

An Evaluation of Arizona's Competitiveness

The Arizona-Sonora Project

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Introduction

If a community is to be competitive in attracting wealth and investment, leaders must understand the implications of global economic trends toward increasing integration and interdependence. Communities around the world are seeking models of the conditions needed to create and support a dynamic business environment. Key ingredients in the competitive mix appear to include:

- A high-quality education system (K-12 and university)
- A skilled and talented workforce
- Advanced transportation infrastructure
- Economic development strategies to enhance and link these resources

An Evaluation of Arizona's Competitiveness (2000 edition) addresses these key assets to guide Arizona economic development professionals in designing effective marketing approaches for their communities. As a product of the Arizona-Sonora Project binational development strategy, the *Evaluation* seeks to assist communities in capturing a larger share of North American Free Trade Agreement (NAFTA), western hemispheric, and global trade.

Overview of the Evaluation

The 2000 *An Evaluation of Arizona's Competitiveness* provides a comparative analysis of key communities in Arizona (Phoenix, Tucson, Yuma, Nogales, and Douglas) relative to California (San Diego and Calexico) and Texas (San Antonio, El Paso, and Laredo; Figure 2.1). The 1999 *Evaluation of Arizona Competitiveness* identified several factors contributing to competitiveness, which are reviewed in the first section of this report. To avoid unnecessary duplication of the previous report, the 2000 *Evaluation* focuses on providing statistics and economic development information in five areas:

- Growth in Trade to Mexico
- Skilled Human Resources and Labor Pool Development
- Maquiladoras and Regional Supplier Development
- Advanced Transportation Infrastructure
- Initiatives and Strategies Underway to Enhance Trade with Mexico

Concluding observations, based on the findings from both 1999 and 2000 reports, on ways to enhance Arizona's competitive position relative to selected communities in other southwestern states, can be found at the end of this study. Like the 1999 report, the 2000 *Evaluation* serves as a marketing tool for increasing Arizona's interaction in competitive markets.

Research Methodology

A host of information was consulted for this project. Sources include:

- Economic development offices at the state and local levels
- Internet sites and web pages
- Statistical reports and publications and articles for both professional and general readership.

During the report preparation process, trips were made to each community to conduct interviews with key economic developers. In addition, business leaders, government officials, and academic scholars were consulted. Every attempt was made to provide comprehensive coverage, however assessing and identifying competitive advantages is a complex task with significant inherent measurement limitations, particularly in comparisons between the large metropolitan areas and the small communities along the border with Mexico.



FIGURE 2.1: MAP OF U.S. MEXICO BORDER

Source: Red Horse Graphics

Key Findings from the 1999 *Evaluation of Arizona Competitiveness*

Factors Contributing to Competitiveness

A

variety of factors influence the degree of competitive advantage one area holds over another. In terms of NAFTA-related enterprise, these factors include:

- Availability of skilled human resources
- Availability of key technologies
- Availability of advanced transportation and communication infrastructures
- Availability of key natural resources
- A sufficient customer base to encourage efficiency and innovation by firms
- Ability to maintain a lead in specific clusters
- Existence of key suppliers providing specialized inputs
- Firm structures that encourage skilled labor force development
- Existence of firms large enough to stimulate growth of a local supplier base
- Existence of goals and strategies for enhancing NAFTA trade

Table 3.1 summarizes the advantages and challenges faced by each community.

TABLE 3.1 Competitive Advantages and Challenges to Economic Development, by City

City	Advantages	Challenges
Arizona		
Phoenix	Strategic economic planning process with Sonora; cluster development in aerospace, semiconductors/high technology; supplier base for these industries; industrial and business services hub for the state; good air transportation services; potential hub functions for proposed CANAMEX corridor; establishment of market niches in bioindustry, software, environmental technologies, and information technologies.	Distance from Mexican border relative to other profiled cities; minimal targeting of NAFTA-related firms; the head start and aggressive marketing by other communities relative to attracting NAFTA-oriented firms.
Tucson	Industry clusters in aerospace, optics, and software, and highly skilled workforce in these areas; high-quality health centers; metal-fabrication facilities; sophisticated educational structure.	Distance from the industrial base in Mexico; insufficient air transportation services and lack of rail service; high cost of real estate and utilities; high tax levels for high-technology and capital-intensive industries; less skilled workforce in plastics than Texas.
Yuma	Binational development efforts by the Rio Colorado Commission; availability of water; avionics industry cluster and infrastructure, with skilled workforce; agribusiness cluster.	Unfavorable external perceptions of the community; insufficient development of border port-of-entry infrastructure; lack of knowledge about the characteristics and needs of NAFTA firms.
Nogales	Highway and rail access to western Mexico; experimental unified port design project; expertise in importation and distribution of Mexican-grown fresh produce.	High cost and limited availability of real estate; shortage of well-educated, English-proficient workers; limited cultural amenities; traffic congestion and safety issues due to rail line through town.
Douglas	Uncongested port of entry; inexpensive land prices; availability of land for development; proximity to Fort Huachuca air base and related surveillance expertise; proximity to educated workforce in nearby Bisbee.	Shortage of qualified and skilled workers; low student education scores; insufficient air, highway, and rail linkages; limited operating hours at border port of entry; lack of high-technology communication services; limited cultural amenities.

TABLE 3.1 Competitive Advantages and Challenges to Economic Development, by City

City	Advantages	Challenges
California		
San Diego	Maquiladora concentrations in electronics and television sets; communications infrastructure; industry clusters in biotechnology, telecommunications, and defense.	Stagnating living standards; high cost of living, especially real estate; shortage of engineers; highway links to Mexico congested and operating over capacity; lack of good rail connections; less than optimal air transport services; inadequate channel depth in harbor for container ships; most supplies for Asian-owned maquiladoras purchased elsewhere.
Calexico	Proximity to Baja California’s capital, Mexicali; inexpensive land, labor, water, and electric power; stable labor base, which poses an advantage over Tijuana.	Local resistance to development of trade linkages with Mexico and Asia; expansion of Calexico-East BPOE creating conflict with El Centro; local resistance to joint development of the area; many college graduates leave the area.
Texas		
San Antonio	Construction of “hush house” to support air-cargo traffic to Mexico and South America; the concentration of international business services in a new trade center (Consul General of Mexico, Trade Commission of Mexico, Attorney General of Mexico, NADBANK, and commercial offices of several Mexican states); Casas San Antonio and Inland Port San Antonio initiatives; high level of collaboration among economic development organizations; meetings between mayor and Mexican presidents; promotion and marketing of Medical Destination Program; large number of well-educated bilingual workers.	Heavy reliance on tourism and lack of cluster development in manufacturing; lack of incentive for trade to stop in the city when it is required to stop two hours south in Laredo.
El Paso	Emerging industry clusters in plastics and metals; growing maquiladora supplier base; concentration of maquiladoras, particularly in electronics.	Chronic congestion at toll-free BPOE; shortage of water; shortage of real estate for manufacturing; poor air quality.
Laredo	Transportation/distribution cluster; transportation infrastructure and geographical location; international banking expertise in NAFTA trade.	Insufficiently diversified economy (too dependent on transportation/distribution); highway congestion and lengthy crossing times at ports of entry; inconvenient distance and poor highway to Columbia BPOE.

Source: *Evaluation of Arizona Competitiveness* (Tucson: The University of Arizona Office of Economic Development, 1999).

Summary of Findings

Trade with Mexico—State-Level Comparisons

The proportion of total export sales going to Mexico is highest for Texas (34 percent). For Arizona the proportion is 14 percent, and for California, 8 percent. When viewed in terms of growth in export sales, however, Arizona (80 percent) and California (94.3 percent) considerably outperform Texas (46.7 percent). Among the chief exports to Mexico from the three border states are electric and electronic equipment, industrial machinery and computers, chemical products, and rubber and plastic products. Primary metals, transportation equipment, and fabricated metals are also significant exports for Arizona. Texas stands out for growth in rubber and plastics, while California shows the highest growth in exports of paper products.

Survey Results

In survey responses from private firms in San Diego, El Paso, Laredo, Phoenix, Tucson, Yuma, Nogales, and Douglas the following site-selection factors were identified as important by the largest number of respondents (Table 3.2):

TABLE 3.2 Leading Site-Selection Factors Important to Survey Respondents

Arizona Responses (n = 30)	California and Texas Responses (n = 24)
Quality of life (n = 22)	Real estate availability (n = 18)
Real estate availability (n = 20)	Real estate cost (n = 18)
Real estate cost (n = 20)	Proximity to markets (n = 17)
Workforce availability (n = 20)	Quality of life (n = 17)
Highway infrastructure (n = 18)	Workforce availability (n = 16)
Workforce education/skill levels (n = 18)	Telecommunications service (n = 13)
Right-to-work state (n = 18)	

Source: *Evaluation of Arizona Competitiveness* (Tucson: The University of Arizona Office of Economic Development, 1999).

The site selection factors most frequently cited as not important are listed in Table 3.3:

TABLE 3.3 Leading Site-Selection Factors Most Often Judged Not Important

Arizona Responses (n = 30)	California and Texas Responses (n = 24)
Rail transportation (n = 17)	Sea transportation (n = 14)
State job training programs (n = 16)	Natural gas cost (n = 12)
Natural gas service (n = 15)	State job training programs (n = 12)
Sea transportation (n = 14)	Rail transportation (n = 11)
Enterprise zones (n = 14)	Water cost (n = 11)
Natural gas cost (n = 13)	Water service (n = 11)
	Natural gas service (n = 11)
	Enterprise zones (n = 11)
	Foreign trade zones (n = 11)
	Financing programs (n = 11)

Source: *Evaluation of Arizona Competitiveness* (Tucson: The University of Arizona Office of Economic Development, 1999).

The greatest number of respondents evaluated their existing locations as competitive in the categories listed in Table 3.4:

TABLE 3.4 Leading Factors Respondents Consider Competitive in Existing Location

Arizona Responses (n = 30)	California and Texas Responses (n = 24)
Quality of life (n = 20)	Workforce availability (n = 17)
Real estate cost (n = 19)	Proximity to markets (n = 17)
Highway infrastructure (n = 18)	Real estate availability (n = 13)
Real estate availability (n = 16)	Wages (n = 13)
Right-to-work state (n = 16)	Quality of life (n = 12)
Education skill level (n = 14)	

Source: *Evaluation of Arizona Competitiveness* (Tucson: The University of Arizona Office of Economic Development, 1999).

Table 3.5 lists the categories in which respondents evaluated their existing locations as not being competitive.

TABLE 3.5 Leading Community Location Factors Rated as Not Competitive

Arizona Responses (n = 30)	California and Texas Responses (n = 24)
Sea transportation (n = 17)	Sea transportation (n = 11)
Property tax (n = 9)	Property tax (n = 11)
Electricity costs (n = 9)	Electricity costs (n = 11)
State job training (n = 9)	Water costs (n = 10)
Financing programs (n = 9)	Water service (n = 9)
	State job training (n = 9)
	Time and cost of permitting process (n = 9)

Source: *Evaluation of Arizona Competitiveness* (Tucson: The University of Arizona Office of Economic Development, 1999).

Table 3.6 shows the order in which respondents ranked the seven communities studied in terms of NAFTA-related competitiveness:

TABLE 3.6 Evaluation of NAFTA-Related Competitiveness

Rank	Arizona Ratings	Rank	California and Texas Ratings
1	Tucson, AZ	1	San Diego, CA
2	Nogales, AZ	2	El Paso, TX
3	El Paso, TX	3	Nogales, AZ, and Laredo, TX
4	San Diego, CA	4	Tucson, AZ
5	Yuma, AZ, and Laredo, TX	5	Yuma, AZ, and Douglas, AZ
6	Phoenix, AZ	6	Phoenix, AZ
7	Douglas, AZ		

Source: *Evaluation of Arizona Competitiveness* (Tucson: The University of Arizona Office of Economic Development, 1999).

Where Arizona Could Capture a Larger Share of NAFTA Trade

Based on research done for this evaluation and for other projects aimed at enhancing Arizona’s economy and increasing the state’s economic interactions with Mexico, Arizona has the potential to increase its share of trade with Mexico and Latin America in a number of key areas, namely:

- High-technology activities, including semiconductor-based production operations
- Metal fabrication operations
- Medical devices, pharmaceuticals, and biotechnology
- Plastics
- Advanced border transportation technologies
- Air transport
- Warehousing and distribution
- Surveillance technologies

Targeted Growth Areas

As Table 3.7 indicates, each of the communities in this analysis has identified key areas of strength as well as specific targets for economic development. In each case, the choices are based on evaluation of that community’s existing or potential ability to maintain a lead in that sector.

TABLE 3.7 Economic Development Targets, by City

City	Key/Targeted Industries
Arizona	
Phoenix	Aerospace, high technology, bioindustry, business services, environmental technology, food/fiber/natural products, information processing, manufacturing, software, transportation and distribution
Tucson	Aerospace, bioindustry, electric and electronic components, environmental technologies, instrumentation, metal fabrication, optics, software development, telecommunications
Yuma	Aerospace, agribusiness, electronics, high technology, light manufacturing, plastics, sheet metal stamping, telecommunications, tourism, senior living
Nogales	International trade, manufacturing/maquiladora, services, tourism
Douglas	Aerospace/high technology, computers, light industrial, manufacturing/maquiladora, professional services, telecommunication, tourism
California	
San Diego	Bioscience, communications, defense, electronics, manufacturing/maquiladoras, recreational goods, software, tourism
Calexico	Agribusiness, manufacturing suppliers

Texas

San Antonio	International business services, manufacturing, health-care industry, communications, corporate and regional offices, tourism
El Paso	Advanced technical, back office, computer-related, headquarters, medical, motor vehicle production, retirement, resorts, tool and die manufacturing
Laredo	Manufacturing/maquiladora, services, transportation and distribution

Source: *Evaluation of Arizona Competitiveness* (Tucson: The University of Arizona Office of Economic Development, 1999).

Goals and Strategies Oriented toward Trade with Mexico and Latin America

All the communities included in this analysis engage in economic development activities targeted specifically at Mexican and Latin American markets. Table 3.8 summarizes each community's activities.

TABLE 3.8 Key NAFTA-Oriented Economic Development Activities and Strategies, by City

City	Activities and Strategies
Arizona	
Phoenix	Headquarters for statewide Binational Economic Development Commission; MatchMex97 binational industry partnering event; NAFTA (FEDEX) Conference; Environmental Technology Cluster grant focusing on developing business with Mexico; CANAMEX corridor; Strategic Economic Development Vision for the Arizona-Sonora Region ("The Arizona-Sonora Project"), which has a six-point plan that includes the development of binational clusters in the areas of health services, manufacturing, tourism, and agribusiness; a comprehensive workforce development strategy; increased efficiency in transportation and border crossing; and regulatory reforms to spur investment, and market promotion of the region.
Tucson	Maquiladora supplier development; Tucson-Mexico: Closer Than Ever—Mas Cerca que Nunca! project to facilitate business partnerships between Tucson and northwestern Mexico; Tucson-Sonora collaborative referral program; Mexico Seminar Series; CANAMEX corridor; Strategic Economic Development Vision for the Arizona-Sonora Region (see Phoenix for description).
Yuma	Binational Economic Development Commission; joint border strategic plan; maquiladora advertising campaign; directory of investors; international trade show; CANAMEX Corridor; Strategic Economic Development Vision for the Arizona-Sonora Region (see Phoenix for description); Arizona-Mexico Commission—Border Trade Alliance Border Strategic Partnership.
Nogales	Maquiladora supplier development; investment guide and interactive CD-ROM to market binational attributes; CANAMEX corridor; Strategic Economic Development Vision for the Arizona-Sonora Region (see Phoenix for description); Arizona-Mexico Commission—Border Trade Alliance Border Strategic Partnership.
Douglas	Maquiladora supplier development; investment guide to market binational attributes; binational marketing efforts involving economic development officials in Douglas and Agua Prieta; facilitation of dialogue between region's mayors; SEAGO's International Trade Center; Strategic Economic Development Vision for the Arizona-Sonora Region (see Phoenix for description); Arizona-Mexico Commission—Border Trade Alliance Border Strategic Partnership; border region business incubator; South Eastern Arizona Center for Agribusiness Development.

California

San Diego Maquiladora supplier development; binational meetings of economic developers; binational communication network project; Golden Opportunities Program for small and mid-sized exporters; binational tourism marketing; NAFTA conferences; public/private intermodal transportation efforts; Cross-Border Connect Program.

Calexico Binational collaboration on NAFTA conference; agribusiness trade show.

Texas

San Antonio Inland Port San Antonio concept, which includes the redevelopment of Kelly AFB and the designation of San Antonio as a NATAP pilot project; trade missions by the Free Trade Alliance and Casas San Antonio to Chile and Argentina promoting two-way trade and investment; Transporte Internacional conference on trade and transportation issues; collaboration with customs administrators from Columbia Solidarity Bridge (Laredo) in an effort to promote the Inland Port project; monthly Mexico group meetings; promotion of 1999 Joint Business Conference.

El Paso Maquiladora supplier development; binational industrial promotion and relocation guide; binational meeting of economic developers.

Laredo Vision '97 International Trade Show; InfoCenter in Monterrey jointly operated with Corpus Christi.

Source: *Evaluation of Arizona Competitiveness* (Tucson: The University of Arizona Office of Economic Development, 1999).

Important Assets Arizona Should Market to Prospective Firms

Arizona has many assets and attributes that make it a particularly attractive location for firms seeking a platform for NAFTA-related enterprise. Among these qualities are:

- Arizona's long history of cordial relations with Sonora
- Activities of the Arizona-Mexico Commission/Comisión Arizona-Mexico in transboundary business development
- Strategic Economic Development Vision for the Arizona-Sonora Region ("Arizona-Sonora Project"), a unique long-range strategic planning process guided by several goals:
 - ◆ Developing the two states into a single economic region
 - ◆ Establishing Arizona-Sonora as a major hub on the NAFTA trade corridor
 - ◆ Eliminating trade barriers
 - ◆ Stimulating commercial development in several key industry sectors
 - ◆ Creating new markets for regional products and services
- Expansion of the Arizona-Sonora Project to include a six-point plan to (1) establish binational industry clusters (agribusiness, health services, manufacturing, and tourism); (2) implement a comprehensive workforce development and education strategy for the region; (3) implement efforts to increase efficiency in transportation and border crossings; (4) market the region for business development and attraction; (5) undertake regulatory reforms to encourage capital investment; and (6) integrate sustainable development and community-based development into the regional plan

- Expertise and experience in aerospace and avionics, and the presence of a supplier base for these sectors
- Expertise and considerable concentration of semiconductor and other high-technology firms, particularly in the greater Phoenix area
- Bioindustry expertise and activity (medical devices, biotechnology, pharmaceuticals)
- The formation of the Plastics and Advanced Materials Cluster offers important supplier linkages for the growing maquiladora industry in Mexico
- An extensive and diversified higher-education structure
- With the inclusion of Sonora, the existence of a large engineering workforce
- Explicit and active support at the state and local levels for formation and maintenance of industry clusters and formal industry cluster organizations in the sectors identified by the governor's task force as having strong potential for further growth and development
- Quality-of-life factors, including golf courses and conference facilities, abundant outdoor recreational opportunities, major-league sports teams (only San Diego is competitive with Phoenix in this regard), a wide array of superior programs in the higher-education realm, a lower cost of living than San Diego, and proximity to and accessibility of major metropolitan areas in California

Summary Observations

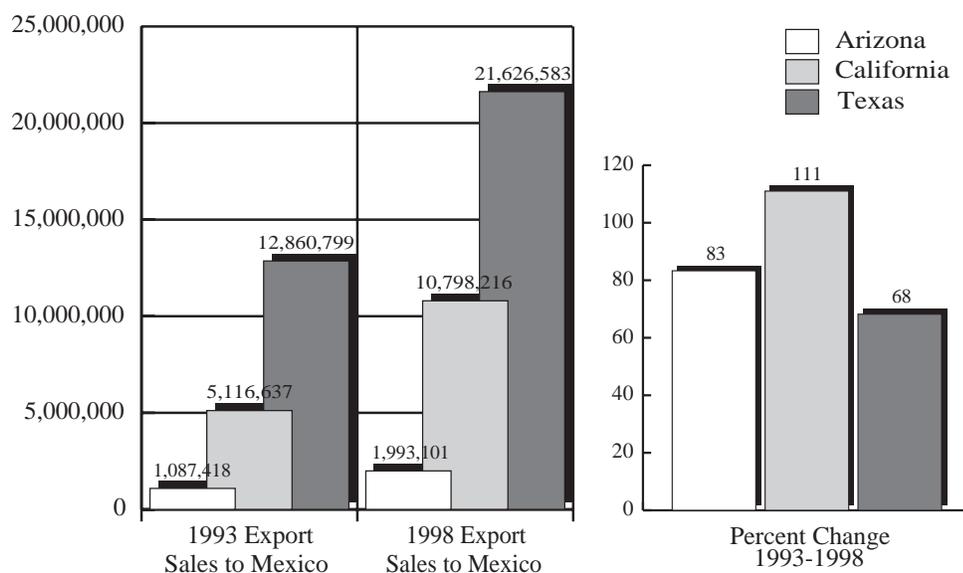
- Arizona is in a good position to capture a larger share of NAFTA trade, if sharply focused marketing and recruitment strategies are implemented at the state and local levels.
- All the communities in this study are just beginning to generate supplier linkages to the maquiladoras; therefore an important window of opportunity exists for Arizona to move aggressively into this area of marketing.
- Arizona should recruit more plastics manufacturers to the state, given the wide uses of these materials in production operations, particularly in the medical device and electronics sectors.
- Arizona should place greater emphasis on generating NAFTA trade linked to the state's aerospace, avionics, and semiconductor strengths.
- Formalization of the CANAMEX corridor, a project to create a direct link between Canada and western Mexico, holds potential for placing Arizona at a crucial crossroads of NAFTA trade in the western reaches of Mexico, the United States, and Canada. It is also possible that, with appropriate business and transportation infrastructure development in the Yuma area, Arizona might capture trade from California. Given privatization activities in Mexico, Arizona must monitor developments closely and be positioned to move quickly into new areas of opportunity, such as the transportation sector.
- Strong consideration should be given to reducing the burden on small and medium-sized businesses wishing to qualify their products for duty-free NAFTA status. Arizona has many modest-sized firms with products that are highly competitive in Mexico; the marketing efforts of these firms need to be supported, at least in the short term; for example, through providing NAFTA training.

Growth in Trade to Mexico

Growth in Export Sales to Mexico

During the 1993-1998 period, Texas exceeded the export sales of both Arizona and California (see table 4.1). On the other hand, Arizona (83.3 percent) and California (111 percent) experienced greater increases in their trade relations with Mexico than did Texas (68.2).

Figure 4.1: EXPORT SALES TO MEXICO BY STATE, 1993 and 1998 (\$ in thousands)



Source: U.S. Census Bureau, Exporter Location Series (June 1999)

Changes in Major Export Categories

Electric and electronic equipment and industrial machinery and computers continue to be the leading categories of merchandise exported to Mexico from Arizona, California, and Texas (Table 4.2). Notable differences begin to emerge in the third, fourth, and fifth rankings. For instance, rubber and plastic products is ranked third for Arizona and fifth for Texas, but does not appear in the top five exports for California. Transportation equipment is ranked third among California's exports to Mexico and is ranked fourth for Texas. Arizona is distinguished by high levels of exports in primary metals and paper products, California exports large amounts of fabricated metal products and apparel, and Texas is strong in chemical products.

TABLE 4.1: TOP FIVE MERCHANDISE EXPORTS SALES TO MEXICO, BY INDUSTRY SECTOR, 1998

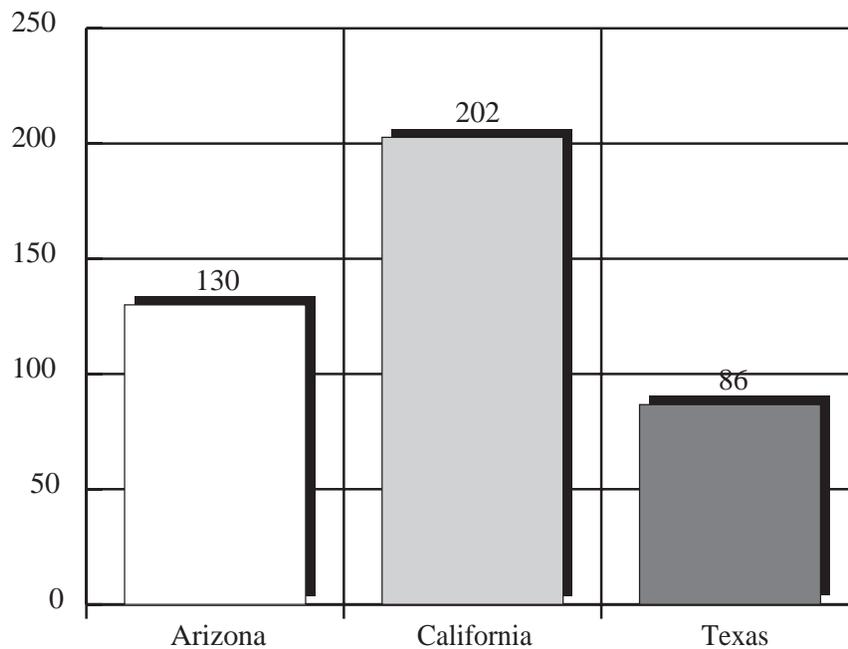
Rank	Arizona Manufactures	California Manufactures	Texas Manufactures
1	Electric & Electronic Equipment	Electric & Electronic Equipment	Electric & Electronic Equipment
2	Industrial Machinery & Computers	Industrial Machinery & Computers	Industrial Machinery & Computers
3	Rubber & Plastic Products	Transportation Equipment	Chemical Products
4	Primary Metals	Fabricated Metal Products	Transportation Equipment
5	Paper Products	Apparel	Rubber & Plastic Products

Source: U.S. Census Bureau, Exporter Location Series (May 1999).

Electric and Electronic Equipment

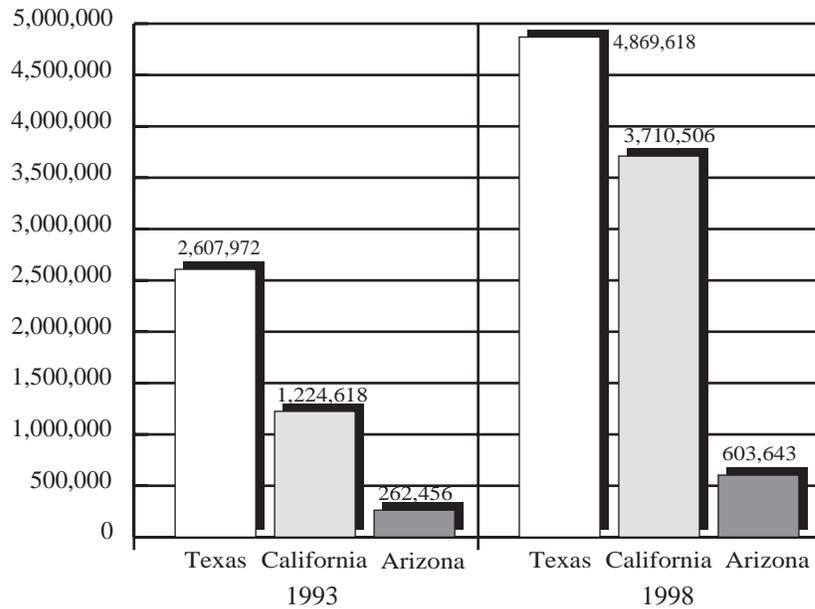
Electric and electronic equipment sales to Mexico increased considerably for Arizona (130 percent) and California (202.7 percent) between 1993 and 1998 (Figure 4.1 and table 4.3). Although Texas experienced more modest growth (86.7 percent) during this period, it continues to lead in terms of dollar value of exports relative to the other border states. During 1997 and 1998 Arizona experienced a 4.2 percent decrease in export sales, compared to 9.8 percent and 8 percent growth for California and Texas respectively.

FIGURE 4.2: PERCENTAGE CHANGE IN EXPORTS OF ELECTRIC AND ELECTRONIC EQUIPMENT, 1993-1998



Source: U.S. Census Bureau, Exporter Location Series (May 1999)

FIGURE 4.3: ELECTRIC AND ELECTRONIC EQUIPMENT SALES TO MEXICO 1993 AND 1998

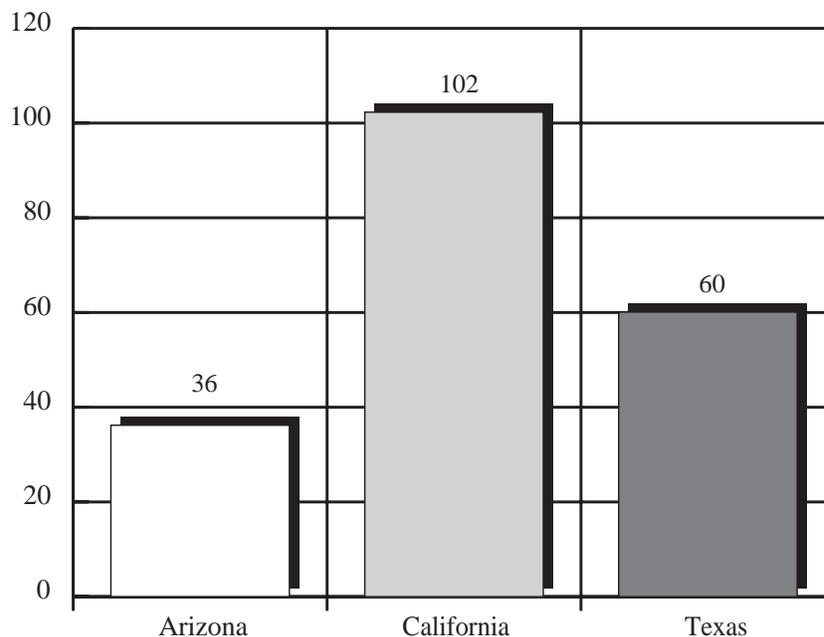


Source: U.S. Census Bureau, Exporter Location Series (May 1999)

Industrial Machinery and Computers

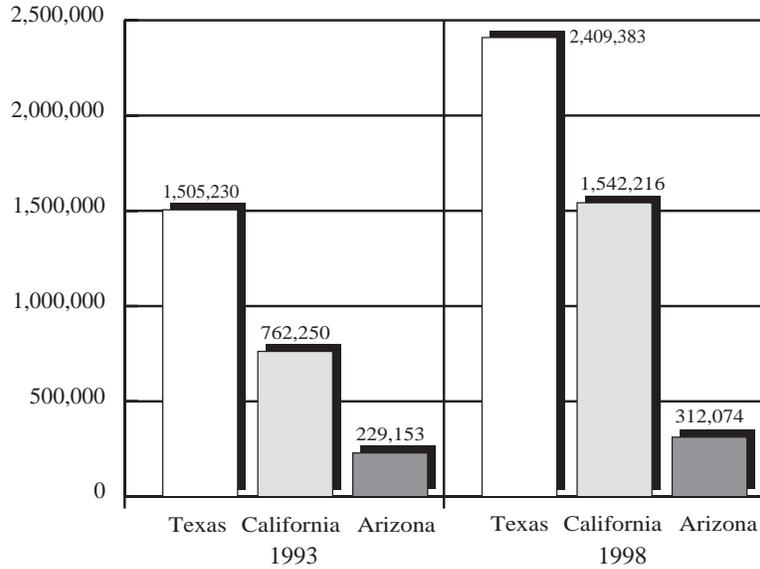
In the industrial machinery and computers sector, California experienced the greatest increase in export sales to Mexico from 1993 to 1998 (102.3 percent), followed by Texas (60.1 percent) and Arizona (36.2 percent). (Figure 4.2 and table 4.4.) Indeed, the data for 1997 and 1998 indicate that Arizona saw a -10.5 percent decrease in this sector, relative to growth in Texas (29 percent) and California (6.3 percent).

FIGURE 4.4: PERCENTAGE CHANGE IN EXPORTS OF INDUSTRIAL MACHINERY AND COMPUTERS, 1993-1998



Source: U.S. Census Bureau, Exporter Location Series (May 1999)

FIGURE 4.5: INDUSTRIAL MACHINERY AND COMPUTER SALES TO MEXICO, 1993 AND 1998

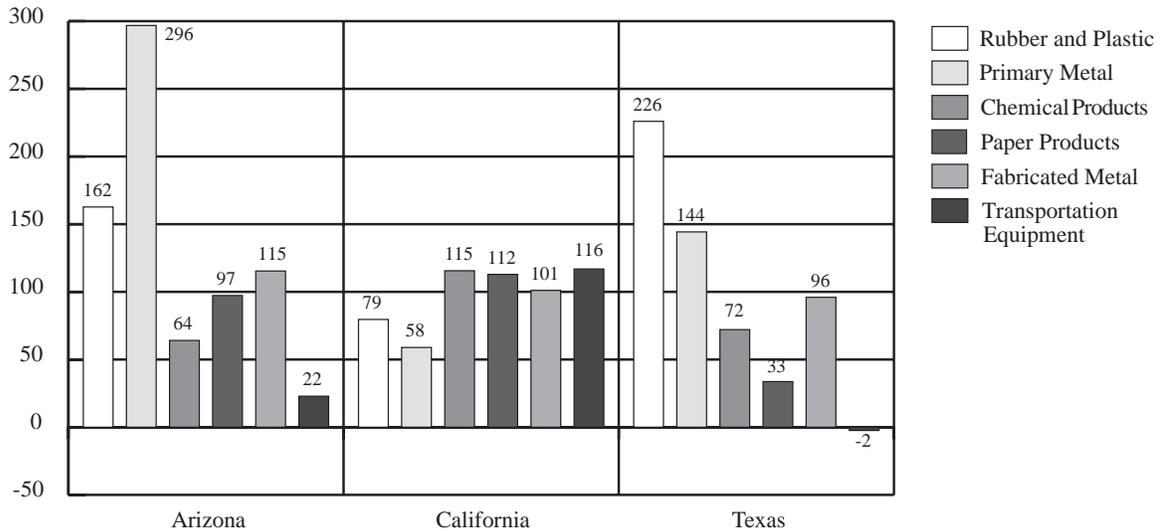


Source: U.S. Census Bureau, Exporter Location Series (May 1999)

Change in Selected Export Categories

During the 1993 to 1998 period, Arizona continued to experience considerable growth in export sales of primary metals (296.8 percent) and fabricated metals (115.4 percent). California saw a notable increase of 115.6 percent in trade of chemical products, compared to 72.1 percent and 64.1 percent growth in Texas and Arizona, respectively. In addition, California stood out for growth in paper product sales (112.9 percent), followed by Arizona (97.3 percent) and Texas (33.7 percent). California’s increase in transportation exports (116.9 percent) during this period is surprising given the decrease experienced by Texas (-2.4 percent) and the modest growth registered by Arizona (22.9 percent). Arizona’s modest growth in transportation exports is accounted for in part by a drastic -45.4 percent decrease in sales from 1997 to 1998, reversing a growth trend in the previous years. Texas led the other states in rubber and plastic product exports, with an increase of 226 percent during the 1993 to 1998 period (Figure 4.3 and table 4.5).

FIGURE 4.6: PERCENTAGE CHANGE FOR SELECTED EXPORT CATEGORIES, 1993-1998



Source: U.S. Census Bureau, Exporter Location Series, (May 1999)

TABLE 4.2: CHANGE IN DOLLAR VALUE OF SELECTED EXPORT CATEGORIES, 1993-1998

	Arizona		California		Texas	
	1993	1998	1993	1998	1993	1998
Rubber & Plastic Products	\$69,967	\$183,786	\$243,672	\$437,636	\$444,786	\$1,449,867
Primary Metals	\$36,852	\$146,237	\$227,940	\$362,158	\$559,290	\$1,366,603
Chemical Products	\$25,467	\$41,791	\$228,946	\$493,683	\$1,092,040	\$1,879,096
Paper Products	\$68,451	\$135,060	\$168,060	\$357,829	\$570,684	\$762,831
Fabricated Metal Products	\$58,483	\$125,984	\$269,417	\$541,723	\$422,231	\$827,676
Transportation Equipment	\$33,122	\$40,699	\$252,528	\$547,823	\$1,562,255	\$1,524,439

Source: U.S. Census Bureau, Exporter Location Series (May 1999).

Exports by Metro Area

All the major metropolitan areas included in this report (Phoenix and Tucson, Arizona; San Diego, California; and San Antonio, El Paso, and Laredo, Texas) experienced various degrees of growth in total international exports, as table 4.6 indicates. In terms of export-related dollar gains for all U.S. metro areas (listed by growth in merchandise value), San Diego led the other communities for the 1993-1998 period. San Diego's top ranking underscores a downward shift for the Phoenix-Mesa area, which had dominated among the communities until 1997. Whereas Phoenix experienced a sudden reversal after 1997, Laredo showed a steady, significant decrease.

TABLE 4.3: CHANGE IN EXPORT VALUE BY METRO AREA, 1993-1998

Rank	Metro Area	Change in Export Value
8	San Diego, California	\$4,233,876
11	Phoenix-Mesa, Arizona	3,603,814
12	El Paso, Texas	3,577,535
42	San Antonio, Texas	1,076,905
52	Tucson, Arizona	766,297
250	Laredo, Texas	-428,253

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

For the 1997 to 1998 period alone, San Diego's performance in export-related dollar gains again exceeds that of El Paso, San Antonio, Tucson, Laredo, and Phoenix-Mesa (Table 4.7). Indeed the dramatic \$3 million decrease for Phoenix-Mesa during this one-year period explains its fall to a ranking behind San Diego for total dollar gains during 1993-1998.

TABLE 4.4: CHANGE IN EXPORT VALUE BY METRO AREA, 1997-1998

Rank	Metro Area	Growth in Export Value
5	San Diego, California	\$781,622
6	El Paso, Texas	710,633
15	San Antonio, Texas	298,011
21	Tucson, Arizona	192,894
234	Laredo, Texas	-325,540
253	Phoenix-Mesa, Arizona	-3,005,635

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

The rankings for U.S. metro-area exporters in 1998 (listed by dollar value) show San Diego leading Phoenix-Mesa, El Paso, and Laredo (see table 4.8). San Antonio and Tucson rank far behind these communities. Comparing the dollar values for 1997 and 1998, Phoenix stands out for its dramatic loss of position. In 1997, Phoenix was rated the 10th largest metro-area exporter, ahead of San Diego; by 1998, it had dropped to 17th place.

TABLE 4.5: TOP METRO-AREA EXPORTERS, 1997 AND 1998

Rank	Metro Area	Total Exports, 1997	Total Exports, 1998
12	San Diego, California	\$7,810,003	\$8,591,625
17	Phoenix-Mesa, Arizona	11,108,393	8,102,758
21	El Paso, Texas	5,833,929	6,544,562
37	Laredo, Texas	3,959,112	3,633,572
70	San Antonio, Texas	1,342,822	1,640,833
85	Tucson, Arizona	1,060,526	1,253,420

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

In terms of percentage change in dollar value of exports between 1993 and 1998, San Antonio, Tucson, El Paso, and San Diego all experienced greater growth than the national average (Table 4.9). Phoenix and Laredo failed to meet the average nationwide for both 1993 to 1998 and 1997 to 1998. Phoenix's decline of -8.2 percent during 1997-1998 is a substantial reversal from the 40.4 percent increase it experienced during 1996-1997.

TABLE 4.6: PERCENTAGE CHANGE IN DOLLAR VALUE OF EXPORTS 1993-1998 AND 1997-1998

Metro Area	1993-1998	1997-1998
San Antonio, Texas	191.0	22.2
Tucson, Arizona	157.3	18.2
El Paso, Texas	120.6	12.2
San Diego, California	97.2	10.0
Phoenix-Mesa, Arizona	80.1	-8.2
Laredo, Texas	-10.5	-27.1
U.S. national average	89.8	10.7

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

To summarize the trends in trade:

- In terms of greatest dollar gain for 1993-1998 and 1997-1998, the San Diego metro region leads the other communities; in contrast, the Phoenix-Mesa metro region experienced a dramatic reversal during both time periods.
- Tucson's ranking of 85th in total exports for 1998 continued to place it far behind San Diego (12th), Phoenix-Mesa (17th), El Paso (21st), Laredo (37th), and San Antonio (70th). On the other hand, among the studied cities, Tucson's rate of growth (157.3 percent for 1993-1998 and 18.2 percent for 1997-1998) was the second fastest behind only San Antonio.

Exports to NAFTA Countries, 1993-1998 and 1997-1998

As table 4.10 shows, during the 1993 to 1998 period, Tucson's 124.6 percent growth in export sales to NAFTA markets trailed behind only San Antonio (273.8 percent). In fact all the communities except Phoenix-Mesa and Laredo experienced triple-digit growth between 1993 and 1998, and Laredo was the only community to register a decline (-11.3 percent) for this period. Phoenix-Mesa and Laredo continued to stand out relative to the other communities for percentage decreases (-6.8 and -9.2 percent respectively) between 1997 and 1998. San Antonio (27.9 percent) led the communities during 1997 and 1998, followed by San Diego (13.8 percent), El Paso (11.3 percent), and Tucson (4.4 percent).

In terms of trade with Mexico specifically, San Antonio experienced tremendous growth, with a 329.5 percent increase during 1993-1998, followed by El Paso (114.1 percent), Tucson (109.7 percent), and San Diego (105.4 percent). In contrast, Phoenix experienced more modest growth (74.2 percent) and Laredo brought up the rear with a -14.9 percent decrease (Table 4.10). The same general ranking holds true for 1997-1998. San Antonio led the group with a 29.6 percent increase. Notable trends during this period are that San Diego (11.4 percent) experienced greater growth than Tucson (2.2 percent), and Phoenix-Mesa (-13.4 percent) shared the distinction of negative change with Laredo (-6.5 percent).

TABLE 4.7: PERCENTAGE CHANGE IN MERCHANDISE EXPORTS TO NAFTA COUNTRIES AND MEXICO, 1993-1998 AND 1997-1998).

Metro Area	NAFTA Countries		Mexico	
	1993-1998	1997-1998	1993-1998	1997-1998
San Antonio, Texas	273.8	27.9	329.5	29.6
Tucson, Arizona	124.6	4.4	109.7	2.2
El Paso, Texas	121.0	11.3	114.1	13.3
San Diego, California	114.3	13.8	105.4	11.4
Phoenix-Mesa, Arizona	93.2	-6.8	74.2	-13.8
Laredo, Texas	-11.3	-9.2	-14.9	-6.5

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

Major Export Categories, by City

The rankings in Table 4.11 indicate the relative importance of various export categories for the Phoenix-Mesa, San Diego, El Paso, and Laredo areas. Data are not available for San Antonio and Tucson.

The data reveal the following major points about world exports:

Electric and electronic equipment is the most significant export for Phoenix-Mesa, San Diego, and El Paso, and the second most significant export for Laredo.

Transportation equipment continues to lead Laredo's exports and is the number-three export for the Phoenix-Mesa metro region. Between 1997 and 1998, this sector moved up to fourth in importance for San Diego; it is not among the top ten exports for El Paso.

Industrial machinery and computers ranks second for Phoenix-Mesa and San Diego exports, and third for Laredo. The sixth place ranking for El Paso represents an improvement from seventh place in 1997.

Rubber and plastic products rank second for El Paso, seventh for both San Diego and Laredo, and ninth for Phoenix-Mesa.

Apparel, the third most important export for El Paso, does not appear among the top ten export sectors for any of the other three metro areas.

Scientific and measuring instruments ranks third among San Diego exports, fourth for Phoenix-Mesa, and tenth for both El Paso and Laredo.

Primary metals ranks fourth among exports for El Paso, sixth for Laredo, eighth for Phoenix-Mesa, and tenth for San Diego.

Chemical products ranks fourth for Laredo, sixth and seventh for San Diego and Phoenix-Mesa respectively, and does not appear among the top ten exports for El Paso.

Paper products ranks eighth for both El Paso and Laredo and ninth for San Diego; it does not appear in the top ten exports for Phoenix-Mesa.

Fabricated metal products, which was not among the top ten exports for Phoenix-Mesa in 1997, now ranks sixth for that metro region, followed by El Paso (7th) and San Diego (8th). Interestingly, in 1996 this was the third most important export category for Laredo, but it has not shown up in the top ten exports since then.

TABLE 4.8: MERCHANDISE EXPORT SALES BY INDUSTRY SECTOR, 1998

Rank	Phoenix-Mesa	San Diego	El Paso	Laredo
1	Electric & Electronic Equipment	Electric & Electronic Equipment	Electric & Electronic Equipment	Transportation Equipment
2	Industrial Machinery & Computers	Industrial Machinery & Computers	Rubber & Plastic Products	Electric & Electronic Equipment
3	Transportation Equipment	Scientific & Measuring Instruments	Apparel	Industrial Machinery & Computers
4	Scientific & Measuring Instruments	Transportation Equipment	Primary Metals	Chemical Products
5	Non-Manufactured Products	Miscellaneous Manufactures	Textile Mill Products	Food Products
6	Fabricated Metal Products	Chemical Products	Industrial Machinery & Computers	Primary Metals
7	Chemical Products	Rubber & Plastic Products	Fabricated Metal Products	Rubber & Plastic Products
8	Primary Metals	Fabricated Metal Products	Paper Products	Paper Products
9	Rubber & Plastic Products	Paper Products	Furniture & Fixtures	Non-Manufactured Products
10	Refined Petroleum	Primary Metals Products	Scientific & Measuring Instruments	Scientific & Measuring Instruments

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

Selected sectors were identified for more detailed analysis either because they appear among the leading exports of more than one state or because they have been targeted for cluster or industry development. Information on these sectors follows.

Electric and Electronic Equipment

Change in exports of electric and electronic equipment is displayed in table 4.12. From 1993 to 1998, San Diego's activity in the electric and electronic equipment sector grew at twice the rate of El Paso (193.9 percent to 94.6 percent), at triple the rate of Phoenix-Mesa (53.6 percent), and at seven times the rate of Laredo (25.4 percent). San Diego continued to lead in 1997-1998, with more modest growth for El Paso and dramatic decreases for both Phoenix-Mesa (-51.3 percent) and Laredo (-37.5 percent).

TABLE 4.9: PERCENTAGE CHANGE IN ELECTRIC AND ELECTRONIC EQUIPMENT EXPORTS, 1993-1998 AND 1997-1998

Metro Area	1993-1998	1997-1998
San Diego, California	193.9	7.2
El Paso, Texas	94.6	0.3
Phoenix-Mesa, Arizona	53.6	-51.3
Laredo, Texas	25.4	-37.5

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

Industrial Machinery and Computers

The Phoenix-Mesa region experienced a significant increase (199.4 percent) in industrial machinery and computer exports during the 1993-1998 period, which was tempered by a considerable decrease (-76.0 percent) during 1997-1998. Both El Paso and San Diego showed relatively strong growth during this time. Laredo stands out for a -12.9 percent decrease between 1993 and 1998, which masked a near reversal (a 10.2 percent increase) during 1997-1998 (Table 4.13).

TABLE 4.10: PERCENTAGE CHANGE IN INDUSTRIAL MACHINERY AND COMPUTERS EXPORTS, 1993-1998 AND 1997-1998

Metro Area	1993-1998	1997-1998
Phoenix-Mesa, Arizona	199.4	-76.0
El Paso, Texas	93.7	34.4
San Diego, California	76.2	15.8
Laredo, Texas	-12.9	10.2

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

Scientific and Measuring Instruments

El Paso's total exports of scientific and measuring instruments for 1993-1998 grew by 213.1 percent, whereas Phoenix-Mesa registered a much more modest 36.5 percent growth and San Diego just 28.9 percent growth (Table 4.14). Laredo, at -22.7 percent, saw a significant decline in this sector over the same period. El Paso, San Diego, and Laredo experienced very modest increases in 1997-1998, whereas the Phoenix-Mesa area registered a decline (-9.9 percent).

TABLE 4.11: PERCENTAGE CHANGE IN SCIENTIFIC AND MEASURING INSTRUMENT EXPORTS, 1993-1998 AND 1997-1998

Metro Area	1993-1998	1997-1998
Phoenix-Mesa, Arizona	213.1	9.9
El Paso, Texas	36.5	-9.9
San Diego, California	28.9	5.6
Laredo, Texas	-22.7	2.72

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

Rubber and Plastic Products

In the rubber and plastic products sector, El Paso experienced more than four times the growth of Phoenix-Mesa, nearly eight times the growth of San Diego, and 19 times that of Laredo (Table 4.15). During 1997-1998, both El Paso and Phoenix continued to experience positive growth, in contrast to declines registered in San Diego (-21.3 percent) and Laredo (-2.4 percent).

TABLE 4.12: PERCENTAGE CHANGE IN RUBBER AND PLASTIC EXPORTS, 1993-1998 AND 1997-1998

Metro Area	1993-1998	1997-1998
Phoenix-Mesa, Arizona	543.6	20.2
El Paso, Texas	116.3	18.9
San Diego, California	68.9	-21.3
Laredo, Texas	28.2	-2.4

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

Fabricated Metal Products

Triple-digit growth occurred in exports of fabricated metals from the El Paso (362.6 percent) and Phoenix-Mesa (252.1 percent) areas, and San Diego (41.4 percent) experienced a modest increase as well. Laredo was the only community to see a decrease during 1993-1998, but this trend reversed in 1997-1998. El Paso experienced the greatest increase (31.2 percent) during 1997-1998, followed by Phoenix-Mesa (25.5 percent). San Diego and Laredo were nearly identical in their growth for this period with 18.3 percent and 18.2 percent respectively (Table 4.16).

TABLE 4.13: PERCENTAGE CHANGE IN FABRICATED METAL EXPORTS, 1993-1998 AND 1997-1998

Metro Area	1993-1998	1997-1998
Phoenix-Mesa, Arizona	362.6	31.2
El Paso, Texas	252.1	25.5
San Diego, California	41.4	18.3
Laredo, Texas	-37.3	18.2

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

Primary Metals

El Paso led the group in primary metal exports for 1993-1998 at 206.1 percent, followed by San Diego (59.1 percent) and Laredo (35.9 percent). The decline experienced by the Phoenix-Mesa metro area persisted in 1997-1998. Despite dramatic growth over the long term, San Diego was the only other community whose exports declined in 1997-1998, with a -4.6 percent drop.

TABLE 4.14: PERCENTAGE CHANGE IN PRIMARY METAL EXPORTS, 1993-1998 AND 1997-1998

Metro Area	1993-1998	1997-1998
Phoenix-Mesa, Arizona	206.1	11.3
El Paso, Texas	59.1	-4.6
San Diego, California	35.9	14.8
Laredo, Texas	-55.6	-37.9

Source: U.S. Census Bureau, Exporter Location Series (November 1999).

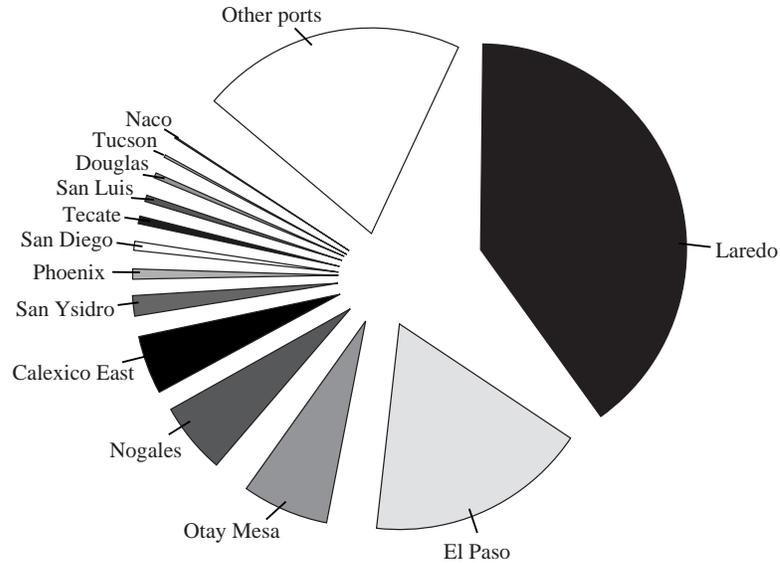
Export Trade Activity of Selected Southwestern Ports

Because the U.S. Census Bureau data compiled in the Exporter Location Series provides information only on the largest metropolitan areas, U.S. Customs data were used to explore market potentials for the smaller communities of Douglas, Nogales, Yuma, and Calexico. This analysis has been expanded to include San Ysidro and Tecate (important ports of entry for San Diego) and Naco, which is located west of Douglas, Arizona.

Data on total export trade for 1999 by select ports along the U.S.-Mexico border provides information on each port's percentage share and relative ranking (see figure 4.4 and table 4.18). Data for 1999 compiled by the Border Trade Institute at Texas A&M International University indicate similar patterns of export behavior with Mexico. (The top ten exports and imports of relevant border cities, by SITC code, can be found in the appendix.) In terms of trade with Mexico specifically, the following patterns hold true:

- Motor vehicles for the transport of persons (SITC 78120) was the leading export for the Nogales and Laredo ports, the third leading export for San Diego, and the eighth for Tucson.
- Television receivers, color, including video monitors and projectors (SITC 76110) was the most important export for San Luis and El Paso and fourth for San Ysidro.
- Refined copper wire (SITC 68241) was the second leading export for both the Douglas and Naco ports.
- Gold including gold plated with platinum (SITC 97101) was third for Tucson and fifth for Tecate.
- Trousers, bib and brace overalls, breeches and shorts, for women or girls (SITC 84260) was ranked third among export categories for San Luis, sixth for the ports of Laredo and Otay Mesa, eighth for El Paso, and ninth for Douglas.
- The fourth-ranked commodities for both Tucson and Phoenix were parts of airplanes or helicopters (SITC 79295). This category did not show up in the ten leading exports of any of the other communities.
- Transmission apparatus for radiotelephony, radiotelegraphy, radio broadcasting, or television (SITC 76431) were the fourth most important exports for Nogales and El Paso, and was the seventh for Phoenix.
- Naco's fourth leading export, electric plugs and sockets not exceeding 1,000 volts (SITC 77258), was the seventh most important for Nogales.
- Special transactions and commodities not classified (SITC 93100) was ranked second for Tucson and Phoenix, and was relatively less important for other communities: El Paso (third), Douglas (fourth), San Luis (fifth), Naco (sixth), and Nogales and Laredo (both eighth). The only Californian port for which this export category shows up was San Ysidro (sixth).

FIGURE 4.7: PERCENTAGE SHARE BY PORTS



Source: Border Trade Institute, Texas A&M International University (April 2000)

TABLE 4.15: EXPORT TRADE BY LEADING SOUTHWEST PORTS, 1999

Community	Ranking by Percentage Share	Dollar Value of Trade
Laredo, Texas	1	\$29,864,822,746
El Paso, Texas	2	12,994,315,229
Otay Mesa, California	4	5,087,992,213
Nogales, Arizona	6	4,159,634,964
Calexico East, California	8	3,436,529,239
San Ysidro, California	10	1,200,392,282
Phoenix, Arizona	11	568,125,667
San Diego, California	12	558,023,639
Tecate, California	13	469,157,430
San Luis, Arizona	14	368,657,760
Douglas, Arizona	15	297,029,679
Tucson, Arizona	16	148,556,876
Naco, Arizona	21	77,824,987
Total for Southwestern Ports, 1999	—	\$74,913,401,554

Source: Border Trade Institute, Texas A&M International University (April 2000).

A review of 1998 export data reflects the presence of only four of the leading commodities for 1999.

- Parts of automatic processing machines and units thereof, magnetic or optical readers and machines for transcribing and processing data (SITC 75997) was for 1999 the third-ranked category for Douglas, followed by El Paso (fifth), and Laredo and Otay Mesa (both sixth). In 1998, this commodity was the third leading export for Phoenix, ninth for Laredo, and did not even rank among the top ten for El Paso and Laredo.
- Articles of iron or steel (SITC 69969) was the third-ranked category for Douglas and the ninth for El Paso in 1998. A year later it completely dropped off the top ten export lists for any Arizona or Texas port. It does appear as the second leading export for San Ysidro, the third for Calexico, and the eighth for Otay Mesa, all ports in California.
- Between 1998 and 1999, nondigital monolithic integrated units (SITC 77643) went from being the fourth most important export for Phoenix to the tenth. This category was the most important export for Calexico in 1998; however, current data indicate that it is no longer in the top ten for Calexico and instead has emerged in tenth place for Otay Mesa.
- Ranked third and sixth respectively for the ports of Yuma and Nogales in 1998, exports of cartons, boxes, and cases of corrugated paper or paperboard (SITC 64211) appear to have shifted to ports in California by 1999. Most recent figures rank this commodity as the fifth most important export for Otay Mesa and the tenth for Tecate.

Skilled Human Resources and Labor Pool Development

The availability of skilled human resources was identified in the 1999 *Evaluation of Arizona Competitiveness* as an important factor contributing to a region’s ability to compete economically. For the plastics industry in particular, it was found that advantageous incentive packages in many cases were not enough to lure companies away from qualified workers. A community’s workforce must be able to produce valuable products and services, in order to attract and retain employers as well as increase wages.¹ A higher skill base demands higher wages because companies require “intelligence capital” to succeed in the current technology-driven economy. The presence of skilled labor is an investment incentive because these talented employees allow firms to be innovative and identify processes for expediting the movement of goods and services.² In the Yuma region, for instance, the Proving Ground cites a high-quality workforce and favorable climate as critical components in their competitive advantage strategy. At the facility, employees skilled in the utilization of sophisticated technology are conducting an average of 100 tests at any one time.³

Labor Force and Industry Employment

Table 5.1 and Figures 5.1 and 5.2 provide information on the general characteristics of each community’s labor force. The data measure civilian labor employment and unemployment rates for the cities and counties in the study area.

TABLE 5.1: CITY AND COUNTY CIVILIAN LABOR FORCE ESTIMATES, 1999;

City	Civilian Labor Force	County	Civilian Labor Force
Phoenix, Arizona	726,609	Maricopa	1,514,859
San Diego, California	622,790	San Diego	1,358,200
San Antonio, Texas	526,726	Bexar	669,947
El Paso, Texas	258,293	El Paso	287,600
Tucson, Arizona	239,084	Pima	384,579
Laredo, Texas	68,006	Webb	72,729
Yuma, Arizona	34,686	Yuma	66,773
Nogales, Arizona	8,815	Santa Cruz	13,396
Calexico, California	6,230	Imperial	42,800
Douglas, Arizona	4,601	Cochise	39,994

Sources: Arizona Department of Economic Security, *Special Unemployment Report for January through December 1999*, Revised March 2, 2000, *Research Administration Benchmark 1999*; California Employment Development Department, Labor Market Information Division, *Labor Force Data for Sub-County Areas, Not Seasonally Adjusted 1999 Benchmark—March 28, 2000*, available from Internet: www.calmis.ca.gov/file/lfhist/99aasub.txt; Texas Workforce Commission, *City and County Civilian Labor Force Estimates Actual Series, 1990-Current Modified April 20, 2000*; available from Internet: www.twc.state.tx.us/lmi/lfs/type/unemploymentcityb260.htm.

FIGURE 5.1: CITY UNEMPLOYMENT RATE ESTIMATES

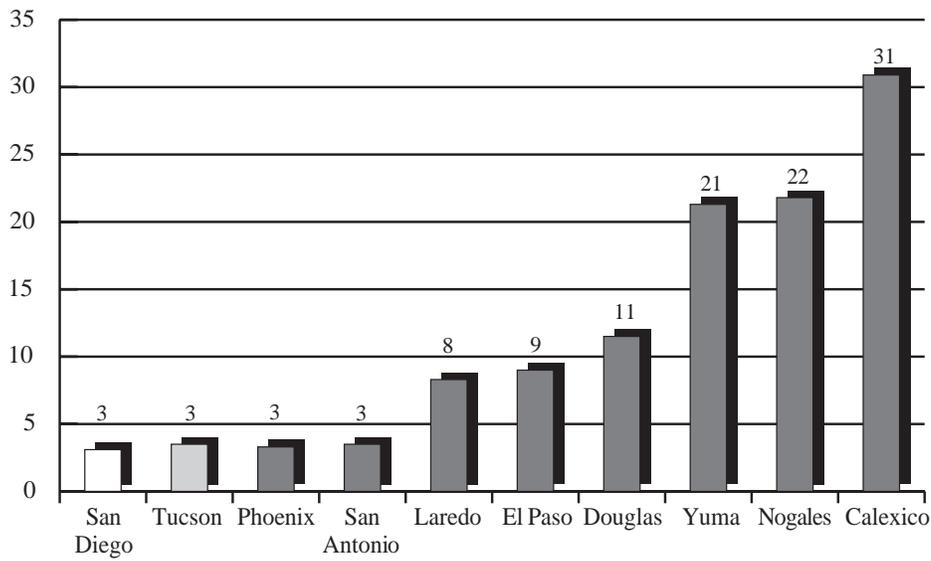
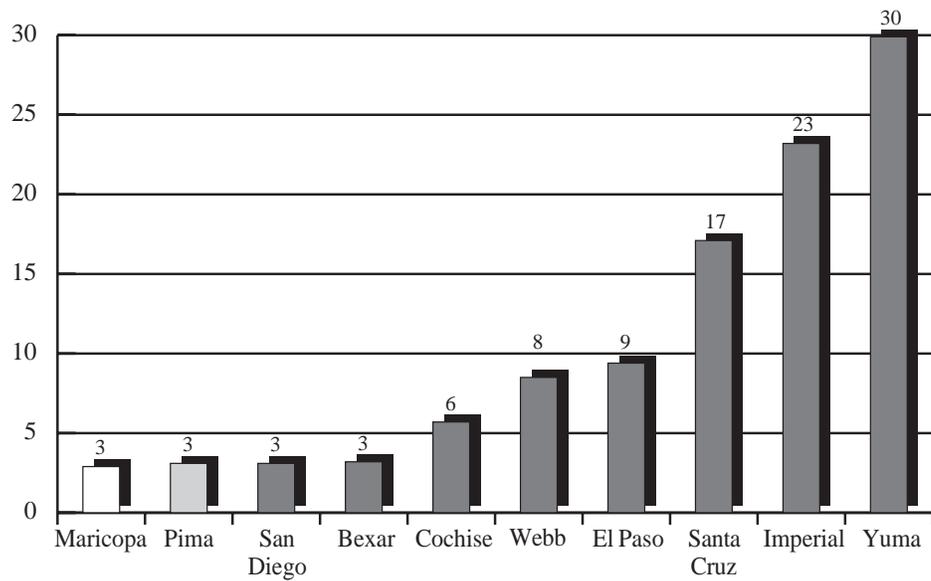


FIGURE 5.2: COUNTY UNEMPLOYMENT RATE ESTIMATES



Sources: Arizona Department of Economic Security, *Special Unemployment Report for January through December 1999*, Revised March 2, 2000, *Research Administration Benchmark 1999*; California Employment Development Department, Labor Market Information Division, *Labor Force Data for Sub-County Areas, Not Seasonally Adjusted 1999 Benchmark—March 28, 2000*, available from Internet: www.calmis.ca.gov/file/lfhist/99aasub.txt; Texas Workforce Commission, *City and County Civilian Labor Force Estimates Actual Series, 1990-Current* Modified April 20, 2000; available from Internet: www.twc.state.tx.us/lmi/lfs/type/unemploymentcityb260.htm.

Skilled Labor Employment

Data from the Bureau of Labor Statistics allows comparison of occupational employment strengths and weaknesses among the various communities. The 1998 data, summarized in table 5.2, indicate the following notable differences:

- Phoenix, with the largest employment total, stands out from its closest competitor, San Diego, in many of the occupational classifications. San Diego is distinguished by larger numbers of computer engineers, machinists, and both electronic assemblers and electronic precision assemblers.
- Despite having less than half the occupational base of San Antonio, Tucson employs larger numbers of chemical engineers and materials engineers.
- Yuma exceeds both Laredo and Douglas in the number of production/operations first line supervisors.
- Douglas is distinguished for having twice as many engineering, mathematical, and natural sciences managers as either Laredo or Yuma, because of the proximity of Fort Huachuca Army Base. The county has more than twice as many electrical/electronic technicians and computer support specialists, and eight times as many systems analysts as Laredo. Finally, it exceeds both Laredo and Yuma in the number of computer programmers; in fact, Douglas has nine times the number of computer programmers as are in Yuma.
- San Antonio exceeds both Tucson and Phoenix in the number of aircraft mechanics.
- El Paso and San Antonio exceed Tucson in the number of tool/die makers. Relative to Tucson and San Antonio, El Paso is distinguished for its workforce of plastic molding operators, quite possibly a reflection of the city's aggressive strategy over the past few years of focusing on the development and recruitment of plastics and injection molding operations. El Paso also has more than three times the number of electronic precision assemblers as San Antonio does.

TABLE 5.2: ESTIMATED SKILLED HUMAN RESOURCES BY REGION, 1998

Occupation	Phoenix, Arizona	Tucson, Arizona	Yuma, Arizona	Douglas, Arizona	San Diego, California	San Antonio, Texas	El Paso, Texas	Laredo, Texas
Accountants/auditors	11,290	1,640	140	80	7,930	4,550	990	310
Aircraft mechanics	1,430	930	n/a	n/a	n/a	2,170	n/a	n/a
Chemical engineers	300	80	n/a	n/a	180	50	n/a	n/a
Computer engineers	3,620	790	n/a	340	4,030	2,230	50	n/a
Computer programmers	8,580	1,310	20 ^a	180	5,890	1,840	320	120
Computer programmer aides	1,820	270	n/a	n/a	810	310	30	n/a
Computer support specialists	6,450	1,300	30	60	5,070	1,330	310	100
Database administrators	1,360	220	n/a	n/a	980	390	160	n/a

Continue Table 5.2 on page 30

Occupation	Phoenix, Arizona	Tucson, Arizona	Yuma, Arizona	Douglas, Arizona	San Diego, California	San Antonio, Texas	El Paso, Texas	Laredo, Texas
Electrical/electronic assemblers	2,210	360	n/a	n/a	3,620	790	560	n/a
Electrical/electronic engineers	6,870	730	n/a	n/a	5,400	1,030	390	n/a
Electrical/electronic precision assemblers	1,940	n/a	n/a	n/a	3,270	100	320	n/a
Electrical/electronic technicians	7,790	820	n/a	130	6,590	1,120	480	60
Engineering, mathematical, and natural sciences managers	6,000	880	40	80	4,100	1,690	350	40
General managers/top executives	30,210	6,120	680	570	28,350	18,960	6,330	2,200
Industrial machinery mechanics	2,070	240	30	20	1,370	890	580	80
Machinists	3,700	920	n/a	n/a	4,440	940	590	n/a
Marketing/sales supervisors	20,910	4,140	500	410	14,950	8,680	2,780	810
Materials engineers	280	70	n/a	n/a	180	60 ^b	n/a	n/a
Mechanical engineers	3,660	290	n/a	30	2,570	780	200	n/a
Plastic mold/casting machine operators/technicians	920	200	n/a	n/a	530	310	340	n/a
Production/operations first line supervisors	5,620	750	70	60	3,770	1,800	1,800	60
Systems analysts	6,350	1,400	n/a	320	4,710	3,110	520	40
Tool/die makers	830	120	n/a	n/a	750	220	190	n/a
Total, all occupations ^c	1,421,350	277,880	35,350	32,420	1,078,180	627,850	219,380	46,550

a. Figure obtained from Arizona Department of Economic Security, Research Administration (February 2000), available from www.de.state.az.us/link/economic/webpage/page6.html.

b. Figure provided by Jim Van Geffen, Texas Workforce Commission, May 9, 2000.

c. These totals include additional occupations not listed in this table.

Source: U.S. Department of Labor, Bureau of Labor Statistics, "1998 Metropolitan Area Occupational Employment and Wage Estimates, Occupational Employment Statistics, Bureau of Labor Statistics" (February 4, 2000), available from <http://stats.bls.gov/oes/state/>.

Grupo Mexico has been actively exploring the establishment of its corporate headquarters in Tucson. Development officials are hopeful that a move by Grupo Mexico coupled with the consolidation of Phelps Dodge's corporate headquarters in Phoenix will provide Arizona with one of the highest concentrations of copper mining executives in the world.⁴

Maquiladora Employment

Information on the total distribution of employment by occupational classifications for specific maquiladora plants in San Luis Río Colorado, Sonora, south of Yuma, is provided in table 5.3. Daewoo Electronics de Mexico is the largest employer with 2,300 workers, followed by BOSE (1,200), Exportex-Sección Lavander (1,100), and Exportex de Mexico (1,050; if the two Exportex divisions are combined, Exportex ranks second). As is true in the maquiladora industry in general, the workforce is concentrated in production. TSE is unique in that, with only 320 employees, it has the second highest number of workers employed as technicians (102).⁵ Figure 5.3 indicates that the distribution of employment in Tijuana maquiladoras is similar to that of San Luis Río Colorado.

TABLE 5.3: MAQUILADORA EMPLOYMENT IN SAN LUIS RÍO COLORADO, SONORA

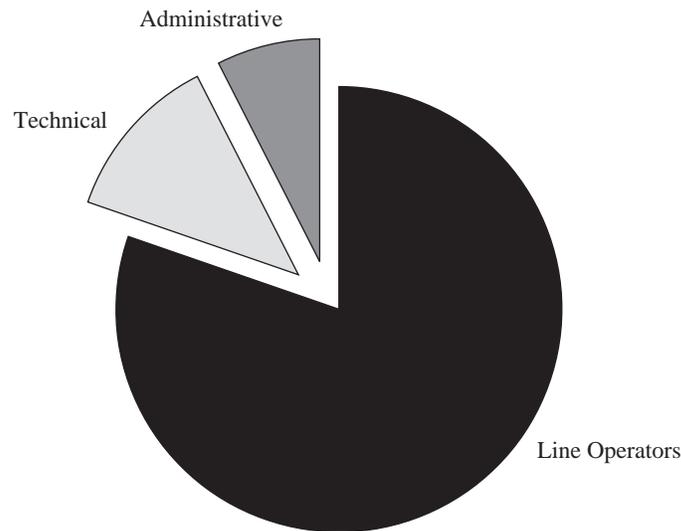
Company Name	Administrators	Technicians	Laborers	Total Employees
AM-MEX Brake	4	1	43	48
BOSE	250	60	890	1,200
Cía de Juguetes Mexicanos	78	22	385	485
Daewoo Electronics de México	300	300	1,700	2,300
Daewoo Electro Components México	37	28	315	380
Devanish de México	7	7	231	245
Exportex de México	80	50	920	1,050
Exportex de México (Sección Lavander)	55	40	1,005	1,100
Fashion Fabrics	10	8	69	87
Hyo Seung de México	6	3	132	141
Industrias Frenco	7	2	18	27
J. Marcel de México	7	4	289	300
Lonta de México	10	1	72	83
Manufactura y Rep. BCJ	3	0	14	17
Mecox Resources	18	77	52	147
Moreno Manufacturas	4	2	34	40
Olguita de México	9	7	759	775
Paul-Son Mexcana	21	40	439	500

Continue Table 5.3 on page 32

Company Name	Administrators	Technicians	Laborers	Total Employees
Poder Uno de México	35	35	730	800
Prestigio de México	21	17	162	200
Río Colorado Textil	2	0	9	11
SANA International	40	10	220	270
San Luis Textil Contractors	1	2	37	40
SEHIWA	5	4	41	50
Sirenamex	8	38	227	273
Sportif de México	6	54	169	229
TSE de México	30	102	188	320
Total	1,089 (9.4%)	963 (8.3%)	9,446 (82.2%)	11,498

Source: *San Luis Río Colorado Dirección de Desarrollo Económico y Turismo*, San Luis Río Colorado, Sonora: Strategic Convergence Location/Punto de convergencia estratégica, (n.d.), p. 25.

FIGURE 5.3: TIJUANA MAQUILADORA EMPLOYMENT



Source: San Diego State University Institute for Regional Studies of the Californias, "Tijuana, Basic Information," p. 5; www.rohan.sdsu.edu/~irsc/tjreport/tj5.html.

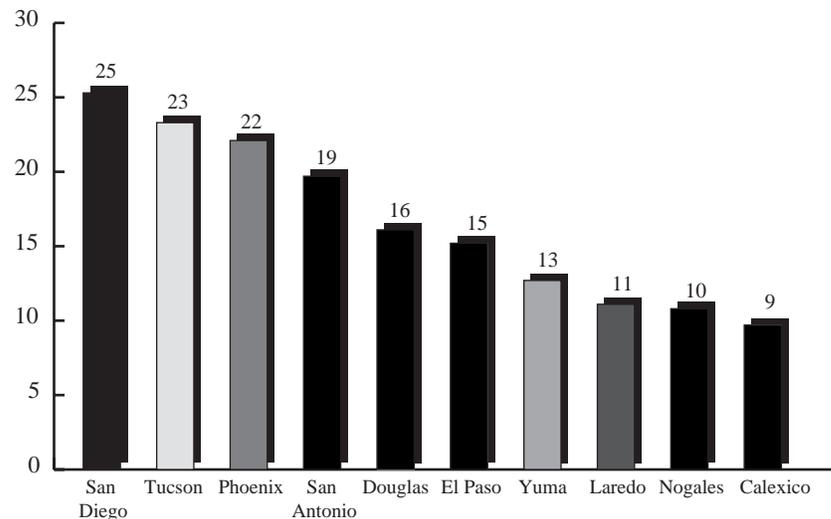
Educational Attainment

According to a 1999 report by the Milken Institute, leading locational factors for high-technology operations were the presence of a trained and educated workforce, proximity to superior educational institutions, an existing supplier base, and amenities associated with a high quality of life. The study's authors emphasized that state and local government investments in workforce development not only assist the companies currently in the region, but can serve as an impetus for new economic development. Based on their findings, the most significant and common characteristic of successful areas was a high percentage of college graduates in the population.⁶

Exemplifying these findings is the role of the University of Arizona’s Optical Science Center. Founded in 1964, the center leads other U.S. institutions in the number of optical science graduates. Tucson—with more than 120 optics firms, many of which were founded on technology generated from the center—boasts one of the highest concentrations of optical science talent nationwide.⁷

Based on census data on college educational attainment, figure 5.4 indicates that San Diego, Tucson, and Phoenix stand out relative to the other communities. Among the smaller communities, Douglas shows high attainment levels in this category, again probably due to the proximity of Fort Huachuca (see table 5.4) .

FIGURE 5.4: COLLEGE EDUCATIONAL ATTAINMENT PERCENTAGES BY REGION



Source: U.S. Census Bureau, 1994

TABLE 5.4: ESTIMATED ENROLLMENT IN INSTITUTIONS OF HIGHER LEARNING

Community	Enrollment
San Diego	284,082
Phoenix	207,462
San Antonio	72,267
Tucson	70,314
Laredo	50,430
El Paso	33,527
Calexico	7,789
Yuma	6,489
Douglas	4,394
Nogales	80

Sources: For Phoenix: City of Phoenix, Community and Economic Development Department, “*Phoenix: Marketplace Facts and Figures*.” Greater Phoenix Economic Council, “*GPEC Fact Book*” www.gpec.org. For Tucson: Records Office, Tucson University; Academic Center, Chapman University; Administration, Phoenix University; Davis-

Monthan site, Park College; IPEDS Opening Fall Enrollments, The University of Arizona; Institutional Research, Pima College. For Yuma: Statewide Academic Programs, Northern Arizona University; Off-Campus Academic Programs, Southern Illinois University; Registrar's Office, Arizona Western College; Registrar's Office, Webster University. For Nogales: Statewide Academic Programs, Northern Arizona University; Institutional Research, Pima Community College. For Douglas: Admissions Office, Cochise College; Student Services, Western International University; Statewide Programs, Northern Arizona University; The University of Arizona–Douglas Campus coordinator; Institutional Research, Pima College. For San Diego: San Diego Regional Economic Development Corporation. For Calexico: Admissions Office, Imperial Valley College; Registrar's Office, San Diego State University–Calexico; National University, Marketing and Student Services Office. For San Antonio: San Antonio Economic Development Foundation. For El Paso: Greater El Paso Chamber of Commerce. For Laredo: Laredo Development Foundation.

Available enrollment data for the Mexicali region indicate that approximately 25,000 individuals were enrolled in an institution of higher learning in 1999 (Table 5.5).

TABLE 5.5: ESTIMATED ENROLLMENT IN INSTITUTIONS OF HIGHER LEARNING IN THE MEXICALI, BAJA CALIFORNIA REGION, 1999

Institution	Estimated Enrollment
Universidad de Baja California	15,000
Instituto Tecnológico de Mexicali	5,000
CE California TI	3,000
CETYS University	1,500
CONALEP II	450
CONALEP/Ejido Pueblo	120

Source: “Background Info: About Mexicali,” Twin Plant News 14, no. 12 (July 1999), 53.

Educational Activities and Initiatives

The state of Arizona has undertaken initiatives to increase local educational opportunities and improve the skill level of the workforce. During 1999 Governor Jane Dee Hull and university leaders from around the state of Arizona met with Mexico’s education secretary to discuss further collaboration in the areas of academic credit transfers, faculty and student exchanges, and joint research in business, trade, science, and engineering.⁸

Given significant labor shortages in the agricultural, tourism, and service industries as well as the rise in illegal immigration, the governor of Arizona is proposing a short-term revival of the guest worker program. The program would allow non-immigrant guest laborers to apply for foreign labor assistance through the existing H-2 visa programs. The cumbersome administrative requirements for these programs would be expedited by an efficient system based on a universal biometric work authorization card to provide proper documentation for immigrant workers. In addition, the proposal calls for using labor shortages as a criterion for certifying workers, making visas extendable, and adopting a fast-track employer certification process.⁹

Phoenix Area

For the fifth consecutive year, the American Graduate School of International Management (Thunderbird) was rated the top school in the nation for international business according to the April 2000 *U.S. News & World Report* rankings of the best graduate schools. Among schools of business, irrespective of specialization, Thunderbird was rated 34th overall, behind the University of Arizona (31st) and Arizona State University—Main Campus (32nd).¹⁰ Thunderbird is one of twenty-six schools in the nation to be designated a Center for International Business Education and Research

(CIBER). The curriculum for the master's program in international management is being revised for the 2000-2001 academic year. While retaining the traditional scope of international studies, modern languages, and world business requirements, students are now required to choose a regional focus, specialize in a course of study, and complete a "capstone," or applied coursework in the chosen specialization.¹¹ Thunderbird offers a number of executive education programs targeting industry leaders, which include:

- Global management executive education programs
- Executive education partnerships
- Custom-designed programs
- Language and culture training
- Executive master's degree program¹²

Arizona State University's Bank One Economic Outlook Center provides sophisticated statistical modeling and computer-based planning as a public service. Established in 1985 and named for Bank One in 1997, the center publishes the *Consenso de Pronósticos Económicos* (Mexico Consensus Economic Forecast) on a quarterly basis. Leading Mexican experts provide an analysis and forecasts on the economy of Mexico.¹³

Arizona State University directed a collaborative effort with the University of Arizona to survey maquiladoras along the Arizona-Sonora border. The study findings suggested that the plants were utilizing lean manufacturing techniques to compete on price, quality, and delivery issues. Another key finding was that firm executives anticipated moving toward greater sourcing of supplies and components from the local markets.

Tucson Region

The University of Arizona is engaged in a host of activities to enhance regional linkages with the states of Sonora and Sinaloa as well as to provide instruction that prepares students for an increasingly globalized trade environment. Notable activities include the following:

- On October 7-8, 1999, the University of Arizona's new president led a delegation of department heads, faculty members, and administrative officials to meet with the rector of the University of Sonora. The visit to Hermosillo yielded information on Mexico's higher education system, meetings between faculty members to discuss collaborative research, and a formal signing of a *convenio* (agreement) between the two institutions. The convenio builds on efforts by previous presidents to formalize relationships between the two universities. The disciplines targeted for cooperation were water research, environmental studies, economic development, agriculture and food production, and engineering. Faculty members from the University of Arizona expressed an interest in reciprocal adjunct faculty opportunities, a brochure to stimulate transboundary study programs between student populations, and agreements regarding access to archaeological sites in Sonora.¹⁴
- In the past, the University of Arizona Agricultural Extension staff have worked with Sonoran colleagues on agricultural producer outreach and training programs. As part of the university-coordinated Arizona-Sonora Project, which promotes binational planning, researchers from Arizona and Sonora completed a comprehensive study of the agricultural industries in each state, which included the identification of the economic complementarities that would facilitate transboundary integration in this sector. *Arizona-Sonora Agribusiness Cluster: Analysis and Recommendations for Development* served as the blueprint for the creation of a binational industry cluster organization that seeks to enhance the competitive position of the two states.¹⁵
- The Southwest Border Technology Project (SWBTP) is a partnership between the University of Arizona and the National Institute of Justice Office of Science and Technology. Utilizing resources at the University of Arizona Science and Technology Park, this new initiative aims to establish a platform for the identification and implementation of technologies to expedite cross-border commercial transactions and support the interception of illegal conveyances. In addition to operating several test beds to determine the feasibility of specific technologies,

the project will act as a clearinghouse for inspection and detection technologies and maintain a comprehensive technology database.

- BorderPACT is a network to foster change and collaboration among border institutions of higher education in the U.S.-Mexico borderlands.¹⁶ In 1999, with sponsorship from the Ford Foundation, BorderPACT awarded \$60,000 in grants to recipients along the U.S.-Mexico border. Funded projects included construction of a satellite medical clinic, community outreach to educate immigrants on their legal rights and responsibilities, identification of culturally appropriate speech and language treatment techniques for Mexican children, and translation of an environmental curriculum into Spanish for sixth-, seventh-, and eighth-grade students.¹⁷ Working in tandem with this network is the Consortium for North American Higher Education Collaboration (CONAHEC), whose executive director is based at the University of Arizona. CONAHEC serves as the lead agency in the administration of the trilateral system fostering improved academic cooperation in North America.¹⁸
- The second annual Border Academy, hosted by the Mexican American Studies and Research Center at the University of Arizona was held over two weekends in July 1999. The academy focused on border health issues during the first weekend session and concluded the following weekend with a session on economic development issues. The health session focused on health status, health systems, and community-based health projects along the border. In the discussions on economic development, participants explored issues concerning NAFTA's impact on Canada, importation and exportation of winter produce, transportation, immigration and the maquiladora industry. Presenters from Germany and Poland highlighted a global perspective to borderland development issues.¹⁹
- Undergraduates in the University of Arizona College of Business and Public Administration are offered a supplementary program to enhance their understanding of international business transactions. The International Business Certificate Program (IBCP) consists of foreign language instruction and coursework in international business subjects, such as accounting, trade theory, finance, management, information technology, and political risk and intelligence analysis. Another component of the program is an academic year internship with an internationally active business in Tucson.²⁰
- The University of Arizona recently was one of four schools receiving a \$400,000 grant from the Alfred P. Sloan Foundation to prepare students for private-sector employment. The grant provides seed money to schools that are attempting to create a link between educational instruction and industry. Starting in the fall of 2000, faculty from the College of Science and the College of Business and Public Administration will offer a professional master's degree in applied bioscience, mathematical science, and applied and industrial physics. An industry advisory board that included representatives of Raytheon and Motorola guided curriculum development.²¹
- The National Law Center for Inter-American Free Trade, located in the University of Arizona College of Law, is leading an effort to establish legal principles for conducting e-commerce across international boundaries. In September 1999, the center hosted a meeting of representatives from Canada, the United States, and Latin America to identify key obstacles to e-commerce trade with specific attention to Latin America.²²

Like the University of Arizona, Pima Community College is initiating strategies to address opportunities and challenges for international commerce and high-tech development.

- The International Business Studies Advisory Committee at Pima Community College is developing a Center for International Studies to be located at the West Campus. In conjunction with the Technological Institute of Sonora (ITSON), the international business faculty will have 20 ITSON students take courses at the college during the summer of 2000. In addition to establishing a course on e-commerce, the International Business Studies program will be offering expanded instruction on cultural differences management, international economics, and globalization. The college, which currently offers an associate degree in international business, is developing an international business certificate program.²³
- A new program at the Pima College West Campus is preparing minimum-wage workers to be electronics technicians. In addition, the Downtown Campus provides instruction in machine tool technology through a partnership with the National Tooling and Machining Association apprenticeship program.²⁴ A significant challenge for the college has been retaining the 150 to 230 students who enroll each semester for the machine tool

technology degree program. A lead instructor for the program indicates that, with a shortage of skilled machinists in the region, industrial demand is prompting students to begin working prior to completing their degree.²⁵

- Recently the college signed a 30-year lease with the Tucson Airport Authority (TAA) to build a 40,000-square-foot hangar for its aviation program.²⁶ The agreement underscores airport officials' concerns that the most serious challenge before Tucson is providing trained people to fill new jobs. TAA representatives indicate that the potential exists for significant employment increases in the local aerospace industry.²⁷ A sizeable challenge to training efforts in Tucson and other communities in the state is that Arizona allocates significantly less money for customized training programs than do California and Texas. In 1999, Arizona funding totaled \$5 million, in comparison to \$117.2 million in California and \$66.5 million in Texas. Arizona legislative appropriations for 2000 and 2001 reflect incremental increases to \$6 million and \$7 million over the two years.²⁸
- The Department of Labor awarded Pima County Community Services a \$788,000 federal grant to assist non-English-speaking job seekers in obtaining marketable skills and to increase the pool of qualified workers. The grant—a collaborative effort by Pima County, the city of Tucson, the University of Arizona, and Pima Community College—will target Arizona participants, largely dislocated workers, for career-track health-care training and language proficiency instruction. This pilot project will run for two years.²⁹
- At the K-12 level, industry leaders advocated that the Tucson Unified School District choose as its new superintendent someone committed to public-private workforce development programs. Citing the need for students who can fill all employment levels in high-tech industries such as optics, information and computer technology, and aerospace, industry representatives stress that high-school graduates must acquire at least some technology skills. Every graduating student should have achieved computer literacy, proficiency with various computer programs, and the ability to access the Internet.³⁰

Yuma Region

The College of Business Administration at Northern Arizona University—Yuma Campus, is offering students internship opportunities with firms in Mexico to help them develop the critical insights and skills needed to perform effectively in a global environment. Following instruction in comparative business practices and intensive business Spanish, students spend an academic semester working in a maquiladora, a small business, or a nonprofit organization in San Luis Río Colorado, Sonora. Several companies and organizations, including BOSE Corporation and Canacintra, have participated in the program.³¹

Acknowledging the vital role that educational achievement plays in the economic success of their region, representatives of Northern Arizona University are initiating an analysis of the training requirements of the maquiladora sector in Sonora and of local manufacturing and distribution service companies. A public- and private-sector effort, the analysis could gauge industry support for training programs in the areas of customs clearing, freight forwarding, and supply chain management.³² Moreover, future training programs would seek to complement the training efforts already underway by Sonoran academic institutions and the maquiladoras themselves.

The University of Phoenix recently opened an instructional site that provides business degree programs for working professionals in the Yuma region.

Nogales Region

A ballot initiative in the Nogales region sought voter approval for a provisional community college. The steering committee for this initiative is designing an educational program that would train the local workforce for high technology. Economic developers report that Nogales has an abundance of unskilled and semi-skilled labor. The college would provide an invaluable resource for community members who currently have to travel outside the region to obtain this level of instruction.³³

Douglas Region

Economic developers in Sierra Vista have partnered with Fort Huachuca to design a recruitment marketing program to attract skilled workers, such as engineers and technicians, from Tucson and other areas across the nation. This recruitment initiative is being funded through corporate sponsorship. In their recruitment efforts, city officials underscore the advanced technology developments at Fort Huachuca and locational advantages such as a low crime and cost of living indices.³⁴

San Diego Region

Notable initiatives in the San Diego region are being undertaken by the University of California system, the California State University system local community colleges, the K-12 school system, and public-private partnerships. Many involve collaboration with similar institutions in Baja California.

The University of California, San Diego established the Center for U.S-Mexican Studies in 1979 to support a broad range of research. Research priorities established for the year 2000-2001 are political transitions in Mexico, political and social consequences of Mexico's economic restructuring, Mexican environmental policy, the economic and political dimensions of North American integration, Mexican migration to the United States; and judicial reform, public security, and law enforcement in Mexico.³⁵

The University of California, San Diego, School of Business Administration, in partnership with the Division of Continuing Education, offers a Certificate in International Business. Faculty members team with industry leaders and government officials to provide instruction in international finance, marketing, and business strategy. The program, which comprises seven 12-credit-hour classes, features information on negotiations, import and export strategies, legal issues, and a course on international e-commerce.³⁶

San Diego State University is one of 25 schools designated by the U.S. Department of Education as a federally supported national center of excellence in international business. CIBER, the Center for International Business Education and Research at that university, is the largest program of its kind in the United States. The MEXUS program, a component of the center, is marketed as "preparing for business without borders." In partnership with Southwestern College, Centro de Enseñanza Técnica y Superior, and the Universidad Autónoma de Baja California, MEXUS attempts to meet industry demands by internationalizing management education. The first binational undergraduate dual-degree program in the United States, the MEXUS Program features a semester-long or year long stay in Chile, Spain, Ecuador, or Mexico. A new partnership with the Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), which has 26 campus in cities throughout Mexico, enables students to study in a wider array of places. MEXUS is developing dual-degree programs with six additional countries: Russia, China, Japan, Brazil, France, and Canada. A new trinational program sponsored by MEXUS, Project North America (PNA) is designed to increase mobility in North American higher education and enhance the human resource structure in the region. Student participants study in both Mexico and Canada. The "Progress Report to Implement a New Border Vision," which was presented at a meeting between the presidents of the United States and Mexico, recognized MEXUS along with 15 other programs as a binational model of educational cooperation and collaboration.³⁷

The Institute for Regional Studies of the Californias (IRSC), established at San Diego State University in 1983, conducts extensive applied research on environmental, regional, and transborder planning issues. As part of its mission to serve as a forum for the discussion and dissemination of information on the border region of California and Baja California, IRSC publishes the *Border Studies* and *Border Issues* series and *Mexico Policy News*.

Deficits in primary and secondary education are affecting not only the future workforce but the current workforce as well. Although a facility expansion by Applied MicroCircuits Corp, a leader in high bandwidth silicon for optical networks, underscores San Diego's ability to attract engineering expertise, a CEO roundtable in 1999 indicated that many engineers with families were choosing other locations because of a perception that San Diego has a poor K-12 system.³⁹ In an effort to improve the skill level of high school graduates, the San Diego Unified School Board approved the "Blueprint for Student Success" in March 2000. Proponents describe the strategy as unique because it allows for extended learning in areas such as literacy and mathematics and requires students to undertake a demanding

curriculum. They based this proposal on U.S. Department of Education findings that the most important predictor of whether a student graduates with a degree was not grades or test scores, but rather the level of difficulty of high school classes.⁴⁰

Calexico Region

A low level of training in Imperial County has traditionally required the importation of skilled workers.⁴¹ With a significant portion of its workforce ill-equipped for technological advancements, Imperial Valley College is designing a workforce-training program to address twenty-first century needs. Citing a booming maquiladora industry and regional business growth to support that sector, college administrators have partnered with the Small Manufacturers Institute to obtain grants for education in entry-level to advanced manufacturing disciplines.⁴² Consisting of the Small Manufacturers Association of California, the California State Universities Institutes, and the Sandia and Lawrence Livermore National Laboratories, the Small Manufacturers Institute was formed to promote manufacturing jobs as a critical component of economic growth. With continued growth projected, workers with valuable skills will be increasingly in demand.⁴³

In 1998, with initial funding from a U.S. Department of Agriculture Rural Development Enterprise Grant, the California Center for Border and Regional Economic Studies (CCBRES) was established to serve as a resource for Imperial Valley and the larger California—Baja California region. Located at the San Diego State University—Imperial Valley Campus, the center compiles trade statistics and maintains an economic profile of the county. CCBRES has produced reports on unemployment, population estimates and projections, state and local foreign trade, and research methodologies for a study to assess worker availability in Mexicali.⁴⁴

Mexicali Region

In 1998, the Centro de Enseñanza Técnica y Superior Universidad (CETYS) conducted a four-part study to assess the availability of workers in Mexicali. Researchers utilized a variety of methodologies to assess the demand for labor by local industries, including consulting federal data sources and undertaking extensive interviews with plant managers, employees, and the general public. The findings indicate that Mexicali has a sizeable labor force pool; however, many of the unemployed were not working because they required flexible hours, child care, part-time employment, or were over 50.⁴⁵

Seeking to make Mexicali a world-class industrial city, educators there have designed a linkage program to meet specific industry needs. This program includes a stated goal of creating a culture or attitude that generates professional and technical development in the areas of engineering, welding, metalwork, and plastic injection molding. To support this initiative, maquiladora managers are enlisted to provide instruction. Additional activities consist of custom technical training in specific applications and summer employment of instructors in maquiladoras so they can acquire information on current industry practices.⁴⁶ A regional committee of local schools is also implementing a pilot project to provide instruction on computer applications.⁴⁷

San Antonio Region

As part of the “city-base” concept, Brooks Air Force Base signed a memorandum of understanding with Texas A&M University to create a center to study environmental challenges along the U.S.-Mexico border. The Frank M. Tejada Center for Excellence in Environmental Operations is the result of an effort to stimulate greater research linkages among universities, industry, and the Air Force. Researchers will direct their attention to water and wastewater pollution prevention and provide outreach through education, training, and leadership development on border issues. City officials, noting that the base is an environmental research hub for the defense department, are optimistic that the partnership will generate new employment and wealth.⁴⁸

Northwest Vista College, a two-year institution, offers associate degrees in a variety of high-tech programs. The school graduated 14 students in 1999 with associate of applied science degrees in semiconductor manufacturing technology.⁴⁹

El Paso Region

El Paso city officials indicate that the most significant challenge facing their region is workforce development. Since the implementation of NAFTA, more than 50 major employers reportedly have either downsized or relocated from El Paso. Hispanic women over 30 who have less than a sixth grade education make up the majority of displaced workers in the region.⁵⁰ With high levels of displaced workers who lack the necessary skills—such as English proficiency, a high-school diploma, and vocational training—to transfer into other occupational areas, particularly the growing teleservices field, the city hired consultants to prepare a strategic adjustment plan. Completed in December 1999, “A Vision for Tomorrow’s El Paso: Economic Adjustment Strategic Plan” includes a workforce development recommendation to refocus programs toward an employer-driven approach with greater linkages to new and existing businesses. The consultants recommended that several steps be taken, including a review of current programs, a survey of the employment needs of El Paso businesses over the next year, and creation of a customer service training program at El Paso Community College.⁵¹ Several other workforce development programs are affiliated with the University of Texas at El Paso and El Paso Community College.

The University of Texas at El Paso offers a bachelor of arts degree in business administration. Courses include international accounting, economics, and finance. In addition, students take classes on the economics of Latin America and Mexico, international management, and marketing.

The Texas Manufacturing Assistance Center (TMAC), affiliated with the U.S. Department of Economic Development National Institute of Standards and Technology, is a one-stop shop for small to medium-sized manufacturers. In addition to fostering partnerships between manufacturers and the research community, the University of Texas at El Paso, TMAC provides opportunities for university students to obtain hands-on experience working for these local manufacturers.⁵²

El Paso Community College, which is recognized for its workforce training efforts, offers a customs broker license preparation program. This program prepares students for careers in international trade through study of U.S. customs laws, importing and exporting, license preparation courses, global freight forwarding, and how to start a customs brokerage business.⁵³

Laredo Region

Like many other communities along the U.S.-Mexico border, Laredo has a large number of unskilled workers. Economic developers emphasize that education must play a key role in creating a marketable labor force in Laredo. A trained workforce can not only attract industry but can raise the standard of living for the community.⁵⁴ With only 47 percent of the student population graduating from high school and only 11 percent graduating from college, economic professionals are supporting career technology programs in the public schools.⁵⁵

Playing a lead role in the effort to develop a skilled labor pool are the Texas A&M International University College of Business Administration and the Graduate School of International Trade (COBA/GSITBA). Graduate-level instruction is provided in business administration in the areas of international banking, international logistics, and information systems. A number of traditional business administration courses in finance and accounting are offered at the undergraduate level.⁵⁶ Through a variety of programs, COBA also publishes monthly digests on border statistics (*Border Business Indicators*) and NAFTA-related issues (*NAFTA Digest*).

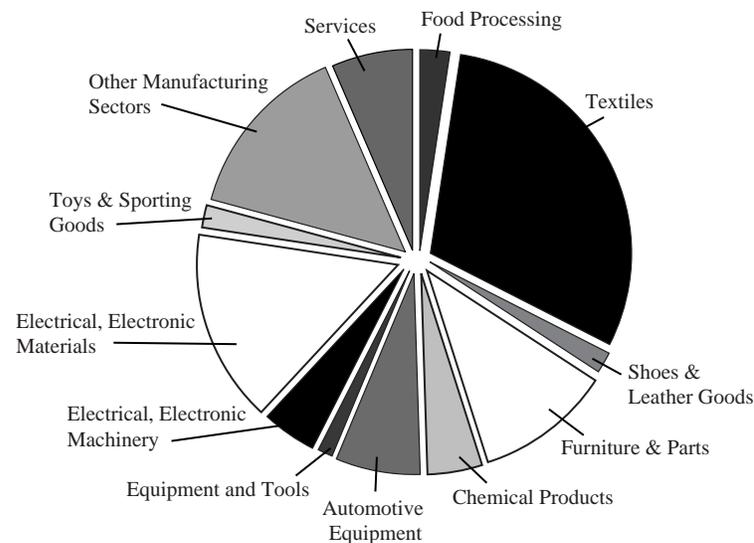
In 1994, the university established the Border Trade Institute to collect U.S. customs import and export data at the five-digit SITC level for ports along the U.S.-Mexico border. The Office for the Study of U.S.-Mexico Trade Relations (USMTR) maintains articles from a variety of press sources in an on-line searchable database. Since 1994, this institute has expanded to provide specialized information on agricultural issues through the Center for North American Studies in the U.S. Department of Agriculture.⁵⁷

Maquiladoras and Regional Supplier Development

Profile and Growth of Maquiladoras

During the last century the development of the maquiladora industry in Mexico ranks among the top outstanding economic events for the country. By the end of 2000, the industry expects to reach 3,700 plants and an employment level of 1,300,000 workers for an annual 8 percent growth rate. A recent survey by the Asociación de Maquiladoras de Sonora (AMS) found that membership anticipated a 20 percent growth in direct labor by the end of 2000. Textiles, electrical and electronic materials, and other manufacturing sectors make up the bulk of the industrial activity for maquiladora plants in Mexico. Furniture and parts, automotive equipment, and chemical products are other important production efforts (Figure 6.1).

FIGURE 6.1: PERCENTAGE OF MAQUILADORAS BY INDUSTRY ACTIVITY

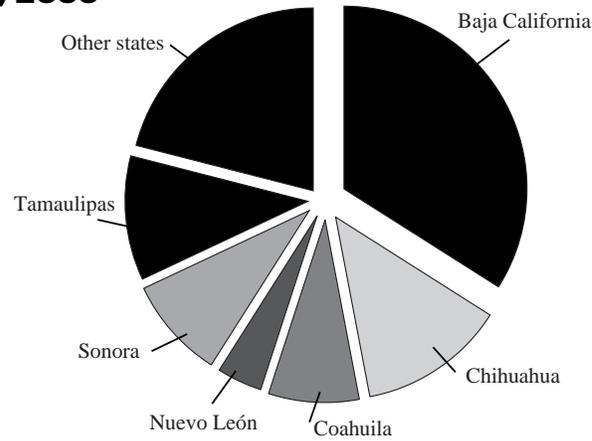


Source: "Maquila Scoreboard," Twin Plant News, May 2000, p.71.

As indicated in figure 6.2 the largest concentration of maquiladora plants is in the state of Baja California, followed by Chihuahua and Tamaulipas. Although Sonoran maquiladoras make up only 9 percent of the industry in Mexico, compared to other Mexican states Sonora experienced one of the highest percentage increases in the number of maquiladora plants between 1998 and 1999. During this year, the number of plants in Guadalajara increased by 50 percent, followed by three communities in Sonora—Nogales (29.6 percent), Hermosillo (28.6 percent), and Guaymas (23.5 percent)—and Ensenada, Baja California (23.5 percent; Table 6.1). Between 1998 and 2000 Nogales, Sonora, experienced a considerable increase (48 percent) in the number of maquiladoras, from 81 to 120. Employment grew nearly 20 percent between 1998 and 2000, to an estimated workforce of 38,283 in June 2000.

Double-digit growth occurred in Matamoros (19.1 percent), Ciudad Juárez (14.7 percent), and Tijuana (10.7 percent). Agua Prieta, at 6.5 percent, was among several communities (Monterrey, Mexicali, Ciudad Chihuahua, and Nuevo Laredo) that showed more modest increases. Over the longer term, however, Mexicali has experienced dramatic growth in maquiladora employment. Between 1995 and 1999, maquiladora employment increased 100.4 percent, even though Mexicali continues to have substantially fewer firms than Tijuana (184 to 737). Regional reports attribute this growth to the relocation of large firms into the area.¹ San Luis Río Colorado was noteworthy as the only community listed to experience a decrease (-3 percent).

FIGURE 6.2: PERCENTAGE SHARE OF MAQUILADORA PLANTS IN SELECTED MEXICAN STATES, 2000



Source: "Maquila Scoreboard," Twin Plant News, May 2000, p.70.

TABLE 6.1: PERCENTAGE CHANGE IN NUMBER OF MAQUILADORAS, 1998 TO 1999]

Community	Maquiladoras 1998	Maquiladoras 1999	Pct. Change 1998—1999
Tijuana	666	737	10.7%
Ciudad Juárez	252	289	14.7
Mexicali	172	184	7.0
Matamoros	115	137	19.1
Monterrey area	120	130	8.3
Reynosa	99	111	12.1
Nogales	81	105	29.6
Ciudad Chihuahua	76	81	6.6
Ensenada	68	84	23.5
Ciudad Acuña	54	57	5.6
Nuevo Laredo	53	54	1.9
Piedras Negras	44	44	0.0
Hermosillo	42	54	28.6
San Luis Río Colorado	33	32	-3.0
Agua Prieta	31	33	6.5
Guadalajara	22	33	50.0
Guaymas	17	21	23.5

Sources: "Maquila Scoreboard," Twin Plant News, November 1998, p. 63; "Maquila Scoreboard," Twin Plant News, November 1999, p. 71.

Regional Activities and Initiatives

Efforts to increase the number of regional producers and suppliers, and the linkages between them, are underway in every community explored in this report. An increasingly popular strategy is trade shows, which feature the products and services of regional suppliers and the sourcing needs of maquiladoras and other industries in the area. Ninety-seven expositions were tentatively scheduled during the calendar year 2000 in Monterrey, Nuevo León.² Table 6.2 highlights some of the most popular trade shows occurring in the U.S border region and Mexico.

TABLE 6.2: TRADE SHOWS AND EXPOS IN THE U.S.-MEXICO REGION

ENVIROMATCH	Guadalajara, Mexico	November 1999
MEXPORT 2000	Otay Mesa, California	February 2000
ANIPRON Trade Show	Mexico City	February 2000
Borderland Tradeshow	El Paso, Texas	March 2000
Expo Industrial 2000	Hermosillo, Sonora	March 2000
Vision 2000	Laredo, Texas	March 2000
Nogales Expo	Nogales, Sonora	April 2000
ADOC International Trade Seminar	Tucson, Arizona	April 2000
NAFTASHO 2000	Calexico, California	April 2000
EXPO Obregón 2000	Ciudad Obregón, Sonora	May 2000
Southern AZ/Sonora International Business Expo	Tucson, Arizona	July 2000
Plasti Imagen Show	Mexico City	September 2000
Match Mex 2000	Mexico City	September 2000

Sources: 2000 trade show calendars from Office of International Business, CINTERMEX, SECOFI, Arizona Department of Commerce, and states of Coahuila, Tamaulipas, New Mexico, California, and Baja California Norte.

Survey of Sonoran Maquiladoras

Recognizing the potential impact of maquiladoras on a region, a team of researchers from Arizona State University and The University of Arizona surveyed production-sharing plants in Sonora, Mexico. The study indicated that these world-class manufacturers are competing on price, quality, and on-time delivery. Many are full-service production facilities and many are implementing lean manufacturing techniques, such as ISO 9000. Of particular interest, maquiladora managers reported that although they are becoming more independent in their decision-making structures, purchasing is still controlled in large part by the parent companies. The respondents noted that the existence of suppliers was not a critical factor in their company's decision to locate in Sonora, although most respondents did anticipate an increase in local purchases from both Arizona and Sonora suppliers. The study concluded with the following recommendations:

- Establish a cross-border maquiladora industry cluster organization to provide linkages between suppliers and maquiladoras. This group would address workforce, transportation, and policy issues
- Design a marketing plan that includes visits with parent companies outside of Arizona to encourage increased use of local suppliers and further maquiladora development

- Assist regional suppliers in developing competitive strategies for just-in-time production, in improving performance with information technologies, and in obtaining quality certifications such as ISO 9000.
- Enhance infrastructure and efficiency of border crossing through common priorities and lobbying efforts between regional economic developers and maquiladora parent companies in Arizona.
- Integrate workforce development needs of maquiladoras into the economic development plans for the region.³

Initiatives in the Tucson Region

The Tucson-Mexico Project of the city of Tucson continues to implement its Maquiladora Supplier Program, which focuses on increasing Tucson-area purchases by the Mexican maquiladora industry. In its first year the program exceeded expectations: Eight contracts were awarded to Tucson companies with an estimated value of \$618,000. In total, Tucson manufacturing supplier companies submitted to maquiladora plants 22 bids worth more than \$3 million. In an effort to increase supplier linkages, program staff has been attending trade shows and have been working with the Greater Tucson Economic Council to attract companies to Tucson to supply the maquiladora industry. Targeted suppliers include zinc die casting, industrial plating, and high-volume thermoset plastics companies.⁴

In November 1999, the Tucson-Mexico Project collaborated with the Agua Prieta Chamber of Commerce to bring 40 private-sector representatives from Tucson to Agua Prieta to explore complementarities between the maquiladora industry and the supplier base in Tucson.⁵ In March 2000, the Tucson-Mexico Project hosted the Expo Industrial 2000 in Hermosillo, Sonora. This international trade show featured nearly 100 businesses and reportedly drew approximately 4,300 visitors from around the world. Representatives of seven Tucson companies traveled with project representatives to participate in matchmaking opportunities between suppliers and maquiladoras. The organizers envision a more cost-effective and timely maquiladora supply delivery system as a result of the exposition. An estimated 96 percent of the supplies sourced by maquiladora plants in Mexico are purchased from outside the local region. These purchasing patterns lead to costly freight charges and delays.⁶

The Tucson-Mexico Project is a critical resource for Tucson-based companies seeking a relationship with clients in Mexico. A box company headquartered in Tucson entered the maquiladora supplier market by opening a new plant in Nogales, Sonora. By manufacturing corrugated cartons in Mexico, the company claims to have attracted nearly a dozen new clients, provided jobs for more than 30 workers, and established an advantage over competitors, namely their ability to serve the Mexican counterparts of their clients—Xerox, General Instruments, BOSE, ACCO, and Master Lock—more efficiently. The firm’s Tucson operation performs warehousing, distribution, and design functions, while the plant in Sonora provides the vast majority of handwork and assembly functions.

Initiatives in the Yuma Region

The Yuma Proving Ground (YPG), described as one of the largest military installations in the world, is attempting to develop supplier and development relationships with regional industries and academic institutions. The Desert Testing and Training Facilities, a critical component of the installation, conducts an average of 100 tests at any given time on helicopter armament, long-range artillery, and main battle tanks. Each year more than 50 units from around the nation come to the Proving Ground to train at the Military Freefall School, part of the John F. Kennedy Special Warfare Center, which specializes in freefall parachuting techniques. Because the military installation requires a wide spectrum of supplies and services to maintain its sophisticated array of technology-based equipment, local economic developers in partnership with the YPG are seeking ways to enhance regional sourcing expertise.⁷

Development officials in San Luis Río Colorado, Sonora, approximately 20 miles south of Yuma, have developed a sophisticated bilingual marketing brochure in order to attract U.S. investment. The brochure emphasizes the community’s strategic location, its efforts to modernize, and the existence of a qualified labor force. Noting that national and foreign investors have found their community a fertile ground for establishing manufacturing operations, the document highlights additional factors such as plenty of level terrain, electricity, and water.⁸

The featured speaker for the session on small business opportunities in Mexico at the fourth annual Desert Pacific Regional International Trade Show and Conference was a businessman who had established a NAPA Auto Parts operation in San Luis Río Colorado. He outlined the procedures for opening a retail business in Mexico. They include:

- Engage a Mexican attorney who is also a notary public and a Mexican accountant. Ensure that both are familiar with the procedure for setting up alien businesses.
- Acquire a U.S. passport, a process which may require two to four weeks.
- Acquire a Mexican visa at the Immigration Office for approximately \$125 U.S. dollars. By actually traveling to the border office, he received his documents in less than a week.
- Obtain for your business the Articles of Incorporation, known in Mexico as Anonymous Society. This process can be complex and time consuming, in some cases taking as long as a year if there are inaccuracies on the form. By obtaining a copy of the Articles of Incorporation of a similar business, and using them as a model, this individual was able to complete the task in one day.
- After obtaining Articles of Incorporation and a legal identity, obtain a Federal Tax ID number, a process estimated to take two weeks.
- New businesses are encouraged to join SECOFI, the federal chamber of commerce in Mexico, in order to access useful networking opportunities.
- Apply for a Social Security Tax ID number, which in this case was completed by the company's accountant in about one week.
- After securing a lease, obtain an Occupant's License, the equivalent of a business license, permitting one to conduct business.

The handouts provided with this presentation indicated that the entire process took nearly six weeks to complete, since the speaker personally handled all the details. He estimated his out-of-pocket expenses at approximately 2000 U.S. dollars.

Initiatives in the San Diego Region

On June 15, 2000, the Otay Mesa Chamber of Commerce and the San Diego Regional Economic Development Corporation hosted the MEXPORT 2000 trade show. A focus of the trade show was changes in import duty status for maquiladoras after January 2001. At that time, maquiladoras will no longer be able to import supplies duty-free unless they originate in a NAFTA country. Major maquiladoras were invited to participate in this year's event to make known their component and supply needs. Seminars provided information on recent tax reforms affecting the maquiladora industry, a new venture capital fund for suppliers, trade financing options on both sides of the border, and the impact of air-cargo trends in the San Diego region.⁹

Table 6.3, produced by the San Diego Dialogue, provides economic data for employment, output, and value added by the maquiladora industry in Baja California :

TABLE 6.3: MAQUILADORA EMPLOYMENT, OUTPUT AND PRODUCTIVITY IN BAJA CALIFORNIA, 1997.

	Employment (Thousands)	Output (Hundred thousands of pesos)	Value Added per Worker (Thousands of pesos)
Food products	2.4	158.2	26.4
Textiles/apparel	12.4	1,071.2	18.7
Wood products	19.4	2,325.7	16.7
Chemical products	13.7	1,540.1	23.1
Machinery/equipment	108.7	37,003.9	22.2
Other mfg.	39.9	5783.4	22.9
Total	196.5	47,882.4	21.7

Source: Jim Gerber, "Cross-Border Economic Bulletin: Economic Data Affecting the San Diego/Baja California Region," San Diego Dialogue Report 3 no. 4: p. 6.

Initiatives in the Calexico Region

The fourth annual NAFTA SHO 2000 trade show, featuring nearly 200 exhibitors, was held near the new port of entry, Calexico East, in February 2000.¹⁰ The event was hosted by an alliance consisting of the Comisión de Desarrollo Industrial de Mexicali (Mexicali Industrial Development Commission), the Valley of Imperial Development Alliance, and the Coachella Valley Economic Partnership. The primary intent of the trade show is to assist regional companies in providing materials and services for the approximately 180 maquiladoras in the area. Materials sourced by the maquiladora industry include electronic components, tool and die, metal stamping, injection molding, plastic extrusion, industrial supplies, and packing materials.¹¹ Development officials indicate that Imperial County serves much of the customs, warehousing, and trucking needs of the industrial sector in Mexicali, which has grown rapidly over the last 20 years.¹²

In March an important supplier linkage was established when Alimentos de Baja California, a dairy company in Mexicali, agreed to produce ice cream for Wal-Mart's Mexican markets. This purchasing agreement has resulted in significant local purchases of new trucks and machinery in order to satisfy the overwhelming demand for ice cream. It has been reported that Alimentos de Baja California, which already provides products for Wal-Mart, Costco, and Sam's Clubs in Tijuana and Hermosillo, is exploring an agreement to supply Sam's Clubs in Argentina and Brazil.¹³ Recently, Thomson Multimedia, one of the largest consumer electronic companies in the United States announced plans to build a \$203 million maquiladora in Mexicali to produce high-end very large screen (VLS) picture tubes. The company has operated for the past 30 years in Ciudad Juárez, across from El Paso. A representative from the firm's strategic business unit for the Americas indicated that the Mexicali plant, which should be operational in 2001, will provide access to Japanese and Korean consumer electronics firms, a growing potential market. In addition to proximity to a growing consumer base along the U.S.-Mexico border, Mexicali was chosen because of the region's abundance of highly skilled workers and natural resources. A key requirement for picture tube manufacturing is water, a scarce commodity in the El Paso region. In fact, since 1996 the number of televisions assembled annually in Juárez has dropped from 10 to 7 million, whereas production in Baja California has nearly doubled to 22 million. The new plant, Thomson Displays Mexicana, is expected to employ approximately 500 workers and bolster the region's position as a high-tech manufacturing center when it opens in 2001.¹⁴

Initiatives in the San Antonio Region

In order to provide assistance to small companies doing business abroad, the International Trade Office of the Small Business Administration positioned its recently hired Mexico specialist in San Antonio. In March 1999, the office arranged a trade mission to stimulate maquiladora investment in regional suppliers. The location of the Mexico specialist in San Antonio is expected to enhance San Antonio's capabilities as a center for international trade.¹⁵ U.S. industries active in Mexico, particularly in the automotive and electronic sectors, are requiring more suppliers nearby. The Electronics Association in Guadalajara is facilitating such linkages by maintaining a list of supply and service needs of its membership.

In December 1999, San Antonio became one of only five U.S. communities (Dallas, Houston, Austin, and Laredo were the others) to benefit from a delivery service agreement between U.S.-based Greyhound Line, Inc., and MultiPack of Mexico City. Marketed as an alternative to UPS and FedEx, the new delivery service underscores the increasing commercial linkages between businesses in San Antonio and Mexico.¹⁶ As another indication of growing commercial ties, Valley Telephone Cooperative, Inc., has begun offering low-rate long-distance service from south Texas to Mexico. A high-speed switch installed in San Antonio allows Valley Telephone to offer long-distance service to customers in the 17 south Texas counties covered by its phone network, including the cities of Laredo and Corpus Christi. The rural cooperative is advertising business phone rates 50 percent lower, and residential rates 30 percent lower, than those offered by its competitors.¹⁷

Initiatives in the El Paso Region

Nearly a third of the maquiladora operations in Mexico are located in Ciudad Juárez, Chihuahua. This represents a significant increase from the 12 operations that existed when the manufacturing program was established in 1965. The Economic Development Division of the El Paso Chamber of Commerce indicates that this sector has produced more than 25,000 indirect jobs in support services, such as retail, transportation, banking and home building.¹⁸

Beginning in 1999, leaders in El Paso, Ciudad Juárez, and Las Cruces formalized an agreement to collaborate on regional promotion and cross-border challenges. Areas targeted for partnership include border-crossing efficiency, economic development, water, education, and health services. The regional initiative is expected to create continuity during changes of administration in the respective governments.¹⁹

"A Vision for Tomorrow's El Paso," an economic plan commissioned by the city of El Paso in 1999, contains a cross-border strategy to capitalize on the existing linkages between El Paso and Ciudad Juárez. The consultants recommend that leadership in El Paso establish a Juárez—El Paso Maquiladora Linkages Task Force to identify and recruit U.S. companies that provide component inputs to the maquiladora industry. Since only a small fraction of the supplies currently are sourced from El Paso—based firms, project consultants indicate that this unified approach could yield significant short-term impacts for the regional economy. Key tasks outlined include:

- Develop a comprehensive database of the existing supplier linkages of Juárez maquiladoras
- Once major nonlocal maquiladora suppliers have been identified, determine the level and type of incentives that are available to attract these firms to El Paso.
- Empower a delegation of political and business leaders to actively recruit these firms
- Facilitate the continued integration of the maquiladoras and their upstream and downstream suppliers and contractors in El Paso.

An additional recommendation to take advantage of El Paso's relationship with Mexico includes targeting cultural tourism as a key industry sector. The consultants suggest that city officials could transform El Paso into an international destination competitive with communities such as San Antonio. The tasks included in this recommendation are as follows:

- Explore the establishment of a Cultural Tourism Zone, similar to San Antonio's Riverwalk development model, that would permit shoppers and tourists to cross the Rio Grande as part of a free-market area.
- Actively promote cultural and geographic attractions.
- Recruit conventions and trade shows to El Paso based on the targeted industries.

Initiatives in the Laredo Region

Laredo is described by local economic development officials as the distribution center for 340 maquiladoras in the immediate region.²⁰ An agreement with one of the top agricultural companies in the world is expected to provide contracts with regional suppliers in the Laredo area. Recently the Corpus Christi Port Commission approved a \$1 million per year lease agreement allowing Archer Daniels Midland of Decatur, Illinois, use of the Corpus Christi Public Elevator. This modern export grain terminal can provide a total output of 2,000 tons per hour. The deep sea port in Corpus Christi is approximately 150 miles west of Laredo and linked by rail and highway connections.²¹

Advanced Transportation Infrastructure

Rail Transportation

The pattern of north- and southbound rail transport of goods appears to be shifting. The U.S. Department of Transportation Bureau of Transportation Statistics reports that between 1994 and 1999 the Nogales port experienced a remarkable 905.7 percent increase in dollar value of freight heading south into Mexico, compared to a 29.3 percent increase for Laredo (Table 7.1). In stark contrast, El Paso experienced a negligible decrease (1.7 percent) during this time period. Northbound rail from Mexico to the United States shows the opposite pattern (Table 7.2): Laredo stands out with a 398.5 percent increase in dollar value between 1994 and 1999, with a minimal increase for Nogales (0.1 percent) and a 36.4 percent decrease for El Paso.

TABLE 7.1: DOLLAR VALUE OF SOUTHBOUND RAIL FREIGHT, 1994 TO 1999

	Laredo	El Paso	Nogales
1994	\$2,383,897,707	\$202,126,115	\$59,668,897
1995	2,395,917,018	144,977,258	84,027,712
1996	2,192,465,643	229,454,517	149,165,403
1997	2,574,902,203	141,833,282	314,633,452
1998	2,840,105,573	172,887,157	635,995,085
1999	3,082,655,583	198,607,556	600,104,490

Source: U.S. Department of Transportation, Bureau of Transportation Statistics, *Transborder Surface Freight Data*; available from Internet: www.bts.gov/cgi-bin/tbsf/by-port-mex01.p1.

TABLE 7.2: DOLLAR VALUE OF NORTHBOUND RAIL FREIGHT, 1994 TO 1999

	Laredo	El Paso	Nogales
1994	\$2,471,146,899	\$147,880,722	\$1,542,877,528
1995	4,993,419,522	220,143,024	1,632,828,297
1996	8,137,797,989	148,474,933	1,255,238,669
1997	8,351,969,585	145,343,460	1,582,148,689
1998	7,778,480,215	282,502,166	1,707,351,113
1999	12,318,179,675	94,036,539	1,543,769,328

Source: U.S. Department of Transportation, Bureau of Transportation Statistics, *Transborder Surface Freight Data*; available from Internet: www.bts.gov/cgi-bin/tbsf/by-port-mex01.p1.

(NOTE: Data compiled by the Border Trade Institute at Texas A&M International University in Laredo indicate that between 1993 and 1999 Laredo's northbound rail traffic (measured by number of railcars) increased by 219 percent. Data were not reported for El Paso in 1999, but this region experienced a -63 percent decrease between 1993 and 1998. Unfortunately the institute does not collect rail data for ports in Arizona and California. Similar trends occurred in southbound rail traffic over the 1993—1999 period: Laredo recorded a 53 percent increase compared to a -91 percent decrease for El Paso.)

Tucson Region

Union Pacific closed its Tucson rail-cargo facility in 1998, resulting in an estimated 750 to 800 containers being shipped to Phoenix for transport by rail.¹ The Port of Tucson, a new intermodal facility that will provide cargo transfer services between trucks and rail, is currently in the design phase and is planned for completion in 2001. Located in a Foreign Trade Zone on the east side of the city, the new \$3 million facility will reconnect Tucson to the east-west rail line.

Yuma Region

A new port of entry is due to be completed between San Luis, Arizona, and San Luis Río Colorado, Sonora, in the next five to ten years. Economic developers are exploring the possibility of establishing a rail crossing that would provide transboundary service on the western corner of the two states.

Nogales Region

With the \$2.2 million acquisition of the Nacozari-Nogales rail line by its Mexican partner, Grupo Mexico, Union Pacific is considering transporting large volumes of Mexican-made sulfuric acid to U.S. markets. The short line, located across from Nogales, Arizona, could play an important role in meeting the growing demand for sulfuric acid, which is used to leach copper ore from mines. Union Pacific estimates that nearly 1,000 cars per month could be transported via this line.²

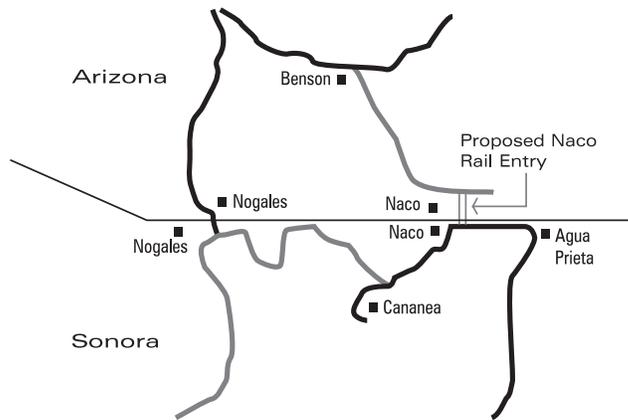
The city of Nogales is in negotiations with Union Pacific Railroad to relocate the train switching and exchange functions from downtown Nogales, Arizona, to a site next to the Nogales International Wastewater Treatment Plant (NIWTP) in Rio Rico. The new switchyard is expected to cost approximately \$3 million, but it is expected to reduce substantially the long delays being experienced at the current facility. The proposed new rail yard is also the possible site for a new container handling facility under consideration by a private company in Mexico.

Douglas-Naco Region

Ferrocarril Mexicano, owners of Pacifico Norte and the Nacozari rail lines, is supporting a proposal to reconstruct the rail line through Naco, Sonora, creating a new port of entry at Naco, Arizona. Proponents of the Naco Rail Crossing Project indicate that billions of dollars in cross-border trade are being lost due to inadequate rail access between Arizona and Sonora. Currently, the two states have one rail connection, which crosses through Nogales, Arizona, and Nogales, Sonora. They argue that the Naco line could serve as an important reliever crossing.³ However, public- and private-sector representatives on both sides of the border are supporting an initiative to relocate the rail entry away from downtown Naco, Sonora, to an industrial zone to the east (Figure 7.1). These officials fear that congestion and safety concerns present at the Nogales rail port could be duplicated in Naco. On occasion train traffic through Nogales, Sonora, reportedly has been delayed while waiting for a customs agent to unlock the gate that separates the two communities. Local vehicle traffic on the Mexican side is also stalled during the delay, leading to safety and environmental concerns.⁴ Letters of support have been obtained from key Mexican officials, including officials of the Mexican rail line and the Guaymas deep-sea port. In a Naco Arizona Community Plan completed in 1999, residents and members of the Cochise County Planning Department indicated their support for relocating the rail line outside of town.⁵

FIGURE 7.1: MAP OF PROPOSED NACO RAIL PORT OF ENTRY

Source: Naco Rail Crossing Project (Naco: Naco Industrial Development, LLC, 1999)



In a second project, Douglas economic developers are exploring the feasibility of creating a rail cargo link for regional manufacturers by extending a spur of the Mexican line north into their community. The new track would be located west of town near a recently constructed cattle crossing. Because no track exists on the Arizona side of the border, loaded cargo would be routed south into Agua Prieta, Sonora, to utilize the Mexican rail line to Naco, where, assuming the new rail crossing is built, cargo would recross into Naco, Arizona for routing to destinations throughout the United States. Agua Prieta city officials have already conducted a study to plan the removal and relocation of track to accommodate the extension of the Janos-Cananea Highway that links with the border.⁶

San Diego Region

A report from the University of California—San Diego estimated that the San Diego region forfeits nearly \$5 billion a year due to insufficient transportation infrastructure linkages. Because the region’s north-south spur serves only San Diego, shippers send their freight through Los Angeles instead. The report argued that a cross-border rail linkage through the San Diego and Arizona Eastern (SD&AE) line could “transform the region into a major trading center,” provided that the Mexican government first grants an operating license for the Tijuana to Tecate stretch (Figure 7.2).⁷ Having been unsuccessful in soliciting bids for the privatization of the SD&AE railroad in Baja California, Mexican officials are weighing options for a new bid program. It is unlikely that U.S. investors can be attracted to complete necessary repairs and upgrades on the U.S. side until ownership issues on the Mexican side are resolved.⁸

FIGURE 7.2: MAP OF SAN DIEGO & ARIZONA EASTERN RAILWAY



Source: “Info” Bulletin (San Diego: San Diego Association Of Government Organizations, 2000)

San Antonio Region

San Antonio's redevelopment of Kelly Air Force Base into an inland port includes plans to divide the facility into five industrially focused zones. One of the zones, the 350-acre East Kelly Light Industrial area, features direct rail access and services.⁹

El Paso Region

In 1998, with a backlog of more than 5,000 rail cars, Union Pacific indicated that it would not accept any new rail customers in the El Paso region.¹⁰ So far no plans to address this situation have been announced.

Laredo Region

Laredo is strategically positioned along the most important rail corridor between Mexico and the United States. During a foreign investors meeting hosted by Mexican President Ernesto Zedillo, the owners of the rail line—Transportación Ferroviaria Mexicana (TFM), a joint venture between Kansas City Southern Industries and Transportación Marítima Mexicana—announced an additional investment of approximately \$800 million in 1999-2000. A significant portion of this investment will be used to enhance intermodal services. A new facility outside of Laredo, partly owned by TFM, will allow for run-through customs processing between the two countries.¹¹ Currently, TFM offers cross-border clients three intermodal services: the Aztec Eagle, the Pacer Stacktrain, and the NAFTA Express.¹²

Air Transportation

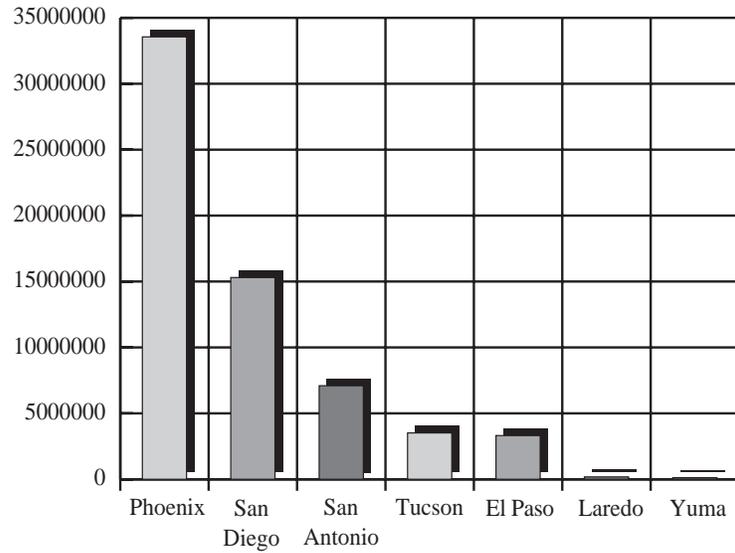
Air industry statistics indicate that between 1992 and 1997 air cargo tonnage worldwide increased at twice the rate of passenger traffic.¹³ The U.S. Department of Commerce reports that more than \$7 billion in merchandise crosses by air annually between the United States and Mexico. In the first half of 1999, U.S. air exports to Mexico of integrated circuits used in computer and electronic manufacturing rose by 99 percent. A driving force behind the recent growth is an increase in high-technology manufacturing in Mexican cities such as Guadalajara.¹⁴ Trade between the two countries has been and continues to be transported in large part by truck and rail. As the shift toward a knowledge-based economy continues, however, advanced transportation systems, particularly airports, will become increasingly important.

Regional Passenger and Air Cargo Statistics

Statistics for total passengers enplaned and deplaned during 1999 indicate that Phoenix's Sky Harbor handles nearly two times the number of passengers as its nearest competitor, San Diego, followed by San Antonio, which handles more than 7 million passengers (Figure 7.3). Tucson and El Paso airports handle similar volumes, although approximately 200,000 more passengers travel through Tucson. Laredo has experienced a 274 percent increase in total airline passengers in the past 12 years, but the total volume is still relatively low.

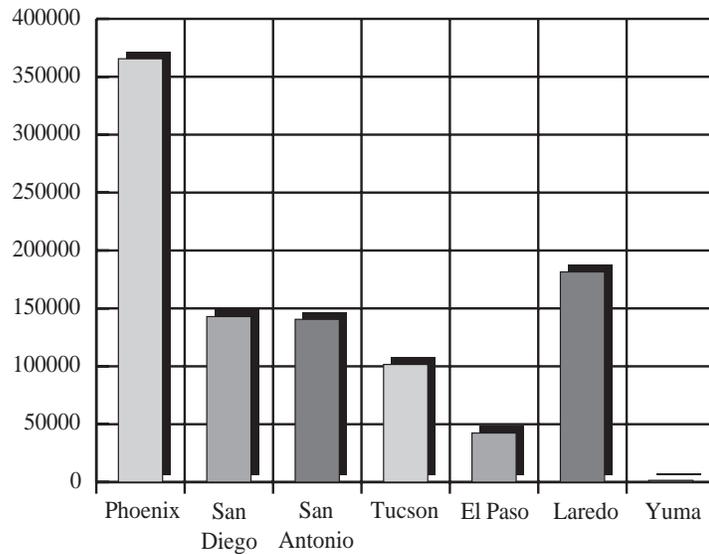
As measured in tons of freight and mail cargo handled, Phoenix Sky Harbor Airport continues to stand out relative to the other airports studied (Figure 7.4). Laredo with less than half the air cargo volume of Phoenix was a distant second followed by San Antonio, San Diego, El Paso and Tucson. Yuma trailed behind all the communities with only 1533 tons handled in 1999.

FIGURE 7.3: TOTAL PASSENGERS ENPLANED AND DEPLANED, 1999



Source: Air traffic statistics from Phoenix Sky Harbor International Airport, San Diego International Airport, San Antonio International Airport, Tucson International Airport, El Paso International Airport, City of Laredo International Airport, and Yuma International Airport.

FIGURE 7.4: TOTAL AIR FREIGHT AND MAIL CARGO (TONS), 1999



Source: Air traffic statistics from Phoenix Sky Harbor International Airport, San Diego International Airport, San Antonio International Airport, Tucson International Airport, El Paso International Airport, City of Laredo International Airport, and Yuma International Airport.

Phoenix Region

Of all the communities studied in this report, Phoenix still provides the greatest advantages with respect to number of flights to various destinations. In the adjoining city of Mesa, the Trade Relations Program, an enterprise of MEGACORP, the city's Office of Economic Development is engaged in an initiative to develop Williams Gateway Airport into a stronger air-cargo facility for the region. A former military installation closed in 1993, Williams Gateway Airport contains three 10,000-foot runways. Several community entities in the Greater Phoenix region have collaborated with the city of Mesa to obtain Foreign Trade Zone status, which local economic developers indicate will assist in enticing companies interested in international trade opportunities. A high-priority development effort is to establish a U.S. Customs' Service facility in the next year to facilitate the importation of commodities from Mexico.

Tucson Region

Recognizing the growing importance of air capabilities, representatives of the Tucson-Mexico Project are seeking to position the community as a key international trade and distribution center. The initiative, Puerto Nuevo, has several components; among them are a "smart" warehouse with the computer technology to track and expedite cargo, a truck hub, a rail/truck transfer station, a new bypass between I-10 and I-19, and an enhanced air-cargo facility at Tucson International Airport.¹⁵ These features, coupled with the city's two foreign trade zones, could create an important competitive link between the community's transportation resources. A cargo market assessment study commissioned by the Tucson Airport Authority found that total freight and mail cargo at the port, led by outbound and inbound freight, increased an average of 9.4 percent between 1994 and 1998. This increase was directly attributable to the maquiladora industry. The most frequently handled commodities were electronic parts and components, computer and automotive parts, textiles, and food. A cargo action plan to further economic ties between Tucson and Mexico is currently being prepared.¹⁶ As part of the "smart" warehouse component of the project, airport and Tucson-Mexico Project officials are exploring a partnership with the Guadalajara World Trade Center to coordinate freight logistics for maquiladora clients.¹⁷

Two organizations have plans to expand their facilities at Tucson International Airport. In September 1999, Raytheon announced plans to expand its aircraft research and development program at the airport.¹⁸ This development coincides with a 30-year lease recently signed by Pima Community College to construct a new hangar at the airport for its aviation program.¹⁹

In March 2000, Aerolitoral, which provides service to Hermosillo, Ciudad Obregón, and Guadalajara, announced that a larger-capacity airplane would be operating on these routes. There are three flights a day from Tucson to Mexico during the week and two daily flights on the weekend.²⁰ In 1999 an Antonov, one of the largest distribution planes operating today, landed at Tucson International Airport in route to Hermosillo. The Antonov can hold approximately 10 truckloads of cargo,²¹ proving that Tucson airport facilities are capable of handling major cargo planes.

Yuma Region

An economic impact study prepared for the Yuma International Airport in 1998 by the ASU College of Business found that the airport created \$95.2 million in total economic benefit to the area, including 1,734 jobs with an annual payroll of more than \$27.1 million.²² Currently the majority of cargo shipped from Yuma is destined for Mexicali maquiladoras and plants in North Carolina and Nebraska. Agricultural products—citrus, produce, cotton, and wheat—make up much of the local export market in the Yuma region. Airport officials indicate that these commodities are well suited for air cargo. Agricultural chemicals, photographic development equipment, automotive rebuilding parts, and commercial and industrial air conditioning equipment are other commodities exported from the port.²³ Port officials at the airport are expanding cargo services;²⁴ marketing material indicates that these development plans are being closely coordinated with economic development efforts to spur growth and promote the region as a major trading center in the southwestern United States. Desiring to compete for the growing cargo market heavily concentrated in Los Angeles, Yuma International Airport officials emphasize that Yuma is the closest airport to LAX that does not have growth restraints. Marketing material states that San Diego, one of its closest competitors, cannot expand its runways and has limited ability to handle heavy freighters.²⁵

Douglas Region

The first phase of development for the Benson Municipal Airport was completed in December 1999, in only seven months. The airport, located on a 184-acre site just three miles from downtown Benson near the intersection of Interstate 10 and State Route 90, features a 4,000-foot runway and a parking apron with 21 tie-down spaces. Airport officials report five to six landings a day due to growing business and tourist opportunities, in particular the opening of Kartcher Caverns State Park. Within the next five years, officials expect to expand the runway to 7,000 feet and construct hangars.²⁶

San Diego Region

San Diego's Lindbergh Field, constrained by a single 9,400-foot runway that cannot be expanded, is described as the smallest major airport (474 acres) in the nation.²⁷ Estimates are that between one-half and two-thirds of the region's air cargo is being diverted to other airports because it cannot be absorbed by Lindbergh. Under an agreement with the city of San Diego, private investors are proposing to redevelop Brown Field, a general aviation airport, into an all-cargo facility.²⁸ The project will include offices and warehouse facilities for freight forwarders, customs brokers, consolidators, and all cargo carriers. The current runway will be extended from 8,000 to 11,500 feet to allow wide-bodied, fully loaded cargo aircraft to fly nonstop to destinations such as the Far East and the Pacific Rim. The Air Commerce Center will include retail and commercial facilities, restaurants, and overnight lodging.²⁹ Stressing that air-freight services are critical for San Diego's competitiveness in international markets, proponents of the Brown redevelopment plan indicate that it would allow Lindbergh Field to reallocate ramp space from cargo to passenger service.

A master plan being prepared by the San Diego Port District projects passenger and cargo needs for the next 20 years. Currently, a market potential exists for Brown Field to capture a portion of the 1.5 million tons of air cargo flowing in and out of Southern California. Based on input/output modeling, Brown Field is expected to generate:³⁰

- 7,500 on-site jobs by 2016
- An annual increase in business gross receipts of \$750 million
- Value-added production of more than \$450 million
- Employee earnings of more than \$240 million

San Antonio Region

One of the redevelopment components of Kelly Air Force Base in San Antonio is an aircraft industrial maintenance area. This initiative complements other efforts to develop a critical mass of air-transportation capabilities. As noted in the 1999 *Evaluation of Arizona Competitiveness*, a specialized aircraft maintenance facility, a "hush house," to support the growing air-cargo traffic to Mexico and South America, is currently under construction.

San Antonio International Airport has seen a 50 percent increase in total air cargo from 1997 to 1999. In 1998, domestic and international shipments exceeded 295 million pounds. Economic impact projections suggest that between 2000 and 2015 the airport will experience a growth of nearly \$2 billion in sales and expenditures, an average of \$1.6 billion in total payroll, and up to 95,637 full-time jobs. On the other hand, the picture for air passenger service does not appear as rosy. Due to poor financial performance, American Airlines announced that it would be discontinuing one of its four daily nonstop flights to Mexico City. Nine days prior to this announcement, La Quinta Inns, Inc., citing the need for better flight connections to Mexico, indicated that it would be relocating out of San Antonio to Dallas.³¹

In an effort to coordinate development plans for the next 10 to 20 years, the city of San Antonio is initiating an Aviation Industry Strategic Plan.³²

El Paso

Fort Bliss is partnering with the city of El Paso to develop an intermodal hub based on its property. This expansion program includes capital improvements of nearly \$50 million to enhance air-transportation capabilities.³³

Laredo Region

Laredo International Airport is marketed as the eighth largest port for Latin American cargo. In addition, connections to major Texas airports are improving. American Eagle announced in March 2000 plans to add a second daily round-trip flight to Dallas/Fort Worth and to nearly double the size of the plane flying the route, from 34 to 64 passengers. Economic developers expect this 44 percent increase in seating capabilities to appeal to group and convention travelers and attract business travel in general.³⁴

Highway Transportation

Data reported by the U.S. Department of Transportation's Bureau of Transportation Statistics indicates that Laredo, El Paso, and Nogales retained a lead in total dollar value for southbound truck freight relative to Tecate, San Luis, Douglas, and Naco (see table 7.3). When considering percentage increases between 1994 and 1999, however, San Luis and Naco stand out with 122.5 and 102.7 percent respectively. El Paso (79.6%), Tecate (77.3%), Laredo (75.6%), Nogales (44.3%), and Douglas (2.9%) experienced more modest increases. With respect to increases in dollar value of northbound truck freight (going from Mexico to the United States) Naco leads with 819.3 percent growth from 1994 to 1999 (see table 7.4). Laredo experienced a 237 percent increase followed by San Luis (169.3%), Tecate (124.9%), Nogales (105.8%), Douglas (65.5%), and El Paso (61.1%).

TABLE 7.3: DOLLAR VALUE OF SOUTHBOUND TRUCK FREIGHT

	Douglas Arizona	Naco Arizona	Nogales Arizona	San Luis Arizona	Tecate California	El Paso Texas	Laredo Texas
1994	\$302,479,378	\$42,918,484	\$2,727,295,923	\$148,794,627	\$280,644,499	\$6,943,873,891	\$16,731,715,796
1995	379,948,153	44,646,548	2,371,830,870	144,389,869	254,472,233	7,705,037,896	12,171,060,228
1996	388,888,892	55,101,235	2,433,227,460	163,081,931	308,571,197	9,259,130,073	15,923,486,095
1997	419,914,460	100,748,584	3,101,299,679	229,644,742	360,991,573	9,717,301,656	23,184,247,251
1998	405,082,474	90,054,882	3,322,648,737	267,260,924	413,826,332	10,806,874,923	25,484,480,925
1999	311,283,004	86,983,140	3,934,252,084	331,055,684	497,578,435	12,473,358,010	29,375,118,913

Source: U.S. Department of Transportation, Bureau of Transportation Statistics, *Transborder Surface Freight Data*; available from Internet: www.bts.gov/cgi-bin/tbsf/by-port-mex01.p1.

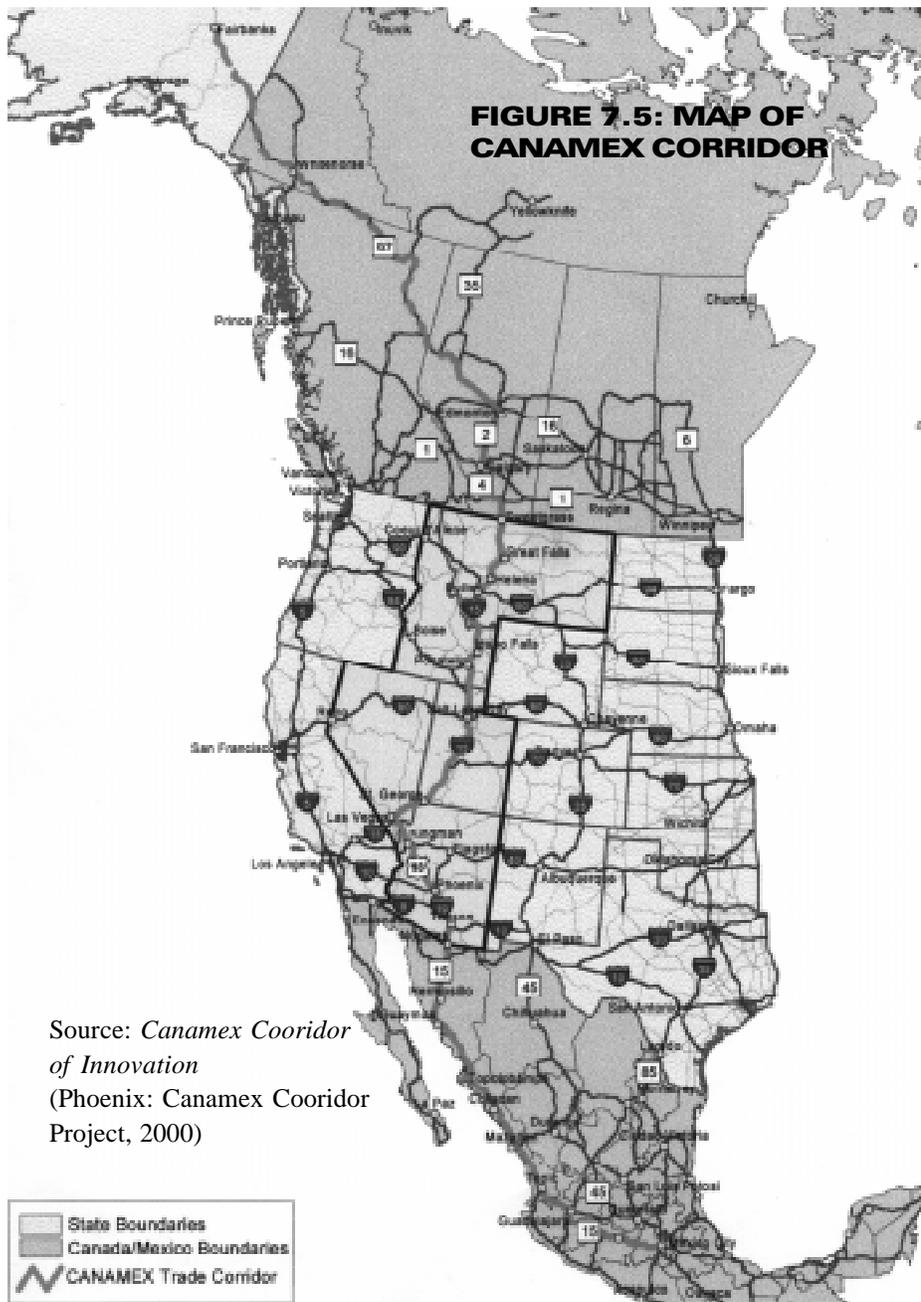
TABLE 7.4: DOLLAR VALUE OF NORTHBOUND TRUCK FREIGHT

	Douglas Arizona	Naco Arizona	Nogales Arizona	San Luis Arizona	Tecate California	El Paso Texas	Laredo Texas
1994	\$352,894,430	\$24,589,847	\$2,660,353,773	\$346,041,086	\$244,416,677	\$10,481,374,518	\$7,557,728,248
1995	553,049,639	67,869,067	3,209,532,439	413,595,959	252,784,450	11,815,007,045	10,103,135,791
1996	428,438,263	43,518,466	3,510,846,005	502,531,112	330,961,943	11,601,370,475	12,512,418,377
1997	499,640,156	48,848,814	3,831,690,158	535,895,143	446,002,679	12,342,837,252	15,722,744,058
1998	554,989,150	108,166,047	4,570,410,365	705,576,768	472,659,130	14,609,540,221	18,984,468,829
1999	584,013,818	226,044,068	5,473,627,989	931,893,584	549,816,071	16,882,150,647	25,475,466,053

Source: U.S. Department of Transportation, Bureau of Transportation Statistics, *Transborder Surface Freight Data*; available from Internet: www.bts.gov/cgi-bin/tbsf/by-port-mex01.p1.

CANAMEX Corridor

The proposed CANAMEX Corridor is a continuous western trade corridor through Arizona, Nevada, Utah, Idaho, and Montana to Canadian provinces in the north and Mexico City in the south (Figure 7.5). This route is described by some as the “Superhighway to the Twenty-First Century” and by others as the “Corridor of Innovation.”³⁵ Arizona is playing a leadership role in the CANAMEX Corridor Coalition by applying for grants to fund environmental studies, planning efforts, and a new state inspection facility at the Nogales Port of Entry; these three grants, totaling \$5.5 million, were awarded in the spring of 2000.³⁶ The corridor was designated a high priority in 1995 and 1998. Representatives of the CANAMEX Corridor Coalition describe the trade route as a strategy to increase trade, tourism, and job growth in the western region. Following a planning meeting in October 1999, the coalition is identifying a consultant to prepare a comprehensive report on the region’s transportation, telecommunications, and regulatory environment, in order to assess the needs for the coming century. The plan is scheduled to be completed by June 2001.³⁷



Tucson Region

A traffic study completed four years ago indicated that due to the increasing volume of commercial truck traffic between Tucson and Mexico, the interchange ramps at the junction of Interstates 10 and 19 need expansion.³⁸ Because Tucson is expected to play an important role in the CANAMEX Corridor Project, in December 1999, representatives of the Tucson-Mexico Project asked the state's CANAMEX Corridor task force to rank the proposed interstate connector the second-highest-priority project in Arizona. (The task force has already established the new bridge at or near Hoover Dam as the most important project.)³⁹

Yuma Region

Member agencies of the Yuma Metropolitan Planning Organization signed an intergovernmental agreement with the Arizona Department of Transportation in January 1999 to build a four-lane service highway for the area. The high-speed truck route will link San Luis with Interstate 8 and eventually U.S. Highway 95. Construction is tentatively scheduled to begin by 2003 and the entire highway to be completed by 2010. The Arizona State

Transportation Board has authorized \$24 million in state construction funds for the project. Local governments have committed \$13.9 million toward the cost of construction.⁴⁰

Nogales Region

The city of Nogales has commissioned a comprehensive ten-year transportation plan. One component of the plan is development of a north-south interconnector, a partially access-controlled expressway from the vicinity of Mariposa Road/State Route 189 at the U.S.-Mexico border to the Ruby Road Interchange of Interstate 19. An east-west interconnector between Interstate 19 and State Route 82 is also proposed. This east-west route will enhance accessibility and circulation, and relieve traffic congestion. The third component of the plan is an expansion of the frontage roads along Interstate 19, including four miles of new, and three miles of reconstructed, frontage roads.⁴¹

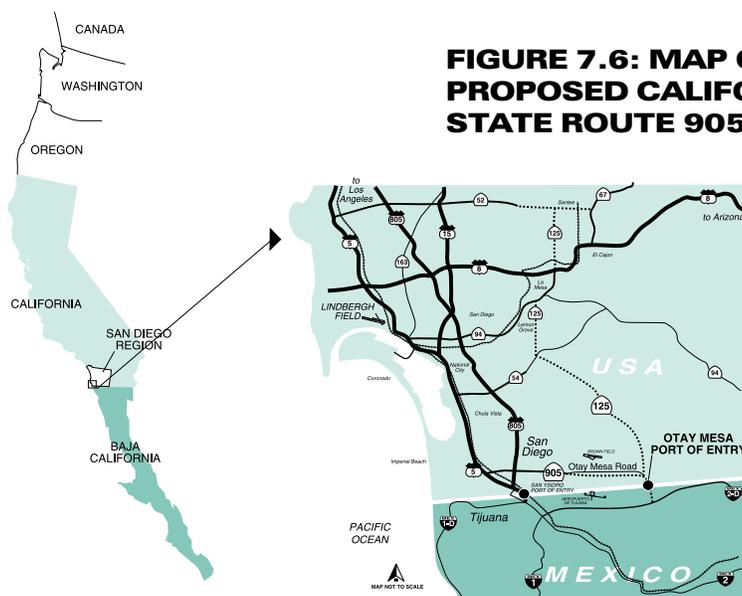
Douglas Region

In a written statement to the Governor's Transportation Vision 21 Task Force, Douglas officials underscored the importance of expanding U.S. Route 191, which connects Douglas to Interstate 10, to four lanes. This expansion will support an improved link from the border south to Ciudad Obregón, which is being undertaken by the Sonoran government.⁴² With only two miles left to complete, this direct route to Obregón is expected to increase agricultural trade within the region.⁴³

The Arizona Transportation Board awarded the city of Douglas \$281,000 in Transportation Efficiency Act (TEA) funding for the Paseo de las Americas project, designed to enhance Pan American Avenue between the port of entry and the city's downtown historic district. The project is intended to facilitate foot traffic and provide a more pleasurable experience for the approximately 55,000 Mexican shoppers and the growing numbers of tourists coming to the region annually.⁴⁴

San Diego Region

The San Diego Association of Governments (SANDAG) and the state's transportation agency, Caltrans, were awarded funding under TEA 21 for the construction of State Route 905.⁴⁵ When completed, this route will connect Interstate 5 north of the San Ysidro Port of Entry with Interstate 805 and the Otay Mesa port to the east (Figure 7.6).⁴⁶ The anticipated cost of the project is \$225 million, of which approximately \$187 million has been committed.



Source: "Info" Bulletin (San Diego: San Diego Association of Government Organizations, 2000)

The state of Baja California is constructing Tijuana 2000, a highway connecting the Otay Mesa border crossing with Playas de Rosarito and coastal communities south of Tijuana. This highway will provide commercial traffic direct access to the port of entry and avoid congestion in downtown Tijuana.⁴⁷

Laredo Region

In 1999, the North American Superhighway Coalition reported that a daily average of 19,000 trucks traverse Interstate 35 within Laredo's city limits.⁴⁸ A bypass route is being constructed to better accommodate this amount of commercial traffic and to serve the region's expanding transportation needs in NAFTA trade with Mexico. Named Camino Colombia, the new 22-mile toll road will connect the Colombia Solidarity Bridge, located approximately 20 miles west of Laredo, to U.S. Highway 83 and Interstate 35. It will be certified to carry hazardous freight. Scheduled to be operational by October 2000, the high-speed bypass is the third privately financed toll road in the United States and the first

privately financed toll road in Texas. International Bancshares Corporation (IBC), a \$4.9 billion multi-bank holding company headquartered in Laredo, provided the development financing. Project financing, estimated at \$75 million, was arranged through Lehman Brothers in New York with New York Life Insurance Company and John Hancock Mutual Life Insurance Company.⁴⁹ Although tolls have not been set, anticipated charges are \$3 per passenger car and \$12 to \$20 for commercial vehicles. Like many toll projects, Camino Columbia is politically unpopular with truckers, who have to absorb the cost of construction through fees. Moreover, it will have to compete with the existing Mine Road, which is free and was expanded to four lanes in 1993.⁵⁰

These infrastructure developments in the Laredo area are spurring development in Nuevo León. The state government has been exploring a 50,000-acre development around the Mexican side of the bridge. Fidenor, a Nuevo León planning agency, has designed a master plan containing a train terminal, an airport, an agricultural processing center, a high-technology industrial park, and a new rail border crossing at Colombia. The stated goal of this plan is to turn the community into a model border city.⁵¹

A new \$101 million bridge in northwest Laredo, the fourth bridge in the region, was completed in March 2000. It is limited to truck traffic and therefore leaves the two older bridges, which connect the downtown centers of Laredo and Nuevo Laredo, to passenger vehicles.⁵² Economic developers hope that the new bridge and bypass will attract tourists back to the region, since they will no longer have to compete with commercial vehicles. In addition to extensive fiber optics that will permit port officials to monitor lane traffic in real time, the new eight-lane bridge features weigh-in-motion capabilities. Trucks approaching the entry will no longer be required to stop and be weighed by a static scale. Instead, new technology will allow commercial vehicles to be assessed and automatically charged as they proceed to their lane.⁵³

Border Ports of Entry

A report recently released by the General Accounting Office found a need for better coordination between agencies and representatives on both sides of the border. As table 7.5 indicates, many of the ports of entry along the U.S. Mexico border are limited in their ability to expand and deploy technology, lack docking space, or have inadequate areas for commercial vehicles to exit and park.

TABLE 7.5: LIMITATIONS of SOUTHWESTERN U.S. BORDER PORTS OF ENTRY

Port of Entry	Limited Space to Expand	Lack of Docking Space	Inadequate Truck Parking	Limited Space to Deploy New Technology	Poor Road Connections	Inadequate Exits
Juárez						
Lincoln Bridge, Laredo	X		X	X		X
Colombia Bridge, Laredo					X	
Ysleta Bridge, El Paso			X		X	X
Bridge of the Americas, El Paso	X				X	X
Nogales West, Nogales	X	X				
Tecate, California		X	X	X	X	
Otay Mesa, California	X				X	X

Source: *U.S.-Mexico Border: Better Planning, Coordination Needed to Handle Growing Commercial Traffic*, Report #GAO/NSIAD-00-25 (Washington, D.C.: General Accounting Office, March 2000), p. 20.

Yuma Region

An average of 360 trucks a day cross at the San Luis Border Port of Entry, and that number is projected to increase exponentially to 12,000 by 2015. Planning for this increase, officials of the cities of Yuma, San Luis, Somerton, and the Cocopah Indian Tribe signed an agreement to form the Greater Yuma Port Authority. The goal of this collaboration is to purchase 330 acres for a new port of entry, a project to which the governors of Arizona and Sonora have pledged their support. Restricted to commercial traffic, the new port of entry will be located approximately five miles east of the port of entry in San Luis and is intended to relieve traffic congestion and aid border economic development.⁵⁴ Statistics indicate that commercial vehicles wait an average of nearly 120 minutes for processing at the current San Luis Port of Entry, and private vehicles in some cases encounter 40-minute delays.⁵⁵ The space at the current port now in use for commercial inspections will be reorganized to install SENTRI (Secure Electronic Network for Traveler' Rapid Inspection) lanes for processing private vehicles.

Nogales Region

The Nogales Alliance: Port of the Future, a task force of public- and private-sector representatives, has been established in Nogales, Arizona. The task force is committed to expanding the economy of Santa Cruz County and enhancing the quality of life of its citizens by improving the border port of entry facilities and regional infrastructure. Hoping to capture a larger share of the financial resources available for development, the alliance scheduled a presentation on its priority projects to the Governor's CANAMEX Trade Corridor Task Force in June 2000. Recently, Nogales and Tucson agreed to participate as regional partners in lobbying for greater attention and financial support for southern Arizona transportation initiatives.⁵⁶

Douglas Region

A new cattle crossing facility west of Douglas has the capacity to handle 3,000 head of cattle. Economic developers hope that it will eventually become a second port for the region. The Union Ganadera de Sonora (Sonoran Cattlemen's Association) raised the funds to develop this crossing after citing limitations at the Nogales Port of Entry. Pointing to the growing market expertise that is being developed, economic development professionals are hopeful that increased traffic at the crossing will lead to value-added opportunities for such enterprises as feedlots and slaughterhouses.

San Diego Region

The San Diego Association of Governments received a grant to update and expand its environmental studies on a proposed new border crossing, located about three miles east of the existing Otay Mesa Port of Entry.⁵⁷ The development proposal for an East Otay Mesa and Mesa de Otay II crossing reflects a formal partnership between Caltrans, the San Diego Association of Governments, the City of San Diego, San Diego County, the Secretariat of Human Settlements and Public Works of the State of Baja California (SAHOPE), and the City of Tijuana.⁵⁸ The new facility will be linked to a new highway heading south, Tijuana 2000, and to a new highway to San Diego, State Route 11.⁵⁹ Recognizing that border congestion is exacerbated by schedule incompatibilities between agencies north and south of the border, Mexican customs officials at Otay Mesa have adopted similar hours of operations as their U.S. counterparts.⁶⁰

Laredo Region

As described previously in the "Highway Transportation" section, a new port of entry and bridge between Laredo and Nuevo Laredo was completed in March 2000. Limited to commercial traffic, the eight-lane bridge with Automatic Vehicle Identification (AVI) capabilities should relieve congestion for tourists crossing at the downtown ports of entry. The port also features weigh-in-motion and X-ray technologies.

Initiatives and Strategies Underway to Enhance Trade with Mexico

A number of NAFTA-oriented development initiatives were identified in each of the communities studied. These public- and private-sector efforts range from meetings, conferences, and trade shows to innovative export assistance programs and strategic planning programs that span the border. The following description of the various activities identified, although not comprehensive, does emphasize how aggressively certain communities are attempting to promote themselves as a platform for transboundary trade.

Events, Trade Shows, and Conferences

Arizona

Arizona communities are distinct from the communities studied in California and Texas because a formal meeting process has been institutionalized at the state level. Public- and private-sector representatives in the areas of agribusiness, art and culture, education, financial and business services, health services, legal advice, livestock, manufacturing, mining, small business, tourism, and transportation meet twice a year to discuss contemporary industry-specific and border-related issues. These biannual meetings, which alternate between a location in Arizona and one in Sonora, are organized and supported by the Arizona-Mexico Commission and its sister organization, the Comisión Sonora-Arizona. In November 1999 the two organizations celebrated 40 years of collaboration at the Sonora Plenary Session in Puerto Peñasco, Sonora.¹

The Sonora session featured the signing of a historic cooperative agreement to establish a binational organization, the Arizona-Sonora Health Services Industry Cluster. The cluster is dedicated to expanding the health services industry in the region, attracting investment, and developing new markets for the products and services of regional providers. In February 2000, the Arizona-Sonora Health Services Industry Cluster, co-chaired by health care professionals from Tucson and Hermosillo, convened a meeting in Tucson to address the projects and organizational issues confronting the group. Four committees emerged to lead the cluster.

The Health Services Delivery and Finance Committee formed a leadership team to (1) devise a medical destination program, which would market Arizona and Sonora providers, (2) conduct a pilot project for cross-border insurance coverage, and (3) extend Medicare payments into the Sonora border region. The Business Development Committee advocated for the development of an online resource guide for the binational region. This guide would provide information on health-care facilities and providers in both states. The Medical Education Committee is seeking to undertake a pilot project for an orthopedic board exam exchange. The group is interested in developing a certification subcommittee to address issue of binational exchange between the medical school in Tucson and the one being planned for Sonora. Finally the Emergency Services and Urgent Care Committee is addressing challenges associated with the legal, logistical, and financial issues of transporting patients across the border and is developing a network of emergency service providers.

In April 2000, a reciprocal meeting was held among cluster members in Hermosillo, Sonora. During this meeting, the details of a pilot project to be implemented initially in Nogales, Arizona, and Nogales, Sonora, were discussed. The project will include a print and web-based directory, a process for approving the inclusion of professionals in the directory, a clear-cut referral protocol to facilitate the movement of patients, and a communication system to connect health professionals on either side of the border. At a later date, the cluster will begin exploring the implementation of a similar project in the Douglas/Agua Prieta and Yuma-Somerton/San Luis Río Colorado areas. In June 2000, the Arizona plenary session in Tucson focused on the region's strategic position within the new economy.

The 1999 Sonora-Arizona Professional Women's Conference, "Entrepreneurial Women Facing the Challenges of Globalization" was held in Hermosillo September 30—October 2. The participants at the sixth annual event addressed issues concerning the benefits of globalization to the region, empowering women to be leaders, and women's participation in sustainable development; they also held a panel discussion on the rational use of water in desert and semi-desert areas.

Phoenix

On March 17, 2000, the Arizona-Mexico Commission and the Sinaloa Economic Development Council hosted a luncheon, "Arizona and Sinaloa: An Emerging Partnership," in Tempe, Arizona. The event followed a recent visit between Governor Juan S. Millán of Sinaloa and Governor Jane Dee Hull of Arizona to reaffirm their commitment to strengthen ties between the two states. Based on economic complementarities, the two states are seeking to develop a partnership in the areas of tourism, cultural exchange, and agriculture.²

The Arizona Department of Commerce International Trade Division, in partnership with the Arizona State University Office of Economic Development, hosted two public seminars on trade. The seminars were held in Tucson (April 18, 2000) and Phoenix (April 20, 2000) and featured the directors of Arizona's four State Trade Offices, located in Japan, Mexico, Taiwan, and the United Kingdom. Arizona exporters were encouraged to attend in order to obtain market research, contact facilitation, and language assistance.³

Tucson

The August 1999 Arizona-Mexico Commission/Border Trade Alliance Regional Meeting in Tucson focused on the maquiladora industry and the CANAMEX Trade Corridor. Participants received updated information on border crossing fees and efforts by the Border Patrol to address racial profiling concerns.

The Tucson-Mexico Project, an initiative led by the city of Tucson, meets monthly as part of its *Vamos* and *Bienvenidos* and *Socios* strategies. Project meetings have focused on the new Puerto Nuevo project, efforts to collect data on the border zone, and outcomes from trade show participation.

In July 1999, the Metropolitan Tucson Convention & Visitors Bureau, with assistance from the Arizona State Office in Hermosillo, sponsored a two-day trip to Hermosillo and Ciudad Obregón for Tucson businesspeople in tourism-related industries. The 16 participants attended the Expo Feria trade show and meetings with Mexican tourism professionals.⁴

Yuma Region

In May 1999, the Arizona-Mexico Commission and Border Trade Alliance co-hosted a San Luis—Yuma, Arizona, regional meeting. The meeting addressed issues of binational coordination in hazardous waste management and emergency response planning, water quality, and the new commercial port of entry planned for San Luis, and underscored the governor of Arizona's recognition of the critical role border communities play in increasing the region's global competitiveness.⁵

The Fourth Annual Desert Pacific Regional International Trade Show and Conference was held on March 13, 2000, at the Yuma Civic and Convention Center. Regional and global trade professionals from the United States, Mexico, Poland, Germany, Czechoslovakia, and China shared information on emerging trade opportunities. Hosted by the Greater Yuma Economic Development Corporation and the Yuma Chamber of Commerce, the conference featured three sessions on (1) international marketing and distribution in the United States and small business opportunities in Mexico; (2) global market opportunities in Asia and Europe; and (3) financial incentives for U.S.-based companies.⁶

In order to promote the region, the Greater Yuma Economic Development Corporation (GYEDC), also participated in several activities, including the Paris Air Show, YUMEX Presentations, and the International Chamber Mixer in San Luis Río Colorado, Sonora.⁷ GYEDC facilitated the participation of several Yuma businesses in the Arizona-Mexico International Green Organization (AMIGO), which aims to forge voluntary partnerships for pollution prevention activities between firms in Arizona and Sonora.

GYEDC is leading an effort to develop a regional strategic plan for the county. The economic development strategy will begin by identifying community advantages, industry targets, and marketing activities. Beginning in July 2000, an outreach component will be implemented to create a unified vision for the region.⁸

Nogales Region

Approximately one-third of maquiladoras in Nogales, Sonora, participate in the AMIGO program meetings. Working closely with Mexican agencies and private-sector entities, the Arizona Department of Environmental Quality is promoting this pollution prevention outreach program.

San Diego

On May 17, 2000, the San Diego World Trade Center presented the Trade Vision 2000 Conference. A panel of international business experts from Mexico and the United States highlighted business and trade opportunities in Mexico for San Diego companies. During the afternoon, firms on both sides of the border were paired in one-on-one matchmaking meetings.⁹

The San Diego Regional Chamber of Commerce has adopted a number of new initiatives to support their efforts to expand their membership internationally. A major project for fiscal year 2000 will be a new international business alliance with the San Diego World Trade Center to develop “how to” presentations on doing business with Mexico and other global markets.

The Mexican Consulate in San Diego hosted the first Border Business Leaders’ Meeting on February 18, 1999, to discuss the establishment of an economic database for the San Diego—Tijuana region. Representation included 25 select organizations from California and Baja California. The group’s initial task is to compile an inventory of the types of information already being collected by various organizations.¹⁰

San Diego Dialogue hosts a monthly Forum Fronterizo luncheon program. The October 1999 program was entitled “Smart Regional Planning and the Airport Question.” The program addressed the costs to the San Diego—Tijuana region of failing to develop a multimodal trade infrastructure. California State Senator Steve Peace, the keynote speaker, described his plans to create the Regional Infrastructure Transportation Authority (RITA). Senator Peace stated that RITA would consolidate and streamline regional transportation infrastructure planning and management by eliminating several overlapping agencies: the San Diego Association of Governments, the Metropolitan Transit Development Board, and the San Diego Unified Port. A key initiative of RITA would be the development of a multimodal transportation center at the north end of Lindbergh Field.¹¹ Since this presentation; Senator Peace has revised his legislation (SB329). His bill, currently under consideration by Governor Gray Davis, seeks to create a commission to examine the consolidation of transportation agencies in the San Diego region. The recommendations from this commission would be presented to the electorate in 2002.

The November 1999 Forum Fronterizo Program luncheon was entitled “New Energy Markets, Population Growth, and Air Quality: Opportunities for Cross-Border Cooperation.” U.S. Secretary of Energy Bill Richardson and the president of Mexico’s Comisión Reguladora de Energía, Dr. Héctor Olea, were featured speakers. The program focused on how new energy market structures could facilitate public- and private-sector cooperation for clean energy development and use, cross-border energy integration, sustainable energy development, and increased private sector investments.¹²

The December 10, 1999, Forum Fronterizo focused on “Health and Medical Care in San Diego and Baja California: Prospects for Collaboration.” The keynote speaker, Dr. Eduardo González Pier, a health economist and director of planning in the Mexican Institute for Social Security (Mexico’s largest health services provider) discussed recent reforms in Mexico’s health-care sector. A panel of regional experts from the public and private sectors addressed the use of telemedicine for emergency health services and improved regulatory mechanisms in Baja California. Additional topics included the revision of cross-border health insurance regulations in California, the portability of public and private health coverage across the border, cooperative efforts in medical education and training, and the establishment of a trauma center in Baja California.¹³ The four policy luncheons in 2000 will examine aspects of the region’s global engagement.¹⁴

A conference, “Cross-Border Urban Integration in the Twenty-First Century: The San Diego—Tijuana Model” was presented by the Center for Global Legal Studies, Thomas Jefferson School of Law, and the Universidad Autónoma de Baja California in collaboration with the UCSD Center for U.S.-Mexican Studies on March 31, 2000. Public- and private-sector experts from both sides of the border gathered to discuss a wide range of topics affecting the binational region. Panel discussions covered employment opportunities and labor needs, particularly immigration issues; the benefits and burdens of maquiladoras; environmental priorities and the responsibilities of governments, corporations and individuals; and finally the binational infrastructure needs of a twenty-first century megacity.¹⁵

The Committee on Binational Regional Opportunities (COBRO), a policy advisory committee providing planning guidance for the San Diego Association of Governments (SANDAG), was established in 1996. COBRO members include key elected officials, business and academic professionals, and the consuls general of the United States and Mexico. COBRO members meet five times a year and gather in the summer for a conference. The 1999 summer conference addressed regional opportunities in the areas of energy, transportation, and trade. Recent binational initiatives fall into three primary areas: intergovernmental coordination, transportation planning, and environmental planning. Projects include the Border Liaison Mechanism, the Bi-State Transportation Technical Advisory Committee, the San Diego Region—Baja California Cross-Border Transportation Study, and Watershed Research and Habitat Conservation efforts.¹⁶

Calexico

The fourth annual NAFTA SHO, an event organized by the Valley of Imperial Development Alliance, the Coachella Valley Economic Partnership, and the Comisión de Desarrollo Industrial de Mexicali, featured 15 maquiladora plants and more than 175 exhibitors. The event, which featured seminars and a tour of the maquiladoras in Mexicali, was held at the Mexport Business Center near the new Calexico East Border Port of Entry in February 2000.¹⁷

San Antonio

The Free Trade Alliance San Antonio has sponsored several conferences in the San Antonio area. In June 1999, the organization hosted ten attorneys general from the United States and Mexico for a three-day meeting highlighting issues of cross-border justice.¹⁸ On September 30 and October 1, 1999, the alliance hosted the Mexico Logistics '99 Conference. Topics addressed were avoiding delays by being prepared for inspections, analyzing the benefits of small versus large carriers, and increasing knowledge of customs administrative procedures.¹⁹ In March 2000, Casa San Antonio, the city's program to facilitate two-way trade with Mexico, and the Free Trade Alliance jointly sponsored a seminar on the legal and accounting aspects of doing business in the United States. The seminar and trade mission to Monterrey, Nuevo León, coincided with the REPCOM (Representantes Comerciales) catalog show.²⁰ In March 2000, the Free Trade Alliance Mexico Group held a panel discussion on the program components of the International Business Development Center. The event, sponsored by Wells Fargo Bank, was entitled “The International Business Development Center Works!”²¹

The South Texas Border International Trade Center in San Antonio opened a satellite office at the city's International Center.²² One of only 15 international trade centers in the United States, it sponsored two seminars “Global Trade Essentials” on March 3, 2000, and “International Transactions” on March 15, 2000.²³

El Paso

The first binational World Trade Center in the world, the El Paso/Júarez World Trade Center, was established in 1995 to assist companies in meeting the challenges of international business. Each month, El Paso/Júarez WTC organizes a seminar; 1999 seminars focused on international issues of documentation, marketing, methods of payment, and transportation. In February and March 2000, the WTC featured regional and national experts on the legal aspects of importing and exporting goods.²⁴

In October 1999, El Paso hosted the 26th meeting of the U.S.-Mexico Binational Planning Group on Bridges and Border Crossings. The forum identifies and prioritizes infrastructure needs along the U.S.-Mexico border.

Laredo

On March 23, 2000, the Laredo Chamber of Commerce hosted the Vision 2000 Economic Outlook Conference. The daylong event provided economic reports for the south Texas region and Mexico. Presentations were given on the regional development efforts of the city of Laredo and the Texas Border Infrastructure Coalition; transportation projects by the Texas Department of Transportation and Camino Colombia, Inc.; and the activities of the South Texas Customs Management Center and the Port of Corpus Christi Authority. The luncheon speaker was the president of the Border Trade Alliance, who gave an update on the maquiladora industry.²⁵

Building on a meeting that included the mayors of both cities, border enforcement officials, and tourism representatives, the Binational Tourism Committee in Laredo and Nuevo Laredo met during 1999 to discuss goals, strategies, and priorities for bringing more tourism to Los Dos Laredos. A key decision from the meeting is to continue promoting the cities as a single destination for tourists.²⁶

A two-day seminar, described as the first binational emergency services seminar, was hosted by the Texas Association of Hispanic Firefighters and the Emergency Management Association of Texas at the civic centers in the Dos Laredos. The first meeting focused on hazardous materials response and the second, in Nuevo Laredo, addressed emergency preparedness and incident cleanup. Association representatives indicated a desire to extend their international outreach to Colombia, Bolivia, Ecuador, and possibly Guatemala.²⁷

In April 1999, the two Laredos hosted the Binational Committee on Urban Planning and Major Border Impact Projects meeting. Secretaries and elected officials from Baja California, Sonora, Chihuahua, Coahuila, Nuevo León, and Tamaulipas met with representatives from the four U.S. border states in an effort to further cooperation.²⁸

Export Assistance Programs and Initiatives

Tucson

The Tucson Metropolitan Chamber of Commerce, in collaboration with the University of Arizona's Office of Economic Development and the city's Tucson-Mexico Project, is redesigning its Mexico Seminar Series. Marketed as a practical, intensive course on how to conduct business in Mexico, the series will be open to businesses in the Tucson and southern Arizona region in Spring 2000. In addition to enhancing market research opportunities for participants, the upcoming series includes a trip to Sonora to establish business contacts and case studies prepared by past attendees.

San Diego

The Golden Opportunities Program, managed by Southwestern College, identifies export-ready companies in the region for high-level export counseling. Potential clients, identified through an SIC code analysis, must make a financial commitment and create a business plan and budget. Clients receive counseling on international marketing research, strategic market planning, and strategies for shipping products globally.

San Antonio

The San Antonio Export Leaders Program run by the city's International Affairs Department targets small and medium-sized firms with high export potential. From April through November 2000, 20 firms were instructed on topics ranging from international markets and foreign market entry strategies to export financing, customs, and transportation. The program features guest speakers, group discussions, and two trips to Mexico. To be accepted for the program, firms had to complete an extensive application and review process, which solicited information on the company's business profile and business goals over the next five years, anticipated benefits, and personal and civic accomplishments.²⁹ Using this information, a panel of business experts selected participants with a strong commitment to exploring international markets.³⁰

As part of San Antonio's effort to stimulate two-way trade, the Free Trade Alliance San Antonio and the city's Greater Kelly Development Corporation have partnered with the Trade Commission of Mexico to establish an international business development center or incubator for Mexican companies.³¹ The International Business Development Center Program (IBDC) was formed in February 2000, and after only three months in existence, 11 companies had signed contracts to participate. IBDC provides a physical facility and value-added support services to assist small and medium-sized companies based outside the United States in penetrating the U.S. market. The program helps firms test the U.S. market potential of their products in an efficient and cost-effective manner.³² Firms receive a variety of services and assistance for one year, after which time they are eligible to negotiate for office and warehouse space at Kelly.³³ IBDC provides office space—including office furniture, equipment, and meeting and conference space—at a cost of \$180 a month. IBDC services include training on U.S. business practices, market research, mentor matching with an established San Antonio company, and assistance in locating legal, warehousing, and customs support services.³⁴

El Paso

The El Paso/Juárez World Trade Center is developing a Certificate in International Trade program. The certificate program is taught by industry professionals and will give participants “hands-on” instruction in international business.

Trade and Protocol Missions

Arizona

In October 1999, Governor Hull made her first protocol and trade mission to Mexico. Leading a delegation of Arizona public- and private-sector officials, the governor met with Mexican President Ernesto Zedillo, members of his cabinet, other federal officials, and members of the Mexican Senate. An important feature of the mission was an invitation by the president of the National Congress and members of the Mexican Senate to meet with Governor Hull. The governors of Arizona and California were the only two U.S. governors invited to meet with the Mexican Congress.³⁵ The trip, described as successful in strengthening existing ties between Arizona and Mexico, resulted in three action items:

- Mexico's energy secretary requested a follow-up meeting with Arizona utility representatives to discuss “interconnectivity,” or methods of linking Arizona's electrical grids with the Mexican system. Three panel discussions with industry leaders, dubbed the Border Electricity Symposium, were held in Phoenix on April 12, 2000. Sponsored by the U.S. Department of Energy and the Arizona-Mexico Commission, this meeting drew approximately 150 attendees from 100 different companies and four countries to address transboundary issues.³⁶
- Mexico's education secretary asked to meet with the presidents of Arizona State University, the University of Arizona, and Northern Arizona University to discuss improved student exchanges and credit transfers between the two nations' universities. In November Dr. Peter Likins, president of the University of Arizona, along with a delegation of faculty and department heads, traveled to Sonora to address these issues on a regional scale.
- The director of Fondo Nacional al Turismo, the agency that develops tourism destinations in Mexico, asked for a meeting in Arizona to discuss improvements at the ports along Mexico's western coast and the CANAMEX corridor.

The Arizona-Mexico Commission, in conjunction with the Arizona Department of Agriculture, coordinates tours by teams of cattle and agricultural producers in Arizona and Sonora. The teams visit areas in Cochise, Pima, Maricopa, and Yuma Counties to facilitate trade in the agribusiness sector. A significant development in 1999 was a pilot project to allow Arizona boxed beef to be sold in Sonoran and Sinaloan supermarkets.

Phoenix

The city of Mesa established its Sister Cities Program in 1981, to foster positive business relations and greater cultural understanding between employers and entrepreneurs in Guaymas, Sonora, and their counterparts in Mesa, Arizona. As part of the program, Mesa businesses that are currently engaged in trade with Mexico or that wish to engage in joint ventures are invited to participate in an annual trade mission organized by MEGACORP, which is Mesa's Office of Economic Development. Development professionals indicate that several companies—for instance, MD Helicopter, TRW Safety Systems, Motorola, Legris, Empire Southwest Machinery, and Royal Aviation—are currently doing business with Mexico.

Tucson

The Caballeros del Sol are the Tucson Metropolitan Chamber of Commerce's intercity commerce and trade committee. Their function is to promote trade among Tucson, other Arizona communities, neighboring states, and Mexico. At least once a year, members travel to Mexican cities such as Ciudad Obregón, Ensenada, Guaymas—San Carlos, Guadalajara, and Hermosillo to facilitate networking and business development. In October 1999, the Caballeros partnered with the Tucson-Mexico Project to participate in a trade mission to Ciudad Obregón. As part of a greater regional outreach effort, the group also visited Guaymas, Empalme, and Navojoa. Over the next four years, the Caballeros will be targeting Ciudad Obregón for further collaboration. Recently the membership voted to formalize their relationship with the communities of southern Sonora in order to develop economic exchanges.³⁷

Yuma

With support from the Arizona Department of Commerce, representatives from the city of Yuma and USAID participated in a trade mission. In June 1999 the group traveled to Ciudad Guzmán and Sayula, Jalisco.

California

Governor Davis of California traveled to Mexico City and Monterrey in February 1999 as part of a two-day “get acquainted/crossborder diplomacy” mission to discuss trade and educational issues. Whereas the previous governor never made an official trip to Mexico during his two terms, Governor Davis sees establishing more cordial relations with Mexico as an important strategy, particularly in light of estimates that one in four Californians have a Mexican ancestor and 15 percent of the state's voters are Mexican American.³⁸ Coincident with the governor's trip to Mexico, the chairman of Teléfonos de Mexico announced that his company would be relocating its headquarters from Houston to San Diego. The company, which collaborates with Sprint Corporation to target U.S. Hispanics for long-distance service, is expected to create 600 new jobs in California over an 18-month period.³⁹

San Diego

Several trade missions deserve mention. On May, 22, 2000, the U.S. Department of Commerce, the Centers for International Trade Development, and the California-Mexico Trade Assistance Center sponsored a four-day trade mission to Guadalajara.⁴⁰ During fiscal year 2000, the San Diego Regional Chamber of Commerce and regional organizations such as the San Diego World Trade Center will be coordinating trade missions to Baja California and other key destinations in Mexico.

In an effort to regain shipping business, specifically a link to Chile, a team of San Diego civic and corporate leaders visited Valparaiso as part of a two-week trade mission to South America. Building on this outreach, San Diego port officials traveled to Chile in April 1999. Since 1997 the port of San Diego has handled only minimal amounts of South American trade. With tremendous growth in the maquiladora industry in Tijuana, shippers are seeking docking alternatives closer to production lines. The question for shippers is whether the relatively small port of San Diego can serve as an alternative to Los Angeles—Long Beach ports or is capable only of handling overflow. To entice shippers to change ports, San Diego would have to guarantee that it could generate 50 or 60 containers of cargo destined for South America every two weeks.⁴¹

San Antonio

In March 1999, the San Antonio Hispanic Chamber of Commerce sponsored a delegation led by the mayor to meet with Mexico's President Zedillo.⁴² The two-day "SA to DF Trip" to Mexico City included group meetings between San Antonio officials and various Mexican secretaries of industry and focused on facilitating commercial flows. The chamber intended the visit to position San Antonio more competitively relative to Dallas and Houston. This meeting, the second time a mayor of San Antonio has met with the Mexican president, generated a proposal by the Free Trade Alliance to "incubate" Mexican firms seeking a platform to penetrate the U.S. market. (See "Export Assistance Programs and Initiatives," above for a description of this program.) The alliance also proposed developing a Mexican inspection station to process perishables and dairy products at Kelly Air Force Base, which is being redeveloped as an inland port.⁴³ Currently, the San Antonio-based HEB Grocery Co. experiences product damage while transporting commodities across the border to its four stores in Monterrey.⁴⁴

Looking for models for improving international trade and tourism, representatives of the Greater San Antonio Chamber of Commerce traveled to southern Florida in October 1999.⁴⁵

Members of a delegation headed by the Chihuahua State Secretary of Commercial and Tourism Development met with government and industry leaders in San Antonio for three days at the beginning of February 2000. Discussions focused on increasing communication and trade between the two regions.⁴⁶ Another visit—this time from government officials and business industry leaders from the state of Morelos—was organized by the city's Internal Affairs Department. During a four-day visit in March 2000, the delegation met with leading business, civic, and government representatives from San Antonio to explore mutually beneficial commercial opportunities.

At the request of the Greater San Antonio Chamber of Commerce, Free Trade Alliance San Antonio organized a trade mission to Costa Rica on April 26—28, 2000. The mission's goals were to encourage business exchange between San Antonio and Costa Rican companies and to promote Inland Port San Antonio.⁴⁷ In addition, community representatives are making several trips to Central and South America to promote the region's growing trade-processing capacity. They hope to make San Antonio an alternative trade destination to Miami over the next 15 to 20 years.

Strategic Planning Initiatives

Arizona-Sonora Project

The Arizona-Sonora Project seeks to enhance the economic integration and competitive position of the Arizona-Sonora region. For the past six years, a consortium of universities, colleges, and research institutions has engaged in a comprehensive strategic planning process dubbed the Strategic Economic Development Vision for the Arizona-Sonora Region. During this research phase, economic complementarities and critical challenges were analyzed in the context of various industry sectors, such as agribusiness, tourism, health service, and manufacturing. In June 1998 the shift to implementation began with an announcement by the governors of Arizona and Sonora of their intent to adopt a six-point plan now referred to as the Arizona-Sonora Project. The plan, described in the 1999 *Evaluation of Arizona Competitiveness*, involves the establishment of binational clusters, workforce development strategies, transportation and border crossing upgrades, marketing of the region, regulatory reform, and community-based development. The following regional economic development efforts have occurred in the past year:

- The Arizona-Sonora Health Services Industry Cluster was officially established.
- In late May 2000, university representatives from Arizona State University and The University of Arizona facilitated an executive steering committee meeting for the newly emerging Binational Manufacturing Cluster. This effort comes on the heels of a study conducted by the universities on the manufacturing and maquiladora industries in the region.
- A promotional video, *The Arizona-Sonora Region: Sharing a Vision for the Future*, was produced to highlight the region's attractiveness for business and investment. The video will be used to promote the region throughout the United States, Europe, and elsewhere.

- Several significant educational initiatives were established. Among them were a tuition waiver program that enabled approximately 50 students from Sonora to attend Arizona community colleges, a student documentation transfer program that protected Sonoran students who attend schools in Arizona from losing credits, and engineering and border technology exchange programs sponsored by the Arizona Department of Transportation. The engineering and border technology exchanges seek to improve training and infrastructure in the region by sharing engineering talent and technology between the two states.
- Planning efforts are underway for a seminar on enforcement of transborder contracts through international arbitration and mediation in the Mexican legal system.
- Also in the planning stages is a summit of institutions of higher education for the purpose of designing a workforce development strategy for the region.
- The governor's guest worker proposal, to allow Mexican nationals to enter the United States legally for work, was embraced and supported by the border governors to address workforce shortages in the United States.
- The National Oceanographic and Atmospheric Administration has partnered with The University of Arizona Office of Economic Development to conduct a border community sustainable development analysis in Nogales, Arizona.
- A CANAMEX task force and executive director have been appointed and additional funding for the CANAMEX Trade Corridor Development Initiative has been secured.
- This report and a second report, *Indicators of Progress*, produced by the University of Arizona's Office of Economic Development was presented by the Governor of Arizona during the Comisión Sonora-Arizona in November 2000. The *Indicators* report includes a report card that grades the region's progress in capturing larger shares of NAFTA and U.S.-Mexico trade, growth in leading sectors and regional integration, and improvements in the quality of life of Arizona-Sonora residents relative to those in other border states. On April 26—27, the university co-hosted two workshops with the Arizona-Mexico Commission, one in Tucson and the other in Phoenix. Participants were briefed on the preliminary findings. Information solicited during the meetings will be used to design an action plan to guide future efforts.

Sonora

In 2000, the Mexican government extended the Sonora Only Program until 2003, allowing U.S. citizens to drive from Arizona throughout the state of Sonora without paying a vehicle fee. Initiated in 1995 by Sonora's Governor Beltrones, the program was suspended in December 1999 when the Mexican government decided to collect a refundable deposit on U.S. vehicles. This policy was billed as a way to prevent stolen vehicles from being imported into Mexico. The agreement between Mexico's Treasury Department and Sonoran officials to extend the Sonora Only Program requires renovation of the facilities issuing tourist permits and enhanced computer linkage with the Treasury to monitor vehicle entries. An additional stipulation of the program's extension was increased supervision and evaluation by federal authorities.⁴⁸

In June 1999, Governor Hull appointed a director for the State of Arizona Office in Hermosillo, Sonora. This office was founded in 1992 to provide outreach for state economic initiatives and dissemination of information. The office also promotes educational programs and exchanges, scholarship opportunities, and cultural activities.⁴⁹

Tucson

The Tucson-Mexico Project, directed by the city of Tucson, represents a collaborative effort by several public- and private-sector organizations, including the Tucson Airport Authority, the Greater Tucson Economic Council, the Tucson Metropolitan Chamber of Commerce, the University of Arizona, Pima Community College, and the National Law Center. These representatives are working to enhance linkages with Mexico through a variety of activities. Several initiatives have been accomplished in 1999—2000:

- An e-mail discussion forum was created to provide a platform for the exchange of information between trade organizations, professional associations, and private businesses in Tucson and Mexico.
- The mayor hosted a delegation of business and government sector representatives from Guadalajara for a weeklong visit in June 1999. The delegation visited the Tucson International Airport to discuss distribution projects and the University of Arizona Science and Technology Park to address binational development strategies with Mexico and the new Southwest Border Technology Project to expedite trade at border ports of entry.
- In collaboration with the U.S. Department of Commerce's Tucson Export Assistance Center, a gold key/sister city trip to Guadalajara was arranged in October 1999. The mission matched local firms with companies in Mexico based on sales and distribution goals. As part of the sister-city outreach, companies participated in various events celebrating the relationship between the two communities.
- The Tucson-Mexico Project and the Agua Prieta Chamber of Commerce cosponsored the Agua Prieta Expo in November 1999. The exposition targeted linkages between Tucson and Agua Prieta businesses involved in tourism or the manufacture of industrial supplies.⁵⁰
- The U.S. government was successfully lobbied to enact the Border Zone Project, a one-year pilot project that allows Mexican business travelers and tourists to travel to Tucson without completing INS Form I-94. Historically, border crossers have been required to fill out this form to travel more than 25 miles into the United States. The Border Zone Project extends the permissible limit to Tucson in the United States and to Magdalena in Sonora.⁵¹
- A border zone data collection project was initiated to track the number of Mexicans shopping at Tucson businesses.
- A group that included the Greater Tucson Economic Council met with maquiladora plant representatives in Nogales, Hermosillo, Empalme, Guaymas, Ciudad Obregón, and Navojoa to promote the distribution and air-cargo opportunities developing in Tucson.⁵²
- More aggressive campaigns were designed to attract consumers to Tucson businesses. Through the city's Vamos a Tucson and Bienvenidos efforts, both elements of the overall project, business alliances along key retail corridors have been established. The current renovation of Park Place, a shopping mall that caters to shoppers from northern Mexico, includes providing oversized lockers for daylong package storage and a state-of-the-art phone system to provide translation services between Spanish-speaking customers and English-speaking employees.⁵³

Tucson & Southern Arizona: A Center of International Trade and Business is a strategic planning initiative to position the region as a leading destination for export-oriented companies and investment and to target high-profile binational meetings and conferences. Under the leadership of the mayor, the Southern Arizona Leadership Council, and the University of Arizona, a five-year business strategy is being developed. Among its goals are to create marketing and outreach programs, to organize trade missions to major world cities in order to promote the region as an expansion and investment site, to broaden business activities to other states in Mexico, to establish an international trade and business development authority, and to host major global events.⁵⁴

Yuma

The Greater Yuma Economic Development Corporation is leading efforts to develop a regional strategic plan for Yuma County. The effort began with the identification of community advantages, industry targets, and marketing activities. In July 2000, an outreach component was implemented to create a unified vision for the region.⁵⁵ In interviews economic development professionals indicate that key components of their efforts over the next year will be to promote the region to site-selection firms, to attract additional suppliers to meet maquiladora sourcing requirements, and to address the growing need for professional business services in the region. Two companies that considered locations in California indicate that Yuma should promote its lack of unionization, low cost of living, and moderate corporate income tax rate as advantages relative to communities such as Calexico.

Nogales

On November 9, 1999, Governor Hull traveled to Nogales to participate in the Nogales Economic Development Round Table, which sought to create a strategic economic vision for Nogales in the twenty-first century. At this meeting the governor emphasized the importance of the CANAMEX Trade Corridor for the future economic development of the Nogales region.⁵⁶

Douglas

Cochise County and southeastern Arizona produce most of the summer vegetables grown in Arizona and an estimated 28 percent of the state's range cattle. Specialty products associated with this area include hydroponic tomatoes, ostriches, apples, chiles, grapes, wine, pecans, and pistachios.⁵⁷ According to an agricultural marketing study, regions that identify new opportunities by developing special market niches for local products and adding value to agricultural products are more likely to maintain a strong agribusiness cluster. Recognizing that in many cases consumers are willing to pay more for specially packaged, high quality, locally grown products, the authors suggest that regional producers provide value-added enhancements to the regional agricultural strengths.

Economic developers report a growing interest from agricultural prospects, such as greenhouses, due to the region's water quality and availability. Other agricultural opportunities include dairy and chili paste production. A dairy operation reportedly was recently established to utilize excess feed grain and to market milk and milk products to Mexico. This development is a natural fit for Cochise County because the region is known for high corn yields.

Cattle provide additional value-added opportunities for the region, particularly with the construction of a new beef processing facility that has the capacity to handle 3,000 head of cattle. Significant supplier service needs identified in the marketing strategy include tractor and implement dealers, more slaughterhouses, special sheep and goat wire fencing materials, and a local ostrich tanning operation; currently ostrich hides are sent to San Antonio for tanning.⁵⁸ Economic development professionals indicate that, with the recent purchase of ASARCO by Grupo Mexico, mining is reemerging as an economic opportunity for the region. A new maquiladora plant operating in the area serves the mining industry.

Tourism comprises a growing piece of regional economic development efforts. With the opening of Kartchner Caverns State Park in Benson, economic development organizations are seeking ways to extend the length of time visitors spend in the region. The South Eastern Arizona Governments Organization (SEAGO) is leading efforts to map a region-wide birding trail, the Southeastern Arizona Birding Trail. Another important strategy being implemented in the Douglas region is the promotion of agricultural tourism. Most visitors come to the region to harvest their own produce at U-Pick operations. Combining the produce-picking opportunities with related experiences, such as farm tours, is an important value-adding activity for regional farmers.

San Diego

Recently the San Diego Regional Chamber of Commerce restructured its International Division into four divisions: the International Business Forum Steering Committee, Trade and Commerce Committee, International Policy Committee, and Programs and Activities Committee. The Trade and Commerce Committee serves as the chamber's vehicle for facilitating key strategic initiatives. Over the next year, the chamber will be cooperating with organizations in San Diego and Mexico, governmental agencies, and business groups to enhance trade and commerce, focusing on Mexico initially and expanding to other markets in Latin America, Asia, and Europe. Through partnership activities, the chamber will be providing educational programs and related special events to equip San Diego business for active participation in global trade. A monthly meeting format has been adopted with the following goals:

- To expand business relations at the state and federal levels with five municipalities in Baja California
- To implement a new international business alliance with the San Diego World Trade Center to order to present "how-to" business seminars that focus on Mexico and other global markets

- To design a database to track chamber members who establish or expand their business operations in Mexico
- To coordinate trade missions to Baja California and other key destinations in collaboration with other regional organizations
- To increase collaborations with chambers of commerce, trade organizations, and agencies in Mexico
- To develop a Destination San Diego strategy, in collaboration with several partners, to promote the region as a gateway to Mexican, Latin American, and European markets and as an international destination for health-care services

In April 1999, The San Diego Regional Chamber of Commerce and the San Diego Hispanic Chamber of Commerce formed a strategic partnership with five business organizations in Mexico: CANACO, the national chamber of commerce; CANIRAC, the national chamber of commerce for the restaurant industry; CANACINTRA, the national chamber of commerce for industry; and CANIETI, the national chamber of commerce for electronics, telecommunications, and information technology. The alliance will enable businesses on both sides of the border to receive benefits and services offered by the various chambers, including answering questions and facilitating meetings.⁵⁹

Global Engagement of San Diego/Tijuana is an initiative to determine what the region needs in order to participate more actively in the world economy. Members are drawn from maquiladoras, businesses, universities, and community organizations on both sides of the border. The chairman of Sempra Energy, the mayor of San Diego, and the president of Grupo AFAL serve as co-chairs. Issues for discussion include sustainable development, the potential consequences of development, the feasibility of serving as a platform for large-scale advance manufacturing, whether education and training programs on both sides of the border are adequate, and the role of the financial industry and whether it is adequate to support global financing demands. Another initiative, The Future of the Personal Electronics Industry in the San Diego/Baja California Cross-Border Region, is exploring the region's potential for high-tech wireless device manufacturing, specifically through linking California's technological innovation with Baja California's production capabilities.⁶⁰

The San Diego Association of Governments partnered with other institutions in the region to produce a mechanism for ongoing regional assessment and to merge federal and state mandates and regional initiatives into a consistent plan. This San Diego Regional Economic Prosperity Strategy (1998) is described in promotional material as representing an emerging consensus on the necessary steps for long-term economic development for the San Diego region. Ten action steps are recommended:⁶¹

1. Encouraging collaborative problem solving
2. Providing sufficient urban land for housing needs
3. Attracting venture capital resources
4. Reducing the cost of doing business
5. Continuing to measure progress
6. Developing workforce and educational linkages
7. Making housing affordable
8. Solving hazardous waste storage problems
9. Assuring adequate water supplies
10. Expanding international trade capabilities.

Calexico

Concerned that approximately 60 percent of the regional economy is based on agriculture, university representatives are advocating for greater diversification at a faster rate. Efforts are needed to identify and attract industries that will expand the agricultural industry by adding value, such as the Gossner cheese factory, which relocated to the region in April. Warehousing and maquiladora supplier linkages are additional sectors that would improve economic viability.⁶²

As part of the strategic planning effort to diversify the economy, the Brawley Economic Development Commission has designed a trifold brochure with a credit-card-sized CD-ROM that promotes the advantages of the region to firms considering relocation.⁶³

San Antonio

Casa Nuevo León in San Antonio opened in June 1999 as the U.S. trade office for the state government of Nuevo León, Mexico. The office is sponsored by the state of Nuevo León and the Monterrey, Mexico, Convention and Visitors Bureau. Among its functions are to promote foreign investment, bilateral trade, and tourism; to provide information about investment opportunities; to maintain a list of suppliers; and to serve as a contact agency for government and commercial representatives. Nuevo León is one of the fastest-growing states in Mexico and, according to *Fortune 500* magazine, “Monterrey is the second best city in Latin America in which to conduct business.”⁶⁴

As reported in the 1999 *Evaluation of Arizona Competitiveness*, San Antonio’s Inland Port activities seek to position the community as a platform for U.S.-Mexico trade. Since the 1999 report, the alliance has devised additional strategies to enhance its international trade capabilities, namely the Export Leaders Program and the International Business Development Center (described under “Export Assistance Programs and Initiatives” earlier in this chapter). In addition, economic development officials are working to formalize an Inland Port Sister City relationship with Monterrey. Project organizers are hoping to create a seamless shipment cycle that does not require cargo to be unloaded at a warehouse in either Laredo or Nuevo Laredo. Initial plans include a proposal to construct a \$500 million terminal in Monterrey, the ADN Plus Industrial Multiport, which would process customs paperwork collaboratively with officials in San Antonio. The proposed site of ADM is near the Aeropuerto del Norte on the city’s north side. Although well situated from a real-estate perspective, the project still must attract support from political leaders and investment in order to complete the permit process. For obvious reasons, this project is unpopular with the hundreds of custom brokers, freight forwarders, and warehousing operations located at the border who would be bypassed if it is developed.⁶⁵

During the Better Future Workshop held in San Antonio by Mayor Howard Peak in January 1999, business leaders reportedly were venting their frustrations over the unrealized potential of the Kelly Air Force Base redevelopment. Although San Antonio has been aggressively marketing its staging, service, and distribution capabilities, the city has been unable to attract a sufficient level of investment. A persisting significant challenge for the region is how to convince shippers to utilize San Antonio—rather than Dallas or Houston—as a platform when shipments must be stopped for customs processing at the border 2½ hours away. Some officials are advocating for a regional partnership between San Antonio and Laredo to enhance development potentials.⁶⁶

El Paso

The city of El Paso completed a comprehensive strategic planning process in December 1999. Due to both national and local changes, a large percentage of El Paso’s workforce has been dislocated. To combat this problem, A Vision for Tomorrow’s El Paso plan recommends the creation of an Economic Policy Council. This group of public- and private-sector representatives would oversee the implementation of action steps outlined in the Vision for Tomorrow’s strategic adjustment plan. Among these are six initiatives addressing industry recruitment, workforce development, business climate, cross-border initiatives, communication, and marketing. A key recommendation is that a Juárez—El Paso maquiladora linkage task force be created. This group would identify and recruit U.S. firms to supply component and service inputs to the maquiladoras.⁶⁷

The Camino Real Economic Alliance (CREA) is a public- and private-sector initiative formed in 1993 to promote the economic growth of New Mexico, west Texas, and Chihuahua. To foster regional integration, CREA is organized around six industry cluster groups: transportation and distribution, tourism, business services, manufacturing, agribusiness, and regional communications. CREA is undertaking four initiatives to enhance these sectors. The first promotes a border region economic image and features initiatives in marketing, tourism, and industrial recruitment. The second builds on the region's strong telecommunications infrastructure and seeks to establish a regional information system to provide communities with the necessary data via the Internet. The third integrates regional clusters into three working groups: light manufacturing (automotive, textile, apparel, and electronics clusters); natural resources (agricultural food processing, mining and materials, and forest and wood products); and trade services (transportation and distribution, business services, and tourism). The fourth initiative is construction of a specialized and responsive border economic infrastructure to support regional trade and development.⁶⁸

Concluding Observations

The following observations are based on findings from both the 1999 and 2000 *Evaluation of Arizona's Competitiveness* reports. They focus on potential strategies for enhancing Arizona's competitive position relative to selected communities in the southwestern states.

Growth in Trade to Mexico

World trade data trends for 1993-1998 and 1997-1998 indicate that the Phoenix-Mesa metro region experienced a dramatic reversal during both time periods. Its ranking in total exports for 1998 fell substantially behind San Diego. Trade experts emphasize that the decline is due in part to the Asian market crisis; however, export sales to NAFTA markets also suffered. Among the major metropolitan areas studied, only Phoenix-Mesa and Laredo did not experience triple-digit growth between 1993 and 1998. For 1997-1998, Phoenix-Mesa and Laredo continued to stand out as the only locations to experience *declines* in trade (-6.8 and -9.2 percent respectively). With respect to Mexican trade specifically, Phoenix-Mesa region experienced only modest growth for 1993-1998 overall, with a decline in 1997-1998.

Although the city of Phoenix is increasing its engagement with Mexico through several efforts (sister-city program, trade missions, educational outreach to Sonoran institutions of higher learning), more attention must be directed toward generating greater trade linkages with Mexico. Such initiatives could include more facilitation of efforts by existing companies to target Mexico as well as more aggressive recruitment of companies that could supply the maquiladora industry in Mexico.

The 1999 *Evaluation* identified the following areas where Arizona communities could capture a larger share of NAFTA trade:

- Recruit more plastics firms not only to supply the maquiladoras, but also to meet the needs of Arizona firms. The 1999 *Evaluation* found that although the number of plastic firms in the state is growing, there remains an unmet demand for this type of supplier.
- Focus on the aerospace, avionics, and semiconductor sectors in Arizona in order to create NAFTA trade opportunities. Encouraging new business formation and business recruitment is two ways to increase the number of firms in the area.
- Encourage local supplier linkages and twin plant operations in the electronics sector and build on the existing base of electronic assembly enterprises in Sonora.
- Attract more firms and work with existing high-technology industries to increase the Arizona- and Sonora-produced tangible commodities for use by Mexican manufacturing firms.
- A possible benefit of this effort would be to increase productivity in Arizona by generating a greater demand for transportation and distribution services.
- Forge links with the mining industry to transform more raw ore into intermediate or final metal products; doing so could create sizeable value-added opportunities for Arizona's metal-fabrication operations. NAFTA customers and the Mexican maquiladora industry in particular are experiencing growing needs for fabricated metal products.
- Pursue opportunities to establish twin-plan operations in the area of bioindustry. Arizona has a small but important cluster of firms engaged in research, development, production, and marketing of medical devices, equipment, pharmaceuticals, and biotechnology products.

- Considering the significant expertise that exists in Arizona in the areas of surveillance technologies, optics, and software, efforts could be undertaken to encourage firms with these strengths to focus on the development and marketing of technologies for managing traffic flows at the border ports of entry.
- Harness the experience and expertise available in Arizona to move commodities and people in order to expand the state's share of air transportation. Opportunities exist both in direct services and in supporting services such as customs and documentation processing, importing and exporting services, and distribution and warehousing capabilities.

Skilled Human Resources and Labor Pool Development

For workers seeking highly skilled jobs, key determinants of success are their level of education, their job experience, and their ability to apply their expertise in order to complete the tasks required for a particular occupation. Therefore, workforce-training activities should be undertaken in all of the Arizona communities studied, particularly the communities along the Arizona-Mexico border. Since economic theory suggests that workers will be paid according to the value of their contributions, possible outcomes of improving worker skill base could be more stable employment, higher worker demand, and eventually more effective economic development.

Workforce-development efforts should build on the strategic advantages of regional industries or cluster strengths. The 1999 *Evaluation* identified key areas of strength as well as specific targets for economic development (see “Key Findings from 1999 *Evaluation of Arizona Competitiveness*”). In each case, the recommendations were based on an evaluation of that community's existing or potential ability to maintain a lead in that sector. Additional training of health-care professionals (i.e., nurses) and international service providers (i.e., freight forwarders and logistic managers) could increase the number of skilled workers in Arizona border communities. Supporting tourism activities, such as the agricultural and ecotourism efforts currently being pursued in the Douglas and Nogales region could facilitate the employment and training of unskilled workers. Teleservice industries could be targeted to capitalize on the large bilingual workforce in southern Arizona.

A key constraint to workforce development identified in the 2000 *Evaluation* is the low level of funding by the Arizona legislature relative to California and Texas.

Maquiladoras and Regional Supplier Development

Establishing supplier linkages to the maquiladora industry has become a major strategy in the border area. With varying degrees of success, economic development professionals are seeking ways to attract or develop a competitive supplier base. Communities in Arizona have an important window of opportunity to capitalize on the growing number of maquiladoras in Sonora. Except in the San Luis Río Colorado area, Sonora experienced one of the highest percentage increases among Mexican states in the number of maquiladora plants between 1998 and 1999. Nogales (29.6 percent), Hermosillo (28.6 percent), and Guaymas (23.5 percent) are distinguished as the primary growth-generation centers.

To provide the greatest economic benefit to the state, efforts should be made to identify highly skilled capital-intensive industries that can provide services to the maquiladora sector. In the short term, activities should focus on the electronics operations in Sonora and Baja California. More detailed information regarding the particular types of suppliers that should be recruited will be available upon the completion of a study being conducted by researchers from The University of Arizona and Arizona State University.

Advanced Transportation Infrastructure

The accelerated transportation growth experienced in the Southwest following the implementation of NAFTA underscores the vital role that infrastructure plays in enhancing trade and economic prosperity. Because commodity movements follow the path of least resistance, it will become increasingly important for Arizona to identify ways to improve

its port facilities and transportation infrastructure. The 1999 *Evaluation* found that both Laredo and El Paso are strong in the transportation and distribution sector, while California shows some weaknesses.

The CANAMEX Trade Corridor Initiative is expected to spur significant growth in NAFTA-related transportation in Arizona, and it will be vital for Arizona communities to ensure that the flow of goods generates value-added opportunities for regional producers and service providers. Business-development activities should include monitoring potential increases in the transboundary flow of goods in order to properly time efforts to expand transportation and distribution functions.

Initiatives and Strategies Underway to Enhance Trade with Mexico

Their export assistance programs, which target and select firms for specialized assistance based on various criteria such as SIC codes, company commitment, and goals, distinguish San Diego and San Antonio. The marketing efforts of small- and medium-sized businesses that wish to qualify their products for duty-free NAFTA-status should be supported through such efforts as the provision of specialized training, in order to reduce the burden on these enterprises. The Tucson Metropolitan Chamber of Commerce seminar series can be a useful tool in identifying firms that would benefit from more specific export assistance. As the chamber of commerce implements plans to expand its seminar series, it should begin targeting specific firms for participation based on a review of the firm's level of readiness and commitment to develop trade linkages with Mexico.

Both the 1999 and the 2000 *Evaluation of Arizona Competitiveness* reports have found that Arizona is in a good position to capitalize on its assets and capture a larger share of NAFTA trade, if a sharply focused marketing and recruitment strategy is implemented. A comprehensive strategy is being developed and a promotional video that highlights the respective strengths of both Arizona and Sonora has been produced by the Arizona-Sonora Project. Key assets that should be emphasized in marketing materials and presentations to prospective firms include:

- The long history of collaboration and cordial relations between the governments of Arizona and Sonora
- The activities and mission of the Arizona-Mexico and the Sonora-Arizona Commissions
- Expertise and experience in aerospace and avionics, including a trained workforce; this field holds potential for the emergence of spin-offs as well as for new entrants.
- Expertise and a large presence of high-technology firms, particularly in the semiconductor industry; a trained workforce and well-integrated programs at Arizona educational institutions are major assets.
- Expertise and knowledge base in bioindustry, particularly medical devices, equipment, and instrumentation; a trained workforce and well-integrated programs at Arizona educational institutions are competitive advantages.
- Expertise and educational infrastructure for growth in the pharmaceuticals industry; potential also exists for twin-plant operations and marketing of products in Mexico. A recent initiative in the government-run health sector to increase utilization of generic pharmaceuticals may increase the motivation to attract firms.
- A more extensive and diversified higher-education structure than any other border community except San Diego.
- Existence of a considerable engineering workforce in the area, if Sonora is included.
- State and local support for the formation of clusters, including formal cluster organizations, in key economic sectors.
- Quality-of-life factors that include major league sports teams; sophisticated medical infrastructure and educational system; excellent general and specialized medical care; applied research programs in engineering and manufacturing at Arizona State University; exceptional programs in medicine, pharmacy, nursing, and bioengineering at The University of Arizona; conference facilities close to major recreation and tourist attractions, a lower cost of living than locations such as San Diego, and proximity to major metropolitan areas in California.

- New opportunities for business development in Arizona resulting from Mexico's ongoing privatization efforts in key sectors such as transportation and health services. Given the strong competition from communities in Texas and California, Arizona must actively monitor these developments in order to act upon them quickly.

Appendix

Export Trade Activity by City, 1999

Calexico, California

Code	SITC Description	Total (in Dollars)
69979	Articles Of Aluminum, N.E.S.	\$26,065
81311	Chandeliers And Other Electric Ceiling And Wall Lighting Fittings (Except Those For Lighting Of Public Open Spaces And Thoroughfares)	14,201
69969	Articles Of Iron Or Steel, N.E.S.	5,353
74593	Parts (Cylinders, Etc.) For Calendering Or Other Rolling Machines (Other Than For Metals Or Glass)	3,627
62999	Articles Of Unhardened Noncellular Vulcanized Rubber, N.E.S.	433

Douglas, Arizona

Code	SITC Description	Total (in Dollars)
78432	Other Parts And Accessories Of Motor Vehicle Bodies Of Headings 8701 To 8705 (Including Cabs)	\$123,630,811
68241	Refined Copper Wire	95,433,441
75997	Parts Of Automatic Data Processing Machines And Units Thereof, Magnetic Or Optical Readers, And Machines For Transcribing And Processing Data, N.E.S.	92,559,075
93100	Special Transactions And Commodities Not Classified According To Kind	32,168,450
28781	Molybdenum Ores And Concentrates, Roasted	25,313,025
00119	Bovine Animals, Other Than Purebred Breeding Animals, Live	18,005,220
77129	Parts Of Electric Power Machinery (Other Than Rotating Electric Power Generating Machinery And Equipment), And Parts Thereof	12,903,766
65893	Life Jackets And Life Belts And Other Made-up Articles, N.E.S., Of Textile Materials	10,153,996
84260	Trousers, Bib And Brace Overalls, Breeches And Shorts, Of Woven Textile Fabrics, Women's Or Girls'	8,349,940
77245	Lightning Arresters, Voltage Limiters And Surge Suppressors For A Voltage Exceeding 1,000 Volts	7,886,126

El Paso, Texas

Code	SITC Description	Total (in Dollars)
76110	TV Receivers, Color, Including Video Monitors & Projectors), Whether Or Not Incorporating Radiobroadcast Receivers Or Sound Or Video Recording Or Reproducing Apparatus	\$1,652,759,990
82119	Parts Of Seats, N.E.S.	1,254,306,169
93100	Special Transactions And Commodities Not Classified According To Kind	946,696,047
76431	Transmission Apparatus For Radiotelephony, Radiotelegraphy, Radio Broadcasting Or Television, Not Incorporating Reception Apparatus	865,275,101
75997	Parts Of Automatic Data Processing Machines And Units Thereof, Magnetic Or Optical Readers, And Machines For Transcribing And Processing Data, N.E.S.	533,362,327
76211	Radiobroadcast Receivers, Combined With Sound Recording Or Reproducing Apparatus, Operating With An External Power Source As In Motor Vehicles	507,720,579
84260	Trousers, Bib And Brace Overalls, Breeches And Shorts, Of Woven Textile Fabrics, Women's Or Girls'	481,773,389
84140	Trousers, Bib And Brace Overalls, Breeches And Shorts Of Woven Textile Materials, Men's Or Boys'	443,521,880
75230	Digital Processing Units Whether Or Not Presented With The Rest Of The System Which May Contain Storage Units, Input Units Or Output Units	403,236,432
87325	Speedometers And Tachometers; Stroboscopes	400,787,107

Laredo, Texas

Code	SITC Description	Total (in Dollars)
78120	Motor Vehicles For The Transport Of Persons (Other Than Public Transport), N.E.S.	\$1,919,003,543
78219	Motor Vehicles For The Transport Of Goods, N.E.S.	1,493,279,019
75230	Digital Processing Units Whether Or Not Presented With The Rest Of The System Which May Contain Storage Units, Input Units Or Output Units	1,454,207,895
71322	Reciprocating Piston Engines Of A Cylinder Capacity Exceeding 1,000 cc	994,124,363
78320	Road Tractors For Semi-Trailers	873,911,620
75997	Parts Of Automatic Data Processing Machines And Units Thereof, Magnetic Or Optical Readers, And Machines For Transcribing And Processing Data, N.E.S.	831,684,647
77313	Ignition Wiring Sets And Other Wiring Sets Of A Kind Used In Vehicles, Aircraft Or Ships	731,007,522
93100	Special Transactions And Commodities Not Classified According To Kind	628,915,365
78439	Parts And Accessories, N.E.S., For Tractors, Motor Cars And Other Motor Vehicles, Trucks, Public-Transport Vehicles And Road Motor Vehicles, N.E.S.	607,508,427
84140	Trousers, Bib And Brace Overalls, Breeches And Shorts Of Woven Textile Materials, Men's Or Boys'	561,518,212

Naco, Arizona

Code	SITC Description	Total (in Dollars)
68212	Refined Copper	\$115,544,129
68241	Refined Copper Wire	28,247,044
69979	Articles Of Aluminum, N.E.S.	19,397,737
77258	Electric Plugs And Sockets, For Voltages Not Exceeding 1,000 Volts	13,304,126
77314	Electric Conductors, For A Voltage Not Exceeding 80 Volts, N.E.S.	10,453,091
93100	Special Transactions And Commodities Not Classified According To Kind	5,126,107
28821	Copper Waste And Scrap	2,267,944
68211	Unrefined Copper (Including Blister Copper But Excluding Cement Copper); Copper Anodes For Electrolytic Refining	2,107,675
77232	Fixed Electrical Resistors, N.E.S	1,478,889
68231	Refined Copper Bars, Rods And Profiles	1,393,138

Nogales, Arizona

Code	SITC Description	Total (in Dollars)
78120	Motor Vehicles For The Transport Of Persons (Other Than Public Transport), N.E.S.	\$1,372,425,836
05440	Tomatoes, Fresh Or Chilled	330,868,390
77313	Ignition Wiring Sets And Other Wiring Sets Of A Kind Used In Vehicles, Aircraft Or Ships	326,812,568
76431	Transmission Apparatus For Radiotelephony, Radiotelegraphy, Radiobroadcasting Or Television, Not Incorporating Reception Apparatus	321,395,383
03611	Shrimps And Prawns, Frozen	310,573,455
05459	Vegetables, N.E.S., Fresh Or Chilled	269,536,358
77258	Electric Plugs And Sockets, For Voltages Not Exceeding 1,000 Volts	238,234,067
93100	Special Transactions And Commodities Not Classified According To Kind	217,069,272
05751	Grapes, Fresh	210,560,724
74489	Lifting, Handling, Loading Or Unloading Machinery, N.E.S.	165,184,695

Otay Mesa, California

Code	SITC Description	Total (in Dollars)
77611	Television Picture Tubes, Color	\$394,724,941
89399	Articles Of Plastics, N.E.S.	169,062,575
77641	Digital Monolithic Integrated Units	127,809,915
09850	Soups And Broths And Preparations Therefor	104,381,974

64211	Cartons, Boxes And Cases Of Corrugated Paper Or Paperboard	99,168,673
75997	Parts Of Automatic Data Processing Machines And Units Thereof, Magnetic Or Optical Readers, And Machines For Transcribing And Processing Data, N.E.S.	72,141,859
71499	Parts For Gas Turbines, N.E.S.	72,079,203
69969	Articles Of Iron Or Steel, N.E.S.	63,752,553
24840	Wood Of Nonconiferous Species, Sawn Or Chipped Lengthwise, Sliced Or Peeled, Whether Or Not Planed, Sanded Or Finger-Jointed, Over 6 mm Thick	56,570,340
77643	Nondigital Monolithic Integrated Units	55,445,865

Phoenix, Arizona

Code	SITC Description	Total (in Dollars)
79240	Airplanes And Other Aircraft, Mechanically Propelled (Other Than Helicopters), Of An Unladen Weight Exceeding 15,000 kg	\$442,827,824
93100	Special Transactions And Commodities Not Classified According To Kind	75,699,612
77261	Boards, Panels, Consoles And Other Bases, For Electric Control Or Distribution Of Electricity, For A Voltage Not Exceeding 1,000 Volts	19,286,285
79295	Parts Of Airplanes Or Helicopters, N.E.S.*	19,070,463
68123	Platinum And Platinum Alloys, Unwrought Or In Powder Form	17,177,523
87411	Direction Finding Compasses, Other Navigational Instruments And Appliances	12,803,992
76431	Transmission Apparatus For Radiotelephony, Radiotelegraphy, Radiobroadcasting Or Television, Not Incorporating Reception Apparatus	8,709,186
69752	Sanitary Ware And Parts Thereof, N.E.S., Of Copper	6,758,872
76493	Parts Of Television Receivers, Radiobroadcast Receivers, Transmission Apparatus For Radio Telephony, Telegraphy, Broadcasting Or Television, Etc.	5,019,601
77643	Nondigital Monolithic Integrated Units	5,009,436

N.E.S. = not elsewhere specified

San Diego, California

Code	SITC Description	Total (in Dollars)
78219	Motor Vehicles For The Transport Of Goods, N.E.S.	\$181,509,461
64110	Newsprint In Rolls Or Sheets	39,772,599
78120	Motor Vehicles For The Transport Of Persons (Other Than Public Transport), N.E.S.	33,788,197
05711	Oranges, Fresh Or Dried	23,552,913
05797	Avocados, Guavas, Mangoes And Mangosteens, Fresh Or Dried	19,064,000
66122	Portland Cement	18,443,267
69119	Metal Structures And Parts, N.E.S., Of Iron Or Steel	12,359,028

79319	Noninflatable Rowing Boats, Canoes And Vessels For Pleasure Or Sports, N.E.S.	9,667,657
56299	Fertilizers, N.E.S. (Imports Only)	7,903,004
64248	Paper And Paperboard Used For Writing, Printing Or Other Graphic Purposes, N.E.S.	7,648,499

San Luis, Arizona

Code	SITC Description	Total (in Dollars)
76110	TV Receivers, Color, Including Video Monitors & Projectors), Whether Or Not Incorporating Radiobroadcast Receivers Or Sound Or Video Recording Or Reproducing Apparatus	\$205,658,909
76381	Video Recording Or Reproducing Apparatus, Whether Or Not Incorporating A Video Tuner	125,686,481
84260	Trousers, Bib And Brace Overalls, Breeches And Shorts, Of Woven Textile Fabrics, Women's Or Girls'	70,482,763
76422	Loudspeakers, Mounted In Their Enclosures	53,918,933
93100	Special Transactions And Commodities Not Classified According To Kind	49,639,440
76281	Radiobroadcast Receivers, Combined With Sound Recording Or Reproducing Apparatus, Etc., N.E.S.	49,177,794
75230	Digital Processing Units Whether Or Not Presented With The Rest Of The System Which May Contain Storage Units, Input Units Or Output Units	35,943,451
05451	Onions And Shallots, Fresh Or Chilled	31,419,215
77121	Static Converters (e.g., Rectifiers)	28,516,338
78629	Trailers And Semi-Trailers For The Transport Of Goods, N.E.S.	27,080,129

San Ysidro, California

Code	SITC Description	Total (in Dollars)
69979	Articles Of Aluminum, N.E.S.	\$2,473,319
69969	Articles Of Iron Or Steel, N.E.S.	649,306
62999	Articles Of Unhardened Noncellular Vulcanized Rubber, N.E.S.	416,585
76110	TV Receivers, Color, Including Video Monitors & Projectors), Whether Or Not Incorporating Radiobroadcast Receivers Or Sound Or Video Recording Or Reproducing Apparatus	247,590
89329	Builders' Ware Of Plastics, N.E.S.	63,873
93100	Special Transactions And Commodities Not Classified According To Kind	47,869
84425	Skirts And Divided Skirts, Of Knitted Or Crocheted Textile Fabrics, Women's Or Girls'	8,417
74564	Agricultural Or Horticultural Appliances For Projecting, Dispersing Or Spraying Liquids Or Powders	5,122
74790	Parts For Taps, Cocks, Valves And Similar Appliances For Pipes, Boiler Shells, Tanks, Etc.	3,149
57990	Waste, Parings And Scrap, Of Plastics, N.E.S.	2,169

Tecate, California

Code	SITC Description	Total (in Dollars)
84540	T-shirts, Singlets (Undershirts), Tank Tops And Similar Garments, Of Knitted Or Crocheted Textile Fabrics	\$66,219,517
69911	Padlocks And Locks (Key, Combination, Etc.), Clasps And Frames With Clasps And Locks, Of Base Metal; Keys For The Foregoing Articles, Of Base Metal	54,230,235
89399	Articles Of Plastics, N.E.S.	19,708,264
65613	Narrow Woven Fabrics, N.E.S.	18,928,661
97101	Gold (Including Gold Plated With Platinum), Nonmonetary, Unwrought Or In Semimanufactured Forms Or In Powder Form	15,083,079
89890	Parts And Accessories Of Musical Instruments (Mechanisms For Music Boxes, Perforated Cards, Etc.); Metronomes, Tuning Forks And Pitch Pipes	9,227,734
89319	Articles For The Conveyance Or Packing Of Goods, N.E.S., Of Plastics; Stoppers, Lids, Caps And Other Closures, Of Plastics	7,828,184
24840	Wood Of Nonconiferous Species, Sawn Or Chipped Lengthwise, Sliced Or Peeled, Whether Or Not Planed, Sanded Or Finger-Jointed, Over 6 mm Thick	7,101,626
68252	Copper Alloy Plates, Sheets And Strip, Over .15 mm Thick	6,442,814
64211	Cartons, Boxes And Cases Of Corrugated Paper Or Paperboard	6,275,844

Tucson, Arizona

Code	SITC Description	Total (in Dollars)
79230	Airplanes And Other Aircraft, Mechanically Propelled (Except Helicopters), Of An Unladen Weight Exceeding 2,000 kg But Not Exceeding 15,000 kg	\$371,436,000
93100	Special Transactions And Commodities Not Classified According To Kind	300,206,566
97101	Gold (Including Gold Plated With Platinum), Nonmonetary, Unwrought Or In Semimanufactured Forms Or In Powder Form	2,721,997
79295	Parts Of Airplanes Or Helicopters, N.E.S.	463,162
77220	Printed Circuits	134,455
89731	Articles Of Jewelry And Parts Thereof, Of Precious Metal Or Metals Clad With Precious Metals (Except Watches And Watch Cases)	116,646
71631	Electric Motors Of An Output Exceeding 37.5 W (Including Universal AC/DC Motors), AC	80,000
78120	Motor Vehicles For The Transport Of Persons (Other Than Public Transport), N.E.S.	73,325
89843	Magnetic Tapes For Sound Recording Or Similar Recording Of Other Phenomena, Of A Width Exceeding 4 Mm But Not Exceeding 6.5 Mm	61,982
77885	Parts Of Electric Sound Or Visual Signaling Apparatus, N.E.S. (Including Parts Of Indicator Panels, Burglar And Fire Alarms)	56,594

Import Trade Activity by City, 1999

Calexico, California

Code	SITC Description	Total (in Dollars)
69979	Articles Of Aluminum, N.E.S.	\$26,065
81311	Chandeliers And Other Electric Ceiling And Wall Lighting Fittings (Except Those For Lighting Of Public Open Spaces And Thoroughfares)	14,201
69969	Articles Of Iron Or Steel, N.E.S.	5,353
74593	Parts (Cylinders, Etc.) For Calendering Or Other Rolling Machines (Other Than For Metals Or Glass)	3,627
62999	Articles Of Unhardened Noncellular Vulcanized Rubber, N.E.S.	433

Douglas, Arizona

Code	SITC Description	Total (in Dollars)
78432	Other Parts And Accessories Of Motor Vehicle Bodies Of Headings 8701 To 8705 (Including Cabs)	\$123,630,811
68241	Refined Copper Wire	95,433,441
75997	Parts Of Automatic Data Processing Machines And Units Thereof, Magnetic Or Optical Readers, And Machines For Transcribing And Processing Data, N.E.S.	92,559,075
93100	Special Transactions And Commodities Not Classified According To Kind	32,168,450
28781	Molybdenum Ores And Concentrates, Roasted	25,313,025
00119	Bovine Animals, Other Than Purebred Breeding Animals, Live	18,005,220
77129	Parts Of Electric Power Machinery (Other Than Rotating Electric Power Generating Machinery And Equipment), And Parts Thereof	12,903,766
65893	Life Jackets And Life Belts And Other Made-up Articles, N.E.S., Of Textile Materials	10,153,996
84260	Trousers, Bib And Brace Overalls, Breeches And Shorts, Of Woven Textile Fabrics, Women's Or Girls'	8,349,940
77245	Lightning Arresters, Voltage Limiters And Surge Suppressors For A Voltage Exceeding 1,000 Volts	7,886,126

El Paso, Texas

Code	SITC Description	Total (in Dollars)
77313	Ignition Wiring Sets And Other Wiring Sets Of A Kind Used In Vehicles, Aircraft Or Ships	\$2,445,774,344
76110	TV Receivers, Color, Incl Video Monitors & Projectors), Whet Or Nt Incorp Radiobroadcast Receivers Or Sound Or Video Recordng Or Reproducing Apparatus	1,652,759,990
82119	Parts Of Seats, N.E.S.	1,254,306,169
93100	Special Transactions And Commodities Not Classified According To Kind	946,696,047
76431	Transmission Apparatus For Radiotelephony, Radiotelegraphy, Radiobroadcasting Or Television, Not Incorporating Reception Apparatus	865,275,101

75997	Parts Of Automatic Data Processing Machines And Units Thereof, Magnetic Or Optical Readers, And Machines For Transcribing And Processing Data, N.E.S.	533,362,327
76211	Radiobroadcast Receivers, Combined With Sound Recording Or Reproducing Apparatus, Operating With An External Power Source As In Motor Vehicles	507,720,579
84260	Trousers, Bib And Brace Overalls, Breeches And Shorts, Of Woven Textile Fabrics, Women'S Or Girls'	481,773,389
84140	Trousers, Bib And Brace Overalls, Breeches And Shorts Of Woven Textile Materials, Men'S Or Boys'	443,521,880
75230	Digital Processng Units Whether Or Not Presented With The Rest Of The System Which May Contain Storage Units, Input Units Or Output Units	403,236,432

Laredo, Texas

Code	SITC Description	Total (in Dollars)
78120	Motor Vehicles For The Transport Of Persons (Other Than Public Transport), N.E.S.	\$5,842,410,210
78219	Motor Vehicles For The Transport Of Goods, N.E.S.	3,646,952,730
75230	Digital Processng Units Whether Or Not Presented With The Rest Of The System Which May Contain Storage Units, Input Units Or Output Units	1,454,207,895
71322	Reciprocating Piston Engines Of A Cylinder Capacity Exceeding 1,000 Cc	994,124,363
78320	Road Tractors For Semi-Trailers	873,911,620
75997	Parts Of Automatic Data Processing Machines And Units Thereof, Magnetic Or Optical Readers, And Machines For Transcribing And Processing Data, N.E.S.	831,684,647
77313	Ignition Wiring Sets And Other Wiring Sets Of A Kind Used In Vehicles, Aircraft Or Ships	731,007,522
93100	Special Transactions And Commodities Not Classified According To Kind	628,915,365
78439	Parts And Accessories, N.E.S., For Tractors, Motor Cars And Other Motor Vehicles, Trucks, Public-Transport Vehicles And Road Motor Vehicles, N.E.S.	607,508,427
84140	Trousers, Bib And Brace Overalls, Breeches And Shorts Of Woven Textile Materials, Men'S Or Boys'	561,518,212

Naco, Arizona

Code	SITC Description	Total (in Dollars)
68212	Refined Copper	\$115,544,129
68241	Refined Copper Wire	28,247,044
69979	Articles Of Aluminum, N.E.S.	19,397,737
77258	Electric Plugs And Sockets, For Voltages Not Exceeding 1,000 Volts	13,304,126
77314	Electric Conductors, For A Voltage Not Exceeding 80 Volts, N.E.S.	10,453,091
93100	Special Transactions And Commodities Not Classified According To Kind	5,126,107
28821	Copper Waste And Scrap	2,267,944

68211	Unrefined Copper (Including Blister Copper But Excluding Cement Copper); Copper Anodes For Electrolytic Refining	2,107,675
77232	Fixed Electrical Resistors, N.E.S	1,478,889
68231	Refined Copper Bars, Rods And Profiles	1,393,138

Nogales, Arizona

Code	SITC Description	Total (in Dollars)
78120	Motor Vehicles For The Transport Of Persons (Other Than Public Transport), N.E.S.	\$1,372,425,836
05440	Tomatoes, Fresh Or Chilled	330,868,390
77313	Ignition Wiring Sets And Other Wiring Sets Of A Kind Used In Vehicles, Aircraft Or Ships	326,812,568
76431	Transmission Apparatus For Radiotelephony, Radiotelegraphy, Radiobroadcasting Or Television, Not Incorporating Reception Apparatus	321,395,383
03611	Shrimps And Prawns, Frozen	310,573,455
05459	Vegetables, N.E.S., Fresh Or Chilled	269,536,358
77258	Electric Plugs And Sockets, For Voltages Not Exceeding 1,000 Volts	238,234,067
93100	Special Transactions And Commodities Not Classified According To Kind	217,069,272
05751	Grapes, Fresh	210,560,724
74489	Lifting, Handling, Loading Or Unloading Machinery, N.E.S.	165,184,695

Otay Mesa, California

Code	SITC Description	Total (in Dollars)
76110	TV Receivers, Color, Including Video Monitors And Projectors), Whether Or Not Incorporating Radiobroadcast Receivers Or Sound Or Video Recording Or Reproducing Apparatus	\$1,626,029,084
75260	Input Or Output Units Whether Or Not Presented With The Rest Of A System And Whether Or Not Containing Storage Units In One Housing	855,107,697
93100	Special Transactions And Commodities Not Classified According To Kind	433,174,328
77812	Electric Accumulators (Storage Batteries)	333,140,174
76431	Transmission Apparatus For Radiotelephony, Radiotelegraphy, Radiobroadcasting Or Television, Not Incorporating Reception Apparatus	311,572,593
87229	Instruments And Appliances Used In Medical, Surgical Or Veterinary Sciences, N.E.S.	240,227,356
78629	Trailers And Semi-Trailers For The Transport Of Goods, N.E.S.	177,178,848
77121	Static Converters (e.g., Rectifiers)	164,167,141
76493	Parts Of Television Receivers, Radiobroadcast Receivers, Transmission Apparatus For Radio Telephony, Telegraphy, Broadcasting Or Television, Etc.	128,905,258
05440	Tomatoes, Fresh Or Chilled	124,288,938

Phoenix, Arizona

Code	SITC Description	Total (in Dollars)
79240	Airplanes And Other Aircraft, Mechanically Propelled (Other Than Helicopters), Of An Unladen Weight Exceeding 15,000 kg	\$442,827,824
93100	Special Transactions And Commodities Not Classified According To Kind	75,699,612
77261	Boards, Panels, Consoles And Other Bases, For Electric Control Or Distribution Of Electricity, For A Voltage Not Exceeding 1,000 Volts	19,286,285
79295	Parts Of Airplanes Or Helicopters, N.E.S.	19,070,463
68123	Platinum And Platinum Alloys, Unwrought Or In Powder Form	17,177,523
87411	Direction Finding Compasses, Other Navigational Instruments And Appliances	12,803,992
76431	Transmission Apparatus For Radiotelephony, Radiotelegraphy, Radiobroadcasting Or Television, Not Incorporating Reception Apparatus	8,709,186
69752	Sanitary Ware And Parts Thereof, N.E.S., Of Copper	6,758,872
76493	Parts Of Television Receivers, Radiobroadcast Receivers, Transmission Apparatus For Radio Telephony, Telegraphy, Broadcasting Or Television, Etc.	5,019,601
77643	Nondigital Monolithic Integrated Units	5,009,436

San Diego, California

Code	SITC Description	Total (in Dollars)
78120	Motor Vehicles For The Transport Of Persons (Other Than Public Transport), N.E.S.	\$3,003,558,739
78219	Motor Vehicles For The Transport Of Goods, N.E.S.	181,509,461
64110	Newsprint In Rolls Or Sheets	39,772,599
05711	Oranges, Fresh Or Dried	23,552,913
05797	Avocados, Guavas, Mangoes And Mangosteens, Fresh Or Dried	19,064,000
66122	Portland Cement	18,443,267
69119	Metal Structures And Parts, N.E.S., Of Iron Or Steel	12,359,028
79319	Noninflatable Rowing Boats, Canoes And Vessels For Pleasure Or Sports, N.E.S.	9,667,657
56299	Fertilizers, N.E.S. (Imports Only)	7,903,004
64248	Paper And Paperboard Used For Writing, Printing Or Other Graphic Purposes, N.E.S.	7,648,499

San Luis, Arizona

Code	SITC Description	Total (in Dollars)
76110	TV Receivers, Color, Including Video Monitors & Projectors), Whether Or Not Incorporating Radiobroadcast Receivers Or Sound Or Video Recording Or Reproducing Apparatus	\$205,658,909
76381	Video Recording Or Reproducing Apparatus, Whether Or Not Incorporating A Video Tuner	125,686,481

84260	Trousers, Bib And Brace Overalls, Breeches And Shorts, Of Woven Textile Fabrics, Women's Or Girls'	70,482,763
76422	Loudspeakers, Mounted In Their Enclosures	53,918,933
93100	Special Transactions And Commodities Not Classified According To Kind	49,639,440
76281	Radiobroadcast Receivers, Combined With Sound Recording Or Reproducing Apparatus, Etc., N.E.S.	49,177,794
75230	Digital Processing Units Whether Or Not Presented With The Rest Of The System Which May Contain Storage Units, Input Units Or Output Units	35,943,451
05451	Onions And Shallots, Fresh Or Chilled	31,419,215
77121	Static Converters (e.g., Rectifiers)	28,516,338
78629	Trailers And Semi-Trailers For The Transport Of Goods, N.E.S.	27,080,129

San Ysidro, California

Code	SITC Description	Total (in Dollars)
69979	Articles Of Aluminum, N.E.S.	\$2,473,319
69969	Articles Of Iron Or Steel, N.E.S.	649,306
62999	Articles Of Unhardened Noncellular Vulcanized Rubber, N.E.S.	416,585
76110	TV Receivers, Color, Including Video Monitors And Projectors), Whether Or Not Incorporating Radiobroadcast Receivers Or Sound Or Video Recording Or Reproducing Apparatus	247,590
89329	Builders' Ware Of Plastics, N.E.S.	63,873
93100	Special Transactions And Commodities Not Classified According To Kind	47,869
84425	Skirts And Divided Skirts, Of Knitted Or Crocheted Textile Fabrics, Women's Or Girls'	8,417
74564	Agricultural Or Horticultural Appliances For Projecting, Dispersing Or Spraying Liquids Or Powders	5,122
74790	Parts For Taps, Cocks, Valves And Similar Appliances For Pipes, Boiler Shells, Tanks, Etc.	3,149
57990	Waste, Parings And Scrap, Of Plastics, N.E.S.	2,169

Tecate, California

Code	SITC Description	Total (in Dollars)
84540	T-shirts, Singlets (Undershirts), Tank Tops And Similar Garments, Of Knitted Or Crocheted Textile Fabrics	\$100,777,818
69911	Padlocks And Locks (Key, Combination, Etc.), Clasps And Frames With Clasps And Locks, Of Base Metal; Keys For The Foregoing Articles, Of Base Metal	60,366,765
11230	Beer Made From Malt (Including Ale, Stout And Porter)	46,061,730
69916	Mountings, Fittings And Similar Articles For Buildings, N.E.S., Of Base Metal	31,732,518
93100	Special Transactions And Commodities Not Classified According To Kind	25,917,227

76426	Electric Sound Amplifier Sets	17,200,533
89826	Musical Instruments, N.E.S. (Excluding Keyboard Instruments Except Accordions), The Sound Of Which Is Produced Or Must Be Amplified Electrically	16,553,167
89731	Articles Of Jewelry And Parts Thereof, Of Precious Metal Or Metals Clad With Precious Metals (Except Watches And Watch Cases)	15,930,167
82159	Furniture, N.E.S., Of Wood, N.E.S. (Other Than Of A Kind Used In Offices, Kitchens, Or Bedrooms)	15,502,325
74271	Pumps For Liquids, N.E.S.	8,873,367

Tucson, Arizona

Code	SITC Description	Total (in Dollars)
79230	Airplanes And Other Aircraft, Mechanically Propelled (Except Helicopters), Of An Unladen Weight Exceeding 2,000 kg But Not Exceeding 15,000 kg	\$371,436,000
93100	Special Transactions And Commodities Not Classified According To Kind	300,206,566
97101	Gold (Including Gold Plated With Platinum), Nonmonetary, Unwrought Or In Semimanufactured Forms Or In Powder Form	2,721,997
79295	Parts Of Airplanes Or Helicopters, N.E.S.	463,162
77220	Printed Circuits	134,455
89731	Articles Of Jewelry And Parts Thereof, Of Precious Metal Or Metals Clad With Precious Metals (Except Watches And Watch Cases)	116,646
71631	Electric Motors Of An Output Exceeding 37.5 W (Including Universal AC/DC Motors), AC	80,000
78120	Motor Vehicles For The Transport Of Persons (Other Than Public Transport), N.E.S.	73,325
89843	Magnetic Tapes For Sound Recording Or Similar Recording Of Other Phenomena, Of A Width Exceeding 4 mm But Not Exceeding 6.5 mm	61,982
77885	Parts Of Electric Sound Or Visual Signaling Apparatus, N.E.S. (Including Parts Of Indicator Panels, Burglar And Fire Alarms)	56,594

Source: The following export and import data was provided by the Border Trade Institute, Texas A & M International University (April 1999)

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