natural resources as a significant source of revenue. The main revenue sources for university trusts are financial assets, such as stocks and bonds, as well as alumni contributions, rather than natural resources, such as oil and natural gas. Thus, comparing New Mexico's Fund with university trusts would be comparing apples with oranges.

Review of other States' Natural Resources Funds

The following section will include a brief review of the state natural-resource funds of Alaska and Wyoming. These two examples are often considered good models by policy makers in New Mexico, upon which withdrawals from the LGPF should be based.[37] As shown below, even with the proposed distributions to early childhood education, New Mexico's approach would still be more conservative.

State of Alaska Oil Funds

The State of Alaska has two separate funds to achieve its saving and stabilization goals. The savings fund (Alaska Permanent Fund-APF) has been in operation since 1976, while the stabilization fund (the Constitutional Budget Reserve Fund-CBR) was adopted in 1990, following a sharp decline in oil revenue in the second half of the 1980s that led to cuts in expenditure and contraction in economic activity. Both funds were approved as amendments to the state constitution, and information about their operations and resources are regularly made public.[38]

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[37] NM Legislative Education Study Committee Bill Analysis on Land Grant Balance & Distribution, CA, March 4, 2013.
[38] Information on the APF can be accessed via the Internet at www.apfc.org. Information on the CBR can be found at www.revenue.state.ak.ur/treasury/index.htm and oga/index.htm.

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The Alaska Permanent Fund (APF)

The APF is essentially a fund for future generations. Its main objective is to establish a financial-investment base that would generate future income in the face of dwindling oil production. In this respect, the fund's assets have grown rapidly since its creation. At the end of fiscal 2013, its resources reached $44.8 billion.[39]

The fund has transparent and specific saving-spending rules. A constitutional obligation requires that at least 25% of all mineral lease rentals, royalties, royalty sale proceeds, federal mineral revenue-sharing payments, and bonuses received by Alaska are placed in the fund. This type of funding channels a significant portion of the state's oil revenues away from the government's budget. As a result of this rigid saving rule, transfers to the APF have to be made independently of oil market and overall fiscal developments. The APF principal is invested permanently and cannot be spent without amending the state constitution with a majority vote of the Alaskan population.[40]

There is, however, some flexibility on how to spend the fund's earnings, based on annual decisions by Alaska's state legislature and the governor. Earnings have been usually used to distribute a portion of the fund income to eligible Alaskans (the permanent-fund dividend program); to provide for automatic reinvestment of income to compensate for the effect of inflation; and to increase the capital of the fund. The dividend program was enacted in 1982 and was conceived as a way to provide Alaskans with a personal interest in protecting the fund. Since the program's inception, 42% of the APF income has been paid out to current generations and the rest was saved for future generations. In 2012, every Alaskan resident received $900 through the dividend program.[41]

The following table outlines revenue, expenditures and changes in the balance of the Alaska Permanent Fund Corp., according to its 2013 Annual Report.

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[39]Evolving, Alaska Permanent Fund Corporation; 2013 Annual Report.
[40] Ibid.
[41]Yereth Rosen, Alaska to pay residents smallest oil trust dividend since 2005; September 18, 2012; Routers.

Statement of Revenue, Expenditures and Changes in Fund Balances

Year Ended June 30

	2013	2012	NET CHANGE	%
REVENUES				
Interest, dividends, real estate and other income	$1,081,900,000	988,402,000	93,498,000	9%
Increase (decrease) in the fair value of investments	3,359,000,000	-989,961,000	4,348,961,000	439%
Total Revenues	**$4,440,900,000**	**-1,559,000**	**4,442,459,000**	**284956%**
EXPENDITURES				
Operating expenditures	-119,800,000	-91,362,000	-28,438,000	31%
Other Legislative appropriations	-7,200,000	-7,025,000	-175,000	2%
Total Expenditures	**-127,000,000**	**-98,387,000**	**-28,613,000**	**29%**
Excess (Deficit) of Revenues Over Expenditures	**4,313,900,000**	**-99,946,000**	**4,413,846,000**	**4416%**
OTHER FINANCING SOURCES (USES)				
Transfers in – dedicated State revenues	840,100,000	915,098,000	-74,998,000	8%
Transfers out – appropriations	-633,700,000	-622,307,000	-11,393,000	2%
Net Change in Fund Balances	**4,520,300,000**	**192,845,000**	**4,327,455,000**	**2244%**
FUND BALANCES				
Beginning of period	40,333,059,000	40,140,214,000	192,845,000	0%
End of period	**$44,853,359,000**	**40,333,059,000**	**4,520,300,000**	**11%**

Source: Alaska Permanent Fund Corporation 2013 Annual Report.

The Constitutional Budget Reserve Fund (CBR)

The CBR's main objective is to supplement government-revenue shortfalls. The Alaskan legislature limits the government borrowing capacity from the fund by setting up an annual cap on the amount that can be drawn from the fund. However, the legislature can review the cap, if necessary. Indeed, in fiscal 1999, the $700 million cap was revised upward when it was obvious that the fiscal deficit would be higher due to lower oil prices and production. CBR resources represent a loan to the budget that has to be repaid in years of fiscal surpluses.

The CBR presents several operational shortcomings that weaken its ability to act as an oil stabilization fund. Its resources are not related to oil market developments, but are made up of proceeds from yearly settlements dealing primarily with disputed tax and royalty sale proceeds.

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Permanent Wyoming Mineral Trust Fund (PWMTF)

The fund was created in 1975 by a constitutional amendment that passed on the November 1974 ballot. For its first 13 years, 2% of severance-tax revenues were used to grow the account. Later, the requirement was lowered to 1.5% and 0.5% to be directed to the state's savings account. Then, in 2005, 1% was added to the constitutional requirement, and now, 2.5% of severance taxes are deposited in the PWMTF until further legislative action.[42]

The ending balance of the PWMTF in fiscal 2012 was $5.4 billion. The Wyoming legislature made it a goal for the PWMTF's balance to reach $4 billion by 2010. They achieved this goal in 2008 when the fund's market value reached $4.1 billion, compared with 1999, when the fund held $1.5 billion. This was accomplished by not only increasing the amount of severance-tax revenues saved from 1.5% to 2.5% in 2005, but also by direct appropriations from the Wyoming state legislature. In fact, $411 million were provided by direct legislative appropriation from 2001 to 2009, and $627 million were placed in the fund above the constitutional requirement for the same period.[43]

The table below illustrates Wyoming's severance-tax rates and the percentage points from the tax rates destined for the PWMTF.

Current Severance Tax Rates

|	Current Severance Tax Rate	Percentage Points for PWMTF	Percent of Severance Tax for Current Use
	(A)	(B)	(C) = 1 - (B)/(A)
Crude Oil	6.0%	2.5%	58.3%
Stripper Oil	4.0%	2.5%	37.5%
Natural Gas	6.0%	2.5%	58.3%
Surface Coal	7.0%	2.5%	64.3%
Underground Coal	3.8%	2.5%	33.3%
Trona	4.0%	2.5%	37.5%
Uranium	4.0%	2.5%	37.5%

Source: Wyoming Legislative Service Office 2010

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[42] Wyoming Severance Taxes and Federal Mineral Royalties: Dean Temte, Senior Legislative Analyst; Wyoming Legislative Service Office; July 2010.
[43] Ibid.

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The following graph shows the distribution by mineral of the FY 2009 total revenue of the severance tax. Around two-thirds of the total severance taxes come from crude oil and natural gas. Thus, it is reasonable to assume that the majority of the severance taxes in Wyoming are for current uses.

Source: Wyoming Legislative Service Office 2010.
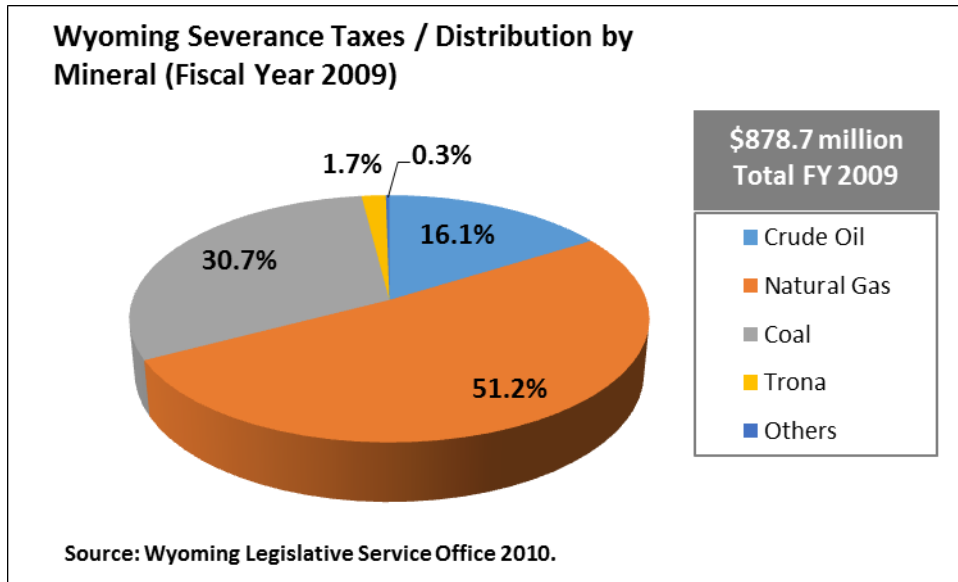
The next table shows how Wyoming's Mineral Trust Fund has grown throughout the years.
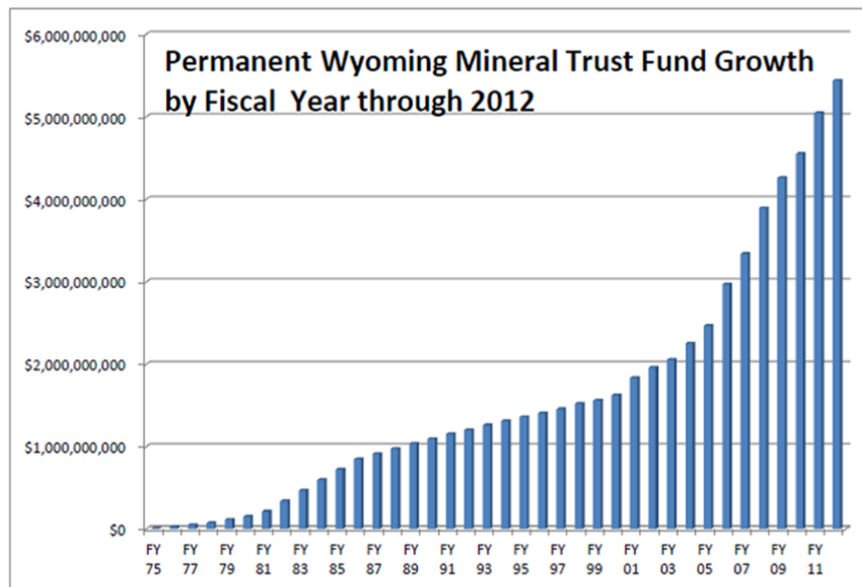
The growth in assets was achieved through a withdrawal policy that is more aggressive than in New Mexico because less than half of the new money goes into the fund while all of the income generated by the STL goes into the LGPF.

Key findings of benchmarks

As discussed above, New Mexico is more conservative than both Alaska and Wyoming in terms of managing its Fund, because 100% of the STL revenue goes to the LGPF.
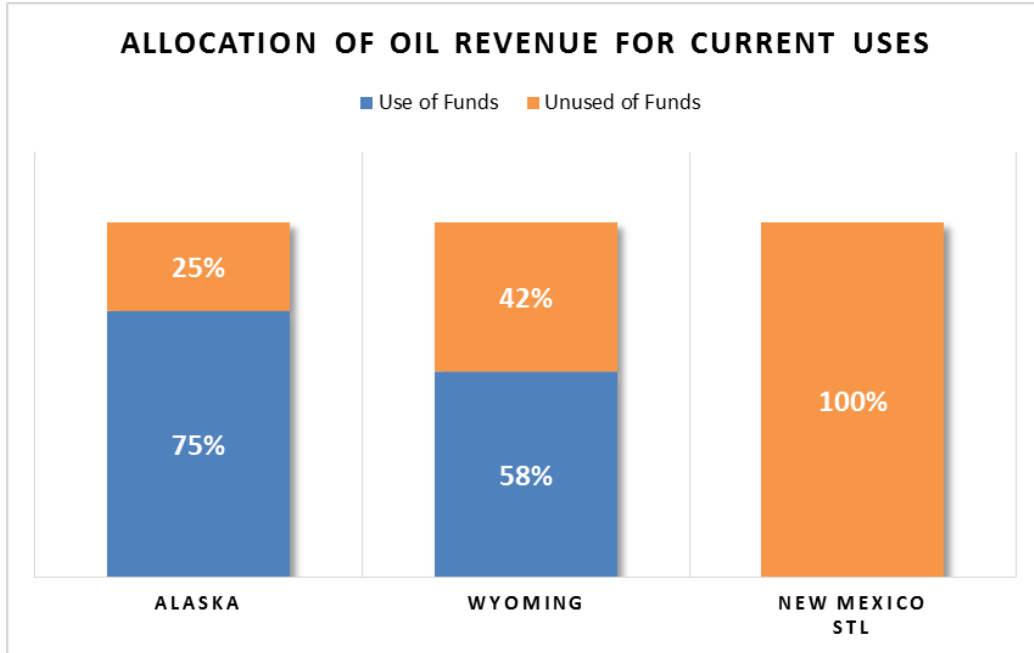
Alaska spends up to 75% of its oil revenues and deposits the remaining 25% in its fund. Wyoming spends around 58% of its mineral revenues and deposits the remaining 42% in its fund.

Even when the allocations for early childhood education are increased, New Mexico would still be conservative in handling its fund.

And yet, New Mexico clearly has the most need for early childhood education among the other jurisdictions evaluated above. New Mexico overall ranking is last among the 50 states in the Annie E. Casey's 2013 Kids Count report on early childhood indicators. Alaska's overall ranking is 44 and Wyoming is 15.

Thus, increasing the allocations for early childhood education in New Mexico is not only necessary, but also economically feasible.

The table and graph below show the percentage of New Mexico oil revenues channeled to current uses would still be lower for the STL than for other funds supported by oil revenues, such as those of Alaska and Wyoming.

ALLOCATION OF OIL REVENUE FOR CURRENT USES

■ Use of Funds ■ Unused of Funds

	ALASKA	WYOMING	NEW MEXICO STL
Unused of Funds	25%	42%	100%
Use of Funds	75%	58%	

New Money Use of Funds & Withdrawal Rates Benchmark

	Alaska	Wyoming	New Mexico STL
New Money Use of Funds	75.0%	58.0%	0.0%
% of Withdrawals from Fund	1.5%	2.5%	5.5%

VI. RESULTS OF EARLY CHILDHOOD EDUCATION PROGRAMS

The advancement in studies related to economic development in recent years has demonstrated a high correlation between education and economic growth.[44] The groundbreaking work of Nobel laureate James J. Heckman, of the University of Chicago, with a consortium of economists, psychologists, statisticians and neuroscientists shows that early childhood development directly influences the education, economic, health and social development for individuals and society.

There is increasing evidence and a growing body of literature that investing in early childhood education has proven benefits, both in terms of government savings in such areas as health and education, and human capital. In short, investing in early childhood education reduces deficits, strengthens the economy and is a key driver of success in school and life.

According to Heckman:

"Investing in early childhood education to increase high school graduation rates would boost New Mexico's economy. For example, a 5% increase in male high school graduation rates is estimated to save New Mexico $38 million in annual incarceration costs and crime-related expenditures. If that same 5% not only graduated but went on to college at the same rate as typical male high school graduates, their average earnings would accrue an additional $20 million annually. If just one year's high school dropouts could be converted to high school graduates, New Mexico households would have an additional $3.1 billion in accumulated wealth over the lifetime of the students from the graduating class."[45]

Some of the returns on increasing investment in early childhood education would be immediate, while others would be in the medium term.

For example, some of the immediate benefits for New Mexico:

A spike in infant deaths indicates there are issues with premature births and low birth weight. This situation usually leads to an increase in babies receiving care in neonatal intensive care units

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[44] The Impact of Education on: The Economy; Alliance for Excellent Education Fact Sheet, November 2003.
[45] "Invest in Early Childhood Development: Reduce deficits, strengthen New Mexico's economy."
www.heckmanequation.org

(NICUs), which means added costs to society. Providing better prenatal care would lead to mothers with healthier pregnancies and a reduction in babies who require admission in NICUs, resulting in million-dollar savings for New Mexico.

Thus, increasing funding for early childhood education, including visitation programs and other prenatal care, would lead to a decrease in the state's infant death rate of 6.9 per 1,000 live births.[46] In dollars and cents, every healthy newborn who is not admitted to a NICU represents savings for New Mexico of approximately $43,333 to $45,000.[47] This cost does not include expenditures to treat chronic health conditions as a result of premature births and low birth weight.

Providing easier access to quality preschool programs would lead to healthier children and enable many mothers to return to school and/or work. This would improve New Mexico's socioeconomic indicators in terms of parents who have high school degrees and stable employment. This would have clear education and economic implications for New Mexico: more residents with high school diplomas and improved chances of obtaining better jobs. At the same time, the children of these parents would benefit by living in a healthier environment.

Thus, New Mexico's early childhood indicators would improve. In other words, New Mexico's Annie E. Casey Foundation statistics would decrease: the 62% who do not attend preschool; the 8.7% incidence of low birthweight babies; the 22% where the household head does not have a high school diploma; the 31% of children who live in poverty; and the 37% whose parents lack secure employment. New Mexico's overall ranking of 50 among the 50 states would improve significantly.

Regarding educational attainment alone, in dollars and cents, there is a 48.3% salary differential between a New Mexican resident with a high school degree versus one without. The average salary of a New Mexican resident with a high school degree is $25,349 a year, while a person who is not a high school graduate earns $17,091 a year.[48]

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[46]"New Mexico infant death rate spiked in 2012," the Albuquerque Journal, Nov. 27, 2013.
[4747] According to published reports, the average NICU stay is 16 days and the average NICU cost is about $43,333 to $45,000. As cited by the New York Times, "In Search of Cuts, Health Officials Question NICU Overuse," The Texas Tribune, by Emily Ramshaw, March 19, 2011; and "Children's TeleICU –The Most Sophisticated in the U.S. – Finds its First Partner Hospital, D Healthcare Daily, by Steve Jacob, Oct. 21, 2013.
[48] Data on median earnings of New Mexico residents ages 25 and older, 2012 American Community Survey, one-year estimates, U.S. Census Bureau.

Professor Heckman's work is buttressed by that of the RAND Corporation.

A review of nine early childhood programs found that the benefit-cost ratios varied from 1.80 to 17.07, meaning that the selected programs generated a benefit of $1.80 to $17.07 for each dollar invested.[49]

In terms of human capital, research at RAND has shown that investing in early childhood programs have "yielded benefits in academic achievement, behavior, educational progression and attainment, delinquency and crime, and labor market success, among other domains."[50]

RAND concludes: "These proven results signal the future promise of investing early in the lives of disadvantaged children."[51]

A 2012 study published by the Center for Economics & Public Policy at the University of California, Irvine indicate that high-quality early childhood education could close the achievement gap at age 5. Researchers Greg J. Duncan and Aaron J. Sojourner analyzed data from the Infant Health and Development Program, which offered "intensive" early childhood education to randomly chosen 985 one- and two-year-olds in eight sites around the U.S.

"[The] results suggest that at age three—at the end of the program—income-based gaps would be essentially eliminated with either a universal or income-based targeted program.... At age eight the results are less precise, but they still suggest that one-third to three-quarters of the gaps in IQ and achievements would be eliminated."[52]

Other studies have demonstrated that more educated individuals, in turn, have better health later in life and better labor-market prospects. There is growing literature that establishes a strong relationship between health and education and more generally, between early childhood conditions and adult outcomes.[53] Gaps in cognitive skills (related to learning, such as memory, language and motor skills) and non-cognitive abilities (related to emotional intelligence, such as self-esteem, self-

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[49] "What Does Economics Tell Us About Early Childhood Policy?" RAND Corporation Research Brief, 2008, and "Proven Benefits of Early Childhood Interventions," RAND Corporation Research Brief, 2005.
[50] "Proven Benefits of Early Childhood Interventions," RAND Corporation Research Brief, 2005.
[51] Ibid.
[52] "Can Intensive Early Childhood Intervention Programs Eliminate Income-Based Cognition and Achievement Gaps?," by Greg J. Duncan and Aaron J. Sojourner, published by the Center for Economics & Public Policy at the University of California, Irvine. May 2012.
[53] Commission on Social Determinants of Health. 2008. "Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health." World Health Organization Final Report. Geneva.

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discipline and motivation) of children of different socioeconomic groups emerge at early ages. Various studies suggest that it is possible to enrich adverse early environments and promote child development.[54]

The family plays a powerful role in shaping these abilities through genetics and parental investments and through choice of child environments. A variety of intervention studies indicate that ability gaps in children from different socioeconomic groups can be reduced if remediation is attempted at early ages. The remediation efforts that appear to be most effective are those that supplement family environments for disadvantaged children.[55]

Moreover, there is compelling evidence of critical and sensitive periods in the development of a young child. Some skills or traits are more readily acquired at certain stages of childhood than other traits.[56] For example, on average, if a second language is learned before age 12, the child speaks it without an accent.[57] If syntax and grammar are not acquired early on, they appear to be very difficult to learn later on in life.[58] A child born with a cataract will be blind if the cataract is not removed within the first year of life.

Different types of abilities appear to be manageable at different ages. IQ scores become stable by age 10 or so, suggesting a sensitive period for their formation below age 10.[59]

The available evidence suggests that for many skills and abilities, later remediation for early disadvantage to achieve a given level of adult performance may be possible, but is much more costly than early remediation.[60] The economic returns to job training, high school graduation, and college attendance are lower for less able persons.[61]

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[54]Case, Anne, Darren Lubotsky, and Christina Paxson 2002. "Economic Status and Health in Childhood: The Origins of the Gradient." American Economic Review, 92(5): 1308-34.

[55]Blau, D., & Currie, J. (2006). Preschool, daycare, and afterschool care: Who's minding the kids? In E. Hanushek, & F. Welch (Eds.), Handbook of the Economics of Education, Handbooks in Economics, vol. 2, chap. 20. Amsterdam: North-Holland, pp. 1163-1278.

[56]Knudsen, E. I., Heckman, J. J., Cameron, J., &Shonko, J. P. (2006).Economic, neurobiological, and behavioral perspectives on building America's future workforce. Proceedings of the National Academy of Sciences, 103 (27), 10155{10162.

[57] Newport, E. L. (1990). Maturational constraints on language learning. Cognitive Science, 14 (1, Special Issue), 11{28.

[58]Pinker, S. (1994). The language instinct: How the mind creates language. New York: W. Morrow and Co.

[59]Hopkins, K. D., & Bracht, G. H. (1975).Ten-year stability of verbal and nonverbal IQ scores. American Educational Research Journal, 12 (4), 469{477.

[60]Cunha, F., & Heckman, J. J. (2007).The technology of skill formation. American Economic Review, 97 (2), 31{47.

[61]Carneiro, P., & Heckman, J. J. (2003).Human capital policy. In J. J. Heckman, A. B. Krueger, & B. M. Friedman (Eds.), Inequality in America: What Role for Human Capital Policies? Cambridge, MA: MIT Press, pp. 77{239.

Despite the low returns to interventions targeted toward disadvantaged adolescents, the empirical literature shows high economic returns for remedial investments in young disadvantaged children.[62]

In the past 30 years, U.S. society has polarized. A greater percentage of young adults is attending and graduating from college. At the same time, a greater percentage is dropping out of secondary school producing a growing underclass, neither working nor going to school.[63] About 75% of youths in the U.S. who apply to the military are ineligible to serve because of low cognitive capacities, criminal records, or obesity; 20% of the U.S. workforce has such a low rate of literacy that it cannot understand the instructions on a vial of pills.[64] The slowdown in the growth of the skills of the workforce is reducing U.S. productivity and competitiveness.[65]

The academic performance of New Mexico's children stood low in comparison with the national average, based on a report from Alliance for Excellence Education.[66] Students need strong literacy skills to succeed in today's knowledge-based economy, yet very few of the state's eight-grade students read at a proficient level (22% in New Mexico compared with 32% of the national average). New Mexico graduates 63% of its students while the national average managed a significant higher rate (78%). Not surprisingly, very few high school graduates enter college with the knowledge and skills necessary to succeed. As a result, they frequently must take remedial courses, costing them time and money that could be better used in pursuit of a degree. New Mexico's college readiness rate is 17%, much lower than the 26% national average.

[62] Barnett, W. S. (2004). Benefit-cost analysis of preschool education.http://nieer.org/resources/files/BarnettBenefits.ppt, PowerPoint presentation.

[63]Heckman, J. J. and P. A. La Fontaine (2010). The American high school graduation rate: Trends and levels. Review of Economics and Statistics.

[64]Heckman, J. J. and D. V. Masterov (2007).The productivity argument for investing in young children. *Review of Agricultural Economics 29*(3), 446–493.

[65] Delong, J. B., L. Katz, and C. Goldin (2003). Sustaining U.S. economic growth. In H. Aaron, J. Lindsay, and P. Nivola (Eds.), Agenda for the Nation, pp. 17–60. Washington, DC: Brookings Institution Press.

[66]Alliance for Excellence Education webpage.http://all4ed.org/state-data/new-mexico/

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The National Institute for Early Childhood Education Research has published some interesting facts regarding investment in early childhood development. These facts demonstrate that investing in early childhood education is a cost-effective strategy for promoting economic growth. For example:

- *Analysts at the Chicago Child-Parent Center study estimated $48,000 in benefits to the public per child from a half-day public preschool for at-risk children.*

- *Participants at age 20 were estimated to be more likely to have finished high school and were less likely to have been held back, need remedial help or have been arrested.*

- *The estimated return on investment was $7 for every dollar invested.[67]*

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[67] National Institute for Early Childhood Education Research

APPENDIX 1: METHODOLOGY USED TO ASSESS VALUE OF STL

The valuation of STL was estimated using the Discounted Cash Flow (DCF) methodology, using the Free Cash Flow (FCF) of the STL, which in this case amount to the contributions to the LGPF. This methodology requires that the FCF be discounted using the Weighted Average Cost of Capital (WACC).

The formula used is the cash flow perpetuity formula:

$$Value = \frac{FCF_{t=1}}{WACC - g}$$

This formula is well established in finance and mathematics literature.[68]

The valuation process using the DCF methodology has four steps:[69]

1. *Value the company's operations by discounting FCF at the WACC.*

2. *Identify and value non-operating assets, such as excess marketable securities, non-consolidated subsidiaries, and other equity investments. Summing the value of operations and non-operating assets gives enterprise value.*

3. *Identify and value all debt and other non-equity claims against the enterprise value. Debt and other non-equity claims include (among others) fixed-rate debt, unfunded pension liabilities, employee options and preferred stock.*

4. *Subtract the value of non-equity financial claims from enterprise value to determine the value of common equity. To estimate price per share, divide equity value by the number of current shares outstanding.*

Considering that the annual contribution to the LGPF is in essence the STL net revenue and that the STL does not pay taxes, the contribution to the LGPF was considered as the FCF.

Value estimation was made assuming no debt or marketable securities considering that the Enabling Act prohibits any mortgage or encumbrance of the trust lands.[70]Since there is no tax and no debt,

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[68] McKinsey & Co., *Valuation, Measuring and Managing the Value of Companies*; Koller, Goedhart & Wessels, 2010 pg. 39
[69]McKinsey & Co., *Valuation, Measuring and Managing the Value of Companies*; Koller, Goedhart & Wessels, 2010 pg. 103
[70]New Mexico-Arizona Enabling Act 36 Stat. 557, § 310 (1910). Chapter 310, Section 10: "*No mortgage or other encumbrance of said lands, or any thereof, shall be valid in favor of any person or for any purpose or under any circumstances whatsoever.*"

the STL WACC is equal to the cost of equity. The cost of equity was estimated using the Build Up method for two scenarios, real estate and oil & gas.

WEIGHTED AVERAGE COST OF CAPITAL

The WACC was defined as the sum of the costs of equity and debt weighted by their proportion in the capital structure of the company. The cost of equity was obtained by the sum of different types of risks using the Build Up method. The risks used in the formula were the following:

1. Rate on risk-free asset

2. Equity risk premium

3. Size Premium

4. Industry Cost of Equity

To obtain the rate on risk-free asset, the long-term (30-year) U.S. Treasury yield was used (3.21% as of FY 2012).[71] For the equity risk Premium, the long-horizon version rate of 6.62% was used.[72] The size Premium rate used was 0.94%.[73] The industry cost of equity was 1.32% for the real-estate scenario and 1.52% for the oil & gas scenario.[74] The cost of equity was estimated at between 12.1% and 12.3%.

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[71]Federal Reserve, Selected Interest Rates, US Treasury securities at 30-year constant maturity, as of March 31, 2013.
[72]Morningstar, Ibbotson-SBBI 2012 Valuation Yearbook, inside back cover.
[73]Morningstar, Ibbotson-SBBI 2012 Valuation Yearbook, inside back cover.
[74] Morningstar, Ibbotson-SBBI 2012 Valuation Yearbook, pg. 39 for the real estate scenario (SIC65) and pg. 32 for the oil & gas scenario (SIC131).

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Cost of Equity		
	Real Estate Scenario	**Oil & Gas Scenario**
Rate on risk-free asset[1]	3.21	3.21
Equity risk premium[2]	6.62	6.62
Size Premium	0.94	0.94
Industry Cost of Equity[3]	1.32	1.52
Cost of Equity	**12.09**	**12.29**

Source: Ibbotson SBBI, 2012 Valuation Yearbook

[1] Long-term (30-year) U.S. Treasury Yield, FY 2012

[2] Long-horizon version from the 2012 Ibbotson, SBBI Valuation Yearbook

[3] Real Estate Scenario SIC 65 and Oil & Gas Scenario SIC 131

To estimate the WACC the standard formula is used:[75]

$$WACC = \frac{Debt}{Debt + Equity} * k_d * (1 - T_m) + \frac{Equity}{Debt + Equity} * k_e$$

where,

$$k_d = cost\ of\ debt$$

$$k_e = cost\ of\ equity$$

$$T_m = company's\ marginal\ income\ tax\ rate$$

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[75]McKinsey & Co., Valuation, Measuring and Managing the Value of Companies; Koller, Goedhart & Wessels, 2010 pg. 261.

Substituting in the above formula, considering that STL does not pay taxes and is not permitted by the Enabling Act to acquire debt, the formula is simplified as follows:

$$WACC = \frac{0}{0 + Equity} * kd * (1 - 0) + \frac{Equity}{0 + Equity} * ke$$

$$WACC = 0 + (1)ke$$

$$WACC = Cost\ of\ Equity$$

APPENDIX 2: ASSUMPTIONS FOR FINANCIAL SCENARIOS

Alternative Financial Scenario I: 1.5% Withdrawal for early childhood education

The assumptions used to build the financial simulation are the following:

- The growth of gain/loss rate used was 7.3%. This is the experience of the last 64 years annualized S&P 500 growth rate (1950–2013). The average rate of return of the LGPF in the last 23 years (1990 – 2012) was 7.8%. This is less than the New Mexico State Investment Council (NMSIC) rate-of-return target, which is 7.5%.

- The STL contributions annual growth rate was based on the Long-term (30-year) U.S. Treasury Yield, as of December 2013, plus the NMSIC Real Return premium (3.89% + 2.00% = 5.89%). This assumption is conservative considering that the annualized growth rate of the STL contributions funds for the same period (1990–2012) was 7.3%. In addition, recent contracts for oil extraction are at higher royalty rates than the average rates in the portfolio. Finally, it is reasonable to assume that proven reserves in the STL fields are growing in line with proven oil reserves in the state of New Mexico.

- The current beneficiaries' rate of distribution used was 5.5%.

- The early-childhood-education distribution rate used was 1.5% for fiscal years 2015 to 2024. This is the distribution rate proposed by the St Joseph Community Health (SJCH).

The results show:

- Early childhood programs would receive (approximate) an average of $225 million for the years 2015 thru 2024.

- The corpus of the LGPF will continue to grow despite the increased distribution.

- Including the value of the STL assets in the calculation, the real distribution rate to the beneficiaries is approximately 4.2%. Thus, distributions from the LGPF are below what would be considered safe by the investment community to protect the corpus of the Fund.

FINANCIAL SIMULATION SCENARIO I: 1.5% ECE WITHDRAWAL OF FINANCIAL ASSETS

Date	Beginning Market Value ($ 000)	Contributions ($ 000)	Current Beneficiaries Withdrawals ($ 000)	ECE Withdrawals ($ 000)	Total Withdrawals ($ 000)	Gain/Loss ($ 000)	Ending Market Value ($ 000)	Distribution Rate From Financial Assets
2015	13,003,986	566,788	609,706	166,283	775,989	949,291	13,744,077	7.0%
2016	13,744,077	600,172	663,580	180,976	844,556	1,003,318	14,503,010	7.0%
2017	14,503,010	635,522	705,538	192,419	897,957	1,058,720	15,299,295	7.0%
2018	15,299,295	672,955	755,557	206,061	961,618	1,116,849	16,127,481	7.0%
2019	16,127,481	712,592	799,456	218,034	1,017,490	1,177,306	16,999,889	7.0%
2020	16,999,889	754,563	843,411	230,021	1,073,433	1,240,992	17,922,011	7.0%
2021	17,922,011	799,007	889,369	242,555	1,131,924	1,308,307	18,897,402	7.0%
2022	18,897,402	846,069	937,707	255,738	1,193,445	1,379,510	19,929,536	7.0%
2023	19,929,536	895,902	988,640	269,629	1,258,268	1,454,856	21,022,026	7.0%
2024	21,022,026	948,671	1,042,480	284,313	1,326,792	1,534,608	22,178,512	7.0%

STL Valuation Real State Scenario (SIC 65)

t	STL Market Value 5 Yrs Average ($ 000)	LGPF Ending Market Value 5 Yrs Average ($ 000)	Total Fund Value	Total Withdrawals ($ 000)	Distribution Rate
	(A)	(B)	(C) = (A)+(B)	(D)	(E) =(D)/(C)
2015	7,456,642	11,085,556	18,542,197	775,989	4.18%
2016	8,219,588	12,065,089	20,284,677	844,556	4.16%
2017	8,828,221	12,827,960	21,656,182	897,957	4.15%
2018	9,171,720	13,737,399	22,909,119	961,618	4.20%
2019	9,711,934	14,535,570	24,247,504	1,017,490	4.20%
2020	10,283,967	15,334,750	25,618,717	1,073,433	4.19%
2021	10,889,693	16,170,337	27,060,030	1,131,924	4.18%
2022	11,531,095	17,049,216	28,580,311	1,193,445	4.18%
2023	12,210,277	17,975,264	30,185,541	1,258,268	4.17%
2024	12,929,462	18,954,173	31,883,635	1,326,792	4.16%

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	STL Valuation Oil & Gas Scenario (SIC 131)				
t	STL Market Value 5 Yrs Average ($ 000)	LGPF Ending Market Value 5 Yrs Average ($ 000)	Total Fund Value	Total Withdrawals ($ 000)	Distribution Rate
	(A)	(B)	(C) = (A)+(B)	(D)	(E) =(D)/(C)
2015	7,223,621	11,085,556	18,309,177	775,989	4.24%
2016	7,962,726	12,065,089	20,027,815	844,556	4.22%
2017	8,552,340	12,827,960	21,380,300	897,957	4.20%
2018	8,885,103	13,737,399	22,622,502	961,618	4.25%
2019	9,408,436	14,535,570	23,944,006	1,017,490	4.25%
2020	9,962,593	15,334,750	25,297,343	1,073,433	4.24%
2021	10,549,390	16,170,337	26,719,727	1,131,924	4.24%
2022	11,170,749	17,049,216	28,219,964	1,193,445	4.23%
2023	11,828,706	17,975,264	29,803,970	1,258,268	4.22%
2024	12,525,417	18,954,173	31,479,589	1,326,792	4.21%

Alternative Financial Scenario II: 1.0% Withdrawal for early childhood education

The assumptions used to build the financial simulations are the following:

- The growth of gain/loss rate used was 7.3%. This is the experience of the last 64 years annualized S&P 500 growth rate (1950–2013). The average rate of return of the LGPF in the last 23 years (1990 – 2012) was 7.8%. This is less than the New Mexico State Investment Council (NMSIC) rate-of-return target, which is 7.5%.

- The STL contributions annual growth rate was based on the Long-term (30-year) U.S. Treasury Yield, as of December 2013, plus the NMSIC Real Return premium (3.89% + 2.00% = 5.89%). This assumption is conservative considering that the annualized growth rate of the STL contributions funds for the period 1990 to 2012 was 7.3%. In addition, recent contracts for oil extraction are at higher royalty rates than the average rates in the portfolio. Finally, it is reasonable to assume that proven reserves in the STL fields are growing in line with proven oil reserves in the state of New Mexico.

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- The current beneficiaries' rate of distribution used was 5.5%.

- The early-childhood-education distribution rate used was 1.0% for the fiscal years 2015 to 2024.

The results show:

- Early childhood programs would receive (approximate) an average of $152 million for the years 2015 thru 2024.

- The corpus of the LGPF will continue to grow despite the increased distribution.

- Including the value of the STL assets in the calculation, the real distribution rate to the beneficiaries is less than 4.0%. Thus, distributions from the LGPF are below what would be considered safe by the investment community to protect the corpus of the Fund.

FINANCIAL SIMULATION SCENARIO II: 1.0% ECE WITHDRAWAL OF FINANCIAL ASSETS

Date	Beginning Market Value ($ 000)	Contributions ($ 000)	Current Beneficiaries Withdrawals ($ 000)	ECE Withdrawals ($ 000)	Total Withdrawals ($ 000)	Gain/Loss ($ 000)	Ending Market Value ($ 000)	Distribution Rate From Financial Assets
2015	13,003,986	566,788	609,706	110,856	720,561	949,291	13,799,504	6.5%
2016	13,799,504	600,172	664,190	120,762	784,951	1,007,364	14,622,089	6.5%
2017	14,622,089	635,522	707,457	128,629	836,086	1,067,413	15,488,938	6.5%
2018	15,488,938	672,955	759,563	138,102	897,665	1,130,692	16,394,921	6.5%
2019	16,394,921	712,592	806,404	146,619	953,023	1,196,829	17,351,319	6.5%
2020	17,351,319	754,563	854,224	155,314	1,009,538	1,266,646	18,362,991	6.5%
2021	18,362,991	799,007	904,423	164,441	1,068,863	1,340,498	19,433,633	6.5%
2022	19,433,633	846,069	957,350	174,064	1,131,413	1,418,655	20,566,943	6.5%
2023	20,566,943	895,902	1,013,208	184,220	1,197,427	1,501,387	21,766,805	6.5%
2024	21,766,805	948,671	1,072,299	194,963	1,267,262	1,588,977	23,037,190	6.5%

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STL Valuation Real State Scenario (SIC 65)

t	STL Market Value 5 Yrs Average ($ 000)	LGPF Ending Market Value 5 Yrs Average ($ 000)	Total Fund Value	Total Withdrawals ($ 000)	Distribution Rate
	(A)	(B)	(C) = (A)+(B)	(D)	(E) =(D)/(C)
2015	7,456,642	11,085,556	18,542,197	720,561	3.89%
2016	8,219,588	12,076,174	20,295,763	784,951	3.87%
2017	8,828,221	12,862,862	21,691,083	836,086	3.85%
2018	9,171,720	13,810,229	22,981,949	897,665	3.91%
2019	9,711,934	14,661,888	24,373,822	953,023	3.91%
2020	10,283,967	15,531,354	25,815,321	1,009,538	3.91%
2021	10,889,693	16,444,051	27,333,744	1,068,863	3.91%
2022	11,531,095	17,406,360	28,937,456	1,131,413	3.91%
2023	12,210,277	18,421,961	30,632,238	1,197,427	3.91%
2024	12,929,462	19,496,338	32,425,800	1,267,262	3.91%

STL Valuation Oil & Gas Scenario (SIC 131)

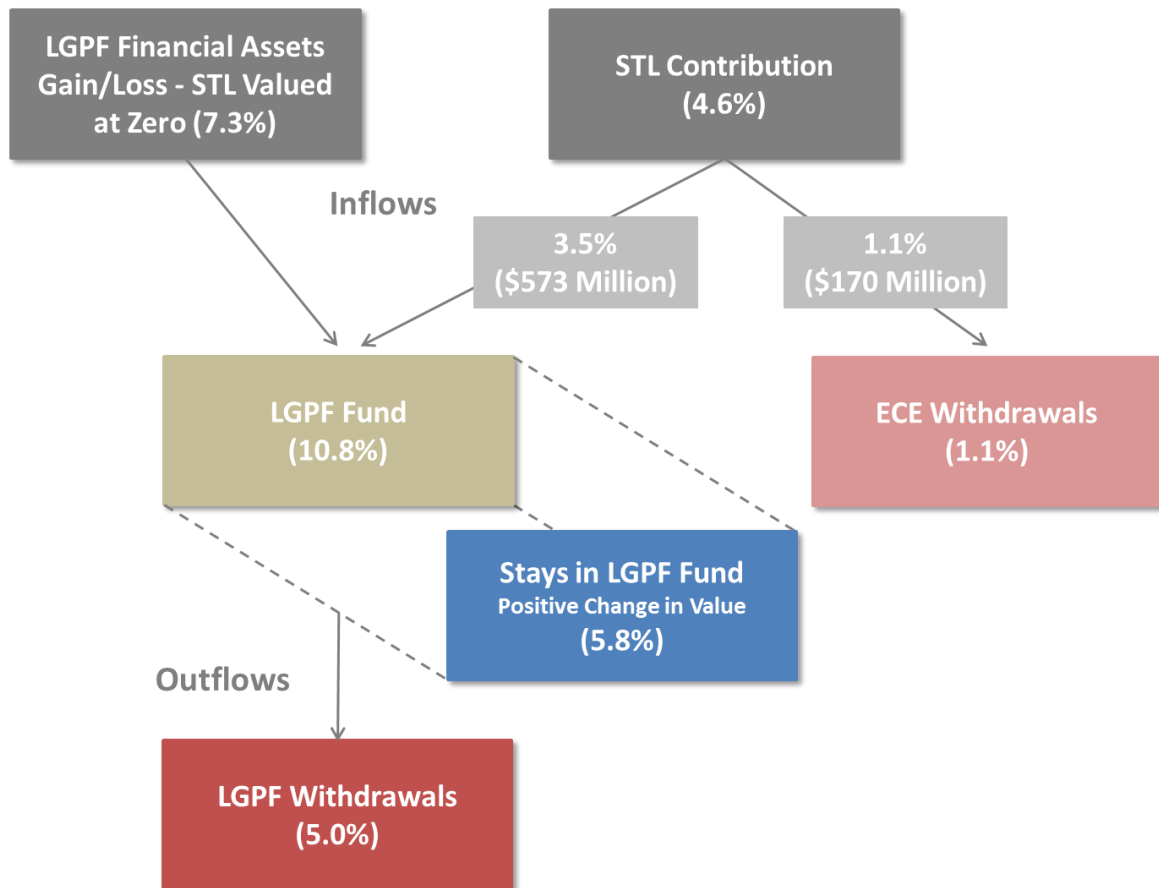| t	STL Market Value 5 Yrs Average ($ 000)	LGPF Ending Market Value 5 Yrs Average ($ 000)	Total Fund Value	Total Withdrawals ($ 000)	Distribution Rate
	(A)	(B)	(C) = (A)+(B)	(D)	(E) =(D)/(C)
2015	7,223,621	11,085,556	18,309,177	720,561	3.94%
2016	7,962,726	12,076,174	20,038,900	784,951	3.92%
2017	8,552,340	12,862,862	21,415,201	836,086	3.90%
2018	8,885,103	13,810,229	22,695,332	897,665	3.96%
2019	9,408,436	14,661,888	24,070,324	953,023	3.96%
2020	9,962,593	15,531,354	25,493,947	1,009,538	3.96%
2021	10,549,390	16,444,051	26,993,441	1,068,863	3.96%
2022	11,170,749	17,406,360	28,577,109	1,131,413	3.96%
2023	11,828,706	18,421,961	30,250,667	1,197,427	3.96%
2024	12,525,417	19,496,338	32,021,755	1,267,262	3.96%

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Alternative Financial Scenario III: Fixed Early-Childhood-Education Withdrawals

This scenario assumes a $150 million transfer from the STL to early childhood education with annual increases of 2.8%. Thus, withdrawals from the LGPF financial assets remain at the 5% that the State Investment Council considers prudent. If the investment choices for the LGPF generate the targeted return of 7.5%, then the financial assets of the LGPF would grow in line with inflation. If the 7.5% is not achieved, there remains a cushion of some $300 million a year in contributions from the STL. This scenario would also bring more transparency to the change in net-asset value of the LGPF by starting to separate the contributions of the STL from the returns of the financial assets of the LGPF.

ALTERNATIVE FINANCIAL SCENARIO III: POSITIVE CHANGE IN VALUE FLOW CHART

% VALUES FROM 10-YR AVERAGE (2015-2024)

The assumptions used to build the financial simulations are the following:

- The growth of gain/loss rate used was 7.3%. This is the experience of the last 64 years annualized S&P 500 growth rate (1950–2013). The average rate of return of the LGPF in the last 23 years (1990 – 2012) was 7.8%. This is less than the New Mexico State Investment Council (NMSIC) rate-of-return target, which is 7.5%.

- The STL contributions annual growth rate was based on the Long-term (30-year) U.S. Treasury Yield, as of December 2013, plus the NMSIC Real Return premium (3.89% + 2.00% = 5.89%). This assumption is conservative considering that the annualized growth rate of the STL contributions funds for the period 1990 to 2012 was 7.3%. In addition, recent contracts for oil extraction are at higher royalty rates than the average rates in the portfolio. Finally, it is reasonable to assume that proven reserves in the STL fields are growing in line with proven oil reserves in the state of New Mexico.

- The current beneficiaries' rate of distribution used was 5.0%.

- The early-childhood-education distribution was estimated based on fixed withdrawals of $150 million from contributions (in other words from STL). After the first year the fixed amount is adjusted by inflation to keep the real value equivalent over time. The New Mexico 30-year annual average inflation rate was used (2.8%).[76]

The results show:

- Early childhood programs would receive (approximately) an average of $170 million for the years 2015 thru 2024.

- The corpus of the LGPF will continue to grow despite the increased distribution.

- Including the value of the STL assets in the calculation, the real distribution rate to the beneficiaries is around 4.3%. Thus, distributions from the LGPF are below what would be considered safe by the investment community to protect the corpus of the Fund.

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[76]Average inflation rate for the last 23 fiscal years (1990–2012). New Mexico Department of Workforce Solution: http://www.dws.state.nm.us/Mobile/LaborMarketInformation/DataandStatistics/USConsumerPriceIndex

FINANCIAL SIMULATION SCENARIO III: FIXED ECE WITHDRAWALS

Date	Beginning Market Value ($ 000)	Contributions ($ 000)	Current Beneficiaries Withdrawals ($ 000)	ECE Withdrawals ($ 000)	Total Withdrawals ($ 000)	Gain/Loss ($ 000)	Ending Market Value ($ 000)	Distribution Rate From Financial Assets
2015	13,003,986	416,788	609,706	150,000	759,706	949,291	13,610,360	6.9%
2016	13,610,360	445,999	662,109	154,173	816,282	993,556	14,233,633	6.8%
2017	14,233,633	477,060	701,104	158,463	859,567	1,039,055	14,890,181	6.7%
2018	14,890,181	510,083	746,623	162,872	909,494	1,086,983	15,577,753	6.7%
2019	15,577,753	545,188	784,475	167,403	951,878	1,137,176	16,308,239	6.7%
2020	16,308,239	582,502	820,822	172,061	992,883	1,190,501	17,088,360	6.7%
2021	17,088,360	622,159	859,080	176,848	1,035,928	1,247,450	17,922,041	6.6%
2022	17,922,041	664,300	899,652	181,769	1,081,421	1,308,309	18,813,230	6.6%
2023	18,813,230	709,076	942,806	186,826	1,129,632	1,373,366	19,766,040	6.6%
2024	19,766,040	756,647	988,877	192,024	1,180,901	1,442,921	20,784,707	6.6%

STL Valuation Real State Scenario (SIC 65)

t	STL Market Value 5 Yrs Average ($ 000)	LGPF Ending Market Value 5 Yrs Average ($ 000)	Total Fund Value	Total Withdrawals ($ 000)	Distribution Rate
	(A)	(B)	(C) = (A)+(B)	(D)	(E) =(D)/(C)
2015	7,456,642	11,085,556	18,542,197	759,706	4.10%
2016	7,735,717	12,038,346	19,774,063	816,282	4.13%
2017	7,847,017	12,747,341	20,594,358	859,567	4.17%
2018	7,679,344	13,574,957	21,254,302	909,494	4.28%
2019	7,694,166	14,263,182	21,957,348	951,878	4.34%
2020	7,726,188	14,924,033	22,650,221	992,883	4.38%
2021	8,260,750	15,619,633	23,880,382	1,035,928	4.34%
2022	8,829,008	16,357,315	25,186,323	1,081,421	4.29%
2023	9,433,010	17,141,924	26,574,935	1,129,632	4.25%
2024	10,074,925	17,979,582	28,054,507	1,180,901	4.21%

STL Valuation Oil & Gas Scenario (SIC 131)

t	STL Market Value 5 Yrs Average ($ 000)	LGPF Ending Market Value 5 Yrs Average ($ 000)	Total Fund Value	Total Withdrawals ($ 000)	Distribution Rate
	(A)	(B)	(C) = (A)+(B)	(D)	(E) =(D)/(C)
2015	7,223,621	11,085,556	18,309,177	759,706	4.15%
2016	7,493,976	12,038,346	19,532,322	816,282	4.18%
2017	7,601,798	12,747,341	20,349,139	859,567	4.22%
2018	7,439,365	13,574,957	21,014,322	909,494	4.33%
2019	7,453,723	14,263,182	21,716,906	951,878	4.38%
2020	7,484,745	14,924,033	22,408,778	992,883	4.43%
2021	8,002,601	15,619,633	23,622,234	1,035,928	4.39%
2022	8,553,102	16,357,315	24,910,416	1,081,421	4.34%
2023	9,138,229	17,141,924	26,280,153	1,129,632	4.30%
2024	9,760,083	17,979,582	27,739,665	1,180,901	4.26%

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Professional Experience:

Mr. Feliciano has more than 20 years' experience as a management consultant in engagements requiring expertise in strategic planning and financial management. Some of the recent consulting engagements led by Mr. Feliciano are:

Analyzed the financial and economic implications of a ratings downgrade of Puerto Rico debt for the P.R. Government Development Bank. Offered alternatives that would avoid downgrading. Original document was featured in a front-page article of El Nuevo Día (Puerto Rico's paper of record) on June 13, 2013. An update of the initial report was prepared in 2013. The reports were part of a broader strategy to lobby the Island's Legislature into enacting a fiscally responsible budget.

Participated in presentations to credit-rating agencies (Standard & Poor's, Moody's Investors Service and Fitch Ratings) regarding Puerto Rico's credit rating.

Led a needs assessment of the Head Start program in Puerto Rico. Work included field visits to Head Start centers, in-depth interviews with key informants, research on demographic trends and financial analysis of the program. Recommendations included the reallocation of resources from better-served areas to underserved areas, reallocation of resources from regular Head Start to Early Head Start, as well as operational adjustments to optimize the use of limited resources.

Performed the strategic plan for the Consejo de Educación de Puerto Rico, the Island's education regulations and licensing entity. The effort included an analysis of external forces such as changes in federal policy regarding the No Child Left Behind Law, new rules for Pell Grants and Puerto Rico's changing demographic profile. These were combined with an analysis of the responsibilities and capabilities of the organization. Recommendations would modify the existing state legal framework to maximize the impact of the institution in the advancement of quality education.

Participated in the selection of a turnaround strategy for a hospital. Tasks included assessment of short- and medium-term alternatives, as well as discussions with both management and medical faculty. Recommendations were accepted.

Advised on the business strategy of a financial institution. Submitted recommendations regarding the location of branches and the optimization of certain internal processes. Recommendations were accepted because they were feasible to implement, given the corporate culture and resources available to the institution.

Valued businesses as part of buy/sell transactions, as well as civil cases.

Education:

Mr. Feliciano graduated Cum Laude with a major in economics from Harvard College and obtained an MBA from IMD (Switzerland), one of the leading European business programs, graduating in the top 10% of the class.

Credentials of Advantage Business Consulting