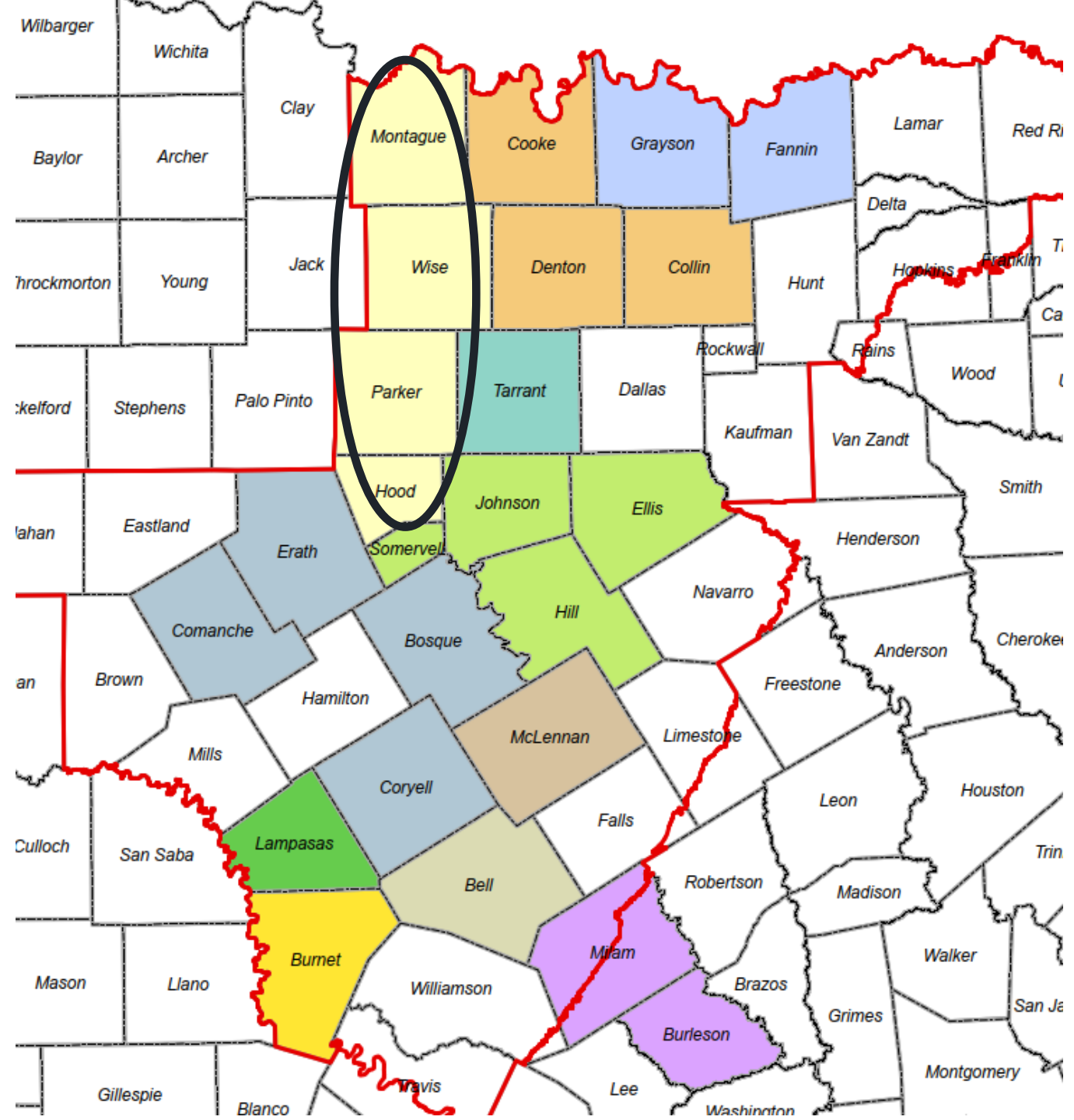
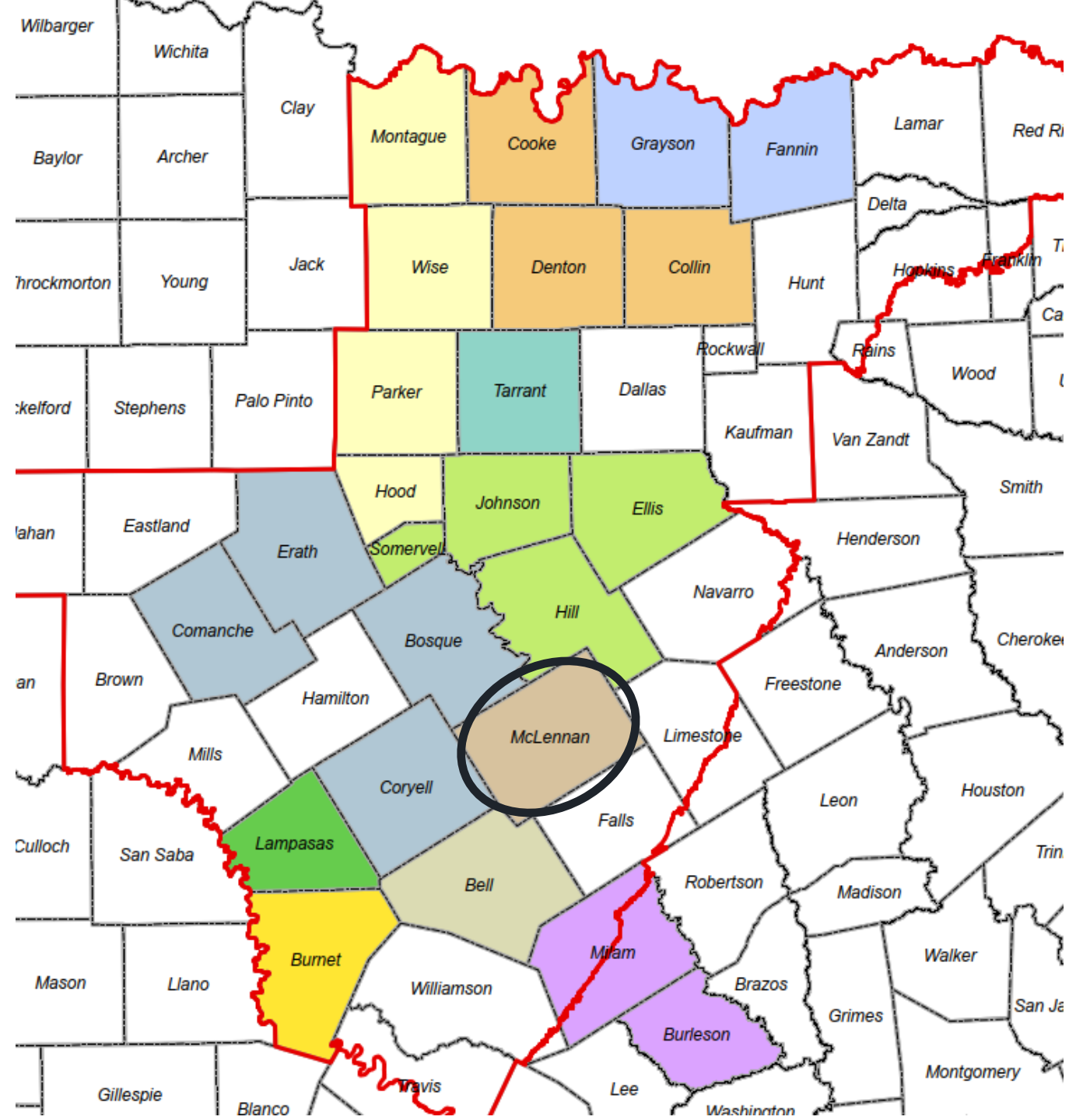


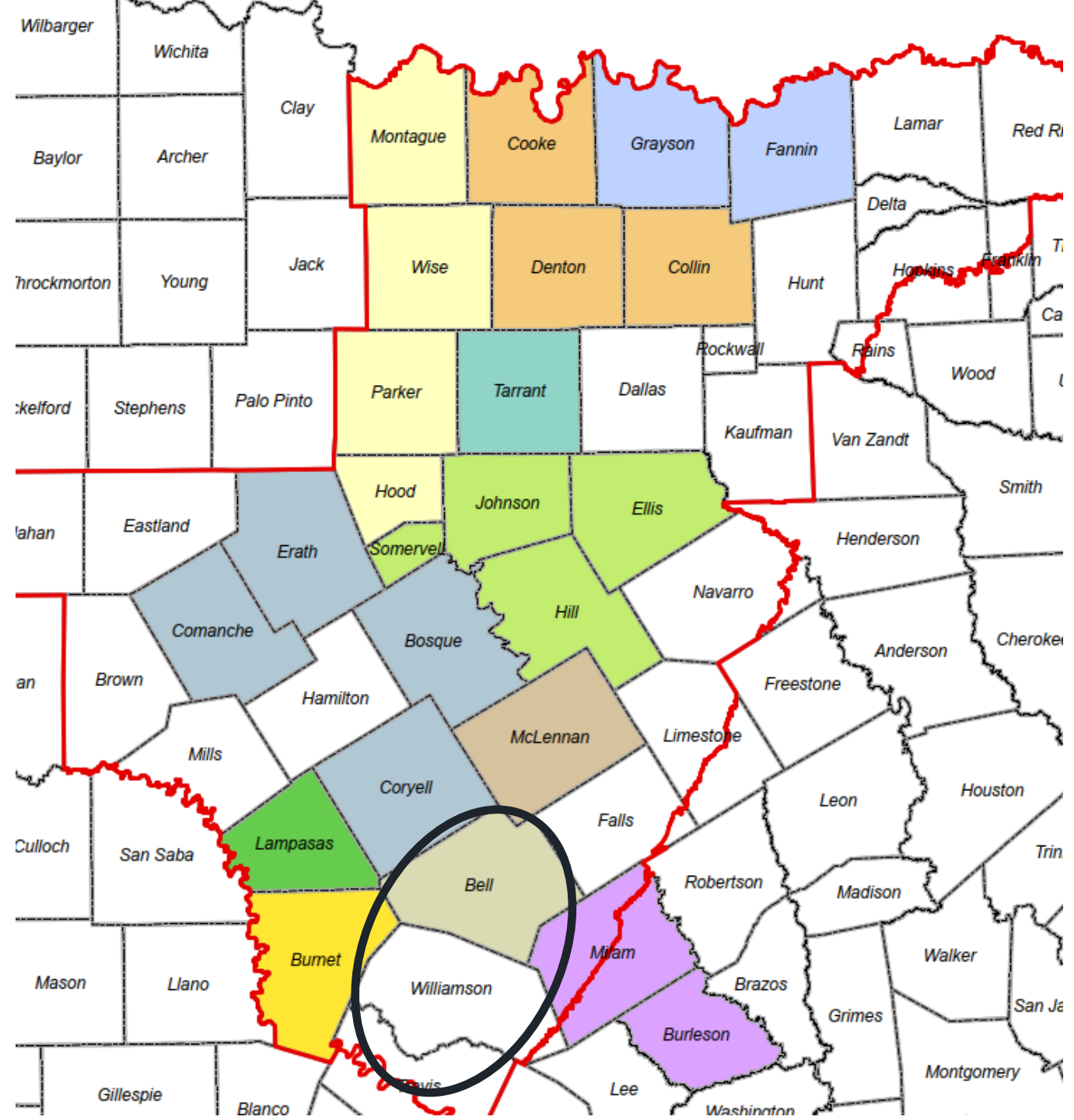
# Prairielands GCD Board Meeting

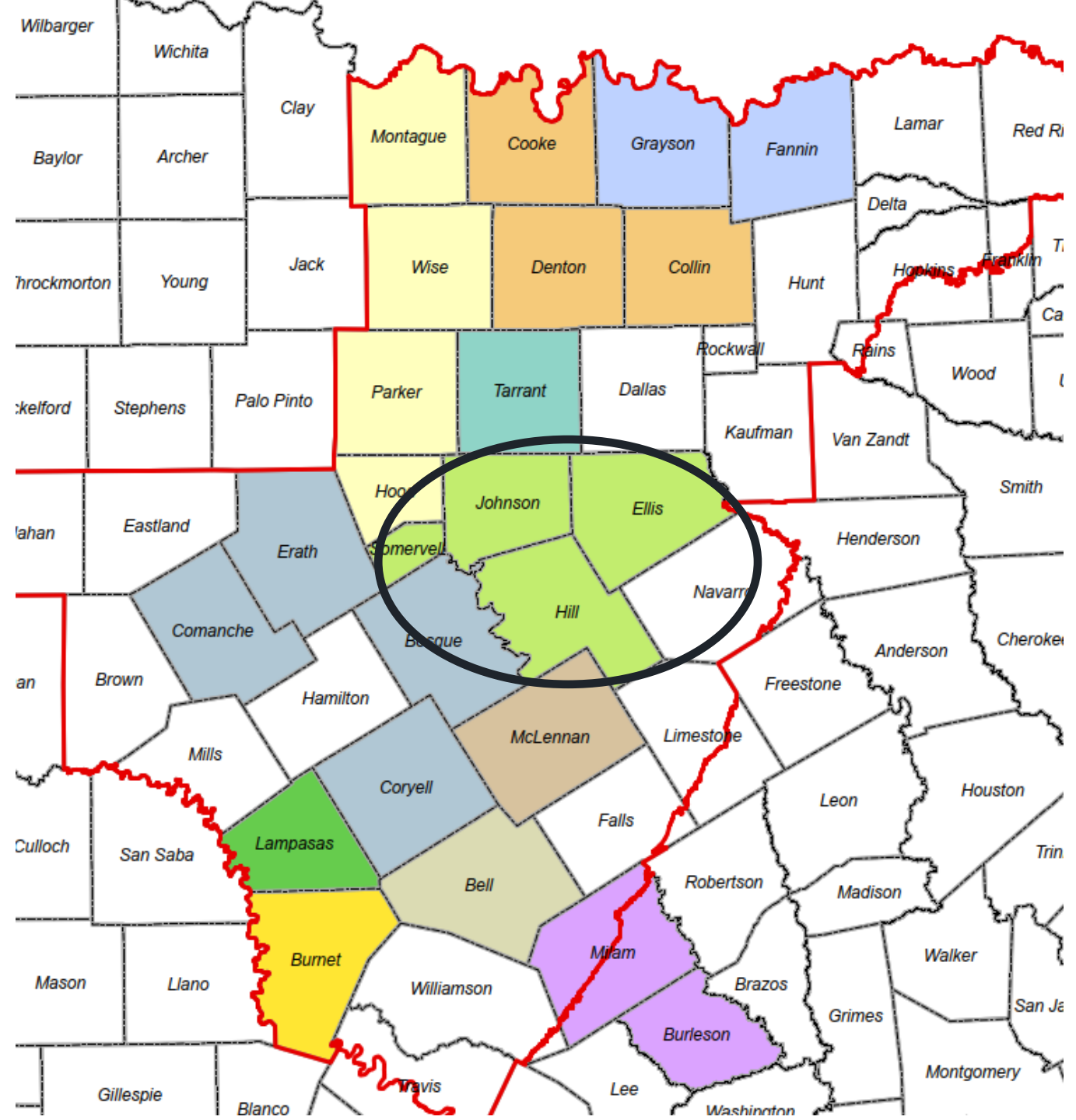
June 15, 2020

# GMA 8 Changes to pumping for proposed Run 11









# Run 11 Results - DFC

💧 DFC differences between Run 10 and Run 11 (compare 2070 results)

💧 Blue negative values indicate higher water levels

💧 Red positive values indicate greater drawdowns

## Change in Drawdown in 2070 (Difference between Run 10 and Run 11)

| County         | Woodbine | Paluxy | Glen Rose | Twin Mnts | Travis Peak | Hensell | Hosston | Antlers |
|----------------|----------|--------|-----------|-----------|-------------|---------|---------|---------|
| <b>Ellis</b>   | 3        | 6      | 13        | 66        | 57          | 13      | 63      | -       |
| Erath          | -        | 0      | 0         | 1         | 4           | -1      | 2       | 1       |
| Falls          | -        | 8      | 15        | -         | 33          | 16      | 34      | -       |
| Fannin         | 0        | 3      | 4         | 9         | 6           | -       | -       | 4       |
| Grayson        | 0        | 3      | 4         | 10        | -           | -       | -       | 5       |
| Hamilton       | -        | 0      | 0         | -         | 1           | 0       | 2       | -       |
| <b>Hill</b>    | 1        | 2      | 9         | -         | 55          | 17      | 64      | -       |
| Hunt           | 3        | 4      | 5         | 10        | 8           | -       | -       | -       |
| <b>Johnson</b> | 0        | 1      | 3         | 23        | 43          | -11     | 86      | -       |
| Kaufman        | 9        | 13     | 16        | 25        | 28          | 20      | 30      | -       |
| Lamar          | 0        | 1      | 1         | -         | 2           | -       | -       | 2       |
| Lampasas       | -        | 0      | 0         | -         | 0           | 0       | 0       | -       |
| Limestone      | -        | 7      | 19        | -         | 27          | 20      | 28      | -       |

Blue negative values indicate higher water levels

Red positive values indicate greater drawdowns



## Change in Drawdown in 2070 (Difference between Run 10 and Run 11)

| County     | Woodbine | Paluxy | Glen Rose | Twin Mnts | Travis Peak | Hensell | Hosston | Antlers |
|------------|----------|--------|-----------|-----------|-------------|---------|---------|---------|
| McLennan   | 0        | 3      | 9         | -         | 26          | 15      | 30      | -       |
| Milam      | -        | -      | 18        | -         | 54          | 20      | 54      | -       |
| Mills      | -        | 0      | 0         | -         | 2           | 0       | 0       | -       |
| Navarro    | 6        | 6      | 20        | -         | 36          | 26      | 35      | -       |
| Red River  | 0        | 0      | 0         | -         | 1           | -       | -       | 0       |
| Rockwall   | 5        | 9      | 11        | 20        | -           | -       | -       | -       |
| Somervell  | -        | -1     | -1        | 18        | 11          | -10     | 35      | -       |
| Tarrant    | 0        | 1      | 9         | 26        | -           | -       | -       | 26      |
| Taylor     | -        | -      | -         | -         | -           | -       | -       | 0       |
| Travis     | -        | -      | 0         | -         | 68          | 12      | 69      | -       |
| Williamson | -        | -      | -3        | -         | 39          | 10      | 40      | -       |

Blue negative values indicate higher water levels

Red positive values indicate greater drawdowns



## Run 11 Results – DFC Values for Run 11

- DFC values are calculated the same as Run 10
- DFC is taken as the average drawdown from the start of the model run (2010) until the end of the model run (2080)
- The DFC values are averaged over each county and GCD

# Run 11 Results – Drawdown (2010-2080)

| County   | Woodbine | Paluxy | Glen Rose | Twin Mnts | Travis Peak | Hensell | Hosston | Antlers |
|----------|----------|--------|-----------|-----------|-------------|---------|---------|---------|
| Bell     | -        | 17     | 83        | 0         | 333         | 145     | 375     | 0       |
| Bosque   | -        | 6      | 53        | 0         | 189         | 139     | 232     | 0       |
| Brown    | -        | 2      | 1         | 0         | 2           | 1       | 1       | 2       |
| Burnet   | 0        | 0      | 2         | 0         | 19          | 7       | 21      | 0       |
| Callahan | -        | 0      | 0         | 0         | 0           | 0       | 0       | 1       |
| Collin   | 482      | 729    | 366       | 560       | -           | 0       | 0       | 596     |
| Comanche | -        | 2      | 2         | 0         | 4           | 2       | 3       | 12      |
| Cooke    | 2        | 0      | 0         | 0         | 0           | 0       | 0       | 191     |
| Coryell  | -        | 5      | 15        | 0         | 107         | 70      | 141     | 0       |
| Dallas   | 137      | 346    | 288       | 515       | 415         | 362     | 419     | 0       |
| Delta    | -        | 279    | 198       | 0         | 202         | 0       | 0       | 0       |
| Denton   | 20       | 558    | 367       | 752       | 0           | 0       | 0       | 416     |
| Eastland | -        | 0      | 0         | 0         | 0           | 0       | 0       | 4       |

# Run 11 Results – Drawdown (2010-2080)

| County         | Woodbine | Paluxy | Glen Rose | Twin Mnts | Travis Peak | Hensell | Hosston | Antlers |
|----------------|----------|--------|-----------|-----------|-------------|---------|---------|---------|
| <b>Ellis</b>   | 76       | 128    | 220       | 413       | 380         | 290     | 390     | 0       |
| Erath          | -        | 6      | 6         | 8         | 25          | 12      | 35      | 14      |
| Falls          | -        | 159    | 238       | 0         | 505         | 296     | 511     | 0       |
| Fannin         | 259      | 709    | 305       | 400       | 291         | 0       | 0       | 269     |
| Grayson        | 163      | 943    | 364       | 445       | 0           | 0       | 0       | 364     |
| Hamilton       | -        | 2      | 4         | 0         | 26          | 14      | 38      | 0       |
| <b>Hill</b>    | 20       | 45     | 149       | 0         | 365         | 211     | 413     | 0       |
| Hunt           | 631      | 610    | 326       | 399       | 350         | 0       | 0       | 0       |
| <b>Johnson</b> | 4        | -57    | 66        | 184       | 235         | 120     | 329     | 0       |
| Kaufman        | 242      | 311    | 305       | 427       | 372         | 349     | 345     | 0       |
| Lamar          | 42       | 100    | 107       | 0         | 125         | 0       | 0       | 132     |
| Lampasas       | -        | 1      | 1         | 0         | 6           | 1       | 11      | 0       |
| Limestone      | -        | 199    | 301       | 0         | 433         | 214     | 445     | 0       |

## Run 11 Results – Drawdown (2010-2080)

| County     | Woodbine | Paluxy | Glen Rose | Twin Mnts | Travis Peak | Hensell | Hosston | Antlers |
|------------|----------|--------|-----------|-----------|-------------|---------|---------|---------|
| McLennan   | 6        | 41     | 148       | 0         | 504         | 242     | 582     | 0       |
| Milam      | 0        | 0      | 241       | 0         | 412         | 261     | 412     | 0       |
| Mills      | -        | 1      | 1         | 0         | 9           | 2       | 13      | 0       |
| Navarro    | 110      | 139    | 266       | 0         | 343         | 295     | 343     | 0       |
| Red River  | 2        | 24     | 40        | 0         | 57          | 0       | 0       | 15      |
| Rockwall   | 275      | 433    | 343       | 466       | -           | 0       | 0       | 0       |
| Somervell  | -        | 4      | 4         | 50        | 64          | 17      | 120     | 0       |
| Tarrant    | 6        | 105    | 163       | 348       | 0           | 0       | 0       | 177     |
| Taylor     | -        | 0      | 0         | 0         | 0           | 0       | 0       | 0       |
| Travis     | 0        | 0      | 83        | 0         | 219         | 68      | 226     | 0       |
| Williamson | 0        | 0      | 78        | 0         | 220         | 89      | 225     | 0       |
| McLennan   | 6        | 41     | 148       | 0         | 504         | 242     | 582     | 0       |

## GMA 8 Path Forward

- Next GMA 8 meeting is August 7, 2020
- Discussion and possible action regarding Run 11 results be the Proposed DFCs for GMA 8 for the Northern Trinity and Woodbine Aquifers
- Discussion may also include:
  - *Possible minor changes*
  - *Appropriate statement of differences to be included with submission to TWDB*
  - *Other aquifers, nonrelevant aquifers, etc.*
- Today: asking for acknowledgement that the Prairielands GMA 8 representative may need to make decisions regarding minor changes to the proposed DFCs or other statements at the next GMA 8 meeting

# Thank you!

*wsp.com*



## Agenda Item 8

💧 Run 11 – Update of NTWGAM DFC/MAG Run

💧 WSP has received pumping updates from:

- *Upper Trinity GCD, Southern Trinity GCD, Prairielands GCD, Central Texas GCD (funded thru GMA 8 contract)*
- *Clearwater UWCD, Travis and Williamson County (funded separately by Clearwater UWCD)*



# Summary of Run 11

💧 MAGs from this round of planning will be used in 2027 State Water Plan (2030-2080)

## 💧 Run 11

- Begins in 2010 (no change)
- Model extended to 2080
- 2070 input will be used for 2071-2080
- Each year is 365.25 days to remove leap year change in MAG
- Pumping has been updated as provided by GCDs
- One drought of record included from 2078-2080
- WSP will provide files to TWDB as early as possible

# Upper Trinity GCD Pumping

| Aquifer        | O/D     | County   | Run 10 AFY | Adjustment | Run 11 AFY |
|----------------|---------|----------|------------|------------|------------|
| Glen Rose      | Outcrop | Hood     | 654        | 138        | 792        |
| Glen Rose      | Downdip | Hood     | 103        | 22         | 125        |
| Paluxy         | Outcrop | Hood     | 159        | 0          | 159        |
| Twin Mountains | Outcrop | Hood     | 3,674      | 1,351      | 5,025      |
| Twin Mountains | Downdip | Hood     | 7,854      | 2,914      | 10,768     |
| Antlers        | Outcrop | Montague | 3,878      | 2,236      | 6,114      |
| Antlers        | Outcrop | Parker   | 2,899      | 6          | 2,905      |
| Glen Rose      | Outcrop | Parker   | 2,290      | 1,394      | 3,684      |
| Glen Rose      | Downdip | Parker   | 874        | 532        | 1,406      |
| Paluxy         | Outcrop | Parker   | 2,609      | 5          | 2,614      |
| Paluxy         | Downdip | Parker   | 50         | 0          | 50         |
| Twin Mountains | Outcrop | Parker   | 1,074      | 220        | 1,294      |
| Twin Mountains | Downdip | Parker   | 2,083      | 444        | 2,527      |
| Antlers        | Outcrop | Wise     | 7,702      | 1,404      | 9,106      |
| Antlers        | Downdip | Wise     | 2,058      | 381        | 2,439      |
|                |         | Total    | 37,961     | 11,048     | 49,009     |

# Southern Trinity GCD pumping

| Year      | Hosston Run 10 AFY | Adjustement for Hosston | Hosston Run 11 AFY |
|-----------|--------------------|-------------------------|--------------------|
| 2010      | 15,937             | -4,135                  | 11,802             |
| 2011      | 15,937             | -4,635                  | 11,302             |
| 2012      | 15,937             | -5,361                  | 10,576             |
| 2013      | 15,937             | -6,978                  | 8,959              |
| 2014      | 15,937             | -8,424                  | 7,513              |
| 2015      | 15,937             | -7,565                  | 8,372              |
| 2016      | 15,937             | -7,074                  | 8,863              |
| 2017      | 15,937             | -7,929                  | 8,008              |
| 2018      | 15,937             | -8,130                  | 7,807              |
| 2019      | 15,937             | -8,135                  | 7,802              |
| 2020-2080 | 15,937             | 0                       | 15,937             |

# Prairielands GCD Pumping

| Aquifer  | Run 10 AFY | Adjustment | Run 11 AFY |
|----------|------------|------------|------------|
| Hensell  | 3,603      | -3,206     | 397        |
| Pearsall | 98         | 1,848      | 1,946      |
| Hosston  | 13,237     | 1,358      | 14,595     |
| Total    | 16,938     | 0          | 16,938     |

# Clearwater UWCD Pumping

| Aquifer   | Run 10 AFY | Adjustment | Run 11 AFY |
|-----------|------------|------------|------------|
| Glen Rose | 972        | -697       | 275        |
| Hensell   | 1,097      | 3          | 1,100      |
| Hosston   | 7,179      | 721        | 7,900      |
| Total     | 9,248      | 27         | 9,275      |

# Central Texas GCD Pumping

| Aquifer   | Run 10 AFY | Adjustment | Run 11 AFY |
|-----------|------------|------------|------------|
| Glen Rose | 424        | -276       | 148        |
| Hensell   | 1,891      | 773        | 2,664      |
| Hosston   | 1,381      | -493       | 888        |
| Total     | 3,696      | 4          | 3,700      |

# Travis County Pumping

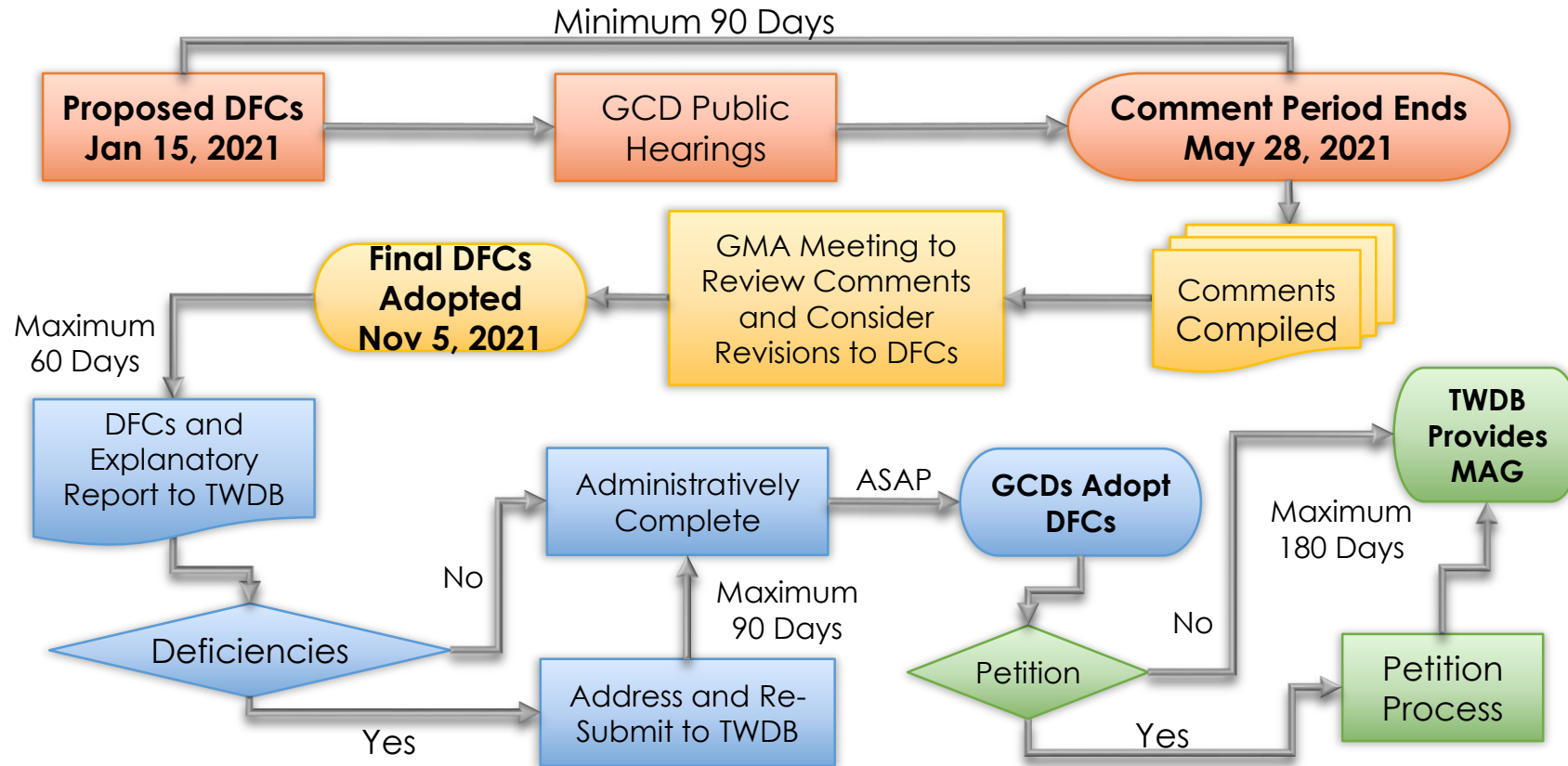
| Aquifer   | Run 10 AFY | Adjustment | Run 11 AFY |
|-----------|------------|------------|------------|
| Glen Rose | 973        | -873       | 100        |
| Hensell   | 1,144      | 1,156      | 2,300      |
| Hosston   | 2,799      | 1,401      | 4,200      |
| Total     | 4,916      | 1,684      | 6,600      |

# Williamson County Pumping

| Aquifer   | Run 10 AFY | Adjustment | Run 11 AFY |
|-----------|------------|------------|------------|
| Glen Rose | 689        | -539       | 150        |
| Hensell   | 752        | 848        | 1,600      |
| Hosston   | 1,934      | -184       | 1,750      |
| Total     | 3,375      | 125        | 3,500      |



# Anticipated Timeline for GMA 8 DFC Process



# DFC Process

(TWC Sec. 36.108 & 31 TAC Ch. 356)

