

# Financing Long Term Water Project Needs



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January 9, 2011

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This monograph is a review and inquiry into the viability of severance tax revenues and mineral lease payments as a sustainable source of funding for Colorado water supply and capital infrastructure needs.

## Table of Contents

Preface and Acknowledgements .....	3
Introduction .....	5
A Brief History of the Colorado Severance Tax and Mineral Leasing Payments.....	7
The Severance Tax Funds – Recognition of Water Needs .....	8
The Severance Tax Trust Fund – The Accounts.....	9
The Local Government Severance Tax Fund.....	11
Federal Mineral Leasing Revenues .....	12
Bonus Payment Distribution .....	14
All Other FML Revenue Distribution .....	14
The Dollars .....	15
Oil, Natural Gas, Coalbed Methane and Carbon Dioxide Severance Taxes .....	17
The Developing Controversy Over Hydraulic Fracturing .....	21
Carbon Dioxide Production .....	22
Oil Shale .....	23
Coal .....	24
Molybdenum.....	28
Metallic Minerals .....	28
The Colorado Budget and Budget Process.....	30
The TABOR Distortion .....	30
The Big Four and the Big Outlier.....	32
Volatility, Lag Times and Forecasting.....	35
Concluding Thoughts .....	37
Appendix A: Allocation and Distribution of Mineral Lease Payments .....	41

## Preface and Acknowledgements

I am greatly appreciative of the assistance that I received from many reviewers. This review began as a self-educational effort because I was confused about many pieces of legislation concerning the accounting and mechanical operation of the funds that hold and distribute severance tax revenues, why in an era of significant growth in energy production were severance tax revenues raised from energy resources so wildly volatile, and what was the nexus between severance tax revenues and the development of water resources.

I was asked several times if I were doing this research on behalf of a client and whether it was going to lead to proposals to increase the severance taxes or to change the distribution of those revenues. While I have clients who are generally interested in the topic, it was undertaken for my own education and to further my understanding of severance taxes as they are levied and used in Colorado. It was not my purpose to develop a case or an argument for changing the current severance tax system.

Other colleagues have asked what I intend to do with the analysis and report now that it is completed. Since my objective in undertaking it was self-education, I had no further objective in mind. Some of my colleagues who have reviewed the drafts found the information useful for their own needs, so it seemed appropriate to simply release it so that others can use the information. Perhaps it will serve as a common source of information that will improve communications among others when they consider and debate the issues surrounding severance taxes and the use of the revenues generated from those taxes.

As this review unfolded, there were three conclusions that continued to arise. First, it is clear that the fiscal structure of the State cannot adequately meet the ongoing everyday needs of the state budgetary obligations so water managers should not look at state funding as first dollar commitments to future large scale water supply or infrastructure projects. Second, it is clear that state elected officials have neither the resources at their disposal or the expected time in office to develop long term capital financing programs for water projects. Third, the water community must make a conscious commitment to developing a fiscal resource strategy to stabilize current levels of state financial support and to develop new revenue streams that while generating significant amounts of money do not compete with high priority public financing needs that are already in place. That commitment must be as strong as the long standing commitment of the water community to the preservation of the Doctrine of Prior Appropriation.

I particularly wish to note the work of the professional staff of the Legislative Council that provided much of the objective information that I relied upon. I am also deeply appreciative of the reviews of the drafts and the suggestions and information contributed by Gary Barber, the general manager of the Pikes Peak Regional Water Authority and Chairman of the Arkansas Basin Roundtable; Dianna Orf, who represents the Colorado Water Congress and the Colorado Mining Association; Tim Feehan of the

Colorado Water Conservation Board; Stuart Sanderson, President of the Colorado Mining Association; Rick Fendel, Petrock and Fendel; John Fognani, Fognani and Faust; and many others who generously shared their thoughts and knowledge about severance taxes and long term water supply issues.

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## Introduction

Over the past twenty years, State financial assistance for Colorado water projects has become inextricably linked to the revenues generated by the State's severance taxes and to the Mineral Lease Payments the State receives from the federal government. However, in recent years the General Assembly has been forced to use some severance tax revenues to offset the dire budgetary impacts precipitated by a succession of economic downturns. The economic downturns have resulted in precipitous yo-yoing in the aggregate revenues produced by the severance tax making the tax an erratic producer of revenues. With no real end of the economic problems in realistic sight, the pattern of using severance tax revenues for general budgetary needs rather than water projects is very likely to continue for several years.

The future water project capital needs facing Colorado over the next several years are in the multiple hundreds of millions (and sometimes billions) of dollars in financing commitments. In addition to water supply development projects such as the Southern Delivery System that Colorado Springs has underway and the diversion of water from the Flaming Gorge Reservoir in Wyoming to be transported to the Colorado Front Range, water utility managers are facing an estimated \$4.9 billion in unfunded infrastructure needs for water, wastewater and stormwater. The Colorado Municipal League notes that much of the infrastructure is now beyond 30 years of age, and failure to systematically address this statewide need will place the public health at risk, detrimentally affect quality of life and will become a drag on the Colorado economy and the state's ability to support economic growth and development.

The central question for water managers and public officials is how are these very large capital needs to be financed?

There are various sources of funding that have historically been used by water managers. There are federal sources, state sources, local sources (usually the water provider itself) and contributions (sometimes voluntary and sometimes mandated) from the private sector. Colorado has generally not been very receptive to large scale private water projects and there have been some notable failed attempts by private parties to develop and finance such water projects. Colorado water laws that are designed to prevent speculation in water are very hard to overcome which adds a chilling effect to private projects. Major public water utilities are very suspicious of partnerships or contracts which do not ultimately turn the actual water right over to the public entity for ownership. Governmental entities are designed to exist in perpetuity and public water managers want to own the water rights in order to protect their communities well into the future.

While each of the foregoing sources has been used successfully, it is not often easy to use multiple sources for a single project particularly if that project requires a multiyear commitment. The deteriorating brick in the financial foundation is the State of Colorado. The continual erosion of the State's fiscal viability is beginning to jeopardize water supply and water system infrastructure. But, it is

not just the State's fiscal problems that is causing water project financing to be jeopardized. The federal budget is in disarray and federal agencies that have historically provided large capital contributions to water projects (such as the Corps of Engineers and Bureau of Reclamation) are also suffering from political pressure and constrained budgetary resources. The increasing public intolerance of the mounting federal debt will have repercussions for large scale water financing commitments, and water managers should become aware that their time horizons for securing federal environmental approvals and funding commitments are likely to be many years longer than in the past.

Water managers must now question whether obtaining federal financial assistance is a viable option.

Given the expected continued difficulties that the State will face with its budget over the next few years, it is highly unlikely that the state revenue sources that are currently in existence can be used to augment or supplement severance tax revenues to finance water projects. Additionally, the General Assembly has made dramatic and painful cuts to essential programs such as K-12 public education and Medicaid and if the budget difficulties begin to stabilize the General Assembly will be facing great pressure to backfill programs that have been cut. Restoration of those program funding levels will be a high priority, and funding for water projects will face strong competition from those high priority needs. Rather than witnessing a return to pre-recession commitments to water projects that use severance tax revenues and mineral lease payments for funding, water managers should anticipate that continued budgetary problems will likely result in further reductions in state funding commitments for water projects. A complete disconnection of water project financing from severance tax revenues and mineral lease payments is not out of the realm of possibility.

The most recent diversion of severance tax and Mineral Lease Payments occurred during the fall of 2010 when Governor Ritter announced his recommendations for the next round of budgetary adjustments made necessary by a sluggish economy. Within the adjustments the Governor recommended to the Joint Budget Committee were transfers from both the severance tax and Mineral Lease Payments. While these transfers did not include transfers from the Colorado Water Conservation Board, there are not many remaining options if the State must come back for more severance tax revenues. In his public comments, the Governor made it clear that he believed his choice was to dig deep into education funding or reduce severance tax and mineral lease funding to the counties.

One of the challenges encountered in analyzing the fiscal situation of the State has been that the situation is fluid and subject to significant changes. The dates of revenue forecasts, presentations by the professional staff of the Legislative Council and the Governor's budget staff, the various conclusions and recommendations are all subject to revision and reprioritization. However, the most recent revenue forecast released by the Legislative Council on December 20, 2010 did not materially alter the information or the conclusions contained in earlier analyses.

On December 20, the Legislative Council released an updated revenue forecast. There was very little good news in that report. While there are mixed signs that some of the economic downturn may be stabilizing, the State is still looking at a significant revenue shortfall. It was made clear by the

professional staff that revenues would be inadequate to fully fund the budget and that policy makers will be facing some very difficult decisions and trade-offs. A new element that has been introduced into the budget difficulties is that statewide assessed valuations are expected to be down for the second consecutive year which will, in turn, require the General Assembly to backfill potentially as much as \$150 million under the School Finance Act. The Joint Budget Committee began working on the next fiscal year appropriations in early November, 2010, and the revenue forecast indicates that the State could be facing as much as another \$1.1 billion in revenue shortfalls for that fiscal year, and that number does not include the potential backfill that will be needed for public school education. As Governor Ritter noted in his public statement concerning the September revenue forecast, “the list of options has grown shorter and shorter.” The Governor’s budget staff has indicated that the Governor’s priority will be to preserve K-12 education and higher education as much as possible as additional cuts are considered. It is not known how closely the priorities of Governor-Elect John Hickenlooper will follow those of Governor Ritter.

## **A Brief History of the Colorado Severance Tax and Mineral Leasing Payments**

Water project funding by the State of Colorado relies extensively on revenues that are generated by the State’s severance taxes and by federal payments generated by leases and the development of mineral resources on federal lands located in Colorado. Colorado has established a separate and independent agency named the Colorado Water Resource and Power Development Authority which also provides financing for water projects. However, the Authority does not receive allocations from severance taxes or Mineral Lease Payments. Discussion of the Authority is beyond the scope of this review but it should be noted that there are very troubling signs that the national municipal bond market is undergoing severe stress because of the debt load of the states and local governments. The debt loads for the states of California, Illinois and New York alone are of such magnitudes that the stability of the municipal bond market may deteriorate making it harder for financing entities such as the Colorado Water Resource and Power Authority to fulfill their missions.

For nearly 100 years, Colorado has imposed some type of severance tax on the extraction of minerals found in the state. Originally, the tax was imposed on coal production and the revenues were committed to coal mining regulation and inspection activities. That structure was largely the rule for the first 40 years of severance tax collection and use.

During the 1950’s, the production of oil and natural gas was added to the severance tax portfolio and the revenues were used to fund the Oil and Gas Conservation Commission. Also during that era, the severance tax on coal production was increased and a new tax structure for oil and gas production was developed that was graduated in relation to the gross income of the producer. For simplicity, it can be said that until 1977 severance tax revenues from coal production were dedicated to regulation and mine inspection; severance tax revenues from oil and natural gas extraction were used to finance the Colorado Oil and Gas Conservation Commission; and producer income taxes from oil and natural gas

operations were used for the needs of the state general fund. Generally this system with various adjustments and modifications was in place through the 1950's, 1960's and the first half of the 1970's.

A significant policy change was enacted by the General Assembly in 1977. The 1977 legislation (which became effective in 1978) repealed the long standing producer income tax and substituted a severance tax system which had component parts that were specifically targeted at various natural resources that were being developed and extracted – literally “severed” from the land. Under the 1977 statute, severance taxes were imposed on metallic minerals, molybdenum, oil, coal, oil shale, and natural gas. Each tax had a different implementation methodology and revenue distribution. For example, 100% of the severance tax revenues collected from oil and natural gas production were dedicated to the state general fund whereas severance taxes collected from the extraction of coal and metallic minerals were apportioned with 40% going to the general fund, 15% to the Severance Tax Trust Fund and 45% to the Local Government Severance Tax Fund. Severance tax revenues levied on oil shale and molybdenum were allocated in different proportions altogether.

In 1982, a severance tax on carbon dioxide was enacted and was generally made comparable to the severance tax on oil and natural gas. Carbon dioxide production and coalbed methane gas production are considered types of natural gas production and are most often included under that category for reporting and statistical purposes.

There have been many adjustments and modifications to the tax structures, rationale for the taxes and directed uses of the revenues made over the past 30 years. As a general rule, the revenues were committed to finance regulatory purposes with some revenues being dedicated for general fund budgetary needs and some revenues being dedicated to address some of the local impacts created by extraction activities. The severance tax was designed to generate revenues but was structured to avoid punitive rates that would act as a disincentive for the development of the resources or that would impair Colorado's competitiveness vis-à-vis other states. Several credits and offsets were adopted to further the profitable development of the resources for the economic benefit of the state.

### ***The Severance Tax Funds – Recognition of Water Needs***

The legislation enacted in 1977 created a statutory scheme for the distribution of the revenues generated by the severance tax. The revenues were distributed to the state general fund, the Severance Tax Trust Fund and the Local Government Severance Tax Fund. A formula was established that directed revenues to the funds in differing proportions depending upon the resource that was subject to the tax.

In 1979, the distribution formula was amended so that the severance tax revenues were distributed with 50% going to the Severance Tax Trust Fund (under the Department of Natural Resources - DNR) and 50% going to the Local Government Severance Tax Fund (under the Department of Local Affairs - DOLA). With that change, the distribution of revenues that had been allocated to the state general fund was discontinued but the interest income generated from the investment of the funds in the Severance Tax Trust Fund continued to accrue to the state general fund.

It was with the 1979 amendments that the legislature specifically authorized money in the Severance Tax Trust Fund to be used for the development and conservation of Colorado water resources.

### ***The Severance Tax Trust Fund – The Accounts***

The moneys in the Severance Tax Trust Fund were originally intended to be held in trust in perpetuity in recognition that the resources that were being developed and extracted were gone forever and could never be renewed. For several years, that was the guiding policy for the Trust Fund. In 1996 the moneys in the fund were committed to direct use. The legislature created two accounts into which the Trust Fund moneys were transferred.

The first account is the *Operational Account* which has been used to pay the expenses of the Oil and Gas Conservation Commission, the Colorado Geological Survey, the Division of Minerals and Geology and the Colorado Water Conservation Board. The second account is the *Perpetual Base Account* and those moneys have been dedicated to pay for water projects that would enhance the development and conservation of the water resources in the state – by and large the same purposes as the Construction Fund of the Colorado Water Conservation Board.

While this arrangement continues generally as it was enacted, adverse economic cycles have necessitated the use of some of the moneys that would otherwise have gone to the two accounts for the general budgetary needs of the state. Additionally, the General Assembly has committed some of the moneys for specific purposes such as the costs of the litigation with the State of Kansas concerning diversions from the Arkansas River and to support low-income energy programs and species conservation programs.

The Perpetual Base Account moneys are used to administer the loan program under the Colorado Water Conservation Board (CWCB) for water projects that construct or improve flood control, water supply, hydroelectric power, and recreation. There is a special contingency for drought-related augmentation needs. Domestic water treatment and distribution system needs are excluded from the permitted uses of the moneys. The CWCB receives much of its operational funding from the interest and loan payments made on the loans it makes for water projects.

The Operational Account moneys are used for the support of programs operated by the various agencies within the Department of Natural Resources. However, not every agency within DNR has access to the moneys. The State Water Engineer, for example, does not receive any moneys from severance tax or federal mineral leases to administer the state water laws. Even though not every agency receives funding from severance tax revenues, the budgetary reality is that the level of severance tax revenues has a direct and profound impact on the funding levels for many programs throughout the Department of Natural Resources. If those revenues were not available, budgetary competition among the agencies would increase and pressure would be put on agencies that do not receive severance tax revenue support.

The following list displays how the moneys are allocated among the recipient agencies:

\*Up to 45% of the available moneys can be used for programs and projects under the Colorado Oil and Gas Conservation Commission;

\*Up to 20% of the available moneys can be used for programs under the Colorado Geological Survey;

\*Up to 30% of the available moneys can be used for programs under the Colorado Division of Reclamation, Mining and Safety (formerly the Division of Minerals and Geology); and

\*Up to 5% of the available moneys can be used for programs under the Colorado Water Conservation Board.

In 2008, the Operational Account was subdivided into “Tier 1” and “Tier 2” programs with Tier 1 programs being considered “core” programs and Tier 2 programs being considered more discretionary. Tier 1 programs basically support the day-to-day functions of the Department of Natural Resources. There is a required reserve for Tier 1 in an amount equal to the appropriation. The Tier 1 programs receive moneys based on the following allocation:

\*Up to 40% of the moneys may be used for programs and projects under the Colorado Oil and Gas Conservation Commission. These programs and projects include plugging and abandonment of wells, site reclamation, regulatory and environmental programs and emergencies.

\*Up to 20% of the moneys may be used for programs under the Colorado Geological Survey.

\*Up to 25% of the moneys may be used for programs under the Colorado Division of Reclamation, Mining and Safety (formerly the Division of Minerals and Geology).

\*Up to 5% of the moneys may be used for programs under the Colorado Water Conservation Board.

\*Up to 5% of the moneys may be used for programs under the Colorado Division of Wildlife.

\*Up to 5% of the moneys may be used for programs under the Colorado Division of Parks and Recreation.

Tier 2 programs are those that support grants, loans, research and construction. There is a reserve requirement for Tier 2 that is equal to 15% of authorized expenditures. Tier 2 moneys are released with 40% becoming available on July 1 of each year, 30% becoming available on January 4 and 30% becoming available on April 1 – assuming that there are sufficient funds available. If funds are not sufficient, there is a proportional reduction that becomes operational.

In recent years, worldwide energy markets have made the severance tax a productive generator of revenues which has, in turn, allowed the General Assembly to establish and fund Tier 2 programs as well as the Tier 1 programs. The following table, adapted from the fiscal year 2010-2011 Appropriations

Report prepared by the Joint Budget Committee, displays the Tier 1 and Tier 2 funding for the past several years. This table is provided for illustration purposes only, and does not reflect required reserve set asides from the appropriations shown:

<b>Tier 1 and Tier 2 Funding</b> <b>Source: 2010-2011 Appropriations Report (p. 383), Joint Budget Committee</b> <b>(Latter years are estimates)</b>							
Tier	FY04-05 (Actual)	FY05-06 (Actual)	FY06-07 (Actual)	FY07-08 (Actual)	FY08-09 (Actual)	FY09-10 (Estimate)	FY10-11 (Estimate)
1	\$6,205,296	\$7,167,084	\$8,669,679	\$9,715,887	\$12,701,274	\$17,894,248	\$16,261,864
2	\$23,100,000	\$31,849,749	\$35,481,328	\$23,076,835	\$46,865,589	\$20,150,345	\$31,701,072

### ***The Local Government Severance Tax Fund***

The other 50% of the revenues generated from the severance taxes are allocated to the Local Government Severance Tax Fund operated under the Department of Local Affairs (DOLA). The moneys in the Fund are then distributed to local governments through a number of programs.

Up to 70% of the moneys in the Fund are made available to local governments that are impacted by resource development and extraction and to compensate affected local governments for the loss of property tax revenues that results from assessment methodologies applied to producing extraction operations. The moneys are made available through grants and loans for the planning, construction and maintenance of public facilities and the provision of public services.

Up to 30% of the moneys in the Fund are distributed directly to local governments in relation to a three factor formula and a discretionary factor applied by DOLA:

\*The proportion of energy industry employees within a given county in relation to the total number of energy industry employees aggregated on a statewide basis is weighted at 30%.

\*The proportion of mine and well permits issued within a given county to the total number of mine and well permits issued on a statewide basis is weighted at 30%.

\*The proportion of the overall mineral production with a given county in relation to the aggregate mineral production on a statewide basis is weighted at 30%.

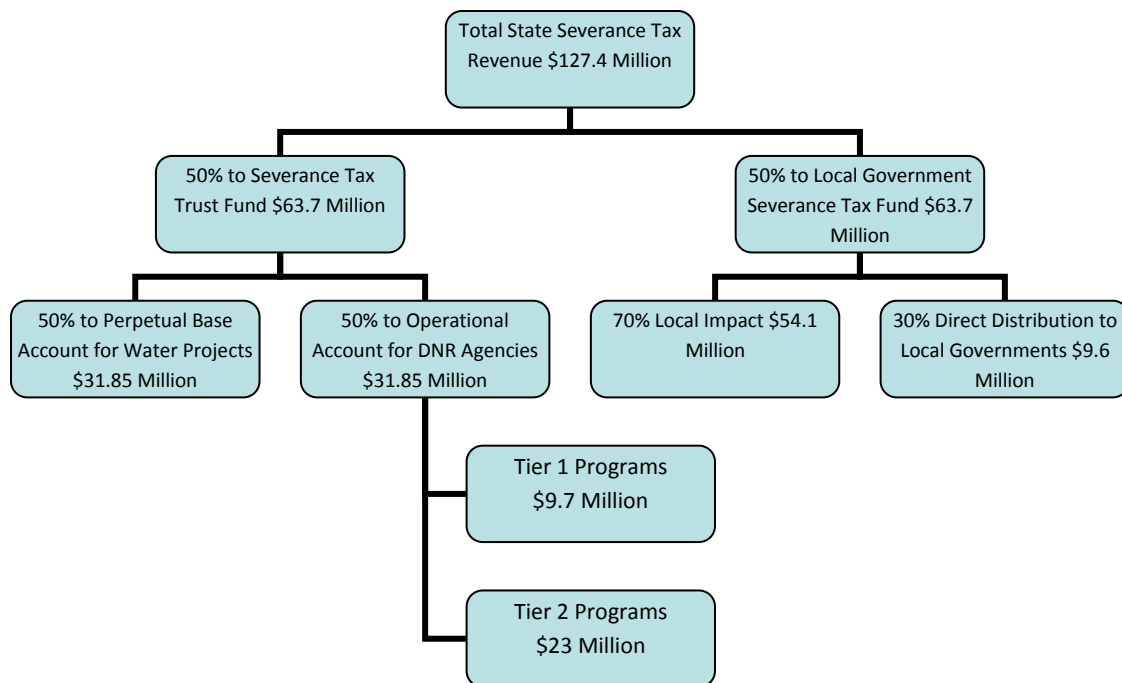
\*The final 10% is to be determined by the Department of Local Affairs based on the recommendations made by the Energy and Mineral Impact Assistance Advisory Committee under DOLA.

Once the allocation based on the three factor formula combined with the 10% discretionary funding is determined, the money is further allocated within each of the counties in relation to energy industry

employee place of residence as a proportion of county population and the road miles in the unincorporated areas of the county.

In 1993, the General Assembly authorized some of the moneys to be set aside for discretionary grants and loans to local governments to be used for the Uranium Mill Tailings Remedial Action Program. In 2002, the General Assembly authorized the distribution of moneys from the Fund to privately organized volunteer fire departments serving impacted areas to further their acquisition of fire-fighting equipment.

The following diagram traces the allocation of Colorado Severance Tax revenues for Fiscal Year 2007:



The dollar values displayed on the chart were developed from reports prepared by the State Auditor and from the Appropriations Report for FY2010-2011, and are displayed here for illustration purposes only.

## Federal Mineral Leasing Revenues

An understanding of the water project financing system cannot be complete without discussion of the Federal Mineral Leasing (FML) revenue sharing. The State receives moneys from the federal government for mineral leases on federal lands located within the State. The kinds of resources that are developed are generally the same ones that exist under lands which are not federal property and reflect the strong presence of energy related resources. When an individual or a company leases federal land

for the development and extraction of minerals located on that land, the federal government receives revenue for those leases.

There are three kinds of revenue that come from the leases and are collected and disbursed by the Minerals Management Service under the Department of Interior:

- \*Lease holders secure the leases through competitive bidding and pay an initial “bonus” in order to use the land.
- \*Lease holders pay rent for the right to develop the minerals found on the property.
- \*A royalty is paid to the federal government from the sale of energy minerals extracted from the property.

The revenues received from the leases, bonuses and royalties are distributed with 49% going to the state within which the leased lands are located and 51% to the federal government. Once Colorado receives the moneys, the distribution gets very, very complicated. The easiest way to understand how the state distributes these moneys is to separate the revenues from the bonus payments from all other FML payments. There is one “front-end” revenue diversion that affects Colorado and that is to a special set aside fund in the US Treasury for the Naval Oil Shale Reserve which is located in Garfield County.

Federal Mineral Lease payments are not state general fund revenues, and they are exempt from TABOR restrictions and controls. They do, however, have a statutory distribution and allocation scheme that is in place and will be discussed further on. The following table has been developed from tables prepared by the Office of Legislative Council and included in the June, September, and December 2010 revenue forecasts. The table displays the federal mineral lease payment amounts received since fiscal year 01-02 and projected through fiscal year 12-13:

<b>Federal Mineral Lease Payments</b>			
<b>Based on Revenue Forecast Reports Prepared by the Office of Legislative Council</b>			
<b>Amounts in Millions</b>			
<b>Fiscal Year</b>	<b>September, 2010 Forecast</b>	<b>December, 2010 Forecast</b>	<b>% Change Between Fiscal Years Per Forecast</b>
2001-2002	\$44.6	\$44.6	N/A
2002-2003	\$50.0	\$50.0	12.1%
2003-2004	\$79.4	\$79.4	58.7%
2004-2005	\$101.0	\$101.0	27.2%
2005-2006	\$143.4	\$143.4	41.9%

2006-2007	\$123.0	\$123.0	-14.3%
2007-2008	\$153.6	\$153.6	25.0%
2008-2009	\$227.3	\$227.3	47.9%
2009-2010	\$120.4	\$122.5	-46.1%
2010-2011 Estimate	\$136.5	\$143.9	17.5%
2011-2012 Estimate	\$150.8	\$153.4	10.5%
2012-2013 Estimate (December 20, 2010)	\$158.7	\$164.0	6.9%

These revenue estimates prepared by the Office of Legislative Council are important for two reasons. First, they indicate the amount of the revenues that result from the Federal Mineral Leasing payments. And, second, they demonstrate that those revenues can also be volatile from year-to-year which is an indication that Federal Mineral Lease payments are not insulated from the outside economic forces that affect the severance tax revenue collections.

### ***Bonus Payment Distribution***

The bonus payments are distributed quarterly with 50% going to the Local Government Permanent Fund and 50% going to the Higher Education Maintenance and Reserve Fund. The moneys in the Local Government Permanent Fund cannot be expended for any purpose unless the amount of FML revenue estimated to accrue to the State is 10 percent less than the amount actually received in the previous fiscal year. When this 10% trigger is reached, the Department of Local Affairs may use the moneys in the Fund for direct distribution to local governments. This mechanism appears to be designed to be a backfill type cushion.

The 50% of the moneys going to the Higher Education Maintenance and Reserve Fund is to be used for controlled maintenance projects that have been included in the 5-year capital improvements program adopted by the Colorado Commission on Higher Education. The principal in this Fund is required to remain in the Fund unless the General Fund revenue is estimated to be insufficient to meet and maintain the State's required 4% reserve. If that trigger is reached, the Legislature can make supplemental appropriations from the Fund to offset reductions in state general fund appropriations for the operating expenses of the state's institutions of higher education.

### ***All Other FML Revenue Distribution***

After the bonus payments are accounted for, all other FML revenues fall into general categories. The first are revenues that accrue to the State from oil shale leases. Those revenues are deposited in The Oil Shale Trust Fund and are to remain in the Oil Shale Trust Fund until appropriated by the General Assembly – but it does not appear that any transfer payments under the FML have ever been made. All

other FML revenues (excluding the just discussed bonus payments and oil shale revenues) are distributed quarterly to fund:

\*The State Public School Fund for funding public education.

\*The Colorado Water Conservation Board Construction Fund to support loans and grants for water storage projects.

\*The Local Government Mineral Impact Fund (under DOLA) which is then split between direct distributions to local governments and school districts that are impacted by energy production and for discretionary grants that are provided to local governments.

The amount of FML revenue that is allocated to the State Public School Fund, Colorado Water Conservation Board Construction Fund and school districts is capped at a predesignated amount each year and the cap is designed to increase by 4% in each subsequent year. The current cap for the funds is \$65 million for the State Public School Fund, \$14 million for the Colorado Water Conservation Board Construction Fund and \$3.3 million to the school districts. In aggregate, these capped distributions constitute 60% of the other FML payments.

All other FML moneys in excess of the caps just discussed – up to a total of \$50 million – is transferred to the Higher Education FML Revenues Fund for appropriation to direct pay for capital construction projects at state institutions of higher education and vocational schools. Any moneys above the just cited \$50 million cap are transferred to the Higher Education Maintenance and Reserve Fund which also receives 50% of the bonus payments.

Appendix A provides a diagram of the revenue flows to and among the designated uses.

## **The Dollars**

The revenues generated by the severance tax and payments received from FML are significant and are an important source of funding for many programs and agencies. However, they are volatile and highly unpredictable. In addition to being volatile, the cash flow generated on both a yearly and monthly basis can vary in quite erratic swings. One of the reasons that the revenues are difficult to predict is that budgetary displays usually are aggregates based on the general category of the revenues. In reality, the severance tax revenues are a reflection of differing revenue streams that are specific to a particular natural resource and not all natural resources enjoy the same development and market conditions as all other natural resources. Additionally, the revenues are based on individual taxpayer circumstances which are affected not only by production but also by various tax credits and exemptions. It may be fairly straightforward for the accountant of a taxpayer to estimate a company's particular tax liability but it is more difficult to predict the cumulative tax revenues from an entire sector.

The severance tax has its origins in levies on the production of coal. Historically, the severance tax revenues that are generated from coal production have been reasonably stable. The same can be said

to be true of severance tax revenues that are generated from metallic mineral production. However, those two sources taken together pale in comparison to the revenues generated from oil and natural gas production. It has been the increasing presence of severance tax revenues from oil and gas production that has led to the volatility of the aggregate revenues since oil and gas severance tax revenues are affected by commodity prices in regional and global markets and are subject to price at the well head.

The Colorado State Auditor released a performance audit of the severance tax programs located in the Department of Revenue and the Department of Natural Resources in June, 2006. The audit looked at severance tax revenues through 2005, and found that since the severance tax had been in effect (1978) it had generated nearly \$950,000,000 – but \$263,000,000 (more than 27%) of that total was collected in the two years immediately preceding the audit. By far, oil and natural gas severance taxes were the most productive generators of revenue indicating an almost halcyon period of rising energy prices, increased production and robust corporate earnings.

Oil and natural gas production are without question the most significant generators of severance tax revenues – generally in excess of 90% of the aggregate severance tax revenues. These sources can generate large amounts of revenue – but they are subject to wild swings directly linked to national and global market conditions which make them very volatile and unpredictable. In some years, market conditions are such that the revenues leap past projections and create what is akin to a windfall for the State. In other years, market conditions are such that the revenues produced are only a fraction of the previous year and fall short of predictions. A good example of this volatility is that severance tax revenues generated from oil and natural gas in fiscal year 08-09 increased by 119% over the revenues collected in the previous fiscal year 07-08. Then, just one year later, the severance tax revenues from the same sources plummeted by 75%. In real dollars, the FY08-09 revenues increased by \$167,000,000 over the previous year, and then precipitously declined by \$229,000,000 just one year later in FY09-10 (information from the Office of Legislative Council). The volatility is not solely the result of commodity prices. As will be discussed further on, oil and gas producers are allowed to take a credit adjustment to their severance tax liabilities for ad valorem property taxes paid during the previous tax year.

The most recent revenue estimates (June, September and December, 2010) prepared by the Office of Legislative Council indicate that the professional staff believes that severance tax revenues for the fiscal year 09-10 will be down 84.8% from fiscal year 08-09. Some of the decrease, according to the professional staff, is likely attributable to accounting adjustments for tax liabilities so it is unlikely that all of the decrease is related to market volatility. The Legislative Council, however, has estimated that severance tax revenues are likely to rebound during fiscal year 10-11. In a sense, market, climate, production and other factors that affect natural gas production and pricing seem to be mitigating each other, but on balance the factors appear to be favorable for increases in natural gas sales at reasonable market prices.

In recent years, more than 90% of the aggregate severance tax revenues have been attributable to oil and natural gas production. Of that 90%, approximately 90% is attributable to natural gas with the

balance being attributable to oil production. With this type of skewing, it is easy to see why the revenues can be highly unpredictable given the volatility of the energy markets at any given time.

Tracking the actual dollars collected from the severance taxes requires extrapolation. The statistical information is not kept in exactly the same format by agencies and industry sources thus making verification of fiscal year information somewhat difficult. Additionally, most of the revenue statistics are reported in aggregates and are seldom displayed by type of natural resource that is taxed. Generally, the aggregate numbers are displayed for oil and natural gas, all other severance tax revenues and an aggregate total for the fiscal year.

The following table is the information reported by the Department of Revenue in its 2009 Annual Report (the most current available):

<b>Net Severance Tax Collections - Colorado Department of Revenue 2009 Annual Report</b>					
<b>Fiscal Year</b>	<b>Oil &amp; Gas \$\$</b>	<b>Oil &amp; Gas %</b>	<b>All Other \$\$</b>	<b>All Other %</b>	<b>Total \$\$</b>
2009	273,028,479	0.95794	11,966,824	0.04199	285,015,302
2008	139,550,829	0.92129	11,922,825	0.07871	151,473,654
2007	126,244,455	0.92225	10,643,144	0.07775	136,887,598
2006	202,688,239	0.95260	10,085,116	0.04740	212,773,355
2005	134,049,755	0.92376	11,063,940	0.07624	145,113,695
2004	107,145,432	0.92459	8,738,392	0.07541	115,883,824
2003	23,612,982	0.73027	8,721,827	0.26973	32,334,808
2002	48,914,233	0.85619	8,215,660	0.14381	57,129,893
2001	54,383,726	0.87833	7,533,418	0.12167	61,917,144
2000	24,640,683	0.77128	6,866,188	0.21492	31,947,871

One of the remarkable features of the data displayed in the foregoing table is that over the 10 year period, the severance tax revenues from oil and natural gas increased more than tenfold while the revenues from all other severance tax revenues increased by a factor of less than 2. It is clear that while severance taxes collected from oil and natural gas produced the greatest amount of revenue, they were very volatile and unstable from year to year. Severance tax revenues from all other natural resource production were not as high, but they were very steady and reliable from year to year.

### ***Oil, Natural Gas, Coalbed Methane and Carbon Dioxide Severance Taxes***

Each form of severance tax has its own unique methodology for how the tax liability for the production or extraction of the targeted natural resource is calculated. The universal element for triggering a tax under any of the various severance taxes is that the natural resource must actually be produced or extracted. For example, there is a severance tax to be imposed on commercial oil shale production but there has not been any commercial oil shale production to generate tax revenues.

Severance taxes on oil, natural gas, coalbed methane and carbon dioxide production, like all severance taxes, begin with production. The severance tax is based on the operator’s gross annual income and is thus highly affected by not only the market price but also on the total production by the operator during the tax year. The tax is structured on a sliding scale in relation to the operator’s gross annual income. The following table sets forth the tax structure:

<b>Severance Tax Sliding Scale for Oil, Natural Gas, Coalbed Methane and Carbon Dioxide Production 39-25-105, CRS</b>	
<b>Rate</b>	<b>Annual Income</b>
2%	Up to \$25,000
3%	\$25,001 - \$100,000
4%	\$100,001 - \$300,000
5%	More than \$300,000

There is a difference between a statutory tax scheme and what is actually determined to be the “real” or effective tax liability. As is the case with most tax structures used in the United States, the ultimate tax liability is determined after the application of a set of accounting adjustments that reduce gross income to a net income. For oil and natural gas, there are two significant adjustments that are applied to the gross income in order to arrive at the net, or actual, taxable income:

\*Producers are allowed to deduct any costs associated with or related to transportation, processing, or manufacturing that are incurred prior to the sale of the oil or natural gas. Many wells, perhaps the majority, produce both oil and natural gas. “Producer” refers to the individual or company that is responsible for the production of the resource and includes any person who owns an interest in the resource. This definition includes those who have royalty rights and working interests. Royalty interests may also include the State and the federal government.

\*Producers are allowed to deduct 87.5% of the ad valorem property taxes assessed on oil or natural gas production from their severance tax liability in the current year. Local government property taxation is not uniform across the universe of local governments. The property tax credit tends to be more pronounced in high property taxation areas than in lower ones. In some jurisdictions, this credit may be large enough to reduce the severance tax liability of a given producer to zero.

One of the most significant exclusions from the taxation on oil and natural gas is the exemption for “stripper wells”. “Stripper” wells (i.e., those oil wells that produce fewer than 15 barrels of oil a day and natural gas wells that produce less than 90 thousand cubic feet [Mcf] a day) are exempt from Colorado severance tax. The purpose of the stripper well exemption is directly related to the incentives at play for a producer to continue to extract oil or natural gas from a well after the production from that well has

declined from its peak or optimum levels. The theory is that the exemption allows the producers to continue to pump the wells to maximize the amount of oil and natural gas that can be produced out of a well or wellfield when the operation has become only marginally profitable.

The foregoing are very significant adjustments to severance tax liability. According to data collected and published by the Office of Legislative Council, the majority of oil and natural gas wells in production in Colorado are stripper wells. According to Legislative Council, in 2006 about 95% of all oil wells and 73% of natural gas wells were classified as being stripper wells and thus exempt from the severance tax. However, not every well is the equivalent of every other well when it comes to production. While there are large numbers of stripper wells with low production, there are also wells that are very large producers on an individual basis. Again, according to research by Legislative Council, in 2006 the non-exempt oil wells accounted for approximately 60% of the state's aggregate oil production and non-exempt natural gas wells accounted for approximately 20% of the state's natural gas production. Another way of looking at that information is that, for 2006, fewer than 5% of the oil wells accounted for 60% of oil production and fewer than 27% of the natural gas wells accounted for 20% of natural gas production. It should, however, be noted that Colorado has experienced significantly increased oil and natural gas exploration and production since those statistics were developed and those descriptions may not be currently reflective of the industry.

Colorado experienced a significant drop in the production of oil and natural gas during the most recent global recession, and a precipitous drop in severance tax revenue was testimony to those economic conditions. However, it is far from clear that the downturn could be characterized as a "bust" in the sense that Colorado has experienced such economic disruptions in the past. Colorado is fortunate to have significant resources of both oil and natural gas that should be solid producers for many years. According to the United States Department of Energy, ten of the Nation's 100 largest natural gas fields and three of its 100 largest oil fields are found in Colorado. Recent exploratory discoveries in Weld County may lead to another large increase in production capability and as drilling technologies become more sophisticated and economic some well fields that may have played out economically may find new life as well.

Additionally, there are known oil and natural gas reserves that exist beneath land owned by the State and local governments that have a potential for development. As an example, the Colorado State Parks Division in the Department of Natural Resources is in the process of developing a financial plan to look at the feasibility of leasing some sites to outside parties for development. The City and County of Denver is considering leasing oil and natural gas sites that are located on the property of Denver International Airport. As state and local budgets are further constrained by the lack of available revenue, it is likely that several leasing options for oil and natural gas deposits will come under consideration and review.

Colorado is responsible for more than one-fourth of all coalbed methane produced in the United States. Coalbed methane output accounts for about one-half of Colorado's natural gas production according to

the US Department of Energy. For national perspective purposes, Colorado's production of natural gas is about 5% of the nation's production of natural gas, but about 30% of the nation's output of coalbed methane. Coalbed methane is associated with coal deposits, and the methane gas is kept in the coal deposits by water pressure. As water is removed from the coal seam, the pressure that had been holding the methane in place is reduced. The methane gas then tends to naturally follow the water as the water is pumped to the surface. The process of capturing the released methane is straightforward and cost effective which has made the capture and use of coalbed methane an important source of energy.

However, the issues surrounding coalbed methane and its production are not without controversy in Colorado. A significant issue is that of produced water with respect to the interpretation and application of Colorado water law. The Colorado State Engineer has undertaken a large study of produced water following a 2009 Colorado Supreme Court decision (*Vance et al v. Wolfe and BP America Production*) that essentially held that produced water was not inherently exempt from the State's water laws. This is an issue that will be embroiled in water administration rule makings and further litigation for the next few years, and how those issues are resolved may affect the production and economics of coalbed methane.

An associated issue, which will be discussed further on, is that hydraulic fracturing (known as "fracking") is often involved with the production of oil and natural gas. "Fracking" has become a politically charged issue and both federal and state legislators as well as regulators are studying fracking with an eye toward increased regulatory scrutiny of the practice. The United States Environmental Protection Agency has undertaken a large review and study of the practice and held public hearings in Colorado during July, 2010.

Colorado uses approximately 40% of its natural gas production, with the balance of 60% being marketed outside the state primarily in the Midwest but also in other regions in the West. Of particular interest is the Rockies Express Pipeline (REX) which began service in November, 2009 and moves natural gas produced in Colorado to markets in the Midwest. The pipeline runs 1,679 miles from northwest Colorado to its terminus in Ohio, and is one of the largest pipelines ever constructed in the United States. It can move 1.8 billion cubic feet of natural gas per day.

Of even more recent interest has been the commencement of construction of the new Ruby Pipeline following an April, 2010 Federal Energy Regulatory Commission (FERC) approval of its required permits. Construction began in July, 2010 and is estimated to be completed in the spring of 2011. The 42-inch pipeline is engineered to run 675 miles from the Opal Hub in Wyoming and terminate in the vicinity of Malin, Oregon traversing parts of the states of Wyoming, Utah, Nevada and Oregon. The pipeline is expected to be capable of transporting 1.5 billion cubic feet per day (nearly as much as REX). The El Paso Corporation (parent of the pipeline) estimates that about one-third of the natural gas will come from Colorado most likely from the Piceance Basin but also potentially from the Raton Basin. One of the reasons Colorado natural gas will be tapped is because traditional Canadian natural gas supplies

have been dwindling in recent years partly because many Canadian power plants are converting from coal fired units to natural gas fired generation – an issue that will be discussed further on with respect to Colorado electricity generation.

In a sense, Colorado is an exporter of its severance tax to natural gas customers located in other states.

## **The Developing Controversy Over Hydraulic Fracturing**

Recent changes in political values and public sentiment have put great stress on the generation of electricity from coal-fired power plants. While there is a robust move toward non-depletable fuel sources (i.e., solar, wind, bio-mass, etc.), it appears that a very significant shift from coal-fired to natural gas generation of electricity will increase demand for natural gas for several years into the future. As noted in the preceding discussion, the extraction technique known as “fracking” or “fracing” is highly controversial and has generated considerable opposition from environmental advocacy groups and citizen groups located in areas where fracking is used. “Fracking” is an acronym used to refer to hydraulic fracturing which is a technique used to create or exploit fractures in the rock and thereby release natural gas and oil that is trapped in the rocks.

Fracking is not all the result of human intervention; fracking can occur naturally through geologic activity and even the freeze-thaw cycle of the seasons. Even though the process has become controversial with the public and elected officials, it has been in use for more than 60 years, and it is estimated that, worldwide, more than 1,000,000 wells have used the process. The public awareness of the controversy may be heightened with the September, 2010 release of the quasi-documentary *Gasland* produced by film maker Josh Fox. The film traverses the country reviewing fracking operations and their alleged impacts upon the environment. The national premiere of the film was held in Denver on September 24, 2010.

In June, 2009 two identical bills named the “FRAC” Act were introduced in the United States House of Representatives and the United States Senate. “FRAC” is an acronym that stands for “Fracturing Responsibility and Awareness of Chemicals Act”. Respectively, the bills are HR 2766 and S. 1215. The House bill was introduced by Representatives Diana DeGette, Jared Polis (both from Colorado), and Maurice Hinchey (New York). Senators Bob Casey (Pennsylvania) and Chuck Schumer (New York) introduced the bill in the Senate. These bills are designed to amend the Safe Drinking Water Act. The bills would allow the Environmental Protection Agency to regulate hydraulic fracturing that occurs in states which have not taken primacy in UIC (underground injection control) regulation. The bills would also require the energy industry to reveal what chemicals are being used in the mixture that is used to maintain an open condition of the fracture. Not every operation uses the same mixture of chemicals in its fracking process, and the companies generally feel that the formula is proprietary information and should not be made publicly available to their competitors. The House Resolution was assigned to the House Committee on Energy and Commerce, where it resides pending hearings. The Senate Resolution

was assigned to the Senate Environment and Public Works Committee, where it resides pending hearings.

The fate of the two resolutions is far from certain now that the November election has established a Republican majority in the House, but the possibility that something will pass that will impose restrictions on the practice of fracking cannot be dismissed. If the restrictions are too severe and costly, one of the effects may be to reduce the number of producing natural gas and oil wells which would, in turn, reduce the volume of the resources produced and increase the production costs to the producers. As has been discussed, the Colorado severance tax on oil and natural gas is levied on producer income and that income could be affected by the pending legislation.

There have been two recent developments regarding the fracking issue that are worthy of note. According to national news sources, the State of Arkansas has just acted to require drilling operators to disclose what chemicals they are using to fracture rock formations to extract natural gas. The Arkansas Oil and Gas Commission has promulgated rules (which will become effective January 15, 2011) that require the operators to disclose the list of chemicals that they plan to use as well as listing the names of the various additives that are used with specific wells. The Commission plans to publish the information on its web site on a well-by-well basis. The State of Wyoming has developed rules that make public access to fracking information easier.

The second development worth noting is statements made by Interior Secretary Ken Salazar that the Department of Interior is determining how it will proceed with a policy to require producers to disclose the fluids used in fracking on public lands. According to information released by the Bureau of Land Management, approximately 90% of the wells in operation on public lands use fracking technology.

The Ground Water Protection Council and the Oil and Gas Compact Commission have undertaken a joint effort to develop a national registry that companies can opt to use on a voluntary basis to report the chemicals that they use in their fracking operations. Several large oil and gas exploration companies and their associated trade organizations have expressed interest in the project. Some of the companies have come to believe that public disclosure will prove that fracking is not associated with groundwater contamination and will provide an independent validation of many studies that have shown no contamination has ever occurred as a result of fracking.

## **Carbon Dioxide Production**

Colorado is also a significant producer of carbon dioxide, and in 1982 the General Assembly added carbon dioxide production to the severance tax imposed on oil and natural gas. Information concerning carbon dioxide production is sketchy and it is not clear how much revenue is generated from the severance tax on carbon dioxide. However, there is a lot of new interest in carbon dioxide that is developing as a result of a push to decrease greenhouse gases and for carbon sequestration. It is not entirely clear how much carbon dioxide is produced from extraction methods and how much may be

captured from processes such as the manufacture of ethanol and other industrial generation. It is possible that as the issue of carbon dioxide capture and production becomes more studied questions with respect to the application and equity of imposing severance taxation on one form of production but not others may arise.

## ***Oil Shale***

The severance tax imposed on commercial oil shale development is structured on a sliding scale, with a small production exemption. The severance tax is applied only to oil shale produced for commercial purposes and is imposed effective 180 days after commercial operations begin. While there is a statutory severance tax scheme, no oil shale production operation has generated any severance tax revenues. The following table displays the current oil shale severance tax structure:

<b>Oil Shale Severance Tax Structure 39-29-107, CRS</b>	
<b>Rate</b>	<b>Year Rate Is Made Effective</b>
1% of gross income, increasing by 1% per year over 4 years to a maximum of 4%	Year one of commercial production: 1%
	Year two of commercial production: 2%
	Year three of commercial production: 3%
	Fourth year of commercial production and each subsequent year: 4%
<b>Exemptions</b>	First 15,000 tons per day of oil shale or 10,000 barrels of oil per day – whichever is greater

Colorado has extraordinary deposits of marlstone, the mineral from which oil shale is extracted. The Green River Formation, which encompasses a number of basins in Colorado, Wyoming and Utah, holds the largest known oil shale deposits in the world. Colorado’s Piceance Basin is estimated to hold 1 trillion barrels of oil. However, despite its promise and value in a world where great pressure is being put on known oil reserves, the problems with making oil shale commercially profitable have not been overcome. Various pilot projects have demonstrated that oil can be produced but there are currently no commercial production facilities in operation. Thus, despite the statutory severance tax, there is no extraction that is occurring that will generate revenues and it is unlikely that any such operation will become a reality in the foreseeable future.

In the event that commercial oil shale operations commence and the State begins to realize revenues from the severance tax on oil shale, those revenues are statutorily designated to go to the Oil Shale Trust Fund for appropriation by the General Assembly. It should not be assumed that those revenues would automatically feed into the current statutory distribution scheme for severance tax revenues.

As a concluding note, some areas of the country that have oil shale deposits also have what are known as “tar sands” from which oil can be extracted. Colorado does not appear to have any such deposits.

## ***Coal***

Historically, it was coal production that was first subjected to a Colorado severance tax in 1913, and it has been subject to many modifications in state severance taxes ever since. Unlike oil, carbon dioxide, natural gas, coalbed methane and oil shale severance taxation which is related to the producer’s income, coal production is taxed on a per ton basis with the rate being tied to the Producers’ Price Index. The Colorado Department of Revenue posts charts that show the tax rate on a monthly basis. For example, the rate for July, 2008 was 83.9 cents per ton whereas for July, 2009 it was 74.5 cents per ton. The rate can vary from month to month.

Notwithstanding the statutory formula, the authority of the Department of Revenue to adjust the severance tax rate has become questionable. In February, 2010, the Colorado Court of Appeals handed down a decision in a case (*Colorado Mining Association; Twentymile Coal Company; Mountain Coal Company, LLC; Colowyo Coal Company, LP; Oxbow Mining, LLC; Trapper Mining, Inc.; and Bowie Resources, LLC vs. Roxy Huber; the Colorado Department of Revenue and the State of Colorado*) brought to challenge whether, under the TABOR provisions of the Colorado Constitution, the Department of Revenue could make those adjustments without a prior vote of approval by the people of Colorado. Essentially the Court held that the plain reading of the TABOR amendment precluded such an adjustment without the approval of the voters. The State has appealed the decision to the Colorado Supreme Court and it is not known when the Court might decide the matter.

In the meantime, the Department of Revenue has continued to levy adjusted coal severance taxes pending the ultimate outcome of the legal challenge. The severance tax on coal was set at .781 cents a ton for the 3<sup>rd</sup> quarter of 2010, and a tax rate for the 4<sup>th</sup> quarter is still pending. If the Supreme Court upholds the Court of Appeals decision, any increases in the severance tax rate will be subject to prior voter approval before the increase can be imposed. There are currently no such proposals for 2011 or 2012. Depending on how the Supreme Court ultimately decides, there is the possibility that severance tax revenues generated on coal production will be less than in previous years. Additionally, the amount of revenue that was collected from the unauthorized increase might have to be refunded in accordance with the provisions of TABOR.

There are two credits allowed against the severance tax on coal. The first is a 50% credit for the production of coal underground which under current rates would reduce the severance tax rate to 39 cents per ton (per the Court of Appeals decision). The second credit is for lignitic coal which is a lower grade coal also known as “brown” coal that can be described as being a grade between coal and peat. The credit is the same as for underground production but it does not appear that any lignitic coal is being produced currently.

Although the Department of Revenue does not display the severance tax revenue generated by coal separately from its category of “all other”, information from the Office of Legislative Council places the

revenues in the \$8,000,000 per year range. Generally, then, using the Legislative Council data, it can be concluded that coal severance tax revenues account for about two-thirds of the total severance tax revenues considered to be “other” under the Department of Revenue display. It would also be fair to conclude that severance tax revenues from coal have historically been highly stable and reasonably predictable but legislated changes and market conditions affecting coal production may result in this historically stable revenue becoming less stable in the future. Those external factors will be discussed further on.

The following table displays the current coal severance tax structure:

<b>Coal Severance Tax Structure</b> <b>39-29-106, CRS</b>	
Rate	Variable with the Producers’ Price Index, current is 78.1 cents per ton per the decision by the Court of Appeals
Exemptions	The first 300,000 tons produced each quarter are exempt
	A 50% tax credit is allowed for underground production and for lignitic coal

Colorado has vast reserves of low-sulfur coal and is ranked 7<sup>th</sup> in the nation among coal producing states. According to the Colorado Geological Survey, approximately 62% of the coal produced in Colorado is exported to other states and to Mexico, although the Colorado Mining Association has published new information that indicates that export sales have decreased significantly since the Geological Survey estimate was made.

While coal is used in cement plants and steel-making processes, its most significant use is for electricity generation. Because of its low sulfur content and low levels of mercury and arsenic, Colorado coal has often been blended with lesser quality coal at eastern and Midwestern power plants to achieve environmental compliance standards. The emerging regulatory emphasis on natural gas generation over coal-fired generation may have a significant effect on the production of Colorado coal.

Nearly 70% of the electricity currently generated in Colorado is from coal-fired plants, and most of the coal used to run the generation comes from Colorado. Some coal is imported to augment the Colorado supplies, and that coal predominantly comes from Wyoming. In addition Colorado is one of the most important sources of coalbed methane gas in the nation.

The use of coal in the generation of electricity has come under great political pressure. Some of the pressure comes from the financial interests that are developing non-depletable electricity generation (i.e., solar, wind, bio-mass) to compete with coal-fired generation, some of it comes from environmental advocacy groups that seek to eliminate fossil fuel electricity generation and some of it comes from environmental regulators seeking “cleaner” electricity generation production generally. However, the political interest that is emerging very quickly to be the most powerful player in the debate is the natural

gas industry. The just completed 2010 Colorado legislative session witnessed the enactment of HB10-1365 which was aimed at requiring Xcel Energy (the state's leading electrical utility) and other rate-regulated electricity producers in the state to reduce air pollutants by retiring, retrofitting or re-powering coal-fired facilities to use natural gas or other non-coal sources of fuel.

It is not clear what the just enacted legislation will mean for Colorado coal production but there is great concern among the coal mining industry that the effect will be dramatic and very harmful. Some Colorado coal is currently being exported to Mexico, and increased demand in that country may offset some domestic decreases in the use of coal. However, the Colorado Mining Association recently reported that coal exports (domestic and foreign) had decreased 27% in the last year and that exports now are 58% of Colorado coal sales which is considerably less than the earlier information prepared by the Colorado Geological Survey. The most recent revenue forecasts prepared by the Office of Legislative Council (June, September and December, 2010) notes that a 41.4% decline in coal production is expected for fiscal year 09-10, which in turn will result in a reduction in severance tax revenues. Legislative Council notes that coal represents the second largest source of severance tax revenue after oil and natural gas severance tax revenues. If the Mining Association and Legislative Council are accurate in their analyses, the overall state severance tax income is likely to become even more volatile as the usually stable coal production declines and the system becomes more skewed toward oil and natural gas severance tax revenues.

However, it has just been announced that the New Elk Mine in Las Animas County will reopen to produce what is known as "coking" coal. Coking coal is used in the production of steel, and Asian markets appear to be hungry for such coal. According to figures released by the Colorado Office of Economic Development, the price of coal from the Powder River Basin in Wyoming that is used for the production of electricity is about \$13 per ton whereas the price per ton for coking coal is currently in the vicinity of \$156 per ton. It is estimated that the New Elk Mine has about 315 million tons of coking coal and the mine owner, the Cline Mining Corporation, plans to extract 2-3 million tons per year.

In August, Xcel announced an aggressive plan to convert some of its Colorado coal-fired power plants to natural gas. Xcel has targeted its power plants in the Denver-Boulder urbanized area for conversion, but has indicated that plants located in more rural areas (such as Hayden and Brush) would not be converted but would be upgraded to be more efficient and less polluting. There has not been an indication whether Xcel plans to make similar conversions to its plants located in other states or whether this conversion is unique to Colorado. The effect of the conversion on coal delivery contracts will certainly be affected, but it is unclear what the total effect on coal production will be. Nor has there been any significant announcement as to what other coal dependent electricity generators such as Colorado Springs Public Utilities may be contemplating for future generation. It is known, however, that natural gas generation is under review and discussion by the managements of those utilities.

While this announcement and subsequent filing with the Public Utilities Commission is of great significance, it should not be automatically concluded that severance tax revenues resulting from natural gas production will show an increase due to expanded production. It has not been established

that natural gas production in Colorado will be expanded to accommodate the new demand; the infrastructure for natural gas production and distribution is extensive and some of the demand may be met from sources outside Colorado. Moreover, the severance tax liability is a function of producer income and other offsets so it is not entirely clear how much additional liability may be created. Sources representing the natural gas industry have suggested that the industry has matured to a point where commodity pricing volatility has been mitigated. There does not seem to be any solid evidence that such assertions are valid and may in fact be premature and of questionable reliability.

When considering what the effect of this legislation may have on coal production in Colorado, it is important to review the time frames that are set forth for the conversion. The just enacted statute requires that the conversion be implemented by 2017; however, that time frame may be altered by the General Assembly. On December 6, 2010, the Colorado Public Utilities Commission approved plans submitted by Xcel to close six older plants along the Front Range and allow the company to replace the coal-fired generation with natural gas generation. There is still uncertainty with respect to the ultimate fate of the Cherokee 4 plant which is the largest coal-fired generation plant in the Denver metro area. It appears that Xcel's current strategy is to add pollution control technology to the Cherokee 4 plant and continue to use coal as the fuel source for generation. Environmental activists along with PUC Commissioner Ron Binz want the Cherokee 4 plant converted to natural gas.

It is safe to conclude that coal production along with the revenues generated by the severance tax on coal are likely to remain flat for the next few years and may begin to erode unless new markets or new technologies (i.e., coal gasification) are developed to offset the shift away from coal-fired electricity generation. The reopening of the New Elk mine in Las Animas County is a positive sign for the coal industry.

If the market changes that occur as a result of the 2010 legislation, electricity generation technology changes, and contract modifications precipitate a reduction in coal production in Colorado while imports of coal from Wyoming remain stable or increase, there will be a reduction in Colorado severance tax revenues generated by coal production. The Colorado coal severance tax is a production tax based on tons of coal produced in Colorado; it does not extend to coal produced in a state such as Wyoming that is imported into Colorado.

As a concluding observation, coal mining has been, and will continue to be, an important economic activity in Colorado. Low sulfur content Colorado coal is a vital natural resource for the nation and coal will be developed for the economic benefit of the nation even if its contribution to electricity generation is reduced. As much as the advocates of alternative electricity generation tout their particular favorite technologies such as solar or wind and decry coal-based generation, those emerging technologies are not likely to contribute a significant percentage of the electricity in this country for many, many years and each suffers from its own peculiar reliability constraints (i.e., wind generation only occurs when the wind is blowing) and environmental impacts on the land, wildlife and water resources. Moreover, there are significant studies that have been publicly released that question whether the alternative energy

technologies can ever be self-sustaining in the market and may require extensive public subsidies for years.

## ***Molybdenum***

Molybdenum production has been important in Colorado for many years, and, since it is subject to global commodity market fluctuations, has been subject to boom and bust economic cycles over the years. Similarly to the severance tax on coal, the severance tax on molybdenum is a production tax rather than being related to producer income. The following table displays the current molybdenum severance tax structure:

<b>Molybdenum Severance Tax Structure</b> <b>39-28-104, CRS</b>	
<b>Rate</b>	<b>5 cents per ton of ore</b>
Exemptions	The first 625,000 tons produced each quarter are exempt

Colorado is the leading producer of molybdenum in the United States, and the Henderson Mine in Clear Creek County is the nation’s largest primary producer of molybdenum. Molybdenum is mostly used as an alloy agent in the production of stainless steel in order to increase its hardness, corrosion resistance and capacity for holding welds. The United States is a net exporter of molybdenum.

The Colorado Department of Revenue does not display the severance taxes generated from molybdenum production and includes those revenues with revenues from coal and metallic minerals in a category designated as “all other.” However, the Office of Legislative Council has opted to display the severance tax revenues generated by molybdenum production in a more refined manner. The Legislative Council backs coal generated severance tax revenues out of the more general “all other” category thereby creating a category of “molybdenum and metallic minerals”. Legislative Council estimates those combined revenues are in the \$1,000,000 to \$2,000,000 range annually.

## ***Metallic Minerals***

The category of metallic minerals is diverse and is actually defined by what the substances are not rather than what they are. The minerals most often cited as being subject to the severance tax on metallic minerals are gold, silver, copper, zinc, uranium and vanadium but other minerals which may be considered to have some metallic characteristic may be included as well. The Colorado Revised Statutes at 39-29-102 (5) defines them this way:

"Metallic minerals" means all minerals except molybdenum, oil and gas, carbon dioxide, coal, oil shale, rock, sand, gravel, stone products, earths, limestone, and dolomite.

The severance tax on metallic minerals is related to the gross income of the operator. Under Colorado law the severance tax is imposed on the value of the ore immediately after its removal from the mine,

and does not include any value added subsequently by any treatment processes, such as crushing, grinding or concentration, by transportation from the mine, or by marketing of the ore or any products derived from the ore. Nor does it include income from the extraction or processing of ores or minerals from mine waste or residue of previously processed ores.

The following table displays the current severance tax on metallic minerals:

<b>Severance Tax Structure for Metallic Minerals</b> <b>39-29-103, CRS</b>	
<b>Rate</b>	<b>2.25% of gross income over \$19 million</b>
Exemptions	An amount equal to all ad valorem taxes assessed during the taxable. Such credit shall not exceed fifty percent of the tax computed in accordance with subsection (1) of this section.

No information with respect to the amount of severance tax revenues generated by each of the types of metallic minerals could be found. Some of the minerals, such as gold, are enjoying extremely high market prices which are likely related to global economic instability and the desire by investors to reduce their investment risks. Even though popular media accounts related to the investment value of gold abound, it is also a very valuable mineral for industrial applications, electronics and other uses. Colorado has historically been recognized as a major gold producing state and ranks 4<sup>th</sup> in the nation for such production. The price of gold is affected by global commodity market activity which is currently showing robust activity with high values. Commodity markets are, however, notoriously volatile and the price of gold has fluctuated over the years in response to the global commodity markets.

It does not appear that copper and zinc are currently produced in Colorado.

Other metallic minerals such as uranium and vanadium are at the threshold of renewed commercial production in Colorado. The global resurgence of interest in the development of nuclear generated electricity has caused a rise in the interest in developing uranium to be processed into fuel. The market, however, is very unstable and price is wildly volatile. Vanadium, which is associated with uranium ore, has a significant presence in Colorado and is used in the processing of steel for strengthening and to thwart corrosion. While there is still interest in underground uranium mining in Colorado, the current thrust is for the use of in situ extraction. One of the characteristics of uranium is that it can be mobilized by bringing it into contact with highly oxygenated water. The uranium atoms bond with the enriched water and the mixture is pumped out of the ground into an ion exchanger (similar to a water softener process) where the uranium is released and bonded with an inert host for transportation to a mill for processing. The water is then recharged and recycled back into more extraction.

There are a small number of proposed in situ operations in the process of securing federal and state permits for their operations but none has begun operations as yet. There is stiff public and political resistance to any uranium operations of any kind in Colorado which is a function both of public fear of

the material and also a long and unhappy history of uranium mining and milling operations dating back to the end of World War II. While it is unlikely that Colorado will ultimately ban uranium extraction, the laws and regulations that will be imposed on the producers are very likely to be onerous and very costly. Whether the producers can profitably operate in Colorado given the highly volatile nature of the uranium ore markets remains to be seen.

What can be said with some degree of confidence is that the permitting process will be lengthy and it is likely to be 2-5 years before all required permits have been secured and actual production is commenced. The regulatory time lines are not sensitive to market conditions and there is no way to predict what the price of uranium may be when all regulatory and permitting processes have been concluded and the in situ operations are in production. It is possible that the market price at time may not be high enough to make extraction profitable. Severance tax revenues will not commence until the uranium ore is actually marketed.

The newest mineral for development in Colorado is rare-earth minerals. These minerals are used in wind turbines, photovoltaic and other clean energy technologies. The US Department of Energy has become concerned that foreign sources of rare-earth minerals (predominantly found in China) are vulnerable to production and market interruptions thereby jeopardizing United States operations. While the markets and interest are clearly evident, opening a mine takes several years so any severance tax revenues that might be generated by the development of rare-earth minerals will not be realized for several more years.

## **The Colorado Budget and Budget Process**

The foregoing discussion has primarily focused on the severance tax revenues and the Federal Mineral Lease revenues, and where those dollars go once they are received by the State. The discussion now turns to the state budget and the budget development process.

The salient question for this discussion is whether the state budget can realistically be expected to provide significant stable funding for water projects in the coming years. The ancillary question is whether the Colorado political infrastructure can be realistically expected to make water projects a priority commitment transcending not only fiscal years but also sequential generations of legislators. Since the voters amended the Colorado Constitution to impose term limits on elected officials, a “generation” of elected officials is no longer than 8 years, and perhaps only 4-6 years, in duration. Water projects have very long lead times for planning and development and can easily transcend multiple generations of elected officials.

## ***The TABOR Distortion***

The so-called TABOR amendment to the Colorado Constitution was enacted in 1992. By way of perspective, all first time voters in Colorado who registered to vote in the 2010 election due to reaching the age of 18 have never lived under a Colorado government without TABOR.

It is not easy to find someone who has a dispassionate and objective view of TABOR. Those who believe that government should do more intervention in the everyday life of society and expend budgetary resources for programs and public purposes generally believe that TABOR is the root cause of the budget misallocations that characterize the state. However, those who hold TABOR up as a budgetary Maginot Line intended to stop what they see as government's insatiable appetite for taxes generally believe that TABOR prevented the absolute destruction of the state during the current global economic downturn. While each school of thought has taken root, neither is particularly useful for analyzing the budget process. The ultimate reality is that the General Assembly is charged with producing a balanced budget every year, and the legislators have met and will continue to meet that obligation.

Among the other effects that TABOR has had in the past two decades, is that it has created a massive distortion in the budget and it has resulted in a budgetary process that satisfies TABOR constraints as its first priority. In theory, at least, pre-TABOR budgets were fairly reflective of the then commonly held view of public finance that earmarked and restricted funds were generally detrimental and the more productive approach to public budgeting was to be found in the dynamics of the political process that ultimately established spending priorities and marshaled budgetary resources to fulfill those priorities. Many of the TABOR critics still hold that vision of the budget process and long for a return to a form of representative government that engages in debate and the development of solutions to various identified problems.

Critics of TABOR very often express these views in their calls to remove what they believe are the budgetary "straightjackets" that are presumed to restrict rational budgetary decision making. However, since its adoption by the voters, TABOR has not been seriously challenged by the electorate. To be sure there have been activities on the margin of the core of TABOR (such as Referendum C), but the amendment largely remains in place. Even the Colorado Supreme Court has tread lightly around the core of TABOR, and while its recent decisions concerning tax credits, deductions and other issues have resulted in outrage by some TABOR supporters, those decisions did not affect the core principles. Even the successive budgetary constrictions set in motion by economic downturns have not resulted in a general call from the electorate to repeal or even substantially overhaul TABOR.

Many TABOR advocates are not far from the older public finance view either. These advocates believe that budgetary priorities will be better established with fewer resources for government to work with. These advocates believe fewer resources will cause policymakers to jettison programs and spending on lesser value purposes and use those freed up resources to fund higher priority purposes. Perhaps there would have been more validity to this notion had the state budget been an optimum balance of programs and expenditures when TABOR was adopted. However, the budget was not optimum and one of the significant distortions caused by TABOR has been the entrenchment of spending patterns that were largely in effect when TABOR was enacted. TABOR has had an unfortunate tendency to crowd out consideration of new priority programs or even to make older programs more efficient by adoption of new technology.

But things have not worked out for the TABOR supporters either. Government has not really been reduced and few programs have been abolished. The TABOR supporters did not take into consideration a fundamental value of American political life. Elected officials come to feel that their job is to craft a budget that does as much as possible with as little as possible. This is an important point about perception, and the example of state funding for the health care of people known as medically indigent is illustrative. For years, the rate of reimbursement to hospitals and physicians for caring for the medically indigent was about 20%. Providers were appalled at the low rate of reimbursement and worked diligently to increase the funding for the program. For legislators, however, the leveraging of so much health care for poor people for a 20% expenditure was an extraordinarily high rate of return on a modest cash investment. For legislators, it was an example of sound fiscal management and getting the most return out of public dollars.

Rather than abolish programs, it is more likely that elected officials will figure out ways of keeping programs functioning even if it means substantially reduced quality or service, shifting costs to fees where possible and generally shifting the cost obligation to other parties through various mandates. Absent a voter directive to abolish a program or to cease providing some service, budget writers will find a way to craft a budget within the constraints.

### ***The Big Four and the Big Outlier***

The state budget has become extraordinarily complex and is governed by many formulas that specify how the revenues coming to the State are to be allocated. The flow chart set forth in Appendix A is a good example of formula budgeting. All things budgetary are either controlled directly or are highly influenced by TABOR and its internal inconsistencies and demands. What is, or is not, subject to the decrees of TABOR determines how much flexibility the General Assembly may have with respect to discretionary budgeting. An excellent example is that the state severance tax revenues are subject to TABOR whereas the revenues received through Federal Mineral Lease payments are not.

Ultimately, the budget focuses on the general fund. The budget that was adopted for Fiscal Year 10-11 is approximately \$18.2 billion. Of that total, only about \$7 billion (just over one-third of the total budget) makes up the general fund of the State – the moneys that fall under the TABOR provisions. The remaining two-thirds of the budget revenues come from federal funds and cash, or fee, income. Some of the federal funds are tied to the general fund through cost sharing formulas that require state moneys to match or leverage federal funds. The classic joint federal-state financing program is Medicaid. Severance tax revenues are subject to TABOR because they are general fund revenue sources whereas Federal Mineral Lease Payments are exempt from TABOR because they are federal transfer payments. However being TABOR exempt is not a total pass on budgetary constraints because TABOR also affects expenditures through its formula. The annual Appropriations Report is a companion publication to the general appropriations bill (long bill) adopted by the General Assembly every year and has a very good and succinct explanation of TABOR and its operational requirements.

Of all the state agencies and budgetary allocations, four spending areas dominate the general fund: K-12 public school education (45.6% of the state general fund), health care spending – predominately Medicaid (17.7% of the state general fund), higher education (9.3% of the state general fund), and corrections (9.3% of the state general fund). Collectively, these four commitments of the state revenues account for more than 80% of state general fund spending.

While these uses of available revenues are important, what is more important is the understanding that these programs have great societal and political priority that gives them precedence over other programs and expenditures. The recent budgetary crisis caused the General Assembly to divert and concentrate considerable resources to maintaining these big four as much as possible. Each has suffered budgetary hits (most notably higher education), but other agencies and programs have suffered earlier and longer. As budgetary circumstances begin to allow, it is highly probable that the General Assembly will place a high priority on the restoration of budget cuts for these four areas before other agencies see any relief. It should be remembered that public school education has been a long time recipient of moneys generated from Federal Mineral Lease Payments as is shown in Appendix A.

A sustained, even if modest, recovery will take some pressure off of the General Assembly for further radical cutting of the budget. However, if a recovery does not begin to materialize or if the economy takes another dip in 2011, water managers should expect to see even more reductions in the budget allocations to the Colorado Water Conservation Board. Governor Ritter has submitted his final draft budget to the Joint Budget Committee with his recommendations for funding levels for water projects. That is the draft budget that the Joint Budget Committee is working from, but it does not reflect what priorities Governor-elect Hickenlooper may introduce into the budget deliberations.

Depending upon how deep and sustained another downturn might be, the existence of the CWCB itself may be jeopardized. Absent a water supply crisis that suddenly vaults the importance of water to the political forefront, water project financing needs will not be able to compete with the deeply entrenched budgetary priority for K-12 education, higher education, Medicaid and corrections. Even if those long standing budgetary priorities could be satisfied, it should not be assumed that water projects would be in the next level of priority. There are many other state agencies and programs that have been affected by the budgetary reductions that also have importance and political priority that might well transcend the political needs for water projects.

The Big Outlier that may begin to affect state general funds is highway financing. There have been state general fund revenues allocated to highway needs but the highway system has predominantly been financed by motor fuel taxes and various fees that are associated with the licensing and operation of motor vehicles. Unfortunately, the motor fuel tax is not producing the kinds of revenues that are needed. Drivers have reduced their miles driven and have purchased more fuel efficient vehicles. Technological innovation is moving toward non-gasoline powered motor vehicles which, if successful, will further reduce the consumption of gasoline. These shifts in consumer and user behaviors may be good for the long run quality of life in Colorado but they are problematic for a fiscal system predicated

on increased gasoline tax revenues to generate the moneys needed to maintain the transportation network.

There is no doubt that the state's highway system, both at state and local levels, is in serious disrepair and every analysis of the needs that has been done in recent years consistently points to the need for more revenues to be committed to maintaining the roads and bridges throughout the state. Tapping general fund revenues is not a new idea. Various proposals to use some general fund revenues have been brought forward over the years, and a few of them have been implemented. But the fact remains that the continuing decline of the highway infrastructure will generate intense political pressure to move those needs directly in competition with other general fund programs. Water will find itself competing not only with K-12 education, higher education, Medicaid, and corrections but also highway financing for the critical dollars it needs for long term projects.

TABOR may have been the controlling set of parameters for budgeting for the past twenty years, but that is not necessarily an indication that it will remain that dominating in the future. There are very real and very demanding needs for governmental financing. In some cases, those needs will eclipse the TABOR constraints and philosophies and the voters may simply remove them from the state budgetary system – a form of TABOR bypass. Even though the need may be expressed on a statewide basis (i.e., highway financing) it is not inherently a given that the State of Colorado must be the action entity. The voters may decide to create independent authorities to address the need and create them to be independent of the state government and more directly accountable to the voters. In some cases, the voters may divert existing revenue streams to be dedicated to that purpose and in other cases the voters may embrace new types of taxes and fees for the operation of the program. The lasting legacy of TABOR may be that the voters look to specific programs and earmarked financing streams to meet their needs more than relying on general representative government to address the needs through the political process. The voters have become accustomed to bypassing the General Assembly; it is not much of a reach for the voters to become comfortable bypassing TABOR.

To create some level of certainty in state funding for water projects, the water community will ultimately have to find a new source of revenue that is not being used by other powerfully entrenched programs. That new source of revenue would need to be developed in such a way that it remains distinct and protected from being diverted for other budgetary needs – and it would need to be insulated from TABOR restrictions. By way of an example of the competition that may be forthcoming, the Higher Education Strategic Planning Steering Committee appointed by Governor Bill Ritter released its final report on the future needs of higher education. One of the recommendations in that report is that there be a “1% surcharge on extraction.” The report does not provide any detail with respect to that recommendation, but it is reasonable to conclude that it means a 1% surcharge on the severance taxes imposed on natural resource extraction.

There is sound reason to conclude that the current state revenue portfolio which consists mainly of income taxes and sales taxes is not robust enough to generate the moneys necessary to support the state budget. During the just completed 2010 legislative session, the General Assembly enacted a

package of bills that was intended to increase state sales tax revenues by eliminating some exemptions to the state sales tax. The General Assembly relied on a Colorado Supreme Court decision that held that the legislature could repeal exemptions, deductions and credits without running afoul of TABOR's mandate for prior voter approval. It is not likely that this package of taxation changes will produce large amounts of new revenue since the controlling variable is the economy and many of the activities that have been made subject to taxation are either not occurring or are not occurring at a level of commerce that will result in significant new tax revenue.

### ***Volatility, Lag Times and Forecasting***

Much attention is paid to the budget process and to the effects of TABOR. Less attention is paid to the cash flow realities of when revenues actually materialize. Budget writers must take into consideration built in lag times when projecting revenues on which the budget is not only constructed but also on which the Constitutional mandate for a balanced budget is predicated. Some forecasting is easier than other forecasting, and budget writers must, by necessity, exercise caution and discipline to avoid budgetary irrationality.

Cash flow is very important not only because the budget writers must estimate how much revenue will be realized but also when those revenues actually get deposited in the treasury. The difference between sales tax revenues and income tax revenues is illustrative. Sales tax collections are to be deposited in the treasury the month following the taxable sales transaction. As part of the 2010 revenue enhancement package, the General Assembly repealed the sales tax exemption for soft drinks. As soon as the exemption became effective as a matter of law, the grocers began to collect the tax at the time of purchase. The grocers then remitted the newly collected sales tax revenues on soft drink sales the next month.

Income taxes, on the other hand, take longer to materialize because they are predicated on a tax year (usually the calendar year but some taxpayers use other fiscal years such as July-June). For the individual taxpayer, the preparation of the tax return occurs in the calendar year following the end of the tax year. The actual remittance of income taxes may not occur until the second quarter of the year following the tax year. Whereas sales tax revenues materialize in about a month, income tax revenues (even controlling for periodic deposits through the withholding of wages) do not become finalized for at least a year. Property tax revenues at the local government level take more than two years to materialize.

Experienced budget writers have developed methods for forecasting both the aggregate tax revenue and when it is likely to be realized in the treasury. Some tax revenues are fairly consistent throughout the year with notable seasonal spikes. An example would be sales tax revenues that are affected by holiday purchasing. Other tax revenues, such as income tax, tend to be realized less frequently but in larger amounts reflecting the deadline by which they must be remitted.

Severance tax revenue receipts vary with the type of tax. With the Colorado severance tax now so dominated by oil and gas severance taxes, it is useful to consider when those revenues actually are

realized. Severance tax liability on oil and natural gas is triggered by actual production, and the formula for credits, stripper wells and so on applies after production occurs. The severance tax is not applied to the value of the production, rather it is applied to the derived and adjusted value after all the credits and other adjustments are made. This is an important distinction because the biggest adjustment is for ad valorem property taxes which tend to be stable from year-to-year. The gross production to which the property tax credit is applied is much more volatile since it is predominantly a function of commodity prices. When commodity prices are high, production not only occurs but the gross value of the production is correspondingly high. When prices fall, production may decrease in more marginal wells and the property tax credit becomes a larger factor in the calculation of severance tax liability since property taxes are a constant.

The assessment of production facilities for taxation purposes is made by county assessors in the year prior to the actual production. But, that calculation is based on the production in the previous year. There is a real two year lag built into the property tax system. This process of assessment and taxation is a critical variable in the volatility of the severance tax revenues that are realized. It is fair to conclude that the volatility in the severance tax revenues is a function of the combined effects of volatility in the commodity market price and in the formula for property taxation.

It may appear that the property tax credit is little more than an accounting adjustment, and in many respects that is true. However, the property tax credit can, and often does, reduce the severance tax liability for a given producer to zero. The effect is more pronounced in counties that have high ad valorem property taxes than in lower tax counties. The larger the liability for property taxes, the higher the credit. An effect that is less known is that of refunds by the State of Colorado. The State Auditor noted in the June, 2006 performance audit that in 2004 a total of 8,007 severance tax returns were filed with the Department of Revenue. Of those 8,007 returns, 6,500 (81%) received refunds.

The property tax credit is very complex and can confuse tax preparers. What may appear to be an attempt by a taxpayer to skirt liability may on analysis be nothing more than an error that results in a technical noncompliance. Colorado law imposes the tax on producers, working interest owners, royalty interest owners and others with interests from the oil and gas produced in Colorado in relation to their proportional ownership interest. Colorado has lots of local governments that impose ad valorem property taxes, and it is well known that at least 2,000 separate and independent mill levies exist throughout the state. However, natural resource production does not occur in every county and tends to be concentrated in a few counties thus the fact that there are more than 2,000 separate mill levies should not be taken to mean that all of them are in play with respect to oil and natural gas extraction.

But notwithstanding the regionalized extraction presence, the number of taxing jurisdictions is an important factor. For illustration purposes, the City and County of Denver, for example, has ten separate mill levies that are imposed. Denver is unique because it is a combined city and county and school district and (other than its inclusion in the Urban Drainage and Flood Control District) it has no other special districts or towns or cities that add to the number of property taxing entities. Weld County, by comparison, has 23 separate taxing municipalities as well as numerous school districts and

other taxing jurisdictions. Denver currently does not have natural resources production, but Weld County has extensive oil and natural gas production activities and may someday have uranium mining. As a short digression, recent news reports have indicated that Denver may be considering the development of some energy resources located on the land surrounding Denver International Airport. Whether that development would be under the control of Denver or work similarly to federal leases has not been discussed. However, the decision on how to develop such resources may determine to what extent severance taxes would be applied.

To further complicate the responsibility of the tax preparer, it is not uncommon for the wells within one lease to be located in more than one county or other property taxing jurisdictions – gas fields and oil fields do not know where political boundaries have been drawn. Thus the “tax return” is not prepared for a specific well and any given well may produce income for multiple interest owners each of whom has a separate and unique tax return that may include several wells. Isolating the tax revenue production for a given well can be a daunting task.

Reporting and the determination of tax liability can become even more complex when the exemption for stripper wells is factored into the equation. It is very common for a well to produce both oil and natural gas, but the stripper well exemption applies to the resource being produced rather than the entire well. A well may not meet the criterion to be a stripper well for natural gas production but may meet the criterion to be a stripper well for oil production. A further complication is that a stripper well is not only exempt from severance tax liability it is also not qualified for the ad valorem property tax credit. It is not clear how the ad valorem property tax credit is calculated when one of the production operations is a stripper well but the other is not.

These complications are structural weaknesses in the statutory and regulatory system. As energy production boomed the system which was never designed for rigorous audit verification became overwhelmed by volume and complexity. Many of the weaknesses were noted in the State Auditor’s 2006 Performance Audit and while the agencies concurred with the recommendations made by the State Auditor it is not clear how many were implemented by the General Assembly or the agencies. A useful inquiry would be to track the actual implementation of the Auditor’s recommended changes.

## **Concluding Thoughts**

The revenues that are generated by the severance tax and federal mineral leases are significant but they are volatile and not wholly predictable. Colorado water projects and needs have been the beneficiaries of some of the severance tax revenues and Federal Mineral Lease Payments for several years. But even though the moneys are distributed in conformance with a statutory formula there is no guarantee that any of the moneys will be forthcoming from one year to the next. The recent economic downturns have made it clear that severance tax revenues and Mineral Lease Payments are a pool of money that the legislature will access and apply to needs that it feels are of a higher immediate importance than water projects. These transfers have not been “borrowings” from restricted funds, they have simply been

alternative uses of available moneys and the legislature does not have a legal or moral obligation to repay the funds once they have been diverted.

The water community in Colorado has been a powerful political force since before statehood. For several generations, the water community has been successful in achieving one overarching goal – the preservation of the legal system that is defined by and exists because of the Doctrine of Prior Appropriation. Beyond a shared value of preserving that system, the water community is far less cohesive and is often characterized by internecine warfare among its members. As state budgetary resources committed to water projects become imperiled, the water community will need to develop a shared value for developing and preserving budget revenues that is at least equal to its shared value of preserving the Doctrine of Prior Appropriation.

Increasingly, the future of water projects will be the future of funding resources which will, by necessity, focus on public sources of funding. One of the considerations that state budget writers include in their budget balancing efforts is whether the program or project can be funded in full or in part by sources other than the State. The more that state budget writers can gain comfort that other funding sources can bear much of the load of financing public programs, the more likely it is that state funding will be limited or even terminated.

By necessity, the water community will have to increase its understanding of the public financing issues facing the State of Colorado. That is not to say that many of the long standing players in the water community have been insensitive to the budgetary issues. Many of the interests have been very adept at securing state and federal funding for their projects and have developed long standing political ties with elected officials and agency professionals. However, success in securing project funding is not the same as developing a stable long term fiscal system to support the funding needs of the water system in Colorado.

For the water community to develop a successful revenue and finance presence on the order of what it has accomplished in relation to the Doctrine of Prior Appropriation, it needs to focus talented resources on long term revenue sustainability. Just as the water engineers consider a water supply portfolio that spreads the risk of precipitation short falls across a wide geographic area, water revenue managers should look to diversifying the water revenue portfolio to insulate water project financing needs from disruptions.

It is clear that revenues generated by the State's severance taxes are volatile from year-to-year, and that the revenues generated by those taxes are not earmarked or permanently dedicated to funding water programs and projects. The formulas that funnel severance tax revenues and Federal Mineral Lease payments into water programs and projects are a good starting point for the water community. The water community should consider developing a stronger presence to protect those funds from being diverted to other purposes. Such a protection could be secured by changing the priority of revenue distribution from one that is based on trickle down percentages of percentages to a front end allocation directly to the targeted funds and accounts. However, in undertaking such an analysis the water

community should exercise caution that it not imperil or jeopardize the funding streams intended for other current uses of the severance tax and Federal Mineral Lease payment revenues.

The amount of money generated by the State's severance tax is a function both of the formula that is applied to the resource and the economic conditions affecting the production of the resource. The water community should begin to develop its own independent forecasting capability. Severance taxation depends upon production; if there is no production, there is no taxation of the extracted resource. The water community would benefit from being able to forecast the market activity for the resources that are subject to the severance taxes. Waiting until official revenue forecasts or reports of actual receipts does not provide the water community with enough early information to identify when revenues may be headed toward a significant decline.

After the production of the resources, the severance tax revenues are directly affected by how the State administers and manages the revenue collection system. The water community may wish to consider advocating the relocation of that administration from the Department of Revenue to the Department of Natural Resources. There is no inherent *a priori* reason why the administration needs to be a function of the Department of Revenue; it can just as legitimately be a function of the Department of Natural Resources. If it is the policy of the General Assembly that 50% of the severance tax revenues be allocated to the Department of Local Affairs, there is no reason why that allocation cannot be directed from the Department of Natural Resources as opposed to the Department of Revenue. There may even be a compelling argument that could be made that verification of production would be better accomplished under the regulatory bodies of the Department of Natural Resources than under the Department of Revenue since those agencies are much closer to the actual producers.

Monitoring and predicting the receipt of Federal Mineral Lease payments by the water community is not significantly different than that for severance tax revenues. However, the water community should consider keeping the Colorado Congressional delegation apprised of the importance of those transfer payments and ask those members to be alert for federal statutory changes that might detrimentally affect those transfers. It is hardly a secret that the federal deficit has become a political issue and there will be great pressure brought on the Congress to pay down that deficit. The allocation of Federal Mineral Lease payments to the states might become a tempting target for the Congress. It would be to the benefit of the water community if the Colorado Congressional delegation were committed to preserving the state share of federal mineral lease revenues.

As important as managing the existing revenue structure is, the water community should undertake a thorough analysis of other revenue sources that could be developed to provide sustained long term revenues for water projects. It is abundantly clear that the current revenue structure used by the State of Colorado is hardly adequate to provide the revenues necessary to operate the state budget even during stable economic times. The current revenues are significantly over committed to current high priority programs such as school finance. It is questionable whether long term water project financing needs will be able to compete with the powerful needs of school finance and other high priority programs.

The potential revenue sources for such a systematic review should have a logical nexus to the use of water, should have the potential to generate significant amounts of revenue and should not be committed or tied to other budgetary programs or needs. The water community does not need to find a single “Holy Grail” of potential revenue; it can develop a portfolio of such sources each of which may generate modest amounts of revenue.

Finally, the water community should consider that the state and country are entering a new era of taxpayer dissatisfaction with government and increasing skepticism about government’s ability to manage the everyday affairs of the nation and communities. The water community may have a deep understanding and appreciation for the need for water projects but that does not necessarily mean that the voters and taxpayers share that understanding or commitment. The water community should review its entire portfolio of public education efforts to develop a greater understanding among those who ultimately write the checks of the need for water programs and projects.

Elected officials at all levels of government are beginning to embrace “conservation” as the first level of strategic response to constrained water supplies. Conservation is important and needs to be a foundation of water supply planning but it also has its limitations. Conservation is a tactic and a strategy; it is not a silver bullet. Water managers know well that each gallon of water in their systems is a valuable commodity and that the best interests of the consumers of their water supplies are not served when water supplies are squandered, misused or even allowed to drain away through obsolete and inefficient infrastructures.

## Appendix A: Allocation and Distribution of Mineral Lease Payments

As discussed in the main body of this analysis, the distribution formula for Mineral Lease Payments is very, very complex. Once the State receives the transfer payments, a complicated and highly interrelated set of statutory formulas come into play in order to direct the moneys to the targeted programs.

The following xx charts display how the formulas work. These charts were created from diagrams, formulas and reports prepared by the Department of Local Affairs, the State Auditor and the Office of Legislative Council. To help keep the information understandable, it is best to think of these charts as a type of cascade – each chart leads to the next, and each chart is dependent upon the one above it.

Chart One: Federal to Colorado transfer payment flow:

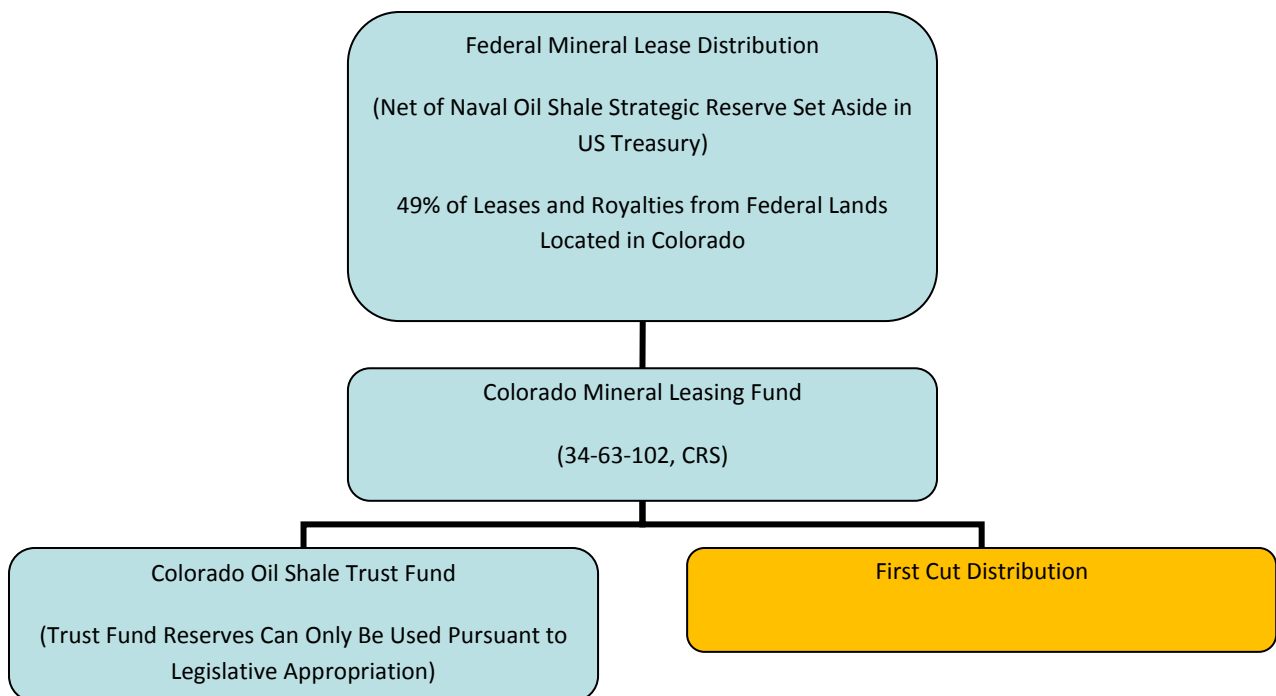


Chart Two: First Cut Distribution

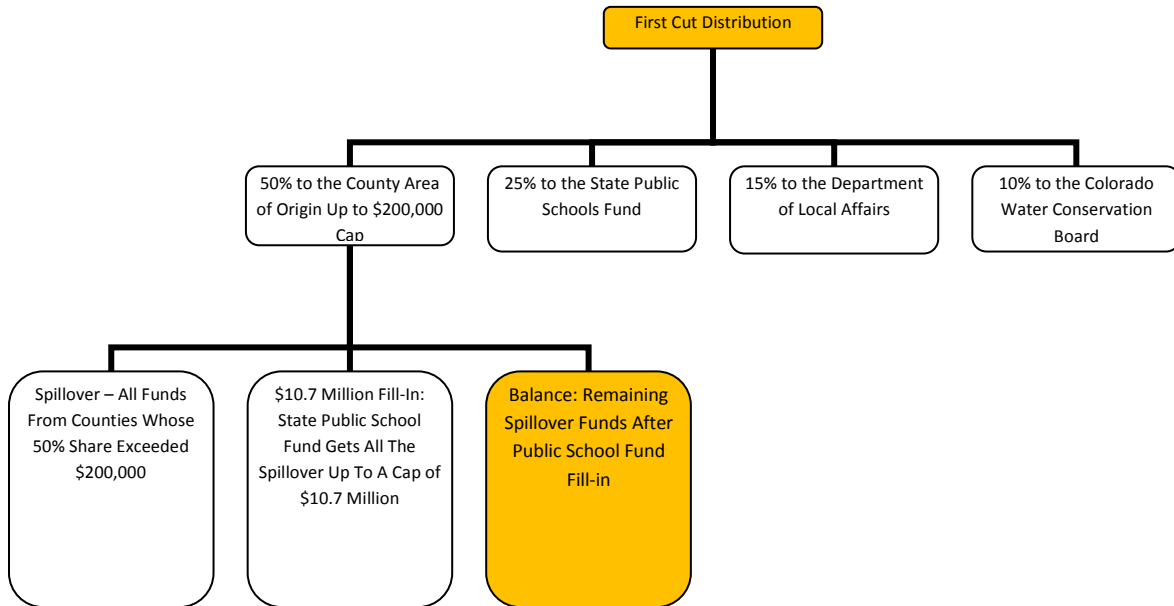


Chart Three: Second Cut Distribution

