

STATE OF COLORADO

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MEMORANDUM

TO: Governor Bill Owens

FROM: Julie Hart, Senior Economist

DATE: April 30, 2002

SUBJECT: Economic Impact Task Force Report on the Impact of Drought

Bill Owens
Governor

Dr. Nancy McCallin
Director

The purpose of this memorandum is to provide an economic impact estimate for the current drought in Colorado as per the State Drought Mitigation and Response Plan. At the present time, we are not able to provide a thorough examination of the impacts of the drought on Colorado's economy because there is little statistical data available at this point to analyze the impacts. Hence, this memorandum will provide an overview of the possible impacts. When we have more comprehensive data and receive reports from both the *Agriculture Task Force* and the *Tourism Task Force*, we will provide an update to this memorandum.

Summary

- **Tourism** and **agriculture** are the two primary sectors in Colorado's economy that will be negatively impacted by the drought.
- **Tourism** spending injects approximately \$8.5 billion into Colorado's economy and comprises eight percent of the state's work force.
- The economies in the **resort counties, southwestern Colorado, and southern Colorado** are most dependent on tourism and will be more affected by a drought.
- The **1977 drought** caused a 40 percent decline in **ski lift ticket sales** and a 15 percent decline in employment at the ski areas.
- **Agriculture** employs 3.9 percent of the state's work force and comprises 3.5 percent of wages.
- The effects of a drought on the agriculture sector are difficult to discern because of the large amount of federal assistance. Indeed, in the **1977 drought** the inventory of livestock actually increased in Colorado while **farm income** from crops only declined 2.8 percent.
- The 2000 Hi Meadow and Bobcat wildfires cost **state and local governments** approximately \$6.5 million.
- State and local government receive approximately \$550 million in **tax revenue** from tourism, a portion of which is at risk from a decline in tourism from the drought.

This memorandum focuses on the areas of the state's economy most likely to be affected by the current drought — tourism and agriculture. A brief summary of the estimated impact of the drought on these sectors is provided as well as a discussion of the impacts from previous droughts that have occurred in Colorado. In addition, we provide an overview of the known impacts of the drought thus far on the economy. The next section discusses the economic implications of a drought on the occurrence of other natural disasters in the state, primarily forest fires. Finally, this memorandum reviews the possible impact to state and local revenues from the decline in agriculture and tourism in Colorado due to the drought.

Impact on the State's Economy

The drought will affect the Colorado economy primarily through the tourism and the agriculture sectors. These two sectors are extremely important to Colorado's economy. Once we have actual statistical data regarding the impact of the drought on tourism and agriculture, we will be able to provide a more complete economic impact statement. The impact to these sectors will be apparent in many of the main economic indicators. Most notably, we will examine farm income, personal income, wages and salary income, employment and the unemployment rate to determine the overall impact to Colorado's economy. In addition, we anticipate that we will observe a decline in both retail sales and sales tax revenue from a decline in tourism spending.

Economic Impact on Tourism

Tourism is one of the most important economic sectors in Colorado. Indeed, tourism is the state's third largest economic sector and injects approximately \$8.5 billion into the Colorado economy each year. In addition, tourism accounts for almost 8 percent of all nonfarm employment in Colorado. Finally, the tourism sector produces approximately \$550 million in revenue for both state and local governments each year.

The drought may affect tourism the following ways:

- A decline in skier visits due to lack of snow;
- A decline in hunting because of a loss of habitat caused by potential wildfires as well as a possible decline in herd size from lack of precipitation in the grazeland;
- A decline in fishing and rafting because of lower stream levels;
- A decline in outdoor recreation because of fire bans and a lack of interest in camping without campfires. In addition, public access to some areas might be restricted because of potential wildfires;
- A decline in resort visits if water restrictions are imposed and golf courses are not able to be watered; and
- A decline in both touring and parks visits if forest fires impact these areas.

Certain regions of the state are more dependent on tourism and consequently will be more affected by the current drought. These regions are extremely dependent on tourism for both employment and income. The part of the state most dependent on tourism is Region 12, which

includes Eagle, Grand, Jackson, Pitkin, and Summit counties. Tourism comprises 51 percent of the resort counties' employment and 76 percent of its income. The second-highest tourism dependent area is Region 9, Archuleta, Dolores, La Plata, Montezuma, and San Miguel counties. Tourism accounts for 34 percent of southwestern Colorado's income and 24 percent of its

employment. The third-highest tourism dependent region in the state is Region 10, Delta, Gunnison, Hinsdale, Montrose, Ouray, and San Miguel counties. In Region 10, tourism comprises 27 percent of the region's income and 21 percent of its employment.

The current drought in Colorado most likely will impact the tourism sector through a decline in a variety of recreational activities. These include skiing, hunting, fishing, rafting, camping, and touring. As stated above, tourism accounts for approximately eight percent of Colorado's nonfarm employment, or approximately 220,000 jobs. Almost 53 percent of the tourism jobs in Colorado are in five sectors that are likely to be affected by the drought. These sectors are, in order of size: skiing, outdoor recreation, touring, resorts, and parks. Skiing accounts for 14.3 percent (30,347 jobs) of total tourism employment, outdoor recreation accounts for 13.1 percent (27,891 jobs), touring accounts for 10.1 percent (21,335 jobs), resort activity accounts for 9.9 percent (20,912 jobs), and park visits account for 5.5 percent (11,595 jobs).

In total, tourism injects approximately \$8.5 billion into the state's economy. Skiing, the largest sector of the tourism industry, accounts for 19 percent (\$1,368 million) of total tourism spending. Touring accounts for \$720 million (10 percent) of tourism spending in Colorado and outdoor recreation contributes \$648 million (9 percent) to the state's tourism spending. If visits to the state's ski areas decline in the 2002-03 ski season because of a lack of snow, the state's tourism economy will be seriously affected. Furthermore, state income and retail sales tax revenues will be lower. In addition, if tourists do not come to Colorado for touring or outdoor recreation, the state's economy will be impacted through a decline in hotel and restaurant visits as well as retail sales. This will also severely impact the state's economy.

Experience with the 1977 Drought

The last major drought in Colorado occurred in 1977. Data from the 1977 drought show that ski lift ticket sales declined by 2.3 million tickets, approximately 40 percent. In addition, employment at the ski areas declined by 15 percent. Moreover, it is estimated that the revenue loss to resort communities was approximately \$76.8 million in uninflated dollars; commercial airlines lost approximately \$15 million; retail sales declined by \$7 million; and restaurant and hotel visits declined 29 percent.

Experience with the 2002 Drought

There is little statistical evidence available to date regarding the impact of the current drought on the state's tourism economy. Moreover, the evidence available thus far from the 2001-02 ski season is complicated by the events of September 11. The most current data show that skier visits declined 5.1 percent in the 2001-02 ski season. However, much of the downturn occurred in the first part of the ski season (November and December) and is most likely a result of September 11 rather than a lack of snow. Skier visits declined 14 percent in the first part of the ski season compared with the comparable period for last year, whereas they were almost equal with the prior ski season for the latter part of the 2001-02 ski season. Much of the downturn occurred in the destination resorts (down 7.3 percent) compared with a decline of 4.3 percent for

the Front Range ski areas. This further suggests that the decline can be attributed to September 11 rather than the drought.

The impact of the drought on the tourism economy can also be assessed by examining how retail sales have fared during this ski season. In the mountain counties, during the first three months of the 2001-02 ski season, retail sales declined 9 percent compared with the same three months in the prior ski season. Once again, however, this is more likely a result of September 11 rather than the drought. Since this ski season was overshadowed by the aftermath of September 11, it will be extremely difficult to assess the impact of the current drought on the 2001-02 ski season.

Economic Impact on Agriculture

Agriculture is one of the state's most important economic sectors. Agriculture also encompasses a large share of land area in Colorado. Indeed, agriculture accounts for 48 percent of the state's land area. In addition, agriculture employs 3.9 percent of the state's work force and accounts for 3.5 percent of the state's wages. Colorado boasts both a large livestock industry as well as a diversified crop industry. Over 60 percent of the state's farm cash receipts are from livestock and approximately 31 percent of the state's farm cash receipts are from crops.

A prolonged drought will negatively affect the state's agriculture sector. The economic impact will typically result in a decline in farm income and employment. Profitability in the state's livestock sector will be negatively affected by higher prices for feed grain that result from less supply. Thus, ranchers will need to decide between paying higher prices to feed their animals, thereby earning less income or selling off their livestock because of higher feed prices and thus produce a glutted market. The glutted market will bring the prices received by ranchers for cattle lower and ranchers will earn less income. In addition, the state has a large manufacturing base that processes food products. In total, manufacturing accounts for 9.3 percent of the state's work force and 12 percent of those workers are employed in food products manufacturing. Thus, if the drought were to affect livestock and crops, the impact would be seen in agriculture income and employment as well as manufacturing income and employment.

Experience with the 1977 Drought

Evidence from the 1977 drought shows that the impact of the drought on ranchers and farmers was subtle. Typically, the impact of drought on agriculture is hard to discern because of the enormous amount of federal assistance available to farmers. During the 1977 drought, cattle and calf inventories actually increased five percent, contrary to what one would expect to happen. However, total income from crops declined 2.8 percent in 1977 after federal assistance. Without the federal assistance, final livestock and crop production would have been much worse.

Experience with the 2002 Drought

Currently, there is little real evidence to discern the impact of the 2002 drought on the agriculture sector. Indeed, most of the evidence will not be available until late in 2002 when the impact on the livestock industry and the impact to crops from lack of precipitation will become known. So far, the only impact to agriculture that is known is the impact on the winter wheat crop. Approximately 19 percent (452,000 acres) of the winter wheat crop has been abandoned (planted, but not harvested) so far in the 2002 growing season. This equates to approximately \$41.9 million in lost farm revenue for Colorado's farmers. Moreover, to compound the difficult situation for farmers,

winter wheat prices are down 8.2 percent in mid-March 2002 compared with mid-March 2001. In addition, livestock prices are considerably lower this year than last year — steer and heifer prices are down 2.7 percent and prices for calves are lower by 15.1 percent.

Economic Impact from Forest Fires

Historically, forest fires have not had a severe economic impact on Colorado. According to the Rocky Mountain Insurance Information, catastrophic fires account for approximately 3 percent of insurance losses. The 2000 Hi Meadow and Bobcat wildfires cost the insurance industry approximately \$18.5 million. Approximately 600 claims were filed from the two fires with the majority of the damage in structures, personal belongings, living expenses paid out, automobiles, and smoke damage. Historically, the most expensive catastrophic fire occurred in California in 1991 and cost insurance companies \$1.7 billion.

While the economic loss to insurance companies may not be large when compared with other natural disasters, the impact to state and local governments can be great. Indeed, the 2000 wildfires in Colorado cost state and local governments \$6.5 million. The federal government reimbursed the state for \$3.2 million because of a Federal Emergency Management Act declaration. However, the current wildfire season has started early and already there have been some major fires. It is thus possible there will be a larger number than average of wildfires that need to be contained, thus driving up state and local governments' firefighting expenses.

Impact to State and Local Revenues

In addition to the economic impact of the drought, there is likely to be a negative impact to both state and local tax receipts. Lower farm income and lower employment in agriculture, manufacturing, and tourism will negatively impact the state's income tax receipts, which less tourism in Colorado will mean lower sales tax revenues at both the state and local levels. A recent study by Dean Runyan suggests that tax revenues generated by the travel industry are approximately \$550 million. This is split almost equally between state and local tax receipts. If we apply the percentage of the areas of tourism that are susceptible to the drought (53 percent of tourism), then those areas comprise \$291 million of the tax revenues. Depending on the severity of the drought, some portion of the \$291 million in tax receipts is at risk.

Also, the Division of Wildlife (DOW) in the Department of Natural Resources will likely be affected through lower sales of hunting and fishing licenses. Hunting and fishing licenses are the primary sources of revenue for the DOW. If these recreational activities are severely affected, the DOW may have trouble funding its programs. The DOW manages the state's 970 wildlife species, regulates hunting and fishing activities, manages more than 230 wildlife areas for public recreation, conducts research to improve wildlife management activities, and develops programs to protect and recover threatened and endangered species. Thus, each of these state activities is threatened by the current drought.