

Texas Water Backbone: Financial Summary

Capital costs, revenue projections, and rate analysis

Capital Investment

Construction Cost Comparison

CONFIGURATION	TOTAL COST	PER-AF CAPACITY COST	
Phased Build (single pipeline first)	\$8.6 billion	\$17,200/AF	
Dual Pipeline (both Day 1)	\$11.15 billion	\$22,300/AF	
Recommended: Dual Build	\$11.15 billion	Saves \$2-3B lifecycle	

Capital Cost Breakdown

COMPONENT	COST (MILLIONS)	
Pipeline materials (dual 96")	\$4,000	
Trenching and installation	\$2,700	
Right-of-way acquisition	\$400	
Pumping stations	\$400	
Desalination facilities	\$2,500	
ASR storage systems	\$1,100	
Engineering and contingency	\$2,320	
Total	\$11,150	

Multi-Use Corridor Assets

ASSET	INVESTMENT	ANNUAL REVENUE	PAYBACK
Dark fiber (144-strand)	\$35M	\$12M	2.9 years
HVDC transmission (4 GW)	\$1,600M	\$192M	8.3 years

Operating Cost Model

Cost Components (per acre-foot)

COMPONENT	COST/AF
Desalination operations	\$700
Pipeline operations	\$200
Pumping energy	\$100
ASR operations	\$75
Administrative overhead	\$75
Total Operating Cost	\$1,150/AF

Operator Margin

Private desalination operators receive: **Cost + 8% margin**

- Water sales at cost-plus guaranteed margin
- 100% of brine valorization revenue retained
- Cost Stabilization Reserve funded from brine profits

Revenue Model

Pricing Structure

TIER	DESCRIPTION	FORMULA
Tier 1	Desal operator → TBA	Operating cost + 8%
Tier 2	TBA operating costs	Pass-through
Tier 3	TBA → Municipalities	~\$1,400/AF

5-Year Revenue Projection

YEAR	PRODUCTION (AF)	MUNICIPAL SALES	REVENUE	NET SURPLUS
1	150,000	100,000 AF	\$170M	\$3.6M
2	175,000	130,000 AF	\$190M	\$3.5M
3	200,000	155,000 AF	\$227M	\$14.7M
4	200,000	165,000 AF	\$242M	\$21.7M
5	200,000	170,000 AF	\$255M	\$28.0M

Additional Revenue Streams

SOURCE	YEAR 5 ANNUAL
Water sales	\$280M
Fiber leases	\$12M
HVDC transmission	\$192M
Brine transport fees	\$8–15M

Funding Sources

State Funding

SOURCE	AVAILABLE	BACKBONE SHARE
Texas Water Fund	\$20 billion	\$6–8 billion (30–40%)
SWIFT	\$6+ billion	Supplemental

Federal Funding

SOURCE	POTENTIAL
WIFIA (Water Infrastructure Finance and Innovation Act)	Up to 49% of eligible costs (~\$5.5B)
EPA State Revolving Fund	Variable
IRA Clean Water provisions	TBD

Private Investment

COMPONENT	INVESTMENT
Desalination operations	\$2.5–3.0B
Brine valorization	\$0.5–1.0B
Transmission JV	\$800M–1.0B

Comparison to Alternatives

Cost Per Acre-Foot

SOURCE	COST/AF
Edwards Aquifer	\$350
Carrizo-Wilcox groundwater	\$600
Texas Water Backbone	\$1,400
Vista Ridge Pipeline	\$2,000+
New reservoir development	\$1,800–2,500

Why Backbone Pricing Is Competitive

- Vista Ridge (current alternative): \$2,000+/AF and rising
 - Marvin Nichols (proposed): \$1,800+/AF plus 66,000 acres destroyed
 - Backbone delivers drought-proof water at lower cost than comparable alternatives
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Risk Factors and Mitigation

RISK	MITIGATION
Energy price spike	Cost Stabilization Reserve; hedging required
Low municipal uptake	Take-or-pay contracts (80% minimum)
Construction cost overrun	Fixed-price contracts; contingency reserves
Technology risk	Proven technology; no R&D required

Financial projections are estimates requiring detailed engineering analysis.

Contact: info@texaswaterbackbone.org (mailto:info@texaswaterbackbone.org) | **Web:**
texaswaterbackbone.org

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