

# El Paso County Water Master Plan

Planning Commission  
December 4, 2018

**FORSGREN**  
*Associates Inc.*



# ELEMENTS OF THE MASTER PLAN

## The El Paso County Master Plan currently exists as:

- El Paso County Policy Plan (1998)
- Topical Elements (6 elements)
- Small Area Plans (10 Plans)
- Drainage Basin Plans (18 Plans)
- Sketch Plans (21 Plans)

# AUTHORITY TO ADOPT

## **30-28-106. Adoption of master plan - contents**

- (1) *It is the duty of a county planning commission to make and adopt a master plan for the physical development of the unincorporated territory of the county. When a county planning commission decides to adopt a master plan, the commission shall conduct public hearings, after notice of such public hearings has been published in a newspaper of general circulation in the county in a manner sufficient to notify the public of the time, place, and nature of the public hearing, prior to final adoption of a master plan in order to encourage public participation in and awareness of the development of such plan and shall accept and consider oral and written public comments throughout the process of developing the plan.*

## **CRS 30-28-108 Adoption of plan by resolution**

- (1) *A county or regional planning commission may adopt the county or regional master plan as a whole by a single resolution or, as the work of making the whole master plan progresses, may adopt parts thereof, any such part to correspond generally with one or more of the functional subdivisions of the subject matter which may be included in the plan. The commission may amend, extend, or add to the plan or carry any part of it into greater detail from time to time. The adoption of the plan or any part, amendment, extension, or addition shall be by resolution carried by the affirmative votes of not less than a majority of the entire membership of the commission. The resolution shall refer expressly to the maps and descriptive matter intended by the commission to form the whole or part of the plan. The action taken shall be recorded on the map and descriptive matter by the identifying signature of the secretary of the commission.*

# DEVELOPMENT OF THIS TOPICAL ELEMENT (Water Master Plan)

## **Colorado's Water Plan approved November 2015**

- El Paso County Water Master Plan RFP issued in May 2017
- Contractor on board August 2017
- Steering Committee created and involved throughout
- Public Participation Program developed (MetroQuest)
- Water Providers Survey implemented (over 50 providers contacted providing over 90% of the population served by central water)
- Land use scenarios developed utilizing MTCP population totals
- Open House (October 25, 2018)
- Draft prepared for public review and comment Nov 6th, 2018
- Board of County Commissioners report item November 13, 2018
- Legal Notice for Planning Commission hearings November 21, 2018
- Planning Commission Hearings December 4<sup>th</sup> and 18<sup>th</sup> 2018
- Final Publication and certification

# WATER MASTER PLAN STEERING COMMITTEE

- Melissa Andrews – School District 49
- Gary Barber – Arkansas Basin Round Table
- Jenny Bishop – Colorado Springs Utilities
- Randy Case – Developer
- Dave Doran – Upper Black Squirrel Groundwater Management District
- Mike Fink – City of Fountain
- Jay Frost – Farmer/Rancher
- Raul Guzman – Meridian Service Metro District
- Jerry Hannigan – Citizen
- Joan Lucia-Treese – El Paso County Planning Commission
- Kip Petersen – Pikes Peak Regional Water Authority, Donala Water and Sanitation District
- Kevin Walker – WS Districts, Housing and Building Association

# PUBLIC INPUT AND MEETINGS

- MetroQuest Survey
  - Direct contacts (HOA's, CONO, NEPCO)
  - Notices on organization websites
  - Publication notices
  - District notices
  - County web pages (Main page, department page)
  - Identification at public meetings (BoCC, PC, HBA, NEPCO, etc)
- Open House notices
  - 50 + people in attendance
- Notice to Military bases in accordance with CRS 29-20-105.6
  - Military base staff involved in the steering committee
  - Direct notice of Planning Commission hearings(s)
- Notice through EDARP online review system to all water providers and review agencies (110)
- Legal notice of the Planning Commission hearing(s) November 21
- Notice to surrounding counties was provided in accordance with CRS 24-32-3203(2)(a)

# OPEN HOUSE COMMENTS

- Try to develop the availability of more surface water - reservoirs.
- "Protect our wells Private Well Owner"
- Would like to receive information and be involved as process moves forward.
- Need to drive towards an integrator system for water delivery... 40-50 (or more!) Providers acting independently is not efficient or effective for the greater good.
- Absolutely need to change the process to assess water adequacy at front-end of land use/ zoning decision process - before developer gets approval of requested rezone.
- Centralized water system for developments with lots smaller than 5 acres (Not Average)
- This is a positive step forward. Until the plan is put in place and water quantity is truly known and measured, there should be halt of development permits using groundwater.
- "You need to have someone unaffiliated with the HOA's checking their water usage & making sure they don't go over limit. It's like having the robber watch the bank: Example- Flying Horse North Development\* Not happy with you Com. Glenn. You are not representing what your people want!!"
- Request the state actually check the levels in the aquifers each year instead of them assuming there's water when there isn't.
- "Protect our wells Private Well Owner"
- Request for charts and maps to be put on line
- Need tonight's charts on a website for public review
- We need well monitoring to know how the aquifers are acting. The State says there is water but reality shows there isn't as much as they say.
- A committed land use plan that disallows rampart urbanization approval needs to accompany water availability.

# WATER PROVIDERS

- A water providers survey was provided to all identified centralized water providers (53)
  - Cities and Towns
  - Special Districts providing water service
  - Private water companies, utilizing a public water supply list by the state

# WATER PROVIDERS QUESTIONS

## **Included, but not limited to:**

- Current, Future, & Build-out Supplies?
- Current, Future, & Build-out Demands?

## **% sources of water:**

- Denver Basin?
- Designated Basin?
- Native Renewable Water?
- Imported Renewable Water?

# WATER PROVIDERS QUESTIONS (Cont.)

- Number of service connection?
- Current non-potable demands?
- Current non-potable reuse demands?
- Current non-potable demand met by raw water?

## **Current customers by Category**

- Residential Single Family or Multi-Family?
- Utility/Municipal?
- Commercial/Industrial?
- Irrigation Only?
- Wholesale Water?

# WATER PROVIDERS QUESTIONS (Cont.)

- Entity boundary and service area (map)?
- What is your anticipated total build-out demand?
- Do you have a conservation Plan?
- Do you have a Landscaping Plan?
- Do you have flexible water rates to incentives conservation?
- Provide utility infrastructure (Water and Sewer) plans?
- Are you participated in regional projects?

# REGULATORY STANDARDS FOR DEVELOPMENT

- El Paso County has adopted and the courts have upheld the requirement to utilize a 300 year water supply standard for subdivisions instead of the state required 100 year supply.
- Generally, renewable water supplies (surface water and alluvial groundwater) are treated differently than non-renewable supplies
- Typically, and in accordance with county regulations, the sufficiency review of the water supply occurs at the final plat stage of development. (CRS 30-28-133)
- However, CRS 29-20-301 does allow an adequacy review at other stages of development, with certain limitations.
- The 1041 permit requirements specifically include review in accordance with the Master Plan

# REVIEW COMMENTS

- 110 review entities included in the initial review comment request
  - 8 have responded with “no comment”
  - Comments have been received from the City of Fountain, Colorado Springs Utilities, and 4-way Ranch Water District which will be addressed in the final plan
  - Comments from one HOA and one citizen at this time.

# Overview

- ***Purpose of the Plan***
- ***Public Feedback***
- ***Water Supplies***
  - *Denver Basin Groundwater*
  - *Renewable Water*
- ***EPC Water Plan Regions***
- ***Current Supplies***
- ***CS Utilities Water Supplies***
- ***Regional Planning***
- ***Expected Growth Areas***
- ***Projected Water Demands***
- ***Strategies***
  - *Reuse*
  - *Aquifer Storage and Recovery*
  - *Land Use with Water Demand*
- ***Next Steps***
- ***Draft Goals and Policies***

# Purpose of the Plan

- Understand **water supply & demand** conditions
- ID possible **efficiencies**
- Encourage **best practices** - water demand mgmt & conservation
- Balance efficient use of limited supplies with **need for reliability**
- **Cooperate with water providers** in their planning efforts
- Provide basis for **review of planned water supplies** for new development
- Evaluate **a range of alternatives** to meet demand
- Integrate water supply into short and long-range **land use planning**
- Integrate **water conservation and landscape planning**
- Provide **guidance for review of 1041 or other utility permit apps.**
- Implement local aspects of **Colorado's Water Plan**

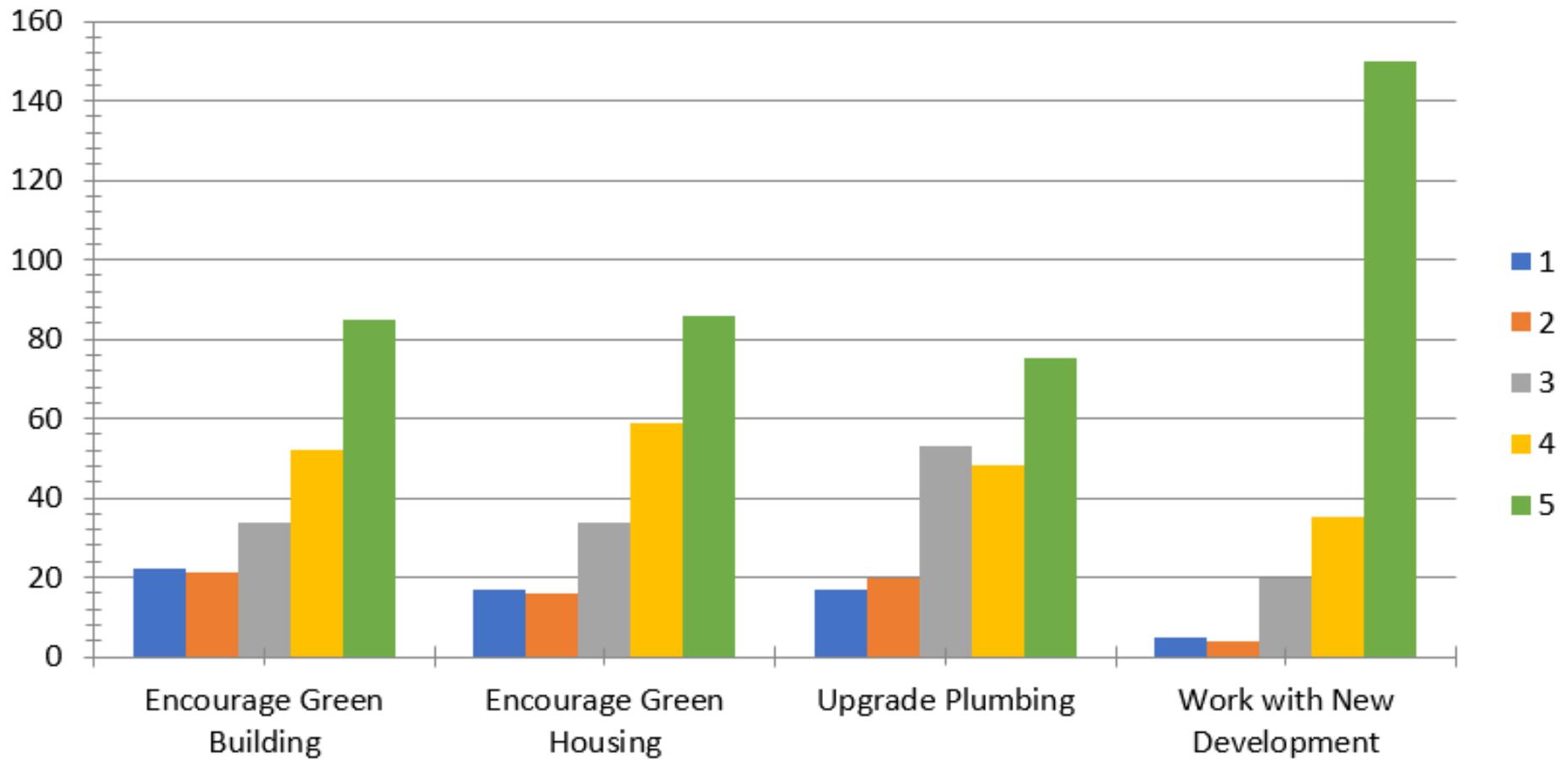
# Public Feedback

## Web-Based Program:

- Open for 4 months
- Linked on EPC website
- Major water providers websites
- Over 1,000 visited the site
- Over 370 left questions/filled out the survey

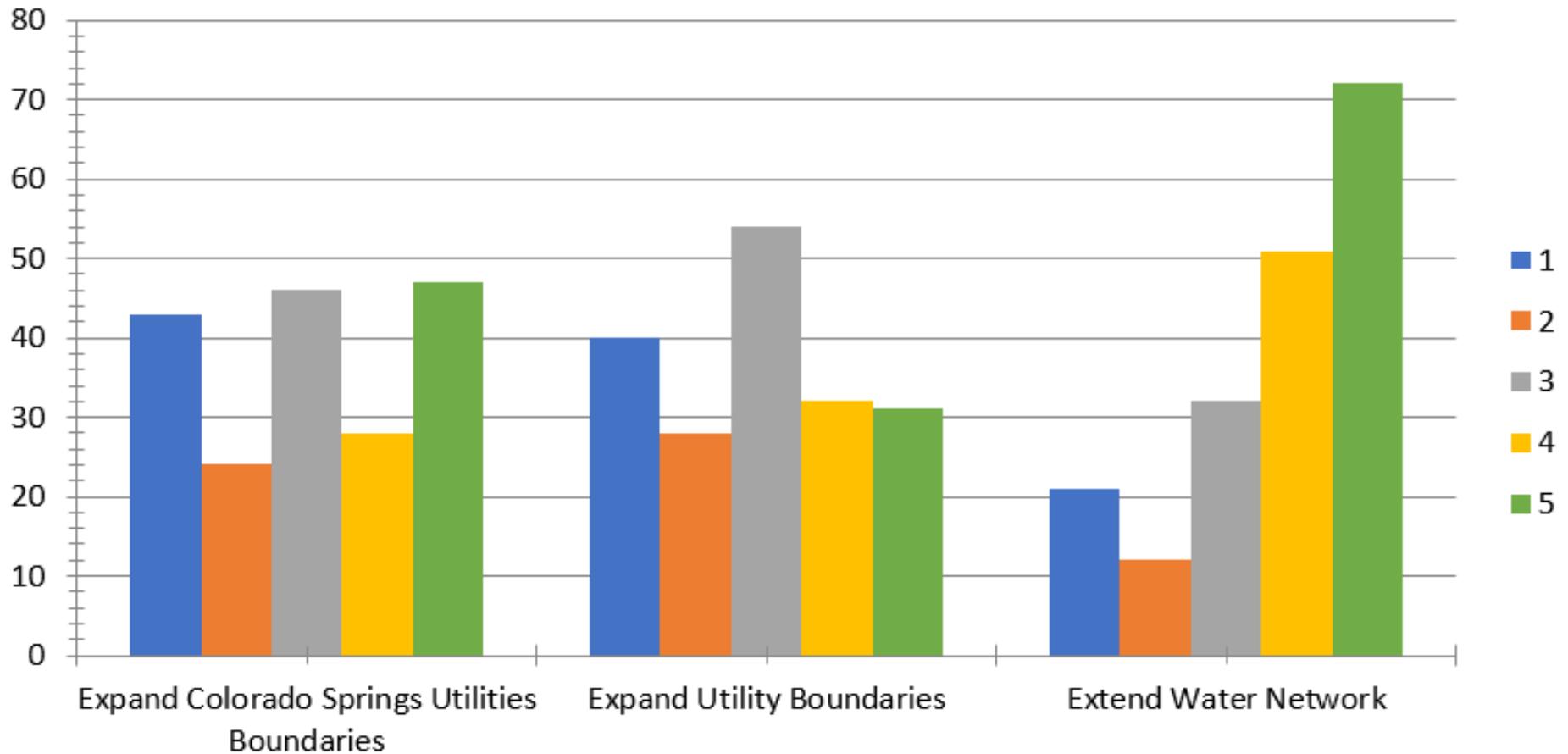
# Public Feedback

## Building Landscaping



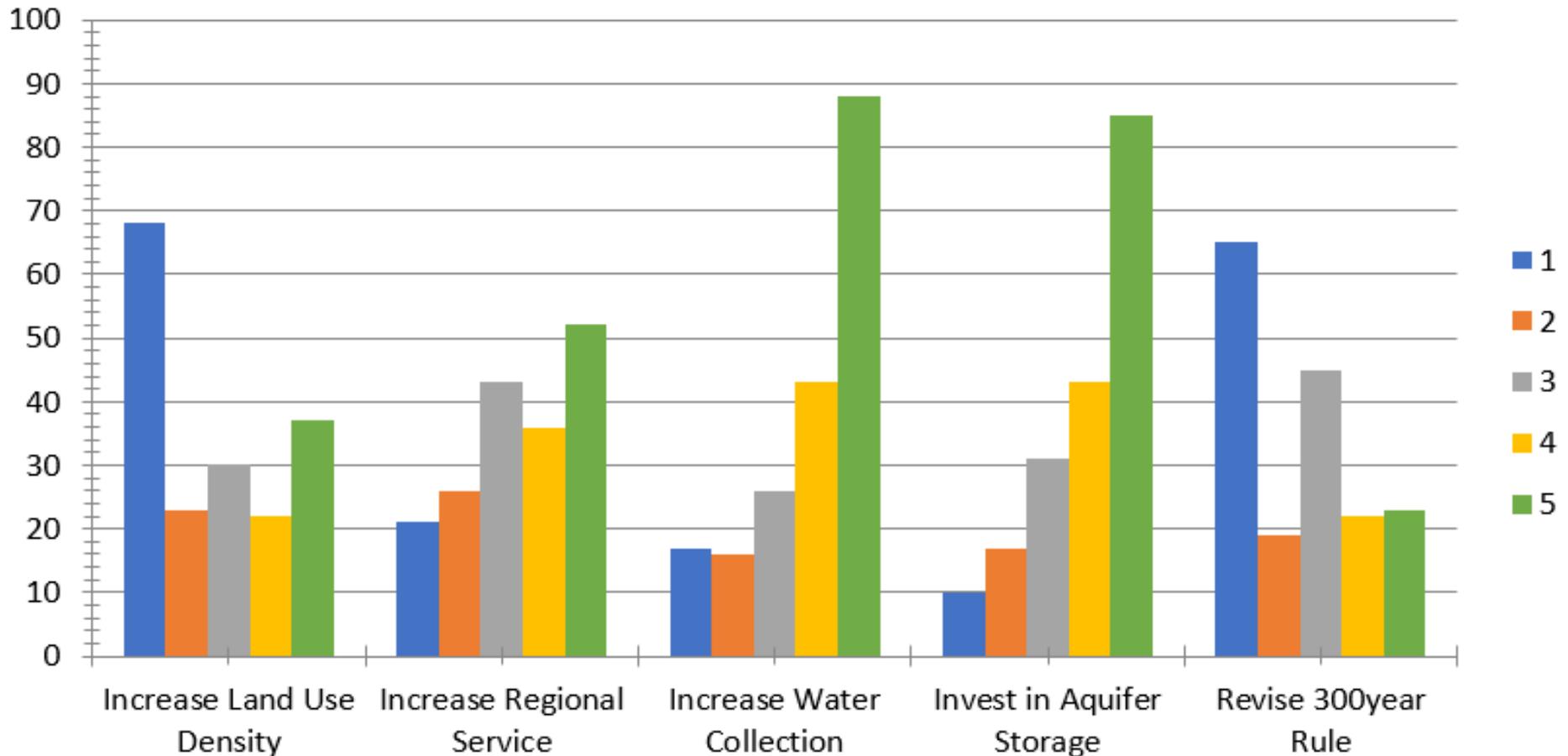
# Public Feedback

## Regionalization

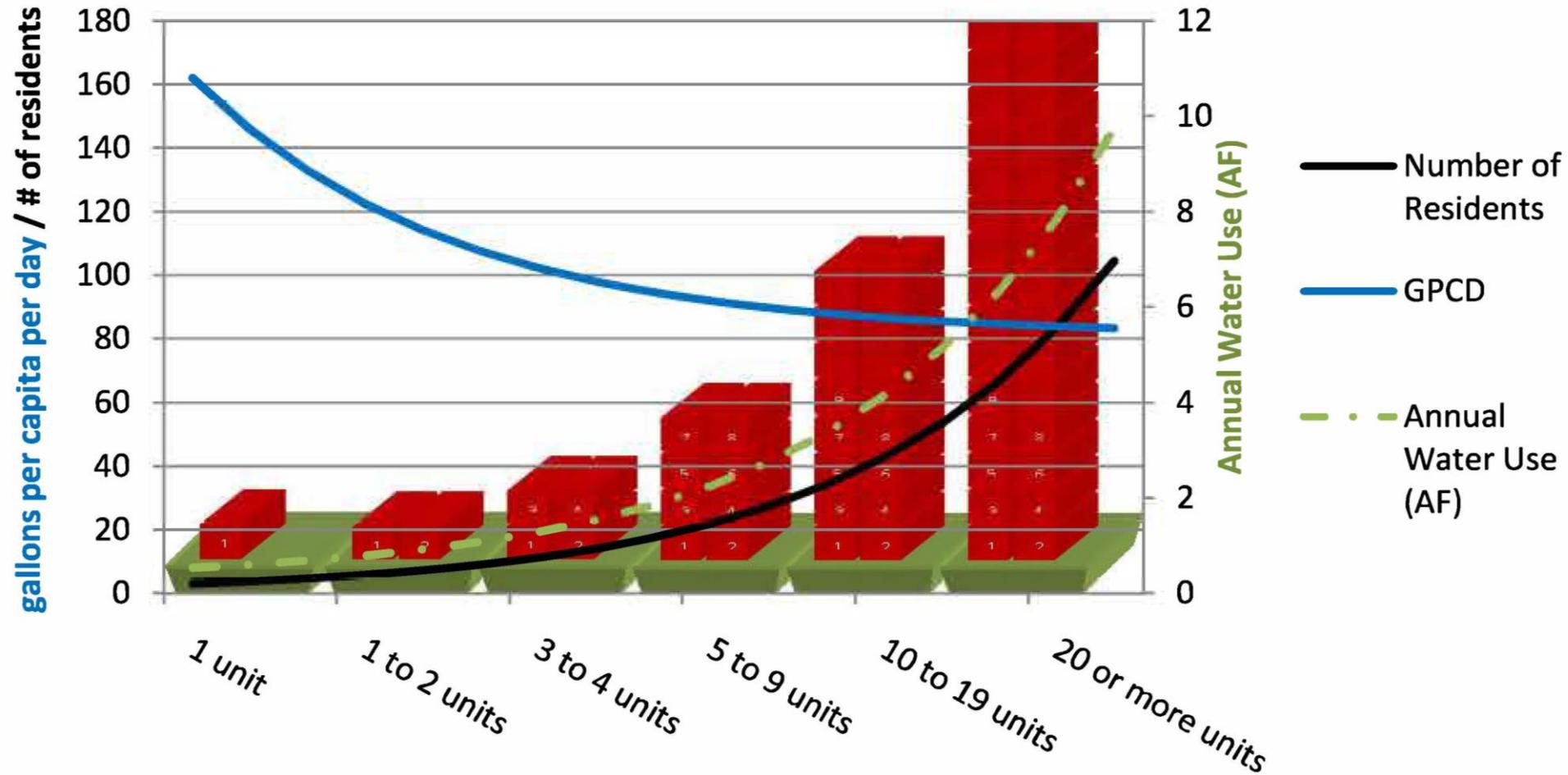


# Public Feedback

## Land Use Infrastructure



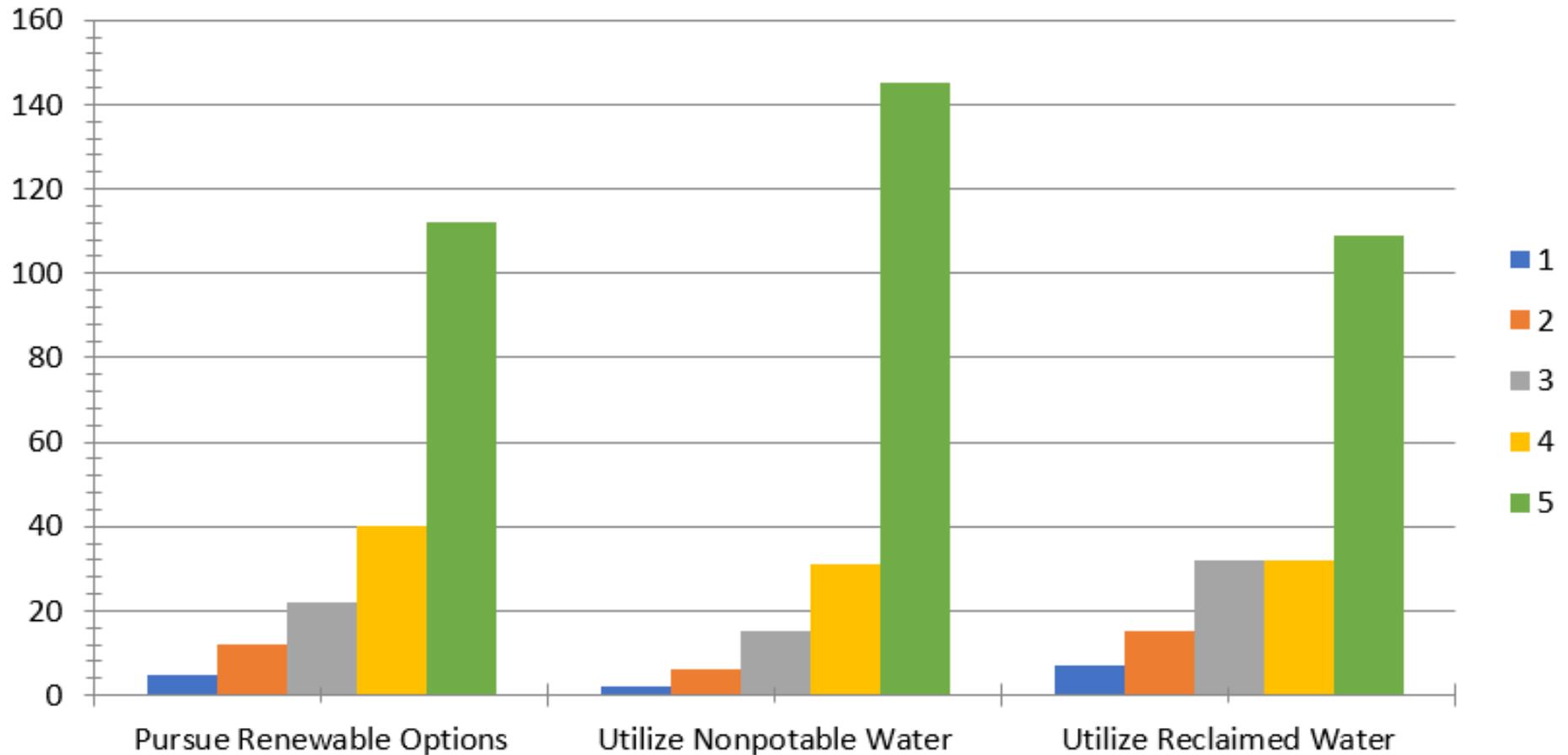
# Per Capita Water Demand



Colorado Water Conservation Board (CWCB), Tech Memo

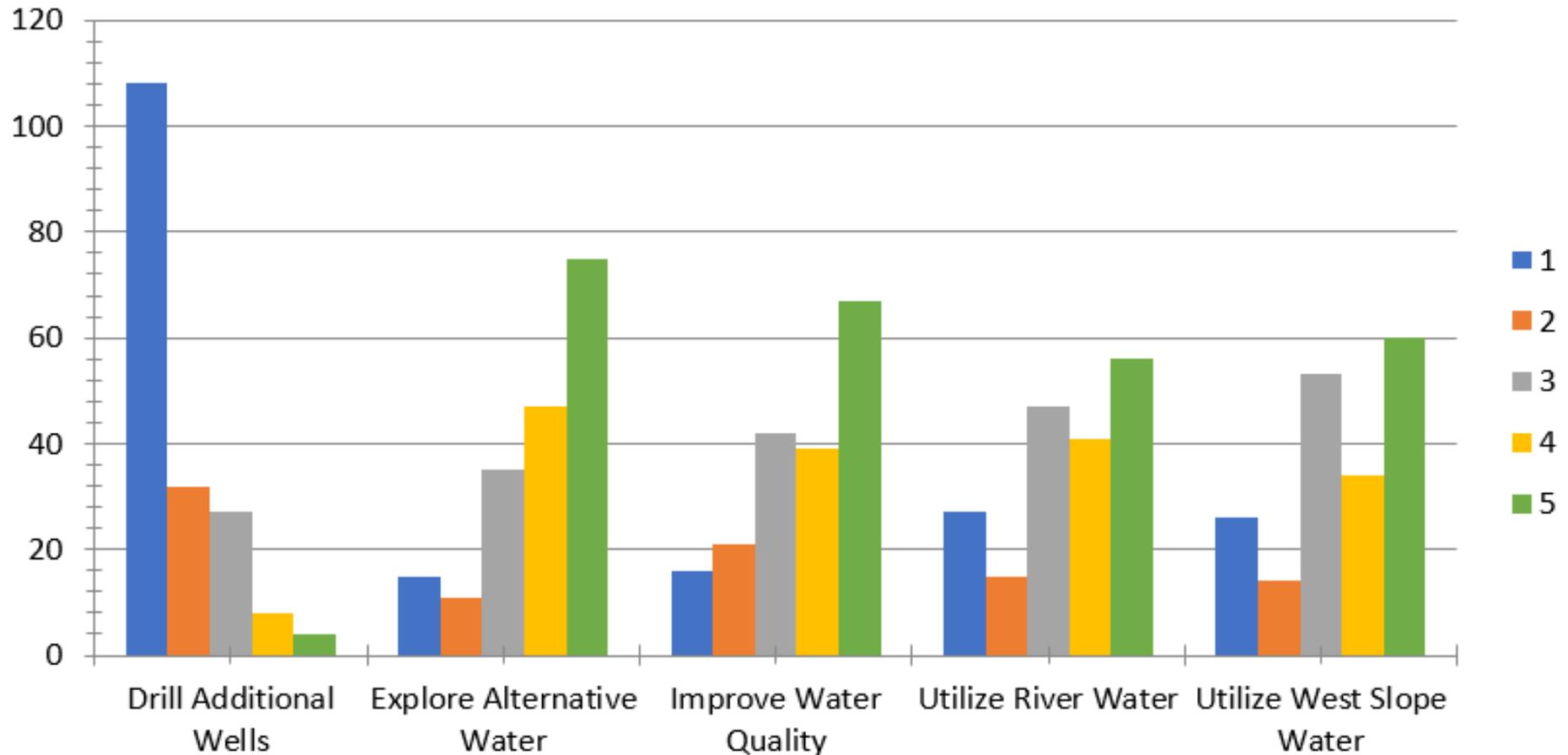
# Public Feedback

## Renewable Water



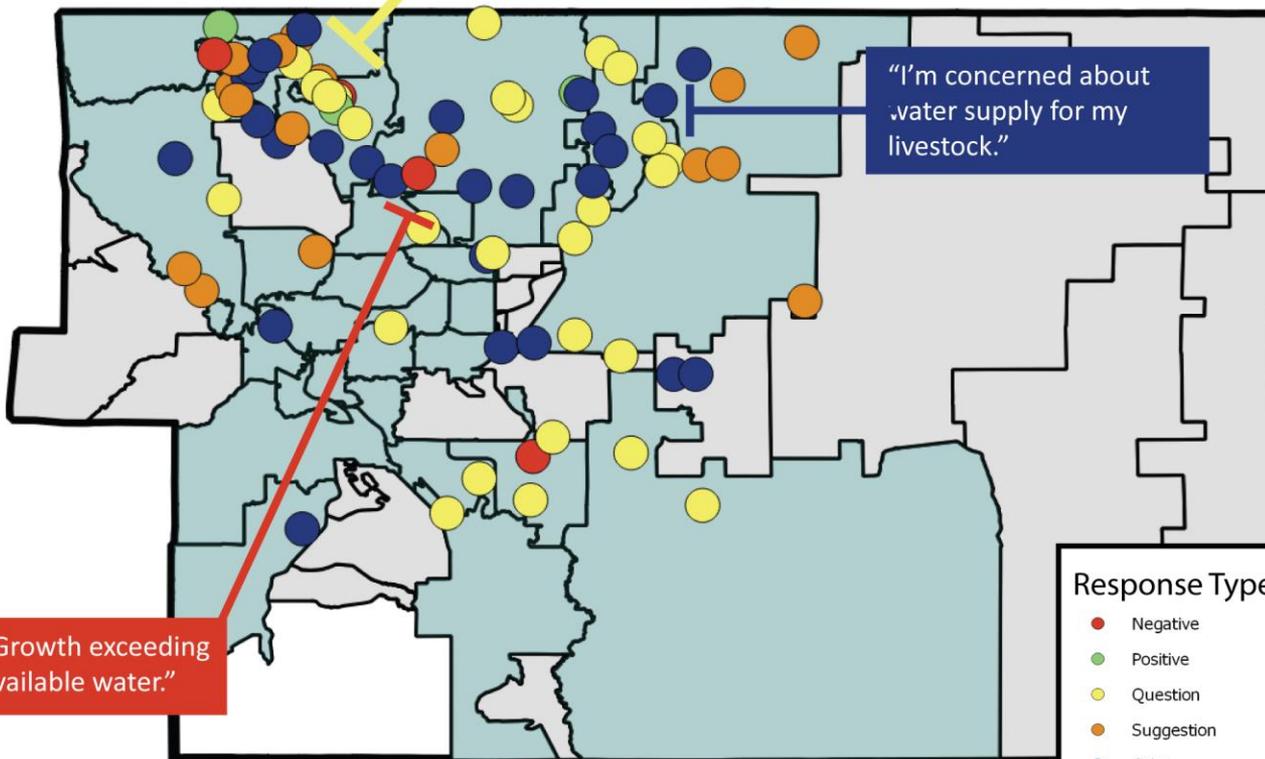
# Public Feedback

## Water Sources Quality



# Public Feedback

"Where is all the water going to come from to supply all the homes being planned in this area?"



"Growth exceeding available water."

"I'm concerned about water supply for my livestock."

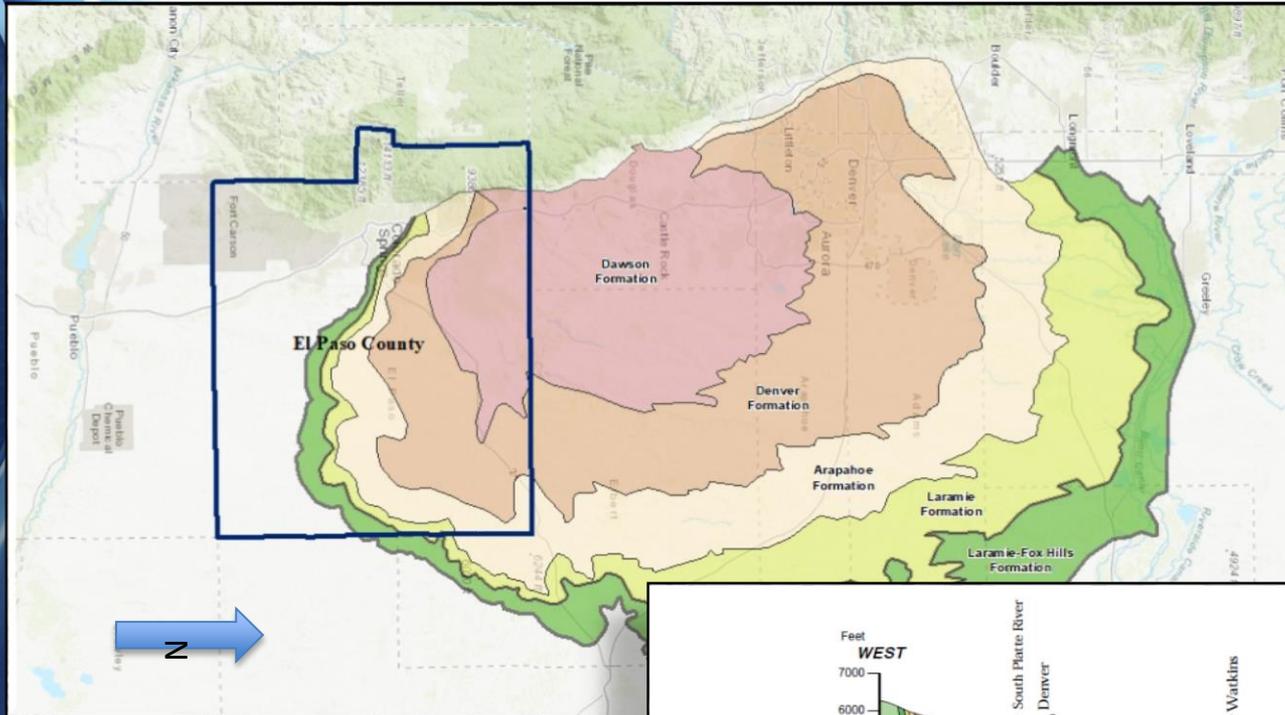
This map omits general feedback comments, not associated with a specific location.

**Response Type**

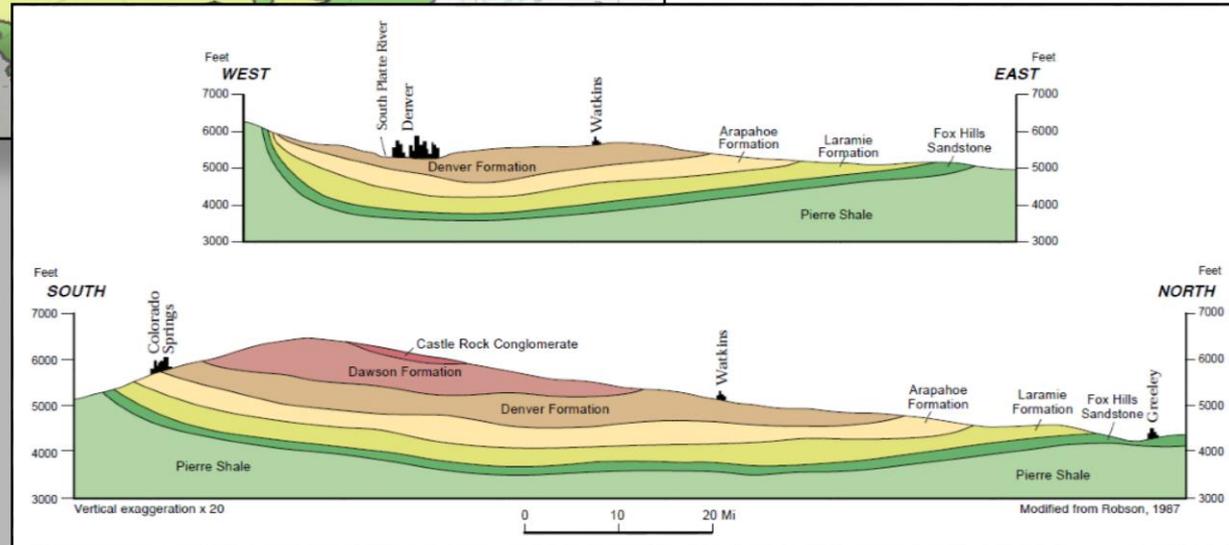
- Negative
- Positive
- Question
- Suggestion
- Other

■ Zip Codes where respondents reside  
■ Zip Codes  
■ El Paso County

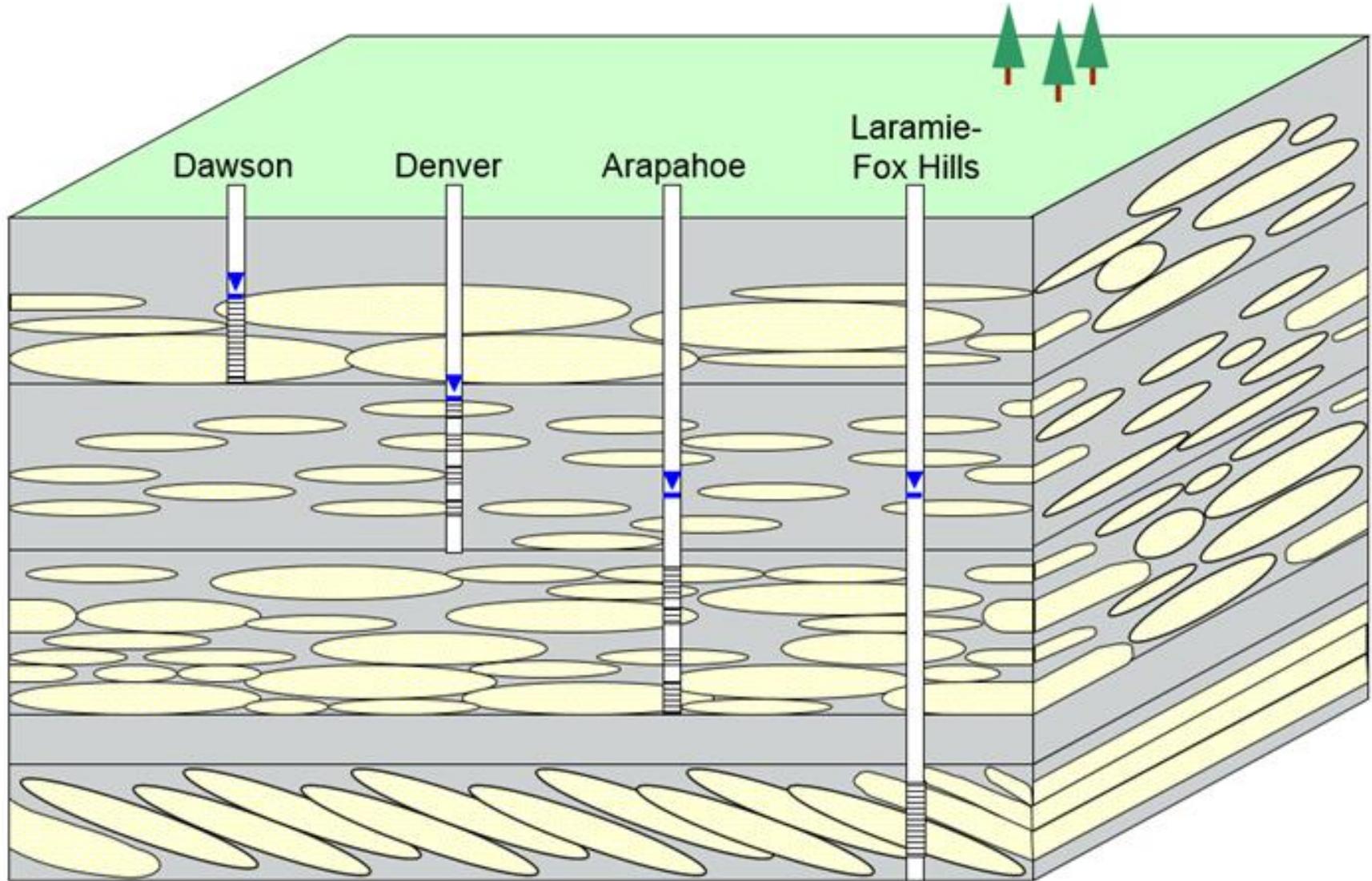
# Water Supplies: Denver Basin



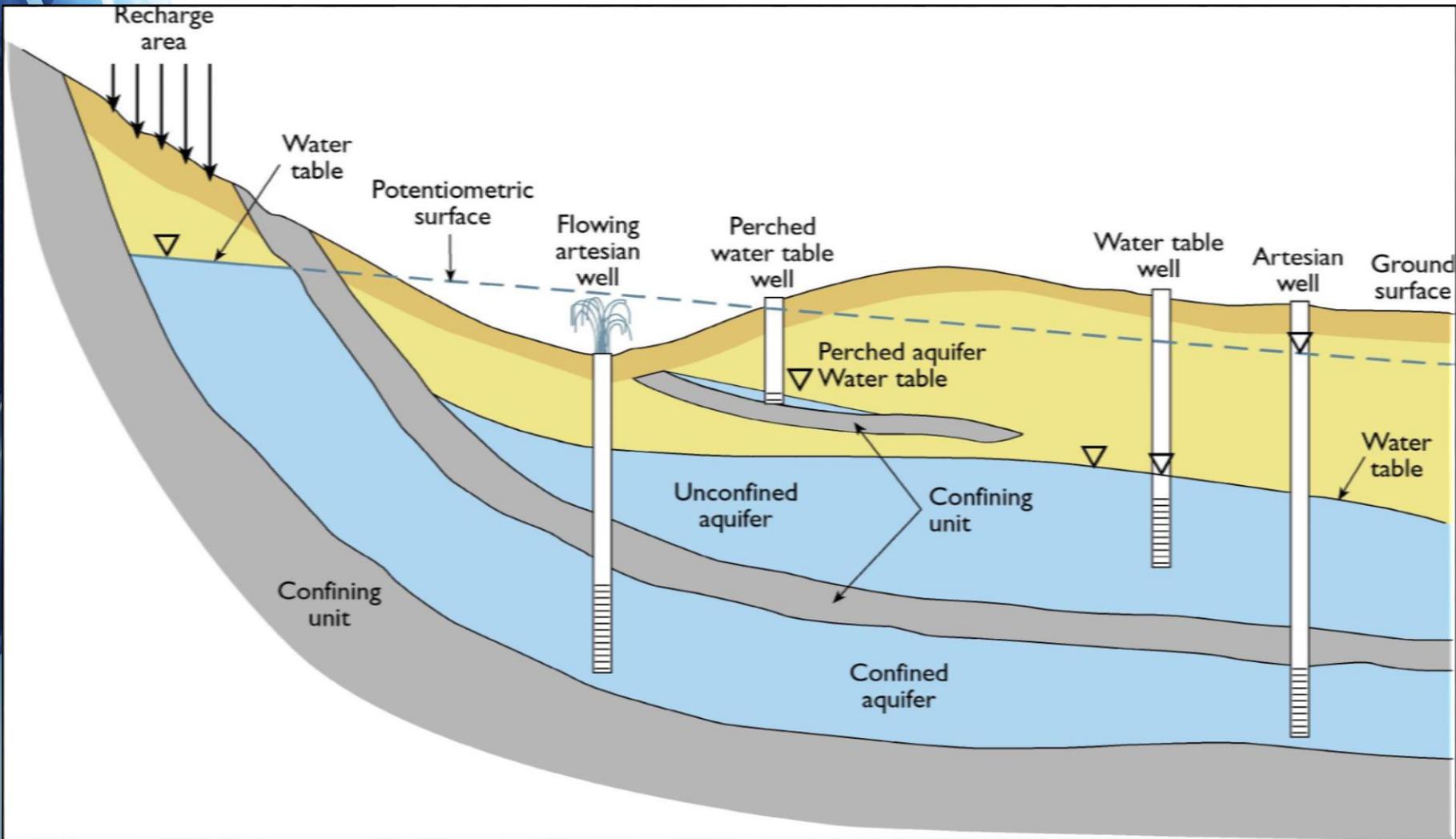
**Denver Basin water:**  
Nonrenewable water mined from bedrock aquifers.



# State 100-Year Rule

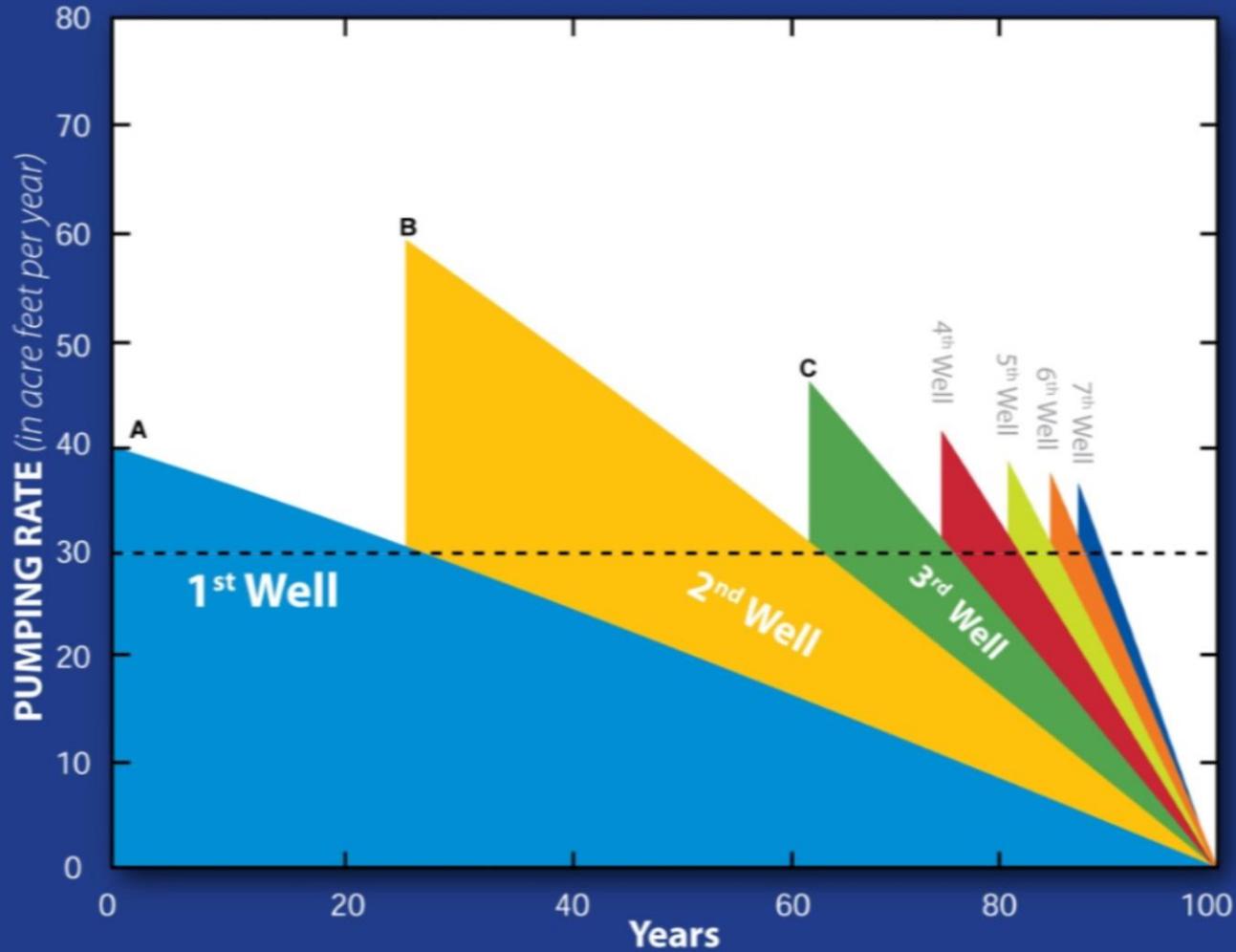


# Denver Basin

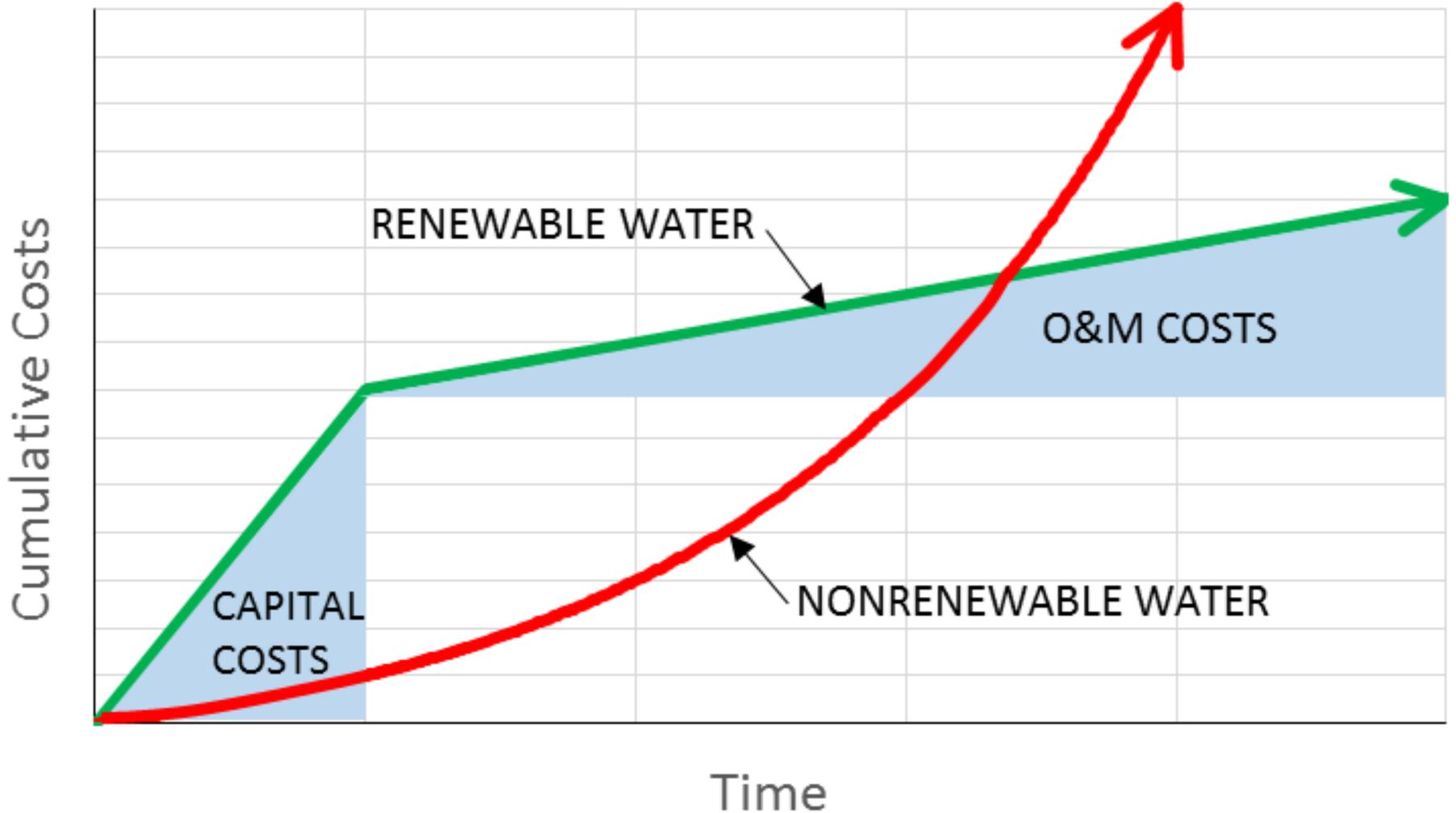


# Denver Basin

## CASCADING REDUCTION IN WELL YIELD



# Denver Basin



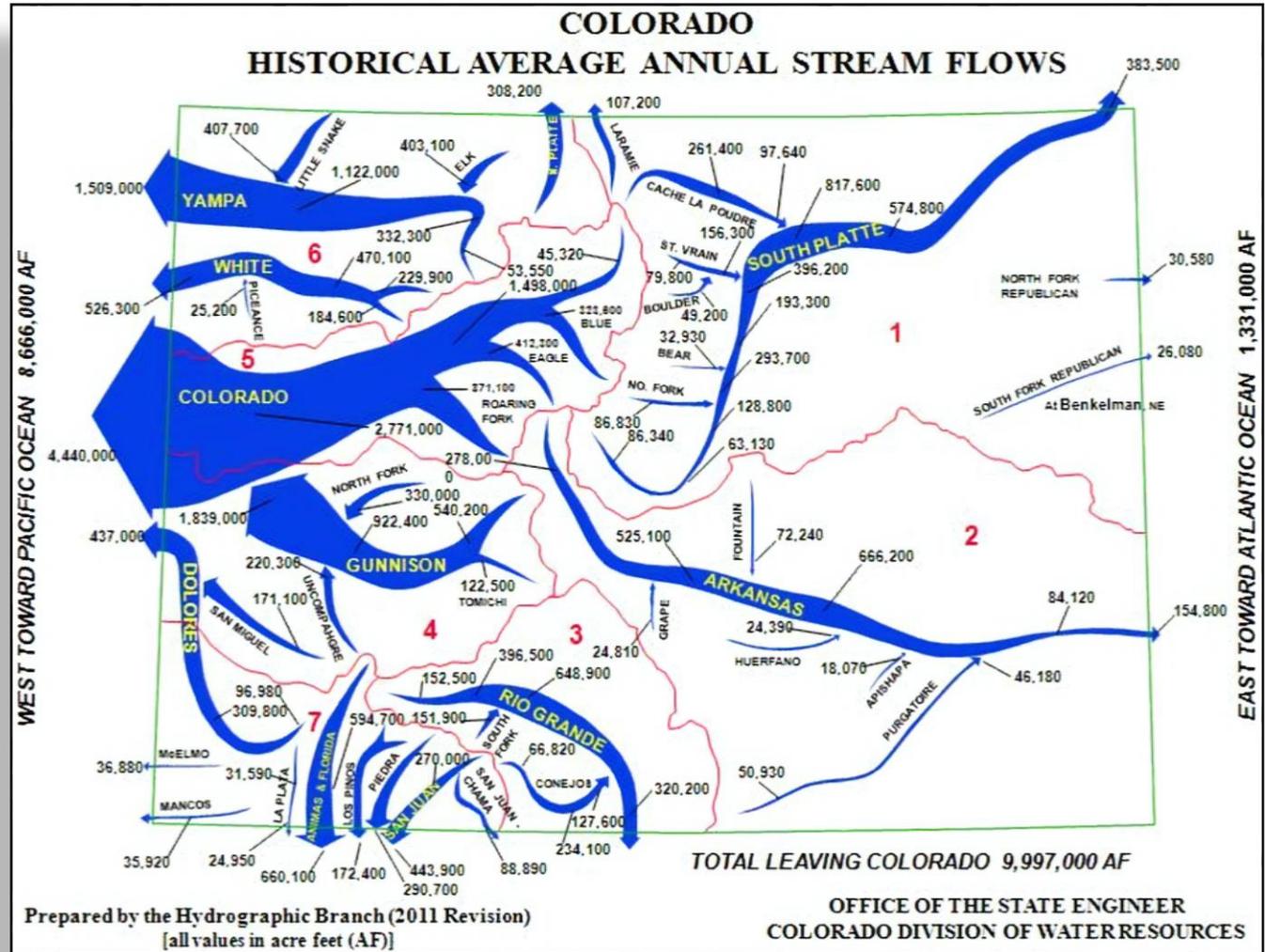
# Water Supplies: Renewable Water

**Renewable water:**  
Derived from annual precipitation.

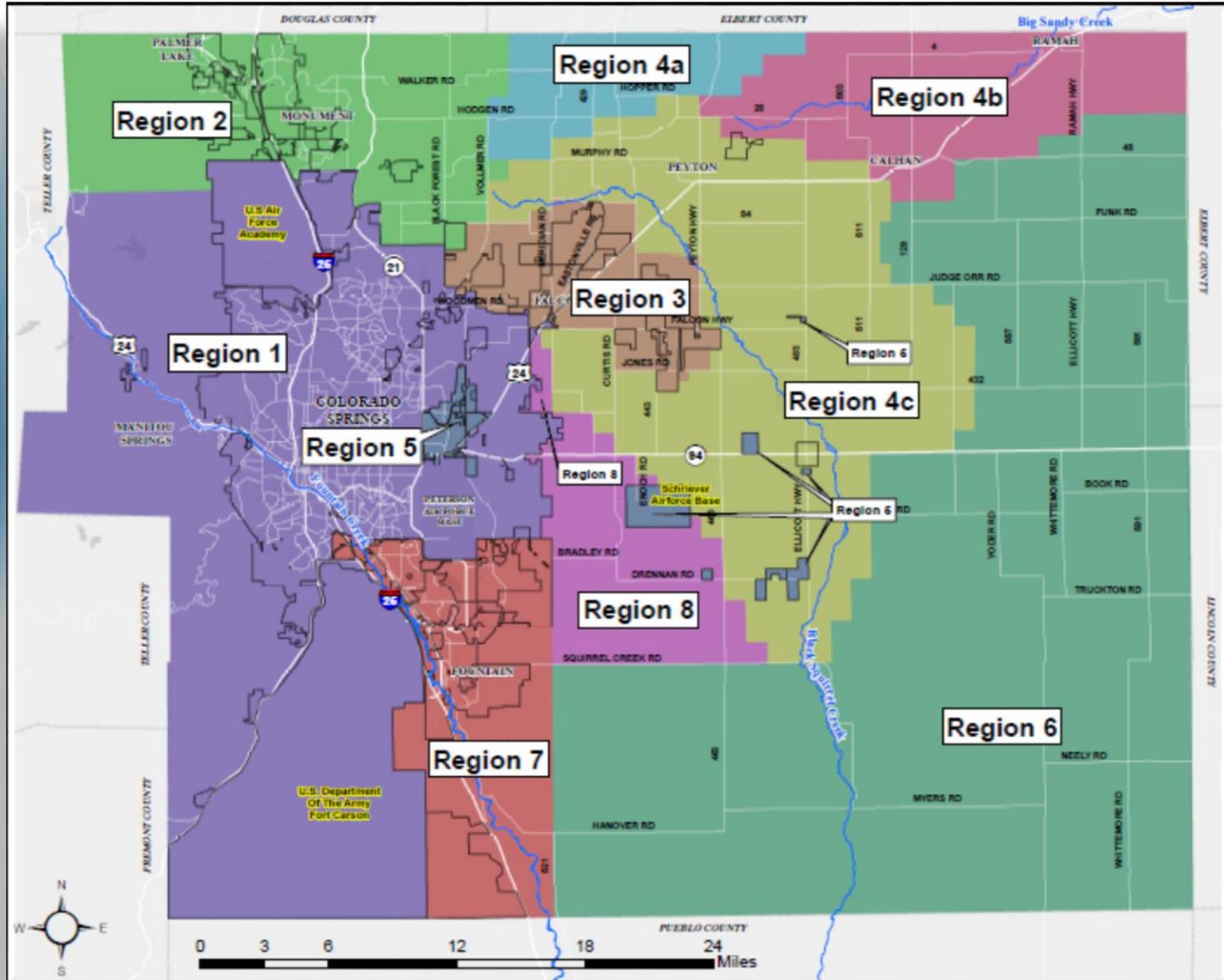
80% Water West Slope

80% Population East Slope

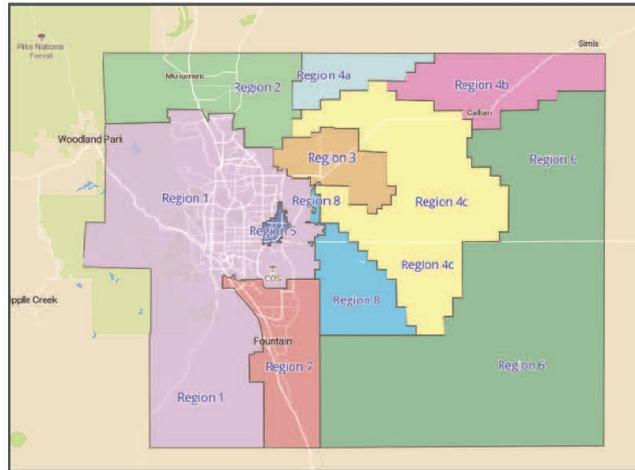
Transmountain Diversions



# EPC Water Plan Regions



# Figure 3.2 El Paso County Providers by Region



## Region 1

- Colorado Springs Utilities
  - \* Cascade MD No 1
  - \* Cheyenne Mtn Air Force Station
  - \* U.S. Air Force Academy
  - \* U.S. Dept Of The Army Fort Carson
- Manitou Springs
- Garden Valley
- Cheyenne Mt. Estates
- Rock Creek Mesa
- Red Rock Valley WD
- Turkey Canon Ranch WD
- Overlook Mutual WC
- Keeton Ranch Water
- Rock Creek MD

## Region 4a

No water providers in this region

## Region 4b

- Town Of Calhan
- Town Of Ramah

## Region 4c

- Prairie Estates
- Peyton Pines
- Silver Bonnett MHP
- Ellicott Town Center MD
- Rock Springs Ranch MD 1-3
- Ellicott Elen Sr High School

## Region 2

- Woodmoor WSD
- Donala WSD
- Triview MD
- Town Of Monument
- Town Of Palmer Lake
- Forest View Acres WD
- Academy WSD
- Walden WSD
- Park Forest WD
- Forest Lakes Md
- Palmer Lake Mobile Home Ranch
- Grandview MHP
- Pioneer Lookout WD
- Elephant Rock MHP
- Peak Shadow
- Pinon Pines MD

## Region 3

- Woodmen Hills MD
- Meridian Service MD
- Paint Brush Hills
- Falcon Highlands MD
- Sage WUA
- Falcon Heights POA
- Bobcat Meadows MD
- 4 Way Ranch MD1
- Camelot
- High Plains Ranch MD
- Sterling Ranch MD 1-3
- School District 49
- Woodmen Hills

## Region 5

- Cherokee Md
- \* Schriever Air Force Base
- \* Sunset Metro District
- \* Ellicott Springs
- \* East Glen Village
- \* Curtis Heights

## Region 6

- Grand View MHP
- Arrowhead MHP

## Region 7

- City Of Fountain
- Security Wsd
- Widefield Wsd
- \* Rolling Hills Ranch MD
- Stratmoor Hills WSD
- Colorado Centre MD
- Wigwam Mutual WC
- Security MHP

**Legend**

WD - Water District	WC - Water Company
WSD - Water & Sanitation District	WUA - Water User's Association
MD - Municipal District	POA - Property Owner's Association
	MHP - Mobile Home Park

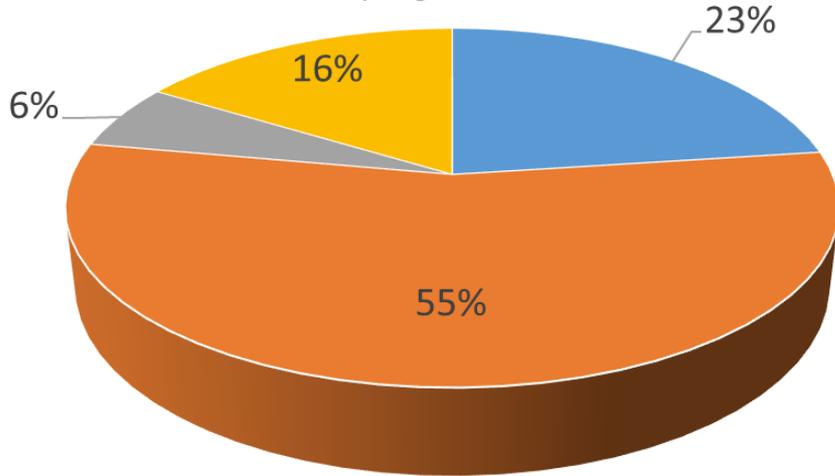
\* Water provided by entity listed above

## Region 8

No water providers in this region

# Current Supplies

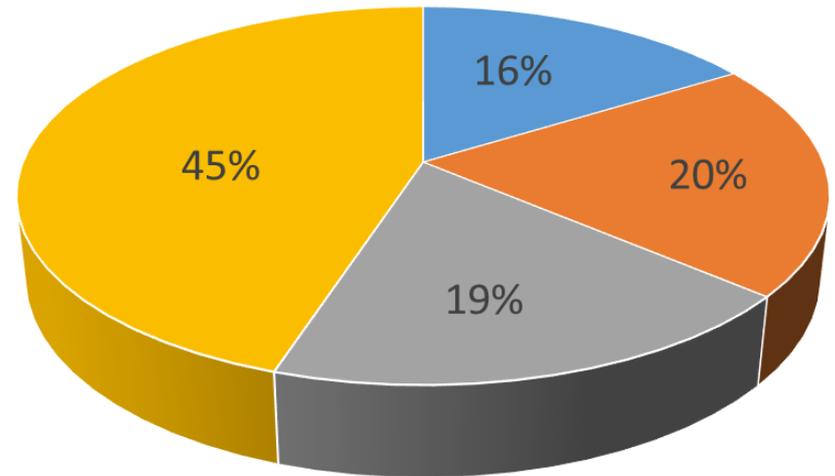
El Paso County Water Sources of Supply with Colorado Springs Utilities



- Native Renewable Water
- Imported Renewable Water
- Designated Basin Groundwater
- Denver Basin Groundwater

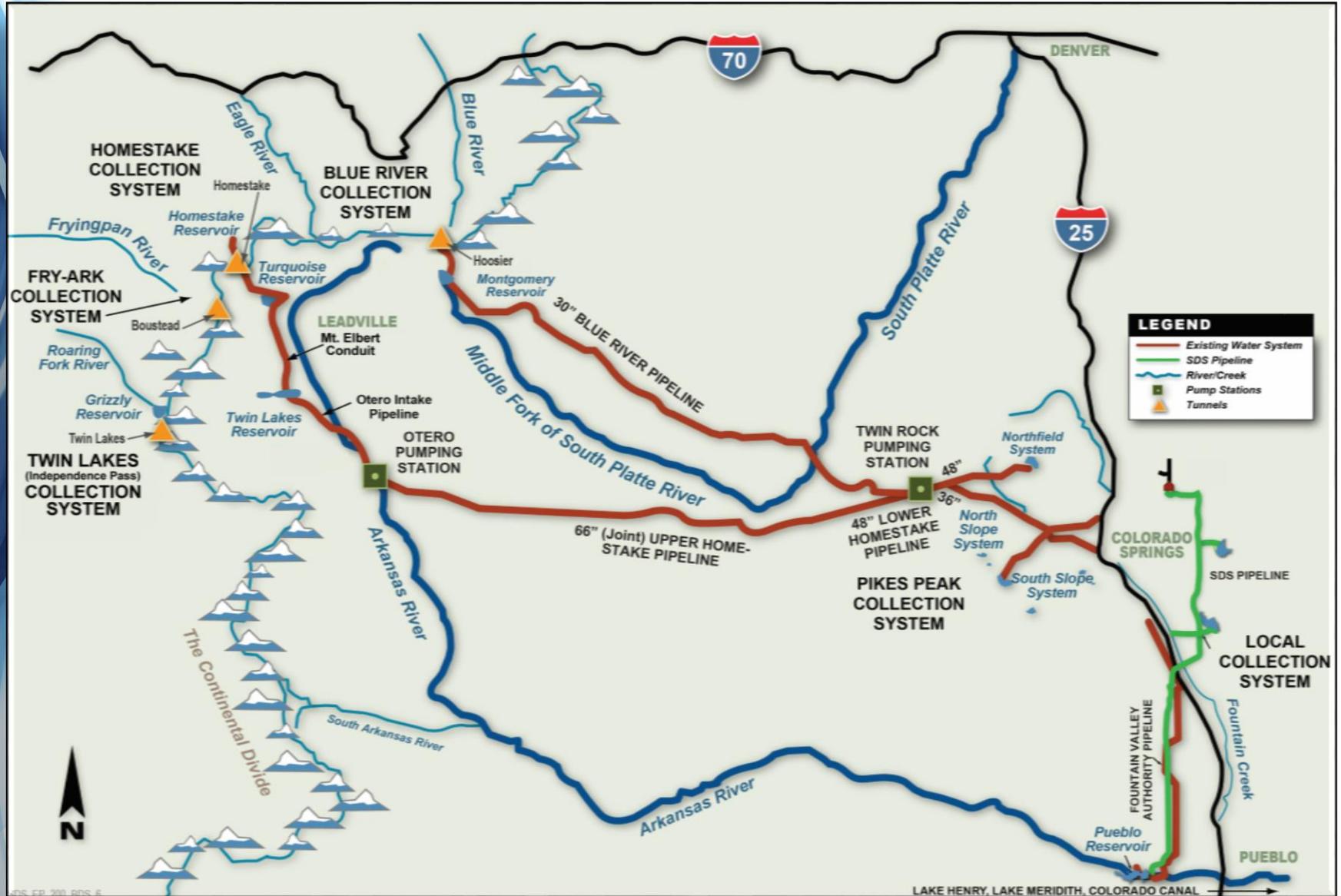
Domestic Wells –  
Over **18,120** wells in the County,  
outside of Water Service Areas

El Paso County Water Sources of Supply without Colorado Springs Utilities



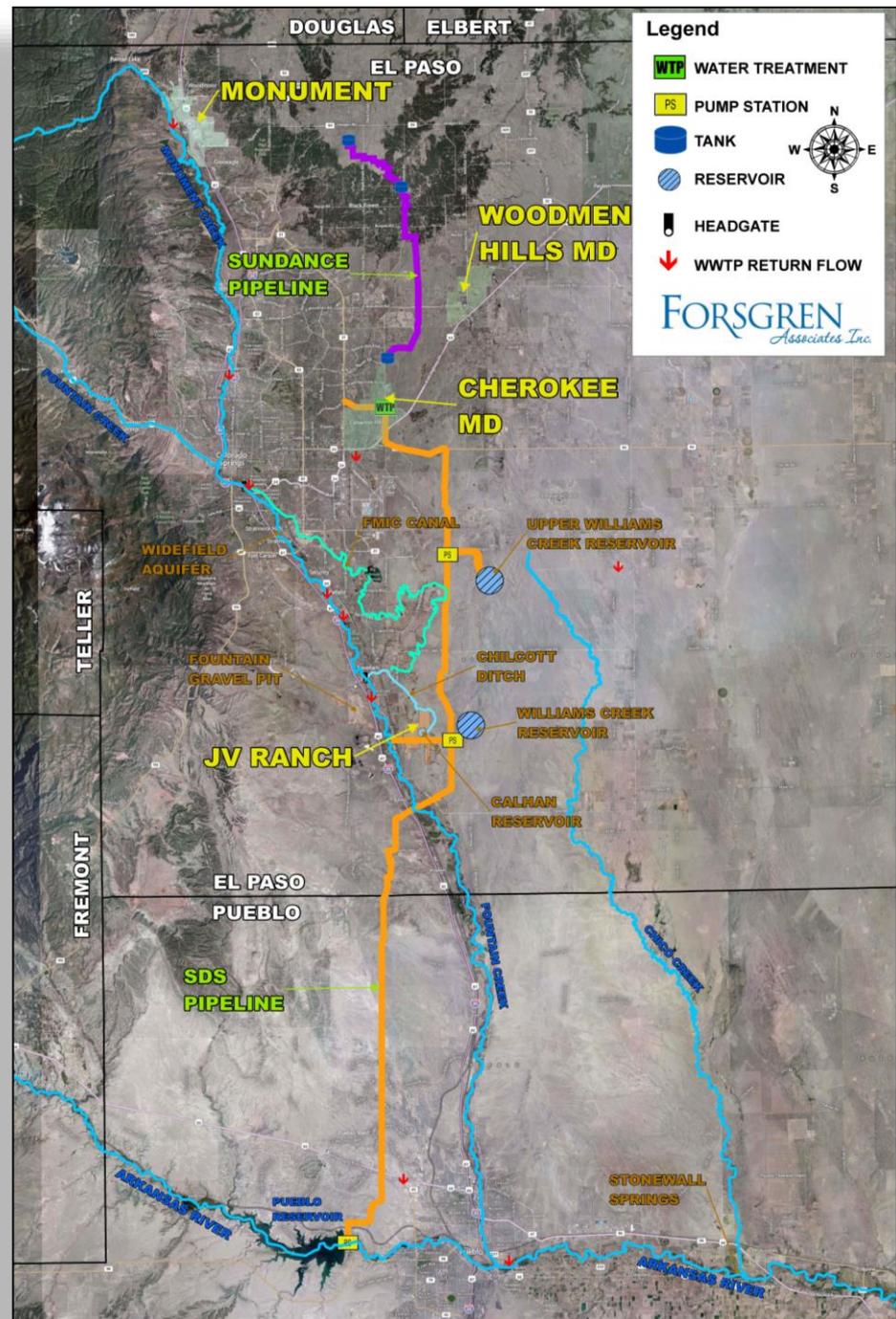
- Native Renewable Water
- Imported Renewable Water
- Designated Basin Groundwater
- Denver Basin Groundwater

# CS Utilities Water Supplies

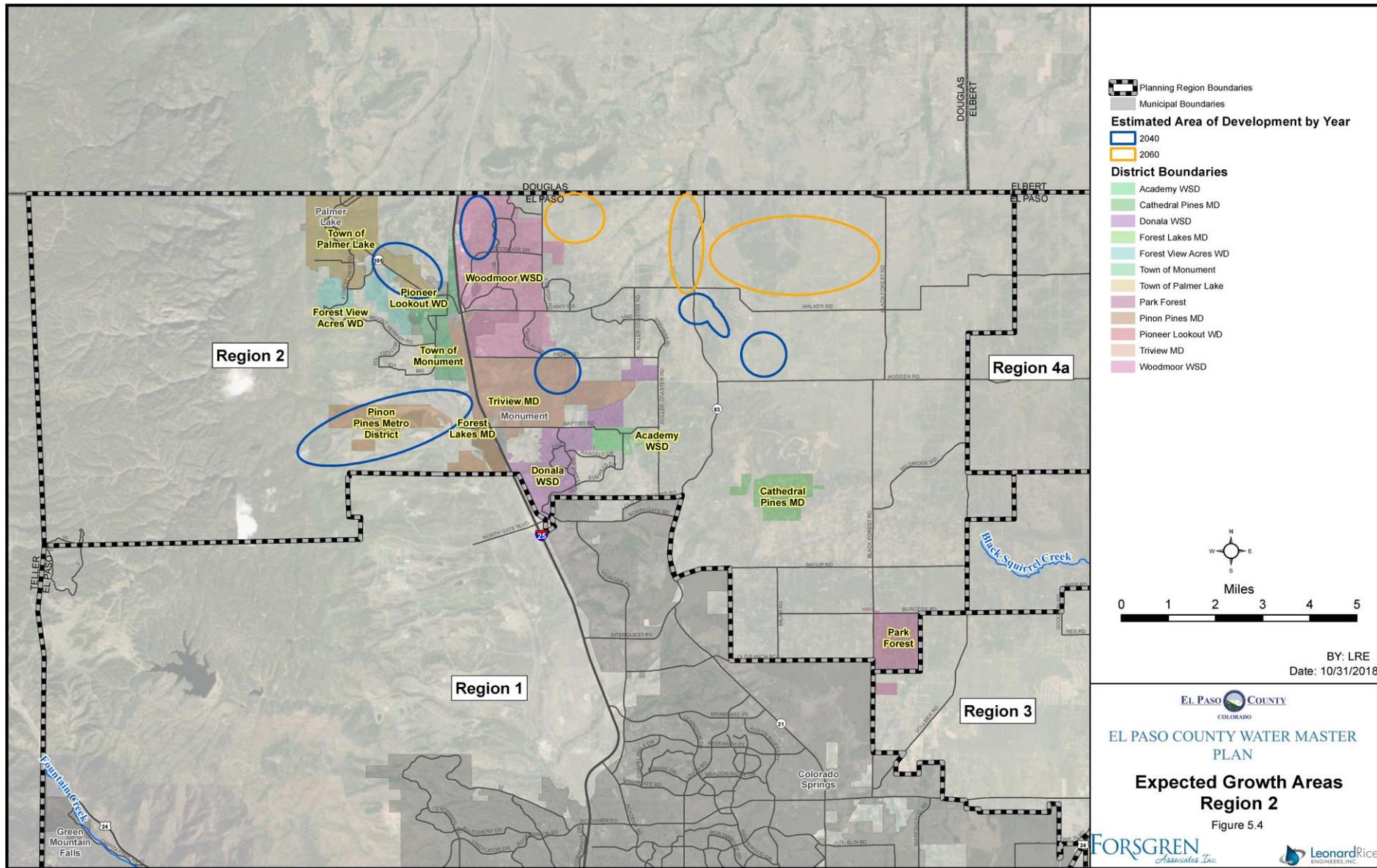


# Regional Planning

# PPRWA



# Expected Growth Areas



EL PASO COUNTY  
COLORADO

EL PASO COUNTY WATER MASTER PLAN

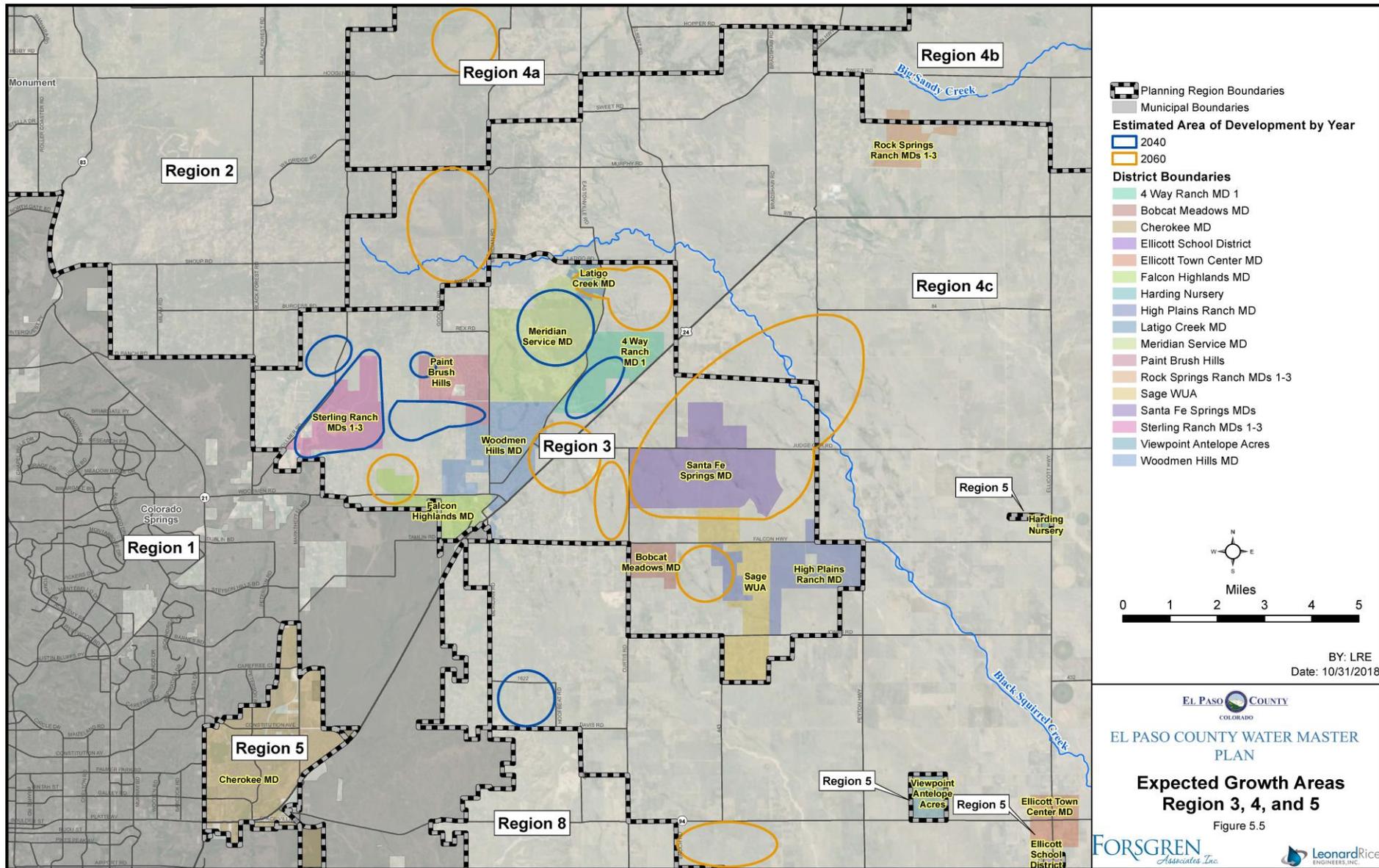
Expected Growth Areas  
Region 2

Figure 5.4

FORSGREN Associates, Inc.

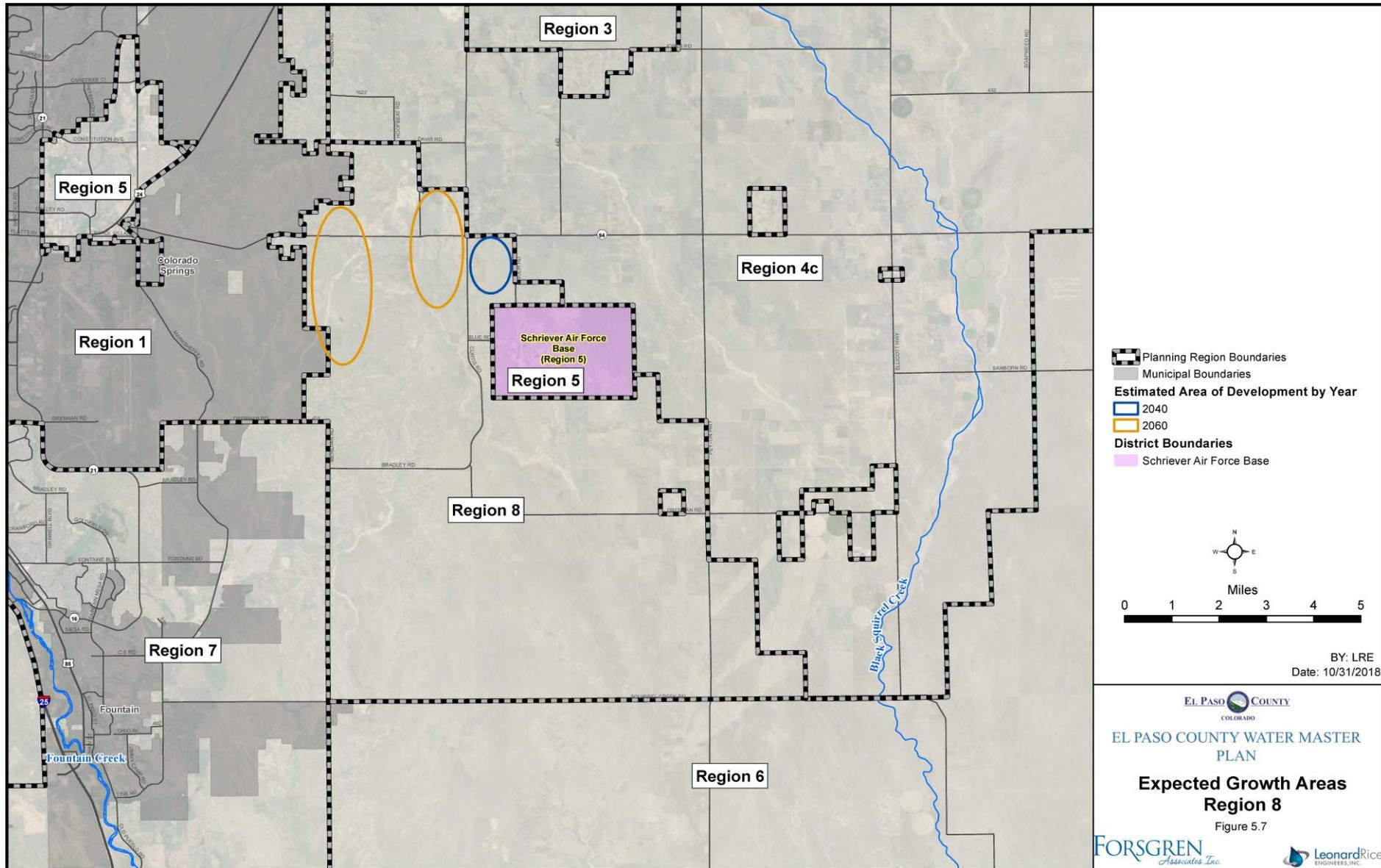
Leonard Rice ENGINEERS, INC.

# Expected Growth Areas

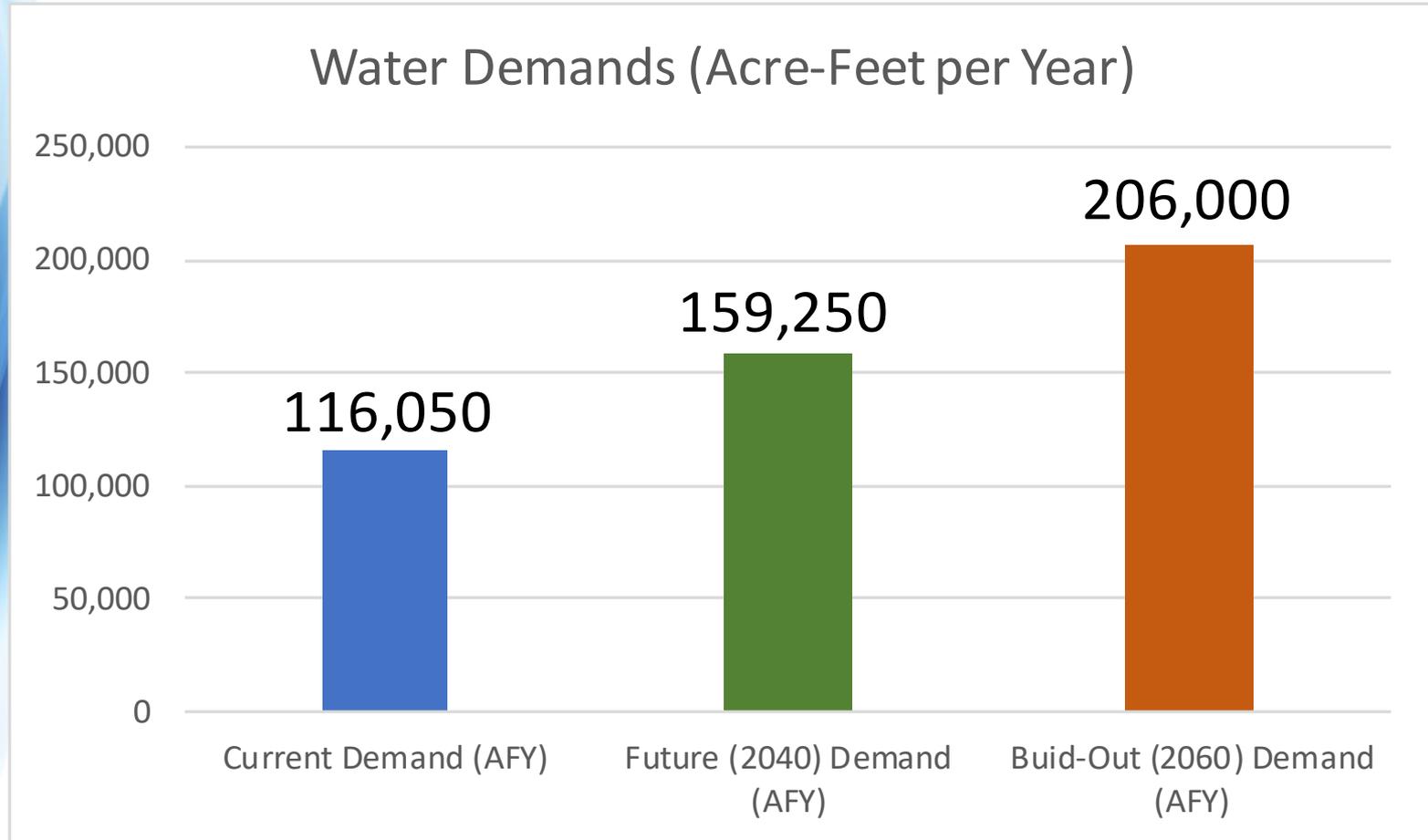




# Expected Growth Areas



# Projected Water Demands



# What is an Acre-foot?



# Strategies: Reuse

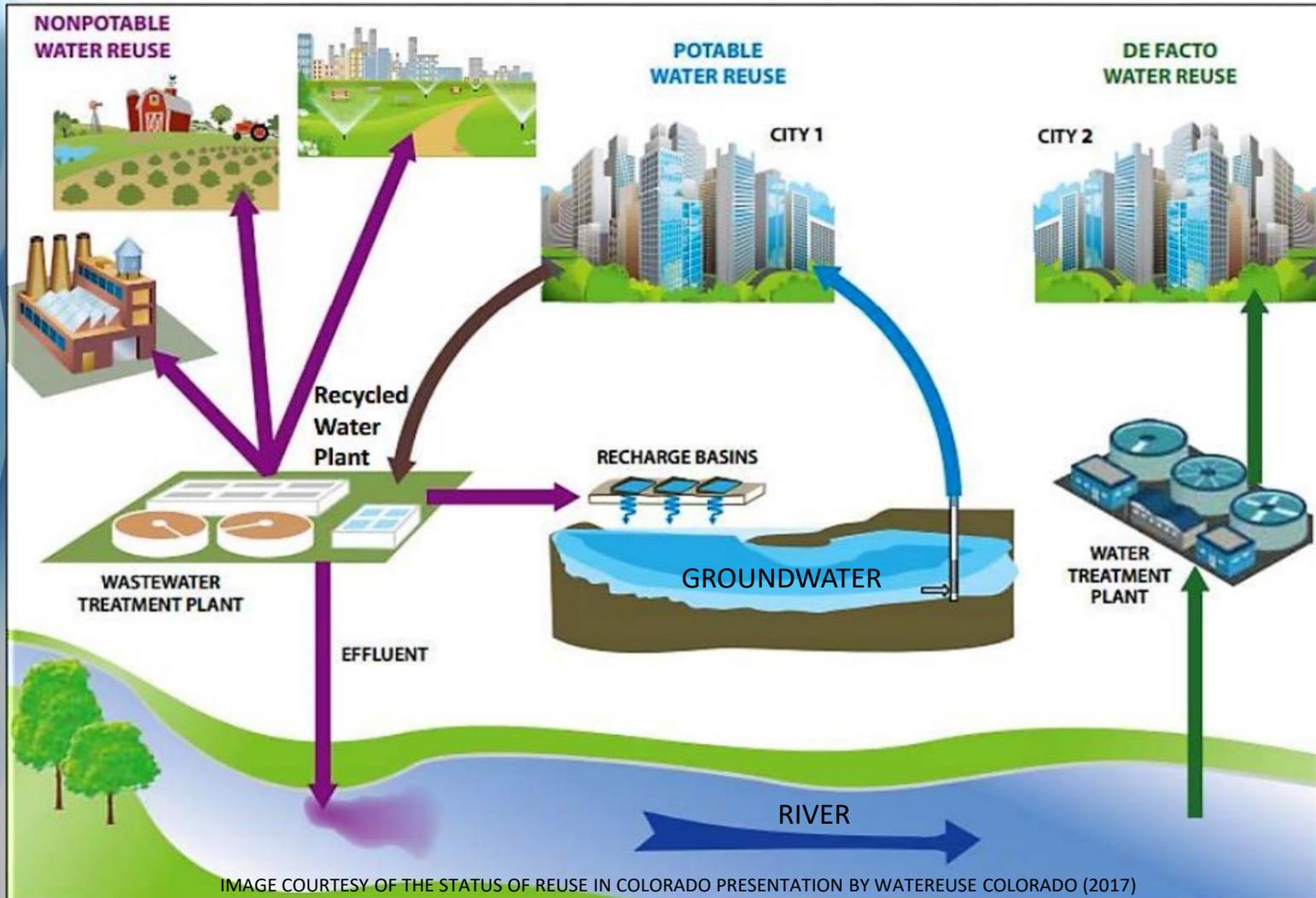
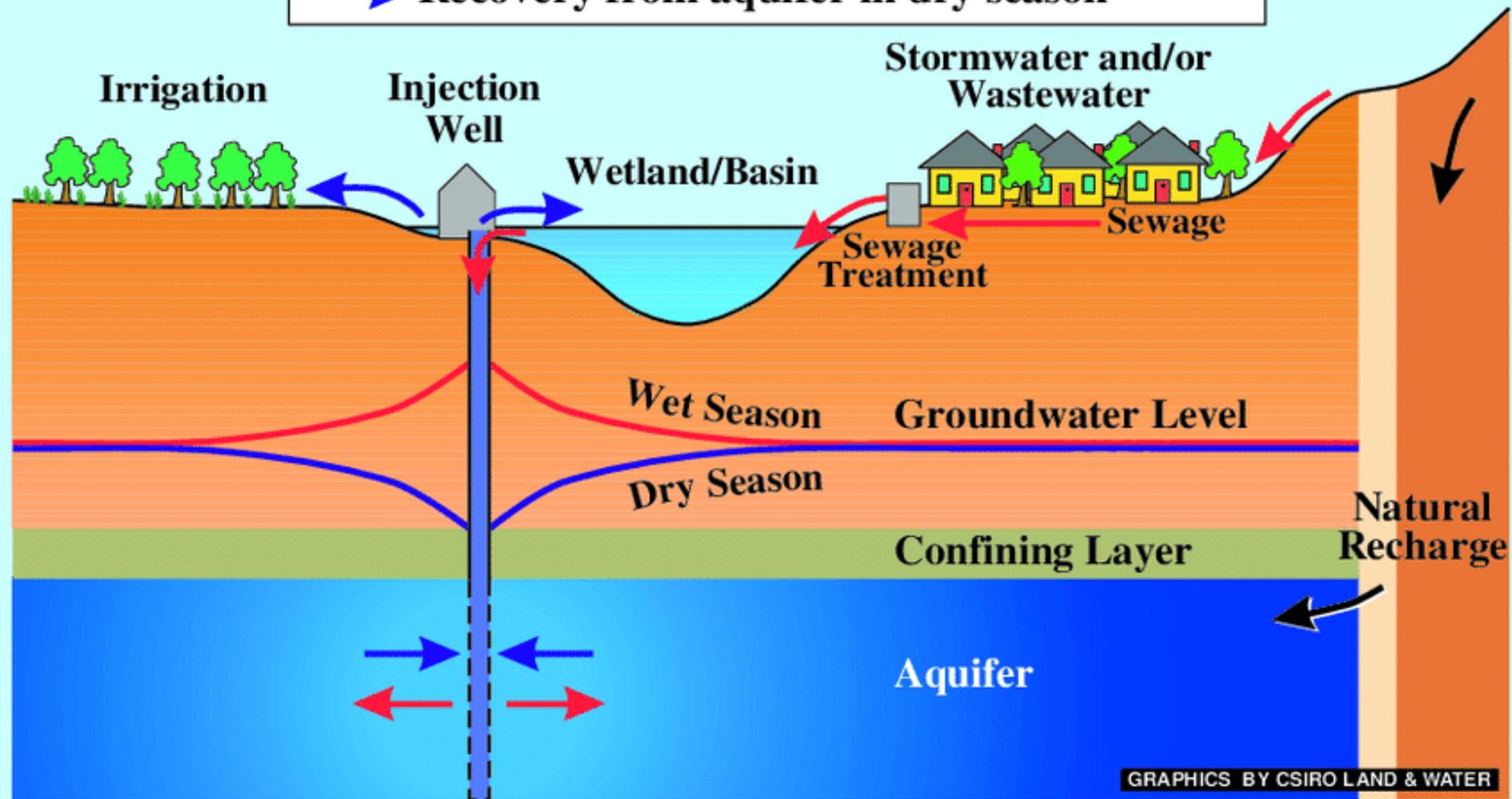


IMAGE COURTESY OF THE STATUS OF REUSE IN COLORADO PRESENTATION BY WATEREUSE COLORADO (2017)

# Aquifer Storage and Recovery (ASR)

- Storm/Waste-water to aquifer in wet season
- Recovery from aquifer in dry season



GRAPHICS BY CSIRO LAND & WATER

# Land Use ↔ Water Demands

- Early Discussion, Available Water Supply – Land Use Application
- Improve Water Efficiency and Promote Reuse
- Promote Water Conscious Landscaping – Landscaping Standards
- Extend the Use of Denver Basin Aquifers – Dry Year Supply
  
- Promote ***Diversified*** Water Portfolios –
  - a) Renewable Water
  - b) Regional Systems
  - c) 300-Year Rule Revisions



# Next Steps



## Modifications to Regulations

- Adopt WMP Goals and Policies
- Landscaping

## Further Analysis

300-Year Rule

## Comprehensive Plan

# Draft Goals and Policies

# Denver Basin Ground Water Rights

- A landowner, or a party with proper consent, may claim and withdraw ground water from the Denver Basin bedrock aquifers.
- The Denver Basin is composed of aquifers, or water bearing formations, that lie one on top of the other in layers. Between the layered aquifers, there is a “confining” layer.
- The ground water was deposited millions of years ago when the Denver Basin was formed. Because of the nature of the confining layers and because of the limited connection between these aquifers and surface water, the ground water in the aquifers is not renewable. When the ground water is used, it is being “mined” or used up without any replacement.
- In 1985, Senate Bill 5 provided a new framework to guide the appropriation of this ground water. Senate Bill 5 and the associated rules identified locations where the use of ground water from the Denver Basin would have a minimal effect on the surface water system. An aquifer with this characteristic is legally identified as nontributary.
- Prior to 1973, withdrawal of Denver Basin ground water was limited primarily by an assessment of proximity to other ground water appropriations in the same aquifer. A party could, therefore, appropriate large quantities of ground water from an aquifer, regardless of the amount of land that party owned.
- As a result of Senate Bill 213, effective July 6, 1973 [C.R.S. 37-90-137(4) and 37-90-107(7)], a landowner is limited to withdrawing only that water determined to be underlying the owned land, or land owned by another who has given consent. Additionally, Senate Bill 213 limits annual withdrawal to one percent of what is determined to be available underlying the owned land.
- These two premises – quantity based on water actually underlying the land and annual withdrawal limited to one percent of the total amount – are also used to allow the uses permitted for many individual on-lot wells that use Denver Basin ground water.
- Therefore, the owners of land (in most cases), private or public, in the Denver Basin have a statutory right to the ground water underlying their land.