The Clean Air Coalition Advisory Committee (CACAC) appreciates this chance to provide information related to potential ozone nonattainment boundaries and designations for the Austin region. The CACAC is the regional staff level committee that provides support for the elected officials of the Clean Air Coalition (CAC) for the Austin-Round Rock MSA (A-RR MSA).

We suggest an additional comment opportunity after the Texas Commission on Environmental Quality (TCEQ) develops draft boundary and designation recommendations, and encourage TCEQ to actively engage regional air quality planning groups and local jurisdictions when developing draft and final recommendations.

This public meeting provides the CACAC with an opportunity to address data needs suggested by the eleven factors detailed in Section 5 of the U.S. Environmental Protection Agency's (EPA's) guidance memorandum (March 28, 2000, *Boundary Guidance on Air Quality Designations for the 8-hour Ozone National Ambient Air Quality Standard)* and the needs for regional strategies as noted in Section 7 of the same memo*.*

Central Texas has a history of successful collaboration with TCEQ and EPA in producing and implementing voluntary air quality plans. These plans, 1-hour Ozone Flex, Early Action Compact (EAC), and 8-hour Ozone Flex, have allowed the region to build an infrastructure of stakeholders, elected officials and staff members who are well prepared to develop a voluntary compliance plan should that option become available.

We urge TCEQ to keep distinct, well-established, planning groups and areas intact when making boundary decisions. Distinct planning areas should not be combined into larger areas; doing so would likely decrease the effectiveness of emission reduction efforts.

The following documentation is provided by CACAC representatives for consideration in the process of determining nonattainment boundaries, attainment dates and regional strategies:

- Voluntary compliance efforts, a proven success strategy, should be offered as a viable option to nonattainment.
- Future composition of emissions inventories for the A-RR MSA counties may indicate different strategies than for an urban area with significant point source emissions;
- Transport and background levels will have to be significantly reduced at the national and State levels; To reduce background contributions within the State emission reductions for large combustion source emissions within the state ozone transport region should be considered, as has been done for the Dallas SIP; Attainment dates for all nonattainment classifications should be more closely aligned;

- Permitting rules may need to require an evaluation of ozone impacts using photochemical grid modeling and regional ozone impacts addressed in the permit process;
- Consideration may be given, as appropriate, to additional documentation provided for addressing criteria which may affect nonattainment boundaries. This includes maps of population and employment density in the MSA and commute patterns within the MSA Counties, as well as, between the Austin and San Antonio regions.

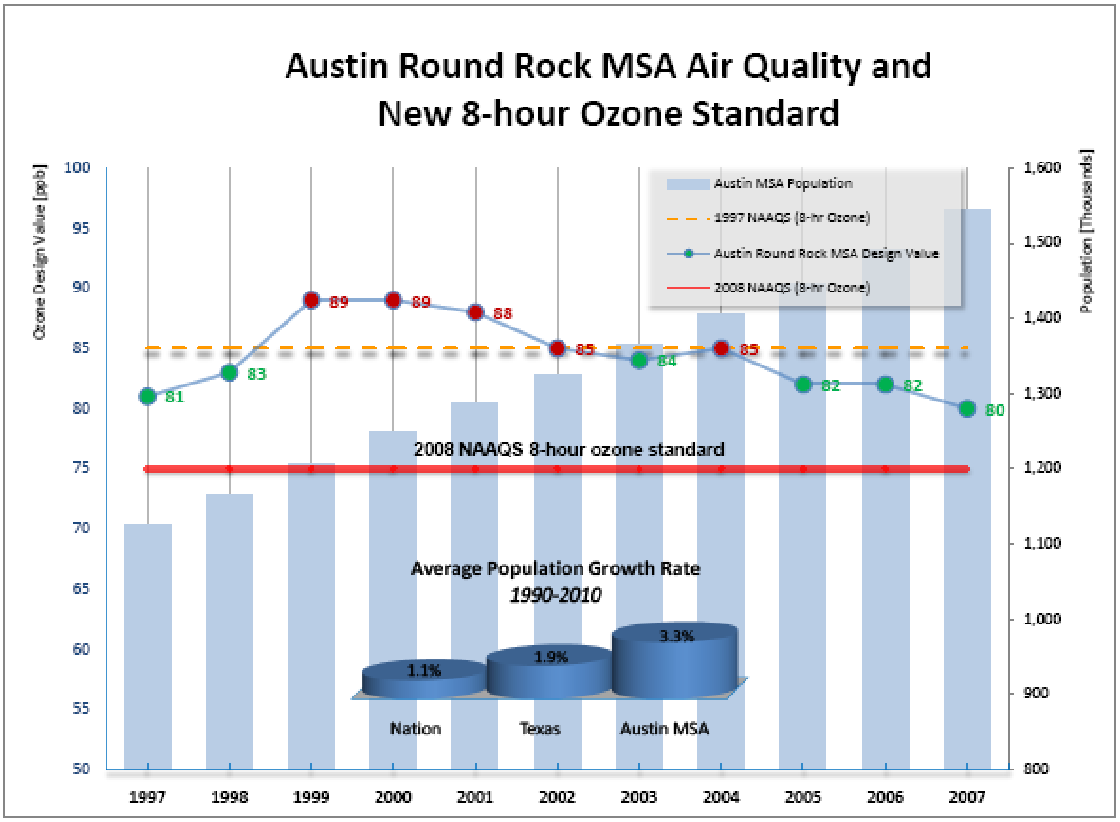


Figure 1 – Ozone design value trend

Voluntary compliance efforts

Through the CAC's leadership and support from the Texas Legislature, the TCEQ and the EPA, the MSA has successfully developed and implemented two Memorandums of Agreement (MOA) to voluntarily implement measures sufficient to ensure continued attainment of the ozone NAAQS: the 1-hour Ozone Flex Plan and the EAC. Efforts undertaken by the CAC and its represented local governments as part of the Early Action Compact have been instrumental in achieving air quality improvements as indicated in the ozone design value decrease shown in Figure 1. Some of the measures implemented include a vehicle inspection and maintenance program, locally enforced heavy vehicle idling limits, power plant emission reductions and almost 200 measures selected and implemented by local governments. The CAC is currently working on a third MOA, the 8-hour Ozone Flex Plan which was recently approved by the TCEQ.

Voluntary compliance efforts such as the EAC have proven effective and should be an available option for areas that may violate the new ozone standard. These efforts result in emissions reductions sooner than would occur under the traditional nonattainment process. They also promote greater buy-in from elected officials and citizens in the local areas. Local areas can help tailor an emissions reduction plan that works for the areas' specific circumstances. Costly prescribed regulations that are not always suited to local needs can then be used only when appropriate. As in the EAC, the traditional nonattainment process could be required if the voluntary efforts are not successful, with no delays in the traditional nonattainment process.

Emissions Inventory Composition and Trends

Regional planning initiatives continue to focus on reducing NOx and VOC emissions from A-RR MSA ozone contributing source categories.
Figures 2 and 3 show anthropogenic NOx and VOC emissions from the 2005 Emissions Inventory in tons per day for four major contributing source categories represented in each of the A-RR MSA counties. The predominant sources of anthropogenic VOC and NOx in the A-RR MSA are on-road, non-road, and area.

Anthropogenic Sources of NOx and VOC in the A-RR MSA (2005)

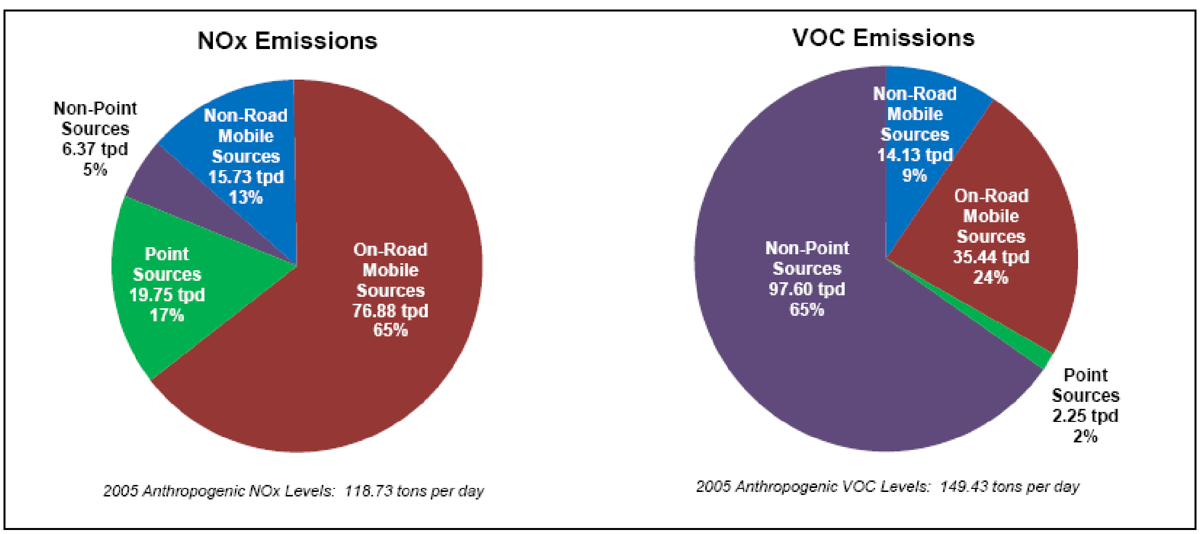


Figure 2 - Anthropogenic sources of NOx and VOC from the TCEQ 2005Emissions Inventory.

Anthropogenic Sources of NOx and VOC in the A-RR MSA (2015)

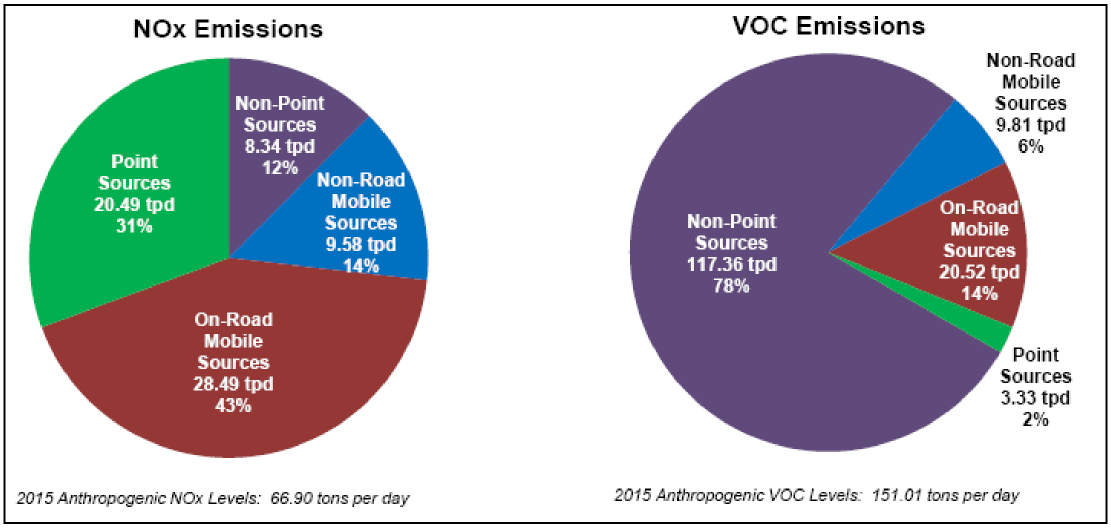
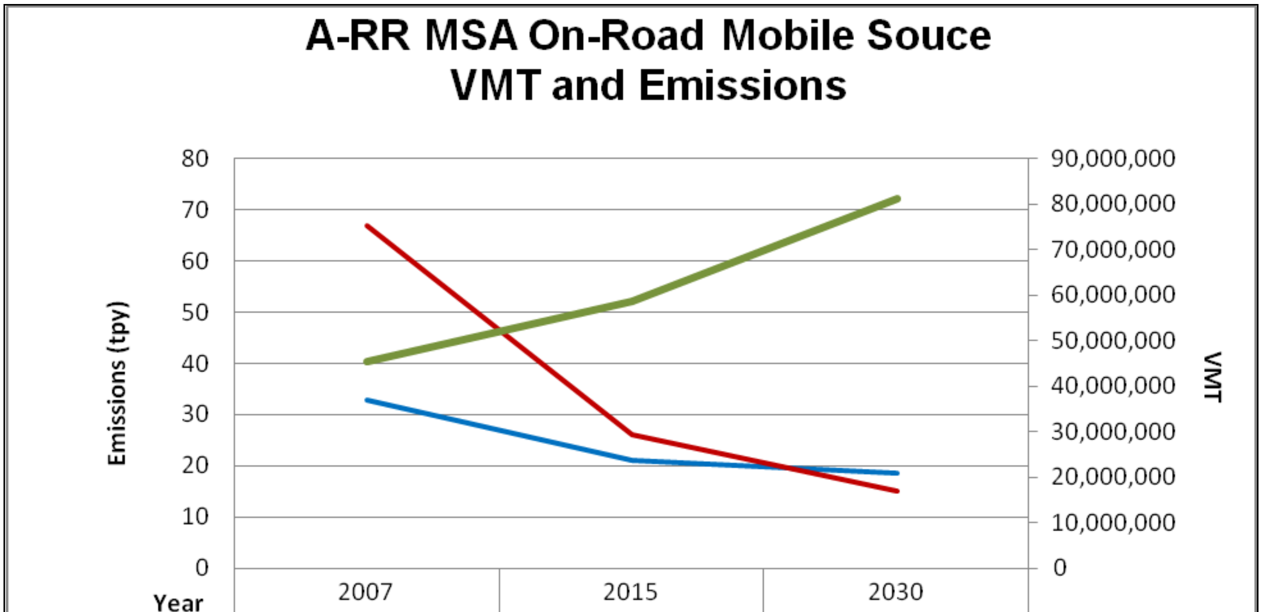


Figure 3 - The 2015 emissions for the on-road mobile sources was obtained from Texas Transportation Institute (TTI) report: "Austin Early Action Compact Region On-Road Mobile Source Emissions Inventories: 2007, 2015, And 2030: Revised Emissions Results", TTI, February 2007; The non-road growth factors were developed by running the US EPA NONROAD model for years 2002, 2005, 2007, 2012 and 2015. Similarly, the area and point source emission trends were also developed by applying growth factors; however, the growth factors were obtained from the 2003 EAC document and applied to the 2005 TCEQ Emissions Inventory data. The represented 2015 emission projections were developed by using an interpolation method for both area and point source categories.

The change in emissions shown in Figure 2 and 3 suggests that the A-RR MSA will see significant reduction of NOx and VOC from on-road and non-road mobile, with no significant change in point source emissions.

In 2007, the Texas Transportation Institute (TTI) performed and documented a regional emissions analysis for the A-RR MSA for 2007, 2015, and 2030. This analysis predicts that total Vehicle Miles Travelled (VMT) for the MSA will increase through 2030, while overall emissions from on-road mobile sources are expected to decrease (see Figure 4). The decrease in on-road mobile emissions can be attributed to technological improvements and refinements to emission standards over time.



Year	2007	2015	2030
VOC (tpy)	32.78	21.09	18.56
Nox (tpy)	66.75	26.18	15.14
VMT	45,529,369	58,670,547	81,260,768

Figure 4 – VMT and emissions trends for onroad mobile sources in Austin-Round Rock MSA

As federally mandated reduction measures are implemented for mobile sources, it will become increasing difficult to identify new areas within the A-RR MSA for emission reductions.

Transport and high background levels

As noted in EPA's 8-hour guidance on ozone nonattainment designations, regional strategies such as those employed in the Ozone Transport Region in the Northeast U.S. and in the EPA NOx SIP call are needed to address the long-range transport component of ozone nonattainment. The HYSPLIT (Hybrid Single-Particle Lagrangian Integrated Trajectory) model was used to investigate the potential source regions of air entering the A-RR MSA. HYSPLIT uses meteorological model forecast data from the National Centers for Environmental Prediction (NCEP) archived by Air Resources Laboratory (ARL). Figures 5 and 6 present the residence time maps for the 20% highest ozone days for June and September based on the maximum ozone concentration at either the Murchison or Audubon monitoring station during the years 2001 through 2005. These back trajectories suggest long-range transport of continental air into the MSA from upwind areas located to the east and northeast of Texas. Multi-day high ozone episodes are often associated with a ridge of high pressure that extends southwestward into Texas. The transport pattern prior to high ozone days is consistent with the large-scale clockwise circulation around this high pressure ridge. This high pressure ridge is often associated with local meteorological conditions that are favorable for the formation and accumulation of ground-level ozone. In addition, the continental air mass transported into the MSA likely contains elevated concentrations of ozone and its precursor compounds associated with both biogenic and anthropogenic emissions from sources located in states and other areas of Texas upwind of the A-RR MSA (Austin Conceptual Model, UT Austin, 2007).

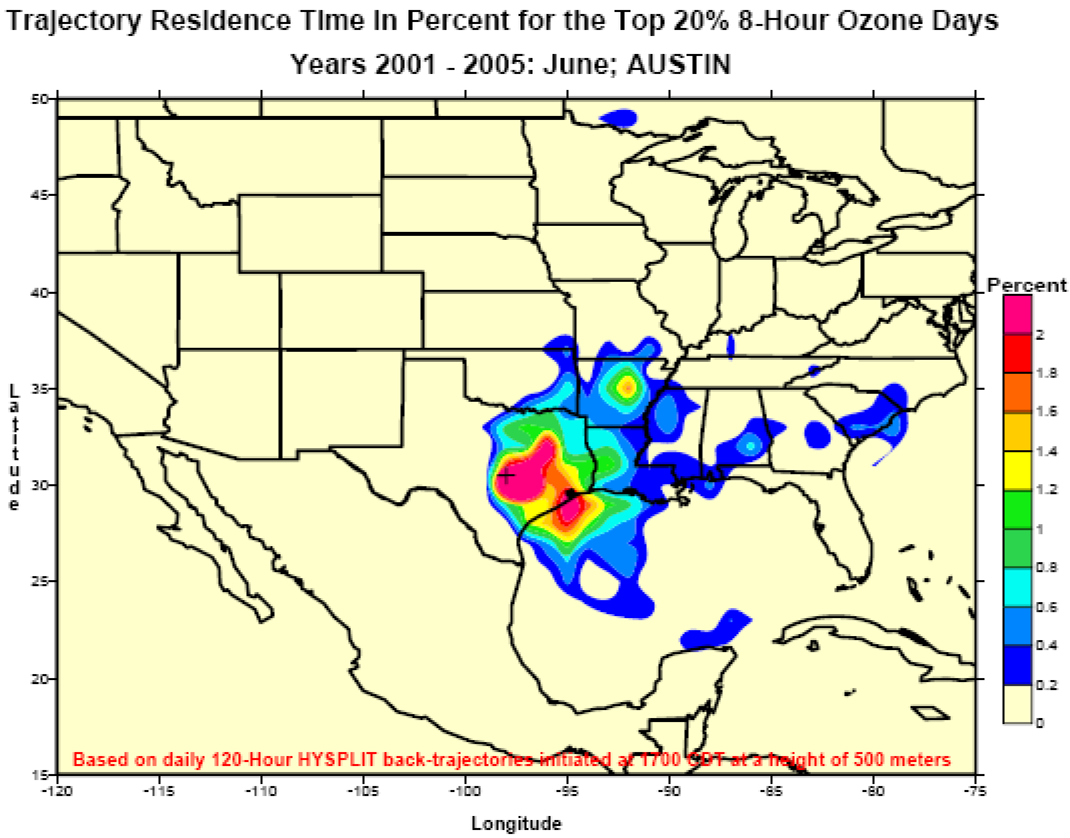


Figure 5 - Trajectory residence time in percent for the highest 20% ozone days in June from 2001 to 2005.

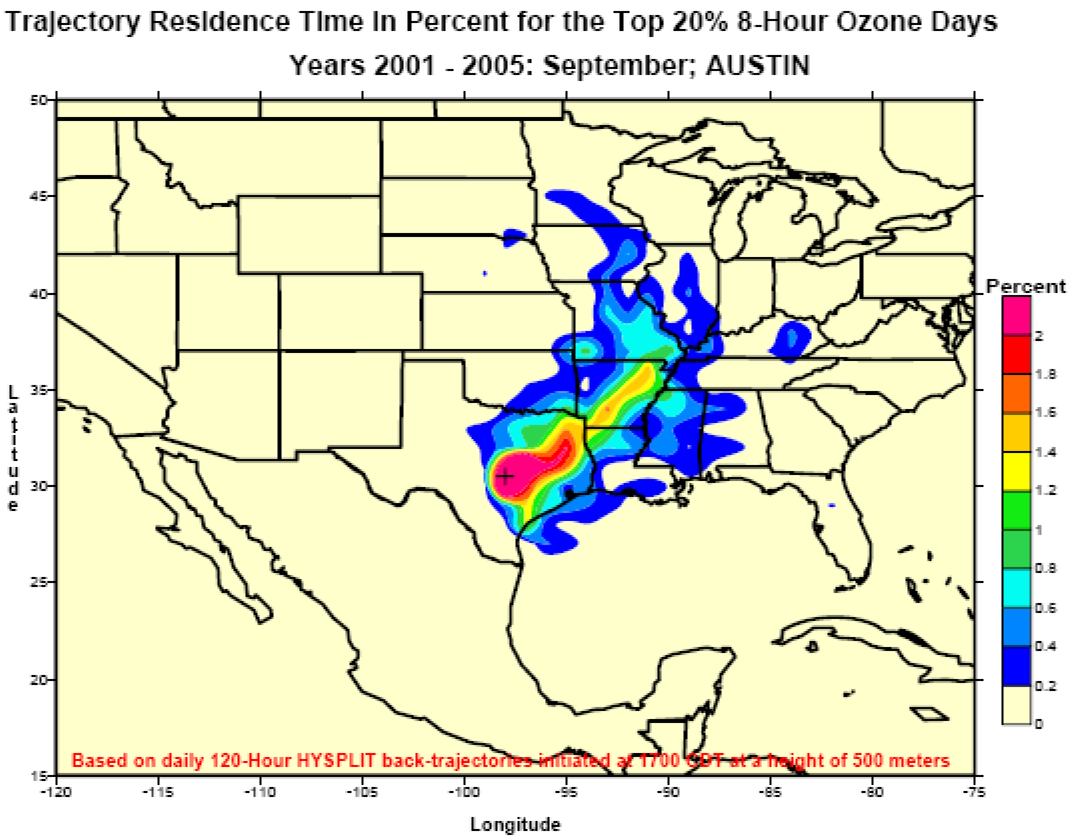


Figure 6 - Trajectory residence time in percent for the highest 20% ozone days in September from 2001 to 2005.

According to the Austin Ozone Conceptual Model (The University of Texas at Austin, July 26, 2007), from 1993 through 2006, one or more monitoring stations measured 75 ppb or greater on 228 days. The number of high ozone days varied from a minimum of 6 in 1996 to a maximum of 34 in 1999. The frequency of occurrence of high ozone days over the course of a typical ozone season is characterized by a bi-modal distribution, with a primary peak in the frequency of high ozone days during the August through early October period and a secondary peak during late May and June. In recent years (2001 through 2006) the average number of late summer high ozone days declined substantially. The frequency of occurrence of high ozone days was equally distributed between the May/June and August/September peaks.

The common meteorological condition occurring with high ozone is a clockwise circulation around a surface ridge of high pressure, often centered over the Central Plains or Ohio/Mississippi River Valleys. It generates northeasterly or easterly wind that transports continental air and haze into eastern Texas. This continental air mass is often characterized by reduced visibility, and likely contains elevated concentrations of ozone and its precursor compounds associated with both biogenic and anthropogenic emissions. High ozone concentrations are often measured at monitoring stations throughout the eastern half of Texas.

In the A-RR MSA, monitoring data collected during these episodes shows background ozone concentrations of typically 80-85% of the observed local maximum. Based on these analyses, the enhancement of ozone concentrations due to emissions from sources within the A-RR MSA generally ranged between 10 ppb and 20 ppb on individual high ozone days, with an average enhancement of 15 ppb. With background concentrations ranging from 65 ppb to 75 ppb, even relatively small contributions of ozone formed from local source emissions in the A-RR MSA would have resulted in an exceedance of the 8-hour ozone National Ambient Air Quality Standard (NAAQS).

The A-RR MSA and other areas are significantly impacted by interstate and intrastate transport from sources outside the MSA or presumed nonattainment area. Figure 7 demonstrates monitored background ozone levels above the new standard. Based on these monitor readings, the MSA would violate the standard due to transported emissions and high background levels that will not be reduced by implementing controls in the MSA area. Given this, EPA and the states must significantly reduce transported and background emissions if compliance to a lower standard is to be achieved.

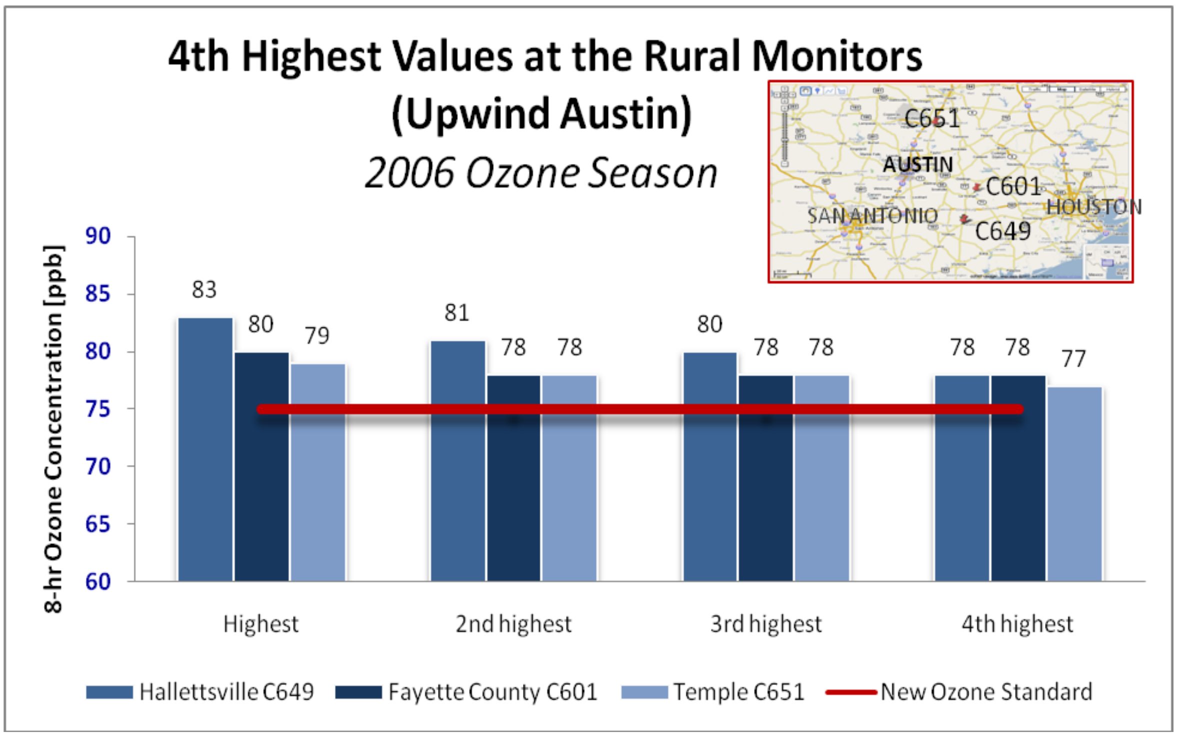


Figure 7 - Four highest ozone readings in 2006 at the Austin upwind monitors

Transported emissions often come from heavily polluted upwind areas, many of which are already ozone nonattainment areas. Recent airborne monitoring conducted by the Baylor Institute of Air Sciences (see Figure 8) demonstrates the extent to which an urban ozone plume emanating from a large nonattainment area can impact areas far downwind of the source region. The federal classification scheme for nonattainment areas allows heavily polluted areas more time to attain than those with lesser pollution problems. Given the prevalence of transport and high background emissions, attainment dates for all areas should be closely aligned, since areas with lesser pollution problems will not be able to attain until the more heavily polluted areas have significantly reduced emissions. It may be prudent and necessary to accelerate heavily polluted areas' attainment deadlines to adequately protect public health.

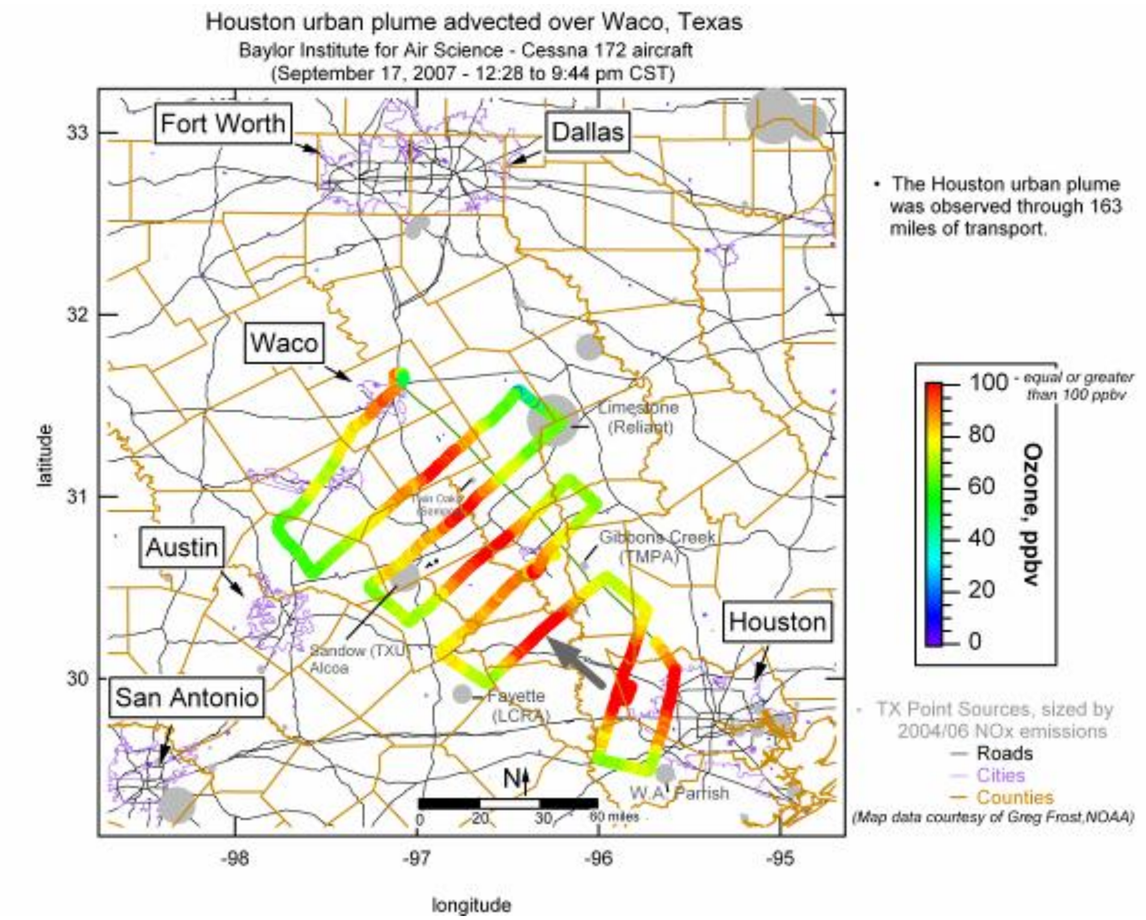


Figure 8 Houston urban ozone plume. Airborne sampling data acquired by Baylor University on September 17, 2007

State and Federal permitting rules and policies

Current interpretation of permitting rules and policies does not allow for evaluation or consideration of the effect of emissions from a proposed point source will have on regional ozone levels or downwind areas. Figure 9 demonstrates the impact a significant source outside of the immediate MSA can have on ozone readings. Both state and federal permitting rules and policies need to be revised or clarified to require an evaluation of the emissions impacts of a proposed point source on regional ozone and downwind areas. The rules and policies should also consider modification of the permit if impacts cannot be sufficiently minimized or mitigated to avoid adverse health impacts or violations of the NAAQS in the affected region or downwind area.

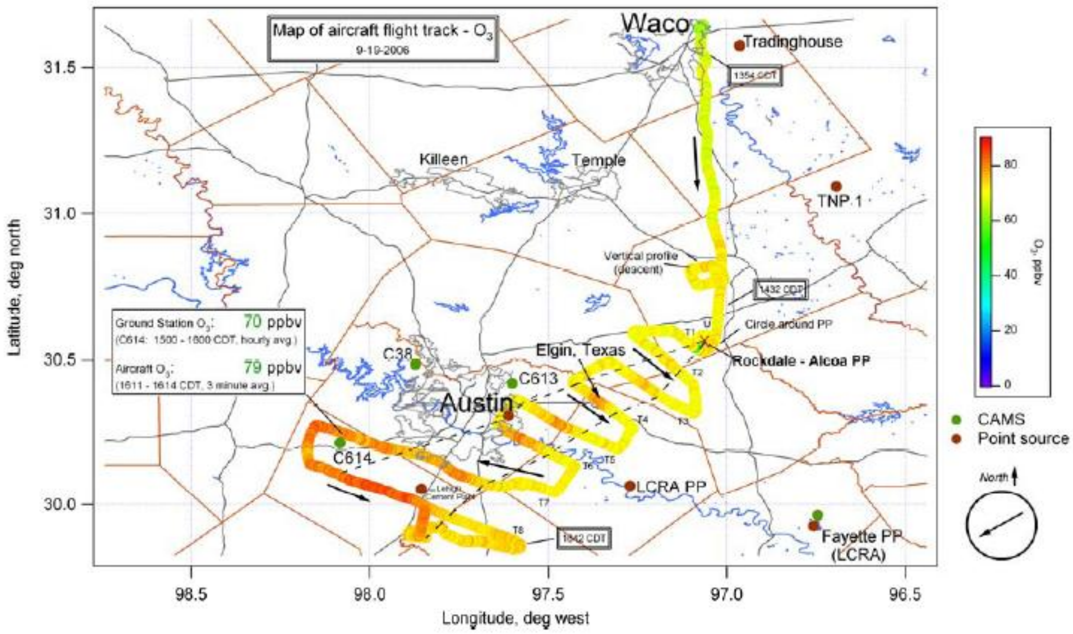


Figure 9 - Map of color-coded ozone concentrations along flight track showing an increase of ozone downwind of the Alcoa-Sandow facility and two transects downwind of Austin, Texas.

Additional documentation provided for addressing criteria which may affect nonattainment boundaries

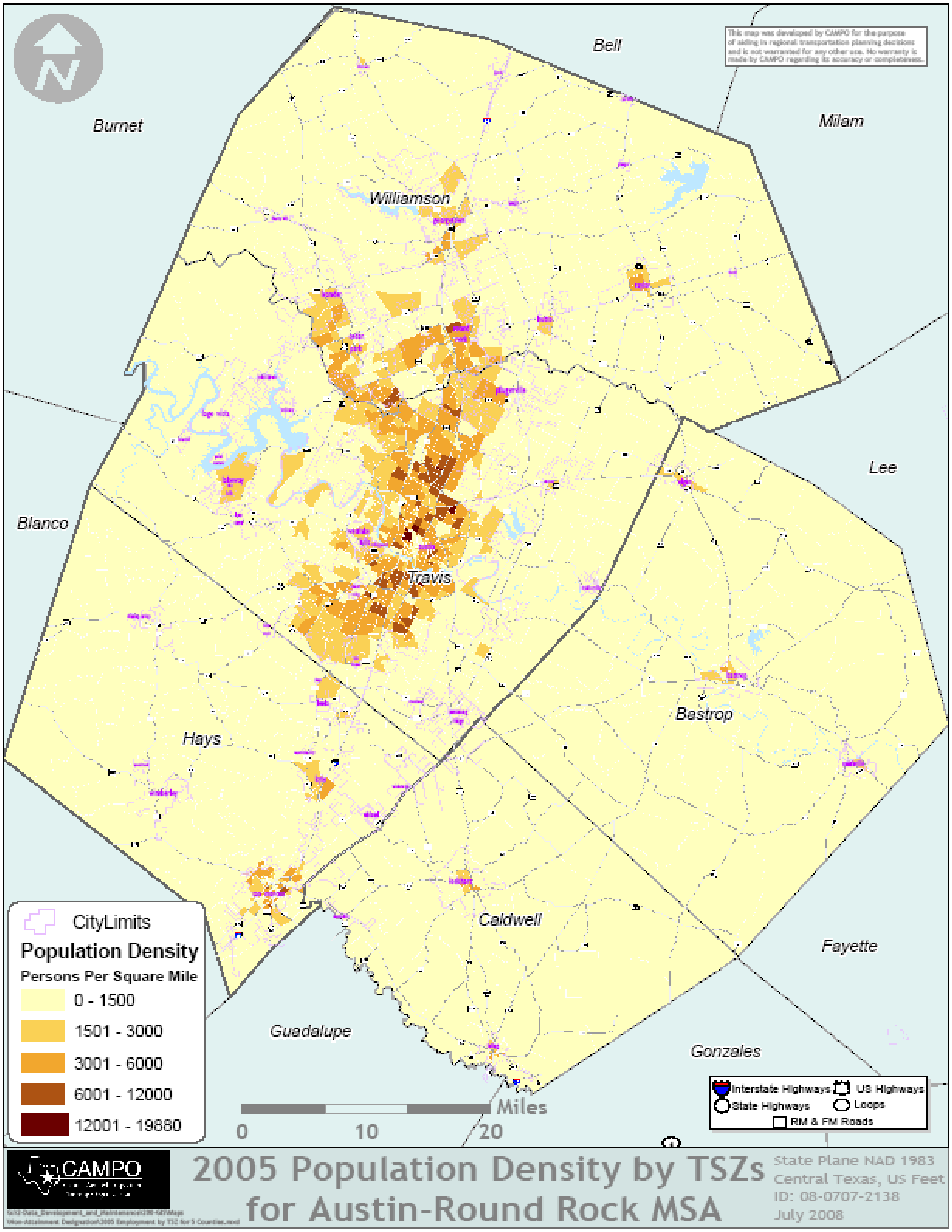
Table 1: Approved Population Forecasts for the CAMPO 2035 Plan

	2005 SDC Est.	2015	2025	2035
Travis	896,800	1,105,000	1,318,000	1,555,300
Williamson	330,700	473,300	702,700	1,026,500
Hays	126,200	189,200	271,600	371,200
Bastrop	69,500	102,300	149,200	215,500
Caldwell	35,400	50,100	65,300	82,100
Total	**1,458,600**	**1,919,900**	**2,506,800**	**3,250,600**

Table 2: Approved Employment Forecasts for the CAMPO 2035 Plan

	2005 Est.	2015	2025	2035
Travis	536,900	707,200	843,500	1,026,500
Williamson	101,500	165,700	253,000	400,300
Hays	41,000	66,200	97,800	137,300
Bastrop	12,000	20,500	34,300	58,200
Caldwell	7,000	10,500	15,000	20,500
Total	**698,400**	**970,100**	**1,243,600**	**1,642,800**

Note: Both population and employment forecasts were approved by the CAMPO Board at their April 2007 meeting.



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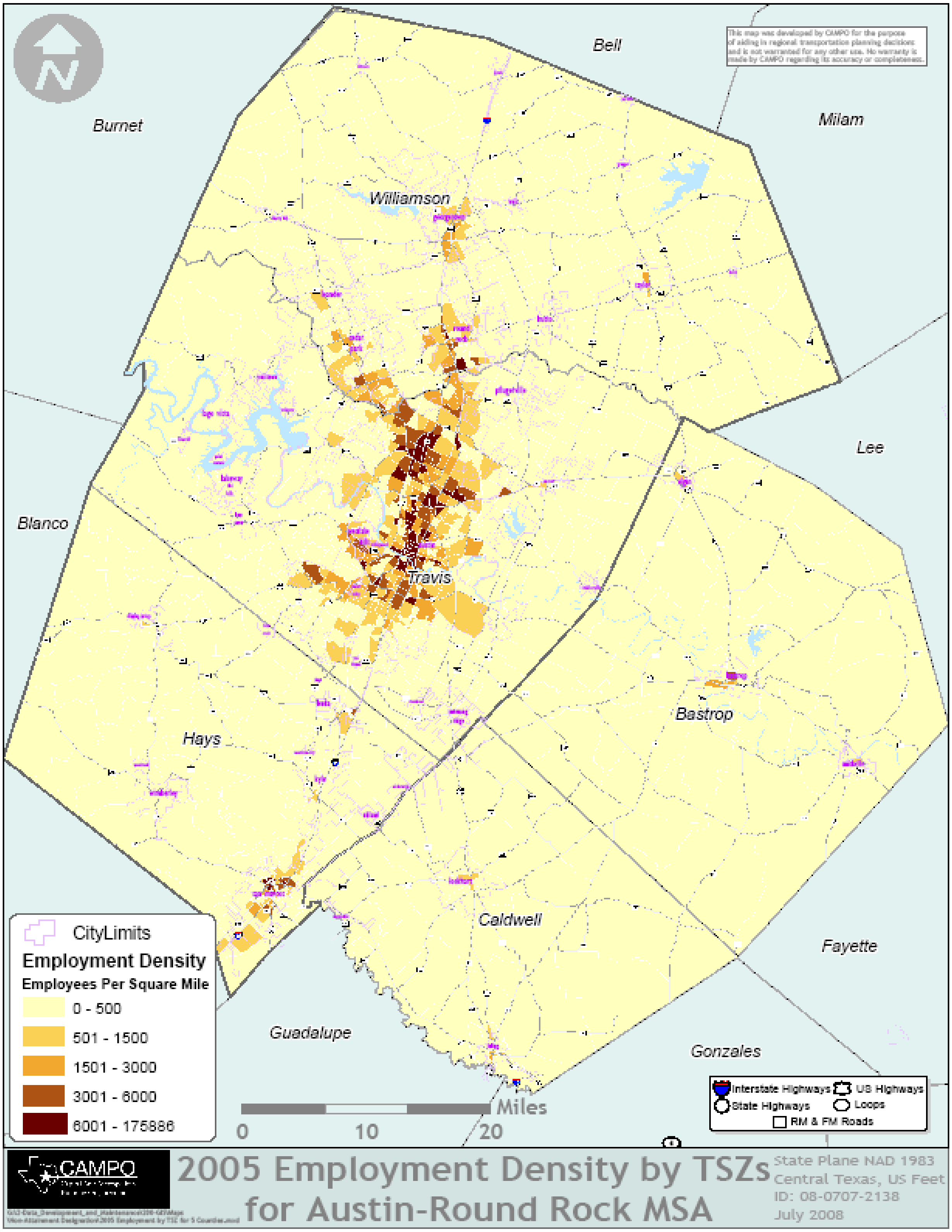

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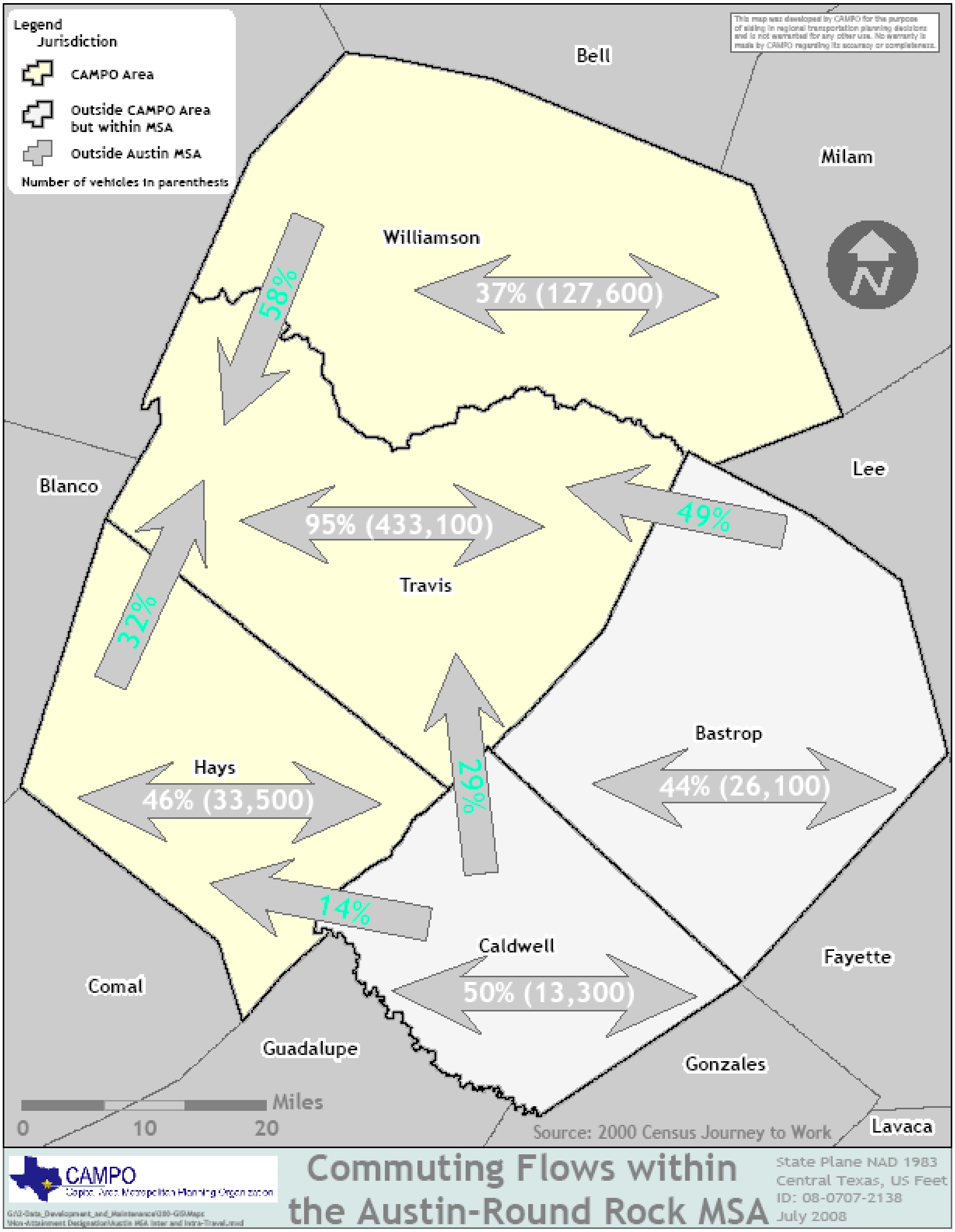

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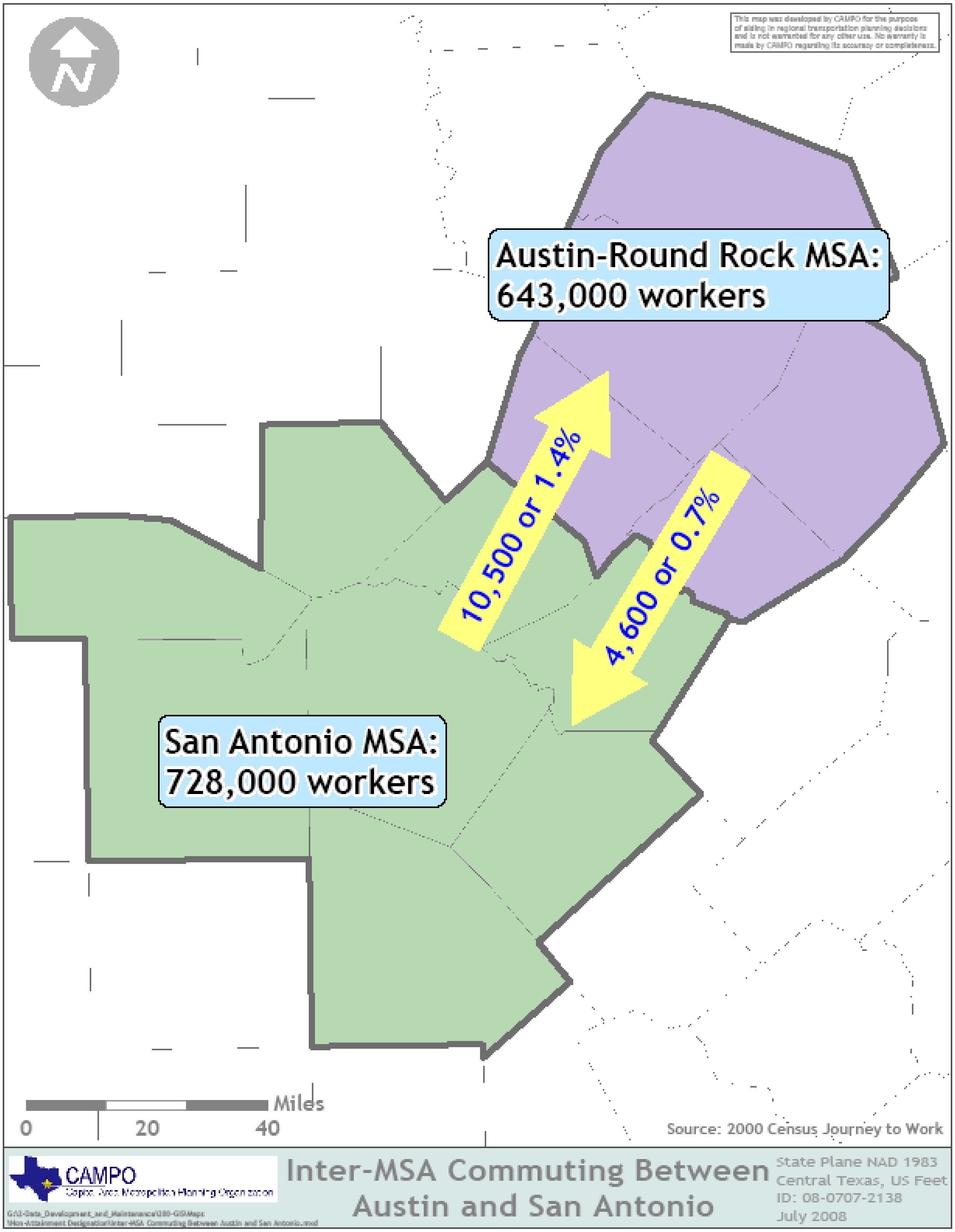
Austin-Round Rock MSA:
643,000 workers
10,500 or 1.4%
4,600 or 0.7%
San Antonio MSA:
728,000 workers
Miles
0
20
40
Source: 2000 Census Journey to Work
CAMPO
Inter-MSA Commuting Between
Austin and San Antonio
State Plane NAD 1983
Central Texas, US Feet
ID: 08-0707-2138
July 2008