The Five Ms

Economic Development in El Paso

Medicine - Military - Movement - Manufacturing - Mexico

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"The Five Ms"
Economic Development in El Paso
2008

"Right now, El Paso is the best place to be. With a clear vision built on our global strengths, our region is creating more, sustainable, high wage jobs than any time since the 1950's. During our 1999 Economic Summit our region was challenged to answer the question: "What is our best strategy to win in a global economy?"

The answer is the "Five Ms"—***Medicine, Military, Movement, Manufacturing and Mexico.***

Working on strengths that have defined us for years, with increasing cooperation between business, government and education, we are now building basic infrastructure, competitive advantages, and consensus strategies to make our regional economic clusters even more valuable. At Ft. Bliss, "Future Combat Systems" promises to re-define a technology driven battlefield essential to winning the conflicts of the 21st Century. At our Medical Center of the Americas, creation of three new Centers of Excellence in infectious disease, diabetes and neuroscience will put us on the map as the center of Hispanic health education, research and service.

Downtown revitalization, state of the art technologies to enhance secure free trade, emerging renewable energies and valuable manufacturing jobs returning from China highlight our region as the best logistical platform to serve the growing population of the Americas.

To truly realize our potential in a 21st Century future, we must strengthen key institutions, especially in higher education; to better integrate the hemisphere's most vibrant regional economy, we must invest in infrastructure and technology. And we must confidently

redefine regional public and private sector leadership with values based on service, honesty and vigorous competition.

The following report on the "Five Ms" details a clear vision around clusters of value in our unique three state, two nation region. We outline initiatives that our community needs to take to make the most of our competitive advantages.

Let us know what you think!

Very truly yours,

Senator Eliot Shapleigh

Medicine

"Medical Center of the Americas"—*The Capital of Hispanic Health*

M.D. Anderson and Sloan-Kettering are world-renowned for cancer research and treatment. The Houston-based Texas Heart Institute has made a name for itself in cardiac care. These institutions have harnessed the expertise to become world-class institutions, attracting top researchers and providing unparalleled care. What will be the medical niche of El Paso's health professionals?

Let's imagine that, in August 2009, the Medical Center of the Americas opens its door to 40 medical school students who will soon be known as the hemisphere's best doctors in Hispanic health.[1] Students train at R.E. Thomason General Hospital, the largest public hospital on the U.S.-Mexico Border, and the state-of-the-art El Paso Children's Hospital. Residents learn innovations in neurosciences and trauma care at William Beaumont Army Medical Center. Candidates for UTEP's Master of Public Health degree work with interns from Silva Magnet High School to conduct research in environmental and behavioral health. Regional law enforcement, including the local police department, county sheriff, FBI, and Border Patrol have created the best forensic lab in Texas. Finally, community leaders invest in a four-year dental school to address significant disparities in dental health along the Border.

With vision, leadership and resources, El Paso will be the Capital of Hispanic health. Our city has the opportunity to lead the nation by developing the first American medical center to focus education, research, and treatment on the opportunities and challenges unique to Hispanics in the United States.

El Paso is the logical place to realize this vision. As the second largest American city on the U.S.-Mexico Border, more than 80

percent of El Paso residents are Hispanic, compared with 32 percent statewide[2] and 12.5 percent nationally.[3] Together, El Paso and its Mexican neighbor, Ciudad Juarez, comprise the world's largest bi-national metroplex, with more than 2.2 million residents.[4] El Paso also has a formidable medical presence. The city is home to the largest public hospital located directly on the U.S.-Mexico Border, eight private hospital systems, a world-class Army medical facility, and an expanding academic medical center.[5] In the 2008 U.S. Department of Defense budget, $78.5 million was earmarked for planning and design of a new 150-acre William Beaumont Army Medical Center campus at Ft. Bliss.[6] When combined, these facilities represent the largest health-related foundation along the Border. To reach our full potential, we must fuse our resources and expertise into a "Medical Center of the Americas."

Hispanic Health Care Challenges

Hispanics living in the United States face a distinct set of health care challenges. Mexican Americans have nearly twice the rate of diabetes as non-Hispanic Whites. Overall, about 9.5 percent of Hispanic/Latino Americans 20 years or older have diabetes.[7] In addition, within the Hispanic/Latino American population, diabetes is more prevalent in women than it is in men.[8] Obesity is also more common among Hispanics than in the general population.

Hispanic women's health problems also need more research and attention. Among breast cancer patients, Hispanic women tend to have larger tumors than non-Hispanic Whites.[9] Hispanic women are also 1.5 times more likely to die of cervical cancer than non-Hispanic White women.[10] In addition, 5.3 percent of Hispanic women receive late or no prenatal care compared to 2.1 percent of non-Hispanic White women.[11]

Hispanics disproportionately experience the harms of environmental contaminants. The lack of safe drinking water, for example, is a source of disease that has hit Hispanics particularly hard. Nationwide, it is estimated that bacteria and parasites in

drinking water affect more than 16.4 million people each year.[12] Studies in New York and Los Angeles have shown that Hispanics suffer higher rates of some water-borne diseases than other ethnic groups.[13]

Lead poisoning also poses a disproportionate threat to Hispanics. Compared to non-Hispanic White children, twice as many Hispanic children have elevated blood lead levels high enough to be considered a risk of lead poisoning by the Centers for Disease Control and Prevention (CDC).[14] Lead poisoning can stunt brain development in children, leading to IQ deficits and cognitive problems.

Language barriers, low rates of health insurance coverage, and limited knowledge of health care services also contribute to health disparities among Hispanic populations. For example, nationwide, Hispanics have the highest uninsured rates of any group. In 2002, 43 percent of Hispanics in Texas were uninsured.[15] Overall, 35 percent of El Pasoans lack health insurance, making it the most uninsured large city in the United States.[16] Recent budget cuts to Medicaid and CHIP have made these already under-utilized safety nets even less available to El Paso's needy.

Research is required to uncover the roots of these demographic discrepancies. Medical education must focus on disparities in health care and teach the next generation of doctors the skills and competencies they will need to treat patients of various cultural backgrounds. Most of all, developing new community-based doctors in the Border region will address the least medically served population in the nation. Basing this work in the Border region, with its large Hispanic population, is a natural choice.

El Paso Medical Community Overview

El Paso is already a health care hub for much of the Southwest U.S. and Mexico. The city is home to R.E. Thomason General Hospital, a 327-bed public hospital[17] with an operating budget of $311.3 million[18]—the largest public hospital facility on the Border.

The William Beaumont Army Medical Center, near Fort Bliss, has 523 beds.[19] In addition to several smaller, private specialty and rehabilitation hospitals, four large private hospital systems are based in El Paso: Del Sol Medical Center, Las Palmas Medical Center, Providence Memorial Hospital, and Sierra Medical Center.

Also based in El Paso is the Texas Tech University Health Sciences Center, which employs about 1,000 faculty and staff.[20] It is an active research center, a busy metropolitan care facility, and a focal point for Border health care. In 2007, Texas Tech El Paso had 23,000 hospital admissions, 62,000 emergency room visits, and a total of 220,312 clinic visits in 13 specialty areas,[21] and the Maxine T. Silva Magnet High School of Health Care Professions in the El Paso Impendent School District trains the next generation of health leaders. In 2006, El Paso's medical institutions employed over 18,000 health professionals and support staff.[22]

In recent years, El Paso's health care community expanding tremendously.

In 2007, R.E. Thomason General Hospital began planning a $139 million renovation of its facility. The renovation includes improvements to Thomason's Emergency Department and Level I Trauma Center, the development of a Cardiovascular Services Program, construction of a new in-patient Surgery Center, construction of a new Infusion Center, and the conversion of all Thomason facilities to private rooms. The project is scheduled to begin in summer 2008 and is expected to be complete by 2011.[23]

Another great success has been voter approval, in November 2007, of a bond for a separately licensed 140-bed children's hospital, slated to open in 2011, at R.E. Thomason General Hospital . In turn, R.E. Thomason General Hospital has committed to invest $30 million over the next several years to recruit pediatricians and pediatric sub-specialists for the new facility. Private investment has spurred development of nearby support services, such as physician offices, lab space, restaurants, and shopping.

At the University of Texas at El Paso, faculty and students are conducting cutting-edge research in medicine and biosciences. Its research centers include the Border Biomedical Research Center (BBRC), Hispanic Health Disparity Research Center (HHDRC), and the W.M. Keck Center for 3D Innovations.[24] The BBRC is a center focused on pathobiology research and heath research in the El Paso-Juarez region. The HHDRC is a partnership with the UT Houston School of Public Health and is focused on mentoring and training health professional through collaboration across academic institutions. And the Keck Center works on research related to biomedical modeling and manufacturing, cardiovascular hemodynamics, and tissue engineering.

Furthermore, UTEP Allied Health and School of Nursing, which joined the UTEP family in 1976, contributes greatly to El Paso's medical community.[25] It has grown into a nationally recognized school with bachelor's and master's programs that reach more than 560 students each year. The school annually graduates more than 130 students, of which about 60 percent stay in El Paso. In addition to UTEP, El Paso Community College has had its own nursing program since 1978.[26] EPCC nursing has a curriculum designed to promote clinical and cultural competence among its students to meet the needs of the diverse El Paso community. And more recently, Texas Tech University's School of Nursing has announced it may soon expand in El Paso with the addition of a Second Degree Accelerated Nursing Program.[27]

Today, we also celebrate El Paso's Paul L. Foster School of Medicine at Texas Tech University.

When we began to plan our legislative agenda for the 80th legislative session, El Pasoans agreed that the number one priority for our community was to secure $48 million in funding to hire first- and second-year faculty for the Texas Tech El Paso Medical School. Since 1992, we have been moving forward with our Medical Center of the Americas (MCA) concept—a world class health education and research center dedicated to Hispanic health,

anchored by the first new medical school in the United States in 30 years.

In August 2007, Western Refining CEO, Paul Foster, donated $50 million to Texas Tech University to help realize our dream of a first-class, four-year medical school.[28] This endowment will allow the Paul L. Foster School of Medicine to attract top researchers and expert faculty.

Today, with $48 million appropriated during this past legislative session for the first and second-year faculty at the medical school, the first phase of development is complete and the school is accredited. Moreover, four research "Centers of Excellence"—focused on infectious diseases, diabetes, and neurosciences—are in development at the medical school. The fourth center is to be determined.

The inaugural class is expected to matriculate in August 2009.[29]

In addition, as noted earlier, El Paso is on track to build a new William Beaumont Army Medical Center at Ft. Bliss.[30] The funds, included in the 2009 Military Construction and Veterans Affairs Appropriations Bill, will provide for planning and design of the new 150-acre facility.[31]

The Next Step: Medical Center of the Americas

The Medical Center of the Americas (MCA), founded in November 2006, is a collection of facilities and resources in El Paso, Texas dedicated to health research, health delivery, health education, and economic development.[32] The MCA will be the first comprehensive medical center to focus on health issues specific to Hispanics in the United States.

The MCA master plan is ever-evolving, but currently includes eight existing institutions: R.E. Thomason Hospital; Texas Tech Health Sciences Center; Psychiatric Center; Office of the Medical Examiner and Forensic Laboratory; Texas Department of Human

Services; West Texas Regional Poison Center; Maxine L. Silva Magnet High School of Health Care Professions; and the El Paso City/ County Health Department Administration. The current funding level is about $100,000. The completed campus will cost an estimated $700,000 and will have an operating cost of $130,000 per year.

A top-tier regional MCA will transform the availability of medical services to the El Paso region. Today, doctors are not evenly distributed in Texas, with Hispanic-dominated West Texas facing the greatest shortage of health professionals.

In El Paso, there are roughly 109 physicians per 100,000 residents[33] compared to 256 per 100,000 residents nationwide.[34] In 2007, the area had an estimated 47 primary care physicians per 100,000 residents versus 68 primary care physicians per 100,000 residents statewide.[35] This shortage extends to many other health care disciplines. For example, while Texas had 37 dentists per 100,000 residents in 2007,[36] El Paso had only 17 dentists per 100,000 residents.[37] The Border has been designated as a medically underserved area due to the lack of pharmacists, nurses, and physician's assistants.[38]

While the Texas population is growing quickly, medical school graduation rates have not kept up with this increase. Without a medical school in the Border region, it has been, and will be difficult to attract doctors to this oft-neglected area.

As the only large medical center in the region, El Paso already serves the medical needs of the large Hispanic communities in West Texas, New Mexico, and northern Mexico. With the development of the MCA, a more dedicated focus on Hispanic health challenges will provide immense benefit for the region. Furthermore, El Paso's location allows caregivers and researchers to stay in touch with Hispanic populations and their unique needs. With staff members proficient in Hispanic cultural competency and sensitivity, El Paso's medical facilities would be an excellent base for this research.

The MCA and Foster School of Medicine will bring thousands of medical professionals, researchers, and students to El Paso. In addition, medical facilities will draw additional focused federal grants to support new projects, centers, and research efforts. The new medical school and research center will provide the incentive for biomedical and biotechnology companies to invest in the El Paso medical community. The Paso del Norte region is the obvious location for a medical center that can coordinate health care, education, and research focused on Hispanics. In 1998, our office drafted and passed the Border Health Institute statute to better coordinate and fund health care delivery and research in fields of study affecting the Border region, including Hispanic health, diabetes, infectious diseases, environmental health, and children's health.[39] As mentioned above, the Foster School of Medicine is developing Centers of Excellence focused on these and other areas.

But, our initiative faces competition. In Phoenix, for example, city leaders have collaborated with university officials to plan a biomedical research center and medical school that will put 15,000 students in downtown Phoenix. The new center, a partnership between Arizona State University and the University of Arizona, will be based in a $150 million facility located on a 13-acre tract donated by the city.[40]

In Round Rock, Texas, a $55 million branch of the Texas A&M University System's medical school is on a fast track for construction on a 50-acre site.[41] In 2007, the state legislature provided $9 million in startup funds to the System, to establish third- and fourth-year programs in Round Rock and bring close to 80 medical students into Williamson County hospitals.[42] Local leaders expect the new Round Rock medical school to improve access to health care, and serve as a draw for Central Texas' growing biotechnology and life science industry.[43]

A few miles south, the University of Texas System is conducting a study for a research-focused medical school in Austin.[44] The UT

Southwestern Medical Center at Dallas remains the most logical campus to establish a school in Austin with a comprehensive, first-class portfolio of education and research activities.[45] An Austin school could be a branch of UT Southwestern a partnership between UT Southwestern and UT-Austin, or even a collaboration involving those two and other health campuses in the UT System.[46]

As other cities catch up, we need to act quickly to harness our city's natural advantages to build an expanded medical center in El Paso, and insist on cooperation between public agencies to best serve public goals.

Conclusion

The health challenges facing the Border region offer a preview of future health care challenges facing the entire state. As an integrated international community, the El Paso region provides a unique environment for health research and education with a focus on our multicultural and multi-national population. By building a Medical Center of the Americas anchored by a four-year medical school, world-class research, and expert care, we will attract the best minds in medicine to collaborate on the future of health care not only for the Border region, but also for the state of Texas. El Paso now has the opportunity to move to the forefront of this effort, and thus, to become the Capital of Hispanic Health.

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Military

Ft. Bliss-WSMR-McGregor Range-Holloman
"Crown Jewel of the Department of Defense"

History

In 1848, the U.S. War Department ordered the establishment of a military post in El Paso. Six years later, in 1854, the post was officially named Fort Bliss in honor of Brevet Lt. Col. William Wallace Smith Bliss, General Zachary Taylor's adjutant general during the Mexican-American War.

In 1916, Pancho Villa began leading a series of raids in northern Mexican Cities and the southern United States, including an attack in March of that year on Columbus, N.M. Following the attack, Gen. John Pershing at Fort Bliss was ordered to find Villa. He led forces across the border for 11 months, but was unable to capture Villa, who was later pardoned by the Mexican Government only to be assassinated in Parral, Chihuahua in 1923. During the remainder of the Mexican Revolution, Ciudad Juárez, across from Fort Bliss, was a major location for fighting until Fort Bliss Commander Gen. George Mosley persuaded the commander of Mexican Federal Forces in Juárez to surrender the city, protecting residents on both sides of the border from violence.

Though unable to capture Villa, Gen. Pershing's experience in the pursuit served him well in France during World War I. During that conflict, Fort Bliss became known as a training ground for generals, producing four chiefs of staff—Hugh L. Scott, Peyton C. March, John J. Pershing and John Leonard Hines.

By World War II, Fort Bliss continued to serve as a vital military training ground, this time playing home to the first-of-its-kind anti-aircraft and guided missile battalion. The United States' first air defense missile would be conceived at Fort Bliss in 1944, just

previous to the testing of the atomic bomb, just about 100 miles north of the base.

That tradition continued with the development of the Patriot missile system and, more recently, the Terminal High Altitude Area Defense System—or THAAD—continuing to provide defense of military assets.

Fort Bliss Today

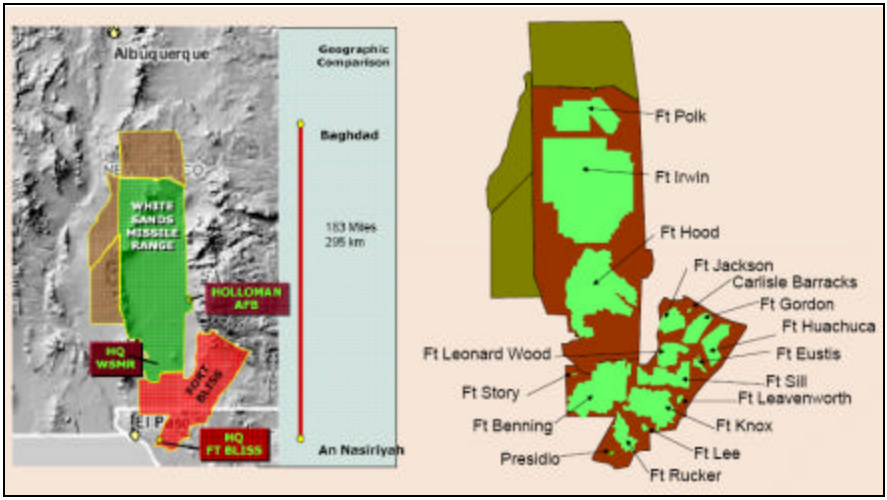
Fort Bliss covers more than a million acres and has a total annual local economic impact of over $2 billion. In cooperation with nearby bases, Fort Bliss has become a major training site, bringing numerous troops and support personnel to the region. With an active duty military force of over 14,000, over 7,400 civilian personnel, almost 30,000 military family members, and 80,000 retirees and their family members, the Fort Bliss community encompasses a population over 135,000. Base Realignment and Closure (BRAC) 2005 and Army Transformation will grow the active duty force to over 30,000 soldiers and 44,000 family members with a corresponding growth in civilian personnel and Department of Defense contractors.

Moreover, the base has unique research and training facilities, where developers of military products can conduct testing of new technologies. Nearby academic and government research facilities supply scientific expertise, and El Paso's extensive transportation infrastructure allows manufacturers to ship products quickly and efficiently. With Fort Bliss' unique military value, El Paso has yet to reach its full potential as a hub for military research and development.

Fort Bliss: A Unique Military Research & Development Site

With 1.1 million acres, the largest block of Department of Defense controlled airspace, the post is bigger than the State of Rhode Island and can accommodate every weapon system in the Army. Combined with land occupied by Holloman Air Force Base and the

White Sands Missile Range, the area is more than 7,000 square miles, slightly smaller than the State of Connecticut.



Source: Ft. Bliss.

The base's unique facilities and instrumentation make it an ideal site for the development, testing, and training of complex military systems. Defense firms regularly use Fort Bliss as a resource for research, development, and testing of new products. Advanced data interoperability allows military researchers and trainers to fuse weapons data, positional information, and range and commercial data to support real-time simulations and generate after-action reports. The region's varied terrain, including mountains, desert and forest, allows rigorous testing in a variety of settings.

With vast military facilities and seasoned researchers at nearby academic centers and laboratories, El Paso is a natural home to defense industry research and development. High-tech military firms can draw from the expertise of the large academic research centers nearby. The University of Texas at El Paso, where annual research expenditures exceed $41 million, has research centers involved in defense research and technology transfer projects. For example, the university's *Institute for Manufacturing & Materials*

Management helps manufacturers convert defense-related technologies to civilian production.

Furthermore, El Paso is a neighbor to New Mexico State University, which had more than $24 million in Defense Department contracts in 2004—including aerospace and missile defense projects. Other nearby laboratories, such as Los Alamos Laboratory, Sandia National Laboratory, and the Army Research Laboratory, have long been critical in U.S. weapon system development.

BRAC 2005

BRAC is the congressionally-authorized process the Department of Defense uses to reorganize its base structure to more efficiently and effectively support our forces, increase operational readiness, and facilitate new ways of doing business. The most recent round of BRAC took place in 2005 and is bringing to Fort Bliss an astounding amount of growth. As a result, Fort Bliss will grow by over 21,000 soldiers and will eventually become an installation almost three times its current size. Current estimates place the total net population gain by 2011 of over 49,000 soldiers, military students, and family members, and an estimated impact per year to the local economy of $4 billion, as illustrated by the chart below:

Impact Type	7,000 Troops	27,954 Troops
Value Added:		
Direct:	632,186,816	2,529,289,138
Indirect:	0	0
Induced:	212,620,552	849,084,987
Total:	**$844,807,368**	**$3,373,677,881**
Employment:		
Direct:	7,000	27,954
Indirect:	0	2,795,428,006
Induced:	3,906.50	15,600
Total:	**10,906.50**	**43,554**
Output:		
Direct:	632,186,816	2,524,592,893
Indirect:	0	0
Induced:	361,383,051	1,443,157,401
Total:	**$993,569,867**	**$3,967,750,295**

Source: Minnesota IMPLAN Group (MIG), IMPLAN

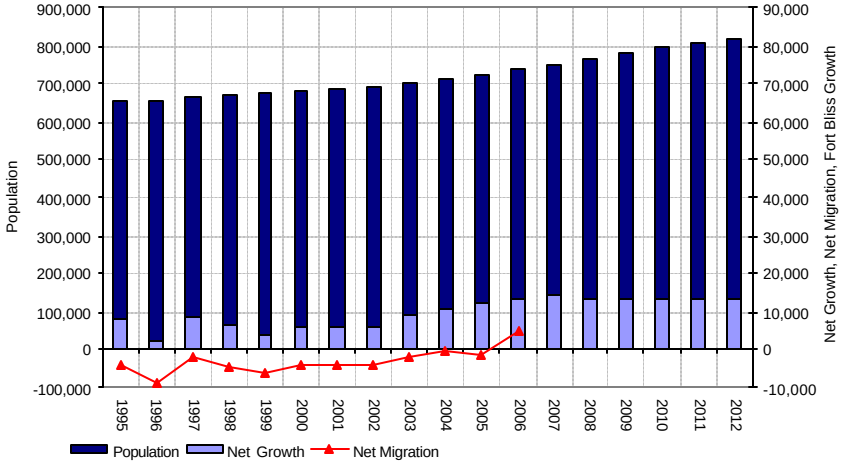
The chart below summarizes the growth, including student growth:

Ft. Bliss Growth, 2006-12

	Baseline 2005		2006	2007	2008	2009	2010	2011	2012	Endstate 2012
		+/-	3844	948	2778	2764	7386	5901	4333	27954
Soldiers	9330	Cumulative	13174	14122	16900	19664	27050	32951	37284	37284
		+/-	2230	550	1611	1603	4284	3423	2513	16213
Spouses	4945	Cumulative	7175	7724	9336	10939	15223	18645	21158	21158
		+/-	2952	728	2134	2123	5672	4532	3328	21469
Children	10385	Cumulative	13337	14065	16199	18322	23994	28526	31854	31854
6-12 years		+/-	1004	248	725	722	1929	1541	1131	7299
(34%)	3531	Cumulative	4535	4782	5508	6229	8158	9699	10830	10830
13-18 years		+/-	856	211	619	616	1645	1314	965	6226
(29%)	3012	Cumulative	3868	4079	4698	5314	6959	8273	9238	9238
Total School		+/-	1860	459	1344	1337	3574	2855	2096	13525
Age	6543	Cumulative	8403	8862	10206	11543	15117	17972	20068	20068

*Source: City of El Paso; draft numbers current as of **May 13, 2008.***

The chart below illustrates total expected city growth through 2012:



Sources: US Census Bureau mid year estimates (BEA) and forecast values from the Border Region Modeling Project, Fort Bliss Transformation Office.

In terms of infrastructure needs within El Paso, over $2.6 billion in infrastructure expansion and construction is planned through 2011. Among planned projects, completion of El Paso's Inner Loop will help facilitate the movement of troops in and out of Biggs Army Airfield. Furthermore, a $83.7 million desalination plant recently opened on land leased from Fort Bliss. This plant will supply water to Fort Bliss and surrounding areas. The El Paso District of the Texas Department of Transportation is working to address areas where traffic is expected to increase the most, including nine major projects in the Fort Bliss area.

The City of El Paso is also assessing growth and development trends in preparation for the Fort Bliss expansion. A $10 million expansion of Global Reach Drive to help serve military transport is a recent community initiative. A $20 million investment will be allocated for capital improvements to streets, parks and drainage in support of Fort Bliss growth. The City is working on an initiative to create a one-stop shop to streamline the permit application and inspection process, as well as to upgrade technology to provide efficient, real time inspections. Finally, the Greater El Paso

Chamber of Commerce is preparing for the adaptation from an air defense unit to an armored division, working with developers and the Army Corps of Engineers to identify areas of potential encroachment in order to build buffer zones between housing developments.

In addition to infrastructure, a number of legislative changes must be implemented to help the El Paso area prepare for the BRAC-related movement of troops, dependents, and contractors, including:

- Assistance with rehiring of retired teachers;
- Address the need for additional counselors, both to assist relocating military students and to help students with the effects of Ft. Bliss-based service-members who are killed in action serving in Iraq or Afghanistan;
- Revisions to high school exit requirements for relocating military students; and
- Aid for school districts when their facilities are strained by the rapid student growth due to BRAC.

To assist school districts with expansion efforts, $875 million in bond money has already been raised between 2003 and 2007. This has led to the creation of three new high schools, three middle schools and 10 elementary schools, as well as renovations to 16 other campuses.

In partnership with El Paso Community College, the Clint, Socorro, El Paso and Ysleta school districts have opened early college high schools between 2006 and 2008, allowing students to graduate from high school with college credit hours or an associate's degree. EPCC also currently has a proposal pending with the Department of Defense to acquire a no-cost, long-term lease on approximately 70 acres of Fort Bliss property adjacent to the new desalinization plant to build a higher education learning complex designed to initially accommodate about 3,100 students.

The proposal would provide direct savings, in-kind support and intangible benefits to the Army, including providing evening access to six classrooms for use by Fort Bliss, providing $100,000 per year in scholarships to soldiers and dependents for academic and vocational programs, as well as offering tuition differential for soldiers enrolled in EPCC classes. EPCC would fund all actions required for construction and furnishing of the complex, fund its estimated $8.9 million annual operating costs and would partner with local universities to provide access to baccalaureate and graduate degree programs.

Collaboration between Fort Bliss and the University of Texas at El Paso also has led to the creation of a Master of Arts in Leadership Studies program that has graduated 150 soldiers in slightly more than 3 years from the Career Captains Course and the Sergeants Major Academy.

UTEP also offered a graduate certificate in intelligence and national security studies in 2007 and 2008 and offers continuing education courses in criminal justice. UTEP's College of Education's Alternative Teacher Certification Program serves military members and their spouses. To serve soldiers and spouses who have accumulated large numbers of credit hours from several institutions and military training schools, UTEP is focusing on the Bachelor of Multidisciplinary Studies degree. The degree allows students three areas of study made of five courses equivalent to 15 semester credit hours each.

In the area of health services, William Beaumont Army Medical Center, one of seven U.S. Army medical centers in the nation, provides quality health care for the force and serves more than 60,000 beneficiaries. Located just two miles from Fort Bliss, WBAMC operates more than 45 primary care and specialty outpatient clinics, 150 inpatient beds with expansion capability to 373, and serves as a Level II Trauma Center for the Southwest Region. A partnership with the adjacent Veterans Administration outpatient clinic consolidates services and enhances treatment to veterans, as well as, to the active duty and retired population. A

new Consolidated Troop Medical Clinic, Dental Clinic, and an addition to the hospital are included in the overall expansion of facilities at Fort Bliss to meet the demands of the growth over the next 5 years.

With BRAC, El Paso will need to address a shortage in medical providers across health occupations. The city estimates that demand for physicians across practice areas by 2017 will be 615. The demand for nurses will be 2,289.

Resources also need to be allocated to address mental health issues associated with multiple military deployments, including incidents of Post Traumatic Stress Disorder, a disorder an estimated 17 to 30 percent of soldiers will suffer once at home. Another 20 percent of troops may have experienced traumatic brain injuries during deployment. To address these issues, El Paso Mental Health & Mental Retardation (EPMHMR) has provided for the creation of two additional facilities in the 79925 zip code, increasing capacity for services for children and adults. EPMHMR has also made available 24/7 psychiatric emergency screenings for military families, a 24/7 crisis hotline for service members and their families, and data tracking and analysis for those seeking mental health services.

Post traumatic stress disorder, along with soldier stressors like long work tours, family separation, incidents of danger and injury or disability as a result of service, cause increased incidents of domestic violence. The Army has consistently shown the highest rates in the armed services for such violence. The Center Against Family Violence (CAFV) reports that in El Paso in 2007, there were 6.1 substantiated cases of child abuse for every thousand of the military population and 4.7 cases of spousal abuse per thousand. Forty-nine percent of domestic violence victims were active duty females and roughly 51 percent were civilian women between the ages of 22 and 36 years old.

CAFV predicts that an increase of the military population to more than 90,000 people may more than double such incidents. Current

military and community-based services to address such issues will need expansion to sufficiently serve a large increase in military population.

Military Manufacturing

Having a unique testing facility and academic centers in one location allows defense systems companies to consolidate operations and complete more of their research, development, and production all in one place. It simply makes sense for military research, development and production to be based near the most versatile testing facility in the world.

Fort Bliss' central location and updated rail, truck, and air facilities make an ideal setting for shipping and receiving military systems. El Paso's $60 million air cargo facility is the largest and most complex on the U.S.-Mexico border, giving manufacturers quick access to worldwide markets.

El Paso's location on the U.S.-Mexico border also would be a boon to defense contractors. Maquiladoras across the border supply a skilled labor market already trained in the mechanics and manufacturing needed for high-tech fabrication of products. Increasingly efficient border traffic allows manufacturers in the U.S. to access just-in-time manufacturing in Mexico. The city's location is ideal for taking advantage of shorter supply lines between research facilities, testing locations, and manufacturing operations. Shorter supply lines are less vulnerable to attack or tampering and are less costly to secure.

Patriot-missile maker Raytheon and aerospace giant Boeing already have substantial operations in El Paso. Raytheon recently tested a new low-cost Patriot missile system at Fort Bliss, supported by soldiers of the 3rd Battalion, 43rd Air Defense Artillery. Professional soldiers tested the missiles during a successful simulation drill in which two Patriots were launched to intercept two low-flying target drones.

Boeing operates a "Strategic Manufacturing Center" in El Paso that for years helped build the Air Force's B-1B long-range bomber. Now, Boeing takes advantage of the city's skilled labor pool to run a versatile manufacturing facility that specializes in manufacturing and production projects for the Department of Defense, NASA, and commercial space-related programs.

In 2008, the nation's first two Terminal High Altitude Area Defense missile system batteries will form at Fort Bliss, with the first expected to be completed by the end of 2010. THAAD provides a second layer of defense to the existing Patriot missile system, targeting high altitude weapons threats, destroying them without use of explosive warheads, but rather high-speed collision. THAAD can intercept enemy missiles as far away as the edge of the Earth's atmosphere. Fort Bliss, Biggs Army Airfield and McGregor Range combine to form the perfect training and maneuver terrain for development of THAAD. The location for two addition THAAD batteries to be created in 2012 and 2013 has yet to be decided.

Training Troops

El Paso's dry climate and mild winters are ideal for military training. Pilots see an average of 340 flying days a year. The base has the country's largest block of restricted airspace and its ranges can accommodate every Army weapon system. Nearby White Sands Missile Range and Holloman Air Force Base offer opportunities to collaborate on large joint training maneuvers.

Fort Bliss and White Sands have long been at the forefront of research and training on interoperability among the services. In 2004, Fort Bliss was designated as a permanent Joint National Training Capability site ensuring a high capacity link to key "Service, Joint, and Agency" locations. This, coupled with expansive ranges, is excellent for joint training.

Every other year, Fort Bliss hosts "Roving Sands," the world's largest joint theater air and missile defense exercise. In this

multinational training event, 15,000 soldiers from all branches of the U.S. Armed Forces and several foreign countries perform joint training missions.

BRAC 2005 also brought part of the Army's Future Combat Systems (FCS) program to Fort Bliss. A $200 billion makeover, FCS is the most ambitious modernization of the Army since World War II. According to military officials, FCS includes creating a family of 14 weapons, drones, robots, sensors, and hybrid-electric combat vehicles connected by a wireless network. The Congressional Budget Office states that FCS is "by far the biggest single investment the Army is planning to make in the next 20 years."

Fort Bliss is playing a major role. Part of FCS is the Army Evaluation Task Force (AETF), which was formed at Fort Bliss in 2007 and will test and evaluate equipment on the training grounds at Fort Bliss and White Sands Missile Range. AETF is the first time the Army has dedicated a brigade solely to evaluate new weapons and devices. By allowing soldiers to provide feedback as they train, the Army is able to begin adjusting training routines even as the first soldiers begin working in the system. Fort Bliss and El Paso's role in FCS will help shape the Army of the future.

Homeland Security Research Initiatives

As the soldiers of the future are trained in El Paso, UTEP has partnered with the Department of Defense and Homeland security to create the National Center for Border Security and Immigration (NCBSI). At the Center, UTEP is developing future scientists, technologists, engineers and mathematicians to meet the emerging challenges of homeland security in a global context. Research projects include work on surveillance and tracking technologies; screening, scanning and inspection; border crossing points of entry; command and control; and others.

Additionally, UTEP is host to a $4 million Center for Defense Systems Research (CDSR). According to UTEP, "The CDSR

applies the broad range of cutting-edge university-based research and technology to the near-term, applied, user-level Department of Defense requirements." The Center's initial projects include advanced manufacturing research and software systems engineering.

The Fort Bliss Community

As one of the Army's *Power Projection Platforms*, Fort Bliss plays a vital role in preparing and mobilizing forces for high-priority worldwide deployment. Since September 11, 2001, Fort Bliss has served as a major base for deploying soldiers to Afghanistan and Iraq.

Fort Bliss is the largest single employer in the El Paso area. Because of this significant impact, the post makes every effort to keep its City counterparts informed of changes that occur at Fort Bliss. Fort Bliss' leaders volunteer with local Chambers of Commerce and have maintained a continuous dialogue with local leaders so that the installation's strategic plan is understood and supported by the community.

Under BRAC, Fort Bliss' expansion is expected to create 40,191 new jobs in El Paso. By 2013, the expected number of employed persons in El Paso will increase to 417,512, up from 353,678 in 2006. Without BRAC, that number in 2013 would only be expected at 377,321. Between 2006 and 2013, BRAC is expected to create a $25.3 billion additional economic impact to the city, with $16.2 billion in new labor income, more than $264,000,000 in new property taxes and more than $58,000,000 in new sales taxes.

Beyond 2013, BRAC will create an estimated $6.3 billion in total economic output, $2.9 billion in labor income, $43,000,000 in property taxes and $9,500,000 in sales taxes.

Conclusion

Fort Bliss is already a driving force for El Paso's economy, with a growing community of troops and support personnel. As a unique research, testing, and training facility, Fort Bliss is a location where defense firms can situate research and fabrication operations all in one place.

Using existing rapid supply lines and skilled workers in El Paso and Juárez, military contractors can take advantage of Fort Bliss' unique value while serving just-in-time manufacturing needs nationwide. With Fort Bliss' massive growth due to BRAC 2005, El Paso and Fort Bliss clearly have a bright future together.

Movement

"24 Hours to Anywhere in North America"

Introduction

The El Paso Del Norte Region—El Paso/Ciudad Juárez/Santa Teresa—is the largest metropolitan area along the U.S/Mexico border. It rests along the border of three states and two countries and is now among the largest international commuter and commercial ports in the Western Hemisphere.

Our region serves as an air, truck, and rail hub for commercial traffic. Easily accessed ports of entry (POE) create a seamless connection between the movement of goods in and out of El Paso. In 2007, there were a staggering 23,307,342 border crossings from pedestrians, private vehicles and commercial trucks.[47]

In order to remain a successful port, enhanced mobility in the areas has become increasingly more important.

On the road, three important corridors are key in the movement of goods in and out of our region: I-10, spanning from the Pacific to Atlantic coast, is a major east-west artery; U.S 54 is the highway that serves as the preferred route north to Chicago; and I-20 connects travelers to North Texas and Dallas. In addition, four district rail routes, hosting two class-one rail providers, are housed within our city. Via rail, El Paso's central location provides access to more than ten major American cities.[48] Moreover, our airport boasts the largest and most complex air cargo facility on the U.S/Mexican border. It provides services to nine major airlines, carrying a total of 81,894 tons in 2007. [49]

El Paso is perfectly situated to serve as a major commercial transportation hub for the Americas. In a just-in-time world, we are 24 hours away from any destination north or south.

Premier "Just-in-Time Port": Using RMAs

Today's manufacturing world operates in a "just-in-time" environment, where companies seek to maximize profit and efficiency by reducing inventory and reducing transportation costs. The faster a company can get an order off the assembly-line and into a consumer's hands, the better the bottom line.

However, at the US-Mexico ports-of-entry, the "just-in-time" environment is complicated by various logistical and bureaucratic obstacles. To better compete, we must adequately fund our infrastructure. Unfortunately, the State of Texas is currently experiencing a funding shortfall of $6 billion.

Currently, TxDOT lacks funds to maintain current infrastructure and not enough to build new infrastructure. In order to address this need, the Texas Legislature approved the creation of Regional Mobility Authorities (RMA) in 2001.

An RMA is a political subdivision of the state that has the power to acquire, design, operate, construct, maintain and repair any transportation project or system within their jurisdiction. An RMA is more than an entity with the power to allocate funds to create roads, its given powers allow RMAs to finance mass transit, relocate rails, levy tolls on new roads, use eminent domain and issue out tax-exempt revenue bonds to support local infrastructure. RMAs are given many funding options, which allows local leaders to take control of their transportation needs and construct projects much faster than the statewide approach.[50]

RMAs, through the many funding options available to them, may also use the funds they raise from one transportation project to finance preliminary studies on another. This option allows revenue generated through tolls to remain at the local level, instead of being sent to other parts of Texas to fund projects elsewhere.

Therefore, the Camino Real RMA (CRRMA) in El Paso will be able to establish its own financial base, and continue to fund its

own transportation projects. Additionally, the CRRMA differs from others found in Texas as it is authorized to fund projects outside of Texas into Mexico and New Mexico—including construction of new international ports of entry.[51]

Trade between Texas and Mexico accounts for a large percentage of state jobs; in fact, trade with our neighboring country supports one in five Texas Jobs.[52] Mexico is now our country's third largest partner in trade. Texas trades more with Mexico than all the European Union combined. Trade with Mexico has increased greatly over the past several years and amounted to $350 billion in 2007. Over 80% of the trade in that year entered Texas through land or rail.[53] Texas exported $168.2 billion in merchandise in 2007, the largest figure in all other states. El Paso, with its four international bridges, is the second largest importer/exporter along the U.S.-Mexico border—after Laredo, Texas—accounting for nearly $47 billion in trade last year. These imports and exports account for approximately 6 percent of all U.S. economic activity.

With the economic benefit enjoyed by healthy trade, investment in local infrastructure is required additionally to mitigate traffic congestion and increased wait times on international ports of entry.[54] Delays on border crossings have increased by 20 minutes in the El Paso area, and various border inspections—including customs, agriculture, drug, immigration and other safety inspections—contribute to congestion at our international bridges. Furthermore, border agencies have experienced staffing shortages and a lack of coordination between federal and state agencies. To compete successfully within the global economy, both nations must invest in its transportation infrastructure. By having the authority to extend projects into Mexico and build new ports of entry, the CRRMA can work to decrease waiting times across international bridges and improve international mobility.

In January 2008, the CRRMA approved its first sale—over $237 million in bonds to finance construction of the Inner Loop Project, which will connect Loop 375 to U.S 54 in East El Paso. The Inner Loop Project is the most expensive infrastructure project in the

area and seeks to alleviate the congestion that will be brought on by large influx of soldiers due to Base Realignment and Closure (BRAC). [55] In addition, because congestion is expected to increase much over the next several years, the CRRMA may look into implementing a mass transit project in the area. A mass transit system, such as Light Rail Transit (LRT), would help alleviate congestion by taking cars off the road and reduce vehicle emissions. As the price of gas continues to rise, driving a vehicle has become more costly; and El Paso citizens are experiencing the financial strain first hand.

More recently, in July 2008, the Texas Department of Transportation (TxDOT) has partnered with the CRRMA to pursue a $1 billion highway construction plan. [56] As part of the plan, the Downtown Tax Increment Reinvestment Zone (TIRZ), will utilize property tax revenue increases from properties along Loop 375 to generate $65 million for transportation projects. [57] "The bottom line is we'll end up putting down $1 billion worth of transportation mobility projects that would probably have taken 25 or 30 years to complete," CRRMA chairman Harold Hahn told *Newspaper Tree*, prior to city council vote on the plan.

With these new mobility tools—such as the CRRMA, TIRZ and tolling on new lanes—El Paso is taking its destiny in its own hands. El Paso can now take full advantage of its ideal geographic location, facilitate "Just-in-Time" international trade, and improve the quality of life for border residents through investment in improved ports-of-entry, strategic transportation projects and the development of mass transit alternatives.

One-Stop Inspections:
Moving People and Product in Minutes Not Hours

El Paso is a city with great potential to attract industry and expand its economy. To lead in a 21st century economy, El Paso must promote safe, secure and fast movement of goods and services.

Long waits at international border crossings affecting the efficiency of commercial movement along our borders. In an attempt to shorten waiting periods, the "one stop" border concept was created. This idea combines inspection processes conducted by several federal and state agencies into one process. A "one stop" border inspection system would facilitate and expedite commercial traffic to and from our city, improve efforts to keep our borders secure, and protect public health by decreasing pollution. Large amounts of vehicles idling during their wait to cross release a larger amount of pollution into the air.

Research shows that a one-stop system is feasible at a relatively low cost. Investing in the technology needed to combine various inspection protocols would be an important investment for El Paso.[58] The bill creating the one stop inspection concept passed in the 76th Texas Legislature as Senate Bill 913. The bill authorizes the Texas Department of Transportation to maintain and build the facilities necessary for a one stop inspection.

Combined, the El Paso ports of entry are the second busiest bridges in the State of Texas, with over 28 million private vehicles crossing in 2006. [59] The construction of more, adequately staffed bridges would facilitate the flow of traffic from Mexico coming into Texas. Additionally, secure manufacturing technology would facilities expedited cross-border commercial traffic. Secure manufacturing technology tracks the movement of trucks and their product from origin to destination, and greatly reduces the volume of commercial traffic at the POEs.[60]

Another program that facilities fast, secure, smart transportation is the Fast and Secure Trade (FAST) system, which uses Radio Frequency Identification (RFID) technology. FAST lanes provide pre-clearance lanes for high-volume manufacturers and expedite U.S. Customs clearance along designated ports of entry. FAST lanes are used by low-risk travelers and allow inspection agencies to place their attention on cross-border traffic of higher or unknown risk.[61] Using similar technology, commuters have access

to El Paso's designated commuter lanes (DCLs). Enrollment in El Paso's DCLs is approaching 21,000 users.

In addition, "smart cards," embedded with biometric identifiers, can be used to allow quick and reliable identification of trusted border citizens who pose no health or safety risk, allowing them to cross more quickly. Enhance driver's licenses (EDLs) are an example of a "smart card."

The EDL program is modeled after Washington State's along the US-Canadian Border. On March 20, 2007, the state of Washington established the high-security driver's license pilot program. U.S. Homeland Security Secretary Michael Chertoff formally approved the pilot program on March 23, 2007. Recently, an agreement was announced with the state of Arizona, according to comments made by Secretary Chertoff. All of the U.S.-Canadian border states are nearing agreement as well.

DHS's endorsement of the EDL program comes as Border states prepare for new federal security requirements mandating a passport for U.S. citizens who enter the country at land ports. Given the impact the passport requirement has on border life, the Texas legislature passed S.B. 11 during the 80th Texas Legislature. The bill authorizes the Department of Public Safety to initiate a pilot program similar to the program in Washington. DPS may adopt rules to implement the program and the department is authorized to enter into a memorandum of understanding with any federal agency for the purposes of facilitating the movement of people between Texas and Mexico.[62]

Currently, implementation of the Texas EDL program is opposed by Governor Rick Perry. He has expressing concern that the EDL program may interfere with federal law, although DHS has stated no conflict exists. Governor Perry has further stated that the State of Texas should primarily begin to work on securing the borders then on the aspect of identification. [63]

Regardless, EDLs would help secure the Border through more efficient monitoring and identification of Border travelers; the program also would afford border residents with a cost-effective alternative to purchasing a separate state drivers license and federal passport or passport card.[64]

Paso del Norte Port Authority

Major U.S. ports in coastal cities employ port authorities to build and fund infrastructure, expedite cross-border traffic, and decrease congestion. Port authorities are administrative entities devoted to constructing, managing, maintaining, and improving ports. In cities such as Houston and Seattle, port authorities have proven to be strong economic engines, generating jobs, business development, and tax revenues.

Currently, West Coast seaports are being overburdened with increased traffic and labor disputes, creating a backlog. High-volume "big box" retailers are planning alternative routes to service "just-in-time "markets with Asian-made goods. In Punta Colonet, Baja California, Mexico, a $6 billion Pacific coast container megaport is being planned for operation in four to five years.[65] The megaport would be about 150 miles from San Diego, and it would route Asian cargo through Mexico to the American heartland. In addition, it would be built in tandem with a rail link that would carry containers from Punta Colonet to the U.S.-Mexico border. The megaport is expected to handle up to 5 million containers a year.[66] Luis Téllez, Mexico's secretary of transportation and communications, recently commented on the project, 'The complexity of this project . . . is enormous."

Currently, approximately 45 trains a day pass trough El Paso; by 2020, the number is expected to reach 130 trains a day.[67]

By utilizing ports on the west coast of Mexico, shippers and manufacturers hope to circumvent the constrained U.S. seaports. Products will be shipped overland, through Mexican states, to land ports on the U.S. Mexico border. In just a few years, this route

could become a major new trade corridor. Therefore, El Paso's location makes it a natural choice to quickly move products into the United States. With the creation of an El Paso port authority, we would be able to build and operate infrastructure, cut red tape, institutionalize security, and expedite commerce.

El Paso ports also benefit from cutting-edge transportation research. During the 79th Texas Legislature, the state provided funding to develop the Center for International Intelligent Transportation Research (CIITR) in El Paso. A branch of the Texas Transportation Institute, CIITR focuses on developing and applying Intelligent Transportations Systems and other advanced technologies to address international transportation issues. The Center's priorities are to facilitate traffic management, improve safe and secure movement of people and goods across the border, and address transportation-related air quality issues. In addition to improving El Paso's transportation system, the Center takes advantage of the city's unique geographic position as a "laboratory" for transportation research to be applied in other international settings.

At the University of Texas at El Paso (UTEP), the Center for Transportation Infrastructure Systems (CTIS) also addresses needs for basic and applied research in transportation infrastructure.[68] The CTIS is a cross-discipline center with multiple faculty members from Engineering, Computer Science, Geology, Sociology, and Economics. During the 2006-2007 fiscal year, the CTIS garnered $1.8 million in research funding.

Federal funding also can support El Paso's role in promoting safe and secure movement of goods and services. The El Paso County Secure Border Trade Demonstration Project, upon final approval, will be funded with Coordinated Border Infrastructure (CBI) funds administered by the Federal Highway Administration (FHWA) through the Texas Department of Transportation (TxDOT). El Paso County will implement the project with oversight from the U.S. Customs and Border Protection Agency (CBP) and Technology Monitoring Assistance from the Texas Transportation

Institute (TTI) Center for International Intelligent Transportation Research in El Paso.

In September of 2007, El Paso County was notified that FHWA will fund the Intelligent Transportation Systems (ITS) portion of the project assuming that an agreement to include a Technology Monitoring System for the Project could be mutually agreed upon by CBP and El Paso County. El Paso County is currently working with CBP to finalize a memorandum of understanding between the two agencies, and anticipates a Project implementation date in the third quarter of 2008.

The overall emphasis of the project is to heighten security and promote economic development and border trade efficiency by enhancing collaboration between maquiladoras, transporters and border security personnel. Specifically, the project will introduce new electronic tracking, reporting and monitoring technology that will expand the capabilities of the private sector to monitor the loading of trucks and track the movement of goods and operation of vehicles, from origin to destination, as well as to electronically verify the identity of drivers and other participants in the cross border supply chain in real time.

Expand International Rail

Currently, El Paso-bound truck cargo traffic originating in the maquiladoras of eastern Juarez must take a circuitous route to its destination. Trucks travel west, through downtown Juarez, and across the Rio Grande, west of the two cities. Then, trucks use I-10 to travel back east to destinations at Fort Bliss and the El Paso International Airport.

This increasingly heavy traffic contributes to highway congestion and wear on transportation infrastructure.

While the construction of the Inner Loop will help to alleviate some of the current congestion, El Paso must invest in international rail. Benefits include moving freight with less injury,

having fewer fatalities and less air pollution. The city must develop a secure transit corridor to shift cargo from commercial trucks to rapid rail and air routes that service just-in-time markets nationwide.

Cargo could be transferred from trucks to rail at the border, transported via secure rapid rail, either to Fort Bliss or the El Paso Airport's recently expanded air cargo facility, where cargo could then be loaded onto planes to serve nationwide markets. This intermodal corridor would be shorter, faster, more secure, and cheaper than the current truck route.

In addition, the city must invest in a secure light rail system for commuters within the El Paso-Juarez metroplex. Public transportation would allow commuters and shoppers to avoid two-hour and four-hour waits at the border. A commuter light rail would ease congestion and reduce pollution from idling vehicles waiting at the border, as well as provide a low-cost alternative for individuals to travel. Reducing commuter vehicles at the border also would ease congestion for international commercial traffic.

Conclusion

El Paso is a natural hub for movement. The city is poised to become a major port of trade between just-in-time markets worldwide. Already, El Paso's leaders have promoted the city as a major player in bi-national trade, working with officials in Texas and Mexico to put in place a set of infrastructure tools unique to the Southwest. To harness this potential, we must use the tools carefully crafted by our state legislators to build key infrastructure. We must also harness state-of-the-art technology to facilitate the movement that will take full advantage of El Paso's strategic geographic location.

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Manufacturing

"Just in Time Capital of North America"

Introduction - "Just in Time" Manufacturing

The sister cities of El Paso and Ciudad Juarez form the production-sharing capital of North America. As the prime maquiladora location in Mexico, Ciudad Juarez is an invaluable resource for the American and Texan manufacturing industries. Meanwhile, its American counterpart is one of the nation's busiest land ports, and fastest growing cities. While the sister cities have had considerable population and economic growth over the last several decades, the evolving concept of "just-in-time" manufacturing adds another dimension to El Paso and Ciudad Juarez. However, for this concept to succeed, the manufacturing industry must be convinced of the great benefits of taking advantage of both sister cities' strengths.

The Paso del Norte Region has always been known for its prolific commercialism and excellent locality. Dating back to the 17th century, the area was employed as an integral business route in the Camino Real (Royal Road) of the Spanish Monarchy. The trade in the region was so successful that in 1765, less than two hundred years after the road was established, it became the largest urban center on the northern frontier of New Spain (Present day Mexico and parts of the American southwest).[69] Nearly two hundred and forty years later, the Paso del Norte Region, with an aggregate population of 2.5 million people, is still developing and expanding.

Today, El Paso alone boasts a population of over 624,000 residents,[70] ranking it among the fifty fastest growing cities in America.[71] At the end of last year, Mexico was the U.S.'s third top trading partner in value for imports and exports added together—$347.34 billion.[72] The most recent data from the U.S. Department of Transportation denotes El Paso as the *second* highest ranking trading land port for land trade with Mexico, the *fifth* highest

ranking land port for land trade in North America, and the *fourteenth* overall gateway when compared with all U.S. freight gateways—air, land, and sea.[73]

A few miles south of El Paso, Ciudad Juarez is also reaching record highs for population. It is expected that by 2009 Juarez will have a population slightly above 1.5 million people. In addition, with over 267,000 persons employed in manufacturing, Juarez is part of the *fourth* largest manufacturing center, by total number of workers employed in North America.[74] A majority of those 267, 000 employees work in or for maquilas; Ciudad Juarez is currently home to more than 300 maquiladoras, about 70 of which are owned by Fortune 500 companies.[75] These facilities serve a broad swath of the manufacturing sector, including telecommunications, electronics, consumer appliances, and automotive products. They also provide highly specialized work, such as clean room manufacturing for medical supplies. The Juarez maquila industry supports a payroll of almost $250 million for maquiladora employees who live in El Paso and commute across the border daily.[76]

The proximity of El Paso and the Border Region to Mexico also opens up the opportunity for value-added manufacturing. *Value added* refers to the additional value created at a particular stage of production. In El Paso and the Border Region, the contribution of low-cost and high-skill manufacturing done in Mexico can raise the value of a product without significantly raising the cost of production. In other words, goods can be produced in Mexico and be transported to Texas for very little cost, and then be sold at a more profitable price.

To realize the full potential of border manufacturing, we must facilitate the link between world class manufacturing operations in Mexico and world class logistics in Texas. By streamlining transportation, creating *secure manufacturing* tax incentives, and ensuring a strong and viable financial industry, we will attract more quality manufacturers to the area.

Facts

Prior to the signing of the 1994 North American Free Trade Agreement (NAFTA), El Paso and Ciudad Juarez were engaged in a push and pull economic relationship. In the late eighties and early nineties, U.S. manufacturers were induced by fewer expenses south of the border, and began to contract more sewing operations to Mexican maquiladoras. While this trend ultimately displaced many sewing companies in El Paso, it also made El Paso an optimal location for the cutting and consolidation of garments, and led to a substantial job increase in the garment industry for both cities.

Since Mexico's entry into the General Agreement on Tariffs and Trade (GATT) in 1986 and the ratification of NAFTA in 1994, trade has shifted to a north-south orientation. Moreover, as the U.S. and Mexican economies integrate due to NAFTA, trade between the two countries has grown, increasing over 400 percent in the last 15 years.[77] And, more recently, with the expansion of the Central American Free Trade Agreement (CAFTA), trade with Latin American countries will only continue to grow. CAFTA, signed by President Bush in the summer of 2005, reduces trade barriers with more Central and South American countries. This growing trade relationship and the growing demand for labor in Mexico have supported a burgeoning high-tech maquiladora industry. The maquiladoras are the second largest source of export earnings in Mexico, producing approximately thirteen percent of the country's GDP. More than 2,000 of Mexico's 3,000 maquiladoras line the border.[78]

Five years ago the maquiladora industry seemed to suffer from labor differentials in Asia, particularly China, but there has been a resurgence of manufacturing in Juarez and along the Mexican border in the past few years. Manufacturers who were turning to the cheaper labor available in Asian markets are now returning to manufacturers in Mexico. The shorter supply lines, intellectual property protections, cost of fuel for transportation, more qualified

labor market, secure manufacturing, and lower tariffs are strong incentives for American production companies.

In addition, both Mexico and Ciudad Juarez are now enjoying what is labeled the "third generation" of manufacturing investments, which are predicated on engineering, research, design and development centers, instead of the first and second generation which consisted of substantial amounts of low skill labor and very little technology. [79]

Yet north of the border, there has been a significant decline and job losses. More than three million manufacturing jobs have been lost nationwide over the past seven years. This trend has hit every state in the country, including Texas, where the manufacturing industry lost over 107,000 jobs from June 1995 to June 2005. The significant reduction in North American manufacturing is tied directly to the relaxation of trade restrictions. NAFTA and other trade agreements significantly reduced—and in some instances eliminated—tariffs on the importation of goods. With lower tariffs, American producers moved manufacturing operations to countries where the cost of production, especially labor cost, is lower.

Manufacturing: The Key to a Value-Added Economy

Manufacturing remains the key to fueling a value-added economy and provides two-thirds of all research and development in this country. The innovation that manufacturing produces drives every sector of our economy. Increases in manufacturing productivity reduce fabrication costs, raise the standard of living, raise wages, maximize profits, and keep inflation low. Despite a slowdown, manufacturing still leads every other sector of the U.S. economy. In Texas, manufacturing has seen rapid growth in high technology industries, including computer hardware and software, industrial machinery, and electronics.

Creating manufacturing jobs has a multiplier effect: for every manufacturing job created, four additional jobs are created that

depend on that original manufacturing job. On the other hand, as our national trade deficit grows, manufacturing jobs are lost to low-wage, low-cost Asian suppliers. To stay competitive in the world market, American manufacturers need to take advantage of inherent efficiencies in the maquiladora system, coupled with short supply lines primed to support "just-in-time" markets.

El Paso-Ciudad Juarez: The "Just-in-Time" Capital of North America

The manufacturing industry south of the border has thrived over the past decade. Traditional manufacturing maquiladoras have been joined by sophisticated high-tech operations run by multinational corporations seeking to take advantage of Mexico's skilled labor and the countries transition into the third generation of manufacturing investments. Unfortunately, El Paso currently supplies a mere *seven* percent of Ciudad Juarez's needs**.**

U.S.-owned maquiladoras allow manufacturers to move capital equipment, machinery, and materials into Mexico, and then bring products back into the country duty-free. Consolidating manufacturing, research and development, and other operations in the El Paso-Juarez metroplex allows manufacturers to speed products directly into just-in-time markets in the U.S., with streamlined logistics and immediate access to nationwide and worldwide markets with access to interstates, cargo rail, and the El Paso airport's newly expanded air cargo facility. This proximity to U.S. distribution centers and immediate markets makes maquilas more attractive than overseas or South American fabrication operations.

Rising fuel and transportation costs also make the El Paso-Juarez region economically competitive for manufacturing. Many experts are seeing evidence that companies looking to keep prices low will have to move some production closer to consumers.[80] According to the *New York Times*, " Globe-spanning supply chains — Brazilian iron ore turned into Chinese steel used to make washing machines shipped to Long Beach, Calif., and then trucked to

appliance stores in Chicago — make less sense today than they did a few years ago."[81]

A complex system of interconnecting maquiladora clusters creates efficiencies for advanced manufacturers. Each advanced technology manufacturing operation requires multiple specialized maquiladora sites that produce separate components in the manufacturing process. Working together as industry clusters, maquilas specialize operations around specific processes, maximizing efficiency and productivity. These clusters reduce supply lines and cut the overall cost of manufacturing.

Maquiladoras also serve as catalysts to attract economic development, since each cluster supports a collateral stream of needs. Maquilas rely on supplies of raw materials from local suppliers in Mexico and Texas. Maquilas also support other manufacturing operations to build tools and components for use in fabrication operations. Products such as precision tooling, tool and die, metal stamping, and instrumentation are needed for maquiladora operations. If suppliers of those specialized products move to the border, they, in turn, will support other industries that need those supplies.

Attracting manufacturers to El Paso also will have substantial indirect benefits. Already, the border maquilas purchase $1.6 billion of support services from El Paso, such as retail sales, transportation, banking, and home building. [82] The manufacturing sector has the potential to drive these and other segments of El Paso's economy.

Building a Secure Manufacturing Zone

Since NAFTA was ratified more than ten years ago, border communities have taken steps to achieve closer economic integration. Congestion at the border still slows the movement of raw materials and finished goods. Importers face numerous slow-downs, including multiple inspection requirements, staffing and

human resource problems, insufficient roads, and limited coordination between various inspection agencies.

Political leaders from the U.S. and Mexico have advocated for a *Secure Manufacturing Zone* at the border. The concept of a secure manufacturing zone is that local leaders must identify and build on strategic relationships and incentives to induce manufacturers to invest in the region. Creating a secure international zone—with manufacturers, transporters, wholesalers and leaders working together towards an end goal—will allow efficient and secure point-to-point movement of supplies between plants and industries on both sides of the border.

A secure manufacturing zone would use interoperable technologies to reduce congestion and facilitate commercial movement. Transponder applications and GPS would be used to track the location of individuals' trucks, while electronic container seals would prevent tampering. Trucks leaving maquilas in Mexico would be secured with intelligent seals and lock-in devices equipped with GPS technology for central tracking of all shipments. Trucks then would pass through an expedited border inspection facility and proceed directly to their U.S. destinations. (For more information on expedited transportation please refer to the Movement chapter.)

By bolstering local cross-border ties, El Paso and Ciudad Juarez should be able to enhance a manufacturing cluster that will entice advanced technology and innovative businesses. Creating a secure manufacturing zone will need strong commitment from local, state, and federal governments in both countries. In order to implement a secure manufacturing zone at the border, officials in El Paso and Mexico must encourage public-private sector cooperation to increase security and compliance of commercial shipments, and to expand electronic exchange of data. The region also should create tax incentives to attract specific industries, such as defense-related manufacturing.

Conclusion

El Paso and Ciudad Juarez form a uniquely appealing environment for high-tech manufacturers seeking streamlined access to "just-in-time" markets. To attract new industries to this area, El Paso's leaders must work to promote the advantages of cross-border manufacturing operations by easing border congestion, streamlining border inspections, and creating tax incentives.

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Mexico

"The Frontier of the Twenty First Century"

Introduction: El Paso, Juárez, & México

El Paso is on the threshold of becoming a prominent international business port and industrial center in a global economy.

The 2.4 million people living in the greater El Paso region form one of the largest bi-national communities in the world. [83] In the 1990's both El Paso's and Ciudad Juarez's population grew well over their respective national average. Ciudad Juarez alone experienced a growth rate of fifty-three percent, while on the other side of the border, El Paso's total population grew by nine percent.[84] Both sister cities have greatly benefited from the free movement of goods, technology, ideas, and people by attracting businesses seeking to take advantage of the two cities plentiful assets.

El Paso's outstanding geographic location, at the heart of the U.S.-Mexico border, has been a major driver to making the city the *second* highest ranking trading land port for land trade with Mexico; the U.S.'s *third* top trading partner at the end of 2007 in value of imports and exports added together ($347.34 billion); and the nation's *fourteenth* overall freight gateway, serving all but one state—Hawaii. [85]

With a 78 percent Hispanic population,[86] El Paso is uniquely equipped to participate in business seeking to operate throughout Mexico and Latin America. Its population has lived a bi-national, bicultural, and bi-literate experience that makes them ideally suited to work in industries operating outside of a traditional domestic business environment.

Subsequent to the signing of NAFTA, the maquiladora industry exploded in Juarez. With over 267,000 people employed in the

maquiladora industry, the region is the *fourth* largest manufacturing center by total number of workers employed in North America.[87] Recent research by Gordon Hanson of the *Journal of Urban Economics* has shown that a 10 percent increase in maquiladora output in a Mexican border city would bring about a 1.1 to 2 percent employment increase in the corresponding U.S. border city. This same 10 percent increase in maquiladora output would consequently increase wholesale trade employment in the U.S. border city by 2.1-2.7 percent, transportation services by 1.7-2.7 percent, manufacturing by 1.2 to 2.1 percent, and retail trade by 1 to 1.8 percent.[88] Furthermore, thousands of Mexican Nationals make the short daily commute to El Paso add to our retail economy by spending money on either entertainment and/or merchandise. Clearly, both the manufacturing industry and Mexico's citizens immensely contribute to El Paso's economy and to that of other border cities.

Due to their recent economic strides, both Juarez and El Paso have been labeled as the top two large North American cities of the future by the Foreign Direct Invest Magazine—with Juarez at #1 and El Paso at #2. The judging criteria for the prestigious award entail that cities contain excellent economic potential, cost effectiveness, human resources, quality of life, infrastructure, business friendliness, and development and business promotion.[89] Moreover, an open environment for international trade and investment, and a large and expanding domestic market means that Mexico will remain an attractive destination for future foreign direct investment.[90]

Paradigms to Emulate: Banking, Law, and Media

A few hundred miles downriver from El Paso, Laredo, a city with an estimated population of 215,000 [91] is home to two locally-owned billion-dollar banks. Positioned on the busy I-35 corridor, Laredo and its Mexican sister city Nuevo Laredo, make up a population of over 700,000.[92] Like El Paso and Ciudad Juarez, *Los Dos Laredos* act as an integrated bilingual and bicultural community that serves as a gateway between the U.S. and Mexico.

In 1970, Laredo's banks had total assets of $102 million. By the end of 1994, the city of Laredo attained the status of a "$4 billion plus" banking center.[93] In addition to offering traditional banking services to local residents, these banks tailor their services to cater to their predominantly Hispanic border population. For example, in 2005, remittances by U.S. workers to Mexico totaled $20 billion; these remittances serve as one of Mexico' largest source of income.[94] Federal law allows U.S. banks to accept foreign-issued identification cards, such as the *matricula consular* issued by the Mexican government, to open accounts. *Citigroup*, after merging with Mexico's leading bank, formed a remittance program to facilitate fund transfers to Mexico. By focusing on immigrant populations and offering services at reasonable rates, the program has both helped bring Mexican immigrants into the financial mainstream and opened a new, diverse arm of international commerce for the bank.

Additionally, Laredo has pursued higher education opportunities to educate local students to become leaders in locally-based international business. Texas A&M International University (TAMIU), based in Laredo, has a global and culturally diverse focus, offering bachelor's, master's, and doctoral degrees in international trade and international banking.

In international legal services, Baker & McKenzie has emerged as a leader. From a law firm that was composed of four lawyers and generated $75,000 in fees, to a firm whose revenues exceed one billion dollars and employees over 3,000 lawyers, Baker & McKenzie is a global leader.[95] Russell Baker, who grew up in the states of Texas and New Mexico, always had a love for the Spanish language and diverse cultures. Rooted in his culturally diverse childhood, Baker envisioned a global market for his legal services. Baker began his legal practice with a focus on helping Mexican nationals; he subsequently built a practice specializing in immigration, bankruptcy, criminal and tort law. Baker & McKenzie is an early business pioneer that embraced diversity and understood the importance of global thinking—that is why today

the law firm has over sixty law firms world-wide, including one in Ciudad Juarez.

For more than 50 years, Miami has billed itself as the Gateway to Latin America, its airport and seaport servicing passenger and cargo traffic to and from hundreds of destinations in Mexico, South America, and the Caribbean. The city has successfully harnessed its diverse local population to build a multi-cultural destination and waypoint for international trade and tourism. For example, Univision's television operations are based in Miami, allowing the company to draw on the city's large population of second and third-generation Latin American immigrants. Utilizing residents' cultural expertise empowers the company to market its programming throughout the hemisphere.

In Texas, San Antonio has long tagged itself as the "Gateway to Mexico" because of its multicultural roots and its proximity to the border.[96] It is a designation that has benefitted the city economically, drawing tourists and industry. As US-Mexico trade increases, other major cities are adopting similar branding campaigns, with the belief they can position themselves as a key economic partner with Latin America.

For example, leaders in Kansas City are pushing forward with a SmartPort effort that is designed to "facilitate trade between Mexico, the United States and Canada."[97] "KC SmartPort wants to make the Kansas City region the No. 1 logistics center in the nation," John E. Wagner Jr., chairman of the KC SmartPort effort, recently told the *San Antonio Business Journal*. "I look forward to helping them do just that."

The First Steps to Success

In addition to movement of people and goods, ports have the potential to export key services such as engineering, architecture, information technology, business management, accounting, media, and international law. El Paso, in particular, is an ideal home for providers of services seeking to reach international markets. By

harnessing American higher education, expertise, and investment, businesses situated at the border can reach southward to endless potential markets.

Businesses in El Paso have already begun to grasp this opportunity. For example, the El Paso-based architecture firm Perspectiva has built on its technical expertise and cultural fluency to complete projects in the southern U.S., Mexico, Venezuela, Argentina, and Puerto Rico. The firm's border location and bicultural focus have allowed its designs, which include hotels, schools, stores, and other institutional buildings, to take into account local geographic, historic, and cultural cues.

Furthermore, the El Paso-based Holguin Group specializes in designing computer systems to assist federal and state agencies monitoring cross-border traffic. The company, which in the past worked on developing an e-commerce platform for Mexico, is now focused on pioneering software to increase the speed and security of shipments across the border, helping officials balance homeland security duties with the need to facilitate border traffic.

Conclusion

As industrial globalization progresses into the 21st century, businesses will need to adapt to international markets to succeed. Clearly, the greater El Paso region has the necessary assets to become a successful international business hub. Its bicultural, bi-national character lends itself to the emerging Mexico economy and many other up-and-coming Latin American countries.

Businesses—and city, state, and national governments alike—must capitalize on the human and cultural capital of El Paso, as well as expand the commercial use of its geographic location. El Paso, Mexico and the global economy is the great frontier of the 21st century.

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