# Water System Overview 2011

## City of Amarillo

Every Drop Counts.

City of Amarillo • www.amarillo.gov

# Water 101

## How much water is used by the following:

- Human? 175 gallons per day
- Cow? 12 gallons per day
- Corn? 510,000 gallons per acre

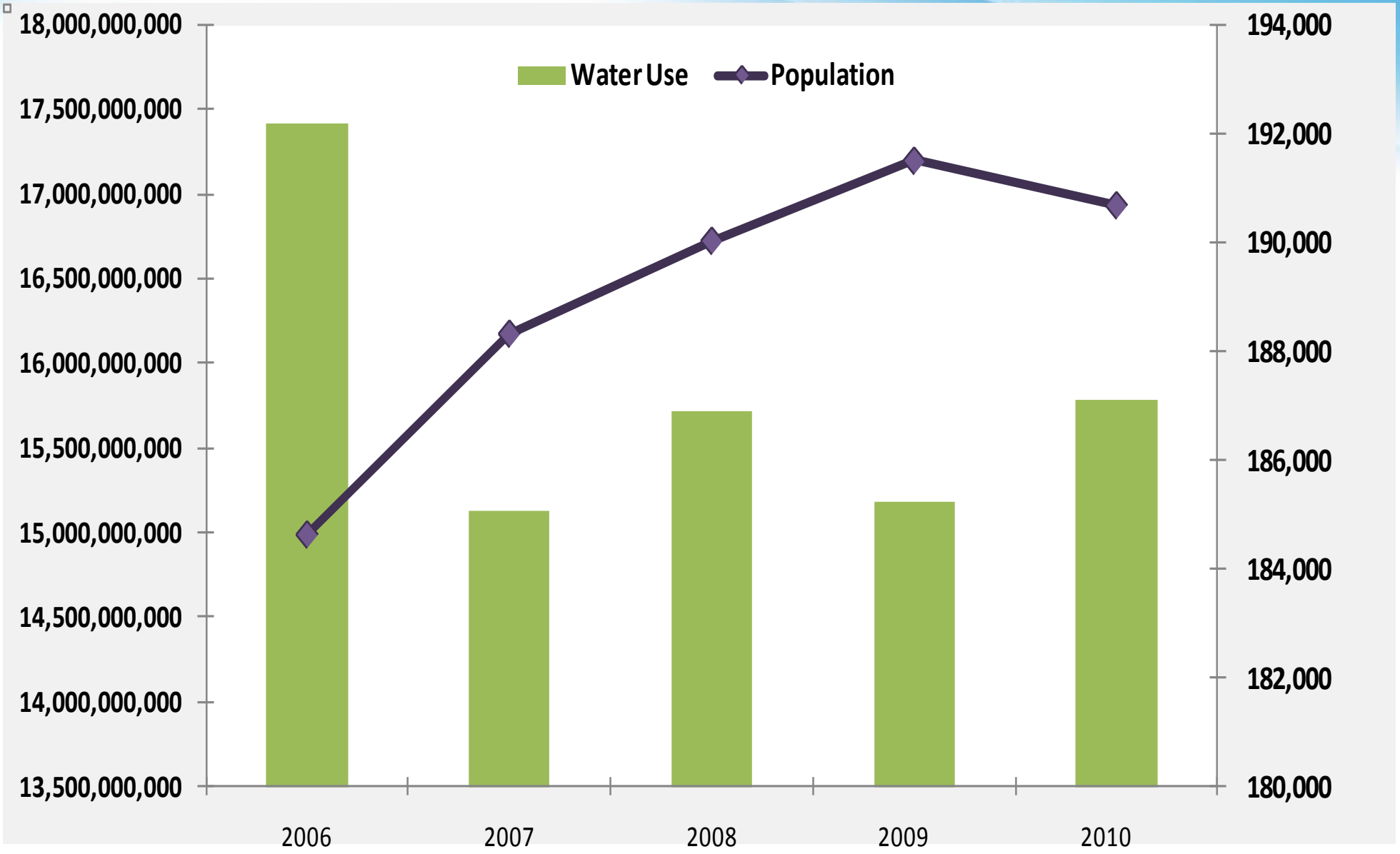
## How much water is in an acre-foot?

- Enough to cover one acre with one foot of water
- 325,851 gallons
- Enough for one human for 5 years

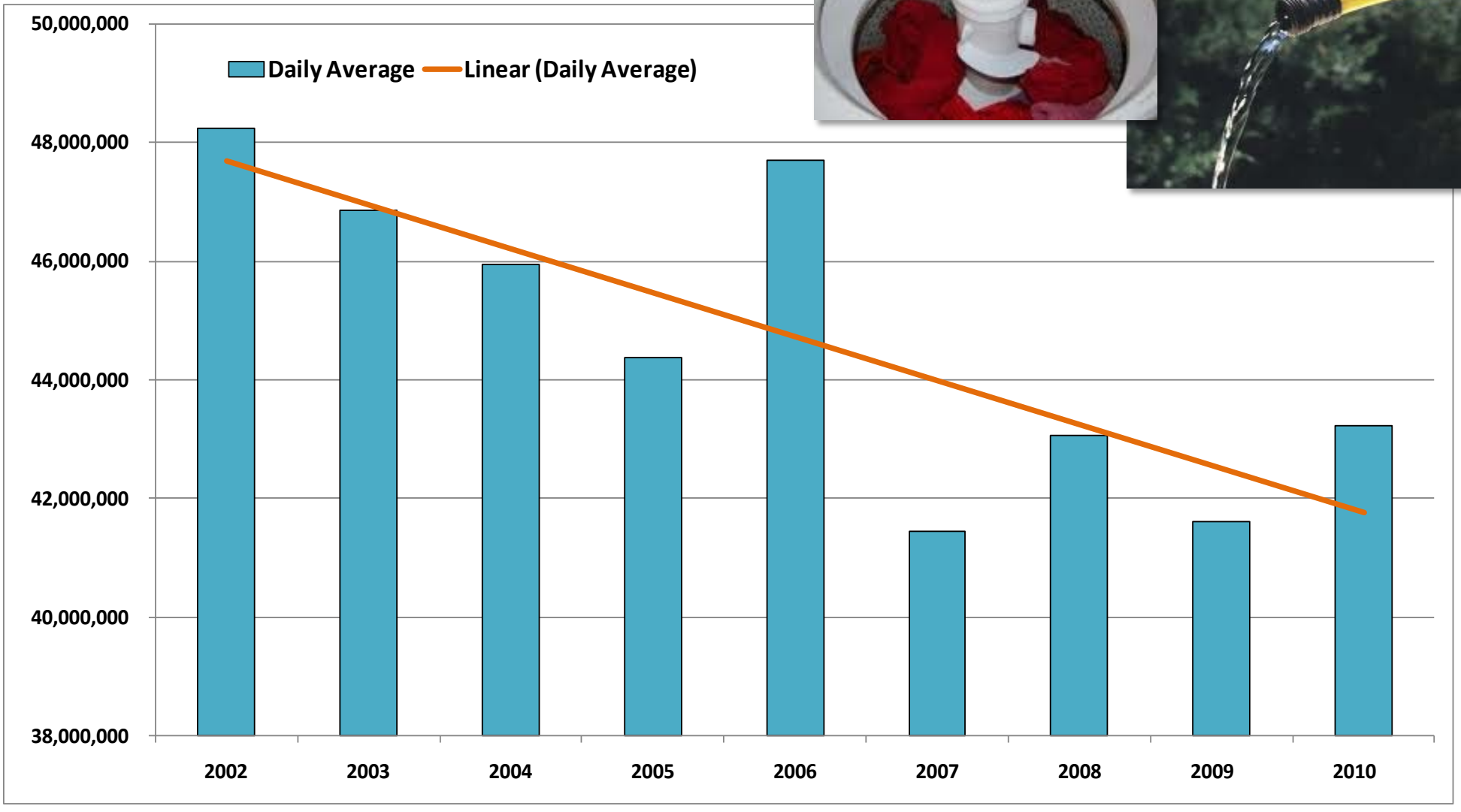
## GPM/MGD?

- At 700 gallons per minute, a well would make 1 million gallons per day.

# Annual (gallons) vs. Population



# Daily Water Use (gallons)



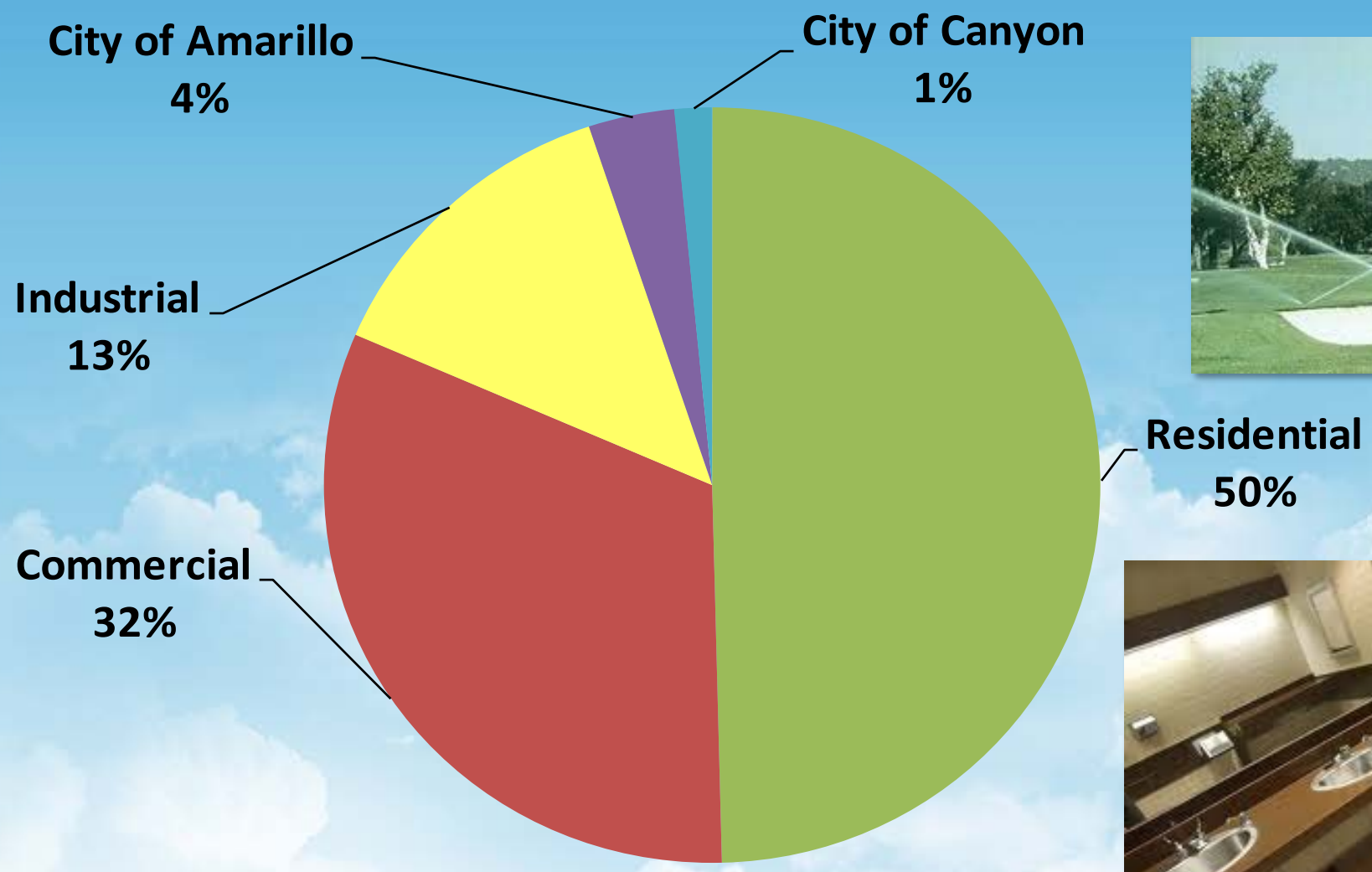
# Facts & Figures – Water Use

- Amarillo's Daily Water use (2010):
  - 43,230,137 gallons or 133 acre-feet
- Amarillo's Annual Water use (2010):
  - 15,779,000,000 gallons or 48,424 acre-feet (total use)
  - 6,929,884,000 gallons or 21,267 acre-feet (residential )

That's Enough water to:

- Cover a football field 9 miles high
- Cover the City 9" deep

# Water Use by Category - 2009



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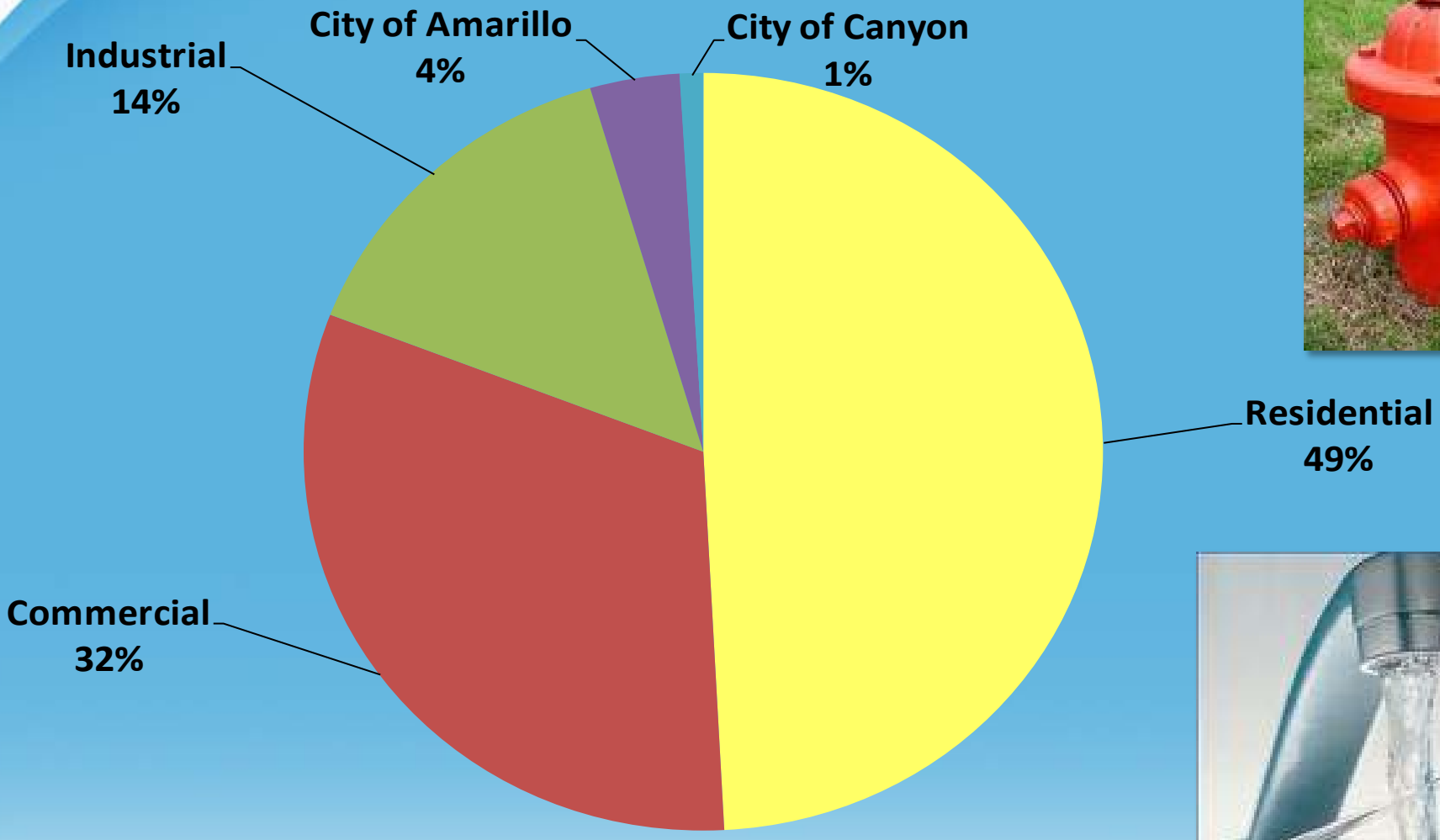
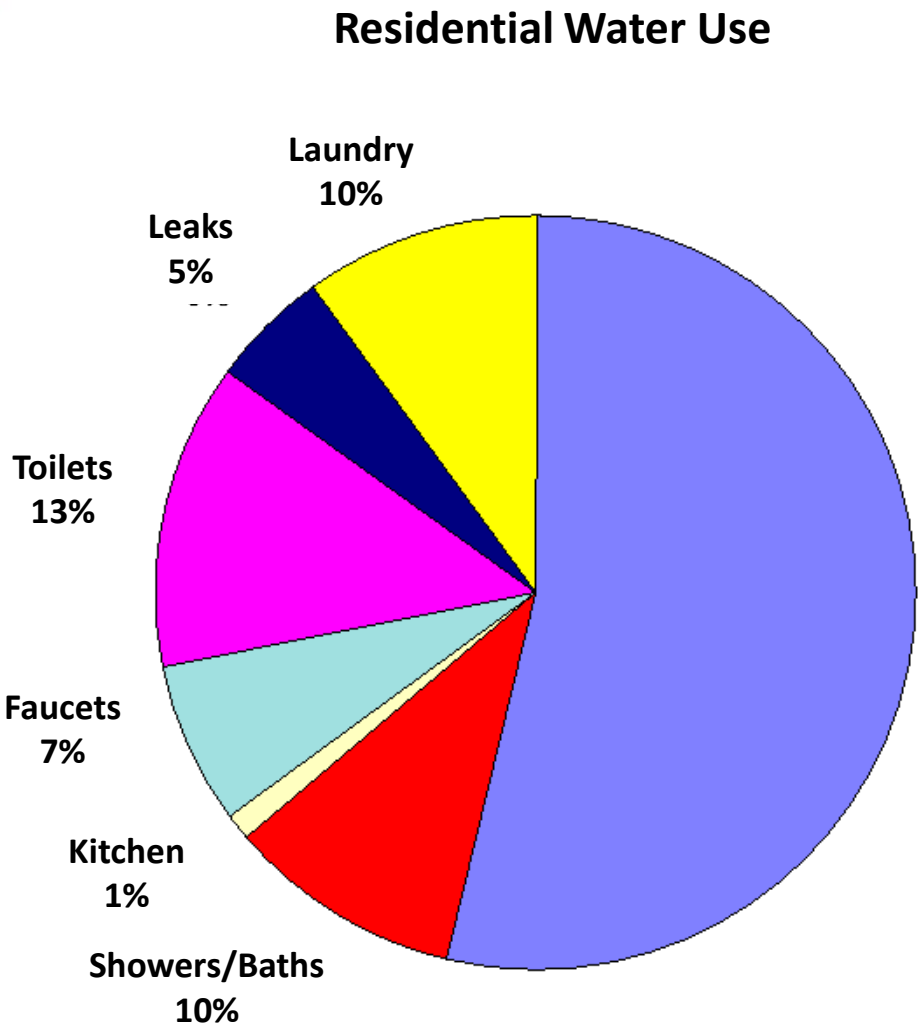
# Water Use by Category - 2010

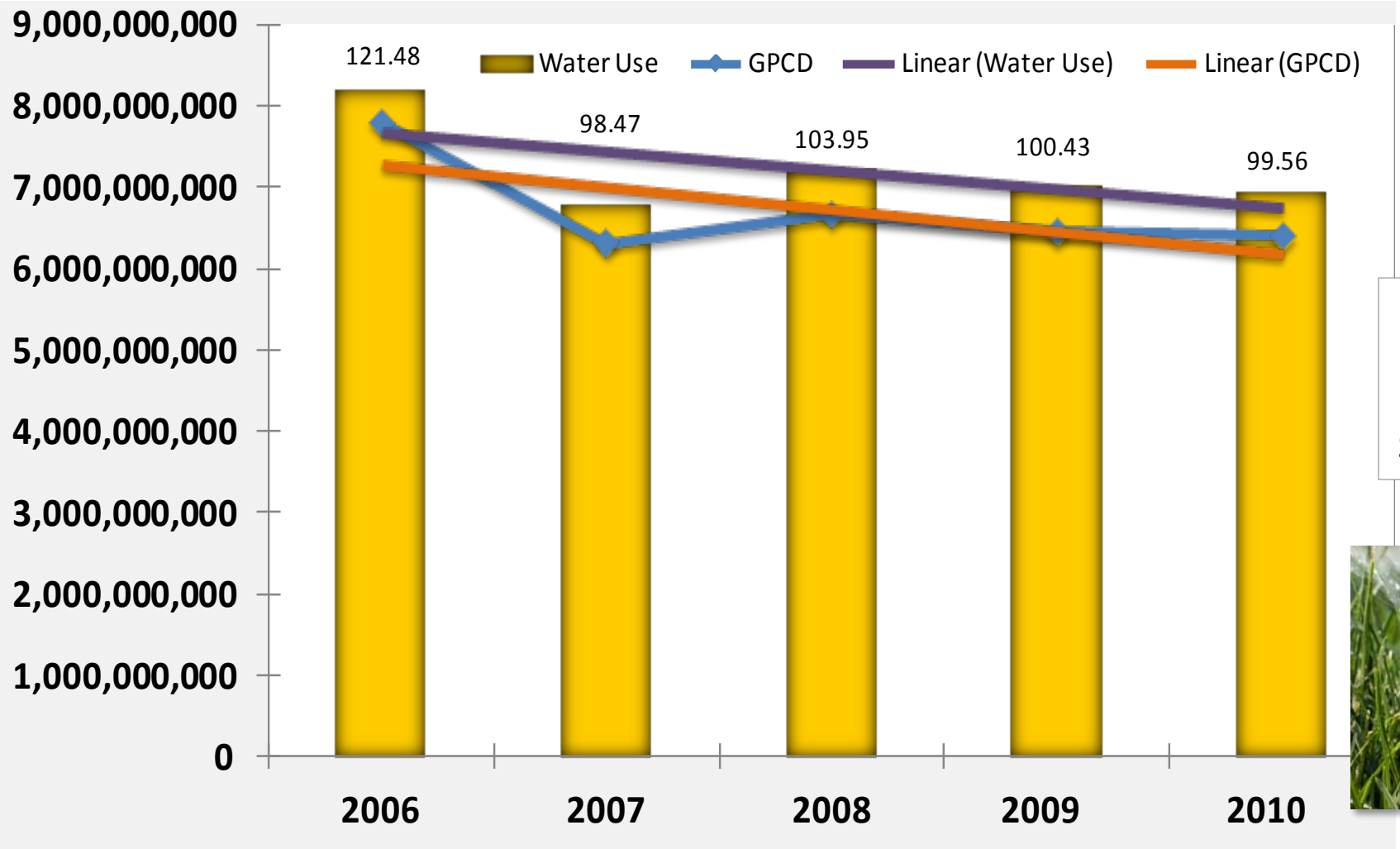


# Inside vs. Outside Watering

## from American Water Works Association



# Residential Water Use & GPCD Trendlines




Note: GPCD Based on Residential System Use Only

# Conservation Efforts

- **Progressive Block Rate Structure**
  - **For residential and commercial irrigation use**
- **Reuse of wastewater effluent is saving 200 to 250 billion gallons of water from being drawn from the aquifer.**
- **Every Drop Counts**
  - **Don't let it run.**
  - **Fix the drip.**
  - **Close the hose.**
  - **Irrigate wisely.**
  - **Check the plumbing.**
  - **Take a 5 minute shower.**
  - **Teach the community.**

Every Drop Counts.

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# Amarillo's Projects - Today

- Water System Projects
  - Potter County Well Field – August
    - Well Field permitted at 24,900 acre-feet/yr
    - Requires 19 Miles of 42" & 48" Transmission & 21 Miles of Collection Pipelines, One 20 mgd pump station and 21 wells
    - Accommodates Growth and allows Rotation of Carson County Field
    - Approx $89 million project
    - Serves as current and mid-term source
    - Serves to eliminate or reduce Lake Meredith Reliance
  - CRMWA Phase III Well Field – Operational
    - Amarillo is approximately 40% "owner" of CRMWA groundwater resources
    - Further Reduce Lake Meredith Reliance
    - Serves as current and mid-term source

# Amarillo's Projects – Tomorrow

- Water System Projects
  - New Combined Pump Station at Osage Water Treatment Plant
    - Provides Ability to Deliver Maximum Capacity to System
    - Received ARRA 0% Stimulus Funding through TWDB
  - Continued Replacements for Carson County Well Field
    - Extends Life of Investment in the Well Field
    - Ensures Continued Firm Delivery Rates
    - Can Be Balanced Against Potter County Well Field
  - Continued Redevelopment of SW/Palo Duro Field
    - Extends Life of Investment in Well Field
    - Increases Delivery Rates
    - Serves against Peak Day Demands

# Water Supply 2011

- 2010 Total Usage = 43.2 mgd gallons
- 2010 Daily Spread = 19 mgd to 76.4 mgd
- 2011 Planned Need = 76.4 mgd (based on 2010 Peak Demand)
- 2011 Supplies Available
  - CRMWA – 25.7 mgd Wells
    - 5 mgd Lake (June – August)
    - 30.7 mgd Total
  - City of Amarillo
    - 38 mgd Carson County (2009 v. 2010 reduction)
    - 10 mgd Southwest Wellfield (based on current projects)
    - 1 mgd Santa Rosa
    - 49 mgd Total
  - City Other
    - 500 million gallon storage reservoir (up to 30 mgd)
    - 6 mgd Potter County Wellfield (short term)

# Water Rights and Supplies

City of Amarillo

Every Drop Counts.

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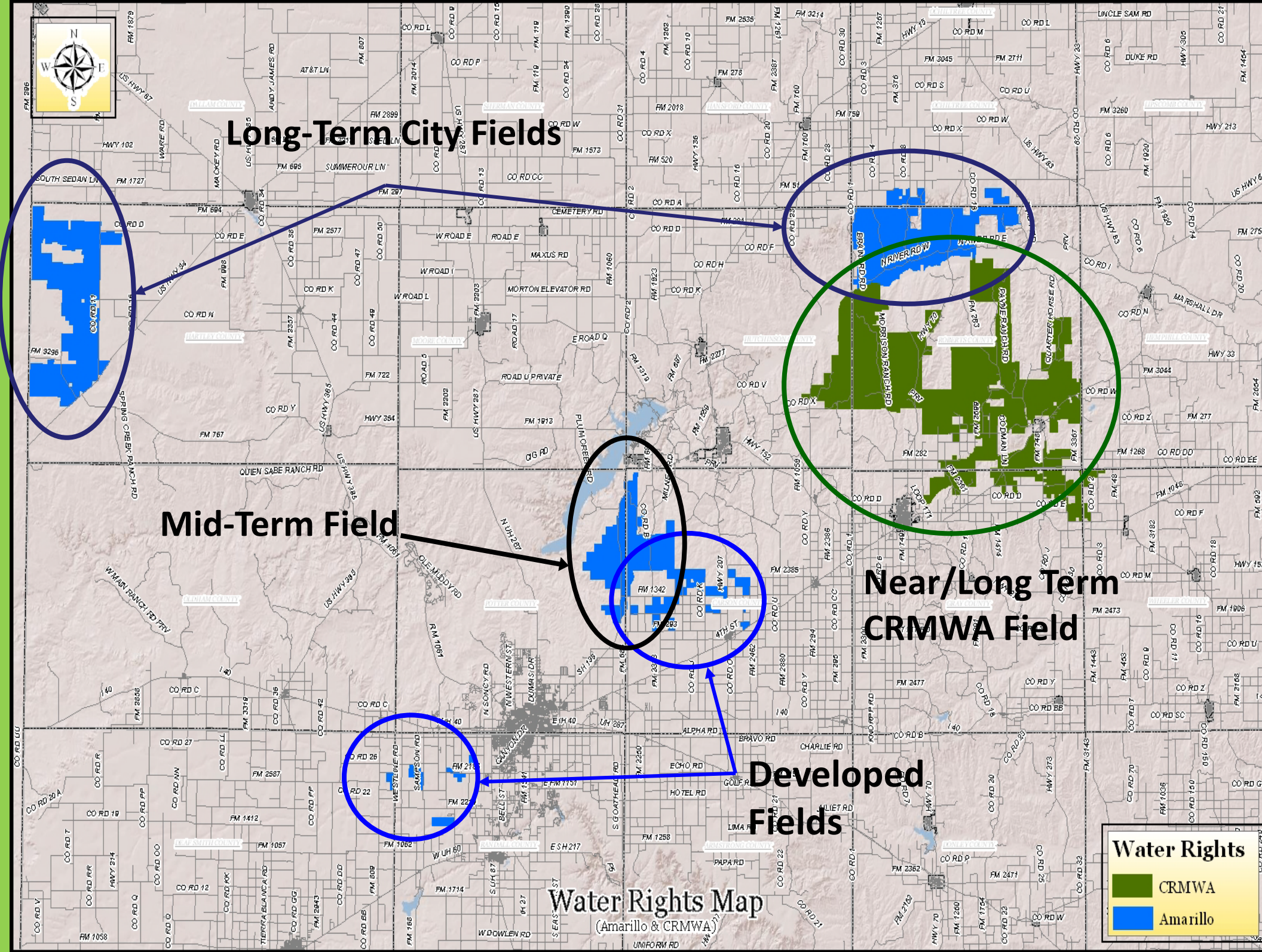
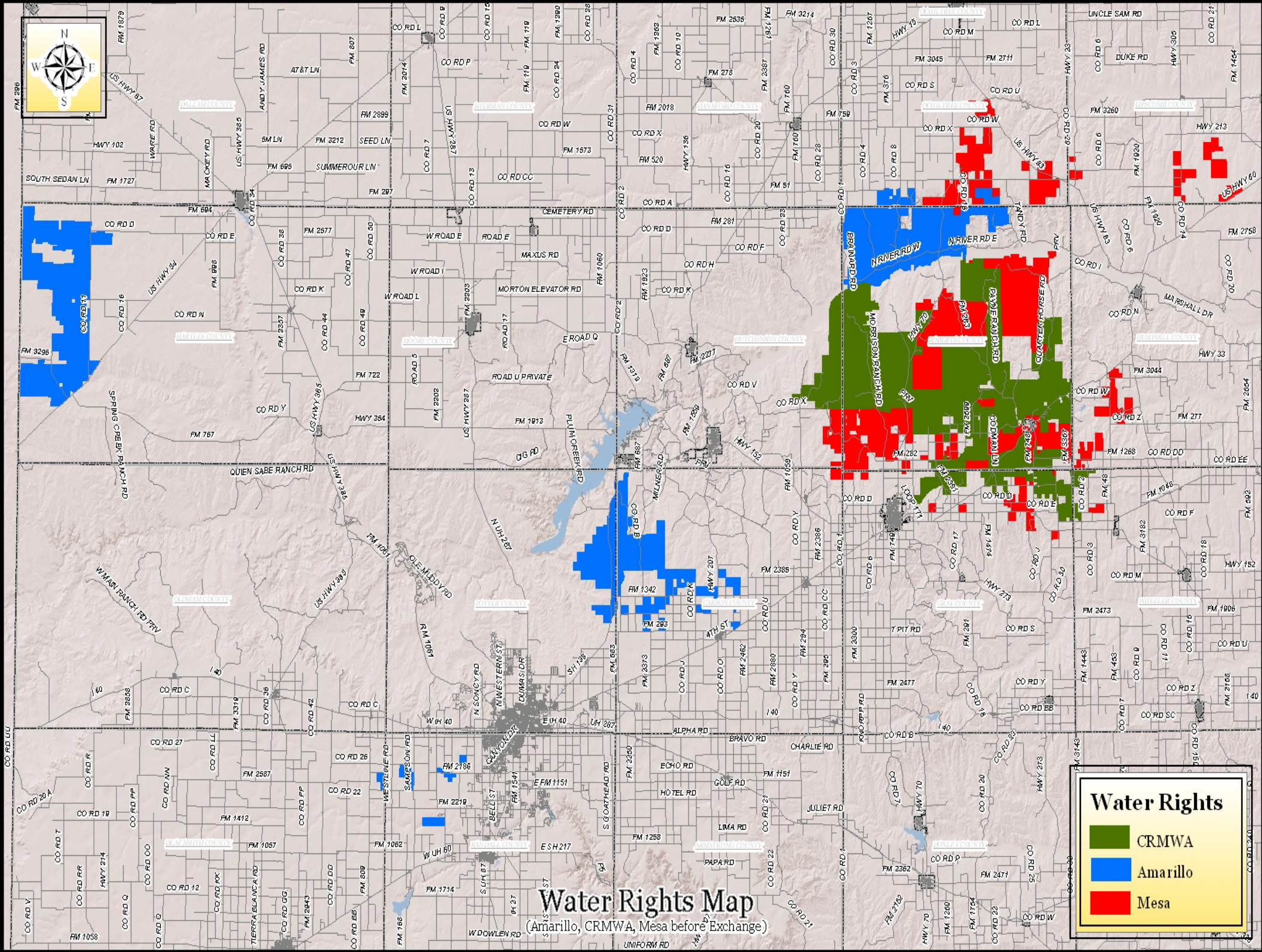

Long-Term City Fields
Mid-Term Field
Near/Long Term
CRMWA Field
Developed
Fields
Water Rights Map
(Amarillo & CRMWA)
Water Rights
CRMWA
Amarillo


Water Rights Map
(Amarillo, CRMWA, Mesa before Exchange)
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QUARTER HORSE RD
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OLD MUDDY RD
W MAIN RANCH RD FRY
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CHARLIE RD
ECHO RD
HOTEL RD
GOLF RD
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LIMA RD
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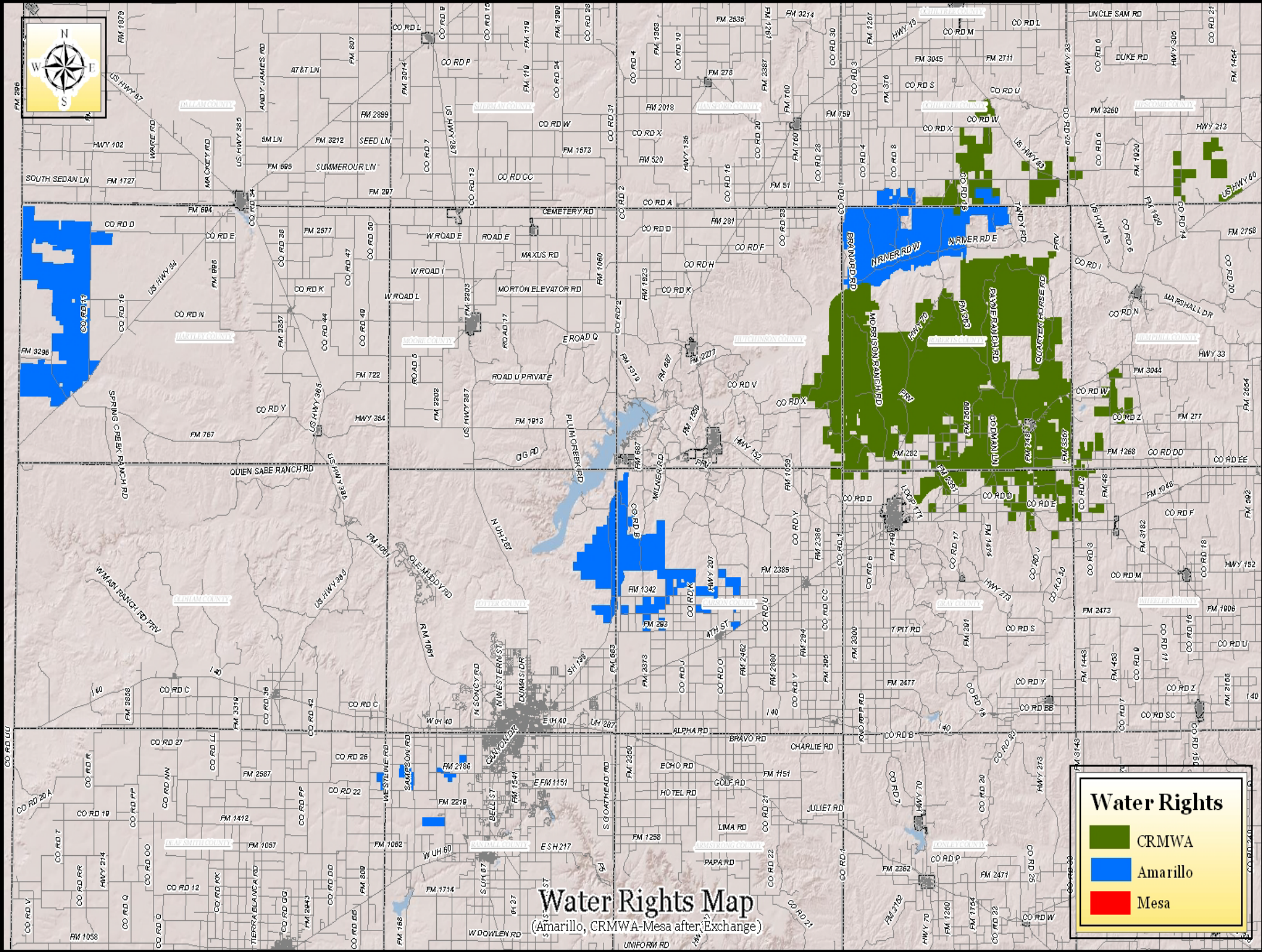
Water Rights Map
(Amarillo, CRMWA-Mesa after Exchange)
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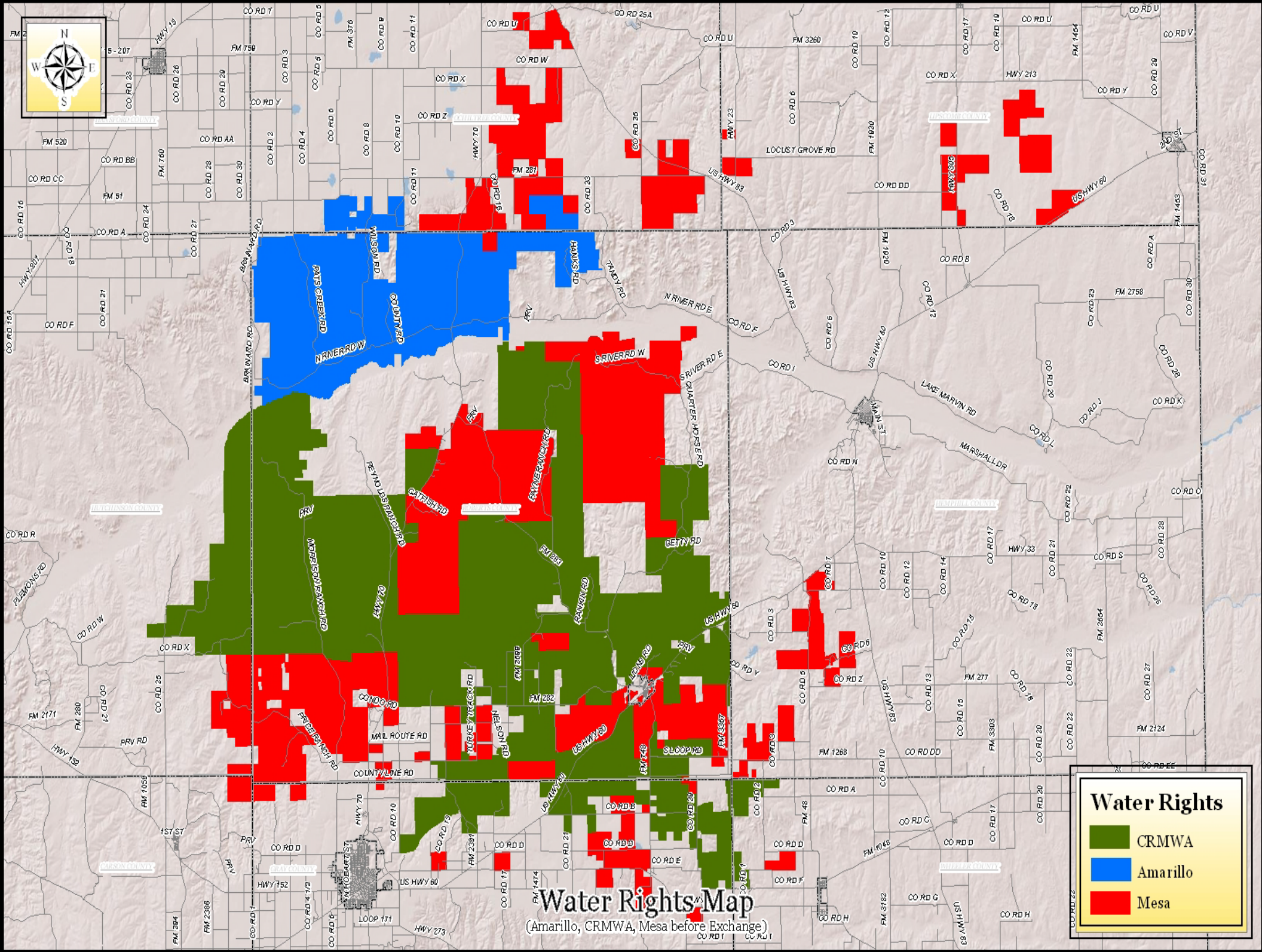
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CRMWA
Amarillo
Mesa
Water Rights Map
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HANKS RD
WILSON RD
PATS CREEK RD
COUNTY RD
BRAINARD RD
REYNOLDS RANCH RD
CATFISH RD
FARMER RANCH RD
GETTY RD
RANKIN RD
LEWIS RD
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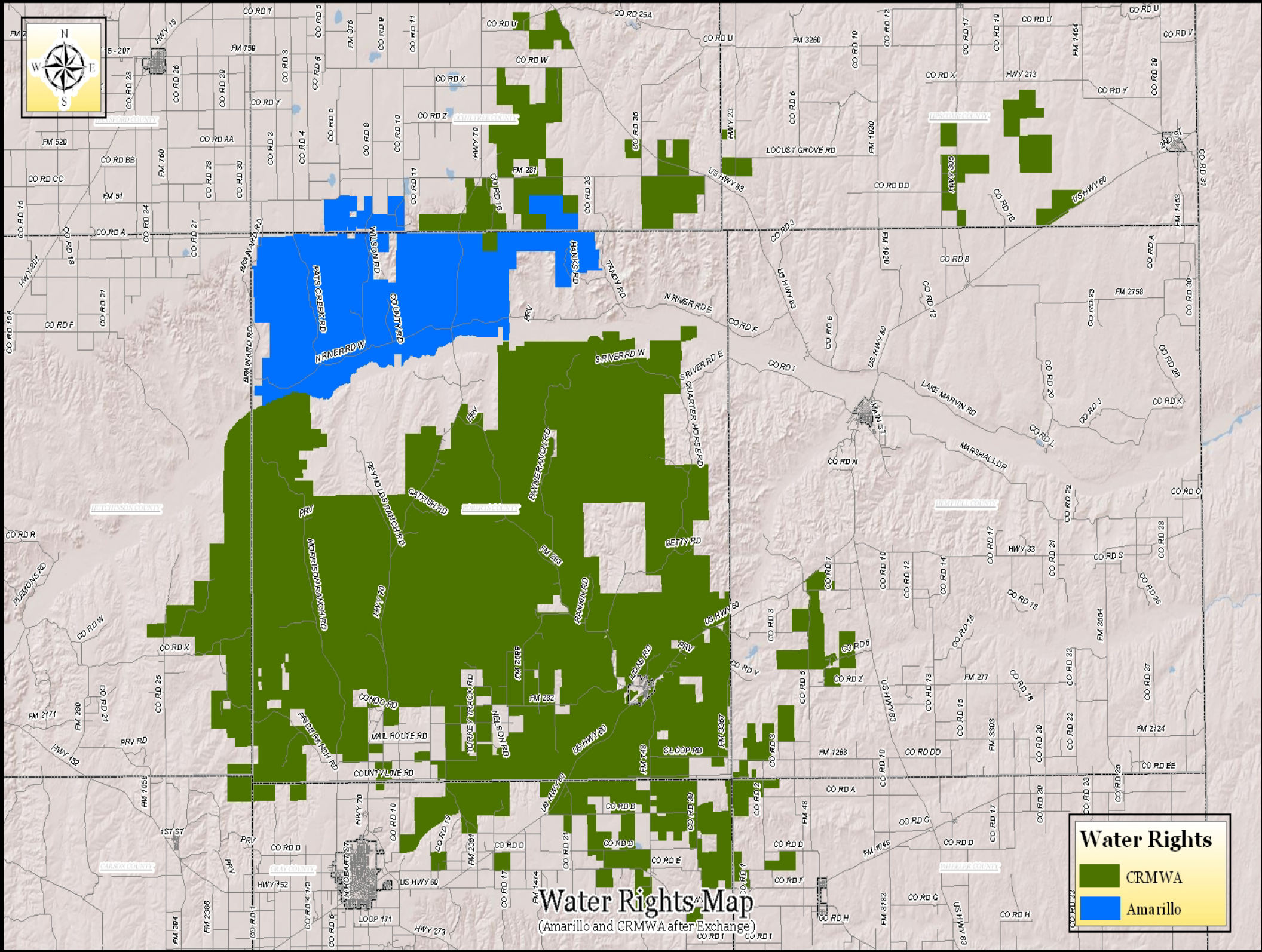
CONDO RD
MAIL ROUTE RD
PRICE RANCH RD
COUNTY LINE RD
SLOOP RD
PLEMONS RD
PRV RD
1ST ST
MAIN ST
HUTCHINSON COUNTY
SPORD COUNTY
CARSON COUNTY
GRAY COUNTY
WHEELER COUNTY
HEMPHILL COUNTY
LIPSCOMB COUNTY
OCHILTREE COUNTY
PRV


Water Rights
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Amarillo
Water Rights Map
(Amarillo and CRMWA after Exchange)
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CARSON COUNTY
GRAY COUNTY
OCHILTREE COUNTY
LIPSCOMB COUNTY
HANSFORD COUNTY
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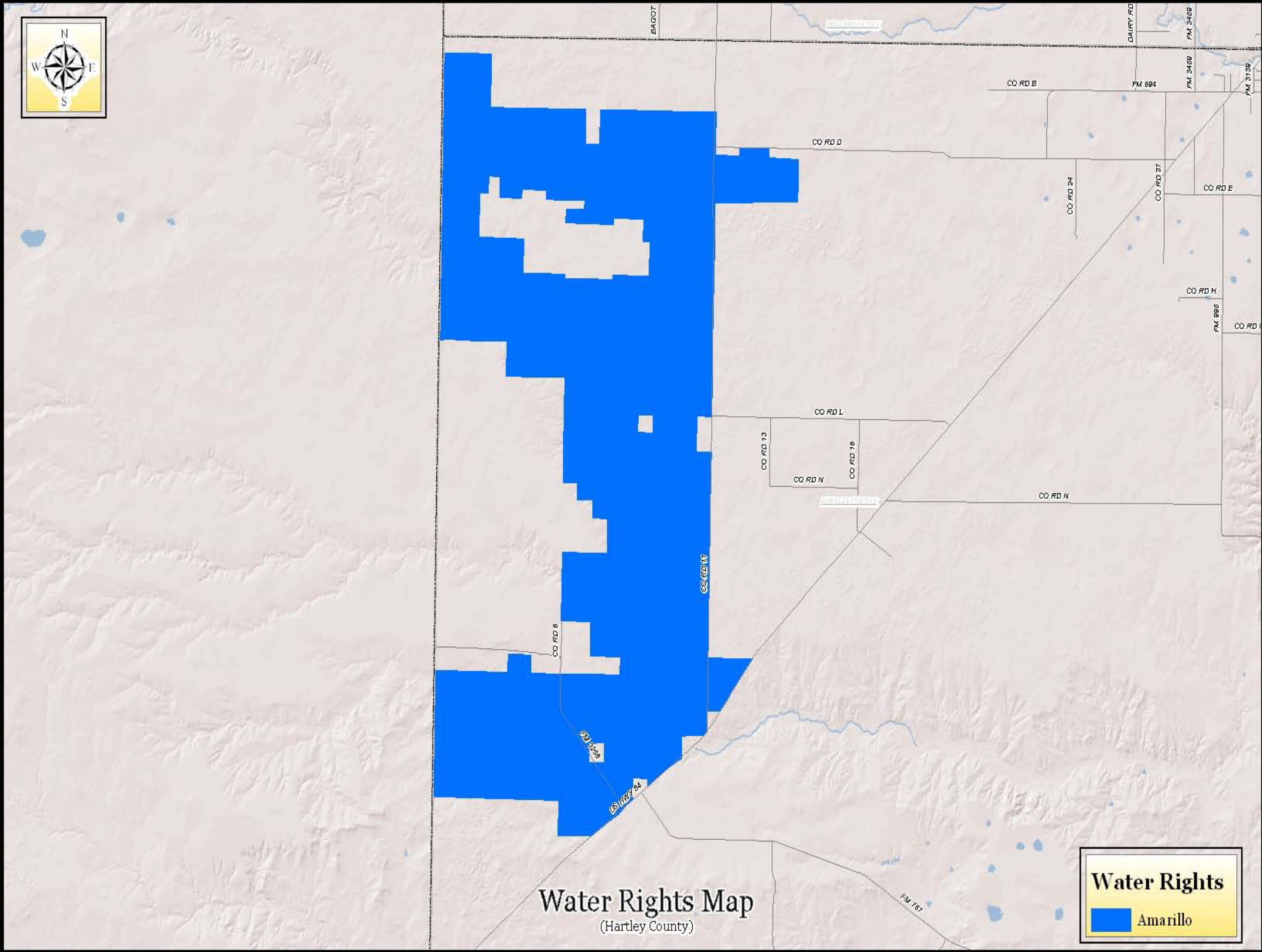
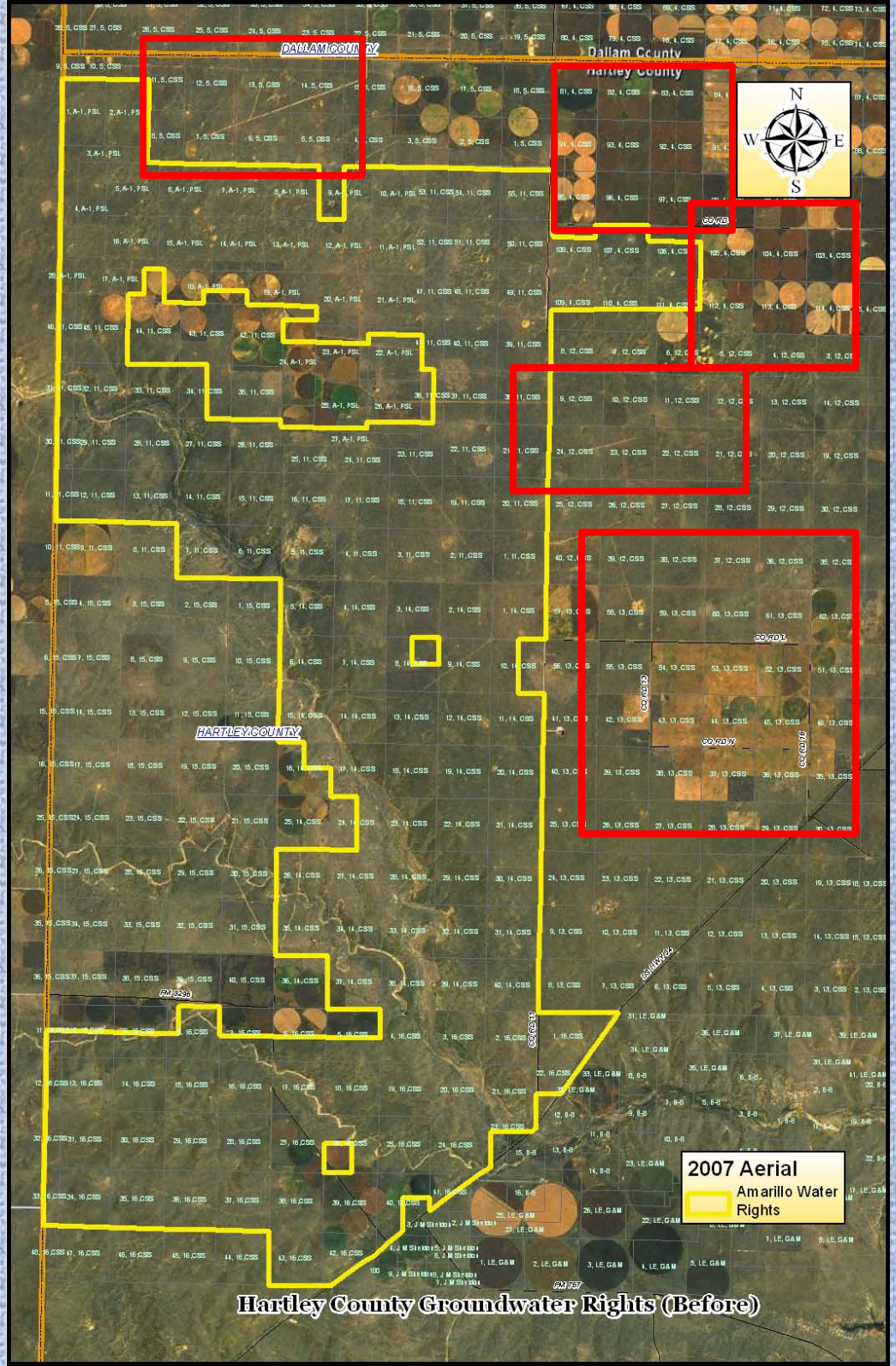
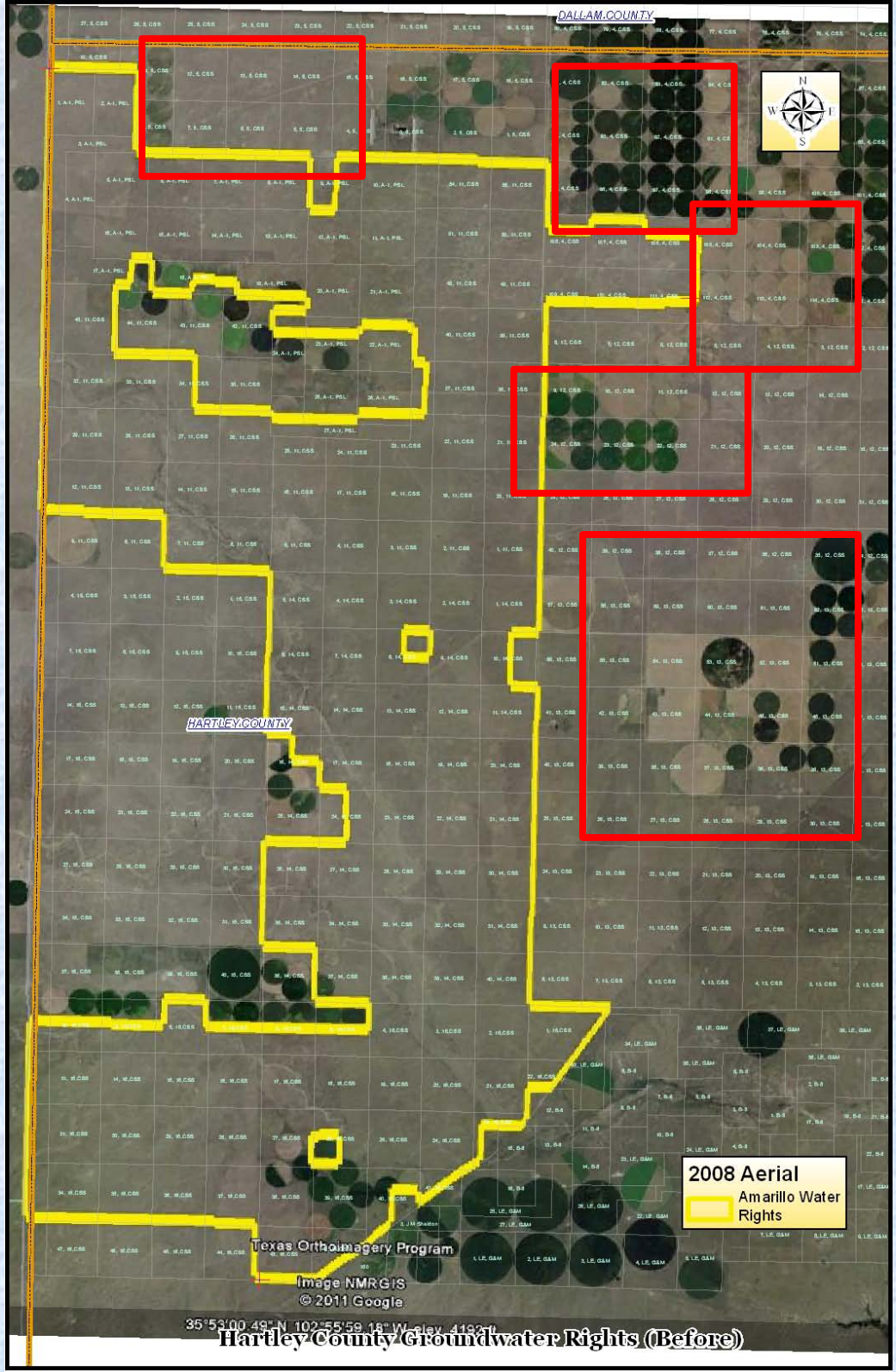



# Water Rights Map

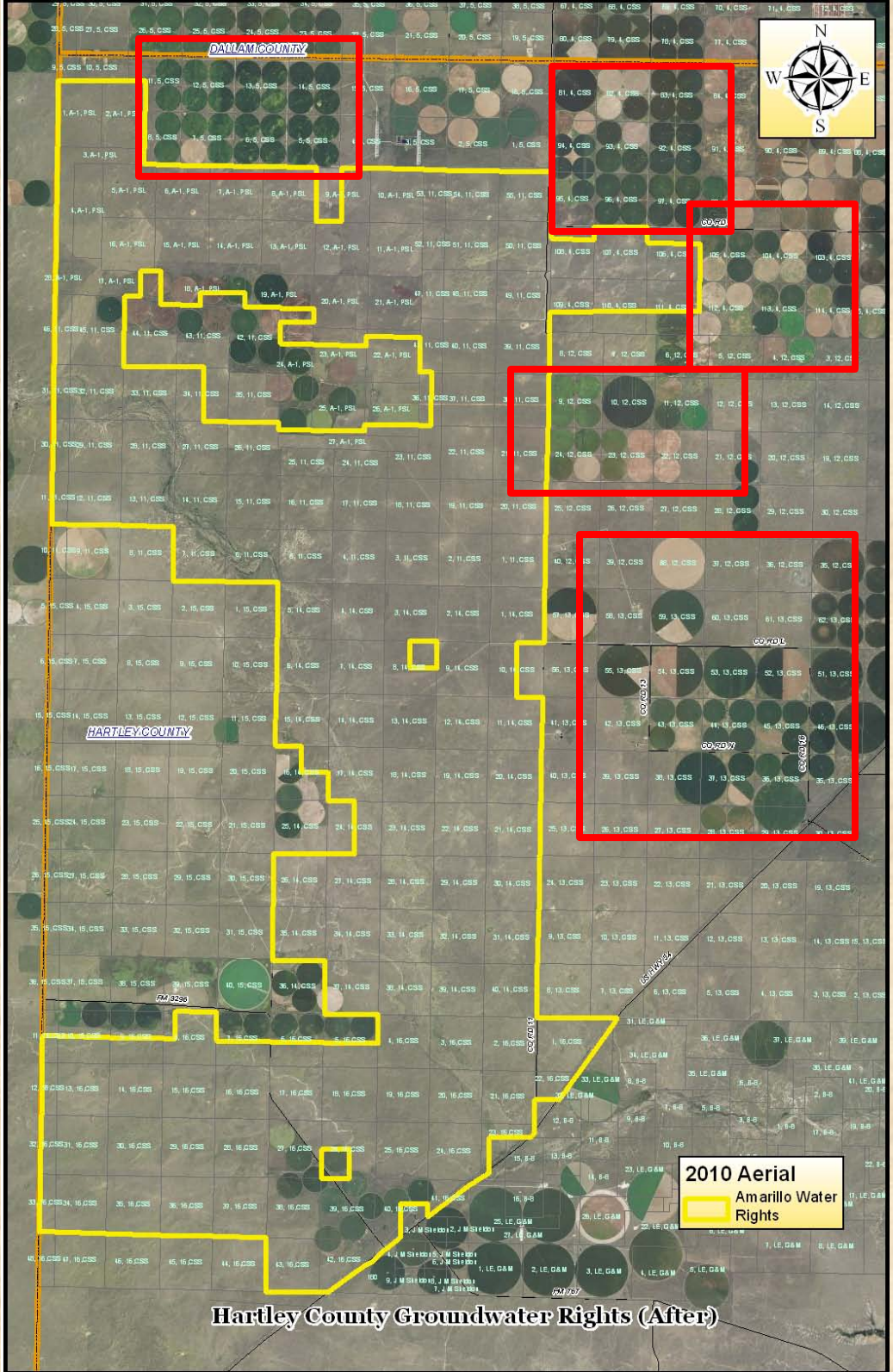
(Hartley County)




Hartley County Groundwater Rights (Before)




Hartley County Groundwater Rights (Before)



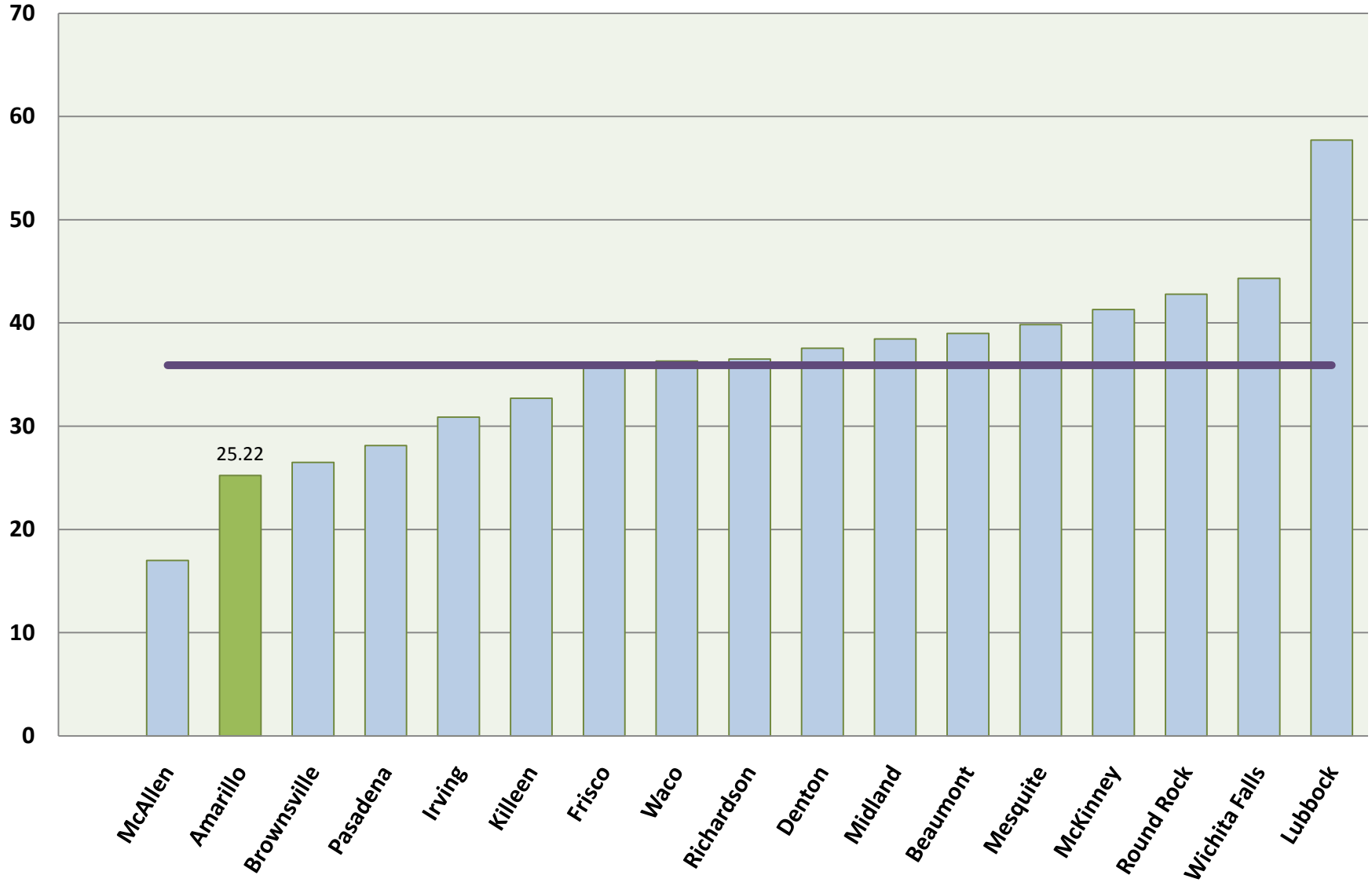

Hartley County Groundwater Rights (After)

# Water System Funding

- Typical Water System Funding through Water Rates (Usage Based Fees)
- City Received $86.2 million in TWDB Funding for Potter County Well Field Project
- These Funds at Approx 2% Interest
- Remainder of Project Funded through Local Revenue
- First Well Field since 1950's
- With Rate Increase – Amarillo Water Rates Nearly Lowest in State

# Residential Water Cost

## 10K Gal/Month




"2010 TML Water and Wastewater Survey Results." *TML Surveys*. Texas Municipal League, 2009-2010. Web. 12 April 2011 <http://www.tml.org/surveys.asp>.
City of Amarillo. April 2011.

# The Big Question….and the small print

**How Long are Current Reserves PROJECTED to Last?**

- Using Peak Year Consumption (2006-54,377 acre-feet)
  - City Reserves Providing 100%
    - 125 + Years
  - City Reserves + CRMWA Groundwater Reserves (City's 40% allocation)
    - 230 + Years
  - City Reserves + CRMWA Groundwater Reserves with purchase from Mesa (City's 40% allocation)
    - 260 + Years
- Using Population/Demand Projections from Regional Water Plan
  - City Reserves Providing 100%
    - 95 + Years
  - City Reserves + CRMWA Groundwater Reserves (City's 40% allocation)
    - 175 + Years
  - City Reserves + CRMWA Groundwater Reserves with purchase from Mesa (City's 40% allocation)
    - 198 + Years

*All estimates exclusive of CRMWA Lake Meredith Allocation, Lake Allocation will increase above estimates, See City Staff for Assumption Used in Projections*

# Conclusion

- The City of Amarillo Water System is in excellent shape for 2011
- Supply Issues identified in the Summer of 2008 as potentially critical have been largely reduced
- Future Growth & Supply Issues will be handled through CRMWA Phase III and Potter County Wellfield
- Reuse water has saved between 200 Billion to 250 Billion gallons of water from being drawn from the aquifer
- The City of Amarillo has established clear precedents for protection of groundwater resources for future use
- The City of Amarillo remains active on the legal and legislative front for continued protection of groundwater for future
- The City of Amarillo actively manages its water rights for current use, and for future availability and protection

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CITY OF AMARILLO

TEXAS