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Hearing on: "Maintaining and Upgrading the Bureau of Reclamation's Facilities
to Improve Power Production, Enhance Water Supply and
Keep Our Homeland Secure"

Testimony Presented by Eric W. Wilkinson
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INTRODUCTION

The Northern Colorado Water Conservancy District (NCWCD) was created by decree of the Weld County District Court in September 1937 as the first water conservancy district in the State of Colorado. As can be seen on the accompanying map, the NCWCD is located along the northern front range of Colorado, extending from the City and County of Broomfield and Fort Lupton on the south, to north of Fort Collins and Greeley on the north, and then extending northeastward along the South Platte River to the Colorado/Nebraska state line. The NCWCD encompasses parts of eight counties and includes approximately 1.6 million acres within its boundaries, including about 720,000 acres of farmland. The constituency population of the NCWCD is approximately 585,000 people.

The area within NCWCD boundaries has historically been water-short because of the region's semi-arid climate and the significant demands for water in the region for agricultural, domestic, municipal, and industrial uses. Settlers moved into this area in the mid-1800s with the area's water resources being first placed to beneficial use for irrigation purposes in 1859. The water resources provided by the South Platte River and its tributaries became over-appropriated as early as the turn of the 20th century. Continued growth and development in this region over the past century has exacerbated this water-short situation to a point where water supply planning and management of available water supplies is critical to continued economic health and sustainability.

The impetus for the creation of the NCWCD was to serve as the sponsoring agency to contract with the United States, through the Bureau of Reclamation (Reclamation), for the design, construction, operation, and maintenance of the Colorado-Big Thompson Project (C-BT Project). The C-BT Project provides an extremely valuable and essential supplemental water supply for the constituents of the NCWCD. A brief explanation of the background and history related to the development and operation of the C-BT Project is contained in an attachment to this testimony entitled "Background and History of the Northern Colorado Water Conservancy District and the Colorado-Big Thompson Project."

EVOLUTION OF DEMANDS

The area included within the boundaries of the NCWCD in 1937 contained a constituency population of approximately 125,000, compared to the current population of 585,000. Growth experienced within NCWCD boundaries has impacted the demand for, and use of, C-BT Project water. In 1957, 85 percent of the C-BT Project water allotment contracts issued by the NCWCD were owned by agricultural interest. Today, 62 percent of the project's allotment contracts are owned by municipal, domestic, and industrial interests. NCWCD's free market ownership transfer and rental systems have allowed the project to adapt to changing needs over its nearly 50 years of successful operation. Transfer of project water from agricultural use to municipal or domestic use has proven to be the "water of choice" to supply the growth experienced within NCWCD's boundaries, a trend that will continue until there is no more water left that has not already been transferred. At that time, there will be a significant increase in the need to develop additional water supply projects and in the conversion of native water rights used for agricultural purposes to municipal and domestic uses.

Studies conducted by the Colorado Water Conservation Board indicate that future additional domestic, municipal, and industrial demands within the South Platte River Basin in Colorado could cause the dry-up of an estimated 250,000 acres

of irrigated farmland within the South Platte River Basin in Colorado downstream of the Denver metropolitan area to provide supplies to meet these future demands. Most of the lands which will be dried-up will be within the boundaries of the NCWCD.

EVOLUTION OF OPERATION AND MAINTENANCE REQUIREMENTS

Over time, the changes in demands on the C-BT Project have required some facilities to be modified to allow operations on a year-round basis to meet changing demand patterns. As more and more of the C-BT Project yield is being utilized for municipal, domestic, and industrial purposes, the demands for year-round water deliveries have increased and the reliability of those deliveries has become increasingly important. This changing demand dictates that the original project facilities must be modified and modernized to meet current and envisioned needs. Further, as the population along the front range of Colorado continues to grow, the extent and density of the population and development also increases. Consequently, to assure that C-BT Project facilities do not pose a threat to public safety, the levels of operation and maintenance associated with project facilities must meet ever-higher standards—standards that are commensurate to the higher consequences that might be suffered should a project feature not perform satisfactorily or, in the extreme, fail. An example of this is the need for higher maintenance levels and structural standards on canals to assure the canals do not pose any threat to development that has grown into areas adjacent to, and downstream of, those canals. The same is true for dams associated with C-BT Project reservoirs.

MODERNIZATION OF EXISTING FACILITIES

Over the years, the NCWCD, working with Reclamation, has found it necessary to modernize several components of the C-BT Project. This modernization has been prompted by the need to assure the continued safety, reliability, and serviceability of project facilities and, at the same time, meet the evolving demands being placed on project facilities and project water supplies. Several significant examples of this can be cited within the project and are noted below.

Farr Pumping Plant and Willow Creek Pumping Plant

Since 1987, the NCWCD, with the approval of Reclamation, has been in a continuing process to modernize both of these pumping plants. The Farr Pumping Plant includes three pumps with a total combined horsepower rating of 18,000 horsepower and is utilized to move water from Lake Granby, the second largest reservoir in the State of Colorado, up into Shadow Mountain Reservoir for diversion through the Alva B. Adams Tunnel to the eastern slope of Colorado. Modernization on this facility included rewinding each of the three pump motors, improving the impeller design within the pumps, and upgrading the control and monitoring systems within the plant. This modernization was required to avert system malfunction, damage, or failure and to promote a longer service life of plant appurtenances and features, as well as to replace plant components that had reached or surpassed the end of their service lives.

The modernization of the Willow Creek Pumping Plant, a plant housing two pumps with a total combined horsepower of 10,000 horsepower, was also done by the NCWCD with the approval of Reclamation. Modernization of this plant included the same work as was done at the Farr Pumping Plant, with the addition of instrumentation that allows the remote operation of the plant from the C-BT Project's Collection System control center at the Farr Pumping Plant. The Willow Creek Pump Plant is important to the project as it pumps water from Willow Creek Reservoir up into Lake Granby for storage within the C-BT Project system, pumping an average of approximately 40,000 acre feet of water a year.

The estimated costs of modernizing these two pumping plants and related collection system facilities to date are approximately \$4.7 million, the costs of which have been shared equally by the NCWCD and Reclamation.

Carter Lake Reservoir - Outlet Canal

The outlet canal downstream of the dam on Carter Lake for a distance of approximately one-half mile was modified in 1993-1994 to winterize that section of the canal in order to accommodate year-round operations. This modification was required to allow the structure to serve a new pipeline delivery system constructed and owned by the NCWCD leading from the outlet canal to as far south as the City of Broomfield and as far east as the City of Fort Morgan. This system, known as the NCWCD's Southern Water Supply Project (SWSP), contains over 110 miles of pipeline and related appurtenances and provides water on a year-round basis to 13 different entities, including municipalities and two domestic water purveyors that serve another eight smaller municipalities and extensive rural areas. The SWSP was constructed by the NCWCD on behalf of the SWSP participants between 1993 and 1999. The canal modifications were an integral part of the SWSP. The total cost of the SWSP was approximately \$65 million and was paid for entirely by SWSP participants.

Horsetooth Reservoir

It is extremely important that the dams associated with federal reclamation project reservoirs meet current and changing safety standards. An example of this is Horsetooth Reservoir, an integral component of the C-BT Project's Distribution system, impounded by four different and distinct dams. Between the period of 1988 and 2000, increased seepage was noted below Horsetooth Dam, the northern-most dam on Horsetooth Reservoir. This changing condition was closely monitored and analyzed during this period. This monitoring and analysis led to the decision in 2000 that modernization of not only Horsetooth Dam, but also the other three dams associated with Horsetooth Reservoir, was necessary for the structures to meet current design and safety standards and to assure their continuing safety.

A significant catalyst in requiring the modernization of these four dams was the rapid and significant growth of the City of Fort Collins located to the east and downstream of Horsetooth Reservoir. When the reservoir was completed in 1951, the City of Fort Collins had a population of approximately 10,000 people. In 2000 when modernization of the dams was being considered, Fort Collins had a population in excess of 120,000 people. In the field of dam safety, the safety criteria associated with dams increases as the threat posed by those dams increases because of greater populations downstream of the dams. This was definitely the case with the four dams on Horsetooth Reservoir.

In 2000, Congress authorized the modernization of dams on Horsetooth Reservoir under the National Dam Safety Act. Over the next three years all four dams were modernized under the authority of that Act. This modernization was carried out by Reclamation. Final costs for the Horsetooth Reservoir dam modernization was \$55 million. Because it was done under the authority of the National Dam Safety Act, 85 percent of those costs were paid by federal appropriations under the National Dam Safety Act. The remaining 15 percent of project costs were paid by the C-BT Project beneficiaries, split equally between the water supply beneficiaries and the power beneficiaries of the C-BT Project.

Had this work not been performed under the National Dam Safety Act, it would have been extremely difficult, if not impossible, for the water and power beneficiaries of the C-BT Project to pay for the modernization of those facilities. Had the dams not been modernized, the subsequent, and far less preferable, alternative would have been to operate the reservoir at a significantly restricted storage level. Such an alternative would have had severe, adverse impacts to NCWCD water users, the region, and the State of Colorado because of the extensive economic dependency on the water supplied by Horsetooth Reservoir and the C-BT Project.

Carter Lake Reservoir - Installation of an Additional Outlet

For a number of years, the NCWCD has been working with Reclamation to add a second outlet to Carter Lake Reservoir. Carter Lake Reservoir presently has only one outlet and for the first 38 years of project operations that outlet was used to meet seasonal water demands between April 1 and October 31. This allowed sufficient time between November 1 through March 31 of the following year to perform needed maintenance on the outlet. Today, approximately 375,000 people served by Carter Lake Reservoir depend on this single outlet to deliver needed water supplies day-in and day-out continuously on a year-round basis. It is imperative, from a public safety and operational standpoint, that a second outlet be provided at Carter Lake Reservoir. A second outlet is needed to allow an alternative for reservoir releases so either the existing outlet or the newly constructed outlet can periodically be taken out of service to allow maintenance of that outlet on a regular and routine basis.

The extensive and prolonged discussions with Reclamation concerning the construction of this second outlet have centered around the requirement by Reclamation that this needed additional outlet must be designed exclusively by Reclamation and that the construction of the outlet be administered and managed by Reclamation. The new outlet, when constructed, would be paid for entirely by the NCWCD, but would be owned by the federal government as part of the Carter Lake Reservoir facilities.

In the last two years, the NCWCD has entered into a number of different Memoranda of Understanding with Reclamation in an effort to move this project forward. Early in this process, it was found that Reclamation's estimate of costs associated with their design and construction management, required to be paid for by the NCWCD, far exceeded that which would be incurred if the NCWCD would utilize a private, qualified engineering consultant to perform the same design and construction management services under the purview, oversight, and required approval of Reclamation. In November 2003, a written proposal was submitted to Reclamation Commissioner Keys to allow the NCWCD to employ URS Engineering Corporation, a well-recognized and competent international engineering firm, to perform the design and construction management of this project under the oversight and approval of Reclamation. After extensive discussion, that proposal was rejected by Reclamation. The NCWCD again entered into additional Memoranda of Understanding with Reclamation to effectuate this project. These Memoranda of Understanding led to an estimate of final design, contract administration, and construction management costs to be charged to NCWCD by Reclamation that were approximately 2.5 times greater than the NCWCD would incur if URS Engineering was employed to perform the same services outlined by Reclamation. Upon receipt of this cost estimate, the NCWCD Board of Directors decided to suspend design activities on the project and to document the NCWCD's concerns in a letter to Reclamation in March of this year. A copy of that letter is attached.

As a result of that letter, Reclamation has reopened discussions in an attempt to find a viable and acceptable alternative for the design and construction management of the additional Carter Lake Reservoir outlet. To its credit, Reclamation has “sharpened its pencil” considerably and has been significantly more flexible in its discussions in recent months. The NCWCD is optimistic that a viable solution can be reached that will allow this project to move forward in a timely and cost-effective manner. Although this project may eventually be constructed in a manner that is satisfactory to both the NCWCD and Reclamation, the time spent in discussion and confrontation over the costs associated with the design and construction management of this project has been significant. It is the NCWCD’s sincere hope that these prolonged discussions will lead to a satisfactory, cost-effective solution.

The estimated cost of completing this project is between \$5 million and \$11 million.

NCWCD POSITIONS AND CONCERNS

The NCWCD does not object to Reclamation having oversight and approval authority on any projects or project modifications associated with, or that affect, Reclamation project facilities. A number of modernization projects associated with the C-BT Project have been completed in this manner. The NCWCD does, however, object to a requirement that Reclamation be the sole source of design and construction management services for projects associated with Reclamation project facilities, specifically if Reclamation cannot perform those services in a cost-competitive and timely manner. If Reclamation is required to be the sole source of design and construction management services, it is imperative that Reclamation provide those required services in a timely manner, and with the efficiency that makes Reclamation competitive with private consulting firms capable of performing the same services. This is particularly important if the project beneficiaries are paying in excess of 50 percent of the project costs.

There was a time in the history of Reclamation when Reclamation was recognized as an eminent, if not the most eminent, source of engineering knowledge and expertise. At times in the past, there were situations where Reclamation was uniquely qualified to perform the engineering services associated with Reclamation projects and to do so in a cost-effective manner. However, as time has passed, that is no longer the case as significant expertise is available in the private sector to perform any and all engineering services necessary for the operation, maintenance, and modernization of federal facilities.

The NCWCD highly values its continuing relationship, indeed its partnership, with Reclamation on the C-BT Project. In fact, NCWCD would be willing to compare the quality of its relationship with Reclamation to the quality of any other district/Reclamation relationship in the western United States. Since entering into the initial Repayment Contract for the C-BT Project with Reclamation in July 1938, the NCWCD’s relationship with Reclamation has been, in the NCWCD’s opinion, mutually beneficial and extremely productive. Without question, it is the NCWCD’s intention to continue to maintain and improve that relationship.

It is imperative that Reclamation continue to consider the needs of its contractors and those contractors’ beneficiaries and constituents. Further, it is imperative that those needs be incorporated and respected in the operation, maintenance, and modernization of existing Reclamation facilities and the development of associated Reclamation policy. Allowing the private contracting of services, whenever and wherever it can be economically and effectively incorporated into the operation, maintenance, and modernization of federal facilities, should always be considered and pursued.

RECOMMENDATIONS

The C-BT Project and the NCWCD are real-world examples of the evolution taking place west-wide regarding the management of available water resources. The need to modernize existing infrastructure and to develop new water management projects to meet rapidly changing, growing, and evolving needs is very real. The federal government has a significant role in that evolution. This role includes responsibilities associated with federal reclamation projects, as well as realistic interpretations and administration of environmental and other applicable laws.

It is imperative that the federal government cooperate with local entities to assure the continuing safety and efficient operation of federal projects to maximize the benefits that can be realized from those projects in the management of available water resources. Actions that the federal government should take in cooperation with local entities should include:

- Allowing private contracting for the work needed to modernize existing Reclamation water project infrastructure. In those cases where private contracting can be used in a cost-effective manner, it should be pursued under the oversight and with the work-products produced subject to approval by Reclamation . If Reclamation is required to perform modernization work, that work should be performed by Reclamation in a timely and cost-competitive manner. This should be required in all cases,

but particularly when project beneficiaries or sponsors are paying more than 50 percent of the project costs.

- Facilitating the modernization of existing infrastructure to meet changing needs placed on project facilities and providing the necessary flexibility through modified or new statutes, policies, or regulations that will allow existing infrastructure to be modified and used to meet changing needs.
- Continued funding of the National Dam Safety Act at adequate levels. This program is essential to assure dams associated with federal projects meet current dam safety criteria and that those reservoirs can continue to operate through their full operating range and continue to provide the benefits the project beneficiaries and the region have historically relied upon.
- Adequate funding for needed financial and technical assistance programs to assist local entities in developing needed water infrastructure. Reclamation loan programs in the past have been of great assistance in the development of new infrastructure and in the enlargement and modernization of existing infrastructure. Further, financial grant programs such as Water 2025 being administered by Reclamation have been of enormous help to grant recipients. This program should be continued and enhanced.
- Adequate federal funding for base funding of Reclamation's operational costs. Inclusion of Reclamation's overhead costs as part of the reimbursable costs paid by project beneficiaries is becoming a very significant part of those reimbursable costs and is having a significant impact on project sponsors.
- Continued federal funding of the increasing security costs being incurred that are associated with required enhanced security measures being placed on federal water project facilities. These costs should continue on a non-reimbursable basis.
- Allowing existing excess capacity in federal reclamation project facilities to be utilized for the diversion, storage, and conveyance of non-project water. The ability to use excess capacity in federal facilities could greatly enhance a region's ability to efficiently manage available water supplies.
- Compelling federal agencies to work with local entities in developing realistic and practical programs to address environmental concerns, including endangered species issues. The development of species conservation or recovery programs and habitat conservation plans may be viable alternatives to address impacts posed by existing projects, as well as new water projects or enlargements of existing water projects.

CONCLUSION

Demands on federal water projects west-wide are changing as are the demands being placed on existing infrastructure. It is becoming increasingly important that this infrastructure perform safely and continue to meet the changing needs of project beneficiaries. Modernization of the aging infrastructure is essential if the public is to continue to realize the benefits these projects were intended to provide.

Thank you very much for giving me this opportunity to present NCWCD's experiences and point of view to you today.