LEGISLATIVE BRIEFING MEMO · WATER POLICY

Brackish Water & Desalination in New Mexico

What it costs to own a plant, what it costs to run one, and the nine questions a legislator needs answered before either number matters.

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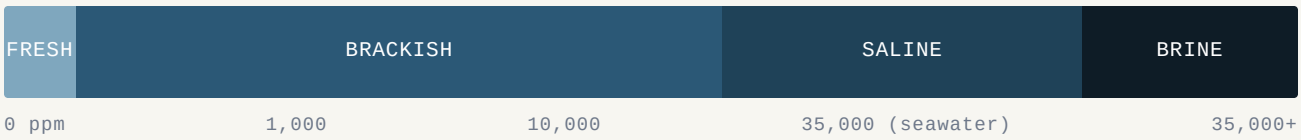
HOW TO USE THIS DOCUMENT

This briefing answers nine questions in the order a legislator is likely to ask them, followed by a talking-points section for public engagement. It draws on state agency filings, peer-reviewed and trade literature, and case histories from New Mexico, Texas, Arizona, and internationally. Dollar figures are planning-level, order-of-magnitude estimates from published industry sources — not bids for any specific New Mexico project — and are flagged as such throughout.

01 The Primer — What Brackish Water Is, Where It Comes From, What's In It

DEFINITION

Brackish water sits between fresh water and seawater on a single measure: total dissolved solids (TDS), reported in parts per million (ppm) or the equivalent milligrams per liter (mg/L). Fresh water runs under roughly 1,000 ppm; seawater runs 30,000–40,000 ppm. Brackish water is the band in between.



New Mexico's own Strategic Water Supply Act (2025) codifies the working end of that range: water sourced from an underground stream, artesian basin, reservoir, or lake with "reasonably ascertainable boundaries" containing **not less than 1,000 ppm** of dissolved solids. At that concentration the water is unpalatable and, per EPA's secondary drinking-water standard, undrinkable without treatment — but conventional water-treatment plants built for fresh surface water cannot remove that level of dissolved salt. It requires a dedicated desalination step.

> A DISTINCTION WORTH HOLDING ONTO
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> New Mexico's statute deliberately excludes **produced water** — the salty wastewater byproduct of oil and gas drilling — from the legal definition of brackish water, after that broader "produced water" version of the 2024 bill drew heavy opposition and failed. The two are easy to conflate in public conversation. They are chemically and politically distinct: brackish groundwater is naturally occurring; produced water carries drilling chemicals and is regulated separately.

WHERE IT COMES FROM

Brackish groundwater typically sits in deep aquifers isolated from the shallower fresh-water aquifers a community already draws from, or occupies the deeper, saltier layer of an aquifer that is fresh near the surface. Its salinity usually comes from one of a few sources: ancient seawater trapped in the rock when it formed (geologists call this "connate" water), slow

dissolution of evaporite minerals (gypsum, halite) in the surrounding formation, or upward mixing with deeper geothermal or saline water along fault zones — all common processes across the Southwest's sedimentary basins. It is not new water in the way rainfall or snowmelt is; it is an existing underground reserve that has simply never been fit to drink without treatment.

New Mexico is estimated to sit atop roughly 2–4 billion acre-feet of brackish groundwater. Texas, sharing many of the same basins, has documented over 2.7 billion acre-feet. Both figures dwarf current fresh-water demand — the resource is not scarce; the infrastructure to use it is.

WHAT IT CONTAINS

The dominant dissolved solid is ordinary sodium chloride, but brackish water's exact chemical fingerprint varies basin to basin and can include sulfates, bicarbonates, and — depending on local geology — trace arsenic, fluoride, boron, or naturally occurring radionuclides. That fingerprint matters practically: it determines which desalination technology performs best (reverse osmosis versus electrodialysis), how aggressively the membranes will scale or foul, and what the resulting waste concentrate ("brine") will contain once the fresh water is extracted — which in turn shapes the disposal method available under state and federal rules. A generic "brackish water" cost estimate is only a starting point; a project-specific water-quality analysis always follows.

02 History — What Communities Have Actually Learned

Brackish and inland desalination is not experimental; it has a multi-decade operating record in the U.S. and abroad. That record splits cleanly into plants that communities are glad they built and plants they regret — and the dividing line is rarely the treatment technology itself.

El Paso, Texas — Kay Bailey Hutchison Desalination Plant

WOULD BUILD AGAIN

Opened 2007; the world's largest inland desalination plant, with capacity up to 27.5 MGD, now being expanded toward 42 MGD. Fifteen-plus years of operation taught the utility to blend water from its least-salty wells first to extend reverse-osmosis membrane life from five years to twelve, and to dispose of brine through three deep injection wells rather than evaporation ponds — cheaper and less environmentally exposed. The plant has become an industry reference site, drawing international visitors and utility delegations, and has won WateReuse Association and Texas Commission on Environmental Quality awards. The throughline: a chronic, proven supply gap (desert city, sub-9-inch annual rainfall, hard population growth) matched with completed delivery infrastructure from day one.

Sources: El Paso Water, Kay Bailey Hutchison Desalination Plant fact sheet · Governing, "El Paso Hopes to Increase Water Desalination by 20 Percent in Three Years" (2025) · Texas Tribune, "Desalination plants have cautionary history" (2016)

Alamogordo, New Mexico — Municipal Desalination Facility

BUILT, BUT STRANDED

New Mexico's own cautionary case, and the most directly relevant one for this Legislature. The treatment plant itself was completed, but an unfinished 16-mile transmission pipeline has left it operating well below potential as a "supplemental resource awaiting full potential" rather than a working part of the water supply. The lesson is structural: the treatment plant is often not the hardest or most expensive piece of a desalination project. The last-mile delivery infrastructure is — and if it isn't funded and sequenced alongside the plant, the capital investment sits idle regardless of how well the technology performs.

Sources: 2nd Life Media Alamogordo Town News, "Alamogordo's Brackish Water Desalination Facility: A Supplemental Resource Awaiting Full Potential" · New Mexico Legislature handout, "Alamogordo Regional Water Supply" · AMTA, "Alamogordo Regional Water Supply: New Mexico's First Large-Scale Municipal Desalination Project"

Yuma, Arizona — Yuma Desalting Plant

NEVER OPERATED AT SCALE

Built in the early 1990s to treat brackish irrigation return flows and meet a Colorado River salinity treaty obligation to Mexico. It has essentially never run except for testing, and sits in "ready reserve." A 2020 federal bill to mandate its restart was set aside as impractical once the estimated cost came in at $160–450 million in upgrades plus $25–40 million a year to operate. The lesson: building a plant to satisfy a treaty or policy target, rather than a locally proven demand with a funded operating budget, produces exactly this outcome.

Sources: Coyote Gulch, "Arizona: Three Exciting Desal Concepts" (2026) · Tucson.com, "Water trains, desalting stations among proposals to boost Arizona's water supplies" (2024)

Southeastern Australia — Millennium Drought desal plants (Sydney, Melbourne, Adelaide, Gold Coast)

REGRETTED, THEN VINDICATED

Five capital cities built large seawater desalination plants during the 2000s Millennium Drought, at a combined cost exceeding $10 billion. When the drought broke around 2010, four of the five plants were mothballed — yet still cost ratepayers hundreds of millions of dollars a year in standby maintenance and contractual charges, since the fixed costs of owning the asset don't go away when it's turned off. Now, with drought conditions returning in the 2020s, several of those same "white elephant" plants are being reactivated and are viewed as having proven their insurance value after all. The honest lesson for a legislator: desalination capacity built for drought resilience behaves like insurance — expensive to carry while unused, and valuable exactly when everything else fails. Whether that trade-off is worth it depends on how a community values that resilience, not on the technology.

Sources: The Conversation, "Cities turn to desalination for water security, but at what cost?" (2019) · Circle of Blue, "In Water-Scarce Regions Desalination Plants Are Risky Investments" (2016) · Smarter Water LA, "Idle desalination plants built by Labor cost $1bn"

London, UK — Thames Water Beckton Desalination Plant

DESIGN SHORTCUT, CHRONIC DOWNTIME

Opened 2010 to guard against Olympic-year shortages. To reduce cost, it was sited on a tidal estuary rather than open sea — a decision that made the plant's supply less stable and contributed to years of intermittent operation. British MPs have called it a "£250m white elephant." The lesson: cutting cost at the site-selection stage can undermine reliability for the life of the asset, in a way that is expensive to reverse later.

Sources: The Daily Telegraph (via PressReader), "Water plant that could prevent hose ban 'secretly mothballed'" (2022) · Yahoo News, "Drinking water plant mothballed despite drought fears"

THE PATTERN ACROSS EVERY CASE ABOVE

Plants that communities are glad they built share three traits: they were sized to a chronic, already-proven supply gap; their distribution infrastructure was funded and completed alongside the treatment plant, not after it; and the operating utility budgeted realistically for the ongoing cost of running it — not just the ribbon-cutting cost of building it. Plants that became regrets are missing one of those three, almost without exception.

03 Desalination Plants — What Communities Need to Understand

Brackish reverse osmosis (RO) is the dominant technology in the U.S. inland market. Understood on its own terms — not compared to seawater desalination, which is a different cost and energy proposition — its trade-offs are fairly consistent across the case histories above.

WHAT WORKS IN ITS FAVOR

Drought-independent. Draws on a resource that isn't tied to Rio Grande Compact allocations, snowpack, or reservoir levels.

Lighter footprint than seawater desal. Brackish water's much lower starting salinity (1,000–10,000 ppm vs. seawater's ~35,000 ppm) means lower operating pressure, higher water recovery rates, and materially lower energy cost per gallon than an equivalent seawater plant.

Right-sizable. Modular, containerized RO units now exist as a commercial product category, letting a small community or a single well-field match capacity to actual demand instead of committing to mega-plant economics.

Potential resource synergy. In some basins, brine has commercial value — several New Mexico and Texas operators are studying battery-grade lithium and potash recovery from produced brines rather than treating concentrate purely as waste.

WHAT WORKS AGAINST IT

Energy-intensive relative to conventional treatment. Raises both operating cost and, depending on the local grid mix, emissions, compared to treating fresh surface water.

Brine disposal is the unsolved core problem. Deep-well injection, evaporation ponds, and surface discharge each carry a distinct environmental risk — see Section 4 — and the "right" method is site-specific, not a settled default.

Front-loaded capital risk. The Alamogordo and Yuma cases above show that the payback period assumes distribution infrastructure gets finished and demand materializes as projected — and if either assumption fails, the capital sits stranded.

Standing-cost exposure. As Australia's experience shows, a plant sized above proven near-term demand still costs real money to maintain even while producing no water.

ENVIRONMENTAL IMPACT — WHAT TO ASK BEFORE APPROVING A SPECIFIC PROJECT

Brine disposal (Section 4) is the environmental question that gets asked first, but it isn't the only one. A legislator should expect these five to come up as a project moves from concept to permit:

- **Is the brackish zone actually isolated from the fresh aquifer above it?** The premise that brackish and fresh water sit in separate, non-interacting zones is a site-specific hydrogeological finding, not a given — heavy pumping from a brackish zone can measurably draw down or intrude into an adjacent freshwater zone if the two are more connected than assumed. This is not theoretical for this region: sustained municipal pumping in the El Paso–Ciudad Juárez area of the Rio Grande Basin has already documented brackish water migrating into freshwater zones as a direct result of decades of heavy withdrawal. The right response isn't to treat this as disqualifying — it's to require the hydrogeologic study up front, before permitting, not after.

  Sources: Baker Institute, "Brackish Groundwater: Current Status and Potential Benefits for Water Management" · Sheng & Devere, "Impacts of groundwater pumping and climate variability on groundwater availability in the Rio Grande Basin", Ecosphere (2013)

- **What does the wellfield, pipeline corridor, and plant site disturb on the surface?** Beyond the treatment building itself, a project's physical footprint includes the well pads, the access roads to reach them, and the pipeline right-of-way connecting everything to the point of use — real disturbance on land that, in Sierra County, is working rangeland. If a project pairs with new solar or wind capacity to offset its energy load, that generation capacity carries its own separate land footprint and siting review, and shouldn't be waved through as a "clean" add-on without the same scrutiny as the plant itself.

- **How closely will the brine-disposal well actually be monitored?** Not all injection wells are regulated the same way. Most brine-disposal wells fall under EPA's Class V category — a broad catch-all class that submits substantially less monitoring and reporting data than the more heavily regulated Class I hazardous/industrial wells. That's a legitimate point of leverage for a legislator: nothing prevents a state from requiring Class I–level monitoring and reporting as a condition of state funding, even where federal rules would only require Class V.

  Source: U.S. EPA, "Basic Information About Class V Injection Wells" · U.S. EPA, "Compliance Reporting Requirements for Injection Well Owners and Operators"

- **Does the funding source trigger a full environmental review?** Projects seeking federal Bureau of Reclamation WaterSMART or Title XVI desalination funding are required to

complete National Environmental Policy Act (NEPA) review and other federal environmental and cultural-resource compliance before construction. A project funded entirely through New Mexico's own Strategic Water Supply Program, with no federal dollars involved, may not automatically face that same depth of review — which makes the state's own permitting and review requirements the operative safeguard, not a federal backstop that may not apply.

Source: Bureau of Reclamation, WaterSMART funding opportunity announcement, Environmental and Cultural Resource Compliance

- **One point that cuts the other way:** because brackish desalination draws water from underground wells rather than an open water body, it avoids the entrainment and impingement of aquatic life — organisms pulled into and killed by an open intake — that is one of the most-cited environmental costs of coastal seawater desalination. Subsurface well intakes are considered a best practice specifically because the surrounding aquifer sediment acts as a natural filter before water ever reaches the plant.

Source: WateReuse Association, "Desalination Plant Intakes – Impingement and Entrainment: Impacts and Solutions"

04 Why Communities Oppose Desalination Plants

Opposition to brackish desalination projects tends to cluster around a consistent set of concerns, though — as New Mexico's own 2025 legislative debate showed — the coalition opposing a given bill is not always ideologically unified.

- **Brine disposal and aquifer contamination.** The leading technical objection. Deep-well injection can migrate through geological formations into freshwater-bearing zones if the receiving geology isn't well characterized; peer-reviewed modeling of poorly sited cases shows recovery of the contaminated zone can take over a century.

  Source: ScienceDirect, "Injection of desalination brine into the saline part of the coastal aquifer; environmental and hydrological implications"

- **Public-process concerns.** New Mexico's original HB 137 draft did not extend the standard public-protest right to permits for deep wells accessing brackish water — a departure from how surface-water rights are normally permitted. Amigos Bravos and allied groups raised this directly; the House subsequently amended the bill to guarantee protest rights for every Strategic Water Supply project "regardless of the depth of the brackish water below the ground."

  Sources: Source New Mexico, "Strategic Water Supply taps out as the governor insists she won't 'give up on it'" · Office of the Governor of New Mexico, "New Mexico Strategic Water Supply bill advances through House with enhanced public protections"

- **Ratepayer cost exposure** if a plant is sized above proven near-term demand and ends up carrying standby costs, as in the Australian cases.

  Source: Smarter Water LA, "Idle desalination plants built by Labor cost $1bn" — see also Section 2

- **Environmental-justice and tribal concerns** where proposed brine-disposal sites or well fields overlap tribal or agricultural land — the Pueblo Action Alliance was an active voice in New Mexico's 2024–25 hearings.

  Source: KUNM, "FRI: Strategic Water Supply taps out as the governor insists she won't 'give up on it,' + More"

- **A genuinely mixed opposition coalition.** New Mexico's 2025 bill drew opposition from environmental advocates and oil-and-gas interests simultaneously, for opposite reasons — environmental groups over brine and public-process concerns, industry over a proposed increase in the per-barrel fee on fracking water. A legislator should expect "opposition" to a future project to arrive from more than one direction at once, for different reasons.

Source: Santa Fe New Mexican, "Despite resistance, Strategic Water Supply bill secures narrow committee approval"

- **Ecological precedent from disposal methods.** Evaporation ponds carry a documented worst case: selenium bioaccumulation from agricultural drainage evaporation ponds at California's Kesterson Reservoir caused widespread waterfowl death and deformity beginning in 1983, and remains the reference case cited whenever evaporation-pond disposal is proposed.

  Source: Water Education Foundation, "Kesterson Reservoir"

- **Commodification concerns.** Several New Mexico legislators and advocates raised a distinct, non-technical objection during 2024–25 hearings: unease about treating a public groundwater resource as a tradable commodity rather than a public trust asset, independent of any specific engineering risk.

  Source: Source New Mexico, "Strategic Water Supply slides over to Senate"

05 About the Desalination Industry

MARKET SIZE

Estimates vary by research firm and by exactly what's counted (equipment only, versus the full technology and services market), but converge on a consistent order of magnitude: the global desalination technologies market is generally sized at roughly **$20–30 billion in 2026**, growing at a high-single-digit to low-double-digit compound annual rate, with several forecasters projecting $37–59 billion by the early-to-mid 2030s. The Middle East and North Africa still account for the largest single regional share of installed capacity, but North American growth — driven substantially by inland brackish and industrial demand rather than coastal seawater projects — is accelerating. The U.S. desalination technology market specifically is projected to reach roughly $5.2 billion by 2032.

> PUBLIC MARKET STUDIES REFERENCED ABOVE
>
> Grand View Research, "Water Desalination Equipment Market Report, 2026–2033"
> Mordor Intelligence, "Desalination System Market Analysis"
> Fortune Business Insights, "Desalination Technologies Market Size, Share"
> Coherent Market Insights, "Global Water Desalination Market"
> Persistence Market Research, "Water Desalination Market Size & Forecast to 2033"
> The Business Research Company, "Desalination Technologies Global Market Report"

MARKET STRUCTURE

The industry has two distinct tiers that a legislator should keep separate: **technology and equipment providers** (who design and often build the treatment plant itself) and **engineering/design firms** (who plan, permit, and manage construction, sometimes independent of any one vendor's technology). Sections 8 and 9 below profile the top five of each. One recent industry analysis found the top five EPC (engineering, procurement, construction) contractors controlled roughly 53% of global contract value in 2025 — a moderately concentrated market where a handful of firms have most of the deep experience.

TRADE AND INDUSTRY ORGANIZATIONS

ORGANIZATION	SCOPE	RELEVANCE TO NEW MEXICO	WEBSITE
International Desalination & Reuse Association (IDRA), formerly IDA	Global — 60+ countries, UN ECOSOC consultative status	The global standards and knowledge body; publishes the industry's reference "Desalting Plants Inventory."	idrawater.org
American Membrane Technology Association (AMTA)	U.S. — ~820 member organizations	Runs the joint AWWA/AMTA Membrane Technology Conference; the most active U.S. technical-training body for utility staff.	amtaorg.com
WateReuse Association	U.S. — the only trade group solely focused on recycled/reused water policy and funding	Active on funding and public-acceptance advocacy; co-publishes research with IDRA.	watereuse.org
Texas Desalination Association (TexasDesal)	Texas state-level	The closest regional peer organization; state-level policy advocacy model New Mexico's own desal community could look to directly.	texasdesal.com
Southwest Desal Association	Regional — Southwestern U.S.	Region-specific policy and elected-official engagement group; the most directly relevant regional peer to New Mexico by geography.	southwestdesal.org

South Central Membrane Association	Regional — South-Central U.S.	Practitioner conference network likely to already include New Mexico project teams.	scmembrane.org

06 Political & Regulatory Landscape

NEW MEXICO

The **Strategic Water Supply Act** (House Bill 137), signed into law in 2025, is New Mexico's operative framework. It establishes the Strategic Water Supply Program under the Environment Department, the Office of the State Engineer, and the Economic Development Department, with authority to award grants and contracts for brackish-water treatment projects. Its first version, introduced in 2024 at a $500 million ask that also covered oil-and-gas produced water, failed to pass amid opposition from environmental and Indigenous groups. The 2025 version was narrowed to a brackish-only program, funded initially at $40 million (with over $75 million appropriated to the broader Strategic Water Supply fund across two legislative sessions), and amended on the House floor to guarantee public-protest rights for every project — a direct, negotiated response to the opposition described in Section 4.

ACTIVE ORGANIZATIONS IN THE NEW MEXICO DEBATE

- **Amigos Bravos** — water conservation nonprofit, based in Taos since 1988; the most consistent technical critic, focused on brine disposal and the public-process gap.

  Website: amigosbravos.org · Facebook: @AmigosBravos · X: @AmigosBravos1

- **Pueblo Action Alliance** — tribal environmental justice organization based in Albuquerque; raised concerns about commodification and process during hearings.

  Website: puebloactionalliance.org · Instagram: @puebloactionalliance · X: @puebloalliance

- **New Mexico Wild** — statewide wilderness, wildlife, and water organization; argues other water-conservation strategies remain comparatively under-resourced next to brackish investment.

  Website: nmwild.org · Instagram: @nmwilderness · X: @nmwild

BORDER-STATE COMPARISON

STATE	GOVERNING APPROACH	WHERE IT STANDS

Texas	Characterize, then zone, then permit. The Texas Water Development Board has run its Brackish Resources Aquifer Characterization System (BRACS) since 2009, and since 2015 has formally designated "brackish groundwater production zones" under a dedicated permitting framework.	31 zones designated to date (deadline for completing designations extended to 2032); at least $250 million earmarked in the state water fund for marine/brackish desal; a 2025 bill (SB 2658) further strengthened the Legislature's biennial reporting requirement. The most regulatorily mature program in the region.
Arizona	Fund pilot proposals through the Water Infrastructure Finance Authority (WIFA) while working around a structural legal constraint: Arizona's Groundwater Management Act generally prohibits moving groundwater — brackish included — out of its basin of origin to reach higher-demand areas.	Live proposals near Yuma, Buckeye, and Winslow; the 1990s-era Yuma Desalting Plant remains a "restart vs. new-build" debate (see Section 2); in November 2025 the state approved funding help for private desal proposals sited in California or Mexico rather than in-state, reflecting how constrained in-state siting has become.
New Mexico	Fund treatment infrastructure directly through the Strategic Water Supply Program while resource characterization is still catching up (a separate ~$13 million appropriation funds mapping and testing).	Building the regulatory maturity Texas already has; the public-protest amendment shows the process is actively being negotiated rather than settled.

> THE PATTERN ACROSS ALL THREE STATES
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> Every border state now treats brackish (and in some cases produced-water) development as core to its water-security planning — but each is solving a different first problem. Texas is solving the mapping-and-permitting problem before committing capital at scale. Arizona is solving a legal transport constraint by looking outside its own borders. New Mexico is solving a funding-and-process problem simultaneously, in public, in real time.

07 Financial Considerations by Application & Community Size

THE DISTINCTION THIS SECTION IS BUILT AROUND

Every desalination cost figure is really two numbers. **The price to own it** is capital expenditure (CAPEX) — wells, the treatment building, membranes, pumps, and the disposal system, financed once. **The cost once it's in service** is the fully loaded unit cost — that CAPEX amortized over the plant's life, plus ongoing operating expenditure (OPEX): energy, membrane replacement, labor, and brine disposal — plus, critically, whatever "last mile" infrastructure (transmission pipeline, storage, connection to the existing distribution system) is needed to actually deliver the water. Section 2's case histories show that almost every regretted project failed at that last category, not at the treatment technology. A legislator evaluating a proposal should ask for both numbers, not just the headline CAPEX figure.

Farm / Ag Co-op Scale

Farmer or Agricultural Co-op

REFERENCE SCALE

Solar-powered pilot RO units now being tested in the Rio Grande basin near White Sands (Bureau of Reclamation-funded)

ILLUSTRATIVE CAPACITY

Roughly 5,000–50,000 gal/day

PLANNING-LEVEL CAPEX

$50,000 – $500,000

UNIT COST (FULLY LOADED)

~$250 – $800 / acre-foot

TYPICAL FUNDING PATHS

USDA Rural Development grants; Bureau of Reclamation WaterSMART; NM Strategic Water Supply Program (brackish-only eligibility)

Small-Community Scale

Small Rural Community (drinking water, pop. under 25,000)

REFERENCE SCALE

Comparable to Alamogordo, NM, and El Paso's original 2007 plant footprint

ILLUSTRATIVE CAPACITY

2–5 MGD

PLANNING-LEVEL CAPEX

$25 million – $70 million

UNIT COST (FULLY LOADED)

$1.25 – $2.60 / 1,000 gal

TYPICAL FUNDING PATHS

NM Strategic Water Supply grants/contracts; USDA Rural Development water & wastewater loan-grant program; state revolving funds

Regional Augmentation Scale

Community Lake / River Augmentation

REFERENCE SCALE

Comparable to El Paso's Kay Bailey Hutchison Plant at full/expanded capacity

ILLUSTRATIVE CAPACITY

10–30+ MGD

PLANNING-LEVEL CAPEX

$100 million – $300 million+

UNIT COST (FULLY LOADED)

$1.00 – $2.00+ / 1,000 gal (scale efficiencies partly offset by added pipeline/injection-well cost)

TYPICAL FUNDING PATHS

State infrastructure bonds; federal Title XVI-style desalination grants; regional water authority revenue bonds

Figures above are planning-level ranges synthesized from Texas Water Development Board cost studies, AMPAC/Cost Now industry cost guides, and the El Paso/Alamogordo case histories in Section 2. They are not bids or engineering estimates for any specific New Mexico site — actual figures depend on well depth, source-water TDS and chemistry, disposal method available at the site, and how much "last mile" infrastructure the project must also fund.

08 Top 5 Desalination Technology Brands

Ranked by scale of global installed capacity and relevance to inland brackish (not solely coastal seawater) projects.

01 — Full-Range Global Leader

Veolia Water Technologies

FOCUS

All desalination technologies (RO, MSF, MED) via specialized subsidiaries Sidem & Entropie; 1,950+ RO plants across 85 countries.

WEBSITE

veoliawatertechnologies.com

CONTACT PATH

Regional inquiry form via corporate site; North America desalination applications page.

02 — Large-Scale Municipal Specialist

IDE Technologies

FOCUS

Large SWRO/BWRO plants; built North America's largest desalination facility (Carlsbad, CA) and Israel's Ashkelon & Sorek plants.

AMERICAS HQ

5050 Avenida Encinas, Suite 250, Carlsbad, CA 92008

WEBSITE

ide-tech.com

03 — Major North American Water-Tech Platform

Xylem Inc.

FOCUS

Broad water-technology portfolio; acquired Evoqua Water Technologies for $7.5B in 2023 to become one of the largest pure-play water-tech companies in the U.S.

WEBSITE

xylem.com

04 — Best Fit for Small/Modular Community Scale

Fluence Corporation

FOCUS

Containerized, modular RO product line (NIROBOX); the closest fit to New Mexico's small-community and agricultural use cases from Section 7.

U.S. OFFICE

3600 Holly Lane North, Suite 100, Plymouth, MN 55447

PHONE

Toll-free +1 (800) 879-3677

WEBSITE

fluencecorp.com

05 — Zero-Liquid-Discharge & Brine-Value Specialist

Aquatech International

FOCUS

Industrial desalination and zero-liquid-discharge systems; active in critical-mineral recovery from brine — directly relevant to New Mexico's own lithium/potash-from-brine interest noted in Section 3.

CORPORATE HQ

1 Four Coins Drive, Canonsburg, PA 15317

PHONE

+1 (724) 746-5300 · Houston, TX office: +1 (281) 500-8008

WEBSITE

aquatech.com

Honorable Mention — Small-Scale Domestic Manufacturer

AMPAC USA

FOCUS

Domestically manufactured RO systems from 500 gal/day up to multi-MGD — the closest off-the-shelf fit for the farm/ag-scale end of Section 7's spectrum.

WEBSITE

ampac1.com

09 Top 5 Desalination Design & Engineering Contractors

Firms with a documented brackish-groundwater desalination practice, ranked with regional Southwest relevance weighted alongside national scale.

01 — Water/Wastewater Specialist, Deep Brackish Bench

Carollo Engineers

FOCUS

Engineering-only (not vendor-affiliated) firm; direct brackish-desal design work including the Barton Springs/Edwards Aquifer feasibility study and multiple TWDB pilot-plant studies.

CORPORATE HQ

2795 Mitchell Drive, Walnut Creek, CA 94598

REGIONAL OFFICE (PHOENIX)

4600 East Washington Street, Suite 500, Phoenix, AZ 85034 · (602) 263-9500

WEBSITE

carollo.com

02 — Global Engineering, Brine-Permitting Expertise

CDM Smith

FOCUS

Authored TWDB's permitting guidance manual for Class II brine-injection wells; extensive El Paso Water program experience.

CORPORATE HQ

75 State Street, Boston, MA 02109

WEBSITE

cdmsmith.com

03 — Global EPC, Widely Cited Brine-Management Guidance

Black & Veatch

FOCUS

Full engineering-procurement-construction capability; active large-project desal practice (Escondida, Manyar Smelter) and publishes the brine-management strategy guidance referenced in Section 4.

CORPORATE HQ

Overland Park, KS

WEBSITE

bv.com

04 — Closest Regional Peer Firm

Freese and Nichols

FOCUS

Texas/Southwest water specialist since 1894; active brackish-desal feasibility work (Gulf Coast Water Authority) — the firm whose client base and geography most closely mirrors New Mexico's.

CORPORATE HQ

801 Cherry Street, Suite 2800, Fort Worth, TX 76102

PHONE

(817) 735-7300

WEBSITE

freese.com

05 — Employee-Owned Full-Service Infrastructure Firm

Burns & McDonnell

FOCUS

100%-employee-owned engineering, construction, and consulting firm founded on municipal water/sewer work in 1898; active current water-infrastructure and desalination-adjacent practice.

CORPORATE HQ

9400 Ward Parkway, Kansas City, MO 64114

PHONE

(816) 333-9400

WEBSITE

burnsmcd.com

TP

Talking Points — Where Brackish Desalination Works, and Where It Doesn't

Prepared for public-facing question-and-answer settings. Each answer is grounded in a specific case or figure from this briefing so it can be defended if pressed.

Q — Is this the same thing as ocean desalination?

A — No. Brackish water starts far less salty than seawater — 1,000–10,000 ppm versus roughly 35,000 ppm — which means brackish treatment uses meaningfully less energy and pressure per gallon than seawater desalination. The two get discussed together in the news, but they are different cost and engineering propositions.

Q — How is this different from a municipal wastewater treatment plant?

A — They solve different problems using mostly different methods. A wastewater plant treats water that has already been used — removing organic matter, pathogens, and other contaminants, typically through biological treatment and disinfection — so it can be safely discharged or reused. A desalination plant treats water that has never been used but is naturally too high in dissolved minerals to drink, using pressure-driven membranes (reverse osmosis) rather than biological processes. Some advanced water-reuse plants do combine both — treating wastewater biologically, then polishing it with the same RO membrane technology used in desalination — but a community's wastewater treatment need and its brackish-water opportunity are separate infrastructure questions, not substitutes for one another.

Q — Will this replace the Rio Grande or our normal water rights?

A — No — and no credible proposal frames it that way. Brackish water is a second, previously unused underground account, sitting under land already used for ranching and agriculture, not a substitute for surface-water allocations under the Rio Grande Compact. It's additive supply, not a replacement.

Q — What happens to the salt that gets removed?

A — This is the single most legitimate technical question, and the honest answer is that it depends on the site. The leftover concentrate ("brine") is typically disposed of by deep-well injection, evaporation ponds, or surface discharge — each with a different environmental risk profile, discussed in Section 4 of the full briefing. Any specific New Mexico proposal should be evaluated on its disposal plan specifically, not on the technology in the abstract. Disposal is not the only outcome available, though: zero-liquid-discharge systems crystallize the leftover concentrate into solid salt rather than disposing of it as a liquid at all, and that solid salt has demonstrated commercial value elsewhere in the region. Companies operating in the Permian Basin are already extracting battery-grade lithium carbonate from oilfield brine under agreements tied to U.S. battery supply chains, and Carlsbad, New Mexico is home to some of the country's largest solar-evaporation potash operations, producing fertilizer-grade mineral salts at industrial scale in a climate well suited to evaporation-based brine management. A smaller-scale precedent exists too: a brackish plant built for the township of Oakey, Queensland sends its leftover brine to a nearby coal mine for dust suppression and coal washing rather than disposing of it as pure waste. None of this changes the fact that a specific New Mexico proposal's brine plan needs its own site-specific review — it does mean "waste" is not the only category brine falls into.

Sources: Volt Lithium Corp., "Volt Lithium Successfully Produces Battery-Grade Lithium Carbonate from Permian Basin Oilfield Brine" (2024) · Intrepid Potash, "About Us" (Carlsbad, NM solar-evaporation operations) · Fluence, "Brackish Water as a Resource" (Oakey, Queensland case study)

Q — Could pumping brackish water affect my well or the river?

A — It can, if the geology isn't as isolated as assumed — that's the honest answer, not a reassurance. Brackish and fresh aquifers are usually described as separate, but that separation is a site-specific finding that has to be verified by a hydrogeologic study, not taken on faith. It's not a hypothetical risk in this region: decades of heavy municipal pumping in the El Paso–Ciudad Juárez area has already documented brackish water migrating into freshwater zones nearby. The safeguard is requiring that study before permitting, not after.

Q — Does this affect wildlife and rangeland?

A — There's real land disturbance to weigh: well pads, access roads, and pipeline corridors on what is, in this region, working rangeland — and if a project pairs with new solar or wind to power itself, that generation capacity needs its own siting scrutiny too, not a pass because it's "clean energy." On the other side of the ledger, because brackish desalination pulls water from underground wells rather than an open water body, it avoids the fish and aquatic-life losses from intake pipes that are one of the most-cited environmental costs of coastal seawater desalination — the surrounding aquifer sediment filters the water naturally before it ever reaches the plant.

Q — How closely is this monitored, and by whom?

A — It depends on the well classification and the funding source, and both are worth pinning down for any specific proposal. Most brine-disposal wells fall under EPA's Class V category, which requires meaningfully less monitoring and reporting than the more heavily regulated Class I wells — though a state can require Class I-level monitoring as a condition of its own funding, regardless of what federal rules require. Separately, a project seeking federal Bureau of Reclamation dollars has to complete a full federal environmental review before construction; a project funded entirely through New Mexico's own program may not automatically get that same depth of review, which makes the state's own permitting conditions the real safeguard.

Q — Why hasn't Alamogordo's plant delivered water yet, if this technology works?

A — Because the treatment plant was built without finishing the 16-mile pipeline needed to actually deliver the water. It's the clearest local proof that the treatment technology is rarely the bottleneck — the delivery infrastructure is, and it has to be funded and sequenced together with the plant, not as an afterthought.

Q — Is this really cheaper than just conserving water?

A — Conservation and desalination aren't substitutes for each other; they solve different problems. Conservation reduces demand against a fixed supply; desalination adds new supply. Every serious water plan, including New Mexico's own 50-Year Water Action Plan, treats them as complementary strategies, not competing ones.

Q — Who pays, and who benefits?

A — It depends on financing structure and scale — a farm-scale system, a small-community drinking-water plant, and a regional augmentation project have very different cost profiles, laid out in Section 7. What's consistent across every case history is that a plant sized larger than proven near-term demand shifts standing costs onto ratepayers even when it isn't producing water, which is exactly why sizing a project to real, demonstrated demand — not aspirational growth projections — is the single most important financial decision in the process.

Q — Where does brackish desalination clearly make sense?

A — Where a community has a chronic, already-proven supply gap; where distribution infrastructure to the point of use can be fully funded alongside the treatment plant; and where a viable, geologically sound brine-disposal plan exists before construction begins. El Paso is the reference case for all three conditions being met at once.

Q — Where does it clearly not make sense?

A — Where a plant is sized to a policy target or treaty obligation rather than proven local demand (Yuma), where the "last mile" delivery infrastructure isn't funded (Alamogordo), or where a project is conceived purely as drought-emergency insurance without a realistic plan for standby costs if the drought ends (the Australian cases). None of those failure modes are about the desalination technology itself.

KEY FIGURES

1,000–10,000
PPM TDS — THE WORKING DEFINITION OF "BRACKISH" UNDER NM'S STRATEGIC WATER SUPPLY ACT

2–4B
ACRE-FEET OF BRACKISH GROUNDWATER ESTIMATED UNDER NEW MEXICO

0
FULLY OPERATIONAL BRACKISH DESALINATION PLANTS DELIVERING WATER IN NM TODAY

16 mi
UNFINISHED PIPELINE STRANDING ALAMOGORDO'S COMPLETED PLANT

$25M–$70M
PLANNING-LEVEL CAPITAL COST, 2–5 MGD SMALL-COMMUNITY PLANT

$1.25–$2.60
PER-1,000-GALLON UNIT COST, BRACKISH DESALINATED WATER (TWDB, 2026)

57–4
NM HOUSE VOTE MARGIN PASSING THE STRATEGIC WATER SUPPLY ACT, 2025

$20–30B
GLOBAL DESALINATION TECHNOLOGIES MARKET SIZE, 2026

DOCUMENT SCOPE

Prepared as neutral background briefing material. Does not represent a policy recommendation or advocacy position on any pending or future legislation.

Source Notes

DEFINITIONS & STATE STATUTE

Baker Institute, "Brackish Groundwater: Current Status and Potential Benefits for Water Management" · New Mexico Environment Department, Strategic Water Supply Program (env.nm.gov/strategic-water-supply) · U.S. EPA

secondary drinking-water standards

CASE HISTORIES

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REGULATORY & POLITICAL LANDSCAPE

Santa Fe New Mexican & Source New Mexico, Strategic Water Supply Act legislative coverage (2024–25) · Office of the Governor of New Mexico, HB 137 signing statements · Texas Water Development Board, Brackish Resources Aquifer Characterization System (BRACS) · Texas Policy Research, SB 2658 (89th Legislature) summary · Circle of Blue / Water Desk, "Brackish Groundwater Is No Easy Water Solution for Arizona" · Tucson.com, Arizona Water Infrastructure Finance Authority coverage · KAWC, "Arizona water board approves desalination plants in California, Mexico" (Nov. 2025)

MARKET, INDUSTRY & FINANCIAL DATA

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