GAVILAN COLLEGE

Student Flow Preliminary Results

Prepared November 2004 by

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Introduction

In the process of conducting research on student flow preliminary to planning a potential new site in Coyote Valley, it was discovered that roughly 30% of student who live within the Gavilan district attend another community college. To understand the motives of these outflowing students, Gavilan in collaboration with the Chancellor's Office is examining the demographics and course taking behavior of all community college students within the Gavilan district. This analysis is intended to serve as a model for other colleges and should be fully completed in the near future. This report shares the preliminary results of this research in progress.

Student Flow Demographics

Table 1 shows the relative enrollments of Gavilan district residents who chose to enroll at Gavilan or at another community college.

Table 1. Enrollment data for students living inside the Gavilan Community College District who are attending a California Community College.

	Gavilan		Not Gavilan		Gavilan		Not Gavilan		Gavilan	Not Gavilan
	Headcount				Enrollments				Units Attempted	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent		
Fall 2001	4,387	69%	2,008	31%	12,611	71%	5,202	29%	6.9	6.3
Fall 2002	4,904	69%	2,238	31%	14,835	73%	5,523	27%	7.2	6.1
Fall 2003	4,373	67%	2,138	33%	13,588	71%	5,500	29%	7.5	6.4
Mean	4,555	68%	2,128	32%	13,678	72%	5,408	28%	7.2	6.2

In general, it appears that students who live in our district but go to community colleges elsewhere are more likely to live closer to San Jose. The map on the last page illustrates the effect of geographic location on attendance. Gavilan's sphere of influence appears strongest in Gilroy diminishing gradually to the south and rapidly to the north. Those who attend college elsewhere appear to be of a similar age distribution to those who come to Gavilan except leavers have relatively fewer members of students over 60. Those going to other colleges are significantly more likely to be male and non-Hispanic and are more likely to have a high school diploma or an AA while those with no diploma or a BA or higher are more likely to come to Gavilan. Those who go elsewhere are less likely to take as many units and more likely to be enrolled in vocational type programs that are mostly not transferable.

Course Taking Patterns and Student Flow

83% of out of district enrollments occurred at our neighboring Region 4 colleges, excluding Ohlone which had enrollments similar to colleges outside the region (Table 2). Viewing enrollments only at Gavilan and these Region 4 colleges we see that about 75% of enrollments by residents occur at Gavilan and 25% at other Region 4 colleges. Some programs show higher enrollments at the Region 4 colleges that the average of 25% suggesting that these are programs we could potentially expand to attract students given constraints on resources and other factors. In other words, if we note a class or program where more than 25% of the enrollments are at other colleges, we could view those enrollments as unmet demand. Conversely, if we see more than 75% of the enrollments occurring at Gavilan, this could be interpreted as an area with strong appeal for local residents.

Table 2. Region 4 California Community Colleges.

Cabrillo College
De Anza College
Foothill College
Ohlone College*
Gavilan College
Hartnell College
Monterey Peninsula College
Evergreen Valley College
San Jose City College

*Ohlone College was not included in the analysis of type of course enrollment

It should be noted that courses are classified according to a coding scheme called Taxonomy of Program or TOP code. This is a six digit code where the first two digits indicate very broad subject areas and the remaining digits indicate more specific classes within this broad area. For example, 150000 is the generic code for Humanities and 150100 is the code for English classes such as college composition and 150900 is the code for Philosophy classes.

Table 3 and Table 4 viewing enrollments at the highest level of the TOP hierarchy. Table 3 is sorted by TOP code number and Table 4 is sorted in descending percents and counts of non-Gavilan enrollments. The Table 4 sort puts programs at the top of the table that are not offered at Gavilan. Below are a group of offerings that are at Gavilan but proportionately more students go elsewhere for these classes suggesting that there may be an unmet need. In this category are Public and Protective Services, Engineering, and Health. Examining within these broad categories, it appears specific programs that have heavy enrollments at other colleges include Administration of Justice, Health Education, Nursing (RN), and Police and Fire training. Other areas that could be included based on the number of enrollments at other colleges are Automotive Technology, Welding, and Engineering, however those programs are unlikely to be resumed at Gavilan due to historic difficulties in maintaining enrollments in these programs.

The next grouping of programs could be considered "bread and butter" programs that appear to appeal to local residents and constitute the bulk of Gavilan's enrollments. These programs include Interdisciplinary Studies, which is mostly basic skills and pre-transfer level Math, basic skills English, and ESL as well as supervised tutoring, and in Humanities. Mathematics also appears to have many enrollments at other colleges but Gavilan's basic skills math and elementary and intermediate algebra classes are coded under Interdisciplinary Studies while other colleges often code these classes under Mathematics. All math classes regardless of TOP code are shown at the bottom of Table 4.

Table 3. Differences in enrollment by TOP code between residents who attend Gavilan and those who attend another region 4 community college not including Ohlone.

	Enrollment Count		Enrollment Percent	
Taxonomy of Program	Gavilan	Not Gavilan	Gavilan	Not Gavilan
Agriculture and Natural Resources	0	399	0%	100%
Architecture and Environmental Design	0	57	0%	100%
Environmental Sciences and Technologies (new)	0	0	0%	0%
Biological Sciences	4063	905	82%	18%
Business and Management	9347	1642	85%	15%
Media and Communications	212	56	79%	21%
Information Technology	2733	810	77%	23%
Education	5268	2332	69%	31%
Engineering and Industrial Technologies	777	1407	36%	64%
Fine and Applied Arts	9015	1950	82%	18%
Foreign Language	2015	791	72%	28%
Health	1624	1004	62%	38%
Family and Consumer Sciences	3763	1656	69%	31%
Law	0	109	0%	100%
Humanities *(Letters)*	18798	4767	80%	20%
Library Science	11	141	7%	93%
Mathematics	2834	1934	59%	41%
Military Studies	0	12	0%	100%
Physical Sciences	2155	1032	68%	32%
Psychology	2880	722	80%	20%
Public and Protective Services	1842	9599	16%	84%
Social Sciences	9119	2585	78%	22%
Commercial Services	4483	65	99%	1%
Interdisciplinary Studies	29025	3380	90%	10%
Total	109964	37355	75%	25%

Table 4. Enrollment by TOP code in Table 3 sorted in descending percents and counts of "Not Gavilan" enrollments.

	Enrollment Count		Enrollment Percent	
Topname	Gavilan	Not Gavilan	Gavilan	Not Gavilan
Agriculture and Natural Resources	0	399	0%	100%
Law	0	109	0%	100%
Architecture and Environmental Design	0	57	0%	100%
Military Studies	0	12	0%	100%
Library Science	11	141	7%	93%
Public and Protective Services	1842	9599	16%	84%
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Commercial Services	4483	65	99%	1%
Environmental Sciences and Technologies (new)	0	0	0%	0%
Total	109964	37355	75%	25%
Math courses regardless of TOP	10236	2027	83%	17%

Multivariate Analysis of Attendance Behavior

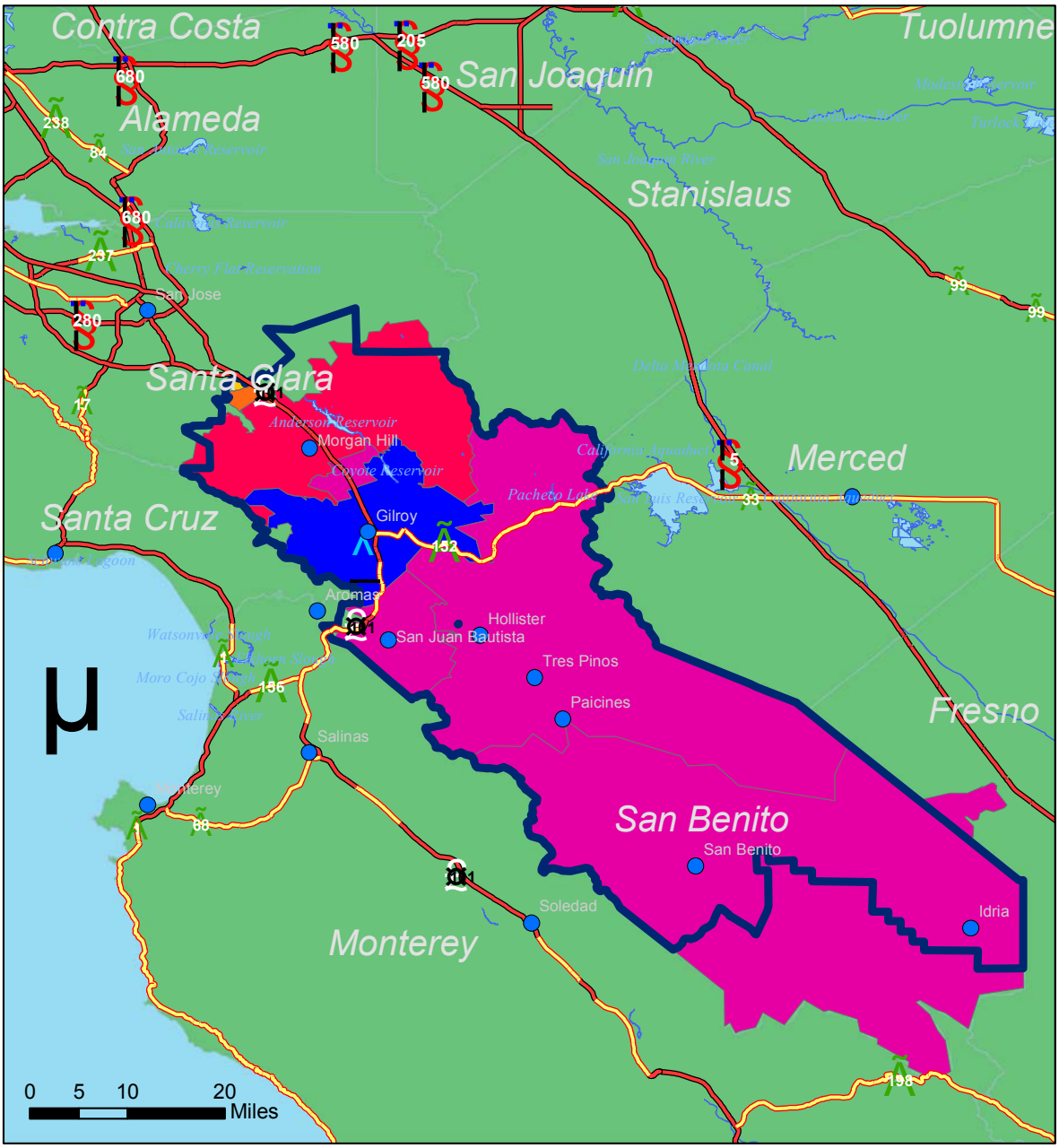
The final step of this preliminary analysis was to examine demographics and course taking behavior simultaneously in a multivariate analysis (Classification and Regression Tree) to predict attendance at Gavilan versus another community college (Table 5). The Classification and Regression Tree was based upon 98,600 enrollments and correctly classified 84% of the students. Some variables turned out to be useful for predicting attendance and others did not. Those variables that did not appear to predict attendance included general demographics such as ethnicity, gender, and age suggesting that while there are differences in attendance patterns between these groups they do not explain attendance behavior as effectively as other factors. Also notable by its absence was time as factor indicating these patterns are stable over the three terms examined.

TOP code, proximity to San Jose, and course transferability and credit status appeared to be the most important variables in predicting attendance behavior. In general, it appeared that those taking non-transferable vocational courses were more likely to attend another college. Those taking general education/transfer prep types of courses had a strong geographic split in attendance behavior. Those who lived north of Morgan Hill were very likely to attend another college while those who lived south of Morgan Hill were very likely to attend Gavilan. Those in the Morgan Hill area were very likely to attend Gavilan if their course had a TOP code of Biological Sciences, Business and Management, Information Technology, Fine and Applied Arts, Commercial Services, or Interdisciplinary Studies (basic skills and tutoring). Those in the Morgan Hill area taking courses with TOP codes of Media and Communication, Education, Foreign Language, Health, Family and Consumer Sciences, Humanities, Mathematics, Physical Sciences, Psychology, or Social Sciences were much more likely to attend Gavilan if those courses were degree applicable while non-credit students in those programs were much more likely to attend another college.

Table 5. Predictor Variables for Student Attendance Decision

Time (3 successive Fall terms)	Latitude
TOP code	Term length (short vs. full term)
Course Units	Degree Applicability
Transferability	Basic Skills Status
Meeting Days	Age
Gender	Ethnicity
Success	Cumulative Units Attempted (student experience)
Educational Level	

Gavilan Joint Community College District



Legend

Gavilan College District Boundary

Gavilan College Main Campus

% Attending Gavilan

- 10
- 11 - 43
- 44 - 64
- 65 - 77
- 78 - 84

Gavilan Research Office 2004