Location of recommended desalination projects in the 2022 State Water Plan relative to designated Brackish Groundwater Production Zones

Innovative Water Technologies (IWT) staff completed an analysis of brackish aquifer studies with the goal of making stakeholders aware of aquifer science completed by the Texas Water Development Board (TWDB) to help them advance the implementation of their desalination project(s). The evaluation consisted of overlapping the 33 recommended brackish groundwater desalination projects in the 2022 State Water Plan with completed brackish aquifer studies by the Brackish Resources Aquifer Characterization System (BRACS) Program and the 31 designated brackish groundwater production zones.

For each BRACS aquifer study, the TWDB collects as much publicly available geological, geophysical, and water-well data as possible and uses the information to map and characterize both the vertical and horizontal extents of the aquifers in great detail. Groundwater is classified into five salinity classes based on total dissolved solids concentration. The project deliverables, including both the data and report, are available to the public. All project data is compiled into the publicly available BRACS Database, which is in Microsoft Access format and described in a detailed data dictionary. Digital geophysical well logs and driller's logs used for the studies may be downloaded from the TWDB Water Data Interactive web viewer or are available upon request. Processed data such as lithology, stratigraphic picks, aquifer water chemistry and salinity analysis, and interpreted results are provided in the form of GIS datasets. Project sponsors can use the data from completed BRACS studies to advance the desalination project by locating brackish groundwater and then proceeding to drill a test well and collect water quality data.

In 2015, the 84th Texas Legislature passed House Bill 30, directing the TWDB to conduct studies to identify and designate brackish groundwater production zones in areas of the state with a moderate to high availability and productivity of brackish groundwater that can be used to reduce reliance on fresh groundwater. To date, the TWDB has designated 31 brackish groundwater production zones that meet the statutory requirements and exclusion criteria. Project sponsors, if located within a designated zone, can use data to inform next steps and use the permitting framework in place for zones and work with the local groundwater conservation district.

- **There are 26 our of 33 recommended desalination projects are within a completed brackish aquifer study area (aquifer study name) (Figure 1).**
  1. Alamo (GC2)
  2. Alice (GC3)
  3. Aspermont (Be)
  4. Austin (NT)
  5. Brazosport Water Authority (GC3)
  6. Canyon Regional Water Authority (CW & WCQSY)
  7. Corpus Christi/San Patricio Municipal Water District (GC1 & GC3)
  8. County Line Special Utility District (HCT)
  9. East Rio Hondo Water Supply Corporation (GC2)
  10. La Feria (GC2)
  11. Lyford (GC2)
  12. Kerr County – wellfield (HCT)
  13. Kerr County - desalination plant (HCT)
  14. McAllen (GC2)
  15. Mission (GC2)
  16. North Alamo WSC (GC2)
  17. Primera (GC2)
  18. S S Water Supply Corporation (CW & WCQSY)
  19. San Angelo, Abilene, & Midland (Rr)
  20. San Antonio Water System (QS2, CW, & WCQSY)
  21. San Benito (GC2)
  22. San Juan – desalination plant (GC2)
  23. San Juan – well (GC2)
  24. Schertz-Seguin Local Government Corporation (QS2, CW, & WCQSY)
  25. Sharyland Water Supply Corporation – project 1 (GC2)
  26. Sharyland Water Supply Corporation– project 2 (GC2)

- **There are zero projects within a brackish groundwater production zone (Figure 2) and within the top and bottom depth of the zone (Figure 3).**

Location of recommended desalination projects in the 2022 State Water Plan relative to designated Brackish Groundwater Production Zones

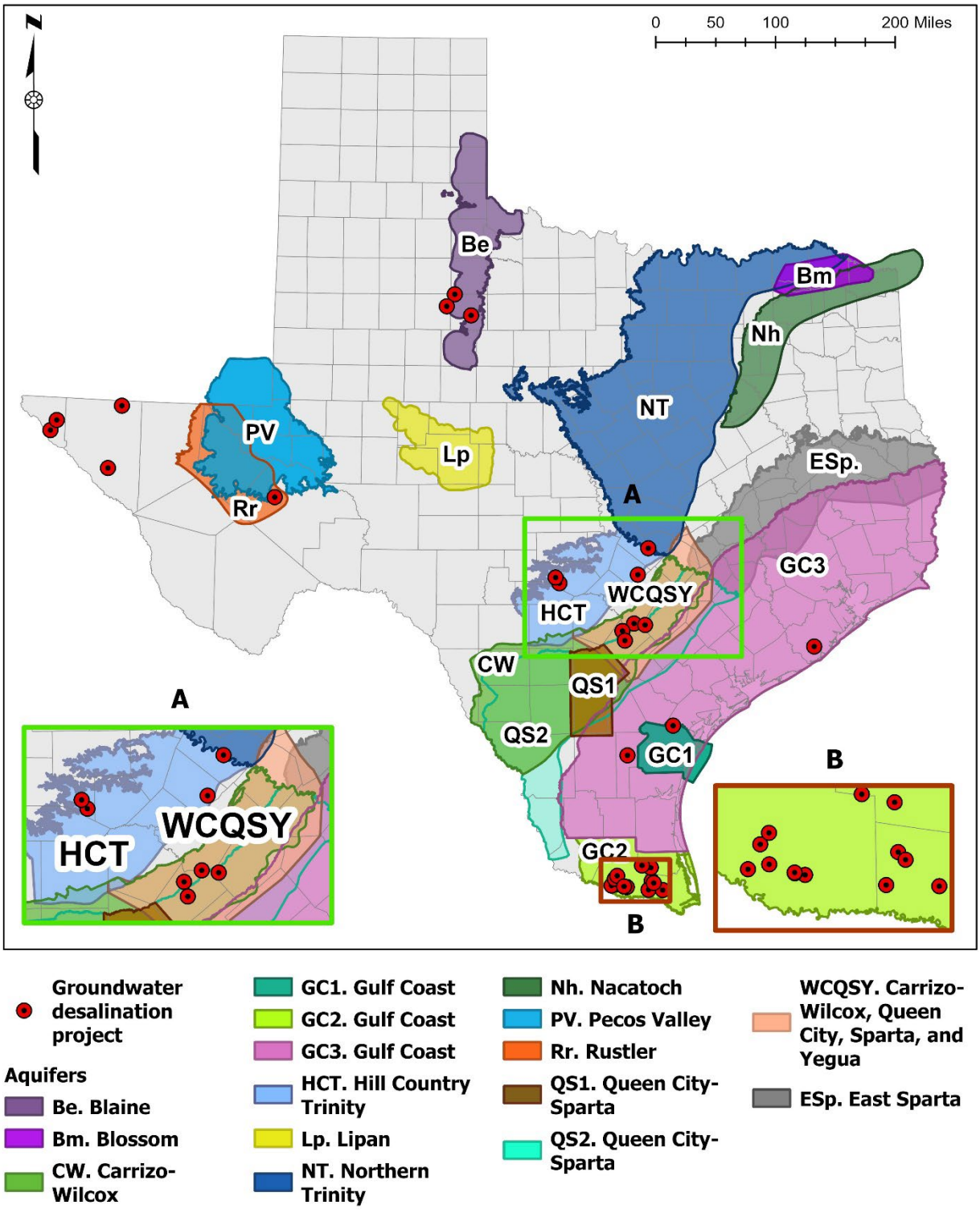

Figure 1: Location of recommended brackish groundwater desalination projects relative to completed brackish aquifer study areas.

Location of recommended desalination projects in the 2022 State Water Plan relative to designated Brackish Groundwater Production Zones

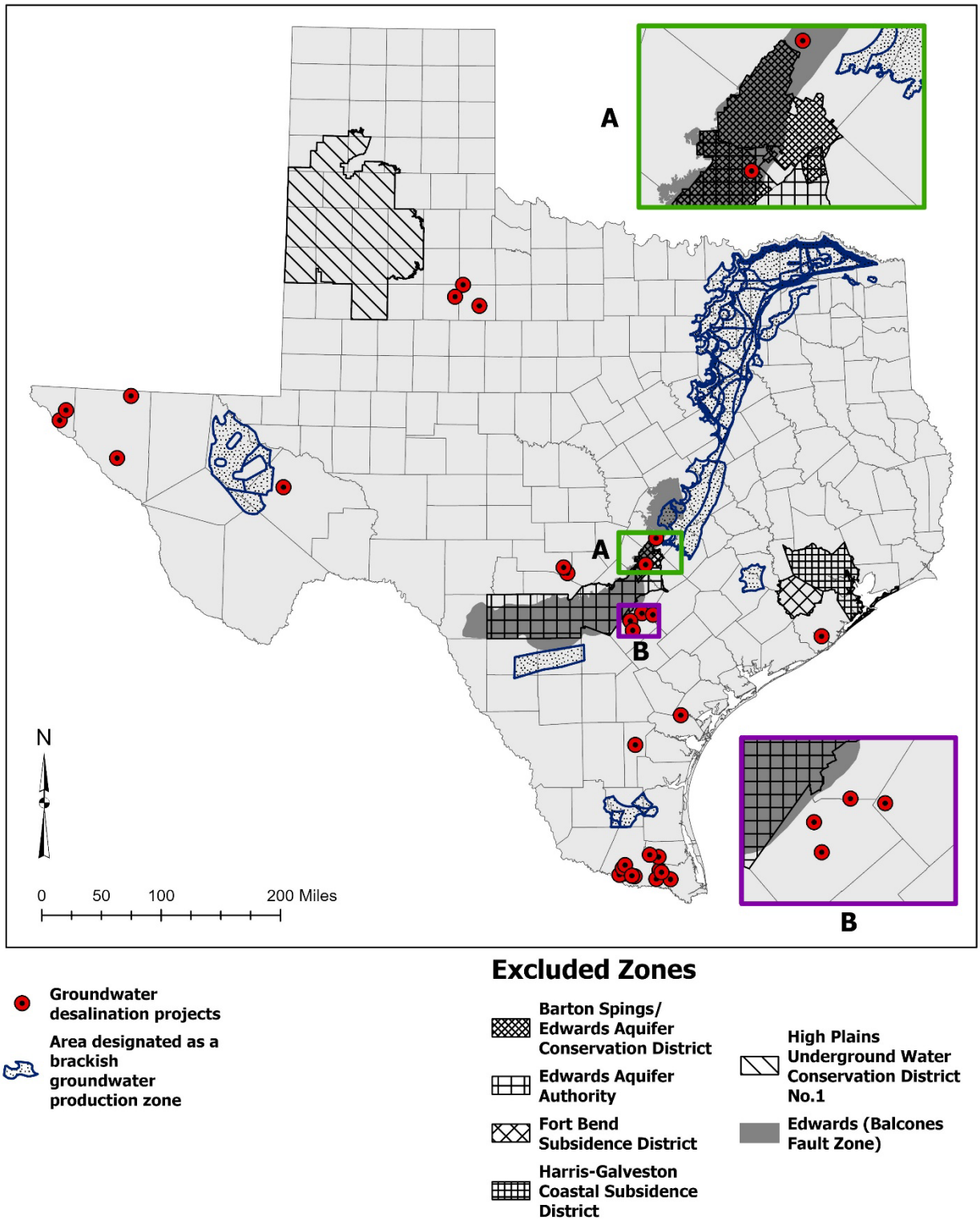

Figure 2: Location of recommended brackish groundwater desalination projects relative to brackish groundwater production zones (BGPZs).

Location of recommended desalination projects in the 2022 State Water Plan relative to designated Brackish Groundwater Production Zones

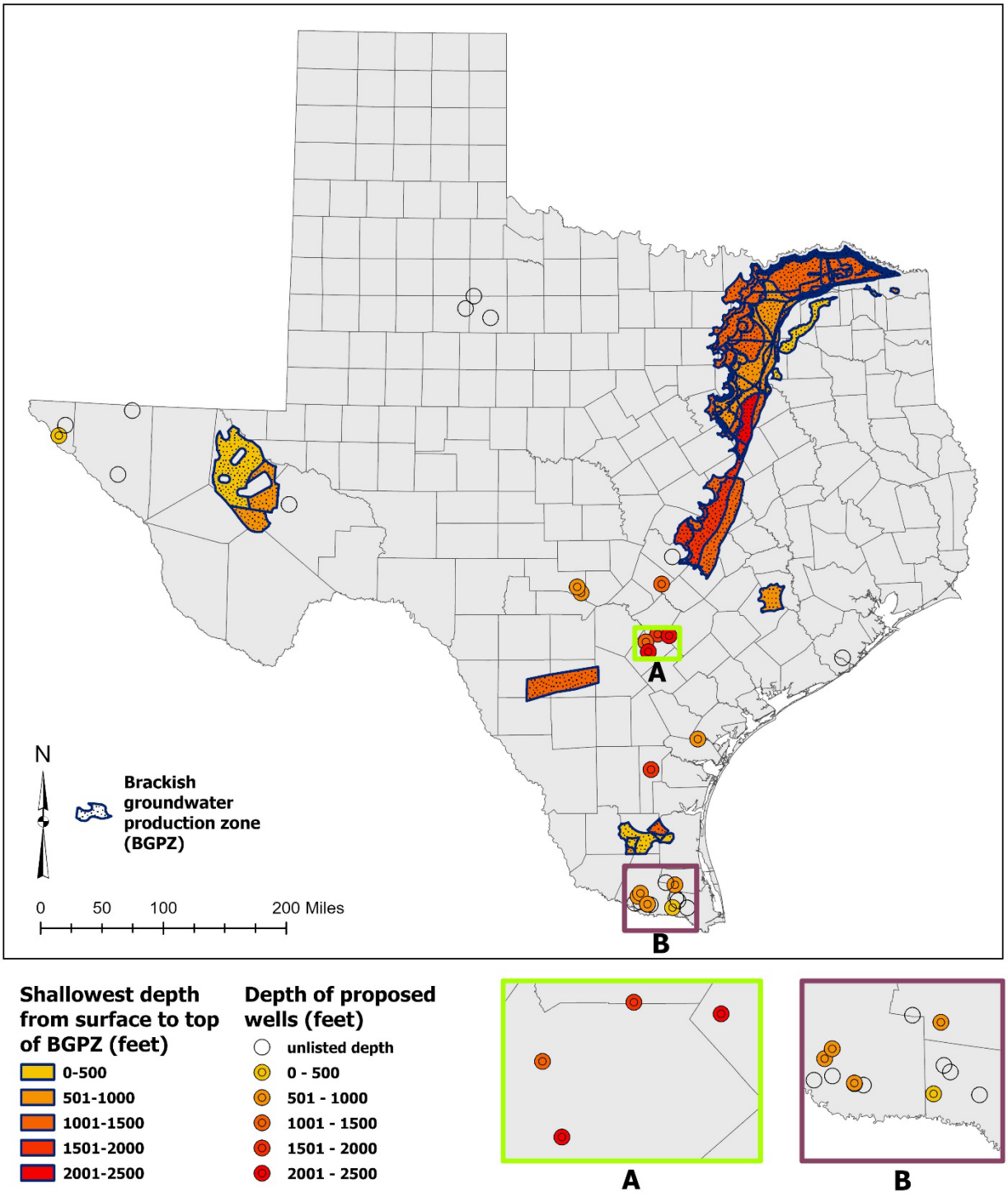

Figure 3: Depth of wells of recommended brackish groundwater desalination projects (if listed) compared to shallowest depth to the top of a brackish groundwater production zones (BGPZs).