

**Touro University:**  
**Contributions to the  
Solano County Economy**



**Prepared for:**  
Touro University - California

September 15, 2006



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## Summary of Touro University Contributions to the Solano County Economy

Touro University-California on Mare Island is a key economic generator for Vallejo and Solano County, and helps regenerate the jobs lost by the closure of the U.S. Naval Shipyard. The University annually spends millions of dollars locally while training students for careers in medicine, public health, pharmacy and education, providing future medical and education professionals for local hospitals and schools. During their training, Touro students work in the various Touro University clinics as well as at many local hospitals, pharmacies, and in public school classrooms. University graduates will take positions locally, as well as nationally, as health and education professionals in local hospitals, clinics, pharmacies and schools. The University's growing base of research offers an opportunity to attract and grow additional knowledge-based industries to Vallejo and build on the emerging biomedical corridor that extends up to University of California, Davis along I-80.

Touro University – California already generates an estimated \$27.6 million for the Solano County economy and supports 229 jobs. With planned program and facility expansion, those benefits will continue to grow. The facility renovation and construction build-out envisioned in Touro's 2003 Master Plan would add 518,000 square feet to the 44-acre campus at a cost of at least \$92 million in today's dollars.

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### **Solano County Income and Jobs Generated by Touro University - California, Academic and Fiscal Year 2005-2006**

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	<u>Direct Impacts</u>	<u>Indirect Impacts</u>	<u>Total Net New</u>
<b>University-Generated Expenditures</b>	\$16,904,000	\$10,667,000	\$27,571,000
<b>Jobs Created in Solano County</b>	143	86	229

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Sources: Touro University; U.S. Bureau of Economic Analysis; Bay Area Economics, 2006.

## Economic Overview of Touro University – California

Touro University – California on historic Mare Island is a division of Touro College, an independent institution of higher and professional education founded in New York in 1970 “to perpetuate and enrich the Jewish heritage, to support Jewish continuity,” and “to contribute to the building of a better society for all through educational opportunities.”

Located on Mare Island since 1998, Touro University – California focuses on providing “quality educational programs in the field of health care and education in concert with the Judaic commitment to social justice, intellectual pursuit, and service to humanity.” Touro recruits and accepts students of all nationalities and religions.

Starting with the College of Osteopathic Medicine, Touro University – California now includes four colleges:

- College of Osteopathic Medicine;
- College of Health Sciences;
- College of Education; and
- College of Pharmacy.

Touro’s student body numbered 761 students for the 2005-2006 academic year including as follows:

- 532 medical students;
- 125 Physician Assistant/Master of Public Health (PA/MPH) students;
- 40 College of Education students; and
- 64 College of Pharmacy students.

Enrollment has grown substantially over the past four years. In 2002-2003, Touro University – California enrollment totaled 432 medical students. The College of Health Sciences was added in 2003. The College of Education started enrolling students in 2004, and the College of Pharmacy opened its doors in 2005. Among the 761 students enrolled in the 2005 -2006 year, 252 were rotating at various hospitals throughout the Bay Area and elsewhere in the U.S as well as at various pharmacies in Solano County.

For the 2005-2006 academic year Touro employed 67 faculty members and 76 staff for a total of 143 full-time employees with a total payroll of \$11.3 million, including 20 percent in fringe benefits.

The University will continue growing with an eventual build-out to 2,500 students on the existing 44-acre campus, necessitating an expansion of its faculty, staff and physical plant. In the longer

term, the University intends to expand its health and educational enterprises in partnership with many of the region's existing businesses and institutions of higher education.

## Income Generated in the Solano County Economy

The presence of Touro University – California generates income for Solano County businesses, institutions and residents in five distinct ways:

- Local spending by the University for operations and construction;
- Salaries and wages paid to University faculty and staff;
- Local spending by University students, faculty and staff;
- Dollars spent by visitors to the University; and
- Spin-off income created indirectly by these expenditures.

Touro directly generated \$16.9 million within in Solano County in Fiscal Year (FY) 2005-2006. With spin-off impacts, the University's contribution to the local economy increased to \$27.6 million.

**Table 1: Solano County Income Generated by Touro University, FY 2005-2006**

<b>Income Components</b>	<b>University- Generated Income</b>	<b>Indirect Income</b>	<b>Total Income</b>
University Expenditures Faculty & Staff	\$ 5,234,000	\$ 4,466,000	\$ 9,700,000
Expenditures	\$ 2,689,000	\$ 1,561,000	\$ 4,250,000
Student Expenditures	\$ 8,720,000	\$ 4,466,000	\$ 13,186,000
Visitor Expenditures	\$ 261,000	\$ 174,000	\$ 435,000
<b>Total Income Impacts</b>	<b>\$ 16,904,000</b>	<b>\$ 10,667,000</b>	<b>\$ 27,571,000</b>

Sources: Touro University; U.S. Bureau of Economic Analysis; Bay Area Economics, 2006

### ***University Spending***

In Fiscal Year 2005-2006, Touro spent \$5.23 million with Solano County businesses and organizations. These expenditures included building rehabilitation and maintenance services, emerging technology upgrades and new installation of state-of-the-art research equipment, facilities, furnishings, lodging, food, printing and sanitation services among a wide variety of purchases.

### ***Campus Facility Investments***

The University's construction expenditures have rehabilitated former Naval Shipyard buildings for classroom, laboratory and office space. To date, Touro has invested \$25 million in renovating the former Navy Combat Systems Technical School complex, base hospital, Officers' Club, Owens Center, Wilderman Hall, and the historic ceremonial grounds.

As the University expands, construction activity will increase significantly. Touro plans to increase its health science programs, as well as adding significantly to the range of on-campus support services and student housing. The University's 2003 Master Plan calls for renovation of an additional 39,000 square feet of existing buildings as well as new construction of 479,000 square feet of additional space for a total of 518,000 square feet. Student housing represents 300,000 square feet of the proposed new development. The balance of the new space will be devoted to classrooms, laboratories and offices. In today's dollars, this future development program is estimated to cost at least \$92 million.

### ***Faculty and Staff Spending***

Of the 143 full-time employees at Touro University, 58 of the faculty and staff live in Vallejo while another 21 live elsewhere in Solano County. These county residents received \$5.1 million in annual salaries and compensation benefits in 2005-2006 – 45 percent of the University's total California payroll. Based on information from the 2004 U.S. Consumer Expenditure Survey for metropolitan San Francisco, they spent roughly 73 percent of their expendable income before taxes. BAE estimates that they made 85 percent of their expenditures in Solano County. Other faculty and staff also spent money in Solano County for meals, entertainment and shopping, conservatively estimated at \$20 per person per week.

Together, these represented an infusion of almost \$2.7 million in annual income into the local economy.

**Table 2: Expenditures by Touro University Faculty & Staff, FY 2005-2006**

	<b>Faculty &amp; Staff</b>
<b>Total Faculty &amp; Staff</b>	<b>143</b>
Living in Solano County	79
Average Income	\$53,451
Average Expenditures (a) (b)	73%
Percent Spent in Solano County	85%
<b>Resident Faculty &amp; Staff Expenditures in Solano County</b>	<b>\$2,620,000</b>
Living Outside Solano County	64
Average Weekly Expenditures in Solano County	\$25
Average Weeks in Solano County per Year	43
Average Annual Expenditures in Solano County	\$1,075
<b>Annual Expenditures by Non-Resident Employees</b>	<b>\$69,000</b>
<b>Total Faculty &amp; Staff Expenditures in Solano County</b>	<b>\$2,689,000</b>

Note: (a) Based on average retail expenditures of 73 percent of income. Assumes 85 percent of expenditures made in Solano County.

Sources: Touro University; U.S. Consumer Expenditure Survey; Bay Area Economics, 2006.

### ***Student Spending***

Three hundred twenty students lived in Vallejo during the 2005-2006 academic year, with 143 living elsewhere in the County, for a total of 463 Touro students living within Solano County. In 2005-2006, an additional 252 medical students were on clinical rotations in hospitals located outside Solano County.

It is estimated that each student spends \$19,232 annually in the community in addition to paying his or her tuition. This translates into \$8.5 million in direct total local spending by Touro students living in the County. The 46 students who lived outside Solano County but attended classes on the Mare Island campus spent an estimated average of \$5,677 locally, including school supplies costs, 20 percent of room and board, and 50 percent of personal and transportation costs. Thus, the overall spending by the 509 on-campus students for the 2005-2006 academic year was \$8.7 million in Solano County.

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**Table 3: Solano County Expenditures by Touro University Students, FY 2005-2006**

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<b>Full-Time Students on Mare Island Campus</b>	509
Living in Solano County (a)	463
Average Annual Expenditures (b)	\$19,232
Percent Spent in Solano County	95%
Annual Expenditures in Solano County	\$ 8,459,000
Students Living Outside Solano County (a)	46
Average Annual Expenditures in Solano County (c)	\$5,677
Annual Expenditures in Solano County	\$ 261,000
<b>Student Expenditures</b>	<b>\$ 8,720,000</b>

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Note: (a) Excludes students on medical rotation off-site.

(b) Averages based on University estimates of student spending.

(c) Assumes 20 percent of room and board expenditures plus one-half of personal and transportation expenditures are spent in Solano County.

Source: Touro University; Bay Area Economics, 2006.

### **Visitors**

Touro University's admissions policy requires an on-site interview by each candidate. In 2005-2006, 1,009 students, including 400 for the newly opened College of Pharmacy, came to Vallejo for admissions interviews. A recent University survey of prospective students revealed that they average 1.78 days in Vallejo. The University has negotiated a discounted hotel rate of \$60 per night and estimates that prospective students average \$40 per day for food plus \$98 for the airport shuttle, suggesting an average expenditure of \$229 per prospective student per visit. This translates into total expenditures of \$231,000 by prospective students.

In fact, many prospects choose to extend their stay in California, taking advantage of their presence in the Bay Area. Others may purchase souvenirs or other retail goods. The per student and daily expenditures estimate is conservative in that it does not include visits by prospective faculty, guest lecturers, or the substantial number of people who attend University conferences and special programs on campus.

Additional visitors are drawn from outside the North Bay area to attend graduation and other events such as the White Coat Ceremony. In 2005-2006, Touro had 165 students participate in such ceremonies. On average, one-half are estimated to have had three out-of-area visitors at graduation with an overall stay of 1.5 days and spending \$183 per party. This activity generated an additional \$30,000 in direct spending within the local economy. As with prospective

students, many visitors coming to graduation extended their stay to visit other sites in the Bay Area.

Together, these two categories of visitors introduced \$261,000 in new economy into the Solano County economy.

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**Table 4: Solano County Expenditures by Touro University Visitors, FY 2005-2006**

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Annual Student Interview Visits	1,009
Average Days in Solano County	1.78
Average Expenditures per Trip	\$229
Total for Student Interviews	\$231,000
Number of Students Graduating	165
Estimated Average Number of Out-of-Town Visitors per Graduating Student	1.5
Average Days in Solano County	1.5
Average Expenditures per Trip	\$183
Total for Graduation	\$30,000
<b>Visitor Expenditures</b>	<b>\$261,000</b>

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Sources: Touro University; Bay Area Economics, 2006.

***Total Direct Expenditures***

Together, the University and its faculty, staff, students and visitors spent \$16.9 million in Solano County during the 2005-2006 academic year.

***Spin-Off Income and “Multiplier Effect”***

The dollars spent in Solano County directly by the University and its faculty, staff, students and visitors then generate additional dollars as these direct dollars are spent and re-spent in the local economy. Economists term this the “multiplier” effect. Student dollars spent in local restaurants are recycled through the economy as the restaurant spends those dollars to pay wages to the restaurant staff, food and supply costs, rent to the building owner, and taxes to the City, County and State. Moreover, the restaurant cook then takes his or her salary and spends it for rent, food, transportation, clothing and other daily essentials. Thus, University-related spending indirectly benefits almost every sector of the Solano County economy. The U.S. Bureau of Economic Analysis estimates that each \$1 spent by the University in Solano County generates an additional \$0.85 among county businesses and institutions. This multiplier, used in Table 5 to estimate spin-off dollars created indirectly, is specific to Solano County and reflects the local economy and the opportunities for local spending.

The \$16.9 million of Touro-related spending generated an estimated \$10.7 million in spin-off income in Solano County in 2005-2006.

**Table 5: Indirect Income Generated by Touro University, FY 2005-2006**

<b>Expenditures by</b>	<b>Direct Income</b>	<b>Multiplier (a)</b>	<b>Indirect Income</b>	<b>Total New Income</b>
University	\$ 5,234,000	1.8533	\$ 4,466,000	\$ 9,700,000
Faculty & Staff	\$ 2,689,000	1.5806	\$ 1,561,000	\$ 4,250,000
Students	\$ 8,720,000	1.5122	\$ 4,466,000	\$ 13,186,000
Visitors	\$ 261,000	1.6664	\$ 174,000	\$ 435,000
<b>Total</b>	<b>\$ 16,904,000</b>		<b>\$ 10,667,000</b>	<b>\$ 27,571,000</b>

Notes: (a) Derivation of multipliers is shown in Appendix A.

Source: Touro University; U.S. Bureau of Economic Analysis, Bay Area Economics, 2006.

### ***Total Income Generated***

Touro University-California generated a total of \$27.6 million for the Vallejo and Solano County economy during the 2005-2006 academic year.

### ***Prospects for Future Spending Growth***

As noted earlier in this report, the University proposes to grow to 2,500 students at full build out of the existing 44-acre campus. That enrollment level will require the hiring of additional faculty and staff, and commensurate increases in spending to provide services to these students. It is anticipated that Touro University direct expenditures could triple with the expanded enrollment.

## Jobs Created

Touro employed a total of 143 faculty and staff at its Mare Island campus in 2005-2006. As with spin-off income, spending by Touro and its faculty, staff, students and visitors ripples through the entire County economy, supporting jobs in every sector. The U.S. Bureau of Economic Analysis estimates a multiplier effect of 17.6 jobs supported by every \$1 million of University spending. Thus, the University-generated expenditures supported a total of 229 jobs throughout the Solano County economy in 2005-2006.

The jobs generated by Touro pay significantly higher wages than many other existing Vallejo jobs. With an average annual salary of \$65,800, these jobs at Touro have helped to replace jobs lost with the closing of the Mare Island Naval Shipyard.

**Table 6: Solano County Jobs Created by Touro University, FY 2005-2006**

<u>Income Components</u>	<u>University-Generated Income</u>	<u>Jobs Multiplier (a)</u>	<u>Total Jobs Created</u>
University Expenditures	\$ 5,234,000	17.6	92
Faculty & Staff Expenditures	\$ 2,689,000	12.2	33
Student Expenditures	\$ 8,720,000	11.4	99
Visitor Expenditures	\$ 261,000	17.5	5
<b>Total Income/Jobs</b>	<b>\$ 16,904,000</b>	<b>58.7</b>	<b>229</b>

Note: (a) Expressed as jobs per million dollars

Sources: Touro University; U.S. Bureau of Economic Analysis; Bay Area Economics, 2006

## Economic Development & Community Benefits

The City of Vallejo benefits from Touro's presence in numerous ways in addition to the quantified impacts described previously. For example, Touro is now emphasizing research in its recruitment and hiring of faculty, with priority given to hiring new faculty members who have current grant funding to support research, particularly in medicine and pharmacy. Seventeen researchers work in recently completed state-of-the-art laboratories conducting research into such areas as diabetes, obesity, cancer drug development, cardiovascular disease and diseases of aging. The University also is pursuing partnerships with several Bay Area research and academic institutions including the University of California, Berkeley; the Buck Institute for Age Research; the California Department of Health Services; and the Ernest Gallo Clinical Research Center. Additionally, partnerships with private sector companies in the biomedical field are nearing finalization.

These efforts are generating additional business interest in locating on Mare Island. For example, a Bay Area company focused on securing U.S. Food and Drug Administration certification of medical equipment has expressed interest in a Mare Island location, particularly to work with Touro faculty. Other entities are eager to locate at Mare Island as well.

Moreover, Touro's presence is helping to build a biomedical concentration in the I-80 corridor, linking to University of California, Davis (UCD) and Genentech. UCD graduates represent roughly one-fifth of the incoming classes at Touro for the 2006-2007 academic year. Touro University is uniquely located in the North Bay Area to facilitate collaboration with surrounding educational institutions and biotechnology enterprises to help build this biomedical research and employment base that many companies hope to attract. Touro has reinforced Vallejo's unique position within the I-80 corridor, as a special town with a private and graduate school University campus acting a major permanent draw to the community.

Recognizing the benefits of collaboration with Touro's medical programs, the Army Reserve is planning to relocate its Second Medical Battalion to Mare Island. The two organizations have exchanged letters of intent with the goal of jointly securing a military hospital on part of the Touro campus. A University hospital would be developed with surge capacity to serve as a medical resource to the Department of Homeland Security in the event of a catastrophe.

The existing Touro University Medical Clinics serve as outpatient medical facilities in Vallejo, and provide pediatric, adult, and geriatric care to North Bay residents. University faculty are the physicians who staff the Touro Clinic. Within the next few years, Touro plans to expand its clinic system and develop a full University Hospital to serve area residents while providing additional training opportunities for its students.

The College of Pharmacy has forged a strong partnership with Kaiser Permanente in Solano County. Already, 21 Kaiser Pharmacists are teaching at the Touro campus on a regular basis. Other strong clinical partners in Solano County include Longs Drugs, Walgreens, Rite Aid, Safeway and Raley's as well as Sutter Health.

The College of Education has been forging new bonds with both the Vallejo City Unified School District and Solano Community College. Touro education students work in classrooms throughout the Vallejo School District , and the College of Education plans to offer courses based in the community.

Touro University is a member of a newly forming Higher Education Coalition in Vallejo that was initiated jointly with the three institutions with campuses in Vallejo: Touro University, California Maritime Academy (CMA), and Solano Community College. Touro and CMA are considering a number of proposals that would expand educational opportunities for students from Solano Community College.

Touro faculty and administrators are active in the full range of civic and community organizations in Vallejo, including the new Leadership Vallejo program. Many contribute their expertise to the local community, serving on the boards of such organizations as the Vallejo Chamber of Commerce, the American Red Cross, Rotary International, Lions Club and the United Way.

## Appendix A. Multipliers

### Appendix A-1: Derivation of Faculty & Staff Expenditure Multipliers

<u>Expenditures</u>	<u>Percent of Total Expenditures</u>	<u>Income</u>	<u>Multipliers Employment</u>
Retail	23%	1.6716	14.1
Eating/Drinking	7%	1.7498	25.2
Real Estate	35%	1.3122	2.8
Transportation	17%	1.8229	21.0
Health	5%	1.708	10.6
Personal	1%	1.6297	12.2
Miscellaneous	4%	1.6297	12.2
Amusement	5%	1.6873	17.6
Contributions	3%	1.7606	19.5
<b>Blended Multipliers</b>	<b>100%</b>	<b>1.5806</b>	<b>12.2</b>

Source: U.S. Bureau of Economic Analysis; BAE, 2006

### Appendix A-2: Derivation of Student Expenditure Multipliers for Solano County

<u>Expenditures</u>	<u>Percent of Total Expenditures</u>	<u>Multipliers Income</u>	<u>Employment</u>
Real Estate	52%	1.3122	2.8
Retail	10%	1.6716	14.1
Eating/Drinking	25%	1.7498	25.2
Service	6%	1.6297	12.2
Transportation	7%	1.8229	21.0
<b>Blended Multipliers</b>	<b>100%</b>	<b>1.5122</b>	<b>11.4</b>

Source: U.S. Bureau of Economic Analysis; Student Survey; BAE, 2006

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**Appendix A-3: Derivation of Visitor Expenditure Multipliers for Solano County**

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<u>Expenditures</u>	<u>Percent of Total Expenditures</u>	<u>Multipliers Income</u>	<u>Employment</u>
Hotel	26%	1.3122	2.8
Eating/Drinking	31%	1.7498	25.2
Transportation	43%	1.8229	21.0
<b>Blended Multipliers</b>	100%	<b>1.6664</b>	<b>17.5</b>

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Source: U.S. Bureau of Economic Analysis; Student Survey; Bay Area Economics, 2006.