Written Statement of
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Committee on Natural Resources,
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"Managing Water for the Future:

How Federal, State, and Local Entities are Supporting Agriculture."

Good morning Madam Chairwoman and members of the Subcommittee. I am Jennifer Gimbel, the Director of the Colorado Water Conservation Board (CWCB). In my role as director, I carry out the policies and directives of a citizen CWCB relating to the conservation, development and utilization of Colorado's water resources. I appreciate this opportunity to testify today on the topic of "Managing Water for the Future: How Federal, State, and Local Entities are Supporting Agriculture." The State of Colorado has maintained a strong commitment to the agricultural community and understands the immense pressures that it faces in the future. This written testimony focuses on the three topics that you highlighted in your May 6, 2010 letter: 1) water supply challenges faced by the agricultural community due mostly from the growth in the South Platte River basin; 2) federal, state and local programs available to farmers to help stretch the water supply; and, 3) innovative and alternative farming practices being implemented or encouraged to help sustain irrigated agriculture.

WATER SUPPLY CHALLENGES

Much like most other western states, Colorado has seen rapid population growth in the last several decades and is projected to continue. The State as a whole is expected to grow from its current population of 5 million people to 10 million by 2050. This hearing is being held in the South Platte Basin of Colorado, which contains a population of approximately 3.5 million people that is projected to increase by 2.3 to 3.1 million more people by 2050. Therefore, about twice as much water will be needed to meet those additional demands. The State of Colorado has embarked on an effort, the Statewide Water Supply Initiative, to define the water supply, the water needs, and the "gap" where needs exceed current supply. The SWSI report can be accessed at http://cwcb.state.co.us/IWMD/SWSITechnicalResources/.

The projected growth in the South Platte River basin will create water supply challenges for the agricultural community. The basin currently irrigates approximately 830,000 acres. Since 2001, the basin has seen a decline of approximately 100,000 irrigated acres due to well curtailment,

urbanization and urban transfers. The basin will likely lose 40,000 to 50,000 acres as a result of urbanization. An additional 160,000 to 280,000 acres is expected to be lost due to agricultural to municipal transfers—combined this could equate to a 25% to 40% reduction in its irrigated acreage in the basin by the year 2050. There are several projects working through the federal permitting process that could assist in helping to minimize the loss of irrigated agriculture. Those projects include Halligan-Seaman Project, Moffat Collection System Project, Windy Gap Firming Project, Northern Integrated Supply Project (NISP) and Chatfield Enlargement Project. However, comments from the Environmental Protection Agency suggest that agriculture dry-up is the least environmentally damaging alternative to most of the proposed projects. This conclusion ignores the environmental benefits of the irrigated acreage itself, as well as the return flows, riparian environment and wetlands that are created.

The CWCB and the Inter Basin Compact Committee (IBCC) have been discussing these exact issues on a statewide level. The IBCC is a committee of water experts and stakeholders, who are contemplating the challenges faced and the best way for the State to move into the future. Both the CWCB and IBCC agree that the status quo means more agricultural dry-up and that should be minimized as much as possible. These two groups and State officials recognize the importance of agriculture to the economy of the State, as well as to its culture.

Realizing the South Platte basin will continue to grow and it contains some of most productive agricultural lands in the state, the State is looking to find a balance between competing needs. In doing so, the State is exploring numerous options, including: new water supply projects, urban conservation, optimization of water management, infrastructure sharing arrangements, and modernization of irrigation practices.

CWCB PROGRAMS THAT SUPPORT AGRICULTURE

The CWCB takes these challenges very seriously and appreciates the opportunity to share with you several programs directed at stretching water supplies:

1. The CWCB is completing the complex South Platte Decision Support System (SPDSS) at a cost of approximately $15 million to better manage this very complex river basin with competing needs and finite resources. A major component of SPDSS is data collection and analysis related to agricultural use, including irrigated land acreages, crop types, and irrigation practices. This information along with other components of SPDSS provides tools for more informed decision making relating to water resource planning.

2. Since 1971, the CWCB Water Project Loan Program has provided low-interest loans to agricultural, municipal and commercial borrowers for the development of raw water resource projects in Colorado.

3. The State has an Emergency Agricultural Drought Grant Program that makes available $1 million annually to make loans and grants to agricultural organizations for emergency drought-related water augmentation purposes.

4. The State of Colorado is a partner with water users, other states, and the federal government, in several Endangered Species Act Recovery Implementation Programs, including the Platte River Recovery Implementation Program. Through this Program, the State provides programmatic ESA coverage for water development projects within the State, while helping recovery threatened and endangered species. Colorado meets its water obligations by retiming water in the lower South Platte River basin. These recharge projects have additional benefits to farmers by providing augmentation water and by providing waterfowl habitat within Colorado. Partnerships like these need to be repeated.

5. Since 2006, the Water Supply Reserve Grant Program has helped basins identify and meet their critical water supply and management needs. The program provides funds for a broad range of activities including construction of infrastructure, feasibility studies, studies of human and environmental needs and technical assistance for permitting or environmental compliance. Several projects funded through the WSRA program are geared towards solving specific challenges in the South Platte basin. A few of these projects are described below.

    a. The Ovid Reservoir Feasibility Study encompasses technical work, modeling and permitting for Ovid Reservoir. The reservoir is strategically located in the lower river, providing a number of opportunities to supply augmentation, meet agricultural and municipal needs, assist with compact administration and aid Colorado's participation in endangered species recovery efforts.

    b. Wetland Recharge Projects divert legally available water into wetlands, allow the water to infiltrate into the alluvial aquifer and eventually back to the river system. These return flows can be claimed as 'recharge credits' and allow junior water right holders to continue operating legally. Aside from this benefit, wetland recharge projects provide significant benefits to migratory waterfowl in the Central Flyway as well as benefits to the Platte River Recovery Program.

    c. Stage Dischargers Data Loggers and Telemetry Project involves the installation of data loggers on diversion structures and return flow augmentation structures to provide real time flow information.

INNOVATIVE AND ALTERNATIVE IRRIGATION METHODS

Approximately 85% of the water in Colorado is used for agricultural purposes. Due to this, there is a perception that if only farmers were to line canals or switch to more efficient irrigation systems, we would have sufficient water to meet all of the needs of the State. The reality is that while there are opportunities, the ability to produce significant amounts of transferrable water are

constrained by legal, physical and economic factors. An in-depth discussion of opportunities and constraints associated with agricultural water conservation can be found in a report sponsored by the CWCB, *Opportunities and Challenges Associated with Potential Agricultural Water Conservation Measures* (http://www.agwaterconservation.colostate.edu/Ag_water_conservation_paper_draftSept11.pdf). Some of the challenges are that for the most part Colorado's cities are located upstream of the major agricultural areas thereby creating challenges to transferring water long distances to the cities. Colorado water law provides that the amount of water legally transferable is limited to the crop consumptive use, not the amount of water diverted. Further, downstream water right holders are entitled to historic return flows. Saving water at the headgate through efficiency measures (e.g. ditch lining, sprinklers, and drip irrigation systems) may not produce transferable water.

Recognizing these limitations, the CWCB has been investigating creative and innovative water management practices that promote water sharing between the cities and farmers. In 2007, the CWCB investigated alternatives to the traditional "buy and dry" of agricultural water in phase 2 of the Statewide Water Supply Initiative. This report examined trends in irrigated acreage, dynamics leading to agricultural transfers and alternative methods to permanent transfers of agricultural water rights. Some of these alternative methods include interruptible supply agreements, rotational fallowing programs, water banking, reduced crop consumptive use and purchase and lease-back programs. An outcome of this report was the development of a grant program to facilitate the development and implementation of these alternative water transfer methods. Since its inception in 2007, the CWCB has awarded $1.5 million to various water providers, ditch companies, and university groups for the funding of six projects to further this emerging area of water resources management. In 2009, the Legislature appropriated an additional $1.5 million to continue this grant program.

Recognizing that the amount of water legally transferable is limited to the crop consumptive use, not the amount of water diverted, the grant program is focused on this category of agricultural water. Reductions in crop consumptive use can occur when irrigated acres are decreased; crop selection is changed from a summer crop to a cool season crop; crop selection is changed to one with a shorter growing season; deficit irrigation is practiced (applying some amount less than full or historical evapotranspiration over the growing season; or evaporative losses from the field surface are reduced as a result of conservation tillage, mulching, and or drip irrigation.

One key objective of the grant program is to help develop partnerships and water sharing agreements between agricultural water users and cities. Another key goal is to promote a new way of thinking about irrigation water. The concept is for farmers to think of their water rights as another 'crop' thereby providing to cities water during drought or emergency periods while providing the farmer with revenue that could be used for farm related capital improvements. A wide variety of projects have received support from the CWCB:

- The Lower Arkansas Valley Super Ditch Company is developing a large-scale rotational fallowing-leasing program in the Lower Arkansas River valley. The sponsors are examining the engineering, legal and institutional challenges associated with the project. It is expected to yield between 24,000 and 80,000 acre-feet of water in a given year.

- The Parker Water & Sanitation District and Colorado State University are developing an on-farm demonstration study to quantify potential consumptive water use savings resulting from the use of deficit irrigation practices. By reducing the consumptive use of irrigated crops, an incremental volume difference between historic and future consumptive use can be computed.

- Farmers Reservoir & Irrigation Company is investigating a number of alternative agricultural water transfer methods, including rotational fallowing, interruptible supply agreements, lease back agreements, and changes in cropping patterns. The project includes the evaluation of a water bank concept that would utilize existing infrastructure to store this "saved" water and then convey it to other agricultural or municipal users when needed.

CONCLUSION

As demonstrated within this testimony, the State takes very seriously its duty to protect the economic well-being of this state, including the agricultural sector. The State has a significant challenge in meeting the needs of a growing population, while maintaining a viable agricultural community that helps to insure a secure food supply and provides numerous environmental benefits. We look forward to our continued partnerships with federal and local agencies. It will take all of us working together to meet the future demands. Thank you for the opportunity to testify today. I am happy to respond to any questions.