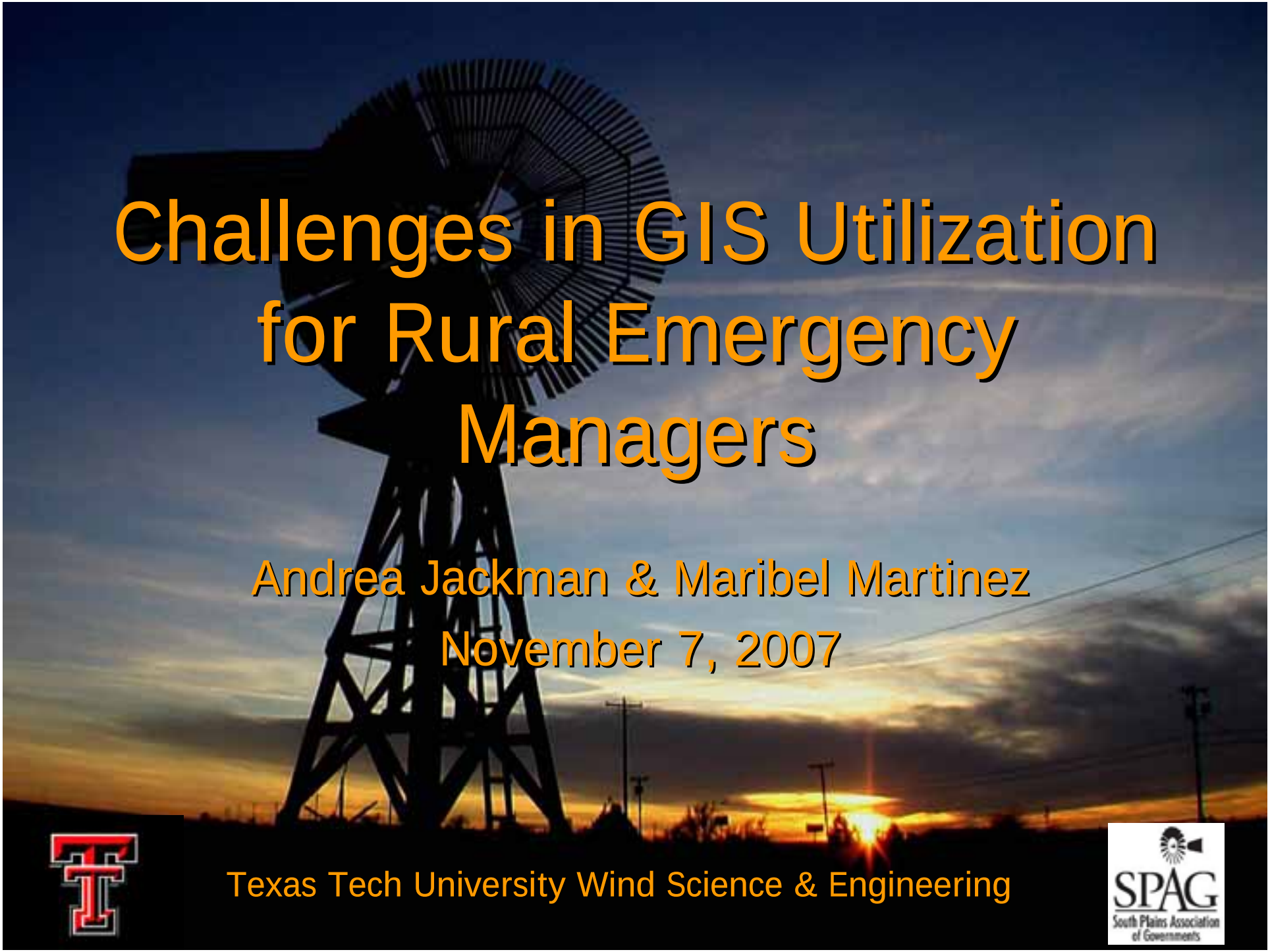

Challenges in GIS Utilization for Rural Emergency Managers

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November 7, 2007

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SPAG
South Plains Association of Governments

South Plains Region of West TX

15 county region

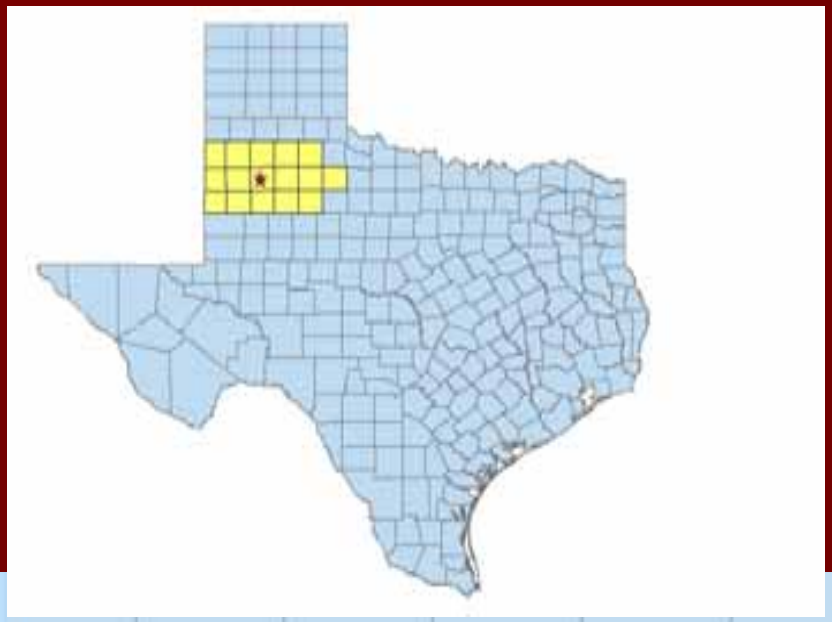
54 municipalities

48 have population ≤ 5,000

19+ are under 500

Lubbock, the “Hub City”

Economy is mostly cotton, oil, and cattle



Source: U.S. Census Bureau, South Plains Association of Governments

Hazards on the South Plains

Major

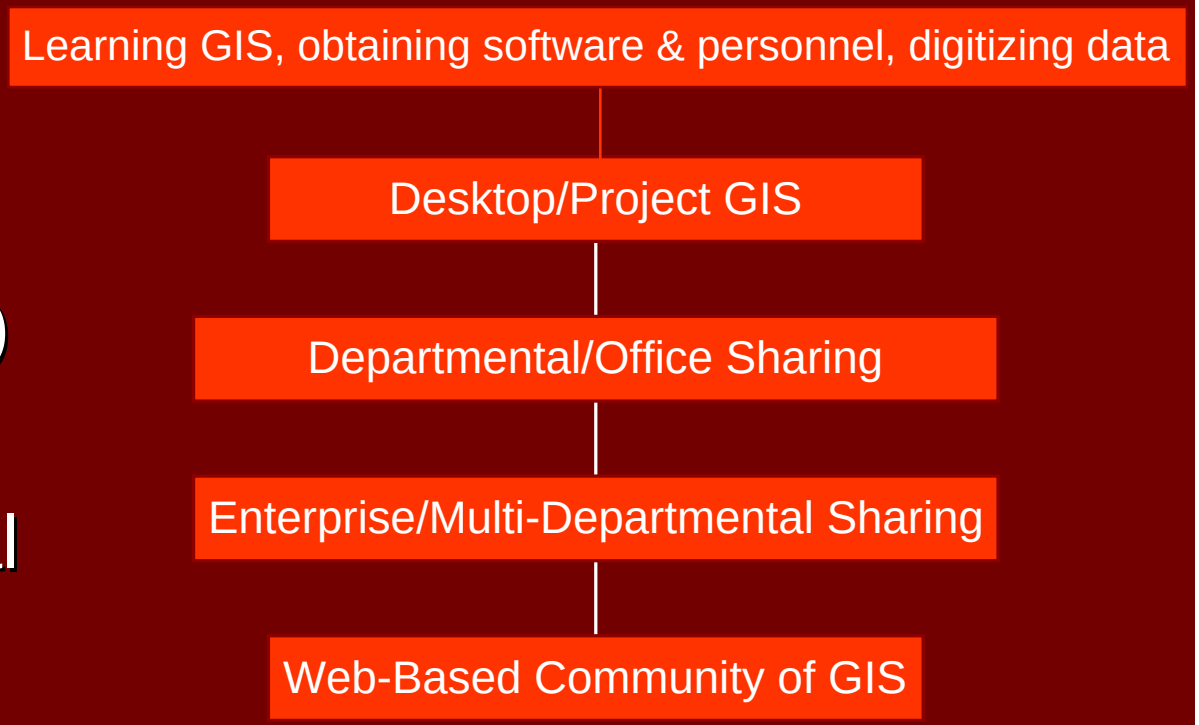
- Tornado
- Severe Thunderstorms
- High wind
- Blowing dust
- Oil-related Hazmat
- I-27 & railroad Hazmat

Minor

- Flood
- Wildfire
- Winter storms
- Pandemic
- Terrorism
- Hurricanes?!

GIS & Homeland Security on the South Plains

1. City
2. County
3. Regional (SPAG)
4. State
5. Regional Federal
6. Federal



GIS on the South Plains cont'd...

For

- Perceived as amazing tool that can only benefit EM

Against

- Computers unavailable
- Trained operators unavailable
- Time-consuming to learn, especially with other jobs
- **Limited or no data available to put into system**
- ***$$$ COST $$$***

* Data = any information that might be beneficial to have digitized, especially for EM purposes. For example: contact info and locations of first responders in the region, road networks, land usage, hospitals & pharmacies, feedlots, oil fields, livestock transportation routes, airstrips, community shelters, etc. etc. etc.

Challenge: Obtaining & Verifying Data When Records Aren't Kept

"*Oh, you want Jim? He's out in his field right now, can I take a message?"*

-Bailey County Volunteer Fire Dept.

- Census may overlook you
- "Small town" community
- Let's face it- record-keeping is not always the most enjoyable job
- Dedicated staff member may not exist
- EM may have several other jobs, tough to reach

Challenge: Utilizing Data

- Smallest towns are sometimes overlooked
- Observed reduction in accuracy for rural areas in TIGER, USGS, TENRIS, HAZUS... privately available data can be more pricey
- Have you ever tried to geocode:

  Courthouse

  O'Donnell, TX 79351 ?

Type 1: “I have neither the time nor the resources to learn and use GIS within my emergency management office”

- Maintain a uniform database of names, updated addresses, contact info, etc. for civil offices, responders, businesses, anything that might be useful in an emergency.
- Join or form a council of governments. One staff member trained in GIS for a given region may be a worthwhile investment.
- Contact other regional or state offices, local community colleges or universities. Someone might be looking for a project.
- Modeling, computation, or real-time apps can always come later… just obtaining accurate, updated maps is useful
- Consider ESRI or Homeland Security Grants

Type 2: “I have GIS, but I have no idea how to use it. I leave that to the computer guy.”

- Consider asking Computer Guy to show you a few tricks
- Study-at-home ESRI internet intro module only $175, even basic tools such as Selection, Join & Relate, Edit Tools… very powerful yet easy to use.
- Remember how handy accurate maps can be, even if they hang on the wall!

Type 3: “GIS is great, but I can’t figure out what to do with the fancy tools at my level”

You may not need all the tools…

- Train others to use the most basic functions, may be handy to have a few extra hands in an emergency.
- Invest in handheld units, focus on maintaining updated, accurate data
- Make this data publicly available, if possible! Post online, or collaborate with other responders/state-level planners to build more accurate regional databases.

Conclusions & Upcoming Work

- *Data* is the biggest problem in rural localities... begin by accurately digitizing as best as possible

  Upcoming: digitization of 15-county SPAG region

- If advanced modeling and integration is beyond your current capability, a good database can smooth upgrades in the future, should the opportunity arise.

  Upcoming: investigation of grant opportunities to get rural EMs trained and equipped

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Thank You
Questions? Comments?
Suggestions?