RANGEVIEW METROPOLITAN DISTRICT

WATER:

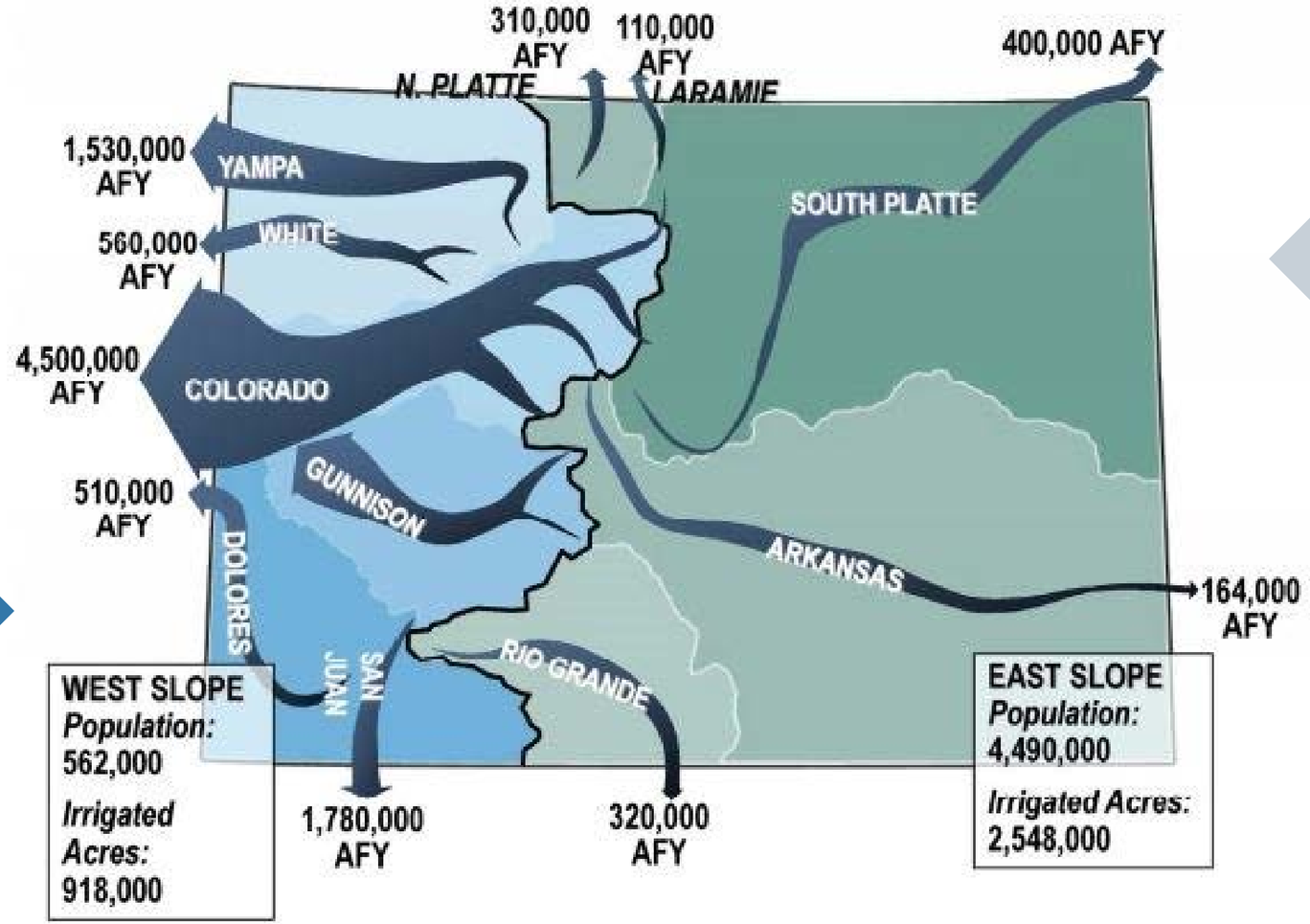
WHAT'S AVAILABLE AND HOW FAR CAN IT GO?

WATER IN COLORADO

Rangeview Metropolitan District

80%

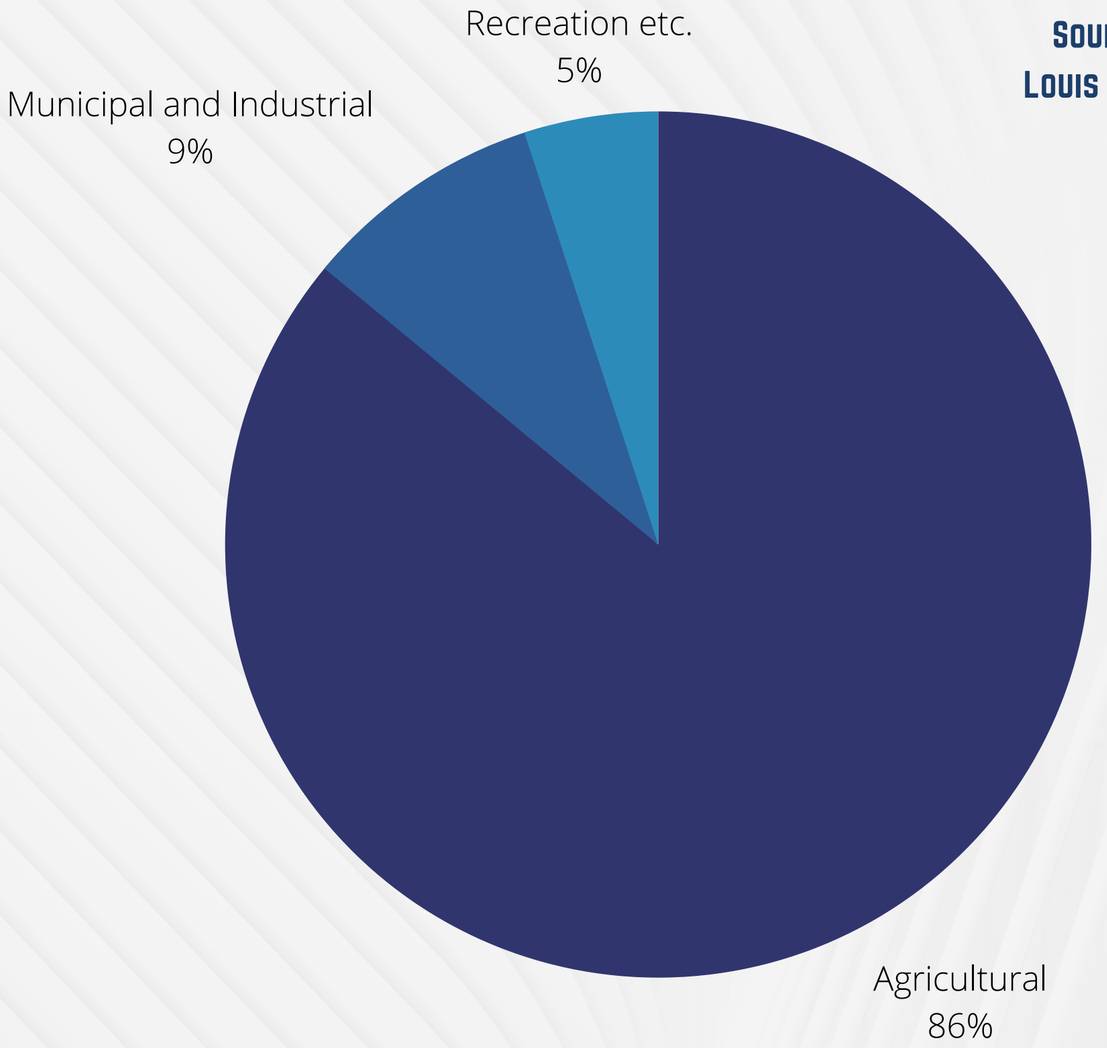
of the water is on the West Slope



80%

Of the population and water demands are on the east slope

HOW WE USE WATER



SOURCE:
LOUIS MEYER

Agriculture

The use of agricultural water makes it possible to grow fruits and vegetables and raise livestock.

Municipal

Supplying water to communities for drinking, bathing, cooking and other everyday uses.

industrial

Oil & Gas, manufacturing and other industries use water during the production process.

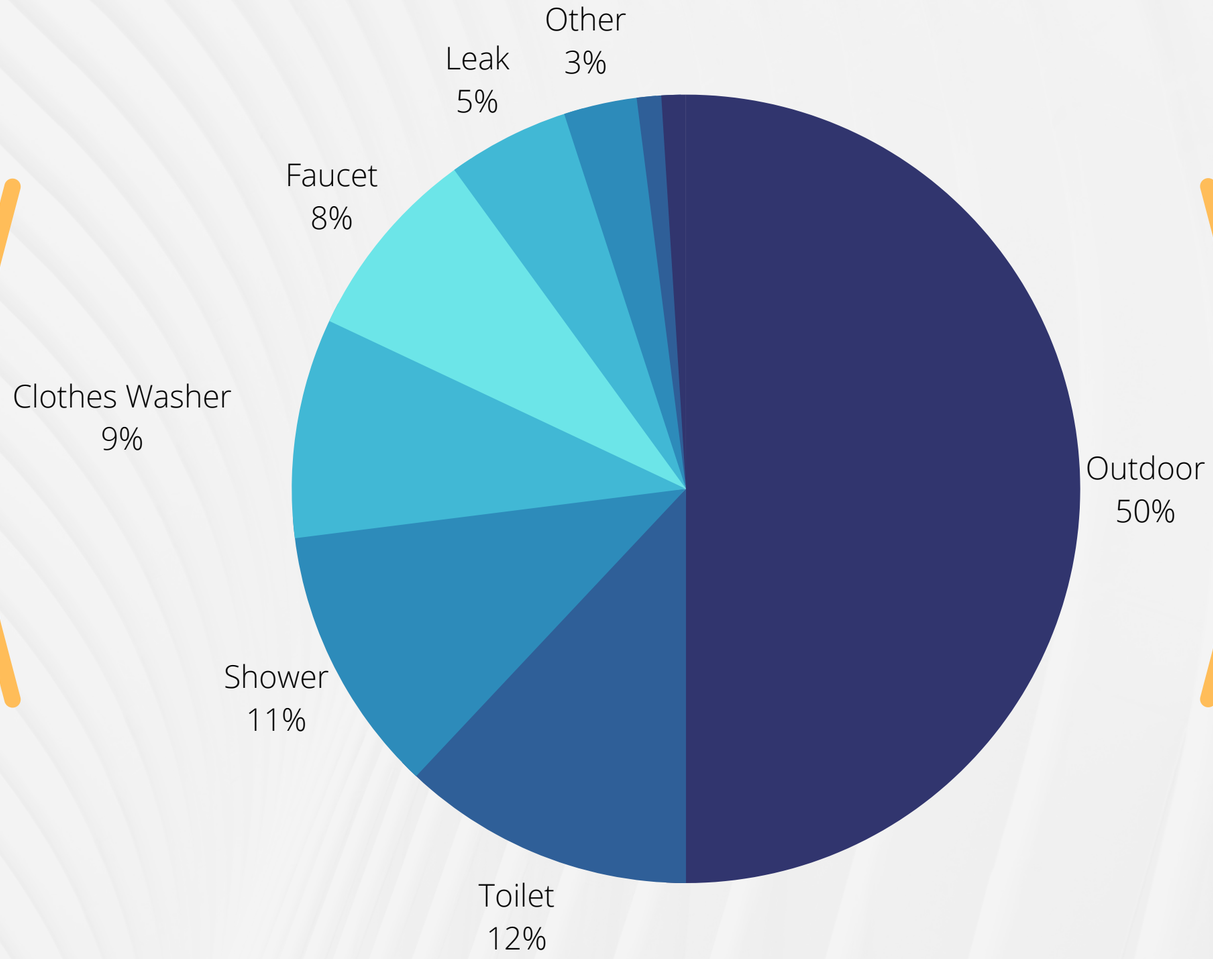
Recreational

Some water is used to recreational activities such as water parks and fishing

MUNICIPAL USE (HISTORICAL USES)

Rangeview Metropolitan District

INDOOR
50%



OUTDOOR
50%

GPCD INTERNATIONALLY

THE U.S USES A LARGE AMOUNT OF WATER EACH DAY COMPARE TO OTHER CONTRIES

GALLONS PER CAPITA PER DAY

Our 2050 goal of **129 gpcd** water demand **already** exceeded

WATER SOURCES

SURFACE

ANY BODY OF WATER ABOVE GROUND, INCLUDING STREAMS, RIVERS, LAKES, WETLANDS, RESERVOIRS, AND CREEKS

GROUND

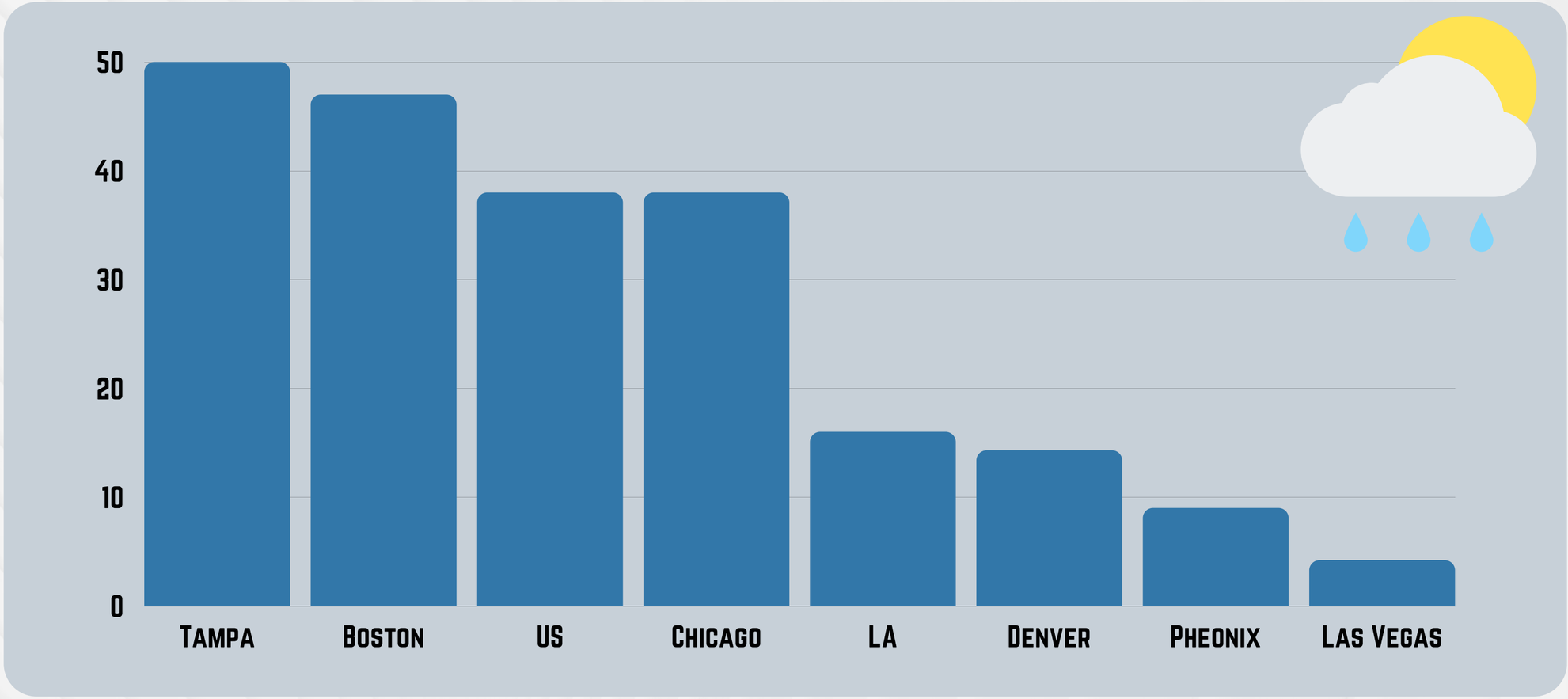
GROUNDWATER IS WATER THAT EXISTS UNDERGROUND IN SATURATED ZONES BENEATH THE LAND SURFACE. THE UPPER SURFACE OF THE SATURATED ZONE IS CALLED THE WATER TABLE.

REUSE

WASTEWATER TREATED AT A WASTEWATER TREATMENT FACILITY, AND THEN REUSED IN APPLICATIONS SUCH AS IRRIGATION AND INDUSTRIAL PROCESSES.

SOURCE USAGE

AVERAGE PRECIPITATION

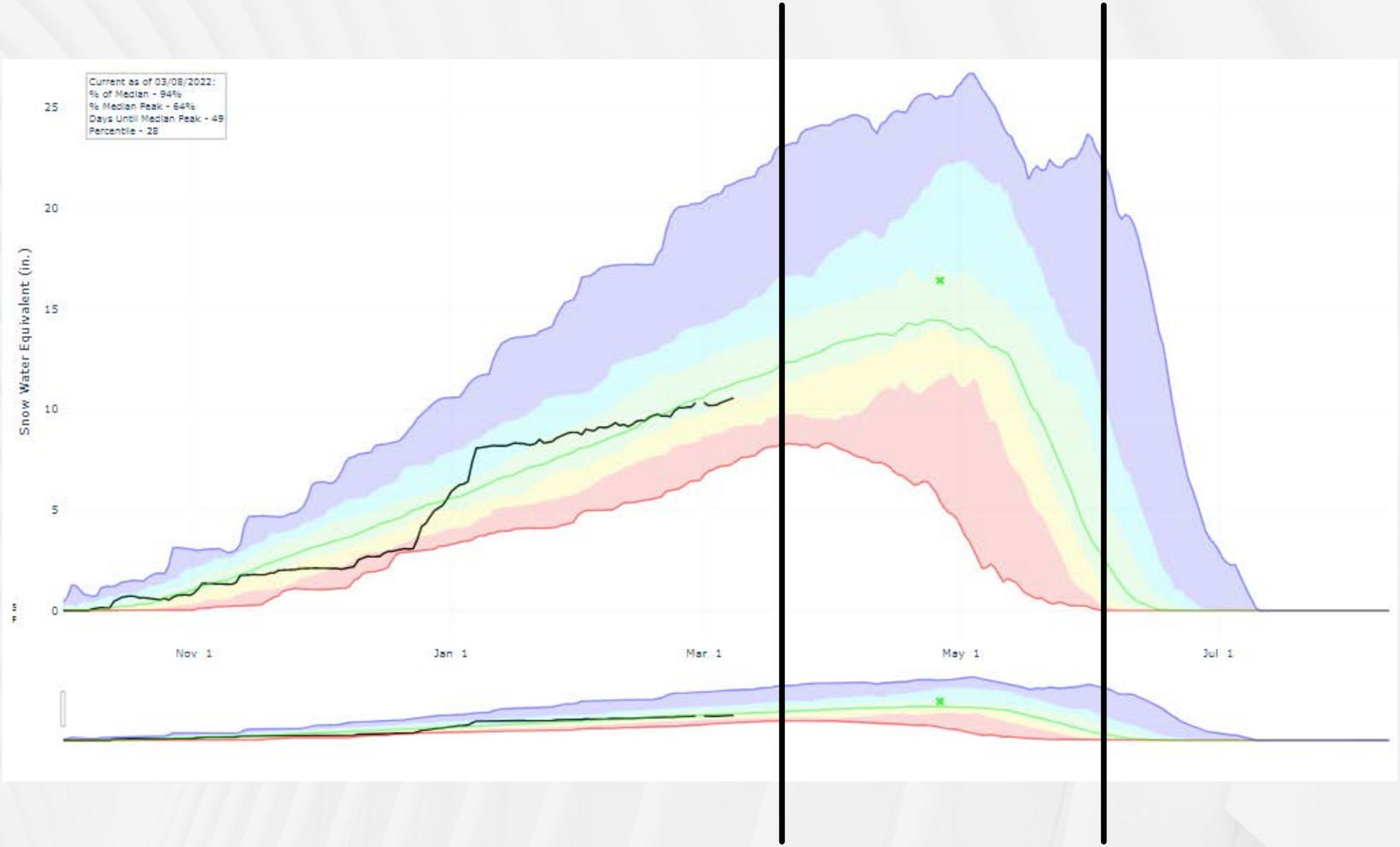


~14” OF PRECIPITATION IN DENVER ANNUALLY

TIMING OF WATER

SNOW MELT WATER FLOWS IN SOUTH PLATTE

AS OF 3/8/22
% OF MEDIAN 94%
% OF MEDIAN PEAK - 64%
DAYS UNTIL MEDIAN PEAK - 49
PERCENTILE - 28



SUSTAINABLE WATER SUPPLY

SURFACE WATER

- WISE 900 ACRE FEET/UP
- LOWER SOUTH PLATTE 700 ACRE FEET
- BOX ELDER LOWRY SUPPLY 3,300 ACRE FEET

GROUNDWATER

- 25,000 ACRE FEET
- ASR

WATER RECLAMATION

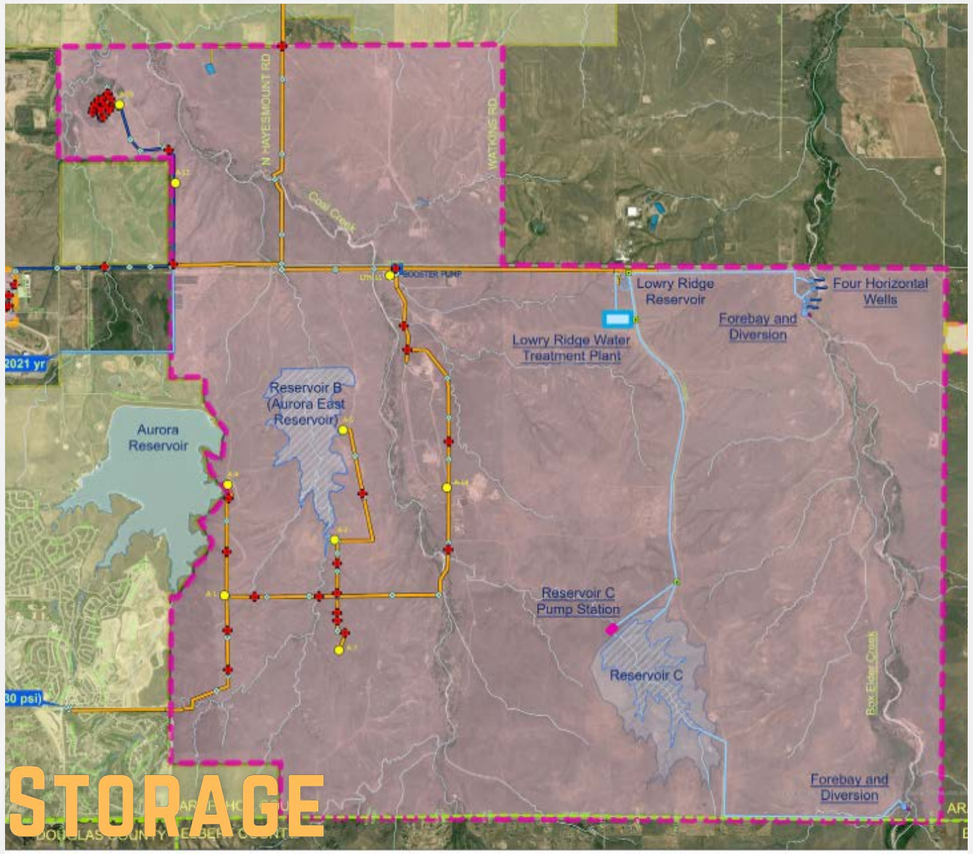
- 2 ZERO DISCHARGE PLANTS

INTERCONNECTION OF WATER SYSTEM

- ENHANCED RELIABILITY
- EMERGENCY SUPPLIES

CONSERVATION

- AVERAGE .28AFT/SFE



STORAGE

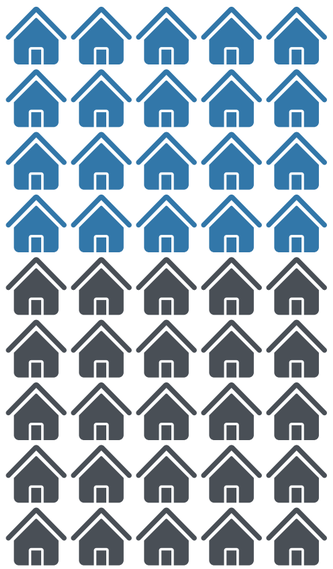
- 2 RESERVOIRS SITES
- 25,000 ACRE FEET
- 40,000 ACRE FEET EXPENADED

DENVER METRO RESIDENTIALWATER USE

Rangeview Metropolitan District

2000

.5 ACRE-FT PER SFE



2000 HOMES
50% INDOOR
50% OUTDOOR

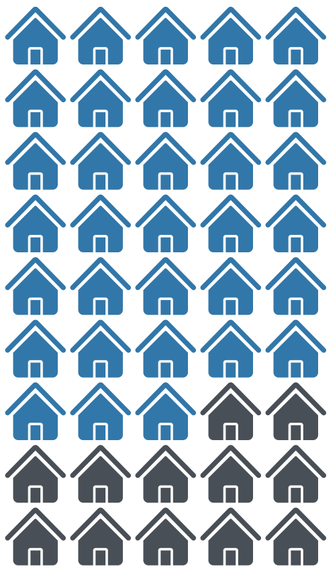
EFFICIENT FIXTURES

IRRIGATION EDUCATION

SMALLER LOTS

2022

.3 ACRE-FT PER SFE



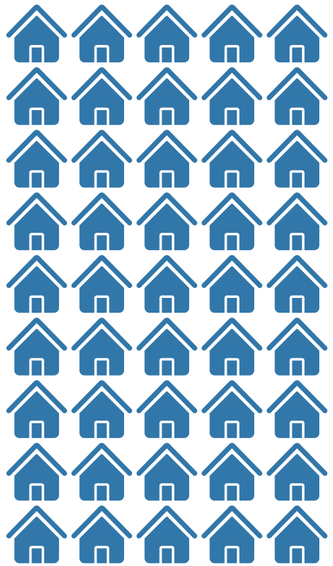
3,333 HOMES
66.6% INDOOR
33.3% OUTDOOR

XERISCAPING

WATER RESUE

2050

.2 ACRE-FT PER SFE



5000 HOMES
90% INDOOR
10% OUTDOOR

1000 ACRE FEET

100 HOMES

WATER CHALLENGES FACING ARAPAHOE COUNTY/I-70 CORRIDOR

- Developments need long term sustainable water supplies (surface water, storage, ground-water, reuse water, conservation)
  - Increasing demand for water: Our population is growing. By 2050, the statewide municipal and industrial gap between supply and demand is projected to be between 250,000 to 750,000 acre-feet per year.
  - There were approximately 650,000 residents in Arapahoe County in 2018, and that number is projected to grow to 875,000 by 2040, a 35% increase.
  - I-70 corridor (Sky Ranch and Prosper) developments could add more than 17,000 new households in the eastern portion of the County

ALL FRONT RANGE COUNTIES FACE SIMILAR CHALLENGES

- Providers continue to diversify water supplies.
  - The region has long recognized that aquifers provide a finite source of water and should not be relied upon as a sole, long-term water supply.
  - The eastern portion of the Arapahoe County is highly attractive for new growth and new water development.
  - sustainable water supplies must be developed, but renewable water supplies are limited.
- The need for additional storage: This is essential for regions across the state.
- The threat of drought and changing climate conditions: Drought is not an if.
- The need for more planning: Few counties have adopted specific plans to assist in guiding new growth in consideration of water supply (challenging unintended consequences).
- No silver bullet, need to incorporate all of the above approach.

WATER CHALLENGES FACING ARAPAHOE COUNTY

- Projects are developing that bring water from the lower South Platte down to this area, but are expensive and take decades to develop.
- The need for additional storage: That is why a goal in the County Comp Plan was to reduce barriers to the construction of additional reservoirs.
- Incentivize water reclamation/ reuse systems.
- Taylor land use regulations and conservation (smaller turf requirements, dual systems).
- Incentivize central water and sewer systems in the County. Minimize individual domestic well/septic development. The County has a many central water providers (Denver, Aurora, Englewood, Littleton, ECCV, ACWWA, Rangeview, Cottonwood, Inverness, others).
- The updated Water Supply Study the County is undertaking will help shape the path forward for addressing these challenges (emphasize all of the above tools).

WATER OPERATION STRATEGY 2022

Rangeview Metropolitan District

SOURCES OF WATER

33% SURFACE WATER - RIVERS

33% GROUND WATER - AQUIFERS

33% REUSE WATER - RECLAIMED WATER

SUSTAINABLE BALANCE

.3 ACRE FEET/SFE

RESIDENTIAL WATER USAGE FOR INDOOR AND OUTDOOR

33.3%

IRRIGATION LOSSES

66.6%

TREAT, STORE AND REUSE

IRRIGATION USE OR RETURNED TO AQUIFER THROUGH ASR

WATER OPERATION STRATEGY 2050

Rangeview Metropolitan District

SOURCES OF WATER

10% SURFACE WATER - RIVERS

45% GROUND WATER - AQUIFERS

45% REUSE WATER - RECLAIMED WATER

SUSTAINABLE BALANCE

.2 ACRE FEET/SFE

RESIDENTIAL WATER USAGE FOR INDOOR AND OUTDOOR

10%

IRRIGATION LOSSES

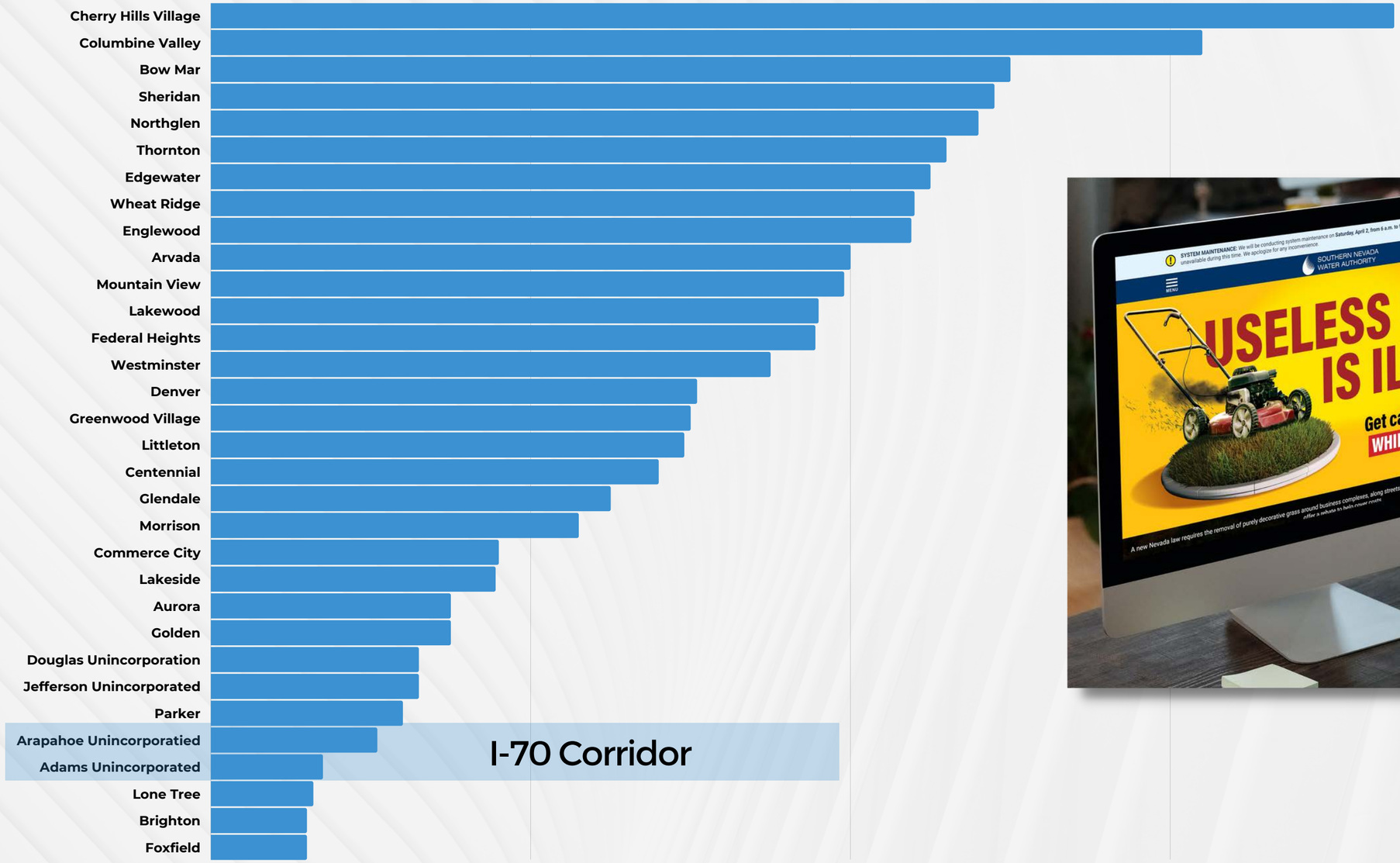
90%

TREAT, STORE AND REUSE

IRRIGATION USE OR RETURNED TO AQUIFER THROUGH ASR

% AREA TURF BY JURISDICTION

Rangeview Metropolitan District



LAND ENTITLEMENT & WATER AVAILABILITY

CHALLENGES

- COLORADO LAW ANTI-SPECULATION
- CANT CHANGE/ADJUDICATED WATER WITHOUT A USE
- ZONING MAY PRECEED ACTUAL DEVELOPMENT BY A DECADE OR MORE
- BUYING WATER YEARS IN ADVANCE OF OPERATING REVENUES VERY DIFFICULT