Supporting Document C-2

Slide Shows

"To Seek a Wise, Peaceable Solution
To a Serious Mutual Problem"

MRG Regional Water Planning
A Multi-Dimensional Problem

Balance Water Use with Renewable Supply

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2 October 2001
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Why Are We Here?

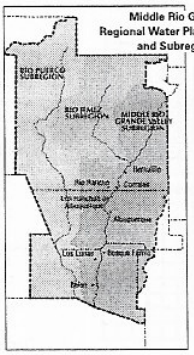
To Introduce the MRG Water Situation
and
To Identify Where the Water Resources Program
Might Contribute

A Real Issue Needing Real Help

Context Overview:

- Rio Grande Compact
- Some Lawsuit History
- Interstate Stream Comm.
- NM State Planning
- Regional Planning
- MRG Region
- Otowi to Elephant Butte
- WA, WRB, CoG

- Kinds of Water
- Effects of Wells
- Rights Priorities
- Full Appropriation
- Domestic Wells



Three Main Watersheds:

- **Rio Puerco**
- **Rio Jemez**
- **Rio Grande**

Three Diverse Counties:

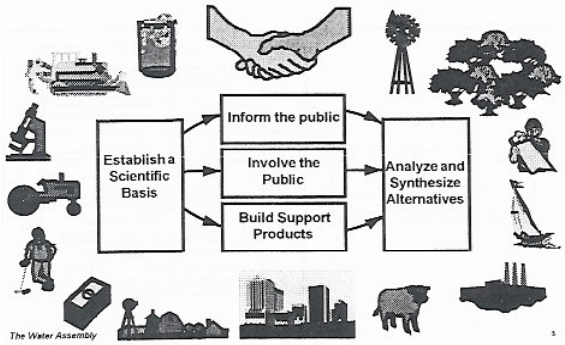
- Sandoval
- Bernalillo
- Valencia

What is Water Planning?

- **Answering Five Basic Questions:**
  - What is the Region's Water Supply?
  - What is the Region's Water Demand (now and future)?
  - What Alternatives Exist to Balance Supply and Demand?
  - Which Alternatives Fit the Community's Values?
  - What Strategies Will Implement the Accepted Alternatives?

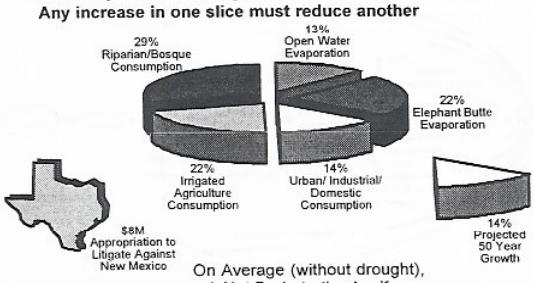
"An Open, Inclusive and Participatory Process"

Actively Bringing All Viewpoints to the Table
Toward a Broadly Acceptable Solution



The Serious Mutual Problem

**The whole pie is now being used;
Any increase in one slice must reduce another**



On Average (without drought),
A Net Drain to the Aquifers:
70,000 afpy, growing to 150,000

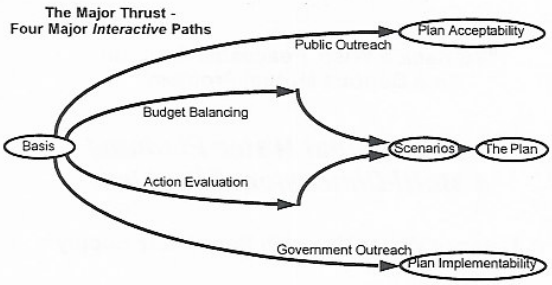
How Did We Get Here?

Some History:

- State Mandated Regional Water Planning
- Water Assembly in 1997, Action Committee
- Constituency Groups, Working Teams
- Partnership with Council of Governments (CoG)
- Previous Work; Basis for Progress:
  - Water Budget, Supply Study, Current & Historical Demand, Future Demand Study
  - Roadshow, Water Picture Show, Community Conversations, Forum, Survey
  - Public Comment Database, Preliminary Evaluation Methods and Criteria
  - ISC Template, Annotated Table of Contents, Scope of Work

Lots Done; Lots More to Do

Planning Our Water Future - The Outline



Four Major Flow Paths - Plus Lots of Details

Quantifying our Values

Water Balancing Spreadsheet

ector	Current Water Use			No-Action Future Water Use			Plan Future Water Use		
	Per Unit	Units	Use	Per Unit	Units	Use	Per Unit	Units	Use
iparian									
dustrial									
omestic									
griculture									
...									
quifer Drain			70K			150K			0

Press the Constituencies to Make Trade-Offs

Understanding Our Options

Alternative Action Database - Example Rows and Columns

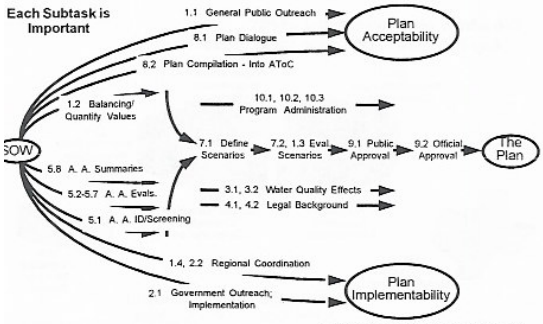
	Attributes of the Actions													
	Clear Title	Status of Item	Cost to Do	Job Impact	Aquifer Impact	Laws Needed	Justice Implication	Pueblo Preference	Ag C/G Pref.	Urban C/G Pref.	Meeting Constraints	Survey Information	...	...
Action 1														
Action 2														
Action 3														
Action 4														
Action 5														
...														
...														
...														
...														
...														
Action 197														

Categories of Actions:
- Watershed Management
- Urban Management
- Conservation
- ... etc.

Categories of Attributes:
- Feasibility:
  - Technical
  - Political
  - Economic
  - ... etc.
- Judgmental:
  - Agricultural
  - Urban
  - Native American
  - ... etc.

Decisions Based on Facts

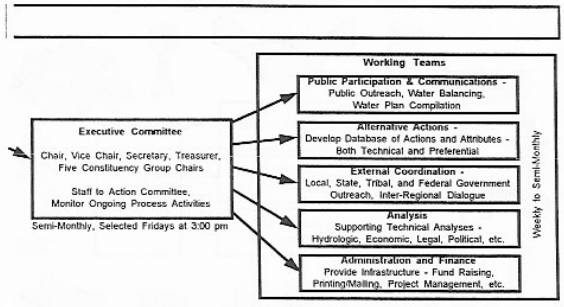
Planning Our Water Future - How the SOW Fits the Flow



Subtasks Are Being Designed

WA Execution Approach - Working Teams

Making the Water Planning Happen



Where Do You Fit In?

Short Term Public Participation

Current Approach:

- Present the Total Planning Process to the Public
- Quantify Values; Seek Input on Future Water Budget
- Preliminary Discussion of Alternative Action Database

- Utilize Print Media for Quasi-Survey
- Conduct Widespread Public Meetings
- Publicize via Broadcast Media

Substantial Preparation and Execution Effort

Short Term Technical Analysis

Current Approach:

- Refine the Alternative Action Database Structure
  - **Candidate Alternative Actions in Categories**
  - **Attributes of Alternative Actions to be Measured**
- Develop Early Fact Set
- Perform Early Screening of Actions
- Develop Refined Facts on Remaining Actions

Balancing Purism with Practicality

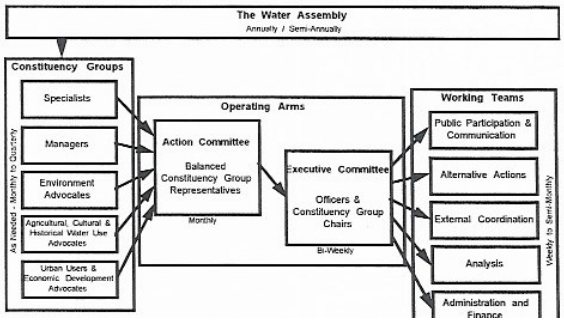
Summary

- An Overdefined Problem
- Individual vs Community Conflicts
- Decisions Based on Facts, ... as known
- Maximizing Public Involvement in the Solution

Seeking a Broadbased Action Plan for MRG Water

The Water Assembly Organization

For a Balanced Public Water Planning Process



The Middle Rio Grande
Regional Water Plan

Why? What? How?

Why Plan ?

- Those who plan for future water needs will be ready.
- Those who do not plan for future water, will not.
- Other agencies, regions & states are planning for their future needs.
- No one else is planning for our region.

Why Plan Now ?

- We cannot depend upon our recent bounty of wet years.
- Our region will "pay" if Texas doesn't get what it is entitled to by compact.
- The costs could run into the millions of dollars.

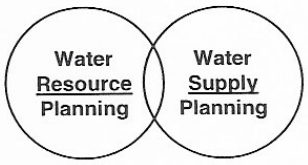
Why Plan Together ?

- Cooperate or litigate
- Cooperation is likely to be more effective.
- Cooperation is more responsive to local needs
- Cooperation is strength against external threats

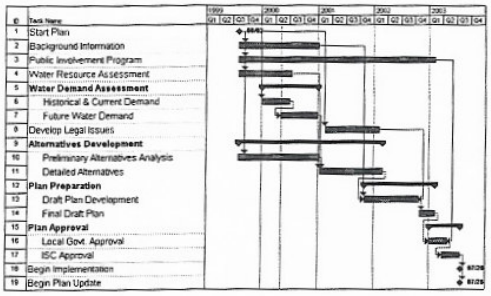
Motivation - A Brief Recap

- US Supreme Court strikes down ban on interstate water exports (1982).
- U.S. District Court says exports can be limited by demonstrated need in NM (1983).
- Regional water planning is the process to demonstrate that need (1987).

Regional Water Planning
What is it?



Current Project Schedule



Task 1 - Background Information

- Public Water Supply Sources & Facilities
- Public Water Supply Service Areas
- Wastewater Systems
  - Capacities & Seasonal Variation
  - Methods of Treatment
  - Points of Discharge
- Environmental Water Needs

Task 2 - Public Involvement Program *Objectives*

- Information to the Public
  - Nature of the Problem
  - What is the Regional Planning Process
  - Where we are in the process
- Information from the Public
  - Issues & Problem Statements
  - Goals & Objectives
  - Input on Alternatives and Analysis

Task 2 - Public Involvement Program *Approaches*

- Information to the Public
  - Newsletters
  - Press releases
  - Topical Information Brochures
  - Water Board Meetings
  - Regional Conferences
  - Co-sponsored meetings

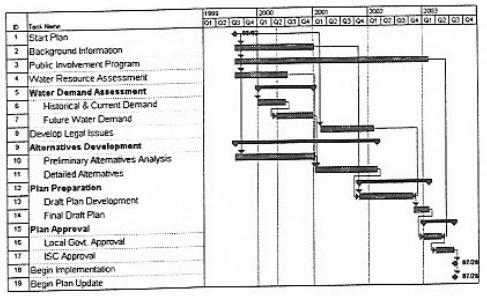
Task 2 - Public Involvement Program *Approaches*

- Information from the Public
  - Community Conversations
  - Focus Groups
  - Written Comments
  - Water Board meetings
  - Other Programmatic Committees as appropriate.

Task 3 - Water Resource Assessment

- Characterize Surface-Water and Ground-Water Resources
  - Availability
  - Variability of Supply
  - Quality
  - Storage
  - Constraints on Long-Term Supply

Current Project Schedule



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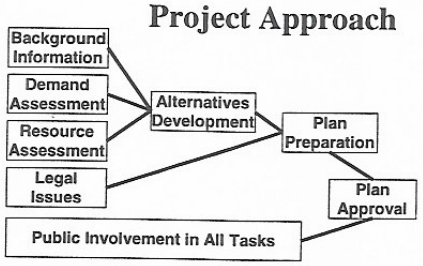
Task 4 - Water Demand Assessment

- Historical & Current Water Use
  - Public Water Supply
  - Self-Supplied Uses
  - Agricultural Uses
- Future Water Use
  - Population Projections
  - Economic & Other Trends

Task 5 - Legal Issues *Work Elements*

- Identify Constraints to Alternatives
  - State & Federal Law
  - Interstate Compacts
  - International Treaties
- Identify Opportunities & Feasibility for Legal Reform

Project Approach



Task 6 – Alternatives Development *Approaches*

- Manage Demand Differently
- Manage Water Differently
- Reallocate Water from Lower- to Higher-Valued Uses
  - Voluntary reallocation methods
  - Marketplace approaches
  - Mitigation of reallocation impacts

Alternatives Development *Key Information Needs*

- What are the impacts of the "do-nothing" alternative?
- How much will the "do-nothing" alternative cost?
- What is the feasibility of other alternatives?
- What do other alternatives cost?

Task 7 - Plan Preparation *Work Elements*

- Preparation & Technical Review of Preliminary Draft Planning Documents
- Public Review and Comment of Preliminary Draft Planning Documents
- Completion of Final Draft Plan
- Public Review and Comment of Final Draft Plan

Ingredients of a Good Plan

- Issues and alternatives are prioritized
- Realistic implementation schedule
- Funding needs and opportunities identified
- Gives direction, but doesn't solve all the problems at once

• dynamic maintenance & revision institution

Task 8 - Plan Approval

- Supported by members of the Water Resources Board
- Supported by Interstate Stream Commission
- Supported by State & Federal legislative delegations

• supported by the public

After Plan Approval (Tasks 9 & 10)

- Plan Implementation (Task 9)
  - Capital improvements
  - Operational Strategies
  - Statutory revisions
  - Interagency agreements
- Plan Update (Task 10)

⊗ routine vs. agressive public involvement campaign ?

ISC plan evaluations on web site

Presentation to the Water Resources Board

The Middle Rio Grande Regional Water Plan:

Mission, Goals, and Objectives from the Public Process

The Water Assembly
partnered with the Water Resources Board
of the Middle Rio Grande Council of Governments
13 December 2000

Bob Wessely
(505) 867-3889

Why Are We Here?

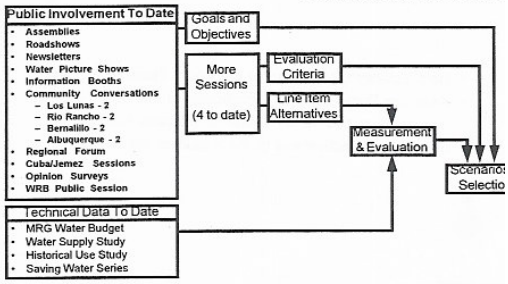
For the Council of Governments' Water Resources Board,
as the designated policy making board for water issues,
to review the draft Mission, Goals, and Objectives,
and to consider their adoption for the regional water plan

Outline of Topics

- Background, Context, and Process for Water Planning
- What Are "Mission", "Goals", and "Objectives"?
- How Did We Get the Draft MG&Os?
- How Will the MG&Os Be Used?
- What Are Some Next Steps?
- Content Review for the Draft MG&Os

Background, Context and Process Overview

"Public participation must be the significant factor in development of regional plans."
... the Regional Water Planning Handbo



What *Are:* Mission, Goals, and Objectives?

- **Mission** - the Purpose of the Water Plan
- **Goals** - Desired Results of the Water Plan
- **Objectives** - Specifics to Achieve the Water Plan Goals

How Did We Get the Draft MG&Os?

- WA/AC, CoG, ISC Contract
- Public Process
  - Background Events
  - Community Conversations
  - Regional Forum
  - Opinion Surveys
- Session Reports
- Traceable Compilation of Report Data
- Coordination between WA Staff and CoG Staff

Example from Traceability Backup

Conversation Report Data

1.3 Promote Appropriate Economic Development (in terms of culture, environment, water use)
- 1.3.1 Set standards for economic development based on a common vision
- 1.3.2 Develop policies and regulations to protect water resources
- 1.3.3 Permit only industries that are water efficient and non-polluting
- 1.3.4 Develop eco-tourism
- 1.3.5 Develop data on tax base needs
- 1.3.6 Provide job training in "attractive" industries

Compiled G & O Statement

C. Manage Economic Growth and Population Growth in a Manner Consistent with the Availability of Water Resource Supplies (1.3, 1.5, 4.4)
- o Develop goals for economic development based on a common vision and consensus that are consistent with the region's water supply (1.1.5, 1.3.1, 4.4.1, 4.4.2, 4.4.3)
- o Develop policies and regulations to protect water and cultural resources (1.1.3, 1.3.2)
- o Change laws, ordinances, policies to promote conservation through measures such as residential in-fill, realistic impact fees (4.3.4, 4.4.5, 4.4.6)
- o Promote appropriate economic development in terms of culture, environment, water use (1.3.3, 1.3.4, 1.3.5, 1.3.6, 5.2.4, 5.2.5, 5.3.7)
- o Manage residential and business development to protect and enhance water resources and decrease water consumption (5.4.8, 5.8.5, 5.9.2, 5.11.3)
- o Promote responsible development to maximize water resources based on regional and sub-regional resource constraints (1.5.3, 5.1.6, 5.8.10, 5.8.24)

Why Bother with the Traceability?

- o It helps ensure that data items from the public process have not been omitted.
- o It helps ensure that inadvertent content has not been injected by the data compilers.
- o It helps the reviewer understand/critique the merged text forming the goals and objectives.
- o It helps the reviewer understand the sources of the mission, goal, or objective:
  - 1.x.x = Los Lunas, Valencia County
  - 2.x.x = Rio Rancho, Sandoval County
  - 3.x.x = Bernalillo, Sandoval County
  - 4.x.x = Indian Pueblo Cultural Center, Bernalillo County
  - 5.x.x = Regional Forum, Valencia, Sandoval, and Bernalillo Counties
  - 5.1.x = Environment Special Interest Group at the Regional Forum
  - 5.2.x = Economic Development Special Interest Group at the Regional Forum
  - 5.3.x = Agriculture Special Interest Group at the Regional Forum
  - 5.4.x = Urban User Special Interest Group at the Regional Forum
  - 5.5.x = Rural User Special Interest Group at the Regional Forum
  - 5.6.x through 5.11.x = Cross Regional Breakout Groups at the Regional Forum
  - 6.x = IPP Telephonic Opinion Survey
  - 7.x = Handout Opinion Survey
  - 8.x = Analyst Augmentation during Compilation

How Will the MG&Os Be Used?

- Help Establish Roadmap for the Water Planning Process
- Keep the Public Values Continuously at the Fore
- Use as Yardstick during Scenario Selection Activities
- Determine Effectiveness of the Resultant Water Plan

What Are Some Next Steps?

- Use Adopted MG&Os to Refine Long Term Project Plan
- Develop a Detailed Structure for the Water Plan Document
- Round Out and Enhance the Constituency Participation
- Pursue Public Awareness and Public Input Activities
- Refine the List of Line Item Alternatives
- Evaluate Cost and Return from Each Line Item Alternative
- Collect/Negotiate Line Items into Alternative Scenarios

Mission and Goals

Overriding Mission

Balance All Water Uses with Renewable Supply in Perpetuity

Derived Goals

A.	Ensure Sufficient Water for the Rio Grande to be a Viable Ecosystem
B.	Preserve the Region's Agricultural, Cultural, and Historical Values
C.	Manage Economic Growth and Population Growth in a Manner Consistent with the Availability of Water Resource Supplies
D.	Develop Broad Public and Official Awareness of Water Issues
E.	Enhance the Conservation of Water in All Sectors
F.	Reform Water Management Laws and Processes
G.	Maintain the Integrity of the Public Water Planning and Implementation Process
H.	Ensure Sufficient Water Quality for each Use
I.	Preserve Qualities of Life Valued by Residents in the Region

Goals and Objectives (1 of 9)

Goal A

Ensure Sufficient Water for the Rio Grande to be a Viable Ecosystem

Supporting Objectives

A.1	Develop a comprehensive management plan for the Rio Grande through coordination of relevant government and private entities
A.2	Restore and maintain a healthy river as measured by an holistic perspective
A.3	Incorporate the needs of a healthy river into the regional water plan
A.4	Identify and pursue opportunities to increase watershed yield
A.5	Meet the needs of endangered species

Goals and Objectives (2 of 9)

Goal B

Preserve the Region's Agricultural, Cultural, and Historical Values

Supporting Objectives

- B.1 Implement programs to restore and expand agricultural markets for local produce such as higher value crops
- B.2 Protect historic and culturally important water uses
- B.3 Preserve agricultural, riparian and open space areas
- B.4 Preserve agriculture and promote appropriate agricultural products and efficiencies

Goals and Objectives (3 of 9)

Goal C

Manage Economic Growth and Population Growth in a Manner Consistent with the Availability of Water Resource Supplies

Supporting Objectives

- C.1 Develop goals for economic development based on a common vision and consensus that are consistent with the region's water supply
- C.2 Develop policies and regulations to protect water and cultural resources
- C.3 Change laws, ordinances, and policies to promote water conservation through measures such as residential in-fill and realistic impact fees
- C.4 Promote appropriate economic development in terms of culture, environment, water use
- C.5 Manage residential and business development to protect and enhance water resources and decrease water consumption
- C.6 Promote responsible growth and development to maximize water resources based on regional and sub-regional resource constraints

Goals and Objectives (4 of 9)

Goal D

Develop Broad Public and Official Awareness of Water Issues

Supporting Objectives

- D.1 Fund and develop a public water education program
- D.2 Focus separately on children, adults, and decision-makers
- D.3 Base the water education program on understanding of:
  1. Scientific knowledge
  2. Legal issues
  3. Environmental restraints, conservation programs, and responsible resource management
  4. Cultural appreciation
- D.4 Goal of the education program should be to develop:
  1. An active citizenry
  2. An engaged general political will
  3. A political consensus based on informed understanding of issues
  4. A major public funding commitment
- D.5 Create a public education program that recognizes various cultural heritages and free choice

Goals and Objectives (5 of 9)

Goal E

Enhance the Conservation of Water in All Sectors

Supporting Objectives

- E.1 Ensure an adequate supply of water for indoor uses
- E.2 Promote water conservation in all sectors through actions such as:
  1. Agricultural water efficiencies
  2. Technological Developments
  3. Minimizing evaporation
  4. Legal and Building Code Reform
  5. Economic Incentives
  6. Minimizing irrigated turf, recreational uses, new development landscaping, and individual swimming pools
  7. Promoting recycling and re-use of water
- E.3 Establish policies constraining the use of water for outdoor purposes

Goals and Objectives (6 of 9)

Goal F

Reform Water Management Laws and Processes

Supporting Objectives

- F.1 Establish coordinated procedures for integrating planning and management of water among local, state, tribal, and federal governments
- F.2 Ensure that New Mexico meets its treaty and compact obligations while fulfilling New Mexico water needs
- F.3 Protect existing water rights by resolving ambiguities through negotiation and adjudication
- F.4 Protect existing and potential aquifer recharge windows and corridors from encroachment by urban development
- F.5 Build a public consensus regarding water laws which need to be preserved and those which need to be revised on issues such as:
  1. Preventing unreasonable water transfers
  2. Changing "use it or lose it" and other disincentive policies
  3. Addressing domestic well issues
  4. Addressing gaps and overlaps in laws
  5. Handling growth effects on water
  6. Establishing enforcement mechanisms
  7. Creating water trusts keeping rights in the community
- F.6 Establish regulations to support holistic and best management practices for river and water resource management, augmented with incentives
- F.7 Price water to reflect its long term value to individuals and to communities
- F.8 Protect aquifers by treating ground water as a reserve rather than as a primary source of water and establishing limits on its use.
- F.9 Develop a drought plan to minimize economic disruption and account for long term balance of supply and demand

Goals and Objectives (7 of 9)

Goal G

Maintain the Integrity of the Public Water Planning and Implementation Process

Supporting Objectives

- G.1 Obtain and use sound scientific data as a basis for planning
- G.2 Communicate, cooperate, collaborate, and compromise
- G.3 Plan water and land use together for the sustainable long term
- G.4 Ensure the planning process is sufficiently well funded - from federal, state, local, and private sources
- G.5 Ensure the planning involves clear, unambiguous, well-defined words and products
- G.6 Maximize information availability, publicity, and public participation in planning
- G.7 Maintain open communications with tribes concerning data, needs, and rights
- G.8 Maximize public/private partnerships to effect implementation of water plans
- G.9 Coordinate the Middle Rio Grande regional water plan with the planning efforts of upstream and downstream water planning regions
- G.10 Ensure that the water plan is leading to a balance of demand and renewable supply

Goals and Objectives (8 of 9)

Goal H

Ensure Sufficient Water Quality for each Use

Supporting Objectives

- H.1 Ensure no degradation from present drinking water quality
- H.2 Establish a plan for watershed pollutant loads consistent with protection of water quality and environmental objectives
- H.3 Ensure proper well construction and plugging of abandoned wells
- H.4 Limit use of private wells and septic systems where centralized water and wastewater services are feasible

Goals and Objectives (9 of 9)

Goal I

Preserve the Qualities of Life Valued by Residents in the Region

Supporting Objectives

- I.1 Respect diversity in defining quality of life and water requirements
- I.2 Preserve ability to make future choices
- I.3 Preserve water for recreational activities such as fishing and rafting
- I.4 Preserve at least some water for community parks and sports fields

At this Time, We Open the Floor for Questions/Comments from the General Public

In Conclusion, Is the WRB Ready to Adopt the Mission, Goals, and Objectives?

"NOW THEREFORE, for the Middle Rio Grande regional water plan, the Water Resources Board adopts:

- The Mission
- Nine non-prioritized Goals to support the mission, and
- Non-prioritized Objectives to achieve each of the goals"

Middle Rio Grande Regional Water Planning

A Master, Generic, Unabridged Presentation for Community Groups and Governing Bodies

Why are we involved in Water Planning?

What has been done to date?

Where do we go from here?

"Balance Water Use with Renewable Supply"

Water Assembly
Water unites us
el agua nos une

www.WaterAssembly.org
867-3889

MR COG
Communities Working Together

www.MRGCOG.org
247-1750

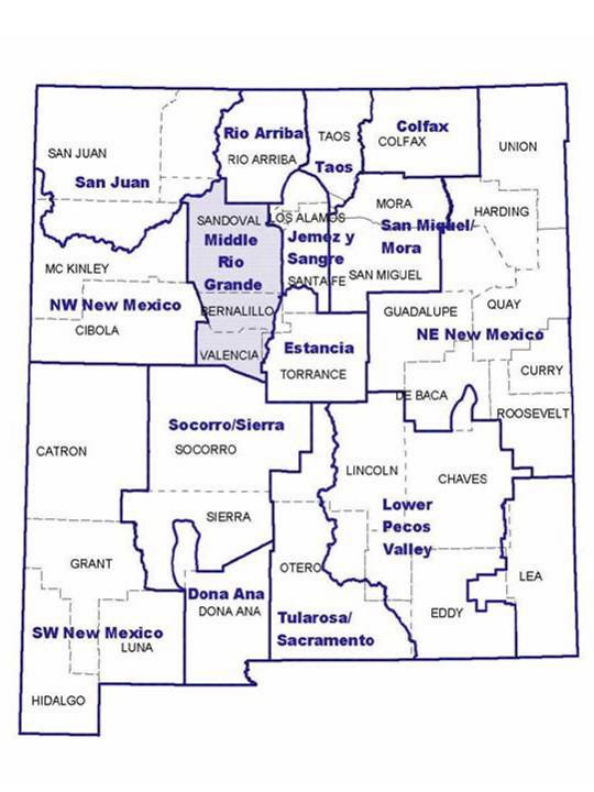
Introductions

Why Are We Here?

- To Provide Information on Regional Water Planning
- To Conduct Dialogue with Concerned Stakeholders
- To Ensure All Viewpoints Are Adequately Represented
- To Work on an Acceptable Solution to Our Water Issues
- To Identify the Preferred Approach to Each Possible Action
- To Balance Water Use with Long Term Renewable Supply
- To Solicit Interest and Participation in these Critical Issues

Who Are We?

Citizens Committed to Produce a Regional Water Plan via an Open, Inclusive, and Participatory Process



- 1 of 16 Regions in NM
- Three Diverse Counties:
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  - Bernalillo
  - Valencia
- Three Main Watersheds:
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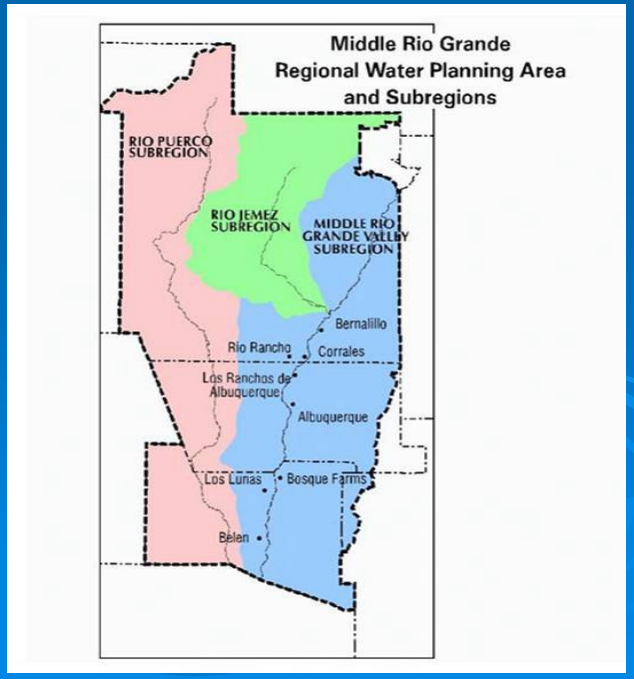
  - Rio Jemez
  - Rio Grande



- Water Assembly:
  - Volunteer Grass Roots Organization
  - Widely Varied Constituencies
  - Developing the MRG RWP
  - Per Request by OSE in 1997
- Partnered with MRCOG

The Water Assembly Organization

For a Balanced Public Water Planning Process

The Water Assembly

Annually

Constituency Groups

As Needed - Monthly to Quarterly

- Specialists
- Managers
- Environment Advocates
- Agricultural, Cultural & Historical Water Use Advocates
- Urban Users & Economic Development Advocates

Operating Arms

Action Committee

Balanced Constituency Group Representatives

Monthly

Executive Committee

Officers & Constituency Group Chairs

Bi-Weekly

Planning Subregions

- Rio Puerco and Rio Jemez
- Placitas

Working Teams

Weekly to Semi-Monthly

- Public Participation & Communication
- Alternative Actions
- Collaborative Modeling
- External Coordination
- Analysis
- Administration and Finance

Contact with the Water Assembly

Groups and Teams

The Water Assembly	Action Committee	Executive Committee
Annually	Monthly	Semi-Monthly

Constituency Groups

Specialists
Michelle Henrie – 768-7394

Managers
Mary Murnane – 848-1507

Environment Advocates
Richard Barish - 232-3013
Reid Bandeen – 867-5477

Agricultural, ... Advocates
Janet Jarratt - 865-1430

Urban Users ... Advocates
Dave Hill – 880-7048

Chair:
Bob Wessely 867-3889

Snail Mail:
P. O. Box 25862
Albuquerque, NM 87125

Visit the Web Site:
www.WaterAssembly.org

Signup to the Discussion List:
To: majordomo@cabq.gov
Subj: (any)
Body: subscribe mrgwp

Broadcast a Message:
To: mrgwp@cabq.gov

Working Teams

Public Participation & Communication
Kevin Bean 293-9208

Alternatives
Ed Payne - 797-4306

Cooperative Modeling
Celina Jones – 877-9073

External Coordination
Pauline Gubbels – 884-3982

Analysis
Sterling Grogan - 247-0235 x 337

Administration and Finance
Bob Prendergast - 857-9225

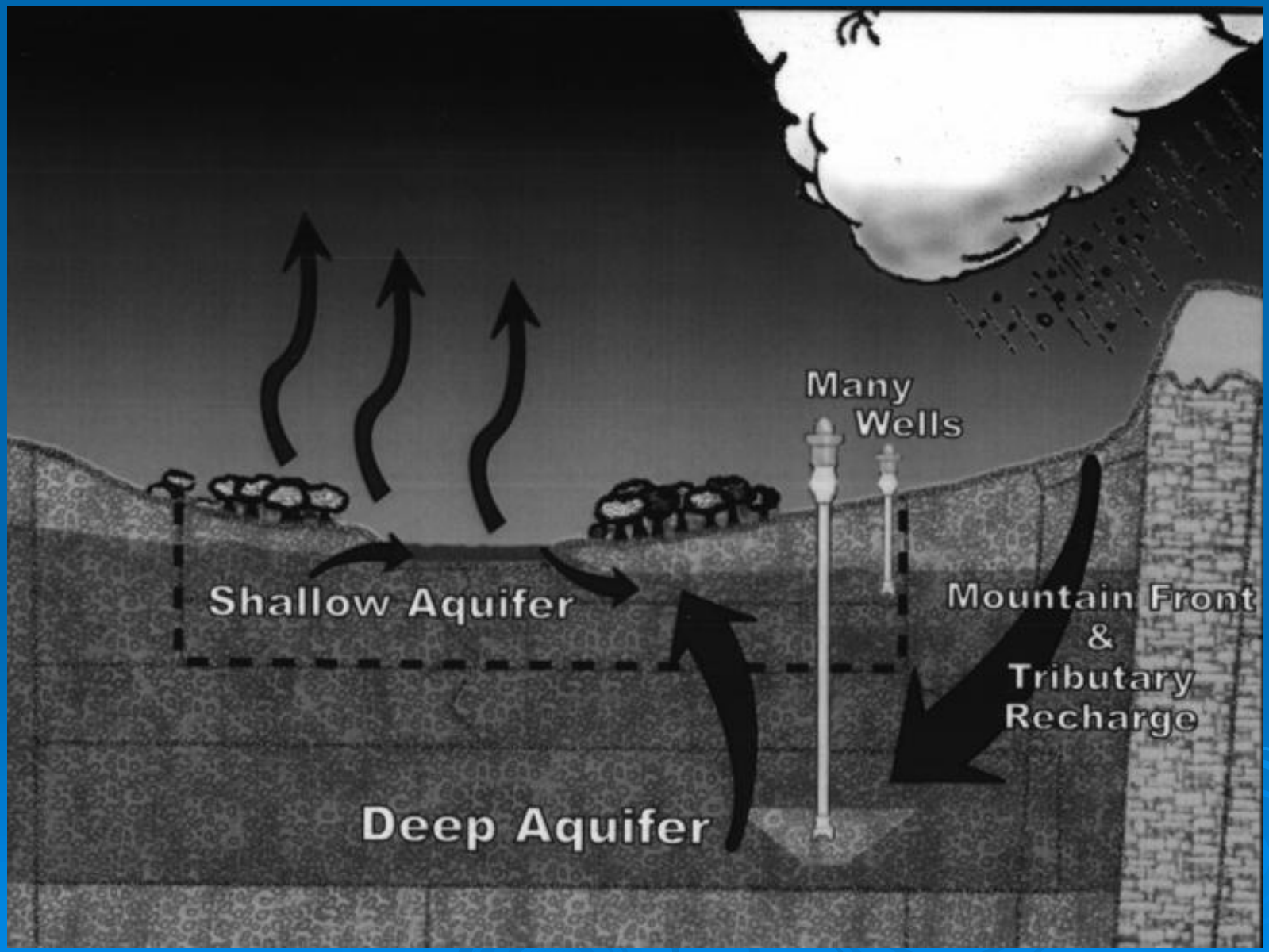
Background

Why Is Water Planning Worthwhile?

Besides the Wet Water Issues:

- 1980s Lawsuits on Water in Interstate Commerce
- Legislative Mandate for Regional Water Planning
- Responsibility Assigned to NM Interstate Stream Commission
- Plan Development for MRG Assigned to Water Assembly
- Partnership with Council of Governments for Adoption/Implementation
- Resources for MRG Regional Water Planning:
  - State Funds, Local Government Funds, Private Funds, and Volunteer Labor
- Regional Water Plans are to be Incorporated in State Water Plan
- Provides Impetus and Vehicle to Resolve Intra-Regional Conflicts
- Defines Public Welfare for the Regions for OSE Policy Decisions
- Will Contain Guidance for Water Trust Fund Projects

The Water Cycle in Our Region



Selected Key Words

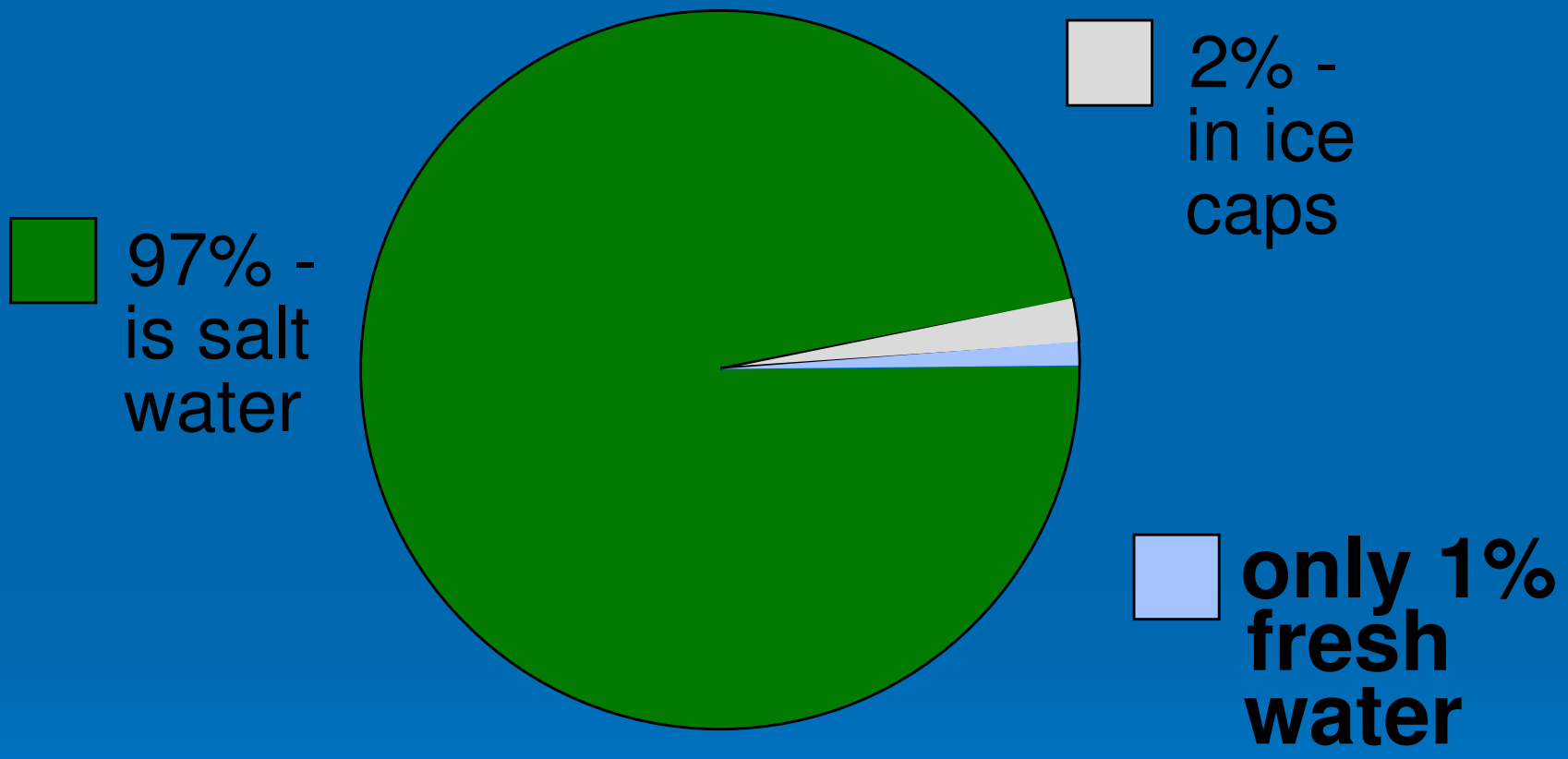
- Wet Water – The kind you can drink
- Paper Water – License to use it if it's there
- Ground Water – Content of aquifers
- Surface Water – Springs and streams
- The Region – 3 Counties, Surface and Ground Water

Selected Key Words

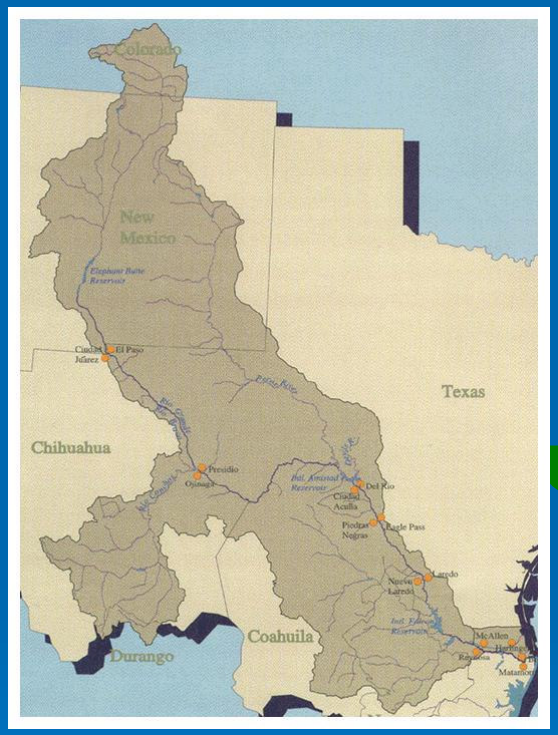
- Inflows – Precipitation, surface, and underground
- Withdrawals – Extractions from aquifers
- Diversions – Extractions from streams
- Return Flows – Give-backs from extractions
- Depletions/Consumptions – Water lost "forever"
  (evaporation or evapotranspiration)
- Water Budget – Inflows less depletions → P&L

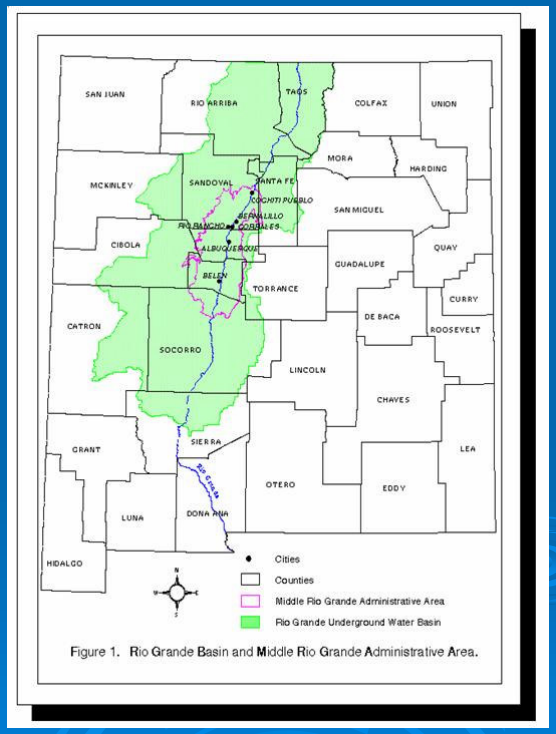
The Water Situation

Worldwide - A Limited Supply of Fresh Water

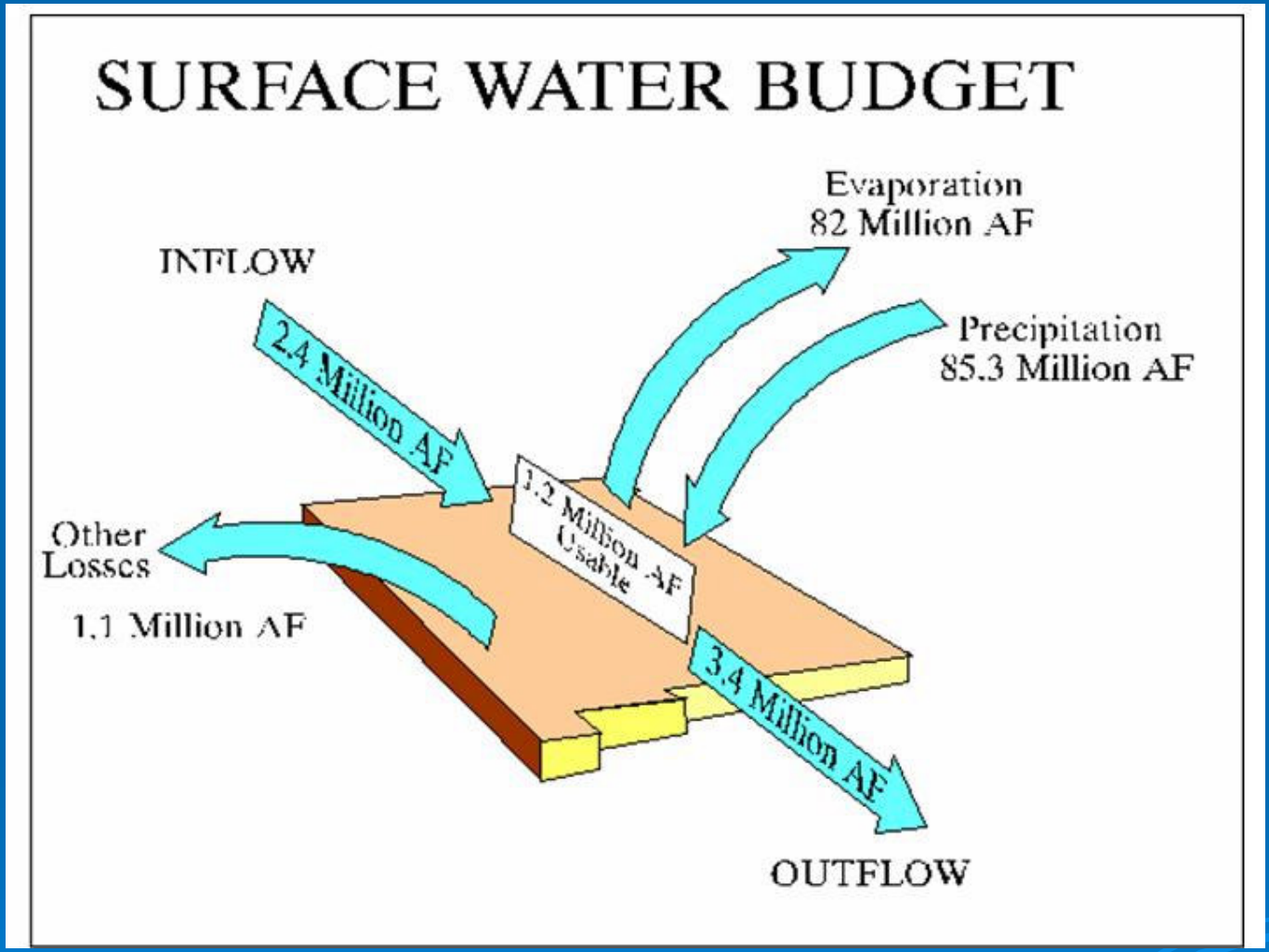


The Middle Rio Grande - A Part of the Whole Picture





A Water Budget



Where It Comes From ...

... and Where It Goes

The MRG Water Budget

Recent Historical Averages

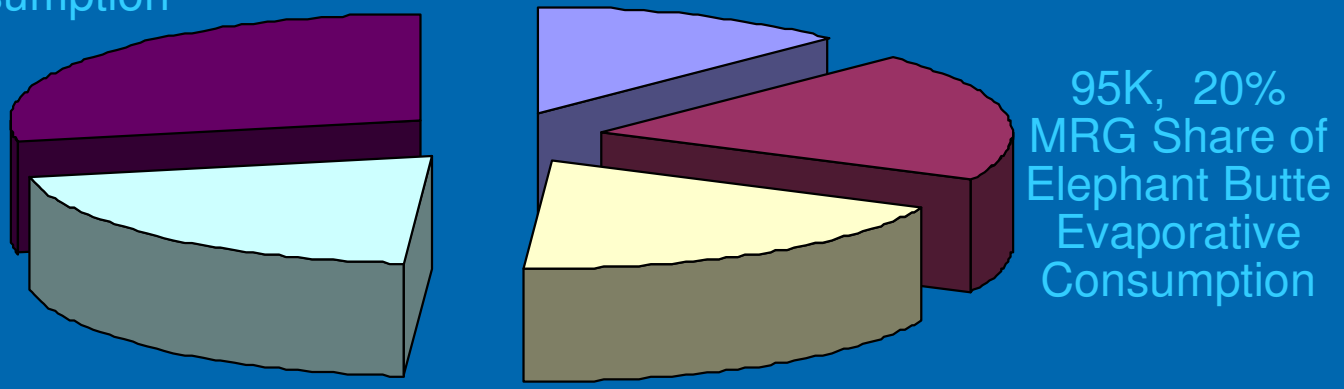
(thousands of acre feet per year)

- 1420 Income to MRG

- 895 to Elephant Butte Reservoir
- 100 to Socorro/Sierra Region
- 480 to MRG Consumptive Use
- 1475 Outgo from MRG

- 55 Net Deficit

Our Serious Mutual Problem



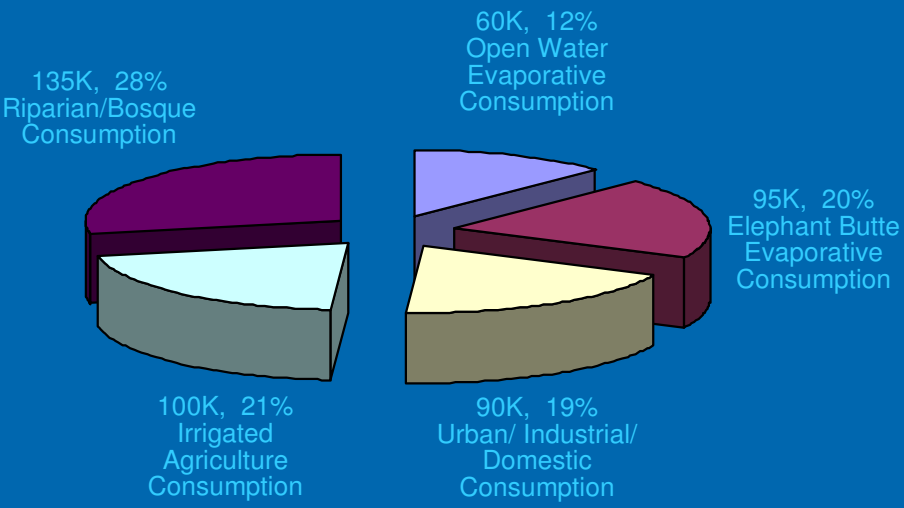
Source: Middle Rio Grande Water Budget – Averages for 1972-1997, October 1999

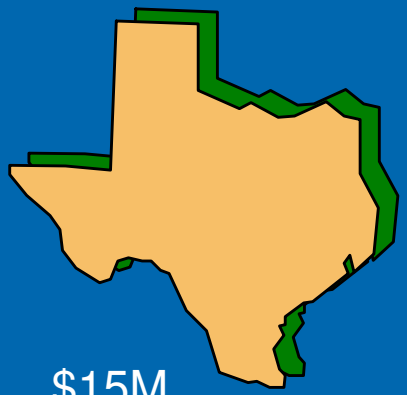
All numeric values are approximate, reflecting currently available information in units of acre feet per year.
One acre foot is about 326,000 gallons

The whole pie is now being over-used; and…
Any increase in one slice must reduce another.

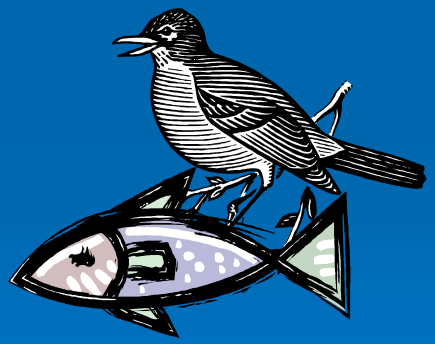
On average (without drought), a net drain to the region of about 55,000 acre feet per year

… And We're Facing More Stress

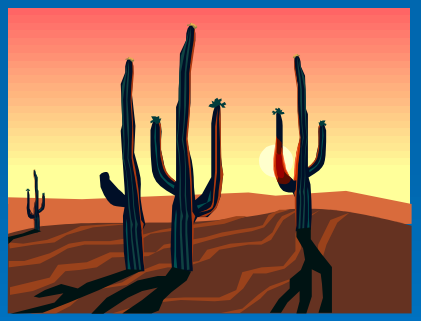




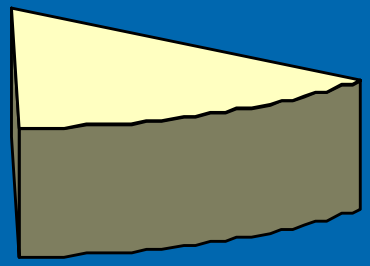
$15M Appropriation to Litigate Against New Mexico



Endangered Species Act



Regular Periods of Drought



An Additional 17% To Support Projected 50 Year Growth

What Can We Do?

Overall, What Are We Seeking?

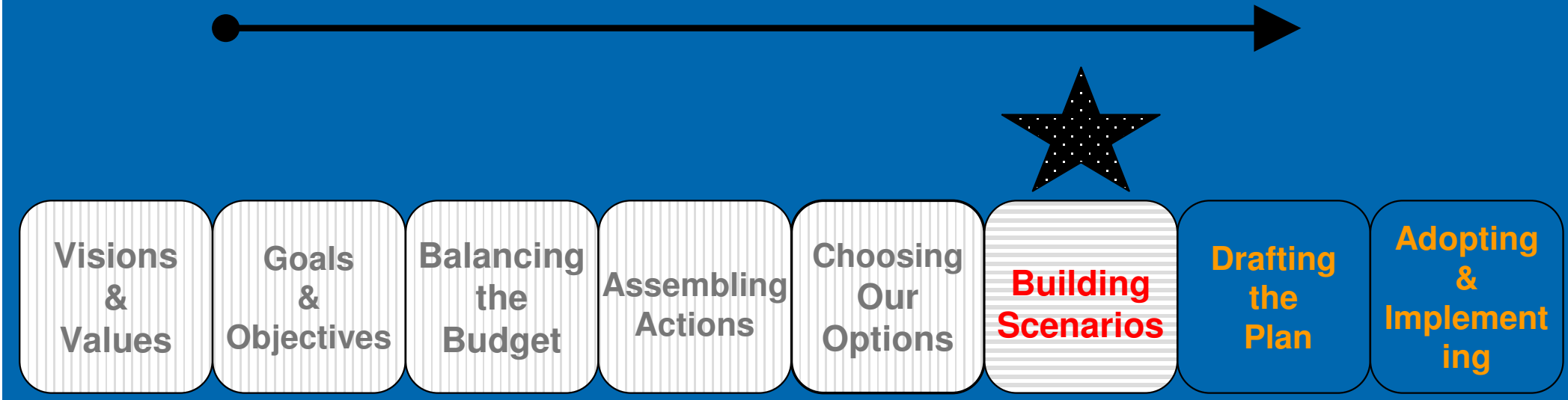
- To find a broadly acceptable solution
  to a difficult and complex problem.

- The problem is continuing to have
  sufficient affordable clean water
  to meet human and environmental needs,
  while maintaining all
  of our desired New Mexican lifestyles.

What is Water Planning?

- **Finding answers to three key questions:**
  - What is the region's available water supply?
  - What is the region's future water demand?
  - How will the region undertake to meet demand with supply?
    - What actions can be taken?
    - Which are acceptable to the community?
    - How can they be implemented?

The Planning Process



The *mission* of the Water Assembly is to develop a regional water plan of sustainable water management strategies in an open, inclusive and participatory process and to establish a process to implement the plan.

Where Does it Lead?

- Water Plan Goes to Local Governments
- Governments Will Make Decisions
- Will Become Part of State Water Plan
- Will Impact You:
  - Economic Growth
  - Quality of Life
  - Jobs
  - Quality of New Mexico
  - Costs/Taxes

Planning History

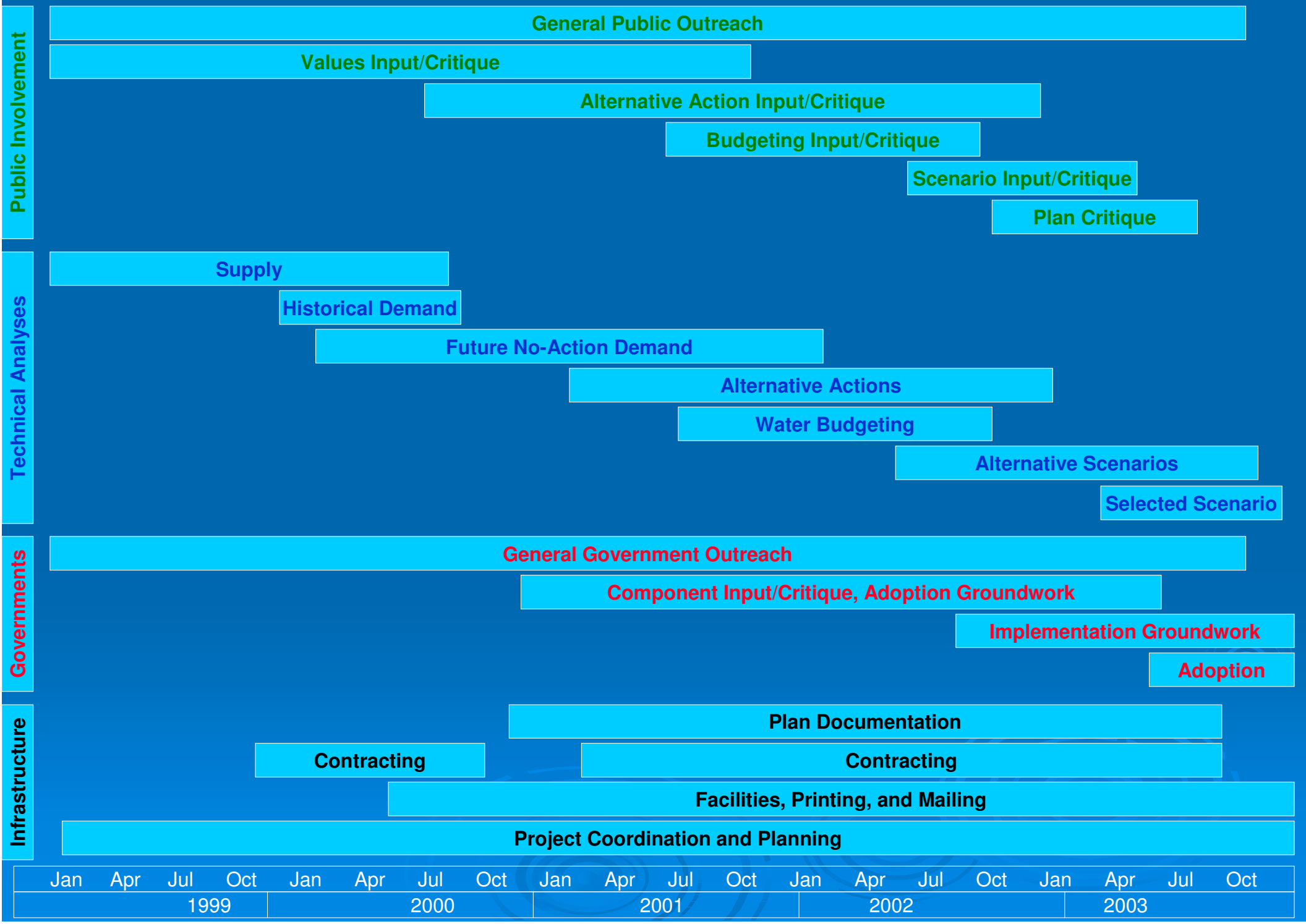
How Are We Planning?

Our Progress and Plans:

- Previous Year Items
- Last Year's Items
- Plans for This Year
  - Alternative Actions
  - Alternative Scenarios
  - Computerized Modeling
  - Public Involvement
    - Community Conversations
    - Regional Forums

MRG Water Planning Overview

Selected Processes



Key Items from Previous Years

Before 2001:

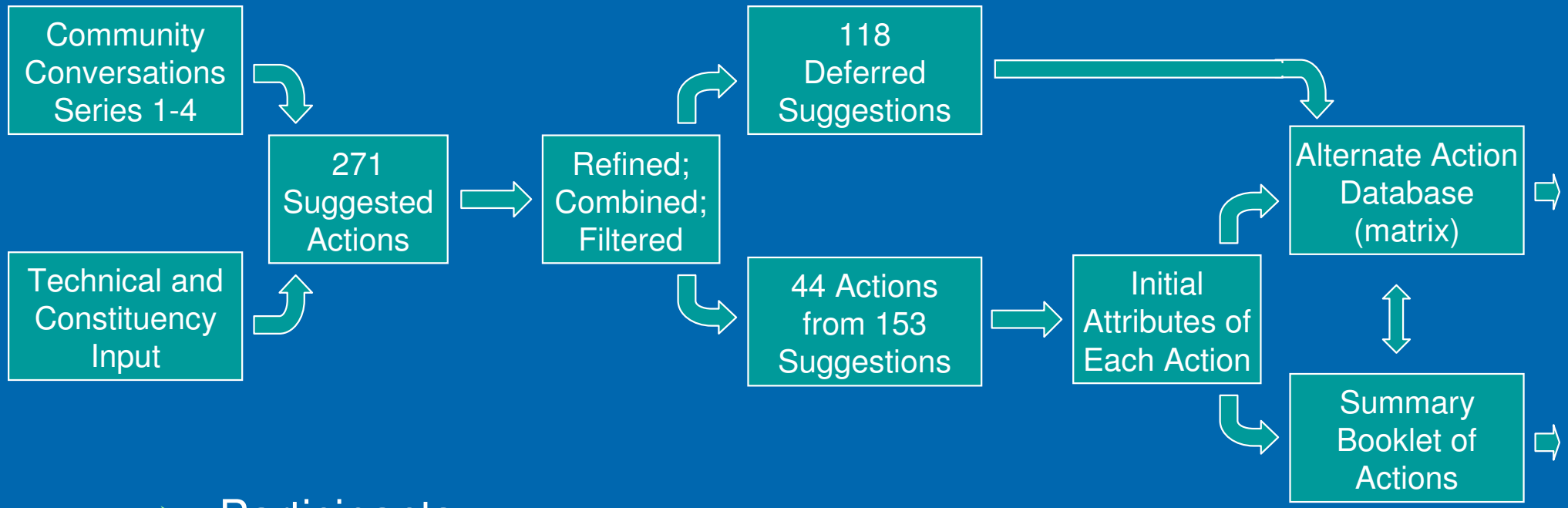
- The Water Budget
- Roadshow, Water Picture Show
- Water Supply Study
- Current and Historical Demand Study
- Community Conversations 1, 2, and 3
- Public Opinion Survey
- Water Plan - Annotated Table of Contents
- Future Water Use Projection Report
- Evaluation Methods and Criteria Report

Specific Highlights of the Past Year

Since 2001:

- Water Balancing Spreadsheet
- Funding Arrangement for SNL/Utton Modeling Support
- Water Balancing Exercise/Mini-Model Developed
- Community Conversations 4 – Water Budgeting
- Contract with ISC Signed – 29 Subtasks, “2” Years
- Alternative Action Identification, Refinement, and Database
- Alternative Action “Analysis-Light” and Summary
- Alternative Action Maxi-Model - In Work
- Community Conversations 5 – Alternative Actions

History of the Alternative Actions



- Participants
  - General Public
  - Water Assembly
  - MRCOG Staff
  - Consultants

- Analyses:
  - Technical
  - Environmental
  - Economic
  - Social/Cultural
  - Legal

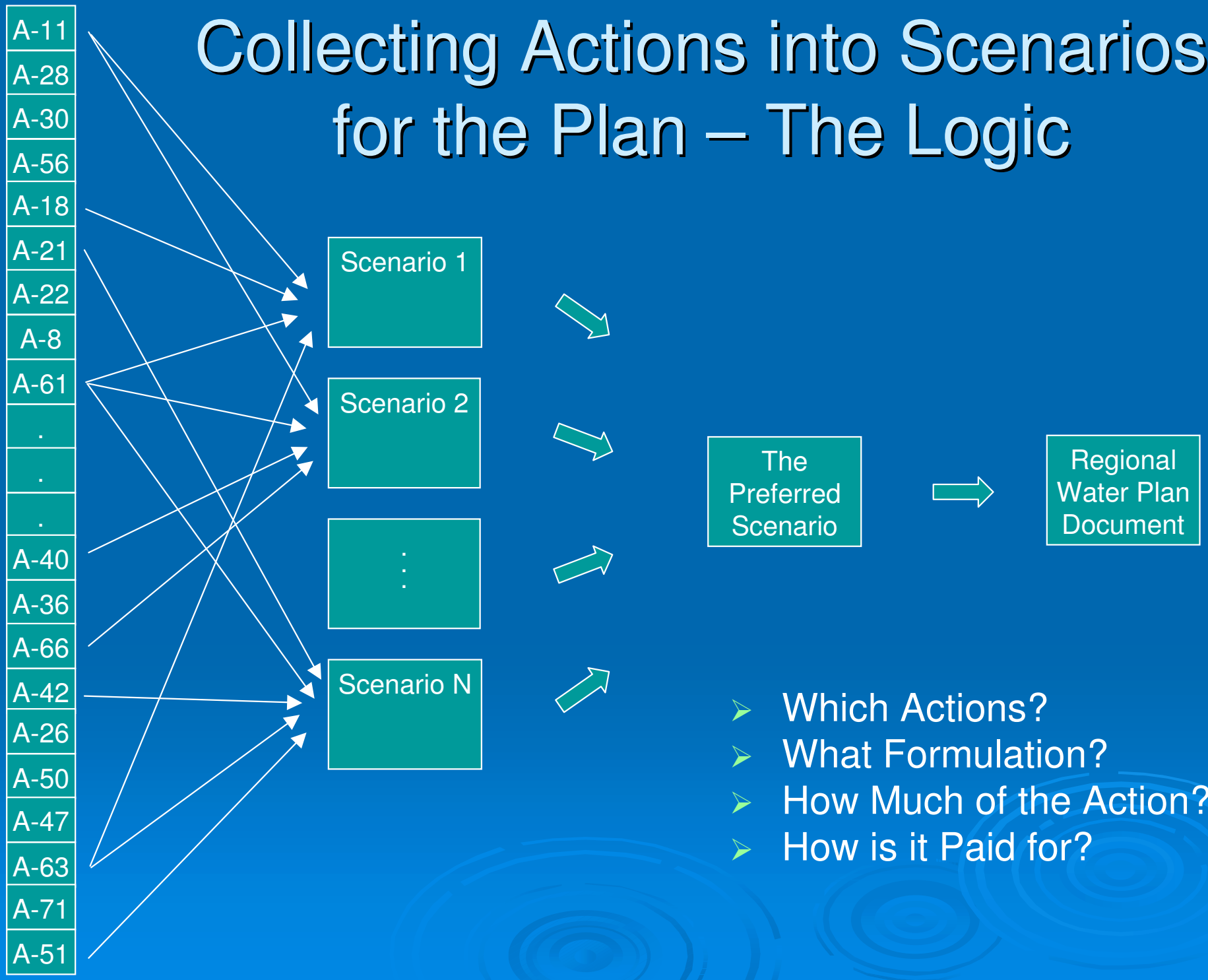
Previews of Coming Attractions

Task Areas for the Next Year

Delivery and Approval by End of 2003:

- Alternative Action Analysis
- Water Balancing/Budgeting - Survey, Negotiation
- Public Outreach – Localized and Broadcast
- External Coordination – Agencies, Regions
- Scenario Identification and Analysis
- Community Conversations 6 – Scenarios
- Scenario Selection and Plan Documentation
- Community Conversations 7 – Plan Review
- Ongoing Review and Approval by WRB, AC

Collecting Actions into Scenarios for the Plan – The Logic



- Which Actions?
- What Formulation?
- How Much of the Action?
- How is it Paid for?

Scenario Development Logic Overview

The Top Level Process

- Bring Five Scenarios to the Public
- Action Committee Approval Mar 2003
- Community Conversations 6 - April 2003
- Refine to a Preferred Scenario
- Regional Forum 6 - May-Jun 2003

A Scenario Contains

- Characterization or Vision Statement
- Timing or Year for Balancing Budget
- List of Participating Alternative Actions
- Intensity of Each Participating Action

Ag, UUEDA and Enviro. Constituency Groups

---

refine vision statement for a Scenario

---

text and budget from Water Balancing Exercise

Each of 5 Constituency Groups

---

designate two full reps to each **S**cenario **D**evelopment **C**ommittee

---

one AC Rep and one AC Alt

SDC-A

Build scenario based upon Ag vision statement

SDC-B

Build scenario based upon UUEDA vision statement

SDC-C

Build scenario based upon Enviro vision statement

SDC-D

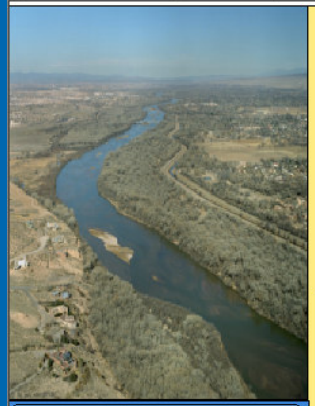
Build scenario based upon blend of vision statements

SDC-E

Build scenario based upon ad hoc vision statement

Middle Rio Grande Water Balance Model

Back | Run 17 | 111%



- Introduction
- Model Structure
- about this model

Control Panel

- Residential Outdoors
- Residential Indoors
- Bosque Alternative
- Ag. Consumptive Use
- Population
- Surface Water Use

Model Results

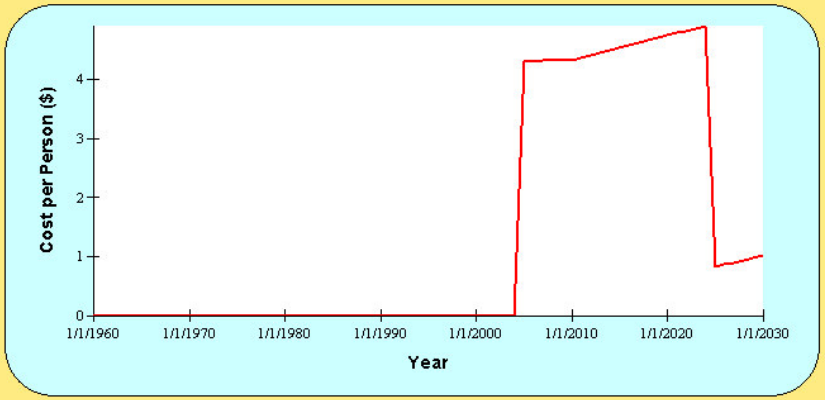
- Groundwater
- Surface Water
- Consumptive Use
- CC Results

Sandia National Laboratories

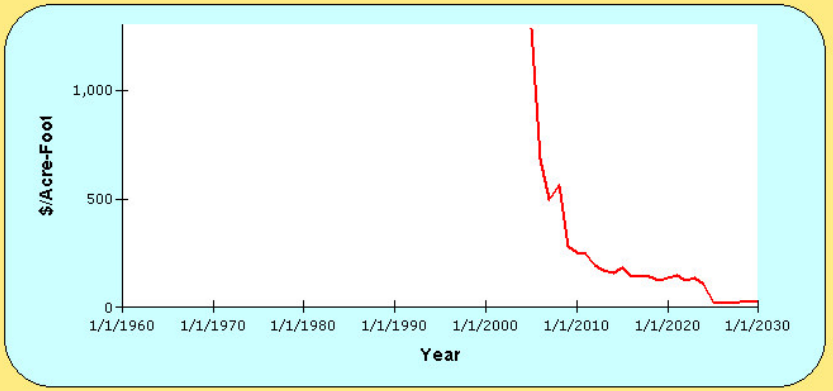
Middle Rio Grande Water Balance Model

Bosque Revegetation Alternative: Results

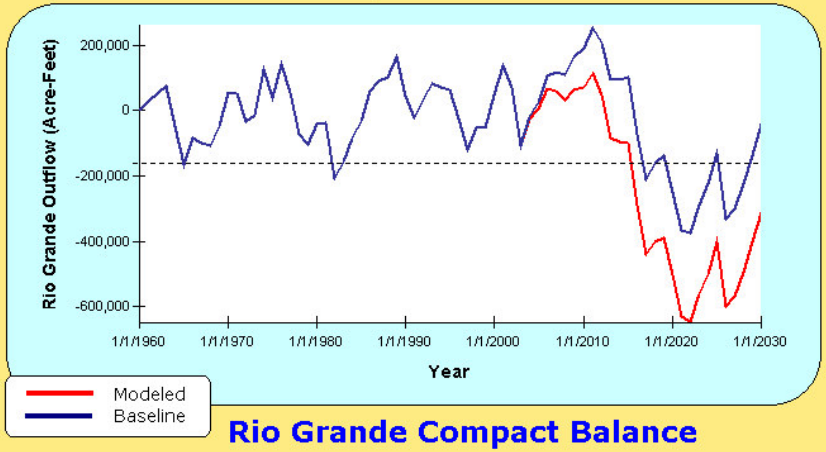
Click on a Graph to see details



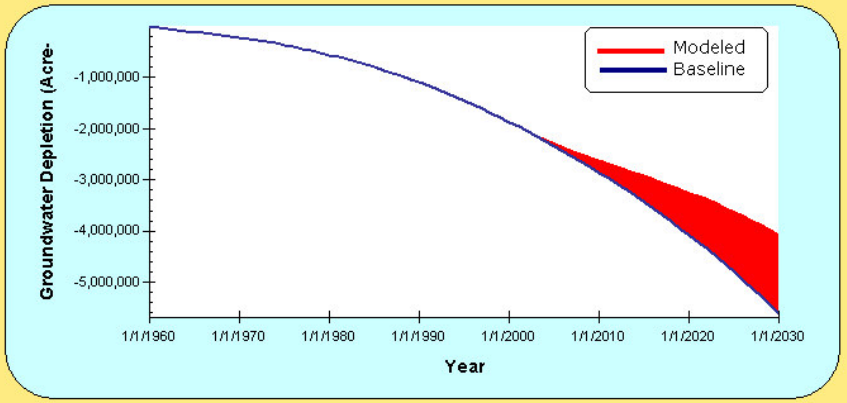
Cost per Person



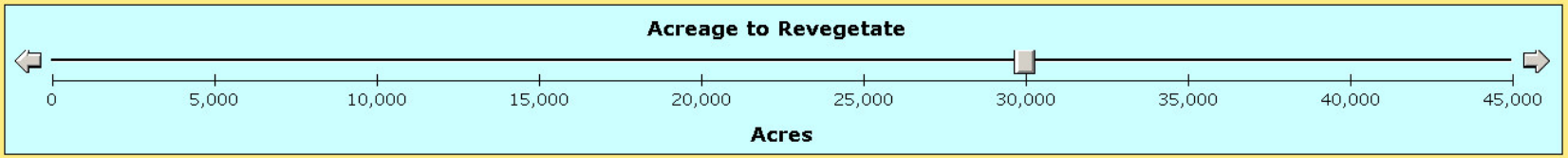
Cost Per Acre Foot of Water Saved



Rio Grande Compact Balance



Groundwater Depletion



01/01/2030

Start | Microsoft PowerPoint - [P... | Middle Rio Grande Wa... | 2:48 PM

Public Involvement Events

Regional Forum - Series 5

- Actions — March 1 — UNM

Community Conversations - Series 6

- Scenarios — April — 2 each in Sandoval, Bernalillo, Valencia

Regional Forum - Series 6

- Scenarios — May 3 — UNM

Community Conversations - Series 7

- Regional Plan — August — 2 each in Sandoval, Bernalillo, Valencia

Regional Forum - Series 7

- Regional Plan — October 11 — UNM

Summary

- An Overdefined Problem – can't do all for all
- Individual vs Community Conflicts
- Constituency vs Constituency Conflicts
- Community vs Community Conflicts
- Decisions Based on Facts, ... as known
- Maximizing Public Involvement in the Solution

- Much Has Been Accomplished; Much Remains
- An Acceptable Solution Requires Everyone

- We Thank You for Being Involved

Planning for a Healthy Water Future!

"Balance Water Use with Renewable Supply"

The Water Assembly
and the
MRCOG Water Resources Board

www.WaterAssembly.org
867-3889

www.MRGCOG.org
247-1750

Backup Slides Start Here

(just in case they are needed to address questions)

Financial Information

Program Resources (estimates)

	1997-2001	2002-2004
NM Interstate Stream Commission (Cash)	$ 150,000	$ 300,000
NMISC/Corps of Engineers (In-Kind)	300,000	45,000
Local Governments (MRCoG Members)	206,352	300,000
Water Assembly (Cash)	100,000	35,000
Water Assembly (In-Kind)	450,000	600,000
Sandia Labs / UNM Utton Center ("In-Kind")	0	250,000
Totals:	**$1,206,352**	**$1,530,000**

Main Topics Accomplished:

- Public Involvement (early)
- Water Supply
- Water Demand (now and future)
- Alternative Actions - Identify

Main Topics Still To Do:

Actions - Analysis/Preferences

Scenarios - Build, Select

Implementation - Design, Assign

Formal Plan - Document, Adopt

ISC/MRCOG Contract Budget

	ISC/CoG	Other
Public Participation & Communications	$ 80,000	$305,000
Program Coordination Activities	4,000	60,000
Water Quality Analysis	10,000	0
Overview of Legal Issues in Region	10,000	10,000
Evaluation of Water Plan Alternative Actions (including rating & ranking)	171,000	126,000
Scenario Development & Analysis	61,000	44,000
Planning Document Preparation	33,000	140,000
Plan Approval	11,000	40,000
Program Administration	265,000	160,000
Totals:	**$600,000**	**$830,000**
	$1,530,000	

Population Issues

New Mexico Growth Components

	Number	
• 2000 Births in NM	29,815	22% of New Res.
• 2000 Immigration to NM	104,647	78% of New Res.
• 2000 New Residents in NM	134,462	

New Mexico Growth Components

	Number	
• 2000 Births in NM	29,815	22% of New Res.
• 2000 Immigration to NM	104,647	78% of New Res.
• 2000 New Residents in NM	134,462	

http://www.census.gov/population/projections/state/
click comp_chg to get list of states
click nmcomp.zip to get downloaded file
unzip to get nmcomp.dat
nmcomp.dat has 1995-2025 data in a text format

http://www.census.gov/population/projections/state/stpj_layout.txt
has an explanation of the data format in nmcomp.dat

New Mexico Growth Components

	Number	
• 2000 Births in NM	29,815	22% of New Res.
• 2000 Immigration to NM	104,647	78% of New Res.
• 2000 New Residents in NM	134,462	
• 2000 Deaths in NM	14,542	
• 2000 Emigrants from NM	86,181	
• 2000 Departures from NM	100,723	
• 2000 Net Increase in NM	33,739	
• 2000 Births minus Deaths	15,273	45% of Net Incr.
• 2000 Immigrants minus Emigrants	18,466	55% of Net Incr.

Data Source - U.S. Census Website

http://www.census.gov/population/projections/state/
click comp_chg to get list of states
click nmcomp.zip to get downloaded file
unzip to get nmcomp.dat
nmcomp.dat has 1995-2025 data in a text format

http://www.census.gov/population/projections/state/stpj_layout.txt
has an explanation of the data format in nmcomp.dat

Five County vs Three County Data

The Water Budget – 5 County Source Data

- Incomes – 1420 kafpy
  - 1100 Rio Grande Inflow
  - 70 San Juan-Chama Inflow (incl. approx. 400/26 for filling Heron)
  - 95 Tributary Inflow (Gaged)
  - 5 Albuquerque Storm Drain Inflow
  - 110 Mountain Front and Tributary Recharge
  - 40 Deep Groundwater Inflow
- Consumptions – 625 kafpy
  - 90 Consumption (evaporation) [residential industrial, municipal]
  - 60 Open Water Evaporation (above San Acacia)
  - 135 Riparian Evapotranspiration (ET)
  - 100 Irrigated Agriculture & Valley Floor Turf (above San Acacia)
  - 100 Rip. ET, Irrig Agric., and Open-water Evap (below San Acacia)
  - 140 Elephant Butte Evaporation
- Outflows - 850 kafpy (at EB Dam)
- Deficit – 55 kafpy

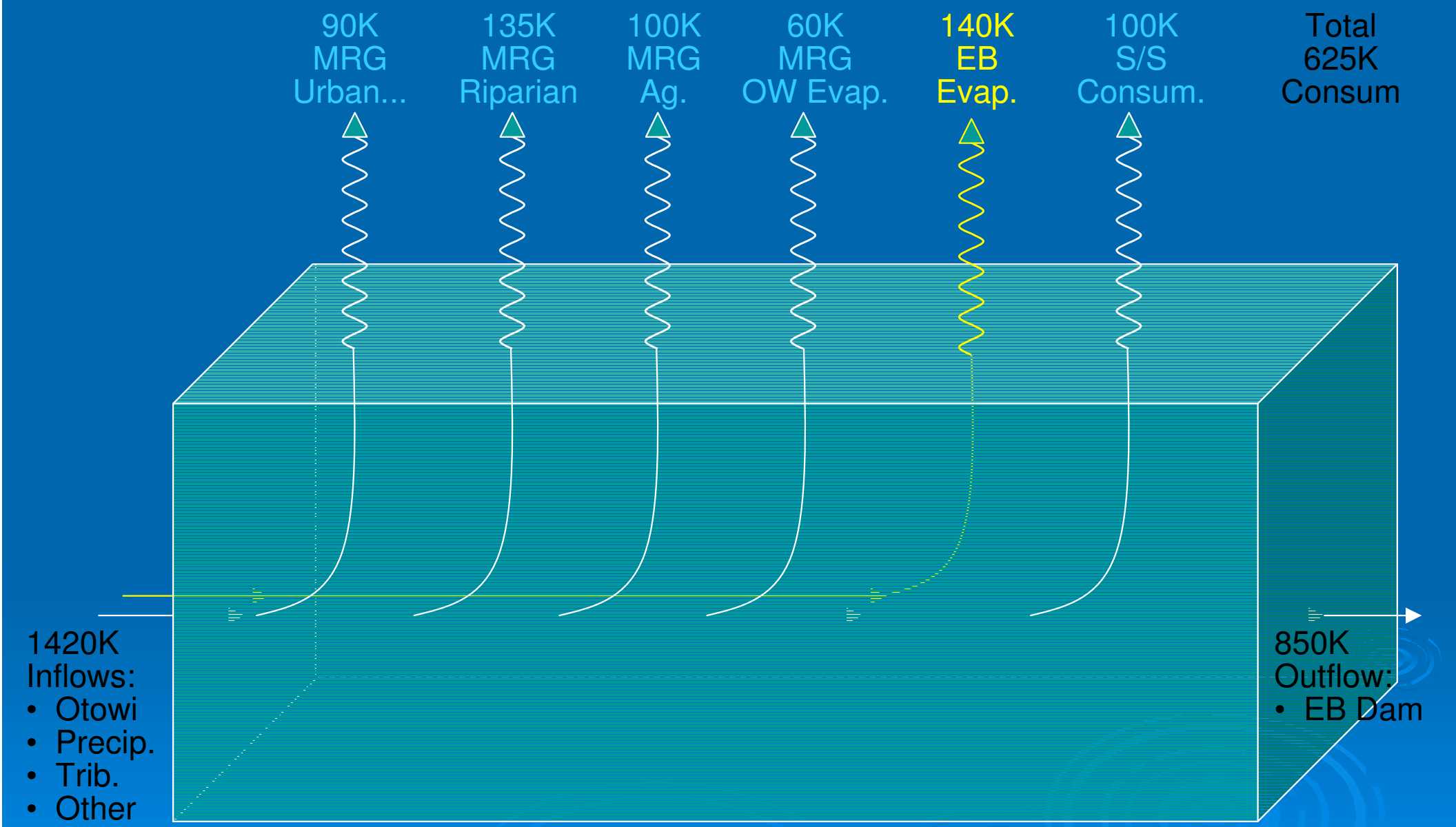
E.B. Proration – to get 3 County MRG Data

- Describe Prorated Share as Consumptive Use in MRG
- Describe Balance as Downstream Flow out of MRG
- Possible Criteria for C.U. Sharing between MRG and S/S:
  - Population Count
  - Other Consumptive Uses
  - Miles of River
  - Total Acres
  - Acres in Floodplain
- Choose Acres in Floodplain:
  - MRG 140,449 = 67%
  - S/S 68,802 = 33%
- Result:
  - C.U. is 95 kafpy in MRG
  - 45 kafpy flows downstream for C.U. in S/S

The Water Budget – Adapted to 3 County MRG

- Incomes – 1420 kafpy
  - 1100 Rio Grande Inflow
  - 70 San Juan-Chama Inflow (incl. approx. 400/26 for filling Heron)
  - 95 Tributary Inflow (Gaged)
  - 5 Albuquerque Storm Drain Inflow
  - 110 Mountain Front and Tributary Recharge
  - 40 Deep Groundwater Inflow
- Consumptions – 480 kafpy
  - 90 Consumption (evaporation) [residential industrial, municipal]
  - 60 Open Water Evaporation (above San Acacia)
  - 135 Riparian Evapotranspiration (ET)
  - 100 Irrigated Agriculture & Valley Floor Turf (above San Acacia)
  - 95 Elephant Butte Evaporation (prorated share)
- Outflows - 995 kafpy
  - 895 to Elephant Butte Reservoir (downstream and prorated share of evap.)
  - 100 to Socorro/Sierra Region Consumption
- Deficit – 55 kafpy

Six Consumptive Uses in Five Counties

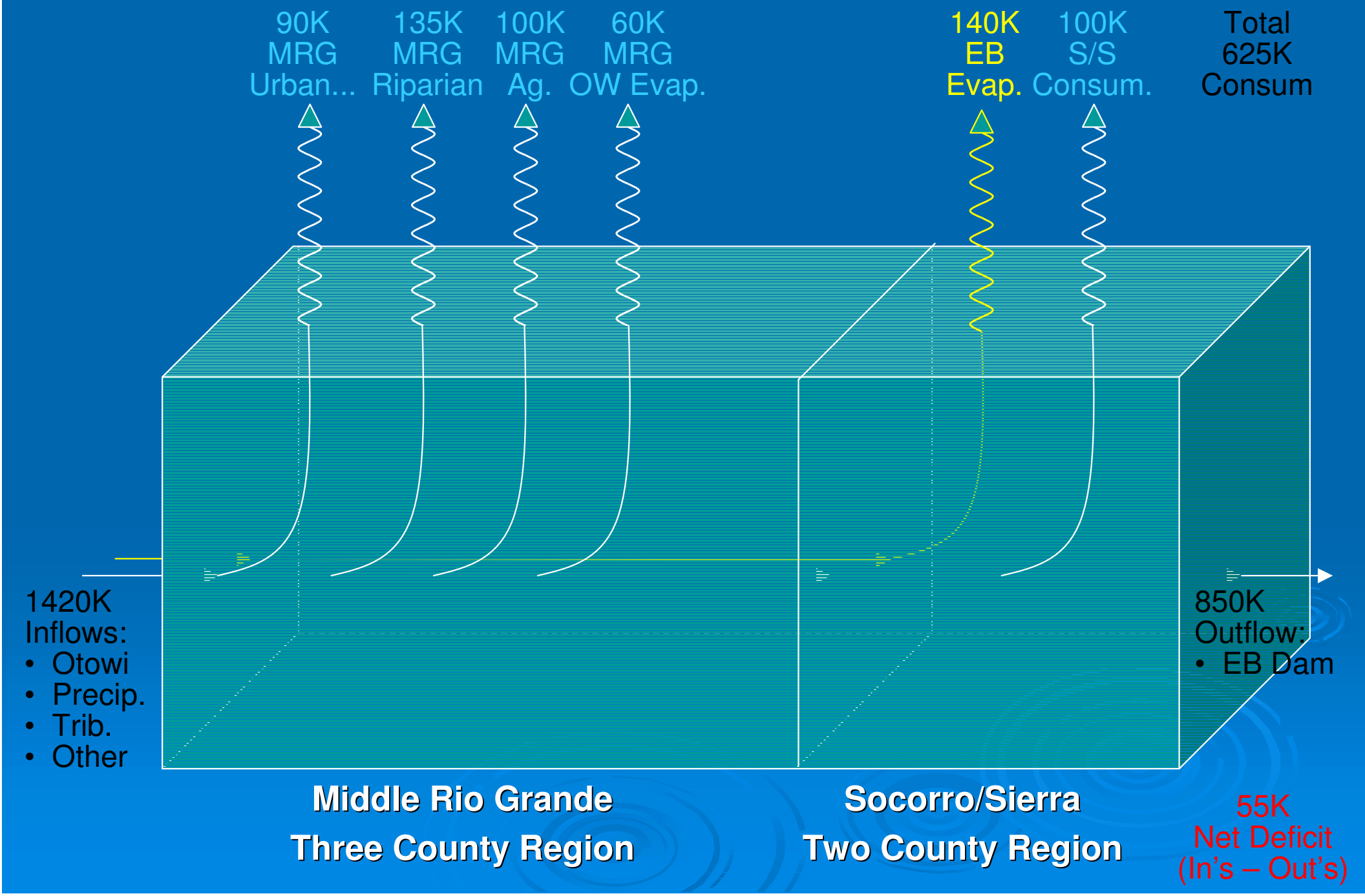


Hydrological Analysis

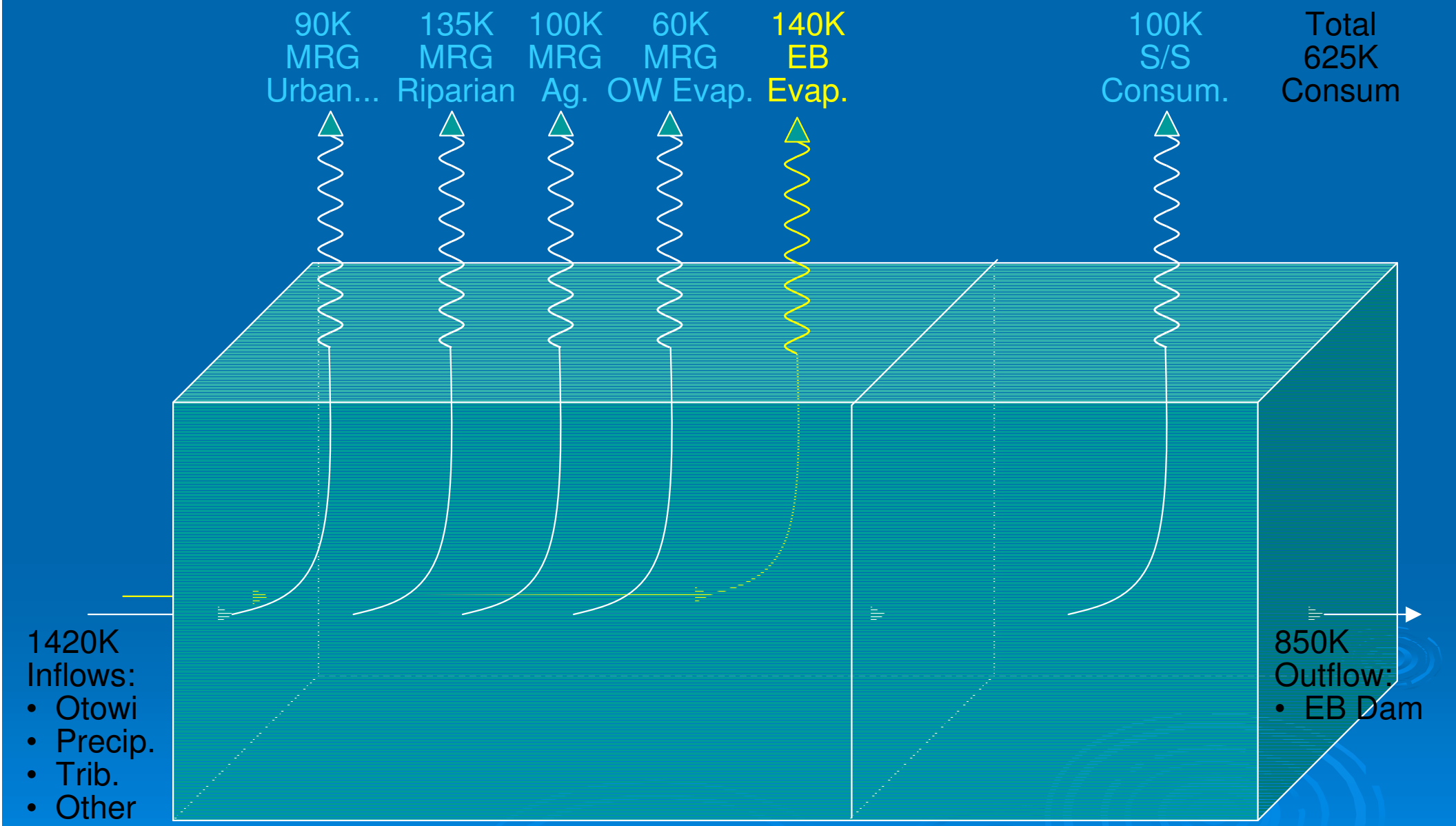
Five County Region

55K
Net Deficit
(In's – Out's)

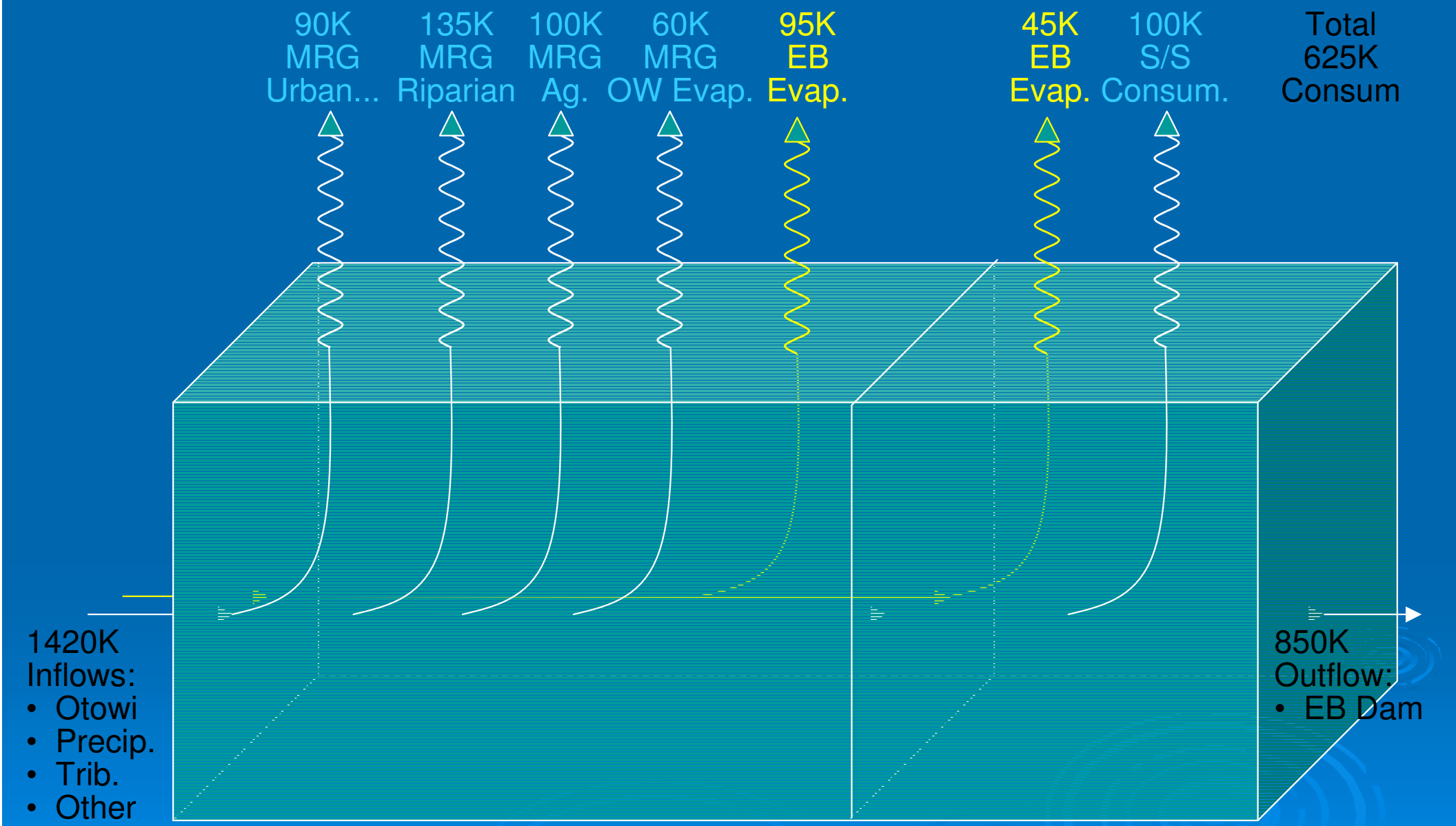
Split the Regions – EB Evaporation in S/S



Split the Regions – EB Evaporation in MRG

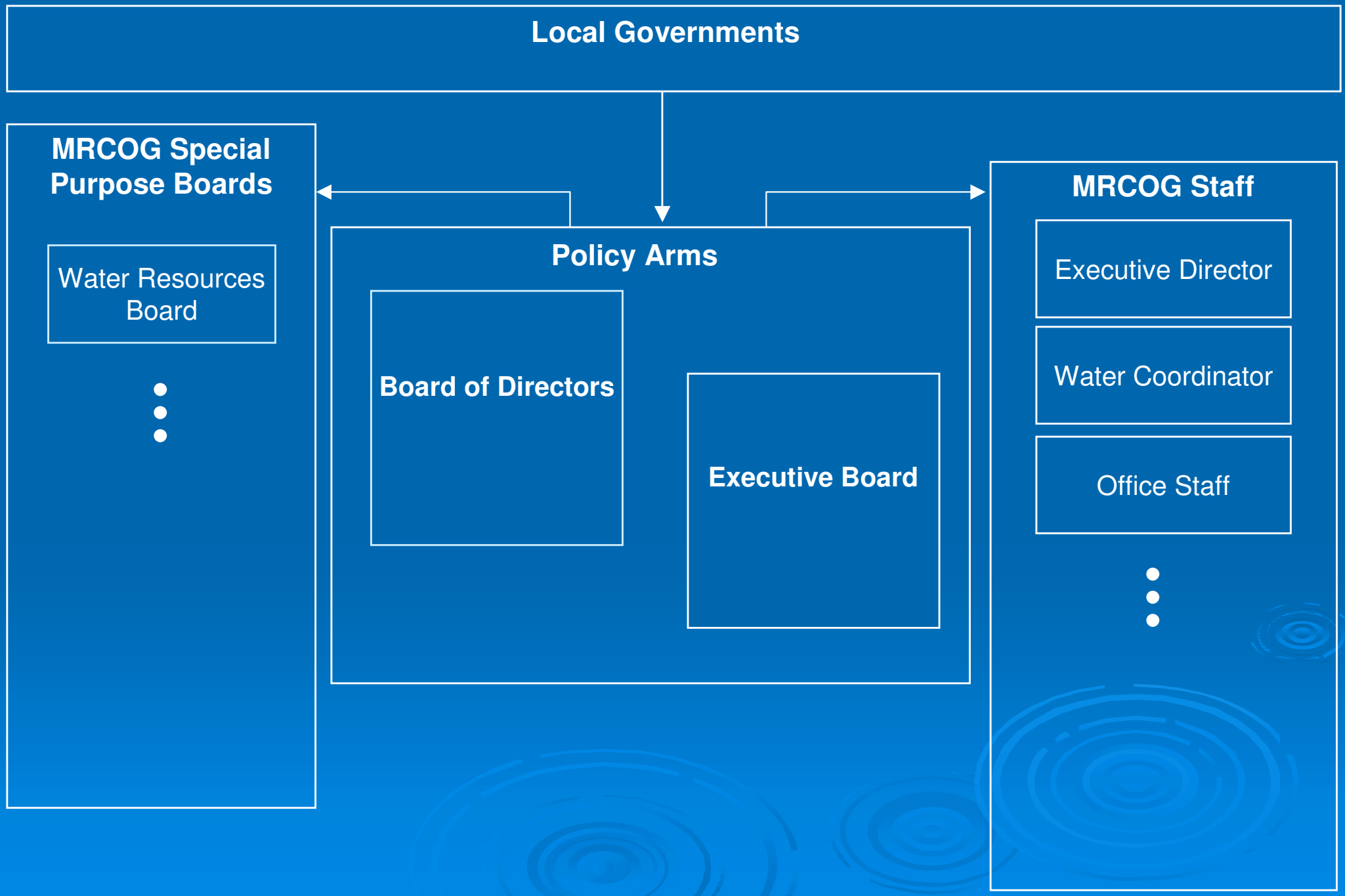


Split the Regions – EB Evaporation Shared

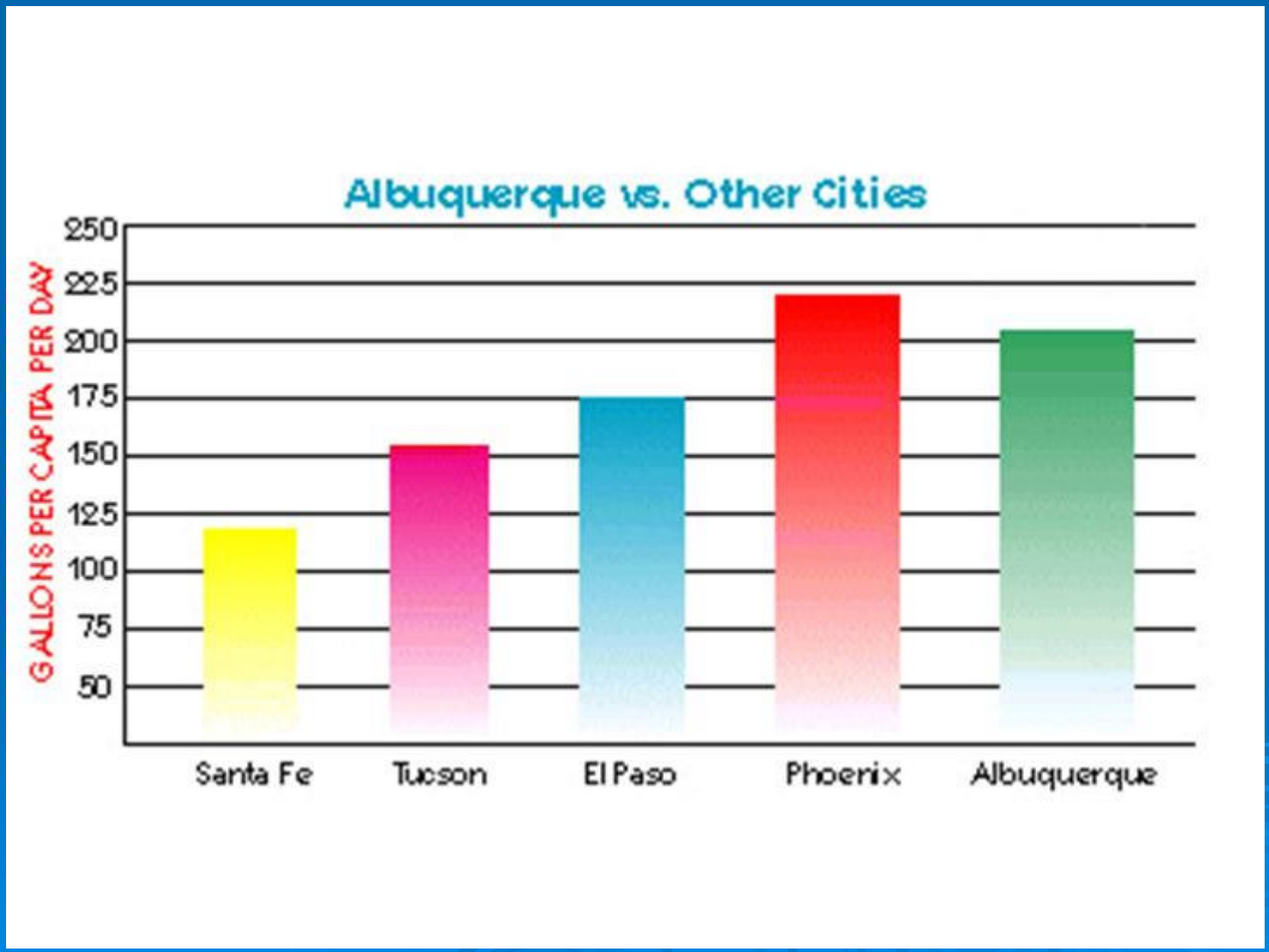


Miscellaneous Items

The MRCOG Organization



Albuquerque Water Use



Water Budget
- - -
The Technical Details

Available surface water varies substantially from year to year, according to precipitation.

In an average year:

- We get enough surface water to meet our annual usage, and
- The net loss to the aquifers is 55,000 acre-feet per year