

EXECUTIVE SUMMARY

This study was funded by the Colorado Water Conservation Board and several water districts in the Colorado Front Range. The study was designed to assess the benefits and costs of pressurized dual water systems, with an emphasis on the most effective way for the state to promote these systems. Dual water systems provide separate, noncontiguous, pressurized treated and untreated water lines into residential lots. The pressurized untreated water line is referred to as the secondary water system, and is used for landscape purposes. The study focused on the potential role of traditional agricultural water suppliers (i.e. canal companies and irrigation districts) in developing, operating and maintaining secondary systems around the state. The study drew heavily upon important innovations in secondary systems occurring in other areas of the Rocky Mountain region.

A major conclusion was that there is an important connection between the involvement of traditional agricultural water suppliers in providing secondary water service and the strengthening of the economic position of irrigated agriculture in the state. This strengthening occurs principally by way of (1) the continued beneficial use of irrigation water freed up as a result of residential and commercial land development in the service areas of canal companies and irrigation districts, and (2) the utilization of revenue earned from providing secondary water service to modernize irrigation canals. While water remains attached to the service areas of these enterprises, the revenue earned can finance significant canal system upgrades, thereby allowing farmers to move toward more efficient on-farm irrigation methods. Significant improvements in water conservation and water quality occur in the process. It is shown that water rights are not affected in the process, nor is the value of water owned by farmers wishing to leave agriculture materially affected.

A second important conclusion is that the involvement of canal companies and irrigation districts in the provision of pressurized untreated water is an important drought mitigation strategy for the state. The development of secondary water systems is very compatible with such ideas as water banking and interruptible supplies. However, the development of more integrated and centralized secondary water systems, as described in this report, is expected to stretch present potable water supplies and treatment capacity farther into the future. Since potable water is commonly used to irrigate landscapes around the state, every unit of pressurized untreated water developed for residential landscape use frees up a comparable unit of potable water and treatment capacity. This reduces the need for municipalities to include landscape water use in their “drought yield” projections. The development of secondary water systems operated and managed by canal companies and irrigation districts represents a new partnership between urban and agricultural water users. It is a partnership that benefits municipalities, agriculture, developers, and homeowners, while addressing environmental concerns.

Water conservation is an essential part of addressing future water shortages. Water conserved in agricultural production is expected to be an important source of future urban water supplies. However, water conservation in agriculture comes at a cost. It involves canal delivery improvements, as well as improvements in the use of water on the farm. To ask farmers to pay for conserving water, in order that water can be made more available for urban uses, seems highly inequitable. By allowing, and promoting, the involvement of canal companies and irrigation districts in secondary water management, new water conservation technologies can be paid for by revenue earned from residential water users, rather than being paid for by already scarce farm income. This is a valuable income transfer to irrigated agriculture, but one that actually involves a reduced cost to residential water users as well. These reduced savings in residential water costs are transferred from financing additional treatment facilities to financing canal infrastructure improvements. Treatment facilities do not conserve water. Canal improvements and on-farm irrigation improvements do conserve water, but they must be financed by those who will use the

conserved water, not farmers. The involvement of canal companies and irrigation districts in the provision of secondary water is an excellent way of accomplishing this water conservation goal in a more equitable way.

The provision of secondary water by canal companies and irrigation districts is expected to result in a more orderly transfer of agricultural land and water to urban uses. First, agricultural water rights are difficult to transfer into urban treatment facilities, both legally and from an engineering standpoint. It is much easier to convert agricultural water rights to residential landscape use within an agricultural water supplier service area.

Second, an economic analysis of secondary water shows that it is most profitable to agricultural water suppliers when delivered to higher density residential development. This promotes more compact subdivision development in urban fringe areas, and promotes more residential development on less productive agricultural lands.

Third, the provision of secondary water by canal companies and irrigation districts provides opportunities for these entities to secure better control of their facility rights-of-way, and provides opportunities to reduce such urban encroachment externalities as trash, vandalism and canal drownings. This is accomplished by using the revenue stream from secondary water service to modernize canal facilities and to hire more employees to supervise the system when needed. Again, this is paid for by urban water users who have penetrated deep into these canal service areas, rather than by farmers having to pay increased canal assessments or land taxes to cover these urban encroachment costs.

It is recommended that this study be shared with municipalities and developers in Colorado, in order to promote greater involvement of traditional agricultural water suppliers in secondary supply.

It is recommended that funds be made available for staff members and directors of these entities to visit their counterparts in Utah and Idaho, in order to learn more about how they can become involved in pressurized secondary supply.

It is recommended that the sample ordinances found in the study (Chapter 6) governing the promotion and use of secondary systems be communicated to municipal and county governments.

Finally, it is recommended that the state, in cooperation with the Department of Agriculture and such organizations as the Farm Bureau, communicate to the agricultural community the findings of this report, and that the state help make available attractive financing of these endeavors when agricultural water suppliers express interest in them.

We are pleased to share this report with you.

Sincerely,

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