South Central Texas Region L Population Projection study

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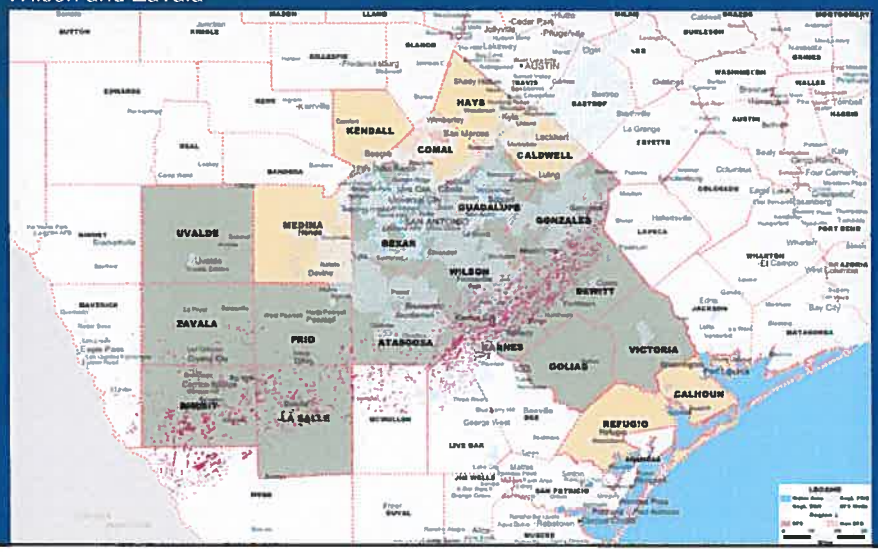
  - Dr. Zhou, Stepwise Autoregression- UTSA;
  - Dr. Sass, Statistical Computing Center-UTSA;
  - Heidy Colon-Lugo, Demographics-UTSA;
  - Dr. Lloyd Potter, Texas State Demographer
  - Dr.s Bangsund & Hodur, Bakken Shale-North Dakota State University
- Source Citations in Report

Region L, WUG and EFS Well Sites

- Atascosa, Bexar, Caldwell, Calhoun, Comal, DeWitt, Dimmit, Frio, Goliad, Gonzales, Guadalupe, Hays, Karnes, Kendall, La Salle, Medina, Refugio, Uvalde, Victoria, Wilson and Zavala



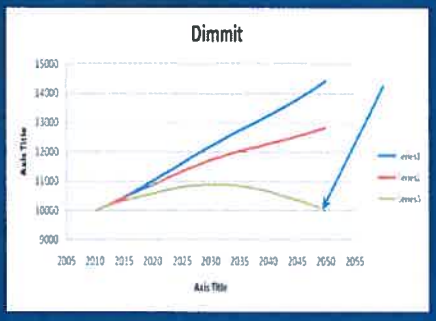
South Central Texas Region L Population Projection Study

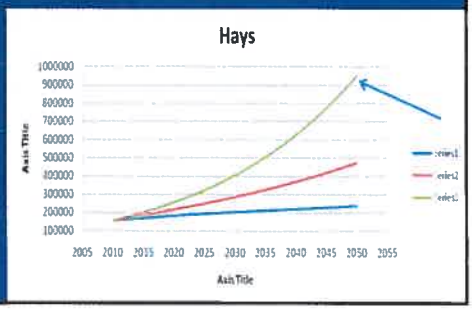
- San Antonio River Authority contracted with CCBR to conduct a study on population projection data
- Usable for planning documents Region L county Water User Groups need to submit to the Texas Water Development Board, Summer 2013
- Standard population data is from Texas State Data Center, Office of the State Demographer

State Demographer Population Projections

- Based on formula of births, deaths and in-out-migration patterns
- Three scenarios: normal (0), conservative (.5), aggressive (1)
- TWDB suggests conservative (.5)
- Files used for this study published on TSDC website:
  - Population Projection data
  - Methodology document

Looking at Projection Scenarios





Texas Water Development Board and Regional Planning

Three options of justification criteria and documentation for submitting alternative population data:

- 1) Request for recount from USCensus
  - paperwork making request is sufficient documentation
  - Cibolo just won a recount appeal
- 2) Evidence of substantial difference in rate
  - "bubble"
- 3) Evidence of significant differences in rate
- - 2010 Base & 2050 Target population numbers; Range and confidence intervals; bubbles/slope

Summary of Options:

- Submit documentation for recount request
- choose ANY of the three population projection scenarios
- Submit documentation and alt numbers
- CCBR study found evidence for all options
  - Significant difference
  - Substantial difference
  - Recount
  - Scenario
  - (2010 Base & 2050 Target population numbers; Range and confidence intervals; bubble/slope)

Statistics

- Projections are abstract number values for unknown future
- "concrete" number not possible = needs "best fit" judgment, situation
- This study looked at
  - Methodology
  - Issues and assumptions
  - Alternatives
  - Tests illustrations
  - Information to aid judgment and selection

What is a Population Projection?

- Populations go through "phases of transition"
- Population is never a certain number due to constant births, deaths, migration
- Population science looks at "stability"
- Phases may last 10-40 years, transition from pre to post = 100- 400 years, ±
- TSDC projections are considered "brief" time period, use B/D/M method, focus on stable patterns applied overall

CCBR Resources

- Expert advice and information
  - State Demographer (StDmg)
  - Various topic experts
  - Professional researchers
- Objectivity
- Experience with research in region
- Public institution:
  - Focus on transparency,
  - Replication,
  - Goal- study as a reference

Alternative Population Projections

- Alternative data suggested by StDmg and Demographic Literature:
  - employment,
  - school enrollment,
  - housing units
- Considered better than B/D/M (cohort component)
- Good for smaller areas
- Method of trend: stepwise autoregressive, SAS
- Graphics, tables, charts, maps for better understanding

Design of Report

- Introduction
- Background
- Methodology
- Issues with B/D/M method
- Presentation of alternative data types, issues
- Situation faced by Region L
- Summary
- Appendix of data workbooks and worksheets for each data set

Results and Findings Documentation

- Uses historical population from 2000
- Each data section lists
  - Data sources and method
  - Situation discussion
  - Total counts (also shown in map)
  - Household Multipliers calculated from data
  - Percent change across 40 years for data versus population across 40 years
  - Comparisons of projection target numbers
  - Forecasts based on historic and event periods

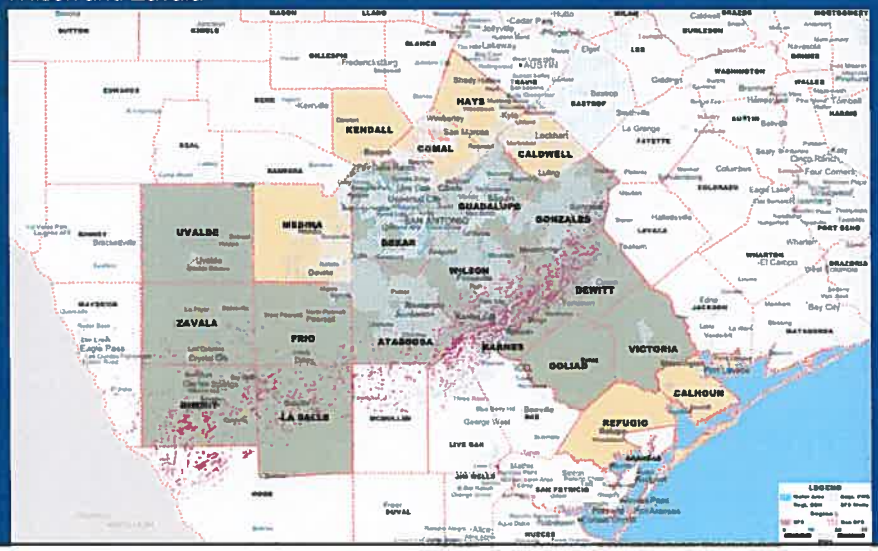
From StDmg Methods:
". . . four major steps must be completed:"

1. The selection of a baseline set of cohorts for the projection area or areas of interest for the baseline time period (usually the last census and for other dates for which detailed base data are available);
2. The determination of appropriate baseline migration, mortality, and fertility measures for each cohort for the baseline time period;
3. The determination of a method for projecting trends in fertility, mortality and migration rates over the projection period;
4. The selection of a computational procedure for applying the rates to the baseline cohort to project the population for the projection period

- This study followed the four steps

Region L, WUG and EFS Well Sites

- Atascosa, Bexar, Caldwell, Calhoun, Comal, DeWitt, Dimmit, Frio, Goliad, Gonzales, Guadalupe, Hays, Karnes, Kendall, La Salle, Medina, Refugio, Uvalde, Victoria, Wilson and Zavala



Population Projections

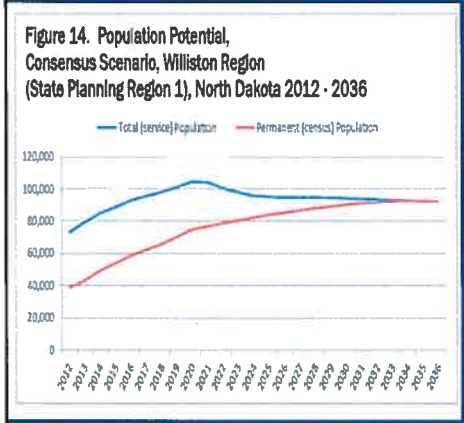
- Census enumerates people; American Community Survey, Community Population Survey periodic samples
- B/D/M Formulas use assumptions
- PopProjections must be assessed alongside other metrics (triangulation) for accuracy, confidence intervals, realism, excessive randomness, ID "unreliable modeling"
- PopProjections may profile uniform generalities and not uniqueness needed for local accuracy
- Some pop characteristics are not shared by all (SAC, EMP, HU, mobile, PHH multiplier, etc.)

Region L Situation

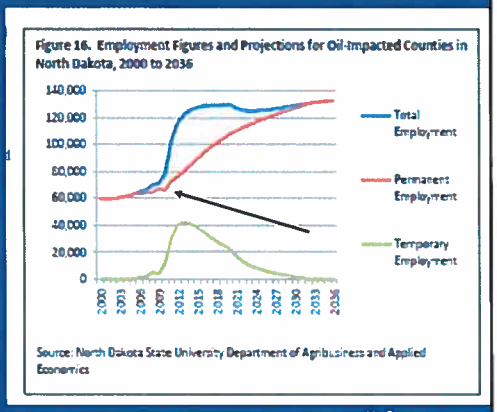
- EFS activity since 2008: high pop influx
- Pop issues "visible" to Region L counties, but not reflected in official documentation
- Study helps document punctuated population
- Issue: lack of "official" or accessible records
- This study supports ongoing State revisions and continual research, also supports local work for better records and access

"Sector 21" Effects

Bakken Population Pressures



Bangsund & Hodur, 2013



www.ndhfa.org

TSDC Methodology Issues Related to Region L Situation

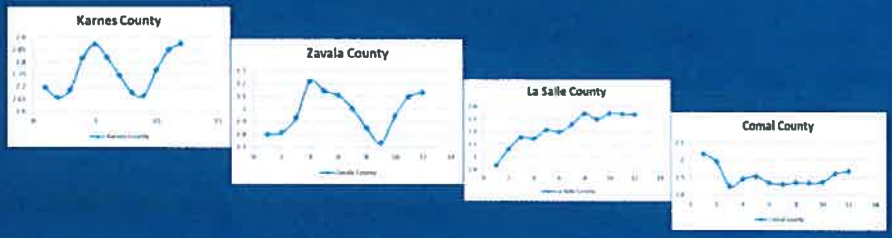
- Enumeration (counting) Issues
- Method and Formula Issues
- Situation Issues:
  - Location
  - Unique socio-economic
  - "growth phase" in population transition

Issues with State Methods addressed

1) All population not counted in Census (report goal)
2) Multipliers not uniform; (B/D/M assumes stable)
3) Macro-economic pressure, Punctuated not "seen"
4) Special populations removed
5) Phases used, not whole pop transition
6) Outliers smoothed
7) Enumeration overlooks mobile workers
8) Smoothing normalizes subgroups: subgroup data is erased and substituted with "standard" data

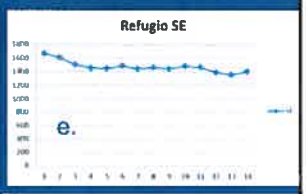
"2) Multipliers not uniform"

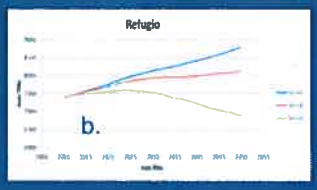
Multiplier graphs for Karnes, Zavala, La Salle and Comal based on school enrollment

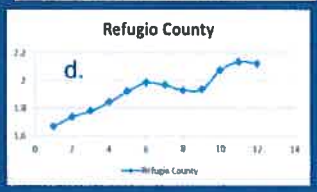


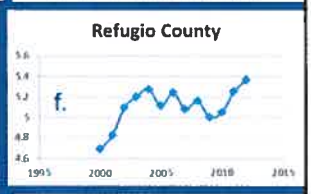
Multiplier graphs for Karnes, Zavala, La Salle and Comal based on employment

"3) macro-econ not seen"







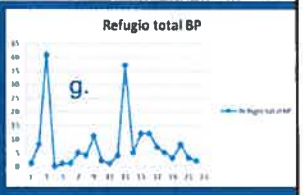


a. Historical pop; b. State Demographer pop proj;

c. Labor force and d. multiplier

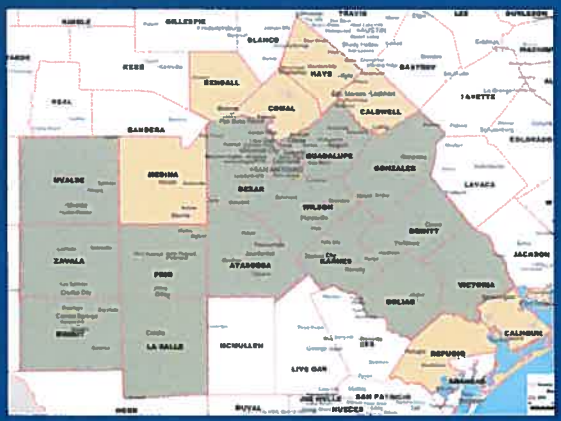
e. School enrollment and f. multiplier

g. building permits



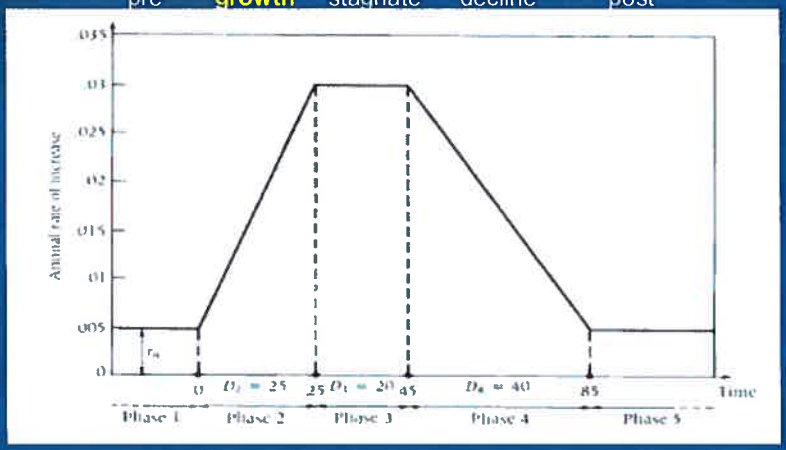
"4) Special populations"

- Military, High Education, Prisons



"5)"Population transitions: 5 phases

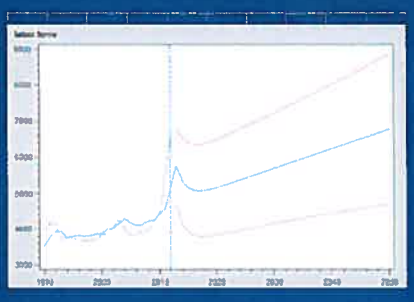
pre **growth** stagnate decline post

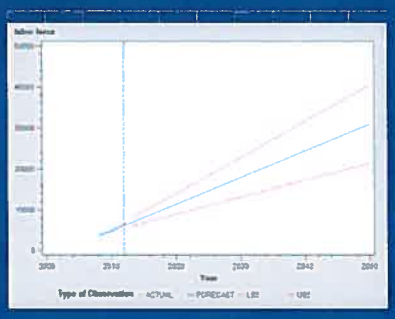


Chesnais, 1990

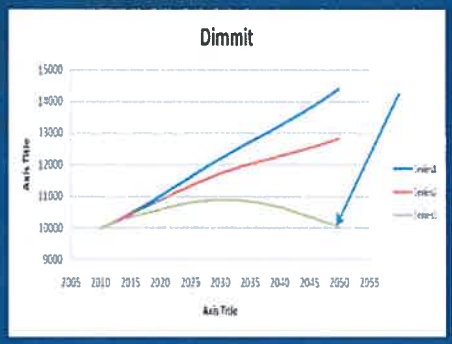
"6) Outliers smoothed

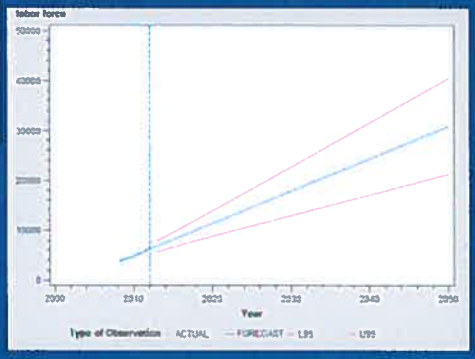
Dimmit County example: Historic and event
Note effect of method on "Bubble"
and confidence interval





Looking at Projection Ranges





"7) Enumeration overlooks mobile workers"

"8) Smoothing normalizes subgroups: subgroup data is erased and substituted with 'standard' data"

Long term smoothing method using substitution for actual non-normal data

. . . for some counties the migration rates were problematic in yet another manner. The use of historical rates often resulted in substantially higher rates of net migration for one sex than the other. Such an imbalance cannot be expected to continue over the entire projection period. The ratio of male rates relative to female rates for each age was examined by computing means for each ratio and analyzing standard deviations for such means. From this analysis, it was decided that a ratio greater than 2 should result in a replacement of the migration rate. Given this, rates were adjusted to be no larger than twice the ratio of male to female rates or visa versa at the COG and State levels within county types for the same age, sex, and race/ethnicity group . . . If the ratio of male to female migration rates for a county of a given type for any age exceeded this limit for the COG type, its rate for that age, sex, and race/ethnicity was replaced with that for the county type for the COG. If the COG's rate for the county type was still problematic, the rate for that county type for the State as a whole was substituted for the county rate.

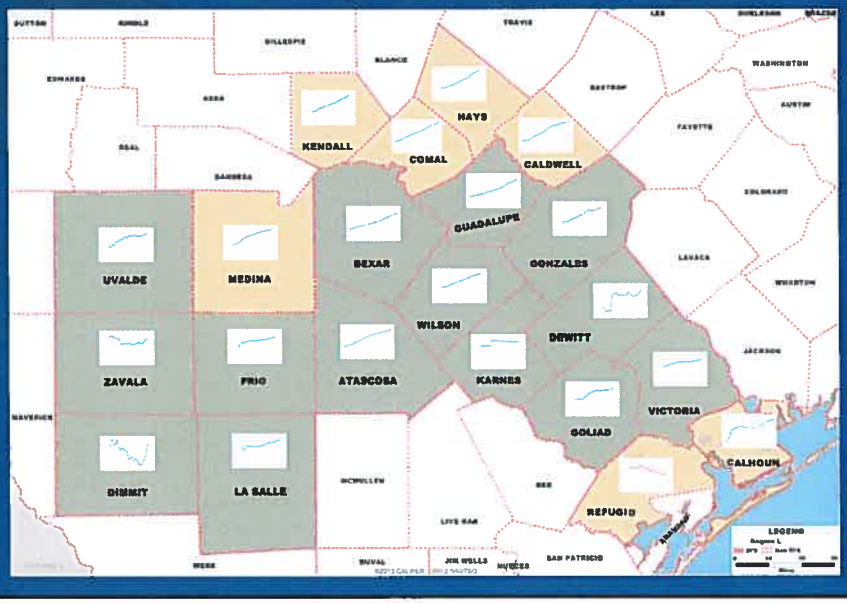
[emphasis added] (StDmg, TSDC, 2012)

Region L Study

(Base & Target pop; range and confidence intervals; bubbles/slope)

- Alternative data
  - Recommended:
    - Employment, Housing Units, School Enrollment
- Multipliers
- Percent change differences
  - Show significant and substantial rate changes
- Comparisons
  - 2050 population targets: StDmg scenarios & Alts
- Forecast charts
  - Allow assessment of confidence intervals and slope

Historical Population of Region L



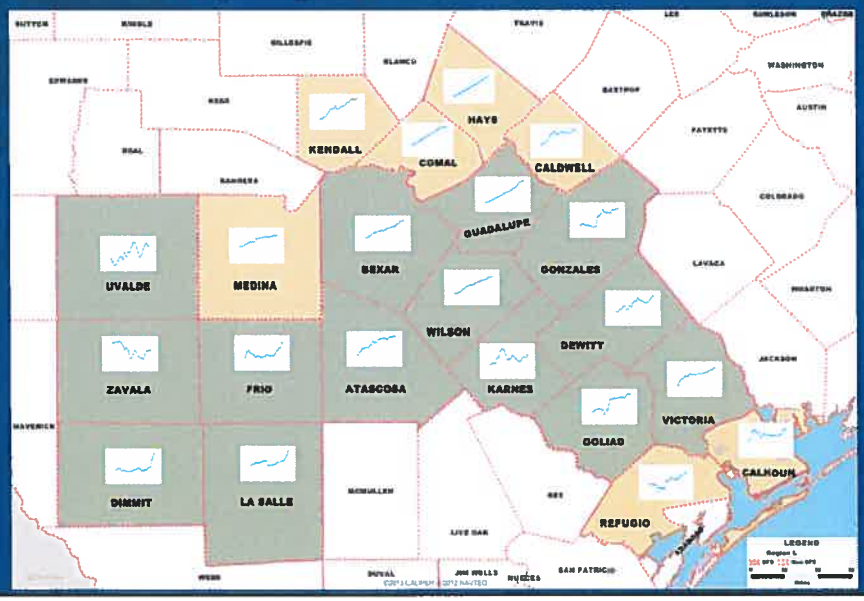
Use of Household Multipliers

- US overall, Texas, Region, etc: different
- TX 2.75 recommended, but income, location, family situation effect PHH
- This study used average of ratio between historic annual data and population
- Used ratio multiplier for autoregressive projections, SAS

I: Employment

- Data:
  - Labor Force Numbers
    - Available for work: employed, unemployed
  - Bureau of Labor Statistics
  - Texas Workforce Commission, Tracer2

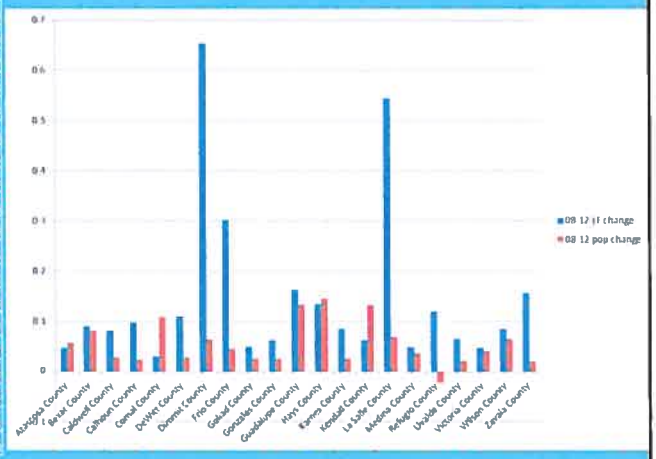
Employment 2000-2012



Percent change difference LF-Pop

Event period: 2008-2012

08-12 LF change	08-12 pop change
4.67%	5.69%
9.00%	8.11%
8.11%	2.82%
9.77%	2.28%
2.98%	10.76%
10.95%	2.83%
65.33%	6.39%
30.16%	4.50%
5.03%	2.61%
6.23%	2.59%
16.29%	13.33%
13.42%	14.43%
8.52%	2.46%
6.30%	13.23%
54.46%	6.85%
4.94%	3.62%
11.93%	-2.30%
6.50%	2.08%
4.68%	4.09%
8.45%	6.51%
15.61%	2.01%



historic

yellow=lo
green=ND
red=hi

County	sdmg 0	sdmg 0.5	sdmg 1	ave mult	WMA mult	popx-labo	popx-WMA
Atascosa C	59053	75481	87117	2.263499	2.280013	72,962	73,494
Bexar Cou	2195644	2695668	3180782	2.148194	2.165588	2,589,924	2,610,894
Caldwell C	43148	64014	92471	2.288288	2.324418	48,627	49,395
Calhoun C	25352	32276	38881	2.204003	2.193817	23,253	23,146
Comal Cou	112457	192808	317376	1.905353	1.916726	223,647	224,982
DeWitt Co	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	28,250
Dimmit Co	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15,499
Frio Count	22136	24488	26160	2.483549	2.413886	22,194	21,571
Gokad Cou	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11,686
Gonzales C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	32,136
Guadalupe	145771	258289	424870	2.044933	2.067609	257,535	260,391
Hays Coun	237144	474802	952790	1.869377	1.900769	338,242	343,922
Karnes Cou	15735	15697	16609	2.76115	2.742729	16,380	16,271
Kendall Co	33669	56429	90187	1.970241	1.985646	66,646	67,167
La Salle Co	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11,212
Medina Co	52341	70896	89271	2.22836	2.244343	85,849	86,465
Refugio Co	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12,045
Uvalde Co	37440	36257	31631	2.259944	2.262158	32,526	32,558
Victoria Co	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	114,343
Wilson Co	43786	71683	108349	2.145427	2.166555	82,109	82,918
Zavala Cou	19410	17521	13540	2.980189	2.962108	6,398	6,359

lower
fall in
higher

Comparisons

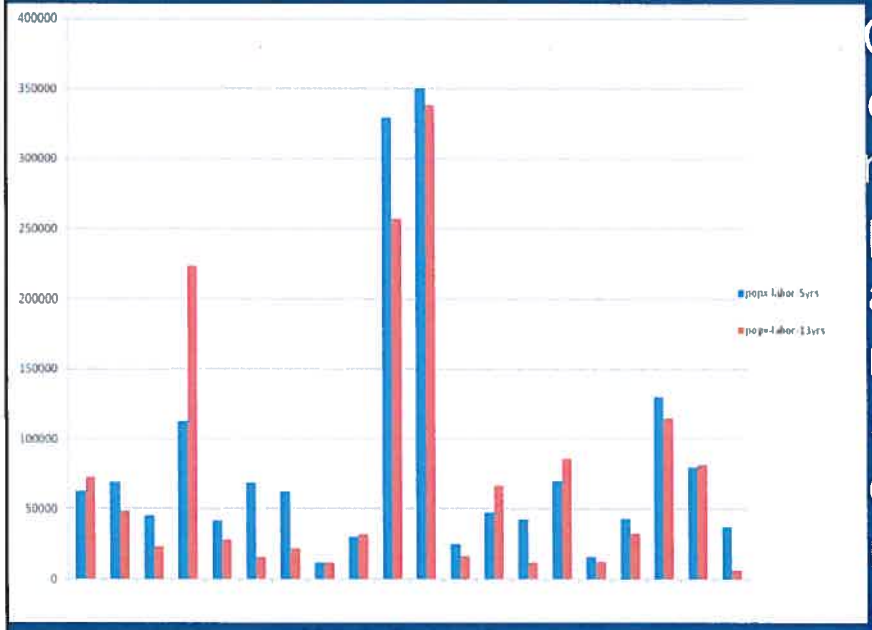
event

yellow=lo
green=ND
red=hi

County	sdmg 0	sdmg 0.5	stdmg 1	popx-labor
Atascosa C	59053	75481	87117	63,054
Bexar Cou	[illegible]	[illegible]	[illegible]	[illegible]
Caldwell C	43148	64014	92471	69,592
Calhoun C	[illegible]	[illegible]	[illegible]	[illegible]
Comal Cou	112457	192808	317376	112,899
DeWitt Co	[illegible]	[illegible]	[illegible]	[illegible]
Dimmit Co	[illegible]	[illegible]	[illegible]	[illegible]
Frio Count	[illegible]	[illegible]	[illegible]	[illegible]
Goliad Cou	[illegible]	[illegible]	[illegible]	[illegible]
Gonzales C	[illegible]	[illegible]	[illegible]	[illegible]
Guadalupe	145771	258289	424870	329,633
Hays Coun	237144	474802	952790	350,421
Karnes Co	[illegible]	[illegible]	[illegible]	[illegible]
Kendall Co	33669	56429	90187	47,859
La Salle Co	[illegible]	[illegible]	[illegible]	[illegible]
Medina Co	52341	70896	89271	69,863
Refugio Co	[illegible]	[illegible]	[illegible]	[illegible]
Uvalde Co	[illegible]	[illegible]	[illegible]	[illegible]
Victoria Co	[illegible]	[illegible]	[illegible]	[illegible]
Wilson Co	43786	71683	108349	79,905
Zavala Cou	[illegible]	[illegible]	[illegible]	[illegible]

lower
fall in
higher

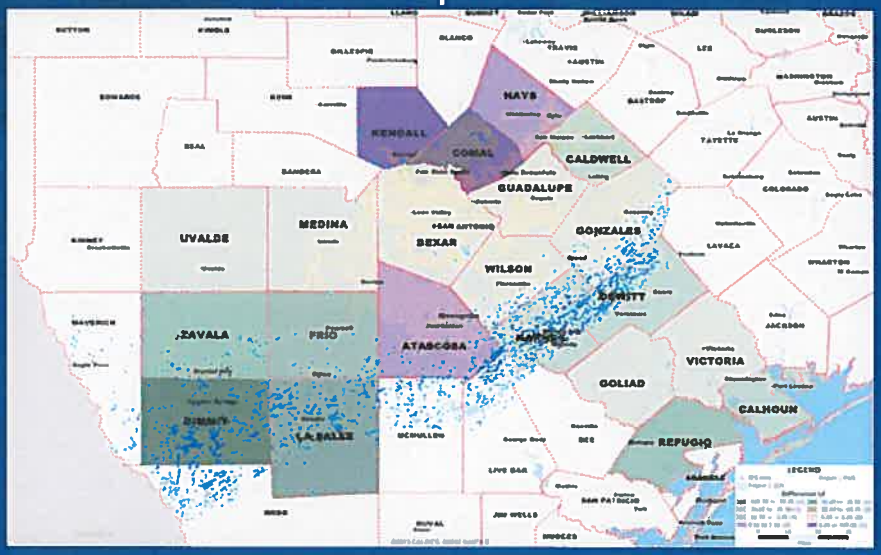
Comparisons



historical vs event

Comparisons

Differences in Employment and Population



II: Housing Units

- Data:
  - TAMU Real Estate Center: Building Permits
  - USC data incomplete
  - Other housing incomplete
    - Property tax rolls
    - Postal service addressing
    - Hotels
    - Apartments
    - Mancamps
    - Mobile homes
    - utility

historic

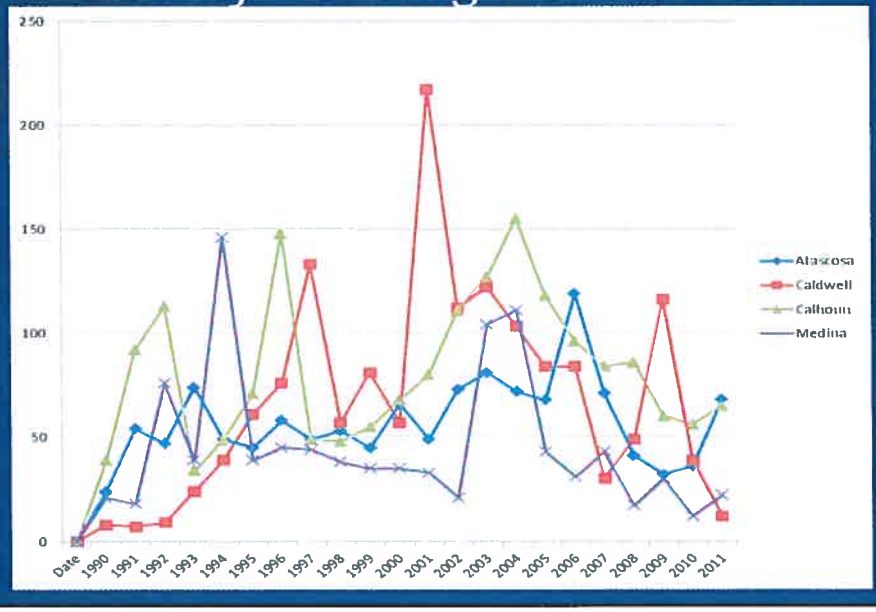
yellow=lo
green=ND
red=hi

County	sdmg 0	sdmg 0.5	stdmg 1	Bpmult	popx-8PHU
Atascosa County	59053	75481	87117	12.0368	74791
Bexar County	2195644	2695668	3180782	3.214023	3010225
Caldwell County	43148	64014	92471	7.969577	66573
Calhoun County	25352	32276	38881	1.353541	26114
Comal County	112457	192808	317376	2.378223	238301
DeWitt County	22003	22216	21770	7.00495	23501
Dimmit County	14414	12825	10042	0	
Frio County	22136	24488	26160	8.632967	24724
Goliad County	6936	8345	10545	0	
Gonzales County	27079	28330	28239	16.25904	26217
Guadalupe County	145771	258289	424870	4.456712	279012
Hays County	237144	474802	952790	3.574941	353058
Karnes County	15735	15697	16609	7.907937	18902
Kendall County	33669	56429	90187	2.832375	77549
La Salle County	9178	9987	10835	0	
Medina County	52341	70896	89271	19.40428	84770
Refugio County	8793	8119	6888	0	
Uvalde County	37440	36257	31631	4.506347	36684
Victoria County	111013	109785	101747	3.517609	116413
Wilson County	43786	71683	108349	30.50361	83081
Zavala County	19410	17521	13540	0	

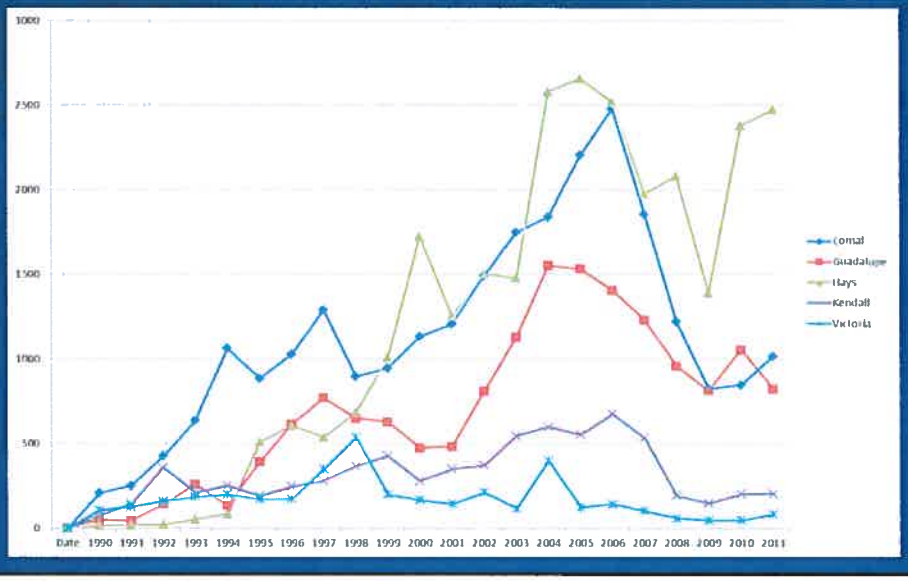
no data
lower
no difference
higher

Comparisons

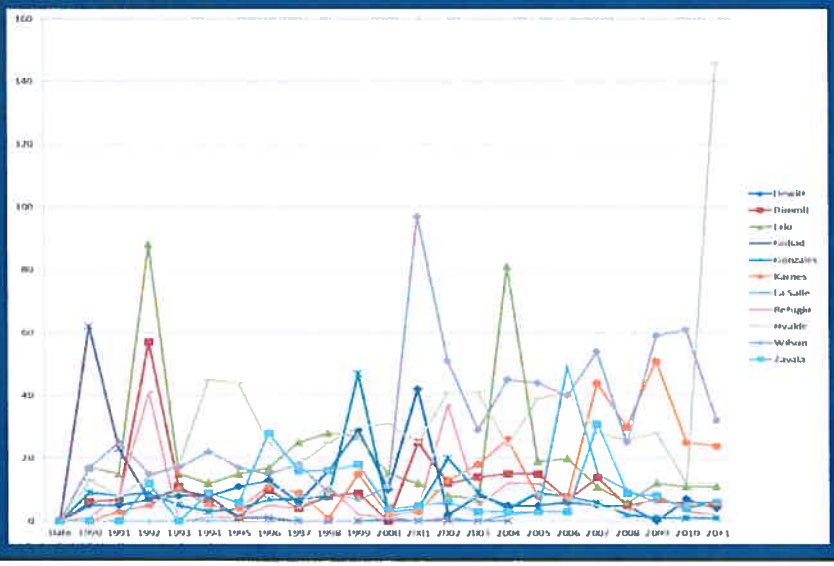
County Building Permit Data



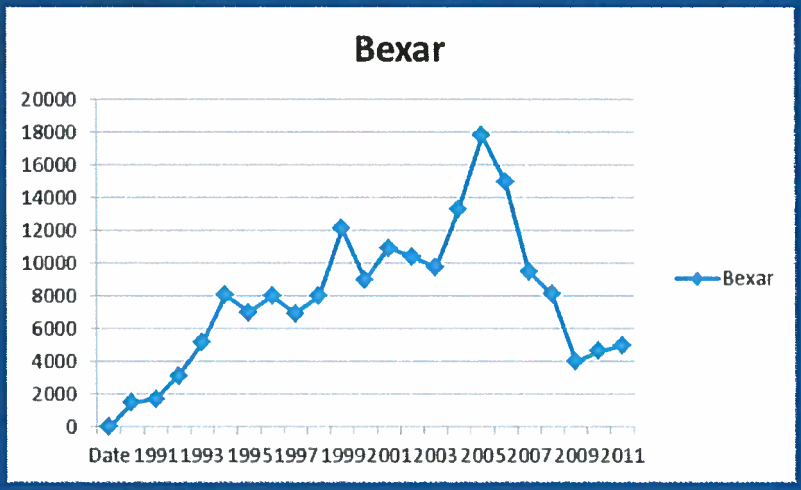
County Building Permit Data



County Building Permit Data



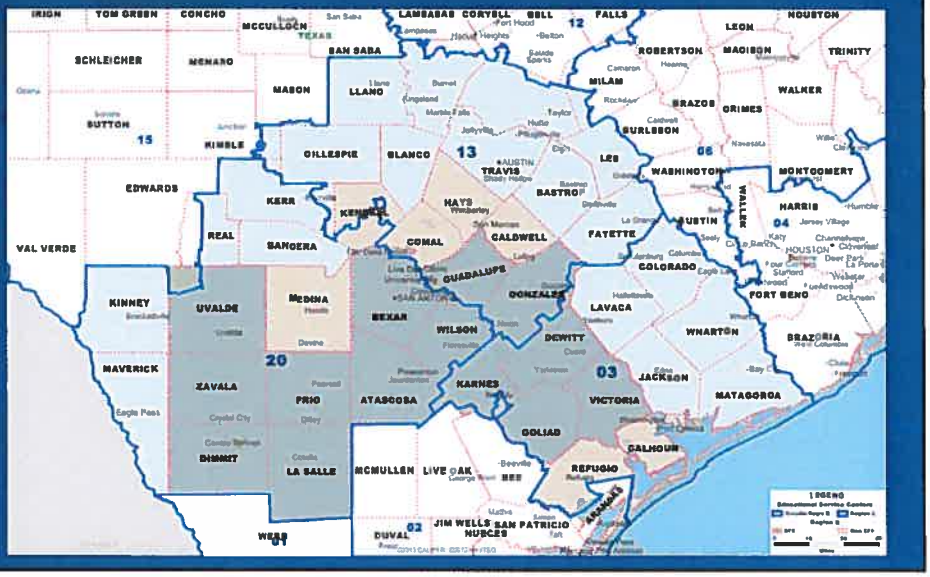
County Building Permit Data



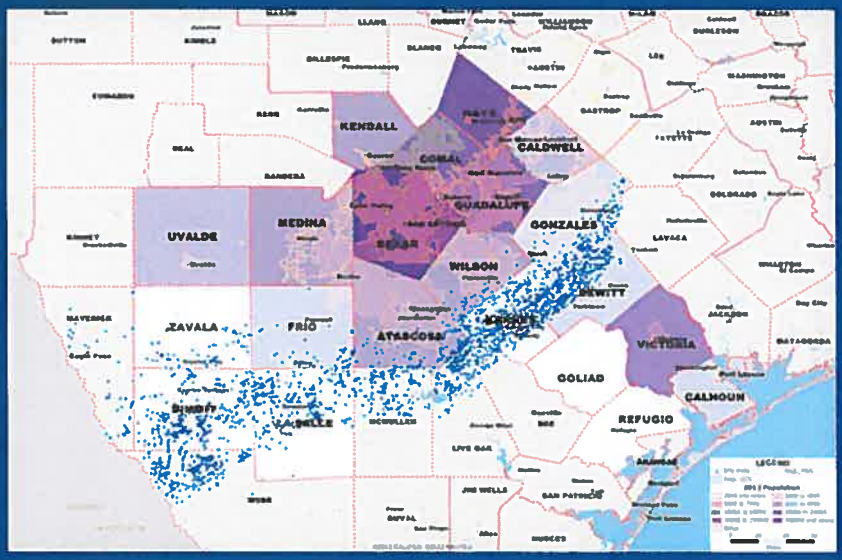
III: School Enrollment

- Data:
- StDmg data age 6-17
- Texas Education Agency
  - Public school aged children (SAC)
  - Does not include private or other school

TEA Regional Service Centers



2013 School Enrollment

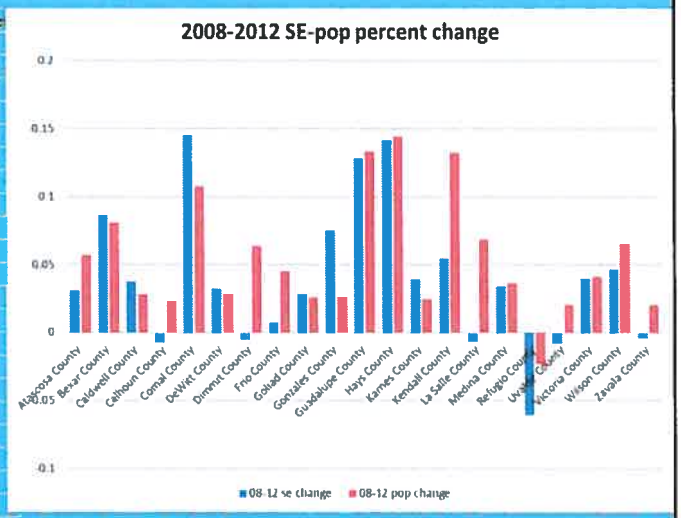


Where Are the SAC?

YEAR	TEA /EFS	CNTYNAME	COUNTY_ENROLLMENT	Census SAC
2009-2010	20/y	ATASCOSA COUNTY	8761	**8788**
2009-2010	20/y	BEXAR COUNTY	**323988**	309232
2009-2010	13/n	CALDWELL COUNTY	6351	**6868**
2009-2010	3/n	CALHOUN COUNTY	**4276**	3863
2009-2010	13/n	COMAL COUNTY	**24833**	18131
2009-2010	3/y	DEWITT COUNTY	**4263**	3021
2009-2010	20/y	DIMMIT COUNTY	**2395**	2009
2009-2010	20/y	FRIO COUNTY	**3192**	2827
2009-2010	3/y	GOLIAD COUNTY	**1349**	1175
2009-2010	13/y	GONZALES COUNTY	**3856**	3542
2009-2010	13/y	GUADALUPE COUNTY	22198	**25236**
2009-2010	13/n	HAYS COUNTY	**28652**	26011
2009-2010	3/y	KARNES COUNTY	**2283**	1983
2009-2010	13/20/AL/n	KENDALL COUNTY	**7611**	5906
2009-2010	20/y	LA SALLE COUNTY	**1178**	1000
2009-2010	20/n	MEDINA COUNTY	**8990**	8288
2009-2010	3/n	REFUGIO COUNTY	**1462**	1243
2009-2010	20/y	UVALDE COUNTY	**6170**	5190
2009-2010	3/n	VICTORIA COUNTY	14918	**15343**
2009-2010	20/y	WILSON COUNTY	**8406**	8096
2009-2010	20/y	ZAVALA COUNTY	**2473**	2379

Percent change difference SE-Pop

08-12 se change	08-12 pop change
3.09%	5.69%
8.58%	8.11%
3.74%	2.82%
-0.68%	2.28%
14.49%	**10.76%**
3.25%	2.83%
-0.46%	6.39%
0.79%	4.50%
2.88%	2.61%
7.53%	2.59%
12.81%	**13.33%**
14.12%	**14.43%**
3.98%	**2.46%**
5.50%	**13.23%**
-0.57%	6.85%
3.44%	3.62%
-6.05%	+2.30%
-0.74%	2.08%
3.95%	4.09%
4.58%	6.51%
-0.39%	2.01%



historic

yellow=lo
green=ND
red=hi

County	sdmg 0	sdmg 0.5	stdmg 1	ave mult	popx-se
Atascosa C	59,053	75,481	87,117	5.229228	53,631
Bexar Cou	2,195,644	2,695,668	3,180,782	5.340807	3,119,331
Caldwell C	43,148	64,014	92,471	6.023014	39,973
Calhoun C	25,352	32,276	38,881	5.098867	21,919
Comal Cou	112,457	192,808	317,376	4.395665	276,088
DeWitt Co	22,003	22,216	21,770	4.574207	17,112
Dimmit Co	14,414	12,825	10,042	4.400926	8,345
Frio Count	22,136	24,488	26,160	5.5198	17,285
Goliad Cou	6,936	8,345	10,545	5.413108	6,500
Gonzales C	27,079	28,330	28,239	4.908178	21,760
Guadalupe	145,771	258,289	424,870	5.95575	285,152
Hays Coun	237,144	474,802	952,790	5.569324	355,394
Karnes Cou	15,735	15,697	16,609	6.40042	9,140
Kendall Co	33,669	56,429	90,187	4.549089	62,451
La Salle Cc	9,178	9,987	10,835	5.855848	4,470
Medina Co	52,341	70,896	89,271	5.120442	58,548
Refugio Cc	8,793	8,119	6,888	5.369083	3,961
Uvalde Co	37,440	36,257	31,631	4.412337	19,338
Victoria Cc	111,013	109,785	101,747	5.801209	73,656
Wilson Co	43,786	71,683	108,349	5.221843	69,566
Zavala Cou	19,410	17,521	13,540	4.68875	12,011

Key	
	lower than scenario
	no difference from scenario

Comparisons

event

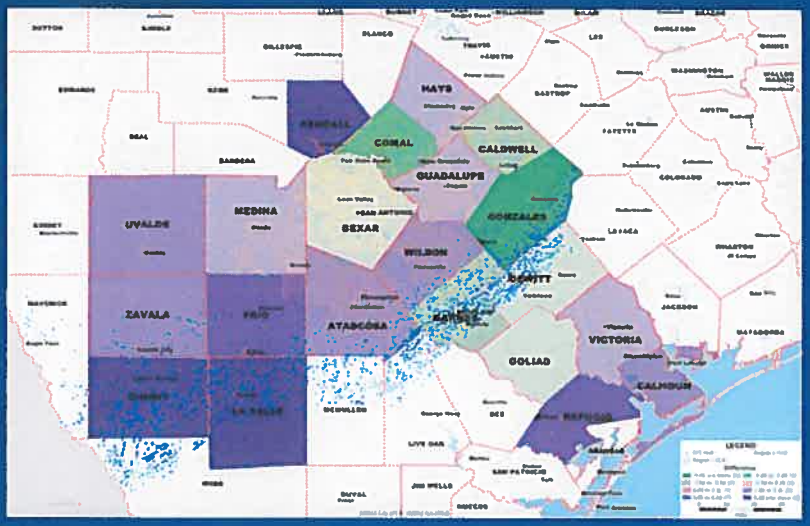
yellow=lo
green=ND
red=hi

County	sdmg 0	sdmg 0.5	stdmg 1	popx-se6yr
Atascosa C	59,053	75,481	87,117	58,293
Bexar Cou	2,195,644	2,695,668	3,180,782	3,102,539
Caldwell C	43,148	64,014	92,471	53,597
Calhoun C	25,352	32,276	38,881	17,848
Comal Cou	112,457	192,808	317,376	262,619
DeWitt Co	22,003	22,216	21,770	28,103
Dimmit Co	14,414	12,825	10,042	10,493
Frio Count	22,136	24,488	26,160	19,700
Goliad Cou	6,936	8,345	10,545	9,620
Gonzales C	27,079	28,330	28,239	34,205
Guadalupe	145,771	258,289	424,870	280,406
Hays Coun	237,144	474,802	952,790	283,073
Karnes Cou	15,735	15,697	16,609	20,290
Kendall Co	33,669	56,429	90,187	57,657
La Salle Cc	9,178	9,987	10,835	8,765
Medina Co	52,341	70,896	89,271	62,759
Refugio Cc	8,793	8,119	6,888	3,413
Uvalde Co	37,440	36,257	31,631	21,024
Victoria Cc	111,013	109,785	101,747	115,588
Wilson Co	43,786	71,683	108,349	58,166
Zavala Cou	19,410	17,521	13,540	12,680

	lower than scenarios
	no difference from scenarios
	higher than scenarios

Comparisons

Differences in School Enrollment and Population



yellow=lo
green=ND
red=hi

County	sdmg 0	sdmg 0.5	sdmg 1	popx-se	popx-se6yr	popx-labor	popx-labor5yr	popx-HU
Atascosa County	59,053	75,481	87,117	53,631	58,293	72,962	63,054	74791
Bexar County	2,195,644	2,695,668	3,180,782	3,119,331	3,102,539	2,589,924	[illegible]	3,010,225
Caldwell County	43,148	64,014	92,471	39,973	53,597	48,627	69,592	66,573
Calhoun County	25,352	32,276	38,881	21,919	17,848	23,253	[illegible]	26,114
Comal County	112,457	192,808	317,376	276,088	262,619	223,647	112,899	238,301
DeWitt County	22,003	22,216	21,770	17,112	[illegible]	[illegible]	[illegible]	[illegible]
Dimmit County	14,414	12,825	10,042	8,345	10,493	[illegible]	[illegible]	
Frio County	22,136	24,488	26,160	17,285	19,700	22,194	[illegible]	24,724
Goliad County	6,936	8,345	10,545	6,500	9,620	[illegible]	[illegible]	
Gonzales County	27,079	28,330	28,239	21,760	[illegible]	[illegible]	[illegible]	26,217
Guadalupe County	145,771	258,289	424,870	285,152	280,406	257,535	329,633	279,012
Hays County	237,144	474,802	952,790	355,394	283,073	338,242	350,421	353,058
Karnes County	15,735	15,697	16,609	9,140	[illegible]	16,380	[illegible]	[illegible]
Kendall County	33,669	56,429	90,187	62,451	57,657	66,646	47,859	77,549
La Salle County	9,178	9,987	10,835	4,470	8,765	[illegible]	[illegible]	
Medina County	52,341	70,896	89,271	58,548	62,759	85,849	69,863	84,770
Refugio County	8,793	8,119	6,888	3,961	3,413	[illegible]	[illegible]	
Uvalde County	37,440	36,257	31,631	19,338	21,024	32,526	[illegible]	36684
Victoria County	111,013	109,785	101,747	73,656	[illegible]	[illegible]	[illegible]	[illegible]
Wilson County	43,786	71,683	108,349	69,566	58,166	82,109	79,905	83,081
Zavala County	19,410	17,521	13,540	12,011	12,680	6,398	[illegible]	

Lower
Between
Higher
no data

Comparisons

Summary by County

Atascosa: "EFS"; historic and event SE is lower, and all other show no difference; 0 - 75K and .5 - 59K

Bexar: "regional urban anchor"; recount; event labor high (3,195k), all other no difference, 1 – 3180K

Caldwell: "north corridor"; historic SE low, all other no difference; .5 – 64K, 1 – 92k

? Calhoun: "coastal", recount; SE and historic labor low, HU ND, event labor high (45k); 0 – 25k, 1 – 35k

Comal: "north corridor"; all ND, but event labor close to 0 scenario, SE (historic 276-event 262k) and historic labor (223k) fall between: .5 – 192k, 0 – 317k

? Dewitt: "EFS"; recount; historic SE lower, all others higher: event SE 25k, event labor 41k; 0, .5 – 22k;
*StDmg projections not recommended, due to downward curvilinear and low estimations

Summary by County

? Dimmit: "EFS"; recount; historic SE lower, event SE ND, Labor higher (historic 16-event 69k), HU no data; 0 – 14k is far under the labor-based target
*StDmg projections not recommended, due to downward curvilinear and low estimations

? Frio: "EFS"; recount; SE low, historic labor and HU ND, event labor high (62k); .5 – 24k, 1 – 26k; but
*StDmg projections curve downward

? Goliad: "south corridor", recount; historic SE low, event SE ND, HU no data, labor high (11k); 1 – 10k;
*StDmg projections not recommended, due to downward curvilinear and low estimations

? Gonzales: "north corridor; recount; historic SE and HU low, event SE (34k) and labor high (historic 32k – event 30k); .5 – 25k

Guadalupe: "north corridor; recount; all ND, however, SE (historic 280k – event 285k) and labor (historic 257k-event 329k) fall between .5 – 258k and 1 – 424k
*StDmg projection ranges are wide, aggressive almost 3 times the normal, may not be realistic

Hays: "north corridor; all ND, SE (355-283K) and labor (338-350k); .5 – 474k;
*StDmg projection ranges are wide, aggressive (~ 1000k) almost 5 times current may not be realistic

Summary by County

? Karnes: "EFS"; recount; SE low, event SE high (20k), labor close & high (historic 16k – event 25k); none;
*StDmg projections not recommended, due to downward curvilinear and low estimations

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Kendall: "north corridor"; all ND, .5 – 56k, 1 – 90k

? La Salle: "EFS"; recount; SE low, HU no data, labor high (historic 11k – event 42k); 1 – 10k,
*StDmg projections not recommended, due low estimations

Medina: "EFS"; all ND, SE (event 62k), labor (historic 85k – event 69k); .5 – 70k, 1 – 89k

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? Refugio: "coastal"; recount; SE low, labor high (historic 12k – event 16k), none;
*StDmg projections not recommended, due to downward curvilinear and low estimations

Summary by County

? Uvalde: "EFS"; recount; SE low, historic labor ND, event labor (43k); 0 – 37k
*StDmg projections usable range, but downward curvilinear and possible low estimations

---

? Victoria: "south corridor"; recount; historic SE low, all other high, event SE (115k), labor (historic 115- event 130k); 0 – 111k
*StDmg projections not recommended, due to downward curvilinear and low estimations

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? Wilson: "EFS"; recount; all ND labor (historic 82k– event 79k); .5 – 71k, 1 – 108k
*StDmg projection ranges are wide

? Zavala: "EFS"; recount; SE and historic labor low, event labor high (37k), HU no data; 0 – 19k

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Conclusion

- Study found evidence to support WUG
  - Requests for census recount
  - Documentation for significant rate differences
  - Documentation for substantial rate differences
- WUG
  - Information to best choice scenario, if not desiring to apply for adjustment
  - Planning information for future reference
  - Suggestions for local record needs for planning

<CCBR available to help read and understand data>

Thank You!

South Central Texas Region L
Population Projection study

Thomas Tunstall, Ph.D., Research Director
Sheryllynn Roberts, Ph.D, Research Economist
& Research Staff
Center for Community and Business Research
Institute of Economic Development
University of Texas at San Antonio
May 2013