

* Estimating groundwater use from exempt wells

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*Unless specifically noted, this presentation does not necessarily reflect official Board positions or decisions.

- Exempt wells
- Data
- How we estimate
- Unknowns
- How to improve

EXEMPT WELLS

**EXEMPT
WELLS**



**NO PERMITTING
REQUIREMENTS**

Texas Water Code exemptions

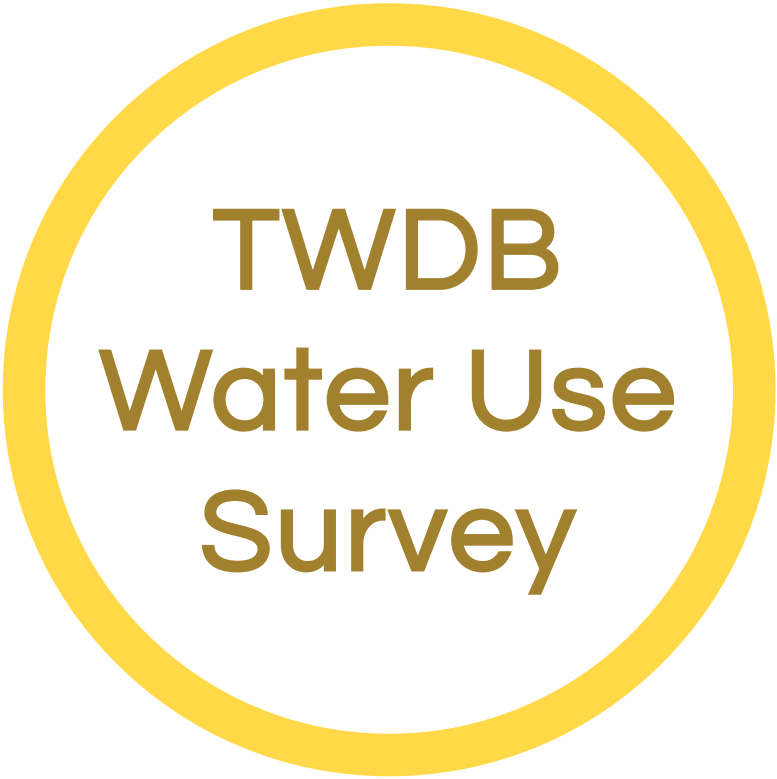
- Domestic and stock use
- Rig supply
- Mining
- Other exemptions described in district rules or enabling legislation

Why care?

- Exempt groundwater production typically not metered or reported, but still happening
- Districts need to know amount of available groundwater and amount used in district for permitting decisions

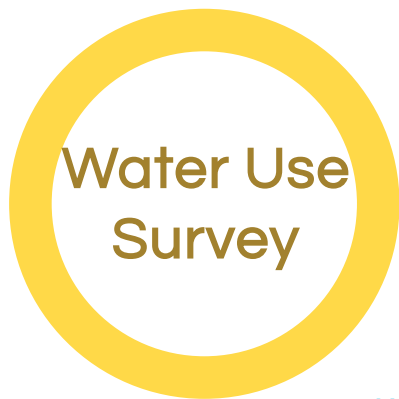
DATA FOR ESTIMATES



A large yellow circle with a thick border, centered on the page.

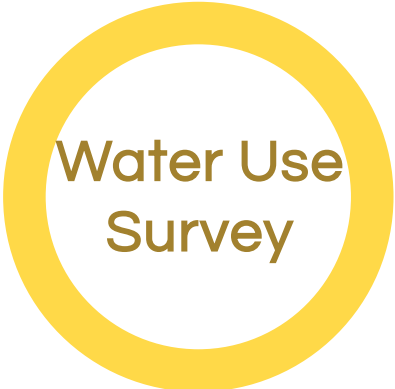
TWDB Water Use Survey

- County-Other (for domestic)
- Livestock
- Mining
- Irrigation





TWDB water demand projections



Water Use
Survey

- Population
- Livestock
- Mining
- Irrigation



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graph TD; A((TWDB Groundwater Database (GWDB))) --- B((Water Use Survey)); A --- C((Water demand projections));
```

**TWDB
Groundwater
Database
(GWDB)**

**Water Use
Survey**

**Water
demand
projections**

- Aquifer codes
- Water use classification
- Locations



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graph TD; A((Submitted Drillers Reports (SDR) Database)) --- B((Water Use Survey)); A --- C((Water demand projections)); A --- D((GWDB));
```

Submitted Drillers Reports (SDR) Database

Water Use
Survey

Water
demand
projections

GWDB

- Proposed water use
- Locations
- Well depths and screened intervals
- Borehole size



District Data

Water Use
Survey

Water
demand
projections

GWDB

SDR
Database

HOW WE ESTIMATE WITH AVAILABLE DATA



Water use data from
the last 5 years

Average percent use
from groundwater



Water use data from
the last 5 years

Average percent use
from groundwater

Projections based on
percent groundwater use
and projected demand by
type

Growth rate

Projections based on most
recent 5 years of water
use survey data, averaged



Water use data from
the last 5 years

Average percent use
from groundwater

Projections based on
percent groundwater use
and projected demand by
type


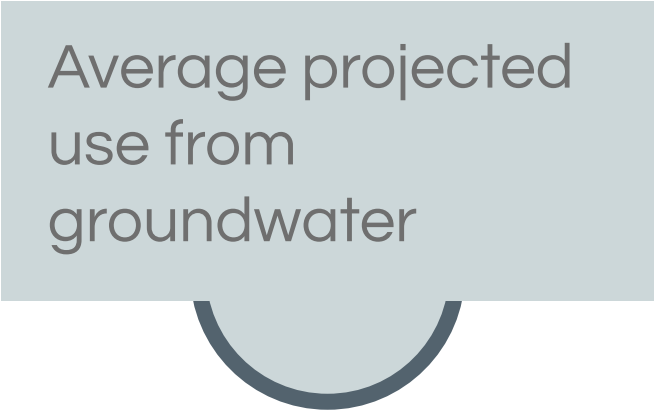
Growth rate

Projections based on most
recent 5 years of water
use survey data, averaged

Average projected use from groundwater



Average projected
use from
groundwater



Average projected
use from
groundwater

Percentage of exempt
wells from GWDB and
SDR database by
aquifer in an area

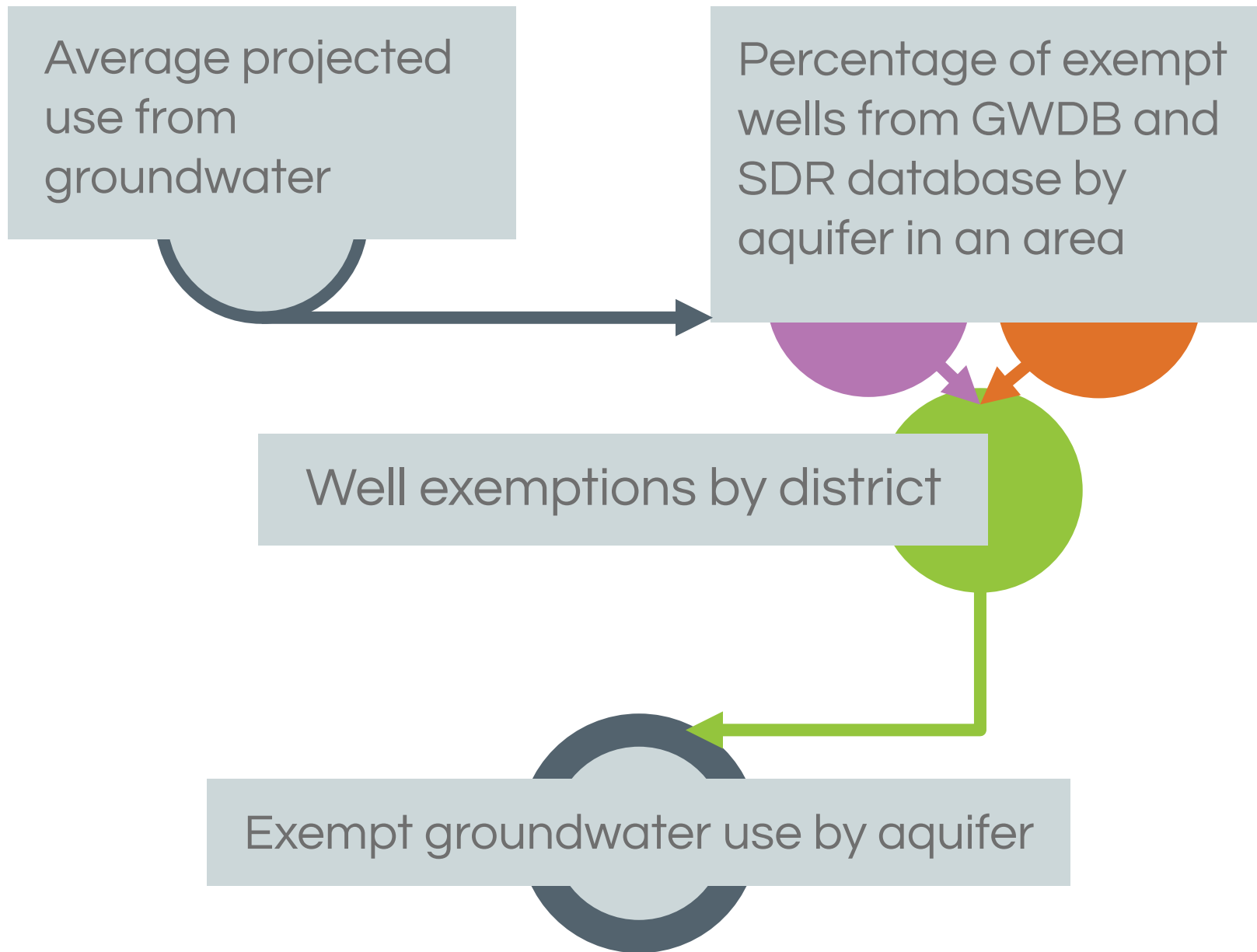


Average projected
use from
groundwater

Percentage of exempt
wells from GWDB and
SDR database by
aquifer in an area

Well exemptions by district





Exempt groundwater use
by aquifer



Exempt groundwater use
by aquifer



The diagram illustrates a process flow. On the left, a light blue rectangular box contains the text 'Exempt groundwater use by aquifer'. Below this box is a light blue semi-circle. A dark blue arrow originates from the right side of this semi-circle and points horizontally to the right. On the right side of the arrow, there is another light blue rectangular box containing the text 'District input'. Below this second box is a green semi-circle. The entire diagram is set against a white background. At the very bottom of the image, there are three horizontal bars of increasing width and decreasing height, colored in shades of blue and grey.

District input

Exempt groundwater use
by aquifer

District input

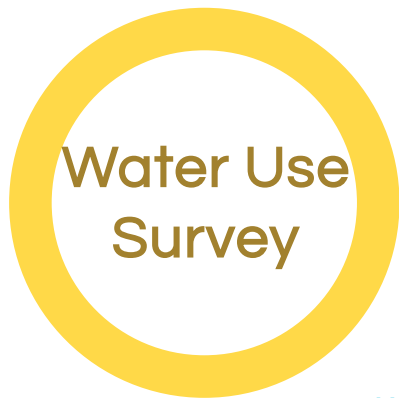
Refined exempt groundwater use by aquifer



THE GREAT UNKNOWNNS



- Not all pumping is reported in the TWDB Water Use Survey
- Data not always accurate



www.twdb.texas.gov/waterplanning/waterusesurvey/historical-pumpage.asp

- Not all wells that exist are in the TWDB Groundwater Database



- Proposed water use may not be current water use
- No aquifer picks
- Some irrigation wells may be domestic wells?



HOW TO GET BETTER ESTIMATES

- Combine stratigraphic interpretation from groundwater availability models and TWDB BRACS program with SDR information
- Look at borehole sizes for irrigation wells that may be domestic wells?



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graph TD; A((District collaboration)) --- B((Water Use Survey)); A --- C((Water demand projections)); A --- D((GWDB)); A --- E((SDR Database));
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District collaboration

Water Use
Survey

Water
demand
projections

GWDB

SDR
Database

That's all, folks!

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Texas Water Code exemptions

Domestic and stock use

"...drilling or operating a well used solely for domestic use or for providing water for livestock or poultry if the well is: A) located or to be located on a tract of land larger than 10 acres; and B) drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day." (TWC 36.117(b)(1))

Rig supply

"...drilling a water well used solely to supply water for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas provided that the person holding the permit is responsible for drilling and operating the water well and the water well is located on the same lease or field associated with the drilling rig." (TWC 36.117(b)(2))

Mining

"...drilling a water well authorized under a permit issued by the Railroad Commission of Texas under Chapter 134, Natural Resources Code, or for production of water from any well to the extent the withdrawals are required for mining activities regardless of any subsequent use of the water." (TWC 36.117(b)(3))

Other exemptions described in district rules or enabling legislation