METROPOLITAN COOPERATION

-- The Supply and Delivery of Water --

-- Prepared by --

Chips Barry and Dennis Donald
Colorado Department of Natural Resources

May 2, 1989

I. Background

Any discussion about metropolitan cooperation dealing with water supplies must recognize the inherent legal underpinnings of our water rights system. This system recognizes seniority of water rights based on time and the transferability of these rights relying on market conditions.

Colorado has no comprehensive "water plan" that directs the development and use of water. The Colorado Constitution provides the basis for a system of water allocation which relies on a market-oriented system. The state's prior appropriation system is sufficiently unique that it is frequently referred to as the Colorado doctrine.

While Colorado does not have a coherent water plan or policy, it does have a legal and institutional framework for establishing water policies which goes far beyond the individual right of appropriation. Legislative, executive, and judicial decisions have served to generate Colorado's water policy. Thus, the state relies principally upon the free market for the allocation of water; however, these allocation decisions are bounded by other public-interest concerns as reflected in court decisions and state statutues.

Concerns over water have changed. Generally speaking, until the past two decades, Colorado was primarily concerned about preserving its share of water under interstate compacts. This was accomplished through the development of water storage projects, especially federal-reclamation projects. In recent years, other concerns have also surfaced, but not supplanted this more traditional concern. Examples include:

- Protection of underground aquifers and novel efforts to integrate surface water and groundwater resources.
- Protection of environmental values and the creation of a state in-stream flow program.
- Protection of endangered species including the passage of a state Endangered Species Act.
- Protection of water quality and the enactment of the Water Quality Control Act.

There have been efforts to add more efficiency to the system. The Colorado Water and Power Development Authority has undertaken basin-by-basin studies to identify water project opportunities. A satellite monitoring system allows the state to more accurately guage and manage flows. And, more pertinent to the present concern, Governor Lamm established a Metropolitan Roundtable which established a forum in which opposing interests could legitimately express their views about Colorado water policy and, in particular, how water would be supplied to metropolitan entities.

II. Metropolitan Water Supply

A. Current supply. Water supply in the metropolitan area is very fragmented, although the vast majority of the yield for the metropolitan area is provided by relatively few suppliers.

The area defined as the "demand area" in the Two Forks EIS included Denver plus the urbanized portions of Douglas, Jefferson, Arapahoe and Adams Counties plus the southeastern corner of Boulder County. In this area, there are 59 water suppliers. The Denver Water Department and 40 providers are current participants in the Platte and Colorado Storage Project Participation Agreement which calls for the construction of Two Forks. Denver itself sells water to about 90 distributors.

Note: Providers includes both suppliers and distributors.
Suppliers is an entity that brings water (yield) into the area.
Distributor delivers water acquired from others to end users.

A few suppliers account for most of the water brought into the metropolitan area.

Supplier	Percent of Total Metro Area Yield
Denver	63.2%
Aurora	6.8
Englewood	5.3
Thornton	4.7
So. Adams Co. WSD	2.3

The five largest suppliers account for 82 percent of the total yield. The twently largest account for more than 95 percent.

The metropolitan area receives water from several sources. Surface water supplies constitute the vast majority of yield. Ground water accounts for about 14 percent of the yield; wastewater exchange provides less than four percent.

Another dimension of the supply issue is that yields vary from year to year making making projections of available water problematic. Safe yield is a conservative figure representing the water which would be available during a dry cycle. Thus, Denver's safe yield is 295,000 acre feet. In contrast, the Denver Water Department has an annual yield of 409,000 acre feet. The minimum and maximum yields for the DWD are 125,000 acre feet and 768,000 acre feet respectively.

To discuss metropolitan water supplies in an aggregate sense, which may show very adequate supplies for years to come, fails to recognize the extent to which supplies are adequately matched with demand throughout the metropolitan area. Some jurisdictions have done an excellent job in insuring that their particular community has an adequate supply of water. In other parts of the metropolitan area, including some areas which are subject to considerable growth, there has been too little planning, too little coordination, and quite likely a heavy reliance on Two Forks for future supplies.

B. Future supply. Future water supplies may come from several sources.

Recent focus has been on the decision to permit the construction of the Two Forks project. Many providers have placed considerable reliance on this project as a source for future supply.

With or without Two Forks, alternative supplies include:

- Windy Gap water could serve parts of the norther metropolitan area.
- A Clear Creek reservoir is being promoted by some communities.
- Some large providers have been exploring projects on the Arkansas and Gunnison Rivers.
- Smaller providers will likely continue to rely on ground water.
- Agricultural water may be diverted to municipal uses.
- Various interim supplies have been identified as part of the Two Forks EIS process.
- Conservation can effectively enhance metropolitan area yields.

III. Metropolitan Water Demand

A. Current demand.

Water is a function of a number of variables including population growth, household size, lot size and extent to which lots are irrigated.

Interesting note: Two Forks projections relied upon BEA for population projections. Latest year in their base for projection was 1982. We, of course, are in a slow or no-growth period. The latest data (1988) reflect a continuation of this trend.

B. Future demand.

Difficulty is projecting not only how much growth and the timing of the growth, but also the spatial dispersal in the metropolitan area. While water may not drive economic development, the availability and cost of water may influence the geographic distribution throughout the Denver area.

Philosophically, it is a matter of time. Colorado will grow and the impact of slower or faster growth is simply that the specific year for attaining a projection will vary (e.g., 2040 rather than 2025).

IV. The Impact of the Two Forks Decision

A. Incentives for metropolitan cooperation with Two Forks. A framework exists for the joint development of projects which could serve the metropolitan area. The Metropolitan Water Development Agreement was the institutional vehicle by which the Denver Water Board and the suburban water providers could plan and develop any number of water projects. The Two Forks participation agreement was an outgrowth of this enabling document.

The Two Forks permit has been justified and advocated, at least in part, as a catalyst to further metropolitan cooperation. With Two Forks, there would be additional water supplies available to a number of entities. But, Denver would certainly gain disproportionately compared with its need. As a result, it would have a marketable commodity that could be shared with suburban communities in exchange for their support of Denver-provided metropolitan services (e.g., Denver General).

B. Incentives for metropolitan cooperation without Two Forks. Denver has considerable leverage over the metropolitan area with regard to water. Importantly, Denver controls valuable water rights and has the necessary infrastructure to serve an area substantially larger than the City and County of Denver. In large part, this is because this system was envisioned as more than simply a Denver City system. However, without Denver's cooperation, Denver could make it very difficult for the less water-independent suburbs to obtain future water.

Denver still holds valuable water cards even without Two Forks. The question is: what is there incentive to play? The suburban interests would like to see the 60,000 acre feet of interim supplies developed. In their view, they see this as an opportunity to which they are arguably entitled despite Denver's control of the water rights. They would say that these rights were acquired under the guise of Denver providing a metropolitan supply and that the suburbs relied upon these promises. Denver, on the other hand, sees these supplies as the security it needs to insure that water is available for future build-out of the City and County of Denver including the Platte Valley and the airport.

V. Closing Thoughts

A. Review of context.

- o Few dominant suppliers, but considerable fragmentation.
- o Many special districts as distributors.
- o Planning and coordinating within and between water entities generally poor.
- o Municipal/district coordination uneven.
- o Water rights are a function of historical presence.
- o Development of raw water supplies have not been conducted in a coordinated manner.
- o Denver supplies adequate -- for Denver.
- o Denver has developed a solid, even visionary, water system.
- o Growth in metropolitan area has slowed.
- o Rate structure between Denver and suburbs (which receive Denver water) reflect marked differential and are a source of Denver/suburb controversy.
- o Existing contracts with Denver assure water will be delivered to districts, but also limit flexibility for metropolitan area.
- o Adequacy of supply varies throughout metro area (i.e., some has independent systems; some are entirely reliant upon Denver; some are hybrids).

B. Alternative scenarios.

1. The "Balkanization" model. Given concerns about securing adequate water supplies, each entity will -- in its own self interest -- pursue its independent solutions (e.g., separate storage facilities, groundwater, agricultural water rights, alternative water management strategies).

2. The "Front Range Water Authority" model. The creation of a water authority to provide treated or raw water on a wholesale basis has been discussed by the metropolitan counties and municipalities (i.e., Adams, Arapahoe and Jefferson counties plus the cities of Arvada, Aurora, Denver, Lakewood, Littleton, Thornton and Westminster). This voluntary approach would rely upon these entities negotiating and entering into intergovernmental agreements concerning growth, annexation, the role of special districts, and the provision by the Authority of water to suppliers or distributors.

3. The "Denver Service Area Authority" model. This would be an extension of the wholesale and retail role of the Denver Water Board. It would service the area presently being served by the Board and would allow for a logical extension of the service area over time. Denver would maintain control over the system. Fees for taps and water rates would be equalized. New supplies would be funded by growth areas.

4. The "State Water Plan" model. It could be argued that given

(a) the state Constitution states the water of every natural stream is the property of the public, dedicated to the use of the people of Colorado, subject to appropriation;

(b) the Department of Natural Resources has the responsibility to encourage the full utilization of the state's natural resources, consistent with realistic conservation principles, to the benefit of all Colorado citizens;

(c) the statutes require the development of a resource management plan;

(d) the State Engineer is subject to the direction of the executive director of DNR; and

(e) the State Engineer is charged with coordinating the work of the Division of Water Resources with other agencies including related local authorities and municipalities;

it would be appropriate to develop a water plan which would address future water supply options for the Denver metropolitan area and advocate the strategy which would insure the most efficient use of the state's water resource..

C. Recommended next steps.

1. Move slowly; take no formal action now.

2. Continue to develop an appreciation for the issues and concerns of different metro entities dealing with water.

3. Contingency strategies should be developed, but no formal action should be taken until a decision on Two Forks has been made.

4. Monitor progress being made to deal with metropolitan water supply/distribution issues including the establishment of a "Front Range Water Authority."