

Water

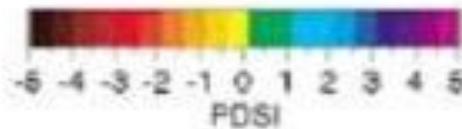
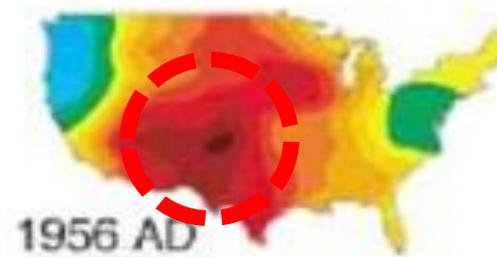
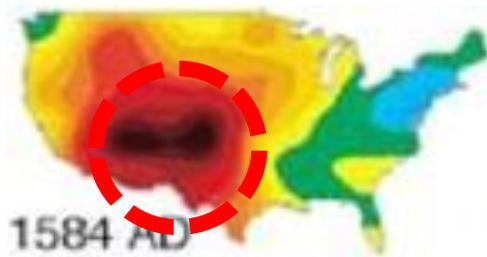
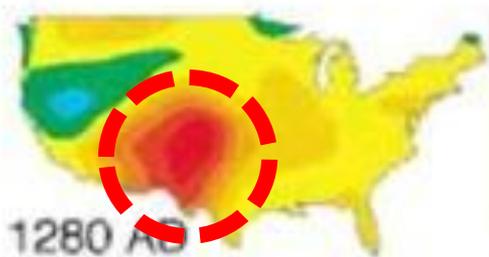
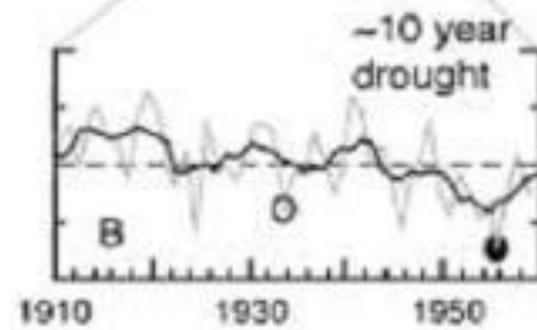
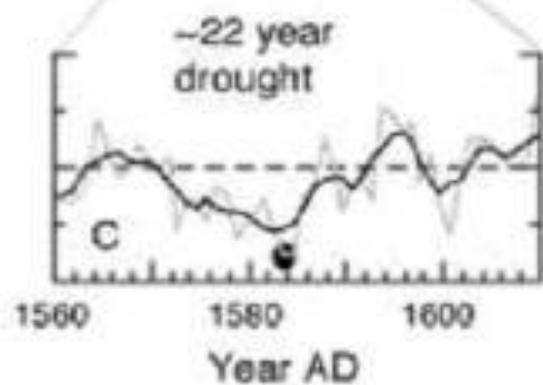
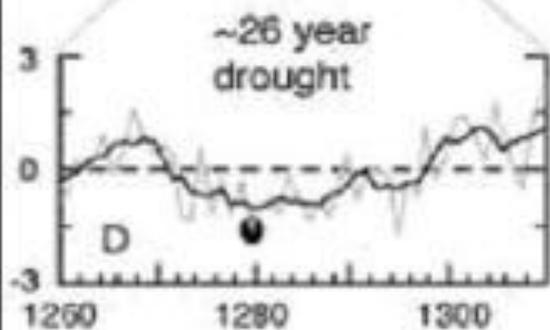
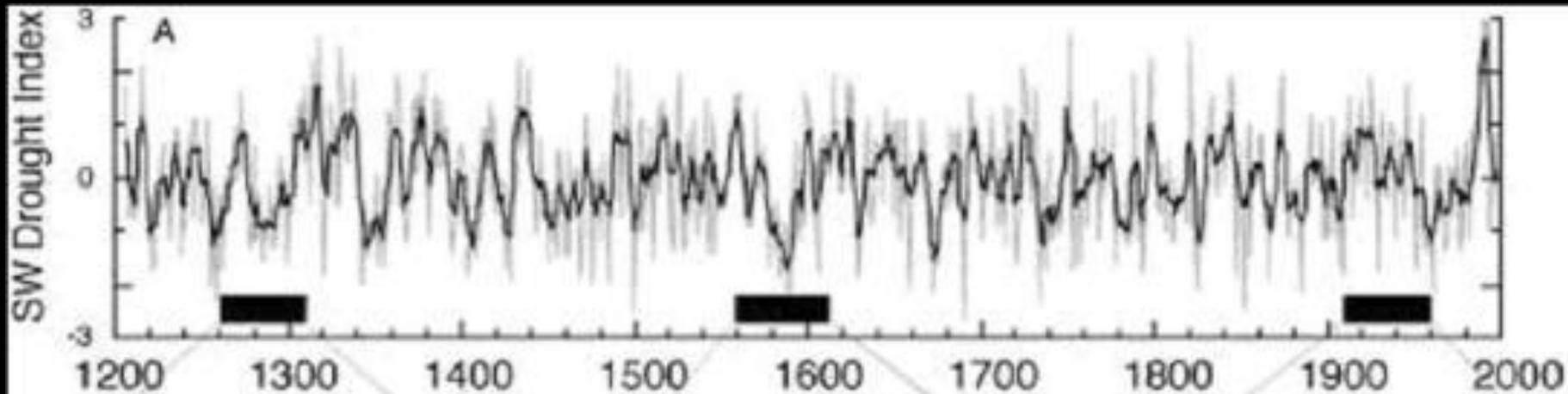
&

Economic Development



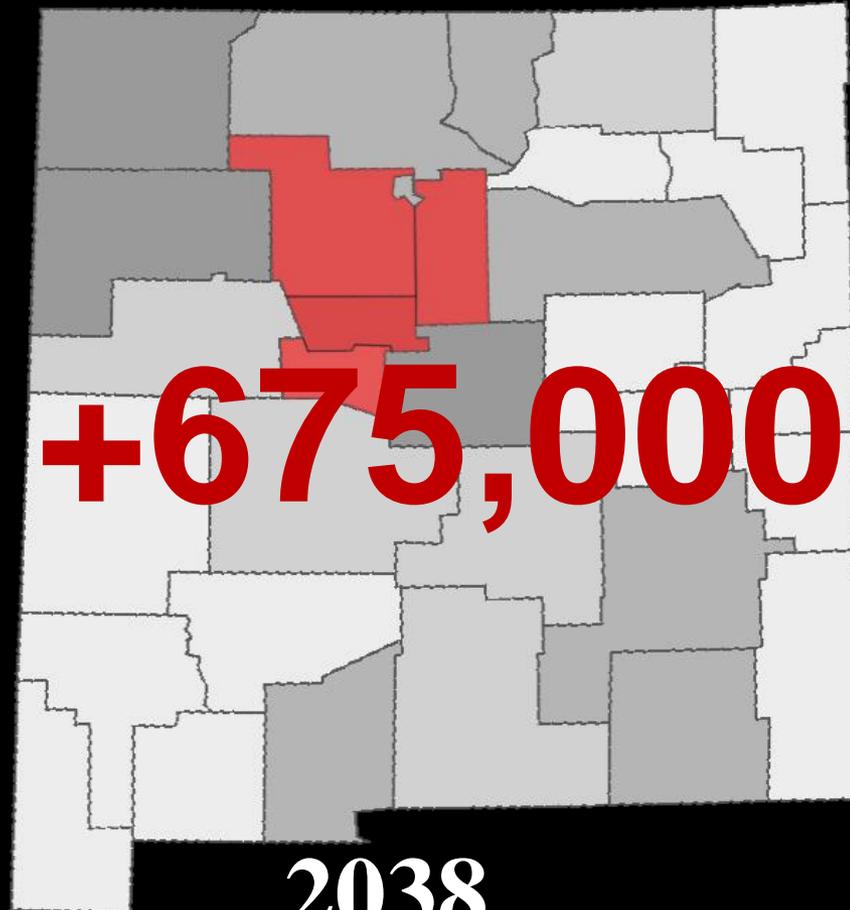
“Study the past if you would divine the future”

Confucius



Growth

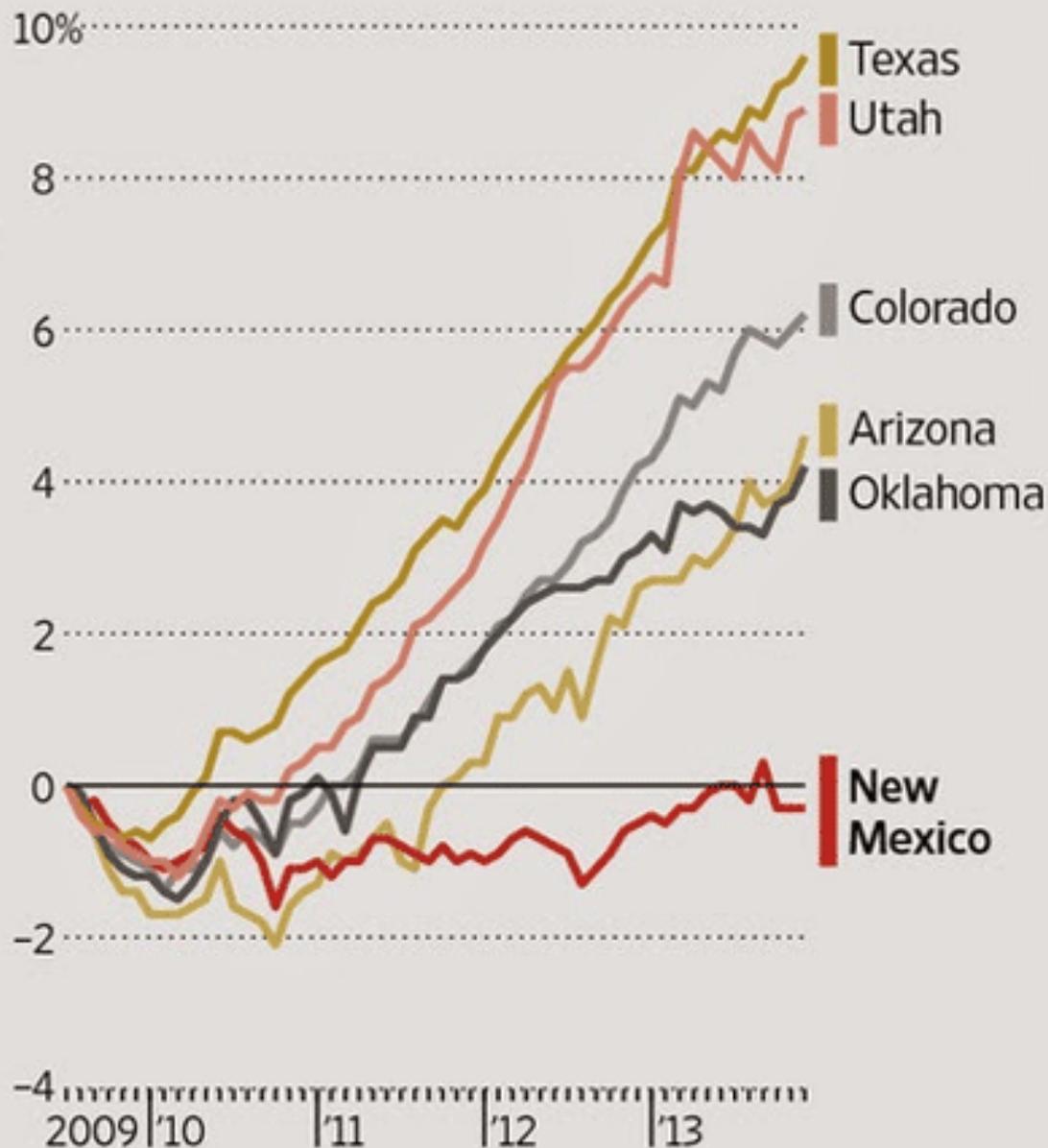
2013
2,100,000



2038
2,775,000

Left Behind

The jobs recovery in New Mexico has been slower than in other western states; change in total nonfarm payrolls since the U.S. recovery started.



Note: Data are seasonally adjusted.

Source:
Labor Department
The Wall Street Journal

Millennial's (Ages 20-34)

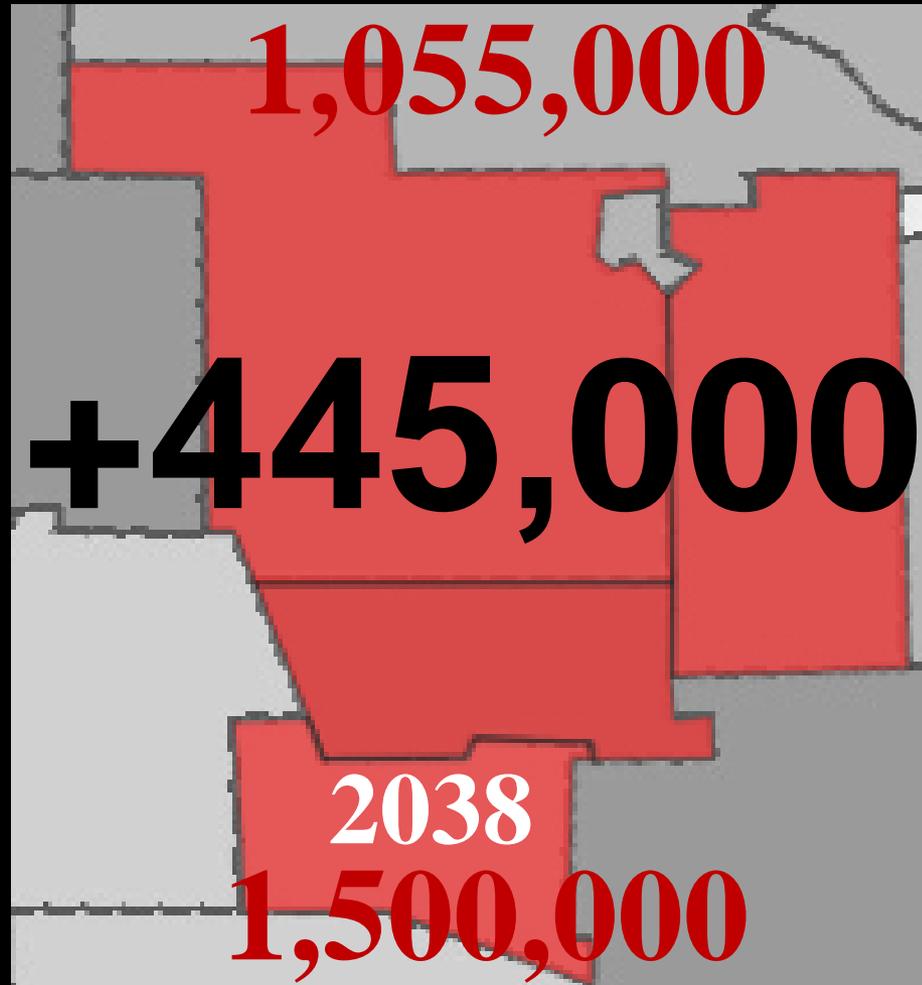
Source: PWC Emerging Trends in Real Estate

AREA (Rank)	5-Year Growth
Albuquerque (46)	-1.4%
Phoenix (25)	11.3%
Dallas (5)	8.7%
Denver (11)	7.3%

*Reverse the trend to positive growth –
attract opportunity for the next generation*

2013

Bernalillo/Valencia/Sandoval/Santa Fe



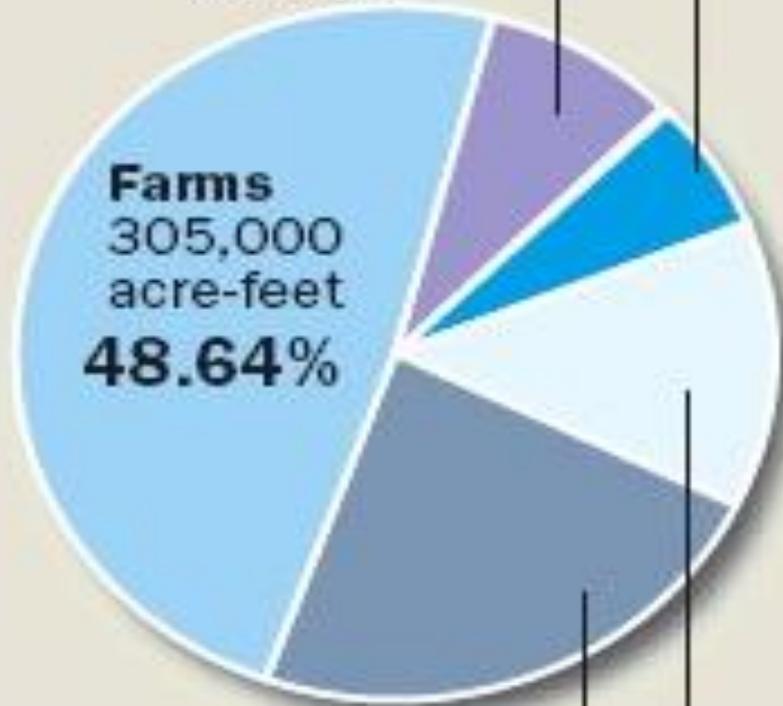
+389,000

Population increase 1985-2010

Cities
53,000 acre-feet

River evaporation
40,000 acre-feet
6.38%

8.45%

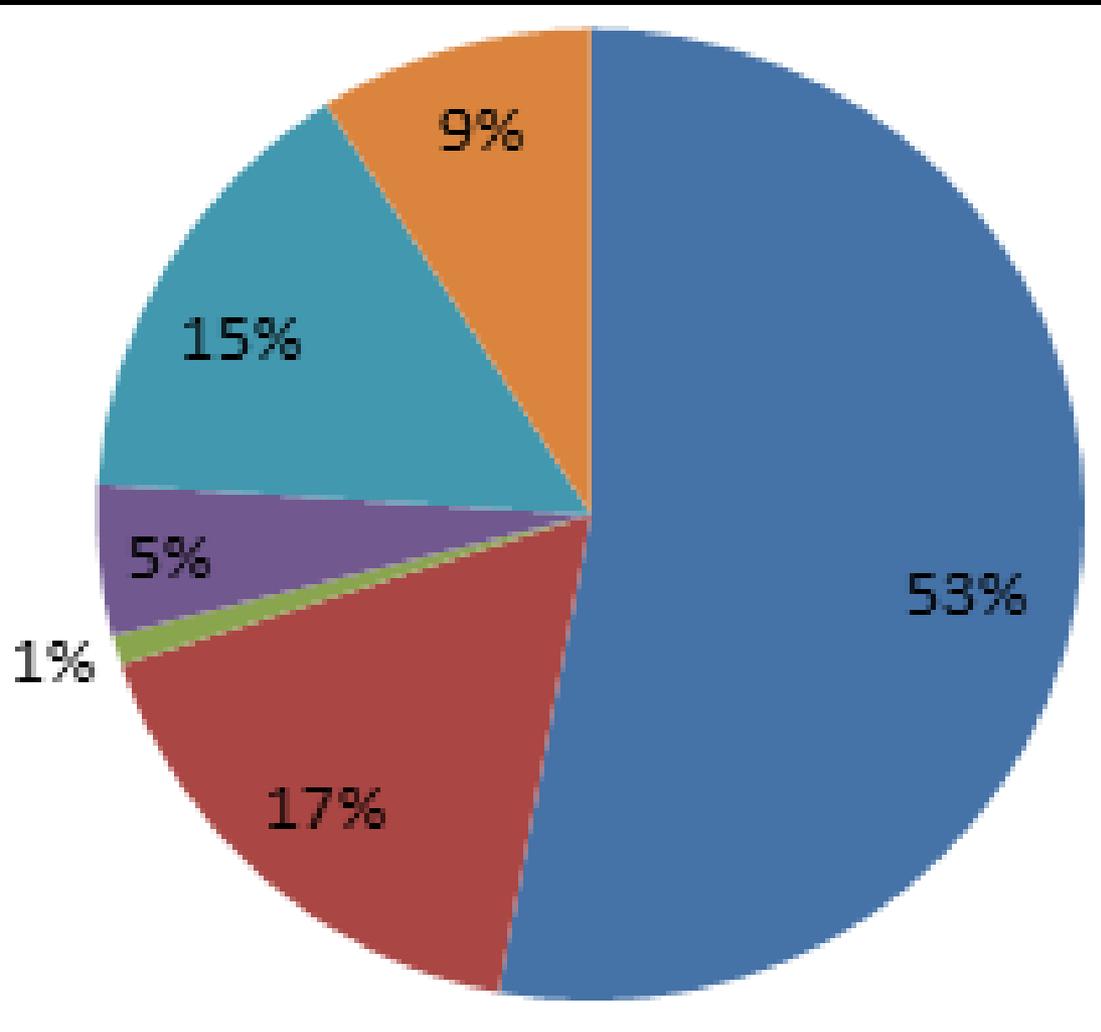


Farms
305,000
acre-feet
48.64%

Riverside vegetation
145,000 acre-feet
23.13%

Reservoir evaporation
84,000 acre-feet
13.40%





- Residential
- Commercial
- Industrial
- Institutional
- Multi-Family
- Irrigation-Only

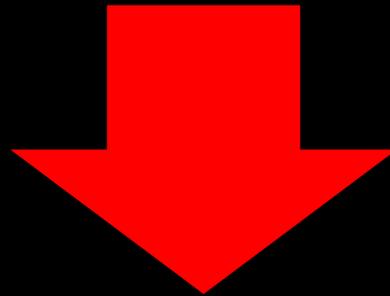
ABCWUA Water Usage by Customer Class

Conserve

Water Conservation

1994

252 gallons pcpd



2013

136 gallons pcpd

Santa Fe – 107 gallons pcpd
San Francisco -91 gallons pcpd

Water Usage 1989-2009



New Mexico Utilities service area was incorporated into the Water Authority's service area in 2009



65% increase in accounts, 19% decrease in yearly demand (billions of gallons per year)



LEED-CS



LEED-CI

Saves **222,300** gallons of water/year from plumbing fixtures

Saves **413,000** gallons of water/year based on electricity savings
(NM electricity production consumes 1.13 gallons of water to produce 1kWh of electricity)



ETHICON
a Johnson & Johnson company



Water Scarcity & Climate Change: Growing Risks for Businesses & Investors

“...companies that treat pressing water risks as a key strategic challenge will be far better positioned in the future. Companies that continue to ignore these challenges put themselves at higher risk.”

Authored by the Pacific Institute
Jason Morrison, Mari Morikawa, Michael Murphy, Peter Schulte
February 2009 *A Ceres Report*

Manage & Protect Green Infrastructure



Bosque-Riverside Vegetation



D. Photographer Joseph C. Stone

Plant Conservation Alliance Least Wanted List:

Tree-of-heaven

is a prolific seed producer, grows rapidly, and can overrun native vegetation

Russian Olive

can out compete native vegetation, interfere with natural plant succession and nutrient cycling, and **tax water** reserves

Siberian Elm

Fast growing seedlings of Siberian elm quickly overtake native vegetation

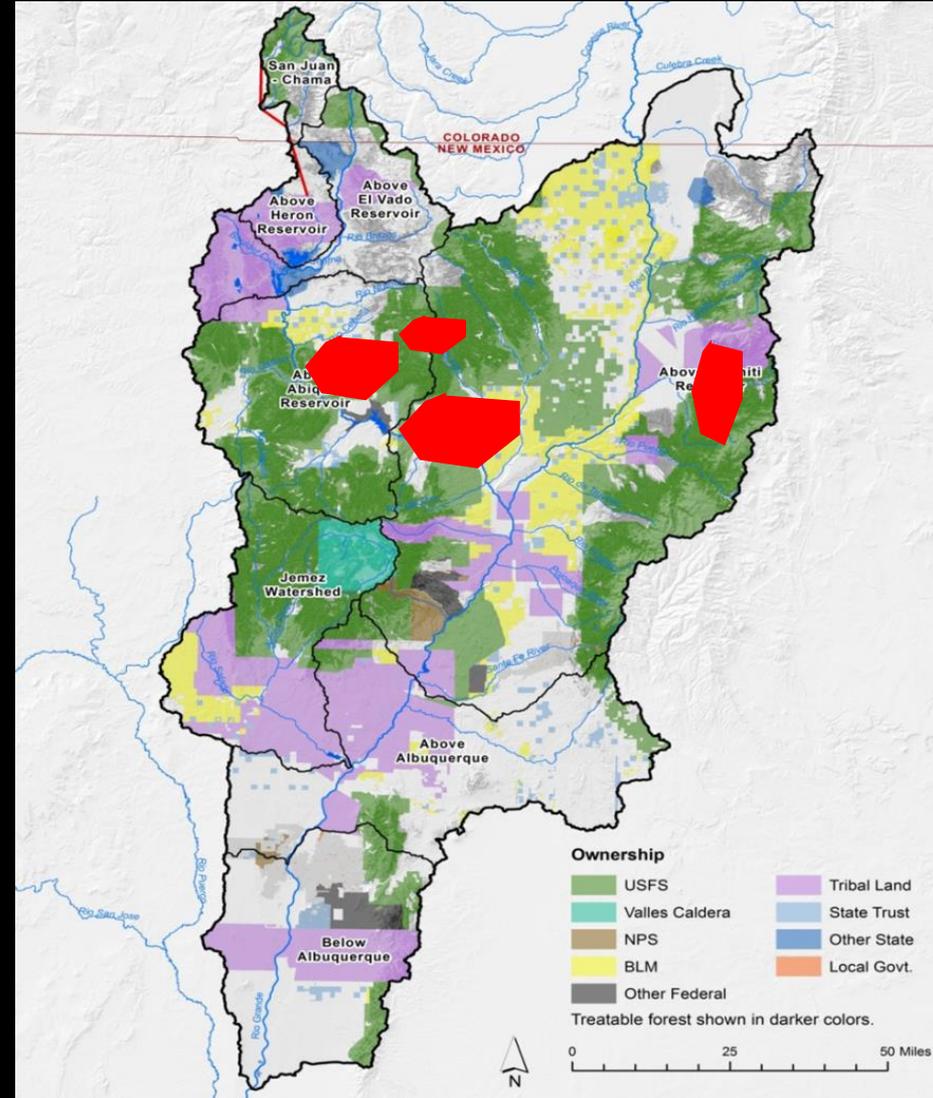
Saltcedars

are fire-adapted species and have long tap roots that allow them to intercept deep **water** tables and interfere with natural aquatic systems.

A healthy Bosque must be managed...

Rio Grande Water Fund

Rio Grande Goals:
1.7 million acres of forests
700,000 acres treated
or 40% of forests
30,000 acres annually
\$7-15 million annually



 Watershed Protection

Las Conchas Fire

156,000 Acres

\$48 million fire suppression

\$19 million lost tourism

\$ 7 million health-related

(est. total cost \$138-\$232 Million)

2000 Cerro Grande Fire 47,000 acres...\$1.0 billion

 **Extreme Fires**



**Over-accumulation of
vegetation/ bio-mass**



Property Damage

● Extreme Fires

Severe Fires Threatens Water Security



**Hydrophobic
Soils**

Water Quality

**Flash Floods
Debris Flows
Sediment**

● Extreme Fires

Forest Treatments Can Increase Snowpack and Water Yield



30,000 acres yields an additional
2745 +/- acre feet* of ground water

*TNC estimate based on thinning/treating 30,000 acres/year of ponderosa pine forests.

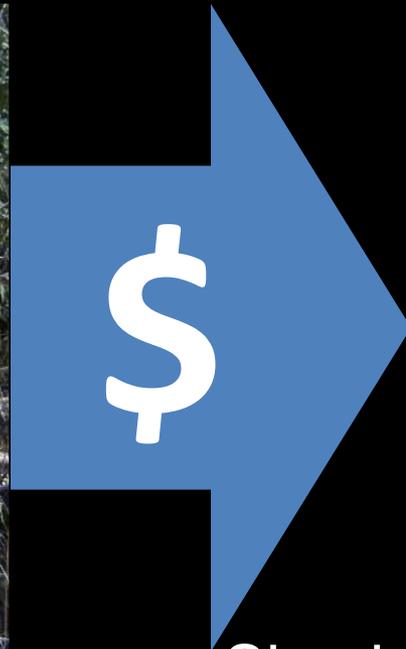
70% of wood by-product of forest treatments is very low quality



30,000 Acres generates 600,000 tons of bio-mass
Labor to harvest bio-mass = 300-600 jobs

- Rural Economic Development
- Job Creation

● Job Creation



Thermal Heating/Cooling



Electricity



Biofuels



Mulch and Compost



Shavings, posts and poles

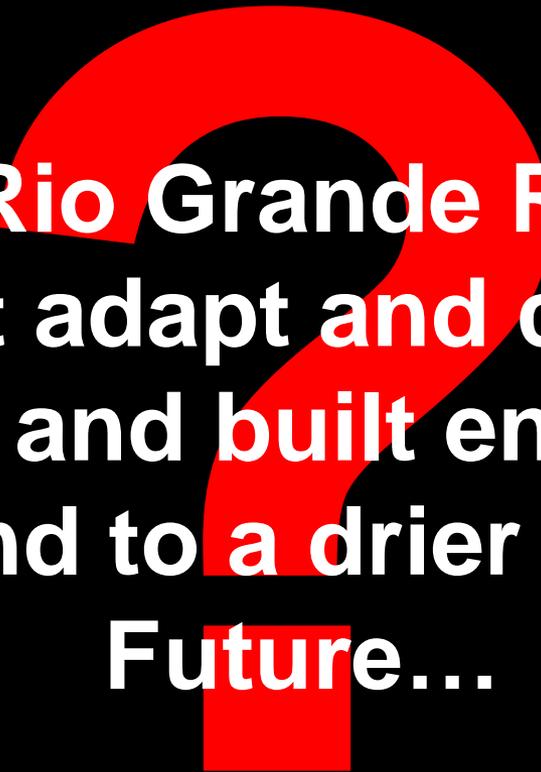
Lumber and SW Construction



● Manufacturing

● Rural Economic Development

Adapt



**Mid Rio Grande Region
must adapt and change
its urban and built environment
to respond to a drier and hotter
Future...**



Sprawl



Density

How we grow will change...



Concrete lined ditch



Bear Canyon Recharge Demonstration Project

The need to re-engineer our cities...to capture storm water run-off...enhance water quality and aquifer/ground water re-charge...

3500-5000 acre/feet per year

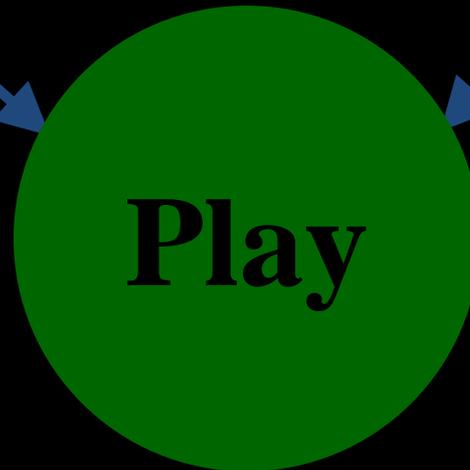
Den-si-ty

Is not

a

four letter

word!



Mixed-Use
Higher Density
Walkable
Transit Oriented
Development (BRT)
Maximize Open
Space

Density < Land



Higher Density Mixed-Use development...
drives transit...reduces VMT...reduces GHG...
reduces impervious surface...
reduces landscape area per unit...
reduces fixture counts per unit...**uses less water**

Density < **Water**

Density < **Energy**

Density < **Land**

Density > **Transit**

Adapt...

New Building Codes...

net zero...water conservation...mixed occupancy

New Land Use Development Codes ...

mixed use, live/work/play, in-fill developments...

Technology & Transportation ...

innovation...energy production and storage...lifestyles

Eco-system...

connected...regional planning...every drop counts...

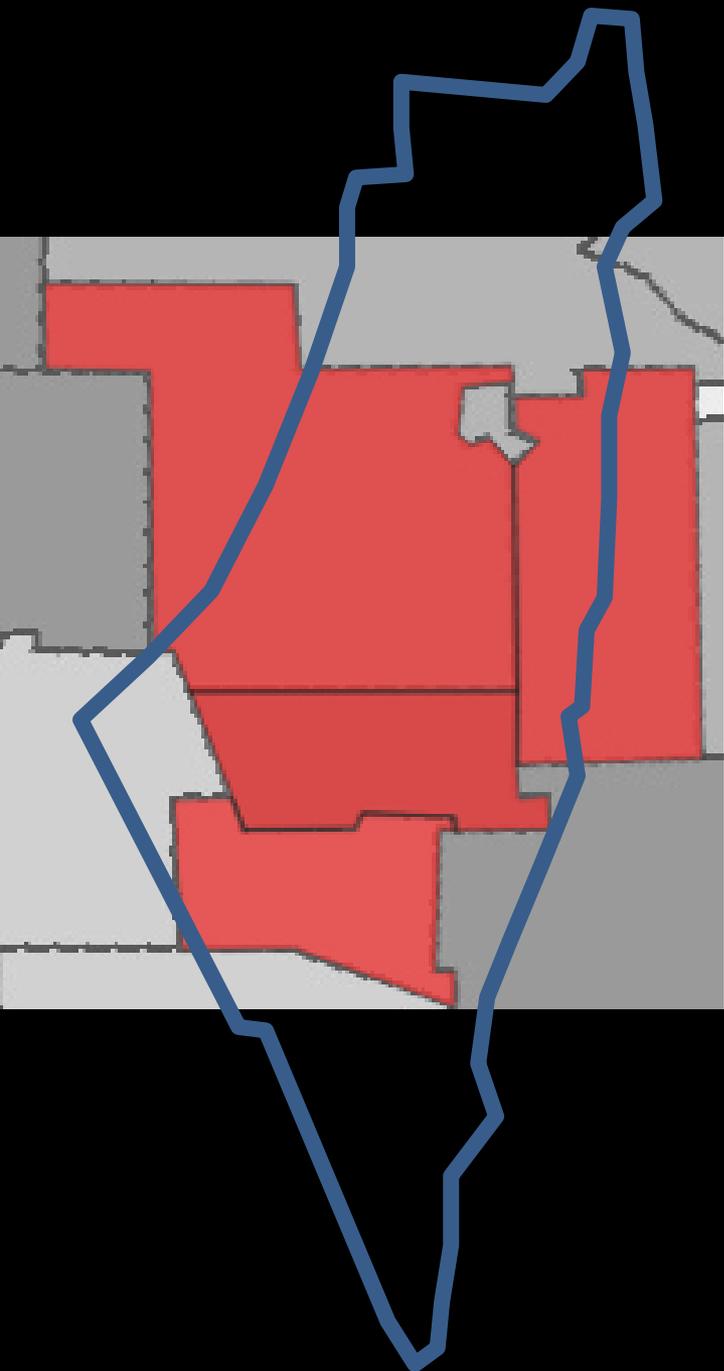
we live in a desert

Innovate



Steve Jobs

**“Innovation is the ability
to see change as an
opportunity - not a threat”**



Israel

8019 square miles

Population = 8,000,000

GDP= \$291.5 Billion

Per Capita GDP=\$36,375

Sandoval+Bernalillo+Santa Fe+Valencia

7853 square miles

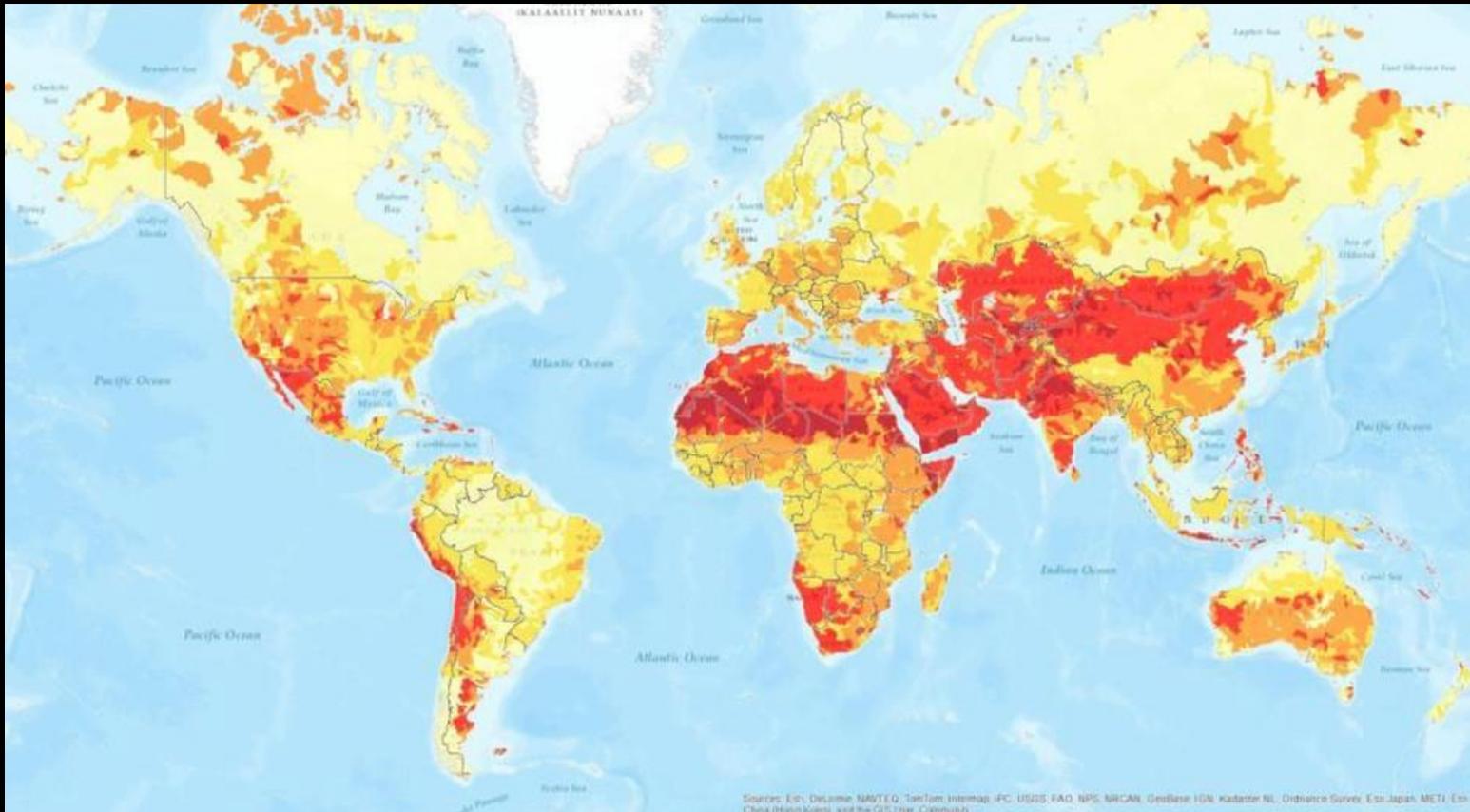
Population = 1,000,000

GDP=\$48 billion

Per capita GDP=\$48,000

A Thirsty Planet

Forty-six countries currently suffer some degree of “water stress”



B of A Merrill Lynch Global Research believes that the degree of water stress could increase between three and nine times over the next decade.

Water...a Global Issue

The current story...

600,000,000

people currently face water scarcity

1,000,000,000

people currently lack access to safe drinking water

The future story...

By 2025,

3,200,000,000

people are predicted to suffer from water-stressed conditions

By 2030,

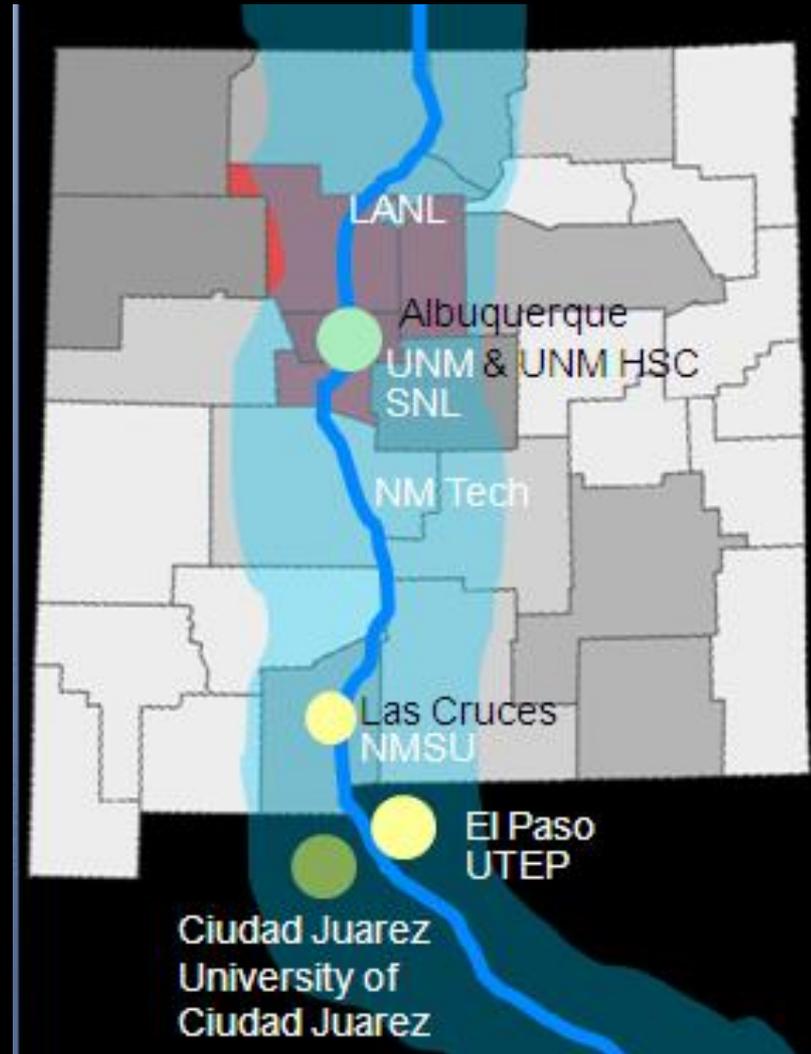
50%

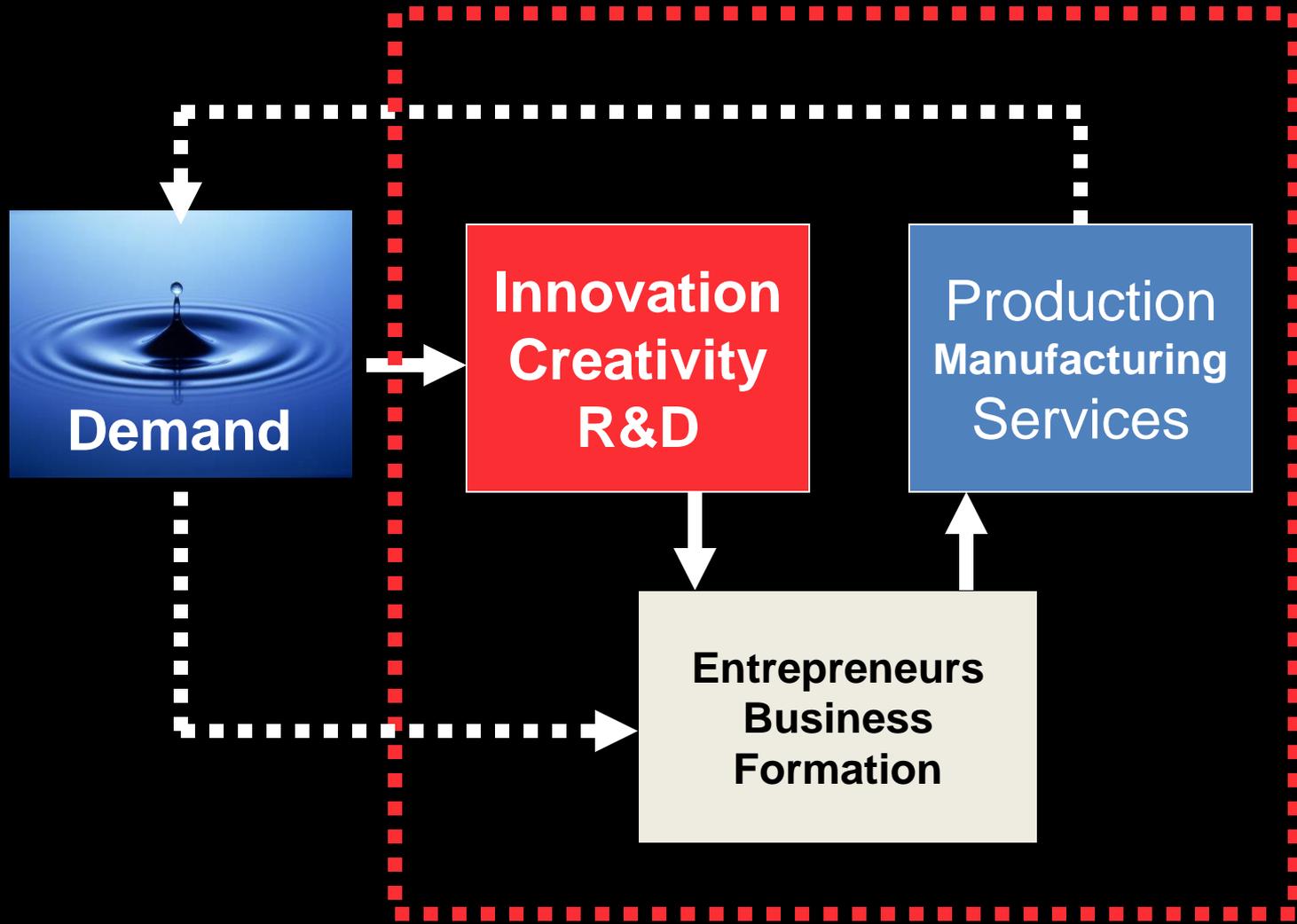
of the world's population will suffer from water scarcity

New Mexico's Unique Opportunity

A global research & development initiative focused on **all things “WATER”**... utilizing the **Rio Grande Watershed** as the test bed for planning, research and new technologies...

UNM Center for Water and the Environment





Economic Development

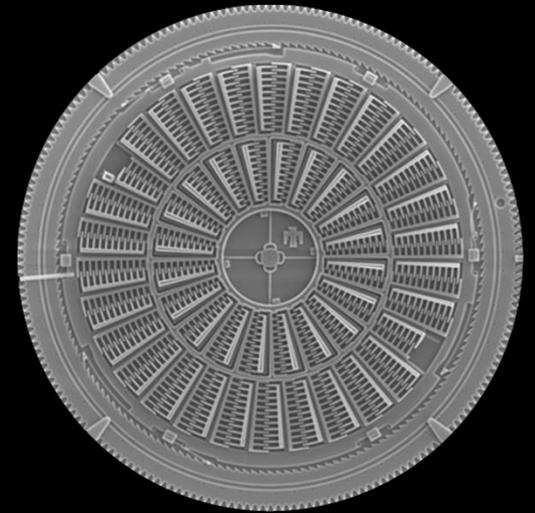
**NM has the opportunity to turn
“water” into a global economic
development competitive
advantage...**



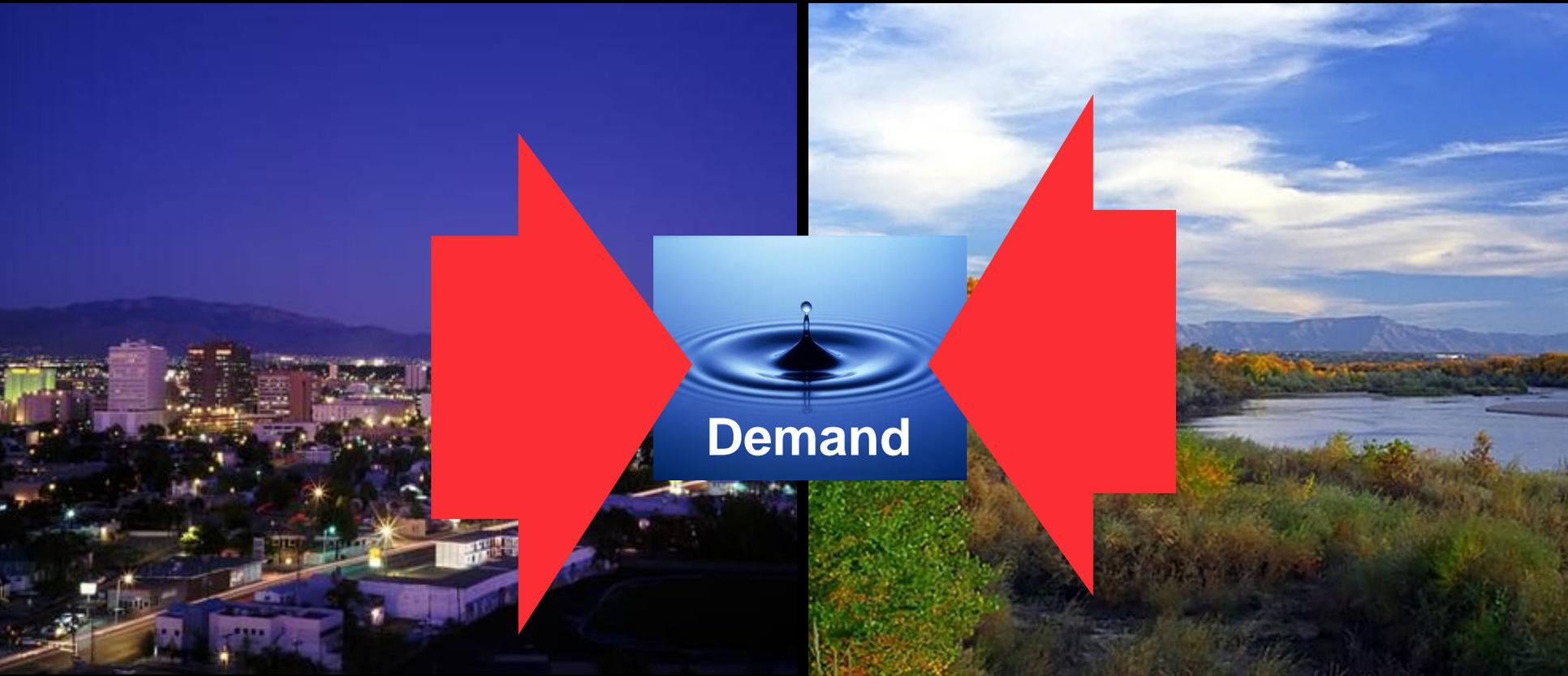
Nature



Culture



Technology



Finding a balance...



**Conserve
Manage & Protect
Adapt
Innovate**