

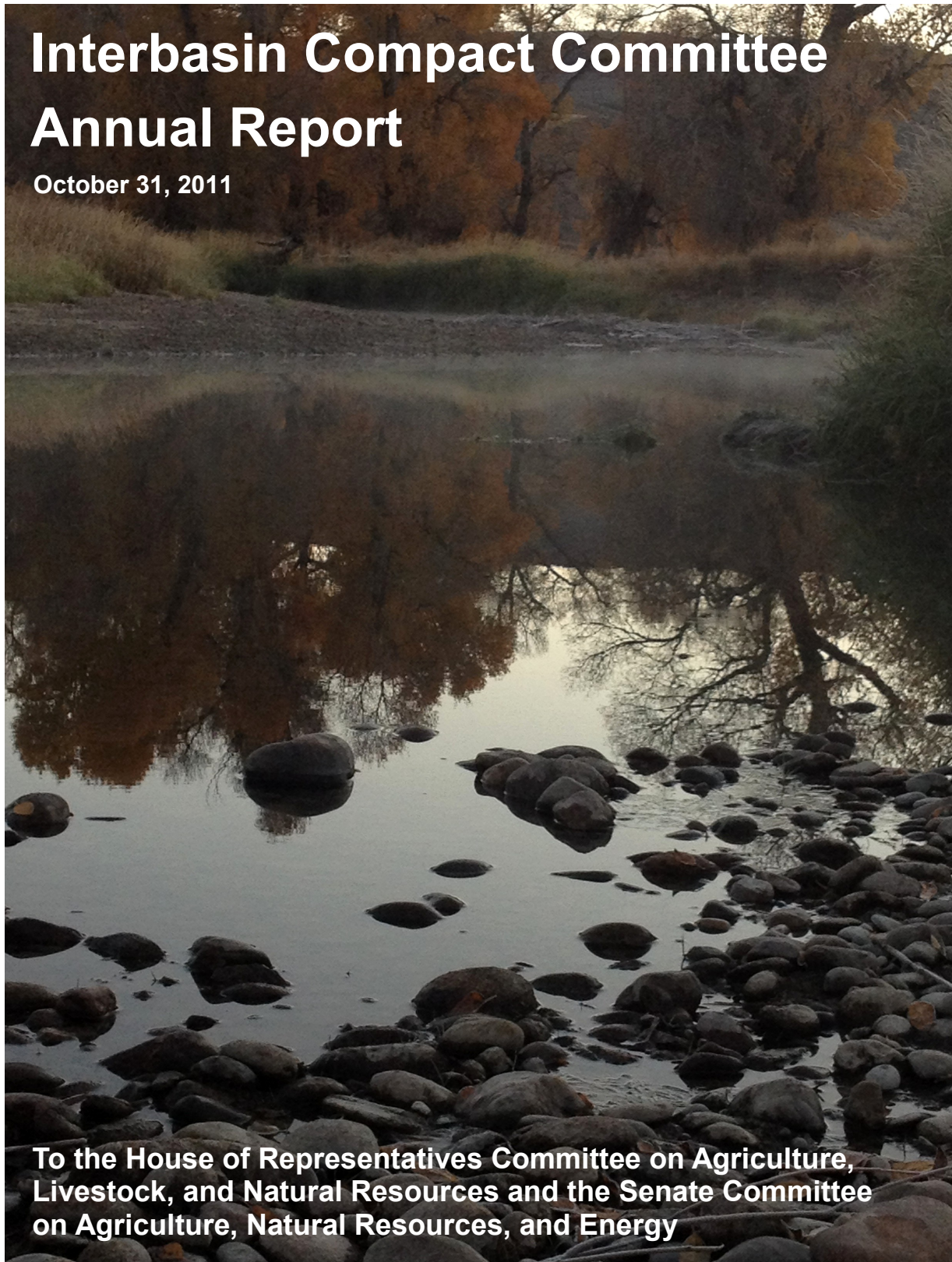


Colorado's Water Supply Future



Interbasin Compact Committee Annual Report

October 31, 2011



To the House of Representatives Committee on Agriculture,
Livestock, and Natural Resources and the Senate Committee
on Agriculture, Natural Resources, and Energy

Carpenter Ranch, Hayden, CO by Taryn Hutchins-Cabibi



John W. Hickenlooper - Governor
Mike King - DNR Executive Director
Jennifer Gimbel - CWCB Director



From John Stulp

*Special Policy Advisor to the Governor for Water
Director of Compact Negotiations*

The Interbasin Compact Process accomplished an amazing amount of work over the past year. Since our last report, we have reached several major milestones that are discussed in this report, four of which are highlighted here. First, on December 15, 2010 the IBCC reported to then Governor Ritter and elected Governor Hickenlooper on the challenges facing Colorado's water supply future and potential solutions. This report to the Governors continues to be a critical document outlining a framework of solutions to our 2050 water challenges. Second, the roundtables completed, their consumptive and nonconsumptive needs assessments. The Colorado for the 21st

Century Act asks each Basin Roundtable to analyze their consumptive and nonconsumptive water supply needs. The completion of these needs assessments is a major milestone. Third, the Statewide Water Supply Initiative 2010 (SWSI 2010) was approved by the Colorado Water Conservation Board in January of 2011. It incorporates the needs assessment work of the roundtables and provides a common technical platform for the analysis of Colorado's water supplies, demands, and solutions to our challenges. Finally, we conducted the first ever Statewide Roundtable Summit in March of 2011. Together, the nearly three hundred participants at the summit helped determine the path forward as laid out in the "roadmap" memo.

This work was only able to be accomplished with the volunteer dedication of the roundtable and IBCC members and the leadership provided by Alex Davis, my predecessor as Director of Compact Negotiations, and Jennifer Gimbel, CWCB Director.

Now that the needs assessments are complete, we are moving into an implementation stage, or as the HB 1177 legislation frames it, ready to "propose projects or methods, both structural and nonstructural, for meeting those needs."

Each roundtable is currently developing portfolios to meet future municipal and industrial needs that minimize impacts to agriculture and the environment. To do so, they are working with the portfolio and trade-off tool developed by the CWCB. The Basin Roundtables are meeting the challenge of creating portfolios that meet the needs of all of Colorado's basins. One common theme is that these portfolios use a combination of already planned projects, conservation, new supplies from the Colorado River system to service both sides of the continental divide, and agricultural transfers. Roundtables are learning the interconnectivity of agriculture in Colorado, are agreeing that conservation needs to exist throughout the state, and are grappling with the challenges of developing additional Colorado River water for use on both the East and West Slopes.

This portfolio work sets the stage for determining how we are going to implement the strategies outlined in the portfolios. As was outlined in the "roadmap" memo, each of the roundtables should develop plans for how to meet their own needs and how to work with other roundtables on issues that cross basins.

While roundtables create plans to meet their nonconsumptive and consumptive needs, they are using Water Supply Reserve Account funds and other money sources to implement projects and methods that address their needs. We have seen the success of significant projects, and I believe we will see many more of these over the next few years.

The work we are doing today is setting the stage for the next few years. We are on track to accomplish the following objectives by 2016:

- Basin roundtables, water stakeholders, and the state have made a measurable dent in addressing future water challenges by implementing on-the-ground consumptive and non-consumptive projects and methods
- Compile basin plans and statewide work into a state water plan
- Complete SWSI 2016

I am proud of the work that has already been accomplished and look forward to the great work that is about to be done. With the help of the Governor, legislature, volunteer stakeholders, and staff I am confident we can tackle the challenges that lie before us.



IBCC's Report to the Governor

On December 15th, 2010, the IBCC sent a report to the Governor outlining the path forward. The IBCC wrote in their report: *The agreement taking shape seeks to balance meeting municipal, agricultural, and non-consumptive needs by using a mix of new water supply development for West Slope and East Slope uses, conservation, completion of IPPs, and agricultural transfers. All parts of this four-pronged framework should be pursued concurrently. In this effort, we have agreed that a successful framework will be one that shares the burdens and the benefits across all water sources and demands, including consumptive and non-consumptive uses.... [I]t is clear that no one strategy can meet Colorado's growing water needs without harming values important to all Coloradans. Therefore, a mix of solutions is needed.*

This remains a framework for how the state is moving forward to help implement conservation, identified projects and processes, new supply development, and agricultural transfers. Already two of the conservation recommendations are being considered. The governor is considering an executive order regarding conservation plans for state facilities and subcommittee members and Denver Water are working with the state legislature on possible changes to the plumbing code to achieve faster passive conservation savings more rapidly. In addition, the Governor's office is considering the recommendations of the IBCC to create an IPP task force.

The full report can be downloaded here: <http://cwcb.state.co.us/about-us/about-the-ibcc-brts/Pages/main.aspx>

Statewide Water Supply Initiative (SWSI) 2010 and Appendices


At its January 2011 meeting, the CWCB board approved SWSI 2010. This work encompasses much of the needs assessment work of the basin roundtables and identifies 16 recommendations. The SWSI 2010 Overall Key Finding reads: *Colorado faces a shortage of water for meeting the state's consumptive and nonconsumptive water needs. In order to meet Colorado's water management objectives, a mix of local water projects and processes, conservation, reuse, agricultural transfers, and the development of new water supplies should be pursued concurrently.*

Copies of the report are available upon request and are available by clicking on the links in the SWSI 2010 outline below or by going to <http://cwcb.state.co.us/water-management/water-supply-planning/Pages/SWSI2010.aspx> and include the following:

- An executive summary
- An analysis of nonconsumptive needs and nonconsumptive projects and methods
- An analysis of consumptive needs, including municipal, industrial, and agricultural water needs
- An analysis of water availability in each river basin
- An analysis of municipal and industrial identified projects and processes and a municipal and industrial gap analysis, and strategies to fill the gap.



Colorado's Water Supply Future



SWSI 2010 Mission Statement, Key Findings, and Recommendations

Statewide Water Supply Initiative 2010 Mission Statement

The Colorado Water Conservation Board will help Colorado maintain adequate water supplies for its citizens, agriculture, and the environment. This will be accomplished through a mix of solutions, all of which should be pursued concurrently.

Introduction

There can be no life without water. Water is indeed the life blood of any community; be it the Front Range metropolis or the farming and recreational communities within Colorado. We know that water supplies are not unlimited. Colorado's growth, development, and quality of life depend upon sustainable and secure supplies of water. The Colorado Water Conservation Board (CWCB), governed by a citizen board, is the state agency responsible for looking at this resource from a statewide perspective. Its mission is to conserve, develop, protect, and manage Colorado's water for present and future generations.

A few years ago, the CWCB, with the blessing of the General Assembly, took on the charge to better understand and prepare for Colorado's future water supply needs. In 2004, the CWCB developed the Statewide Water Supply Initiative (SWSI 1), which comprehensively identified Colorado's current and future water needs to the year 2030. SWSI 1 examined a variety of approaches Colorado could take to meet those needs. In 2006, the report was supplemented by SWSI 2 by adding to the technical work on water conservation, alternative agricultural water transfers, and environmental needs.

SWSI 1 implemented a collaborative approach to water resource issues by establishing "basin roundtables"—diverse groups of people who provide input on water issues. The basin roundtables established a grass roots effort for education and collaboration on water planning issues; those efforts were institutionalized in the Colorado Water for the 21st Century Act of 2005. The Act also created a 27-member Interbasin Compact Committee (IBCC) to facilitate conversations within and between basins.

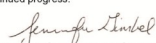
The Act charges the basin roundtables to develop consumptive and nonconsumptive needs assessments and propose projects and methods to meet those needs. The SWSI 2010 update relies on those basin needs assessments and can inform local and regional water

John Hickenlooper – Governor
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planning efforts; however, SWSI is not intended to replace local project planning or implementation. SWSI 2010 compiles information to develop a common understanding of existing and future water supplies and demands, both consumptive and nonconsumptive, throughout Colorado. Key elements of this update include:

- Analysis of water supply demands to 2050;
- Summary of nonconsumptive needs in each basin, as identified by the basin roundtables;
- Analysis of supply availability in the Colorado River Basin;
- Implementation elements associated with identified projects, water conservation, agricultural transfers (both permanent and nonpermanent), and development of new water supplies; and
- Development of estimated costs of implementing water supply strategies.

SWSI 2010 provides a comprehensive picture of Colorado's water needs—now and in the future. The CWCB intends SWSI to be updated and refined every few years. Also, to ensure the local perspective in this report, each basin roundtable will supplement this report with individual basin reports later in 2011. Used as a statewide planning tool, SWSI 2010 provides comprehensive information to water providers, state policy makers, and the General Assembly as they make decisions for accomplishing our next step—to work together on implementing the necessary strategies to meet our near and long-term future water supply challenges. The CWCB, its staff, and I look forward to working with the stakeholders on implementing strategies to meet the identified water needs, and will keep you up-to-date on our continued progress.


 Director of the Colorado Water Conservation Board

CDM

January 26, 2011



Basin Needs Reports

The basin roundtables reached a milestone in June 2011 with each basin roundtable completing their needs assessment. The Colorado Water for the 21st Century Act requires each basin roundtable to “develop a basin-wide consumptive and nonconsumptive water supply needs assessment” by analyzing their consumptive needs, nonconsumptive needs, available water supplies, and proposing projects and methods for meeting those needs. Each basin roundtable’s needs assessment report is available on CWCB’s website at: <http://cwcb.state.co.us/water-management/basin-roundtables/Pages/main.aspx>.

Statewide Summit

Nearly 300 roundtable members, IBCC members, and water stakeholders attended first every Statewide Roundtable Summit on March 3rd, 2011. Discussion at the Summit highlighted the process entering an implementation phase, and Governor Hickenlooper announced the need for a State Water Plan. The Summit was the first time all the roundtable came together and had a shared discussion. Out of the success of the Summit, the path forward was framed and subsequently written in the “roadmap” memo described below. Full details of the summit, including audio clips and summit proceedings, are available at <http://cwcb.state.co.us/about-us/about-the-ibcc-brts/Pages/StatewideRoundtableSummit.aspx>.

Roadmap Memo

On May 26th, 2011, Director John Stulp issued a memo dubbed the Colorado Water for the 21st Century Roadmap Memo. This memo was developed in cooperation with the basin roundtable chairs, the IBCC, and the CWCB Board members. It outlines the path forward for the process and is summarized in the graphic below. The full memo is available at: <http://cwcb.state.co.us/public-information/board-meetings-agendas/documents/july2011/31.pdf>.

Year 1 and Year 2	Mid-Term
Basin Roundtables	
<ol style="list-style-type: none"> 1. Finish Basin Reports 2. Identify consumptive and non-consumptive projects and methods to get behind and begin strategic implementation 3. Develop statewide portfolios 	<ol style="list-style-type: none"> 1. The basin roundtables will continue to work with their local constituencies to identify ways that the region will meet future consumptive and non-consumptive needs using a portfolio approach. This can provide a vision for the basin, including how to fill the water supply gap. Basin roundtables may choose to add more specificity. 2. Continue implementation of consumptive and non-consumptive projects and methods.
Colorado Water Conservation Board	
<ol style="list-style-type: none"> 1. Support basin roundtable / IBCC technical work and portfolio development 2. Develop statewide portfolios 3. Begin to implement SWSI 2010 recommendations 4. Review WSRA criteria and guidelines 	<ol style="list-style-type: none"> 1. Support basin roundtables in technical work 2. Continue implementing SWSI 2010 3. Begin SWSI 2016
Interbasin Compact Committee	
<ol style="list-style-type: none"> 1. Identify and execute next steps for IBCC subcommittees 2. Support basin roundtable portfolio development and bring portfolios together 3. Review WSRA criteria and guidelines 	<ol style="list-style-type: none"> 1. The IBCC members will work with their basin roundtables or constituencies to determine the specifics of cross-basin and statewide consumptive and non-consumptive projects or methods

Milestones

Basin roundtables, water stakeholders, and the state have made a measurable dent in addressing future water challenges by implementing on-the-ground consumptive and non-consumptive projects and methods

Compile basin plans and statewide work into a state water plan

Complete SWSI 2016



New Major Tools

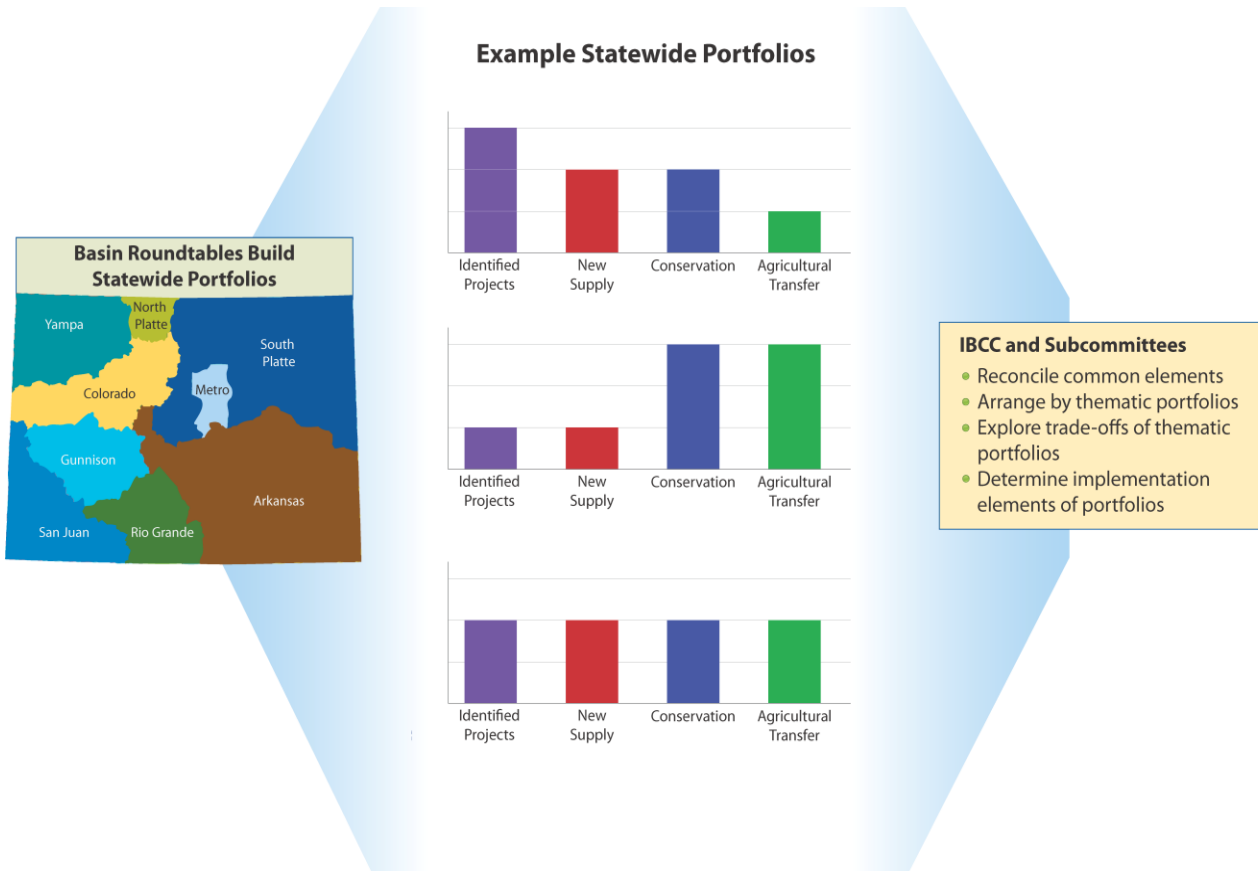
Portfolio and Trade-off Tool:

To facilitate the discussion of how Colorado is going to meet its future water supply needs and how those solutions may be implemented, the CWCB created [Colorado's Water Supply Future Portfolio and Trade-Off Tool](#). Each roundtable is currently using this planning tool to build statewide portfolios by examining different combinations of strategies or "portfolios" for meeting the state's future municipal and industrial (M&I) water needs.

No one strategy can solve the future water needs of the state, so the portfolios include different mixes of strategies, such as conservation, reuse, agricultural transfers and new water supply development. These mixes are applied to a range of potential future scenarios representing low, medium and high water demand and new water supply availability. The tool

allows stakeholders to view immediately the resulting trade-offs associated with individual portfolios and scenarios, such as reduction in irrigated acres, changes in stream flows and costs. Through the Portfolio Tool, the CWCB, IBCC, basin roundtables and other stakeholders are making more informed decisions about how Colorado will meet its future water needs.

To download the tool and see the documentation, visit: <http://cwcb.state.co.us/technical-resources/portfolio-tool/Pages/main.aspx>





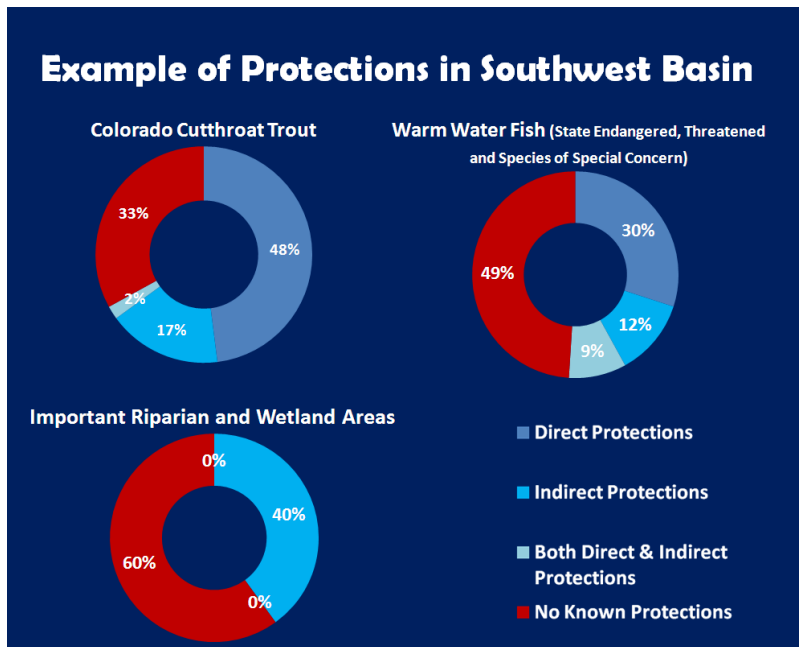
Basin Needs Decision Support System

The BNDSS is still under development, but a prototype is expected to be completed by the end of the year. The system will include municipal and industrial Identified Projects and Processes (IPPs) and incorporate the nonconsumptive database (see below). The system will also house provider demand data as well as population data for future SWSI analyses. The BNDSS will allow CWCB to track the progress of Colorado’s M&I IPPs and projects and methods for meeting Colorado’s nonconsumptive needs.

Nonconsumptive Mapping and Database

Basin roundtables identified where important nonconsumptive values are throughout the state, as represented in SWSI 2010 and the basin reports. Geo PDF’s were developed so that people can click on a stream reach and identify what nonconsumptive attributes, whether it being an endangered fish species or a boating area, exist in that area.

Through surveys and additional research, CWCB mapped the location of existing and planned nonconsumptive projects. All of this information was put into a database which indicates whether the project provides direct or indirect protections and for which attributes. CWCB now has a database that can help roundtables assess questions about different attributes in a given area, such as the information presented in the figure. CWCB expects that roundtables will use this information as they develop implementation plans for meeting their consumptive and nonconsumptive needs.



Basin Roundtable Education Action Plans

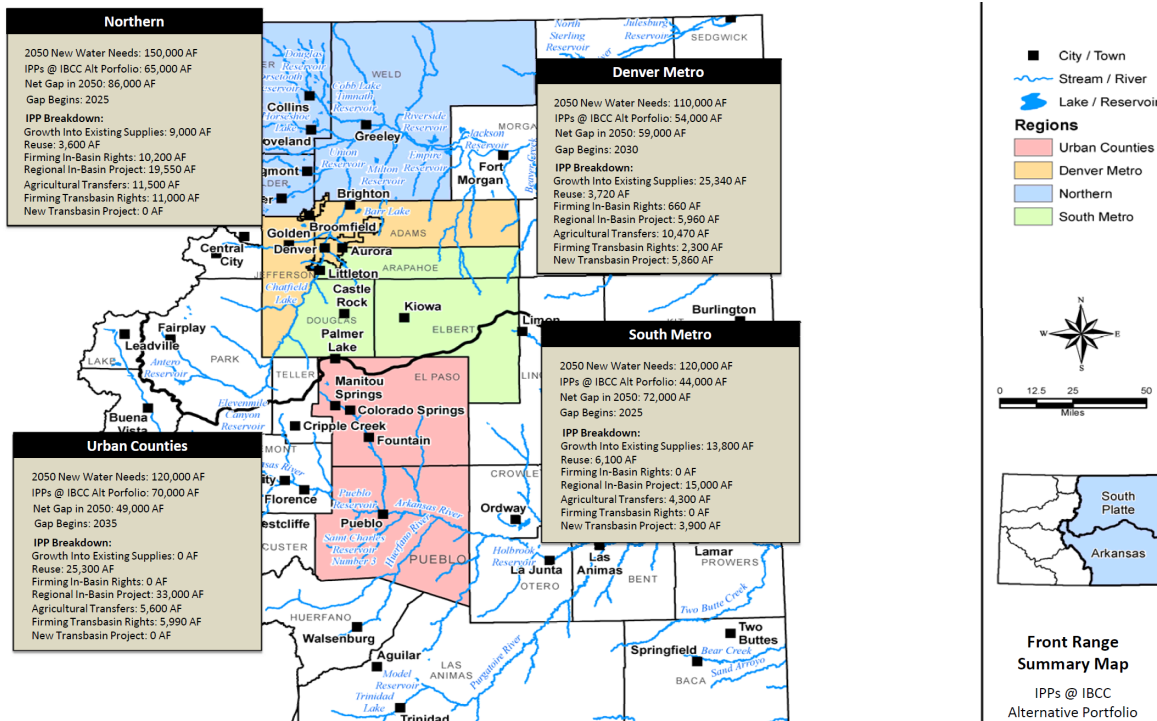
Each basin roundtable established an education and outreach committee, and through these committees developed Education Action Plans. The action plans detail the educational goals and tasks for each basin roundtable. Implementation of these Education Action Plans will help engage the public in the work of the roundtables and some identify activities to educate the roundtable membership on important water issues. Download a basin roundtable education action plan by going to <http://cwcb.state.co.us/public-information/education-outreach/Pages/IBCCPublicEducationParticipationOutreachWorkgroup.aspx> and clicking on it in the section to the right.

Many of the roundtables are currently implementing significant educational activities within their basins. The latest summary of these activities is available at: <http://cwcb.state.co.us/public-information/education-outreach/Documents/PEPO/EAPs/PEPO2011ReviewFinal.PDF>. CWCB will continue to help each basin roundtable implement their Education Action Plans.



The Municipal and Industrial Water Supply Gap

As part of SWSI, the CWCB produced an analysis of the water supply gap. This is the difference between Colorado’s future municipal and industrial (M&I) water supply needs and those water supplies that water providers are already planning. As stated in SWSI, *Colorado faces a significant M&I water supply gap in 2050. The M&I gap varies between 190,000 and 630,000 AFY depending on the success rate of the IPPs [those projects and processes identified by the water providers]. By 2050, Colorado’s M&I gap could be between 32 percent and 66 percent of new M&I demands.*



The IBCC wanted to look in more detail with regard to the timing and location of the gap than provided in SWSI and also make a few different assumptions. The figure below demonstrates one figure in the “Basin Municipal & Industrial Gap Analysis” memo produced for the IBCC. The full memo can be downloaded by going to CWCB’s Reports and Studies Page: <http://cwcb.state.co.us/public-information/publications/Pages/StudiesReports.aspx>.

Public Education, Participation, and Outreach Committee (PEPO)

The IBCC has several subcommittees. The Public Education, Participation, and Outreach Committee (PEPO) is the only legislatively mandated subcommittee, and is made up of IBCC members, educational experts, and the Basin Roundtable Educational Liaisons. PEPO was responsible for organizing the March 3rd, 2011 Statewide Roundtable Summit described elsewhere in the report. The Basin Roundtable Education Liaisons use PEPO as a forum to share their local educational activities.

PEPO is currently working on making the IBCC’s consensus agreements digestible to the public. One critical message PEPO identified is that *our water needs exceed our planned supplies, creating a “gap.” We need a portfolio of solutions that incorporates water from conservation, reuse, agricultural to municipal transfers, and the development of new supplies to minimize the impact to agriculture, the environment, and recreation.* PEPO is working with the Water 2012 coalition to get the key messages out to the public, along with print media, and developing a base presentation to assist roundtables’ outreach to civic groups and local government.



Investigating Alternative Agriculture to Municipal Water Transfers

Due to the likelihood that increased transfers of agricultural water rights will occur in the coming decades in order to satisfy M&I water demands, there is a desire by the state policy makers to promote alternatives to traditional transfers resulting in permanent dry-up in order to minimize the negative socioeconomic impacts to rural communities that so often result from such transfers. In a letter to Governor Ritter and Governor-elect Hickenlooper, dated December 15, 2010, the IBCC stated that permanent agricultural water transfers should not become the default approach to meeting the state's water supply gap and that alternative agricultural transfers are likely to be preferable to permanent transfers because they would promote ongoing agricultural ownership of irrigation water rights and will assist in keeping agricultural land in production, even if on a reduced basis. It is important to note that Colorado's current water court transfer process is heavily weighted towards dry-up of irrigated lands in order to transfer the historical consumptive use (CU) water. To provide incentives for M&I water providers to consider alternative methods for their water supply options, in 2007 the Legislature authorized the CWCB to develop a grant program to facilitate the development and implementation of alternative agricultural water transfer methods (ATMs). In 2009, the Legislature authorized an additional \$1.5 million for the program.

Since its inception, the CWCB's Alternative Agricultural Water Transfer Methods Grant Program has awarded \$2.8 million to various water providers, ditch companies, and university groups for the funding of a variety of projects to study and further various alternative water transfer methods including rotational fallowing, Interruptible Service Agreements (ISAs), water banks, purchase and leasebacks, deficit irrigation, and changing crop

types. Projects from the first round of grants include studying alternatives to continuous irrigated crops, developing the "Flex CU" market concept, and investigating a water bank concept where both farmers and M&I users could deposit water in FRICO's existing infrastructure.

With the exception of purchase and leasebacks and some limited occurrences of short-term leasing, these ATMs are just beginning to be explored as viable options for meeting M&I water demands in Colorado. While promising, there are technical, legal and institutional, financial, and other issues associated with ATMs. Through the ATM Grant Program, CWCB and others are currently exploring ways to address these issues



utilizing incentives to gain greater awareness, interest, and participation from agricultural water users and municipalities with alternative agricultural water transfers. In January 2011, the CWCB approved additional grant requests (\$1.2 million) to continue advancing this area of water management. The new grants range from working on developing a West Slope Compact Water bank to examining excess augmentation credits in the South Platte River and identifying means to use those credits.

Detailed information on the program, including descriptions of funded projects, is described in a Colorado Water Conservation Board's (CWCB) Report, "Alternative Agricultural Water Transfer Methods Grant Program Summary, May 2011" (Grant Program Summary). The full report is available at the CWCB website:

<http://cwcb.state.co.us/water-management/water-supply-planning>



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