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COLORADO: OPTIONS TO INCREASE WATER SUPPLY AND IMPROVE EFFICIENCIES

OVERSIGHT FIELD HEARING

BEFORE THE

SUBCOMMITTEE ON WATER AND POWER

OF THE

COMMITTEE ON RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

Friday, December 12, 2003, in Denver, Colorado

Serial No. 108-81

Printed for the use of the Committee on Resources

Available via the World Wide Web: http://www.access.gpo.gov/congress/house
or
Committee address: http://resourcescommittee.house.gov

U.S. GOVERNMENT PRINTING OFFICE

90-927 PS WASHINGTON : 2004

For sale by the Superintendent of Documents, U.S. Government Printing Office
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OVERSIGHT FIELD HEARING ON "COLORADO: OPTIONS TO INCREASE WATER SUPPLY AND IMPROVE EFFICIENCIES"

Friday, December 12, 2003
U.S. House of Representatives
Subcommittee on Water and Power
Committee on Resources
Denver, Colorado

The Subcommittee met, pursuant to call, at 10:00 a.m., in the Old Supreme Court Chambers of the Colorado State Chambers, 200 East Colfax Avenue, Denver, Colorado, Hon. Ken Calvert [Chairman of the Subcommittee] presiding.

Present: Representatives Calvert and Tancredo.

Also Present: Representatives Udall of Colorado and Beauprez.

Mr. CALVERT. The oversight hearing by the Subcommittee on Water and Power will come to order. The Subcommittee is meeting to hear testimony on options to increase water supply and improve efficiencies here in Colorado.

I ask unanimous consent that Mr. Beauprez, the Representative from the Seventh District of Colorado has permission to sit on the dais and participate in this hearing. So ordered.

Before we proceed with opening statements and testimony, I will yield to Mr. Beauprez for some announcements, including Presentation of the Colors and Pledge of Allegiance.

[Presentation of the Colors.]

Colonel Lucas will lead us in the Pledge of Allegiance. Colonel Lucas is a fighter pilot Veteran of the Second World War, served in the Pacific, a Veteran of the Korean War and a Squadron Commander of the Vietnam War.

Colonel Lucas.

[Pledge of Allegiance.]

Mr. CALVERT. Thank you.

Mr. Beauprez?

Mr. BEAUPREZ. Thank you, Mr. Chairman, I'd like to acknowledge the members of the Adams City Junior Officer Training Corps, the Reserve Officer Training Corps, excuse me, that were kind enough to present and post our colors this morning.

Would everyone please join me in showing your appreciation.

[Applause.]

Mr. Chairman, I'll have more official or more formal comments in a moment, but let me begin by thanking especially you and

Congressman Tancredo for convening this hearing on a subject that is extremely important and timely to the State of Colorado, one which we have grappled with most of my life and I'm sure we'll continue to grapple with for some time coming, but especially as Subcommittee Chairman, I thank you for coming to Colorado. Obviously, it is a subject that is of interest to a great many people, judging from the crowd we've got today. I look forward to the testimony and yield back.

STATEMENT OF THE HON. KEN CALVERT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. CALVERT. I thank the gentleman and certainly it's great to start this morning with young Marines. I represent Camp Pendleton in California, so it's always great to see Marines wherever I go and this is certainly a magnificent room to have this hearing and this is a subject, of course, of great interest to this Committee and to me personally. And throughout this year, this Subcommittee has witnessed the drought's severe impact on the West.

Every day we hear more stories about how Western community leaders are faced with increasingly tough decisions on how to provide adequate and reliable water supplies to their citizens, while safeguarding the environment.

My home region of Southern California has been especially hit by the drought—as has all the West. Our water supply has decreased because of decreasing supplies. Although Colorado probably doesn't like to be compared to California, your State is also experiencing some of the same demand for water as demand for water continues to grow.

Similarly to California, Colorado has one area, the Western Slope with most of the water, and another area, the Front Range, as I understand, with most of the population. Colorado's population has grown by almost 1 million every decade for the last 30 years, yet no new major storage for water has been built to accommodate the projected and current demand for a number of reasons. This, too, is an echo of my own experience in my own State. As we all know, capturing and transporting this water and paying for the associated infrastructure are not easy tasks due to budget constraints and certainly differences of opinion.

There is a tremendous lack of consensus on how to resolve Colorado's water supply situation. The defeat recently of Referendum A is a clear message that Colorado's water leaders are divided and need to constructively discuss the best way to move forward. Too often solutions are not found because there's a lack of communication between key stakeholders.

The ones who end up paying the ultimate price for this lack of construction discussion are the water consumers we are trying to help. As a matter of fact, I have an old saying that I know the Committee gets tired of me saying it is that from that old movie, "Field of Dreams," "Build it and they will come." Of course, we have a saying anywhere in the West, "Don't build it and they come anyway." And so we need to communicate because your constituents are the ones that pay the price.

For these reasons my distinguished colleague, Bob Beauprez, asked for this field hearing. As someone who knows firsthand how

intractable water issues can be, I certainly commend him for his positive and proactive leadership and look forward to working with him and the rest of the Colorado delegation on these important issues.

Mr. Tancredo has been very actively involved in this on the Committee and I would like to say—I know Scott McInnis is not here today, but I came in the House with Scott a number of years ago. We served in the last six terms together and he's retiring this term and I wanted to say publicly my friendship and affection for Scott. We will miss him in the House, but I know that he's not going to disappear and he will be of service to Colorado in many years to come.

I certainly hope that today's hearing will help foster communication and bring about collaborative and commonsense solutions for all of Colorado. Otherwise, if you don't come to an agreement, then you'll just have to send all that unused water down the river and we may find use for it.

With that, we're going to recognize our first panel. The Honorable Lionel Rivera, Mayor, City of Colorado Springs, Colorado, welcome. The Honorable Randy Thurston, Vice President, Pueblo City Council, Pueblo, Colorado, welcome. Mr. Greg Walcher, Executive Director, the Colorado Department of Natural Resources, and Mr. Peter Binney, Utilities Director, Aurora, Colorado, welcome.

And before we get into that, we're going to have opening statements. Excuse me, I ought to look at my script more carefully.

And with that, I would recognize Mr. Tancredo for his opening statement.

[The prepared statement of Mr. Calvert follows:]

Statement of The Honorable Ken Calvert, Chairman, Subcommittee on Water and Power

Throughout this year, this Subcommittee has witnessed the drought's severe impact on the West. Every day, we hear more stories about how western community leaders are faced with increasingly tough decisions on how to provide adequate and reliable water supplies to their citizens while safeguarding the environment.

My home region of ever-growing Southern California has been especially hit hard by the drought and the regulations that decrease our water supplies. Although Colorado certainly does not like to be compared to California, your state is also experiencing the same pressures.

Very much like California, Colorado has one area with most of the water and another area with most of the population. Colorado's population has grown by almost 1 million every decade for the last 30 years, yet no new major storage has been built during the same time due to a number of reasons. This, too, is an echo of California's water problems. As we all know, capturing and transporting this water—and paying for the associated infrastructure—are not easy tasks with limited budgets and differences of opinion.

There is a tremendous lack of consensus on how to resolve Colorado's water supply situation. The defeat of Referendum A is a clear symbol that Colorado's water leaders are divided and need to constructively discuss the best way to move forward.

Too often, solutions are not found because there is a lack of communication between key stakeholders. The ones who end up paying the ultimate price for this lack of constructive discussion are the water consumers we are trying to help.

For these reasons, my distinguished colleague, Bob Beauprez, asked for this field hearing. As one who knows firsthand how intractable water issues can be, I commend him for his positive and pro-active leadership and look forward to working with him and the rest of the delegation on these important issues.

I sincerely hope that today's hearing will help foster communication and bring about collaborative, commonsense solutions for all of Colorado. Otherwise, you can keep on sending your unused Colorado River apportionment down to California!

STATEMENT OF THE HON. THOMAS G. TANCREDO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF COLORADO

Mr. TANCREDO. Thank you, Mr. Chairman, and let me say certainly, first of all, welcome, and to tell you that it is a courageous act for anyone to come to Colorado from California to talk about water. So I am very pleased that you are here and I commend you for that act of courage. And I do thank you very much for having this hearing.

Mark Twain once said, "In the west, whiskey is for drinking, water is for fighting." And as most of us have seen that old adage is as true now as it was then. Since Teddy Roosevelt first envisioned the Bureau of Reclamation that would make the "Western deserts bloom", the history of water in the West has been one of struggle, triumph, conflict and it continues even today.

Over the last several decades Colorado has become an increasingly urbanized State with a more diversified economy. We have seen our population double over the last two decades. It is likely that we will see it double again in another 20 years. In fact, there are more people living along the front range of Colorado today than were people in Colorado in the entire state just 30 years ago.

While the face of Colorado has changed significantly, urban water consumption continues to amount to just 5 percent of overall consumption. And the same shortages that plagued Colorado's cities 50 years ago, continue to do so today. In fact, talk about irony. Today's Denver Post reports that on this day in 1953, this was the comment in the Denver Post, "Denver's progress in spurring residential development depended on getting more water, officials said." This was 1953. The water storage projects that former Western Colorado Congressman and Interior Committee Chairman Wayne Aspinall built, like Glen Canyon Dam and Fryingpan-Arkansas, have served the interior West well in coping with their water and power needs. Unfortunately, our storage infrastructure is inadequate to meet the demands of the future or to cope with the droughts of today.

Most people agree that we need to build additional storage, but the goal of enlarging existing reservoirs and building new ones remains an elusive one. Such efforts have been stalled by interstate water conflicts and the rhetoric of extreme environmentalists. Federal environmental laws like the Endangered Species Act have also played a role in inhibiting new water storage and development of projects.

In the long run, Democrats and Republicans, Front Range suburbanites, farmers and Western Slopers will have to work cooperatively if we are to find a solution that benefits our entire State. It also means that people who live in places like Highlands Ranch, in my District, and in Aurora, will probably continue to pay higher rates for their water and that additional water will be transferred from agricultural uses to municipal under leases or sales.

In short, it means Colorado water users will need to do what we all learned to do in kindergarten, and that is, share. Stretching current supplies whether by utilizing excess storage capacity in existing reservoirs, improving conservation, using more efficient irrigation and landscaping techniques, eliminating invasive plants like

tamarisk, improving Federal laws, enlarging existing storage facilities and exploring the concept to build new storage and delivery systems are all avenues that need to be explored.

While it is clear that addressing these challenges to the satisfaction of all parties will not happen overnight, it's also clear that continued regional in-fighting and perpetual inaction are recipes for a disaster and one that will affect not just the thirsty, and often the scape-goated Front Range cities, but the economy of the entire State.

So I hope this hearing will serve as a useful tool in continuing the dialog and I really do look forward to hearing from the participants today.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Tancredo follows:]

Statement of The Honorable Thomas G. Tancredo, a Representative in Congress from the State of Colorado

I would like to thank my colleague Chairman Calvert and Chairman Pombo for holding this hearing.

Mark Twain once said, "In the west, whiskey is for drinking, and water is for fighting," and, as most of us have seen, that old adage is as true now as it was then. Since Teddy Roosevelt first envisioned a Bureau of Reclamation that would make the "western deserts bloom," the history of water in the west has been one of struggle, triumph, and conflict that continues today.

Over the last several decades, Colorado has become an increasingly urbanized state with a more diversified economy. We have seen our population double over the last two decades, and it is likely that we will see it double again in another twenty years. In fact, there are more people living along the Front Range of Colorado today than there were in people in the entire State just thirty years ago.

While the face of Colorado has changed significantly, urban water consumption continues to amount to just five percent of overall consumption, and the same shortages that plagued Colorado cities fifty years ago, continue to do so today. In fact, today's Denver Post reports that. on this day in 1953, "Denver's progress in spurring residential development depended on getting more water, officials said.".

The water storage projects that former western Colorado Congressman and Interior Committee Chairman Wayne Aspinall built—like Glen Canyon Dam and Fryingpan-Arkansas—have served the interior west well in coping with their water and power needs. Unfortunately, our storage infrastructure is inadequate to meet the demands of the future, or to cope with the droughts of today.

Most people agree that we need to build additional storage, but the goal of enlarging existing reservoirs and building new ones remains an elusive one. Such efforts have been stalled by intra-state water conflicts, and the rhetoric of extreme environmentalists. Federal environmental laws, like the endangered species act, have also played a role in inhibiting new water storage and development projects.

In the long run, Democrats and Republicans, Front Range suburbanites, farmers, and western slopers will all have to work cooperatively if we are to find a solution that benefits our entire state.

It also means that people who live in places like Highlands Ranch and Aurora will probably continue to pay higher rates for their water, and that additional water will be transferred from agricultural uses to municipal under leases or sales. In short, it means Colorado water users will need to do what we all learned to do in kindergarten: SHARE.

Stretching current supplies further by utilizing excess storage capacity in existing reservoirs, improving conservation, using more efficient irrigation and landscaping techniques, eliminating invasive plants like Tamarisk, improving federal laws, enlarging existing storage facilities, and exploring the concept of building new storage and delivery systems, are all avenues that need to be explored.

While it is clear that addressing these challenges to the satisfaction of all parties will not happen overnight, it is also clear that continued regional infighting and perpetual inaction are recipes for a disaster—and one that will affect not just the thirsty, and often scapegoated Front Range cities, but the economy of the entire state. I hope this hearing will serve as a useful tool in continuing the dialogue, and I look forward to hearing from our panelists today.

Thank you Mr. Chairman.

Mr. CALVERT. I thank the gentleman.
Mr. Udall?

STATEMENT OF THE HON. MARK UDALL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF COLORADO

Mr. UDALL. Thank you, Mr. Chairman. I, too, want to join in my current colleague's welcome directed toward you and I want to thank you for holding the hearing today here on this important matter. I also want to thank Congressman Beauprez for seeking the hearing and it's always great to spend time with my twin, Congressman Tancredo, and to be here with him.

We also want to thank the witnesses who are going to help edify us so that we can learn more about what we can do, particularly when you take into account the Federal role which we will discuss here today as well as the state role in providing for present and future water needs.

Water, as Congressman Tancredo just pointed out, has been an important issue in Colorado since humans first settled here. And Mr. Chairman, it's my understanding that there are more water attorneys in Colorado per capita than any other state in the country including your home State of California. So it's no surprise that not only is water the life blood of our communities, it's also provided full employment for lawyers.

In all seriousness though, the prolonged drought that Colorado has been experiencing has indeed raised the stakes in our efforts to supply an already scarce resource to the many demands placed on it. Since water issues have been so contentious, it is essential that we work together to develop collaborative solutions that are environmentally sound, fiscally responsible and do not pit one community against another. Because Referendum A, the proposed $2 billion water project bonding initiative that failed this past November, did not live up to those requirements, I opposed it. But now that it has been defeated, it's even more important to renew and reemphasize these essential principles in our continuing efforts to address water supply needs, as well as consumption policies and behaviors. Clearly, that discussion has already begun and this hearing is another opportunity to continue it.

The focus for us now should be to identify and explore options and opportunities to help develop our existing resources and find ways to stretch the resources we already have.

A number of proposals have been made before and after the defeat of Referendum A. One of those is a potential new reservoir near Wolcott in Eagle County. I'm encouraged by that effort, as it is an example of the right way to approach such a project: develop a process at the front end by bringing all the interests together, East and West Slope, to sort through the issues and then reach some consensus.

If and when that consensus is reached, then I believe the financing is likely to follow; and without beating up on Referendum A too much, I think that's why the referendum was a particular flop because it put the last piece, the financing, ahead of the identification and development of projects.

I do want to be clear too that I think our solution to our water woes does not solely rest with new storage projects. Clearly, new

dams should be on the table, but there's much more we can do with our existing infrastructure to capture more water.

These ideas include expanding existing dams and reservoirs, preparing many small dams so that they hold water to their capacity, developing conjunctive use of surplus surface flows with groundwater aquifers and, of course, greater conservation measures.

We should also not overlook the needs of safety and security of existing supply facilities, especially in these times of terrorist threats. All of these things we can do right now. The State has financing authority to help with this and entities like the Denver Water Department have shown that conservation efforts can and do work.

I hope to continue to work with all interests to explore these and other options and ideas and suggestions that may be offered here today at this hearing. I look forward to the conversation and the exploration that will follow today's hearing.

Again, Mr. Chairman, welcome to Colorado. It's great to have you here.

Mr. CALVERT. Thank you.

Mr. Beauprez?

STATEMENT OF THE HON. BOB BEAUPREZ, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF COLORADO

Mr. BEAUPREZ. Thank you, Mr. Chairman, again thank you for your willingness to hold and host this timely hearing today and thanks to my good friends, Congressman Udall and Congressman Tancredo, both members of your Subcommittee for participating today and not only today, but for what they have done, what you have done, to further the issue of water and the subject that we're about today, improving not only our ability to store and use it, but efficiencies of the same. And especially thanks to all of the witnesses that are going to testify because you're the real experts and we're here to learn and hear from you.

There's also a number of key Colorado leaders that, although they're not present with us today, have strongly committed themselves to advancing the water solutions here in the Colorado in recent years. I want to acknowledge especially the foresight and leadership of our Governor, Bill Owens; our Attorney General, Ken Salazar, as well as you mentioned, Mr. Chairman, Congressman Scott McInnis, and also Joel Hefley, who have contributed substantially to this issue for many years in our State.

All of the support, sustainable, expanding, job-creating economy, to facilitate that objective we must be willing to provide the three basic infrastructure elements to that end: transportation, energy and water, all in dependable, predictable, affordable supply. In Colorado, we have to do some work on all three of those, Mr. Chairman. Today, we'll focus on water. And maybe it's the most critical of all three of those for us.

In the past, we have typically adopted a very parochial view regarding infrastructure, water infrastructure, kind of any every man for himself view. I hope, however, that we finally realize that if one part of the State suffers, then we all are hurting.

If Douglas County has a problem, as they do, then we all have a problem. If we dry up our farms, the whole State suffers.

Although Referendum A did not pass at the ballot box on November 4th, it did succeed in terms of generating public debate all across the State of Colorado about water policies, so that part is good. Colorado citizens still expect its leaders to do something about planning, developing and utilizing water resources for our beautiful State.

I requested this field hearing by the Water Subcommittee because it is imperative that we keep the momentum going in Colorado's movement for solving our water issues.

Mr. Chairman, Colorado has experienced a lot of growth as had already been recognized in recent years, largely because of our beauty, climate and expanding economy, not unlike the reasons many flock to your State of California. Between Mr. Udall and Mr. Tancredo and myself, we represent a majority of the regions of this State that are most heavily impacted by growth.

Mr. Chairman, it was during the 1960s with leadership from Congressman Wayne Aspinall, who I think you already cited, that Colorado last undertook serious aggressive steps to address our water needs about 40 years ago. Our population was less than 2 million then. Today, our population stands around 4.3 million and according to our state demographer, by the Year 2025, we might exceed 6.5 million.

While the population and demand for water swells, we still have the same 3.4 million acres of farmland to irrigate and agriculture remains a bedrock industry in this State. It contributes 16 billion—with a B—to our state economy annually. My constituents and all Coloradans know all too well that today, not tomorrow, is when we need to reach consensus about water storage, transfer and conservation for future generations.

The need is obvious, but the solution continues to elude us. Obvious to all is that we are a 100 percent source state, no water flows into Colorado, only out. Further, each spring, millions of acre feet of water beyond our compact agreements, flows past our borders because we lack means to store and distribute. During my lifetime in this State and I am a native, the first 40 years I spent farming and the last 15 in an urban environment, it seemed that three things you don't discuss among friends were religion, politics and water. All three of those were sure to start a fight and likely not to lead to a resolution. We have to get beyond that.

Without utilizing wisely the water we have sourced here, we endlessly pit urban interests against agriculture, east against west, issues or District against that, but the only clear result being Courts perpetually stuffed with water litigation, ever escalating value on a limited supply of water rights that we do have and bitter divisions of Coloradans against one another as this inevitable winners and losers gets determined. And really, we're all losers in the end.

This past time, we must find a solution for the good of the State that involves winners and I believe it is very much possible, not easy, but possible. Not to oversimplify a very complex situation, but I believe our solution to the good of all of Colorado must include the following four key principles: first, conservation. We can always use water more efficiently and more wisely.

Augmentation of existing storage is the second. There are numerous examples of storage lakes that need dredging to remove silt, dams that can be raised to increase capacity, and aquifers that can be used as water banks.

Third, build new storage. Reservoirs are not inherently all bad. I see the Mayor of Golden out here somewhere, there's Chuck. Quinella Reservoir is being completed right now with assistance from Congressmen Udall, Tancredo and myself and will solve much of the City of Golden's challenge. We have to be willing to look at solving storage needs, rather than simply dismissing the possibility out of hand.

And last, transbasin transfers. Transbasin transfers. We must be willing to do the hard work of moving water from where it's generated to where it is needed while providing both compensation and environmental protection for the basin of origin.

Mr. Chairman, allow me to add that I requested this hearing with some reluctance because I strongly believe that Colorado's water solutions should be driven locally. I don't want any misconception from this requested hearing that I suggest the Federal government should drive this critical issue. Having said that, however, I recognize that vast amounts of Federal land are in our State, especially our mountains where most of our water is generated and stored, so it's rather obvious that the Federal government will have a role to play in Colorado's water solution.

Mr. Chairman, I'm ready to work together with you, my colleagues in the Colorado delegation, and other members of the Water Subcommittee and state and local leaders, to deal with the difficult issues that are before us, issues related to water resources, project alternatives, funding methods, planning and the environment.

Time has come for us in Colorado to focus on finding solutions to our collective water needs, not just raising objections to the challenges that we face. I welcome today's testimony on the critically important issues regarding options for increase in our water supply and improving our efficiencies. I look very much forward to our panel of witnesses. Thank you, again, Mr. Chairman and I yield back.

[The prepared statement of Mr. Beauprez follows:]

Statement of The Honorable Bob Beauprez, a Representative in Congress from the State of Colorado

Thank you, Mr. Chairman.

I want to thank you for holding this timely hearing on Colorado's options for increasing its water supply and improving water-use efficiencies. Thanks also to my friends, Ranking Subcommittee Member Udall, Congresswoman DeGette, and Committee Member Tancredo for their valued participation—both today and previously—in this issue so critical to Colorado. Most importantly, I want to thank all of the witnesses who will be testifying today. All of you are deeply entrenched in water issues on a daily basis, and I know all of us look forward to hearing your insights and opinions.

There are a number of key Colorado leaders that, although they are not present with us, have strongly committed themselves to advancing water solutions in recent years. I want to acknowledge the foresight and leadership of Governor Bill Owens, Attorney General Ken Salazar, as well as Congressmen Scott McInnis and Joel Hefley, who have contributed substantially to this issue for years.

All of us support a sustainable, expanding, job-creating economy. But to facilitate that objective we must be willing to provide the three basic infrastructure elements—transportation, energy, and water—all in dependable, predictable, and

affordable supply. In Colorado, we have work to do on all three fronts, but today we'll concentrate on water.

In the past, we have typically adopted a very parochial view regarding infrastructure—a kind of every-man-for-himself attitude. I hope, however, that we finally realize that if one part of the state suffers, we all hurt. If Douglas County has a problem, we all do. If we dry up our farms, the whole state suffers.

Although Referendum A did not pass at the ballot box on November 4th, it did succeed in terms of generating public debate all across the great State of Colorado about water policies. Colorado's citizens still expect its leaders to do something about planning, developing, and utilizing water resources for our beautiful state. I requested this field hearing by the Water Subcommittee because it is imperative that we keep the momentum going in Colorado's movement toward solving our water issues.

Mr. Chairman, Colorado has experienced a lot of growth in recent years, largely because of our beauty, climate, and expanding economy—not unlike the reasons many flocked to your State of California. Between Mr. Udall, Mr. Tancredo, and myself, we represent a majority of the regions of Colorado most heavily impacted by increased growth, with Congresswoman DeGette's district, Denver, the nexus of it all.

Mr. Chairman, it was during the 1960's with leadership from Congressman Wayne Aspinall that Colorado last undertook serious, aggressive steps to address our water needs. Our population was less than 2 million. Today, the population of Colorado stands at around 4.3 million. According to the state demographer's office, by 2025 the state's population may exceed 6.5 million. While the population and the demand for water swells, we still have the same 3.4 million acres of farm land to irrigate. Agriculture remains a bedrock industry in our state contributing $16 billion to our economy annually. My constituents and all Coloradoans know all too well that today—not tomorrow—is when we need to reach consensus about water storage, transfer, and conservation for future generations.

The need is obvious, but the solution continues to elude us. Obvious to all is that we are a 100% source state; no water flows into Colorado, only out. Further, each spring, millions of acre feet of water beyond our compact agreements flows past our borders because we lack the means to store and distribute it.

During my lifetime in this state—the first 40 years spent farming and the last 15 in an urban environment—it seemed the three things you didn't discuss among friends was religion, politics, and water. Any of the three were sure to start a fight, but likely not lead to a resolution. We have to get beyond that.

Without utilizing wisely the water we have sourced here, we endlessly pit urban interests against agriculture, east against west, this user district against that, with the only clear result being courts perpetually stuffed with water litigation, ever escalating value on the limited supply of water rights, and bitter divisions of Coloradoans against one another as the inevitable winners and losers are determined. And, really we all are losers in the end.

It is past time when we must find a solution for the good of the state that involves winners and winners. And, I believe it is very much possible.

Not to oversimplify a very complex situation, but I believe our solution for the good of all of Colorado must include the following four key principles:

- Conservation: we can always use water more efficiently and more wisely;
- Augmentation of existing storage: there are numerous examples of storage lakes that need dredging to remove silt, dams than can be raised to increase capacity, and aquifers than can be used as water banks;
- Build new storage: reservoirs are not inherently all bad. Golden is completing the Guenella Reservoir with assistance from Congressmen Tancredo, Udall, and myself. We have to be willing to look at solving storage needs, rather than dismissing any possibility; and
- Lastly, Transbasin Transfers: We must be willing to do the hard work of moving water from where it is generated to where it is needed, while providing both compensation and environmental protection for the basin of origin.

Mr. Chairman, allow me to add that I requested this hearing with some reluctance because I strongly believe that Colorado's water solutions must be driven locally. I do not want any misconception from this requested hearing that I suggest the federal government should drive this critical issue. However, recognizing the vast amounts of federal land in our state, especially our mountains where most of our water is generated and stored, I do feel there is an obvious role for us to play in an eventual solution.

Mr. Chairman, I am ready to work together with you, my colleagues in the Colorado delegation, other Members of the Water Subcommittee, and state and local leaders to deal with difficult issues before us—issues related to water resources,

project alternatives, funding methods, planning, and the environment. Time has come for us in Colorado to focus on finding solutions to our collective water needs, not just raising objections to the challenges we face.

I welcome today's testimony on the critically important issues regarding options for increasing water supply and improving water-use efficiencies. I am looking forward to hearing from the distinguished panel of witnesses, and I am confident that this will be a very informative hearing.

Thank you again, Mr. Chairman.

Mr. CALVERT. I thank the gentleman for his testimony and for his leadership on this issue.

And first, our witness is the Honorable Lionel Rivera, the Mayor, City of Colorado Springs.

Welcome, sir, and you're recognized for 5 minutes. We have a 5-minute rule and you may have been told about that. We try to keep the testimony to 5 minutes so it will give us plenty of time for questions.

STATEMENT OF THE HONORABLE LIONEL RIVERA, MAYOR, CITY OF COLORADO SPRINGS, COLORADO

Mr. RIVERA. Before I get started, Mr. Chairman, I want to first thank you for coming to Colorado and hosting this very important hearing on very important issues for our State and I also would like to thank members of our delegation also for being here today.

Over the years, and one more comment, I will be submitting my comments, written comments for the record.

Mr. CALVERT. Without objection, all the comments, any additional comments will be accepted into the record.

Mr. RIVERA. Over the years, the cities and towns in this State, as well as the agricultural community have developed a wide and innovative series of projects to allow us to utilize the water which we are entitled to consume under our compact with neighboring states. The very nature of our water supply requires us to continue to improve and increase the amount of storage we have in order to carry the snow melt runoff from the wet years to the dry years and from the runoff months to the months with low stream flows.

Colorado Springs has appropriated and beneficially uses a portion of Colorado's compact of apportioned water on the Colorado River. Colorado Springs has developed and utilizes local water supplies originating in the snow fields on Pikes Peak and Colorado Springs has acquired water supplies on the Arkansas mainstream.

In 1990, we began a water planning process to determine our needs through the Year 2040. We found that although our existing water supply decreased and may be adequate, there was need for additional storage and delivery infrastructure. In 1996, the city adopted a plan of action which identified a number of approaches for meeting our future water demands. As part of this plan, Colorado Springs approached the Southeastern Colorado Water Conservancy District and indicated our need for additional storage. The Southeastern District then conducted a water and storage needs assessment on behalf of all district members including Colorado Springs.

That study confirmed the need for additional storage capacity in order to provide firm yield to municipal entities and it analyzed a wide range of alternatives to meet that demand, including storage

of nonproject water and project space and possible reservoir enlargements. Both storage of nonproject water and possible enlargement of Pueblo Reservoir and Turquoise Reservoir, rank very favorably in terms of cost, operational effectiveness, and environmental socio-economic factors.

Colorado Springs has committed to pay for and receive approximately 50 percent of the additional storage capacity available through storage of nonproject water and enlargements, totally about 58,000 acre feet of storage, a critical component in meeting our future water supply requirements. The enlargement study is also a critical first step in future water planning and development in the Arkansas River Valley.

Colorado Springs, the Southeast District, and the Pueblo Board of Water Works, along with over 40 entities, participated in this storage study process. We strongly supported and encouraged this regional and cooperative approach to water development.

Throughout the years, Colorado Springs has worked in close cooperation with its neighbors in developing water supplies. That cooperation has been evident with the City of Pueblo's Board of Water Works and by that cooperation both cities have been able to develop very reliable supplies for their citizens.

We hope to see a continuation of that cooperation and Colorado Springs is willing to accommodate concerns that the City of Pueblo has about flows for recreation through their city, as well as efforts to protect a viable agricultural economy in the Arkansas Valley east of Pueblo.

We in Colorado are focusing on the improvement and expansion of existing storage facilities and the development of the means to better utilize water already capable of being stored. Colorado Springs believes that all the interest in Colorado support the principle of safely enlarging existing facilities, developing the means to better utilize the water that is already stored.

We hope that when Congress returns from the holiday recess, Congressman Hefley, joined by Congressman Beauprez and Congressman Tancredo, will introduce legislation to permit the improved use of the storage facilities of the Fryingpan-Arkansas Project, including Pueblo Reservoir and Turquoise Reservoir. Colorado Springs supports that legislation which will allow a preferred storage option plan to be developed. That plan will make additional storage space available to the cities and towns in the Arkansas Valley, as well as to the agricultural community through more efficient use of existing storage space.

In addition, we hope that Congress will authorize the investigation of enlarging one or both of these facilities to take advantage of additional supplies that can be developed. This effort is consistent with the Bureau of Reclamation Water 2025 effort to remove institutional barriers to allow storage of nonproject water and project space.

We appreciate the Bureau of Reclamation's commitment to this effort, but we need Congress to act by codifying the Bureau's contracting authority on this project and to authorize the enlargement study. For Colorado Springs to utilize the waters that it has developed already, it is necessary to construct a pipeline from Pueblo Reservoir to the city.

Colorado Springs with the communities of Fountain and Security are pursuing a new pipeline, a southern delivery system from Pueblo Reservoir to the Pikes Beak Region. Colorado Springs is working with its neighbors and the Pueblo community to secure the construction of that pipeline and we are confident that with the long history of cooperation and good will between the communities, that the development of the Colorado Springs southern delivery system will be a reality.

We trust that Congress will be supportive in our efforts to ensure that the Colorado Springs community has a stable and adequate water supply, now and in the future.

If we are capable of managing the water supplies that are apportioned to us by our various compacts, we will be able to meet the challenges of additional population and future droughts. However, that cannot occur without improved management of existing storage and the development of additional storage.

The most efficient way to ensure that additional storage can be developed, is to enlarge existing facilities, rather than confront the challenges of creating extensive new storage.

We would respectfully request that the Committee give favorable consideration to any legislation proposed by Colorado to permit the more efficient utilization of existing storage or the enlargement of existing storage facilities. And those conclude my comments and thank you very much, Mr. Chairman.

[The prepared statement of Mr. Rivera follows:]

Statement of The Honorable Lionel Rivera, Mayor, City of Colorado Springs. Colorado

On behalf of the City of Colorado Springs, we would like to express our appreciation to the Subcommittee and you, Mr. Chairman, for taking the time to visit Colorado to discuss the very pressing water resource problems this State faces. As you know, Colorado sits at the top of all of its rivers and must share their flow with all of its neighbors. In addition, well over 70% of the total amount of water flowing in our rivers occurs in just three short months and comes from the melting snow in our mountains.

Colorado Springs is the second largest metropolitan area in the State of Colorado and the home to a number of our military installations, including the Air Force Academy, Fort Carson, NORAD, Peterson Air Force Base, Schriever Air Force Base and the newly created Northern Command. All of these entities are served by Colorado Springs Utilities, an enterprise of the City of Colorado Springs.

Colorado Springs has a history of providing reliable, cost-effective utility services to our customers, including domestic, commercial and industrial water supplies, despite our location in a very arid part of the country.

We possess a very diverse water supply and delivery system, with over 75% of its water coming from the Colorado River Basin through transbasin diversion projects. The remainder is obtained from the Pikes Peak watershed or from the Arkansas River itself via the Fountain Valley Pipeline. The latter delivers our federal Fryingpan-Arkansas Project water.

However, the recent drought has stressed our water supply and delivery system. As we can all attest, it has forced all of us to reevaluate our water supplies and delivery infrastructure. Colorado Springs for several years has had an aggressive water conservation and demand side management program. During the drought our residents were able to reduce their consumption by 12% in 2002 and almost 20% this year.

I also want to highlight our reuse system. We have one of the largest wastewater reuse systems in the state and it has been in use since the 1960's. We have a direct reuse/non-potable water system at our Las Vegas Street Waste Water Treatment Plant that currently has a capacity of up to 6 mgd, and we reuse about 3,000 acre feet (af) of water per year on that system for irrigation. In addition, the water that is delivered to the Air Force Academy and some of the water to Fort Carson is also reused. We continually make improvements in those systems recognizing it is a

valuable component of our current and future water supply. We are evaluating expanding our non-potable reuse delivery system.

Over the years, the cities and towns in this State, as well as the agricultural community, have developed a wide and innovative series of projects to allow us to utilize the water, which we are entitled to consume under our compacts with our neighboring states. But the very nature of our water supply requires us to continue to improve and increase the amount of storage we have in order to carry the snowmelt runoff over from wet years to dry years and from the runoff months to the months with low streamflows.

Colorado Springs has been a leader in developing innovative water supplies relying upon a variety of sources to meet the needs of its rapidly growing population. Colorado Springs has appropriated, and beneficially uses, a portion of Colorado's Compact apportioned water on the Colorado River; Colorado Springs has developed, and utilizes, local water supplies originating in the snowfields on Pikes Peak, and Colorado Springs has acquired water supplies on the Arkansas mainsteam.

In 1990, we began a water planning process to determine our needs through the year 2040, based upon realistic growth projections. We found that, though our existing water supply decrees may be adequate, there was a need for additional storage and delivery infrastructure. In 1996, the City adopted a plan of action which identified a number of approaches for meeting our future water demands, including water conservation, existing system improvements, and a new Southern Delivery System from Pueblo Reservoir, which is part of the Fryingpan-Arkansas Project.

As part of this action plan, Colorado Springs Utilities approached the Southeastern Colorado Water Conservancy District and indicated our need for additional storage. The Southeastern Colorado Water Conservancy District then conducted a water and storage needs assessment on behalf of all District members, including Colorado Springs. Colorado Springs Utilities fully supported this district-wide effort. That study confirmed the need for additional storage capacity in order to provide firm yield to municipal entities and it analyzed a wide range of alternatives to meet that demand, including storage of non-project water in project space and possible reservoir enlargements.

Both storage of non-project water and possible enlargement of Pueblo Reservoir and Turquoise Reservoir ranked very favorably in terms of cost, operational effectiveness and environmental/socioeconomic factors. Colorado Springs has committed to pay for and receive approximately 50% of the additional storage capacity available through storage of non-project water and enlargements, totaling approximately 58,000 acre-feet of storage, a critical component in meeting our future water supply requirements. The enlargement study is also a critical first step in future water planning and development in the Arkansas River Valley.

Colorado Springs and the Southeast District were not alone in undertaking these planning efforts. Over 40 entities participated in the storage study process, including the Upper Arkansas Water Conservancy District, the City of Canon City, Arkansas River Outfitters Association, Colorado Division of Wildlife, City of Florence and the Pueblo Board of Water Works, the body responsible for providing water service to the City of Pueblo, our neighbor to the immediate south. We strongly supported and encouraged this regional and cooperative approach to water development.

Throughout the years Colorado Springs has worked in close cooperation with its neighbors in developing these water supplies. In particular, that cooperation has been most evident with the City of Pueblo's Board of Water Works and, by that cooperation, both Cities have been able to develop very reliable supplies for their citizens. We hope to see a continuation of the cooperation that has occurred for so many years, and Colorado Springs is willing to accommodate concerns that the City of Pueblo has about flows for recreation through the City, as well as efforts to protect a viable agricultural economy in the Arkansas Valley east of Pueblo.

I know the Committee is painfully aware that the opportunity to build new storage on the rivers and streams in Colorado has been significantly reduced by the competing pressures to protect the environment and insure that Native species and riparian conditions are not damaged or destroyed. As a result, we in Colorado are focusing on the improvement and expansion of existing storage facilities and the development of the means to better utilize the water already capable of being stored. Colorado Springs hopes and believes that all of the interests in Colorado support the principal of enlarging existing facilities and developing the means to better utilize the waters already stored.

We hope that when Congress returns from the holiday recess, Congressman Hefley joined by Congressman Beauprez and Congressman Tancredo will introduce legislation to permit the improved use of the storage facilities of the Fryingpan-Arkansas Project including Pueblo Reservoir and Turquoise Reservoir. Colorado Springs supports that legislation, which will allow a preferred storage option plan

to be developed. That plan will make additional storage space available to the cities and towns in the Arkansas Valley, as well as to the agricultural community through more efficient use of existing storage space. In addition, we hope that Congress will authorize the investigation of enlarging one or both of those facilities to take advantage of additional supplies that can be developed.

This effort is consistent with the Bureau of Reclamation's Water 2025 effort to remove institutional barriers to allow storage of non-project water in project space. Optimizing the use of existing water supply infrastructure makes both business sense and environmental sense. We appreciate the Bureau of Reclamation's commitment to this effort, but we need Congress to act by codifying the Bureau's contracting authority on this project and to authorize the enlargement study.

For Colorado Springs to utilize the water supplies that it has developed already it is necessary to construct a pipeline from Pueblo Reservoir to the City. Although there are already pipelines from the Arkansas River near Buena Vista and from Pueblo Reservoir to the City, those pipelines no longer meet the needs of the City of Colorado Springs, and an additional infrastructure must be constructed. Colorado Springs, along with the communities of Fountain and Security, are pursuing a new pipeline, the Southern Delivery System from Pueblo Reservoir to the Pikes Peak region. Colorado Springs is negotiating in good faith with its neighbors and the Pueblo community to secure the construction of that pipeline, and we are confident that with the long history of cooperation and good will between the communities that the development of the Colorado Springs Southern Delivery System will be a reality. We trust that Congress will be supportive of our efforts to insure that the Colorado Springs community has a stable and adequate water supply both now and in the future.

To sum up, the State of Colorado has adequate water for its present and future needs. If we are capable of managing the water supplies that are apportioned to us by our various Compacts, we will be able to meet the challenges of additional population and future droughts. However, that cannot occur without improved management of existing storage and the development of additional storage. The most efficient way to insure that additional storage can be developed is to enlarge existing facilities rather than confront the challenges of creating extensive new storage. We would respectfully request that the Committee give favorable consideration to any legislation proposed by Colorado to permit the more efficient utilization of existing storage or the enlargement of existing storage.

Again, we sincerely appreciate the Committee's willingness to take time from your incredibly busy schedule to hold a field hearing here in Colorado to hear from Colorado Springs and our friends and neighbors in this fine State concerning our desperate need for more storage to meet the challenges of the future.

Thank you very much.

Mr. CALVERT. I thank the gentleman for his testimony. Next, the Honorable Randy Thurston, Vice President of Pueblo City Council.

STATEMENT OF THE HONORABLE RANDY THURSTON, VICE PRESIDENT, PUEBLO CITY COUNCIL, PUEBLO, COLORADO

Mr. THURSTON. Mr. Chairman, thank you and welcome to Colorado.

As a representative from Pueblo, I am honored and pleased to address the distinguished members of this Committee. We welcome the opportunity to update the Committee on the advances Pueblo has made in developing and utilizing water resources in the region and to discuss the shared water concerns of our constituents.

We, in southeastern Colorado, including the community of Pueblo, recently reached a crossroads decision. Our choice was either to continue to fight in Court, further depleting resources, opportunities and expanding taxpayers' dollars in Court battles, as well as understanding that there is no growth during the periods of fighting and battles, or to unite and reach consensus that benefits the needs of our citizens that trust us to represent their interests.

Those benefits could include expanded water capacity in the Pueblo Reservoir with a new concept of soft inflows. As long as the

enlargement is not there exclusively for future out of transfers basin then we truly have a problem in southeastern Colorado.

The guaranteed continuing flows in the Arkansas through the region of the City of Pueblo, and the removal of the tamarack trees along the Arkansas River, the simple fact that one of those trees consumes 300 gallons a day of water is a major issue that can solve a lot of the problems just in addressing that.

The vehicle used by the Arkansas Basin stakeholders was the creation of goals and principles signed in September of this year. At least 90 percent of the population of the Basin is represented by these stakeholders and we were very proud of this document and what it means both now and in the future for keeping the water basin, making water quality a priority, instead of shoving it under the carpet for future generations to clean up. As a foundation for continued communications and solutions, the goals and principles have set direction for the entire Arkansas Basin for its future.

We ask that state and Federal legislators support our efforts and goals and principles during this time of transition. I hope that as a parent that all the stakeholders involved in developing these goals and principles have done such by putting the larger interest of the region above their own interest and have worked together to simply do what is right to keep the Arkansas Basin in southeastern Colorado alive and prosperous.

We want to cooperate with this Committee as a partner and stakeholder in developing water solutions for this Basin, as well as the entire State. It's in the same spirit of cooperation we ask this Committee to respect and acknowledge the issues and concerns of the citizens of southeastern Colorado. These concerns include keeping the Arkansas Basin alive, the Arkansas River alive, maintaining water quality and ensuring the Arkansas Basin is not destroyed as a result of ill-formed or insensitive decisions and should be based on feedback from the most familiar and affected by the final choices that will be made in the near future.

Pueblo and southeastern Colorado are pleased to participate on the on-going discussions regarding the future of water supplies in our State. The Pueblo City Council is optimistic that these efforts will ultimately be a success and a win-win result can soon be achieved.

As the governing municipality of the Pueblo Reservoir that is dedicated to protecting and preserving the Arkansas River Basin, we are a strong advocate of water storage, maintaining water flows, improving water quality and maintaining a high quality of life for our city's citizens. We come to the table as partners to discuss and address the needs of the region, determined to develop the solutions necessary to preserve Colorado's heritage and future.

Thank you.

[The prepared statement of Mr. Thurston follows:]

Statement of Randy Thurston, Vice President, City Council, Pueblo, Colorado

The severe drought conditions that struck Colorado and other regions of the arid West in 2002 have made it clear that additional water storage in the state, in combination with sensible growth management, and increased water conservation and use efficiency, is necessary to provide a reliable future water supply for the

State's increasing population and to meet competing demands for water. Regional cooperation to identify and develop appropriate projects is required. Reasonable mitigation of detrimental impacts will be necessary. In southeastern Colorado, new efforts are being made on a regional basis, to implement cooperative approaches to the complex issues and competing interests implicated by new water storage projects. While it is too early to determine whether these efforts will be successful, Pueblo remains hopeful that through these and similar efforts, appropriate balances can be struck to match the benefits of proposed water projects with acceptable levels of local, environmental and other impacts.

I. PUEBLO/SOUTHEASTERN COLORADO

Pueblo is a community of approximately 105,000 people located on the semi-arid plain in southeastern Colorado. Pueblo serves as the medical, financial, retail and cultural center for 350,000 people from the Continental Divide east to Kansas, and from the City of Fountain south to the New Mexico border. Located at the confluence of the Arkansas River and Fountain Creek, Pueblo has been an important trading and population center for over 300 years. The Arkansas River has always been an important part of the City, due to its prominent role in commerce and industry, as a source of water for the community, and as the peaceful riparian habitat enhancing the urban core of the City adjacent to our City parks, river trails and nature center.

Water in Colorado is obviously a scarce and precious resource. In a state where over 80% of the population is located on the eastern slope of the Continental Divide and over 80% of the moisture is located on the western slope of the Divide—getting the water to the people is often a complicated and controversial task. Most of the moisture in Colorado falls in the form of snow during the winter months. During the warming days of spring, rivers and creeks quickly fill to capacity. Storage of the peak spring runoff is crucial to the reliability of water supplies in Colorado. Water storage can benefit municipal, agricultural, and recreational interests, alike.

Pueblo and southeastern Colorado have been fortunate to benefit from several Bureau of Reclamation storage and diversion projects. These projects have brought water to thirsty Front Range communities and farms, as well as providing needed water storage to the western slope of Colorado. Before these projects, farmers working the fertile soils in the region had water for the initial part of the growing season, but not all of the growing season. The Fryingpan-Arkansas Project, part of which is Pueblo Reservoir located less than 10 miles upstream from Pueblo, was completed in 1975. Project facilities are used for storage of both project and non-project water. In general, the project brings surplus water from the western slope of Colorado to southeastern Colorado. The project also includes western slope storage facilities, such as Ruedi Reservoir.

11. ENLARGEMENT OF PUEBLO RESERVOIR

The recently proposed enlargement of Pueblo Reservoir well illustrates the complexities and difficulties associated with new water storage projects in Colorado. Even before the 2002 drought, Pueblo Reservoir was the focus of efforts to increase water storage on the Arkansas River. These efforts were, and continue to be, directed by the Southeastern Colorado Water Conservancy District, and supported by the Cities of Colorado Springs, Aurora, and other primarily municipal interests. The Pueblo Board of Water Works also is a strong supporter of the project. The Southeastern District anticipates that the Bureau of Reclamation will also be a partner in this expansion effort.

While recognizing the value and need for additional water storage, the Pueblo City Council has consistently voiced concerns with any increase in the storage capacity of Pueblo Reservoir that results in significant diminishment of the flow of the Arkansas River through the City, located only a few miles below the dam. As a result, Pueblo opposed (including in hearings held before this Subcommittee in March 2002) proposed federal legislation contemplating enlargement of water storage space in Pueblo Reservoir, because the legislation did not include enforceable mechanisms to protect reasonable minimum flows through the City. Pueblo's concerns focused on the fact that, while the lion's share of the benefits of the increased storage would accrue to distantly located municipalities, the project's detrimental impacts would most heavily burden Pueblo. These impacts include reductions in flows that diminish the value of the River as an important and irreplaceable amenity for the City and its residents, and impacts to the City's on-going efforts in partnership with the Army Corps of Engineers to restore riparian habitat and enhance river-related recreation through Pueblo.

As a general matter, Pueblo agrees that increased utilization and expansion of existing storage projects is preferable to the construction of new projects. From a

water supplier standpoint, expansions can be accomplished more quickly, with less time and resources expended on permitting efforts and at a lower cost per acre foot of water storage than new projects.

Since Pueblo's testimony in 2002, several positive developments have occurred. As an initial step, Pueblo, Colorado Springs, the Southeastern District, and both the Lower and Upper Arkansas Valley Water Conservancy Districts reached agreement on a set of common water-related goals and principles that are intended to provide the general framework for cooperative decisionmaking regarding Arkansas River Valley water matters. These "Arkansas River Water Preservation Goals and Principles" were finalized in September 2003. The City Councils of Pueblo and Colorado Springs are working more closely together than ever before on water issues, as a result, and Pueblo commends and recognizes the new leadership in Colorado Springs that has facilitated this. While Pueblo's on-going concerns with the proposed legislation relating to Pueblo Reservoir have not yet been resolved, the Cities are working hard to reach specific agreement on these and related issues that would permit the legislation to go forward. The Pueblo City Council is optimistic that these efforts will ultimately be successful and that a "win-win" result can soon be achieved.

Pueblo remains committed to pursuing an appropriate, cooperative resolution of the issues that will allow for increased water storage opportunities in Pueblo Reservoir to improve water supply reliability, while protecting the interest of Pueblo and its residents in preserving appropriate minimum flow levels in the Arkansas River through Pueblo. Additional time is necessary, however, to allow the affected state interests to develop an appropriate solution, and federal legislation mandating specific actions in the advance of local agreement could chill the new cooperation.

III. CONCLUSION

The proposed expansion of the Fryingpan-Arkansas project provides an example of the complexities and difficulties associated with new water storage projects in Colorado. Recognition of the competing uses and values of water in an evolving Colorado and cooperation at the regional and local levels is necessary for such projects to become a reality. Federal action that would discourage such cooperation, or which fails to recognize the necessity for a reasonable balance of the various competing interests, will serve only to shift the focus of discussion from problem-solving at the negotiating table, to the types of legal and permitting wrangle that historically plagued projects like Two Forks and Animas-La Plata.

Mr. CALVERT. Thank you.

Mr. Walcher, Executive Director of Colorado Department of Natural Resources is recognized for 5 minutes.

STATEMENT OF GREG WALCHER, EXECUTIVE DIRECTOR, COLORADO DEPARTMENT OF NATURAL RESOURCES

Mr. WALCHER. Thank you, Mr. Chairman, and thank you for being in Colorado and holding this hearing and for all of your leadership on resource issues that matter so much in the United States of the West. We appreciate you being here. And I'd appreciate you starting out with pointing out some of the similarities between our states and water and particularly in the reality of the natural water being in one part of the State and the population in another. That essentially ends the similarities between our states and water as you probably know. California has an unfortunate tendency to take our water and send us its people and we wish it would stop both.

We have a serious issue in Colorado that the other witnesses have already talked about and Congressmen Beauprez, Tancredo and Udall mentioned as well. In Colorado, the issue is always going to be about storage and conservation because in this State, 80 percent of the water that we have comes in the form of snow and so that means that in the natural situation that in a span of about 2 months, it melts and leaves.

So in this State, we have to be able to either store that water during the wet periods and use it during the dry periods or we can't sustain life here. It also means that there will always be discussion about the responsible use of that water to make sure we're using it in the most efficient and effective possible manner, so that all of the things that we can do to create a really sincere movement toward better water conservation in this State, we ought to be doing and we are doing.

In terms of storage, it's a new era and new kind of debate in our State than has been before because storage doesn't just mean new reservoirs as others have already said. There are many ways to store additional water. In Colorado, that means an on-going effort to enlarge some existing reservoirs, either by dredging out the bottom or enlarging the dams or both, particularly in places where the politics were fought out years ago and the reservoir is already there, that can be done.

It also means repair existing dams where the water level is restricted and we have upwards of 100,000 acre feed of water storage already built that we cannot take advantage of because of restrictions on unsafe dams. We've made progress. We've repaired more than 100,000 acre feed of dams already, so it's an on-going effort, but it's a part of the storage that we need as well.

We also are beginning to examine the prospects for underground storage in Colorado which California has already done to a large extent, and which we need to do as well. And then finally, it means new storage in this State as well.

We're involved in the statewide water supply initiative which is a year-and-a-half long process to do essentially what Congressman Udall outlined, which is at the local level from the ground up to identify with all of the different players at the table the future water demands and needs for each basin and to try and figure out solutions to supplying that. That's going to result in an effort on the part of our State to build, I suspect, dozens of small water storage facilities of one kind or another, generally off the main stem of rivers and streams where they can enhance the environment as well.

It's also enormously important to us, as part of our responsibility to future generations that we do everything we can to protect the sanctity of the interstate compacts that we are a party to and we are especially grateful, in fact, for the long-term positive working relationships we have developed with many of the water leaders in California, leading toward the publication of California's 4.4 Plan and the final signatures on the quantification settlement agreement. We know that you played a key role also in that, Mr. Chairman, and we appreciate your leadership there.

And finally, I want to mention one thing that gets in the way in the discussion of water in Colorado very commonly and that is the Endangered Species Act. I want to mention it because I know from conversations we've had with Chairman Pombo and others on the Full Committee that something that the Resources Committee is struggling with. And it's a serious issue because it complicates so many of the water discussions in our State.

Public support for recovery and protection of endangered species is overwhelming on its 30th anniversary, as you know. But the de-

bate so often has veered off of actually recovering endangered species and into sort of sidebar issues about controlling human activity.

Colorado has taken, as you probably know, a very different approach to recovering species by actually recovering them in the wild. We built the first state-owned native species hatchery in America dedicated entirely to the production of endangered fish and we have stocked back in the Colorado River system hundreds of thousands of razorback suckers and bony-tailed chubs and humpbacked chubs and Colorado pike minnow. We're making huge progress in the recovery of the greenback cut throat trout and boreal toads and other aquatic species so that we can, in the end, get back to arguing about water for water's sake which is recreation to us here in Colorado.

But there is something the Federal government could do to help that process along and that is to do everything that you can to insist that recovery goals be published on all of the endangered species so we know where we're headed and we can figure out where the light is at the end of the tunnel.

The Endangered Species Act does not require massive rewrite. It doesn't require huge changes in thousand-page bills, that if we had actual recovery goals for all of the species like we now have on the Colorado River recovery program, it would enable us to do a better job of recovering species and dealing with water on the basis of the merits of the water issues.

Thank you very much.

[The prepared statement of Mr. Walcher follows:]

Statement of Greg Walcher, Executive Director, Colorado Department of Natural Resources

I am Greg Walcher, Executive Director of the Colorado Department of Natural Resources.

Mr. Chairman. It is a pleasure to join you today to share with you the State of Colorado's view on our water supplies and the efficient use of this most precious resource. I thank you and your colleagues for taking the time to visit our great State and to learn how we are addressing issues related to water management.

With Colorado firmly in the grasp of an on-going drought, your visit could not have been more timely. While late spring storms eased the dramatic situation, the summer and fall brought continued harsh conditions for water managers and policymakers. We still sit at the heels of the worst drought on record.

Because Colorado is uniquely situated at the apex of eight major water drainages, it has built its water conservation and supply programs around these features. Our state is highly reliant on spring runoff to fill our reservoirs, irrigate our fields, and bring water to our thirsty metropolitan areas.

In order to meet the State's water needs, we must look to locally driven solutions to this statewide issue. Clearly, we cannot assume that West Slope water users will shoulder the entire burden created by growth in other parts of the state. However, we must be willing to look at novel answers to use and reuse of water currently in the system.

The State of Colorado, through the Colorado Water Conservation Board, has started the process of working with local communities to identify and develop their water needs. This program, called the Statewide Water Supply Initiative, is the first comprehensive analysis of locally based solutions to our statewide water issues. Unlike other plans that have been offered, SWSI is built on the premise that a coordinated effort, built upon local expertise, offers the best opportunity to find new and different answers to the age-old question of water use.

The project started in June of this year and is scheduled for completion in November of 2004. During this time, my staff will have held public meetings in each river basin, contacted hundreds of local water authorities and reviewed thousands of documents in order to provide a forum aimed at developing a common understanding

of existing water supplies, future water supply needs and demands throughout Colorado and possible means of meeting those needs.

Because Colorado is so diverse in its water needs, it is clear that the only way to address this statewide issue is to begin from the bottom up. As a sidebar, I would like to thank Rick Brown of the Colorado Water Conservation Board for his efforts guiding the SWSI process.

Being a "West-Sloper" myself, I am sensitive to the needs of Western Slope towns, farms and ranches. There is no question that the time has come for a more comprehensive approach like the one being offered by the Colorado Water Conservation Board.

While there is no question that Colorado must advance water storage and delivery across the state, it is important to note that the federal government holds a very important key to efficiently managing our State's water resources.

The Endangered Species Act passed with the best of intentions three decades ago. However, in the intervening years, the Act has been used more and more as a tool to control and inhibit human activities as opposed to securing the future of the species it was intended to protect.

Colorado has taken a bold step in advancing species conservation on the state level. We built and operate the first facility dedicated to the conservation of threatened and endangered aquatic animals. This facility, located in Alamosa, Colorado, is a testament to Colorado's desire to move beyond the political squabbles that have historically put a stranglehold on species conservation and to focus on recovering threatened and endangered species.

In order to take the next step in our forward-looking program, the federal government, through the United States Fish and Wildlife Service, must be willing to publish static and responsible recovery goals. The Colorado River Program is an example of the State's ability to step in on behalf of wildlife, here there are four endangered fish, and make significant headway through the use of leadership and cooperation. However, we cannot efficiently utilize our water resources without a level of certainty on how threatened and endangered species will be treated. Reasonable recovery goals responsive to the resource will allow us to do that.

Mr. Chairman, all of this work will be for nothing if Colorado is not able to protect its share of Colorado River water. Over the past five years, I and my staff have worked with the Department of the Interior and other Colorado River states to develop a framework under which Colorado's share of the Colorado River would be better-protected. With the signing of the QSA in October, the Colorado River basin states appear to be on track to live within the Colorado River Compact requirements. I am pleased that this peace has been secured and would like to thank Secretary Norton and her staff for their hard work.

Earlier this month, the Colorado Water Conservation Board finished a feasibility study aimed at determining whether Colorado can use its share of the Colorado River in a way that is economically practical. The feasibility study concluded that such a project is possible with the right mix of users and the financial will to see it through. This novel analysis is just the type of solution that allows us to put the necessary tools on the table.

Colorado's water issues are not unique, but are shared across the western United States. For the better part of four years, most of the region has seen below normal precipitation. While we cannot dwell on the impacts of the current drought, it is important to recognize that we can plan better for the next time Mother Nature throws us a curveball. For Colorado that means increased storage, in the form of expanding existing reservoirs and building new ones, increased efficient use of ground water sources and a sincere movement toward water conservation. Certainly no single program can address the management issues present in our state, but by protecting the water to which we are entitled, and by using that resource wisely, Colorado can protect our valued way of life and continue the State's economic prosperity.

Mr. Chairman, this concludes my testimony. I thank you and your colleagues for the opportunity to address you today and will answer questions the committee might have.

Mr. CALVERT. I thank the gentleman.

Next is Mr. Peter Binney, the Utilities Director, Aurora, Colorado. You are recognized for 5 minutes.

STATEMENT OF PETER BINNEY, UTILITIES DIRECTOR, AURORA, COLORADO

Mr. BINNEY. Thank you, Mr. Chairman. Aurora is a growing municipality of nearly 300,000 people in the eastern Denver metropolitan area. We operate the third largest municipal water system in the State. Aurora is strategically located to be home to more than 500,000 people in the next 25 years and contributes significantly to the vitality and economic well-being of the State of Colorado.

Aurora represents an important case study in how the State of Colorado could potentially respond to the forecasted growth of the Front Range population by 3,500,000 people over the next 60 years. The recently completed Big Straw Study has projected that the Front Range corridor between Pueblo and Fort Collins, including the Denver metropolitan area, will have to develop an additional 784,000 acre feed to meet its municipal water needs and as a water manager, a rule of thumb would suggest that that will require 1.5 to 2 million acre feed of additional storage beyond what we have at the moment.

Aurora is an important subset of those demands and will develop new sources of water totaling approximately 85,000 acre feed by the Year 2060. This represents a doubling of our current water supply system. Many of these projects will have to be completed in the next 10 to 25 years to provide an adequate safe and reliable water supply to these growing communities. Time is of the essence. These new water sources must be developed in a cooperative, timely and systematic manner while respecting the social, environmental and institutional values that are embraced by all the citizens in the State of Colorado.

The conundrum that we face lies in this forecasted growth in population and resulting water demands along the Front Range. Our existing infrastructure of reservoirs, pipes, pumps and treatment plants are capable of meeting our near-term needs. They are not, however, adequate for meeting these forecasted demands and must be expanded significantly.

The State of Colorado does not have a "Panacea Project" that can miraculously be turned on to meet the needs we expect to have in the Year 2060, let alone in the Year 2010. We do not have untapped pots of water that provide an effective or easy solution to our forecasted demands. We must therefore face the hard decisions of changing the way we use water in the State and recognize that we have to move beyond the "Man over Nature" phase of the early 20th century. We are now in a tradeoff phase of water management in the State of Colorado and we have to reallocate our uses at this time. We will have to bring water from remote geographic areas into the Front Range. We must trade some of our established and appropriated uses of water for those that will meet our needs in the future. And these needs will not only be for the communities of Beulah, Julesburg and Mr. Aurora. They also must include the environmental and ecosystem protection that we embrace: recreational, agricultural and other non-consumptive uses as well.

The State of Colorado must accept that new water supplies will move from the West Slope across the Continental Divide as well as other river basins into the front range and that farms and cities will work more cooperatively than they have in the past, either

through permanent transfers of agricultural water or as we're doing in the Arkansas Basin on an interruptable supply basis. The cities must accept that these projects will be built in a cooperative and participative way and that multiple benefits include mitigation and enhancement projects will be a part of future water supply programs. These are expected to significantly increase the cost to urban water users. The economic vitality of the Front Range communities should not be seen as a threat to other parts of the State or to traditional water users, but rather as the opportunity to effectively guide the State's decisions on water management and policy.

The recent defeat of Referendum A illustrated the concern that Coloradans have over the methods used by water providers and private interests, as well as the state and Federal agencies, in meeting these changing needs for water across the State.

Unfortunately, the Referendum A debate again polarized opinions and positions reminiscent of past water wars. I believe that what did emerge though was a better understanding that pragmatic and effective solutions need to be identified. No "blank checks" will be written. Only then can the public appreciate and make informed decisions on what the future plumbing systems will look like, how they can be enlarged, how they can be rehabilitated, and how they can be operated to benefit other communities while also protecting our environment. And all of this must happen in an economic and timely manner.

I would suggest to you that engineers, hydrologists and managers of the water systems across the State have a sound appreciation of the technical solutions that could be implemented in the next 60 years. In my written testimony, I have identified many of the strategies that will be employed by the City of Aurora to meet these growing needs.

I would also suggest to you that systems like Aurora's are capable of financing the more than $1 billion in capital improvements we have forecasted that we would need in the next 10 to 12 years. What exacerbates the implementation of this program are governance, political, regulatory and institutional issues. I'd also draw your attention to the de facto conflict resolution process that water agencies must navigate to make something happen.

While the cities and urban water needs cannot be satisfied by riding roughshod over the needs of others, we collectively do not benefit from guerilla warfare tactics, obstructionism and an inability to make commitments to meet our future water needs.

Our long-term solutions are in storing water in enlarged and new reservoirs, in pumping water from geographically remote areas or in changing the ways we use water currently in the Arkansas and South Flat River Basins. Those changes and ways we use water could come from transfers or leases of agricultural water, reclamation of potable water from treated effluent, conservation and demand management, conjunctive uses of surface and ground waters or water system integration.

We, as a State, cannot accept the "do nothing" alternative and we must successfully enlarge our water supply infrastructure needed for the future and do that in a manner that is respectful of the needs of all responsible stakeholders. To do otherwise is disingenuous. It wastes time in chasing "paper water" or illusory solutions

and sets the State toward a position where it will deal with this need in a time of crisis rather than solving it in a programmatic and participative approach that can benefit the State as a whole.

Thank you.

[The prepared statement of Mr. Binney follows:]

Statement of Peter D. Binney, P.E., Director of Utilities, City of Aurora, Colorado

INTRODUCTION

My name is Peter D. Binney. I am the Director of Utilities for the City of Aurora, Colorado. Aurora is a growing municipality of nearly 300,000 people in the eastern Denver metropolitan area and operates the third largest municipal water system in the State. Aurora is strategically located to be home to more than 500,000 people in the next 25 years and to contribute significantly to the vitality and economic well-being of the State of Colorado.

Aurora represents an important case study in how the State of Colorado could potentially respond to the forecasted growth of the Front Range population by 3,500,000 people in the next 60 years. The recently completed Colorado River Return Reconnaissance Study, 2003 has projected that the Front Range Corridor between Pueblo and Fort Collins, including the Aurora, Denver and Colorado Springs metropolitan areas, must develop an additional 784,000 acre-feet of water in the next six decades. Aurora is an important subset of those demands and will develop new sources of water totaling approximately 85,000 acre-feet by the year 2060. Many of these projects must be completed in the next 10—25 years to provide an adequate, safe and reliable water supply to these growing communities. These new water sources must be developed in a cooperative, timely and systematic manner while respecting the social, environmental and institutional values that are embraced by all the citizens of Colorado.

The conundrum the State of Colorado is facing lies in this forecasted growth in population and resulting water demands along the Front Range. Our existing infrastructure of reservoirs, pipes, pumps and treatment plants are capable of meeting our current, or near-term, needs for water. They are not, however, adequate for meeting these forecasted needs and must be expanded significantly.

The State of Colorado does not have a "Panacea Project" that can miraculously be turned on to meet the needs we expect to have in the Year 2060, let alone in the Year 2010. We do not have untapped pots of water that provide an effective or easy solution to our forecasted demands. We must therefore make the hard decisions of changing the way we use water in the state and recognize we have moved beyond the "Man over Nature" phase of the early 20th century and we are now in a phase of reallocating or trading off the finite bucket of water we can use to meet the State's water needs. We must bring water from remote geographic areas, or we must trade some of our established and appropriated uses of water for those that will meet our needs in the future. These needs are not only municipal water uses across the State from Beulah to Julesburg to Aurora. They also include needs for environmental and ecosystem protection, recreational, agricultural and other non-consumptive uses that our citizens may embrace.

The State of Colorado must accept that new water supplies will move from the West Slope across the Continental Divide as well as other river basins and either permanently, or on an interruptible basis, from agricultural uses. The cities must accept that these projects will be built in a cooperative and participative way and that multiple benefits including mitigation and enhancement projects will be included. These are expected to significantly increase the costs to urban water users. The economic vitality of the Front Range communities should be seen not as a threat to other parts of the State or to traditional water users but rather as the opportunity to effectively guide the State's decisions on water management and policy.

The recent defeat of Referendum A illustrated the concern that Coloradoans have over the methods used by water providers and private interests, as well as state and federal agencies, in meeting the changing needs for water across the State. The Referendum A debate again polarized opinions and positions reminiscent of past water wars. I believe what did emerge though, was a better understanding that pragmatic and effective solutions need to be identified. No "blank checks" will be written. Only then can the public appreciate and make informed decisions on what the future plumbing system will look like, how it can be enlarged, and how it can be operated to benefit other communities while also protecting our environment. And all of this has to happen in an economic and timely manner.

I would suggest to you that the engineers, hydrologists and managers of the water systems across the State have a sound appreciation of the range of technical solutions that could be implemented. In my written testimony, I have identified many of the strategies that will be employed by the City of Aurora to meet its identified needs. I would also suggest to you that systems like Aurora's are capable of financing the more than one billion dollars in capital improvements we have identified that need to be built in the next 10—12 years. What exacerbates the implementation of this program are governance, political, regulatory and institutional issues and the de facto conflict resolution process that local water agencies must navigate to make something happen.

While the cities and urban water needs cannot be satisfied by riding roughshod over the needs of others, we collectively do not benefit from guerilla warfare tactics, obstructionism and an inability to make commitments to meet our future needs.

Our long-term solutions are in storing water in enlarged and new reservoirs, in pumping water from geographically remote areas or in changing the ways we use water currently in the Arkansas and South Platte River basins. Those changes in ways we use water could come from transfers or leases of agricultural water, reclamation of potable water from treated effluent, conservation and demand management, conjunctive uses of surface and ground waters or water system integration.

We, as a State, cannot accept the "Do Nothing" alternative and must successfully enlarge the water supply infrastructure needed for the future and do that in a manner that is respectful of the needs of all responsible stakeholders. To do otherwise is disingenuous, it wastes time in chasing "paper water" or illusory solutions and sets the State towards a position where it will deal with this need in a time of crisis rather than solving it in a programmatic and participative approach that can benefit the State as a whole.

(Submitted written background material)

CURRENTLY AVAILABLE WATER SUPPLIES

As with many of the growing cities in the West, Aurora has been developing its water supply systems since the early 1950's and must develop its water supplies from the relatively junior water rights and sources left after more than 100 years of water development by agriculture and the older cities and industries. These available water sources are typically less reliable during dry years (and therefore require proportionately larger reservoirs to provide reliable sources of water), are geographically remote from the cities, and require major investments to develop. In fact, water rights in the South Platte River basin with priority dates of later than 1876 are typically considered unreliable for meeting municipal water demands without major reservoirs being available to buffer hydrologic uncertainty.

In developing its water rights portfolio, the City of Aurora has used many of the practices that will be representative of future water programs. Key components of the City's Water System include:

- 75% of the City's water has been developed by transferring senior agricultural water rights for municipal use;
- approximately 50% of the City's water has been developed by transferring water from the Arkansas and Colorado River basins into the South Platte River basin;
- approximately 80% of the City's water supplies result from snowmelt between May 1 and July 31 and must be stored in reservoirs for delivery to the City in other months or for carryover to drier years;
- the City currently uses close to 80% of its reusable return flows through water trades, augmentation, irrigation of parks and open spaces, exchanges and leases;
- Aurora has developed and implemented an industry-leading Water Conservation Program that has reduced municipal water demands by more than 30% from Year 2000 levels, but that has come at a cost of higher water rates and impacts on the environment in the City;
- Aurora has entered into numerous Intergovernmental Agreements or contracts with the federal government, counties, water providers and water conservation districts to develop water by efficiently using existing infrastructure and to mitigate the impacts of Aurora's water developments;
- Aurora has signed agreements with Arkansas Valley interests that preclude future permanent transfers of agricultural water for a 40-year period, significantly subsidize the cost to local water users for reimbursement to the federal government for Fryingpan-Arkansas Project, provide a reliable mechanism for dry-year leasing of agricultural water without disrupting the agricultural economy and makes substantial payments to the local water district to address in-basin water needs;

- Aurora is developing an Integrated Resource Plan for the development of an additional 85,000 acre-feet per year of water. This Plan to double the size of the Water System will emphasize the development of water sources through cooperative programs with farms and other parts of the State and will incrementally add onto the core physical infrastructure built over the last 50 years; and
- Aurora has identified close to one billion dollars in infrastructure and water supply development needs in the next decade and has instituted rate and tap fee increases to generate the necessary funds from its current and future customers. New customers on the Aurora Water System now pay 56% more for a tap than they did two years ago and water rates have increased at 15% per year. These increases do not include additional drought surcharges or burdensome tiered pricing structures of nearly 400% for higher water users. No subsidies are requested from the state or federal government and Aurora is prepared to pay for its own programs, if needed.

Aurora is now planning the next phases of its long-term water acquisition program.

IMPACTS OF ONGOING DROUGHT

The effects of the ongoing drought are still pronounced and continue its adverse effects on cities, farmers and the environment. Regional drought conditions are not ameliorating across the Western United States and unless there is a substantial change in forecasted weather patterns, the city will face its third year of highly restrictive water uses in 2004. The City of Aurora's storage levels in its reservoirs was reduced to 26% of capacity in the spring of 2003 but will have recovered to 40% of capacity in the spring of 2004. A seasonal minimum reservoir capacity of 60% is considered acceptable for Aurora's municipal water system. This recovery in reservoir levels was not a result of higher water flows in the streams but the product of exceedingly high levels of water conservation, the purchase of water rights, and very successful development of interruptible supplies through short-term leases of agricultural and industrial water.

In 2003, Aurorans conserved aggressively and used 30% less water than they did in Year 2000. A comprehensive Water Conservation and Water Management Plan has guided our customers in all aspects of their water use from toilet flushing practices to water glasses in restaurants to limiting the sizes of lawns. Aurora's water customers did also pay a marginal rate of $2,885 per acre-foot per year for watering larger lawns in the City. This economic disparity between water used for some agricultural uses at a rate of less than $100 per acre-foot per year is one of the major paradoxes that Colorado's water managers and policymakers will have to address.

Aurora also developed other water sources to increase the robustness of its current water supply system and to aid in drought recovery. The Cities of Thornton and Aurora negotiated the sale of Thornton's Upper South Platte water rights to Aurora. This yields 7,146 acre-feet per year to Aurora while return flow obligations from Aurora replace that water for Thornton's needs. Aurora paid more than $51,000,000 through the sale of revenue bonds issued through the City's Water Enterprise Fund. Additionally, Aurora, the Southeast Colorado Water Conservancy District and Upper Arkansas Water Conservancy District entered into long-term Intergovernmental Agreements that should settle twenty years of often acrimonious and unproductive dispute. Details of these agreements are described later but of significance include the potential for periodic dry year leasing of agricultural water rights that assist in drought recovery but do not require permanent transfers from agricultural water uses.

This ongoing drought has rudely reminded all water users (including recreationists and environmentalists) that we live in a semi-arid climate and in a region that is periodically exposed to severe and sustained drought conditions. The last century was one of the most benign climatic periods we have seen in the last 2,000 years, so many of our policies and presumptions about water and its reliability have been formed in a time of surplus. It is not prudent, nor is it responsible, to only construct new projects or adapt our emerging water policies every few decades, as we have been prone to do. Inevitably, our needs change or available capacity in existing infrastructure is absorbed and we place ourselves behind the proverbial "eight ball." The game of billiards is not often won if we have to rely on trick shots too often.

WATER SUPPLY DEVELOPMENT STRATEGIES

The State has seen numerous proposals in recent decades to structurally develop major new water projects. It has been estimated that more than $100 million in engineering and legal fees has been spent in the last decade alone on various proposals, but not one gallon of water has been developed from most of these efforts.

Something critical has been missing from this approach to water supply planning. The packaging or public/ institutional acceptability of the proposals has been flawed in some fatal way.

The challenge as we reformat our approach for the future is to find the balance between past and future water uses and different geographic areas of the state that are either supply-rich or demand-rich. Unfortunately, these attributes are often mutually exclusive and so tradeoffs of current uses or physical delivery of new water supplies to those areas with additional water needs will have to occur. Or, we will have to implement elegant cooperative programs, whether the farms, cities and environment, to establish a new, balanced and sustainable equilibrium.

The bottom line for water managers and policymakers is that no one strategy is likely to meet their future water needs so an integrated approach that embraces demand management, new source development and basin of origin mitigation and environmental protection will be required. We do not believe these requirements should be codified but rather result from negotiation between the parties with State Government providing an arbitration (through Water Courts and otherwise) or facilitation role. If those negotiations are unsuccessful, no water project will proceed.

A component of future water sources will be met through more efficient use of existing water rights or infrastructure as described in the following section. Those efficiency strategies will be supplemented by new source strategies that could include the following approaches.

Unappropriated and Developable Junior Surface Water Rights

Hydrologists recognize that some water is available for development at or near the points where our major rivers leave the State. It was this recognition that led to the recently completed studies of the Big Straw concept. Certainly, a technologist can plan massive pump back systems from the Colorado River at the Utah State line, from the lower Arkansas River downstream from La Junta and from the lower South Platte River downstream from Julesburg. But the Big Straw report did start quantifying the multi-billion dollar costs and major environmental hurdles that are associated with these projects. The report does, however, stimulate us to consider other more reasonable alternatives including mid-basin reservoirs and re-operation or reallocation of water supplies that are currently bypassing the emerging demand centers on their way to downstream decreed water users. Rather than the heroic home run hits of Stateline pump back systems it is certainly reasonable to incorporate more modest proposals, such as Aurora's Camp Hale pump back project or Colorado Springs' Southern Delivery System. It is also reasonable to further evaluate the Green Mountain Pump back, Blue Mesa Pump back and Reudi Pump back alternatives in long-range planning.

New Reservoir Storage

A fundamental component of all future water supply programs will be the addition of new reservoir storage. The strategic location of new reservoirs and operational interconnection with existing delivery systems can capture wet year or high spring runoff flows, be used to substitute water releases from existing reservoirs for downstream water needs while allowing higher utility of those upper basin reservoirs for future uses, enhance return flows for Interstate Compact and environmental uses, and stage water deliveries so current delivery systems can be used more efficiently.

Agricultural Water Rights

Aurora is currently participating in, and has plans to expand, cooperative farm-city programs with willing agricultural water users as a part of its long-term water management programs. When a willing buyer-seller or lessor-lessee partnership can be developed, Aurora invites discussion on identifying whether it is feasible to enter into a relationship that would benefit both parties. We are willing to discuss opportunities with the Colorado Farm Bureau, as well as ditch companies or senior water rights holders, and to identify appropriate terms of mitigation projects that would allow a water project to proceed.

Agricultural water uses represent the largest consumer of water in the State with over 14 million acre-feet of irrigation annually. Of the State's overall water uses, 5.5 million acre-feet or 93% of the State's total water consumption is used by agriculture. Under the hypothetical assumption that all the Front Range's future consumptive water needs (55% of 784,000 acre-feet or 430,000 acre-feet) were to be met by transfers from agriculture, then the State would still have 5.1 million acre-feet or 86% of the States' water available for irrigation. Colorado will still predominantly be an agricultural water-using state. It is possible that the effects of agricultural transfers will be concentrated closer to the emerging demand centers so localized effects of transfers will have to be carefully evaluated. It is unlikely that the south-

western or northwestern areas of the State will be involved in any future programs to meet the emerging water needs of the Front Range.

Denver Basin Aquifers

These large non-tributary and non-renewable aquifers underlying much of the Front Range are an important water resource that must be managed and developed in an integrated and sustainable manner. Prior overestimates of the aquifers' capacity have resulted in over pumping and declines of water tables exceeding thirty feet per year. While more than 99% of the theoretically recoverable water is still in the aquifers, the cost of extracting that nonrenewable resource is escalating and will require groundwater dependent users to develop alternative sources or conjunctive use water systems. The costs of this infrastructure will exceed one billion dollars and a reliable and sustainable surface water source must still be identified and secured.

PROMOTING MORE EFFICIENT USE OF EXISTING INFRASTRUCTURE AND WATER RIGHTS

Past water development projects have essentially used all the reliable yields in streams that flow to the Front Range. Any new water development programs bringing water from other river basins will likely have to be integrated into the infrastructure and operations of current users including the Colorado Big Thompson Project, Denver Water, Aurora, Colorado Springs and the Fryingpan-Arkansas Project. New water projects could most likely deliver new water for interconnection to these existing systems and then redistribute water along the Front Range to individual customers. The physical reality of the State's topography and past water development practices along the Continental Divide must be considered by those who are responsible for planning and implementing future solutions.

It is envisaged that an integrated water management plan meeting the needs of the growing cities will include at least the following.

Water Conservation

A benefit of the ongoing severe drought conditions is the development and broad implementation of highly restrictive water use programs not seen in the Front Range since the 1950's drought. This reminder that we live in a semi-arid climate has reinforced an ethic of responsible water stewardship in Front Range cities that, while widely practiced in the past, had not been codified to the extent now in practice. It is expected that these benchmarks of water use will be a part of water utility operations in the future. Certainly, the literature describing effective water conservation programs will be updated to reflect the beneficial performance of these programs in arid climate areas.

This ethic of wise water stewardship in the cities results in higher utility of the existing investments in water development and also reduces the rate of increase in which new water supplies must be developed.

Water Reclamation

The treatment of municipal sewage so it can be used for outdoor irrigation or, with enhanced tertiary treatment, for indirect potable use are expected to be important components for future water supply plans for Front Range communities. There are many examples where non-potable reclamation is occurring in Colorado Springs, Aurora, Denver and the South Metro area. While the development of these programs are an advantage to a particular community, they do reduce the return flows to streams and so the environmental impacts and effects on downstream water users who have relied on these discharges must be assessed against the impacts on new source water development.

More Effective Use of Federal Projects

The City of Aurora has developed its water rights in the Arkansas River basin in part through creative and beneficial operating strategies that use the federal Fryingpan-Arkansas Project. While Aurora is not a Project Participant and is not represented on the governing body of that Project, annual payments made to the U.S. Bureau of Reclamation and to local agencies will represent nearly 50% of the local cost reimbursement share when the federal debt is repaid. Aurora's participation effectively halves the cost of local farmers, the City of Colorado Springs and Pueblo and others for the benefits of using this federal project.

Transferred agricultural water rights are exchanged upstream to an existing point of diversion on the Arkansas River to the South Platte River basin for delivery to the City. These exchanges are made only when there is no adverse impact to Project participants and indeed a 10% premium in delivered water is made to other in-basin users for every acre-foot of water delivered to Aurora. Additionally, Aurora will pay

$21 million to the local water district to allow local solutions to local water problems.

Conjunctive Use and Groundwater Development

Many newer water utilities and districts have relied on the groundwater resources underlying much of the Front Range in the Denver Basin aquifers. The recently completed South Metro investigations have identified the finite nature of those aquifers and estimated the cost of developing sustainable water sources to supplement the use of groundwater in a conjunctive use approach. The combination of surface water and groundwater resources in a conjunctive use program will allow efficient use of available local water supplies although one resource will not be effective without the other.

Rehabilitated Storage Reservoirs

The State of Colorado has cataloged those reservoirs where storage capacity is limited because of dam safety issues. Selective repairs to these dams can be an important water supply component with typically limited environmental impacts.

Water System Integration and Consolidation of Water Development

An economy-of-scale must be achieved before a significant water development project becomes feasible. Many of Colorado's current water systems are tied to local jurisdictions and individual cities or districts still fiercely voice their independence and need for autonomous control of their water systems. There will be little progress made in solving the major water needs of these growing cities until a new regional governance model is initiated. Denver Water followed this model when they became the contract provider of water for more than 50 suburban contracts. It was also the realization of this factor that allowed other metropolitan areas, such as Tampa and Las Vegas, to move beyond their previously balkanized, divisive and ineffectual approaches to meeting growing urban water needs. It has been proposed as a solution for the needs of the South Metro Denver area as they respond to the major capital requirements of developing a reliable and renewable water supply system to supplement their use of diminishing groundwater supplies. It is also seen as a possible role for Aurora as they develop their future water sources.

Appropriation Doctrine Identifies Standards of Developing New Water Sources

The State of Colorado's Appropriation Doctrine codifies and protects the property right nature of a water right and allows for the transfer of existing water uses to the extent that no other senior water rights holders are injured by that action. The State's Water Courts and legal system are diligent in assuring that the redistribution of water through this process does not cause injury and protects other values including in-stream flows. Additional tests applied by the Water Courts include the required demonstration that a water right can and will be developed—this requires that the applicant can secure all local, state and federal permits.

The numerous overlapping regulatory checks and balances as well as the rigor of the financial markets minimizes, if not prevents, the speculative or damaging impacts of future water projects. Indeed, there are many who would suggest that this multi-layered oversight has crippled the ability of sound and needed projects from proceeding and not just preventing the infeasible or poorly considered projects from happening.

CONCLUSIONS

The State of Colorado is forecasting a doubling of its population in the next fifty years with much of that growth occurring in Front Range cities between Pueblo and Fort Collins and not just the Aurora-Denver metropolitan area. This population growth will require the development of major new water infrastructure and require very effective uses of water in the cities as water is delivered from other river basins or transferred, temporarily or permanently, from current water uses. This development and reallocation of the State's water must occur in a respectful and collaborative manner that recognizes the needs of all responsible stakeholders. But the result of this process should be the structured and systematic development of the infrastructure that will deliver water to the cities while ensuring adequate water for other users across the state and for ecosystems and the environment.

An integrated program should come from local water agencies as they identify the infrastructure and operational needs of their water systems. State and federal governments should work cooperatively with the water agencies to facilitate the decisionmaking process and represent the interests of all responsible stakeholders who may also have an interest or concern about proposed projects.

Mr. CALVERT. Thank you. It's my privilege in chairing this Committee, I go around the country and we discuss with many different folks and regions about difficulties that we're having with water, not just the Colorado River, obviously, which is certainly very significant here in the West, but the Rio Grande in the South and the Colombia in the Pacific Northwest.

There's problems with water throughout the country, especially in the West, but not just in the West. And one of those issues, of course, is the Arkansas River and the difficulties that Colorado and Kansas have had well over a 100 years in litigation and the rest that has been going on.

As a matter of fact, we've had some hearings in Washington that Mr. Hefley and Mr. Moran have both attended—and Mr. Moran from Kansas and Mr. Hefley, a great member of Congress from your State of Colorado, are concerned about this issue of enlarging Pueblo Reservoir. And I'm going to ask this question for Mayor Rivera and Councilman Thurston, are you communicating, as you move forward on the concept of enlarging the reservoir and using, I'm sure, good science and engineering and so forth to resolve these outstanding issues, are you staying in contact with our friends from Kansas that apparently are worried and share their worries with us, that the enlargement may affect the Arkansas compact, and what's your feeling?

Is it—will the enlargement of that reservoir in any way affect the compact or the agreements that have been litigated over the years? And I'll start with you, Mayor, and Councilman Thurston.

Mr. RIVERA. Well, Mr. Chairman, we've been in regular contact with the Representatives from Kansas and no, we don't believe that the enlargement of Pueblo Reservoir will impact the compact agreements already settled to at all.

And in addition to our big dialog with Kansas, we have a good dialog with our neighbors to the south. The reservoir is in their city or close by. Water stored behind the dam is water that was acquired by Colorado Springs that's good to go and we're working with them cooperatively so we can have solution that benefits both our communities.

Mr. CALVERT. Councilman?

Mr. THURSTON. I will echo Mayor Rivera's comments as far as the situation with Kansas and feeling that it won't have a negative impact and the fact that we're very pleased in Pueblo.

Our Council has been working with the Colorado Springs Council. This is the first time probably in 40 years or beyond that the two Councils have really sat down in earnest and really said let's look at the region as a whole instead of what our interests are and what their interests are. And taking the responsible role of let's just do what's right.

Let's really look at southeastern Colorado where we're both located as our responsibility as big brothers to find solutions and have that cooperative working.

So again, I want to commend my friends in Colorado Springs and their efforts to cooperate in that dialog with us.

Mr. CALVERT. Great.

Mr. Walcher, you mentioned that Colorado is undertaking a state water supply initiative. Will this water initiative include movement of Western Slope water to Front Range?

Mr. WALCHER. The statewide water supply initiative, Mr. Chairman, is an analysis of all who have thought about water storage proposals over the last few generations, which there are literally hundreds of on the books, actually very few of those involve any trans-mountain diversion, but there are hundreds and hundreds of places, sites where from a geologic point of view, have been identified as potential water storage areas.

This project is an attempt to figure out, I guess, which of those are more feasible in the modern world—which is to say where there is an actual water right available, an actual proponent and beneficiary of the water and, perhaps most importantly, where there is public support for it. So at the grass roots level, it's a series of dozens and dozens of meetings in every single basin of the State with all of the different players from both sides of the issues at the table trying to figure out what the future demands are in that basin and what the future potential storage sites are that they might support and that are feasible. Once they get there, they will have narrowed a list of 707 potential storage sites down to some reasonable number that we can go to work on and it involves new storage in every single basin of the State.

Mr. CALVERT. Maybe I can ask this for the entire panel here today because apparently I understand the emotion of moving water from one region of the State to the next. I run into that quite often. How do you propose to resolve Western Slope Front Range trans-basin water issues? I mean I know this State has been discussing it for some time, but I'd like Mr. Binney to add to this discussion.

How would you propose that?

Mr. BINNEY. First off, I'd like to say that if the West Slope is not a part of the Front Range solution, then we'll have to meet our needs in either the Arkansas or the South Platte Basin. I hope that we're thinking a little more broadly than that and that we'll be able to look at all of the State's resources.

Let me give you, as an example, a project that we're involved in with Colorado Springs and with Western Slope interests. This is a project where we're looking to develop conditional water rights that we have in the Eagle Valley.

We reached an agreement with West Slope interests about 10 years ago that would leave a third of that project's water supply for West Slope water needs rather than asserting our legal rights that were available to Colorado Springs and to Aurora.

We came to an agreement where a third was going to be an accommodation where we would leave water in the West Slope to meet recreational, municipal, in-stream needs while we were moving ahead with trans-Basin diversions.

I think that's representative of the types of mitigation projects that Front Range cities are prepared to undertake to address some of these emotional and political needs that you're suggesting.

Mr. CALVERT. Thank you.

Mr. Udall?

Mr. UDALL. Thank you, Mr. Calvert. If I might, I'd like to follow-up on the Pueblo-Colorado Springs discussion we're having and hopefully leave a little bit of time to talk with Mr. Binney about what I felt was very interesting in hearing your testimony about the money you're prepared to bring to the table over the long term.

You mentioned, both of you, in the end of your testimony that you hope that the Congress will, number one, not get in the way of what you're trying to accomplish, and number two, that we would help you.

Could you elaborate just a little bit more, each of you, as to what that would involve?

Mr. RIVERA. Well, in Colorado and in Colorado Springs we are very concerned about the doctrine of prior appropriation. We think it's important to realize that there are state water rights issues that really are dealt with on a local level and while we want Federal legislation to at least study the expansion of Pueblo Reservoir and Turquoise Reservoir, it comes to the point where that legislation passes and there is an expansion.

We really don't think there should be anything written in the legislation that overrides state water rights and we think that's critical. We need your help, but we don't want you stepping on what we do here locally. That's very critical to us.

Mr. CALVERT. We've never heard that before.

[Laughter.]

Mr. CALVERT. Vice President Thurston, do you have——

Mr. THURSTON. We work very diligently on these goals and principles and I would like to leave each one of you a copy of that, so that you can see where we're going. And we're just really saying that the Federal legislation be sensitive to those goals and principles and it really is through the voice of the people that these principles were generated and also in understanding that the Arkansas Basin is over-appropriated.

Again, when we're looking at solutions, the solution is not going to an over-appropriated basin, but again when we're looking at the under-appropriation of the Colorado, we will put all of our resources and energies behind how can the State fill that situation without again taxing on to an over-appropriated river basin which again if it's done inappropriately will make a very dark hole for southeastern Colorado. So these goals and principles are something I would like to share with all of you.

Mr. CALVERT. Mayor and Vice President, it sounds to me like there's perhaps some application to what you've been able to accomplish in other arenas. As you move ahead, I think the State is going to keep an eye on what you're doing and we may be drawing on your expertise, assuming that this reaches a positive conclusion, so I want to thank you for that.

You mention in here, Mayor, that you're hoping that Congressmen Hefley and Tancredo and Beauprez will introduce legislation as we return. Is Congressman McInnis a part of this process as well and have you included him in these discussions?

Mr. RIVERA. Well, we work very closely with our own Congressman, Congressman Hefley, and we know that he is dealing with Scott McInnis on a regular basis in trying to get him involved in the process, but Congressman McInnis, of course, is very interested

in ensuring that Pueblo and Colorado Springs come to an agreement on their own in terms of our southern delivery system and thus ensuring that Pueblo has the water that they need that flows through their city for recreation uses and we're doing that. And so that the conversation is on-going and I think we're getting very, very close to an agreement where the entire congressional delegation can support us.

Mr. UDALL. Great. I look forward to being included in those discussions as well. Both Congressman McInnis and I straddle different basins, so we try and do all we can to balance those competing needs and oftentimes have to look across both sides of the divide, whether it's the Platte and the Colorado or the Colorado and the Arkansas or the Rio Grande, so I think that's important he's involved in those discussions.

Mr. THURSTON. And Sue Smith from Scott McInnis' office is here in the audience today as well, so we've been working very closely with them.

Mr. UDALL. If I might turn to Mr. Binney. Thank you again for your testimony and the outline you provide us of what we face, both opportunities and challenges. I was fascinated when you pointed out that you think you can bring a billion in capital to all these various needs. Are you approaching this with the mindset that you don't need Federal support when it comes to the dollars that might be necessary to do all the various things that are being proposed?

Mr. BINNEY. No, certainly we would look to work with the Federal delegation in many ways that you can help us out.

[Laughter.]

What we have done in the City of Aurora, we operate as an enterprise fund. All of our funding comes from tap fees and user fees and when we looked at the challenge that was ahead of us, one way that you can obviously presume to move ahead is through self-sufficiency. I talked to my Council last year about this 10-year capital program. I outlined the alternatives for them. They strongly suggested to me that I ought to look inwards before I look outwards. We increased our tap fees by 56 percent last year and increased programmatically our user fees by 15 percent and that's without any draft surcharges.

So we have put in place a financing program that would allow us to meet our needs. Certainly, we will be in touch with you to see if there are other ways that you can help, but we have recently just done the first of a series of revenue bonds, working with Wall Street. We have already spent 100 million dollars of that and that has been funded through revenue bonds that are pledged against revenues coming from the utility itself.

Mr. UDALL. Thank you. Thank you, Mr. Chairman. This has been helpful to me.

Mr. CALVERT. I thank the gentleman. Mr. Tancredo?

Mr. TANCREDO. Thank you, Mr. Chairman. Mr. Udall indicated that we've heard some of these things before, especially about not wanting the Federal government to override any decisions of the local level. We certainly have. But I'll tell you something else we've heard before, gentlemen, and that is we're close to an agreement. We're working closely together. It's almost there. We've been

dancing this dance for a long, long time. And frankly, I would like to get us a little closer to the discussion of when we're going to end this dance and what it's going to take to get us to the point where we have some agreements down there. And I know, Mr. Binney, for instance, Aurora has recently signed an agreement with the Southern Colorado Water Conservancy District which should end—I know that the purpose is to try to end this 20 years of acrimony and the wars in the Arkansas Valley. And I also understand, as part of this agreement that you will be paying, as you say, a great deal of the cost, but will have actually no governmental representation on how the decisions are made in the Basin.

So what else is necessary? What else do we have to do to get this thing done, Mr. Binney?

Mr. BINNEY. We have been working very closely with the U.S. Bureau of Reclamation to give us some more security in how we operate our water rights in the Arkansas Valley. Previously, everything was done on an annual if-and-when basis. We can only use the Fryingpan-Arkansas Project when there is excess storage capacity available.

We have been working diligently with the Bureau of Reclamation to see if we can't have in place a long-term contract, a 40-year contract where we will have some of that security that you're suggesting is important to our community. We are a part of the Arkansas Valley fabric. Some people are continuing to fight us there, but I think some of the security that we have and one of the things that I think led to our being able to negotiate disagreement with the Southeastern District was recognizing that we're only going to be there, under sufferance, but we're going to be there in a respectful way. So I think we're a long way—I would like to see Aurora become part of the discussions between Pueblo, the Pueblo City Council and Colorado Springs though as we move forward and I think once we've done that, they will see us not as the monster as perhaps we are portrayed in the newspapers, but rather as a constructive part of their community.

Mr. TANCREDO. Well, let's talk about the way it's perceived in the newspapers, Aurora, in particular and you're continually identified as the primary cause of drying up the farmland in rural areas like the Arkansas Valley and what kind of mitigation does Aurora provide for these transfers, the transfers of water from the basins and is there—are there mitigation requirements in the law?

Mr. BINNEY. Yes. Within the decrees that we have with the State of Colorado, when we move the consumptive use portion of water off the lands, we have to leave water there for revegetation and weed control. When people characterize what we're doing as the decertification of southern Colorado that is not correct. We have to put a stable grassland down on to that land.

So part of it is preserving the environment when we move water to the city. Part of it is that we are paying large amounts of money, one to the Otero County. We have paid far beyond what is required by law. With the agreement that we entered into with the Southeast District, we not only are paying a very large amount of the local cost reimbursement share for the Fryingpan-Arkansas Project, basically we're subsidizing Colorado Springs and South-

eastern District as they're paying off the Federal government for that project.

We also allocated in excess of $20 million that could be used by the Southeast District to start addressing some of these local water supply needs that are in the valley and that are being affected by changes in the agricultural community.

Mr. TANCREDO. Just how much water has been taken out of the valley by Aurora as compared to let's say Colorado Springs or Pueblo?

Mr. BINNEY. In the decade of the 1990s, we moved 4,000 acre feeds out of the basin.

Mr. TANCREDO. Four thousand acre feeds during the decade?

Mr. BINNEY. That was per year. We have water rights, decreed water rights for 22,000 acre feeds and just for that in context, the average annual flow coming out of Pueblo Reservoir is in excess of 500,000 acre feeds. So once we have fully developed the decrees that we have, we'll be affecting perhaps 4 percent of the flow coming out of Pueblo Reservoir.

Mr. TANCREDO. I really do hope that his helps your—the testimony here today, I hope this helps put Aurora in perspective, Aurora's usage of that water and helps us move toward some sort of collaborative arrangement.

Mr. Chairman, I have a number of questions here for which I will not have time, but I'd like to be able to offer them——

Mr. CALVERT. Without objection. Questions will be entered into the record and we would ask the Panel to answer those questions and make it part of the permanent record.

Mr. TANCREDO. Thank you, Mr. Chairman. Just this one now for Mr. Walcher and that is what's the Administration doing to act as an honest broker in this whole thing? And is there an initiative of any kind here in the State through your office, through the government?

Mr. WALCHER. Thanks for asking. Our primary function and it is the statewide water supply initiative that we talked about because we don't frankly believe that the State ought to dictate to all the local basins in Colorado what their water future is. That isn't the tradition of Colorado water law. The tradition is that local people come up with local solutions to local problems and so our role is to help enable and facilitate that which is what that project is all about.

But I will say and this sort of goes to your previous question too about the vigorous sort of argument that goes on so long and how we're going to get to fixing it. We have an advantage in this generation that hasn't existed in Colorado for a very long time, that people ought to be focusing on. The sad thing about Referendum A, of course, was how contentious it became and because of that became kind of a distraction. But the advantage we have now is the tremendous working relationships that have developed among water leaders throughout the State that have not existed in my lifetime.

And I can remember well, as you can too, no doubt, when the Denver Water Board had to disguise people pretending to be farmers when they went to buyout water rights because they were so unpopular no farmer would talk to them.

We have evolved a long ways past that from a situation where California and Colorado water leaders didn't talk to each for three generations hardly. We've now got situations where Aurora is making available water that it doesn't have to make available during a time when we had 80,000 wells shut off in the South Platte Basin.

We've got projects with the Colorado River District and the Denver Water Board and Parker Water and Sanitation working together to try and make something happen.

We've got relationships that I think haven't existed for a long time in Colorado. Whether that comes naturally to us or not isn't clear, but out of necessity, we have had to learn to work together. I think that there's a very good chance that we're going to see whether it's a project in Wolcott or where, I'm not sure. But I think there's a very good chance that we're going to see people come together and work on solutions that will work for everyone and I think the State has a role to play in facilitating that, not in dictating the outcome.

Mr. TANCREDO. Thank you. Thank you, Mr. Chairman.

Mr. CALVERT. Thank you. I would, for the record, correct that Colorado water leaders and California water leaders did talk to each other the last 30 years, we just couldn't put that into the record.

[Laughter.]

Mr. Beauprez, you're recognized.

Mr. BEAUPREZ. Thank you, Mr. Chairman. First of all, just—I won't belabor the point any more than to recognize Mayor Rivera and Vice President Thurston, I commend both of your cities for working toward a reasonable commonsense solution to what I think is a rather obvious challenge. And I think I'll direct my questions during my time primarily to Mr. Binney and perhaps Mr. Walcher.

Mr. Binney, you put forward what to me are some fairly staggering numbers, based on the study you cite and I commend you, frankly, for looking beyond 10 or 20 years, but 60 years I think is your time frame. Seven hundred eighty-four thousand acre feed of additional usage, which I think you said would require a million-and-a-half to two million of additional storage. Is that correct?

Mr. BINNEY. That's correct.

Mr. BEAUPREZ. And to put it in context, am I correct, I'm just pulling numbers out of my memory here, but is not Blue Mesa something like 1.1 million acre feed of storage capacity, is that——

Mr. BINNEY. I'm not sure of that, but Two Forks would have been 1 million acre feeds.

Mr. BEAUPREZ. I'd be glad to be corrected if I'm wrong, but you're talking about a lot of storage?

Mr. BINNEY. That's correct. We'll need storage in different basins as well as along the Front Range.

Mr. BEAUPREZ. I would commend you at least first of all for recognizing the magnitude of the challenge, of focusing on what I alluded to in my opening comments of winners and winners, the mitigation at least offers and considerations that you're talking about, whether or not they end up being acceptable. I think we've got to talk about that.

Where I would like to go with you and Mr. Walcher, Mr. Walcher, you just mentioned a minute ago about the State's role. My concern, Congressman Udall mentioned it in his opening comments, and I think we all did in some way, shape or form, how do we manage to bring all of the various interests together, including agriculture and I would ask you, Mr. Binney, would it be a fair statement that if we had adequate storage in Colorado, we might not need to be looking at agricultural water rights as aggressively as municipalities have somewhat been forced to look at them?

Mr. BINNEY. I would be a strong advocate of a more balanced approach of one versus the other. I think that to deliver this 784,000 acre feed that was identified by the State in using Junior Unappropriated Waters, they're really—what you're doing is you're looking at yourself to pump back projects like the Big Straw Project or Blue Mesa Pump or has been proposed pipelines from the lower part of the Arkansas Valley.

I think the State would be better served by a balance of some of those projects, perhaps not as heroic as the one that we just received a report on, but also considering setting up farm-city relationships where I think Mr. Walcher recognized that Aurora was delivering treated effluent for the benefit of people who operate wells for agricultural purposes in the lower part of the basin. And to me that should be a part of what we're looking at as we move into the future.

Mr. BEAUPREZ. Let me ask a real direct question and maybe Mr. Walcher, you can respond first, if you like.

I am concerned governance and how we pull all these various groups together to develop some sort of a statewide, not only a plan, but how in the world does it function? How do we identify the projects, how do we satisfy all the players, how do we keep winners and winners at the table and still satisfy the long-term water needs of the State of Colorado without a statewide umbrella somehow?

Mr. WALCHER. I don't think a statewide umbrella is necessary to do that to tell you the truth.

Mr. BEAUPREZ. Let me be even more direct because I'm concerned that what we have done in the past with very local control and I am a local control advocate, but without some consideration of municipality to municipality, basin to basin, user group to user group and getting all of those somehow to collaborate, are we not perhaps continually setting ourselves up for these endless wars?

Mr. WALCHER. I don't think so. I think in the absence of some sort of metro-wide water district or some kind of a governance structure like that it means the table has to be bigger and lots more people need to be there, but I don't think it's necessarily impossible to do.

We have the ability under our current system for all the local entities involved to get together and make solutions that work for multiple entities and we have a lot of those in play already as Peter has mentioned and as we've talked earlier. There are lots of collaborative projects that people are talking about now, even in the absence of some sort of governance change that you're talking about.

It may be that the people in the suburbs might get together and decide that a unified water district is a good way to go and it might

simplify things a bit if they do, but frankly, I don't think it changes the type of issues that have to be worked through to get to the solution whether the table has four people at it or 40 people present. The issues aren't really that different.

I think one of the biggest myths in Colorado water is the concept of over-appropriated rivers. And I know that there are more than 100 potential storage projects in the South Platte Basin and the South Platte is an over-appropriated river by that standard, meaning that every single drop in it is owned by somebody. But we still have peak flows in wet years when all the reservoirs are full and we still have lost hundreds of thousands of acre feed of South Platte water to Nebraska because we didn't have the room to store it.

So the need to get the storage there is what we ought to be focused on and however many people need to be at that table to get there. I think the State's role is to try and help identify what the feasibility of it is and then the local folks, I guess, can decide if they want to create some sort of different governing structure, but if they don't, I still believe we can get there.

Mr. BEAUPREZ. Mr. Binney, can you respond quickly? I know I'm probably running short on time.

Mr. BINNEY. I've been looking for that Holy Grail as well and I think I found it in Las Vegas of all places. I asked Pat Mulroy who has gone through something similar to what we've gone through where the Las Vegas Valley was basically ready to shut down development because of water supply issues. They came together and they fought the Southern Nevada Water Authority and they brought a certain level of harmony to the six major water users in that valley.

Her homily was that they were able to solve their problem when the availability of water was no longer a political issue. I think there's some truth in that and I think as we search through with the governance issues what they were able to do is to turn it into a purely commercial transaction. If you wanted the water in which they were bringing from Lake Mead and they spent close to $3 billion for their solution, you ponied up and you bought your part of that project.

So I think that there are some things that we should look to our friends not only in California, but in Nevada, to find some potential solutions for along the Front Range. We're a victim of economies of scale and I don't think we're going to solve our problems by doing a continuing series of very small suboptimal projects.

I truly believe that we're going to build some very large public works projects where there will be multiple beneficiaries on both the basins of origin and on the Front Range. And it's only when we realize that we've got to get to that level of project that we're going to solve our needs.

Mr. BEAUPREZ. Thank you, Mr. Chairman.

Mr. CALVERT. I thank the gentleman. I thank this panel for your valuable testimony. Members of the Subcommittee may have additional questions that we will submit to you in writing and we would ask for your responses for the permanent record.

With that, thank you very much and you're excused.

I will now recognize the second panel of witnesses: Ms. Melinda Kassen, Director, Colorado Water Project for Trout Unlimited; Mr. Richard Kuhn, Club 20; Mr. Joel Rosenstein, Vice President, Coloradans for Water Conservation and Development; Mr. Alan Foutz, President, Colorado Farm Bureau; and Ms. Patricia Wells, General Counsel, Denver Water, Denver Colorado.

Will you please come forward? For the panel again I'll explain our 5 minute rule. We have a little light up here, and hopefully you can see it. It's got a little green light, a little yellow light which means hurry up, red light which means stop. So we try to stay within the 5 minute rule so we can have some questions and I can catch my plane.

[Laughter.]

So with that we'll first recognize Ms. Melinda Kassen. You're recognized for 5 minutes.

STATEMENT OF MELINDA KASSEN, DIRECTOR, COLORADO WATER PROJECT, TROUT UNLIMITED

Ms. KASSEN. Thank you, Mr. Chairman, and Members from Colorado, good morning. I appreciate the opportunity to testify. I've submitted written testimony for the record with a host of suggestions regarding water supply strategies. I'll focus this morning on just a few.

First, I want to agree with Congressman Beauprez' statement on the facts version of this hearing agenda that Colorado's on-going water problems only get worse if we fail to address them in a meaningful way. I think the question that we all grapple with is what is meaningful? Colorado must choose water supply strategies for the future that are equitable and that are cost effective.

The era of mega projects with devastating environmental impacts and the era of massive Federal subsidies are both over. The big straw is and will remain a pipe dream and I don't think that Union Park is significantly better——

Mr. CALVERT. No pun intended, right?

Ms. KASSEN. Sorry?

Mr. CALVERT. No pun intended, pipe dream?

Ms. KASSEN. No pun intended. Fifteen billion dollars, and the list goes on. But the same coalition of Coloradans who have worked together for the past several decades to stop destructive, risky and costly water projects and financing schemes will continue to block big, new diversions from the West Slope, the Rio Grande, and the Arkansas River to supply areas of the Front Range that have failed to provide sustainable water for their own futures.

The high quality of life that Colorado enjoys depends also on maintaining and in some cases restoring recreational, environmental and the aesthetic values of our rivers and streams. That's one of the reasons that we all live here.

Our water future, thus, must rely on smart storage and supply strategies that protect these values. The solutions and most of them have already been discussed today, they're not unknown. We have a road map.

On the supply front, we need to do at least three things: conserve water and maximize all water users, efficiency of use and re-use. Colorado has not tapped fully into conservation programs. Most

cities still don't have significant tiered block rate structures. There are few incentives for leak detection and repair and many places don't have rebates for changes in landscaping and efficient appliances. I mean there are lots of things that we can mine in terms of conservation.

Second, reclaiming and integrating existing infrastructure and using temporary transfer programs like water leasing, interruptable supplies and water banks to allow existing water users the full use of water that's already developed, but currently isn't captured by providers.

And finally, expanding storage incrementally, but only after involving all of the parties to craft mitigation for adverse ecological, social and economic impacts. At the same time, we need to be mindful of stream protection and for that there are also a couple of things that we need to do. We need to lower barriers for existing water users who want to convert their rights for in-stream protection.

We need to identify the funds to enable those sorts of conversions. We need to make water management actions deliver environmental benefit and I believe that that's possible in terms of reoperation of projects and such. And we need to allow Federal agencies to use their existing authorities and rights to protect rivers.

Finally, there is some more research. We know a lot about water, but there are also things we don't know. On the environmental side, there isn't enough information about what ecologically sustainable flows really means, what's necessary to keep in the river and on the supply side, there could be more information available about the capacity of and how to recharge our groundwater resources.

With Federal and state—while the Federal and state government can help, the lion's share of this work will happen at the local level. The most important state role, I believe, is to provide leadership to help the disparate interests agree on smart solutions. For Congress, I would suggest that the most important activities are to ensure that the Federal scientists provide timely focused research and that Federal projects are operated as models in terms of smart supplies, smart storage, both on the conservation side and on the supply side as well as demonstrating that you can operate in a way that is not completely environmentally destructive.

The Federal role is not to weaken the Clean Water Act, as I think you're going to hear later or the Endangered Species Act.

Thank you again for your time. I'd be happy to answer questions.

[The prepared statement of Ms. Kassen follows:]

Statement of Melinda R Kassen, Esq., Director, Colorado Water Project, Trout Unlimited

Mr. Chairman, members of the Committee, and members from Colorado, good morning and thank you for the opportunity to offer testimony today on the important topic of Colorado water supplies and water-use efficiency.

Trout Unlimited

Trout Unlimited (TU) is a national, non-profit organization with 130,000 members, of whom over 8,000 belong to our Colorado Council. Trout Unlimited's mission is to conserve, protect and restore coldwater fisheries and their watersheds. In 1998, TU established the Western Water Project, which now has offices in five states in the inter-mountain west. We participate, primarily at the state level, in decisions

affecting water quality and water allocation to ensure healthy coldwater stream flows and foster meaningful public input into these decisions.

My Background

I opened the Colorado Water Project office in 1998. My previous experience in water matters dates back 20 years to the Office of the Colorado Attorney General, where I represented the Water Quality Control Division and Commission, the State Engineer and the Colorado Water Conservation Board. I then worked at the Environmental Defense Fund where I spent half of my time on water matters, including the fight against Two Forks Dam and Reservoir. Prior to starting at TU, I represented Kaiser-Hill, the contractor responsible for cleaning up the former nuclear weapons facilities at Rocky Flats; in that capacity I was involved in the renewal of the site's Clean Water Act discharge permit. I have also taught Environmental and Administrative Law at the University of Denver College of Law, and worked as counsel to the House of Representatives Armed Services Committee. I last testified before this Subcommittee in March 2002 regarding H.R. 3881, a bill involving the proposed expansion of the Bureau of Reclamation's Fryingpan-Arkansas project.

A Sustainable Strategy to Meet Colorado's Water Needs

In 2002, Colorado endured one of the worst droughts in its history. A year later, many reservoirs have yet to refill. Colorado's population growth is placing significant additional demands on our water resources. Water policies at all levels of government need to encourage sustainable supplies of good quality water for all Colorado residents without excessive costs or environmental damage.

In January 2003, the conservation community released a report, What the Drought Means for the Future of Water Management in Colorado. I have attached copies of the Executive Summary to this testimony. Written by water policy experts, the Report examines the hydrology of the drought, its economic impact, and the responses of water suppliers. The Drought Report suggests smart supply and smart storage principles to guide future water management. I would like to focus on these commonsense solutions to our common problems.

Smart supply alternatives can substantially increase the amount of available water by using existing water supplies fully and efficiently. For example:

- Strengthen conservation and efficiency programs. While this is primarily the province of local providers, state and federal government agencies may be able to provide financial and technical assistance. Just a few of the programs that have been demonstrated to reduce urban water use are programmed to detect and fix system leaks, rebates for re-landscaping and efficient appliances, and tiered block rate structures.
- Reclaim unusable space in existing reservoirs. Colorado's State Engineer estimates that, due to safety restrictions on reservoirs, as much as 250,000 acre feet of storage that currently exists in the state is unusable. Fixing the problems would allow the State Engineer to lift these restrictions, thereby recovering this space for active storage. In addition, many of the state's older reservoirs would be able to increase active storage capacity were they dredged.
- Expand the ability of water users to share supplies through leasing, water banks and other arrangements. While Colorado has an active water market, our court-based system has made it difficult to move water around quickly and on a short-term basis. The State Legislature enacted several bills in 2003 that begin to remedy this situation, but more work is necessary before water users will truly be able to share water easily in response to drought, or for other market-driven reasons.
- Integrate existing infrastructure in a way that allows all water users within a geographic area to maximize their rights. The Drought Report describes several examples where the ability to integrate infrastructure would result in a direct increase in Front Range water supplies. Later in this testimony, I give several examples of how Front Range providers could use existing federal facilities to supply water rather than build new diversions and storage.

Smart storage principles optimize already claimed water supplies to increase useable supply. For example:

- Use existing water supplies and usable return flows fully and efficiently. Efficiency programs in Colorado's urban areas are spotty, and Front Range water providers have been reluctant to reuse water due to consumer sensitivities, despite water court decrees directing this reuse, although Colorado Springs does reuse treated effluent on city turf.
- Expand existing diversion and storage capacities incrementally to enhance providers' flexibility to respond to increased needs as they appear. This is the

strategy that Denver has successfully pursued since EPA vetoed its enormous, proposed Two Forks Dam and Reservoir project over a decade ago.

- Involve all of the affected interests, not just the water users, in crafting mitigation to eliminate or lessen environmental and socioeconomic impacts. For example, because the market is now driving water transfers from agriculture to municipal uses, participants should structure such transfers, where possible, to maintain agriculture, and under any circumstances to mitigate the adverse impacts to rural communities. A successful example of where this has happened is in the Upper Arkansas River Basin where the local water conservancy district led a negotiation effort with the City of Aurora, basin water rights holders and other basin interests, including rafting businesses and Trout Unlimited's local chapter regarding Aurora's plan to take water out of that basin.
- Emphasize the most efficient utilization of existing supplies to avoid the problems and inequities of new transbasin projects. The most recent example is the Big Straw. Last month, the Colorado Water Conservation Board released a reconnaissance-level study that predicted the costs of this project could reach $15 billion. New transbasin diversions, i.e. from the Colorado River to the growing cities along the Front Range east of the Continental Divide, particularly under junior priorities, are the most expensive option for supplying Colorado's water needs. They are also the most environmentally damaging. Why choose this approach when there are faster, smarter and cheaper alternatives?

One of the lessons of the failed state bond referendum is that all affected entities must be at the table in developing new water supplies. Whether the project involves drying up agricultural land, taking unappropriated water from areas that are themselves growing, or depleting flows in rivers that support a recreation economy, the politics of transbasin diversions demand that those who benefit from such diversions minimize the adverse effects, mitigate those effects to the extent possible and compensate for the remaining losses, even if those loses are lost future opportunities for the exporting basin.

The Bureau of Reclamation can also play a role. The Bureau has developed major water projects across Colorado, many of which serve agricultural users. As is true elsewhere in the west, agriculture consumes close to 90% of the water used in Colorado. Virtually all of Colorado's growing water demand is municipal. Given that the state has a mature water supply infrastructure, which stores and delivers 7.5 MAF of water annually, this existing infrastructure must help satisfy increased urban demands, as well as recreational and environmental needs. The Bureau must pursue reoperation of its projects, or the reallocation of water within these projects, to provide additional urban supplies, while maintaining riparian and instream resources and rural economies. In addition, Congress should take action, or encourage the Bureau to act, to:

- Streamline the processes required to allow cooperative use of federal water infrastructure for water development and delivery. Cooperative utilization of federally and locally owned water supply and distribution infrastructure would greatly expand our ability to move water up and down the Front Range and to water short areas on the west slope. Without this cooperation, water users may be required to build expensive and environmentally damaging new projects that would otherwise be unnecessary. For example, if Denver could expand its north end system at least in part via the Bureau's Colorado-Big Thompson project and Windy Gap, wheeling the water through this system to the northern suburbs Denver supplies, this would save additional pressure on the already over-depleted Fraser and Williams Fork Rivers in the Colorado Basin. Similar opportunities exist on the Arkansas River, with the Bureau's Fryingpan-Arkansas Project, and other Bureau reservoirs in that basin.
- Pursue opportunities to increase conservation for Bureau projects and activities. For example, the Bureau can modify existing water supply and delivery infrastructure to reduce physical losses of water within a system to create additional supplies. (Such supplies can then increase out-of-stream deliveries and/or supplement environmental flows.) The Bureau can also define what constitutes beneficial use for water used from its projects, as well as what constitutes waste.
- When evaluating existing infrastructure for modernization or rehabilitation, consider the outright removal and replacement of existing infrastructure with alternative means of supply, including conservation.

Finally, everyone recognizes that environmental values are an integral part of Colorado's quality of life and increasingly recreation-based economy. We should recognize and develop state policy that ensures that water projects do not have significant adverse environmental effects. Where possible, we should restore the rivers and streams that past water policies have left high and dry.

Protecting Rivers Given Drought & Growth

We value our rivers for their ecological, recreational and aesthetic benefits. Already, too many of Colorado's rivers and streams are dry at some times of the year. This is true even though water drives Colorado's increasingly recreation-based tourism economy. At the same time, there is increasing pressure to withdraw more water to supply Colorado's growing population.

Not only has Colorado's water allocation system failed to protect many rivers and streams for these ecological, recreational and aesthetic benefits, but some of Colorado's water conflicts now exist because the water allocation system that has served for 150 years to deliver water to agriculture and cities, failed to provide adequate protection for endangered and threatened species who rely on Colorado's native water supplies. These species, like all aquatic life as well as those other species who depend on aquatic life or habitat, need some portion of the natural flow regime (i.e., high spring flows, trailing off over the rest of the year) to survive. Yet, there is not enough information available regarding how much of the natural hydrograph must be preserved to sustain native and wild aquatic species as well as riparian functions. Federal agencies could advance the science regarding environmental flows.

We need to protect the environment that makes Colorado the special place it is, even in the face of drought and growth. Trout Unlimited hopes that Colorado can demonstrate to the rest of the West that growth and conservation can proceed hand in hand. Here are a few ways we can do so under existing laws:

- Enforce against the wasteful use of water. Our courts and Constitution impose on every water user a duty to use water in a wise and efficient manner. Unfortunately, the prior appropriation system's "use it or lose it" imperative conflicts with Colorado's constitutional ban against wasting water. Both the state and the Bureau could do a better job of defining waste and limiting diversions to what is necessary for beneficial use;
- Allow federal agencies to help protect the state's rivers. Federal agencies have some authority to protect Colorado streams. Unfortunately, most Colorado water users object to the agencies exercising their authority, even when the agencies are trying to prevent streams crossing national parks, monuments and forests from dry up or serious impairment;
- Convert diversionary water rights to instream flow protection. In some cases, the only way to restore dry streams is by purchasing or leasing senior water rights and then putting that water back into the stream. The Colorado Water Conservation Board currently has the authority both to buy and seek donations of rights for conversion. The Board should pursue these aggressively. There may also be federal funds available for these purposes, for example, from the Land and Water Conservation Fund or through some of the Farm Bill accounts;
- Continue to add to the Board's portfolio of instream flow rights on streams that would benefit from this protection;
- Enforce existing instream flow water rights to the maximum extent under the law. The Board has no field personnel to determine whether its rights are being satisfied;
- Encourage both agricultural and municipal conservation to stretch existing water supplies and thereby reduce the need for new dams and diversions; and
- Invest in better stream monitoring to enhance enforcement of instream flow rights and provide data on stream health. This is another place where the federal government could assist. Research to quantify the flows that will sustain aquatic species has been quite limited. Only within the last decade have articles appeared regarding the importance of maintaining natural hydrographs both to maintain instream and riparian systems and values. More is needed.

To protect the environment, Colorado must also develop new strategies. Other western states have tried and proved effective all of the following:

- Add conservation requirements to decrees for new or changed water right;
- Create incentives for agricultural water salvage as Oregon and Montana have done;
- Condition new or changed water rights to minimize or mitigate the adverse effects on water quality, fisheries and the environment, as the laws of South Dakota, Oregon and Utah provide; and
- Allow existing water rights holders to convert their rights to instream protection, either temporarily or permanently, as is allowed in California, Arizona, Nevada, Alaska, Montana and Oregon.

Finally, in addition to the scientific research mentioned above, there are things federal agencies with land and water management duties in Colorado can do to restore or sustain environmental flows:

- Explicitly integrate environmental restoration into all water management actions by approving future water development, management changes, water supply contracts or transfers only if they are designed and operated to provide a net environmental restoration benefit; and
- Evaluate the possibility of developing leasing arrangements to provide environmental flows with only occasional interruptions in times of extreme drought, such as the state program instream flow donation agreement between the City of Boulder and the Colorado Water Conservation Board.

Avoiding the Crises

In Water 2025, the Secretary of Interior identified the Front Range as one of the West's "red zones," at or near a water crisis. Certainly, most of the region's large water suppliers are currently undertaking projects to deliver more supplies to this fast-growing region. The Cities of Denver, Aurora and Colorado Springs, along with the Northern Colorado Water Conservancy District, which supplies both agricultural and municipal users in the Ft. Collins-Greeley-Loveland area, each have projects for which the NEPA scoping process just closed public comment. There are additional projects that these suppliers are discussing, including another small reservoir on the Eagle River, a Colorado River tributary, which could benefit both the Front Range and West Slope interests. Together, these projects may deliver close to 300,000 new acre feet of water, some of which will come from the Colorado River Basin.

In recognition of the need to work more collaboratively on water projects, many of these same Front Range water suppliers have engaged with some of the west slope counties that would be the most affected as a result of increased transbasin diversions to identify not only the impacts of their projects, but also the water short areas within these exporting counties. The Upper Colorado River Study (UPCO), five years in the making, is a landmark effort to examine ways in which the water transfers everyone knows are coming can be done in a manner that is the least disruptive to local interests.

Unfortunately, not all of Colorado's water suppliers have engaged in such far-sighted planning. In addition, some of Colorado's fastest-growing counties have been relying on non-renewable ground water that is proving not to be as long-lived as had been envisioned 20 years ago. Thus, these localities, many of which are at the southern end of Denver's metropolitan area, need help. One new study suggests that "conjunctive use" of water, i.e., using surface water directly and to replenish ground water in wet years while pumping ground water to repay surface water rights owners during dry years, may work to alleviate the problems in the south metro area. Certainly, TU hopes that the on-going negotiations regarding this approach succeed, given that the alternatives, including new transbasin diversions, are likely to be significantly more expensive and environmentally damaging.

To solve the problems facing the south metro Denver area, as well as other areas around the west, additional federal research and information programs monitoring both surface and ground water resources would be helpful. While ground water development and management is within state authority, federal research could help states and localities better understand this resource, as well as how to accomplish recharge and how to utilize water stored in federal projects to do so. Given the apparent over-reliance on ground water in Denver's southern metropolitan area, such additional research could provide necessary information to water planners that might help them make intelligent choices regarding supply options.

Lastly, another research arena for federal scientists is the likely effects (if any) of climate change on Colorado's water supply. Federal research on the impacts of climate change could help water managers better understand how to plan for, and accommodate, changes in runoff associated with predicted changes in climate. For example, most climate change models predict a loss of runoff in Colorado that far exceeds the state's unused increment of its compact entitlements and equitable apportionment decrees. Validating these model estimates, as well as explaining the system dynamics that might cause this result, would provide important information to local water providers in Colorado and around the West trying to plan for the future. Certainly, no one wants new crises to arise due to failure to plan for an adequate water supply in light of changes to expected supplies resulting from global warming.

Thank you for this opportunity to present my views. I would be happy to answer questions.

[An attachment to Ms. Kassen's statement follows:]

WHAT THE CURRENT DROUGHT MEANS FOR THE FUTURE OF WATER MANAGEMENT IN COLORADO

DANIEL F. LUECKE
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JANUARY 2003

EXECUTIVE SUMMARY

For at least the last three years, Colorado has been in the grip of a serious drought. In the public debate that has emerged from this natural phenomenon, some elected officials and others have called for more large dams. We believe that a review of the hydrology of the state's rivers, the existing water supply infrastructure, and the economic, financial, and environmental consequences of building large new structures suggests that there are more effective and efficient options. In this report, after describing the state of the Colorado water economy and the value of water in various uses, we: 1) identify the principles for assessing future management strategies and projects; 2) review the hydrologic and economic impacts of the drought; 3) appraise the drought response of water managers; and 4) outline the structural and non-structural options for meeting future demands.

Principles for Assessing Water Management Strategies and Projects

Colorado has a surprising abundance of water for a great variety of purposes, despite relatively low and unevenly distributed precipitation and a perception of water scarcity. This abundance is often obscured, however, by the inefficient way in which water is managed and used. Many, if not most, water management utilities are making significant strides toward improving both their efficiency and system reliability. Nonetheless, while individual users may be efficient from their point of view, at higher levels, like watersheds, the potential for improved efficiencies still exists.

Colorado's water economy has passed from its "expansionary phase" into what might be called its "mature phase," in which: 1) water users are linked by elaborate physical systems and are increasingly interdependent economically; 2) new supply options are limited; 3) costs of new supply are rapidly escalating; and 4) federal subsidies have evaporated. Moreover, people now value free flowing streams for their recreational and environmental worth. Applying a widely accepted rule based on the principle that an efficient and fair public policy decision is one that makes no entity worse off for the betterment of another, present day water supply expansion decisions based on large storage projects are almost always wasteful, inefficient, and unfair. Thus, we recommend that, before considering new storage options, we should:

- Invest in conservation;
- Foster cooperation between the two largest user groups—cities and farmers;
- 1Restore and enlarge existing storage facilities; and
- Use system linkages to distribute existing supplies more efficiently.

We further recommend that future water supply management and development efforts should adhere to five basic principles of what we would characterize as "smart storage":

- Make full and efficient use of existing water supplies and usable return flows;
- Expand water supplies incrementally to utilize existing diversion and storage capacities better;
- Recognizing that market forces now drive water reallocation from agricultural to municipal uses, structure such transfers, where possible, to maintain agriculture, but in all cases, mitigate the adverse impacts to rural communities from these transfers;
- Involve affected publics and fully address the inevitable environmental and socioeconomic impacts of increasing water supplies; and
- Recognize the fundamental political and economic inequities and the adverse environmental consequences of new transbasin diversions and emphasize the most efficient utilization of existing supplies to avoid new transbasin projects.

Hydrological Impacts of the Drought

The current drought, which began in 2000 and has continued to the present, has been the most severe on record by several measures. Stream flows in Colorado in 2002 have generally been the lowest in over 100 years and the tree ring data suggest that flows are probably the lowest in 300 to 500 years. In terms of multiple year stream flow deficits, the current drought is worse than the historic droughts of the 1950s and 1970s. While this drought has not lasted as long as the drought

of the 1930s, it is not yet over and it has been more severe than any three-year period of the 1930s.

Economic Impacts of the Drought

The total economic impact of the drought of 2002 is probably in excess of $1 billion, or roughly 0.7% of the state's income, although no one can yet know the precise losses. Losses occurred in several economic sectors, but mostly in agriculture, and water-dependent recreation and tourism. Federal programs and insurance mitigated some losses. Municipal use, including landscaping, is the only sector where more water supply development and/or measures to increase efficiency could have prevented a large fraction of the losses incurred. As a result, the preventable economic losses were about $250 million overall, or 17% of the total loss. Given that even these "avoidable" losses will recur only with another major drought, probably not more than once every half-century, programs to prevent these losses should not cost more than $250 million and probably not even half that.

Managers' Responses to the Drought

Water managers' responses, though late in many cases, did have an effect on customer behavior and did achieve some reduction in customer demand. Initial efforts consisted of educational programs to encourage efficiency and voluntary conservation programs, followed by mandatory restrictions on outdoor water usage. Very few water providers adopted pricing surcharges or placed any restrictions on the issuance of new taps. Many providers invoked restrictions as a precautionary response in recognition that the current drought might not be over.

Water savings achieved by municipal providers' drought response measures varied; but, preliminary results suggest that, on average, municipal water users will have reduced their normal demand by about 10% between May 1, 2002, and April 30, 2003. In most communities the public response to efforts to reduce water use was positive.

Some providers also implemented measures to increase their supplies and reduce their draw on storage reservoirs. These measures included cooperative arrangements with farmers, invoking special drought clauses to relax minimum bypass flows, drilling supplemental wells, trading supplies between users, building facilities to allow better use of existing water rights, and sharing the burden of shortages where the State Engineer was willing to relax administration of the priority system.

Agricultural water users employed a wide variety of strategies to cope with the drought and irrigators were generally more adept than cities at anticipating its onset. Responses included reductions in the amount of acreage planted, changes in cropping mix from full season crops (e.g. feed corn) to partial season crops (e.g. 1- or 2-cut hay and corn for silage). Some farmers decided not to farm this year (2002), and to lease their water supplies to cities instead and many livestock owners sold off significant percentages of their herds in expectation of high-priced and reduced feed supply.

Mechanisms to Meet Existing & Future Water Demands

Looking to the future and the assessment of storage augmentation in managing Colorado's water needs, not all basins are created equal. Some can be eliminated from consideration given current conditions either of hydrology, adequacy of existing storage capacity, economics, project proposals that are already well along (e.g., Animas/La Plata), downstream delivery requirements (e.g., Rio Grande Compact), or some combination of the above. The Rio Grande, the San Juan/Dolores, the Yampa/White, and the North Platte fall into this category. In all of these basins at least two of these factors are relevant. For these reasons, the report concentrates on the question of storage in the Colorado/Gunnison, the Arkansas, and the South Platte.

Reservoirs have been part of Colorado's water development strategy since the late 1800s, in response to its highly variable stream flows. Today, Colorado has more than 7.5 million acre-feet of reservoir storage. About 25% of this capacity directly supports municipal water uses and this fraction is steadily growing, mostly as cities acquire agricultural water rights with their associated storage. In addition, there is the natural storage provided by Colorado's principal underground aquifers. The Denver Basin aquifers contain approximately 150 million acre-feet of recoverable groundwater and aquifers elsewhere within the South Platte, Arkansas and Rio Grande basins contain over 15 million acre-feet.

The traditional purpose for building reservoirs has been to capture excess runoff, which usually occurs relatively infrequently and in large volumes. Consequently, traditional reservoirs are fairly large and located directly in a stream channel. Apart from their well-documented environmental impacts, such large on-stream reservoirs have other major limitations. First, they are relatively costly to build and cannot be built incrementally in response to gradually growing demands. Rather, they must

be fully paid for and constructed "up front," which increases their financial risk and diminishes their economic viability. Second, as a basin becomes over-appropriated, additional runoff-capture storage produces ever-diminishing returns in terms of water supply yield, because unappropriated runoff occurs less frequently and storage carry-over periods become longer. Third, evaporation losses compound the diminishing yield problem, becoming a major limiting factor in reservoirs' ability to provide relief both over extended drought conditions and for severe droughts that occur every few decades or less often. Finally, given the diminishing returns for new storage projects that would be fully integrated into existing systems, storage-yield ratios for projects designed to store wet-year water for drought protection are approaching, if not exceeding, 5-to-1. This means that for 100,000 acre-feet of additional firm annual supply, the reservoir would have to store over 500,000 acre-feet and would cost well over one billion dollars.

If reservoirs are built solely for drought protection, providing a full measure of protection requires keeping these reservoirs almost full until severe droughts are obviously underway. They cannot be used to provide water to existing demands during non-drought periods or to meet the demands of new growth. To do so compromises their drought protection capacity.

Another consideration is that building reservoirs for drought protection does not eliminate the need for municipal water restrictions. Virtually all water providers that enacted watering restrictions in 2002 had sufficient storage supplies to meet their normal demands throughout the year. They enacted watering restrictions as a precautionary measure, recognizing that there is no way of knowing how long the current drought may last.

With these limitations in mind, we find that water providers are increasingly developing "smart storage"—smaller reservoirs designed to optimize already-developed supplies rather than capture unappropriated peak season runoff. Smart storage is now commonly developed as a means for capturing and re-regulating reusable return flows, increasing the yields of exchange rights and augmentation plans, re-regulating the yields of changed irrigation rights to meet municipal demand patterns, and increasing yields from existing water rights and transbasin diversions. In some cases, existing traditional storage capacity has been rededicated to smart storage purposes with resulting increases in yields.

While recognizing the progress water providers are making in developing smaller, off-channel projects, enlargements of existing projects and underground aquifer storage, we think that three basic elements constitute Colorado's water future: 1) conservation and demand management; 2) municipal-agricultural cooperation; and 3) supply integration, management, and development. In the three major basins we have looked at carefully—the South Platte, the Arkansas, and the Colorado—we believe that this combination of measures can meet growing long-term urban demands.

Mr. CALVERT. Thank the gentle lady.

And next, Mr. Richard Kuhn, Club 20.

STATEMENT OF RICHARD ERIC KUHN, GENERAL MANAGER, COLORADO RIVER WATER CONSERVATION DISTRICT, MEMBER, CLUB 20

Mr. KUHN. Thank you, Chairman Calvert and Members of this Committee from Colorado. For the record, my name is Richard Eric Kuhn. I represent both Club 20 and the Colorado River Water Conservation District. Both of those organizations represent the Western Colorado or the Colorado River Watershed within Colorado.

I want to call your attention or address three important issues. First, I want to call your attention to what is called the Colorado 64 Water Principles. Second, I want to emphasize and perhaps second what Peter Binney and Greg Walcher said, that although Colorado certainly faces tough challenges with our water future, we're very busy as well. I don't want to leave you with the impression that nothing is going on because in my 23 years in this business, we've never been busier, more innovative or looked at more cooperative projects than we are doing today.

And then finally, just a real quick discussion of some new challenges we face in the evolving Federal role.

Concerning the Colorado 64 Water Principles, this was developed by Club 20, other organizations or regional organizations such as Action 22, Progressive 15 and government and business leaders within Colorado's urban Front Range. These principles were overwhelmingly endorsed by the Colorado General Assembly. And I think I want to point out as often the case with many large civil works, the political and institutional challenges are often much more challenging than the actual engineering or the technical or even the financial issues. I think that's true of dams, that's true of freeways. That's true of a lot of things.

We see these Colorado 64 Principles as essentially a set of behaviors that if you follow them, it's more likely to lead to success, especially at the local level. The organization, the River District that I represent voted against Referendum A by 87 or 88 to 12. There's a message there and that message is you need to involve the locals. You have to address the local concerns if you're going to use rural or western Colorado water to help solve the Front Range water problems.

Current projects, there are a lot of them under development. Many of them have been mentioned. Enlargement of Elk Head Reservoir off the Colorado River Basin Project, the Eagle River work including Wolcott, Colorado Springs Substitution Agreement, the Douglas County Water Resources Authority Study that's looking at conjunctive use, the Arkansas River Basin Projects that we discussed. Some smaller ones that we're involved with that are not just Front Range, enlargement of existing Stagecoach, Animas-La Plata, Wolford Mountain enlargement, Reuter-Hess, Gerry Creek, Statewide Water Supply Study. So there are many of them.

New challenges. I want to address three things here. First, within Colorado and I think this is very similar to the experience in California, Idaho, Utah, Arizona, the "easy to build" projects were built a long time ago. We're not talking about those that are very simple any more.

If one were to walk along the Continental Divide from Monarch Pass which is east of Gunnison, north 200 miles to near Steamboat Springs and you were to look to the w'est, you would find that the water in the watersheds is already spoken for and in most cases it was spoken for 25 to 50 years ago. So if you're going to use more additional Colorado River water, you're going to go farther to the west, farther to the north, farther to the south. And the Big Straw Project may seem like a joke, but the reality is beginning in 2001, all of 2002 and in most of 2003, you had to go all the way to Grand Junction to find any free water. And by free water, I mean water that's not appropriated and used by others in the Colorado River system. Those were dry years. It's not true of wet years. There are strategies that can make better use of the wet year water.

Second thing I want to mention real quickly is that I think there's increasing concern among the water community that there's a basic water supply paradigm out there that the last 50 years or so of hydrology can represent the future. And there's increasing concern that that's no longer the case.

At a recent NWRA convention, Reclamation Commissioner Keys made it clear that he believes there's something very significant happening out there, but we're not smart enough to know what it is and exactly how it's going to impact us, but as a water community and the simplest water projects take 15 to 20 years to develop, we need to be very aware of what's going on out there. And I see that science as very much a Federal role. That affects California, New Mexico, Arizona, Colorado, everyone.

When I talk about the Colorado River, I often point out you don't have to look to global warming scenarios to be concerned. In fact, I don't look to global warming. I look to the recent history. Instead of going back 100 years where we have gauges, go back 500 years when we can reconstruct with good confidence those gauges and the flow of the Colorado is maybe 10 percent less than what we think it is. And with that I will end my testimony, only indicating that the Federal agencies can play a very productive role, especially in science in cooperation with local entities.

[The prepared statement of Mr. Kuhn follows:]

Statement of Richard Eric Kuhn, General Manager, Colorado River Water Conservation District, Member, CLUB 20

I want to thank Subcommittee Chairman Calvert, Congressman Beauprez and the other members of the House Resources' Subcommittee for this opportunity to share the views of the Colorado River Water Conservation District and CLUB 20 on the important water issues facing the State of Colorado.

For the record, my name is Richard Eric Kuhn. I am here representing the Colorado River Water Conservation District (River District) and the CLUB 20 Water Committee. I am employed by the River District as the General Manager. I have been an employee of the River District since 1981 and General Manager since 1996.

The Colorado River Water Conservation District is the principal policy body for the Colorado River within Colorado. We are a political subdivision of the State of Colorado, responsible for the conservation, use, and development of the water resources of the Colorado River Basin to which the State of Colorado is entitled under the 1922 and 1948 Colorado River compacts. The River District includes all or part of 15 counties in west-central and northwest Colorado.

CLUB 20 was founded in 1953. For over five decades, this organization of businesses, local governments and individuals has been the voice for western Colorado. A board of directors makes CLUB 20 policy, which includes voting membership for each of the 22 counties and the Ute Nations in Colorado West.

For the benefit of the Committee, I would like to briefly address three important water matters. First, I want to call your attention to the Colorado 64 Water Principles. Second, I want to emphasize that the Colorado water community is very busy. While Colorado certainly faces tough challenges with meeting its future water needs, individual water agencies within Colorado have probably never been as busy, innovative or cooperative with their efforts to meet Colorado's future water needs. Finally, I want to address some of the new challenges we face and the evolving role of the Federal government on water issues.

"Colorado 64" Water Principles

I want to call your attention to a set of principles developed through a consensus process by CLUB 20, similar regional organizations, such as Action 22 and Progressive 15, and government and business leaders from Colorado's urban Front Range. The ten principles were overwhelmingly endorsed by the Colorado General Assembly through its adoption of House Joint Resolution 1019 this year.

As is often the case with development and construction of large civil works, the political and institutional challenges associated with water projects are often much more difficult to solve than the technical challenges. In our view, these ten principles represent a consensus list of "behaviors" that, if followed, will increase the likelihood that new or expanded water projects can attain the necessary public support, especially at the local level.

While these principles on their face appear straightforward and simple, the devil, of course, is in the details of implementation. Western Colorado and other rural Colorado residents are obviously very concerned that the growing demand for water

along the urban Front Range corridor will take away our existing economic base, be it recreation or agriculture, our quality of life and our future. The fact that many Colorado counties outside the Front Range, be they in Western Colorado, the San Luis Valley, or in the Arkansas River Valley, voted against the recent Referendum A by margins of eight or nine to one is compelling evidence that water solutions designed to meet the needs of the Front Range at the expense of Colorado's rural areas are, in all likelihood, a road map for failure. The ten principles presented in "Colorado 64" are, in our view, the road map toward success.

Current Projects Under Development

From an outsider's view, based on press reports addressing such issues as the continuing drought in Colorado and the Western United States, the problems with over reliance on groundwater use in the Southern Metropolitan Denver Area and the recent controversy over Referendum A, it may appear that not much is being done to address Colorado's water needs. I believe that the reality is that nothing could be further from the actual truth. Throughout Colorado, water agencies are very busy with the development of new and innovative projects designed to meet Colorado's future water needs. Further, in my 23 years of experience, I've never seen more cooperative projects or cooperative efforts that are designed to develop cooperative or joint projects.

The following is a list of some of the projects currently under development that the West Slope is involved with:

1. The Enlargement of Elkhead Reservoir.

The River District, State of Colorado and the Upper Colorado River Basin Endangered Species Recovery Program are working on a joint project to enlarge the existing Elkhead Reservoir by about 12,000 acre feet. Elkhead Reservoir is located on Elkhead Creek, a tributary to the Yampa River near Craig. The remarkable aspect of this project is the fact that the needs of endangered fish are being met through a cooperative project where the Federal agencies are stepping up to the plate and, through the Recovery Program, participating in a project with broad local support.

2. Upper Colorado River Basin Project.

The River District, Denver Water, Northern Colorado Water Conservancy District, Grand County, Summit County, the Northwest Colorado Council of Governments, Middle Park Water Conservancy District and other local entities are working on a joint effort to examine local water issues in the headwaters of the Colorado River in Grand and Summit Counties (the UPCO Project).

This study has two general areas of focus, the Upper Blue River in Summit County and the Fraser River Basin in Grand County. Denver Water is currently in the process of seeking federal permits to "firm up" and enhance the yield of its North End or Moffat Tunnel Collection System. Northern Colorado Water Conservancy District's Municipal Subdistrict is seeking federal permits to "firm up" the yield of the Windy Gap Project. Both of these projects will further impact the Colorado River Basin in Grand County, a region already heavily impacted by existing transmountain diversions.

The goal of UPCO is to identify and address the local Grand County water supply and environmental needs and develop projects or project operational criteria to meet these needs as components of one or both of the firming projects.

Within Summit County, the UPCO efforts are focused on meeting the recreation and water supply needs of the communities surrounding Dillon Reservoir, which includes four major Colorado ski areas.

3. The Eagle River Memorandum of Understanding.

Within the Eagle River watershed, the River District, Eagle County, local water districts, Vail Resorts, Colorado Springs, Denver and Aurora are working together to identify and implement joint projects. Projects that can be supported by both the in-basin users and the out-of-basin users. This effort is the direct result of the past failure of Colorado Springs and Aurora to obtain local permits for the original Homestake II Project.

4. Colorado Springs Substitution Agreement.

The River District, Colorado Springs, Denver Water, Summit County, Breckenridge and others recently completed a small, but complicated, agreement that firms up the yield of Colorado Springs' Upper Blue River water rights in very dry years. In return, Colorado Springs provides a small (250 acre feet) amount of water for uses on the Blue River above Dillon Reservoir.

5. Douglas County Water Resources Authority Study.

The River District, Denver Water and the Douglas County Water Resources Authority are jointly studying options to address the water needs of the Southern Metropolitan Denver Area which is an area currently relying on deep groundwater use. Options include the development of a conjunctive-use project. This project would supplement groundwater use with water available from the Platte and Blue Rivers in wetter years.

6. Arkansas River Basin Projects.

While not a party to the Preferred Storage Option Project (PSOP) sponsored by the Southeastern Colorado Water Conservancy District, the River District is currently negotiating Memorandums of Agreement (MOAs) with Colorado Springs and the Twin Lakes Reservoir & Canal Company so that the River District Board of Directors can support, in concept, the reoperation of Pueblo Reservoir and a feasibility study to enlarge Pueblo Reservoir. The goal of the MOAs is to preserve the historic compromises associated with the Congressional approval of the Fryingpan-Arkansas Project.

In addition to the above list, the following is a list of some of the other Colorado projects under development:

1) Enlargement of the existing Stagecoach Reservoir (Upper Yampa Water Conservancy District);
2) Animas-La Plata Project (U.S. Bureau of Reclamation);
3) Wolford Mountain Reservoir Enlargement (River District);
4) Colorado Springs Southern Delivery System (SDS);
5) Rueter-Hess Reservoir (Parker Water & Sanitation District);
6) Enlargement of Gerry Creek Reservoir (Ute Water Conservancy District); and
7) Statewide Water Supply Initiative Study (Colorado Water Conservation Board).

New Challenges

Finally, I want to take a few moments to comment on some of the new challenges we face and make a few suggestions on the Federal role to help local agencies address Colorado's water future.

First; within Colorado, the "easy to build" projects were built a long time ago. If one were to walk along the Continental Divide from Monarch Pass east of Gunnison to Muddy Pass, near Steamboat Springs, (several hundred miles), all of the available water on the West Slope, from the Divide, west for 25 to 50 miles has been appropriated and developed, most, but not all, for transmountain uses. To develop Colorado's unused Colorado River water, we either need to devise projects that better manage existing supplies and use more wet year water or go farther west. The recently completed "Big Straw" study by the Colorado Water Conservation Board may seem like an extreme example of this concept. The project proposes to pump water from the Colorado River below Grand Junction to the Continental Divide. However, the reality is that in all of 2001, all of 2002, and most of 2003, one would have had to go all the way to Grand Junction to find any water that was available for use for a new appropriator.

Second; there is increasing concern among the water community that the basic water supply paradigm that the hydrology records of our streams from the past 50 years or so can be used to "predict" hydrology into the future may be WRONG. In a business where even the development of simple projects normally takes 15 to 20 years, climate variability could add major new uncertainties and conflicts over water supplies. At the recent NWRA convention, Reclamation Commissioner John Keys made it clear that he believes something very significant may be happening to our weather patterns, but we're not yet smart enough to know exactly what or why. As a state that obtains most of its surface supply from snowmelt, Colorado may be especially at risk to climate change.

I often point out that one need not look to future global warming scenarios to be concerned. My personal opinion is that there is overwhelming evidence that the long-term average (500 year) flow of the Colorado River system is as much as 10% less than the recent 90 year gauge records and, unfortunately, if this is true, the recent dry years which have drained Lake Powell to below 50% of capacity may be more the "rule" than the "exception."

Finally, I would urge the Water & Power Subcommittee members to continue their role of examining and questioning the Federal government role in addressing Western water issues. Clearly, the role of the Federal agencies in water development has changed. In 1937, when the River District was formed, Coloradans viewed the Federal government, especially the Bureau of Reclamation, as essential to the

development and settlement of the West. Federal assistance was needed to fund and build water projects that would provide reliable water supplies for economies based on irrigated agriculture. The lynchpin of a reliable water supply was then, and still is, upstream storage. However, the reality of today is that in the initial press releases outlining the Department of the Interior's Water 2025 initiative, the words "new water storage" were not to be found.

Even though the days when Congressional appropriations were the primary source of water projects are long gone, federal agencies still have an important role. Almost every project needs Federal permits, right-of-ways or contracts. I would hope that, in the spirit of the 2025 initiative, Federal agencies will become active partners in working with local agencies to develop consensus-based solutions to Colorado's water needs. The River District's Wolford Mountain Project and Elkhead enlargement are good examples of a generally positive partnership between Federal agencies and local water agencies.

[NOTE: Attachments to Mr. Kuhn's statement have been retained in the Committee's official files.]

Mr. CALVERT. Thank you.

Mr. Joel Rosenstein, Vice President of Coloradans for Water Conservation and Development.

STATEMENT OF JOEL ROSENSTEIN, VICE PRESIDENT, COLORADANS FOR WATER CONSERVATION AND DEVELOPMENT

Mr. ROSENSTEIN. Mr. Chairman and Members of the House Committee on Resources, thank you very much for the opportunity to address your group. For the record, my name is Joel Rosenstein. I am here on behalf of the Coloradans for Water Conservation and Development (CWCD). I represent the Denver Metro Chamber of Commerce. I'm on the CWCD's Board of Directors. The Chamber represents about 3,000 businesses in the Metro Denver area.

The CWCD is a recently formed nonprofit corporation that promotes responsible conservation and the development of water resources in the State of Colorado. The CWCD represents a broad coalition of business and agricultural interests, many of which are statewide organizations. Our members include the Chamber, Colorado Concern, the Colorado Farm Bureau, National Association of Industrial and Office Properties, Colorado Apartment Association, the Colorado Association of Home Builders, as well as a number of individuals supportive of our primary objectives.

The severity of the recent drought on Colorado business and agriculture and the need for a unified voice for water development among business and agriculture interests prompted these organizations to form a coalition that, in a very short time, is shaping policy concerning conservation and the development of the State's water resources.

Since 2002, I have chaired the Denver Metro Chamber of Commerce's Water Task Force. This year our task force issued a white paper entitled "Water: What it Means to Business" and I brought with me copies and I'd be happy to share that with you. In publishing the white paper, the Chamber sought to inform and educate its membership and other interested parties about the critical role of water in our State's economy.

The drought impacted nearly every industry and every region of Colorado. Sixty-three of the 64 counties in Colorado received a Federal Drought Disaster designation and for the first time since its creation in 1981, the Colorado Drought Mitigation Response Plan was fully activated.

The Colorado Department of Natural Resources estimates the economic loss to agriculture, tourism, and recreation at $1.1 million. Agriculture producers, especially dry land crop and livestock producers suffered damages totaling more than $450 million. The green industries, which includes landscaping and nurseries, estimate that the 2002 drought resulted in a loss of 15,000 jobs and $75 million in sales. The severe drought caused many municipal water providers in the metro Denver area to impose severe water restrictions which cause lawns, gardens, fields and parks to brown and effected the ways children practice and get involved with organized sports. Wildlife habitat and riparian areas also suffered tremendously. For residents of smaller towns such as Rocky Ford, Beulah, Victor, Cripple Creek and Penrose, the water shortage forced entire towns to have drinking water delivered by truck from other locations.

If Colorado's economy is to remain strong and vibrant, we must take immediate action to maximize our current water resources and develop water resources on both sides of the Continental Divide. Currently, Colorado Water Conservation Board is conducting the Statewide Water Supply Initiative as we talked about that some this morning. And it goes by the acronym of SWSI and SWSI is identifying conservation projects and also existing facilities in need of repair and expansion. And we're going to be looking forward to working with the CWCB and other groups involved with SWSI to make sure that it succeeds.

Each proposed water project will face the unique set of challenges before its completion. All water projects face a very daunting challenge in satisfying the multi-faceted requirements of the various state and Federal agencies having jurisdiction. In our view, the greatest obstacle for any water storage project is securing the necessary Federal permits. An applicant's efforts to secure such permits require significant time and resources. It is important to note that new water storage projects and the repair, rehabilitation and expansion of existing water storage facilities are subject to the onerous permitting process. Even continued operation of existing facilities can become entangled in permitting disputes when existing permits must be renewed.

There is no question that environmental impacts must be assessed when a project is being considered. Environmental Impact Statements required under NEPA are, in theory, an excellent opportunity for project proponents and opponents to assess the positive and negative impacts of a proposed project. It is our understanding that NEPA was intended as a tool for regulators, stakeholders and lawmakers to identify the environmental issues that may arise from a water project.

The Environmental Impact Statement process, however, has evolved in a way that too often does not meet the needs of our citizenry, especially those relating to water development. The process, too often, halts water development projects that are both feasible and have sufficient financial backing.

We respectfully urge Congress to take immediate action to streamline the Federal permitting process. We look to recent actions by Congress where the permitting process has been signifi-

cantly simplified, if not altogether eliminated, for actions deemed to be critical for the health and safety of our citizens.

And for the sake of time, my testimony goes on and talks about some actions that were recently taken by Congress and some that weren't, including the recent energy bill and the Healthy Forests Restoration Act as areas and ways to streamline overly burdensome Federal permitting requirements. Improved coordination among Federal agencies, stronger state roles in the process and limits on appeals are constructive proposals that could help streamline the process.

In addition, limiting the number of alternatives an agency must consider, and expanding categorical exclusions from NEPA to include repermitting, repairing or enlarging existing facilities may merit further consideration.

Thank you very much for the time and the opportunity to testify.

[The prepared statement of Mr. Rosenstein follows:]

Statement of Joel Rosenstein, Vice President, Coloradans for Water Conservation and Development, Representative, Denver Metro Chamber of Commerce

Introduction and Background

Mr. Chairman and members of the House Committee on Resources, my name is Joel Rosenstein. I am here on behalf of Coloradans for Water Conservation and Development (CWCD). I represent the Denver Metro Chamber of Commerce on CWCD's board of directors. I was recently elected vice president of CWCD.

The CWCD is a recently formed non-profit corporation that promotes responsible conservation and the development of water resources in the State of Colorado. The CWCD represents a broad coalition of business and agricultural interests, many of which are statewide organizations. Our charter members include the Denver Metro Chamber of Commerce, Colorado Concern, the Colorado Farm Bureau, National Association of Industrial and Office Properties, Colorado Apartment Association, the Colorado Association of Home Builders, as well as a number of individuals supportive of our primary objectives.

The severity of the recent drought on Colorado business and agriculture and the need for a unified voice for water development among business and agriculture interests prompted these organizations to form a coalition that, in a very short time, is shaping policy concerning conservation and the development of the state's water resources. In fact, we are beginning to work with public and private entities to support the development of additional water projects.

In addition to my involvement with the CWCD, I am a real estate attorney with the Denver law firm of Fisher, Sweetbaum & Levin. I practice real estate, general corporate and some special district law. Since 2002, I have chaired the Denver Metro Chamber of Commerce's Water Task Force. This year, our task force issued a white paper entitled, "Water: What it Means to Business." In researching and drafting the white paper, I was involved in extensive interviews with stakeholders representing an array of business and agricultural interests from around the state. In publishing the white paper, the Denver Metro Chamber of Commerce sought to inform and educate its membership and other interested parties about the critical role of water in our state's economy.

In researching and preparing this white paper, our committee found that, notwithstanding water's centrality to a healthy, vibrant economy in Colorado, the business community has typically been involved only on the periphery of Colorado water policy discussions and debates. The historic drought of 2002 (and, for some areas of the state, 2003) has caused many Colorado business leaders and businesses to focus on the management and development of Colorado's precious water resources.

2002 Drought Impacts

The drought impacted nearly every industry in every region in Colorado. Sixty-three of the 64 counties in Colorado received a federal drought disaster designation and, for the first time since its creation in 1981, Colorado's Drought Mitigation and Response Plan was fully activated. The Conservation and Drought Planning Division of the Colorado Department of Natural Resources estimated the economic loss to agriculture, tourism and recreation—three of Colorado's largest industries—

at $1.1 billion. Agricultural producers, especially dry land crop and livestock producers, suffered damages totaling more than $450 million. The green industries (landscaping and nursery industries) estimate that the 2002 drought resulted in a loss of 15,000 jobs and $75 million in sales.

The severe drought caused many municipal water providers in the metropolitan Denver area to impose severe water use restrictions. These restrictions caused lawns, gardens, fields and parks to brown. This, in turn, forced many school-aged children to find other locations to practice and engage in organized sports. For those unable to find a suitable alternative, they had to do without. Wildlife habitat and riparian areas also suffered tremendously. For residents of smaller towns, such as Rocky Ford, Beulah, Victor, Cripple Creek and Penrose, the water shortage forced entire towns to have drinking water delivered, by truck, from other locations.

Water development and conservation: key elements in securing Colorado's future

If Colorado's economy is to remain strong and vibrant, we must take immediate action to maximize our current water resources and develop water resources on both sides of the Continental Divide. Water conservation measures must be tailored to preserve and sustain return flows for downstream users and to facilitate the recharging of underground aquifers. While conservation is a necessary component of sound water management, conservation, alone, will not meet the growing demands of our state. We must do more to store excess water during times of peak run-off as permitted by our interstate compacts. The storage of such water will benefit instream flows and recreational uses as much as it does municipal, industrial and agricultural users.

Efforts are now underway at the state and local levels to identify projects that are feasible and locally supported. One of the most expedient ways to increase Colorado's capacity is to repair, rehabilitate and restore our existing facilities. According to the Colorado Department of Natural Resources, we are unable to use more than 100,000 acre feet of reservoir storage. Such facilities require capital repairs before they can safely fill to full capacity. Just like conservation, the rehabilitation of existing facilities is an important part of managing our state's water resources. And, like conservation, rehabilitation of existing facilities, alone, is not enough to meet our future needs.

Currently, the Colorado Water Conservation Board (CWCB) is conducting the Statewide Water Supply Initiative (SWSI). The CWCB will issue a report in December 2004. SWSI will identify new local and regional water storage projects with attendant local and regional support. In addition, SWSI will also identify conservation projects and initiatives and existing facilities in need of repair and/or expansion. We look forward to working with the CWCB, local water conservation and conservancy districts and municipalities in moving these projects forward—projects that will meet our future water needs and temper the severity of future droughts.

Federal permitting: A major obstacle to water development

Each proposed water project will face a unique set of challenges before its completion. All water projects, however, face a very daunting challenge in satisfying the multifaceted requirements of the various state and federal agencies having jurisdiction. In our view, the greatest obstacle for any water storage project is securing the necessary federal permits. An applicant's efforts to secure such permits require significant time and resources. It is important to note that new water storage projects and the repair, rehabilitation and expansion of existing water storage facilities are subject to the onerous permitting process. Even continued operation of existing facilities can become entangled in permitting disputes when existing permits must be renewed.

There is no question that environmental impacts must be assessed when a project is being considered. Environmental Impact Statements (EIS) required under National Environmental Policy Act (NEPA) are, in theory, an excellent opportunity for project proponents and opponents to assess the positive and negative impacts of a proposed project. It is our understanding that the NEPA process was intended as a tool for regulators, stake holders and lawmakers to identify the environmental issues that may arise from a water project. It is our further understanding that the environmental analyses to be conducted pursuant to NEPA should result in a balancing act between the environment and the diverse needs of our citizenry. This EIS process, however, has evolved in a way that, too often, does not meet the needs of our citizenry, especially those relating to water development. The process, too often, halts water development projects that are both feasible and have sufficient financial backing.

When Secretary of the Interior Gale Norton, then acting as Attorney General of the State of Colorado, testified before the full House Resources Committee during

a 1998 Oversight Hearing on NEPA, she drew a grim picture of the burdensome nature of EIS process. Of the final EISs filed in 1996, Norton stated, the longest had 1,638 pages of text, while the average was 572 pages, including 204 pages of NEPA analysis. In preparation of an EIS, a project proponent must expend significant time and resources. Such are spent with no reasonable assurance that the proposed water project will ultimately prevail or prevail on a timetable that meets the growing demands of its proposed users. For instance, the Parker Water and Sanitation District has spent approximately 18 years and millions of dollars trying to permit its off-channel reservoir, Reuter-Hess. Permitting and red tape can mire down even the most environmentally benign water projects. Rancher John Miller from Montezuma County spent $20,000 out of his own pocket on permitting to clean out an irrigation ditch that predated the San Juan National Forest.

We respectfully urge Congress to take immediate action to streamline the federal permitting process. We look to recent actions by Congress where the permitting process has been significantly simplified, if not altogether eliminated, for actions deemed to be critical for the health and safety of our citizens.

Models for future permitting reforms

Congress had considered permitting reforms before. The most recent energy bill, the Chairman's CALFED bill, and the Healthy Forests Restoration Act of 2003 addressed ways to streamline overly burdensome federal permitting requirements. Improved coordination among federal agencies, stronger state roles in the process and limits on appeals are constructive proposals that will help streamline the process. In addition, limiting the number of alternatives an agency must consider, and expanding categorical exclusions from NEPA to include repermitting, repairing or enlarging existing facilities may merit consideration.

The Healthy Forests Restoration Act of 2003 (Act) provides one model of federal permitting reform. The Act limits the number of alternatives that must be considered when assessing environmental impacts. Perhaps, just as important as examining the alternatives of moving forward with a particular project or initiative, the Act requires that the federal government consider the impact of not moving forward. With respect to public land management, the cost of not moving forward with forest management may be the increased risk of catastrophic wildfires that ravage lands and habitat and endanger human lives and homes. In the case of water development, the cost of not moving forward is no less catastrophic: loss of critical riparian and wildlife areas, impacts to drinking water supplies, soil erosion and dust storms (which Colorado experienced in the 2002 drought), the strain on existing water capacity, and the loss of the quality of life that makes Colorado a very desirable place to live, work and raise a family.

The Act also set forth a tiered approach to deal with federal permitting. In the Act, there are specific federal activities, such as those involving federal agency involvement in developing a community wildfire protection plan, that are deemed not to constitute a federal agency action under NEPA (42 U.S.C. 4321 et seq.).

We acknowledge that it may not always be appropriate to exempt completely a federal agency action from NEPA. In these instances, it may be helpful to limit the scope and duration of the NEPA process. The Act provides that certain federal activities, such as those involving wildland-urban interface, do not require the Secretary of Interior "to study, develop or describe more than the proposed agency action and one action alternative in the environmental impact statement prepared pursuant to section 102(2) of the National Environmental Policy Act of 1969."

We believe that similar actions must be taken with respect to federal laws, such as NEPA, that relate to the permitting of water projects in Colorado. Earlier in my testimony, I referred to the ongoing efforts of SWSI to identify existing storage facilities in need of repair and rehabilitation and new water projects. We propose that with respect to those projects in need of repair and rehabilitation, as identified by SWSI, such should not be categorically subjected to a NEPA or similar review process. And, in connection with new water projects identified by SWSI, they should be subject to a less burdensome federal permitting process whereby the proponent must only submit one alternative in preparing the EIS.

Thank you, Mr. Chairman, members of the Committee, CWCD would be happy to work with you on these, or other ideas, to help ensure future generations have adequate water supplies.

Mr. CALVERT. I thank the gentleman.

Next, Mr. Alan Foutz, President, Colorado Farm Bureau is recognized for 5 minutes.

STATEMENT OF ALAN FOUTZ, PRESIDENT, COLORADO FARM BUREAU

Mr. FOUTZ. Mr. Chairman and members of the Subcommittee, good morning. My name is Alan Foutz. I am President of Colorado Farm Bureau. I currently farm about 1200 acres of wheat and sunflowers and millet in the Akron area. I would ask that as the winter gets worse that you feed your birds. That certainly helps me out.

I appreciate the opportunity this morning to provide comments to the Subcommittee on Water and Power, specially regarding the status of Colorado's water supply and possible ways to increase such supplies. I think it's interesting and important to note that the Colorado Farm Bureau is the State's largest farm organization and we do represent a majority of our State's farmers and ranchers.

It's important, I think, to understand for the Subcommittee the reason that agriculture finds it so important to be a part of this Subcommittee hearing today. Of the approximately 6 million acre feed that are stored in the State, Colorado agriculture has the rights to use 85 to 90 percent of that 6 million acre feed, and so in fact, we are probably the largest stakeholder in terms of use of the water that is currently stored in the State of Colorado.

Because of that and because of the increasing urban population which is being accompanied by industrial growth, that simply produces significant impacts for those of us in the agricultural community.

Federal mandates for endangered species habitat, improved water quality, those also simply increase demand on the water that we currently store and while we understand that the endangered species must be taken into account, we believe that listing of species based on speculation rather than on sound science often prohibits much of our needed water development.

We feel the same, sometimes of water quality and although water quality is important to all of us, we need to understand that as we begin to look at those mandates, there needs to be some consideration about the use and where that goes and the impacts that those Federal regulations do have on us.

Because of the huge impact that water has in the State of Colorado, and on the agricultural industry, 2 years ago I put together a Colorado Farm Bureau Task Force and the goal of that task force was to provide an opportunity and a forum for all of the water using entities to come together so that we could try to begin to bring partnerships and form partnerships within the water community so that we could come to some understanding and some reasonable assurance that there was going to be water available for agriculture.

Gentlemen, the losers in this discussion of water is agriculture. The municipalities aren't going to lose. They have the money to buy the water. Industrial use has the money to buy the water. The only ones who have most of the water in this state is agriculture and without increasing our supplies, the loser in this argument is going to be the agricultural industry in the State of Colorado. As you've heard, it is a huge industry.

Mr. Chairman, Colorado Farm Bureau's member-driven policy states that we recommend that our number one priority for Colorado be the maximum beneficial utilization of Colorado water under the present system for the State and that a concerted program be initiated to build storage and water facilities and improve existing structures.

Our policy also states that we recommend that the State of Colorado take aggressive action in funding and development of multiple water projects within the State with the objective of retaining all of the Colorado water that's owned and that can be used in any one of our numerous basins. That was the reason why we supported very vigorously Referendum A.

Colorado Farm Bureau also believes that Colorado should, and this is extremely important, protect the prior appropriations system that's been the basis of our water structure for a 150 years. We need to maintain that. It works and we need to maintain that.

We need to make sure that we maintain our Colorado interstate water compacts. We need to make sure that we maintain our existing water rights systems so that we when those people who own those water rights can utilize them on a free market system, and I think some of these solutions to the problem is really free market in some cases. There's going to be some that might argue that, but I think that may be the case.

We also need to be concerned about when we get to talking about inter-basin transfer, that there is, in fact, some way to help mitigate the movement of that water whether it's an economic mitigation or whether it may be an environmental mitigation, whatever that mitigation needs to be locally, that's obviously something we need to do.

In order for the State of Colorado to meet the current and future water demands, policymakers, users and managers should strongly consider a mix of the several potential water development opportunities that we have. I think the first thing that we need to look at is the development of the unappropriated waters that do leave the State and those numbers have existed. We know there's somewhere between 450,000 acre feed and a million and a half acre feed.

Second, we need to develop cooperative water resource planning processes for local, regional and state agencies.

Third, we need to develop alternatives for further funding of projects, whatever that might be, both private and public.

Fourth, we need to encourage conservation and carry our programs to educate the public about conservation and the impacts, both negative and positive that conservation has. And fifth, we need to develop additional water supplies by supporting large and small scale projects.

Mr. Chairman, the Colorado Farm Bureau is dedicated to helping further the water programs in Colorado and in furthering partnership so that we can move forward on this issue in the State.

Thank you.

[The prepared statement of Mr. Foutz follows:]

Statement of Dr. Alan Foutz, President, Colorado Farm Bureau

Good morning. My name is Alan Foutz. I am President of the Colorado Farm Bureau and currently farm 1,200 acres of wheat, sunflowers and millet in Akron. I appreciate the opportunity to provide comments to the Subcommittee on Water and

Power regarding the status of Colorado's water supply and possible ways to increase such supplies. Colorado Farm Bureau is the state's largest agriculture organization with over 28,000 members.

Today's widespread delivery facilities provide such easy access to water that most people take it for granted, even in Colorado, a state where water is considered the most precious natural resource. Like other western states, Colorado's settlement and subsequent economic progress was possible only by developing water resources from surface waters and underground aquifers.

Colorado is one of only two states in the nation that depends solely on precipitation for our water supply. Our state also supplies water to many of our eastern and western neighbors. Drainage throughout the state occurs through three separate systems, with all rivers originating in the Colorado mountains. All drainage west of the Continental Divide flows into the Colorado River, through Nevada and Arizona, and eventually out to the Gulf of California. The major rivers east of the Continental Divide are the North and South Platte, Arkansas, and the Rio Grande. Drainage east of the Continental Divide flows into the Gulf of Mexico by the South Platte and the Arkansas rivers which are part of the Mississippi system. Water from the eastern slope of the San Juan Mountains drains into the Gulf of Mexico by the Rio Grande River.

Agriculture is the third largest industry in the state of Colorado, with revenues reaching $16 billion. Agriculture uses 85% to 90% of Colorado's water to produce food and fiber. Producing a typical lunch—hamburger, french fries, and a soft drink—requires 1,500 gallons of water. This includes the water needed to raise the potatoes, the grain for the bun, the grain needed to feed the cattle, and the production of the soda.

Water that is not consumed by crops returns to the river system where it is picked up and used again and again before it leaves the state. We estimate it is diverted, applied to beneficial use and a portion returns to the stream for subsequent diversion seven times from the headwaters of a major river in Colorado to the state line where it fulfills our interstate compact obligation.

Surface water supplies, developed from natural streams, represent the largest source of fresh water supplies. The eastern plains and western plateau regions are semiarid, while the central mountains collect abundant precipitation during the winter and snowmelt in early spring. This water feeds four of the West's major river systems: the South Platte, Arkansas, Rio Grande, and Colorado. Mining and agricultural interests were the first to tap water resources from these stream systems.

The increase in population accompanying industrial growth has produced significant increases in the water demand by municipalities, particularly those on the eastern front range. Continued population growth, federal mandates for endangered species habitat and improved water quality will increase future demands for water supplies. While we understand that endangered species must be taken into account, we believe that listing a species based on speculation rather than sound science often prohibits much-needed water development.

Colorado is currently experiencing one of the worst droughts in our state's history. Most people believe that we are in the third consecutive year of a drought cycle in Colorado and that the state is in the fifth year of below-average snow pack. Based on the available information we have now, we are in the worst drought since 1977, with some river basins below 10 percent of their normal water capacity. Some estimates say that this is the worse drought in the last 350 years.

Typically runoff in Colorado equals 16 million acre feet. During this drought, however, runoff is approximately 6.4 million acre feet. Today, our reservoir capacity is less than 6.5 million acre feet. To put this in perspective, one acre foot is equal to 325,851 gallons of water or enough to fill a football field one foot deep.

Colorado farmers and ranchers depend on a reliable water supply to produce the highest quality of food for U.S. consumers. According to the Colorado Department of Agriculture, total water diversions in Colorado were 21.9 million acre-feet, with irrigation withdrawals accounting for 11.5 million acre-feet or 53% of all water diverted. The value of crops produced in Colorado is around $1.3 billion with three-fourths of this total value depending on irrigation. These crops form the basis for Colorado's livestock industry, which produces $3.2 billion in sales.

Right now, this high standard and our way of life are in jeopardy due to our lack of water and our inability to store the water we are entitled to under our interstate compact agreements. Water conservation practices are a way of life for farmers and ranchers in Colorado. We inspect water systems before water begins to flow, clear ditches of debris and make sure ditch banks are sturdy, check nozzles for leaks on sprinkler systems, rotate grazing for adequate rest and regrowth, maintain riparian buffers, filter strips and grassed waterways as conservation buffers near streams,

use conservation tillage to increase soil moisture and reduce evaporation, and plant crops that withstand dryness.

Water conservation practices, while important, will not satisfy future water supply needs alone. We must store the water that is rightfully ours instead of watching it flow freely from our state. Colorado is entitled to more than 16 million acre feet per year but we only store 6 million. Storage options range from constructing new reservoirs to enhancing wastewater reclamation opportunities.

Colorado Farm Bureau's member-driven policy states that we recommend that the number one priority for Colorado be the maximum beneficial utilization of Colorado water under the present system for the state, and a concerted program be initiated to build storage and water facilities. Our policy also states that we recommend the State of Colorado take aggressive action in funding and development of multiple water projects within the state with the objective of retaining all the Colorado-owned water that can be used by any basin within the state.

Colorado Farm Bureau also believes Colorado should protect the prior appropriations system, Colorado interstate water compact entitlements, existing water rights when interbasin water transfers occur, and allow the free market system to work in the pricing of water. In order for the State of Colorado to meet current and future water demands, policymakers, users, and managers should strongly consider a mix of several potential water development opportunities.

First, we must develop unappropriated supplies. At least 450,000-1.5 million acre-feet have been identified as new developable surface water supplies. Second, we must develop a cooperative water resource planning process for local, regional, and state agencies. Third, we need to develop alternatives for further funding, both private and public, for water project development. Fourth, we must encourage conservation and carry out programs to educate the public and water user entities about the importance of water efficiency as well as the importance of water resource development to our state's economy. Fifth, we must develop additional water supplies by supporting large- and small-scale water projects, wastewater reuse, and groundwater recharge programs. Finally, we must enhance and expand statewide computer databases and decision support systems to improve development and management of existing supplies.

Water is fundamental to all life forms, affecting all ecosystems and the various uses to which it is put. Often, these uses compete quantitatively and qualitatively with one another. At the same time, agriculture, industry, and rapidly expanding populations are increasing the demand for this limited resource. As a state, our challenge is to come together and build new water projects that will benefit every corner of our state and protect the water we do have.

Colorado Farm Bureau looks forward to working with the Committee on western water issues and developing a strategy to meet our demanding water needs. Thank you.

Mr. CALVERT. I thank the gentleman.

Next, Ms. Patricia Wells, General Counsel, Denver Water, Denver, Colorado.

STATEMENT OF PATRICIA WELLS, GENERAL COUNSEL, DENVER WATER, DENVER, COLORADO

Ms. WELLS. Thank you, Mr. Chairman, and Members of the Colorado Congressional Committee. Denver Water is the largest municipal water supply in Colorado serving more than 1.2 million people. While we're drinking bottled water up here today, I assure you that the water from the tap will be just as good.

Mr. CALVERT. I hope so because we're drinking the water from the tap.

Ms. WELLS. Even better.

Mr. CALVERT. And for the record I would point out that the water you're drinking is Arrowhead Water which is imported from California.

[Laughter.]

Ms. WELLS. Denver's water gets its supply from both the South Platte and the Colorado River. I've described in my written testi-

mony the 1996 integrated resource plan what Denver Water did to determine how we will meet our build out need of 475,000 acre feed and it's basically a tripartite approach, if you want to call it that. First, conservation. Our plan calls for 16,000 acre feed to be gained through conservation before the Year 2030.

In addition, the recycling of water is a very important way to increase supply. We have a $60 million recycling water treatment plant that will go on-line this spring to supply 15,000 acre feed of water into our customers for nonpotable uses and the third prong is new supply. We looked first at refinements of our system. It's been around for a long time. We have some ditch rights, for example, that we can convert to municipal use.

We're looking at joint projects with our suburban neighbors and also with our West Slope partners and we're also looking at some new projects, for example, enlarging existing reservoirs, perhaps building a new small reservoir to solve a problem that we currently have on the north side of our system.

For the rest, the topic of this hearing was to be options for increasing supply or improving water use efficiencies, so I thought I would make some suggestions as to how, in fact, Congress could help with both of those. For enhancing supply, one thing that Congress could do is that right now the Drinking Water State Revolving Fund created by Congress that funds a lot of local water supply projects is by regulation prohibited from being used for reservoirs, reservoir rehabilitation or the acquisition of water rights.

In Colorado, that's how we tend to enhance supply and those projects are not available. This is only a regulatory prohibition, not a statutory prohibition and Congress could probably maybe fix that.

Second, water transfers are currently not subject to regulation by discharge permits, NPDES discharge permits. However, two Federal circuit courts have determined that they would be. In Colorado, and all the western states, how we create water supplies is by moving water. We do it through ditches, tunnels, canals, millions and millions of facilities that have never been subject to discharge permits.

Two cases have held that they must be. One of those cases is currently going to be heard by the U.S. Supreme Court in January. It's called the Miccosukee Tribe of Indians versus the South Florida Water Management District. That case has great import for all of us in the West. If we have to have a discharge permit to move water through the Roberts Tunnel then we have a problem. EPA could say you can't move—the issue is the water in the Blue River is different than the water in the Platte River and we move water from the Blue to the Platte. It's different. And the Courts have determined that that is, that difference is addition of pollutant, even though we're not adding anything to the water by moving it.

So the issue in the case is as often is the case congressional intent. So if Congress did not intend to regulate all these ditches, dams, canals under the NPDES discharge permits, you can probably maybe fix that as well. Third, the Endangered Species Act is, in fact, a problem for existing supplies as well as for new supplies. I do not think that the Endangered Species Act should be weak-

ened. I don't think the public would stand for it. But I do think there are a couple of things that you could do to adjust it.

First, which isn't an adjustment at all and that is to provide money for recovery programs. So long as there are recovery programs in place for the species, then projects can go forward. That's happened on the Colorado with the four endangered fish. We're still in the balance and whether that's going to be true on the Platte for the birds in Nebraska, our recycling plant could be in danger, if there is no recovery program for the birds in Nebraska.

In addition to money, the minor adjustment would be for Congress to change the timing of critical habitat designation from within a few months after listing to the recovery program. What happens now is critical habitat is supposed to be designated concurrently or within a year after listing. At that time, the Federal government, the Fish and Wildlife Service doesn't know anything about the species or what they need. That can only be done really in the context of recovery program where you know what you're doing, you have goals and you set about to do it.

A second item under the Endangered Species Act, which is the subject of supplemental testimony I have provided at the desk, is a decision yesterday that came down that has put into question the "No Surprises Policy" currently available to people who do habitat conservation plans. It's very important. Three hundred seventy-nine habitat conservation plans covering 30 million acres are currently enjoying the "No Surprises Policy" assurance and the Court has held that that was not adopted properly.

My time is up and I can't get to what Congress could do to help for re-use and conservation, but it is in my written testimony.

Thank you.

[The prepared statement of Ms. Wells follows:]

Statement of Patricia L. Wells, General Counsel, Denver Board of Water Commissioners

INTRODUCTION

Denver Water is an agency of the City and County of Denver, the largest municipal public utility in Colorado, serving water to over 1 million people, about one-quarter of the state's population. Because Denver was one of the earliest communities in Colorado, and thanks to a number of visionary leaders in the early 20th century, Denver Water enjoys relatively senior water rights, and storage and transmission facilities, that are the envy of water suppliers nationwide.

DENVER WATER'S APPROACH TO WATER SUPPLY

Denver Water completed an Integrated Resource Plan (IRP) in 1996 that identified an overall requirement of 100,000 more acre-feet of firm yield in order to serve our combined service area to geographic build-out. A more detailed description of the IRP and Denver Water's resulting activities appears later in this testimony. Upon completion of the IRP, the Denver Water Board determined to produce the increased supply needed until 2030 through three basic approaches:

1. Conservation—Elements of conservation include the "natural replacement" that occurs when older water fixtures are replaced with newer, more efficient fixtures; incentive programs funded by Denver Water; and regulatory programs implemented by both Denver Water and general purpose governments. The IRP concluded that 16,000 acre-feet of "supply" could be created through conservation. (An average single family residence in Denver Water's service area uses about .6 acre-foot of water per year.)
2. Reuse or recycling—The IRP proposed that approximately 15,000 acre-feet of new supply be created by treating effluent from a wastewater treatment plant to non-potable standards to be used for irrigation and industrial purposes. For every acre-foot of recycled water used, one less acre-foot of potable water needs to be stored, treated and distributed. As a result of the IRP analysis, Denver

Water's recycled water plant was put on a fast track. The $60 million treatment plant is nearly completed and will begin delivering water next spring.

3. New supply—While new supply might be viewed as the traditional solution to water needs, the IRP emphasized alternatives to Denver Water's time-honored approach of unilateral construction of new reservoirs. The IRP recommended system refinements, which could include changing ditch irrigation rights to municipal use, conversion of park irrigation from potable to non-potable water, and improvements in distribution facilities, and joint-use cooperative projects developed with partners. In addition, the plan contemplated new supply projects that could include enlargement of existing reservoirs or construction of relatively small new reservoirs.

With regard to Denver Water's water supply, or any other water supply in Colorado, the truth discerned through the three-year IRP process is that there is no silver bullet. No single approach, much less a single project, can resolve the need for water supply. Conservation is very important and can provide the least-cost supply, but it is not a panacea. Certainly, any entity contemplating new supply must first ensure that it has placed the maximum reasonable reliance on conservation in order to minimize the costs of new supply and maximize the acceptability of the project. Reuse of effluent is also important. If the appropriate water rights exist, the supply of effluent is dependable and relatively drought-proof. However, reuse of effluent requires expensive treatment capacity and also results in lower flows in streams to which the effluent is presently being discharged. New supply in the form of reservoirs is also beneficial, but presents the well-known tension between the environmental benefit of water left in streams and the human benefit of water used for domestic purposes. All three approaches should be included in efforts to enhance water supply.

OPTIONS TO INCREASE WATER SUPPLY

As discussed above, new supply projects are not the sole or even the primary solution to water needs. However, when new supply is an appropriate solution, there are several ways in which Congress could improve the likelihood that viable projects will, in fact, be implemented.

1. Remove regulatory limitations on the use of federal loan funds. The Safe Drinking Water Act Amendments of 1996, P. L. 104-182, created the Drinking Water State Revolving Fund (DWSRF) to provide financial assistance to public water systems. Although the statute does not require such a result, see 42 U.S.C. § 300j-12 (a)(2), EPA regulations do not permit the funds to be used to enhance water supply, at least in the ways that supply is normally enhanced in the West. While eligible projects are allowed to "rehabilitate or develop water sources," EPA specifically prohibits use of the funds for reservoirs, dams, dam rehabilitation or water rights 40 C.F.R. § 35.3520(e). This regulatory limitation has caused problems for water projects in Colorado; Congress could easily rectify this situation by means of instructions to EPA.
2. Clarify that water transfers do not require NPDES discharge permits. The judiciary has recently increased dramatically the scope of the Clean Water Act's requirement that any addition of pollutants to the nation's waters be subject to an NPDES permit issued by EPA. Despite 30 years of contrary experience under the Clean Water Act, two federal circuit courts have held that transfers and diversions of natural, untreated water as part of water supply or water quality systems are subject to regulation by means of NPDES permits. Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York, 273 F.3d 481 (2nd Cir. 2001); Miccosukee Tribe of Indians v. South Florida Water Management Dist., 280 F.3d 1364 (11th Cir. 2002). It is almost impossible to overstate the danger these cases pose to the operation of water supply systems, both current systems and certainly any new supply project. More than two million dams and countless other diversion structures throughout the United States would become subject to permit requirements that might well be impossible to satisfy. Fortunately, the U.S. Supreme Court will hear one of the cases in January. South Florida Water Management District v. Miccosukee Tribe of Indians, et al., No. 02-626. However, a decision would probably not be forthcoming for several months, and judicial interpretation is not always predictable. Since the issue in the litigation is whether Congress intended to regulate water transfers diversions as point sources rather than non-point sources, compare 33 U.S.C. § 1362(12) with 33 U.S.C. § 1314(f)(2)(F), Congress has the ability to clarify its intent and provide definitive protection for the water supply systems on which the nation depends.
3. Ensure that the Endangered Species Act does not prohibit water supply projects. In the semi-arid West, the competition for water is fierce, and the

competitor with the trump card is the Endangered Species Act. If the U.S. Fish and Wildlife Service determines that flows are needed by a threatened or endangered species, then water is not available to be developed or stored for human needs. See Rio Grande Silvery Minnow v. Keys, 333 F.3d 1109 (10th Cir. 2003)(holding that the Bureau of Reclamation must reduce deliveries required by contracts that pre-date the ESA to protect the minnow). The fundamental protections of the ESA should remain in place. The ESA works to protect important habitat and ecosystems, and the public supports its purpose. What would be most useful to water suppliers is the development and implementation of recovery programs for all species that have been listed. Where recovery programs are in place, water development can occur. For example, the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, developed over many years, has allowed existing and new depletions to the Colorado River to occur without jeopardy opinions. Congress should provide significantly increased funding for recovery programs under the ESA. To make the development of recovery plans more workable and rational, Congress should also amend the statute to move the designation of critical habitat to a more sensible place in the process, the development of the recovery plan. At present, the statute requires designation of critical habitat "concurrently" with the listing of the species, or at least within one year 16 U.S.C. § 1533(a)(3)(A) and (b)(6)(C). This requirement forces Fish and Wildlife either to make completely uninformed decisions about habitat and, in the interest of caution, designate much more area than necessary, or to violate the statute. Fish and Wildlife has been placed in the untenable position of routinely losing lawsuits for failure to designate critical habitat within the statutory deadline, e.g., Forest Guardians v. Babbitt, 174 F.3d 1178 (10th Cir. 1999), and then losing another lawsuit because its hasty compliance resulted in an inadequate designation. E.g., Middle Rio Grande Conservancy District v. Babbitt, 206 F.Supp.2d 1156 (D.N.M 2000). Congress can rectify this counterproductive dilemma by including critical habitat designation as part of development of recovery plans, and providing sufficient funding that recovery plans can actually be implemented.

4. Clarify the meaning of "waters of the United States" under the Clean Water Act. In the years since the passage of the Clean Water Act in 1974, the extent of its jurisdiction has been subject to "regulatory creep." The Act regulates under the NPDES program discharges into "navigable waters," 33 U.S.C. § 1344(a), which are defined in the statute as "waters of the United States." 33 U.S.C. § 1362(7). The U.S. Supreme Court recently held that the Corps of Engineers had exceeded its authority when it interpreted the Act to cover an isolated, intrastate gravel pit Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, 121 S. Ct. 675 (2001). However, a new threat to water suppliers arises from a Fourth Circuit case, United States v. Deaton, 332 F.3d 698 (4th Cir. 2003), which upholds the Corps' assertion of jurisdiction over a roadside drainage ditch. The Corps' theory is that the drainage ditch eventually empties into a navigable water. Of course, that is what drainage ditches are intended to do, transport storm water and other surface water off roads and developed land into streams and rivers. These drainage ditches are considered sources of pollutants at the point where they discharge into streams and rivers, and are regulated under storm water management programs. It is difficult to see how they can also be "waters of the United States." The problem for water suppliers is that water systems frequently include ditches of many types, and any eventual connection with a stream could subject them to control by the Corps of Engineers and EPA under the Clean Water Act. Congress could clarify the definition of "waters of the United States" to exclude ditches and other man-made structures.

OPTIONS TO IMPROVE WATER USE EFFICIENCY

As discussed above, conservation and reuse can be important sources of water supply. Congress has an important role to play in enhancing the productivity of these potential sources.

1. Create water efficiency standards for appliances. The federally mandated production of low-volume toilets has been very effective in helping to reduce indoor water consumption. Congress could further increase indoor water conservation by creating water efficiency standards for other water-using appliances, such as dishwashers and clothes washers. These standards could either be mandated, as was the case for toilets, or could form the basis for water efficiency product labeling. Denver Water offered a rebate for horizontal axis clothes

washers during the recent drought, and the response from our customers was overwhelmingly positive.

2. Enhance the effectiveness of irrigation systems. Automated irrigation systems are becoming the norm in residential developments in the West. Since irrigation constitutes more than 40% of Denver Water's water use, any savings in irrigation enhances overall supply. Congress could facilitate the manufacture of more efficient irrigation systems in two respects. First, water efficiency labeling could be initiated, so the customer could determine in advance which system would produce greater efficiency. Second, Congress could mandate that new controllers include a rain sensor, which prevents operation of the irrigation system during precipitation events. Since rain sensors avoid wasting water, their inclusion in new irrigation controllers would benefit both consumers and water providers.
3. Prohibit restrictive covenants that restrict water-wise landscaping. Although restrictive covenants are contractual, when they violate important public policy, they are unenforceable. Several local governments have prohibited new covenants that require a certain amount of turf, or restrict the use of Xeriscape or other drought-tolerant landscaping. E.g., Denver Rev. Municipal Code § 57-100;Colo. Rev. Stat. § 37-60-126(g)(11). Congress could greatly enhance the use of water-wise landscaping, resulting in significant water savings, if it declared such restrictive covenants to be contrary to public policy.
4. Increase funding for recycling of water. Recycled water projects are eligible for loans under the Water Pollution Control State Revolving Loan Fund established under the Clean Water Act. However, such funding has in the past been quite limited. As the technology for recycling water has improved and public acceptance has grown, this would be an opportune time to increase funding for recycling projects.

DENVER WATER'S INTEGRATED RESOURCE PLAN

Denver Water's approach to water supplies has undergone profound change during the past several years. In part, this change has resulted from a new and complex political and regulatory environment that culminated in the federal government's 1991 veto of the Two Forks project. Two Forks was designed to capture and store an additional 1.1 million acre-feet of water and was intended to provide for the needs of much of the metropolitan Denver area well into the 21st century.

With the project's veto, Denver Water moved to redefine the boundaries of its service area and reassess its traditional assumptions for providing the water supply needed to meet customer demand within that area. This reassessment was accomplished through Integrated Resource Planning (IRP). Such planning includes techniques to factor in changing public and regulatory sentiment and new technologies, as well as traditional engineering and financial aspects of water utility planning.

A principal policy decision made in the context of the IRP process was that Denver Water would not attempt to expand its service area. Denver Water defined a "Combined Service Area" comprised of the City and County of Denver and 78 suburban Contract Distributors. See Attachment A. Denver Water committed to serve the build-out needs of this area, but also agreed to provide fixed amounts of water to certain entities outside the Combined Service Area. This approach allows Denver Water to estimate with more certainty future water needs, as growth within the Combined Service Area proceeds to build-out. The Denver Water Board decided to look outside its Combined Service Area for potential efforts, only when such efforts would provide a substantial benefit to the Combined Service Area.

In the 1996 IRP, the Board indicated that no single option or project would be sufficient to close the 100,000 acre-foot shortfall between its available supply and demand at build-out. As a central feature of its resource strategy, the Board emphasized the need for a strong water conservation ethic and additional cost-effective water conservation measures. The Board also committed itself to development of a non-potable recycled water project and small-scale system refinements, such as conversion of park land from potable to non-potable irrigation. The Board indicated that new surface water storage would likely be needed toward the end of the near-term time frame to supplement conservation, reuse and small-scale refinements. To implement its near-term and long-term strategies, the Board set forth certain guidelines:

- When meeting future needs, including development of cooperative projects with others, the Board will pursue resource development in an environmentally responsible manner;
- The Board recognized that "cooperative actions" with other metropolitan entities outside its service area can enhance its near-term and long-term strategies,

and directed staff to explore such cooperative actions with entities grouped by quadrants of the metropolitan area;

- The Board cautioned that, as a result of maximizing use of its existing supply, flows in the Platte would be reduced downstream north of Denver, and fluctuation of its reservoirs, such as Dillon Reservoir, would be increased; and
- The Board emphasized that it would not undertake future structural projects on the Western Slope unless such project is developed cooperatively with Western Slope entities for the benefit of all parties concerned.

Supply and Demand. As part of its 2002 update of the IRP, Denver Water revisited various water supply and demand management options. The results of that update show that the Denver Water Board currently has a supply of 375,000 acre-feet of firm annual yield. Much of that increase can be attributed to projects under construction and processes presently underway. For example, 17,000 acre-feet results from Denver Water's non-potable recycling project, which is under construction and will be fully used over the next decade. Similarly, 5,000 acre-feet are attributable to gravel pit storage, even though these storage reservoirs will not be fully operational for several years.

Current demand on the Denver Water system is now 285,000 acre-feet. Denver Water projects its requirement for build-out of the system in the middle of the 21st century at approximately 450,000 acre-feet.

Conservation. In 1996, the Board set a goal of saving 29,000 acre-feet through additional conservation efforts by the year 2045. The IRP identified two planning horizons: the near-term from 1996 through 2030 and the long-term from 2030 through build-out of the Combined Service Area. The near-term conservation goal established in the IRP was 16,000 acre-feet. Based on this near-term goal, the conservation measures are considered to have saved approximately 2,300 acre-feet.

Staff is currently researching new incentive measures, effective mandates and reasonable rates that meet other Board goals, as well as the conservation goal. This approach will include the education and information measures already in place, and even more cooperation with neighboring utilities, non-profit organizations and trade associations to maximize results.

Non-Potable Reuse. Denver Water is currently constructing a non-potable water recycling project. The recycling project will take secondary treated wastewater from the Denver Metro Reclamation District plant and treat it to a tertiary level. The basic treatment processes include coagulation, sedimentation, filtration and disinfection with chlorine. Colorado recently implemented control regulations for non-potable reuse water for urban irrigation areas. Denver Water's recycled water will meet or exceed both adopted and proposed state regulations.

In Colorado, 15 recycling projects are on-line, including Colorado Springs, Aurora and Westminster. Broomfield is planning a new project, and expansions of existing systems are also planned. When constructed, Denver Water's project will be the largest in the state. When it is fully operational in 2013, it in combination with exchanges operated pursuant to state water rights will, in effect, exhaust the yield that can be generated from reusable water until additional reusable water becomes available due to additional growth.

System Refinements or Modifications. The IRP process in 1996 identified numerous small-scale projects to improve water system efficiency, resulting in 10,000 acre-feet of additional firm yield. Today, the yield estimate is 13,000 acre-feet. As a result of the long lead time and uncertainties of many of these projects, Denver Water is implementing the largest projects to determine their capabilities. Estimated yields and completion dates are shown below.

System Refinement Projects

Project	Firm Yield (acre-feet)	Scheduled Completion
Gravel Pit Storage	5,000	2008
High Line Canal Efficiency	3,000	2009
Strontia Fish Flow Recovery	3,000	2003
Lawn Irrigation Return Flows	500	2009
Others	1,500	Varies
Total	13,000	

Denver Water and South Adams County Water and Sanitation District have jointly acquired six gravel mining sites to develop 8,000 acre-feet of storage needed for river exchanges and 4,000 acre-feet of storage for augmenting the recycling project.

Nearing completion is a Future Management Study investigating the effects of reducing deliveries in the lower third of the High Line Canal and conveyance of that section to a recreation management entity. Aurora has expressed interest in operating most of the lower canal and helping provide canal flow to maintain the vegetation.

The Lawn Irrigation Return Flow study began in 2000 and is expected to be complete in 2004. Denver Water will enhance its supply by claiming its reusable LIRF's through a water court proceeding. Denver Water has constructed a pump station near the South Platte, which will allow it to recover bypass flows that must be released from Strontia Springs Reservoir as a regulatory condition. Denver Water customers on or near the City Ditch are being converted to the recycling plant.

Cooperative Actions. Denver Water believes it can find the additional water to build out its Combined Service Area from its own resources. That is, the Board is not dependent on resources—water rights, facilities, or dollars—from those outside its Combined Service Area to find additional water supply or demand reduction needed to meet its future obligations within the Combined Service Area. The combination of Denver Water's infrastructure and extensive conditional water rights puts it in an enviable position in terms of preparation for its future.

However, the Board also realizes that there may be economies and efficiencies to be gained by pooling its efforts and resources with those outside its Combined Service Area, and is willing to engage in mutually beneficial cooperative actions with those outside its Combined Service Area. The Board is not willing to permanently dedicate its infrastructure or water rights capacity to those outside its Combined Service Area without receiving yield, infrastructure or other commensurate benefit beyond payment of the costs involved.

Denver Water has been exploring cooperative actions with water suppliers outside the Combined Service Area. The following cooperative actions have been discussed or implemented within the four metro regions:

Aurora. Aurora and Denver Water are discussing potential steps for rebuilding Denver Water's Antero Dam to allow storage of the full decreed amount in the reservoir. Cooperation on the enlargement of Denver Water's Eleven Mile Reservoir also is part of the discussion. The Antero project would provide an additional 65,000 acre-feet of storage, while the Eleven Mile project could provide an added 18,000 acre-feet of storage. Preliminary steps include an engineering feasibility study, on-site environmental evaluation, an outreach program in Park County to identify crucial issues, and an assessment of probable regulatory hurdles.

Northeast. The northeast regional group includes Aurora, Brighton, Farmers Reservoir and Irrigation Company, South Adams County Water and Sanitation District (South Adams), Thornton, the Rocky Mountain Arsenal, and the State of Colorado. Early meetings of this group also included Public Service Company of Colorado (now Xcel Energy) and Metro Wastewater Reclamation District. Denver Water has implemented one cooperative action in this region—a three-way agreement among Denver, South Adams and the Rocky Mountain Arsenal. South Adams and Denver Water are cooperatively building 8,000 acre-feet of gravel pit storage for Denver Water's use, which will produce 5,000 acre-feet of new yield. South Adams will receive 4,000 acre-feet of this new yield, and Denver Water will acquire the remaining 1,000

acre-feet. The Rocky Mountain Arsenal will receive 1,200 acre-feet of recycled water for the wildlife refuge. A further outcome of northeast regional efforts is an agreement between Denver Water, Farmers Reservoir and Irrigation Company, and two other irrigation companies that settled long-standing disputes surrounding the acceptability of Denver Water's reusable effluent as a replacement supply in exchanges and Denver Water's ability to use pumps at Metro Wastewater to operate exchanges.

Northwest. The northwest regional group includes Arvada, Broomfield, Consolidated Mutual and Westminster. Denver Water's first priority in this region is to solve its Moffat System problem. Denver Water and Consolidated Mutual have entered into an arrangement that provides Denver Water with 440 acre-feet of yield in exchange for Denver Water paying $3 million toward the construction of a small reservoir (Walter S. Welton Reservoir) built by Consolidated Mutual. In 1999, the Board entered into an agreement with the City of Arvada to purchase land and preserve the option to build Leyden Gulch Reservoir as a possible answer to Denver Water's Moffat reliability problem.

South Metro. The south metro group includes Douglas County, the Town of Castle Rock, Centennial Water & Sanitation District, Parker Water & Sanitation District, East Cherry Creek Valley Water & Sanitation District, Castle Pines North Metropolitan District, Cottonwood Metropolitan District, Inverness Water & Sanitation District, Stonegate Village Metropolitan District, Meridian Metropolitan District, Pinery Water & Wastewater District, Roxborough Park Metropolitan District, and Arapahoe County Water & Wastewater Authority. Denver Water, the Colorado River Water Conservation District, and the south metro entities listed above have agreed to study collaboratively possible water supply options. The expected completion date for the study is December 2003. When the study is completed, the Douglas County water users expect to prepare a cooperative action proposal for Board consideration.

Upper Colorado River Basin Study. While not a part of the metro Denver regional efforts, the Board has extended its outreach to the Western Slope as well as to the Northern Colorado Water Conservancy District (Northern). On the Western Slope, Denver Water has been engaged in a four-year effort known as the Upper Colorado River Basin Study. The study includes, as participants, the Colorado River Water Conservation District (Colorado River District), Summit County, Grand County, the Northwest Colorado Council of Governments' "QQ Committee," the Northern Colorado Water Conservancy District, and Colorado Springs. Other interested entities, including the environmental community, have participated from time to time. The study is intended to identify current and future impacts of growth and increasing water demand on the Upper Colorado River Basin, whether from the headwater counties themselves or the Eastern Slope. That study is now moving toward the "negotiation" stage to see if mutually beneficial solutions can be found for the problems and issues identified in the study's data-gathering efforts.

Eagle River Basin. The Board has numerous water rights in Eagle County and is currently participating in a study to develop information regarding the feasibility of storing Eagle River water supplies near Wolcott, Colorado. The importance of this effort is that the east and west slopes are working together to understand how a joint use project may improve their respective water supplies. The participants in this work are the River District, Vail Consortium, Aurora and Denver Water.

The Moffat Project. Denver Water is facing an increased likelihood that it will not be able to meet its customers' water demands reliably on the north end of its system during dry periods. The reason is a water availability problem at the Moffat Water Treatment Plant. Denver Water currently has adequate water in its supply system, but not enough of that water is available for treatment at the Moffat plant.

Denver Water is examining several potential solutions for providing more water to the Moffat plant during dry years, such as enlarging Gross Reservoir; building a new off-channel reservoir; or recycling water for drinking purposes. The NEPA process for this project being conducted by the Corps of Engineers has just begun, with the scoping completed only a few days ago. Phase II, which involves the initial screening of potential alternatives, will begin shortly.

Attachment A

Denver Water's Combined Service Area

Additional statement submitted for the record by Patricia L. Wells, General Counsel, Denver Board of Water Commissioners

In my pre-submitted testimony, I mentioned several means by which Congress could increase water supply, or protect existing water supply. A federal court opinion issued on December 11, 2003, has unfortunately created another opportunity for Congress to act in response to judicial interpretations damaging to water suppliers. Therefore, I submit this supplemental testimony to make an additional recommendation for Congressional assistance to increase water supply.

5. *Adopt the "No Surprises Policy" as part of Section 10 of the ESA.* In 1994, the Departments of the Interior and Commerce first announced the "No Surprises Policy," which provides crucial protection to landowners and water suppliers who are willing to devote resources to protection of threatened and endangered species by means of a Habitat Conservation Plan (HCP) created pursuant to Section 10 of the Endangered Species Act. 16 U.S.C. § 1539(a). The "No Surprises Policy," codified into regulation in 1998, provides regulatory certainty to property owners in exchange for conservation commitments. The regulation prevents the federal government from imposing additional requirement that would increase costs or further restrict the use of natural resources beyond the original HCP. See 50 C.F.R. §§ 17.22, 17.32, 222.2.

The "No Surprises Policy" has been extremely successful in encouraging property owners to enter into HCP's. From 1982 to 1992, only 14 plans were approved. In the following ten years, 379 HCP's with "No Surprises" assurances have been approved, covering approximately 30 million acres and affecting more than 200

species. The policy is also important to Denver Water, which has an HCP for the Preble's Meadow Jumping Mouse covering thousands of acres of operating property along the foothills west of Denver. Without the "No Surprises Policy," Denver Water would not be willing to enter into an HCP and dedicate certain land as a refuge for the mouse. Without an HCP, Denver Water's operations could be severely compromised.

The "No Surprises" regulation has been remanded by a federal district court on procedural grounds. Spirit of the Sage Council, et al. v. Norton, et el., Civ. Action No. 98-1873(EGS)(D.D.C. Dec. 11, 2003). The court's order of remand was sufficiently critical of the intent and purpose of the "No Surprises Policy" that its survival in the next round of judicial review is doubtful. Congress could resolve this problem simply by adopting the "No Surprises" regulation into Section 10 of the ESA.

Mr. CALVERT. I thank the gentle lady for her testimony.

Ms. Kassen, I certainly appreciated the remarks about maximizing existing water supplies, but I'm aware your group is well known for litigating to prevent farmers, ranchers and others from using their existing supplies. Does that mean you're no longer going to challenge the right to use existing water rights?

Ms. KASSEN. I'm not sure what litigation you're talking about.

Mr. CALVERT. Does that mean—as I understand, there's a case, a lawsuit that affects the rights of Northern Colorado farmer water supply and storage to use existing water rights, is that the case—is your operation involved in that case?

Ms. KASSEN. Is this the bypass water case from 1994?

Mr. CALVERT. Yes.

Ms. KASSEN. We're awaiting a decision from the Judge. I don't think there are any other pieces of litigation on the table, but with regard to bypass flows, Congressman, I think that in the renewal of permits that were given long before any environmental laws had come on to the books, it is appropriate for the Federal agency who is the land manager to determine whether the renewal of the permit is consistent with existing law and that's when you have the bypass flow controversy arise.

Trout Unlimited remains committed to existing law which we believe requires Federal agencies to manage land as wise managers and to manage land consistent with existing laws and FLMPA, which your Committee was probably involved with when it was passed in 1976, does require, we believe, the Forest Service to impose bypass flows, if necessary, to meet its obligation under that act.

Mr. CALVERT. Certainly we have a different understanding of the intent of the law as it was passed, but to all of the witnesses, Mr. Rosenstein, you talk about coordinating permitting requirements, in the bill that I have that is involved with Western Water and certainly involved with Colorado. We have a portion of that bill that would streamline the permitting process. This was, quite frankly, taking from the City of San Francisco on their Hut Hutchie Reservoir rebuilt and pipeline and Ms. Pelosi introduced the streamline language. I took that language and put it in this legislation and I guess I won't ask the whole panel, but I'll start with you, is this the type of thing that you think is necessary to help streamline and build these projects?

Mr. ROSENSTEIN. Yes sir, I do. I think it's important before you're going in to do a project when you're doing your initial due diligence

you've got to be able to identify what all the obstacles are and not be, I guess, surprised.

Mr. CALVERT. Ms. Wells, do you have any comment on that?

Ms. WELLS. I'm not sure what the exact provisions of the bill are. NEPA is long and difficult and expensive. If you have enough money and enough time, you can get through it. And I think that streamlining can be helpful. Redundancies are not necessary. Where various Federal agencies don't cooperate with one another, that would be very helpful.

Mr. CALVERT. That's the intent of this and the fact that we would, in effect, together through a large project like this, streamline this process and move it not bypassing any existing Federal law, but moving this in a more comprehensive way and get it done and move on.

Ms. WELLS. I can give you an example. We are in our North Side supply. The Corps of Engineers is the lead agency and one of the potential solutions, Gross Reservoir, which has a FERC license and we had to pretty much pull teeth to get FERC to agree to be a cooperating agency and they are and so that helps, but actually it would be useful if they were required to be.

Mr. CALVERT. Mr. Kuhn, any comment?

Mr. KUHN. No, I think it's just a good idea. We've been through four or five major permitting processes and generally, if you get out ahead, it's good. The one concern that I have at a local—as a local issue is many of these projects, we've had project failures in Colorado because where proponents have received Federal permits but have not been able to obtain the necessary local permits, so you've got to bring them together, both the local and the Federal issues. There are several major ones, of those, in fact.

Mr. CALVERT. Any other comments? Mr. Udall, you're recognized.

Mr. UDALL. Thank you, Mr. Chairman. I want to just begin by thanking the panel, in general, and Counselor Wells, it's always great to see you and thanks for the very concrete ideas that we can pursue at the Federal level to help meet the challenge here in Colorado.

I look forward to reading your testimony because I think there's a lot of great detail in there that the panel and the Committee ought to consider.

If I might, I want to turn to Ms. Kassen for a minute and talk a little bit about this concept of recreation flows you had mentioned in your commentary and I wanted—Dr. Foutz also had talked about agriculture is the third largest industry in the state. Tourism is the second largest industry and we need them both. I think we have some opportunities here to work in concert, but this question of recreational flows is continuing to raise its head and be debated and if you would comment on that, I'd appreciate if the Panel would as well.

Ms. KASSEN. Well, speaking just for a moment as a representative——

Mr. UDALL. You might take that mike and bend it in your direction

Ms. KASSEN. Speaking just for a moment as a representative of Colorado, of Trout Unlimited, the fishing industry brings about $1.5 billion a year to the State of Colorado and that's part of the

whole complex of recreation activities. I think the drought report which the environmental community commissioned at last fall after the 2002 year showed that agriculture was the top loser and that recreation was the second biggest loser as a result of the drought, mostly as a result of the reduced flows associated with rafting. And you put a lot of rafting and guide kind of businesses, if not out of business, at least at risk as a result of that last year. So there are a number of ways that reservoirs can be reoperated to enhance recreation. There are also, as I think you know, a number of innovations in Colorado water law to allow water, to allow kayak forces to get water rights which puts them in the prior appropriation system and enables them to protect those rights for recreation and certainly we think that's important and we think that any new projects going forward in this state will have to take account of impacts to the recreation community. In other words, if you're taking water—large amounts of water—out of a basin that has a recreation economy, as is true in much of your District on the West Slope, that would be an important part of any mitigation that happens with those kinds of projects.

Mr. UDALL. Thank you. And I think I may have demoted my good friend, Mr. Foutz, by calling him Dr. Foutz, but I had it in my head somewhere he had a doctorate, you do, don't you? Yes, I think—so did you want to comment at all from an agricultural point of view on that question?

Mr. FOUTZ. Thank you, Congressman Udall. You know, Colorado Farm Bureau has historically proposed, I mean opposed recreational industry in flows and I guess we do that for several reasons. Number one, it's kind of a parochial issue because we think that the beneficial use for the water really in the State is agriculture and municipal use. We've always—we've been there and that's probably where we're going to be.

Certainly I think one of the big issues that we face is how those in stream flows today are being delineated and simply going through Court action and delineating in stream flow without participation in some way financially and obtaining the water right or something else other than simply having it decreed by a court, creates problems. It does create problems because it defines then that a certain amount of water has to pass a point in the stream and any activities which would remove or delineate, decrease that amount of water past that point, is certainly going to add an impact upstream from that, from that particular point in the river. So the amount on how it's handled is, I think, extremely important.

The State has water rights. If you want a water right, buy one just like the municipalities and we do.

Mr. UDALL. I highlight this because I think you're a fisherman and I'm a fisherman, I'm a boater and I think everybody sitting here in some way or another recreates with our water resources and it reminds me of the 64 Principles that this is an issue we ought to continue and try and to discuss and solve together. I think the ground work has been done and the common elements shown, so let's keep working on it.

Mr. FOUTZ. Again, I go back to the task force that Colorado Farm Bureau has put together and we are bringing all of these stakeholders to our table and sitting down and trying to discuss that

with the water owners and water users to see if there isn't some way that we can reasonably try to address those issues.

Mr. UDALL. I want to thank the panel and if I might, Mr. Chairman, I would like to extend a question to be answered later to Mr. Kuhn about some of the projects he outlines and my sense is that there hasn't been a lot of problems when it's come to the permitting, once you all did that work on the front end.

Mr. KUHN. Yes, once you basically have local consensus and a broad public support, the permits are there. If you look at when projects have problems with permitting it's almost, there's almost a complete coalition with whether there's local support for a project. There are a few exceptions, but for the most part, if you've got local and state support, Federal agency permits, they can be onerous at times, but ultimately, they're there.

Mr. UDALL. Thank you, Mr. Chairman.

Mr. CALVERT. Mr. Tancredo?

Mr. TANCREDO. Thank you, Mr. Chairman. Just three quick questions other than those that I'll submit for the written response.

First of all, Mr. Rosenstein, I want to congratulate you, first of all, I want to congratulate the organization and the formation of this organization, it seems to me, is something that was desperately needed here in the State. I want to see an organization that will lobby for both development and conservation efforts and so I wish you all the best of luck in the world in that organization.

What's your impression of the reasons, the primary reason, I guess that amendment, Referendum A failed. Do you think it was, in fact, a rejection on the part of the stakeholders of any idea of storage and expansion of present resources?

Mr. ROSENSTEIN. First, thanks very much for your support of our organization. And too, I wish I had a crystal ball that could tell me why that measure failed and why the other ones in the ballot failed as well. In terms of talking to folks, I think people recognize the importance of having water storage projects that will help sustain Colorado's economy. I think that's the bottom line and the defeat of Referendum A, I don't think, affects that bottom line. We need available water supply to support our economy and also to support our future as well.

Mr. TANCREDO. Alan, first of all, let me tell you that I'll be happy to feed the birds that are around my house during the winter if you promise me you'll feed the pheasants that might be around your place.

Mr. ROSENSTEIN. I'd be glad to do that.

Mr. TANCREDO. It's a deal. Alan, you heard reference earlier here to a mapping project. I don't know if Mr. Kuhn spoke specifically of a mapping project, but the importance of getting some new information about the geology out here in the West and there is legislation that's been proposed, I think it's a Senate bill. It's High Plains Aquifer Mapping and Monitoring Act.

Are you familiar with it at all? Do you know how, for instance, the agricultural community responds to these kinds of requests for new information about the geology and hydrology in the area?

Mr. FOUTZ. From the standpoint of collecting information, I think you'll notice in my written comments that that's one of the things that we do recommend is that we do gather as much scientific data

as we can on both closed basins and on tributary waters and try to understand more fully what is exactly going on in the interconnection. It may be between all of those and how this system works.

We have a lot of information in the State. We have a lot of people in CSU and CU that have studied Colorado waters for a long time and we know a lot about, but there's still a lot that we don't know and I think this last two or 3 years when we've had the drought, we've really begun to understand what we don't know.

If we were to go to the Rio Grande Valley or the San Luis Valley, for example, on the Rio Grande, and if we were to look at the underground aquifer and the stream flows there, I think they're finding out that they don't understand that completely. We don't understand the Ogalalla Aquifer completely and how that is recharged. So those studies are important, yes. They're all important.

Mr. TANCREDO. They're important, Alan, but if you look at a picture of those aquifers or what we believe they are today and where they are today, you can see, it's not a Colorado issue. This is an issue for all the states in the region and it will require some sort of Federal initiative and Federal support. So I'm hoping that what you're saying is that you would look carefully at that particular piece of legislation. We did have it come before the Committee, I know, and I think somebody from maybe the Corn Growers Association came in and testified against it. I really hope that we get some reference from the Farm Bureau here that we can use——

Mr. FOUTZ. And I think if what we're looking at is a study, I've not specifically looked at that particular piece, but I don't see a problem with it. If it involves more than that we'd have to sit down and take a look at it, but I think we have to know what's going on underground and above ground in terms of water in this State and in the surrounding states so that we begin to understand the system. It is a system.

Mr. TANCREDO. That's right and I think we would be in for some big surprises if we took a very hard look at exactly how that system is put together and what we're doing to it. So——

Mr. FOUTZ. But we do need to understand that, good or bad.

Mr. TANCREDO. Undeniably. And last, Ms. Kassen, in your testimony and in your responses to the question I think put to you by Representative Udall, you indicated that you could see, of course, that there was damage that had been done during the drought to the recreation industry and specifically to trout. Now doesn't that mean, can I interpret that to mean that you would support projects that would store water for those times? I mean, after all, it's not just an issue of storing water for the potential use of urban projects or urban part of the State, but storing water that can be used during drought to replenish stream flows, so why shouldn't we—well, I guess I shouldn't jump to a conclusion about what you're going to say. What do you think about storing water? Increasing our storage capacity so as to mitigate against the problems that you identify as there with recreational industry?

Ms. KASSEN. Congressman Tancredo, Trout Unlimited has never been against storage, let's just start there.

Mr. TANCREDO. And new projects, new development, new storage capabilities, expanding the ones we have. How do you feel about that?

Ms. KASSEN. I think I said in my testimony that we believe that expanding reservoirs is going to be part of the solution and I'm certainly involved in terms of writing comments on a number of these projects that are coming down the road. There are attached to my testimony is the executive summary of something called what I call the Drought Report and there's a whole list of things there which include new storage.

Mr. TANCREDO. Is there any project you can think of, that you can tell us, anything that's on the drawing board right now that you can say we support this idea or is it just a general, that meets certain criteria and we'll be happy to think about it?

Ms. KASSEN. I think that Eagle Park Reservoir is one example and when Patty Laws talked about the Denver North End expansion 15 years ago, Trout Unlimited suggested that an expansion of Gross Reservoir was part of the alternative solution to Two Forks. We don't know exactly what that project is going to look like right now. We're involved in the project. We're hoping to be able to support that. Those are two.

We hope to be able to support the expansion of Pueblo Reservoir as well. Our concern there, and this goes back to a discussion you all were having a few minutes ago about getting agencies to—the Federal agencies to be on the same page, is that Pueblo Reservoir expansion could dry up a section of the Arkansas River that the Corps and some local agencies have just spent $6 million trying to restore. And we don't think that makes a lot of sense. But assuming that Pueblo Reservoir can be expanded in a way that preserves the Arkansas River below Pueblo Reservoir, we would expect to be able to support that. So those are three.

Mr. TANCREDO. Thank you. Maybe you should think about joining Coloradans For Water Conservation and Development. You seem to be more positive today than I noticed in the past, so I just offer that to you for your consideration.

Thank you, Mr. Chairman.

Mr. CALVERT. I thank the gentleman.

Mr. Beauprez?

Mr. BEAUPREZ. Thank you, Mr. Chairman, and again thank you so much for conducting this hearing today. I think it's been exceptionally good. I know you have a plane to catch and I'll try to be very brief. I'd like to pursue, if I had an unlimited amount of time with Mr. Foutz, the statement you made about agriculture being the real loser and I fear the same.

I'd like to pursue that issue with you about agriculture because I could not agree more. And I very much fear because of the nature of agriculture, small farms, and independent farmers are few in numbers even if you aggregate all of them that sometimes they're victimized and I'm very concerned about this stream flow issue that has come up.

And I am very sensitive. I want to make that very clear. I am sensitive to that, too. I don't know if anybody wants to dry up our streams unnecessarily, but it certainly elevates the issue of water rights and private property rights and whose water is it and I

think the point, I think you made, Ms. Kassen, about needing more research is a legitimate one, because I hope that this doesn't end up forever and ever and ever in Courts.

Ms. Wells, I thank you very much for some very proactive and commonsense suggestions as to what Congress might address. Thanks for that.

And to Mr. Kuhn, if I might, I'll address my question and stop right there. I want to commend you for the Colorado 64 Principles. I like that a lot. And I looked through those and I noticed with great interest that number one in those says that all Colorado water users must share in solving Colorado's water resource problems. I couldn't agree more.

I assume you really mean it when you said "all Colorado users." And then last, not to skip over all the rest of them, but you say "future water supply solutions must benefit both the area of origin and the area of use." There are some of us that live on the east side of the mountains, where I've lived all my life, and I'm not necessarily one of them, but there are some that think that those on the West Slope think, when you say water over here from over there it's a no how, no way.

My sense in scanning your position statement is that you're much more open to discussion and I'd like you to directly address that, if you would.

Mr. KUHN. Thank you, Congressman Beauprez. I think the reality of this is that it's always been a positioning between West Slope interests and East Slope interests to establish a neutral playing field, more or less, one where if you build a transmountain diversion, the basin of origin doesn't unduly suffer from that and our history is going back to the 1930s and the development of the Colorado Big Thompson Project that carried with it mitigation measures on the West Slope that are very important today, to the most recent efforts that Peter Binney mentioned and the Eagle River is one of where there is that neutral playing field, then we have productive projects.

When one side says no, never or the other side says it's our manifest destiny to take whatever we want, then we end at a stalemate.

Mr. BEAUPREZ. Well, I thank the gentleman for his proactive action on that and I really think it is an absolute necessity for the sake of Colorado and our—I mean I don't see another solution to water other than we all work together and recognize it is our collective challenge to address and focus not only limitations, but upon solutions to rather obvious endpoints.

Mr. Chairman, again, I thank you very much for convening this. I think it's been most productive and I yield back.

Mr. CALVERT. Thank you, Mr. Beauprez, and thank you for your leadership and inviting me here to Denver and your community's hospitality. My friend, Mr. Tancredo, it's always great for Californians to come up to Colorado and see what our water looks like when it's white.

[Laughter.]

But seriously, as you know, I go around the country and we discuss water issues and they're always emotional and difficult, but we need that extra water to sustain all those attorneys that are in

the audience. And seriously, as one of my best friends who is a water attorney continues to tell me consensus is highly overrated.

[Laughter.]

Which leads to nothing happening and Mr. Binney, you said in your statement "doing nothing is not an alternative." And that's absolutely correct. We can learn to share without having one part of the State to the benefit of the other. We need to do that. We can help the whole. And that's a hard thing to do. I experience it all over the country. We can agree on a lot of things. Everybody agrees that conservation is a good thing. I don't think anybody in this room would say conservation is bad and we can all agree to do that. And we can do a better job of it. Removal of non-native evasive species, they're all over the West and we need to get rid of them and it's expensive, but it's a positive step and we need to do that. We can all agree to work together to get that done.

Most of us agree that reclamation is a good idea and we ought to get into it. Water transfers, I mean, obviously there's fights within communities and between the rural communities and the urban communities, but water transfers can be done if properly done and water rights are protected and people are paid. They can be done properly.

Ground water management is something that we need to work on all throughout the West and certainly through the whole country. When we get into controversies, we get into surface storage, either off-stream storage or on-stream storage, but all of it, really is part of the solution and we need to work together to make sure that we get this done because especially in this State, if you don't, the water, as Mr. Foutz pointed out, the unappropriated water is going downstream and you're not using it. And if you don't use it, I know who will.

[Laughter.]

So let's be realistic about this and work together to solve this problem and we shall. I'd like to include statements for the record from Mr. Dave Miller, the Independent Water Planner for Palmer Lake, Colorado; Mr. Bart Miller, Water Program Director, Western Resource Advocates; and Alan J. Leak, Centennial, Colorado. I'd also again say for the record we will keep the hearing open for 10 business days for any additional statements from witnesses or anyone else interested in contributing to the record. If there's no further business before the Subcommittee, I again thank the Members of the Subcommittee and all our witnesses and happy holidays.

We stand adjourned.

[Whereupon, at 12:12 p.m., the hearing was concluded.]

[Additional information submitted for the record follows:]

[Information submitted for the record by Dave Miller follows:]

Dave Miller, Independent Water Planner
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December 13, 2003

The Honorable Ken Calvert, California, 44th District, Chairman
U. S. House Subcommittee on Water and Power
Room 1522 LHOB
Washington, D.C. 20515

Subject: Written answers to questions submitted for Colorado witnesses appearing before Subcommittee's Water Supply Oversight Hearing, Colorado State Capitol, 12/12/03

Dear Mr. Calvert:

All Coloradans should thank you for holding a Colorado Water Supply Oversight Field Hearing in Denver. Hopefully, this historic hearing will help Colorado solve its divisive water planning and infrastructure problems. Colorado currently supports about seventy percent of our nation's water lawyers.

Regrettably, time did not permit Subcommittee consideration and witness answers to the enclosed oversight questions. These straightforward questions are designed to expose Colorado's non-integrated local water planning and infrastructure inefficiencies, which are not openly discussed within Colorado water circles. Although Colorado's wet year runoffs provide most of the renewable water supplies for Southwestern states, its escalating water user fees are now among the highest in the West.

At the hearing, there was no mention of Colorado's Congress-authorized Aspinall Pool water rights (300,000 acre-feet) and superior Gunnison high altitude pumped-storage alternative at Union Park. These "overlooked" rights, coupled with 1.2 million acre-feet of flexible off-river storage, could quickly integrate and enhance Colorado's water supply infrastructure for drought and growth needs throughout both slopes.

There was also no testimony and discussion regarding Colorado's serious dam safety problems for probable maximum floods (PMF) and maximum credible earthquakes (MCE). For example, recent U.S. Bureau of Reclamation and Black and Veatch engineering studies indicate Pueblo Dam can not be modified and/or enlarged to meet today's PMF and MCE safety standards. In fact, most of Colorado's aging reservoirs are unsafe and substantially inadequate for multi-year droughts.

In view of the above, I respectfully suggest a Subcommittee request to Colorado witnesses appearing before your Denver hearing for their concise written answers to the enclosed penetrating questions. Their revealing honest answers in the Congressional record should provide valuable insights for local, state, federal, and Congressional leaders, who are trying to find cost-effective solutions for growing Western water, power, environmental, and agriculture problems. Union Park's advanced pumped-storage benefit-cost expectations for five major river basins are about 10 to 1. Most traditional Western dams on rivers were built with only 2 to 1 benefit-cost expectations.

Sincerely,

Dave Miller

Dave Miller

encl: Unanswered Subcommittee questions for Colorado witnesses, dated December 12, 2003

cc: The Honorable Thomas G. Tancredo, Colorado, 6th District
The Honorable Mark Udall, Colorado, 2nd District
The Honorable Bob Beauprez, Colorado, 7th District

Added Note: Colorado needs emergency legislation to expedite development of its Aspinall Pool and Union Park Pumped-Storage oversights. Union Park is the "Silver Bullet" solution needed to integrate Colorado's fragmented water supply infrastructure into a cooperative statewide drought, growth, and environmental protection capability. *DM*

December 12, 2003 • Crested Butte News • page 27

LETTERS

Colorado has lost its water direction

Dear Editor,

• The National Environmental Policy Act (NEPA) requires balanced water development decisions, based on objective environmental and economic comparisons of all reasonable alternatives.

• EPA vetoed Denver's Two Forks Dam, because its NEPA studies ignored Colorado's unused Gunnison River entitlements and superior Union Park Pumped-Storage Alternative. Two Forks would have also caused harmful additional depletions from Colorado's over-depleted South Platte, Blue, Williams Fork, and Fraser River environments, with its excessive water rights.

• Federal river flow data indicates Colorado's vast untapped Gunnison River losses to down river states have been increasing since the 1960s. This costly trend is caused by the Gunnison Basin's continuing economic conversion from irrigated farming to tourism, and its self-defeating opposition to multi-purpose trans-mountain storage alternatives.

• Low value hydropower will be used to fill Union Park's high altitude, off-river reservoir with up to 1.2 million acre-feet of Colorado's unused Aspinall Pool water rights during heavy runoff years. Those captured federal flood waters will then provide high value peaking power and multi-year drought protection, when and where needed, throughout the Gunnison, Colorado, South Platte, Arkansas, and Rio Grande River Basins.

• Union Park's assured flexible deliveries by gravity will greatly increase the reliability, productivity, and quality of the region's existing water and power resources. Its overall benefit-cost expectations are in the 10 to 1 range. In contrast, traditional Western dams on rivers were built with only 2 to 1 benefit-cost expectations.

• Recent engineering studies indicate most of Colorado's existing dams would suffer catastrophic failures under today's safety criteria for probable maximum floods (PMF) and maximum credible earthquakes (MCE). Union Park's much safer roller-compacted concrete dam and flexible large storage capacity can be managed to help correct Colorado's serious, but untold, dam safety problems.

• EPA will surely veto those current Front Range water development proposals, which would further dewater and degrade Colorado's over-depleted Arkansas, South Platte, Eagle, Blue, Williams Fork, and Fraser Rivers. Such EPA vetoes are guaranteed, if local and state water . . . officials continue to ignore Colorado's untapped Gunnison water rights and superior Union Park multi-purpose storage capabilities.

• Coloradans must immediately unite behind an emergency program to develop Colorado's wasted Gunnison water entitlements and Union Park Pumped-Storage oversight for current and future drought and growth needs of both slopes.

Dave Miller
Independent Water Planner
Palmer Lake, Colo.

Thursday, December 4, 2003 • Gunnison Country Times • 13

LETTERS

Big Straw another testament to Union Park

Editor:

Colorado's recently completed Big Straw Study demonstrates how far some politically-appointed state water officials have strayed from good science.

Most small and large engineering firms refused to bid on Big Straw's $500,000 study contract, because its political sponsors could not answer the following fundamental hydrological questions:

1. How are West Slope cities, farms, and environments beneficially using Colorado's damaging spring floodwater entitlements, which currently flow freely to California during heavy snowmelt years?

2. How can Colorado pump at a constant rate from the Colorado River near the Utah state line during floods and droughts, without massive new regulating reservoirs at both ends of the pipeline?

The appointees, who rammed the Big Straw Study through Colorado's Water Conservation Board and legislature, are the same players who have opposed Colorado's superior Union Park Pumped-Storage alternative, since EPA wisely vetoed Two Forks.

Colorado can efficiently store up to 1.2 million acre-feet of its currently wasted Aspinall Pool water rights in its "overlooked" high altitude Union Park Reservoir site during wet cycles. These saved state flood waters will then be available for flexible gravity deliveries, when and where needed, throughout five Southwestern river basins (Gunnison, Colorado, South Platte, Arkansas, and Rio Grande) during droughts.

Union Park's unprecedented, multi-basin, pumped-storage water and power insurance concept has 10-to-1 benefit-cost expectations for both sides of the Divide. In contrast, traditional single-basin river dams were built with 2-to-1 benefit-cost expectations. Animas – La Plata's current benefit-cost projection is about 1-to-1.

Colorado must unite behind an emergency program to construct Union Park for ~~its emergency~~ drought and growth needs throughout both slopes.

Dave Miller,
Independent Water Planner

The Gazette

COLORADO SPRINGS • WEDNESDAY, JAN. 1, 2003 | WEDNESDAY | 50 CENTS DAILY • $1.25 SUNDAY

OUR VIEW

California schemin'

Colorado's continuing water policy paralysis welcomed by downstream states

Californians have apparently been watching Colorado's internal water wars and were with interest — self-interest. And they like what they're seeing.

Comments made recently by one California congressman should serve as a wake-up call to Coloradans who voted against Referendum A in November, turning thumbs down on $2 billion in potential bonding authority for future water projects. Those Coloradans either seem to believe the state's water challenges will solve themselves, or don't want them solved, embracing self-imposed scarcity as the antidote to the "threat" of continued growth.

Californians, it seems, were equally pleased by the measure's defeat at the polls, since they are likely to benefit most from Colorado's continued water policy paralysis. Golden Staters will gladly scoop up every drop we hold rights to but allow to escape downstream each year for want of adequate storage.

Rep. Ken Calvert, chairman of the House Resources water subcommittee, is among the Californians who saw the referendum's defeat as a clear signal that this state was as divided as ever on water policy questions — not that Californians ruled, of course.

"The ones who end up paying the ultimate price for this lack of constructive discussion are the water consumers we are trying to help," Calvert said during a recent visit to Denver. "If you don't come to an agreement, you can keep sending your unused Colorado River apportionment down to California. We'll make use of it."

And will they ever.

While other states through which Colorado's precious snow melt flows are rabidly protective of their water rights and apportionments (the governor of Arizona in the 1950s even mobilized the state's National Guard to prevent construction of a dam that would divert water to California), recognizing water as the key to their future survival and prosperity, Coloradans continue to take a dangerously lackadaisical attitude toward the issue.

We prefer to fight among ourselves, myopically, to the potential detriment of our state's larger water interests, vis-a-vis the jostling for advantage among fast-growing Western states for which water is the lifeblood.

Coloradans typically seem divided not just on water — how best to use it, store it, share it, pay for it, conserve it — but on what impact, if any, the Referendum A debate had on the search for solutions. Although we never saw funding as the largest hurdle facing most water projects, and continue to see regulatory and political challenges as far more daunting, we nonetheless had hoped a strong show of support for the measure would send a clear signal to legislators that the people were fed up with the paralysis and ready for action.

But the defeat sent a far more confusing message, interpreted by silver-lining seekers as encouraging a beneficial exchange of ideas, by others as inviting a retreat to old and entrenched positions. Gov. Bill Owens recently indicated that while he hopes for some water-related action in the upcoming legislative session, the ball is squarely in the court of those who found reason to fault Referendum A, or defend the status quo. "They didn't like what we had," Owens said. "What do they propose?"

What, indeed.

Perhaps, just perhaps, our water policy paralysis will end only when internally divided Coloradans climb out of the trenches in which they're hunkered, get a good look at the larger battlefield on which Western water wars are fought, and see the opportunistic delight other states are taking in the spectacle of Coloradans squabbling among themselves.

The bottom line is this: If Coloradans don't have the will to take full advantage of their water rights by rationally and aggressively pursuing improved storage capacity, Californians and Arizonans will. Take full advantage, that is.

The Gazette Thursday, January 1, 2004

WATER WARS

Gunnison project could solve many of our concerns

Colorado's water advocates are far more dangerous than California's ("California schemin'," Our View, Dec. 30). Why are Colorado's Front Range cities planning to divert more water from our relatively over-developed Arkansas, South Platte, Eagle, Blue, Williams Fork and Fraser rivers, while the untapped Gunnison branch's massive Colorado River losses to California have been increasing since the 1950s? If Colorado Springs, Aurora, Denver and South Metro would cooperatively develop the Gunnison's unused Aspinall Pool federal water rights with the "conciliator" Uncle Park Pumped-Storage Site, Colorado would save the other bullet water solution most of its quickly eaten pocket and enhance both upper watersheds.

Uncle Park's 1.2 million-acre-feet of high, off-river storage can integrate Colorado's highly fractured water supply infrastructure into an advanced, statewide water management system with unprecedented 10-to-1 benefit-cost expectations. In answer gently delivered of these movements, when and where needed, throughout the Gunnison, Colorado, South Platte, Arkansas and the Grande river basins, would provide unprecedented state and regional benefits.

Uncle Park's advanced pumped-storage water and power facilities can be built in four phases, within seven to 10 years, for about $2.5 billion. These development costs are minor compared to current Front Range proposals with inferior capabilities and escalating life-cycle costs.

If Front Range cities continue their confusing, inefficient directions, the Environmental Protection Agency will soon be forced to render additional Yucca Flats-type verdicts. The National Environmental Policy Act requires objective environmental and economic comparisons of all reasonable alternatives.

Dave Miller
President, Natural Energy Resources Co.
Fulcrum Lake

METRO 6 THE GAZETTE Sunday, December 14, 2003

Colorado must discuss water storage

Congressman says California could benefit if state leaders don't find solution

THE ASSOCIATED PRESS

DENVER • Colorado must find ways to store more water or California will find ways to use it, the chairman of a congressional subcommittee said Friday.

Rep. Ken Calvert, a California Republican who leads the House Resources water subcommittee, said the recent defeat by Colorado voters of Referendum A, a measure that would have provided $2 billion in revenue bonds for major water projects, is a clear sign Colorado's water leaders are divided and must discuss ways to move forward.

"The ones who end up paying the ultimate price for this lack of constructive discussion are the water consumers we are trying to help. If you don't come to an agreement, you can keep sending your unused Colorado River apportionment down to California. We'll make use of it," Calvert said at a field meeting in Denver.

Rep. Tom Tancredo, R-Colo., said state government must do more to resolve disputes about water projects.

Greg Walcher, director of the state's Department of Natural Resources, however, told the subcommittee the state has no business telling districts which projects to build.

"We don't frankly believe that the state ought to dictate to all the local water basins in Colorado what their water future is. The tradition in Colorado water law is that local people come up with local solutions to local problems," Walcher told the subcommittee.

Walcher said the Referendum A battle resulted in working relationships among water users across the state that have not existed for decades.

Referendum A debate polarized opinions and reignited water wars, said Peter Binney, Aurora's director of utilities.

But Peter Binney, Aurora's director of utilities, said the debate over Referendum A polarized opinions and reignited water wars. He said voters made it clear that they will not approve funding for major projects unless projects are identified.

Binney told the subcommittee the Front Range corridor between Pueblo and Fort Collins must develop an additional 784,000 acre-feet of water during the next 37 years, with most of the projects to be completed in the next 25 years to allow communities to grow.

Note: These conflicting Tancredo-Walcher policy statements reveal why Colorado's statewide water storage and delivery systems are non-integrated, inefficient, wasteful, high cost, outdated, inadequate, and unsafe for floods, droughts, and growth. Colorado is the only Western prior-appropriation state that relies exclusively on a divisive local planning and court process to decide which storage and delivery projects to build. All other Western states use water resource professionals in a continuing statewide water planning process to guide strategic local, state, and regional water development decisions. Any local Colorado water development proposal that has not evaluated the Gunnison's unused federal Aspinall Pool water rights, and Colorado's integrated Union Park Pumped-Storage Alternative for both slopes, has virtually no chance for success. As Two Forks proponents discovered, the National Environmental Policy Act (NEPA) scoping process requires objective environmental and economic comparisons of all reasonable alternatives. Colorado's untapped Gunnison River is the Southwestern Region's largest under used water source. Union Park's flexible gravity augmentations for Gunnison, Colorado, South Platte, Arkansas, and Rio Grande River systems have 10 to 1 benefit-cost expectations. Traditional storage proposals (i.e. Two Fork's Homestake II, Southern Delivery System, Pueblo Enlargement, etc.) have less than 2 to 1 benefit-cost expectations.

Dave Miller, Independent Water Planner, P. O. Box 567, Palmer Lake, Colorado, 80133, (719) 481-2003

[A statement submitted for the record by Western Resource Advocates follows:]

Statement submitted for the record by Bart Miller, Water Program Director, Western Resource Advocates

Members of the Subcommittee:

Western Resource Advocates takes this opportunity to provide public comment on the December 12, 2003, Field Hearing: "Colorado: Options to Increase Water Supply and Improve Efficiencies." Western Resource Advocates, formerly called Land and Water Fund of the Rockies, is a regional law and policy center that uses law,

economics, and policy analysis to protect land and water resources and assure energy demands are met in environmentally sound and sustainable ways.

The Issue

At the heart of today's hearing is how best to deal with Colorado's water future, shaping a solution that meets human needs and, at the same time, protects the natural environment that is a significant part of why Colorado is such a wonderful place to live, work, and visit.

Although water currently is being put to use in the state for many purposes, the growth in demand in the foreseeable future is for urban/suburban uses. The population of the Denver metropolitan area, as well as other communities on Colorado's Front Range, may double within the next 35-40 years, potentially doubling urban water demand.

If we rely solely upon water supply solutions from the recent past—diverting and storing water with large infrastructure projects—we will endanger one of the state's most precious resources, our natural river systems. This should not be the path we follow blindly forward in the future and should not be the target of any federal funding or other assistance.

Federal funding or involvement, to the extent any is needed, would be best spent assisting the state, local water providers, and citizens to maximize the efficient use of our existing supplies. We can stretch already-developed water supplies to meet a higher portion of our needs through indoor and outdoor conservation as well as through creative supply-side options that are less likely to require large new projects that are, on the whole, slow to construct, highly contentious, extremely costly, and environmentally damaging.

Efficiency alternatives can postpone or alleviate entirely the need to divert and store the last water left in our rivers. Water that is crucial to continued enjoyment by anglers, rafters, local communities, and the preservation of the plants, fish, and other wildlife that rivers support.

Thus far, western water policy has not encouraged efficiency alternatives, both because of legal impediments and a lack of sustained public pressure to invest in efficiency. Some water utilities have made efforts, but progress has been isolated and sporadic. Although agricultural efficiency also must be addressed, urban water use is an area where demand for water is growing most quickly, where there is a receptive audience to an efficiency message, and the financial resources to implement efficiency alternatives.

Lack of comparative data on water use and efficiency options has been a significant hurdle to maximizing urban water use efficiency. Many cities simply are in the dark as to how they compare to others in the region. Nor are they necessarily aware of cutting-edge approaches being explored elsewhere. Isolation has hampered innovation. Comparative information could inspire the state, water providers, and citizens to transform to a world of greater efficiency.

The Solution

Earlier this week, Western Resource Advocates released a report that fills this gap in knowledge. "Smart Water: A Comparative Study of Water Use Efficiency Across the Southwest" provides, for the first time, a snapshot of current water use in major cities in six Southwestern states (including 4 cities in Colorado), along with how cities compare with conservation and efficiency programs, leaks, water rate structures, and unmet potential for improvement. Smart Water also includes a roadmap for the future, explained in detail in the pages that follow. A digital copy of the report is available on Western Resource Advocates' website at www.westernresourceadvocates.org. Hardcopies or CDs can be obtained by calling Don Wojcik at 303-444-1188 ext. 247, or e-mailing him at don@westernresources.org.

To the extent that federal assistance or funding results from this field hearing, we propose that "in consultation with the state, local water providers, and interested members of the public" the following recommendations from Smart Water be implemented to improve water use efficiency in Colorado and throughout the Southwest.

(A) Outdoor Water Use Efficiency

On the demand-side of the water use equation, among urban uses, outdoor use has the greatest potential for water savings in the Southwest. Outdoor water use (primarily landscape irrigation) not only accounts for the majority of residential urban water use but, for the most part, is "elective" or discretionary. Current levels of outdoor use in many urban areas in the Southwest expose the divergence between the high-water-use landscape vegetation many have chosen and the arid/semi-arid place in which we live. In addition, our Smart Water analysis indicates that little or no correlation exists between municipal water consumption and climate

conditions. An appropriate or acceptable "developed urban landscape" is defined differently in many southwestern cities. In addition to landscape design issues, low-density urban sprawl compounds the problem of high outdoor water use as it usually brings with it substantial landscaped area (i.e., irrigated area), typically covered with non-native vegetation.

Recommendations for action for water policymakers:

- Offer landscape/Xeriscape rebate programs and irrigation controller rebate programs;
- Limit water use on medians, sidewalk parkways, slopes, and other areas close to impermeable surfaces;
- Enact and/or amend landscaping ordinances (via municipal zoning ordinance or development codes) that: (1) require some degree of Xeriscape landscape; (2) regulate the amount/percentage of high water-use vegetation; and (3) require water-efficient soil preparation best management practices and landscape designs;
- Enact watering regulations that restrict landscape irrigation to early morning and evening times to avoid daytime evaporation losses;
- Provide landscape irrigation audits to identify waste by customers in all sectors and educate the public on Xeriscape, efficient irrigation techniques, design, etc.; or
- Incorporate smart development principles into municipal zoning ordinances, development standards, and comprehensive plans (e.g., emphasize higher-density mixed-use developments, Xeriscape requirements, infill development, and the use of reclaimed water for landscape irrigation, etc.).

(B) Water Rate Structures and the Price of Water

Strategic water pricing is a key component of demand-side water-use efficiency that can induce water conservation by customers. Currently, water sold in the region to urban customers for discretionary use is priced much lower than its actual long-term cost. Many water providers in the arid Southwest simply do not use water rate structures that send an effective "conservation message" to their customers. With a finite water supply, this practice results in unsustainable consumption. Many water providers have begun to apply increasing block rate structures in an attempt to send this conservation message via their water pricing structures. However, in many cases, the block price increases are not steep enough to get the attention of water users. As explained in detail in Smart Water, rate structures that yield inclining marginal price curves and average price curves tend to be most effective in promoting water-use efficiency. Increasing block rate structures also tend to be fair, if they are designed to charge high-volume users for the provider's avoidable costs of serving discretionary, outdoor use and reward low-volume users.

Recommendations for action for water policymakers:

- Reassess and modify water provider rate structures in a way that sends a clear, consistent conservation message via water pricing. This is most effectively done through an increasing block rate structure;
- More effectively incorporate long-term infrastructure costs, new supply attainment costs, and environmental costs into municipal water price-setting;
- Set fixed service charges and variable consumption prices in a way that sends a consistent conservation price signal while maintaining revenue stability; and
- Utilize aggressive increasing block rate structures in all years (i.e., not just as an emergency drought response tool).

(C) Indoor Water Use Efficiency

Although the savings potential for indoor water efficiency may be secondary to the gains from outdoor efficiency, they are still significant. By converting a "typical" American home to a "conserving" American home, we can go from an average of 69 gallons/capita/day (gpcd) to approximately 45 gpcd (via low-flow fixtures and appliances that are readily available at home improvement stores).

Recommendations for action for water policymakers:

- Offer indoor appliance/fixture rebate programs;
- Enact municipal ordinances that require water-efficient indoor appliances/fixtures in all new residential and commercial development (coinciding with 1992 EPAct) as well as all building upgrades (executed and inspected via building permit process);
- Require appliance upgrades contemporaneous with property sales, or perhaps require landlords to install them to qualify for a rental license;
- Enact municipal ordinances (building/plumbing codes) that require appliances/fixtures not captured by the EPAct and that exceed standards established therein;

- Provide indoor water use audit services to all customers in all sectors (including leak detection and repair assistance); and
- Educate the public on water-efficient appliances, fixtures, and personal water use behavior.

(D) Supply-Side Water Use Efficiency

Supply-side water use efficiency holds some of the greatest potential for minimizing or even avoiding the need for developing new supply sources. In order to send a consistent "conservation message" to their customers, water providers must demonstrate an equal effort in increasing the efficiency of their collection/storage facilities, delivery systems, and treatment facilities, as well as reap the benefits of using innovative supply strategies and technologies.

Water loss reduction is a critical piece in the water efficiency puzzle. Rates of Unaccounted for Water (UFW) vary substantially between water providers in the region. Smart Water reveals that collectively in our region, hundreds of thousands of acre-feet are unaccounted for in our water collection and distribution systems each year. Halting preventable losses (e.g., leaks) will save a great deal of water and better metering will provide more accurate data on actual use and losses in distribution systems.

Many other innovative supply-side measures are being developed across the Southwest. These measures include: water reuse and recycling systems; aquifer storage and recovery projects; system integration and coordination; and market-based water transfers. Such supply-side strategies are already being used by many water providers, although they are not yet commonplace in the region.

Recommendations for action for water policymakers:

- Implement aggressive system-wide water loss reduction programs (e.g., leak detection and repair, dam repair, etc.) to minimize UFW;
- Seek efficiency savings via cooperative, integrated water supply efforts with other local or regional water providers
- Pursue market-based water transfers, such as water salvage projects with agricultural users, temporary dry-year leases with agricultural users, and water banking transfers with other water providers or regional/state water banking authorities;
- Explore the feasibility and legality of using water reuse and recycling systems. When feasible, use non-potable reclaimed water for urban landscape irrigation and industrial uses; and
- Investigate the feasibility of using aquifer storage and recovery (ASR) systems (e.g., conjunctive use), if at least a portion of a water provider's supply is derived from groundwater sources.

(E) Program Implementation, System Monitoring, and Staying "Up to Speed"

Through the Smart Water analysis, we have discovered a very large potential for improving urban water efficiency throughout the Southwest. Based on comparisons of per capita Single-Family Residential consumption, outdoor and discretionary consumption, UFW and other end-use variables in service areas throughout the region, it appears urban water providers have just begun to improve water-use efficiency.

There is a least one "target" water provider in almost every category, setting the benchmark toward which others can strive. Model water providers hint at a vast potential for water savings. Smart Water also found a significant variation in conservation programs throughout the region, from very comprehensive programs to much more limited ones.

The analysis reveals that several water providers' water consumption accounting and program monitoring were lacking, incomplete, and/or inconsistent, leaving these providers with only a fuzzy picture of actual water use. In addition, many water providers have not thoroughly assessed the cost-effectiveness of their conservation programs. Although detailed benefit/cost analyses are often conducted to justify traditional structural water supply improvements, this level of analysis for water use efficiency measures is extremely limited, even nonexistent for some providers.

Recommendations for action for water policymakers:

- Enact and implement multi-faceted conservation programs that concurrently use rebate programs, education programs, conservation-aimed water rate structures, and regulations/policies to reach customers with unique response "triggers" or "motivators."
- Keep "up to speed" with the continuously evolving state-of-the-art programs and policies used in other water providers. The significant variation in conservation programs and policies in the Southwest indicates that much more information sharing and modeling can take place;

- Improve or upgrade water system accounting practices to reduce water waste and increase revenues;
- Streamline water conservation program monitoring and analysis efforts, including cost-effectiveness and/or benefit-cost analyses. In addition to facilitating the promotion and fine-tuning of conservation programs, this information also can provide excellent "model" material to be shared with other water providers; and
- Take charge in promoting water use efficiency in dry and wet years.

(F) Education and Awareness

Although many municipal water providers offer water conservation education programs, many consumers do not have a basic knowledge of water sources/issues within their area:

- Where does our water supply originate?
- What's at stake if we don't conserve? and
- Where will the "next drop" of supply water come from?

Many water customers are not sufficiently aware of programs/opportunities offered by their water providers, or aware of how they can improve their water-use efficiency. Furthermore, many residents of the American West, often transplants from other, less arid, parts of the nation or globe, have only a fledgling awareness of place. Collectively, Southwestern residents need to adjust their water use and mindset to be more consistent with the arid climate in which we live, and make clear distinctions between our water "needs" and water "wants."

Recommendations for action for water policymakers:

- Improve the promotion and advertisement of water conservation programs (e.g., for rebate programs, audit programs, the rationale for increasing block rates, etc.);
- Use all available media outlets to spread the message of adapting to our surroundings/climate and the importance of water conservation during wet and dry periods (i.e., not only during drought conditions);
- Educate people on the "collision course" of population growth and water supply in the Southwest (i.e., that we can prevent a "crisis" by acting now); and
- Promote comprehensive water-use audit programs to all municipal water customers to provide personalized education and direction on how to become water efficient.

[The statement submitted for the record by Alan Leak follows:]

December 12, 2003

Honorable Richard W. Pombo, Chairman
1522 Longworth House Office Building
U.S. House of Representatives
Washington, DC 20515-6204

Dear Honorable Pombo, and Members of the Subcommittee on Water and Power:

As a native Coloradan, a resident of the City of Centennial, and a water resources engineer with over 23 years of water resources planning experience whom is extremely concerned about Colorado's water future, I appreciate you taking time today to hear testimony on how the United States can help Colorado further develop its water supplies.

I am writing you today to request the United States take whatever actions are necessary which would allow, facilitate, and promote the diversion of up to 240,000 A.F./year of waters of the Gunnison River and tributaries at or above Blue Mesa Reservoir for the benefit of the residents of the State of Colorado upon payment for power interference charges at the Aspinall Unit.

Proposed diversions of water from or above Blue Mesa Reservoir above 60,000 A.F. per year have been opposed by United States officials in the past based primarily upon the transparent need to protect hydropower and other claimed uses at the Aspinall unit. This was never the intent of the Colorado River Storage Project Act (Act) under which the Aspinall Unit was constructed. The following describes the current state of renewable water resources within the State of Colorado and why and how such a request should be approved.

Colorado is uniquely situated at the headwaters of seven major river systems which discharge an average of 10,726,000 A.F. of water per year to our neighboring states as follows (see Exhibit A):

1.	Platte River Basin	892,000 AF/Yr
2.	Arkansas River Basin	163,000 AF/Yr
3.	Rio Grande River Basin	328,000 AF/Yr
4.	San Juan / Las Animous River Basin	1,891,000 AF/Yr
5.	Colorado River Basin	4,632,000 AF/Yr
6.	Delores River Basin	573,000 AF/Yr
7.	White / Yampa River Basins	2,246,000 AF/Yr
TOTAL LEAVING COLORADO		**10,725,000 AF/YR**

(Ref: Colorado Division of Water Resources, 2000)

Ninety-three percent (93%) of this water (9,670,000 AF/YR) originates on the west slope of the Colorado Rockies. In comparison, over 81% of Colorado's total population resides on the east slope of the Colorado Rockies. To meet the current water demands of this large (3.6 million) east slope population base, Colorado water providers have diverted water from the west slope (transmountain diversion), dried-up agricultural lands, depleted non-renewable groundwater, and instituted water conservation measures. However, to meet the State's current and future east slope populations, additional water supplies from the west slope of Colorado will be, and are currently, necessary. Repeated attempts to divert water from the Gunnison River Basin have been met with opposition, with the water rights assigned to, and owned by, the United States for the Aspinall Unit being wrongly used to prevent transmountain diversions out of the Gunnison River basin at or above Blue Mesa Reservoir.

Compact requirements and the Endangered Species Act have severely restricted Colorado's ability to use water leaving the state from the South Platte River and the Arkansas River. In addition, existing transmountain diversions (see Exhibit B) out of the upper tributaries of the Colorado River (i.e. Blue River, Eagle River, Roaring Fork River, Fryingpan River, Fraiser River, etc.), coupled with the Endangered Species Act, limit the amount of additional water (if any) which could be diverted from these rivers for use on the eastern slope of Colorado. In contrast, the largest untapped and economically feasible renewable water source for the east slope population is to divert water out of the Gunnison River Basin, which currently discharges almost 1,900,000 AF annually to the Colorado River. This represents 40% of the total flow of the Colorado River leaving the State of Colorado.

The Colorado River Compact apportioned to the State of Colorado a share of the flows in the Colorado River. It has been estimated that up to 1,000,000 AF annually of Colorado's compact entitled water has been flowing out of Colorado for the lack of diversion and storage facilities.

In 1956, the Colorado River Storage project Act (Act) was enacted to assist the State of Colorado and other upper basin states in developing its compact entitled water. The Act provided for the construction of holdover storage reservoirs which, in times of drought, could be drained to meet Colorado's (and other upper basin states') compact requirements while still allowing Colorado to divert its compact entitled water. Hydropower facilities were constructed at these reservoirs in order to generate funds to pay for the project construction until such time as water upstream of the reservoirs was diverted by the upper basin states for compact entitled purposes. There was no intent to use hydropower purposes to prevent the upper basin states from using their compact entitlements. Rather the reservoirs were meant to assist in this utilization.

However, efforts by those opposed to transmountain diversions, in conjunction with United States officials have used the cloud of water rights adjudicated for hy-

dropower purposes in state water court and donated to the United States as a tool to prevent transmountain diversion of water from and above Blue Mesa Reservoir.

There is no doubt that the Aspinall Unit reservoirs generate a significant amount of power revenues and provide recreational benefits to the citizens of Colorado. However, in the current state of water needs in Colorado, the need for renewable water to Colorado's most populated east slope must outweigh the need for the incremental power production, which would be lost by an upstream transmountain diversion project, especially if the value of such power would be paid by those who are diverting the water (power interference costs). Studies of such proposed diversion of water from the Gunnison River Basin have been previously prepared (i.e. the USBR's original Gunnison-Arkansas Project), which proved that such diversions of water are viable.

The current missing component which would allow the State of Colorado to utilize water from the Gunnison River at or upstream of Blue Mesa Reservoir would be to direct the United States Bureau of Reclamation to facilitate and promote the diversion of water at, or above, Blue Mesa Reservoir. Specifically, the USBR should use the water rights assigned to the Aspinall Unit to place a call on the river system "only" when needed to refill the Aspinall Unit "after" a compact call for releases from storage.

An additional 240,000 AF per year of water diverted into the eastern slope river basins (Arkansas River and South Platte River) would put a significant dent into east slope water deficits. The reduction of 240,000 AF/year of runoff into Blue Mesa Reservoir represents only one-fourth of the average annual inflow to the reservoir, and would be diverted only in the average and high (wet) runoff years, thus protecting natural habitats and the stream corridor from damaging droughts and floods. Peaking flows could still be released for aesthetic and habitat protection in the Black Canyon of the Gunnison National Park.

This simple directive would protect the Upper Colorado River Basin area (above Green Mountain Reservoir) from further depletions, as well as lessen the threat to eastern and western Colorado agriculture from further dry-ups to meet Colorado's existing and growing population.

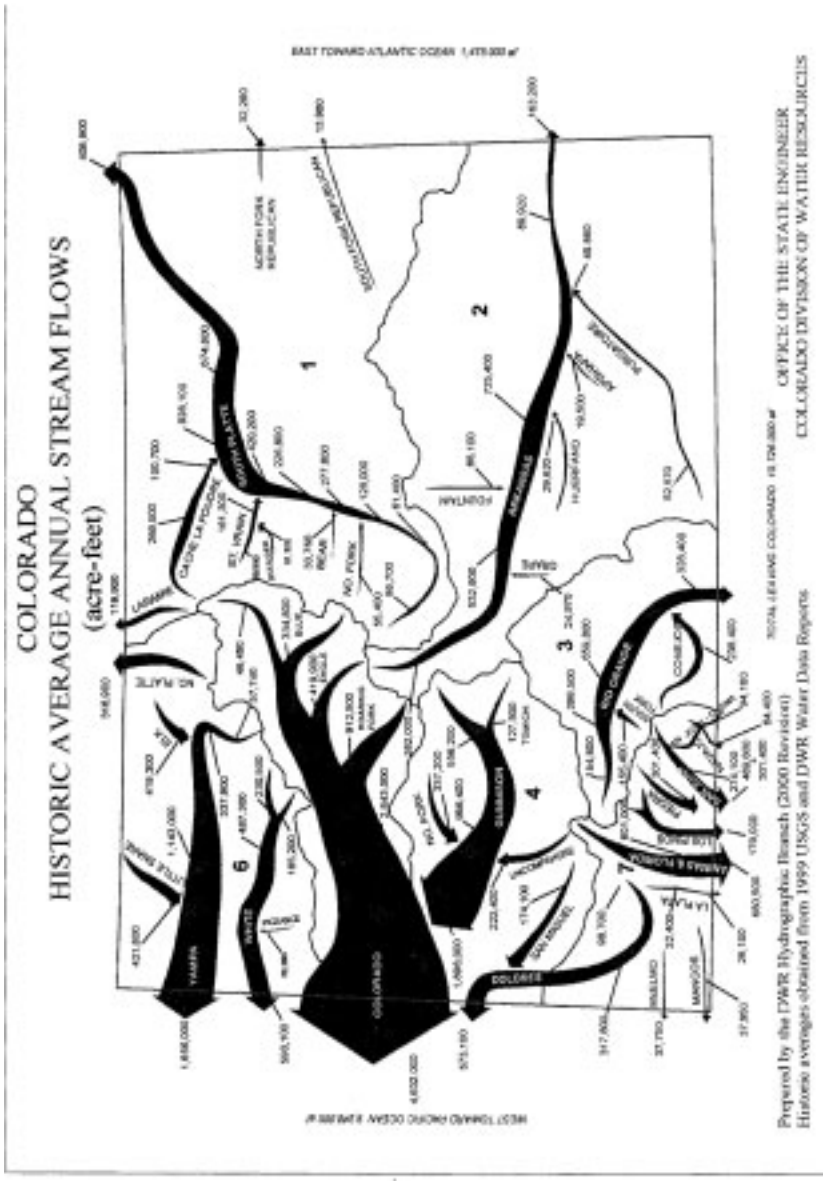
Because of page limits, I have not included information (reports, studies, etc.) to backup the statements included herein. I would be honored to provide whatever additional information is requested to allow the Commission to establish a basis of findings to support this request. I sincerely appreciate the opportunity to provide input to the Commission on this important topic.

Respectfully submitted,

Alan J. Leak, P.E.
6909 South Clermont Street
Centennial, CO 80122

[Exhibits A and B follow:]

EXHIBIT A


COLORADO
HISTORIC AVERAGE ANNUAL STREAM FLOWS
(acre-feet)
EAST TOWARD ATLANTIC OCEAN
WEST TOWARD PACIFIC OCEAN
1
2
3
4
5
6
7
YAMPA
WHITE
COLORADO
GUNNISON
DOLORES
SAN JUAN
ANIMAS
PINEDA
SAN MIGUEL
DUCHESNE
GREEN
ARKANSAS
SAN DIEGO
NO. PLATTE
SOUTH PLATTE
PUEBLO
TOTAL LEAVING COLORADO
OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
Prepared by the DWR Hydrographic Branch (2000 Revision)
Historic averages obtained from 1999 USGS and DWR Water Data Reports.

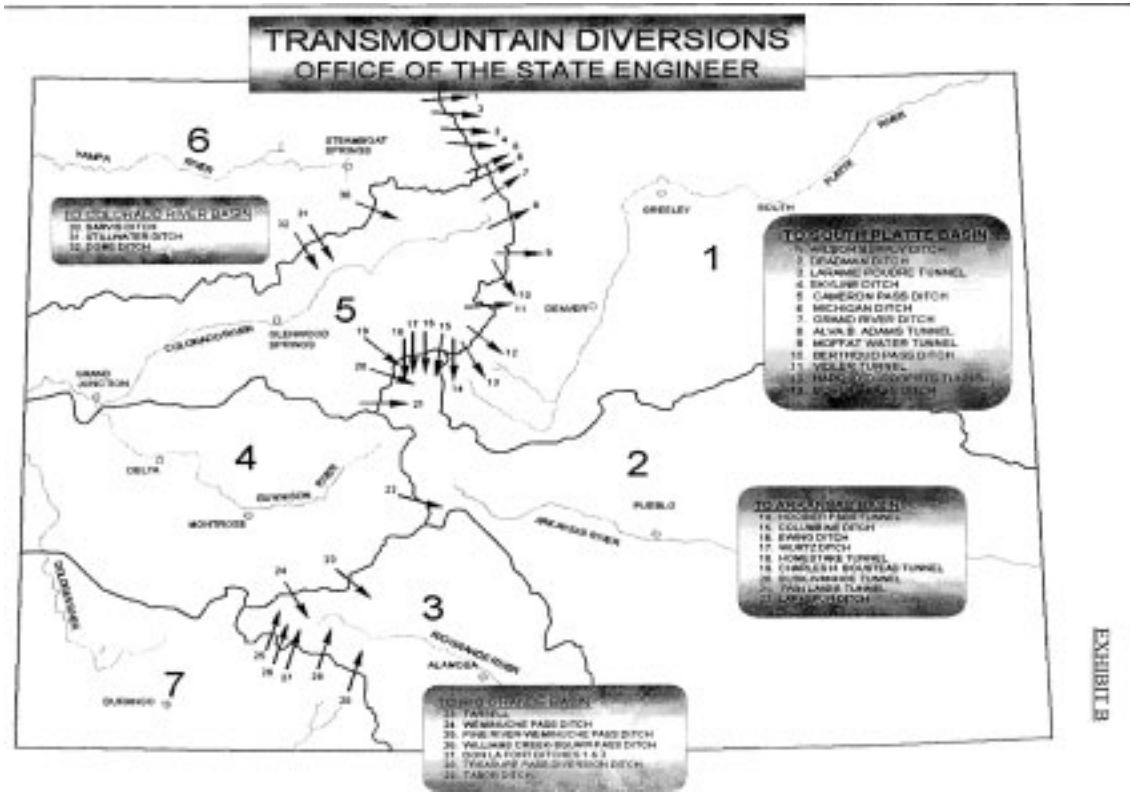

TRANSMOUNTAIN DIVERSIONS
OFFICE OF THE STATE ENGINEER
6
5
4
3
2
1
7
STEAMBOAT SPRINGS
GREELEY
DENVER
GLENWOOD SPRINGS
GRAND JUNCTION
DELTA
MONTROSE
PUEBLO
ALAMOSA
DURANGO
1. WILSON SPRING DITCH
2. GRADMAN DITCH
3. LARAMIE POUDRE TUNNEL
4. BOXELDER DITCH
5. CAMERON PASS DITCH
6. MICHIGAN DITCH
7. GRAND RIVER DITCH
8. ALVA B. ADAMS TUNNEL
9. MOFFAT WATER TUNNEL
10. BERTHOUD PASS DITCH
11. VOLKS TUNNEL
12. HARRIS DIVERSIONS TUNNEL
13. BOOMERANG DITCH
14. FOURMILE TUNNEL
15. COLUMBINE DITCH
16. EARNO DITCH
17. WURTZ DITCH
18. HOMESTAKE TUNNEL
19. CHARLES H. BOUNTEAU TUNNEL
20. SUBLIMITY TUNNEL
21. TWIN LAKES TUNNEL
22. LAKE CREEK DITCH
23. TARYNA
24. WEMINUCHE PASS DITCH
25. PINE RIVER-WEMINUCHE PASS DITCH
26. WILLIAMS CREEK-BOLAM PASS DITCH
27. DON LA FORT DITCHES 1 & 2
28. TREASURE PASS DIVERSION DITCH
29. TABOR DITCH

EXHIBIT B