RGRWA

RIO GRANDE REGIONAL WATER AUTHORITY

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A REGIONAL APPROACH TO DESALINATION IN THE LRGV

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BLACK & VEATCH
Building a world of difference.

OVERVIEW

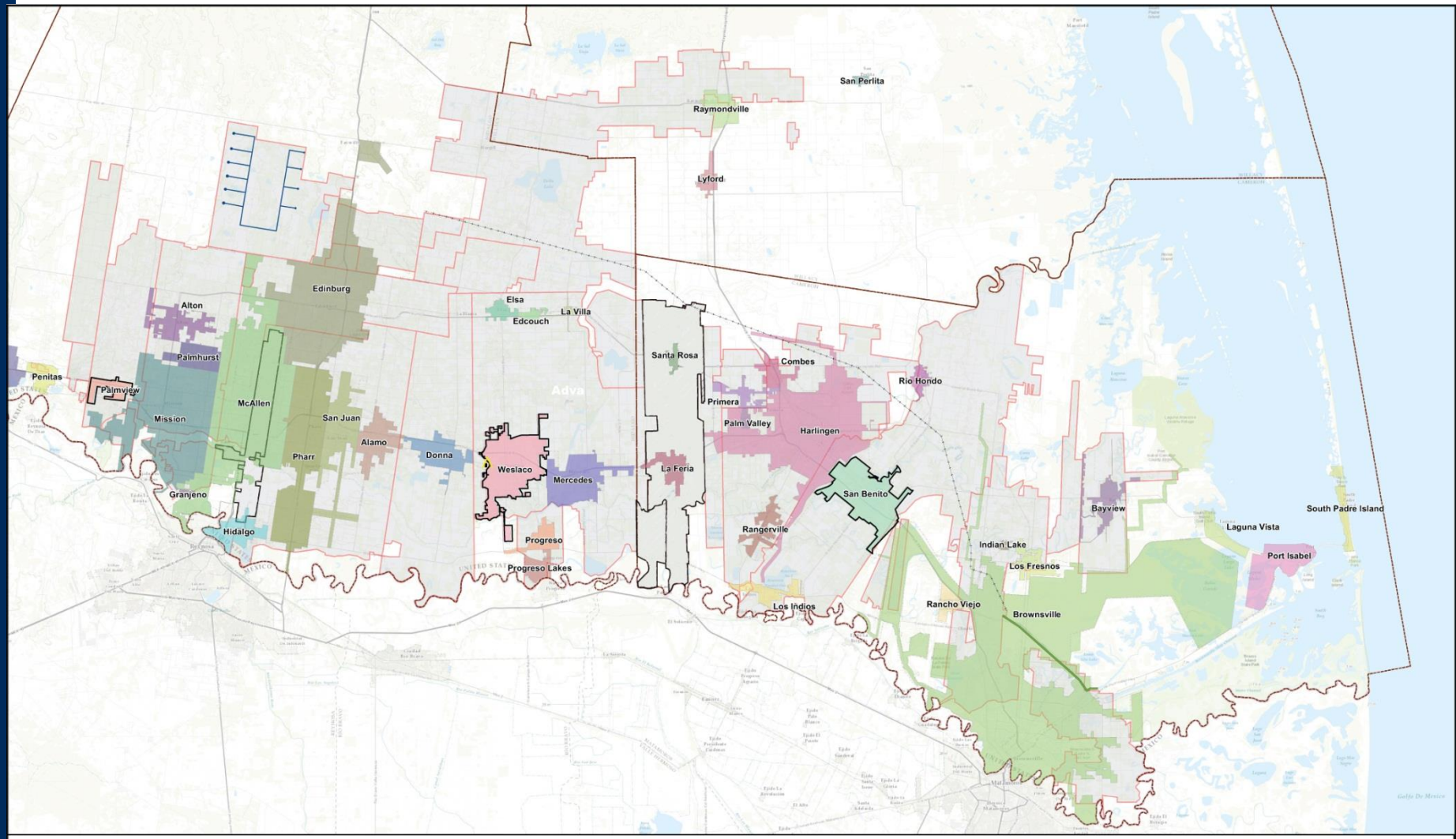
- The Need
- The Expectations
- The Options
- The Approach

WHAT IS THE NEED? WATER.

WHY THIS PROJECT NOW?

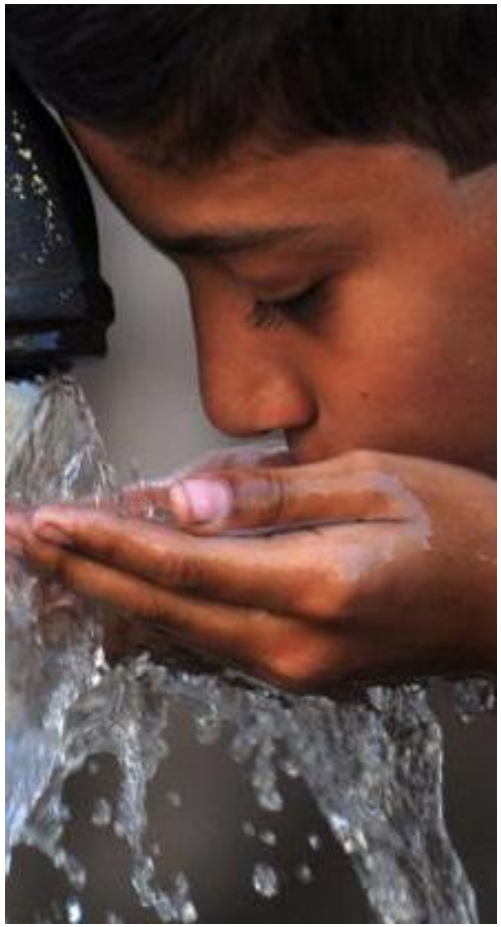
- *Increasing population in the region increases the drinking water demand.*
- *By 2060 an additional 410,000 acre-ft of water is needed.*
- *Mexico is not meeting their obligation to release water.*
  Recent 5-year deficits as high at 480,000 acre-feet.
- *New dams in Mexico may further reduce water available to the US.*
- *Potential decrease in water availability due to climate change*
- *There a regional awareness of water and an openness to regional solutions*
- *RGRWA taking initiative on a regional basis to look for solutions for irrigation and municipal water .*

PROJECT AREA; THE LOWER RIO GRANDE VALLEY



CHARACTERISTICS OF MAJOR WATER PROJECTS AND SYSTEMS

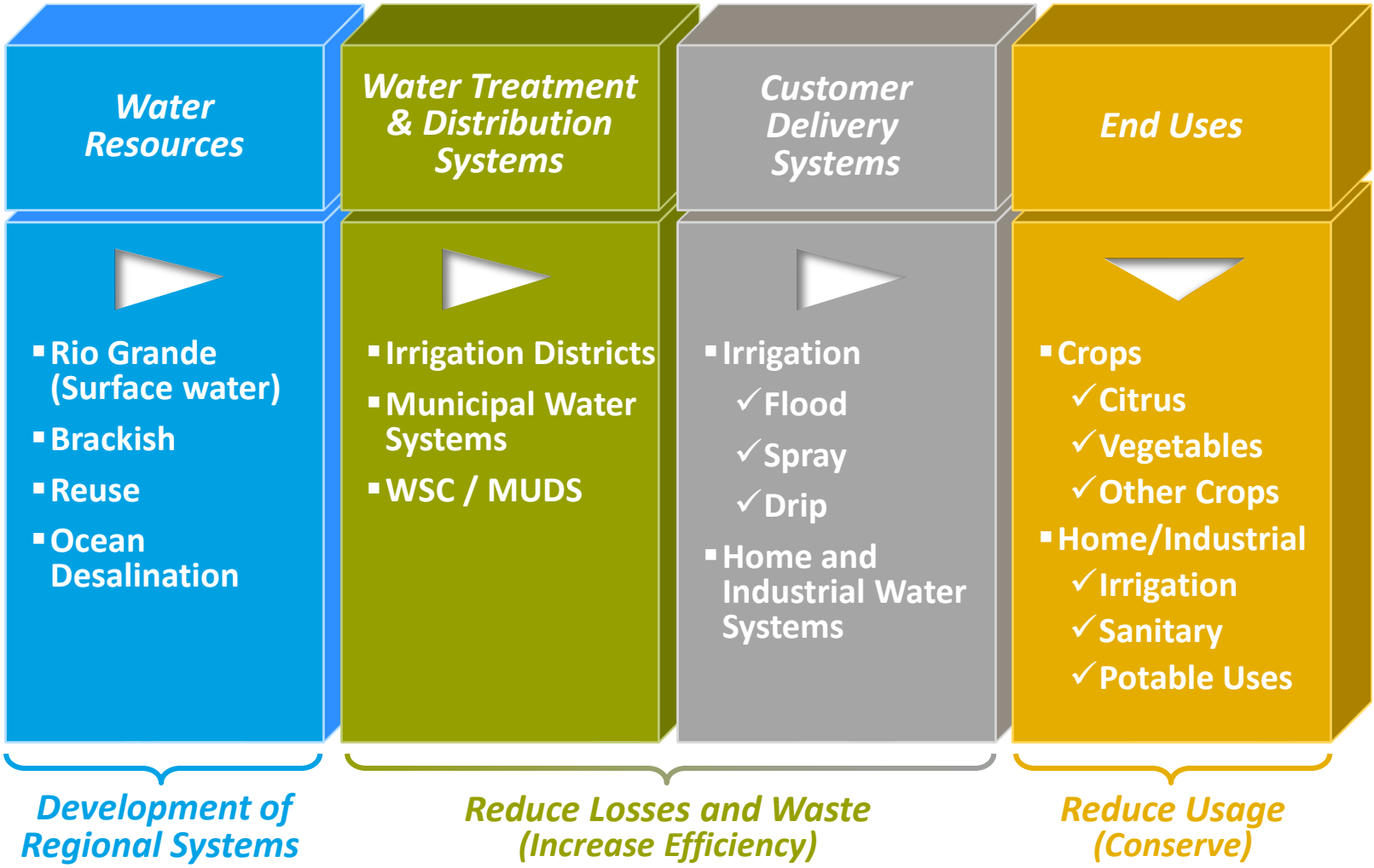
- The presence of water has supported the development of civilization throughout history.
- Large water projects have been driven by large government entities.
- Transporting water is usually the largest cost in water resource initiatives.
- Revenue must meet expenses.
- Leadership and vision are required to develop regional systems.
- Utilities generally want to own their own facilities and control their destiny



THE GREAT WATER EXPECTATIONS

- It's safe
- It's plentiful and dependable
- It's affordable
- It's is high quality and useable
- It's viewed as a basic human right
- It's personal
- It's essential for economic growth

THE RGRWA – STRATEGIC WATER MANAGEMENT PROGRAM

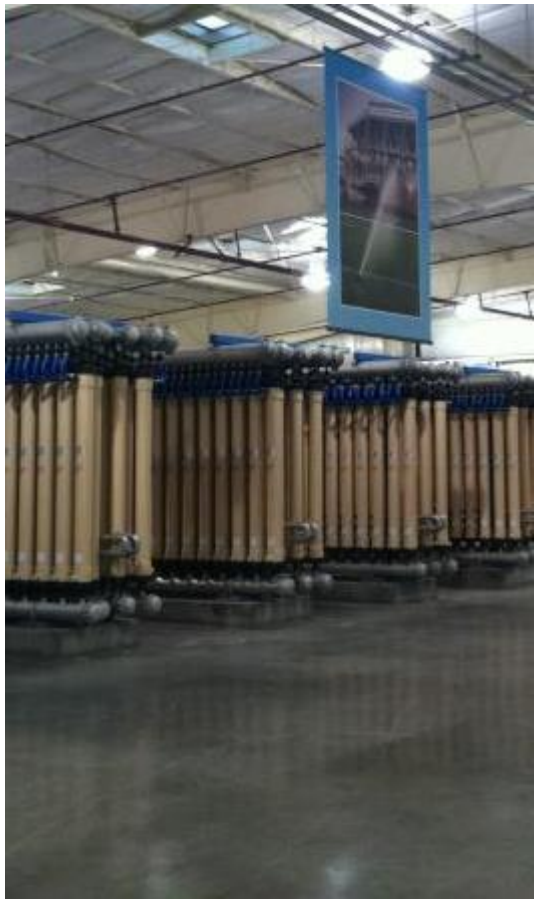


OPTION: SURFACE WATER

- Source: the Rio Grande
- Largest current source of water in the Valley
- Adjudicated/possibly over-allocated water source.
- Aside from agricultural conversions not great opportunity for additional water supplies.

OPTION: BRACKISH WATER

- Already successfully used throughout the LRGV for more than a decade.
- Most are smaller plants 1 to 2 mgd.
- Potentially large quantities of low salinity brackish water in the area.
- Shallow wells and surface discharge create the opportunity for low cost water supply.



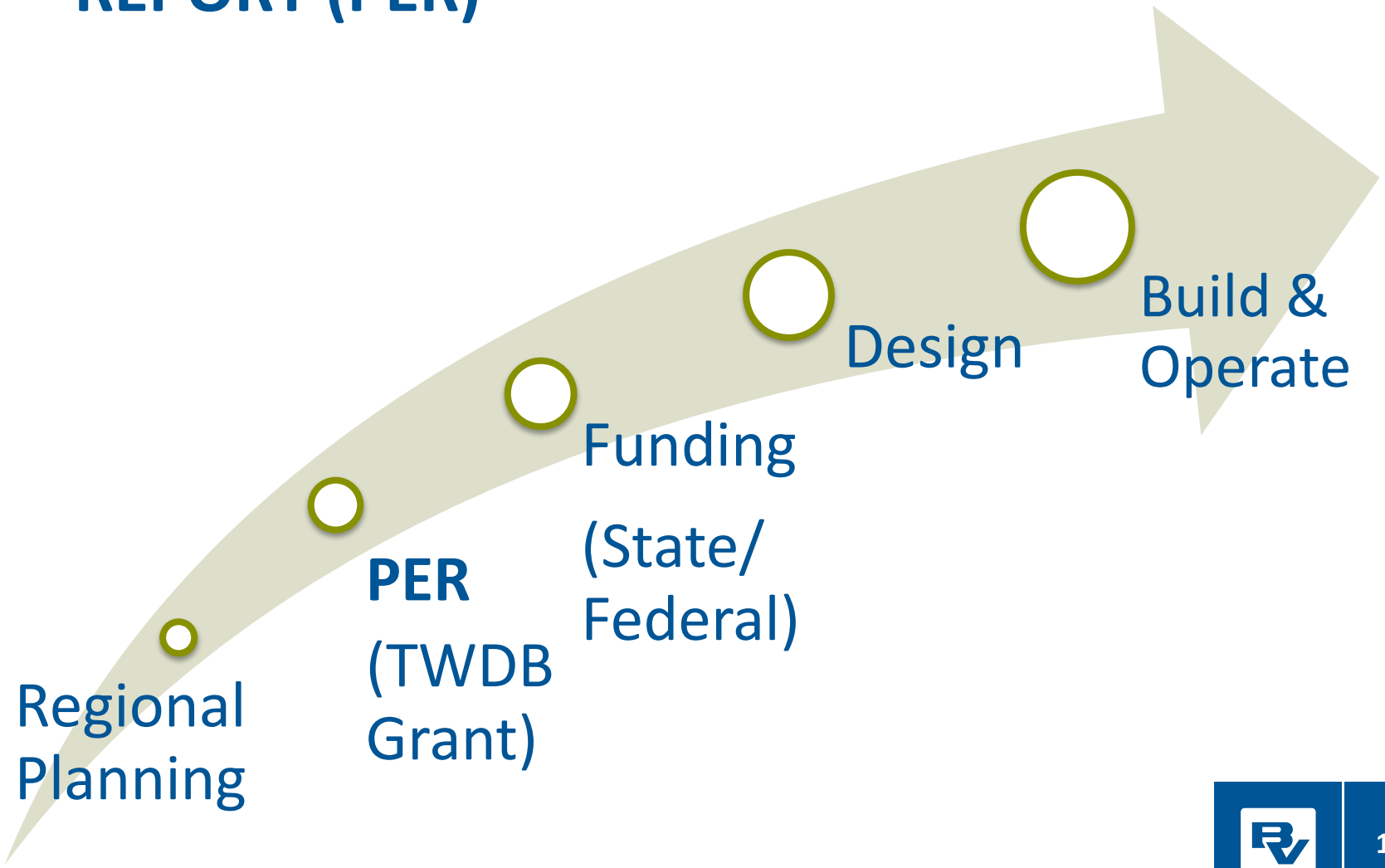
OPTION: REUSE WATER AND DPR

- Reuse water is currently used for some irrigation and power plant cooling.
- High total dissolved solids (TDS) over 1,200 mg/l, limits use for agriculture and irrigation.
- Limited industrial opportunities in the area.
- Direct Potable Reuse (DPR) costs may be competitive under the right utility conditions.
- May be better suited to individual utilities.

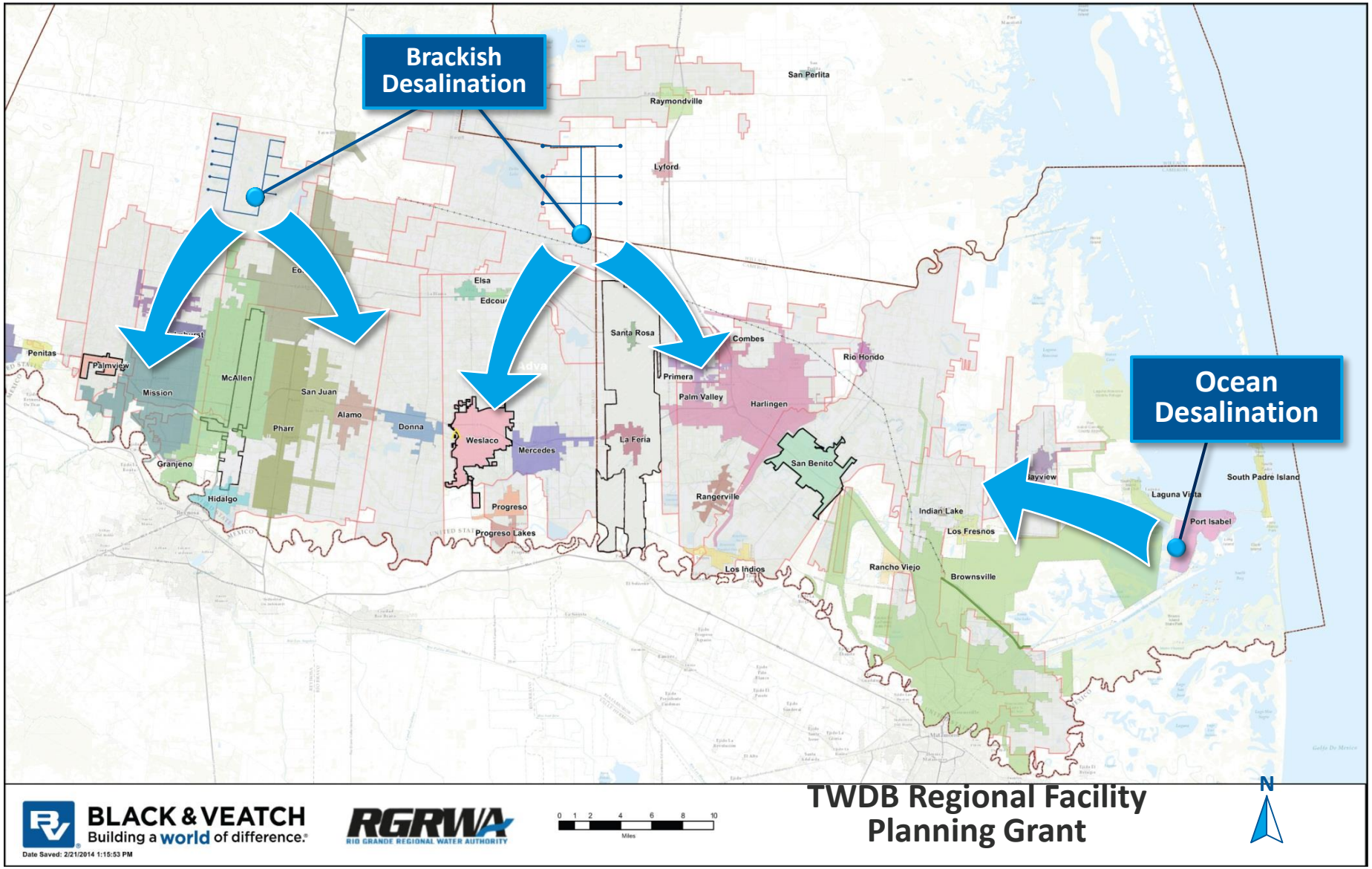
OPTION: OCEAN DESALINATION

- Potentially unlimited water supply.
- Some pilot and study work to date.
- Established technology worldwide.
- Cost is the current barrier to entrance to the water portfolio.

RGRWA WILL USE THE TWDB GRANT TO DEVELOP A PRELIMINARY ENGINEERING REPORT (PER)



EXPECTED SOLUTION?



Large Regional Facilities and Regional Valley Wide Distribution Facilities

THE SOLUTION MUST BE:

- A sustainable water supply.
- Provide quality, compatible water.
- Be conspicuously distributed and metered to the customer base.
- Clear and reasonable organizational structure for management and operations.
- Affordable delivered water supply

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