Downstream

Growth, Water, and the Future of the Rio Grande Valley

Everything Begins with Water

The Rio Grande is the foundation of the Valley — not oil, not highways, not ports.
Water built this region.

What the River Enabled

- Irrigation
- Citrus
- Farms
- Towns
- Families

Key Insight

Without the river, there is no Valley. The Rio Grande is not one resource among many — it is the origin of everything that followed.

Where Our Water Begins

Our water does not start here. It begins hundreds of miles away — in the Rocky Mountains — and travels a long, contested path before it ever reaches us.

1

Rocky Mountain Snowpack

Origin of the Rio Grande's flow

2

Colorado & New Mexico

Flows through upstream states

3

Reservoirs & West Texas

Used and reused along the way

4

South Texas

We inherit accumulated pressures

We are at the end of the system. End-of-system communities bear compounded risk. **Only about 15% to 20% of its water makes it to the final stretch**, largely due to heavy irrigation, municipal consumption, and climate-driven drought.

How Water Built Prosperity

In the early 1900s, irrigation canals transformed the Rio Grande Valley. An agricultural explosion followed — and communities formed around water access.

The River Made Prosperity Possible

Without engineered water access, the Valley's agricultural identity would not exist.

Growth Was Engineered Through Water

Early irrigation infrastructure was the original economic development strategy.

Every Growing System Eventually Faces Pressure

The same water that enabled expansion now faces the limits of that expansion.

The Valley Feeds the Nation

14 billion pounds of fresh produce are imported annually

The Rio Grande Valley is a critical winter food supply for the United States. This is not a regional story — it is a national one.

When Water Tightens...

Agriculture tightens.

When Agriculture Tightens...

Grocery shelves feel it.

Water in the RGV...

Impacts national food systems.

- **Truckloads:** Over 590,000 truckloads of produce were imported from Mexico to the U.S. in 2022, with that number expected to grow, primarily through Texas ports.

From River to Tap: The Hidden Journey of RGV Water

Water Source

- Rio Grande water travels **~1,800 miles** before reaching the Rio Grande Valley
- By the time it arrives, it has passed through **multiple states, agriculture, and cities**

Heavy Municipal Treatment

- Valley utilities must **heavily treat and disinfect** river water before it reaches homes
- Disinfectant byproducts TTHMs, Haleocetic Acid, Chlorites, Chlorines
- Treatment byproducts and wastewater are discharged into the **Arroyo Colorado**

Local Water Cycle

- Treated wastewater flows into the **Arroyo Colorado → Laguna Madre → Gulf of Mexico**

Consumer Confidence Report Problem

- Water utilities release **Consumer Confidence Reports once per year**

Delayed Transparency

- Reports show **data from January–December of the previous year**
- If water quality changes today, the public may not see it **until the following summer**

The Tightening System Drought

Texas has spent much of the last 15–20 years oscillating between drought and partial recovery.

Coastal Bend Water Emergency (March 2026)

- **Reservoirs Below 10% Capacity**

Lake Corpus Christi and Choke Canyon combined storage has fallen to **historic record lows**

- **Stage 3 Drought Restrictions**

Mandatory limits on lawn watering, car washing, and other non-essential water uses

- **Potential Water Shortage by Spring 2027**

City officials warn the region could **run out of available water supply**

- **$1 Billion in Emergency Projects Proposed**

Including **desalination plants and groundwater development**

- **Industrial Water Surcharges Implemented**

Large water users facing higher costs as supply tightens

Prolonged drought cycles. A binational water treaty. Rising population. Accelerating industrial development. The pressures on the Rio Grande system are multiplying — while supply does not.

↑

Demand Rises

Population growth and industrial expansion drive ever-increasing water demand.

→

Supply Does Not

Drought cycles and upstream usage leave less water reaching the Valley.

⚠

Structural Imbalance

This is not a temporary shortage. It is a mathematical reality.

The Drought and Flood Paradox

Designed to Drain, Not Store

- Much of the Valley's infrastructure was designed to **move water out quickly**
- Drainage canals, floodways, and pumps send stormwater **directly to the Gulf of Mexico**
- Very little infrastructure exists to **capture or store stormwater locally**

Stormwater that could recharge aquifers or reservoirs is **rapidly drain to the Gulf.**

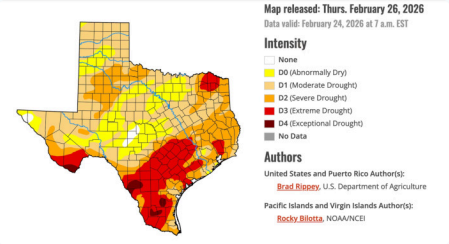
Major rain events overwhelm infrastructure. The Arroyo Colorado overflows. The same system that struggles in drought overwhelms in flood — and infrastructure limitations are exposed under stress.

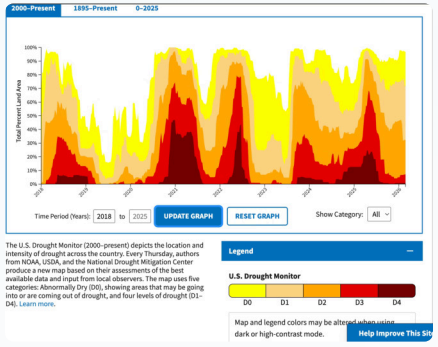
Floodwaters Carry

- Urban runoff
- Agricultural residue
- Chemical nutrients
- Sediment

Key Insight

The system is not built for extremes — and extremes are becoming the norm. Whether drought or flood, the infrastructure reveals its limits under stress.





Vulnerable Infrastructure: Facing Extreme Weather

The Rio Grande Valley's infrastructure is increasingly stressed by extreme weather events, revealing critical vulnerabilities in flood management and public safety.

5

1-in-100 Year Storms

Experienced since 2018, highlighting a new normal for extreme rainfall.

1 in 5

Annual Flood Risk

Parts of Harlingen face this probability of flooding every year.

359,873

People in the

Rio Grande Valley live inside the 100-year floodplain.

115,576

Buildings in Floodplain

, of which **92,825 are homes in that** 100-year zone

This escalating frequency of severe storms, combined with inherent geographical risks, demands urgent attention to bolster infrastructure resilience and protect communities.

A Century of Chemical Agriculture

Over 100 years of fertilizers, herbicides, pesticides — including DDT historically — and modern synthetic compounds have left a legacy in the land and water of the Rio Grande Valley.

Chemicals Move

Applied to fields, chemical compounds do not stay in place. They migrate through soil and water over time.

Water Carries

The river and its tributaries become transport systems for agricultural residue accumulated over generations.

Flooding Redistributes

Flood events spread what was contained, compounding long-term environmental health impacts across the region.

Agricultural history affects long-term environmental health. This is not a future risk — it is a present reality.

AI Data Centers: Scale of Infrastructure

5,000

Data Centers

Currently operating across the United States

570+

In Texas

Texas hosts one of the largest concentrations in the nation

What Data Centers Require

Massive Electrical Load

Cooling Systems

Redundant Infrastructure

Large Land Footprint

Energy and water systems are interconnected. AI advancement is inevitable. **Structural preparedness determines impact.**

SpaceX Scale: Aerospace Mass Production

Production Ambitions

- One Starship per day — goal
- ~365 per year
- Long-term ambition of 1,000 annually
- Milestones aiming for 3 per day by late 2026

Mass Production Increases

- Launch cadence
- Energy use
- Transportation demand
- Infrastructure load

> **Scale multiplies impact.** What is manageable at one launch per month becomes something fundamentally different at three per day.

Air Pollution and Health: Infrastructure Decisions Are Health Decisions

Demographics & Economic Realities

- One-third of population under 18
- Poverty: 24.7%–27.1% — nearly triple the national average
- Food insecurity: 22%–27%
- Nearly 1 in 2 children in rural areas face food insecurity

Food Bank Reality

- 87,000 fed weekly
- 25.2% food insecurity rate
- Food deserts
- Transportation barriers

Environmental Factors

- **300,000 pounds** of carcinogens released annually in Cameron County
- Cross-border air movement
- Mexico burnings impacting RGV

Health Trends

- Asthma
- Respiratory illness
- Diabetes
- Cardiovascular disease
- Dementia — vascular dementia linked to reduced blood supply

No single cause. Water, air, land use, and industrial policy are interconnected.

Return to the River: The Choice

Everything flows downstream. **Growth is not the enemy. Irresponsible growth is.**

The Valley

- Feeds the nation
- Hosts aerospace
- Expands ports
- Builds bridges
- Builds highways

Reality

- One river
- One watershed
- One interconnected system

Final Insight

The question is not whether we grow.

The question is whether we grow in a way that **strengthens the foundation.**

If the foundation cracks, everything built on top eventually does too.

Growth At All Costs