EASTERN URBAN CENTER
SPA PLAN
DRAFT PUBLIC FACILITIES FINANCE PLAN

Approved by:
Chula Vista City Council
Date:
Resolution No.

Prepared by:

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II.5.1 EXECUTIVE SUMMARY

OVERVIEW

This Public Facility Finance Plan (PFFP) addresses the public facility needs associated with the Eastern Urban Area (EUC), Sectional Planning Area (SPA) Plan and the Otay Ranch General Development Plan (GDP). The developer proposed project as described in the SPA Plan is referred to as the "EUC" or the "EUC SPA Plan" in this PFFP. The PFFP has been prepared under the requirements of the City of Chula Vista's Growth Management Program and Chapter 9, Growth Management of the Otay Ranch GDP. The preparation of the PFFP is required in conjunction with the preparation of the SPA Plan for the project to ensure that the development of the project is consistent with the overall goals and policies of the City's General Plan, Growth Management Program, and the Otay Ranch GDP. The GDP was originally adopted by the Chula Vista City Council on October 28, 1993, to ensure that development within the Otay Ranch will not adversely impact the City's Quality of Life Standards. The Otay Ranch GDP was last amended with the General Plan Update on December 13, 2005. This PFFP meets the policy objectives of the Otay Ranch GDP, as amended.

This PFFP is based upon the project information that has been presented in the *EUC Sectional Plan Area (SPA) Otay Ranch GDP dated April 1, 2009, and prepared by Cinti Land Planning*. The PFFP analyzes the existing demand for facilities based upon the demand from existing development and those projects with various entitlements from 2009 through the year 2013.

When specific thresholds are projected to be reached or exceeded based upon the analysis of the development of the project, the PFFP provides recommended mitigation necessary for continued compliance with the City of Chula Vista's Growth Management Program and Quality of Life Standards. The PFFP does not propose a different development phasing from that proposed by the EUC SPA Plan, but may indicate that the development should be limited or reduced until certain actions are taken to guarantee public facilities will be available or provided to meet the Quality of Life Standards. Subsequent changes to the SPA Plan may require an amendment to this PFFP.

Typically, as an applicant receives each succeeding development approval, the applicant must perform the required steps that will insure the timely provision of the required facility. Failure to perform the required step curtails additional development approvals. The typical steps are illustrated below:

Performance of Facility Thresholds

GDP:

- Goals, objectives & policies established.
- Facility thresholds established.
- Processing requirements established.

SPA:

- Facility financing refined and funding source identified consistent with GDP goals, objectives & policies.
- Facility demand and costs calculated consistent with adopted land uses and GDP defined methodologies.
- Specific facility financing and phasing analysis performed to assure compliance with Growth Management Thresholds.
- Facilities sited and zoning identified.

Tentative Map:

- Subdivision approval conditioned upon assurance of facility funding.
- Subdivision approval conditioned upon payment of fees, or the dedication, reservation or zoning of land for identified facilities.
- Subdivision approval conditioned upon construction of certain facility improvements.

Final Map:

- Tentative Map conditions performed.
- Lots created.

Building Permit:

- Impact fees paid as required.

The critical link between the thresholds and development entitlements is the PFFP. Part II, Chapter 9, Section C of the GDP/SPA Processing Requirements, General Development Plan Implementation, requires the preparation of a PFFP as a condition of approval of all SPAs. This PFFP satisfies the GDP requirement. The PFFP requires the preparation and approval of phasing schedules showing how and when facilities and improvements necessary to serve proposed development will be installed or financed to meet the threshold standards, including:

- An inventory of present and future requirements for each facility.
- A summary of facilities cost.
- A facility phasing schedule establishing the timing for installation or provisions of facilities.
- A financing plan identifying the method of funding for each facility required.
- A fiscal impact report analyzing SPA consistency with the Subregional Plan (SRP).

Subsection C of the City of Chula Vista Municipal Code (CVMC) Section 19.09.100 (Growth Management Ordinance) requires that if the City Manager determines that facilities or improvements within a PFFP are inadequate to accommodate any further development within that area the City Manager shall immediately report the deficiency to the City Council. If the City Council determines that such events or changed circumstances adversely affect the health, safety or welfare of City, the City may require amendment, modification, suspension, or termination of an approved PFFP.

A. GENERAL CONDITIONS FOR THE EUC SPA PFFP

1. All development within the boundaries of the PFFP for the project shall conform to the provisions of Section 19.09 of the Chula Vista Municipal Code (Growth Management Ordinance) as may be amended from time to time and to the provisions and conditions of this Public Facilities Financing Plan unless stated otherwise in a separate development agreement entered into by the developer and the City.

2. All development within the boundaries of the PFFP for the project shall be required to pay development impact fees for public facilities, transportation and other applicable fees pursuant to the most recently adopted program by the City Council, and as amended from time to time unless stated otherwise in a separate development agreement entered into by the developer and the City. Development within the boundaries of the EUC SPA Plan shall be responsible for fair share proportionate fees that are necessary to meet the adopted facility performance standards as they relate to the SPA Plan, subdivision and development application.

3. The Public Facilities Finance Plan shall be implemented in accordance with Chula Vista Municipal Code (CVMC) 19.09.090. Future amendments shall be in accordance with CVMC 19.09.100 and shall incorporate newly acquired data, to add conditions and update standards as determined necessary by the City through the required monitoring program unless stated otherwise in a separate development agreement entered into by the developer and the City. Amendment to this PFFP may be initiated by action of the Planning Commission, City Council or property owners at any time. Any such amendments must be approved by the City Council.

4 This PFFP addresses all future projects within its boundaries that are consistent with the SPA Plan. Future projects will be reviewed for consistency with the SPA Plan, PFFP and EIR. Future projects that are determined to be inconsistent with the SPA Plan, PFFP and EIR shall require additional environmental review and may require amendments to the SPA Plan and PFFP.

5. This PFFP analyzes the maximum allowable development potential for planning purposes only. The approval of this plan does not guarantee specific development densities.

6. The facilities and phasing requirements identified in this PFFP are based on the EUC SPA Plan Site Utilization Plan.

7. The plan analysis covers both of the two grading options, which are included in the EUC SPA Plan and Technical Studies. Any design consistent with these documents will not require an amendment to the PFFP.

8. The plan analysis is based upon the non-sequential and conceptual phasing presented in the EUC SPA Plan document. Significant changes to the conceptual phasing plan may require an amendment to the PFFP.

9. This project is being proposed concurrently with a parks agreement and a development agreement. If approved by the City Council, the development agreement could limit fee, dedication and improvement requirements by its terms.

B. PUBLIC FACILITY COST AND FEE SUMMARY EUC SPA

The following tables identify and summarize the various facility costs associated with development of the project. The facilities and their costs are identified in detail in subsequent sections of this document. The tables indicate a recommended financing alternative based upon current Chula Vista practices and policies. However, where another financing mechanism may be shown at a later date to be more effective, the City may implement such other mechanisms in accordance with City policies. This will allow the City maximum flexibility in determining the best use of public financing to fund public infrastructure improvements.

The Traffic Impact Analysis by Kimley-Horn (KH), dated October 2008, has identified on-site and off-site road improvements that will be required as the result of the development of the project. The estimated cost of street improvements is identified in Table A.2. The improvement projects listed include both off-site and on-site improvements. In the event the developer constructs a Transportation Development Impact Fee (TDIF) improvement, the cost of the improvement may be eligible for credit against TDIF fees. The developer as a project exaction shall complete construction of non-TDIF eligible improvements.

TDIF Fees and traffic signal fees generated by the project are identified on Table A.1. Funding for street improvements may be accomplished in one or more possible funding alternatives such as:

- Payment of TDIF fees.
- Construction of improvements by developer with credit toward DIF fees on building permits.
- Financing through assessment districts or Community Facility Districts (CFD).
- Expenditure of available DIF account funds.
- Construction of improvements by other developers.
- Federal Funds.

Some off-site sewer, drainage and water facilities are the responsibility of the developer if the facility is needed to support the proposed development.

The proposed EUC SPA Plan's 2,983 residential units will generate approximately 624 elementary school students. To provide for future elementary school demand in the EUC, an elementary school site of approximately six acres is planned within the EUC. In addition, the developer has a school mitigation agreement with the district to mitigate school impacts.

The project's residential units will generate approximately 471 Middle and High School age students. The Sweetwater Union High School District has approved a site for a Middle/High School adjacent to the EUC in Village 11. An additional High School is available immediately to the west of the EUC in Village 7. Further, the developer has a school mitigation agreement with the district to mitigate school impacts.

The project will trigger development impact fees for libraries, police, fire services, civic center, corporation yard, and other city public facilities will be funded, in part, from revenues generated from the payment of Public Facilities Development Impact Fees at building permit issuance.

Altogether, the City's development impact fees by phase and facility for the Project are identified on Table A.1.

Table A.1[1]
Otay Ranch EUC
Summary of Estimated DIF Fees by Phase & Facility

	Phase				
	Blue	**Yellow**	**Green**	**Orange**	**Total**
Facility					
Traffic (1)	$12,691,174	$11,448,146	$6,873,516	$7,739,211	$38,752,047
Sewer	$3,305,915	$4,049,496	$2,228,322	$2,454,019	$12,037,752
Drainage (2)					
Water (2)					
Police (5)	$1,622,571	$1,801,097	$1,133,185	$1,199,072	$5,755,925
Fire (5)	$831,115	$946,177	$580,462	$625,037	$2,982,791
Schools (3)					
Library (5)	$1,092,246	$1,445,499	$763,020	$914,211	$4,214,976
Parks (4)	$9,712,745	$12,853,995	$6,785,100	$8,129,555	$37,481,395
Recreation (5)	$828,656	$1,096,656	$578,880	$693,584	$3,197,776
Civic Center (5)	$2,134,041	$2,457,053	$1,490,468	$1,693,584	$7,775,146
Corp. Yard (5)	$566,208	$414,609	$395,244	$320,188	$1,696,249
Pedestrian Bridge (6)	$1,107,709	$1,465,959	$773,820	$927,151	$4,274,639
Administration (5)	$487,811	$561,522	$340,699	$369,693	$1,759,725
Total	**$34,380,191**	**$38,540,209**	**$21,942,716**	**$25,065,305**	**$119,928,421**

Notes:
(1) Includes TDIF & Traffic Signal Fees.
(2) No city imposed DIF program in place for this facility.
(3) No city imposed DIF program, however, all properties, including non-residential, are assessed a special tax to fully mitigate impacts on school facilities caused by residential development.
(4) Includes both Development and Acquisition in lieu. Not applicable to non-residential projects.
(5) Facilities funded by Public Facilities DIF component.
(6) Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit. In addition, the developer may have an agreement with the city that modifies the DIF.

Please reference Exhibit 5, Phasing Plan.

[1] The fees provided in this table are estimates only and subject to change. Public Facility DIF and TDIF fees are based on the City of Chula Vista's Development Checklist for Municipal Code Requirements, Form 5509, and Revised September 16, 2008. Fees are subject to change as the ordinance is amended by the City Council from time to time unless stated otherwise in a separate development or parks agreement.

Table A.2 EUC SPA Timing and Funding Source by Facility		
Facility	**Funding Source**	**Project Timing**
1. EUC SPA TDIF	Pay TDIF	Prior to Building Permit
2. No Specific Traffic Signal Facility	Pay Traffic Signal Fee	Prior to Building Permit
Street improvements[1] to be constructed or bonded by EUC		
Olympic Pkwy & Brandywine Ave Restripe NB approach to include one thru lane and one shared thru-right lane and coordinate SB I-805 Ramps through Brandywine on Olympic Pkwy	Developer Builds	1st EDU
Olympic Pkwy & Heritage Rd Add SB right-turn overlap phase	Developer Builds	1st EDU
Main St & Heritage Rd Add dual NB and dual EB right-turn lanes	Developer Builds	3,070 EDUs
Birch Rd & La Media Rd. Convert a WB thru lane into a thru/right turn lane	Developer Builds	5,270 EDUs
Birch Rd & Magdalena Ave. Add exclusive EB right-turn lane.	Developer Builds	5,270 EDUs
Rock Mountain Rd & Magdalena Ave. Add a dual SB left-turn lane and a dual NB right-turn lane	Developer Builds	5,270 EDUs
Hunte Pkwy between SR-125 and Street A. [2] Add 2 auxiliary lanes to the six-lane Town Center Art.	Developer Builds	5,270 EDUs
Sewer[3]		
On-site Sewer	Developer Builds	Concurrent w/ Phasing Building Permit
Off-site Sewer		
Poggi Canyon Basin connection – Max. 580 EDU's	Developer Builds Pay City Fees	Replace Reach 270 within one year of occupancy of the first unit draining to Poggi Canyon or a d/D of .85, unless otherwise approved by the City Engineer.
Salt Creek Basin Interim connection – Max. 2,455 EDU's (until Rock Mtn. Trunk Sewer built)	Developer Builds Pay City Fees	Install 173 foot 12" stub sewer within one year of occupancy of the first unit draining to Salt Creek or d/D of 0.85, unless approved by the City Engineer
Salt Creek Basin Permanent connection – Max 1,955 EDU's	Pay City Fees	Rock Mtn. Trunk Sewer completed by others
Wolf Canyon Basin connection (Rock Mtn. Trunk Sewer) – Max 2,492 EDU's	Developer builds connection to Village 7	Rock Mtn. Trunk Sewer completed by others
Drainage	Developer Builds	Per Ordinance
Water	Pay OWD Capacity Fees	Pay @ purchase of Water Meters
Police	Pay PFDIF	Prior to Building Permit
Fire	Pay PFDIF	Prior to Building Permit
Site for future Fire Station	Developer Dedicates	Dedicate site with applicable final map
Schools	SUHSD fees or Mello-Roos	Prior to Building Permit
	CVESD fees or Mello-Roos	Prior to Building Permit
Table notes on page 7.		

Table A.2 Continued EUC SPA Timing and Funding Source by Facility		
Facility	**Funding Source**	**Project Timing**
Libraries	Pay PFDIF	Prior to Building Permit
Site for future Library	Developer Dedicates	Dedicate site with applicable final map
Parks	PAD Fees/In-Lieu fees	Prior to Building Permit
Site(s) for future parks	Developer Dedicates	Dedicate site with applicable final map
Recreation	Pay PFDIF	Prior to Building Permit
Civic Center	Pay PFDIF	Prior to Building Permit
Corp. Yard	Pay PFDIF	Prior to Building Permit
Other Public Facilities	Pay PFDIF	Prior to Building Permit

[1] The improvements must be constructed per the approved conditions of approval or as approved by the City Engineer unless stated otherwise in a parks or a development agreement.

[2] This improvement not required if Otay Valley Road interchange on SR-125 is constructed.

[3] Development shall not occur without adequate sewer capacity as determined by the City Engineer.

II.5.2 INTRODUCTION

II.5.2.1 Overview

The City of Chula Vista looks comprehensively at the issues dealing with development and the additional impacts it places on public facilities and services. The approval of the Threshold Ordinance and the General Plan update were the first steps in the overall process of addressing growth related issues. The second step in this process was the development and adoption of a specific Growth Management Element, which set the stage for the creation of the City's Growth Management Program.

The Chula Vista City Council adopted the Growth Management Program and Implementing Ordinance No. 2448 on May 28, 1991. These documents implement the Growth Management Element of the General Plan, and establish a foundation for carrying out the development policies of the City by directing and coordinating future growth in order to guarantee the timely provision of public facilities and services.

The Growth Management Ordinance requires a Public Facilities Finance Plan (PFFP) to be prepared for future development projects requiring a Sectional Planning Area (SPA) Plan or Tentative Map. The contents of the PFFP are governed by Section 19.09.060 of the Municipal Code, which requires that the plan show how and when the public facilities and services identified in the Growth Management Program will be installed or financed.

II.5.2.2 Purpose

The purpose of all PFFP's in the City of Chula Vista is to implement the City's Growth Management Program and to meet the General Plan goals and objectives, specifically those of the Growth Management Element. The Growth Management Program ensures that development occurs only when the necessary public facilities and services exist or are provided concurrent with the demands of new development. The Growth Management Program requires that a PFFP be prepared for every new development project, which requires either SPA Plan or tentative map approval. Similarly, amendments to a SPA Plan may require an amendment or a supplement to the PFFP.

The PFFP is intended to be a dynamic and flexible document. The goal of the Financing Plan is to assure adequate levels of service are achieved for all public facilities impacted by the project. It is understood that assumed growth projections and related public facility needs are subject to a number of external factors, such as the state of the economy, the City's future land use approval decisions, etc. It is also understood that the funding sources specified herein may change due to financing programs available in the future or requirements of either state or federal law. It is intended that revisions to cost estimates and funding programs be handled as administrative revisions, whereas significant revisions to the facilities-driven growth phases are to be accomplished through an update process via an amendment to or a supplement to the PFFP.

II.5.2.3 Growth Management Threshold Standards

City Council Resolution No. 13346 identified eleven public facilities and services with related threshold standards and implementation measures. These public facilities and services were listed in a policy statement dated November 17, 1987 and have subsequently been

refined based on recommendations from the Growth Management Oversight Commission (GMOC).

The eleven public facilities and services include:

- Traffic
- Police
- Fire/EMS
- Schools
- Libraries
- Parks and Recreation
- Water
- Sewer
- Drainage
- Air Quality
- Fiscal

During development of the Growth Management Program two new facilities were added to the list of facilities to be analyzed in the PFFP:

- Civic Facilities
- Corporation Yard

Threshold standards are used to identify when new or upgraded public facilities are needed to mitigate the impacts of new development. Development approvals will not be made unless compliance with these standards can be met. These threshold standards have been prepared to guarantee that public facilities or infrastructure improvements will keep pace with the demands of growth.

A. <u>The Threshold Standards fall into three general categories:</u>

1. *A performance standard measuring overall level of service* is established for police, fire and emergency medical services, sewers, drainage facilities, and traffic;
2. *A ratio of facilities to population* is established for park and recreation facilities, and libraries; and
3. *A qualitative standard* is established for schools, water, air quality, and fiscal impacts.

The qualitative standard pertains to some services that are provided by agencies outside of the city -- schools are provided by the Chula Vista Elementary School District and the Sweetwater High School District; water service is provided by two independent water districts (Otay Water District and Sweetwater Authority); and sewer service is provided by the City of Chula Vista and has an agreement with the City of San Diego to treat the waste water. Finally, the air-quality and fiscal threshold standards do not relate to specific public services but are intended to determine whether growth is having an adverse impact on two other measures of quality of life: the air quality within the region and the city's overall fiscal health.

B. <u>The Threshold Standards are applied in three ways:</u>

1. Many of the standards were used in the development and evaluation of the city's General Plan to ensure that quality-of-life objectives are met at the time of General Plan build-out during a 20-to-25 year period;
2. Certain standards are used in the evaluation of individual development projects to determine the possible impacts of the project and to apply appropriate conditions and requirements in order to mitigate those impacts; and
3. All of the standards are monitored by the Growth Management Oversight Commission (GMOC) on an annual basis to ensure that the cumulative impacts of new growth do not result in a deterioration of quality of life, as measured by these standards.

II.5.2.4 The Project

The Otay Ranch is located in southwestern San Diego County approximately 3.5 miles east of downtown Chula Vista and 13 miles southeast of downtown San Diego. The ranch is grouped geographically into three distinct parcels: the Otay Valley parcel; the San Ysidro Mountains parcel; and the Proctor Valley parcel. The 9,449-acre Otay Valley parcel is the largest parcel and is located with the City of Chula Vista. The remaining parcels are primarily located within the unincorporated area of the county (see Regional Vicinity Map Exhibit 1).

The EUC project area is located in the central portion of the Otay Valley Parcel of the Otay Ranch GDP. The proposed SPA area is essentially consistent with the EUC designated area identified in the Otay Ranch GDP approved in December, 2005. The entire EUC area includes approximately 238 acres of gently rolling terrain and is bounded by the proposed alignments of SR-125 on the west, Birch Road on the north, EastLake Parkway on the east and Hunte Parkway on the south (see Project Location/SPA Boundaries Exhibit 2).

The project area is immediately adjacent to Otay Ranch Village 7, to the west across the SR-125 ROW and the Freeway Commercial Center (Otay Ranch Town Center), which has been developed immediately to the north. Additional suburban development is or will be located on the adjacent Otay Ranch properties, Village Eleven to the northeast, University Site to the southeast, and Village Nine, to the south.

Access to the site will be provided via each of the arterial roads, which bound the EUC development area. Freeway interchanges are planned on SR-125 at Birch Road and Hunte Parkway. Bob Pletcher Parkway connects to the EUC via a freeway underpass from Village 7.

Historically, the Otay Valley Parcel of the Otay Ranch property has been used for ranching, grazing and dry farming activities. The property is crossed by a system of dirt roads and old cattle trails, and is composed of plowed agricultural fields. Portions of the property have been graded in conjunction with the grading of Village 7, SR-125, and the Otay Ranch Town Center. Similar off-site grading, south of the EUC, may be required to achieve a balance for the EUC.

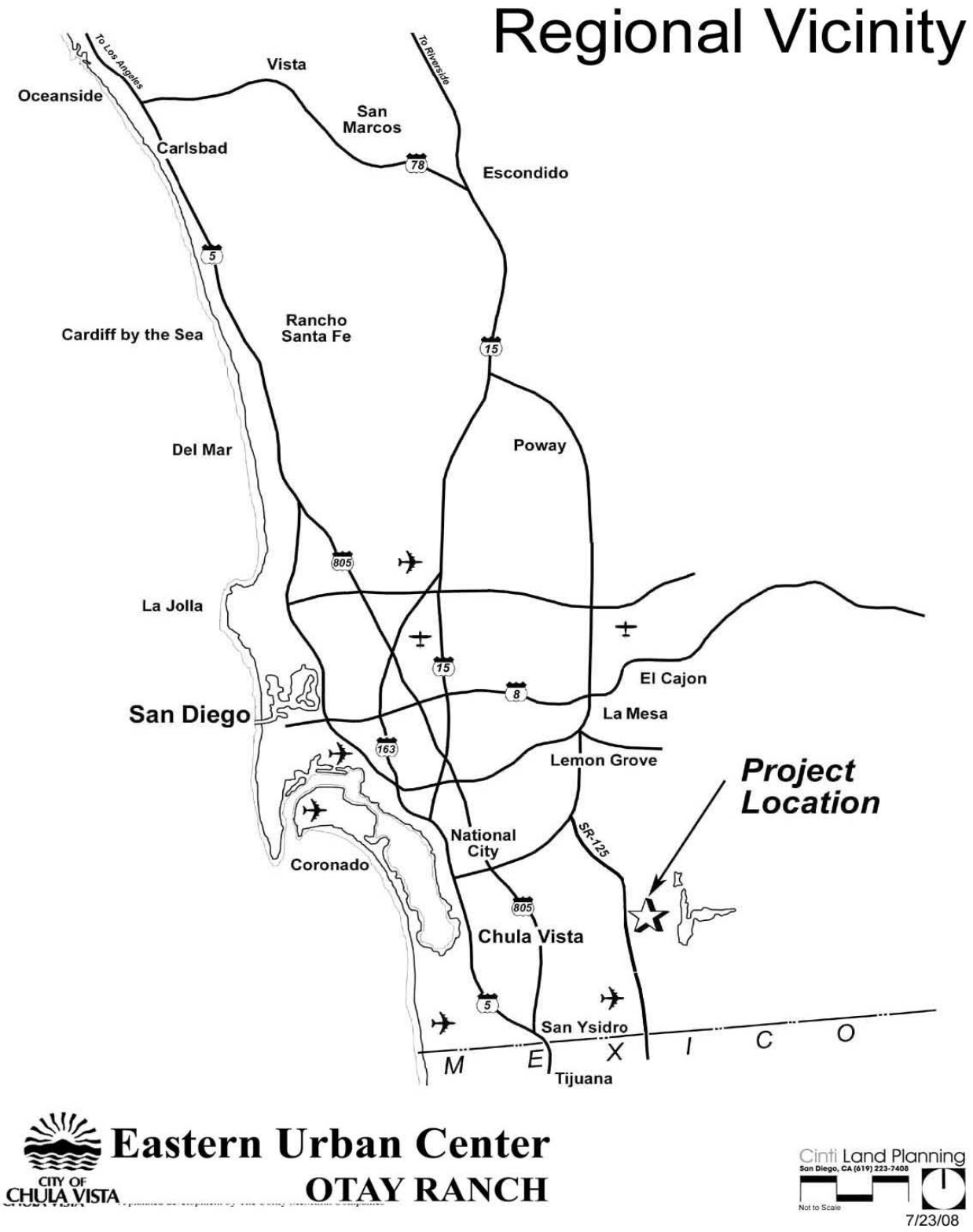
The EUC site is comprised of three separate ownerships (see Ownership Map Exhibit 3). The majority landowner, McMillin Otay Ranch, LLC, which controls approximately 90 percent of the planning area, has prepared the SPA Plan. Only that property is included on the Site Utilization Plan (Exhibit 6) and adoption of the SPA Plan will grant development approval only to that property owned by the applicant. Inclusion of other ownerships will require amendment(s) of the initial SPA approval, as required by the Otay Ranch GDP Implementation provisions (Otay Ranch GDP/SRP, Part II, Chapter 1, Section E).

II.5.2.5 Public Facilities Finance Plan Boundaries

Section 19.12.070 of the Municipal Code requires that the City establish the boundaries of the PFFP at the time a SPA Plan or Tentative Map(s) is submitted by the applicant. The boundaries shall be based upon the impact created by the project on the existing and future need for facilities. The project boundaries will correlate the proposed development project with existing and future development proposed for the area of impact to provide for the economically efficient and timely installation of both on-site and off-site facilities and improvements required by the development. In establishing the boundaries for the PFFP, the City shall be guided by the following considerations:

1. Service areas, drainage, sewer basins, and pressure zones that serve the Project;
2. Extent to which facilities or improvements are in place or available;
3. Ownership of property;
4. Project impact on public facilities relationships, especially the impact on the City's planned major circulation network;
5. Special district service territories;
6. Approved fire, drainage, sewer, or other facilities or improvement master plans.

The boundaries of the PFFP for the project are congruent with the SPA Plan boundaries. Also, the PFFP addresses certain facilities (streets, drainage, sewer, police, fire, etc.) that are impacted beyond the boundaries of the SPA Plan.



Eastern Urban Center
OTAY RANCH
CITY OF CHULA VISTA

Cinti Land Planning
San Diego, CA (619) 223-7408
Not to Scale
7/23/08

Exhibit 1

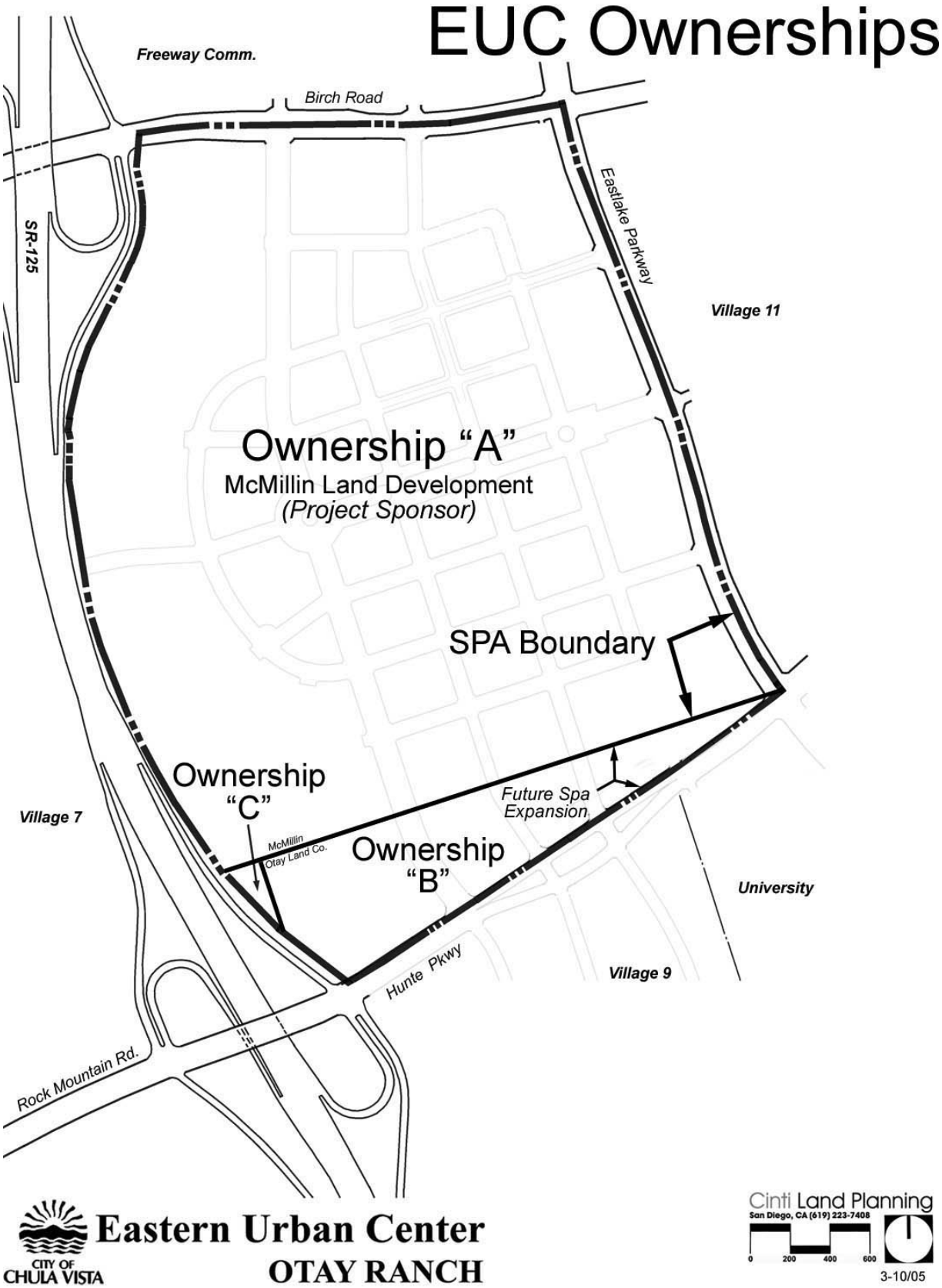
Location/SPA Boundary

CITY OF CHULA VISTA

Eastern Urban Center
OTAY RANCH

Cinti Land Planning
San Diego, CA (619) 223-7408
0 500 1000 1500
Scale approximate
10/20/06

Exhibit 2


EUC Ownerships
Freeway Comm.
Birch Road
SR-125
Eastlake Parkway
Village 11
Ownership "A"
McMillin Land Development
(Project Sponsor)
SPA Boundary
Ownership "C"
Future Spa Expansion
Village 7
McMillin Otay Land Co.
Ownership "B"
University
Village 9
Hunte Pkwy
Rock Mountain Rd.
Eastern Urban Center
CITY OF CHULA VISTA
OTAY RANCH
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San Diego, CA (619) 223-7408
0 200 400 600
3-10/05

Exhibit 3

II.5.3 LAND USE ASSUMPTIONS

II.5.3.1 Purpose

The purpose of this section is to quantify how the EUC SPA Plan will be analyzed in relationship to all other projects that are at some stage in the City's development process. The Growth Management Program addressed the issue of development phasing in relationship to location, timing, and fiscal/economic considerations.

Based upon the overall elements to be considered when projecting the phasing of development and policies contained in the Growth Management Program, the City was able to forecast where and when development will take place and produced a 5 year Development Phasing Forecast. Subsequent to the approval of the Growth Management Program, the forecasted development phasing has been updated periodically as facility improvements are made and the capacity for new development becomes available. The current update is summarized on Table B.1.

The specific factors, which affect the development-phasing forecast, include the status of development approvals and binding development agreements, and the completion of the construction of State Route 125. These components were reviewed as part of this PFFP in conjunction with the requirement to provide facilities and services concurrent with the demand created by the project to maintain compliance with the threshold standards.

The management of future growth includes increased coordination of activities of the various City departments as well as with both the Sweetwater Union High School District and the Chula Vista Elementary school District and the Otay Municipal Water District that serve the City of Chula Vista. The development phasing forecast is a component of the City of Chula Vista's Growth Management Program. The Development Services Department provides annual growth forecasts for two time frames: 18 months and a 5-year period. This information enables City departments and the other aforementioned service agencies to assess the probable impacts that growth may have on maintaining compliance with the City's facilities and service Threshold Standards. In addition, with this data City departments and the other service agencies will be able to report potential impacts to the GMOC.

II.5.3.2 Existing Development

As a starting point, the PFFP considers all existing development up to December 2007 as the base condition. This information is based upon City of Chula Vista Department growth management monitoring data. According to this and other data, the population of the City as of January 1, 2008 is estimated at 231,305 (California Department of Finance, May 1, 2008).

For the purposes of projecting facility demands for the EUC SPA the City of Chula Vista utilizes a population coefficient of 2.58[2] persons per multi-family dwelling unit. This factor is used throughout this PFFP to calculate facility demands from approved projects. The coefficient has been confirmed for use in the PFFP by the Development Services Department. The same coefficient will be used for calculating the specific project facility demands. One exception to this is the calculation of parkland dedication and development fees, which are based on the Chula Vista Municipal Code Chapter 17.10 defined population coefficient of 2.61 persons per multi-family dwelling unit.

[2] Provided by the City of Chula Vista.

II.5.3.3 Development Phasing Forecast

A summary of the latest development-phasing forecast is shown in Table B.1. The table presents an estimate of the amount of development activity anticipated to the year 2013. The total number of dwelling units permitted for Eastern Chula Vista by the year 2013 is approximately 7,785 dwelling units. It should be noted that these projections are estimates and should used for analytical purposes only and unless a development agreement or other legal instrument guarantees facility capacity, some projects with varying levels of entitlement may not have committed capacity.

Table B.1
Estimated Five-Year Residential Unit Growth Forecast 2008 Through 2013[3]

Projects	Forecast of Units Permitted 11/2008 to 12/2013			Approximate Units Remaining After 2013		
	MF	SF	Total	MF	SF	Total
Otay Ranch	4,103	2,027	6,130	4,574	254	4,828
Eastlake	605	48	653	0	0	0
Rolling Hills Ranch	0	161	161	0	0	0
Bella Lago	0	23	23	0	0	0
San Miguel Ranch	0	98	98	0	0	0
Sub - Total	**4,708**	**2,357**	**7,065**	**4,574**	**254**	**4,828**
Western Chula Vista	695	25	720	10,112	357	10,469
Total	**5,403**	**2,382**	**7,785**	**14,686**	**611**	**15,297**

Source: City of Chula Vista Preliminary Five-Year Growth Forecast Years 2009 through 2013, October 31, 2008.

II.5.3.4 Otay Ranch EUC SPA Development Summary

The Eastern Urban Center is a proposed urban center, serving the regional commercial, financial, urban residential, professional, entertainment, and cultural needs of Otay Ranch and eastern Chula Vista. This prime location is designated as the Eastern Urban Center. The center has been planned to be a viable and intense mixture of uses similar to a traditional downtown. Surrounding land uses in the adjacent Village Nine, particularly its town center; the University Campus and the Otay Ranch Town Center area are expected to relate closely to the EUC.

The center will be composed of building of varying orientations. It will contain specialty land uses, as well as shopping and entertainment uses, and uses supportive of the university campus. Landmark architecture will be encouraged to create a pronounced identity. An internal circulation system will provide for pedestrians, bus and bus rapid transit (BRT) connections. This system will provide efficient access throughout the Eastern Urban Center and to the ultimate bus rapid transit line through this region.

[3] A year-to-year estimate of how many building permits will be issued has been developed for general planning purposes, but should not be relied upon for exactness. The total number of permits that will be issued over the next five years is reasonably certain however many variables may and will affect what the actual annual distribution will be.

Pursuant to Otay Ranch GDP, the EUC will contain:

- 3,313 multi-family high-density residential units (The EUC SPA Plan addresses the McMillin ownership only. The McMillin ownership proposes 2,983 multi-family high-density residential units.)
- Build-out population of approximately 8,548
- Regional and specialty shopping
- Multi-Use Cultural Arts Facility (including civic arts/theaters and museums)
- Regional Purpose Facilities
- Local parks
- Business Park
- Visitor Commercial
- Transit station
- An Elementary School
- Urban Open Space Corridor
- Library and Civic Facilities
- Fire Station
- Affordable Housing

The Site Utilization Plan (Exhibit 4) indicates some of the required elements from this list. The library site and the fire station are designated in the Civic Core area, the transit station site is adjacent to the Main Street District, a possible elementary school site is "floating" in the south-central residential area and urban parks are distributed throughout the EUC. A high school site is not shown since the Sweetwater Union High School District is currently planning to locate that facility further east in Village 11, outside of the EUC. The Urban Open Space Corridor is implemented as the enhanced 15-foot wide Regional "Greenway" Trail which extends eastward from Village Seven under SR-125 and through the Business District and into the Main Street District. It extends south from the Main Street area and exits the EUC at the southeast corner via a pedestrian bridge over EastLake Parkway. In addition, the GDP includes land use statistics for the EUC portion of Planning Area Twelve, as shown in Table B.2.

The proposed EUC SPA Plan is a mixed-use land development concept within the Otay Ranch development. The entire EUC is approximately 230 acres, of which approximately 207 acres is owned by McMillin Companies (Ownership 'A' on Exhibit 3). Approximately 22 acres on the southern portion of the site is owned by the Otay Land Company (Ownership 'B' on Exhibit 3) with the remainder approximate 1 acre owned by S&MBF (Ownership 'C' on Exhibit 3). The EUC is generally bounded by Birch Road to the north, Hunte Parkway to the south, Eastlake Parkway to the east, and State Route 125 (SR-125) to the west. Exhibit 4 illustrates the proposed EUC Site Utilization plan.

The McMillin Companies ownership is proposed to be separated into 10 community districts (see Exhibit 4 and summarized in the following list):

- Area 1: Gateway Mixed Use Commercial District
- Area 2: Northeastern Neighborhood District
- Area 3: Eastern Gateway Neighborhood District
- Area 4: Business District
- Area 5: Mixed Use Civic/Office Core District
- Area 6: Main Street District
- Area 7: Eastern Gateway District

- Area 8: Southwestern Neighborhood District
- Area 9: Central Southern Neighborhood District
- Area 10: Southeastern Neighborhood District

Within the McMillin EUC ownership the following land uses/intensities are proposed:

- 2 hotels with a total of 250-rooms
- 2,007, 000 square feet (sf) of office space
- 160,000 sf of civic and public facilities
- 2,250 high density dwelling units
- 733 medium density dwelling units
- 815,000 sf of retail uses
- 165,000 sf of recreational and fitness center

In summary, the EUC SPA project proposes the following target components: 2,983 multi-family residential units, 2 hotels with a total of 250 rooms and 3,487,000 square feet of non-residential building area (includes Commercial, Industrial, Institutional and Community Facilities square feet). The discretionary phase of the EUC project requires the adoption of a SPA Plan, Environmental Impact Report and Tentative Map.

Table B.2
GDP Land Use Table (as amended in 2005)
EUC Component of Planning Area 12

Use	Dwelling Units				Acreage****								Approx. Pop. +
	SF Units	MF Units	Total Units	Density	Res. Ac.	Park Ac.	CPF Ac.	School	Com'l	O.S.	Art.	Total	
EUC	0	3,313	3,313	41.2	80.4	25.6	11.9	35.0			8.0	160.9	8,548
Regional Comm.									29.4			29.4	
Visitor Comm.									11.0			11.0	
Cultural									5.0			5.0	
Office Low Rise/Bus.									19.0			19.0	
Office Med/High Rise									11.5	1.5		11.5	
TOTAL	**0**	**3,313**	**3,313**	**41.2**	**80.4**	**25.6**	**11.9**	**35.0**	**75.9**	**1.5**	**8.0**	**238.3**	**8,548**

*	Actual park size to be determined by Parks Master Plan at the SPA level; park acreage based on ratio of 3.0 acres per 1000 persons.
**	CPF acreage based on ratio of 1.39 acres per 1000 persons. Square footage equivalent may be considered at SPA Plan level.
***	School acres will divert to residential if not needed for schools.
****	May include mixed-use and multi-use.
*****	The maximum permitted non-residential areas may alternatively be measured in square feet up to the maximum projected yield of 3,872,000 square feet.
+	Population coefficient is 3.3 persons per single family unit and 2.58 persons per multi-family unit.
++	Fire Station.

Source: Cinti Land Planning

The mix of uses shown in the above table is subject to the following policy, which was added to the EUC policy list in 2005:

> *The mix of uses shown in Exhibit 63 (Table A) is representative of the expectations and intended character for the Eastern Urban Center. The final land use mix and distribution of uses shall be determined at the SPA planning level. Variation from the uses identified in Exhibit 63 may be approved subject to the following findings:*

1. *The intended character and purpose of the Eastern Urban Center is maintained;*
2. *The distribution of uses is compatible with the adopted uses in adjacent villages; and*
3. *The viability of the Eastern Urban Center is maintained or enhanced.*

This policy emphasizes that the character and purpose of the EUC. The intended vertically mixed-use character of the EUC makes it difficult to categorize uses by acreage since a single building (on a single parcel) may include different uses at different levels (e.g., commercial at street level and office or residential uses on upper levels). Because of the difficulty in assigning a building site to a particular use category, the EUC SPA Plan emphasizes the appropriate character and mix of uses for consistency with the Otay Ranch GDP rather than acreage statistics. Consistent with the note to the GDP Land Use Table, non-residential uses are quantified in terms of square feet of building floor area in-lieu of site acreage. Correspondingly, residential use is quantified in terms of number of dwelling units instead of acreage. These statistics will allow for the proper accounting of development intensity within the project regardless of location within mixed-use structures.

The ownership of the overall EUC SPA is divided among three owners (see Exhibit 3). The EUC SPA Plan implements only the majority ownership. The development allocations in Table B.3 are divided among the ownerships to determine the appropriate statistics. As shown, the applicant's ownership comprises 90.04% of the total development acreage and corresponding amounts of residential (dwelling units) and non-residential (building floor area) development are allocated to the EUC SPA Plan. The statistics below are estimates only; these statistics are subject to change based on more precise engineering calculations.

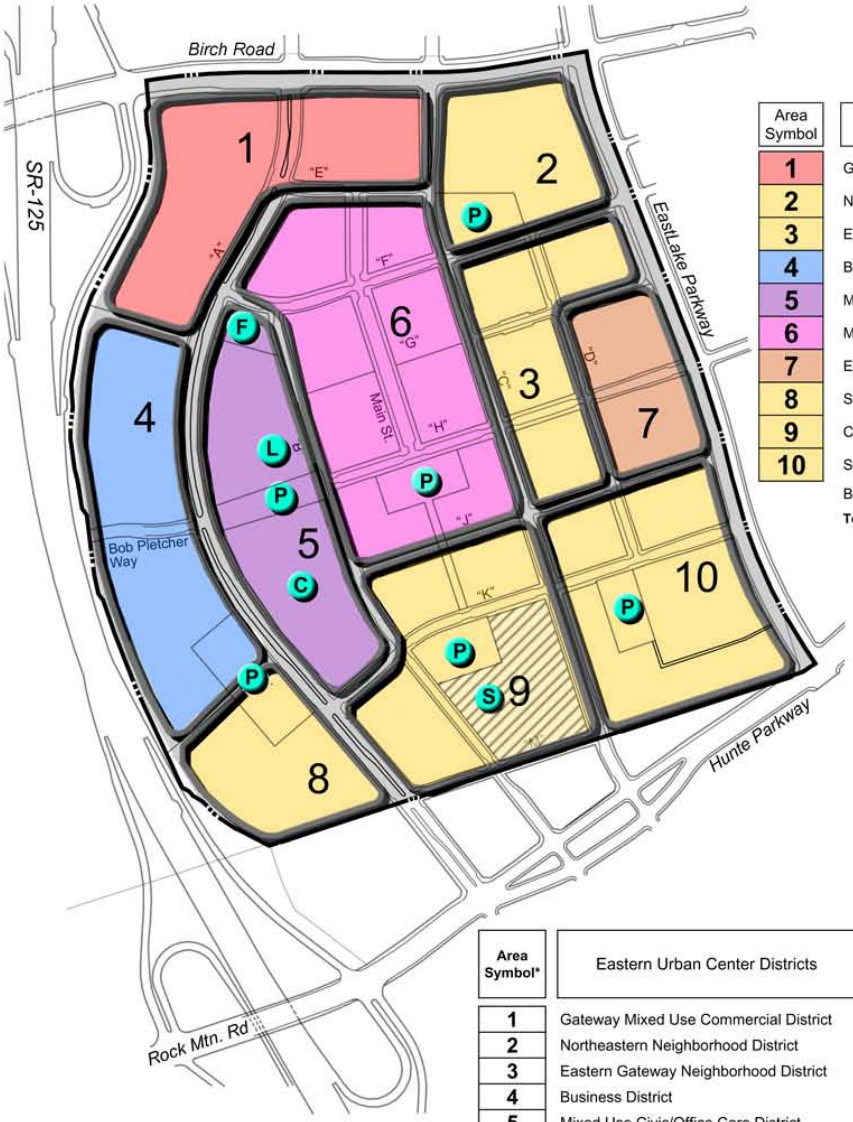
Table B.3[4]
Allocation of GDP Land Uses to Ownerships

Ownership	Estimated Development Area Owned (AC)	Percent of Total	Share of Non-Residential (SF)	Share of Residential (DU)
McMillin Otay (Applicant)	206.6	90.04 %	3,487,000	2,983
Otay Land	22.2	9.66 %	374,000	320
S&MBF	0.7	0.30 %	12,000	10
TOTALS	**229.5**	**100** %	**3,872,000**	**3,313**

The development pattern and interior circulation arrangement is illustrated on the Site Utilization Plan Development statistics for McMillin's portion of the EUC planning area are shown on the Site Utilization Plan (Exhibit 4). Density adjustments (residential units or non-residential floor area) within any one or between EUC districts/neighborhoods may be permitted if the adjustment is within the envelope studied by the EIR. The Site Utilization Plan provides Low, High, and Target densities within each district/neighborhood. While the target amount is the intended density at the time of SPA approval, any value between the low and high amounts would be consistent with the SPA Plan. The SPA Plan will allow limited transfers of density or intensity beyond the stated maximum for an individual district subject to specific findings. While land uses may be transferred within the EUC, there are no provisions in the plan that allow any transfers above the land use maximums listed in the General Plan or Otay Ranch GDP. The required findings will provide assurance that any approved transfers will not create additional environmental impacts (e.g., traffic impacts, infrastructure or population-based facilities shortfall, etc.) beyond those associated with the original project.

[4] The total acres of individual ownerships in the EUC SPA may vary slightly due to changes in the final right-of-way of SR-125 and possible land swaps, but these should not substantially affect the allocation percentages indicated in Table B.3. Staff shall confirm the exact percentage allocation during the processing of the SPA Plan. The names and boundaries of the owners may also be updated to reflect any changes that occur during the process.

Site Utilization Plan



Area Symbol	Eastern Urban Center Districts	Acres
1	Gateway Mixed Use Commercial District	22.7
2	Northwestern Neighborhood District	13.2
3	Eastern Gateway Neighborhood District	17.2
4	Business District	25.4
5	Mixed Use Civic/Office Core District	23.3
6	Main Street District	34.7
7	Eastern Gateway District	9.6
8	Southwestern Neighborhood District	12.5
9	Central Southern Neighborhood District	24.4
10	Southeastern Neighborhood District	23.6
	Birch Road & EastLake Parkway	8.0
	Total	**214.6**

Area Symbol*	Eastern Urban Center Districts	Non-residential Sq. Ft. *(000's)* Permitted			Residential Dwelling Units Permitted		
		Low	Target	High	Low	Target	High
1	Gateway Mixed Use Commercial District	100	400	700	0	50	100
2	Northeastern Neighborhood District	2	120	200	150	300	500
3	Eastern Gateway Neighborhood District	5	50	250	150	400	750
4	Business District	500	1,362	1,900	0	100	150
5	Mixed Use Civic/Office Core District	100	900	1,000	0	200	300
6	Main Street District	80	240	400	100	533	800
7	Eastern Gateway District	10	170	400	50	200	300
8	Southwestern Neighborhood District	2	50	200	300	500	700
9	Central Southern Neighborhood District	2	45	100	130	500	650
10	Southeastern Neighborhood District	2	150	200	200	200	450
Maximum, Not to Exceed, Totals		**3,487**			**2,983**		

Potential Public Components

- P Park
- L Library
- F Fire Station
- S Potential Elementary School*
- C CPF Site

Note: *District 10 may also be an alternative for the Elementary School Site.*

Notes:
1. ** Numeric Area Symbols do not represent phases.*
2. *The allocation of intensity in each district shall be based on the building height regulations in the EUC Form Based Code.*

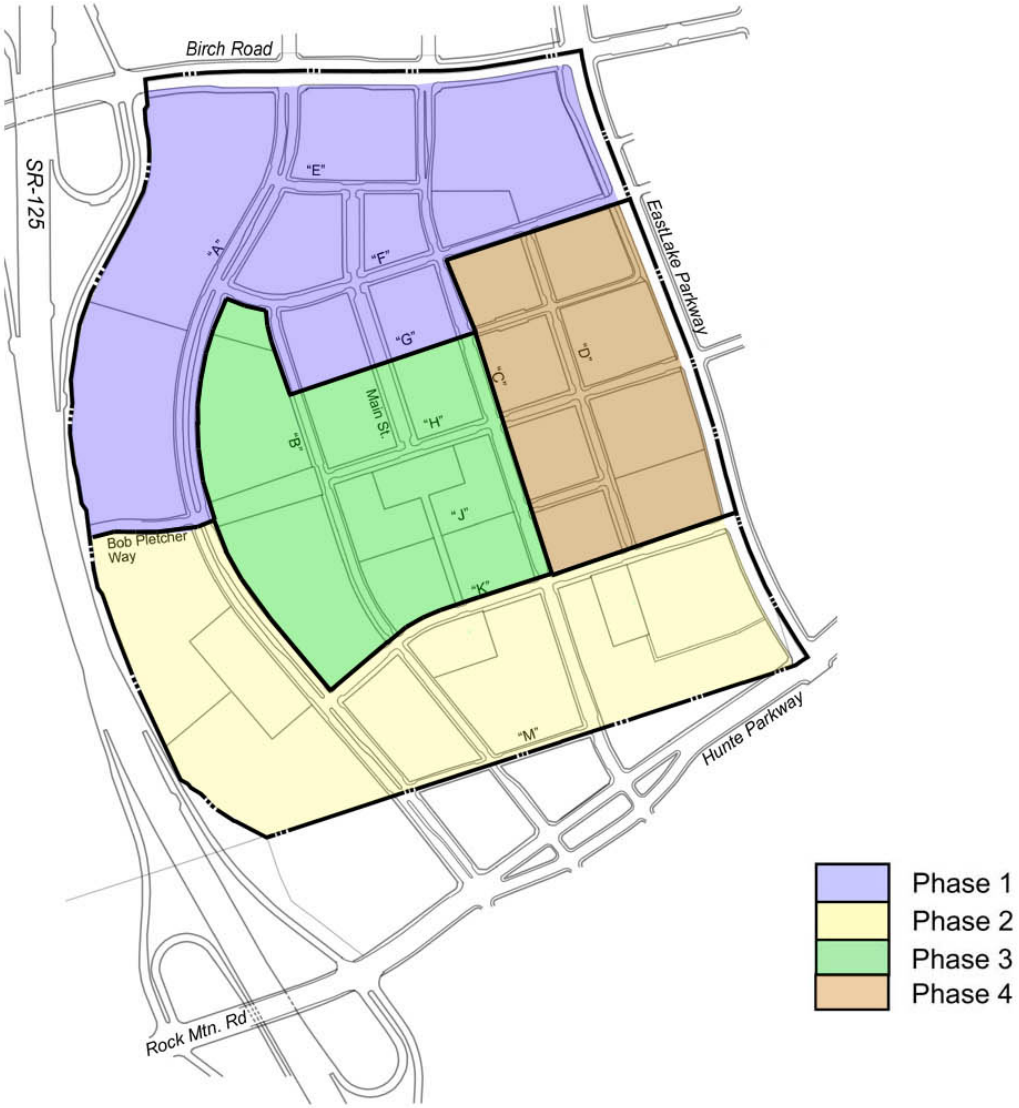
Eastern Urban Center
OTAY RANCH

CITY OF CHULA VISTA

Urban Design: RTKL
Cinti Land Planning
San Diego, CA (619) 223-7408
0 200 400 600
10/20/08

Exhibit 4

Phasing



Eastern Urban Center
OTAY RANCH

CITY OF CHULA VISTA

Urban Design: RTKL
Cinti Land Planning
San Diego, CA (619) 223-7408
0 200 400 600
5/30/08

Exhibit 5

II.5.3.5 DEVELOPMENT PHASING:

The development of the Otay Ranch EUC SPA will be completed in four non-sequential phases. Each phase consists of one or more community districts. The Conceptual Phasing Plan (Exhibit 5) reflects anticipated market demand for development within the Planning Area.

Sequential phasing is frequently inaccurate because of unforeseen market changes or regulatory constraints. Therefore, the EUC SPA Plan permits non-sequential phasing by imposing specific facilities requirements for each development increment regardless of which phase it is located. This will ensure that new EUC SPA development is adequately served and City threshold standards are met. Construction of the major on-site streets, which serve multiple phases, shall be phased according to the provisions of this PFFP. A summary of the infrastructure public facility timing is provided in Table B.4 below.

Table B.4
EUC SPA
Facility Phasing Plan Summary

Facility	Facility Description	Triggers	Financing Method
Traffic[1]			
A.	**Off-Site Street Improvements**[2] **- Constructed/Bonded by Developer** [3]		
	Olympic Pkwy & Brandywine Ave Restripe NB approach to include one thru lane and one shared thru-right lane and coordinate SB I-805 Ramps through Brandywine on Olympic Pkwy	1st EDU	Subdivision Exaction
	Olympic Pkwy & Heritage Rd Add SB right-turn overlap phase	1st EDU	Subdivision Exaction
	Main St & Heritage Rd Add dual NB and dual EB right-turn lanes	3,070 EDUs	Subdivision Exaction
	Birch Rd & La Media Rd. Convert a WB thru lane into a thru/right turn lane	5,270 EDUs	Subdivision Exaction
	Birch Rd & Magdalena Ave. Add exclusive EB right-turn lane.	5,270 EDUs	Subdivision Exaction
	Rock Mountain Rd & Magdalena Ave. Add a dual SB left-turn lane and a dual NB right-turn lane	5,270 EDUs	Subdivision Exaction
	Hunte Pkwy between SR-125 and Street A. [4] Add 2 auxiliary lanes to the six-lane Town Center Arterial	5,270 EDUs	Subdivision Exaction
Potable Water	Complete Otay Water District Sub-Area Master Plan (SAMP)	Prior to 1st final Map	N/A
	Water Improvements per OWD & SAMP	Prior to Building Permit	Capacity Fees & Exaction
	Service Availability Letter from OWD to City	Prior to Building Permit	N/A
Potable Water	OWD CIP Fees	Prior to Building Permit	Capacity Fees & Exaction
Recycled Water	Zone Improvements per OWD & SAMP	Prior to Building Permit	Capacity Fees & Exaction
Footnotes on page 23			

Table B.4 EUC SPA Facility Phasing Plan Summary			
Sewer[5]			
A.	On-site Sewer	Prior to Building Permit	Subdivision Exaction
B.	Off-site Sewer		
	Poggi Canyon Basin connection –Max. 580 EDU's	Replace Reach 270 within one year of occupancy of the first unit draining to Poggi Canyon or a d/D of 0.85, unless otherwise approved by the City Engineer.	Subdivision Exaction
	Salt Creek Basin Interim connection – Max. 2,455 EDU's (until Rock Mtn. Trunk Sewer built)	Install 173 foot 12" stub sewer within one year of occupancy of the first unit draining to Salt Creek or d/D of 0.85, unless approved by the City Engineer.	Subdivision Exaction
	Salt Creek Basin Permanent connection – Max 1,955 EDU's	Rock Mtn. Trunk Sewer	Subdivision Exaction
	Wolf Canyon Basin connection (Rock Mtn. Trunk Sewer) – Max 2,492 EDU's	completed by others	Subdivision Exaction

Footnotes:
This table is subject to the parks and development agreement.
1 TDIF Streets will be constructed by Developer (receiving TDIF credits). Non TDIF Streets are developer exaction.
2 On-site and Off-site street improvements must be constructed per the approved conditions of approval or as approved by the City Engineer unless stated otherwise in a parks or development agreement.
3 Developer maybe responsible unless others construct street improvements.
4 This improvement not required if Otay Valley Road interchange on SR-125 is constructed.
5 Development shall not occur without adequate sewer capacity as determined by the City Engineer.
6 Prior to Final Map or a Park Agreement with the City of Chula Vista.

The EUC developer has proposed the phasing plan illustrated by Exhibit 5. Table B.5 provides a break down of the developer's phasing plan. This table summarizes the amount of Multi-Family units, retail square footage and office square footage per phase. The lot numbers within each phase are from the developer's proposed Tentative Map.

Table B.5 Developer Proposed Phasing						
Lot #	**Land Use**	**Acres**	**MF DU**	**Retail**	**Office (<5 stories)**	**Office (>5 stories)**
Blue Phase						
1	Office	11.00	53		78,800	813,200
2	Commercial	13.67	41	230,000	53,000	
3	Commercial	5.66	17	117,000		
4	Residential	9.28	400	50,000		
5	Mixed Use	2.13	45	22,000		
6	Mixed Use	4.27	91	43,000		
8	Mixed Use	3.02	64	31,000		
9	Mixed Use	2.91	62	30,000		
P1	Parks	1.97				
	Streets	16.93				
Total		**70.81**	**773**	**523,000**	**131,800**	**813,200**
Yellow Phase						
25	Residential	4.51	159	12,000		
26	Residential	6.86	242	18,000		
27	Residential	12.77	275	103,000		
28	Residential	9.54	300	50,000		
29	Office	9.63	47		75,500	704,500
P-4, P-5, P-6	Parks	7.07				
	Streets	9.20				
Total		**59.58**	**1,023**	**183,000**	**75,500**	**704,500**
Green Phase						
7	Office	7.06	45		271,000	
14	Mixed Use	3.00	64	31,000		
15	Mixed Use	3.15	67	32,000		
16	Commercial	8.58	55	329,000		
17	Mixed Use	2.63	56	27,000		
18	Mixed Use	2.48	53	25,000		
23	Residential	2.80	99	7,000		
24	Mixed Use	2.86	101	8,000		
P-2, P-3	Parks	3.90				
	Streets	8.54				
Total		**45.00**	**540**	**459,000**	**271,000**	**0**
Orange Phase						
10	Residential	2.85	107	41,000		
11	Residential	3.06	115	44,000		
12	Mixed Use	3.97	36	58,000		
13	Mixed Use	3.08	116	44,000		
19	Mixed Use	2.96	110	42,000		
20	Mixed Use	4.19	39	62,000		
21	Residential	3.34	72	27,000		
22	Residential	2.48	52	20,000		
	Parks	0.00				
	Streets	5.29				
Total		**31.22**	**647**	**338,000**	**0**	**0**
		206.61	**2,983**	**1,503,000**	**478,300**	**1,517,700**

II.5.3.6 DEVELOPMENT IMPACT FEES

A. Transportation

The current Transportation Development Impact Fee (TDIF) Ordinance sets forth the calculation of development impact fees. This PFFP uses the CVMC Chapter 3.54 as the basis for the estimated TDIF fees. Table B.6 below illustrates the current fee schedule:

Table B.6
TDIF Schedule

Land Use Classification		TDIF Rate
Residential (Low)	0-6 dwelling units per gross acre	$11,317 per DU
Residential (Med.)	6.1-18 dwelling units per gross acre	$9,054 per DU
Residential (High)	>18.1 dwelling units per gross acre	$6,791 per DU
Senior housing		$4,528 per DU
Residential mixed use	>18 dwelling units per gross acre	$4,528 per DU
Commercial mixed use	< 5 stories in height	$181,074 per 20,000 sq. ft.
General commercial (acre)		$181,074 per acre
Regional commercial (acre)	> 60 acres or 800,000 sq. ft.	$124,488 per acre
High rise commercial (acre)	> 5 stories in height	$316,879 per acre
Office (acre)	< 5 stories in height	$101,854 per acre
Industrial (acre)		$90,542 per acre
18-hole golf course		$803,515 per acre
Medical center		$735,612 per acre

B. Public Facilities

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF is adjusted every October 1st pursuant to Ordinance 3050, which was adopted by the City Council on November 7, 2006. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report. The current fees are shown in Table B.7, which also provides a break down of what the fee funds.

Table B.7
Public Facilities Estimated DIF Fee Components[5]

Component	Single Family/DU	Multi-Family/DU	Commercial/Acre	Industrial/Acre
Civic Center	$2,458	$2,328	$7,841	$2,478
Police	$1,565	$1,691	$7,394	$1,595
Corporation Yard	$421	$338	$7,148	$3,367
Libraries	$1,413	$1,413	$0	$0
Fire Suppression	$1,243	$894	$3,283	$653
GIS, Computers, Telecom & Records Management	$0	$0	$0	$0
Administration	$563	$532	$1,795	$543
Recreation	$1,072	$1,072	$0	$0
Total/Residential Unit	$8,735	$8,268		
Total per Com'l/Ind. Ac.			$27,461	$8,661

[5] Based on the Revised September 16, 2008, City of Chula Vista Development Checklist for Municipal Code Requirements (Form 5509) and is subject to annual adjustments.

II.5.4 FACILITY ANALYSIS

This portion of the PFFP contains 13 separate subsections for each facility addressed by this report. Of the 13 facilities, 11 have adopted threshold standards; the Civic Center and Corporation Yard do not. Table B.8 highlights the level of analysis for each facility.

Table B.8
Level of Analysis

Facility	Citywide	East of I-805	Service Area Sub-basin	Special District
Traffic	✓	✓		
Pedestrian Bridges			✓	
Police	✓			
Fire/EMS	✓		✓	
Schools				✓
Libraries	✓			
Parks, Recreation & Open Space		✓		
Water			✓	✓
Sewer			✓	
Drainage			✓	
Air Quality	✓			
Civic Center	✓			
Corp. Yard	✓			
Fiscal	✓		✓	

Each subsection analyzes the impact of the EUC SPA Project based upon the adopted Quality of Life Standards. The analysis is based upon the specific goal, objective, threshold standard and implementation measures. The proposed SPA plan is used to determine facility adequacy and is referenced within the facility section.

Each analysis is based upon the specific project processing requirements for that facility, as adopted in the Growth Management Program. These indicate the requirements for evaluating the project consistency with the threshold ordinance at various stages (General Development Plan, SPA Plan/Public Facilities Finance Plan, Tentative Map, Final Map and Building Permit) in the development review process.

A service analysis section is included which identifies the service provided by each facility. The existing plus forecasted demands for the specific facility are identified in the subsection based upon the adopted threshold standard.

Each facility subsection contains an adequacy analysis followed by a detailed discussion indicating how the facility is to be financed. The adequacy analysis provides a determination of whether or not the threshold standard is being met and the finance section provides a determination if funds are available to guarantee the improvement. If the threshold standard is not being met, mitigation is recommended in the Threshold Compliance and Recommendations subsection which proposes the appropriate conditions or mitigation to bring the facility into conformance with the threshold standard.

II.5.4.1 TRAFFIC

II.5.4.1.1 GMOC Threshold Standard

1. Citywide: Maintain Level of Service (LOS) "C" or better, as measured by observed average travel speed on all signalized arterial segments except that during peak hours a LOS of "D" can occur for no more than any two hours of the day.
2. West of Interstate 805: Those signalized intersections which do not meet the standard above may continue to operate at their current LOS, but shall not worsen.
3. Each village will provide a complex integrated system of roads, low-speed electric vehicles and bike paths, and pedestrian ways. The system is defined below by individual road types that may be found in all villages except for the rural standard. However, the actual pattern of roads varies within each village in response to site features, circulation element roads, topography, land use organization, etc. The following is a description of how these roads are located functionally within the village setting. While circulation element roads must adhere to prescribe levels of service, these interior roads are permitted to operate at less than established LOS. This is done to further encourage use of alternative modes of transportation.

II.5.4.1.2 GMOC Level of Service (LOS) Definition

Six levels of services (LOS) have been defined varying from A (free flow) to F (severe congestion). A general definition of LOS is summarized in Table C.4. The City of Chula Vista's GMOC uses an LOS definition for signalized arterial segments as a method for evaluating and comparing traffic conditions. Arterial LOS measurements consider average weekday peak hours and exclude seasonal and special circumstance variations. This LOS standard does not apply to the EUC internal streets. The following table summarizes the GMOC Traffic Quality of Life Threshold Standard for signalized arterial streets:

Table C.1
GMOC LOS Definition

Level of Service	Average Travel Speed (mph)		
	Class I	Class II	Class III
A	> 35	> 30	> 25
B	> 28	> 24	> 19
C	> 22	> 18	> 13
D	> 17	> 14	> 9
E	> 13	> 10	> 7
F	< 13	< 10	< 7

SOURCE: Highway Capacity Manual, 1994.

The arterial streets are divided into the following three classifications:

(1) Class I arterials are roadways where free flow traffic speeds range between 35 mph and 45 mph and the number of signalized intersections per mile is less than four (4). There is no parking and there is generally no access to abutting property.

(2) Class II arterials are roadways where free flow traffic speeds range between 30 mph and 35 mph, the number of signalized intersections per mile range between four (4) and eight (8). There is some parking and access to abutting properties is limited.

(3) Class III arterials are roadways where free flow traffic speeds range between 25 mph and 35 mph, and the number of signalized intersections per mile are closely spaced. There is substantial parking and access to abutting property is unrestricted.

II.5.4.1.3 Freeway Segment LOS and Thresholds

The analysis of freeway segment LOS is based on the procedure developed by Caltrans District 11**,** which is based on methods described in the *1994 Highway Capacity Manual.* The procedure involves comparing the peak hour volume of the mainline segment to the theoretical capacity of the roadway (V/C). Directional and truck factors are also used to calculate the future freeway volumes. V/C ratios are then compared to the V/C ranges shown on the tables to determine the LOS for each segment. Caltrans recommends LOS E or better as an acceptable threshold for determining impacts on the regional freeway system. LOS E is used as the threshold of significance because a decrease from this level of service to LOS F determines the need to develop a freeway Deficiency Plan.

Table C.2
Caltrans District 11 Freeway Segment LOS Definitions

LOS	V/C	Congestion/Delay	Traffic Description
Used for freeways, expressways and conventional highways			
A	<0.41	None	Free flow
B	0.42-0.62	None	Free to stable flow, light to moderate volumes.
C	0.63-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.81-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
E	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for conventional highways			
F	<1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 sec./vehicle
Used for freeways and expressways			
F(0)	1.01-1.25	Considerable 0-1 hr delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
F(l)	1.26-1.35	Severe 1-2 hr delay	Very heavy congestion, very long queues.
F(2)	1.36-1.45	Very Severe 2-3 hr delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
F(3)	>1.46	Extremely Severe 3+ hours of delay	Gridlock

SOURCE: Caltrans 1992

Caltrans LOS Definition

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS for freeway segments can generally be categorized per Table C.2.

II.5.4.1.4 Roadway Segment LOS Standards and Thresholds

This section presents the LOS standards and thresholds utilized by the City of Chula Vista to analyze roadway segment performance. Table C.3 presents the City of Chula Vista roadway segment capacity and level of service standards for arterial roadways.

Table C.3
Street Segment Performance Standards and Volumes

Street Classification	Acceptable LOS	Acceptable Volume (ADT)
Expressway	C	70,000
Prime Arterial	C	50,000
Major Street (Six Lanes)	C	40,000
Major Street (Four Lanes)	C	30,000
Town Center Arterial	C	50,000
Class I Collector	C	22,000
Gateway Street	D	61,200 (Six Lanes) 43,200 (Four Lanes)
Urban Arterial	D	37,800
Commercial Boulevard	D	33,750
Downtown Promenade	D	14,400

Source: City of Chula Vista

Table C.4
Street Segment LOS Threshold Descriptions

LOS	Description
A	Describes primarily free-flow operations. Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.
B	Also represents reasonably free-flow, and speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.
C	Provides for flow with speeds still at or near the free-flow speed of the roadway. Freedom to maneuver within the traffic stream is noticeably restricted at LOS C, and lane changes require more vigilance on the part of the driver. The driver now experiences a noticeable increase in tension because of the additional vigilance required for safe operation.
D	The level at which speeds begin to decline slightly with increasing flows. In this range, density begins to deteriorate somewhat more quickly with increasing flows. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.
E	Describes operation at capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream. At capacity, the traffic stream has no ability to dissipate even the most minor disruptions, and any incident can be expected to produce a serious breakdown with extensive queuing.
F	Describes breakdowns in vehicular flow. Such conditions generally exist within queues forming behind breakdown points such as traffic incidents and recurring points of congestion. Whenever LOS F conditions exist, there is a potential for them to extend upstream for significant distances.

SOURCE: Highway Capacity Manual, 1994.

The analysis of street segment LOS is based on the functional classification of the roadway, the maximum desired level of service capacity, roadway geometries, and the existing or forecasted average daily traffic (ADT) volume. The City of Chula Vista LOS D was utilized to determine if a segment would operate over or under capacity. Table C.4, Street Segment Level of Service Threshold Descriptions, is a description of the various street segment LOS thresholds.

II.5.4.1.5 Intersection LOS Standards and Threshold

The analysis of existing and projected peak hour intersection performance was conducted using the methodology documented in the *1994 Highway Capacity Manual (Transportation Research Board Special Report 209).* LOS C or better indicates acceptable operating conditions for signalized intersections during AM and/or PM peak hour conditions. Those intersections found to have LOS E or F under an analysis of future conditions are considered to have significant impacts and will require mitigation.

II.5.4.1.5.1 Signalized Intersection Analysis

The measure of effectiveness for intersection operations is level of service. In the 2000 Highway Capacity Manual (HCM), LOS for signalized intersections is defined in terms of delay. The LOS analysis results in seconds of delay expressed in terms of letters A through F (see Table C.5).

Table C.5
LOS Thresholds For Signalized Intersections

Average Control Delay per Vehicle (Seconds/Vehicle)	Level of Service
0.0 ≤ 10.0	A
10.1 to 20.0	B
21.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.0	F

SOURCE: Highway Capacity Manual, 2000.

Table C.6
Intersection LOS Threshold Descriptions

LOS	Description
A	LOS A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	LOS B describes operations with delay in the range 10.1 seconds and 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	LOS C describes operations with delay in the range 20.1 seconds and 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	LOS D describes operations with delay in the range 35.1 seconds and 55.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or higher v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are more frequent.
E	LOS E describes operations with delay in the range of 55.1 seconds to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	LOS F describes operations with delay in excess of over 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

SOURCE: Highway Capacity Manual, 2000.

Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Table C.6 is a description of the various intersection LOS thresholds.

II.5.4.1.5.2 Unsignalized Intersection Analysis

For unsignalized intersections, level of service is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. Table C.7 below depicts the criteria, which are based on the average control delay for any particular minor movement.

Table C.7
LOS Thresholds for Unsignalized Intersections

Average Control Delay Per Vehicle (Seconds/Vehicle)	Level of Service	Expected Delay to Minor Street Traffic
0.0 ≤ 10.0	A	Little or no delay
10.1 to 15.0	B	Short traffic delays
15.1 to 25.0	C	Average traffic delay
25.1 to 35.0	D	Long traffic delays
35.1 to 50.0	E	Very long traffic delays
≥ 50.0	F	Severe congestion

Source: Highway Capacity Manual, 2000.

LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This LOS is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

II.5.4.1.6 Chula Vista Traffic Monitoring Program (TMP)

The TMP stipulates that the existing level of service on arterial segments in Chula Vista be maintained at LOS C or better, with the exception that LOS D is acceptable on signalized arterial segments for two hours per day maximum. The Engineering Department of the City of Chula Vista evaluates LOS for arterial roadway segments utilizing the HCM methodology, Chapter 11, based on average travel speeds, to adhere to the Growth Management traffic threshold standards. The adopted Growth Management Ordinance mandates the project's participation in the traffic section as it relates to the City's annual review of network performance. All major circulation element facilities within the City of Chula Vista are subject to review. Those facilities where traffic volumes have increased by at least 10% since the last review or have experienced a significant change in conditions or are at the upper fringes of LOS C approaching LOS D are included in the annual traffic study, which is reviewed for conformance by the Growth Management Oversight Committee (GMOC). The City of Chula Vista requires the application of these guidelines to the future development of the project.

Utilization of the roadway and intersection performance standards presented in this chapter and the required adherence to the Growth Management traffic threshold standards will result in full conformance with the requirements of the City of Chula Vista.

II.5.4.1.7 Service Analysis

The Engineering Department of the City of Chula Vista is responsible for ensuring that traffic improvements are provided to maintain a safe and efficient street system within the City. Through project review, City staff ensures the timely provision of adequate local circulation system capacity in response to planned development while maintaining acceptable LOS. To accomplish their review the Engineering Department has adopted guidelines for Traffic Impact Studies (January, 2001). These guidelines ensure uniformity in the preparation of traffic studies. Further, the guidelines assist in maintaining acceptable standards for planned new roadway segments and signalized intersections at the build out of the City's General Plan and Circulation Element. The Circulation Element of the General Plan serves as the overall facility master plan.

In conformance with requirements of the Congestion Management Program (CMP), an analysis of CMP freeways and arterials is required for any project that generates 2,400 daily or 200 peak hour trips (As detailed in the 1991 Congestion Management Program). This analysis, *Traffic Impact Analysis for Chula Vista Eastern Urban Center (EUC), March, 2009, by Kimley-Horn and Associates, Inc.* was prepared for the City of Chula Vista. This document is referred to as the "Traffic Analysis" throughout this PFFP. The Traffic Analysis is the basis of the Traffic Section of this PFFP and addresses both existing and planned circulation system conditions, details necessary improvements and outlines the incremental circulation improvements based upon planned project phasing. Further, the Traffic Analysis also includes an evaluation of the proposed Bus Rapid Transit (BRT) Route within the EUC.

Based on the distribution of project traffic as determined by the Select Zone Assignment (SZA) and the requirements of the CMP, the project study area was established. The study area is bound by Telegraph Canyon Road/Otay Lakes Road to the north, Hunte Parkway to the east. Main Street/Rock Mountain to the south and Interstate 805 (I-805) to the West. All signalized intersections, freeway interchanges and arterial segments within this area were analyzed under various scenarios by Kimley-Horn and Associates, Inc. (see Traffic Analysis for scenario details). The proposed circulation network (described later in this section) was analyzed in the General Plan Update, which was approved by the City Council on December 13, 2005. The intersections and segments analyzed in the Traffic Analysis report are listed below:

A. Intersections:

The study area was defined based on discussions with City staff and refined based on the results of the select zone assignments of the project traffic. The study intersections selected for analysis are shown in Table C.8.

Table C.8
Study Intersections

Intersection	Traffic Control (a)
1. Telegraph Canyon Rd & Heritage Rd	Signal
2. Telegraph Canyon Rd & La Media Rd	Signal
3. Otay Lakes Rd & Eastlake Pkwy	Signal
4. Olympic Pkwy & SB I-805 Ramps	Signal
5. Olympic Pkwy & NB I-805 Ramps	Signal
6 Olympic Pkwy & Oleander Ave	Signal
7. Olympic Pkwy & Brandywine Ave	Signal
8. Olympic Pkwy & Heritage Rd	Signal
9. Olympic Pkwy & La Media Rd	Signal
10. E Palomar St & Olympic Pkwy	Signal
11. Olympic Pkwy & SR-125 SB Ramps	Signal (b)
12. Olympic Pkwy & SR-125 NB Ramps	Signal (b)
13. Olympic Pkwy & Eastlake Pkwy	Signal
14. Olympic Pkwy & Hunte Pkwy	Signal
15. Birch Rd & La Media Rd	Signal
16. Birch Rd & Magdalena Ave	Signal
17. Birch Rd & SR-125 SB Ramps	Signal (b)
18. Birch Rd & SR-125 NB Ramps	Signal (b)
19. Main St & Heritage Rd	OWSC (b)
20. Rock Mountain Rd & La Media Rd	Signal (b)
21. Rock Mountain Rd & Magdalena Ave	Signal (b)
22. Rock Mountain Rd & SR-125 SB Ramps	Signal (b)
23. Rock Mountain Rd & SR-125 NB Ramps	Signal (b)
24. Bob Pletcher Way & Wolf Canyon Loop	Signal (b)

Notes:
(a) Signal = Traffic signal, OWSC = One-Way Stop-Control
(b) These intersections do not exist under Existing Conditions, but will be constructed in various phases of the project.

Source: Kimley-Horn

B. Segments

Table C.9 displays the roadway segments that were selected for the Traffic Analysis.

Table C.9
Roadway Segments

ROADWAY SEGMENT	ROADWAY CLASSIFICATION (a)
Olympic Parkway	
NB I-805 Ramps to Brandywine Ave	6 Lane Prime Arterial
Brandywine Ave to Heritage Rd	6 Lane Prime Arterial
Heritage Rd to La Media Rd	6 Lane Prime Arterial
La Media Rd to E Palomar St	6 Lane Prime Arterial
E Palomar St to SR-125 Ramps	6 Lane Prime Arterial
SR-125 Ramps to Eastlake Pkwy	8 Lane Prime Arterial
Eastlake Pkwy to Hunte Pkwy	6 Lane Prime Arterial
Birch Road	
La Media Road to SR-125 Ramps	6 Lane Major street
SR-125 Ramps to Eastlake Pkwy	6 Lane Prime Arterial
Main St	
Maxwell Rd to Heritage Rd	6 Lane Prime Arterial
Rock Mountain Road	
Heritage Rd to La Media Rd.	6 Lane Prime Arterial
La Media Rd. to SR-125 Ramps	6 Lane Town Center Arterial
Hunte Pkwy	
SR-125 Ramps to Eastlake Pkwy	6 Lane Town Center Arterial
	8 Lane Town Center Arterial
Eastlake Pkwy to Olympic Pkwy	6 Lane Prime Arterial
Olympic Pkwy to Otay Lakes Rd	4 Lane Major Street
La Media Rd	
Telegraph Canyon Rd to E Palomar St	6 Lane Prime Arterial
E Palomar St to Olympic Pkwy	6 Lane Prime Arterial
Olympic Pkwy to Birch Rd	6 Lane Prime Arterial
Birch Rd. to Rock Mountain Road	6 Lane Prime Arterial
South of Rock Mountain Road	6 Lane Prime Arterial
Eastlake Pkwy	
Fenton St to Otay Lakes Rd	4 Lane Major Street
Otay Lakes Rd to Olympic Pkwy	4 Lane Major Street
Olympic Pkwy to Hunte Pkwy	6 Lane Major Street
South of Hunte Pkwy	4 Lane Major Street
Heritage Rd	
Otay Lakes Rd to Olympic Pkwy	6 Lane Prime Arterial
Olympic Pkwy to Rock Mountain Rd.	6 Lane Prime Arterial

(a) Existing roads street classification is based on the City of Chula Vista General Plan.

Source: Kimley-Horn

Table C.10 displays the freeway segments that were selected for the Traffic Analysis.

Table C.10 Freeway Segments		
Interstate 805		
Telegraph Canyon Rd to Olympic Pkwy	NB	4 M
	SB	4 M
Olympic Pkwy to Main St	NB	4 M + 1 A
	SB	4 M + 1 A

C. Traffic Analysis

The Traffic Analysis is based upon the Year 2030 baseline traffic volumes for the roadway segments within the study area. These volumes were obtained from the Chula Vista General Plan Update, September 2005. Models for three roadway network alternatives were obtained from SANDAG using Chula Vista General Plan Update land uses. These uses included: with no Rock Mountain Road; with Rock Mountain Road overpass; and with Rock Mountain Road interchange. Modeled EUC project traffic was removed from the 2010 volumes to obtain baseline conditions.

The Traffic Analysis estimated turning movement volumes at the study intersections are based on the existing turning movements at each respective study intersection. These intersections were factored up based on the projected ADT volumes along each approach. These volumes were adjusted where needed to account for the roadway network assumed for each scenario in this study, and to remove EUC traffic to obtain baseline conditions. Where intersections currently do not exist, volumes were based on forecast ADT and assumed travel patterns.

A total of 11 Scenarios were analyzed in the Traffic Analysis, which have different assumptions concerning the study area, land use and roadway network. A detailed description of each scenario is provided in the Traffic Analysis. A summary of the different scenarios is provided below:

1. Existing Conditions (2006)

Existing Conditions: Represents the traffic conditions of the existing street network (see Tables C.11, C.12 and C.13 for the existing intersection, roadway and freeway LOS summary). It should be noted that the majority of the traffic counts were obtained in December 2006. The Existing Conditions analysis would represent the conditions during the time that the actual counts were obtained. Additional improvements have been completed since the time the counts were obtained (i.e., opening of the Southbay Expressway in November 2007). However, the Existing Conditions analyses would not take into account and improvements after December 2006. These changes would be reflected in future year scenarios.

2. Horizon Year (2010)

The following discussion provides a summary description from the Traffic Analysis of the Baseline 2010 Horizon Year condition, both with and without the addition of the EUC project traffic. The specific geometrics of the intersections and roadway

segments in the study area for the Horizon Year 2010 scenario are presented in the Traffic Analysis.

a. Intersections

Under the Horizon Year 2010 scenario, the following improvements at the numbered study intersections (from Table C.8) were assumed by the Traffic Analysis to be completed:

8. Olympic Parkway/Heritage Road: Completion of south leg along Heritage Road
11. Olympic Parkway/SB SR-125 Ramps: Completion of SR-125 interchange, full build-out of intersection
12. Olympic Parkway/NB SR-125 Ramps: Completion of SR-125 interchange, full build-out of intersection
15. Birch Road/La Media Road: Completion of west leg along Birch Road and south leg along La Media Road
16. Birch Road/Magdalena Avenue: Completion of east leg along Birch Road
17. Birch Road/SB SR-125 Ramps: Completion of SR-125 interchange, full build-out of intersection
18. Birch Road/NB SR-125 Ramps: Completion of SR-125 interchange, full build-out of intersection
24. Bob Pletcher Way/Wolf Canyon Loop: Completion of an all-way stop controlled T-intersection

b. Intersection Analysis

Table C.11 displays the LOS analysis results for the study intersections under the Horizon Year 2010 baseline and the 2010 baseline with the project. As shown in the table, the following study intersections would operate at an unacceptable LOS.

- Olympic Parkway and Brandywine Avenue *(LOS E - p.m. peak-hour)*
- Olympic Parkway and Heritage Road *(LOS E - a.m. peak-hour)*

Since the project traffic would consist of less than five percent of the entering traffic at the Olympic Parkway/Brandywine Avenue intersection during the p.m. and a.m. peak-hour, this intersection would be considered a cumulative project impact under Horizon Year 2010 conditions.

c. Roadway Segments

The following roadway segments (with the designated classification shown in parenthesis) were assumed to be completed for the Horizon Year 2010 scenario by the Traffic Analysis:

- SR-125 interchanges with Otay Lakes Road, Olympic Parkway, and Birch Road
- La Media Road south of Birch Road (6-lane prime arterial)
- Eastlake Parkway between Birch Road and Hunte Parkway (6-lane major arterial)

d. Roadway Segment Analysis

Table C.12 displays the roadway segments analysis under the Horizon Year 2010 baseline and 2010 With Project conditions. As shown in the table, the following roadway segments would function at an unacceptable LOS.

- Olympic Parkway from Northbound Interstate 805 Ramps to Brandywine Avenue (LOS E)
- Olympic Parkway from Brandywine Avenue to Heritage Road (LOS D)

Both segments listed above would be considered a cumulative impact since the project traffic would consist of less than five percent of the roadway's capacity and add less than 800 ADT to the roadway.

e. Freeway Segment Analysis

The Traffic Analysis indicates that no freeway segments would function at an unacceptable LOS. No significant impacts are associated with the project along the freeway segments under this scenario.

f. Traffic Volumes

According to the Traffic Analysis, the total project traffic added during the 2010 scenario was 8,783 ADT, which is approximately 11 percent of the overall project traffic.

3. Horizon Year (2015)

This section provides a description of the Horizon Year 2015 condition, both with and without the addition of the Chula Vista EUC project traffic.

a. Intersections:

Under the Horizon Year 2015 scenario, the following improvements are assumed by the Traffic Analysis to be completed in the vicinity of the project site:

19. Heritage Road/Main Street: Completion of north and east legs of intersection.
20. Rock Mountain Road/La Media Road: New intersection due to the extension of Rock Mountain Road
21. Rock Mountain Road/Magdalena Avenue: New intersection due to the extension of Rock Mountain Road

The specific geometrics of the intersections in the study area for the Horizon Year 2015 scenario are presented in the Traffic Analysis.

b. Intersection Analysis

Table C.11 displays the LOS analysis results for the study intersections under the Horizon Year 2015 baseline and 2015 baseline with the EUC Project. As shown in the table, the following study intersections would operate at an unacceptable LOS.

- Olympic Parkway and Heritage Road *(LOS E - a.m. peak-hour only)*

Since the project traffic would consist of more than five percent of the entering traffic at the Olympic Parkway/Heritage Road intersection, it would be considered to be directly impacted by the project under Horizon Year 2015 conditions.

c. Roadway Segments

The following list summarizes the roadway segments that have been assumed by the Traffic Analysis to be completed for the Horizon Year 2015 scenario with the designated classification shown in parenthesis:

- Heritage Rd. between Olympic Parkway and Main St. (4-lane major arterial)
- Rock Mountain Rd between Heritage Rd and Magdalena Ave. (6-lane prime arterial)

The segments of La Media Road and Rock Mountain Road at their point of intersection are classified as a 6-lane town center arterial. The geometrics of the roadway segments in the study area for the Horizon Year 2015 scenario are presented in the Traffic Analysis.

d. Roadway Segment Analysis

Table C.12 displays the roadway segments analysis under the Horizon Year 2015 baseline and 2015 baseline with the EUC project. As shown in the table, the following roadway segments would function at an unacceptable LOS:

- Olympic Parkway from Northbound I-805 Ramps to Brandywine Ave. *(LOS E - no significant impact since intersections operate at an acceptable LOS)*
- Olympic Parkway from Brandywine Avenue to Heritage Road *(LOS D)*

The segment of Olympic Parkway from Northbound I-805 to Brandywine Avenue would not be considered a cumulative impact since the intersections on both ends of the segment would operate at an acceptable LOS. For the segment of Olympic Parkway between Brandywine Avenue and Heritage Road, the project would cause a direct impact since the segment functions at LOS D and exceeds the significance thresholds.

e. Freeway Segment Analysis

The freeway segment analysis under the Horizon Year 2015 baseline and 2015 baseline with the project is shown in Table C.13. The following freeway segment would function at an unacceptable LOS:

- Southbound I-805 from Telegraph Canyon Road to Olympic Parkway *(LOS E - p.m. peak-hour)*

Since the project traffic would consist of less than five percent of the capacity for the above freeway segment, the segment would have a cumulative project impact under Horizon Year 2015 conditions.

f. Traffic Volumes

According to the Traffic Analysis, the total project traffic added during the 2015 scenario was 30,729 ADT, which is approximately 38 percent of the overall project traffic.

4. Horizon Year (2020)

The following discussion provides a summary of the Horizon Year 2020 condition with the completion of the Rock Mountain overpass, both with and without the addition of the EUC project traffic. Specific geometries of the intersections and the roadway segments in the study area for the Horizon Year 2020 scenario with the Rock Mountain Road overpass are presented in the Traffic Analysis.

a. Intersections

Under the Horizon Year 2020 scenario with the Rock Mountain Road overpass, no major intersection improvement projects were assumed by the Traffic Analysis to be completed in the vicinity of the project site, except at the following location:

21. Rock Mountain Road/Magdalena Avenue: Addition of east leg caused by the extension of Rock Mountain Road to the east

b. Intersection Analysis

Table C.11 displays the LOS analysis results for the study intersections under the Horizon Year 2020 baseline and 2020 baseline with the EUC, including a Rock Mountain Road overpass. As shown in the table, the following study intersection would operate at an unacceptable LOS.

- Main Street/ Rock Mountain Road and Heritage Road *(LOS E - p.m. peak-hour)*

Since the project traffic would consist of more than five percent of the entering traffic for the above intersection, the intersection would be directly impacted by the project under Horizon Year 2020 (Rock Mountain Road overpass) conditions. The two intersections previously impacted along Olympic Parkway would now operate at an acceptable LOS. Traffic volumes at these locations have decreased over time, which could be attributed to changes in travel patterns with drivers shifting from a congested I-805 to the South Bay Expressway.

c. Roadway Segments

The following list summarizes the roadway segments that Traffic Analysis assumes to be completed for the Horizon Year 2020 scenario with the Rock Mountain Road overpass:

- Rock Mountain Road between Magdalena Avenue and SR-125 (6-lane prime arterial)
- Hunte Parkway between SR-125 and Eastlake Parkway (Town Center Arterial)

All intersection and roadway segment improvements listed above are assumed to be built by others and not by the proposed EUC project.

d. Roadway Segment Analysis

Table C.12 displays the roadway segments analysis under the Horizon Year 2020 baseline and 2020 baseline with the project, including a Rock Mountain Road overpass. As shown in the table, the following roadway segments would function at an unacceptable LOS:

- Olympic Parkway from Northbound I-805 Ramps to Brandywine Ave. *(LOS E)*

- Olympic Parkway from Brandywine Avenue to Heritage Road *(LOS D)*
- Olympic Parkway from Heritage Road to La Media Road *(LOS D)*

None of the roadway segments have a significant impact. The intersections along each of the three segments operate at an acceptable LOS therefore no mitigation is necessary.

e. Freeway Seqment Analysis

Table C.13 displays the freeway segment analysis under the Horizon Year 2020 baseline and 2020 With Project conditions, including a Rock Mountain Road overpass. As shown in the table, the following freeway segments would function at an unacceptable LOS:

- Northbound Interstate 805 from Telegraph Canyon Road to Olympic Parkway (LOS E – a.m. peak-hour)
- Southbound Interstate 805 from Telegraph Canyon Road to Olympic Parkway (LOS F – p.m. peak-hour)

Since the project traffic would consist of less than five percent of the capacity for both of the above segments, the segments would have a cumulative project impact under Horizon Year 2020 (Rock Mountain Road overpass) conditions.

f. Traffic Volumes

The Traffic Analysis indicates that the total project traffic added during this scenario was 52,676 ADT, which is approximately 65 percent of the overall project traffic.

5. Horizon Year (2030) with the completion of the Rock Mountain Road Interchange

The following discussion is a summary of the Traffic Analysis regarding the Build-Out condition in the year 2030, including the completion of the Rock Mountain Road interchange, both with and without the addition of the Chula Vista EUC project traffic. The specific geometrics of the roadway segments in the study area for the Year 2030 Build-Out scenario are presented in the Traffic Analysis.

a. Intersection and Roadway Segments

The roadway network and intersection geometry is the same as the Year 2030 Build-Out Conditions with Rock Mountain Overpass scenario, with the following exceptions:

22. Rock Mountain Road/SB SR-125 Ramps: Construct new ramp intersection with SR-125
23. Rock Mountain Road/NB SR-125 Ramps: Construct new ramp intersection with SR-125

All intersection improvements listed above are assumed to be built by others and not by the proposed EUC project.

b. Intersection Analysis

Table C.11 displays the LOS analysis results for the study intersections under the Year 2030 Build-Out baseline and 2030 With Project conditions. As shown in the table, all study intersections would operate at LOS D or better except for the following intersections.

- Telegraph Canyon Road and Heritage Road *(LOS E – a.m. peak-hour)*
- Olympic Parkway and Brandywine Avenue *(LOS E – a.m. and p.m. peak-hours)*
- Birch Road and La Media Road *(LOS F– p.m. peak-hour)*

- Birch Road and Magdalena Avenue *(LOS E – p.m. peak-hour)*
- Main St. / Rock Mountain Rd and Heritage Rd *(LOS F– a.m. and p.m. peak-hours)*
- Rock Mountain Road and Magdalena Avenue *(LOS F – a.m. peak-hour)*

The Kimley-Horn Traffic Analysis determined that the project traffic would consist of more than five percent of the entering traffic the above intersections with the exception of the Telegraph Canyon and Heritage Road intersection. Therefore, the intersections would be considered to have a direct project impact under Year 2030 Build-Out conditions.

c. Roadway Segment Analysis

Table C.12 displays the roadway segments analysis under the Year 2030 Build-Out baseline and 2030 With Project conditions. The following roadway segments would function at an unacceptable LOS.

- Olympic Parkway from Northbound I-805 Ramps to Brandywine Avenue *(LOS E)*
- Olympic Parkway from Brandywine Avenue to Heritage Road *(LOS D)*
- Olympic Parkway from Heritage Road to La Media Road *(LOS D – no significant impact since intersections operate at an acceptable LOS)*
- Main Street from Maxwell Road to Heritage Road *(LOS D)*
- Hunte Parkway from State Route 125 Ramps to Eastlake Parkway *(LOS E)*
- Eastlake Parkway south of Hunte Parkway *(LOS D)*

All of the above segments are considered to have a direct impact with the addition of the project traffic except for the segment of Olympic Parkway between Heritage Road and La Media Road. This segment would not be considered to have any impact since the operations of the intersections on both ends of the segment would operate at an acceptable LOS. Further, the Traffic Analysis notes that the Hunte Parkway segment may operate over its capacity if the SR-125/Otay Valley Road interchange is not constructed by the Year 2030. This would require all the traffic south of Hunte Parkway to use Hunte Parkway.

d. Freeway Segment Analysis

Table C.13 displays the freeway segment analysis under the Year 2030 Build-Out baseline and 2030 With Project conditions. As shown in the table, all freeway segments would function at LOS D or better except for the following segments:

- Northbound I-805 from Telegraph Canyon Rd. to Olympic Parkway *(LOS F – a.m. peak-hour)*
- Southbound I-805 from Telegraph Canyon Rd. to Olympic Parkway *(LOS F – p.m. peak-hour)*
- Southbound I-805 from Olympic Parkway to Main Street *(LOS F – p.m. peak-hour)*

Since the project traffic would consist of less than five percent of the capacity for all of the above segments, the segments would have a cumulative project impact under Year 2030 Build-Out conditions.

e. Traffic Volumes

Traffic reflecting build-out of the project (80,352 ADT) was added during the 2030 build-out scenario.

Table C.11
Summary of Peak-Hour Intersection LOS Analysis

	INTERSECTION	PEAK HOUR	EXISTING		2010 BASELINE		2010 BASELINE WITH PROJECT		2015 BASELINE		2015 BASELINE WITH PROJECT		2020 BASELINE		2020 BASELINE WITH PROJECT		2030 BASELINE		2030 BASELINE WITH PROJECT		2030 BASELINE WITH PROJECT MITIGATED	
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)
1	Telegraph Canyon Rd & Heritage Rd	AM	58.2	**E**	29.7	C	30.6	C	35.6	D	39.1	D	46.3	D	49.5	D	68.3	**E**	74.8	**E**	54.7	D
		PM	26.2	C	21.1	C	21.8	C	24.8	C	26.6	C	25.8	C	32.2	C	30.8	C	41.7	D	28.9	C
2	Telegraph Canyon Rd & La Media Rd	AM	33.7	C	39.4	D	39.6	D	39.8	D	40.2	D	43.3	D	44.4	D	34.6	C	36.7	D	36.7	D
		PM	30.2	C	28.3	C	28.7	C	29.1	C	30.3	C	32.0	C	34.7	C	33.3	C	39.3	D	39.3	D
3	Otay Lakes Rd & Eastlake Pkwy	AM	20.8	C	26.8	C	25.9	C	25.8	C	27.7	C	26.6	C	36.2	D	25.3	C	46.9	D	46.9	D
		PM	26.6	C	28.8	C	28.9	C	31.4	C	32.4	C	37.0	D	38.6	D	36.4	D	45.0	D	45.0	D
4	Olympic Pkwy & SB I-805 Ramps	AM	18.7	B	21.5	C	22.5	C	22.4	C	28.1	C	23.8	C	41.6	D	24.5	C	48.8	D	38.2	D
		PM	29.8	C	33.6	C	35.2	D	35.3	D	45.2	D	35.1	D	48.9	D	37.9	D	54.9	D	53.4	D
5	Olympic Pkwy & NB I-805 Ramps	AM	32.0	C	35.7	D	36.9	D	34.5	C	41.6	D	33.6	C	44.1	D	31.2	C	46.8	D	31.7	C
		PM	27.5	C	30.0	C	31.5	C	28.2	C	34.5	C	26.6	C	36.6	D	23.7	C	49.6	D	32.4	C
6	Olympic Pkwy & Oleander Ave	AM	41.1	D	33.9	C	35.0	C	30.4	C	33.6	C	28.1	C	31.8	C	25.8	C	32.6	C	14.7	B
		PM	22.8	C	28.6	C	30.9	C	23.6	C	28.7	C	21.3	C	28.1	C	20.7	C	21.3	C	15.2	B
7	Olympic Pkwy & Brandywine Ave	AM	43.1	D	49.9	D	47.7	D	42.6	D	48.9	D	46.6	D	54.4	D	51.1	D	61.0	**E**	53.5	D
		PM	41.6	D	58.7	**E**	64.7	**E**	49.8	D	52.0	D	47.6	D	53.4	D	49.1	D	61.0	**E**	50.2	D
8	Olympic Pkwy & Heritage Rd	AM	20.2	C	56.6	**E**	60.9	**E**	52.4	D	58.6	**E**	49.0	D	54.8	D	45.0	D	48.4	D	48.4	D
		PM	12.1	B	38.2	D	51.1	D	35.4	D	44.7	D	37.3	D	42.1	D	32.5	C	42.9	D	42.9	D
9	Olympic Pkwy & La Media Rd	AM	53.4	D	44.4	D	46.3	D	39.5	D	50.0	D	36.9	D	50.3	D	32.1	C	40.8	D	40.8	D
		PM	15.8	B	23.0	C	28.7	C	22.1	C	30.9	C	23.8	C	33.2	C	21.7	C	36.8	D	36.8	D
10	E Palomar St & Olympic Pkwy	AM	26.0	C	17.5	B	17.6	B	19.8	B	20.0	B	20.0	B	18.9	B	22.3	C	23.3	C	23.3	C
		PM	20.3	C	21.8	C	21.9	C	23.4	C	24.2	C	26.4	C	29.3	C	25.7	C	28.6	C	28.6	C
11	Olympic Pkwy & SR-125 SB Ramps	AM	N/A (c)		7.9	A	8.0	A	8.0	A	8.1	A	10.0	A	9.3	A	6.4	A	9.4	A	6.4	A
		PM			10.1	B	10.1	B	10.1	B	10.3	B	10.1	B	10.4	B	7.6	A	11.1	B	7.9	A
12	Olympic Pkwy & SR-125 NB Ramps	AM	N/A (c)		4.0	A	4.1	A	4.0	A	3.9	A	3.9	A	3.9	A	3.8	A	3.8	A	3.8	A
		PM			4.1	A	4.1	A	4.0	A	4.0	A	3.9	A	3.8	A	4.3	A	4.4	A	4.4	A
13	Olympic Pkwy & Eastlake Pkwy	AM	16.3	B	25.9	C	27.4	C	25.2	C	28.6	C	25.0	C	33.2	C	20.9	C	32.0	C	32.0	C
		PM	16.4	B	44.3	D	46.8	D	33.2	C	45.2	D	30.0	C	43.3	D	23.7	C	32.6	C	32.6	C
14	Olympic Pkwy & Hunte Pkwy	AM	15.0	B	34.0	C	32.4	C	27.4	C	27.9	C	23.1	C	24.4	C	18.2	B	20.5	C	20.5	C
		PM	13.7	B	23.1	C	23.1	C	19.6	B	21.2	C	18.9	B	25.3	C	19.5	B	23.4	C	23.4	C
15	Birch Rd & La Media Rd	AM	4.8	A	14.1	B	15.6	B	18.2	B	23.5	C	21.1	C	29.9	C	20.3	C	49.6	D	53.8	D
		PM	4.4	A	12.6	B	17.0	B	18.7	B	28.9	C	26.5	C	50.5	D	29.9	C	85.3	**F**	39.2	D
16	Birch Rd & Magdalena Ave	AM	13.6	B	17.4	B	15.6	B	18.5	B	19.0	B	20.2	C	20.9	C	19.4	B	33.9	C	25.6	C
		PM	29.4	C	22.9	C	18.0	B	22.2	C	25.6	C	22.5	C	29.4	C	32.3	C	56.6	**E**	44.9	D
17	Birch Rd & SR-125 SB Ramps	AM	N/A (c)		7.4	A	5.5	A	4.8	A	5.4	A	4.5	A	6.7	A	4.7	A	8.5	A	7.4	A
		PM			3.4	A	6.0	A	5.5	A	6.7	A	8.6	A	12.3	B	5.8	A	11.4	B	9.6	A
18	Birch Rd & SR-125 NB Ramps	AM	N/A (c)		7.5	A	4.7	A	5.1	A	6.2	A	5.4	A	17.8	B	3.8	A	3.2	A	3.1	A
		PM			9.8	A	4.6	A	5.1	A	6.6	A	6.0	A	24.4	C	4.7	A	4.6	A	5.3	A
19	Main St & Heritage Rd	AM	N/A (c)		N/A (c)				27.5	C	26.8	C	34.1	C	40.4	D	83.9	**F**	85.0	**F**	53.2	D
		PM							31.7	C	37.7	D	48.4	D	61.3	**E**	87.2	**F**	96.1	**F**	47.2	D
20	Rock Mountain Rd & La Media Rd	AM	N/A (c)		N/A (c)				13.7	B	13.8	B	17.0	B	20.1	C	48.1	D	36.9	D	36.9	D
		PM							14.8	B	13.4	B	20.9	C	32.3	C	42.4	D	30.2	C	29.6	C
21	Rock Mountain Rd & Magdalena Ave	AM	N/A (c)		N/A (c)				11.9	B	11.9	B	19.2	B	24.1	C	43.3	D	110.0	**F**	41.9	D
		PM							15.3	B	12.3	B	15.8	B	21.0	C	27.4	C	45.0	D	40.2	D
22	Rock Mountain Rd & SR-125 SB Ramps	AM	N/A (c)		N/A (c)				N/A (c)				N/A (c)				N/A (c)		10.3	B	10.3	B
		PM																	44.7	D	44.7	D
23	Rock Mountain Rd & SR-125 NB Ramps	AM	N/A (c)		N/A (c)				N/A (c)				N/A (c)				N/A (c)		28.1	C	28.1	C
		PM																	36.6	D	36.6	D
24	Bob Pletcher Way & Wolf Canyon Loop	AM	N/A (c)		7.2	A	7.6	A	7.3	A	8.8	A	7.3	A	9.9	A	7.3	A	11.9	B	11.9	B
		PM			7.2	A	7.6	A	7.2	A	10.0	A	7.2	A	12.4	B	7.2	A	27.5	D	27.5	D

Notes:
Bold and lightly shaded values indicate intersections operating at LOS E or F and with a cumulative impact. **Bold and black shaded** values indicate project direct impact.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 180 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0
(c) Intersection does not exist in given scenario

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Table C.12
Summary of Roadway Segment LOS Analysis

ROADWAY SEGMENT	ROADWAY CLASSIFICATION	ACCEPTABLE VOLUME	EXISTING		2010 BASELINE		2010 BASELINE WITH PROJECT		YEAR 2015 BASELINE		2015 BASELINE WITH PROJECT		YEAR 2020 BASELINE		2020 BASELINE WITH PROJECT		YEAR 2030 BASELINE		2030 BASELINE WITH PROJECT		2030 BASELINE WITH PROJECT IMPROVED	
			ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS
Olympic Pkwy																						
NB I-805 Ramps to Brandywine Ave	6 Lane Prime Arterial	50,000	51,336	**D**	57,080	**E**	58,399	**E**	55,670	**D**	58,866	**E**	54,160	**D**	59,030	**E**	52,490	**D**	58,745	**E**	58,745	**E**
Brandywine Ave to Heritage Rd	6 Lane Prime Arterial	50,000	49,961	C	53,400	**D**	55,530	**D**	50,860	**D**	54,411	**D**	49,350	C	54,524	**D**	43,490	C	50,305	**D**	50,305	**D**
Heritage Rd to La Media Rd	6 Lane Prime Arterial	50,000	47,756	C	44,160	C	46,797	C	44,060	C	49,742	C	42,680	B	50,411	**D**	41,780	B	52,703	**D**	52,703	**D**
La Media Rd to E Palomar St	6 Lane Prime Arterial	50,000	37,344	A	27,780	A	27,831	A	28,650	A	28,828	A	29,070	A	29,314	A	30,500	A	30,873	A	30,873	A
E Palomar St to SR-125 Ramps	6 Lane Prime Arterial	50,000	38,650	B	39,930	B	40,163	B	40,250	B	41,067	B	39,910	B	41,249	B	39,600	B	41,467	B	41,467	B
SR-125 Ramps to Eastlake Pkwy	8 Lane Prime Arterial	70,000	27,127	A	48,750	A	49,673	A	49,040	A	52,271	A	42,070	A	47,488	A	40,080	A	45,588	A	45,588	A
Eastlake Pkwy to Hunte Pkwy	6 Lane Prime Arterial	50,000	15,903	A	31,500	A	31,500	A	31,380	A	31,380	A	29,400	A	29,400	A	25,200	A	25,387	A	25,387	A
Birch Rd																						
La Media Rd to SR-125 Ramps	6 Lane Major Street	40,000			29,580	A	32,826	B	26,110	A	34,633	B	19,730	A	30,870	B	10,270	A	26,420	A	26,420	A
SR-125 Ramps to Eastlake Pkwy	6 Lane Prime Arterial	50,000			22,550	A	26,709	A	20,870	A	35,429	A	16,560	A	34,214	A	8,570	A	30,228	A	30,228	A
Main St																						
Maxwell Rd to Heritage Rd	6 Lane Prime Arterial	50,000	11,255	A	28,100	A	28,100	A	31,660	A	32,725	A	36,350	A	39,881	B	49,890	C	55,678	**D**	55,678	**D**
Rock Mountain Rd																						
Heritage Rd to La Media Rd	6 Lane Prime Arterial	50,000							6,320	A	10,226	A	15,230	A	22,900	A	29,380	A	37,969	B	37,969	B
La Media Rd to SR-125 Ramps	6 Lane Town Center Arterial	50,000											14,130	A	23,687	A	28,970	A	42,506	B	42,506	B
Hunte Pkwy																						
SR-125 Ramps to Eastlake Pkwy	6 Lane Town Center Arterial	50,000											14,130	A	23,687	A	37,460	A	61,732	**E**		
	w/ Enhancements	70,000																			61,732	C
Eastlake Pkwy to Olympic Pkwy	6 Lane Prime Arterial	50,000	1,600	A	4,430	A	5,850	A	5,210	A	10,182	A	8,130	A	12,696	A	19,490	A	26,118	A	26,118	A
Olympic Pkwy to Otay Lakes Rd	4 Lane Major Street	30,000	8,533	A	15,290	A	15,706	A	13,480	A	14,936	A	12,260	A	14,391	A	18,090	A	21,264	A	21,264	A
La Media Rd																						
Telegraph Canyon Rd to E Palomar St	6 Lane Prime Arterial	50,000	24,208	A	33,360	A	33,786	A	34,670	A	36,161	A	36,210	A	38,462	B	38,790	B	42,151	B	42,151	B
E Palomar St to Olympic Pkwy	6 Lane Prime Arterial	50,000	12,658	A	16,340	A	16,776	A	17,940	A	19,467	A	19,920	A	22,294	A	23,690	A	27,424	A	27,424	A
Olympic Pkwy to Birch Rd	6 Lane Prime Arterial	50,000	10,418	A	35,170	A	38,010	B	34,080	A	40,472	B	32,020	A	41,273	B	29,270	A	42,713	B	42,713	B
Birch Rd to Rock Mountain Rd	6 Lane Prime Arterial	50,000			8,400	A	8,400	A	10,380	A	12,866	A	12,270	A	13,488	A	17,100	A	18,407	A	18,407	A
South of Rock Mountain Rd	6 Lane Prime Arterial	50,000											13,230	A	13,230	A	24,490	A	27,291	A	27,291	A
Eastlake Pkwy																						
Fenton St to Otay Lakes Rd	4 Lane Major Street	30,000	21,516	A	8,550	A	8,692	A	11,790	A	12,287	A	15,030	A	15,821	A	21,500	A	22,714	B	22,714	B
Otay Lakes Rd to Olympic Pkwy	4 Lane Major Street	30,000	18,945	A	22,320	A	22,969	B	20,380	A	22,653	B	18,470	A	22,549	B	20,690	A	26,851	C	26,851	C
Olympic Pkwy to Hunte Pkwy	6 Lane Major Street	40,000	5,782	A	21,870	A	23,564	A	21,120	A	27,050	A	21,000	A	30,557	B	16,470	A	28,606	A	28,606	A
South of Hunte Pkwy	4 Lane Major Street	30,000											13,950	A	17,785	A	26,290	C	32,825	**D**	32,825	D
Heritage Rd																						
Otay Lakes Rd to Olympic Pkwy	6 Lane Prime Arterial	50,000	12,383	A	28,090	A	28,587	A	29,470	A	31,210	A	30,810	A	33,671	A	33,490	A	37,971	B	37,971	B
Olympic Pkwy to Rock Mountain Rd	6 Lane Prime Arterial	50,000			3,100	A	3,100	A	10,570	A	11,635	A	17,470	A	17,835	A	31,800	A	32,267	A	32,267	A

Notes:
Bold values indicate roadway segments operating at LOS D, E or F, but have no significant impact. **Bold and black shaded** values indicate project direct impact. **Bold** and lightly shaded values indicate project cumulative impact.

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Table C.13
Summary of Freeway Segment LOS Analysis

FREEWAY SEGMENT	DIR	NUMBER OF LANES	CAPACITY (a)	EXISTING		2010 BASELINE		2010 BASELINE WITH PROJECT		2015 BASELINE		2015 BASELINE WITH PROJECT		2020 BASELINE		2020 BASELINE WITH PROJECT		2030 BASELINE		2030 WITH PROJECT	
				V/C RATIO	LOS	V/C RATIO	LOS	V/C RATIO	LOS	V/C RATIO	LOS	V/C RATIO	LOS	V/C RATIO	LOS	V/C RATIO	LOS	V/C RATIO	LOS	V/C RATIO	LOS
AM PEAK																					
Interstate 805																					
Telegraph Canyon Rd to Olympic Pkwy	NB	4 M	8,000	0.767	C	0.778	C	0.781	C	0.843	D	0.856	D	0.908	D	0.930	**E**	1.038	**F0**	1.072	**F0**
	SB	4 M	8,000																		
Olympic Pkwy to Main St	NB	4 M + 1 A	9,200	0.667	C	0.676	C	0.678	C	0.730	C	0.735	C	0.784	C	0.789	C	0.892	D	0.904	D
	SB	4 M + 1 A	9,200																		
State Route 125																					
Otay Lakes Rd to Olympic Pkwy	NB	2 M	4,000	N/A (d)		0.289	A	0.300	A	0.319	A	0.357	A	0.350	A	0.411	B	0.410	A	0.504	B
	SB	2 M	4,000																		
Olympic Pkwy to Birch Rd	NB	2 M	4,000	N/A (d)		0.204	A	0.211	A	0.242	A	0.268	A	0.280	A	0.323	A	0.355	A	0.453	B
	SB	2 M	4,000																		
Birch Rd to Rock Mountain Rd	NB	2 M	4,000	N/A (d)		0.256	A	0.262	A	0.299	A	0.317	A	0.341	A	0.371	A	0.426	B	0.475	B
	SB	2 M	4,000																		
Rock Mountain Rd to Otay Valley Rd	NB	2 M	4,000	N/A (d)		0.256	A	0.256	A	0.256	A	0.256	A	0.363	A	0.363	A	0.469	A	0.546	B
	SB	2 M	4,000																		
PM PEAK																					
Interstate 805																					
Telegraph Canyon Rd to Olympic Pkwy	NB	4 M	8,000																		
	SB	4 M	8,000	0.857	D	0.869	D	0.873	D	0.942	**E**	0.956	**E**	1.014	**F0**	1.039	**F0**	1.159	**F0**	1.197	**F0**
Olympic Pkwy to Main St	NB	4 M + 1 A	9,200																		
	SB	4 M + 1 A	9,200	0.745	C	0.756	C	0.757	C	0.816	D	0.821	D	0.876	D	0.881	D	0.996	**E**	1.010	**F0**
State Route 125																					
Otay Lakes Rd to Olympic Pkwy	NB	2 M	4,000	N/A (d)																	
	SB	2 M	4,000			0.323	A	0.335	A	0.357	A	0.398	A	0.390	A	0.459	B	0.458	B	0.563	B
Olympic Pkwy to Birch Rd	NB	2 M	4,000	N/A (d)																	
	SB	2 M	4,000			0.228	A	0.236	A	0.270	A	0.299	A	0.312	A	0.361	A	0.397	A	0.507	B
Birch Rd to Rock Mountain Rd	NB	2 M	4,000	N/A (d)																	
	SB	2 M	4,000			0.287	A	0.293	A	0.334	A	0.355	A	0.381	A	0.415	B	0.476	A	0.530	B
Rock Mountain Rd to Otay Valley Rd	NB	2 M	4,000	N/A (d)																	
	SB	2 M	4,000			0.287	A	0.287	A	0.287	A	0.287	A	0.405	A	0.405	A	0.524	A	0.610	B

Notes:
Bold values indicate freeway segments operating at LOS E or F. **Bold and shaded** values indicate cumulative impacts.
(a) The capacity is calculated as 2,000 ADT per lane and 1,200 ADT per auxiliary lane
(b) Traffic volumes obtained from SANDAG using Chula Vista General Plan Update land uses
(c) Peak-hour volume calculated by: (ADT*K*D)/Truck Factor
(d) SR-125 is currently under construction and therefore cannot be analyzed in existing conditions

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D. SANDAG Traffic Modeling

The basis of the Traffic Analysis is the Series 10.0, 2030 City/County Forecast Traffic Model, which is produced by the San Diego Association of Governments (SANDAG). Kimley-Horn worked with the City of Chula Vista and SANDAG to input the proper land use and network designations into the model for the aforementioned 11 scenarios.

The Traffic Analysis used a model with the appropriate land use, City of Chula Vista circulation element and SR 125 for the entire study area for each scenario. The project land uses were coded into the model exactly as proposed/adopted as appropriate. After the proper land use intensities and network configurations were entered into the model for each study scenario, the model was run. The SANDAG model outputs ADTs on all Circulation Element street segments.

E. Growth Management Oversight Commission (GMOC) Analysis

The Chula Vista Traffic Monitoring Program (TMP) assesses the operating performance of the City's arterial street system for compliance with the GMOC Threshold Standards. The threshold standards specify that a LOS of C or better, as measured by average travel speeds on the arterial, shall be maintained with an exception that during peak hours LOS D can occur for no more than any two hours of the day. In addition, planned arterial facilities that are not currently included in the current TMP will be based on direction provided by the City Engineer.

According to the GMOC Annual Report, the three arterial segments, noted in the Table C.14 below, do not comply with the threshold standard. The segments are located in eastern Chula Vista in proximity to the SR-125 toll road. Heritage Road (Olympic Parkway/Telegraph Canyon Road) is non-compliant for the second year in a row. In last year's review cycle, traffic signal timing was an issue for that segment, and the GMOC recommended that no modifications be made, and that the situation be re-evaluated after the opening of SR-125.

Table C.14
2008 Non-Compliance Threshold Findings

Segment	Direction	Level of Service
Heritage Rd (Olympic Pkwy — Telegraph Canyon Rd)	NB	D (3 Hrs)
Heritage Rd (Telegraph Canyon Rd. — Olympic Pkwy)	SB	E (3 Hrs)
La Media Rd (Telegraph Canyon Rd. — Olympic Pkwy)	NB	D (3 Hrs)
Otay Lakes Rd (Telegraph Canyon Rd — E. H St)	NB	D (4 Hrs)
Otay Lakes Rd (E. H St— Telegraph Canyon Rd)	SB	D (3 Hrs), E (1 Hr)

Source: GMOC 2008 Annual Report

SR-125 opened in November 2007, after the GMOC review ended. The impacts of the toll road on major east/west roadways in eastern Chula Vista are currently being monitored, and City engineering staff will prepare a report on its findings in June. If the three segments continue to be non-compliant, the report will include recommendations that will mitigate the impacts.

II.5.4.1.8 Project Processing Requirements

The PFFP is required by the Growth Management Program to address the following issues for Traffic Facilities:

A. Identify on-site and off-site impacts and improvements by phase of development.

B. Provide cost estimates for improvements.

II.5.4.1.9 Existing Transportation Network

This section summarizes the operation of the existing transportation network in the project study area for the key freeway segments, street segments, and intersections.

Following are brief descriptions of the existing streets in the project area.

A. <u>Interstate 805</u>

I-805 is a north-south freeway, which originates in South County and terminates at its connection with the I-5 Freeway near Del Mar, California. Local interchanges in the project vicinity are at Olympic Parkway, Telegraph Canyon Road, and East H Street. I-805 is generally an eight-lane freeway between I-805 and SR-54 with auxiliary lanes present between some interchanges. The Traffic Analysis determined that most of the study area freeway mainline segments are calculated to currently operate at LOS D or better in both northbound and southbound directions in the AM and PM peak hours.

B. <u>Existing and Planned City Street System</u>

This section summarizes the existing roadway circulation network, peak-hour traffic volumes, and operations at the study intersections and roadway segments.

<u>Road Network</u>

The following provides a description of the existing street system within the vicinity of the project study area. Ultimate roadway classifications are taken from the City of Chula Vista's General Plan and functional classifications are based on consultant's field observation.

Olympic Parkway is classified and functions as a 6-lane prime arterial in the study area, except for the segment between the future SR-125 ramps and Eastlake Parkway, which functions as an 8-lane prime arterial. This roadway generally runs in the east/west direction. Landscaped medians exist along all segments. Bike lanes and sidewalks are present on both sides of the roadway. Parking is not provided on either side of the roadway. The posted speed limit is 35 mph between I-805 and Brandywine Avenue and 50 mph between Brandywine Avenue and Hunte Parkway.

Birch Road is classified as a 6-lane major arterial between La Media Road and SR-125 and as a 6-lane prime arterial between SR-125 and Eastlake Parkway. However, at the time of the Kimley-Horn Traffic Analysis, this roadway was only partially built and not open to through traffic. Currently, Birch Road has been partially constructed along the EUC boundary. For the section of roadway that is currently built along the EUC, a landscaped median exists along with bike lanes and sidewalks on the north side of the roadway.

Main Street is classified and functions as a 6-lane prime arterial between Maxwell Road and Heritage Road. Main Street currently terminates at Heritage Road on the west end of the study area. In the future, Main Street would be extended to Hunte Parkway by connecting to Rock Mountain Road. The posted speed limit is 50 mph.

Hunte Parkway is classified as a 6-lane prime arterial between Eastlake Parkway and Olympic Parkway and as a 4-lane major street between Olympic Parkway and Otay Lakes Road. Landscaped medians exist along all segments. Bike lanes and sidewalks are present on both sides of the roadway. In the future, Hunte Parkway would be extended to Main Street by connecting to Rock Mountain Road. The segment between La Media Road and Eastlake Parkway is classified as a 6-lane town center arterial. The posted speed limit is 45 mph.

To the east, this roadway is classified and functions as a 4-lane major street between Olympic Parkway and Otay Lakes Road. Bike lanes and sidewalks exist on both side of this roadway and the posted speed limit is 45 mph. Rock Mountain Road will connect Main Street with Hunte Parkway and this segment of roadway would function as a 6-lane prime arterial.

La Media Road is classified and functions as a 6-lane prime arterial in the study area. It is only built through Santa Luna south to Village 7. A landscape median exists along this segment of roadway. Bike lanes and sidewalks are present on both sides of the roadway. The posted speed limit is 45 mph.

Eastlake Parkway is classified and functions as a 4-lane major roadway between Otay Lakes Road and Olympic Parkway and as a 6-lane major roadway between Olympic Parkway and Hunte Parkway. To the south of Birch Parkway, this roadway is built to Hunte Parkway. Landscaped medians exist along all segments. Bike lanes and sidewalks are present on both sides of the roadway. The posted speed limit is 40 mph.

Heritage Road is classified and functions as 6-lane prime arterial between Otay Lakes Road and Olympic Parkway. To the south of Olympic Parkway, this roadway is not built and is closed to all vehicular traffic. The posted speed limit is 40 mph

C. Existing Traffic Volumes

- **Roadway Segment Volumes**
  Kimley-Horn obtained existing Average Daily Traffic (ADT) volumes from traffic counts performed by Field Data Services between December 2006 and January 2007. Table C.15 displays the roadway segment analysis under existing conditions. As shown in the table, all roadway segments function at an acceptable LOS in the study area, except for the following segment:

  Olympic Parkway from Northbound I-805 Ramps to Brandywine Avenue (LOS D).

- **Freeway Segment Volumes**
  Table C.16 displays the existing I-805 and SR-125 freeway segment volumes. As shown in the table all freeway segments of the I-805 function at LOS D or better within the study area.

Table C.15
Existing Conditions
Roadway Segment LOS Summary

ROADWAY SEGMENT	ROADWAY CLASSIFICATION (a)	ACCEPTABLE VOLUME (b)	LOS CAPACITY	ADT (c)	LOS
Olympic Pkwy					
NB I-805 Ramps to Brandywine Ave	6 Lane Prime Arterial	50,000	62,500	**51,336**	**D**
Brandywine Ave to Heritage Rd	6 Lane Prime Arterial	50,000	62,500	49,961	C
Heritage Rd to La Media Rd	6 Lane Prime Arterial	50,000	62,500	47,756	C
La Media Rd to E Palomar St	6 Lane Prime Arterial	50,000	62,500	37,344	A
E Palomar St to SR-125 Ramps	6 Lane Prime Arterial	50,000	62,500	38,650	B
SR-125 Ramps to Eastlake Pkwy	8 Lane Prime Arterial	70,000	87,500	27,127	A
Eastlake Pkwy to Hunte Pkwy	6 Lane Prime Arterial	50,000	62,500	15,903	A
Main St					
Maxwell Rd to Heritage Rd	6 Lane Prime Arterial	50,000	62,500	11,255	A
Hunte Pkwy					
Eastlake Pkwy to Olympic Pkwy	6 Lane Prime Arterial	50,000	62,500	1,600	A
Olympic Pkwy to Otay Lakes Rd	4 Lane Major Street	30,000	37,500	8,533	A
La Media Rd					
Telegraph Canyon Rd to E Palomar St	6 Lane Prime Arterial	50,000	62,500	24,208	A
E Palomar St to Olympic Pkwy	6 Lane Prime Arterial	50,000	62,500	12,658	A
Olympic Pkwy to Birch Rd	6 Lane Prime Arterial	50,000	62,500	10,418	A
Eastlake Pkwy					
Fenton St to Otay Lakes Rd	4 Lane Major Street	30,000	37,500	21,516	A
Otay Lakes Rd to Olympic Pkwy	4 Lane Major Street	30,000	37,500	18,945	A
Olympic Pkwy to Birch Rd	4 Lane Major Street	30,000	37,500	5,782	A
Heritage Rd					
Otay Lakes Rd to Olympic Pkwy	6 Lane Prime Arterial	50,000	62,500	12,383	A

Notes:
Bold values indicate roadway segments operating at LOS D, E or F.
(a) Existing roads street classification is based on the City of Chula Vista General Plan.
(b) In the City of Chula Vista, the acceptable volume outside the urban core represents a level of service C.
(c) Average Daily Traffic (ADT) volumes for the roadway segments were provided by Field Data Services and measured on December 6, 2006.

Source: Kimley-Horn

Table C.16
Existing Conditions
Freeway Segment LOS Summary

FREEWAY SEGMENT	DIRECTION	NUMBER OF LANES	CAPACITY (a)	ADT (b)	K (PEAK HOUR %)	D (DIRECTIONAL SPLIT)	TRUCK FACTOR	PEAK-HOUR VOLUME (c)	V/C RATIO	LOS
AM PEAK										
Interstate 805										
Telegraph Canyon Rd to Olympic Pkwy	NB	4 M	8,000		0.066	0.566	0.886	6,139	0.77	C
	SB	4 M	8,000	146,000						
Olympic Pkwy to Main St	NB	4 M+ 1 A	9,200	146,000	0.066	0.566	0.886	6,139	0.67	C
	SB	4 M+ 1 A	9,200							
PM PEAK										
Interstate 805										
Telegraph Canyon Rd to Olympic Pkwy	NB	4 M	8,000							
	SB	4 M	8,000	146,000	0.078	0.533	0.887	**6,858**	0.86	**D**
Olympic Pkwy to Main St	NB	4 M+ 1 A	9,200	146,000						
	SB	4M + 1 A	9,200		0.078	0.533	0.887	6,858	0.75	C

Notes:
Bold values indicate freeway segments operating at LOS E or F.
M=Main Lane; A= Auxiliary Lane.
(a) The capacity is calculated as 2,000 ADT per main lane and 1,200 ADT per auxiliary lane
(b) Traffic volumes provided by Caltrans
(c) Peak-hour volume calculated by: (ADT·K*D)/Truck Factor

Source: Kimley-Horn

Table C.17 displays the Peak-Hour LOS analysis results for the study intersections under Existing Conditions. As shown in the table, all intersections currently operate at LOS D or better during both peak periods, except for the following intersection:

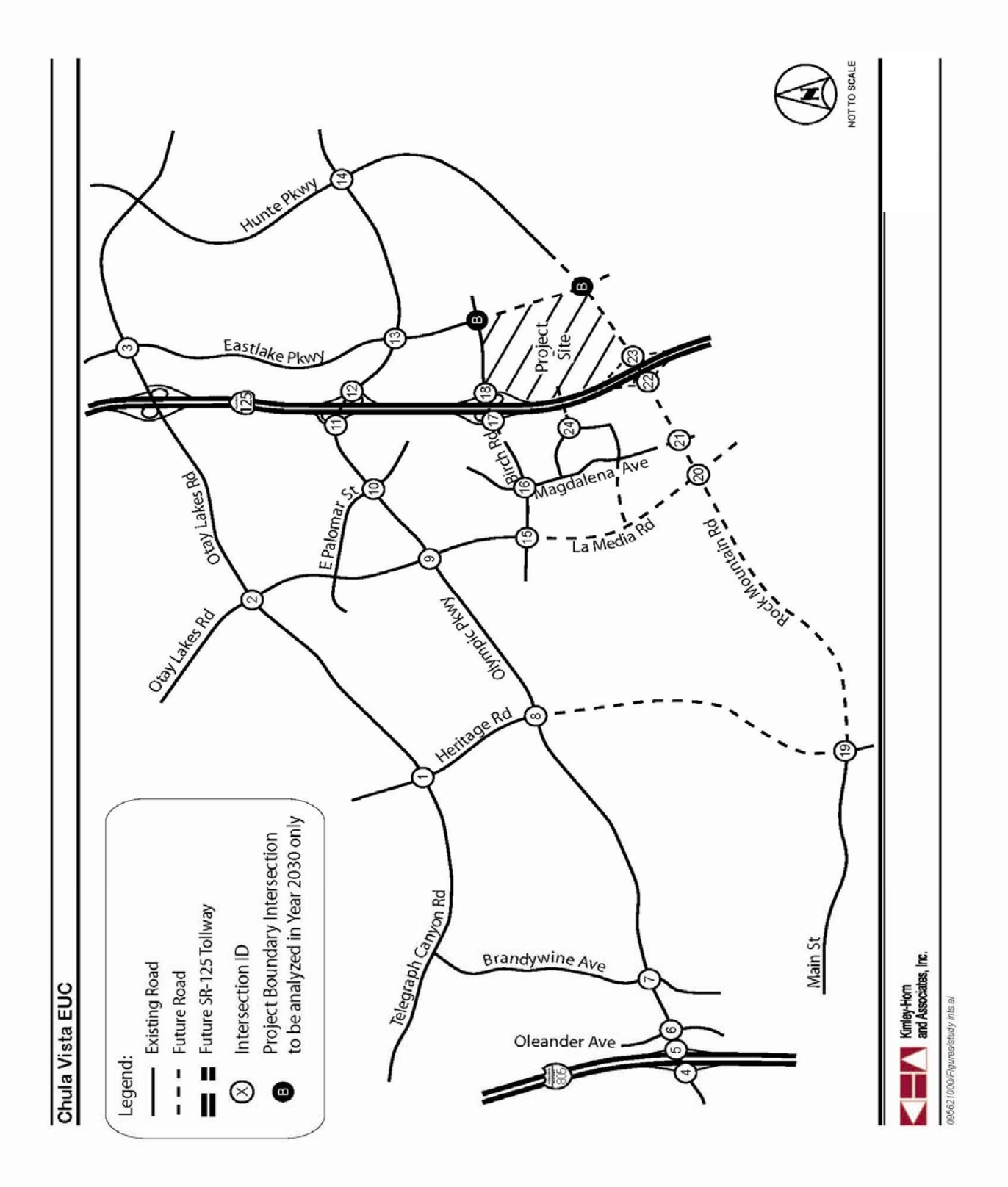
- Telegraph Canyon Road/Heritage Road (LOS E).

Table C.17
Existing Conditions
Peak-Hour Intersection LOS Summary

INTERSECTION		PEAK HOUR	EXISTING	
			DELAY (a)	LOS (b)
1	Telegraph Canyon Rd & Heritage Rd	AM	58.2	**E**
		PM	26.2	C
2	Telegraph Canyon Rd & La Media Rd	AM	33.7	C
		PM	30.2	C
3	Otay Lakes Rd & Eastlake Pkwy	AM	20.8	C
		PM	26.6	C
4	Olympic Pkwy & SB I-805 Ramps	AM	18.7	B
		PM	29.8	C
5	Olympic Pkwy & NB I-805 Ramps	AM	32.0	C
		PM	27.5	C
6	Olympic Pkwy & Oleander Ave	AM	41.1	D
		PM	22.8	C
7	Olympic Pkwy & Brandywine Ave	AM	43.1	D
		PM	41.6	D
8	Olympic Pkwy & Heritage Rd	AM	20.2	C
		PM	12.1	B
9	Olympic Pkwy & La Media Rd	AM	53.4	D
		PM	15.8	B
10	East Palomar St & Olympic Pkwy	AM	26.0	C
		PM	20.3	C
13	Olympic Pkwy & Eastlake Pkwy	AM	16.3	B
		PM	16.4	B
14	Olympic Pkwy & Hunte Pkwy	AM	15.0	B
		PM	13.7	B
15	Birch Rd & La Media Rd	AM	4.8	A
		PM	4.4	A
16	Birch Rd & Magdalena Ave	AM	13.6	B
		PM	29.4	C

Notes:
Bold values indicate intersections operating at LOS E or F.
ECL = Exceeds Calculable Limit. Reported when delay exceeds 180 seconds.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

Source: Kimley-Horn



Study Streets and Intersections
Exhibit 6

II.5.4.1.10 Transit

Public transportation is one component of a comprehensive, efficient and safe transportation system for the Otay Ranch Community. The design of the EUC promotes access to public transit and locates land uses in proximity to proposed transit stations. Chula Vista Transit (CVT) provides bus service through the Eastern Territories of the City of Chula Vista that can be extended to serve the project area. Regional transit plans for the South Bay Bus Rapid Transit (BRT) lines will serve the EUC. Exhibit 7, Transit Routes, conceptually shows how local bus service could be distributed to provide service to all users within one-quarter mile. The routes indicated are conceptual only.

The San Diego Metropolitan Transit System (MTS) of SANDAG collaborated with the City of Chula Vista to develop the Southbay Transit First Study. The information in this document was incorporated into the city's General Plan Update.

MTS has developed the "Transit First" service concept to reduce the public's dependence upon the automobile. Transit and land use patterns should work together. The easy access to transit facilities in correlation with the service offered can make transit a viable travel mode alternative to the automobile, thus reducing traffic congestion. According to SANDAG, the ridership on San Diego public transit set records in 2007. SANDAG forecasts indicate a 168% increase in transit trips per day by 2030. Efforts are being made in the region to increase public transit by making it more accessible and convenient. Additionally, providing transit facilities will help meet the objectives of the City's CO_2 Reduction Plan. This plan mentions transit as one of the action measures to reducing CO_2 emissions along with enhanced pedestrian connections to transit, increased housing density near transit, and site design with transit orientation.

The planned transit system within the EUC SPA is based on the service concepts described in the adopted *TransitWorks* Strategic Plan by MTS. The plan identifies Yellow, Green, Blue and Red Car levels of transit service. The Green Car represents local circulators using mini to mid-size buses. The Green Car would act as a collector and provide feeder access to Blue Car and/or Red Car and Yellow Car concepts. Bus stop facilities would be Low to Medium level with service provided on residential streets and major streets. The Blue Car provides short distance trips (1-5 miles) with frequent stops. This concept describes the current Chula Vista Transit service. Bus stop facilities would be at a Medium to High level. Service is provided on major streets and arterials. The Red Car is corridor-focused, and would have stops about every mile for express/transitway bus service, with a stop at the EUC transit station.

BRT Route through EUC:
The BRT route enters the EUC from the Freeway Commercial area, north of Birch Road. The transit route enters the EUC project area by crossing Birch Road, parallel to EastLake Parkway in a dedicated guideway. The guideway then continues along EastLake Parkway past the northern EUC street entry to its own entry, where it transitions to a dedicated transit lanes. (see Exhibit 7). The transit stop is shown on appropriate sides of the guideway near street "C". This transit stop will not require bus bays or dedicated bus rider parking. The EUC SPA Plan provides for the location of the transit way alignment and stop per the GDP. Vehicular movements for entering adjacent properties, parking, and for turning movements at intersections are the only typical non-transit use of the dedicated transit lanes. However, emergency vehicles will be allowed to use the transit lanes.

A preliminary analysis was performed by Kimley Horn on the BRT route through the EUC site in order to gain an understanding of the localized transit issues. In order to support and justify the assumption of the transit credit apportioned to the proposed project, a review of an assumed operating plan was conducted. The BRT project is not the responsibility of the proposed project but the proposed site was reviewed to resolve any potential issues related to transit service in an attempt to prevent site layout issues that might prohibit efficient BRT utilization. Kimley Horn analyzed each location along the route that crosses an intersection. Details of the BRT evaluation is in the Kimley Horn Traffic Analysis. Their recommendations are included in the PFFP.

BRT Route Recommendations:
Intersections along the BRT route should be configured so that the BRT route has the right-of-way at unsignalized intersections (BRT does not stop) or the intersection is signalized. The Traffic Analysis recommends traffic signals at the following intersections:

- C Street/H Street
- C Street/J Street
- D Street/G Street
- C Street/G Street
- C Street/Project Driveway (Between K Street and M Street)
- C Street/M Street
- Traffic signal conduits should be installed in streets and BRT exclusive transitways throughout the entire site so that future transit signal priority treatments can be used and signals can be interconnected. These transit signal priority measures could include:

  Early green indications for transit at signals – this would cut short the red time and expedite all traffic moving in the direction of the BRT.

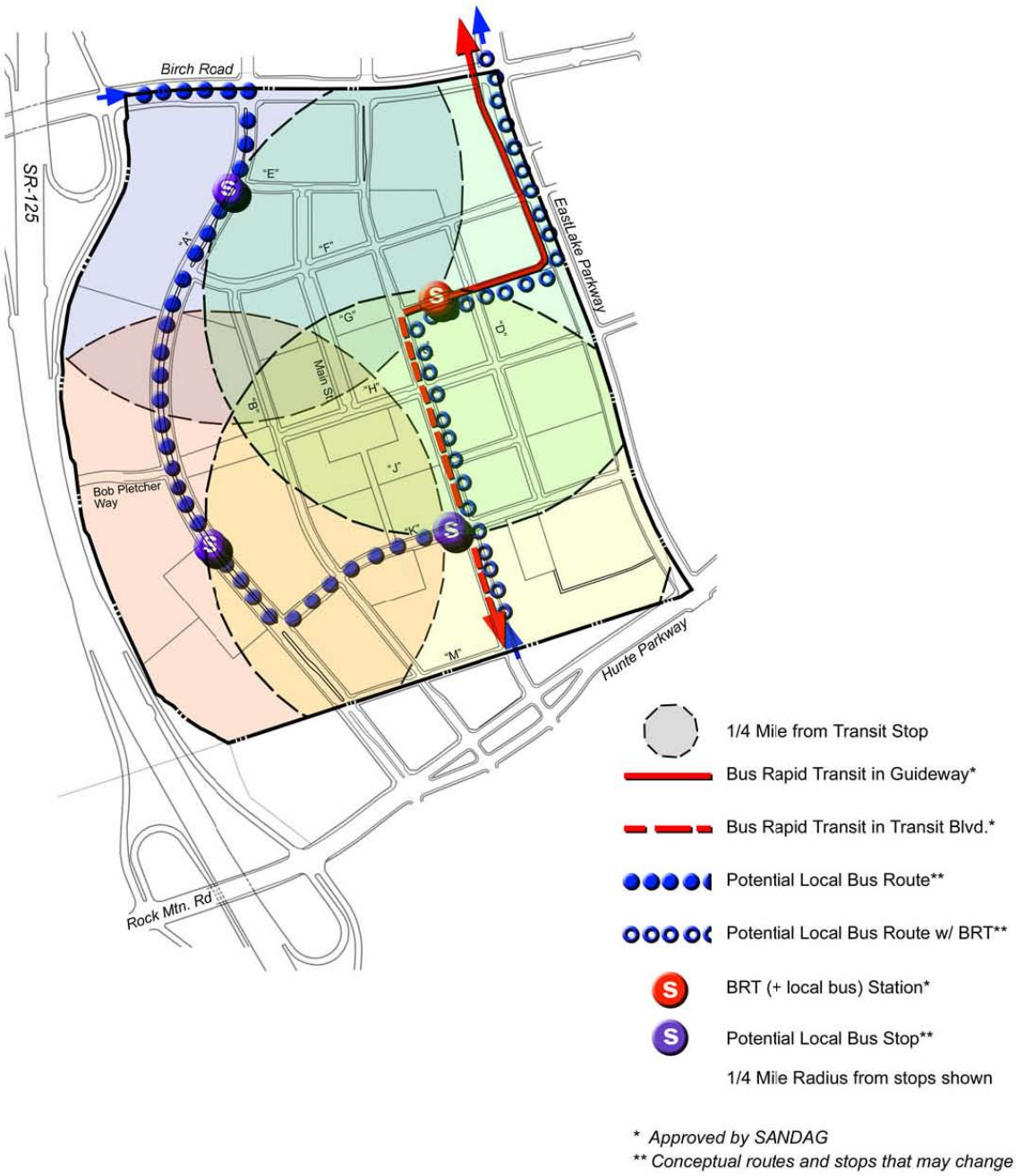
  Green extension at signals – this allows for the signal to hold the green light for several seconds, if a transit vehicle is close to the intersection.

  Count-down indicators at transit stations – this allows for the transit vehicle to know when the traffic signal will turn green for the BRT movement. This allows the driver of the BRT to hold the doors open as late as possible, in order to accommodate late arriving passengers, while not missing a green light.

  Traffic signal progression would be established so that BRT vehicle would not need to stop at most, if not all, of the traffic signals within the EUC.

Kimley Horn concluded that based on their assumptions the project site's layout is conducive to effective BRT service. With the changes listed above, the BRT would have priority at signalized intersections and therefore would not be required to stop within the EUC, except at the BRT station for the purpose of picking up or dropping off passengers. The examined improvements will then increase the potential success of the BRT service in attracting riders, increasing the BRT vehicle's travel speed and would help to optimize transit usage in the EUC. It should be, noted that the improvements listed above are not required of the project to facilitate vehicular circulation and are solely needed to ensure increased efficiency of the Bus Rapid Transit line.

Transit Routes



Eastern Urban Center
OTAY RANCH
CITY OF CHULA VISTA

Urban Design: RTKL
Cinti Land Planning
San Diego, CA (619) 223-7408
0 200 400 600
9/18/08

Exhibit 7

II.5.4.1.11 Trip Generation and Phasing

The following section describes the proposed Chula Vista EUC project including the estimated project trip generation, distribution, and assignment for the Horizon Year and Build-Out scenarios.

II.5.4.1.11.1 Project Trip Generation

The estimated EUC project trip generation is described in the following section. Kimley-Horn analyzed the potential project trips associated with the EUC site, including the area associated with other ownerships. This PFFP uses the project trip analysis from the Traffic Analysis.

SANDAG trip generation rates were utilized by Kimley-Horn for their Traffic Analysis. Table C.18 shows the total gross trip generation for the proposed project, separated by the 10 different areas/districts of the project. As shown in the table, the McMillin EUC project is estimated to generate 124,148 ADT including 9,507 (6,623 in, 2,884 out) a.m. peak-hour trips and 13,431 (5,550 in, 7,881 out) p.m. peak-hour trips. In addition, the trip generation associated with the development of the other ownerships is estimated to generate 20,701 ADT including 1,203 (787 in, 416 out) a.m. peak-hour trips and 2,181 (989 in, 1,192 out) p.m. peak-hour trips. The total gross trip combines the McMillin and other ownership for a total of 144,849. In addition, the trip generation shown in Table C.18 does not include any trip credit reductions.

Trip reduction credits such as internal capture and transit reductions were applied by Kimley-Horn to the total trip generation to reduce the amount of traffic generated by the proposed project. Once applied, the internal capture and transit reductions result in the total net trip generation (Table C.19). The internal trip capture credit was applied to land uses that have an attraction to each other. Some of these land uses include residential, office, retail, and recreational. Kimley-Horn used internal capture rates for residential, office, and retail land uses that are based on rates outlined in the *ITE Trip Generation Handbook,* 2nd Edition, June 2004. Internal capture rates for recreational uses were estimated based on experiences from other projects similar in nature. The hotel use was included as a retail component. Internal capture rates ranged from zero percent (recreational/retail uses during the morning and afternoon peak) to 60 percent (office/recreational uses during the morning and afternoon peak).

The McMillin EUC project and other ownerships are all located within the area confined by SR-125, Birch Road, EastLake Parkway and Hunte Parkway, have compatible land uses, and will jointly utilize the proposed internal roadway network. Therefore, it was assumed by the Traffic Analysis that a number of trips will travel between the different ownerships within the EUC, and will not utilize the surrounding arterial roadway network. As a result, these trips are considered internal trips to the EUC. Internal trip capture calculations incorporate the proposed project land uses and the assumed land uses of the other EUC ownerships. The project analyses in each scenario year incorporate development within the proposed project and the other ownerships. Proposed project trips were isolated by the Traffic Analysis when determining significance and share of impacts and for PFFP purposes.

The total internal trip capture credit for the overall EUC resulted in a reduction of 45,952 ADT, including 1,374 a.m. peak-hour trips and 3,786 p.m. peak-hour trips. Accounting for the proposed project's share of overall EUC traffic, the proposed project has a share of the

internal trip capture credit of approximately 39,385 ADT, including 1,178 a.m. peak-hour trips and 3,245 p.m. peak-hour trips. Appendix D of the Traffic Analysis contains the detailed calculations for the internal trip capture credit for each future year scenario.

Since the proposed regional and local bus transit services will be provided within the EUC site, a transit trip credit of 10 percent was applied to the residential and office land uses. SANDAG and the City have agreed to a 10 percent mode share assumption for transit credit, which is consistent with the RTP. As a result, the total transit trip capture credit for the overall EUC resulted in a reduction of 5,174 ADT, including 690 (515 in, 175 out) a.m. peak-hour trips and 664 (186 in, 478 out) p.m. peak-hour trips. Accounting for the proposed project's share of overall EUC traffic, the proposed project has a total transit trip capture credit of approximately 4,412 ADT.

Table C.19 shows the net new trip generation for the EUC and the proposed project (proposed minus internal and transit reductions). As shown in the table, the net trip generation of the proposed project would total 80,352 ADT, including 7,410 (5,323 in, 2,087 out) a.m. peak-hour trips and 9,568 (3,825 in, 5,743 out) p.m. peak-hour trips.

Table C.18
Gross Trip Generation Summary

Land Use	Land Use as listed in SANDAG	Units[1]		Trip Rate[2]	Daily Trips	AM Peak-Hour % of ADT[2]	AM Peak-Hour In:Out Ratio[2]	AM Peak-Hour In	AM Peak-Hour Out	AM Peak-Hour Total	PM Peak-Hour % of ADT[2]	PM Peak-Hour In:Out Ratio[2]	PM Peak-Hour In	PM Peak-Hour Out	PM Peak-Hour Total
					DRIVEWAY TRIPS[3]										
McMillin EUC															
Area 1 - Gateway Mixed Use Commercial District		Phase 1													
Medium Density Residential	Condominium	58	du	8 / du	464	8%	2.00 : 8.00	7	30	37	10%	7.00 : 3.00	32	14	46
Hotel	Hotel (w/convention facilities/restaurant)	150	oc	10 / oc	1,500	6%	6.00 : 4.00	54	36	90	8%	6.00 : 4.00	72	48	120
Community Retail	Community Shopping Center	200	ksf	80 / ksf	16,000	4%	6.00 : 4.00	384	256	640	10%	5.00 : 5.00	800	800	1,600
Office	Standard Commercial Office	50	ksf	20 / ksf	1,000	14%	9.00 : 1.00	126	14	140	13%	2.00 : 8.00	26	104	130
Area 2 - Northwestern Neighborhood District		Phase 1													
High Density Residential	Apartment	400	du	6 / du	2,400	8%	2.00 : 8.00	38	154	192	9%	7.00 : 3.00	151	65	216
Neighborhood Retail	Neighborhood Shopping Center	40	ksf	120 / ksf	4,800	4%	6.00 : 4.00	115	77	192	10%	5.00 : 5.00	240	240	480
Office	Standard Commercial Office	10	ksf	20 / ksf	200	14%	9.00 : 1.00	25	3	28	13%	2.00 : 8.00	5	21	26
Area 3 - Eastern Gateway Neighborhood District		Phase 2													
High Density Residential	Apartment	450	du	6 / du	2,700	8%	2.00 : 8.00	43	173	216	9%	7.00 : 3.00	170	73	243
Neighborhood Retail	Neighborhood Shopping Center	85	ksf	120 / ksf	10,200	4%	6.00 : 4.00	245	163	408	10%	5.00 : 5.00	510	510	1,020
Office	Standard Commercial Office	85	ksf	20 / ksf	1,700	14%	9.00 : 1.00	214	24	238	13%	2.00 : 8.00	44	177	221
Area 4 - Business District		Phase 1													
Fire Station	Government (Civic Center)	10	ksf	30 / ksf	300	9%	9.00 : 1.00	24	3	27	12%	3.00 : 7.00	11	25	36
Medium Density Residential	Condominium	100	du	8 / du	800	8%	2.00 : 8.00	13	51	64	10%	7.00 : 3.00	56	24	80
Retail	Specialty Retail/Strip Commercial	100	ksf	40 / ksf	4,000	3%	6.00 : 4.00	72	48	120	9%	5.00 : 5.00	180	180	360
High-Rise Office	Large (High-Rise) Commercial Office	1,562	ksf	17 / ksf	26,554	13%	9.00 : 1.00	3,107	345	3,452	14%	2.00 : 8.00	744	2,974	3,718
Area 5 - Mixed Use Civic/Office Core District		Phase 3													
Medium Density Residential	Condominium	100	du	8 / du	800	8%	2.00 : 8.00	13	51	64	10%	7.00 : 3.00	56	24	80
Hotel	Hotel (w/convention facilities/restaurant)	100	oc	10 / oc	1,000	6%	6.00 : 4.00	36	24	60	8%	6.00 : 4.00	48	32	80
Retail	Specialty Retail/Strip Commercial	60	ksf	40 / ksf	2,400	3%	6.00 : 4.00	43	29	72	9%	5.00 : 5.00	108	108	216
Fitness Center	Racquetball/Health Club	90	ksf	30 / ksf	2,700	4%	6.00 : 4.00	65	43	108	9%	6.00 : 4.00	146	97	243
Office	Standard Commercial Office	200	ksf	20 / ksf	4,000	14%	9.00 : 1.00	504	56	560	13%	2.00 : 8.00	104	416	520
Civic/Public	Government (Civic Center)	150	ksf	30 / ksf	4,500	9%	9.00 : 1.00	365	40	405	12%	3.00 : 7.00	162	378	540
Area 6 - Main Street District		Phase 3													
High Density Residential	Apartment	500	du	6 / du	3,000	8%	2.00 : 8.00	48	192	240	9%	7.00 : 3.00	189	81	270
Retail	Specialty Retail/Strip Commercial	145	ksf	40 / ksf	5,800	3%	6.00 : 4.00	104	70	174	9%	5.00 : 5.00	261	261	522
Central Recreation Center	Racquetball/Health Club	75	ksf	30 / ksf	2,250	4%	6.00 : 4.00	54	36	90	9%	6.00 : 4.00	122	81	203
Office	Standard Commercial Office	20	ksf	20 / ksf	400	14%	9.00 : 1.00	50	6	56	13%	2.00 : 8.00	10	42	52
Area 7 - Eastern Gateway District		Phase 2													
Medium Density Residential	Condominium	75	du	8 / du	600	8%	2.00 : 8.00	10	38	48	10%	7.00 : 3.00	42	18	60
Retail	Specialty Retail/Strip Commercial	100	ksf	40 / ksf	4,000	3%	6.00 : 4.00	72	48	120	9%	5.00 : 5.00	180	180	360
Office	Standard Commercial Office	20	ksf	20 / ksf	400	14%	9.00 : 1.00	50	6	56	13%	2.00 : 8.00	10	42	52
Area 8 - Southwestern Neighborhood District		Phase 4													
High Density Residential	Apartment	300	du	6 / du	1,800	8%	2.00 : 8.00	29	115	144	9%	7.00 : 3.00	113	49	162
Community Retail	Community Shopping Center	15	ksf	80 / ksf	1,200	4%	6.00 : 4.00	29	19	48	10%	5.00 : 5.00	60	60	120
Office	Standard Commercial Office	35	ksf	20 / ksf	700	14%	9.00 : 1.00	88	10	98	13%	2.00 : 8.00	18	73	91
Area 9 - Central Southern Neighborhood District		Phase 4													
High Density Residential	Apartment	600	du	6 / du	3,600	8%	2.00 : 8.00	58	230	288	9%	7.00 : 3.00	227	97	324
Neighborhood Retail	Neighborhood Shopping Center	45	ksf	120 / ksf	5,400	4%	6.00 : 4.00	130	86	216	10%	5.00 : 5.00	270	270	540
Area 10 - Southeastern Neighborhood District		Phase 4													
Medium Density Residential	Condominium	400	du	8 / du	3,200	8%	2.00 : 8.00	51	205	256	10%	7.00 : 3.00	224	96	320
School	Elementary	800	st	1.6 / st	1,280	32%	6.00 : 4.00	246	164	410	9%	4.00 : 6.00	46	69	115
Community Retail	Community Shopping Center	25	ksf	80 / ksf	2,000	4%	6.00 : 4.00	48	32	80	10%	5.00 : 5.00	100	100	200
Office	Standard Commercial Office	25	ksf	20 / ksf	500	14%	9.00 : 1.00	63	7	70	13%	2.00 : 8.00	13	52	65
McMillin EUC Subtotal:					**124,148**			**6,623**	**2,884**	**9,507**			**5,550**	**7,881**	**13,431**
Other EUC Ownerships		Phase 4													
High Density Residential	Apartment	330	du	6 / du	1,980	8%	2.00 : 8.00	32	126	158	9%	7.00 : 3.00	125	53	178
High-Rise Office	Large (High-Rise) Commercial Office	193	ksf	17 / ksf	3,281	13%	9.00 : 1.00	384	43	427	14%	2.00 : 8.00	92	367	459
Community Retail	Community Shopping Center	193	ksf	80 / ksf	15,440	4%	6.00 : 4.00	371	247	618	10%	5.00 : 5.00	772	772	1,544
Otay Land Company EUC Subtotal:					**20,701**			**787**	**416**	**1,203**			**989**	**1,192**	**2,181**
GROSS TRIP GENERATION =					**144,849**			**7,410**	**3,299**	**10,709**			**6,539**	**9,073**	**15,612**

Note:
1. oc = Occupied Room; ksf = One Thousand Square Feet; du = Dwelling Unit; st= student
2. Trip rates referenced from the Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, SANDAG, April 2002
3. Driveway trips are the total number of trips generated by a site.

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Source: Kimley Horn

Table C.19
Net Trip Generation Summary

Land Use	Land Use as listed in SANDAG	Units[1]		Trip Rate[2]	Daily Trips	AM Peak-Hour % of ADT[2]	AM Peak-Hour In:Out Ratio[2]	AM Peak-Hour In	AM Peak-Hour Out	AM Peak-Hour Total	PM Peak-Hour % of ADT[2]	PM Peak-Hour In:Out Ratio[2]	PM Peak-Hour In	PM Peak-Hour Out	PM Peak-Hour Total
DRIVEWAY TRIPS[3]															
Proposed Project															
Hotel	Hotel (w/convention facilities/restaurant)	250	oc	10 / oc	2,500	6%	6.00 : 4.00	90	60	150	8%	6.00 : 4.00	120	80	200
High-Rise Office	Large (High-Rise) Commercial Office	1,562	ksf	17 / ksf	26,554	13%	9.00 : 1.00	3,107	345	3,452	14%	2.00 : 8.00	744	2,974	3,718
Office	Standard Commercial Office	445	ksf	20 / ksf	8,900	14%	9.00 : 1.00	1,121	125	1,246	13%	2.00 : 8.00	231	926	1,157
Civic/Public	Government (Civic Center)	150	ksf	30 / ksf	4,500	9%	9.00 : 1.00	365	40	405	12%	3.00 : 7.00	162	378	540
Fire Station	Government (Civic Center)	10	ksf	30 / ksf	300	9%	9.00 : 1.00	24	3	27	12%	3.00 : 7.00	11	25	36
High Density Residential	Apartment	2,250	du	6 / du	13,500	8%	2.00 : 8.00	216	864	1,080	9%	7.00 : 3.00	851	364	1,215
Medium Density Residential	Condominium	733	du	8 / du	5,864	8%	2.00 : 8.00	94	375	469	10%	7.00 : 3.00	410	176	586
Retail	Specialty Retail/Strip Commercial	405	ksf	40 / ksf	16,200	3%	6.00 : 4.00	292	194	486	9%	5.00 : 5.00	729	729	1,458
Neighborhood Retail	Neighborhood Shopping Center	170	ksf	120 / ksf	20,400	4%	6.00 : 4.00	490	326	816	10%	5.00 : 5.00	1,020	1,020	2,040
Community Retail	Community Shopping Center	240	ksf	80 / ksf	19,200	4%	6.00 : 4.00	461	307	768	10%	5.00 : 5.00	960	960	1,920
Central Recreation Center	Racquetball/Health Club	75	ksf	30 / ksf	2,250	4%	6.00 : 4.00	54	36	90	9%	6.00 : 4.00	122	81	203
Fitness Center	Racquetball/Health Club	90	ksf	30 / ksf	2,700	4%	6.00 : 4.00	65	43	108	9%	6.00 : 4.00	146	97	243
School	Elementary	800	st	1.6 / st	1,280	32%	6.00 : 4.00	246	164	410	9%	4.00 : 6.00	46	69	115
Proposed Project Subtotal:					**124,148**			**6,625**	**2,882**	**9,507**			**5,552**	**7,879**	**13,431**
Other EUC Ownerships															
High Density Residential	Apartment	330	du	6 / du	1,980	8%	2.00 : 8.00	32	126	158	9%	7.00 : 3.00	125	53	178
High-Rise Office	Large (High-Rise) Commercial Office	193	ksf	17 / ksf	3,281	13%	9.00 : 1.00	384	43	427	14%	2.00 : 8.00	92	367	459
Community Retail	Community Shopping Center	193	ksf	80 / ksf	15,440	4%	6.00 : 4.00	371	247	618	10%	5.00 : 5.00	772	772	1,544
Other EUC Ownerships Subtotal:					**20,701**			**787**	**416**	**1,203**			**989**	**1,192**	**2,181**
GROSS TRIP GENERATION =					**144,849**			**7,412**	**3,297**	**10,709**			**6,541**	**9,071**	**15,612**
Internal Trip Capture Credit (see Appendix D for detailed calculations)															
Residential Internal Trip Credit					8,027			103	89	192			508	327	835
Office Internal Trip Credit					5,380			92	85	177			261	160	421
Retail Internal Trip Credit					30,069			482	442	924			1,098	1,246	2,344
Recreational Internal Trip Credit					2,476			10	71	81			26	160	186
Internal Trip Capture Credit Subtotal:					**45,952**			**687**	**687**	**1,374**			**1,893**	**1,893**	**3,786**
Transit Trip Credit (10%)															
Residential				10%	1,332			24	128	152			88	27	115
Office				10%	3,816			491	47	538			98	451	549
Transit Trip Credit Subtotal:					**5,147**			**515**	**175**	**690**			**186**	**478**	**664**
TRIP CREDIT TOTAL =					**51,099**			**1,202**	**862**	**2,064**			**2,079**	**2,371**	**4,450**
NET TRIP GENERATION =					**93,750**			**6,210**	**2,435**	**8,645**			**4,462**	**6,700**	**11,162**

Note:
1. oc = Occupied Room; ksf = One Thousand Square Feet; du = Dwelling Unit; st = Students
2. Trip rates referenced from the Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, SANDAG, April 2002
3. Driveway trips are the total number of trips generated by a site.

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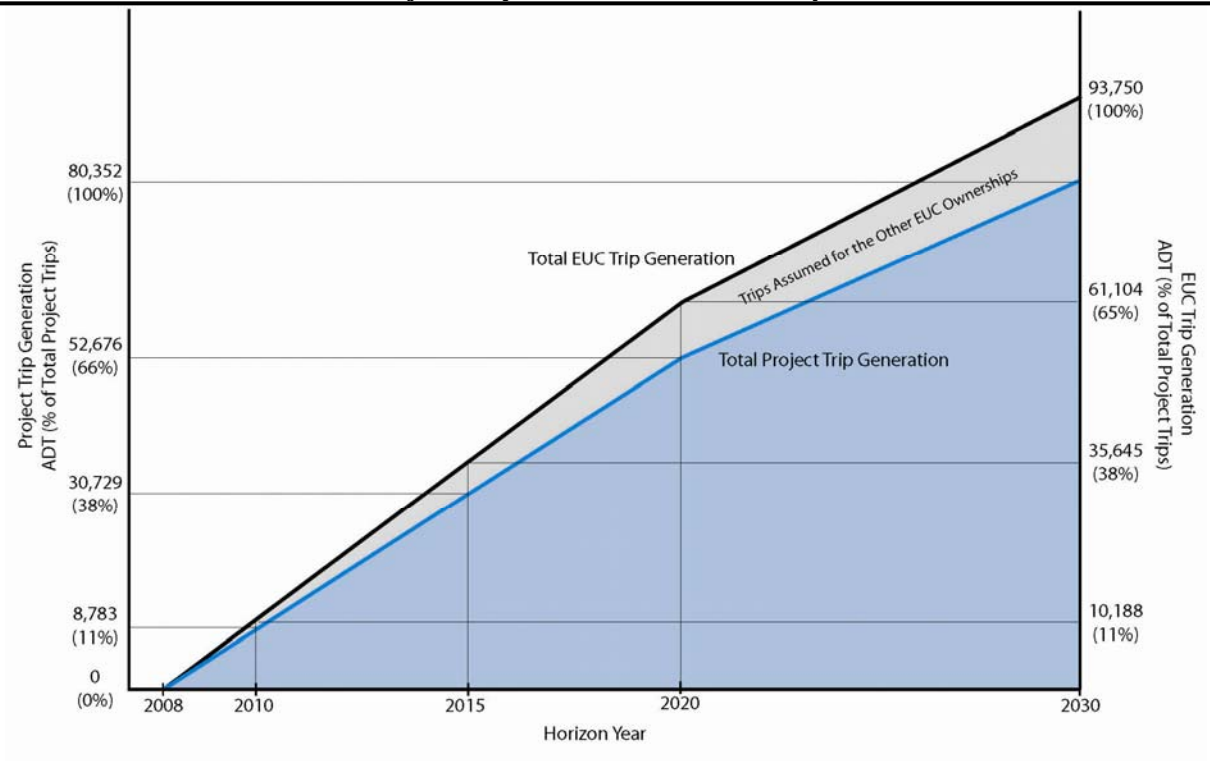
Source: Kimley Horn

Phasing Reconciliation

An estimated project phasing was provided by the land owner. The owner plans on building out all residential units by the Year 2020. Approximately 2 million square feet of the non-residential uses are planned on being constructed by the Year 2020. The remainder of the project will be built by Year 2030. Since further detail is not available, a straight-line growth of residential traffic from 2008 to 2020, a straight-line growth of traffic associated with 2 million square feet of non-residential uses from 2008 to 2020, and a straight-line growth of traffic associated with 1.5 million square feet of non-residential uses from 2020 to 2030 was assumed by the Traffic Analysis.

The growth of project traffic and the corresponding total site traffic by interim year scenario is illustrated in Table C.20. Approximately 11 percent of the project is assumed to be built by 2010, 38 percent of the project is assumed to be built by 2015, 66 percent of the project is assumed to be built by 2020, and full build-out of the project by 2030.

Table C.20
Project Trip Generation Assumed by Year



Source: Kimley-Horn

Table C.21 separates the traffic generated by each phase of the project. As shown in the table, the proposed project and other ownerships Phase 1 results, in a total of 15,320 ADT (11 percent), Phases 2 and 3 each result in a total of 38,299 ADT (26 percent per phase), and Phase 4 results in a total of 52,931 ADT (37 percent). After subtracting the internal and transit trip credits, the resultant trip volumes equal 10,188 ADT through Phase 1, 35,645 ADT through Phase 2, 61,104 ADT through Phase 3, and 93,750 ADT through build-out. After extracting the other ownerships share of the total trips, the proposed project is projected to generate a net total of 8,783 ADT through Phase 1, 30,729 ADT through Phase 2, 52,676 ADT through Phase 3 and 80,352 ADT through Phase 4 or build-out.

Table C.21
Net Trip Generation summary by Phase

Land Use	Daily Trips	AM Peak-Hour			PM Peak-Hour		
		In	Out	Total	In	Out	Total
Trip Generation by Phase [1]							
Phase 1	15,320	730	412	1,142	722	906	1,628
Phase 2	38,299	1,826	1,029	2,855	1,805	2,266	4,071
Phase 3	38,299	1,826	1,029	2,855	1,805	2,266	4,071
Phase 4	52,931	3,030	828	3,858	2,209	3,633	5,843
GROSS TRIP GENERATION =	**144,849**	**7,412**	**3,297**	**10,709**	**6,541**	**9,071**	**15,612**
Cumulative Trip Generation [1]							
Phase 1	15,320	730	412	1,142	722	906	1,628
Through Phase 2	53,619	2,556	1,440	3,997	2,527	3,172	5,699
Through Phase 3	91,918	4,382	2,469	6,851	4,332	5,438	9,769
Through Phase 4	**144,849**	**7,412**	**3,297**	**10,709**	**6,541**	**9,071**	**15,612**
Internal Trip Capture Credit [1] ***(see Appendix D for detailed calculations)***							
Phase 1	4,496	65	65	130	183	183	366
Through Phase 2	15,750	229	229	458	641	641	1,282
Through Phase 3	27,002	392	392	784	1,101	1,101	2,202
Through Phase 4	**45,952**	**687**	**687**	**1,374**	**1,893**	**1,893**	**3,786**
Transit Trip Credit [1] ***(10%)***							
Phase 1	636	51	26	77	27	49	76
Through Phase 2	2,224	180	92	272	96	173	269
Through Phase 3	3,812	309	158	467	164	296	460
Through Phase 4	**5,147**	**515**	**175**	**690**	**186**	**478**	**664**
Net Trip Generation [1, 2]							
Phase 1	10,188	614	320	935	512	674	1,186
Through Phase 2	35,645	2,147	1,119	3,267	1,790	2,358	4,148
Through Phase 3	61,104	3,681	1,919	5,600	3,066	4,040	7,107
Through Phase 4	**93,750**	**6,210**	**2,436**	**8,645**	**4,462**	**6,700**	**11,162**
Net Trip Generation Associated with Proposed Project							
Phase 1	8,783	529	276	805	441	581	1,022
Through Phase 2	30,729	1,851	965	2,816	1,543	2,033	3,576
Through Phase 3	52,676	3,173	1,654	4,827	2,644	3,483	6,127
Through Phase 4	**80,352**	**5,323**	**2,087**	**7,410**	**3,825**	**5,743**	**9,568**

Note:
1. Trip generation shown is for developable area including McMillin EUC and Otay Land Company EUC
2. Net trip generation is the cumulative trip generation minus the internal trip capture and transit credit.

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Source: Kimley Horn

Trip Distribution

The project trip distribution for the EUC was based on SANDAG's Series 10 Traffic Forecast Volumes. Some of the major assumptions made by Kimley-Horn in the forecast included the following:

- Select Zone Assignment from Traffic Analysis Zone (TAZ) 4343
- No Rock Mountain Road interchange
- No Otay Valley Road interchange
- Land Use = Chula Vista Build-Out
- Circulation Element = General Plan
- SR-125 = 4-lane toll facility
- Transit = Existing "On the Ground"

For the Horizon Year 2010 and 2015 scenarios, the project trip distribution was modified by Kimley-Horn to reflect the assumed road network in each respective year. For the Horizon Year 2030 scenario, two roadway network alternatives were analyzed: 1) with Rock Mountain Road overpass and 2) with Rock Mountain Road interchange. The project trip distribution for each scenario is based on the appropriate model network alternative. The Traffic Analysis contains detailed exhibits of each Horizon Year scenario and the various Select Zone model plots.

Network Analysis

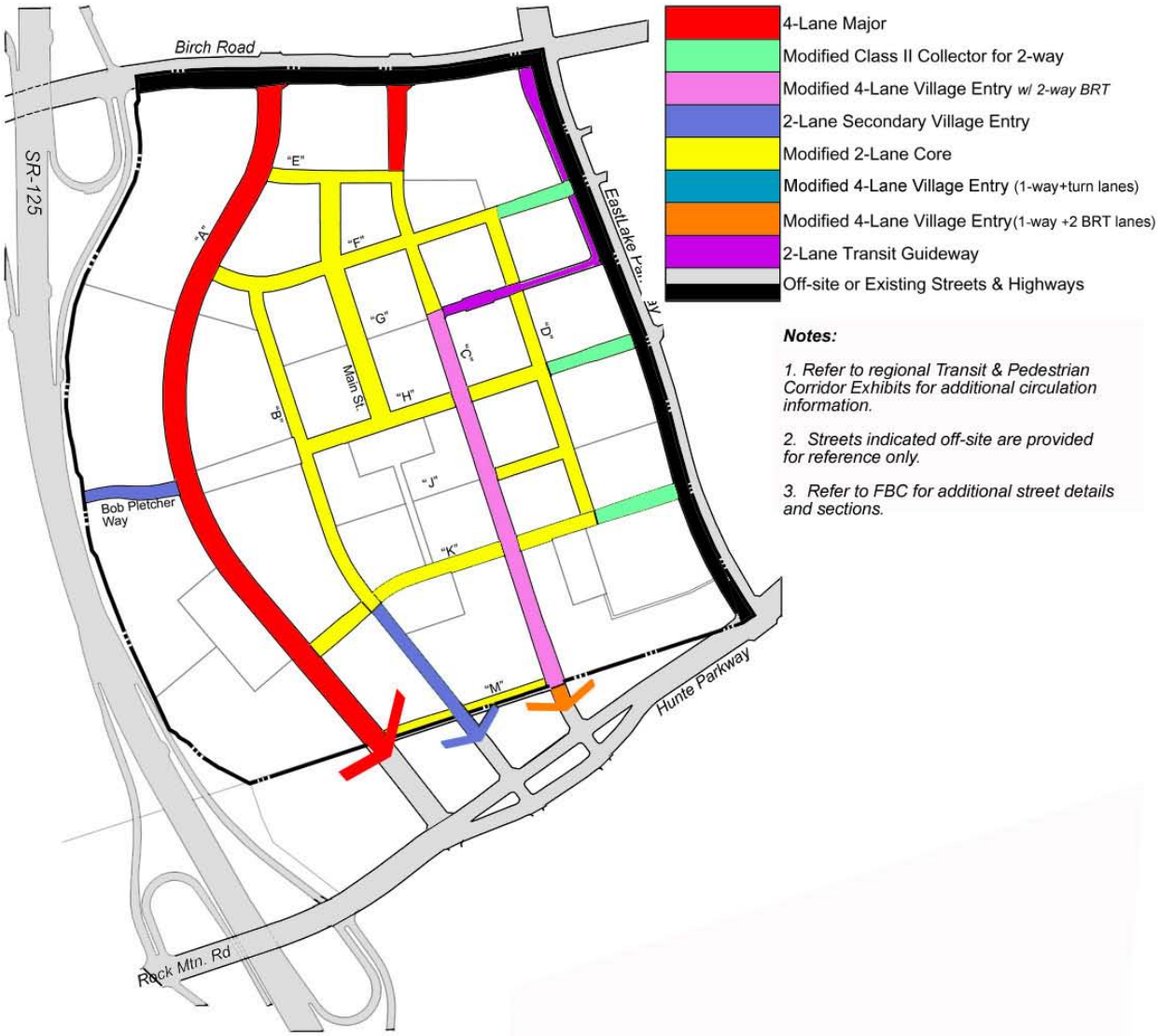
It was necessary to estimate future traffic volumes for several study years in order to determine if the planned circulation network or system could accommodate these volumes. As previously discussed, the Series 10.0, SANDAG 2030 City/County Forecast Traffic Model was used to estimate these volumes. The traffic model outputs freeway and street segment ADTs. These ADTs were utilized directly as outputted by the model. In addition, it was also necessary to estimate peak hour intersection volumes. The Traffic Analysis details the methodology to determine future traffic volumes.

The aforementioned 11 Scenarios that were analyzed in the Traffic Analysis have different assumptions concerning the study area, land use and roadway network. Kimley-Horn developed peak hour intersection and daily segment analyses for each scenario. The Traffic Analysis provides a detailed description of the 11 scenarios.

Network Performance Assessment Process

The Traffic Analysis included traffic model projections for cumulative development projects. The report also identified the number of daily trips for the phasing of developments on key roadway segments in order to perform the analysis of network performance based on daily segment LOS. This performance evaluation was performed for roadway and freeway segments. A review of peak hour intersection operations was also performed which required the application of peak hour factors to average daily traffic volumes to develop peak hour turning movements at each of the key project intersections.

Circulation



Notes:

1. Refer to regional Transit & Pedestrian Corridor Exhibits for additional circulation information.

2. Streets indicated off-site are provided for reference only.

3. Refer to FBC for additional street details and sections.

Eastern Urban Center
OTAY RANCH
CITY OF CHULA VISTA

Urban Design: RTKL
Cinti Land Planning
San Diego, CA (619) 223-7408
0 200 400 600
10/17/08

Exhibit 8

11.5.4.1.11.2 Equivalent Dwelling Unit's

The standard trip generation rates for the land uses associated with the EUC site, including the area associated with other ownerships, were converted to trip rates with project credits. The trip rate with project credits takes into account the mixed-use and transit credits. The trip credit ratio of 65 percent was calculated by dividing the number of net trips (93,750 ADT) by the number of gross trips (144,849 ADT) for the overall EUC. The trip credit ratio was then applied to the trip rate for each respective land use. To convert the trip rate with project credits to an EDU's per unit rate, it is assumed that one Equivalent Dwelling Unit (EDU) equals 10 net trips. The total EDU's for the project was calculated by dividing the daily trips including the mixed-use and transit credits by 10, resulting in a total of 9,375 EDU's for the total Chula Vista EUC site. Of this total, 8,035 EDU's are related to the McMillan site and 1,340 EDU's are related to other ownerships. Table C.22 summarizes the EDU's used for the PFFP analysis.

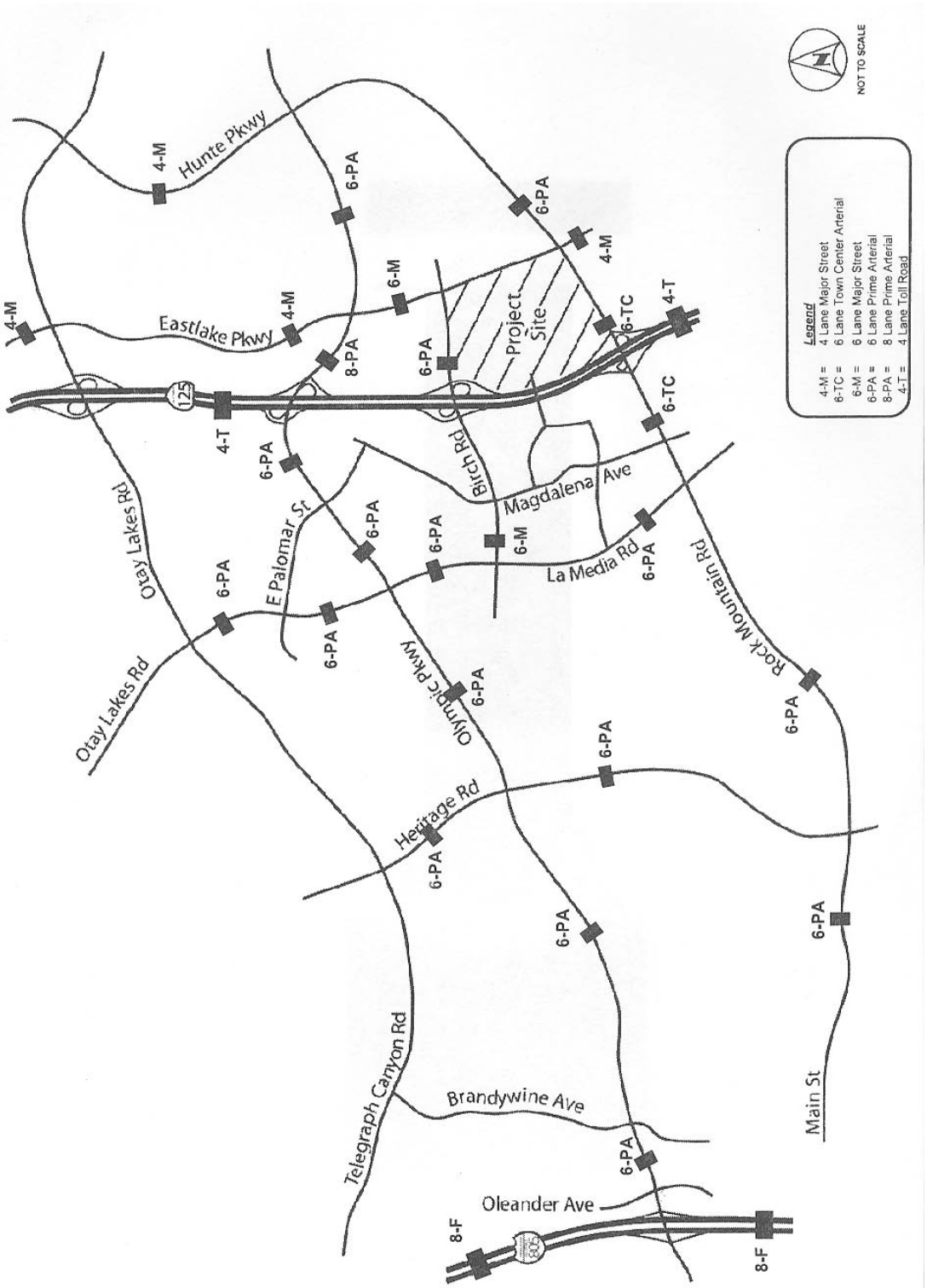
Table C.22
PFFP EDU Summary

Land Use	Land Use as listed in SANDAG	Units[1]	SANDAG Trip Rate	SANDAG Trip Rate with Project Credits[2]	EDUs per Unit[3]	Units in Project	Daily Trips	Daily Trips with Credit	Total EDUs
Proposed Project									
Hotel	Hotel (w/convention facilities/restaurant)	oc	10 / oc	6.47 / oc	0.65 / oc	250	2,500	1,618	162
High-Rise Office	Large (High-Rise) Commercial Office	ksf	17 / ksf	11.00 / ksf	1.10 / ksf	1,562	26,554	17,186	1,719
Office	Standard Commercial Office	ksf	20 / ksf	12.94 / ksf	1.29 / ksf	445	8,900	5,760	576
Civic/Public	Government (Civic Center)	ksf	30 / ksf	19.42 / ksf	1.94 / ksf	150	4,500	2,913	291
Fire Station	Government (Civic Center)	ksf	30 / ksf	19.42 / ksf	1.94 / ksf	10	300	194	19
High Density Residential	Apartment	du	6 / du	3.88 / du	0.39 / du	2,250	13,500	8,738	874
Medium Density Residential	Condominium	du	8 / du	5.18 / du	0.52 / du	733	5,864	3,795	380
Retail	Specialty Retail/Strip Commercial	ksf	40 / ksf	25.89 / ksf	2.59 / ksf	405	16,200	10,485	1,049
Neighborhood Retail	Neighborhood Shopping Center	ksf	120 / ksf	77.67 / ksf	7.77 / ksf	170	20,400	13,203	1,320
Community Retail	Community Shopping Center	ksf	80 / ksf	51.78 / ksf	5.18 / ksf	240	19,200	12,427	1,243
Central Recreation Center	Racquetball/Health Club	ksf	30 / ksf	19.42 / ksf	1.94 / ksf	75	2,250	1,456	146
Fitness Center	Racquetball/Health Club	ksf	30 / ksf	19.42 / ksf	1.94 / ksf	90	2,700	1,748	175
School	Elementary	st	1.6 / st	1.04 / st	0.10 / st	800	1,280	828	83
Proposed Project Subtotal:							**124,148**	**80,352**	**8,035**
Other Ownerships									
High Density Residential	Apartment	du	6 / du	3.88 / du	0.39 / du	330	1,980	1,282	128
High-Rise Office	Large (High-Rise) Commercial Office	ksf	17 / ksf	11.00 / ksf	1.10 / ksf	193	3,281	2,124	212
Community Retail	Community Shopping Center	ksf	80 / ksf	51.78 / ksf	5.18 / ksf	193	15,440	9,993	999
Otay Land Company EUC Subtotal:							**20,701**	**13,398**	**1,340**
PROJECT TOTAL =							**144,849**	**93,750**	**9,375**

Note:
1. oc = Occupied Room, ksf = One Thousand Square Feet, du = Dwelling Unit, st = Students
2. Represents the SANDAG trip rate minus mixed-use and transit credits. The trip credit ratio used was calculated by dividing the number of net trips by the number of gross trips for the EUC project.
3. One EDU equals ten net trips.

K:\09\621000\Excel\621000TO01.xls]PFFPREPORT

Source: Kimley Horn



PFFP Roadways[6]
Exhibit 9

[6] Source: Kimley Horn

II.5.4.1.12 Adequacy Analysis

The City of Chula Vista created the Guidelines For Traffic Impact Studies in February 2001. This document establishes written guidelines for identification of project traffic impacts in Environmental Impact Report documents. Prior to the establishment of the guidelines, the City of Chula Vista hired BRW to review criteria that was being utilized by the City of San Diego and traffic impact study guidelines recommended by the San Diego Traffic Engineer's Council (SANTEC) / Institute of Transportation Engineers (ITE). The objective was to determine the applicability of these standards to developments and facilities within the City of Chula Vista, and develop a specific set of standards for the City of Chula Vista based on this review. The City of San Diego and SANTEC/ITE standards were used to reevaluate several completed studies in the City of Chula Vista to determine potential changes in the identification of project impacts. Results of this evaluation were communicated to the City of Chula Vista department heads and staff through a series of workshops. Discussions, comments and recommendations precipitated from these workshops provided the foundation for the guidelines.

The guidelines provide written criteria for determining the need and scope of traffic studies and identifying impacts. The use of these guidelines ensures uniformity in the preparation and review of traffic studies for developments within the City of Chula Vista. In addition, the guidelines help determine timelines for the implementation of specific improvements to address identified deficiencies.

A. <u>Determining When A Study Is Needed</u>

In conformance with requirements of the Congestion Management Program (CMP), an analysis of CMP freeways and arterials will be required for any project that generates 2,400 daily, or 200 peak hour trips (As detailed in the 1991 CMP).

For those developments that do not satisfy the requirements for a CMP analysis, a traffic study may be required based on direction provided by the City Engineer and the Environmental Review Coordinator.

B. <u>Methodology</u>

1. Study Area Definition

a. Volume Thresholds for Study of CMP Freeway Facilities: All freeway segments are by definition included in the CMP network. All freeway mainline segments to which the proposed project will add 2400 total trips (Average Daily Trips or ADT) or 150 or more peak hour trips in either direction must be analyzed.

b. Volume Thresholds for Study of CMP Arterial Facilities: All CMP arterial segments, including Regionally Significant Arterials (RSA) and other CMP arterial segments and intersections (including freeway on/off ramp intersections), to which the proposed project will add 800 or more total trips (ADT) or 50 or more peak hour trips in either direction must be analyzed.

c. Volume Thresholds for Local Roadways and Intersections: Traffic studies will be required to review those local and collector roadway facilities that are not included in the CMP network based on direction provided by the City Engineer.

2. **Analysis Scenarios**
   Each of the study area freeway segments, roadway segments, and intersections must be analyzed for the following scenarios:
   a. Existing Conditions
   b. Existing Conditions + Proposed Project
   c. Existing Conditions + Approved and Pending Projects + Proposed Project (Only for non-master planned projects)
   d. Horizon Years (Usually defined as five-year incremental study years for project, i.e. 2010, 2015 & 2020. However, final determination on years to be studied may vary based on direction of the City Engineer)
   e. Regional Buildout Year + Proposed Project

   Additional scenarios may be required depending on the size and phasing of any proposed development. For each analyzed scenario, peak hour analysis will include the AM and PM peaks. At the direction of the City Engineer, special studies of midday peak or other off-peak periods may be required.

3. **Growth Management Oversight Committee (GMOC) Near-Term Analysis**
   As determined by the City Engineer, analysis of roadway segments under near-term conditions (Years 0-4) may be conducted using the methodology described in Chapter 11 (Arterial Streets) of the most recent version of the Highway Capacity Manual, which determines segment level of service based on speed, as detailed in the Significance Criteria below. Classification of facilities and definition of segment lengths must be consistent with the City's current Growth Management Traffic Monitoring Program. The Threshold Standard for these arterial analyses requires the maintenance of LOS C or better as measured by average travel speeds except that LOS D can occur for no more than any two hours of the day. Thus, if LOS D conditions are determined for any period of two (2) hours, additional analysis may be required along these high volume segments based on direction provided by the City Engineer.

   For planned arterial facilities that are not currently included in the current Traffic Monitoring Program, the definition of segment length and facility classification will be based on direction provided by the City Engineer.

C. <u>Significance Criteria</u>

Project impacts will be defined as either project specific impacts or cumulative impacts. Project specific impacts are those impacts for which the addition of project trips result in an identifiable degradation in LOS on freeway segments, roadway segments, or intersections, triggering the need for specific project-related improvement strategies. Cumulative impacts are those in which the project trips contribute to a poor level of service, at a nominal level.

Study horizon year as used herein is intended to describe a future period of time in the traffic studies, which corresponds to SANDAG's traffic model years, and are meant to synchronize study impacts to be in line with typical study years of 2010, 2015, 2020 and 2030.

Criteria for determining whether the project results in either project specific or cumulative impacts on freeway segments, roadway segments, or intersections are as follows:

1. **Short-term (Study Horizon Year 0 to 4)**
   For purposes of the short-term analysis roadway sections may be defined as either links or segments. A link is typically that section of roadway between two adjacent Circulation Element intersections and a segment is defined as that combination of contiguous links used in the Growth Management Plan Traffic Monitoring Program. Analysis of roadway links under short-term conditions may require a more detailed analysis using the GMOC methodology if the typical planning analysis using volume to capacity ratios on an individual link indicates a potential impact to that link. The GMOC analysis uses the Highway Capacity Manual (HCM) methodology of average travel speed based on actual measurements on the segments as listed in the Growth Management Plan Traffic Monitoring Program.
   a. Intersections
      1. Project specific impact if both the following criteria are met:
         a) LOS E or LOS F.
         b) Project trips comprise 5% or more of entering volume.
      2. Cumulative impact if only a) above is met.
   b. Street Links/Segments
      If the planning analysis using the volume to capacity ratio indicates LOS C or better, there is no impact. If the planning analysis indicates LOS D, E or F, the GMOC method should be utilized. The following criteria would then be utilized.
      1. Project specific impact if all the following criteria are met:
         a) LOS D for more than 2 hours or LOS E/F for 1 hour
         b) Project trips comprise 5% or more of segment volume.
         c) Project adds greater than 800 ADT to the segment.
      2. Cumulative impact if only a) above is met.
   c. Freeways
      1. Project specific impact if both the following criteria are met:
         a) Freeway segment LOS is LOS E or LOS F
         b). Project comprises 5% or more of the total forecasted ADT on that freeway segment.
      2. Cumulative impact if only a) above is met.

2. **Long-term (Study Horizon Year 5 and later)**
   a. Intersections
      1. Project specific impact if both the following criteria are met:
         a) Level of service is LOS E or LOS F.
         b) Project trips comprise 5% or more of entering volume.
      2. Cumulative impact if only a) above is met.
   b. Street Segments
      Use the planning analysis using the volume to capacity ratio methodology only. The GMOC analysis methodology is not applicable beyond a four-year horizon.

1. Project specific impact if all three of the following criteria are met:
   a) Level of service is LOS D, LOS E, or LOS F.
   b) Project trips comprise 5% or more of total segment volume.
   c) Project adds greater than 800 ADT to the segment.
2. Cumulative impact if only a) above is met. However, if the intersections along a LOS D or LOS E segment all operate at LOS D or better, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. If segment Level of Service is LOS F, impact is significant regardless of intersection LOS.
4. Notwithstanding the foregoing, if the impact identified in paragraph 1 above occurs at study horizon year 10 or later, and is off-site and not adjacent to the project, the impact is considered cumulative. Study year 10 may be that typical SANDAG model year which is between 8 and 13 years in the future. In this case of a traffic study being performed in the period of 2000 to 2002, because the typical model will only evaluate traffic at years divisible by 5 (i.e. 2005, 2010, 2015 and 2020) study horizon year 10 would correspond to the Sandag model for year 2010 and would be 8 years in the future. If the model year were less than 7 years in the future, study horizon year 10 would be 13 years in the future.
5. In the event a direct identified project specific impact in paragraph 1 above occurs at study horizon year 5 or earlier and the impact is off-site and not adjacent to this project, but the property immediately adjacent to the identified project specific impact is also proposed to be developed in approximately the same time frame, an additional analysis may be required to determine whether or not the identified project specific impact would still occur if the development of the adjacent property does not take place. If the additional analysis concludes that the identified project specific impact is no longer a direct impact, then the impact shall be considered cumulative.

c. Freeways
   1. Project specific impact if both the following criteria are met:
      a) Freeway segment LOS is LOS E or LOS F
      b) Project comprises 5% or more of the total forecasted ADT on that freeway segment.
   2. Cumulative impact if only a) above is met.

II.5.4.1.13 Cost & Financing Project Traffic Improvements

A. Street Improvements

Table C.23 summarizes the major street improvements as it relates to EUC development phasing based on the project Kimley-Horn Traffic Analysis dated March 2008. The EDU triggers for off-site improvements are a map based trigger and that bonding will be required pursuant to Government Code 66462.5(c).

Table C.23
Estimated Traffic Improvement Thresholds and Costs
Public Improvements required to be constructed or bonded by the EUC [1]

Facility/Intersection [2]	Improvement Description [3]	Threshold	Estimated Roadway Costs [4]
Olympic Pkwy & Brandywine Ave	Restripe NB approach to include one thru lane and one shared thru-right lane and coordinate SB I-805 Ramps through Brandywine on Olympic Pkwy	1st EDU	$150,000
Olympic Pkwy & Heritage Rd	Add SB right-turn overlap phase	1st EDU	$100,000
Main St & Heritage Rd	Add dual NB and dual EB right-turn lanes	3,070 EDUs	$250,000
Birch Rd & La Media Rd	Convert a WB thru lane into a shared thru/right-turn lane	5,270 EDUs	$100,000
Birch Rd & Magdalena Ave	Add exclusive EB right-turn lane	5,270 EDUs	$150,000
Rock Mountain Rd & Magdalena Ave	Add a dual SB left-turn lane and a dual NB right-turn lane	5,270 EDUs	$250,000
Hunte Pkwy between SR-125 and Street A [5]	Add 2 auxiliary lanes to the six-lane town center arterial	5,270 EDUs	$350,000

[1] Developer shall agree to construct and to secure the facility prior to the applicable final map with the fully entitled unit count for the applicable threshold. Constructing the improvements will offset TDIF.
[2] The Developer will be required to process a Joint Use Agreement with the City of Chula Vista and any Agency for streets that cross-existing easements.
[3] TDIF credits are available for a facility outside the city right of way.
[4] Does not include additional Right of Way costs. Actual construction costs may be different based on construction documents.
[5] This improvement not required if Otay Valley Road interchange on SR-125 is constructed.

B. Transportation Development Impact Fee (TDIF)

The project is within the boundaries of the TDIF program and, as such, the project is subject to the payment of the fees at the rates in effect at the time building permits are issued. However, the improvements identified on Table C.23 will be required to be constructed or bonded pursuant to the identified thresholds. The Developer's total fee obligation is based on the TDIF.

Table C.24 below illustrates the current TDIF fee schedule:

Table C.24 TDIF Schedule[7]		
Land Use Classification		**TDIF Rate**
Residential (Low) (per DU)	0-6 dwelling units per gross acre	$11,317 per DU
Residential (Med.) (0.8 EDU/DU)	6.1-18 dwelling units per gross acre	$9,054 per DU
Residential (High) (0.6 EDU/DU)	>18.1 dwelling units per gross acre	$6,791 per DU
Senior housing (0.4 EDU/DU)	>18 dwelling units per gross acre	$4,528 per DU
Residential mixed use (0.4 EDU/DU)	>18 dwelling units per gross acre	$4,528 per DU
Commercial mixed use (per 20,000 sq. ft.)	16 EDU/20,000 sq. ft.	$181,074 per 20,000 sq. ft.
General commercial (per gross acre)	< 5 stories in height (16 EDU/Acre)	$181,074 per acre
Regional commercial (per gross acre)	> 60 acres or 800,000 sq. ft. (11 EDU/Acre)	$124,488 per acre
High rise commercial (per gross acre)	> 5 stories in height (28 EDU/Acre)	$316,879 per acre
Office (per acre)	< 5 stories in height (9 EDU/Acre)	$101,854 per acre
Industrial (per gross acre)		$90,542 per acre
18-hole golf course (per course)	70.0 EDU/Course	$803,515 per acre
Medical center (per gross acre)	65/Acre	$735,612 per acre

Table C.25 summarizes the estimated TDIF based on the project development phasing per the Traffic Analysis. The table is provided as an estimate only. Fees may change depending upon the actual number dwelling units, the actual acreage for commercial and industrial land and the current city fee, which is subject to change from time to time. Final calculations will be known at time building permits are applied for. In addition, Table C.25 presents the total number of estimated EDUs and commercial square footages and/or acres for the EUC.

[7] Based on the Revised September 16, 2008, City of Chula Vista Development Checklist for Municipal Code Requirements (Form 5509) and is subject to annual adjustments.

Table C.25
Estimated TDIF Fees[8]

Development Phase	DU	Acres	Com'l Square Footage	Office (<5 stories) S.F.	Office (>5 stories) S.F.	Fee/High Density Unit	Fee/Res. Mixed Use	Fee/20K Com'l Mixed U	Com'l Fee/ Acre	Office (<5) Fee/Acre	Office (>5) Fee/Acre	Total
Blue												
Res. High	400	9.28				$6,791						$2,716,400
Res. Mixed Use	262	12.33					$4,528					$1,186,336
Com'l Mixed Use	111		176,000	53,000			$4,528	$181,074				$2,575,905
Gen Com'l		19.33	347,000						$181,074			$3,500,160
Office (<5 stories)		5.00		78,800						$101,854		$509,270
Office (>5 stories)		6.00			813,200						$316,879	$1,901,274
Total	**773**	**51.94**	**523,000**	**131,800**	**813,200**							**$12,389,346**
Yellow												
Res. High	976	33.68				$6,791						$6,628,016
Res. Mixed Use							$4,528					$0
Com'l Mixed Use	47		183,000				$4,528	$181,074				$1,869,643
Office (<5 stories)		4.00		75,500						$101,854		$407,416
Office (>5 stories)		5.63			704,500						$316,879	$1,784,029
Total	**1,023**	**43.31**	**183,000**	**75,500**	**704,500**							**$10,689,104**
Green												
Res. High	99	2.80				$6,791						$672,309
Res. Mixed Use	341						$4,528					$1,544,048
Com'l Mixed Use	100	14.12	130,000				$4,528	$181,074				$1,629,781
Gen Com'l		8.58	329,000						$181,074			$1,553,615
Office (<5 stories)		7.06		271,000						$101,854		$719,089
Total	**540**	**32.56**	**459,000**	**271,000**	**0**							**$6,118,842**
Orange												
Res. High	346	11.73				$6,791						$2,349,686
Res. Mixed Use	301	14.20					$4,528					$1,362,928
Com'l Mixed Use			338,000				$4,528	$181,074				$3,060,151
Total	**647**	**25.93**	**338,000**	**0**	**0**							**$6,772,765**
Grand Total	**2,983**	**153.74**	**1,503,000**	**478,300**	**1,517,700**							**$35,970,056**

[8] Estimated TDIF is based on the Revised September 16, 2008, City of Chula Vista Development Checklist for Municipal Code Requirements (Form 5509) and subject to annual adjustments. Actual TDIF may be different.

C. Traffic Signal Fee

Future development within the project will be required to pay Traffic Signal Fees in accordance with Chula Vista Council Policy No. 475-01. The estimated fee is calculated based on the current fee of $29.75 (the date of this PFFP) per vehicle trip generated per day for various land use categories. The table below is provided as an estimate only. Fees may change depending upon the actual number dwelling units, the actual acreage for commercial and industrial land and the current city fee, which is subject to change from time to time. Final calculations will be known at time building permits are applied for.

Table C.26
EUC SPA
Estimated Traffic Signal Fees[9]

Development Phase	Trips	Traffic Signal Fee @ 29.75/Trip
Blue	10,188	$303,093
Yellow	25,457	$757,346
Green	25,459	$757,405
Orange	32,646	$971,219
Total	**93,750**	**$2,789,063**

All internal intersections will be constructed with signal conduits so that traffic signals can be constructed at a later date if warranted. Signals constructed will receive a signal credit against the payment of fees; signals constructed at the intersection of TDIF and non-TDIF roads will receive a pro-rate share against their respective fees.

D. Non-DIF Streets and Signals

Street "A" within the EUC is currently not within the city's Eastern TDIF Program. Internal public streets and signals are not eligible for DIF credit pursuant to city policy. These streets and signals will be funded by the development.

II.5.4.1.14 Threshold Compliance and Requirements

A. Off-Site and On-Site Thresholds:

1. EUC Off-Site Thresholds

Table C.28 summarizes the thresholds associated with the various improvements to the facilities/intersections in the study area. Each threshold was calculated by Kimley Horn by taking the total EDU's for the project (8,035 EDU) and multiplying it by its respective percentage (38 percent for 2015 and 66 percent for 2020) for the various interim years. The effect of the mitigation is calculated only in the Year 2030 scenario. If a facility/intersection becomes deficient in a prior scenario (Year 2010, 2015, or 2020), the mitigation required for the Year 2030 is assumed to be needed and implemented prior to the start of a future year scenario.

[9] Estimated Traffic Signal Fee is based on the Revised September 16, 2008, City of Chula Vista Development Checklist for Municipal Code Requirements (Form 5509) and is subject to annual adjustments. Trips are estimated, based on the Traffic Analysis, actual trips and Traffic Signal Fees may be different at the time of building permit.

For example, the intersection of Olympic Parkway and Brandywine Avenue is significantly impacted in the Year 2010 and Year 2030. The mitigation of re-striping the northbound approach and coordinating the signals along Olympic Parkway between the SB I-805 Ramps and Brandywine Avenue would fully mitigate the impacts in the Year 2030. This same mitigation also mitigates the project's impacts in the Year 2010. Since this intersection first shows an impact in the Year 2010, the recommended mitigation would be required to be in place prior to the Year 2010. Without any specific information regarding the timing, location, and intensity of the EUC development, it has been assumed that this mitigation would be needed at the start of the project (1St EDU).

For the five additional locations that are significantly impacted by the Year 2030, the significance threshold shown in the table is 5,268 EDU's, which is calculated by multiplying the total 8,035 EDU's by 66 percent (amount of project to be constructed by the Year 2020). This assumes construction of the Rock Mountain Road interchange with SR-125 by the Year 2030. Since SR-125 is not within the City's jurisdiction, it is difficult to control the timing of this interchange and with the uncertainty of the overall development and its timing, it is recommended that further analysis be performed to determine the exact year when the Rock Mountain interchange is required.

2. EUC On-Site Thresholds

Table C.29 summarizes the internal facilities that need to be bonded and/or constructed for each parcel within the EUC. For each parcel, all streets identified on Table C.29 as being required for access would need to be bonded and/or constructed. The internal streets are subject to further review by the city based on the specific evolution of the development patterns.

The EUC project will develop according to market conditions, with certain districts or certain land uses developing faster than others. Therefore, the interim year construction of boundary intersections and internal roads is uncertain at this time. The Traffic Analysis recommended that boundary intersections be constructed to their full proposed build-out geometry when the connecting internal links are constructed. Future assessment may be required to determine when these connections need to be made, and the boundary intersections constructed, based on the project's development pattern or as directed by the City Engineer. Due to the uncertainties with the timing and location of the development in each respective scenario, the City Engineer will determine if and when additional studies may be needed to update the assumptions and validate the PFFP triggers. In addition, the City Engineer may amend the PFFP triggers at his/her discretion unless stated otherwise in a parks and development agreement.

The developer shall construct or enter into an agreement to construct and secure, in accordance with Section 18.16.220 of the Municipal Code, the required street improvements, including traffic signals, prior to approval of the applicable final map that contains the cumulative EDU trigger.

B. Threshold Compliance

1. GMOC Analysis:

The findings of the GMOC analysis from the Traffic Analysis are presented in C.27. As shown in the table, the segment of Olympic Parkway between I-805 and Hunte Parkway would operate at LOS D or better with speeds ranging between 26 mph and 32 mph. Thus, less-than-significant impacts would occur along the Olympic Parkway between I-805 and Hunte Parkway).

Table C.27
Summary of GMOC LOS Analysis

ROADWAY SEGMENT	DIRECTION	EXISTING		2010 BASELINE		2010 PLUS PROJECT	
		SPEED (a)	LOS (b)	SPEED (a)	LOS (b)	SPEED (a)	LOS (b)
AM PEAK							
Olympic Pkwy							
I-805 to Hunte Pkwy	EB	33.5	C	32.1	C	32.0	C
	WB	28.1	C	26.6	D	26.1	D
PM PEAK							
Olympic Pkwy							
I-805 to Hunte Pkwy	EB	32.1	C	27.4	C	26.6	D
	WB	31.0	C	28.8	C	28.0	C

Notes:
(a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph).
(b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay.

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Source: Kimley Horn

2. Intersections:

Horizon Year 2010 With Project

Intersection #7: Prior to implementation of the first phase of the proposed project (with 1st EDU) at the intersection of Olympic Parkway/Brandywine Avenue, the Applicant shall secure or construct the re-striping of the northbound approach to include one thru lane and one shared thru-right lane and coordinate SB I-805 Ramps through Brandywine on Olympic Parkway.

Intersection #8: Prior to implementation of the first phase of the proposed project (with 1st EDU) at the intersection of Olympic Parkway/Heritage Road, the Applicant shall secure or construct the addition of a southbound right-turn overlap phase.

Horizon Year 2015 With Project

The intersection of Olympic Parkway/Heritage Road (Intersection #8) would be directly impacted by the proposed project. Implementation of the mitigation to Intersection #8 above would ensure an acceptable LOS at this intersection.

Horizon Year 2020 With Project

Intersection #19: Prior to implementation of the third phase of the proposed project (at 3,070 proposed project EDUs) at the intersection of Main Street/Heritage Road, add dual northbound and dual eastbound right-turn lanes.

Horizon Year 2030 With Project

Intersection #1: Prior to implementation of the final phase of the proposed project (at 5,270 proposed project EDUs) at the intersection of Telegraph Canyon Road/Heritage Road, add exclusive westbound right-turn lane and widen north leg to provide three thru lanes.

Intersection #15: Prior to implementation of the final phase of the proposed project (at 5,270 proposed project EDUs) at the intersection of Birch Road/La Media Road, convert a westbound thru lane into a shared westbound thru/right-turn lane.

Intersection #16: Prior to implementation of the final phase of the proposed project (at 5,270 proposed project EDUs) at the intersection of Birch Road/Magdalena Avenue, add exclusive eastbound right-turn lane.

Intersection #19: Prior to implementation of the final phase of the proposed project (at 5,270 proposed project EDUs) at the intersection of Main Street/Heritage Road, add dual northbound and dual eastbound right-turn lanes and add southbound right-turn overlap phase.

Intersection #21: Prior to implementation of the final phase of the proposed project (at 5,270 proposed project EDUs) at the intersection of Rock Mountain Road/Magdalena Avenue, add a dual southbound left-turn lane and a dual northbound right-turn lane.

3. Roadway Segments:

No mitigation measures are necessary for the Horizon Year 2010, 2015, and 2020 scenarios.

Horizon Year 2030 With Project

Hunte Parkway (SR-125 to Street A): Prior to 5,270 EDUs and if SR-125 and the Otay Valley Road interchange is not constructed, the applicant shall construct two auxiliary lanes on this roadway segment as determined necessary by the City Engineer.

4. Freeway Segments:

No mitigation measures are available to reduce the proposed project's significant cumulative impacts.

5. Project Boundary Intersections:

Prior to completion of the entire project, (8,036 proposed project EDUs) the Hunte Parkway/EastLake Parkway intersection shall be improved to consist of a right-turn overlap phase for the eastbound, westbound, and northbound movements.

Upon connection of Street A to Hunte Parkway, the Applicant shall construct the Hunte Parkway/ Street A intersection with a fourth eastbound through lane, a dual northbound left-turn lane, and a southbound right-turn overlap phase.

6. Other Traffic Mitigations:

The Applicant, in cooperation with the City of Chula Vista, shall monitor the necessary timing to construct the SR-125 and Rock Mountain Road interchange to ensure that this improvement is constructed prior to surpassing the EUC PFFP threshold of 5,270 proposed project EDUs.

C. Threshold Requirements

1. Threshold compliance will continue to be monitored through the annual Transportation Monitoring Program of the GMOC.
2. The project shall be conditioned to pay TDIF Fees and Traffic Signal Fees at the rate in effect at the time building permits are issued.
3. The project shall be conditioned to complete the Traffic Facilities (street segments and signalized intersections) according to the thresholds as described in Table C.28 and the internal streets as described in Table C.29 (See Regulating Plan in Appendix A for parcel locations), all to the satisfaction of the City Engineer.

Table C.28
PFFP Thresholds

Facility/Intersection	Improvement	PFFP Threshold
Improvements to be constructed or bonded by EUC		
Olympic Pkwy & Brandywine Ave	Restripe NB approach to include one thru lane and one shared thru-right lane and coordinate SB I-805 Ramps through Brandywine on Olympic Pkwy	1st EDU
Olympic Pkwy & Heritage Rd	Add SB right-turn overlap phase	1st EDU
Main St & Heritage Rd	Add dual NB and dual EB right-turn lanes	3,070 EDUs
Birch Rd & La Media Rd	Convert a WB thru lane into a shared thru/right-turn lane	5,270 EDUs
Birch Rd & Magdalena Ave	Add exclusive EB right-turn lane	5,270 EDUs
Rock Mountain Rd & Magdalena Ave	Add a dual SB left-turn lane and a dual NB right-turn lane	5,270 EDUs
Hunte Pkwy between SR-125 and Street A	Add 2 auxiliary lanes to the six-lane town center arterial (if the Otay Valley Road interchange on SR-125 is not constructed).	5,270 EDUs

Source: Kimley-Horn

Table C.29
Thresholds for Internal Streets

Parcel	Frontage Improvements[1]	Primary Access[2]	Secondary/Emergency Access[3]
1	Street A (F to Bob Pletcher) Bob Pletcher Way	Street A (Birch to F)	none
2	Street A (Birch to F)	none	none
3	Street A (Birch to E) Street C (Birch to E) Street E (A to C)	none	none
4	Street C (Birch to F) Street F (C to Eastlake)	none	none
5	Street C (E to F) Street E (Main to C) Main St (E to F) Street F (Main to C)	Street E (A to Main) Street A (Birch to E)	Street C (Birch to E)
6	Street A (E to F) Street E (A to Main) Main St (E to F) Street F (A to Main)	Street A (Birch to E)	none
7/FS	Street A (F to Bob Pletcher) Street B (F to H) Street F (A to B)	Street A (Birch to F)	none
8	Street F (B to Main) Street B (F to G) Main St (F to G)	Street F (A to B) Street A (Birch to F)	Street F (Main to C) Street C (F to Birch)
9	Street F (Main to C) Street C (F to G) Main St (F to G)	Street C (Birch to F)	Street F (C to Eastlake)
10	Street C (F to G) Street F (C to D) Street D (F to G) Street G (C to D)	Street F (D to Eastlake)	none
11	Street F (D to Eastlake) Street D (F to G) Street G (D to Eastlake)	none	none
12	Street D (G to H) Street G (D to Eastlake) Street H (D to Eastlake)	none	none
13	Street H (C to D) Street C (G to H) Street D (G to H) Street G (C to D)	Street H (D to Eastlake)	none
14	Street H (Main to C) Main St (G to H) Street C (G to H)	Street H (C to Eastlake)	Street C (Birch to G)
15	Street H (B to Main) Main St (G to H) Street B (G to H)	Street H (Main to Eastlake)	Street B (G to F) Street F (B to A) Street A (F to Birch)
16	Street A (Bob Pletcher to K) Street K (A to B) Street B (H to K)	Street A (Bob Pletcher to Birch)	none
17	Street H (B to Main) Street B (H to J)	Street H (Main to Eastlake)	Street B (J to K) Street K (B to Eastlake)
18	Street H (Main to C) Street C (H to J)	Street H (C to Eastlake)	Street C (J to K) Street K (C to Eastlake)
19	Street H (C to D) Street C (H to J) Street D (H to J) Street J (C to D)	Street H (D to Eastlake)	none
20	Street D (H to J) Street H (D to Eastlake)	none	none
21	Street D (J to K) Street K (D to Eastlake)	none	none
22	Street K (C to D) Street C (J to K) Street D (J to K) Street J (C to D)	Street K (D to Eastlake)	none
23	Street K (Main to C) Street C (J to K)	Street K (C to Eastlake)	Street C (J to H) Street H (C to Eastlake)
24	Street K (B to Main) Street B (J to K)	Street K (Main to Eastlake)	Street B (H to J) Street H B to Eastlake)
25	Street A (K to M) Street K (A to B) Street B (K to M) Street M (A to B)	Street K (B to Eastlake)	Temp emergency access along Street A
26	Street C (K to M) Street K (B to C) Street B (K to M) Street M (B to C)	Street K (C to Eastlake)	Street C (K to H) Street H (C to Eastlake)
27	Street K (C to Eastlake) Street C (K to M)	none	none
28	Street A (K to M) Street K (A to Eastlake)	Street A (K to Birch)	Temp emergency access along Street A
Engineer.	Street A (Bob Pletcher to K) Bob Pletcher Way	Street A (Bob Pletcher to Birch)	none

Note: All roads required in accordance with this table (Frontage, Primary, and Secondary, when necessary) that have not been previously secured or constructed shall be bonded for with a fully entitled map pursuant to Section 18.16.220 of the Chula Vista Municipal Code and constructed in accordance with the Subdivision Improvement Agreement unless otherwise agreed to by the City Engineer.

[1] Frontage requirements may be reduced at the request of the applicant and with the approval of the City Engineer if minmum access requirements can be achievedwithout all of the identified facilities.

[2] An alternative primary access may be provided based on the facilities that exist and the access patterns which have developed at the time of parcel development.

[3] Secondary access will be required when a parcel (or the frontage road) does not directly connect to a street segment that provides access to a circulation element road AND the traffic volume on the identified primary access route exceeds the capacity of that facility. Parcels with a frontage on Street A do not require a secondary access.

II.5.4.2 POLICE

II.5.4.2.1 Threshold Standard

A. Emergency Response: properly equipped and staffed police units shall respond to 81% of "Priority One" Emergency calls throughout the city within 7 minutes and shall maintain an average response time to all "Priority One" emergency calls of 5.5 minutes or less (measured annually).

B. Urgent Response: Properly equipped and staffed police units shall respond to 57% of "Priority Two" Urgent calls throughout the city within 7 minutes and maintain an average response time to all "Priority Two" calls of 7.5 minutes or less (measured annually).

II.5.4.2.2 Service Analysis

The City of Chula Vista Police Department provides police services. The purpose of the Threshold Standard is to maintain or improve the current level of police services throughout the City by ensuring that adequate levels of staff and equipment are provided. Police threshold performance was analyzed in the "Report on Police Threshold Performance 1990-1999", completed April 13, 2000. In response to Police Department and GMOC concerns the City Council amended the threshold standards for Police Emergency Response on May 28, 2002, with adoption of Ordinance 2860. Police Facilities are also addressed in *A Master Plan for the Chula Vista Civic Center Solving City Space Needs Through Year 2010,* dated May 8, 1989.

II.5.4.2.3 Project Processing Requirements

The PFFP is required by the Growth Management Program to address the following issues for Police Services.

A. Services reviewed must be consistent with the proposed phasing of the project.

B. Able to demonstrate conformance with *A Master Plan for the Chula Vista Civic Center* dated May 8, 1989, as amended unless stated otherwise in a parks or development agreement.

II.5.4.2.4 Existing Conditions

The Chula Vista Police Department (CVPD) provides law enforcement services to the area encompassing the project. The CVPD is located in a new headquarters building at the corner 4th Avenue and F Street in Chula Vista. This new facility is expected to be adequate through the build-out of Chula Vista. Currently, CVPD is authorized a staff of 244 sworn officers and 95.5 civilian support personnel. The Project is within Police Patrol Beat 32 that is served by at least one Beat Officer per shift.

<u>Police Facility Inventory</u>

- New Police Headquarters at 4th Avenue and F Street.

II.5.4.2.5 Adequacy Analysis

According to the GMOC 2008 Annual Report the response thresholds for "Priority One" Calls for Service (CFS) were met during the 2006 -2007 time period (see Table D.1). The department is in compliance with "Priority One" CFS with 84.5% of the calls responded to

within 7:00 minutes. The thresholds for "Priority Two" CFS during the same period were not met. The Priority Two CFS thresholds have not been met for several years (see Table D.2). For Priority Two CFS, the department responded to 43.3% of the calls within an average of 7 minutes. The GMOC has determined that "Priority Two" or the Urgent Emergency Response time threshold was not met.

According to the GMOC, police response time is just one measure of how these services are keeping pace with growth. The city has implemented measures to improve police response time. These measures range from maintaining full staffing to technological improvements. Two measures that do relate to the ability of the Police Department to maintain the quality of life and are growth related are maintaining adequate staffing and reducing false alarms.

As the table below indicates, the Police Department has made progress in reducing their Priority One response times over the past several years. The Police Department is engaged in several current or proposed initiatives to continue the reduction in response times.

Table D.1
Historic Response Times
Priority I -- Emergency Response, Calls For Service

	Call Volume	% of Call Response w/in 7 Minutes	Average Response Time
Threshold		**81.0%**	**5:30**
FY2006-07	976 of 74,277	84.5%	4:59
FY2005-06	1,068 of 73,075	82.3%	4:51
FY2004-05	1,289 of 74,106	80.0%	5:11
FY2003-04	1,322 of 71,000	82.1%	4:52
FY 2002-03	1,424 of 71,268	80.8%	4:55
FY 2001-02	1,539 of 71,859	80.0%	5:07
FY 2000-01	1,734 of 73,977	79.7%	5:13
FY 1999-00	1,750 of 76,738	75.9%	5:21
CY 1999[10]	11,890 of 74,405	70.9%	5:50

Source: GMOC 2008 Annual Report

Since the 1997-98 time period the Priority Two threshold has been non-compliant. However, the Police Department has advised that response times should be viewed with some caution. National research[11] indicates that victims of "victim involvement crimes" waited an average of 41 minutes before calling police. This research also indicates that reducing response times is unlikely to reduce crime levels. Further, community satisfaction with police response times is very dependent on incident-specific expectations. Finally, based on a SANDAG Survey[12] the 94% of the residents are satisfied with the services of the Chula Vista Police Department.

In response to the Priority Two threshold not being met, the GMOC recommended that the City Council direct the City Manager to have the Police Department prepare and implement an action plan addressing the decline in performance relative to meeting the GMOC threshold for Priority Two calls. The GMOC recommends that this be done by 2008 so that progress in developing and implementing the plan can be reflected in the Police Department's next report to the GMOC.

[10] The FY98-99 GMOC Report used calendar 1999 data due to the implementation of the new CAD system in mid-1998.
[11] 2008 Annual GMOC Report
[12] 2008 Annual GMOC Report

Table D.2 Historic Response Times Priority II -- Emergency Response, Calls For Service			
	Call Volume	**% of Call Response w/in 7 Minutes**	**Average Response Time**
Threshold		**57.0%**	**7:30**
FY 2006-07	24,407 of 74,277	43.3%	11:18
FY 2005-06	24,876 of 73,075	40.0%	12:33
FY 2004-05	24,923 of 74,106	40.5%	11:40
FY 2003-04	24,741 of 71,000	48.4%	9:50
FY 2002-03	22,871 of 71,268	50.2%	9:24
FY 2001-02	22,199 of 71,859	45.6%	10:04
FY 2000-01	25,234 of 73,977	47.9%	9:38
FY 1999-00	23,898 of 76,738	46.4%	9:37
CY 1999	20,405 of 74,405	45.8%	9:35
FY 1997-98	22,342 of 69,196	52.9%	8:13
FY 1996-97	22,140 of 69,904	62.2%	6:50
FY 1995-96	21,743 of 71,197	64.5%	6:38

Source: GMOC 2008 Annual Report

II.5.4.2.6 Financing Police Facilities

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 7, 2006 by adoption of Ordinance 3050. The Public Facilities Development Impact Fee (PFDIF) is adjusted every October 1st pursuant to Ordinance 3050. The Police Public Facilities DIF Fee for Multi-Family Development is $1,691/unit and $7,394/Acre for Commercial Development (see Table B.7)[13]. This amount is subject to change as it is amended from time to time. The project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Police Fee obligation at buildout is $5,755,926.

Table D.3 EUC SPA Public Facilities Fees For Police[14]					
Phase	**Multi-Family Units**	**Commercial Acres**	**Police Fee**		**Total Fee**
			Multi-Family $1,691/Unit	**Commercial $7,394/Acre**	
Blue	773	42.66	$1,307,143	$315,428	$1,622,571
Yellow	1,023	9.63	$1,729,893	$71,204	$1,801,097
Green	540	29.76	$913,140	$220,045	$1,133,185
Orange	647	14.2	$1,094,077	$104,995	$1,199,072
	2,983	96.25	$5,044,253	$711,673	$5,755,926

[13] Fee based on Form 5509 dated 9/16/2008. Actual fee may be different and will be determined by the City of Chula Vista at the time of building permit.

[14] The PDIF Fee is subject to change as it is amended from time to time. Changes in the number of dwelling units or Commercial Acreage may affect the estimated fee.

II.5.3.2.7. THRESHOLD COMPLIANCE AND REQUIREMENTS

Police response times for "Priority One" Calls for Service (CFS) were met during the 2006 - 2007 time period. The department is in compliance with "Priority One" CFS thresholds for the time period. The thresholds for "Priority Two" CFS during the same period were not met. However, response times to "Priority Two" CFS alone are not the only indicator of the capacity of the Police Department to provide adequate services. Compliance of the threshold requirements can be met with the following requirements:

A. Prior to the approval of each building permit unless stated otherwise in a parks or development agreement, the Applicant(s) shall pay Public Facilities Development Impact Fees (PFDIF) for police protection services at the rate in effect the time building permits are issued.

B. The City will continue to monitor police responses to calls for service in both the Emergency (priority one) and Urgent (priority two) categories and report the results to the GMOC on an annual basis.

C. Prior to approval of each design review permit, site plans shall be reviewed by the CVPD to ensure the incorporation of crime prevention through environmental design (CPTED) features and other recommendations of the CVPD, including, but not limited to, controlled access points to parking lots and buildings; maximizing the visibility along building fronts, sidewalks, paseos, and public parks; and providing adequate street, parking lot, and parking structure lighting.

II.5.4.3 FIRE AND EMERGENCY MEDICAL SERVICES

II.5.4.3.1 Threshold Standard

Emergency response: Properly equipped and staffed fire and medical units shall respond to calls throughout the City within seven (7) minutes in 80 percent (current service to be verified) of the cases (measured annually).

II.5.4.3.2 Service Analysis

The City of Chula Vista Fire Department (CVFD) provides Fire and Emergency Medical Services (EMS). EMS is provided on a contract basis with American Medical Response (AMR). The City also has countywide mutual and automatic aid agreements with surrounding agencies, should the need arise for their assistance. The purpose of the Threshold Standard and the monitoring of response times are to maintain and improve the current level of fire protection EMS in the City. Fire/EMS facilities are provided for in the 1997 Fire Station Master Plan, as amended unless stated otherwise in a parks or development agreement. The Fire Station Master Plan indicates that the number and location of fire stations primarily determine response time. The 1997 Fire Station Master Plan evaluates the planning area's fire coverage needs, and recommends a nine (9) station network at build out to maintain compliance with the threshold standard. In addition, the CVFD has provided updated fire facility and equipment information that has been included in this PFFP.

II.5.4.3.3 Project Processing Requirements

In accordance with the Fire Station Master Plan, the City, at its sole discretion unless stated otherwise in a parks or development agreement, shall determine when a new fire station is required in order to achieve threshold service levels, meet specific project guidelines or maintain general operational needs of the Fire Department. Developments shall be in accordance with the project guidelines outlined in the Fire Station Master Plan as may be amended from time to time unless stated otherwise in a parks or development agreement.

The requirement to pay for fire station construction and related equipment shall be the sole responsibility of the developer or developers and the City may require said developer or developers to provide a guarantee mechanism to assure the availability of such funding.

The City of Chula Vista requires all SPA Plans to address fire services. Some of the issues that must be addressed are:

A. Specific siting of the facility takes place, which conforms to the *Fire Station Master Plan,* August 14, 1997, as amended unless stated otherwise in a parks or development agreement.
B. Equipment needs.
C. Methods of financing.
D. Timing of construction consistent with the threshold service levels.
E. Specific project guidelines and/or general operational needs of the Fire Department.

II.5.4.3.4 Existing Conditions

There are currently nine (9) fire stations serving the City of Chula Vista. The existing station network is listed listed below in Table E.1 (Current Fire Station Facilities):

Table E.1
Current & Planned Fire Station Facilities[1]

Station	Location	Equipment	Staffing
Current Fire Station Facilities			
Station 1	447 F Street Chula Vista, CA 91910	Engine 51 Truck 51 Battalion 51	Assigned: 24 On Duty: 8
Station 2	80 East J Street Chula Vista, CA 91910	Engine 52 Brush 52	Assigned: 9 On Duty: 3
Station 3	1410 Brandywine Ave. Chula Vista, CA 91911	US & R 53	Assigned: 12 On Duty: 4
Station 4	850 Paseo Ranchero Chula Vista, CA 91910	Engine 54	Assigned: 9 On Duty: 3
Station 5	391 Oxford Street Chula Vista, CA 91911	Engine 55	Assigned: 9 On Duty: 3
Station 6	605 Mt. Miguel Rd. Chula Vista, CA 91914	Engine 56	Assigned: 9 On Duty: 3
Station 7	1640 Santa Venetia Rd. Chula Vista, CA 91913	Engine 57 Truck 57 Battalion 52	Assigned: 24 On Duty: 8
Station 8	1180 Woods Drive Chula Vista, CA, 91914	Engine 58	Assigned: 9 On Duty: 3
Station 9	291 E. Oneida Street Chula Vista, CA 91911	Engine 59	Assigned: 9 On Duty: 3
Planned Fire Station Facilities			
Station	**Location**	**Equipment**	**Staffing**
Station 10	Eastern Urban Center	EUC Engine EUC Truck	Assigned: 21 On Duty: 7
Station 11[2]	80 East J Street Chula Vista, CA 91910	Bayfront Engine Bayfront Truck	Assigned: 21 On Duty: 7

1 These planned facilities only represent those new facilities as listed within the 1997 Fire Department Master Plan.
2. Chula Vista Bayfront Master Plan and Port Master Plan Amendment Revised Draft EIR SCH#2005081077 (Station 11).

Source: CVFD

II.5.4.3.5 Adequacy Analysis

The City of Chula Vista Fire Department (CVFD) currently serves areas within the City's boundaries, including the EUC project. The closest CVFD stations to the project site are:

- Fire Station #6, located adjacent to the Shops at San Miguel Ranch.
- Fire Station #7, located in Village 2
- Fire Station #8, located in EastLake III
- Planned Fire Station #10, to be located in the EUC.

The EUC is currently within the Fire Station #7 response district. The station is located at 1640 Santa Venetia, which is less than a mile from the project, and will provide first-in coverage to the project. Station #8 is located in the EastLake Woods neighborhood, which is approximately 2 miles from the project.

The Fire/EMS response time threshold was met for calendar year 2006. This is the second year in a row that the CVFD met the threshold even with a substantial increase in the number of reported emergency calls.

American Medical Response (AMR) provides emergency medical services to the project site, on a contract basis for the City of Chula Vista. There are three full time AMR stations, which provide advanced life support (ALS) services to the city of Chula Vista exclusively.

Table E.2
EUC PFFP
Fire/EMS - Emergency Response Times Since 1999

Years	Call Volume	% of All Call Response Within 7:00 Minutes
FY 2007	10,020	88.1%
CY 2006	10,390	85.2%
CY 2005	9,907	81.6%
FY 2003-04	8,420	72.9%
FY 2002-03	8,088	75.5%
FY 2001-02	7,626	69.7%
FY 2000-01	7,128	80.8%
FY 1999-00	6,654	79.7%

Source: GMOC 2008 Annual Report

The pace of growth and the transition of the community to a suburban designation with an urban core are issues that will be addressed through the CVFD's strategic business plan. Currently, the department is preparing a new Fire Facility Master Plan that will recommend the number and types of fire facilities required for future service delivery as the City transforms. The recommendations contained in the new plan will be consistent with the forecasted growth and land used assumptions from the City's General Plan update. In addition, the department continues the process of implementing its strategic business plan and performance measures.

The CVFD currently meets the GMOC threshold of responding to 80 percent of calls within seven minutes. However, the EUC proposes an urban core type of development that is anticipated to change the need for fire service in the area. The CVFD expects the project demand for services to increase the operating costs for equipment and staffing.

In response to the anticipated need, the EUC includes the dedication of a fire station site. A new station within the EUC will greatly shorten travel time for fire and medical response units. The new station together with Fire Station #7 and #8 will facilitate emergency response within the EUC.

II.5.4.3.6 Financing Fire Service Facilities

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 7, 2006, by adoption of Ordinance 3050. The Public Facilities Development Impact Fee (PFDIF) is adjusted every October 1st pursuant to Ordinance 3050. The Fire Public Facilities DIF Fee for Multi-Family Development is $894/unit, commercial (including office) development is $3,283/acre. (see Table B.7)[15]. This amount is subject to change as it is amended from time to time. The project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Fire Fee obligation at buildout is $2,982,791

Table E.3
EUC SPA
Public Facilities Fees For Fire[16]

Phase	MF Units	Commercial Acres	Fire Fee		Total Fee
			MF $894/Unit	Commercial $3,283/Acre	
Blue	773	42.66	$691,062	$140,053	$831,115
Yellow	1,023	9.63	$914,562	$31,615	$946,177
Green	540	29.76	$482,760	$97,702	$580,462
Orange	647	14.2	$578,418	$46,619	$625,037
	2,983	96.25	$2,666,802	$315,989	$2,982,791

Table E.3 is an estimate. Actual fees may be different. PFDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

II.5.4.3.7 Threshold Compliance and Recommendations

A. The City will continue to monitor fire department responses to emergency fire and medical calls and report the results to the GMOC on an annual basis.

B. The project shall pay public facilities fees at the rate in effect at the time building permits are issued.

C. Several trigger points exist for the construction and staffing of the EUC fire station. It is likely that the risk based trigger points will occur prior to those associated with the concentration of the service demand; however, the location of the risk/demand is also a factor. The completion of the first /any trigger point threshold will be such a risk point. These trigger points include two distinct locations and several development driven events within each location would trigger the need for the EUC fire station:

[15] Fee based on Form 5509 dated 9/16/2008. Actual fee may be different, please verify with the City of Chula Vista at the time of building permit.

[16] The PFDIF Fee is subject to change as it is amended from time to time. Changes in the number of dwelling units, Industrial Acreage or Commercial Acreage may affect the estimated fee.

Location A – All development north of "F" street and south of Birch Road and development north of Bob Pletcher Parkway and west of "A" street within the EUC. Location "A" triggers point thresholds include:

1. The completion of the first building of any type of construction or occupancy having floors used for human occupancy located more than 75 feet (22,860 mm) above the lowest floor level having building access; or
2. Construction of any structure which is not protected with automatic fire sprinkler systems in accordance with NFPA 13 requirements and the following standards:
   a) Residential units (designed with commercial spacing and density),
   b) Nonresidential (minimum protection – Ordinary Group 2 density); or
3. Construction of any structure over three stories without building measures to maintain the continuity of the exiting system such as smoke proof stair enclosures, stairwell pressurization and smoke control systems, or other approved alternatives.

Location B – Includes the remaining area of the EUC not in Location "A." Location "B" triggers point thresholds include:

1. The completion of the first building of any type of construction or occupancy having floors used for human occupancy located more than 75 feet (22,860 mm) above the lowest floor level having building access; or
2. Occupancy of midrise residential units (four to six stories in height); or
3. Completion of more than three structures over three stories or four levels; or
4. Completion of any single structure over 104,000 square feet in area.

D. The Fire Marshal shall have the sole discretion to grant exceptions based upon adequate alternative means and materials. Such alternatives may require third party technical review at the project permit phase.

E. Subject to approval of the City Council, in lieu of paying the required impact fee, the Applicant may satisfy that requirement through a written agreement by which the Applicant agrees to either pay the fee or build the facility in question, pursuant to the terms of the agreement.

II.5.4.4 SCHOOLS

II.5.4.4.1 Threshold Standard

The City annually provides the two local school districts with a 12 to 18 month development forecast and requests an evaluation of their ability to accommodate the forecast and continuing growth. The Districts' replies should address the following:

1. Amount of current capacity now used or committed.
2. Ability to absorb forecasted growth in affected facilities.
3. Evaluation of funding and site availability for projected new facilities.
4. Other relevant information the District(s) desire(s) to communicate to the City and GMOC.

II.5.4.4.2 Service Analysis

School facilities and services in Chula Vista are provided by two school districts. The Chula Vista Elementary School District (CVESD) administers education for kindergarten through sixth grades. The Sweetwater Union High School District (SUHSD) administers education for the Junior/Middle and Senior High Schools of a large district, which includes the City of Chula Vista. The purpose of the threshold standard is to ensure that the districts have the necessary school sites and funds to meet the needs of students in newly developing areas in a timely manner, and to prevent the negative impacts of overcrowding on the existing schools. Through the provision of development forecasts, school district personnel can plan and implement school facility construction and program allocation in line with development.

On November 3, 1998, California voters approved Proposition 1A, the Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998. Prior to the passage of Proposition 1A, school districts relied on statutory school fees established by Assembly Bill 2926 ("School Fee Legislation") which was adopted in 1986, as well as judicial authority (i.e., Mira-Hart-Murrieta court decisions) to mitigate the impacts of new residential development. In a post Proposition 1A environment, the statutory fees provided for in the School Fee Legislation remains in effect and any mitigation requirements or conditions of approval not memorialized in a mitigation agreement, after July 23, 1, 2000, have been replaced by Alternative Fees (sometimes referred to as Level II and Level III Fees). The statutory fee for residential development is referred to in these circumstances as the Level I Fee (i.e., currently at $2.97 per square foot for new residential construction and $0.47 per square foot for new commercial and industrial construction). This fee is shared between CVESD and SUHSD through a fee sharing agreement.

CVESD utilizes their current School Facilities Needs Analysis (SFNA), July 23, 2008, to quantify, for the next five-year period, the impacts of new residential development on the districts school facilities, and to calculate the permissible Alternative Fees to be collected from such new residential development. To ensure the timely construction of school facilities to house students from the residential development in the EUC, alternative fees or implementation of a Mello Roos Community Facilities District (CFD) will be necessary.

In compliance with Government Code Section 65995 et. Seq. the SFNA provides the determination of eligibility for and the calculation of a Level II Fee of $2.68 per square foot of new residential construction. A corresponding Level III Fee of $5.35 per square foot of new residential construction is also identified.

Sweetwater Union High School District utilizes their current "Sweetwater Union High School District Long Range Comprehensive Master Plan" dated July 20, 2004. Implementation of the SUHSD Plan is ongoing and has resulted in the upgrading of older schools and accommodating continuing growth. The district has leveraged $187 million from Proposition BB into a $327 million effort utilizing state funding to modernize and upgrade eight campuses. Additional work efforts associated with Proposition O have commenced and construction could begin in 2008.

II.5.4.4.3 Project Processing Requirements

The PFFP is required by the Growth Management Program to address the following issues for School Services:

1. Identify student generation by phase of development.
2. Specific siting of proposed school facilities will take place in conformance with the *Sweetwater Union High School District Long Range Comprehensive Master Plan,* July 2004 and Chula Vista Elementary School District's Standards and Criteria.
3. Reserve school sites, if necessary, or coordinate with the district for additional school classrooms.
4. Provide cost estimates for facilities.
5. Identify facilities consistent with proposed phasing.
6. Demonstrate the ability to provide adequate facilities to access public schools in conjunction with the construction of water and sewer facilities.
7. Secure financing.

II.5.4.4.4 Existing Conditions

School Facilities Inventory, Chula Vista Elementary School District

Currently, the CVESD's inventory consists of 44 elementary schools including 6 Charter schools. Approximately 25 schools are on a traditional calendar and 18 are on a year-round calendar. Table F.1 lists existing schools together with the capacity and enrollment of each. Capacity using existing facilities is approximately 29,212. Projected enrollment for July 23, 2008 is currently approximately 27,488. Forty-three of the 44 schools have capacity. Three schools are near capacity (see Table F.1). In addition, a new elementary school in Village 11, directly east of the EUC is proposed and would become operational in approximately one to two years with the capacity of 1,000 students. Generally, there is sufficient capacity throughout the district at this time to accommodate additional students.

Currently, almost all of CVESD's capacity is found on the west side of the District. The proposed EUC project is located on the east side of the District and is surrounded by mitigated development (CFD areas) where enrollment is near capacity when using state-loading standards. The District has a school mitigation agreement with the EUC Developer.

Currently there are no elementary school facilities available to accommodate future EUC children. At this time, the District has not made a decision where a new elementary school will be located. Possible locations include a designated site within Area 9 or alternatively Area 10 of the EUC.

Table F.1 Chula Vista Elementary School District Estimated Enrollments vs. Capacity			
School	**Estimated Enrollment July 23, 2008**	**Approximate Capacity**	**Approximate Remaining Capacity**
Allen	406	405	-1
Arroyo Vista Charter	838	852	14
Casillas, John	684	716	32
Castle Park	509	563	54
Chula Vista Hills	584	612	28
Chula Vista LCC	585	621	36
Clear View Charter	539	608	69
Cook	543	568	25
Discovery Charter	809	881	72
EastLake	685	754	69
Feaster-Edison Charter	1,081	1,091	10
Finney	500	537	37
Halecrest	502	541	39
Harborside	643	705	62
Hedenkamp	983	1,003	20
Heritage	878	903	25
Hilltop Drive	533	561	28
Juarez-Lincoln	664	685	21
Kellogg	501	545	44
Lauderbach	761	887	126
Liberty	660	716	56
Loma Verde	486	517	31
Los Altos	389	421	32
Marshall	732	750	18
McMillin	823	852	29
Montgomery	399	439	40
Mueller	977	1,040	63
Olympic View	816	832	16
Otay	606	699	93
Palomar	400	428	28
Parkview	446	490	44
Rice	693	705	12
Rogers	506	514	8
Rohr	406	452	46
Rosebank	695	734	39
Salt Creek	929	952	23
Silver Wing	450	477	27
Sunnyside	386	432	46
Tiffany	602	645	43
Valle Lindo	579	645	66
Valley Vista	506	528	22
Veterans	638	655	17
Vista Square	649	726	77
Wolf Canyon	487	525	38
TOTALS	27,488	29,212	1,724

Source: CVESD

Table F.2 Sweetwater Union High School District Estimated Enrollments vs. Capacity			
School Site	**Adjusted Total Capacity**	**12/2008 Estimated Enrollment**	**Capacity vs. Forecasted**
Middle Schools			
Bonita Vista	1,530	971	559
Castle Park	1,530	1,459	71
Chula Vista	1,410	1,020	390
EastLake	1,665	1,504	161
Granger*	1,380	1,200	180
Hilltop	1,410	1,027	383
Mar Vista*	1,581	1,300	281
Montgomery	1,614	1,100	514
National City*	1,054	900	154
Rancho del Rey	1,440	1,459	-19
Southwest*	1,350	900	450
Subtotal	**15,964**	**12,840**	**3,124**
High Schools			
Bonita Vista	2,550	2,236	314
Castle Park	1,920	2,225	-305
Chula Vista	2,850	2,850	0
EastLake	2,940	2,781	159
Hilltop	2,550	1,969	581
Mar Vista*	1,879	2,300	-421
Montgomery*	2,440	2,300	140
Otay Ranch	2,900	2,755	145
Olympian	2,600	1500	1,100
Palomar	600	448	152
San Ysidro*	2,400	1,800	600
Southwest*	2,400	2,400	0
Sweetwater*	2,163	2,700	-537
Subtotal	**30,192**	**28,264**	**1,928**
Total	**46,156**	**41,104**	**5,052**
* Schools outside of the City of Chula Vista			

Source: GMOC 2008 Annual Report

School Facilities Inventory, Sweetwater Union High School District

The SUHSD currently administers eleven (11) junior high/middle schools and thirteen (13) senior high schools including one continuation high school within the District. Of the eleven junior highs, six have been converted to middle schools serving grades seven and eight. In 2002, the district completed construction of the San Ysidro High School. In July of 2003 the district opened the Otay Ranch High School (near Otay Ranch Village 2) located at 1250 Olympic Pkwy, Chula Vista and EastLake Middle School (EastLake Woods) located at 900 Duncan Ranch Road Chula Vista. In August 2006, the district opened Olympian High School (Village 7) at 1925 Magdalena Ave, Chula Vista. There is a new combination middle/high school proposed within the vicinity of the EUC area with a possible middle school opening on the Olympian High School Campus in 2009. Planned for the future is middle school #12 and high school #14.

The district wide student enrollment is stable. According to the district, the EUC project is within the EastLake Middle School and the Olympian High School attendance areas. The Sweetwater Union High School District and the EUC Developer have a School Mitigation Agreement to form a CFD or pay mitigation obligations.

II.5.4.4.5 School Sizing and Location

The project is proposed to consist of 2,983 dwelling units at build out. At completion, the proposed project could generate approximately 1,095 students using the following Student Generation Factors:

		Multi-Family Attached[17]
Elementary (K-6)	=	.2091 [18] students/d.u.
Middle School (7-8)	=	.063 students/d.u.
High School (9-12)	=	.095 students/d.u.

By phase and school category, the project is expected to generate the following students:

Table F.3
EUC SPA
Student Generation by Development Phase

Phase	Multi-Family Dwelling Units	Elementary School (K-6)	Middle School (7-8)	High School (9-12)	Total Students
Factors		0.2091	0.063	0.095	
Blue	783	164	49	74	287
Yellow	873	183	55	83	321
Green	672	141	42	64	247
Orange	655	137	41	62	240
Subtotal	2,983	624	188	283	1,095

School Size Standards:

Elementary	750-1000 students
Middle	1,500 students
Senior High	2,400 students

[17] Includes Apartment & Condominium units.
[18] Rate from CVESD

Chula Vista Elementary School District

The Site Utilization Plan identifies a 6-acre elementary school site adjacent to a proposed park and mixed-use residential neighborhood within District 9 with an alternative site within District 10. Although the project would not meet the GDP criteria of 10 usable acres, the CVESD has indicated (see EUC SPA EIR) that either of the proposed EUC elementary school sites, as well as other elementary school sites in the area, are smaller due to less acreage being available and the high cost of land. As noted in Table F.3, the build-out of the EUC would generate the need to house approximately 624 elementary school age students. The EUC elementary school is envisioned as an urban, multi-story school. Either site shown on the Site Utilization Plan would be located next to a park, which would have the potential for joint use with the school. In addition, the CVESD Facilities Planning Division must approve the site prior to acceptance by the CVESD Board of Education.

The CVESD relies heavily on local funding to finance the construction of school facilities and in the last two years the District has been deemed ineligible to receive any monies from the State to construct new schools. Based on the projected development set forth in the GMOC forecast and current eligibility determinations by the Office of Public School Construction, the District does not anticipate additional state funding will be forthcoming for at least the next five years. With state funding in doubt plus increased costs of school construction and land acquisition the future of new school construction projects will be difficult. The District and the EUC Developer have a School Mitigation Agreement of either creating a new CFD or annexing into an existing one. Further, the Developer will provide mitigation payments to fund Elementary School facilities.

Sweetwater Union High School District

The maximum capacity of a middle school is approximately 1,500 students. It is anticipated that the approximately 188 middle school students generated by the EUC project will attend the EastLake Middle School located approximately 4 miles from the project. Currently, EastLake Middle has the capacity to accept the estimated students generated by the project.

The maximum capacity of a high school is approximately 2,400 students. It is anticipated that approximately 283 high school students will be generated from the EUC project. These students will attend Olympian high school located less than a mile from the project. Currently, Olympian High has the capacity to accept the estimated students generated by the project.

Demand for adult school facilities will be satisfied within existing facilities in the Sweetwater Union High School District, however should it be desired by the district, an adult school use is permitted in the Business and Civic Districts in the EUC SPA Plan.

II.5.4.4.6 Financing School Facilities

California Government Code section 65995 et. seq. and Education Code Section 17620 et. seq. authorizes school districts to impose facility mitigation exactions on new development as a way to address increasing enrollment caused by that development.

Although the collection of school fees is one method available to defray the cost of new development, it is not an acceptable solution since the maximum amount that could be collected by law represents less than one-fourth the cost to construct schools. The SUHSD is unable to meet the needs of this project with current school facilities and it is unable to construct new facilities to meet the impacts of this project through the provision of school fees.

In recognition of this funding deficiency, it is the policy of each district to fully mitigate the facility impacts caused by a master planned community via the creation of a Mello Roos Community Facilities District as a condition of approval of the SPA Plan (CVESD) or prior to recordation of a final map (SUHSD). The following Mello-Roos Districts have been created by each district:

SUHSD		CVESD	
CFD Number	Location	CFD Number	Location
1	EastLake	1	EastLake
2	Bonita Long Canyon	2	Bonita Long Canyon
3	Rancho del Rey	3	Rancho del Rey
4	Sunbow	4	Sunbow
5	Annexable	5	Annexable
6	Otay Ranch	6	Otay Ranch
7	Rolling Hills Estate	10	Annexable for future annexations
8	Coral Gate (Otay Mesa)	11	Otay Ranch (Lomas Verde)
9	Ocean View Hills	12	Otay Ranch (Village 1, West)
10	Remington Hills/Annexable	13	San Miguel Ranch
11	Lomas Verdes	14	Otay Ranch Village 11 (Brookfield/Shea)
12	Otay Ranch (Village 1 West)	15	Otay Ranch Village 6 (ORC)
13	San Miguel Ranch		
14	Otay Ranch Village 11		

Based on historical data available from each district an estimate of costs for the construction of school facilities on a per student basis is provided. Both districts follow state standards for determining the costs and size for school construction. The cost for a high school, including land acquisition, is approximately $45,800 per student (2007 dollars). Excluding land, the cost for a high school is approximately $25,000 per student. The cost for a middle school, including land acquisition, is approximately $36,666 per student (2007 dollars). Excluding land, the cost for a middle school is $20,000 per student. The cost for an elementary school, including land acquisition, is approximately $32,500 per student (2007 dollars). Excluding the land, the cost for an elementary school is approximately $20,000 per student (2007 dollars). Land acquisition cost is calculated at approximately $1,000,000 per acre (10 acre elementary school site). Using the aforementioned costs per student together with the school size, the following costs per facility can be anticipated.[19]

Elementary School Cost	
(800 students) ($20,000/student w/o land cost)	$16,000,000
(800 students) ($32,500/student w/land cost)	$26,000,000
Middle School Cost	
(1,500 students) ($20,000/student w/o land cost)	$30,000,000
(1,500 students) ($36,666/student w/ land cost)	$55,000,000
High School Cost	
(2,400 students) ($25,000/student w/o land cost)	$60,000,000
(2,400 students) ($45,800/student w/ land cost)	$110,000,000

[19] The cost of land is variable and could easily exceed the estimated land costs.

II.5.4.4.7 Threshold Compliance and Recommendations

1. Prior to the issuance of each building permit, the Applicant(s) shall provide the City with evidence of certification by the CVESD that any fee, charge, dedication, or other requirement levied by the school district has been complied with or that the district has determined the fee, charge, dedication or other requirement does not apply to the construction.

2. Prior to approval of a applicable final map for private development on Lots 26 and 27 of the EUC Tentative Map, the applicant shall provide evidence from the Chula Vista Elementary School District that the site has not been determined by the district to be needed for use as a school site.

II.5.4.5 LIBRARIES

II.5.4.5.1 Threshold Standard

In the area east of I-805, the city shall construct, by buildout (approximately year 2030) 60,000 Gross Square Feet (GSF) of library space beyond the citywide June 30, 2000 GSF total. The construction of said facilities shall be phased such that the city will not fall below the citywide ratio of 500 GSF per 1,000 population. Library facilities are to be adequately equipped and staffed.

II.5.4.5.2 Service Analysis

The City of Chula Vista Library Department provides library facilities.

II.5.4.5.3 Project Processing Requirements

The PFFP is required by the Growth Management Program to address the following issues for Library services:

1. Identify phased demands in conjunction with the construction of streets, water and sewer facilities.
2. Specifically identify facility sites in conformance with the Chula Vista Library Master Plan.

II.5.4.5.4 Existing Conditions

The City provides library services through the Chula Vista Public Library at Fourth and "F" Street (Civic Center), the South Chula Vista Library in the Montgomery/Otay planning area, and the library at the EastLake High School. The Castle Park and Woodlawn Libraries have been closed. The existing and future libraries are listed on the Table G.1 and Table G.2, respectively.

Table G.1
Existing Library Facilities

Existing Libraries	Square Footage
Civic Center	55,000
South Chula Vista	37,000
EastLake	10,000
Total Existing Square Feet	**102,000**

II.5.4.5.5 Adequacy Analysis

Using the threshold standard of 500 square feet of library space per 1,000 population, the demand for library space based on Chula Vista's estimated population (beginning in 2008) of of 229,613[20] is approximately 114,807 square feet. Chula Vista currently provides 102,000 square feet of library space. This represents a 12,807 square foot deficit. The demand by the 2015 forecasted population of 257,874 is approximately 129,938 square feet. Comparing this demand to the existing library square footage of 102,000 square feet results in a deficit of

[20] 2008 GMOC Annual Report

approximately 27,784 square feet unless the Rancho Del Rey Library is completed before 2015. The Chula Vista General Plan update (2005) identifies a build-out population of 296,900 (incorporated boundaries). This population will require approximately 148,450 square feet of Library Facilities.

The 1998 Chula Vista Library Master Plan Update addresses such topics as library siting and phasing, the impacts of new technologies on library usage, and floor space needs. The plan calls for the construction of a full service regional library of approximately 30,000 square feet in the Rancho del Rey area at the corner of Paseo Ranchero and East H Street and the construction of a second full service regional library of similar size in the Otay Ranch Eastern Urban Center (EUC). Currently, it is unknown when sufficient funds will become available for the construction of the Rancho del Rey Branch Library. Preconstruction planning and design have been completed. Future library facilities are listed in the following table:

Table G.2
Future Library Facilities

Future Libraries	Square Footage	Estimated Cost
Rancho Del Rey Library (First regional library) @ 30,000 sf	30,000*	$30,000,000±
Otay Ranch EUC Library (Second regional library) @ 30,000 sf	30,000**	Unknown
Estimated Total Future Net Square Feet	**50,000**	
Total Master Plan Library Square Feet (existing and future)	**150,000**	

* Assumes construction of the first 30,000-square foot regional library by 2015.

** Assumes construction of the second 30,000-square foot (minimum size) regional library and the closure of the 10,000-square foot EastLake library, per the Chula Vista Public Library Master Plan.

Table G.3 highlights existing plus forecasted project demands for library space as compared to the existing and scheduled library space as well as the impact of the EUC Project on library facilities. The project can be accommodated in the projected Regional Library space.

Table G.3
EUC SPA
Forecasted Library Space Demand vs. Supply

	Population[21]	Demand Square Footage	Supply Square Footage	Above/(Below) Standard
Estimated Existing Citywide 1/1/08	229,613	114,807	102,000	(12,807)
First Regional Library (Rancho del Rey) 2015			30,000	16,347
Forecasted Projects to 2015	28,261	14,131		
Subtotal	**257,874**	**128,938**	**132,000**	**3,540**

For the fourth consecutive year, the City has not complied with the threshold standard of providing 500 gross square feet of library facilities per 1000 people. There is an urgency to begin construction of the Rancho Del Rey library branch.

[21] 2008 GMOC Annual Report

The Library Threshold Standard Implementation Measure requires that the City Council formally adopt and fund tactics to bring the library system into conformance, and that construction, or another actual solution, shall be scheduled to commence within three years of the threshold not being satisfied (June 2007). However, it is important to note that although the city is out of compliance with the Library Threshold Standard the library system is not struggling with a lack of square footage. According to library staff, the current square footage appears to be adequately serving the city's population. Rather than a lack of space the city's public library system is struggling with the following contraints:

- Lack of conveniently located facilities to serve the east side of Chula Vista (the most significant influencing factor on library use is proximity of the facility to the user),
- The public's demands for restoration of library hours which were lost during the last round of budget cuts;
- Adequate computer facilities, both equipment and infrastructure quality at the Civic Branch, and the number of stations, as well as speed of connection at all library facilities.

The Public Library System is not experiencing significant issues due to a lack of square footage available (i.e., a failure to meet the threshold). The city's libraries are experiencing significant customer service issues directly related to location of branches, hours and equipment availability and quality.

The project will generate a total library demand of approximately 3,885 square feet, which can be accommodated in the projected planned total square footage of library space (approximately 30,000 square feet).

11.5.4.5.6 Financing Library Facilities

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 7, 2006, by adoption of Ordinance 2887. The Public Facilities Development Impact Fee (PFDIF) is adjusted every October 1st pursuant to Ordinance 3050. The Library Public Facilities DIF Fee for Multi-Family Development is $1,413/unit (see Table B.7)[22]. This amount is subject to change as it is amended from time to time. The project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the estimated Library Fee obligation at buildout is $4,214,979.

Table G.4
Library Fee For EUC

Phase	Number of Multi Family DUs	Library Fee $1,413/DU	Library Fee for EUC
Blue	773	$1,092,249	$1,092,249
Yellow	1,023	$1,445,499	$1,445,499
Green	540	$763,020	$763,020
Orange	647	$914,211	$914,211
Total	**2,983**	**$4,214,979**	**$4,214,979**

[22] Fee based on Form 5509 dated 9/16/2008. Actual fee may be different, please verify with the City of Chula Vista at the time of building permit.

The projected fee illustrated in Table G.4 is an estimate only. Actual fees may be different. PFDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

11.5.4.5.7 Threshold Compliance and Recommendations

In it's 2007 Annual Report, the GMOC noted the need to update the 1998 Library Master Plan to reflect increased library needs generated by projected build-out population from the 2005 General Plan Update. The GMOC also recommended that the update consider changing trends to define the adequacy of library facilities and equipment, and what constitutes adequate staffing and hours of operation. Once an updated baseline is established, the plan would recommend how to most effectively and efficiently achieve the thresholds, both in relation to new facilities and in regards to updating existing facilities, given projected infill development.

Based upon the analysis contained within this section, the city's current library facilities (approximately 102,000 square feet) are approximately 12,807 square feet below the threshold standard (See Table G.3). The completion of the Rancho Del Rey Library will accommodate the EUC and other 2015 forecasted projects. To meet the city's Library Threshold Standard the Rancho Del Rey Library should be completed as soon as possible. Construction of the Rancho Del Rey Library or the EUC Library will bring the city back into compliance with the Libraries Threshold Standard.

1. Prior to the issuance of each building permit for residential dwelling units unless stated otherwise in a development agreement, the EUC Developer shall pay the Public Facilities DIF for library facilities at the rate in effect at the time of building permit issuance.
2. Prior to the approval of the final map containing Lot 7, the Applicant shall deliver a site for the public library and associated library parking and /or condominium air space to accommodate a library of approximately 30,000 square feet in a manner acceptable to the Library Director.
3. Subject to approval of the City Council, in lieu of paying the required impact fee, the Applicant may satisfy that requirement through a written agreement by which the Applicant agrees to either pay the fee or build the facility in question, pursuant to the terms of the agreement.

II.5.4.6 PARKS, TRAILS AND OPEN SPACE

II.5.4.6.1 Park Threshold Standard

Three (3) acres of neighborhood and community parkland with appropriate facilities shall be provided per 1,000 residents. This standard is specified in Section 17.10.040 of the Chula Vista Municipal Code.

II.5.4.6.2 Service Analysis

The City of Chula Vista provides public park and recreational facilities and programs through the Development Services, Public Works, and Recreation Departments which are responsible for the acquisition and development of parkland. All park development plans are reviewed by City staff and presented to the Parks and Recreation Commission for review. A recommendation is made by this Commission to the deciding body, the City Council.

The Otay Ranch Parks and Recreation Facility Implementation Plan was adopted by the City Council on October 28, 1993. This plan identifies the parks facility improvement standards for the Otay Ranch.

The City Council approved the Chula Vista Parks and Recreation Master Plan in November 2002. The Plan provides guidance for planning, siting and implementation of neighborhood and community parks.

II.5.4.6.3 Project Processing Requirements

1. Identify phased demands in conformance with the number of dwelling unit's constructed, street improvements and in coordination with the construction of water and sewer facilities.
2. Specific siting of the facility will take place in conformance with the EUC Urban Parks, Recreation, Open Space, and Trails Plan.
3. Site/s reserved for park purposes within the project.
4. Compliance with the Otay Ranch Resource Management Plan.

II.5.4.6.4 Existing Conditions

The existing and future parks as depicted in the Park and Recreation Element of the General Plan and as updated by the inclusion of more recent information are contained in the city's Parks and Recreation Master Plan.

II.5.4.6.5 Project Park Requirements

Compliance with Public Park Standards

The EUC project generates an estimated population of 7,676 (2,983 dwelling units x 2.58[23] population factor). To meet the city threshold requirements the amount of parkland dedicated is based on a standard of 3 acres per 1,000 populations (see Table H.1). The standard is based on State of California Government Code 66477, also known as the Quimby Act that

[23] Provided by the Chula Vista Planning Department.

allows a city to require by ordinance, the dedication of land or payment of fees for park or recreational purposes.

Table H.1 Quimby Act Parkland Requirements		
EUC SPA Population	**Standard**	**Parkland Acres Required**
7,696	3 acres per 1,000 population	23.09

All new development in the City of Chula Vista is subject to the requirements contained in the City's Parkland Dedication Ordinance CVMC Chapter 17.10. The ordinance establishes fees for park land acquisition and development, sets standards for dedication and establishes criteria for acceptance of parks and open space by the City of Chula Vista. Fees vary depending upon the type of dwelling unit that is proposed. There are four types of housing; Single Family dwelling units (defined as all types of single family detached housing and condominiums), Multi-Family dwelling units (defined as all types of attached housing including townhouses, attached condominiums, duplexes, triplexes and apartments), Mobile Homes and Hotel/Motel Rooms. Multi-Family Housing is defined as any free-standing structure that contains two or more residential units. Parkland dedication requirements are shown below on Table H.2.

Table H.2 City of Chula Vista Parkland Dedication Ordinance Standards		
Dwelling Unit Type	**Land Dedication per Unit**	**Dwelling Units per Park Acre**
Multi-Family	341 sf/du	128 du/ac.

Table H.3 EUC SPA Plan Preliminary Parkland Dedication Requirements City Ordinance Applied to Planning Prediction of Unit Numbers and Types			
Dwelling Unit Type*	**Number of D.U.**	**Parkland Required/DU**	**Required Acres**
Multiple Family	2,983	341 sf/du	23.36
TOTALS	**2,983**		**23.36**

* Dwelling unit type - Note that number and type of units listed reflect 'Land Use Designations' listed in the Otay Ranch GDP, since this level of information is all that is available at the time of this document's preparation irrespective of underlying zoning district. Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit. Definitions of dwelling unit types used for calculating park obligations are based upon from the City's Parkland Dedication Ordinance CVMC chapter 17.10. These definitions differ from the way unit types are defined from a planning, land-use and zoning perspective that uses unit density per acre to categorize the type of unit. CVMC chapter 17.10 uses product type to categorize the type of unit distinguishing between attached and detached units. Consequently, the figures in this chart are preliminary estimates, and shall be recalculated at the time when the obligations are due as determined by chapter 17.10 of the CVMC unless stated otherwise in a separate parks or development agreement.

The City's Parklands and Public Facilities Ordinance (CVMC 17.10) is based on the Quimby Act. Based on the City's Parklands and Public Facilities Ordinance, the parkland requirement is approximately 23.36 acres (see Table H.3).

The project phasing (Table B.5) and Site Utilization Plan (Exhibit 4) identifies the park designations and acreage that are also shown in Table H.4. Table H.4 also identifies the phase of development in which the park will be constructed and the park acres that the city has determined will be given credit for purposes of satisfying the project's parkland dedication as measured against the City's Parkland Dedication Ordinance. The Neighborhood Park will be graded and offered for dedication in whatever development phase is initiated by the project developers. A detailed park agreement between the Developer and the City of Chula Vista will provide the details of the phasing and timing for the individual parks. The City's Parkland Dedication Ordinance requirements for the project are outlined in Table H.4.

Table H.4
EUC SPA Plan
Park Acres and Eligible Credits[24]

Park Identification	Net Acreage	Phase	Proposed Credit %	Eligible Credit Ac.
Northeast P-1	1.97	Blue	100%	1.97
Town Square P-2	2.28	Green	100%	2.28
Civic P-3	1.62	Green	100%	1.62
Southeast P-4	1.51	Yellow	100%	1.51
South Central P-5	1.90	Yellow	100%	1.90
South West P-6	3.60	Yellow	100%	3.60
Office Plaza, Jogging Path & Promenades	2.75	Blue & Yellow	100%	2.75
Total Provided				**15.63**
In Lieu Fees Reinvested On-site				**5.88[25]**
In Lieu Fee - Off-site Facilities				**1.85[26]**
Totals				**23.36**
EUC SPA PAD Requirements				**23.36**

II.5.4.6.6 Park Adequacy Analysis

Table H.5 is a comparison of park acreage demands and supply east of Interstate 805 for existing, approved projects, as well as the phased addition of the project. A review of the existing and approved park demands for Chula Vista east of I-805 including the project indicates a projected 2012 demand of approximately 358.04 acres of Neighborhood and Community Park. The 2012 projected supply of park acreage east of I-805, 430.73 acres, is 72.69 acres more than the projected demand.

[24] Parkland fee and acreage obligations are subject to change pending changes in the dwelling unit types and numbers, or clarification of unit type at the time when obligations are due unless otherwise stated in a parks or development agreement.

[25] In Lieu Fee of $9,464,337 (identified in the SPA).

[26] In Lieu Fee of $2,892,939 of which 1 million must be paid at the first Final Map containing residential units. The remaining fee must be paid on a per residential-unit basis on successive Final Maps in accordance with the Park Land Dedication Ordinance unless otherwise stated in a parks or development agreement.

Table H.5 Estimated Park Acreage Demand Compared to Supply East of Interstate 805					
	Population East of I-805[27]	**Demand Park Acres**[28]	**Existing Park Acres**	**Eligible Credit Acres**	**Net Acres +/-Standard**
Existing to 12/2007	112,502	337.51	389.43[29]	389.43	+51.92
Forecasted Projects 2007 to 2012	6,845[30]	20.53	41.30[31]	41.30	+20.77
Total	**119,347**	**358.04**	**413.52**	**413.52**	**+72.77**

Table H.6
EUC SPA
Park Supply by Phase

Phase	MF DU Type[1]	Demand Park Acres	Supply Park Acres	In Lieu Fee Onsite	Eligible Credit Acres	Net Acres +/- Standard	Project Cumulative	Phase
Blue	773	6.05	3.06[2]	1.15	1.85	6.06	0.01	0.01
Yellow	1,023	8.01	8.67[3]	3.26	0	11.93	3.92	3.93
Green	540	4.23	3.9	1.47	0	5.37	1.14	5.07
Orange	647	5.07	0	0.00	0	0	-5.07	-0.00
Total	**2,983**	**23.36**	**15.63**	**5.88**	**1.85**	**23.36**	**-0.00**	**-0.00**

[1] Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit. Definitions of dwelling unit type used for calculating park obligations are based upon from the City's Parkland Dedication Ordinance CVMC chapter 17.10. These definitions differ from the way unit types are defined from a planning, land-use and zoning perspective that uses unit density per acre to categorize the type of unit. CVMC chapter 17.10 uses product type to categorize the type of unit distinguishing between attached and detached units. Consequently, the figures in this chart are preliminary estimates, and shall be recalculated at the time when the obligations are due as determined by chapter 17.10 of the CVMC unless stated otherwise in a separate parks or development agreement.

[2] Blue Phase assumes 1.09 acres of Office Plazas and/or Jogging Path & Promenades.

[3] Yellow Phase assumes 1.66 Acres of Office Plazas and /or Jogging Path and Promenades.

The proposed development of the EUC project requires per the City of Chula Vista Parkland Dedication Ordinance approximately 23.36 acres (see Table H.3) for public parkland. The EUC SPA plan identifies 15.63 acres net for public parkland. The 15.63 acres of the 23.36-acre community parkland will be met by the Developer dedicating and constructing on-site parks. The difference in the proposed park requirements and the obligation will be accommodated through a combination of in-lieu fees reinvested on-site and off-site in lieu fees paid by the Developer. A detailed park agreement between the Developer and the City of Chula Vista will provide the details of the eligible credits.

[27] Population figures are from the 2007 GMOC Annual Report.

[28] Based on City Threshold requirement of 3 acres of neighborhood and community parkland per 1,000 residents east of I-805.

[29] Existing Park Acreage from the 2007 GMOC Annual Report.

[30] Population figure derived from the Table B.1.

[31] Park acreage from Park Acreage Table from the 2007 GMOC Annual Report.

II.5.4.6.7 Parkland, Open Space and Trails

The Otay Ranch GDP established a four-tiered system of parks to be provided throughout the community to meet its goals and thresholds. The four tiers are: 1) park amenities in town square parks; 2) active play facilities in neighborhood parks; 3) community-level playing fields in community parks; and, 4) region-wide active and passive recreational areas in designated regional parks. Open space, community and regional parks are designated at the GDP level and only the pedestrian open space/trail corridor connecting from Wolf Canyon in Village Seven through the EUC to Salt Creek via Village Eleven is identified in the Eastern Urban Center SPA at this level.

The GDP Park and Open Space Policies for the EUC state that parks will be established at the SPA Plan level. The amount of parkland required by the local park code, Chapter 17.10 CVMC, and the amount provided are indicated in Tables H.3 and H.4.

The framework strategy prepared for the "University Study Area" is an ongoing process, but the framework strategy report relative to the EUC was accepted by the City Council on May 1, 2007. However, consistent with the General Plan and GDP policies, the EUC SPA Plan has included variations from conventional parkland standards to most appropriately meet the needs of EUC residents within the urban style environment of the EUC.

The EUC is planned by the developer to serve a different function (inclusion of regional services and activities) and have a distinctive urban character (densely populated cultural and commercial center of Otay Ranch) than the Otay Ranch Villages, which are primarily suburban residential. The proposed structure of the EUC reflects this character. It comprises small blocks that flank a central spine of more intense urban uses: cultural, commercial, and residential. High-density residential uses predominate blocks to the north and south of this area, while commercial and office uses extend to the west and northwest. The EUC, like other development in Otay Ranch, is intended to provide a pedestrian-friendly environment. This demographic mix chooses urban environments because of their density and intensity. The EUC will offer residents convenient access to the cultural, commercial, and employment opportunities that are characteristic of urban centers. Future residents can live, work, and play in a focused urban setting that includes urban open space.

The EUC's urban function and character is extends to its proposed park and recreation facilities. Parkland at the end Main Street provides a visual focus for both Main Street and the Civic Park. Small urban parks distributed throughout the EUC's neighborhood districts, linked with widened pedestrian corridors as park promenades, serve as "pedestrian-pocket" parks that are compatible with the EUC's fine grain and convenient to its residents. In addition, the Regional Trail extends through the EUC, providing trail users the opportunity to experience this urban environment. The Business District contains internal plazas that are linked to the jogging trails and primary pedestrian grid within the balance of the EUC. Additional recreation facilities are provided in the mixed-use context of the EUC (see Exhibit 10).

A. <u>Required Park Land & Improvements</u>

New development is required to provide public parkland, improved to City standards, and dedicated to the City and/or provide in lieu fees, based on the city's Parkland Dedication Ordinance. The dedication requirements implement the Quimby Act 3 acre/1000 population standard. In addition to improved parkland, additional or specialized recreational facilities or payment of in lieu fees can be provided and credited against the

parkland requirement on an acre basis. The projected dedication and/or fee requirement for the EUC SPA, based on the proposed target number of units and the assumed product types is 23.36 acres as detailed in Table H.3.

The EUC SPA Plan intends that all park requirements be met with a combination of on-site Parkland, In Lieu Fees reinvested on-site or paid for offsite improvements. The proposed amount of park acreage and additional credits eligible for credit and to be credited to the project is the 23.36 acres required. The park area provided will be in various locations and various facilities as listed Table H.4 and illustrated in Exhibit 10. In addition to the provision of parkland, the EUC proposes to exceed the standard level of improvement to be provided to meet the park provisions requirements.

The EUC Developer has proposed to exceed typical park improvements by providing high quality, exceptionally detailed parks and recreation facilities. Such improvements provided beyond the standard level of improvement serve to meet the recreational needs of future EUC residents. Exceeding typical park improvements will achieve "place making," which is an essential element in creating an urban center.

Trails that are internal or contiguous to a park shall be included as park acres for determination of parkland credit.

The eligibility of any proposed EUC facility for park credit will be determined based on a detailed park agreement between the Developer and the City of Chula Vista. Additional details regarding the proposed parks and potential opportunities are provided in the EUC Parks Master Plan. Compliance with the park dedication requirements will be monitored at each applicable final map and building permit within the project.

B. <u>Open Space</u>

While generally accepted standards have been established for the provision of acreage and the function of hierarchy of parks, the "need" for open space is more difficult to quantify. Usually the need, amount and location of open space is determined by the natural environmental conditions of the land and facility related needs such as detention basins, future road rights-of-way, and buffer space between unrelated land uses, etc. Steep slopes and sloping lands with unstable geologic conditions are obvious candidates for open space, as are noise buffer areas along major traffic ways. But unlike suburban grading, some of these slopes will be retained by walls or by the buildings themselves.

The location and general extent of open space within Otay Ranch is determined at the GDP level of planning. Open space within the Eastern Urban Center SPA will be limited to slopes and landscaping along the freeway and major roads as required by the Otay Ranch GDP. Typical landscaped or natural open space is inconsistent with the highly urban character of the EUC; "urban open space" will by provided throughout the project in the form of plazas, greenbelt trails and similar public spaces integrated in the built environment. Additional project open space will by provided in conformance to the requirements specified in the Form Based Code. All proposed improvements are processed by the Landscape Architectural section and subject to approval by the Director's of Planning and Engineering.

Preservation of sensitive habitat is not a significant issue for the Otay Ranch Eastern Urban Center SPA. There are no sensitive habitat types requiring protection, preservation or enhancement in the planning area. The property has been historically

used for agriculture production, cattle grazing, is crossed by a system of dirt roads and old cattle trails, and consists of bare dirt and non-native grasslands. Non-native grasslands can be used as Raptor foraging habitat and this is discussed in the EUC SPA Plan.

C. Park & Open Space Implementation

All of the open space and public parks will be controlled through open space easements and/or dedication to the City, district or homeowners' association. Maintenance of the public neighborhood park will be provided by the city general fund or a private entity, subject to identification of a funding source. Community Facility, Open Space and/or Landscape Maintenance Districts may be established to ensure proper management and operation of public right-of-way improvements. Private open space areas and slopes within "common interest" residential projects will be designated common areas and maintained by homeowners' associations. Similar property owners' associations may be established for non-residential projects which include common areas requiring on-going maintenance.

The phasing of community development concurrent with the provision of adequate park land and improvements is specifically detailed in a Park Agreement which will be entered into by the Developer and the City of Chula Vista. The schedule of improvements has been developed to maintain an adequate level of service for Otay Ranch EUC residents and businesses. The mechanism to provide dedication and improvement of public park areas is expected to be subdivision map conditions. All parks in the EUC will be provided on a "turn key" basis. The Parks and Recreation Master Plan for the EUC further defines the process for park design and implementation.

The details of the implementation and maintenance will be dealt with a park agreement between the Developer and the City, which will include provisions to provide fully improved parks to the City.

D. Otay Ranch Resource Management Plan (RMP)

In accordance with the RMP, the project would convey 1.188 acres of habitat to the Otay Ranch Preserve for each acre of development within the EUC, in accordance with existing conveyance agreements. Conveyance is based on a development land area of approximately 177.63 acres, which is the SPA Plan's land area (approximately 206.6 acres), less land area to be used for parks, school, fire station, library, and BRT (a total of approximately 28.87 acres). At 1.188 acres of conveyance per developed acre, the total conveyance obligation would be approximately 211.00 acres. Preserve conveyance areas are illustrated in Table H.7. The acreages are estimates only; actual acreages may be different when calculated at the time of final map.

Table H.7 EUC Conveyance Obligation	
Development	**Acreage**
Total Developable EUC Land Uses	206.6
Common Uses Not Calculated as Part of Conveyance Obligation:	
Parks	12.88
Other Amenities	2.75
Regional Trail	0.95
BRT	2.22
School	6.00
Fire Station	1.07
Library	3.00
Subtotal Acreage of Common Uses	28.87
Total Developable Acreage (minus acreage for Common Uses)	177.73
Per Acre Conveyance	1.188
Estimated Total Conveyance Acreage	211.14*
** Final conveyance acreage will be determined at the time of final map.*	

E. <u>Trails and Pedestrian Connections</u>

The SPA Plan provides for trails and pedestrian linkages within and beyond the EUC. Within the EUC, parks are accessed by the network of sidewalks, including a circuit walk and Main Street Promenade and by through-block paseos. The Civic Park, Town Square Park and the South Central Park are also directly connected by their proximity and a 40-foot wide paseo between Town Square Park and the South Central Park. Connections of the EUC with other Otay Ranch villages and parks are established by the Village Pathway and Regional Trail.

1. Circuit Walk, Main Street Promenade, and Jogging Path
   The circuit walk and Main Street Promenade are proposed 20-foot wide sidewalks with added landscaping and street trees, which serves as an effective visual and physical link between the parks. A jogging path on the western side of the EUC links the office plazas with the Southwest Park.

2. Paseos
   The SPA Plan proposes paseos are through-block pedestrian connections, and will comprise a paved pathway along a landscaped corridor (see the EUC Form Based Code for illustrations). A 40-foot wide paseo directly links the Town Square Park and the South Central Park. The location and alignment of other paseos will be proposed when adjacent development areas are planned in greater detail.

3. Regional Trail
   The Regional Trail provides pedestrian and bicycle access through the Otay Ranch Villages and EUC. The Otay Ranch GDP provides for the Regional Trail to pass through the EUC, connecting west to Village Seven and east to Village Eleven, subject to the description and character as defined in the adopted General Development Plan. The segment of Regional Trail in the EUC will take the form of a 15-foot wide/10-foot clear corridor (see SPA Plan for details). This segment of the Trail through the EUC fills a critical gap by providing direct access westward

through Village Seven, to the planned Community Park in Villages Two and Four. The Trail enters the EUC in the west from Village Seven along Bob Pletcher Way, passes through the Civic Plaza and Main Street Promenade to Town Square Park, and then proceeds south along the Paseo to connect to the South Central Park. It continues along to the east, connecting with the Southeast Park and then turns south until it connects to the pedestrian bridge in Village Eleven in the southeastern portion of the EUC (see Exhibit 11).

4. Village Pathway
   Village Pathways are inter-village cart and pedestrian paths that link the villages in Otay Ranch and also provide access to the planned regional transit stations in Otay Ranch. The Village Pathway follows Birch Road along the northern edge of the EUC, and connects to Village Seven to the west, and Village Eleven to the east (see Exhibit 11).

   The Village Pathway along Birch Road features a 15-foot wide paved surface for pedestrian, bicycle, and cart use. Along the Birch Road frontage, the pathway assumes an urban feel. Access to the EUC occurs where the Pathway intersects streets "A" and "C."

5. Surrounding Pathways and Pedestrian Connections
   In addition to the Village Pathway along Birch Road, community-serving paths are located along both Eastlake Parkway and Hunte Parkway. These paths are contained within 15-foot wide corridors. EUC residents can access the paths from major north-south and east-west streets in the EUC, and direct access points into fronting development sites will be encouraged.

II.5.4.6.8 Recreation

The project SPA provides the park, recreation, open space and trails facilities within the plan area. The Otay Ranch Parks and Recreation Facility Implementation Plan (adopted by the City Council on October 28, 1993) identifies the parks facility improvement standards for Otay Ranch. The City of Chula Vista Park and Recreation Department conducted subsequent facilities needs assessments and proposed some modifications to the adopted Otay Ranch Plan. Modifications to the adopted Otay Ranch Plan are included in the City of Chula Vista Parks and Recreation Master Plan, November 12, 2002. The SPA Park Master Plan identifies the proposed types, quantities and location of the facilities provided at each park site in the SPA Plan area. The variety of recreational elements proposed and the recreational opportunities envisioned are discussed in the Urban Parks, Recreation, Open Space & Trails Plan chapter of the SPA Plan.

II.5.4.6.9 Financing Park, Open Space & Trail Facilities

Chapter 17.10 of the Chula Vista Municipal Code, as amended unless stated otherwise in a parks or development agreement, governs the financing of parkland and improvements. Included as part of the regulations are Park Acquisition and Development (PAD) fees established for the purpose of providing neighborhood and community parks. The Ordinance provides that fees are paid to the City prior to approval of a final subdivision map, or in the case of a residential development that is not required to submit a final map, at the time of the final building permit application.

The difference between 15.63 and 23.36 acres (7.73 acres) would be provided through the payment of in lieu fees. A portion of the in lieu fees will be reinvested into the previously mentioned 15.63 acres of parkland, an amount representing 5.88 acres of developed parkland (representing 25 percent of overall park obligation). Another portion of the in lieu fees will go toward the delivery of recreational facilities at an off-site location, an amount representing 1.85 acres of developed parkland. CVMC 17.10.070 allows the City to deem that a combination of dedication of parkland and the payment of in lieu fees would better serve the public and the park and recreation needs of future residents of the project if in the judgment of the City, suitable land does not exist. Furthermore CVMC states that the amount and location of the land or in lieu fees, or combination thereof, shall bear a reasonable relationship to the use of the park and recreational facilities by the future inhabitants of the subdivision.

Table H.8
Park Development Component (PAD) Fees
Development In-Lieu Component Only

Development Phase	Multi-Family Dwelling Units	Development Component of PAD Fee's/DU Total	Total Fees Due
		MF @ $3,157	
Blue	773	$2,440,361	$2,440,361
Yellow	1,023	$3,229,611	$3,229,611
Green	540	$1,704,780	$1,704,780
Orange	647	$2,042,579	$2,042,579
Total	**2,983**	**$9,417,331**	**$9,417,331**

Note: Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit unless stated otherwise in a separate parks or development agreement. Definitions of dwelling unit type used for calculating park obligations are based upon from the City's Parkland Dedication Ordinance CVMC chapter 17.10. These definitions differ from the way unit types are defined from a planning, land-use and zoning perspective that uses unit density per acre to categorize the type of unit. CVMC chapter 17.10 uses product type to categorize the type of unit distinguishing between attached and detached units. Consequently, the figures in this chart are preliminary estimates, and shall be recalculated at the time when the obligations are due as determined by chapter 17.10 of the CVMC unless stated otherwise in a separate parks or development agreement.

PAD Fees are subject to periodic annual increases. Table H.8 identifies the fees calculated for the development component of the PAD fees while Table H.9 identifies the fees calculated for the parkland acquisition component of the PAD fees. These fees are estimates only and are dependent upon the actual numbers of units filed on the final map. Fees are also subject to change by the City Council. Multi-Family dwelling units are defined as all types of attached housing including townhouses, attached condominiums, duplexes, triplexes and apartments.

Table H.9 Park Acquisition Component (PAD) Fees Acquisition In-Lieu Component Only			
Development Phase	**Multi-Family Dwelling Units**	**Acquisition Component of PAD Fees/D.U. Total**	**Total Fees Due**
		MF @ $9,408	
Blue	773	$7,272,384	$7,272,384
Yellow	1,023	$9,624,384	$9,624,384
Green	540	$5,080,320	$5,080,320
Orange	647	$6,086,976	$6,086,976
Total	**2,983**	**$28,064,064**	**$28,064,064**

Note: Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit unless stated otherwise in a separate parks or development agreement. Definitions of dwelling unit type used for calculating park obligations are based upon from the City's Parkland Dedication Ordinance CVMC chapter 17.10. These definitions differ from the way unit types are defined from a planning, land-use and zoning perspective that uses unit density per acre to categorize the type of unit. CVMC chapter 17.10 uses product type to categorize the type of unit distinguishing between attached and detached units. Consequently, the figures in this chart are preliminary estimates, and shall be recalculated at the time when the obligations are due as determined by chapter 17.10 of the CVMC unless stated otherwise in a separate parks or development agreement.

II.5.4.6.10 Financing Recreation Facilities

Chapter 17.10 of the CVMC, which requires the collection of fees from residential developments to pay for parkland acquisition and various park facilities within the City of Chula Vista, is subject to changes by the City Council from time to time. On October 25, 2005, the City Council approved Ordinance 3026 relating to the periodic annual review and adjustment of park acquisition and development fees. Approval of Ordinance 3026 resulted in an increase fee for parkland acquisition. In July 23, of 2004 the Chula Vista City Council approved Ordinance 2945. This Ordinance amended Chapter 17.10 of the CVMC, which requires the collection of In-Lieu Park Acquisition and Development Fees from residential developments that are not required to submit a subdivision map or parcel map.

Some of the previous council actions that contributed to an increase in the in-lieu fees for park development and land acquisition are Ordinances No. 2886 and 2887 (both approved on November 19, 2002). Ordinance 2886 amended Chapter 17.10 of the CVMC to update the Parks Acquisition and Development Fees. Ordinance 2887 amended Chapter 3.50 of the Municipal Code, as detailed in the *"Public Facilities DIF, November 2002 Amendment',* adding a new recreation component to the Public Facilities DIF, updating the impact fee structure and increasing the overall fee.

Chapter 17.10 of the Chula Vista Municipal Code, first adopted in 1971, details requirements for parkland dedication, park improvements and the collection of in-lieu fees (i.e., PAD fees) from developers of residential housing in subdivisions or in divisions created by parcel maps, both east and west of I-805. It is the responsibility of the developer to dedicate land for parks and develop all or a portion of the land as a neighborhood or community park. All parks must be designed and constructed to the City of Chula Vista regulations and to the satisfaction of the Director of General Services. Improvements that may be required by the city include:

- Drainage Systems
- Lighted Parking Lots
- Concrete Circulation Systems
- Security Lighting
- Park Fixtures *(drinking fountains, trash receptacles, bicycle racks, etc.)*
- Landscaping *(including disabled accessible surfacing)*
- Irrigation Systems
- Restrooms and Maintenance Storage
- Play Areas *(tot lots, etc.)*
- Picnic Shelters, Tables, Benches
- Utilities
- Outdoor Sports Venues *(tennis courts, baseball/softball fields. basketball courts, multi-purpose sports fields, skateboard and roller blade venues)*

In addition to parks-related items, a 1987 revision called for the dedication, within community parks, of major recreation facilities to serve newly developing communities, including:

- Community centers
- Gymnasiums
- Swimming pools

Historically, PAD fees have not been sufficient to construct these additional large capital items. However, major recreation facilities are now funded through a newly created component of the Public Facilities DIF. The major capital items to be included in the new component are: community centers, gymnasiums, swimming pools, and senior/teen centers. Based on the Parks and Recreation Master Plan, 140,595 square feet of major recreation facilities will be required to meet new development growth through build-out at a gross construction cost of over $32 million. Since the demand for major public recreation facilities is created by residential development, facilities costs are not spread to commercial/industrial development. Table H.10 provides an estimate of the Recreational PDIF Fees for the project.

Table H.10
EUC SPA
Public Facilities Fees for Recreation[32]

Development Phase	Multi-Family Dwelling Units	Recreation Fee $1,072/MF Unit	Total
Blue	773	$828,656	$828,656
Yellow	1,023	$1,096,656	$1,096,656
Green	540	$578,880	$578,880
Orange	647	$693,584	$693,584
Total	**2,983**	**$3,197,776**	**$3,197,776**

[32] The PFDIF Fee is subject to change as it is amended from time to time. The Recreation Fee is based upon the City of Chula Vista's Development Checklist for Municipal Code Requirements, Form 5509, and Revised September 16, 2008. The total number of dwelling units filed on the final map or for which building permits are required shall determine the actual fee amount unless stated otherwise in a separate parks or development agreement.

II.5.4.6.11 Threshold Compliance and Recommendations

A. Based upon the analysis contained in this section of the PFFP, the parks standard for both neighborhood and community parks measured on an area-wide basis east of Interstate 805 is projected to be met at the completion of the project.

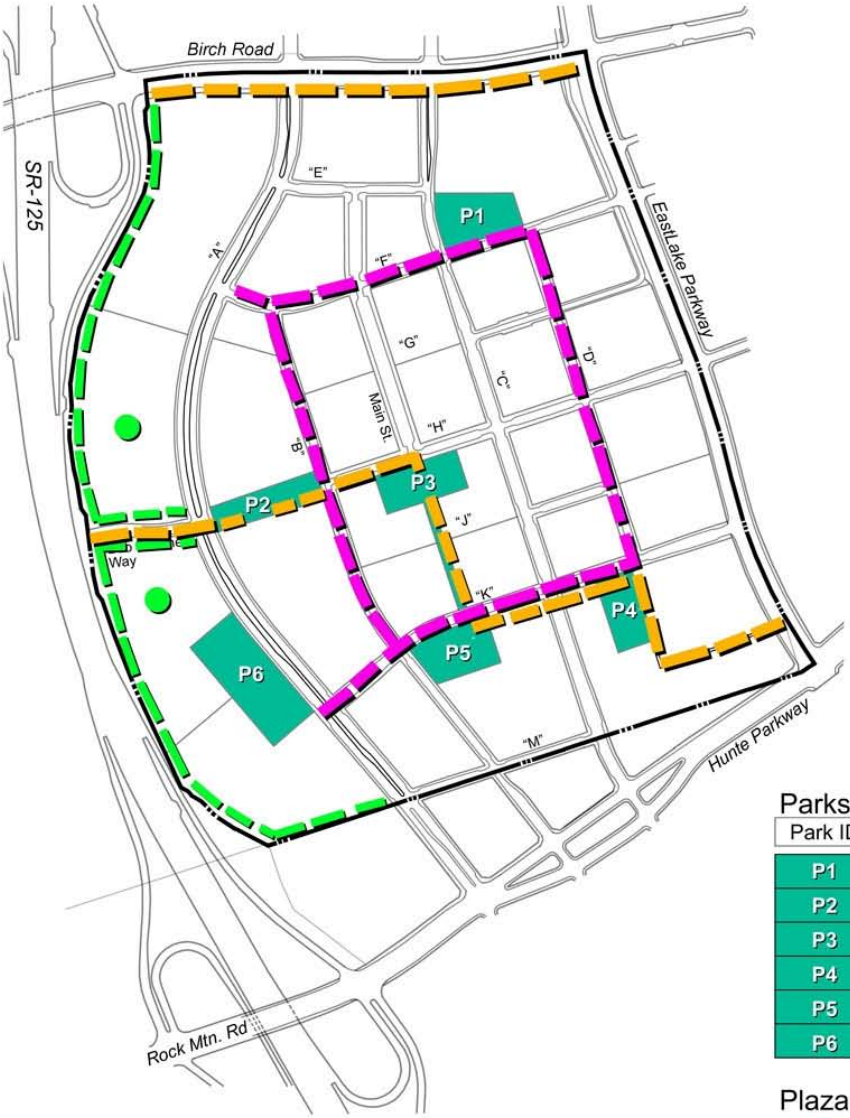
B. The Applicant may, subject to City Council approval, enter into a written agreement with the City identifying the Applicant's parkland acreage dedication, park development improvements and in lieu fee obligations, and the timing and method of satisfying those obligations. If the Applicant and the City enter into such an agreement, the Applicant may satisfy its parkland dedication, improvement and in lieu fee obligations pursuant to the terms of that agreement.

C. Prior to approval of the final map(s), or for projects not requiring a final map, prior to building permit approval, for residential projects, the Applicant(s) shall dedicate parkland and pay in lieu fees for the area covered by the final map(s). The delivery of said parkland and payment of in lieu fees shall be in accordance with the fees and phasing approved in the Public Facilities Financing Plan for the SPA Plan, subject to approval of the Directors of Recreation and Development Services.

D. Prior to issuance of each building permit for any residential dwelling units, the Applicant(s) shall pay recreation facility development impact fees (part of the Public Facilities Development Impact Fee) in accordance with the fees in effect at the time of building permit issuance and phasing approved in the PFFP for the SPA Plan, subject to approval of the Directors of Recreation and Development Services.

E. Prior to recordation of each final "B" map, the developer shall convey approximately 1.118 acres of habitat for each acre of development area as defined in the RMP, (a total of approximately 211.14 acres) to the Otay Ranch Preserve pursuant to the Otay Ranch Resource Management Plan. Conveyance of the habitat meets the city's threshold standard for conveyance of open space. The actual number of acres will be determined at the time of final map.

Parks



Parks

Park ID	Name
P1	Northeast "Interaction"
P2	Civic "Kenetic"
P3	Town Square "Performance"
P4	Southeast "Cycles"
P5	South Central "Light"
P6	Southwest "Motion"

Plazas & Connections

- Plazas
- Jogging Trail
- Circuit Walk
- Regional Trail & Village Greenway

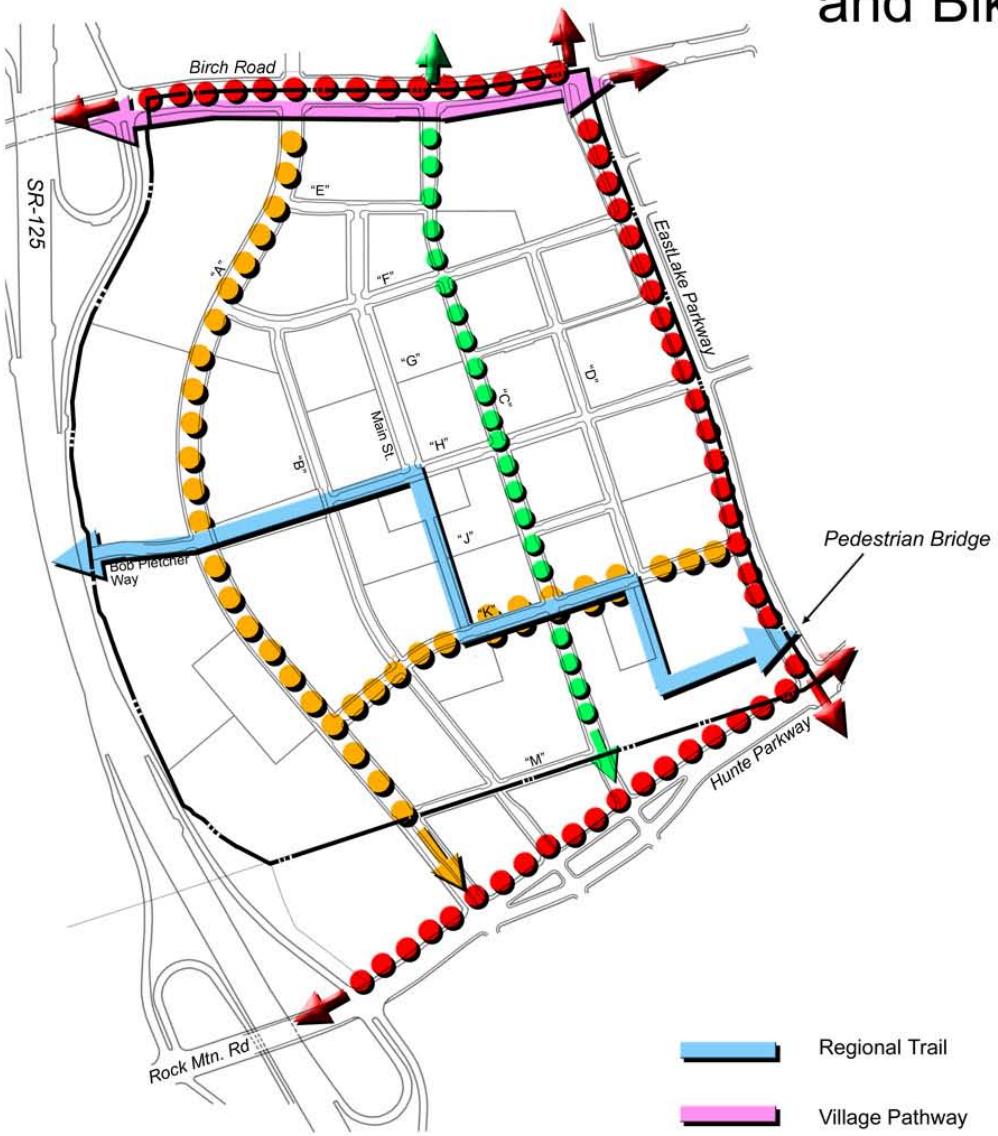
Note: *Refer to Parks Master Plan and Pedestrian Corridor Exhibits for additional details*

Eastern Urban Center
OTAY RANCH
CITY OF CHULA VISTA

Urban Design: RTKL
Cinti Land Planning
San Diego, CA (619) 223-7408
0 200 400 600

Exhibit 10

Regional Trails
and Bike Lanes



Regional Trail

Village Pathway

Inter-Village Connection

Regional Bike Lanes
(Emergency parking/bike lanes)

Bike Route
(14' widened travel lane)

Note: Due to low traffic speeds & volumes, streets not indicated as having specific provisions for bike lanes/routes can accomodate bicycle traffic as mixed flow.

Eastern Urban Center
OTAY RANCH

CITY OF CHULA VISTA

Urban Design: RTKL
Cinti Land Planning
San Diego, CA (619) 223-7408
0 200 400 600
10/20/08

Exhibit 11

II.5.4.7 WATER

II.5.4.7.1 Threshold Standard

1. Developer will request and deliver to the City a service availability letter from the Water District for each project, as defined by the City.

2. The City annually provides the San Diego County Water Authority, the Sweetwater Authority, and the Otay Water District with a 12 to 18 month development forecast and requests an evaluation of their ability to accommodate the forecast and continuing growth. The Districts' replies should address the following:
   a. Water availability to the City and Planning Area, considering both short and long term perspectives.
   b. Amount of current capacity, including storage capacity, now used or committed.
   c. Ability of affected facilities to absorb forecasted growth.
   d. Evaluation of funding and site availability for projected new facilities.
   e. Other relevant information the District(s) desire(s) to communicate to the City and GMOC.

The growth forecast and water district response letters shall be provided to the GMOC for inclusion in its review.

II.5.4.7.2 Service Analysis:

The Otay Water District (OWD) will provide potable and recycled water service for EUC SPA Plan area. The district has existing and planned facilities in the vicinity of the project site. Expanding the existing system can provide future water service.

The Eastern Urban Center Technical Water Study, Revised July 23, 2008, PBS&J, and the Otay Water District Water Supply Assessment and Verification Report, dated July 2007, by James F. Peasley, P.E., Water Resources Engineering Manager, Otay Water District is the basis for this section of the PFFP. The PBS&J report provides recommendations for improvements that are needed to provide potable and recycled water service to the proposed development and its alternatives. The Water Supply Assessment and Verification Report (WSA&V Report) includes an identification of existing water supply entitlements, water rights, water service contracts, or agreements relevant to the identified water supply needs for the EUC SPA project. Prior to the approval of the first final map the developer shall prepare a potable and reclaimed Subarea Water Master Plan (SAMP) and gain approval from the Otay Water District. The SAMP will be reviewed by the City of Chula Vista. The City's Fire Marshall and OWD shall review the SAMP prior to the first final map for the project. The SAMP will provide more detailed information on the project such as project phasing; pump station and reservoir capacity requirements, and extensive computer modeling to justify recommended pipe sizes. The OWD will not approve final engineering improvement plans until a SAMP has been approved for the project.

The design criteria implemented to evaluate the potable and recycled water systems for the project are established in accordance with the *Otay Water District Water Resources Master Plan, July 2002* (WRMP). The design criteria are utilized for analysis of the existing water system as well as for design and sizing of proposed improvements and expansions to the existing system to accommodate demands in the study area.

The OWD prepared the WSA&V Report at the request of the City of Chula Vista (City). The WSA&V Report identifies that the water demand projections for the proposed EUC SPA project are included in the water demand and supply forecasts within the Urban Water Management Plans and other water resources planning documents of the Otay WD, the San Diego County Water Authority (Water Authority), and the Metropolitan Water District of Southern California (Metropolitan). Water supplies necessary to serve the demands of the proposed EUC SPA project, along with existing and other projected future users, as well as the actions necessary to develop these supplies, have been identified in the water supply planning documents of the Otay WD, the Water Authority, and Metropolitan. Further, the WSA&V Report demonstrates and verifies that sufficient water supplies are to be available over a 20-year planning horizon, and in single- and multiple-dry years to meet the projected demand of the proposed EUC SPA project and the existing and other planned development projects within the Otay WD.

Senate Bills 610 (Chapter 643- Statutes of 2001) and Senate Bill 221 (Chapter 642. Statutes of 2001) amended state law effective July 23, 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 are companion measures, which seek to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers' prior to approval of specified large development project. Both statutes also require this detailed information be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. Both measures recognize local control and decision-making regarding the availability of water for projects and the approval of projects. The OWD Board of Directors approved WSA&V Report for EUC meets the requirements of Senate Bills 221 and 610.

II.5.4.7.3 Project Processing Requirements

The SPA Plan and the PFFP are required by the Growth Management Program to address the following issues for water services.

1. Identify phased demands in conformance with street improvements and in coordination with the construction of sewer facilities.
2. Identify location of facilities for on-site and offsite improvements in conformance with the master plan of the water district serving the proposed project.
3. Provide cost estimates and proposed financing responsibilities.
4. Identify financing methods.
5. A Water Conservation Plan shall be required for all major development projects (50 dwelling units or greater, or commercial and industrial projects with 50 EDUs of water demand or greater. The applicant shall submit a water conservation plan along with the SPA Plan Application.

11.5.4.7.4 Existing Conditions

Most of the water used in the San Diego County Water Authority (SDCWA) area is imported from the Metropolitan Water District (MWD). MWD receives its water supply through the State Water Project and the Colorado River Aqueduct. The SDCWA conveys water from the MWD to local purveyors within San Diego County.

The EUC SPA area is within the OWD Central Service Area. Potable water is delivered to the Central Service Area via the Second San Diego Aqueduct. Water is delivered at Aqueduct connections Number 10 and Number 12 and is conveyed to the Central Service Area emergency/operating reservoirs at elevation 624 by gravity. Water is then pumped to the existing 980 pressure zone (PZ).

The OWD uses their established criteria to determine the pressure zones within new and existing developments. The criteria constitute minimum and maximum allowable pressures and maximum velocity thresholds within the distribution system piping under specified system operating conditions. These were used to determine pressure zone service area boundaries in the area of the project. All of Eastern Urban Center SPA will be served by the 980 PZ.

There are two existing reservoirs in the 980 PZ. These reservoirs are located within the north of the Rolling Hills Ranch development. The reservoirs have a capacity of 5.0 MG each for a total of 10.0 MG. The emergency storage for the 980 PZ is provided in the 624 zone reservoirs. Other than providing a supply of water to the Central Area Pump Station, the 624 zone will not be utilized to serve the Eastern Urban Center.

The Central Area Pump Station, located at the Patzig Reservoir site, pumps water from the 624 PZ to the 711 PZ distribution system. The pump station currently has five pumps (including one standby); each rated for approximately 4,000 gallons per minute (gpm) which results in a firm capacity of about 16,000 gpm. The 980 zone receives potable water from the EastLake Pump Station, which lifts water from the 711 PZ to the 980 PZ distribution system. This pump station is located on the south side of Otay Lakes Road at Lane Avenue and houses three 4,000 gpm pumps (including one standby) for a firm capacity of 8,000 gpm.

Concurrent with the construction of other portions of the Otay Ranch, the existing 980 Zone main in EastLake Parkway and a main in Birch Road have been constructed. These form a backbone distribution loop comprised of a 20-inch pipeline in EastLake Parkway south from Olympic Parkway past Birch Road to Hunte Parkway, and a 12-inch pipe in Birch Road, which extends west toward the SR-125 to connect to the existing 12-inch potable water main. The proposed potable water mains within the EUC SPA will connect to the existing mains in Birch Road and EastLake Parkway (see Exhibit 12). Based on the projected demands and system looping, on-site potable water facilities will likely range from 8 to 12 inches in diameter, pending final land use and fire flow requirements.

The proposed project will be required to provide all potable water improvements needed to serve the project when constructed without relying on the phased construction of adjacent projects, which are planned to provide improvements.

According to the 1991/1992 Capital Improvement Program for the San Diego County Water Authority (CWA), facilities planned by the CWA and Metropolitan Water District (MWD) will increase the filtered water conveyance capacity, permit raw water conveyance capacity within the aqueduct system and enable the CWA to meet projected demand through 2010. Based on the San Diego County Water Authority 1987 Distribution Study, the additional water supply made available from these improvements will allow the Otay Water District to meet projected demands through 2010. The land uses in the General Plan/GDP update, approved in December 2005, were included in the latest Otay Water District master plan.

Domestic water demand for the SPA Plan area will be estimated as a part of the SAMP and must be approved by the OWD and the City of Chula Vista. An analysis of available water supply will also be completed to assure that sufficient supplies are planned to be available as demand is generated by the project.

Current OWD policies regarding new development require the use of recycled water where available. Consistent with the Otay Ranch GDP, it is anticipated that recycled water will be used to irrigate street parkway landscaping, parks and manufactured slopes along open space areas, and landscaped areas of commercial, industrial and multi-family sites.

Recycled water is currently available to the Otay Ranch area from the 1.3 mgd capacity Ralph W. Chapman Water Recycling Facility located near the intersection of Singer Lane and Highway 94. Recycled water supply is also anticipated to be available from the City of San Diego's 15.0 mgd South Bay Water Reclamation Plan. It is anticipated that the EUC will receive recycled water via proposed connections to the 944 Recycled Water Zone distribution systems.

Two existing lined and covered ponds, totaling 28.3 MG located within the Otay Water District Use Area provide operational storage for the 944 Recycled Zone. The ponds are connected to an existing 20-inch transmission main in Lane Avenue which runs south to an existing main in Otay Lakes Road. The distribution system extends south the EUC site via a main in EastLake Parkway. Recycled water is currently available at the EUC site from 12-inch mains in EastLake Parkway and Birch Road along with an 8" line in Bob Pletcher Way. In the future an 8" line will be constructed in Hunte Parkway.

Recycled water will be supplied to the EUC through connections to the existing both recycled water mains adjacent to the site. The proposed project will be required to provide all recycled water improvements needed to serve the project when constructed without relying on the phased construction of adjacent projects, which are planned to provide improvements.

II.5.4.7.5 Adequacy Analysis

A. <u>Water Conservation Plan</u>

A Water Conservation Plan is required for all major development projects (50 dwelling units or greater, or commercial and industrial projects with 50 EDUs of water demand or greater). This plan is required at the Sectional Planning Area (SPA) Plan level or equivalent for projects which are not processed through a Planned Community Zone. The city has adopted guidelines for the preparation and implementation of the Water Conservation Plan.

The *draft Sustainability Element, Eastern Urban Center (EUC) Sectional Planning Area (SPA) Otay Ranch GDP dated January 5, 2009, by Cinti Land Planning*, provides an analysis of water usage requirements of the proposed project, as well as a detailed plan of proposed measures for water conservation, use of recycled water, and other means of reducing per capita water consumption from the proposed project, as well as defining a program to monitor compliance. The Water Conservation Plan is presented in Sustainability Element within the SPA Plan document and therefore is not included in the PFFP.

B. EUC SPA Water Demand

Table I.1 shows the water demands for each ownership within the EUC. Ultimate average potable water demand for the EUC development based on current land-use planning is approximately 0.94 million gallons per day (MGD), of which 0.91 MGD belongs to McMillin's portion. According to OWD's WRMP, projected demand for the entire EUC is 0.94 MGD. A uniform demand rate was not used for all land uses, as the mixed-use commercial areas have a different unit demand than residential and fire station areas. Appendix A of the PBS&J Study provides additional information on the unit demand rates and total demands for the project compared to those demands assumed in the Master Plan.

Table I.1
Water Demands by Owner Within EUC [1]

Owner	Total Acreage (gac)	Total Average Demand (gpd) [2]	OWD Projected Total Demand (gpd) [3]
McMillin	206.5	908,381	904,620
SMBF	0.7	1,012	1,125
Otay Land Co.	21.0	33,737	33,737
Total	**228.2**	**943,130**	**939,481**

[1] Demand numbers used in this table do not include any adjustments for savings that would result from the implementation of the water conservation plan in the SPA.
[2] Demands do not include outside irrigation water uses.
[3] Per OWD 2002 Master Plan.

Source: PBS&J

Table I.2
EUC Potable Demands by Phase

Land Use	Average Day (gpd)	Max Day[1] (gpd)	Peak Hour[2] (gpd)
Blue (Phase 1)			
Non-residential	50,951	152,853	356,658
Hotel	17,250	51,750	120,750
Residential	198,390	555,492	1,230,018
Total Phase 1	**266,591**	**733,126**	**1,599,547**
Yellow (Phase 2)			
Non-residential	39,586	118,758	277,101
Residential	246,075	664,403	1,451,843
Total Phase 2	**285,661**	**757,001**	**1,656,833**
Green (Phase 3)			
Non-residential	33,660	100,979	235,617
Residential	147,900	428,910	1,020,510
Total Phase 3	**181,560**	**522,891**	**1,243,683**
Orange (Phase 4)			
Non-residential	6,270	18,809	43,887
Residential	168,300	479,655	1,077,120
Total Phase 3	**174,570**	**495,778**	**1,117,246**
All Phases Total	**908,381**	**2,225,534**	**4,632,743**

[1] Max Day Demand Factors per OWD's WRMP, Figure 4-1.
[2] Peak Hour Demand Factors per OWD's WRMP, Figure 4-2.

Source: PBS&J

The water demands are consistent with the approved SB610/221 Water Supply Assessment presented and approved by the OWD Board in August 2007. The original September 2006 EUC Technical Water Study was approved by OWD in December 2006.

Based on assumed project phasing, Table I.2 summarizes the expected demands for each phase for the McMillin ownership of the EUC.

The EUC is within the Otay Water District 944 Recycled Water PZ. This zone primarily serves new development areas west of the Otay Lakes. Recycled water in this area meets State of California Title 22 requirements for non-potable uses. The Ralph W. Chapman Water Recycling Facility provides recycled water to the 944 PZ. OWD's Master Plan projected a recycled water demand of approximately 81,880 gpd for the EUC. Current land use planning for the EUC results in an average day demand of 63,861 gpd for the project, which is less than OWD's planned usage. The most prevalent recycled water use within the EUC will be for landscape irrigation, such as watering medians, parks, open space, and common areas. The recycled water demands are presented in Table I.3.

Table I.3
EUC Recycled Water Demands

Land Use	Area (Acres)	% Irrigated[2]	Irrigated Area (ac)	Irrigation Rate (gpd/ac)	Total RW Demand (gpd)[1]
Mixed-Use Commercial/Hotel/Residential	143.2	10	14.3	2,155	30,853
Parks	12.8[3]	100	12.8	2,155	27,562
Right-of-Way[4]	50.5	5	2.5	2,155	5,446
TOTAL	**206.5**		**29.6**		**63,861**

1 Total Demand based on OWD's WRMP, or approximately 2,155 gpd/ac.
2 % Irrigated per OWD's WRMP with the exception of Right-of-Way.
3 Represents designated parks only. Private recreational uses are covered under mixed-use commercial etc.
4 Irrigated areas for Right-of-Way include landscaped medians not previously called out as parks.

Source: PBS&J

II.5.4.7.6 Existing Water Facilities

Otay Water District will supply the potable water to the EUC SPA. The district currently relies solely on the San Diego County Water Authority (SDCWA) for water supply. The OWD has several connections to SDCWA Pipeline No. 4 which delivers filtered water from the Metropolitan Water District's filtration plant at Lake Skinner in Riverside County. The OWD also has a connection to the La Mesa - Sweetwater Extension Pipeline, which delivers, filtered water from the R.M. Levy Water Treatment Plant in the Helix Water District. Currently, this connection supplies water to the north portion of the OWD only. The OWD has a connection to the City of San Diego's water system in Telegraph Canyon Road and has an agreement that allows them to receive water from the Lower Otay Filtration Plant.

The Central Service Area of the OWD will serve the project. This area of the District is supplied water from Connection Number 10 and 12 to the SDCWA aqueduct, which fills 624 Zone reservoirs. Water is then distributed within the 624 Zone and pumped to the 980 Zone storage and distribution system.

Fire flow within the EUC was evaluated as part of the PBS&J Technical Water Study. The fire flow requirements for each building within the EUC will be a function of building design including height and structure type. As part of the building permit process, the City of Chula Vista Fire Department will evaluate fire flow requirements. The Applicant is required to prepare a final Subarea Master Plan (SAMP) prior to approval of the first final map. The SAMP will be approved by OWD as well as the City of Chula Vista. Among other topics, the SAMP will identify existing on-and off-site pipeline locations, size and capacity and the City of Chula Vista's fire flow requirements (flow rate, duration, hydrant spacing, etc). The EUC's on-site system would meet a fire flow of 5,000 gpm.

A. Potable Water

The EUC lies entirely within OWD's 980 PZ. This pressure zone primarily serves new developments west of the Lower Otay Lakes Reservoir, and is currently supplied by two 5 MG storage tanks. OWD's current planning includes construction of an additional 20 MG of storage in the Central Area System for the 980 PZ as part of their CIP. An existing 20-inch 980 PZ transmission main along Eastlake Parkway and a 12-inch 980 PZ transmission main in Birch Road will provide water to the EUC. Also, the planned 980-2 Pump Station has recently been completed and is in operation. The construction of these facilities will improve hydraulics in the system. McMillin will not be responsible for the construction of any offsite improvements as part of this Project as confirmed in discussions with OWD staff.

B. Recycled Water

There are sufficient recycled water distribution mains to serve the EUC, including an existing 12-inch main in Birch Road and an existing 12-inch main in Eastlake Parkway. A future 8-inch main in Hunte Parkway will be constructed as part of OWD's CIP. A connection is also planned in Bob Pletcher Way, under SR-125, to an existing 8-inch recycled water main. On-site recycled water pipelines would most likely be sized at 8-inch diameter, unless otherwise directed by OWD. The proposed recycled water system layout is shown on Exhibit 13.

II.5.4.7.7 Proposed Facilities:

A. Potable Water:

PBS&J determined that the projected EUC demands and system looping, on-site potable water facilities will likely range from 8 to 16-inches in diameter pending final land use and fire flow requirements. A network of looped distribution mains is planned to serve the EUC. The potable water system as described in the PBS&J study would be the same under both grading option 1 and grading option 2.

Typical planning for a project consists of a unit water demand per acre for non-residential and per dwelling unit for residential and does not take into account multiple-story buildings. Current planning for the EUC allows for high-rise buildings up to 15 stories in height, but does not limit it to a particular land use.

B. <u>Recycled Water</u>

The PBS&J Study recommends an on-site distribution network. Exhibit 13 illustrates the proposed recycled water system layout. The recycled water system would be the same under both grading option1 and grading option 2 as described in the SPA Plan.

II.5.4.7.8 Financing Water Facilities:

The financing and construction of potable water facilities is provided by two methods:

Capacity Fees:
OWD's Capital Improvement Program (CIP) wherein the District facilitates design and construction of facilities and collects an appropriate share of the cost from developers through collection of capacity fees from water meter purchases. Capital Improvement Projects typically include supply sources, pumping facilities, operational storage, terminal storage, and transmission mains.

Exaction:
The developer is required to finance, construct, dedicate water and recycled water facilities that serve only their development to the OWD.

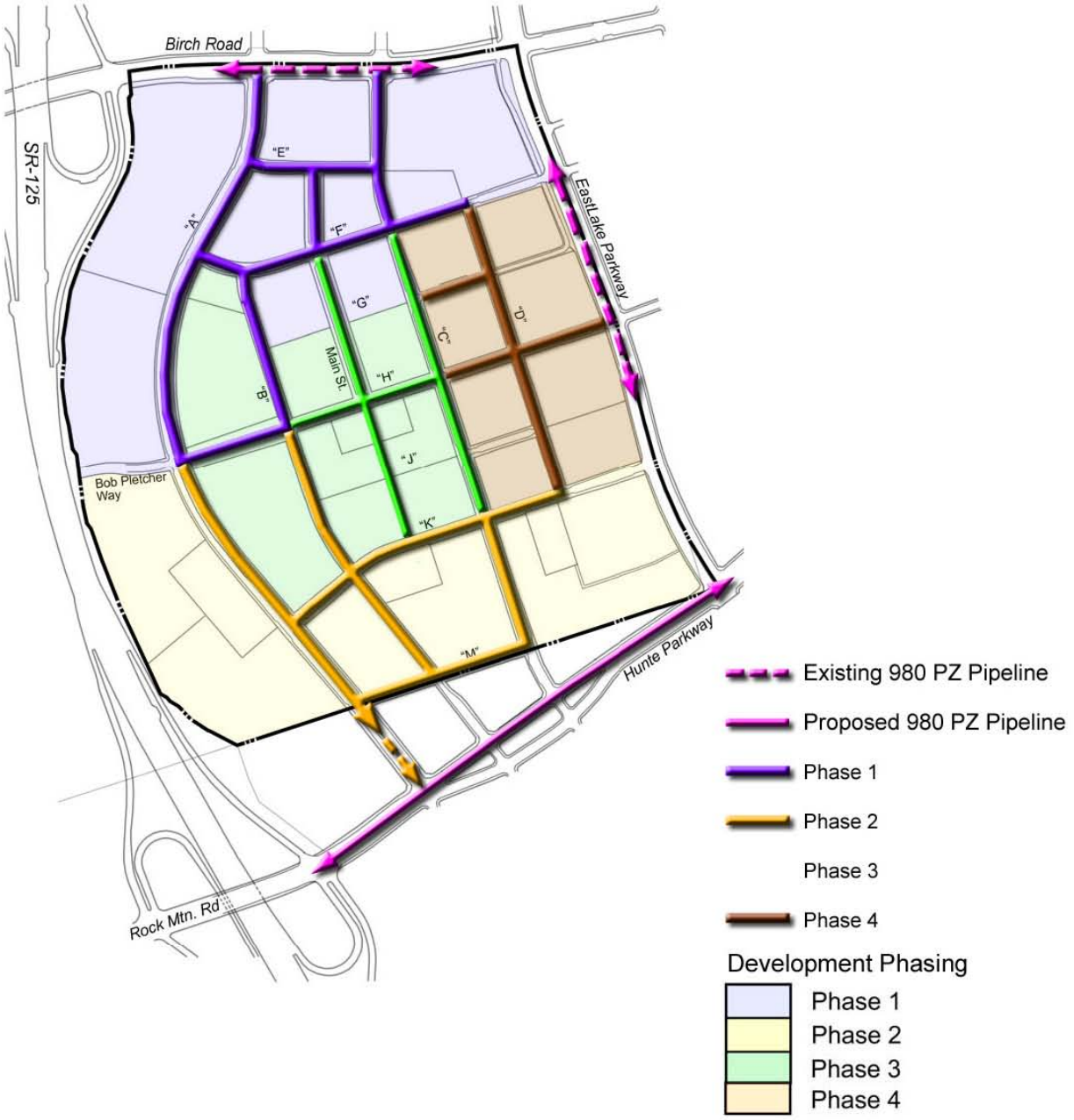
Potable Water Improvement Costs
The total capital cost for potable water facilities will be determined at the time the system is designed and the SAMP is approved. In accordance with District Policy No. 26, the District may provide reimbursement for construction and design costs associated with development of these improvements.

Recycled Water Improvement Costs
The total capital cost for recycled water facilities will be determined at the time the system is designed and the SAMP is approved. The District may provide reimbursement for construction and design costs associated with development of these improvements.

II.5.4.7.9 Threshold Compliance and Recommendations

1. The applicant shall request and deliver to the City service availability letters from the appropriate water district prior to the issuance of each building permit;
2. This PFFP was prepared prior to the completion of the reclaimed and potable SAMP. Facility requirements may change based on the master plan findings including, reservoir requirements, pipe sizes and distribution alignments;
3. Prior to approval of the first Final Map, the applicant shall provide a SAMP to the Otay Water District and to the City of Chula Vista. Water facilities improvements shall be financed or installed on-site and off-site in accordance with the fees and phasing in the approved SAMP.
4. The applicant shall be responsible for funding the district required improvements if it's not covered by a capital improvement program (C.I.P.).

Potable Water System



Source: PBS&J

Urban Design: RTKL

Cinti Land Planning

San Diego, CA (619) 223-7408

0 200 400 600

12/1/08

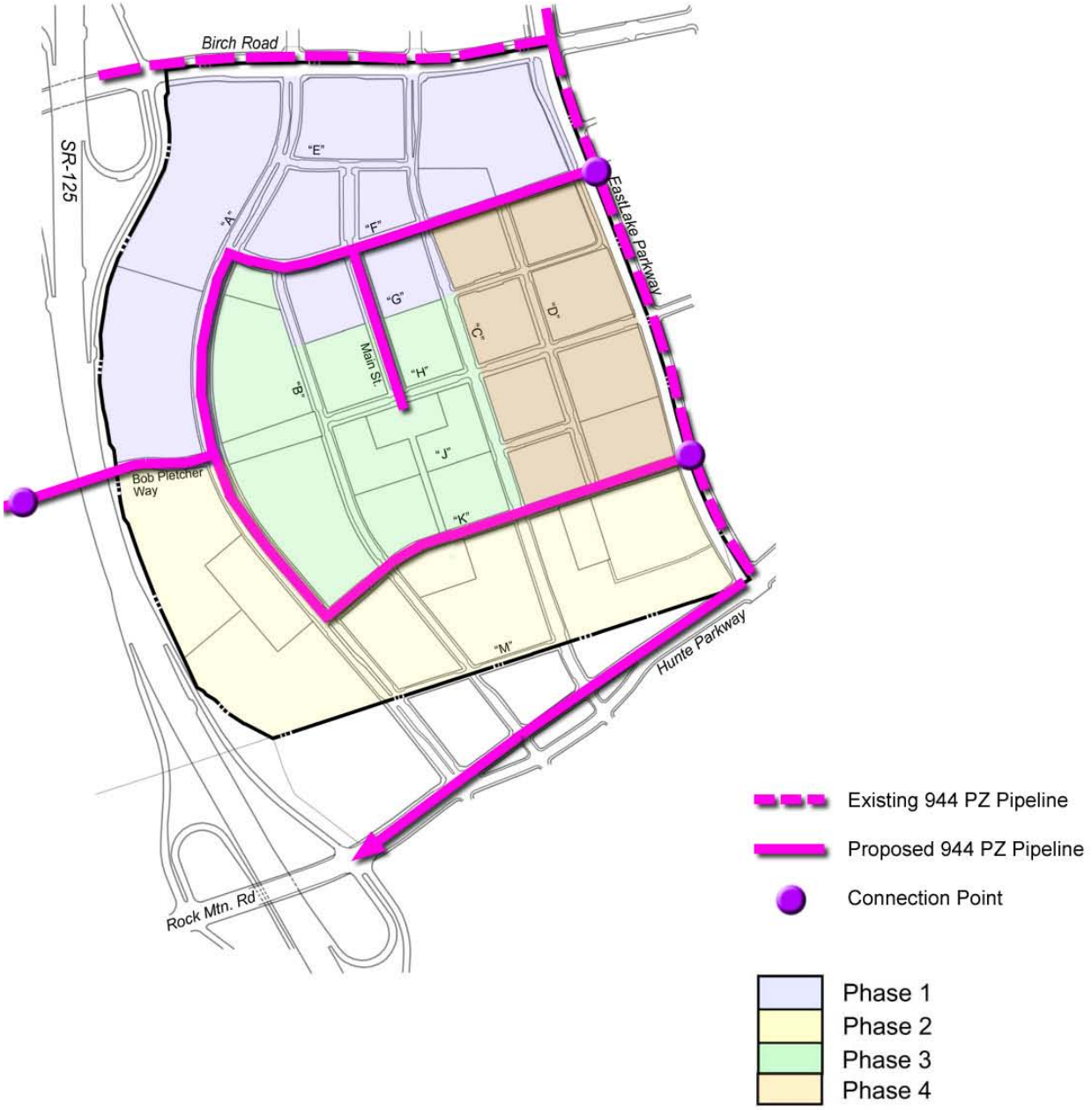
CITY OF CHULA VISTA

Eastern Urban Center

OTAY RANCH

Exhibit 12

Recycled Water System



Eastern Urban Center
OTAY RANCH
CITY OF CHULA VISTA

Urban Design: RTKL
Cinti Land Planning
San Diego, CA (619) 223-7408
0 200 400 600
7/23/08

Exhibit 13

II.5.4.8 SEWER

II.5.4.8.1 Threshold Standard

1. Sewage flows and volumes shall not exceed City Engineering Standards.

2. The City will annually provide the City of San Diego Wastewater Department (METRO) with a 12-18 month development forecast and request confirmation that the projection is within the City's purchased capacity rights and an evaluation of their ability to accommodate the forecast and continuing growth. As an alternative, the City of Chula Vista Public Works Department will gather the necessary data. The information provided to the GMOC shall include the following:
   a. Amount of current capacity now used or committed.
   b. Ability of affected facilities to absorb forecast growth.
   c. Evaluation of funding and site availability for projected new facilities.
   d. Other relevant information.

II.5.4.8.2 Service Analysis

The City of Chula Vista currently purchases capacity for wastewater treatment through the City of San Diego. Chula Vista oversees the construction, maintenance and the operation of the sewer trunk line system. The City Engineer is responsible for reviewing proposed developments and ensuring that the necessary sewer facilities are provided with each development project.

The Sewer Threshold Standard was developed to maintain healthful, sanitary sewer collection and disposal systems for the City of Chula Vista. Individual projects are required to provide necessary improvements consistent with the City of Chula Vista Wastewater Master Plan dated May 2005 and shall comply with all city engineering standards.

The source of information regarding the existing and recommended sewer facilities is from the *Eastern Urban Center Technical Sewer Study, dated January 2008 by PBS&J.* This study is referred to as the PBS&J Sewer Study throughout this PFFP.

Table J.1
Sewer Land Use Summary

Land Use	Gross Acres	Units	Total Sewer Demand (gpd)
Commercial/Fire Station	143.2	3.332 Msf	239,038
Multi-Family Residential		2,983 DU	592,871
Hotel		150 rooms	13,200
Parks	12.8	--	6,395
ROW	50.5	--	0
TOTAL	**206.5**		**851,504**

Source: PBS&J

McMillin's approximate 206.6-acre EUC project consists mostly of commercial and high-density residential land uses, as well as several parks and a fire station. Table J.1 summarizes the various land uses for the project. A more detailed breakdown of these land

uses is provided in Appendix A of the PBS&J Sewer Study. In addition, the land uses and densities assumed for the study are consistent with those evaluated in the recently adopted General Plan Update. However, final land uses and location of certain land uses may vary.

II.5.4.8.3 Project Processing Requirements

The SPA Plan and the PFFP are required by the Growth Management Program to address the following issues for Sewer Services:

1. Identify phased demands for all sewer trunk lines in conformance with the street improvements and in coordination with the construction of water facilities.
2. Identify location of sewer facilities for on-site and offsite improvements, in conformance with the PBS&J Sewer Study.
3. Provide cost estimates for all facilities and proposed financing responsibilities.
4. Identify financing methods.

II.5.4.8.4 Existing Conditions

Sanitary sewer service for the EUC will be provided by the City of Chula Vista (City). The City operates and maintains its own sanitary collection system that connects to the METRO. All wastewater generated within the EUC will eventually be conveyed to either the Poggi Canyon, Rock Mountain Road or Salt Creek Sewer Interceptors that discharge into the METRO system. The wastewater is ultimately treated by the City of San Diego at the Point Loma Wastewater Treatment Facility.

Poggi Canyon Basin:
The northern portion of the EUC lies within the Poggi Canyon Sewer Basin. According to the latest conceptual grading plans by PDC (May 2007), portions of Blocks 2 through 6 and Park P1 will drain to the Poggi Canyon Trunk Sewer (PCTS). Based on PBS&J calculations (Appendix A of the PBS&J Sewer Study), McMillin could permanently sewer up to 580 EDUs from the EUC to the Poggi Canyon Sewer Basin.

The EUC preferred land use plan proposes 529 EDUs to flow into the PCTS. There are also 464 interim EDUs in PCTS from McMillin's Village 7 project that McMillin could utilize for the EUC. These units are planned to be switched to the Rock Mountain Road Trunk Sewer (RMTS) once constructed. However, due to constraints with the downstream collection system in Birch and La Media, the maximum number of EDU's that the EUC Project could contribute to PCTS is 580 EDUs.

Salt Creek Interceptor Interim Connection:
The PBS&J Sewer Study determined that 2,955 of the remaining EDUs could be served by the new 12-inch sewer system in Eastlake and Hunte Parkways and the Village 11 sewer lateral on both an interim and permanent basis. In addition, the study identified a constraint in the existing 12” PVC sewer lateral that connects the sewer system to the Salt Creek Sewer Interceptor. To serve the fully developed tributary area, McMillin will need to install approximately 173’ of 15” pipeline adjacent to the existing 12” sewer lateral to the Salt Creek Sewer Interceptor. Upon completion of this 15” sewer line, the existing 12” sewer lateral will serve to provide emergency backup in case of blockage within the 15” sewer, thereby significantly reducing the possibility of sewer overflow and spillage into the preserve.

Wolf Canyon Sewer Basin:
According to the *EUC/Village 7 Off-Site Sewer Capacity Analysis dated December 2, 2005*, 3,355 EDUs from the EUC were originally planned to sewer through Village 7 to the future RMTS. Based on the latest development plans for the EUC, a large portion will flow to RMTS once it is constructed. Based on the maximum EUC land use and preferred grading plan, a projected conveyance of 2,492 EDUs could be sewered through Village 7 to RMTS on a permanent basis. The PBS&J Sewer Study concluded that the anticipated number of EDUs to RMTS is therefore less than the planned 3,355 EDUs.

II.5.4.8.5 Adequacy Analysis

Sewer flows generated by the project were estimated by PBS&J. Their estimates were based on current city planning criteria for the permanent and interim on-site sewer system conditions. These estimated flows are the basis for design of new sewer facilities and the evaluation of existing facilities that will serve the project.

A. Wastewater Treatment:

The City of San Diego METRO provides sewer treatment services for the City of Chula Vista and 14 other participating agencies in accordance with the terms of a multi-agency agreement (METRO Agreement). The METRO system currently has adequate sewage treatment capacity to serve the region until approximately 2025. The Developer shall pay capacity fees prior to building permit issuance. Development shall not occur without adequate sewer capacity as determined by the City Engineer. Building permits will not be issued if the City Engineer has determined that adequate sewer capacity does not exist. All development must comply with the Municipal Code, specifically Municipal Code sections 19.09.010(A) 6 and 13.14.030. The METRO System currently has adequate sewage treatment capacity to serve the region until approximately 2025.

The City of Chula Vista currently has wastewater treatment capacity rights of 19.843 mgd in the METRO System. However, according to City staff, the City will be allocated 1.021 mgd of additional capacity through a re-rating system, resulting in a total allocation of 20.864 mgd. The City currently generates an average flow of approximately 17 mgd; therefore, the City has reserve capacity of approximately 3.864 mgd. The Chula Vista Wastewater Master Plan indicates that the City will require 5.33 mgd of additional capacity for the General Plan Update preferred alternative by 2030.

B. Wastewater Generation:

In accordance with the City of Chula Vista's 2002 Subdivision Manual, PBS&J used the city sewage generation rates to estimate the total annual average wastewater flows produced from the project: These estimated flows form the basis for design of the new sewer facilities and evaluation of existing facilities that will serve the Project. Table J.2 below summarizes the criteria based on the City's Subdivision Manual.

Table J.2
Chula Vista Subdivision Manual Design Criteria

Item	Subdivision Manual Criteria
Residential Sewage Generation	265 gpd/EDU SF: 1DU = 1 EDU MF: 1DU = 0.75 EDU
Commercial Sewage Generation	2,500 gpd/nac
Park Sewage Generation	500 gpd/nac
PVC Roughness Coefficient, n	0.012
d/D for proposed sewer pipe	0.5 for pipes <=12" 0.75 for pipes >12"

Source: PBS&J

The EUC is planned to include some multi-story buildings. The General Development Plan for the EUC calls for approximately 7.5 million square feet (sf) of building area, of which about approximately 3.5 million sf is reserved for commercial/office/retail use. Non-residential wastewater generation rates are based on 2,500 gpd/acre. This is converted to square feet and account for non-buildable areas. Therefore, a generation rate of 0.072 gpd/square foot is used for non-residential land uses. Average wastewater generation rates at ultimate buildout for the Project are presented in Table J.3.

Table J.3
McMillin's EUC Sewage Generation

Use	Acres	Units	DU	Unit Generation Rate		EDUs	Total Sewer Demand (gpd)
				Non-Res	Res.		
Commercial	143.2	3.314 Msf	--	0.072 gpd/sf-nr	--	897	237,747
Fire Station		18 Ksf	--	0.072 gpd/sf-nr	--	5	1,291
Hotel (155 Ksf)		150 rooms	--	88 gpd/room	--	50	13,200
Multi-Family Residential	--	--	2,983	--	199 gpd/DU	2,237	592,871
Parks[1]	12.8	0	--	--	--	24	6,395
Total	**156.0**		**2,983**			**3,213**	**851,504**

[1] Sewer generation rates may change depending upon specific park plans within the EUC.

Source: PBS&J

On-site and offsite collection, trunk, and interceptor facilities were evaluated based on this sewage flow. In addition, the city's design criteria are used for analysis of the existing sewer system as well as for design and sizing of proposed improvements and

expansions to the system to accommodate the flows anticipated to be generated by the project.

The EUC Project and the planned mixed-use development, associated with a variable marketplace, provide uncertainty as to exactly what type of product (building) will be built and where it will be located on the site. To ensure that the on-site sewer system can accommodate the relocation of higher density uses on the site, PBS&J Sewer Study evaluated the planned system by placing the highest sewer demands at critical points and confirming that the peak sewer flows will not adversely affect cleansing velocities, slopes, and critical depths regardless of the final development plan. The proposed sewer system is based on the preferred land use plan and grading alternative, however, only minor modifications to the location and depth of the on-site sewers would occur with grading option 2 as described in the PBS&J Technical Sewer Study.

Table J.4 summarizes the expected demands for each phase for the McMillin ownership of the EUC. The phasing for facilities will provide continuous service for the Project. The facilities anticipated for each phase of the Project are shown on Exhibit 15.

Table J.4
Demand Projections

Land Use	Avg. Annual Day (gpd)	Peak Flow[a] (gpd)
Blue (Phase 1)		
Non-residential	91,756	227,554
Hotel	13,200	33,000
Residential	154,628	351,004
Parks/Fountains	1,255	3,138
Total Phase 1	***260,838***	***545,152***
Yellow (Phase 2)		
Non-residential	72,529	181,323
Residential	191,794	420,028
Parks/Fountains	2,735	6,838
Total Phase 2	***267,058***	***555,481***
Green (Phase 3)		
Non-residential	62,557	156,393
Residential	115,275	272,049
Parks/Fountains	2,405	6,013
Total Phase 3	***180,237***	***425,360***
Orange (Phase 4)		
Non-residential	12,196	30,490
Residential	131,175	306,950
Parks/Fountains	0	0
Total Phase 4	***143,371***	***329,753***
All Phases Total	**851,504**	***1,583,798***

a) Peaking factors per CVDS-18

Source: PBS&J

C. On-Site Sewer Collection

PBS&J analyzed the on-site sewer system using the preferred land use and grading alternative to determine the desired pipe sizes and slopes to meet the City's design criteria. The proposed on-site sewer system, as dictated by the preferred land use and grading alternative, is shown on Exhibit14. Detailed calculations for the on-site sewer system, under both grading options, are provided in PBS&J Sewer Study (See EUC EIR Appendices) and those pipes affected by the minimum and maximum conditions are highlighted.

The on-site sewer collection system is expected to range from 8-inches to 15-inches in diameter, depending on the projected flows, available grade, and anticipated land use. The on-site sewer system was sized by PBS&J to accommodate changes' to land use densities and locations. Exhibit 16, Allowable EDU's in the On-site Sewer System, on page 135, illustrates the maximum corresponding EDU's to be conveyed by, and allowed within each sewer segment. In addition, several on-site sewer lines may need to be extended during final engineering to accommodate development of the individual blocks at multiple or alternative connection points.

D. Off-Site Pipeline Capacity:

PBS&J conducted an analysis to determine available capacity of existing off-site pipelines. The analysis is based on the City's Master Plan generation rate of 215 gpd/EDU for existing sewer mains and 265 gpd/EDU per the Subdivision Manual for new sewers. The interim sewer system proposed will allow the City more time to finalize the RMTS plans and coordinate with the responsible developers. This will also allow development to proceed in the Otay Ranch Planning Area while minimizing changes to the RMTS later due to revisions associated with the future developments. Table J.5 provides a summary of EDUs, capacity, and associated conveyance systems.

- The maximum condition in the North Area will result in a maximum of 580 EDUs.
- Commence construction of Reach P270 upon reaching a d/D of 0.75, unless otherwise approved by the City Engineer.
- Complete construction of Reach P270 the sooner of one year after occupancy of the first unit sewering to the Poggi Canyon System, or a d/D of 0.85, unless otherwise approved by the City Engineer.
- 2,955 of the remaining EDUs can be served by the new 12-inch sewer system in Eastlake and Hunte Parkways and the Village 11 lateral on both an interim and permanent basis. McMillin will complete the construction of approximately 173 feet of 15-inch parallel to the existing 12-inch stub connection to the Salt Creek Interceptor the sooner of one year after occupancy of the first unit sewering to the Salt Creek System, or a d/D of 0.85, unless otherwise approved by the City Engineer.
- Reach 5 of the Salt Creek Interceptor has sufficient capacity to allow the maximum interim 3,090 EDUs to be served by this section and also the maximum permanent condition of 1,955 EDUs.
- The new 12-inch system in Eastlake and Hunte Parkways, constructed by McMillin, was designed for a maximum capacity of 1,863 EDUs in Eastlake Parkway and 2,455 EDUs in Hunte Parkway and therefore has sufficient capacity for the 1,955 EDUs

(maximum condition) that would permanently sewer through this line to Salt Creek. Temporarily this line will flow greater than 50%, but less than 65%. Once the units to RMTS have been switched over, this line will flow less than 50%. Detailed calculations are included in the PBS&J Sewer Study.

Table J.5
Summary of EDU's per Conveyance

Ultimate Conveyance	Preferred Alternative		Minimum Alternative		Maximum Alternative	
	EDUs	gpd	EDUs	gpd	EDUs	gpd
PCTS	529	140,157	123	32,529	1,313	347,949
Salt Creek	718	190,318	403	106,925	1,955	518,198
RMTS	1,966	521,029	887	235,183	2,492	660,297
TOTAL	3,213	851,504				

Source: PBS&J

II.5.4.8.6 Recommended Sewerage Facilities

The sewer facility improvements required to serve EUC SPA include on-site gravity sewer lines and contributions for the construction of the Poggi Canyon Interceptor and the Salt Creek Interceptor. As discussed in section II.5.4.8.5, Adequacy Analysis, off-site improvements to a few sections of the Poggi Canyon Interceptor and construction of 173-feet of 15-inch sewer main parallel to the existing 12-inch sewer lateral to the Salt Creek Interceptor may be required. The sizing of on-site sewer lines in the PBS&J Sewer Study were considered preliminary and shall be verified during the improvement plan preparation process when slopes and alignments for sewer lines have been better established. Exhibit 17 shows the proposed major sewer facilities that are in the vicinity of the project.

II.5.4.8.6.1 Improvements

The recommended on-site sewer lines internal to the EUC will range from 8-inch to 15-inch gravity sewers. Exhibit 14 provides the recommended on-site sewer line sizing for the project. Exhibit 17 illustrates the recommended off-site sewer line requirements to support the EUC.

II.5.4.8.6.2 Phasing

Poggi Canyon Basin Development

In the permanent condition, the northern portion of the EUC will sewer to existing 10-inch main in Birch Road. The total proposed permanent EDUs in the northern portion of the EUC are 529 EDUs, but could be as high as 580 EDUs. Based on the PBS&J hydraulic analysis, the Poggi Canyon Trunk Sewer would have sufficient capacity to handle the additional units from the EUC once the construction to upsize Reach P270 is complete.

Until the RMTS is completed, a majority of the remaining blocks within the EUC Development will require an interim sewer to the Salt Creek Interceptor east via Eastlake and Hunte Parkway. This interim sewer will allow all the remaining EDUs within the EUC to be sewered and will be used by McMillin until such time that the RMTS can be completed.

Wolf Canyon Sewer Basin

A majority of the Project lies within the Salt Creek Sewer Basin (Wolf Canyon is a sub-basin of the Salt Creek Sewer Basin) will ultimately sewer to the future trunk sewer in Rock

Mountain Road through an existing 16-inch main in Magdalena Avenue to the west and ultimately connect to the Salt Creek Interceptor downstream of the proposed interim connection point and Reach 5. Until such time that RMTS is constructed, these units will temporarily sewer through the recently-constructed 12-inch sewer in Eastlake and Hunte Parkway and will enter the Salt Creek Interceptor through the Village 11 sewer lateral and the proposed 173 feet of 15-inch PVC to be constructed by McMillin parallel to the existing sewer lateral.

Salt Creek Sewer Basin

A portion of the project originally within the Wolf Canyon Sewer Basin, is now planned to sewer to the east in Eastlake and Hunte Parkways and ultimately to the Salt Creek Interceptor through the Village 11 lateral.

II.5.4.8.7 Financing Sewerage Facilities

To fund the necessary improvements to the Poggi Canyon and Salt Creek Interceptors, development impact fees have been established by the City of Chula Vista. A discussion of the required fees is provided in the following subsection A and B. Table J.6 below provides an estimate of the per phase sewer Equivalent Dwelling Units.

Table J.6
EUC Sewer EDU's per Phase

Phase	Residential		Commercial/Office		Fire Station		Park		Total EDU's
	MF Units	MF EDU's	Estimated Square Feet.	Equivalent EDU's	Square Feet.	Equivalent EDU's	Acres	Equivalent EDU's	
Blue	773	580	1,468,000	399			2.62	5	984
Yellow	1,023	767	963,000	261			5.82	11	1,039
Green	540	405	730,000	198	18,000	5	4.71	8	616
Orange	647	485	338,000	92			0.00	0	577
Total	**2,983**	**2,237**	**3,499,000**	**950**	**18,000**	**5**	**13.15**	**24**	**3,216**

The City of Chula Vista collects a Sewerage Participation Fee to aid in the cost of processing sewerage generated within the city. The fee is collected at the time of connection to the public sewer for new development. Existing buildings are subject to the fee when plumbing fixtures are added. For residential development the current fee $3,478 per EDU. Commercial projects are prorated based on the number of Equivalent Fixture Units (EFU). Table J.7 below summarizes the estimated city Sewerage Participation Fee for the residential component of the EUC. The commercial component of the EUC will be calculated for each specific project. The sewerage participation fees for all projects will be calculated prior to the issuance of building permits.

Table J.7
EUC Residential Component Estimated Sewerage Participation Fee

Phase	Residential		$3,478 Fee/EDU
	MF Units	MF EDU's	
Blue	773	580	$2,017,240
Yellow	1,023	767	$2,667,626
Green	540	405	$1,408,590
Orange	647	485	$1,686,830
Total	**2,983**	**2,237**	**$7,780,286**

A. Poggi Canyon Basin Impact Fees

The November 19, 1997, Poggi Canyon Basin Gravity Sewer Basin Plan was prepared for the City of Chula Vista by Wilson Engineering to establish future improvements required to the Poggi Canyon Interceptor and to establish a fee for funding these improvements. City of Chula Vista Ordinance Number 2716 established the fee to be paid by future development within the Poggi Canyon Basin. Table J.8 summarizes the estimated fees to be paid for each land use type. The project estimated Poggi Canyon Basin Fee is $230,000. The estimated fee may change depending upon the final number of dwelling units, changes in acreages and/or fee revisions by the City Council.

Table J.8
EUC SPA
Estimated Poggi Canyon Basin Impact Fees

Phase	Residential		Commercial/Office		Fire Station		Park		Total EDU's	$400 Fee/EDU
	MF Units	MF EDU's	Estimated S.F.	Equivalent EDU's	Square Feet	Equivalent EDU's	Acres	Equivalent EDU's		
Blue	594	446	462,000	125	0	0	2.62	5	575	$230,000
Yellow	0	0	0	0	0	0	0.00	0	0	0
Green	0	0	0	0	0	0	0.00	0	0	0
Orange	0	0	0	0	0	0	0.00	0	0	0
Total	**594**	**446**	**462,000**	**125**	**0**	**0**	**2.62**	**5**	**575**	**$230,000**

B. Salt Creek Basin Impact Fees

The November 1994 Salt Creek Basin Study was prepared by Wilson Engineering to establish a fee to fund future improvements to the Salt Creek Interceptor System. In August 2004, the City of Chula Vista updated the Salt Creek Sewer Basin Plan with the primary goal of ensuring that fees are more fairly and equitably distributed amongst the remaining properties within the Salt Creek Basin, and that sufficient funding will be available to complete the required improvements within the Salt Creek Interceptor System. This fee is required to be paid by all future developments within the Salt Creek Drainage Basin to fund improvements required to serve ultimate development within the drainage basin. The developer shall update the Salt Creek DIF to account for the changes the project will have on the area of benefit. City of Chula Vista Ordinance Number 2974 updated the fee to be paid for future development within the Salt Creek Basin that connects into the existing system. Table J.9 summarizes the fees to be paid by each land use type. These fees are typically collected at the time building permits are issued unless stated otherwise in a development agreement. The project estimated Salt Creek Basin Fee is $3,491,386. The estimated fee may change depending upon the final number of EDU's, changes in acreages and/or fee revisions by the City Council.

Table J.9
EUC SPA
Estimated Salt Creek Basin Impact Fees

Phase	Residential		Commercial/Office		Fire Station		Park		Total EDU's	$1,330 Fee/EDU
	MF Units	MF EDU's	Estimated Square Feet	Equivalent EDU's	Square Feet	Equivalent EDU's	Acres	Equivalent EDU's		
Blue	179	134	953,000	259	0	0	0.00	0	393	$522,595
Yellow	1,023	767	963,000	261	0	0	5.82	11	1,039	$1,381,870
Green	540	405	730,000	198	18,000	5	4.71	8	616	$819,732
Orange	647	485	338,000	92	0	0	0.00	0	577	$767,189
Total	**2,389**	**1,791**	**2,984,000**	**810**	**18,000**	**5**	**10.53**	**19**	**2,625**	**$3,491,386**

II.5.4.8.8 Threshold Compliance and Recommendations

A. Facilities to accommodate sewer flows have been identified in the PBS&J Sewer Study. The construction of new sewer lines must be phased in before the construction of streets.

B. All gravity sewers will be designed to convey peak wet weather flow. For pipes with diameter of 12 inches and smaller, the sewers will be designed to convey this flow when flowing half full. For pipes of diameter larger than 12 inches, the sewers will be designed to convey peak wet weather flow when flowing at three-fourths of the pipe depth. All new sewers will be designed to maintain a minimum velocity of two feet per second (fps) at design capacity to prevent the deposition of solids.

C. Prior to design review approval and in accordance with the Intensity Transfer provisions in the EUC SPA, the applicant(s) shall provide a wastewater technical report with each proposed project requesting an intensity transfer. The technical report shall demonstrate to the satisfaction of the City Engineer that adequate wastewater infrastructure will be available to support the transfer. The transfer of residential density shall be limited by the ability of sewerage facilities to accommodate flows (as shown in Exhibit 16, *Tributary Drainage Areas & Maximum Capacity)*.

D. Prior to issuance of the first building permit, unless stated otherwise in a development agreement, as related to any uses within the portion of the EUC served by the Poggi Canyon System, and to the satisfaction of the City Engineer, the developer shall:

1. Bond for the improvement of the constrained reach at Brandywine Avenue (Reach P270) with the first final map for the project;
2. Monitor sewer flows within the Poggi Canyon Sewer Basin to the satisfaction of the City Engineer and submit quarterly reports to the City upon the issuance of the first building permit for the EUC;
3. Obtain the approval for the improvement plan and any necessary environmental permits for Reach P270 prior to the first final "B" map, unless otherwise approved by the City Engineer;
4. Commence construction of Reach P270 upon reaching a d/D of 0.75, unless otherwise approved by the City Engineer;
5. Complete construction of Reach P270 the sooner of one year after occupancy of the first unit sewering to the Poggi Canyon System, or a d/D of 0.85, unless otherwise approved by the City Engineer;
6. Not seek building permits within the Poggi Canyon Sewer Basin if any segment of the Poggi Canyon Trunk Sewer achieves a d/D of 0.85, or the City Engineer has determined, at his sole discretion, that there is not enough San Diego METRO treatment capacity for the project; and
7. Upon the completion of the Rock Mountain Trunk Sewer, divert those Village Seven flows from the Poggi Canyon Sewer Basin that were ultimately designed to flow to Salt Creek Sewer Basin so that additional capacity is provided for the EUC's permanent flows.

E. Prior to issuance of the first building permit, unless stated otherwise in a development agreement, as related to any uses within the portion of the EUC served by the Village Eleven sewer lateral to the Salt Creek Sewer Interceptor, and to the satisfaction of the City Engineer, the developer shall:

1. Bond for the improvement of the constrained reach along the Village Eleven lateral into the Salt Creek Sewer Interceptor with the first final map for the project.
2. Monitor sewer flows within the constrained reach along the Village Eleven lateral into the

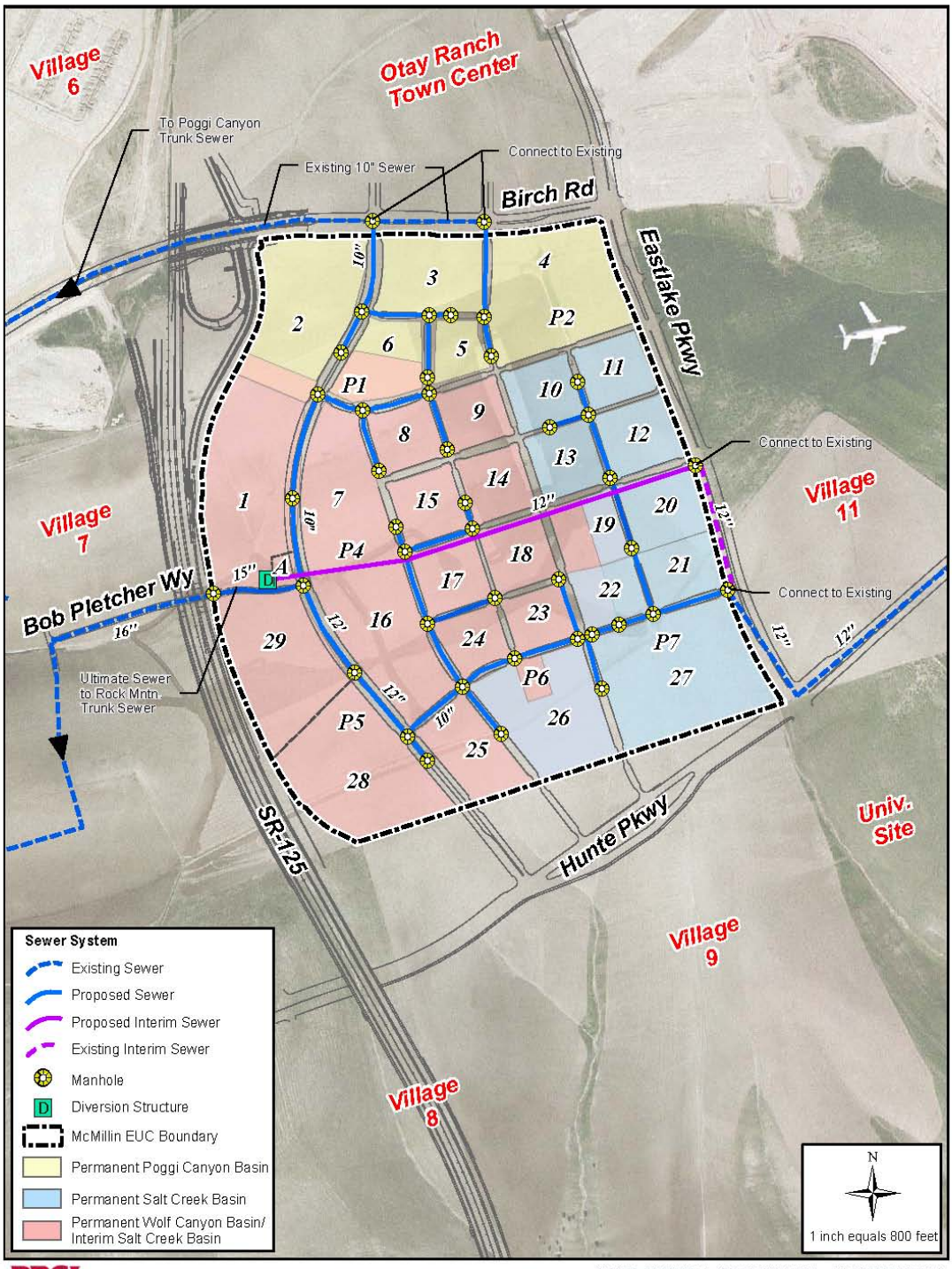
Salt Creek Sewer Interceptor to the satisfaction of the City Engineer and submit quarterly reports to the City upon the issuance of the first building permit for the project that drains to the Salt Creek System;

3. Obtain the approval for the improvement plan and any necessary environmental permits for the constrained reach along the Village Eleven lateral into the Salt Creek Sewer Interceptor prior to the first final "B" map covering any parcel that sewers to the Salt Creek System, unless otherwise approved by the City Engineer;
4. Commence construction of the constrained reach along the Village Eleven lateral into the Salt Creek Sewer Interceptor upon reaching a d/D of 0.75, unless otherwise approved by the City Engineer;
5. Complete construction of the constrained reach along the Village Eleven lateral into the Salt Creek Sewer Interceptor the sooner of one year after occupancy of the first unit sewering to the Salt Creek System, or a d/D of 0.85, unless otherwise approved by the City Engineer;
6. Not seek building permits within the Salt Creek Sewer Basin if any portion of the constrained reach along the Village Eleven lateral into the Salt Creek Sewer Interceptor achieves a d/D of 0.85, or the City Engineer has determined, at his sole discretion, that there is not enough San Diego METRO treatment capacity for the project; and
7. Upon the completion of the Rock Mountain Trunk Sewer, divert those temporary flows from the constrained reach along the Village Eleven lateral to the sewer within Bob Pletcher Way.

F. Prior to issuance of each building permit related to any uses within the portion of the EUC served by the Poggi Canyon System, the developer shall pay the Poggi Canyon DIF at the rate in effect at the time of building permit issuance unless stated otherwise in a development agreement.

G. The developer for the project shall, unless stated otherwise in a development agreement:

1. Underwrite the cost of all studies and reports required to support the addition of sewer flows to existing lines.
2. Assume the capital cost of all sewer lines and connections identified herein.
3. Pay all current sewer fees required of the City of Chula Vista. The City will add the 2 off-site improvements (SCSL & P270) to the Sewer DIF program.
4. Comply with Section 3-303 of the City of Chula Vista Subdivision Manual.
5. Construct off-site connections as required by the City Engineer.



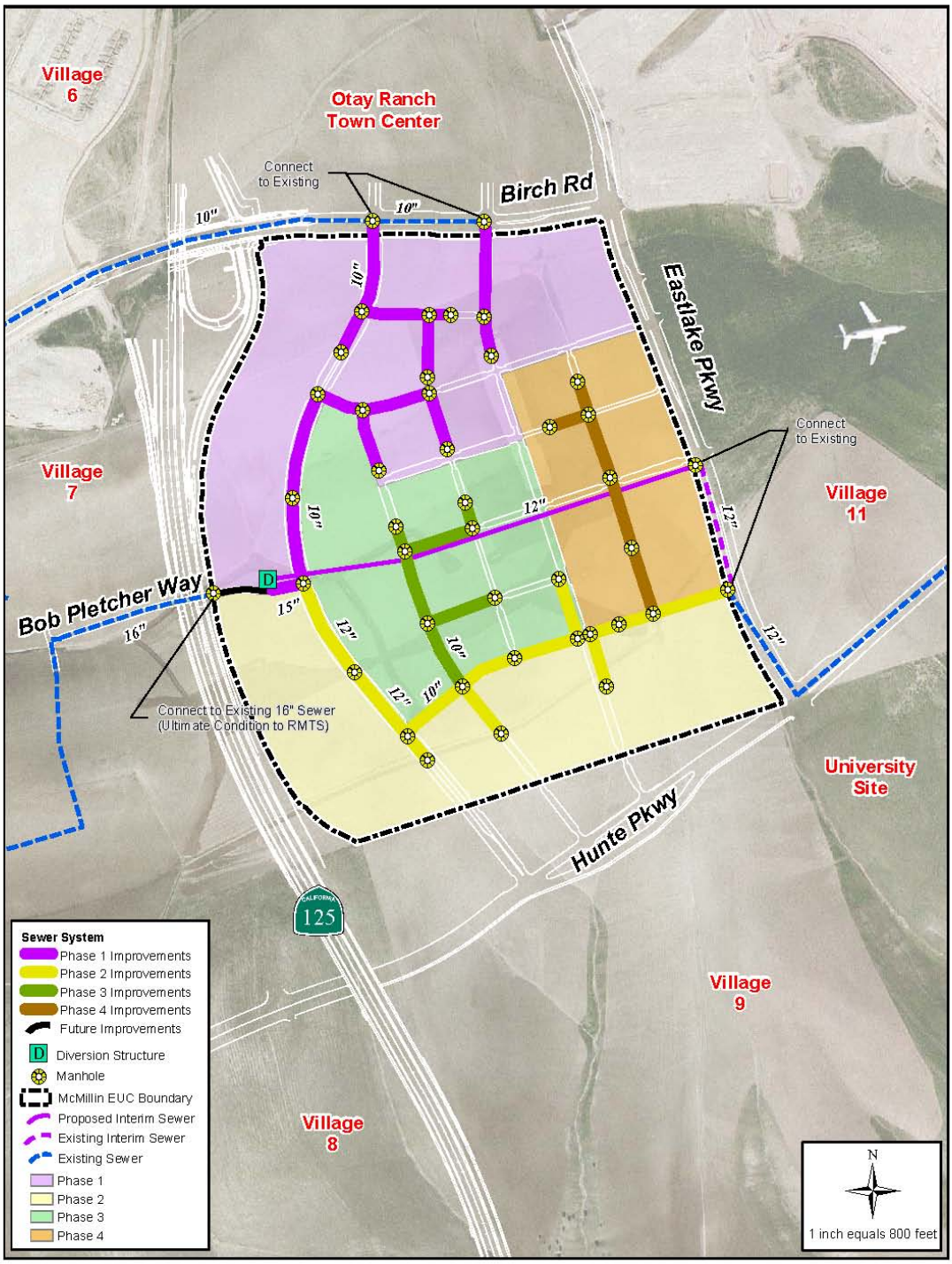
PBSJ

* ALL PIPES 8" UNLESS OTHERWISE NOTED

ON-SITE SEWER SYSTEM

1/16/2008 TH KM Z:/Projects/S/McMillin.mxd/ConceptStudies/OnsiteSewerSystem.mxd

Exhibit 14



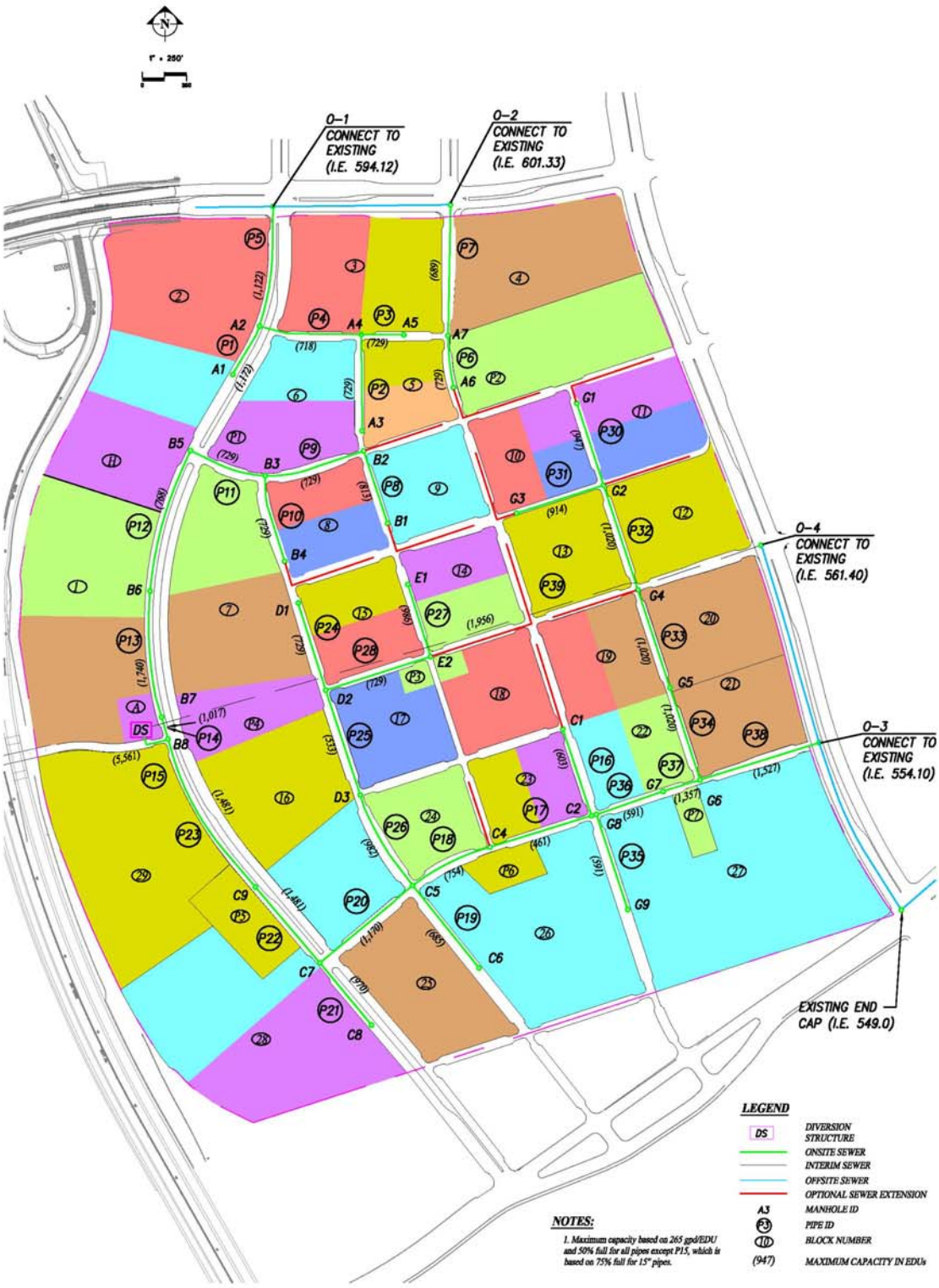
PBSJ

* ALL PIPES 8" UNLESS OTHERWISE NOTED

SEWER FACILITY PHASING

1/16/2008 T:\HILL Z:\Projects\S\McMillin\mxd\ConceptStudies\SewerFacilityPhasing.mxd

Exhibit 15



Tributary Drainage Areas & Maximum Capacity

Exhibit 16

Source: PBS&J

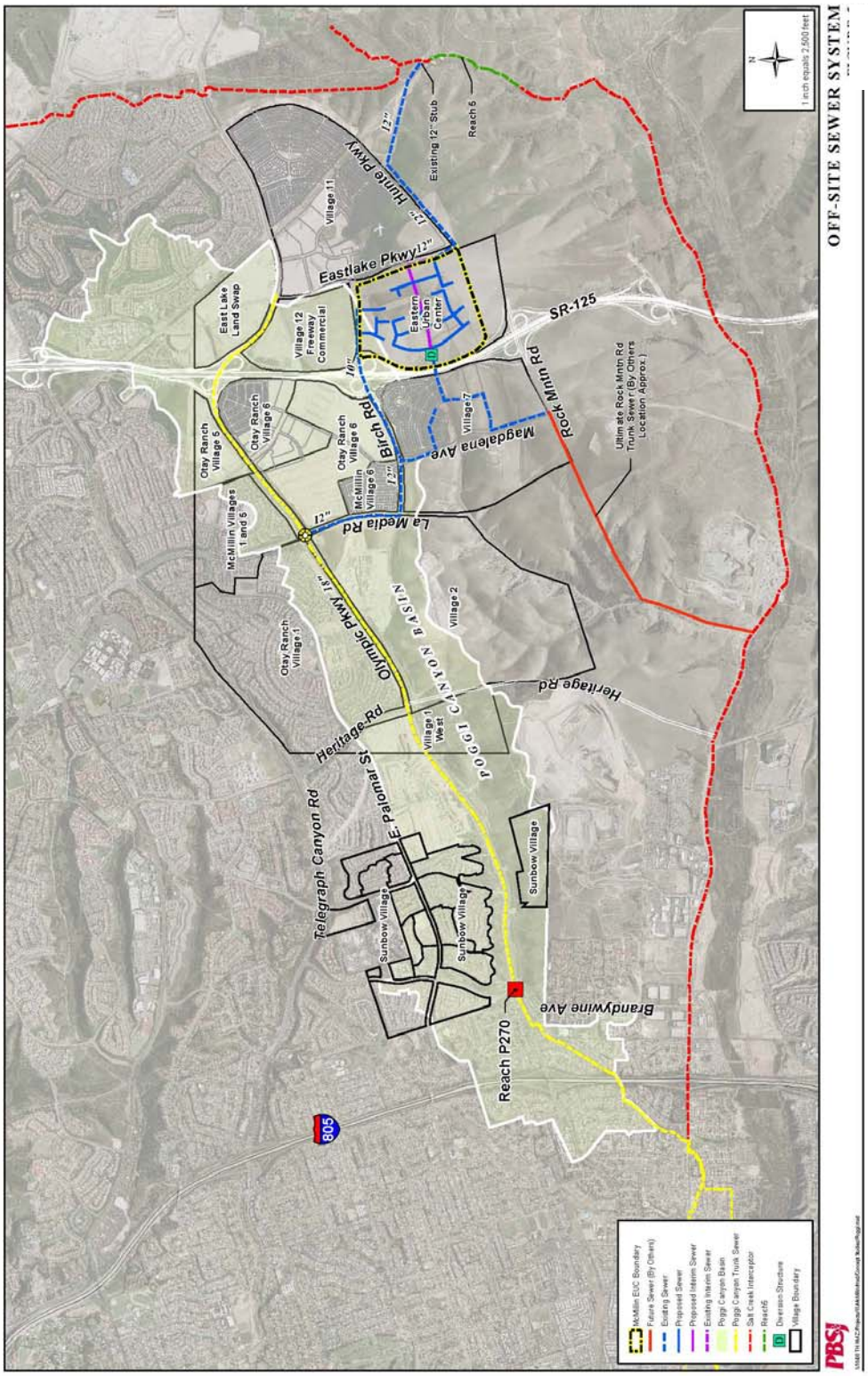

OFF-SITE SEWER SYSTEM
1 inch equals 2,500 feet
N
McMillin EUC Boundary
Future Sewer (By Others)
Existing Sewer
Proposed Sewer
Proposed Interim Sewer
Existing Interim Sewer
Poggi Canyon Basin
Poggi Canyon Trunk Sewer
Salt Creek Interceptor
Reach5
Diversion Structure
Village Boundary
Reach P270
Reach 5
Existing 12" Stub
Eastlake Pkwy
Hunte Pkwy
Eastern Urban Center
SR-125
Rock Mntn Rd
Ultimate Rock Mntn Rd Trunk Sewer (By Others Location Approx.)
Magdalena Ave
Birch Rd
La Media Rd
Olympic Pkwy
Heritage Rd
Telegraph Canyon Rd
E. Palomar St
Brandywine Ave
POGGI CANYON BASIN
Village 11
Village 12 Freeway Commercial
East Lake Land Swap
Otay Ranch Village 5
Otay Ranch Village 6
Otay Ranch Village 7
Otay Ranch Village 1
McMillin Villages 1 and 5
McMillin Village 6
Village 1 West
Village 2
Sunbow Village
805
12"
10"

Exhibit 17

II.5.4.9 DRAINAGE

II.5.4.9.1 Threshold Standard

1. Storm water flows and volumes shall not exceed City Engineering Standards.

2. The GMOC shall annually review the performance of the City's storm drain system to determine its ability to meet the City's goals and objectives.

II.5.4.9.2 Service Analysis

The City of Chula Vista Public Works Department is responsible for ensuring that safe and efficient storm water drainage systems are provided concurrent with development in order to protect the residents and property within the city. City staff is required to review individual projects to ensure that improvements are provided which are consistent with the drainage master plan(s) and that the project complies with all City engineering drainage standards.

The 2004 Drainage Master Plan prepared by PBS&J for the City of Chula Vista consists of a city-wide hydrologic analysis and an updated version of the city's storm water conveyance system GIS database.

The SPA Plan drainage improvements are identified in the *Preliminary Drainage Study for McMillin Eastern Urban Center (EUC)*, revised July 23, 30, 2008, prepared by Rick Engineering Company. The Rick Study was prepared to assess the existing and developed condition drainage conditions for the project. The EUC site drains to three basins: Poggi Canyon (northern portion of the EUC site), Wolf Canyon (central portion), and Otay River (southern portion). Wolf Canyon also ultimately discharges into the Otay River, two miles southwest of the EUC study area. The study evaluates the project drainage based on both grading options.

A. The stated purpose of the Rick Study is as follows:
   - Prepare hydrologic models to quantify existing and developed condition peak flows to Poggi Canyon.
   - Prepare hydrologic models to quantify existing and developed site runoff to Wolf Canyon.
   - Prepare hydrologic models to quantify existing and developed site runoff to Otay River.
   - Design detention facilities to maintain developed condition peak flow rates below the pre-developed peak flow rates to Poggi Canyon, Wolf Canyon, and Otay River.

Poggi Canyon, Wolf Canyon and Otay River watersheds have been studied previously in association with the construction of major roadways and village developments in Otay Ranch.

B. The Rick study for the EUC relied upon numerous studies that include the following:

   1. *City of Chula Vista Subdivision Manual* dated July 2002.
   2. *Preliminary Regional Drainage Study, Major Drainage Patterns an for Otay Ranch Village 6,* revised September 4, 2001 by P&D consultants.

3. *Master Drainage Study for Poggi Canyon Creek;* dated October 14, 1999 by Hunsaker & Associates.
4. *Addendum to Master Drainage Study for Poggi Canyon Creek;* dated September 21, 2001 by Hunsaker & Associates.
5. *Drainage Study for McMillin Ranch – Village 12 and its Addendum*, both dated May 24, 2004 by Rick Engineering Company.
6. *Water Quality Technical Report for Otay Ranch Village 7*, dated September 22, 2005, by Rick Engineering Company.
7. *Drainage Study to Size Pipe between EUC and Village 7 Crossing SR-125 Right of Way*, dated February 11, 2004 by Rick Engineering Company.
8. *Drainage Study for McMillin Village 7 Vista Verde*, dated November 29, 2004, by Rick Engineering Company.

The EUC SPA project is under the jurisdiction of the San Diego Regional Water Quality Control Board (SDRWQCB). The EUC SPA project is subject to the National Pollutant Discharge Elimination System (NPDES) requirements both during and after construction. NPDES requirements stem from the Federal Clean Water Act and are enforced either by the State Water Resources Control Board (SWRCB) or the SDRWQCB. Stormwater runoff pollution prevention and control measures for the project are identified in the *Preliminary Water Quality Technical Report for Mcmillin Eastern Urban Center (EUC)*, revised February 26, 2008, by Rick Engineering Company.

II.5.4.9.3 Project Processing Requirements

- The SPA Plan and the PFFP are required to address the following issues for drainage issues:
- Identify phased demands.
- Identify locations of facilities for on-site and off-site improvements.
- Provide cost estimates.
- Identify financing methods.

II.5.4.9.4 Existing Conditions

The project area currently predominantly rolling hills with arroyos draining to canyons that flow to the south and west, away from Salt Creek and the Otay Reservoir basins located to the east. There are three major non-jurisdictional drainages for runoff leaving the McMillin EUC site in both the pre-project and post-project condition. The northern portion of the project area drains northerly and then westerly to Poggi Canyon. The central portion of the project area drains westerly to Wolf Canyon. The southern portion of the project site drains southerly to the Otay River via two distinct un-named drainages that ultimately confluence with one another.

A. <u>Northerly Drainage</u>

The northern portion of the McMillin EUC project area will be served by an on-site storm drain system in Birch Road. From Birch Road, runoff continues northerly then westerly, through Otay Ranch Villages 6, 7, and Planning Area 12 and discharges to the existing Poggi Canyon Regional Detention Facility, which ultimately discharges to Poggi Canyon. The existing Poggi Canyon Regional Detention Facility was designed as part of a master drainage design for a reach of Poggi Canyon Creek. The storm drain system and the

existing Poggi Canyon Regional Detention Facility were designed assuming the area of the McMillin EUC contributing to the basin would be 20.4 developed acres.

B. <u>Central Drainage</u>

The runoff from the central portion of the Eastern Urban Center is conveyed under SR-125 via an existing storm drain system to the Regional Water Quality & Detention Facility located within Village 7, a component in the Wolf Canyon Water Quality and Extended Detention Basins. The storm drain system and Wolf Canyon Water Quality and Extended Detention Basins were designed assuming the area of the McMillin EUC contributing to the basins would be approximately 164 acres and the land use would be the McMillin EUC.

C. <u>Southerly Drainage</u>

The southern portion of the McMillin EUC project area drains to two distinct un-named drainages which confluence and ultimately outfall to the Otay River. While it is anticipated in the future, presently there is no downstream development along these drainages or master planned drainage facilities between the southerly boundary of the EUC project site and the Otay River.

II.5.4.9.5 Proposed Facilities

A. <u>Storm Drainage</u>

The development of the McMillin EUC project includes the construction of a new urban center that consists of multi-family units, commercial sites, mixed-use development, community-serving sites, parks, and roads.

The Poggi Canyon Regional Detention Facility has been designed to capture and detain the 10-, 50- and 100-year post-project flows associated with its specific drainage basin, including 20.4 acres of the McMillin EUC project area, down to the pre-project levels. The runoff from the northern portion of the EUC site will be contained in existing storm drain pipes for the entire length of travel between the EUC and the Existing Poggi Canyon Regional Detention Facility. The drainage design for the EUC will honor the original regional drainage design and not exceed the 20.4 acres draining northerly to this system under both options.

The existing Wolf Canyon facility in Village 7 has been designed to capture the 2-, 10 and 100-year project flows associated with its specific drainage basin, including approximately 164 acres of the McMillin EUC project area, down to pre-project levels. The Wolf Canyon facility is also numerically sized to treat the runoff, including runoff from the McMillin EUC, based on number sizing requirements for treatment control BMPs provided in the City of Chula Vistas Storm Water Standards Manual. The EUC project will honor the original drainage design and not exceed the 164 acres draining to this system under either option.

The EUC project design must incorporate Low Impact Development (LID) integrated Management Practices (IMPs) to address flow control (including Hydromodification Management) in addition to storm water treatment for runoff before leaving the site without relying on these off-site facilities.

The southern portion of the EUC will incorporate on-site measures to managed discharged rates and durations for runoff discharging southerly for protection from downstream erosion. In addition, on-site measures for 2-, 10-, 50-, and 100-year detention for flood control purposes will be implemented. The on-site measures will consist of: 1) LID measures sized for decentralized flow control throughout the southerly draining portion of the project area; 2) underground detention facilities located on-site within the EUC site. The proposed underground detention facility is a required drainage facility per the Preliminary Drainage Study for McMillin EUC. This facility will be located at the southern end of the EUC site along M Street and will detain the 2-, 10-, 50-, and 100-year storm events.

The overall drainage distribution between Poggi Canyon, Wolf Canyon, and Otay River will be similar to existing conditions. Runoff within the developed EUC site will be directed toward those drainage areas via internal storm drain systems. The EUC Developer is considering two grading alternatives, which is discussed on page 148 of the PFFP. Developed areas and storm event flows for each watershed are summarized in the following table:

Table K.1
Summary of the 2, 10, 50 and 100-year Storm Events
(Post-Project Conditions) [1]

Node Number[2]	Area (acre)	Flow Rate (cubic feet per second)			
		2-year[3]	10-year[3]	50-year	100-year
North Drainage Basin					
Grading Alternative #1					
#125	7	13.4	22.1	29.4	34.0
#235	13.4	20.9	34.3	46.0	53.2
Grading Alternative #2					
#125	7	13.1	21.5	28.7	33.1
#235	13.4	17.1	29.8	40.4	46.9
Central Drainage Basin					
Grading Alternative #1					
#924	163.6	206.5	343.2	461.5	533.2
Grading Alternative #2					
#772	162.7	205.1	341.8	463.5	536.2
Southern Drainage Basin					
Grading Alternative #1					
Pre-project # 404	106.7	37.3	62.8	85.9	100.0
Post Project#4050 [4]	99.4	80.3	92.7	124.0	143.4
Grading Alternative #2					
Pre-project # 404	47.8	20.6	33.9	45.5	52.8
Post Project#4050	45.3	34.3	56.0	75.7	89.0

1 Post-Project Runoff Coefficients: C=.87 for streets and C+.85 for pads.
2 Downstream Point of Interest/Comparison for the drainage basin at the EUC boundary. See Preliminary Drainage Study for McMillin EUC by Rick Engineering for precise node locations.
3 Upon final design, the LID IMP devices will be designed to detain for 20 percent of the 5-year through the 10-year storm event.
4 Includes detained flows from underground detention facility in M Street. See Preliminary Drainage Study for McMillin EUC by Rick Engineering for Post Project detained discharges for both the underground detention facility in M Street and the above ground detention facility located south of Hunte Parkway.

Source: Rick Engineering Company

The Southern Basin requires 100-Year storm water detention for the either of the proposed Grading Options. Table K.2 provides a comparison of the 100-Year Detention results between Grading Option 1 and 2. This table also indicates the post-project detained discharges for both the proposed underground detention facility in "M" Street, and the above ground interim detention facility located South of Hunte Parkway in the westerly canyon. The proposed detention facilities for either Grading Option 1 or 2 detain downstream impacts while releasing post-project flows at pre-project levels.

Table K.2
100-Year Detention Results for Grading Option 1 & 2
for the Southern Discharge Locations [a & b]

Storm Event	Detention Facility	Post Discharge Location	Pre-Project Discharge (cfs)	Post-Project Detained Discharge (cfs)
Grading Option 1 100-Yr.	Underground Facility	Drainage Basin 1020	28.6	28.6
	Detention Basin	Drainage Basin 4000	100	100
Grading Option 2 100-Yr.	Underground Facility	Drainage Basin 1020	28.6	28.5
	Detention Basin	Drainage Basin 4000	52.8	52.5

[a] Pre-project Alternative 1 Drainage Basin 400 outlet point is coincident with post-project Drainage Basin 4000 outlet point.
[b] Pre-project Alternative 2 Drainage Basin 400 outlet point is coincident with post-project Drainage Basin 4000 outlet point.

Source: Preliminary Drainage Study for McMillin Eastern Urban Center (EUC), revised January 30, 2008, Rick Eng. Co.

B. <u>Storm Water Quality</u>

1. **Regulations:** The EUC project is subject to National Pollutant Discharge Elimination System (NPDES) requirements. NPDES requirements are contained in Section 402(p) of the Federal Clean Water Act, which established a framework for regulating storm water discharges from municipal, industrial, and construction activities. These requirements are implemented through permits issued by the State Water Resources Control Board (SWRCB) or the local Regional Water Quality Control Board in which the project is located. In San Diego County the local board is the California Regional Water Quality Control Board San Diego Region, herein (SDRWQCB). Further, the requirements are implemented through the City of Chula Vista, which is the governing municipality where the project is located.

   The *Preliminary Water Quality Technical Report for McMillin Eastern Area, March 28, 2008, by Rick Engineering* summarizes post-construction storm water protection requirements for the EUC project: The Preliminary Water Quality Technical Report is herein referred to as the WQTR.

   The EUC is planned as the urban center of Otay Ranch and will include mixed use residential and commercial. The project is expected to include high density multi-family residential, high rise office, commercial, recreational, civic and cultural land uses. The project applies to at least five priority project categories based on Appendix B of the City of Chula Vista's Storm Water Standards Manual: (1) Home subdivisions of over 10 units, (2) Commercial Developments greater than one acre, (3) Restaurants, (4) Parking lots 5,000 square feet or more with 15 or more parking spaces, and potentially exposed to urban runoff, and (5) Streets, roads, highways, and freeways.

For the purposes of post-construction storm water quality management, the proposed EUC project will follow the guidelines and requirements set forth in the following documents:

- *Development Storm Water Manual for Development and Redevelopment Projects*, *dated July 23,, 2008, City of Chula Vista.* This manual is referred to as the "Storm Water Standards Manual." The Storm Water Standards Manual contains the City of Chula Vista's Standard Water Mitigation Plan (SUSMP) requirements.
- SDRWQCB Order No. R9-2007-0001, a renewal of National Pollutant Discharge Elimination System (NPDES) Permit No. CAS0108758, "Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, the San Diego Unified Port District, and the San Diego County Regional Airport Authority" (Order No. R9-2007-0001, or "Municipal Storm Water Permit"), adopted by the SDRWQCB on January 24, 2007.

The Storm Water Standards Manual provides guidance for new development and redevelopment projects to achieve compliance with the City of Chula Vista's SUSMP. The City of Chula Vista's current SUSMP and Development Storm Water Manual requirements are based on the new Municipal Storm Water Permit adopted by the SDRWQCB, Order No. R9-2007-0001, National Pollutant Discharge Elimination System (NPDES) No. CAS0108758 "Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District."

The SDRWQCB adopted Order No. R9-2007-0001, includes several changes to requirements for post-construction storm water management and will result in SUSMPs being modified plus changes to standards for post-construction storm water management practices. Specific changes that will directly affect the design of the EUC include:

- ***Low Impact Development (LID) Best Management Practices (BMP) Requirements:*** Project applicants with Priority Development Projects will be required to implement LID BMPs which will collectively minimize directly connected impervious areas and promote infiltration (Section D.1.d.(4) of Order No. R9-2007-0001).

- ***Hydromodification — Limitations on Increases of Runoff Discharge Rates and Durations:*** Under Section D.1.g of Order No. R9-2007-0001, the Copermittees will be required to prepare a Hydromodification Management Plan (HMP) and incorporate its requirements into their SUSMPs. Hydromodification refers to changes in a watershed's runoff characteristics resulting from development, together with associated morphological changes to channels receiving the runoff, such as changes in sediment transport characteristics and the hydraulic geometry (width, depth and slope) of channels. These changes result in stream bank erosion and sedimentation, leading to habitat degradation due to loss of overhead cover and loss of in-stream habitat structures.

The master design of the EUC will incorporate design elements in anticipation of the new standards, which will be in effect by the time development plans for the EUC are prepared. All development within the EUC will be subject to the City of Chula Vista's SUSMP at the time of grading permit issuance.

2. **Surrounding Villages in Otay Ranch:** The EUC is part of the larger Otay Ranch development. Because the Otay Ranch Community is a master planned community, consideration was given to accommodating drainage from the EUC project area during design of the Otay Ranch Villages and certain regional drainage facilities that the EUC project area drains to. This is discussed in detail in the WQTR, Section 2.1.3. "Identify Conditions of Concern." The northerly portion of the EUC will drain northerly and then westerly through Otay Ranch Villages 6, 7, and Planning Area 12 and ultimately into Poggi Canyon via an existing regional detention basin located within Poggi Canyon ("Poggi Canyon Regional Detention Facility"). The central portion of the McMillin EUC will drain westerly through Otay Ranch Village 7 and ultimately into Wolf Canyon via an existing regional detention, water quality, and extended detention basin located within Wolf Canyon ("Wolf Canyon Water Quality and Extended Detention Basin"). The southerly portion of the McMillin EUC will drain southerly to the Otay River via two distinct un-named drainages. No master planned drainage facilities have been previously designed for these drainages.

   The potential impacts to downstream channels and habitat have been evaluated and addressed in Section 2.1.3 of the WQTR. The following is a summary of the northern, central and southern drainage basins within the EUC:

   - The EUC Northerly drainage basin design will incorporate LID Integrated Management Practices (IMPs) to address flow control (in addition to treatment) for runoff before leaving the site without relying on the off-site facility. In addition, the runoff contributed from the EUC North drainage basin will be contained in existing engineered systems for the entire length of travel between the EUC and the existing regional detention facility. The existing Poggi Canyon Regional Detention Facility represents a second line of defense for protection of downstream receiving waters from erosion due to runoff from the northern portions of the project. As a result, no conditions of concern exist for the ultimate downstream outlet for the northern drainage area of the EUC.

   - For the central drainage area, because of the existing Wolf Canyon Water Quality and Extended Detention Basins and because the runoff contributed from the EUC project area will be directly discharged to the facility via a storm drain system, no conditions of concern exist for the ultimate downstream outlet for the central drainage area of the EUC. The Wolf Canyon Regional Detention Facility is sized to incorporate 22% of the Hydromodification management requirement for the EUC central drainage basin. The streets in the EUC project make up 19% of the 22% Hydromodification management requirement, therefore the Hydromodification management requirement has been satisfied with the use of the Wolf Canyon Regional Detention Facility. The remaining 3% can be utilized to offset the requirements of individual parcels. Beyond this, each individual parcel owner will be required to satisfy the remaining Hydromodification management requirement upon development by selecting on-site storm water management measures through the menu located in Appendix I of the WQTR and the submittal of a supplement to the WQTR to verify sizing. If an option other than what is shown on the menu (WQTR Appendix I) or BAT as approved

by the City Engineer, is chosen by the parcel owner, a project-specific WQTR shall be prepared for each parcel, referencing the approved Rick Engineering WQTR for information relevant to regional design concepts (e.g., downstream conditions of concern). Should the developer choose to treat the streets through the use of additional LID/Hydromodification Management devices and strategies, the entire (or a portion of) 22% or 36 acres can be transferred to offset requirements of individual parcels.

- For the southerly drainage area, presently there is no downstream development along the southerly drainages or master planned drainage facilities between the southern boundary of the proposed EUC project site and the Otay River. Without implementation of on-site measures to manage runoff from the EUC, each of these drainages would be susceptible to increased erosion resulting from increased peak flow rates or increased runoff volumes or durations from the EUC project. On-site measures will be used to manage discharge rates and durations for runoff discharging southerly from the EUC project site for protection from downstream erosion and for flood control. On-site measures for 2-, 10-, 50-, and 100-year detention will be implemented. The on-site measures will consist of one or a combination of the following, to be determined during engineering design of the project: LID measures sized for decentralized flow control throughout the southerly draining portion of the project area; underground detention facilities located on-site within the EUC and/or the triangular wedge and/or Hunte Parkway; above-ground detention facilities located within the off-site fill area.

3. **Stormwater Pollution:** Based on the Storm Water Standards Manual, the EUC project as a whole can be expected to generate the following pollutants: sediment, nutrients, heavy metals, organic compounds, trash and debris, oxygen demanding substances, oil and grease, bacteria and viruses, and pesticides; because it includes the following priority project categories listed in Table K.3: "Attached Residential Development", "Commercial Development >100,000 ft." (this is subject to be updated to "greater than one acre" based on Order No. R9-2007-0001), "Restaurants," "Parking Lots", and "Streets, Highways & Freeways." Anticipated pollutants will vary by individual parcels.

   The EUC project is located in the following hydrologic basin planning area: the Otay Valley Hydrologic Area within the Otay Hydrologic Unit. The corresponding number designation is 910.20 (Region '9', Hydrologic Unit '10', and Hydrologic Area '2'). In Hydrologic Basin 910.20, Poggi Canyon Creek is listed as impaired on the 303(d) List. The pollutant/stressor causing impairment of Poggi Canyon Creek is the pesticide DDT.

   Based on the definition of primary pollutants of concern from the Storm Water Standards Manual and based on the discussion provided in Section 2.1.2 of the EUC WQTR, there are no primary pollutants of concern for the project. For projects where no primary pollutants of concern exist, those pollutants identified through the use of Table K.3 shall be considered secondary pollutants of concern. For the EUC project as a whole, this will include every pollutant that is shown on Table K.3. As development plans for individual parcels are prepared, either a supplemental WQTR from an engineer verifying the sizing of all devices selected for a parcel will be submitted, or a project-specific WQTR shall be prepared referencing this WQTR for

information relevant to regional design concepts (e.g., downstream conditions of concern).

Table K.3
Anticipated and Potential Pollutants Generated By Land Use Type

Priority Project Categories	Sediment	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
	General Pollutant Categories								
Attached Res. Dev.	X	X			X	X	X	X	X
Dev. of 10 Hsg units or more	X	X			X	P(1)	P(2)	p	X
Com'l Dev. >1 acre	P(1)	P(1)		P(2)	X	P(5)	X	P(3)	P(5)
Auto Repair Shops			X	X(4) (5)	X		X		
Restaurants					X	X	X	X	
Hillside Dev. >5K s.f. (2)	X	X			X	X	X		X
Parking Lots	P(1)	P(1)	X		X	P (1)	X		P(1)
Streets, Highways & Freeways	X	P(1)	X	X(4)	X	P(5)	X		

X = anticipated P = potential
(1) A potential pollutant if landscaping exists on-site.
(2) A potential pollutant if the project includes uncovered parking areas.
(3) A potential pollutant if land use involves food or animal waste products.
(4) Including petroleum hydrocarbons.
(5) Including solvents

Source: City of Chula Vista "Development and Redevelopment Projects Storm Water Standards Requirements Manual," December 9, 2002, Appendix B - Table 1.
* Note that "Attached Residential Development" is subject to be updated to "a development of 10 housing units or more" based on Order No. R9-2007-0001.
** Note that "Commercial Development >100,000 ft^2" is subject to be updated to "greater than one acre" based on Order No. R92007-0001.

4. **Site Design BMPs:** In general, there will be a strong focus on LID principles through implementation of Integrated Management Practices (IMPs) for post-construction storm water management for the EUC project. In addition to the LID design principles, there will be some additional conventional measures applied. For example, other conventional measures available from the Storm Water Standards Manual will be used to treat trash and debris. The conventional measures that are proposed will not be stand-alone measures but will be part of a treatment train of BMPs in conjunction with the LID IMPs. Site design and source control BMPs will also be implemented. The site design and source control BMPs are described in Sections 3.2 and 3.3. LID IMPS are described in Section 3.4, and conventional BMPs are described in Section 3.5.

   The LID IMPs are proposed to consist of in-ground planter boxes (tree wells and median) dispersed uniformly throughout the site's landscape. In addition to in-ground planters (tree wells and median), pervious pavement, and swales will also be utilized. Detention and slow filtration through biologically active soil in the planter boxes will provide treatment and manage discharge rates and durations. As development plans for individual parcels are prepared, the same procedures described in the WQTR shall be followed to design IMPs within the parcel. The IMPs within

each parcel may include, but are not limited to, any of the standard designs provided in Appendix C of the WQTR. All development within the project will be subject to the City of Chula Vista's SUSMP at the time of grading permit issuance.

Operation and Maintenance Plans (O&M Plans) will be prepared to describe the designated responsible parties to manage the IMPs, BMPs, and the detention facilities for the southerly drainage area, and the training requirements, operating schedule, maintenance frequency, routine service schedule, specific maintenance activities, copies of resource agency permits (if applicable), record keeping requirements, and any other necessary activities. There may be one or more O&M Plans for the EUC as needed, depending on the delegation of maintenance responsibilities (i.e., an overall site O&M Plan may be prepared for the hydrodynamic separators or drainage inserts within the public streets and the additional flood control detention facilities for the southerly drainage area, while individual parcels may require additional O&M Plans for site-specific BMPs located within the parcel). The CFDs and/or HOAs will be responsible for funding and maintenance for all storm water BMPs. Typical maintenance activities are provided in this WQTR for the LID IMPs and conventional BMPs.

C. Alternative Grading Options

Two alternative grading options, including a preferred option (Grading Option 1) and a second option (Grading Option 2), are being considered for the EUC project. Variations within these options could also be considered. Grading Option 1 recognizes anticipated development to the south of the Applicant's property and balances grading quantities through the export of material to provide fill in the areas of the future Village Nine or the University Site. Grading Option 2 balances grading quantities through the export of material to the remainder of the EUC site south of the applicant's ownership and includes the grading necessary for construction of the portions of "A" Street, "B" Street, "C" Street, "M" Street and Hunte Parkway. Option 2 would require the raising of the EUC by approximately 5.5 feet. Grading Option 1 would not cause an increase in EUC elevations. The two grading options for the EUC development both feature three major drainage basins on-site: the northern drainage basin, central drainage basin, and southern drainage basin.

1. **Northern Basin:** Under both Grading Options 1 and 2, the northern post-project drainage basin (Drainage Basins 100 and 200) of the EUC SPA Plan site would be served by an on-site storm drain system that would convey runoff to an existing storm drain system in Birch Road. From Birch Road, runoff would continue northerly then westerly, through Otay Ranch Villages Six, Seven, and Planning Area Twelve then co-mingled and ultimately discharge to the existing Poggi Canyon Regional Detention Facility (ultimately discharges to Poggi Canyon). The existing Poggi Canyon Regional Detention Facility was designed as part of a master drainage design for a reach of Poggi Canyon Creek.

   The runoff from the northern portion of the EUC SPA Plan area would be contained in existing storm drain pipes for the entire length of travel between the project site and the existing Poggi Canyon Regional Detention Facility. The storm drain system and the existing Poggi Canyon Regional Detention Facility were designed assuming

the area of the project site contributing to the basin would be 20.4 developed acres, and the detention facility was designed to detain the 10-, 50-, and 100-year storm events down to pre-project levels.

Table K.1 provides a summary of the 2-, 10-, 50-, and 100-year storm events for the north drainage basin under post-project conditions under each grading alternative. As shown in the table, under both grading options, the proposed grading and drainage designs for the northern drainage basin would not exceed 20.4 acres. As such, the existing storm drain system serving the northern basin would accommodate project storm water flows and as such, the proposed project would not substantially alter the existing drainage pattern of the project site or area in a manner that would result in substantial erosion or siltation off-site.

2. **Central Basin:** Under both Grading Options 1 and 2, the central drainage basin (Drainage Basin 300 through 900) of the EUC SPA Plan site would be served by an on-site storm drain system that would convey runoff to an existing storm drain system that conveys runoff westerly under SR-125 to Otay Ranch Village Seven. The runoff from the central portion of the EUC SPA Plan would co-mingle with off-site runoff from SR-125 and Otay Ranch Village Seven. It would be discharged directly from the storm drain system under State Route 125 to the existing Wolf Canyon Water Quality and Extended Detention Basins, which ultimately discharge to Wolf Canyon.

   The storm drain system and the existing Wolf Canyon Water Quality and Extended Detention Basins were designed assuming the area of the EUC SPA Plan contributing to the basins would be 163.6 developed acres and the land use would be the medium-high residential and commercial development. The proposed grading and drainage design for the central drainage basin of the EUC SPA Plan would honor this original design and would not exceed 163.6 acres.

   Table K.1 provides a summary of the 2-, 10-, 50-, and 100-year storm events for the central drainage basin under post-project conditions under each grading option. As shown in the table, under both grading options, the proposed grading and drainage design for the central drainage basin would not exceed 163.6 acres. As such, the existing storm drain system serving the central basin would accommodate project storm water flows and as such, the proposed project would not substantially alter the existing drainage pattern of the project site or area in a manner that would result in substantial erosion or siltation off-site. Thus, impacts are concluded to be less-than-significant for the central drainage basin.

3. **Southern Basin:** The southern drainage basins of the EUC SPA Plan site drain to two distinct un-named drainages which each continue southerly to the Otay River. The southern post-project drainage basin would consist of three on-site and two off-site drainage basins. The on-site southern drainage basin would be routed to a proposed underground detention facility located at the southern end of the EUC SPA Plan along "M" Street, which would detain the 2-, 10-, 50-, and 100-year storm events. The detained flows from the underground detention facility would be commingled with a portion of the flows from the "triangular wedge" (16.6 acres of the off-site portion of EUC (land owned by the OLC) and 30.3 acres of off-site fill area to the south of Hunte Parkway (also referred to as the "Off-site Soils Stockpiling Area" or "SSA" (Drainage Basin 4000). The runoff would then be routed to a proposed detention basin located within the downstream canyon. This basin would

also be designed for a volume of 2.7 acre-feet while attenuating the 2-, 10-, 50-, and 100-year post-project flows. Drainage Basin 5000 would be just east of Drainage Basin 4000 and would collect flows from the remaining portion of the "triangular wedge" and commingle with remaining areas of the EUC SPA Plan draining east toward EastLake Parkway, as well as flows from the existing adjacent developments (Otay Ranch Village Eleven and Eastlake Parkway). The post-project flows from Drainage Basin 5000, remaining areas of the EUC SPA Plan draining east toward EastLake Parkway and the existing adjacent developments mentioned above, would be less than that of the pre-project flows. Therefore, a detention facility has not been proposed for this drainage basin. All of the proposed detention facilities for Grading Option 1 would detain the post-project flows to at or below pre-project levels.

Under Grading Option 2 the southern drainage basins of the EUC SPA Plan site would drain to two distinct un-named drainages, which each continue southerly to the Otay River. The southern post-project drainage basin would consist of three on-site and two off-site drainage basins. The on-site southern drainage basin would be routed to a proposed underground detention facility, which would detain the 2-, 10-, 50-, and 100-year storm events. The detained flows from the underground detention facility would be commingled with a portion of the flows from the interim condition triangular wedge (Drainage Basin 4000).

The runoff would then be routed to a proposed interim condition above ground detention basin located within the downstream westerly canyon. Drainage Basin 4000 would also be designed for a volume of 1.6 acre-feet while attenuating the 2-, 10-, 50-, and 100-year post-project flows. The interim condition above ground detention basin would need to be reassessed when the pads within the triangular wedge are developed in order to detain for the ultimate condition. Drainage Basin 5000 is just east of Drainage Basin 4000 and collects flows from the remaining portion of the interim condition triangular wedge and commingles with remaining areas of EUC SPA Plan draining east toward EastLake Parkway. Drainage Basin 5000 also collects flows from the existing adjacent developments (Otay Ranch Village Eleven and Eastlake Parkway). The post-project flows from Drainage Basin 5000, remaining areas of the EUC SPA Plan draining east toward Eastlake Parkway and the existing adjacent developments mentioned above, would be less than that of the pre-project flows. Therefore, a detention facility has not been proposed for this drainage basin. All of the detention facilities would detain the post-project flows to at or below pre-project levels.

II.5.4.9.6 Financing Drainage Facilities

A. <u>On-site Facilities</u>

City policy requires that all master planned developments provide for the conveyance of storm waters throughout the project to City engineering standards. The project will be required to construct all on-site facilities that have not yet been identified through the processing of a subdivision.

In newly developing areas east of I-805, it is the City's policy that development projects assume the burden of funding all maintenance activities associated with water quality facilities. As such, the City will enter into an agreement with the project applicant whereby maintenance of water quality facilities will be assured by one of the following funding methods:

1. A property owner's association that would raise funds through fees paid by each property owner; or
2. A Community Facilities District (CFD) established over the entire project to raise funds through the creation of a special tax for drainage maintenance purposes.

B. <u>Off-site Facilities</u>

Off-site drainage facilities that are necessary to support the proposed project are either constructed or are in the process of being designed and processed with the City of Chula Vista by other projects. There are no off-site drainage facilities required of the project.

II.5.4.9.7 Threshold Compliance

A. The planned development of the EUC SPA will not adversely impact the existing natural drainage condition. The increased runoff due to the development will be mitigated by use of detention basins as identified in the *Preliminary Drainage Study for McMillin Eastern Urban Center (EUC)*, revised January 30, 2008, by Rick Engineering Company.

B. Prior to approval of grading permits, the following note shall be placed on the grading plans to the satisfaction of the City Engineer: "Grading within Areas A, B and C, as shown in Figure 2 of the *Organic Pesticide Assessment and Soil Reuse Plan, revised June 5, 2007, by Geocon, Inc.*, shall be managed in accordance with the remediation measures included in the aforementioned plan to the satisfaction of the City Engineer. The grading plans shall demonstrate compliance with the 2007 Geocon report.

C. Prior to issuance of each grading permit for the EUC SPA Plan, the SSA, the Salt Creek Sewer Lateral Improvement, and the Poggi Canyon Sewer Improvement Area or any land development permit, including clearing and grading, the Project Applicant(s) shall submit a Notice of Intent (NOI) and obtain coverage under the National Pollutant Discharge Elimination System (NPDES) permit for Construction Activity from the State Water Resources Control Board (SWRCB). The permit requires development of a Storm Water Pollution Prevention Plan (SWPPP) and Monitoring Plan that shall be submitted to the City Engineer and the Director of Public Works. The SWPPP shall be incorporated into the grading and drainage plans and shall provide for implementation of construction and post-construction Best Management Practices (BMPs) on site to reduce the amount of sediments and pollutants in construction and post-construction surface runoff before it is discharged into off-site storm water facilities. The BMPs shall include measures to mitigate potentially significant indirect impacts to the jurisdictional feature approximately 300 feet downstream of the off-site Soils Stockpiling Area. The grading plans shall note the condition requiring a SWPPP and Monitoring Plans.

D. Prior to issuance of each grading permit, a detailed drainage system design study shall be prepared in accordance with the City of Chula Vista's standards and shall be reviewed and approved by the City Engineer.

E. Permanent treatment controls BMPs shall be included as part of the proposed project in accordance with Section 2c of the City of Chula Vista SUSMP, the City of Chula Vista Development Storm Water Manual, 2008, and the final Water Quality Technical Report for McMillin Eastern Urban Center (WQTR) to the satisfaction of the City Engineer.

F. As development plans for individual parcels are prepared, parcel owners shall choose from the on-site storm water management measures included in the menu in Appendix I of the final Water Quality Technical Report for McMillin Eastern Urban Center (WQTR) and submit a supplemental report to the WQTR to verify sizing to the satisfaction of the City Engineer. If an option other than what is shown on the menu is chosen by the parcel owner, a project-specific WQTR shall be prepared for each parcel, referencing the final WQTR for information relevant to regional design concepts (e.g., downstream conditions of concern) to the satisfaction of the City Engineer.

   Upon development, each land use shall be divided into Drainage Management Areas (DMA). This will include not only streets within the parcel, but also buildings, parking lots or structures, and other areas. As each DMA would generally drain to an IMP, the specific design of these features, including their proximity to structures and how runoff would be collected and discharged from them shall be subject to approval by the geotechnical engineer for the project. This shall be evaluated on a lot by lot basis after rough grading is completed and prior to constructing any improvements or structures. All development within the project shall be subject to the City of Chula Vista's SUSMP at the time of grading permit issuance unless otherwise addressed in a development agreement. Some parcels will utilize the excess Hydromodification benefits of the Wolf Canyon Basin.

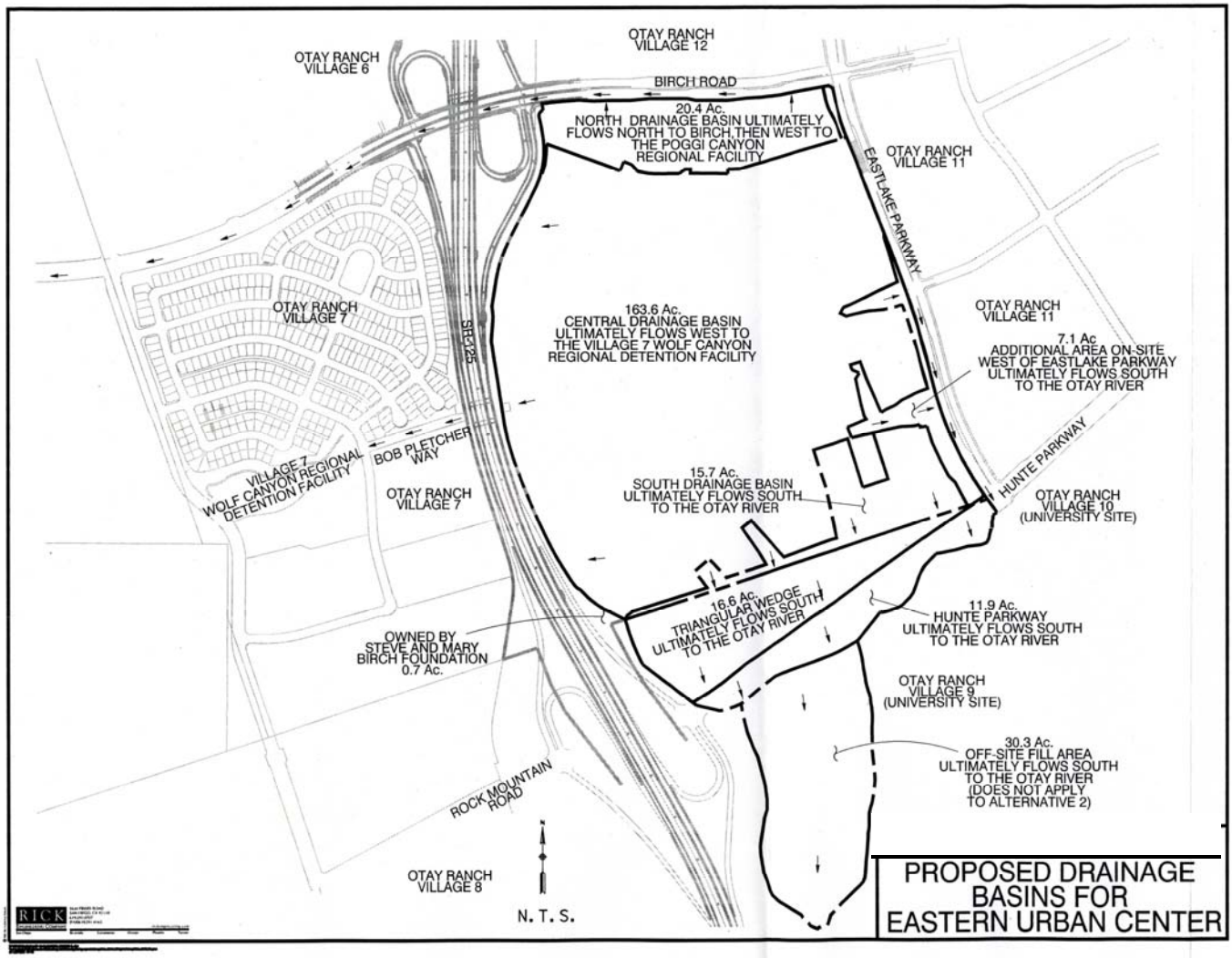
G. Should Grading Option 2 be implemented, the interim condition above ground detention basin in the southern drainage shall be reassessed and approved by the City Engineer when the pads within the triangular wedge are developed in order to detain for the ultimate condition.

H. The Applicant(s) shall monitor and mitigate any erosion in downstream locations that may occur as a result of on-site development.

I. The Applicant(s) shall comply with the City of Chula Vista Development Storm Water Manual Limitation of Grading requirements, which limit disturbed soil area to 100 acres, unless expansion of a disturbed area is specifically approved by the Director of Public Works. With any phasing resulting from this limitation, if required, the Applicant shall provide erosion and sediment control BMPs in areas that may not be completed before grading of an additional area begins.

J. As a result of the NPDES Municipal Permit, Order No. R9-2007-0001, and phasing of the EUC SPA Plan development, the Applicant(s) shall comply with the City's Interim Hydromodification Criteria or Hydrograph Modification Management Plan, as applicable, addressed regionally at the EUC SPA Plan level concurrent with Grading and Improvement Plans for major streets.

K. Prior to the issuance of any building permit resulting in an increase in permanent impermeable area, each Applicant wanting to develop within the EUC SPA Plan is required to develop and implement post-construction SUSMP and BMPs in accordance with the most recent regulations at the time of Grading or Building Permit issuance, unless otherwise addressed in a development agreement. In particular, Applicants are required to comply with the requirements of the NPDES Municipal Permit, Order No. R9-2007-0001, and the City of Chula Vista Development Storm Water Manual dated January 2008, or any re-issuances thereof. Specifically, Applicants shall incorporate in the proposed project design structural on-site design features to address Site Design and Treatment Control (BMPs) as well as LID and HMP requirements. Any of said requirements may be waived if the applicant demonstrates, to the satisfaction of the City Engineer, that regional facilities exist to address such requirements.



Source: Rick Engineering

Exhibit 18

II.5.4.10 AIR QUALITY

II.5.4.10.1 Threshold Standard

The City annually provides the San Diego Air Pollution Control District (APCD) with a 12-18 month development forecast and requests an evaluation of its impact on current and future air quality management programs, along with recent air quality data. The growth forecast and APCD response letters shall be provided to the GMOC for inclusion in its annual review.

II.5.4.10.2 Service Analysis

Air Quality Improvement Plan

The City of Chula Vista has a Growth Management Element (GME) in its General Plan. One of the stated objectives of the GME is to be proactive in its planning to meet federal and state air quality standards. This objective is incorporated into the GME's action program. Although adopted in 1989, the GME has remained current by not only requiring air pollution reduction measures identified in 1989 but also "measures developed in the future."

To implement the GME, the Chula Vista City Council has adopted the Growth Management Program that requires Air Quality Improvement Plans (AQIP) for major development projects (50 residential units or commercial/industrial projects with equivalent air quality impacts). Title 19 (Sec. 19.09.050B) of the Chula Vista Municipal Code requires that a SPA submittal contain an AQIP. The AQIP shall include an assessment of how the project has been designed to reduce emissions as well as identify mitigation measures.

The Chula Vista City Council adopted the Carbon Dioxide ($C0_2$) Reduction Plan on November 14, 2000. The plan included implementing measures regarding transportation and energy efficient land use planning and building construction measures for new development. In this Plan, it was recognized that the City's efforts to reduce carbon dioxide emissions from new development are directly related to energy conservation and air quality efforts. As a result, the City initiated a pilot study to identify and evaluate the relative effectiveness and costs of applying various design and energy conservation features in new development projects.

Based on the pilot study and other data the City has developed guidelines for required AQIP's. These guidelines allow a project to either participate in the Chula Vista Greenstar Building Efficiency Program or evaluate the project using the Chula Vista CO_2 Index Model. The EUC developer has selected to have the project modeled using the Chula Vista CO_2 Index Model. The AQIP for the EUC is included in the SPA Plan within the Sustainability Element.

Twelve land use action measures were identified in the INDEX Pilot Study report and the CO_2 Reduction Plan. These action measures address the energy efficiency and emission reduction aspects of any proposed development. The indicators for the CO_2 INDEX model are based on these action measures and are used to evaluate the ability of a proposed project to meet the Chula Vista standards for air quality improvement through the project modeling process. The land use action measures include:

Land Use

1. Compact Development - minimize sprawl.
2. Density - intensity of land use.
3. Diversity - mix and variety of Land Uses.
4. Orientation toward pedestrian and bicycles.
5. Orientation toward transit.

Buildings & Landscaping

6. Energy efficient building construction - Reduce energy use by exceeding Title 24 building standards.
7. Solar Use - Solar thermal applications and power generation.
8. Vegetation - Uptakes air pollutants and greenhouse gases and provides shading to reduce temperatures.

Transportation

Important components of Transportation Action Measures include dense street networks, completeness of sidewalks and direct routes to activity nodes.

9. Pedestrian Facilities - Circulation design and improvements for pedestrian use.
10. Bicycle Facilities - System design and improvements to encourage bicycle use.
11. Transit Facilities - Transit system design and improvements to circulation system.

Infrastructure

12. Water use - Land Planning that reduces water consumption (see Water Conservation Plan Section V of the Sustainability Element for details).

As identified in the CO_2 INDEX Pilot Study, the twelve key indicators listed in Table L.1 below have the greatest potential to achieve favorable scores based on project design. To "pass" the modeling test, project scores must reflect improvements at or beyond the threshold scores in two out of four indicators in each element: Land Use, Transportation and Environment.

Table L.1
CO_2 Index Model Indicators

Element	Indicator	Unit of Measure	Threshold Score
Land Use	Land Use Mix	0 to1 index	.4 or higher
	Land Use Balance	0 to 1 index	.75 or higher
	Neighborhood Completeness	% of key uses	50 or higher
	Internal Vehicle Connectivity	0 to 1 index	.75 or higher
Transportation	Pedestrian Network Coverage	Pedestrian Routes/Streets Ratio	1.0 or higher
	Pedestrian Route Directness	Walkable distance v. straight-line ratio	1.5 or lower
	Transit Service Coverage	Stops/sq. mile	10 or higher
	Daily Auto Driving	Vehicle-miles/day/capita	20 or less
Environment	Park Proximity	Distance to closest park	1200 ft or less
	Total Residential Energy Use	MMBtu/yr/capita	24 or less
	Total Non-residential Energy Use	MMBtu/yr/emp	12 or less
	Total Res. & Non-res. Energy Use	MMBtu/yr/person	70 or less

Source: Cinti Land Planning

Two EUC development scenarios were modeled. Both were consistent with the overall statistics shown on the Site Utilization Plan but each represented a different distribution of development intensity within the project. The results of each alternative were very comparable to the other indicating that development intensity variations, within the overall SPA Plan limitations, would yield comparable results.

Because the land use mix and project design features which meet the AQIP requirements are intrinsic to the project, no specific implementation measures are required. The project only need be developed as envisioned in the SPA Plan. The City of Chula Vista will continually review development plans at each stage of design and construction approval. These reviews will assure that the project is developed in a manner consistent with the SPA Plan and which meets the AQIP requirements.

11.5.4.10.3 Threshold Compliance and Recommendations

The City continues to provide a development forecast to the APCD in conformance with the threshold standard. The AQIP is provided as part of the EUC SPA Plan Sustainability Element.

Table L.2
Modeling Results

Element	Indicator	Units	Terra Nova	College Estates 1	College Estates 2	*Weighted By*	*TN Value*	*TN Weight*	*CE1 Value*	*CE1 Weight*	*CE2 Value*	*CE2 Weight*	Weighted Average	Village 6	Village 11	East Lake 3
Demographics	Population	residents	3482	3249	1839		*3647*		*2794*		*2726*		3055	6261	6974	6173
Demographics	Households	dwelling units	1159	1083	613								--	2083	2321	2056
Demographics	Employment	employees	40	245	40		*42*		*211*		*59*	--	104	241	305	792
Demographics	Land Area	acres	199	242	141			--		--		--	--	282.98	509.24	743.61
Land-Use	Development Footprint	acres/resident	0.06	0.07	0.06	*residents*	*0.06*	*3482*	*0.07*	*3249*	*0.06*	*1839*	0.06	0.04	0.04	0.07
Land-Use	Street Network Extent	street mi./capita	2.43	2.76	2.66	*residents*	*2.43*	*3482*	*2.76*	*3249*	*2.66*	*1839*	2.60	1.79	2.44	1.38
Land-Use	Amenity Proximity (retail)	ft.	2363	3491	4240	*dwelling units*	*2363*	*1159*	*3491*	*1083*	*4240*	*613*	3194	2192	2925	6260
Land-Use	Single-Family Dwelling Density	DU/acre	8.22	5.51	6.94	*dwelling units*	*8.22*	*1159*	*5.51*	*1083*	*6.94*	*613*	6.92	8.13	7.08	4.50
Land-Use	Multi-Family Dwelling Density	DU/acre	16.66	NA	NA	*dwelling units*	*16.66*	*1159*	*0*	*1083*	*0*	*613*	6.76	24.90	15.80	17.25
Land-Use	Average Residential Density	DU/acre	9.98	5.51	6.94	*dwelling units*	*9.98*	*1159*	*5.51*	*1083*	*6.94*	*613*	7.63	12.25	10.38	5.77
Land-Use	Employment Density	emps./acre	2.51	12.01	4.08	*employees*	*2.51*	*40*	*12.01*	*245*	*4.08*	*40*	9.86	5.05	6.80	11.25
Land-Use	Commercial Building Density	ratio	NA	0.08	NA	*commercial parcel area (sq.ft.)*	*0*	*0*	*0*	*280548*	*0*	*0*	0.08	0.35	0.35	0.35
Land-Use	Use Mix	0 to 1 index	0.33	0.27	0.36	*land area (acres)*	*0.33*	*199*	*0.27*	*242*	*0.36*	*141*	0.31	0.37	0.32	0.32
Land-Use	Use Balance	0 to 1 index	0.52	0.34	0.34	*land area (acres)*	*0.52*	*199*	*0.34*	*242*	*0.34*	*141*	0.40	0.48	0.49	0.44
Land-Use	Neighborhood Completeness	% of key uses	40	40	40	*residents*	*40*	*3482*	*40*	*3249*	*40*	*1839*	40	60	60	80
Land-Use	Block Size	acres	23.48	9.08	10.75	*land area (acres)*	*23.48*	*199*	*9.08*	*242*	*10.75*	*141*	14.41	6.14	9.29	18.43
Land-Use	Pedestrian Orientation of Buildings	ft.	NA	103	NA	*feet of setback*	*0*	*0*	*103*	*889*	*0*	*0*	103	N/D	N/D	N/D
Land-Use	Internal Connectivity for Pedestrians	0 to 1 index	0.73	0.81	0.75	*no. of ped. intersections*	*0.73*	*105*	*0.81*	*102*	*0.75*	*85*	0.76	1.00	0.98	0.95
Land-Use	Internal Connectivity for Vehicles	0 to 1 index	0.77	0.79	0.66	*no. of street intersections*	*0.77*	*57*	*0.79*	*58*	*0.66*	*53*	0.74	0.82	0.74	0.84
Land-Use	External Access for Pedestrians	ft. between points	1138	804	1983	*study perimeter (ft.)*	*1138*	*18080*	*804*	*16086*	*1983*	*15865*	1299	1279	619	2919.71
Land-Use	External Access for Vehicles	ft. between points	1934	2011	2644	*study perimeter (ft.)*	*1934*	*18080*	*2011*	*16086*	*2644*	*15865*	2184	1511.73	1598.79	4671.54
Land-Use	Street Network Density	miles/sq. mi.	15.37	19.71	18.83	*land area (acres)*	*15.37*	*199*	*19.71*	*242*	*18.83*	*141*	18.01	17.97	21.40	15.59
Land-Use	Housing Proximity to Transit	ft. to closest stop	1439	1667	861	*dwelling units*	*1439*	*1159*	*1667*	*1083*	*861*	*613*	1401	1306	1560	1317
Land-Use	Employment Proximity to Transit	ft. to closest stop	2819	445	984	*employees*	*2819*	*40*	*445*	*245*	*984*	*40*	804	1064	1040	1081
Land-Use	Transit-Oriented Residential Density	DU/acre w/i 1/4 mi.	11	5	7	*dwelling units w/in 1/4 mi.*	*11*	*1073*	*5*	*896*	*7*	*613*	8	12.25	10.40	6.05
Land-Use	Transit-Oriented Employment Density	emps./acre w/i 1/4 mi.	3	12	4	*employees w/in 1/4 mi.*	*3*	*0*	*12*	*388*	*4*	*40*	11	4	6	10
Transportation	Pedestrian Network Coverage	ped. routes/streets ratio	0.94	0.85	0.92	*total street miles*	*1*	*3058*	*1*	*4777*	*1*	*2647*	0.89	1.00	1.00	1.00
Transportation	Pedestrian Crossing Distance	ft. curb to curb	45	41	39	*no. of street intersections*	*45*	*57*	*41*	*58*	*39*	*53*	42	42	36	52
Transportation	Pedestrian Route Directness	walk ft./straightline ft. ratio	1.62	1.76	1.45	*dwelling units*	*1.62*	*1159*	*1.76*	*1083*	*1.45*	*613*	1.64	1.61	1.38	1.59
Transportation	Bicycle Network Coverage	% of streets w/route	16	6	NA	*total street miles*	*16*	*3058*	*6*	*4777*	*0*	*0*	10	95	100	97
Transportation	Transit Service Coverage	stops/sq. mi.	8	11	23	*land area (acres)*	*8*	*199*	*11*	*242*	*23*	*141*	13	11	5	18
Transportation	Daily Auto Driving	veh-mi./day/capita	22	22.00	22	*residents*	*22*	*3482*	*22.00*	*3249*	*22*	*1839*	22	22.0	22.0	22.0
Infrastructure	Residential Water Use	gal./day/capita	~~128~~	~~171~~	~~153~~	*residents*	*128*	*3482*	*171*	*3249*	*153*	*1839*	~~150~~	~~151~~	~~160~~	~~193~~
Environment	Park Space Supply	acres/1000 residents	11.20	3.62	7.89	*residents*	*11.20*	*3482*	*3.62*	*3249*	*7.89*	*1839*	7.62	1.51	2.65	3.08
Environment	Park Proximity	ft. to closest park	2090	2732	1266	*dwelling units*	*2090*	*1159*	*2732*	*1083*	*1266*	*613*	2157	1359	1659	2558
Environment	Open Space Supply	% of land area	19	2	6	*land area (acres)*	*19*	*199*	*2*	*242*	*6*	*141*	9	10	13	16
Environment	Open Space Contiguity	0 to 1 index	0.72	0.53	0.58	*open space acres*	*0.72*	*37.81*	*0.53*	*4.85*	*0.58*	*8.43*	0.68	0.62	0.35	0.67
Environment	Housing Energy Use	MMBtu/yr./capita	27.59	32.30	35.55	*residents*	*28*	*3482*	*32*	*3249*	*36*	*1839*	31	24.33	22.59	28.89
Environment	Household Transportation Energy Use	MMBtu/yr./capita	46.80	46.80	46.80	*residents*	*47*	*3482*	*47*	*3249*	*47*	*1839*	47	46.80	46.80	46.80
Environment	Nonresidential Building Energy Use	MMBtu/yr./emp	0.00	18.03	0.00	*employees*	*0*	*3482*	*18*	*3249*	*0*	*1839*	18.03	14.19	22.36	42.72
Environment	Total Energy Use	MMBtu/yr./person	73.55	74.86	80.60	*residents + employees*	*74*	*3482*	*75*	*3249*	*81*	*1839*	75.56	69.02	67.42	71.94
Environment	NOx Emissions	lbs./yr./person	33.01	33.45	33.82	*residents + employees*	*33*	*3482*	*33*	*3249*	*34*	*1839*	33.35	32.66	32.51	33.35
Environment	SOx Emissions	lbs./yr./person	0.72	0.83	0.92	*residents + employees*	*1*	*3482*	*1*	*3249*	*1*	*1839*	0.80	0.63	0.60	0.81
Environment	HC Emissions	lbs./yr./person	58.43	58.44	58.44	*residents + employees*	*58*	*3482*	*58*	*3249*	*58*	*1839*	58.43	58.43	58.43	58.44
Environment	CO Emissions	lbs./yr./person	452.06	452.15	452.23	*residents + employees*	*452*	*3482*	*452*	*3249*	*452*	*1839*	452.13	451.98	451.95	452.13
Environment	PM Emissions	lbs./yr./person	0.13	0.14	0.16	*residents + employees*	*0*	*3482*	*0*	*3249*	*0*	*1839*	0.14	0.11	0.10	0.14
Environment	C02 Emissions	lbs./yr./person	10238	10566	10846	*residents + employees*	*10238*	*3482*	*10566*	*3249*	*10846*	*1839*	10493	9941	9835	10471

Source: Cinti Land Planning

II.5.4.11. CIVIC CENTER:

II.5.4.11.1 CITY THRESHOLD STANDARDS:

There is no adopted threshold standards for these facilities. The facility information is being provided in this report to aid in establishing operational benchmarks which will determine construction phasing of the Civic Center. These facilities are funded through the collection of the DIF fees in effect at the time building permits are issued unless stated otherwise in a development agreement.

II.5.4.11.2 SERVICE ANALYSIS:

Although the existing Civic Center successfully accommodated city administration offices prior to the mid-1980's population growth, increase in City staff to meet new demands of growth has caused increasing congestion problems. City staff in the Public Services Building experience space shortages, lack of privacy and storage, and frequent noise distractions. This was reported in a survey, which is included in the Civic Center Master Plan dated May 8, 1989. Site Alternative Three "The Suburban Scheme" was selected from the master plan at a City Council conference on June 22, 1989.

II.5.4.11.3 EXISTING CONDITIONS:

In July of 2001, the final master plan for the renovations to the Civic Center was approved by City Council. Rebuilding the Civic Center was primarily funded by development fees (approximately 89%). The Civic Center Redevelopment was completed in three phases by 2008. The new City Hall Redevelopment, or Phase One of the Civic Center Complex, is completed. Phase Two, the construction of the new Public Services Building is also complete. Phase Three was the gutting and remodeling of the old Police Station for additional offices and was completed in 2008.

II.5.4.11.4 ADEQUACY ANALYSIS:

The need for the Civic Center cannot be easily related to population figures or acres of commercial and industrial land, which will be developed in the future. The original facilities, according to the master plan, are inadequate because of the lack of space. This has worsened as employee numbers and their workloads have increased in response to demands for services, which have been generated by new development. Expansion of the Civic Center Complex is currently underway. This expansion included space planning, design, and construction is expected to keep pace with demand for additional work space. City Hall facilities have been renovated and now include a new state of the art Council Chambers. Consistent with the Master Plan, further expansions and renovations include a conversion of the old Police Station to additional office space and re-building of the Public Services Building.

II.5.4.11.5 FINANCING CIVIC CENTER FACILITIES:

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The Public Facilities Development Impact Fee (PFDIF) is adjusted every October 1st pursuant to Ordinance 3050, which was adopted by the City Council on November 7, 2006. The PFDIF amount is subject to change as it is amended from time to time. The Civic Center DIF Fee for Multi-Family Development is $2,328/unit and for Commercial Development is $7,841 (see Table B.7).

The EUC SPA project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the EUC Civic Center Fee obligation at buildout is $7,699,120 (see Table M.1).

Table M.1[33]
EUC SPA
Public Facilities Fees For Civic Center

Phase	Multi-Family Units	Commercial Acres	Civic Center		Total Fee
			Multi-Family $2,328/Unit	Commercial $7,841/Acre	
Blue	773	42.66	$1,799,544	$334,497	$2,134,041
Yellow	1,023	9.63	$2,381,544	$75,509	$2,457,053
Green	540	29.76	$1,257,120	$233,348	$1,490,468
Orange	647	14.20	$1,506,216	$111,342	$1,617,558
Total	**2,983**	**96.25**	**$6,944,424**	**$754,696**	**$7,699,120**

Table L.1 is only an estimate. Actual fees may be different. PDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

II.5.4.11.6 THRESHOLD COMPLIANCE AND RECOMMENDATIONS:

Civic Center facilities will be funded through the payment of the public facilities fees; the fees shall be paid prior to the issuance of building permits unless stated otherwise in a development agreement, at the rate in effect at building permit issuance.

[33] Fee based on Form 5509 dated 9/16/2008. The PDIF Fee is subject to change as it is amended from time to time. Actual fees may be different, please verify with the City of Chula Vista at the time of building permit.

II.5.4.12 CORPORATION YARD

II.5.4.12.1 THRESHOLD STANDARDS:

There is no adopted threshold standard for this facility. The facility information is being provided in this report to aid the City in establishing operational benchmarks which will determine construction phasing of the corporation yard.

II.5.4.12.2 SERVICE ANALYSIS:

New development, with its resultant increase in required maintenance services, creates a need for a larger corporation yard. The 25-acre Corporate Yard is located at 1800 Maxwell Road.

II.5.4.12.3 EXISTING CONDITIONS:

The Corporate Yard Facility was previously an SDG&E equipment and repair facility. The city has renovated and added new improvements for the maintenance and repair of city owned equipment. This facility consists of a renovated building that serves as the administration building for the Corporate Yard. Existing shop buildings have been renovated and new shops have been added as well as a new maintenance building. The Corporate Yard includes parking for employees, city vehicles and equipment. In addition, a Bus Wash/Fuel Island/CNG and associated equipment have been added.

II.5.4.12.4 ADEQUACY ANALYSIS:

The need for a Corporate Yard cannot be easily related to population figures or acres of commercial and industrial land which will be developed in the future. The growth in population, increase in street miles and the expansion of developed areas in Chula Vista, requires more equipment for maintenance as well as more space for storage and the administration of increased numbers of employees. The need for a larger Corporation Yard has been specifically related to new development.

II.5.4.12.5. FINANCING CORPORATE YARD FACILITIES:

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The Public Facilities Development Impact Fee (PFDIF) is adjusted every October 1st pursuant to Ordinance 3050, which was adopted by the City Council on November 7, 2006. The PFDIF amount is subject to change as it is amended from time to time. The Corporate Yard DIF Fee for Multi-Family Development is $338/dwelling unit and for Commercial Development is $7,148/acre(see Table B.7).

The project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Corporate Yard Fee obligation at buildout is $1,696,249 (see Table N.1).

Table N.1 EUC SPA Public Facilities Fees For Corporate Yard[34]					
Phase	**Multi-Family Units**	**Commercial Acres**	**Corporate Yard**		**Total Fee**
			Multi-Family $338/Unit	**Commercial $7,148/Acre**	
Blue	773	42.66	$261,274	$304,934	$566,208
Yellow	1,023	9.63	$345,774	$68,835	$414,609
Green	540	29.76	$182,520	$212,724	$395,244
Orange	647	14.20	$218,686	$101,502	$320,188
Total	**2,983**	**96.25**	**$1,008,254**	**$687,995**	**$1,696,249**

The projected fee illustrated in Table N.1 is an estimate only. Actual fees may be different. PFDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

5.3.12.6. THRESHOLD COMPLIANCE:

Corporate Yard facilities will be funded through the payment of the public facilities fees; the fees shall be paid prior to the issuance of building permits unless stated otherwise in a development agreement, at the rate in effect at of building permit issuance.

[34] Fee based on Form 5509 dated 9/16/2008. The PDIF Fee is subject to change as it is amended from time to time. Actual fees may be different or stated otherwise in a parks or development agreement, please verify with the City of Chula Vista at the time of building permit.

5.3.13. OTHER PUBLIC FACILITIES

5.3.13.1. THRESHOLD STANDARD:

There is no adopted threshold standard for these facilities which are part of the Public; Facilities Development Impact Fee Program and include GIS, Computer Systems, Telecommunications, Records Management System and Administration. The information regarding these capital items is being provided in this section of the PFFP to aid the City and the Developer in calculating the PFDIF fees to be paid by the EUC Project.

5.3.13.2. SERVICE ANALYSIS:

The public facilities identified above are described in the report entitled *Development Impact Fee for Public Facilities* dated April 20, 1993, known as document number C093-075.

5.3.14.3. EXISTING CONDITIONS:

The City continues to collect funds from building permit issuance in the Eastern Territories for deposit to the account associated with Administration costs only and not the other aforementioned public facilities. These other public facilities that funds are not currently collected include records management, telecommunications, computer systems and GIS.

5.3.14.4. FINANCING ADMINISTRATION FACILITIES:

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The Public Facilities Development Impact Fee (PFDIF) is adjusted every October 1st pursuant to Ordinance 3050, which was adopted by the City Council on November 7, 2006. The PFDIF amount is subject to change as it is amended from time to time. The Administration DIF Fee for Multi-Family Development is $532/dwelling unit and for Commercial Development is $1,795/acre (see Table B.7)[35].

Table O.1
EUC SPA
Public Facilities Fees For Administrative Facilities

Phase	Multi-Family Units	Commercial Acres	Administrative Facilities		Total Fee
			MF $532/Unit	Commercial $1,795/Acre	
Blue	773	42.66	$411,236	$76,575	$487,811
Yellow	1,023	9.63	$544,236	$17,286	$561,522
Green	540	29.76	$287,280	$53,419	$340,699
Orange	647	14.20	$344,204	$25,489	$369,693
Total	**2,983**	**96.25**	**$1,586,956**	**$172,769**	**$1,759,725**

[35] Fee based on Form 5509 dated 9/16/2008. The PDIF Fee is subject to change as it is amended from time to time. Actual fees may be different, please verify with the City of Chula Vista at the time of building permit.

The EUC SPA project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the EUC Administration Facilities Fee obligation at buildout is approximately $1,759,725. Table N.1, is only an estimate. Actual fees may be different. Changes in the number of multi-family dwelling units or commercial acreage may affect the estimated fee. Public Facilities DIF Fees are subject to change depending upon City Council actions and or Developer actions that change the number of residential units, residential densities, industrial acreage or commercial acreages.

5.3.14.5 THRESHOLD COMPLIANCE AND RECOMMENDATIONS:

Administration Facilities will be funded through the payment of public facility fees; the fees shall be paid prior to the issuance of building permits unless stated otherwise in a development agreement, at the rate in effect at the time of building permit.

II.5.4.14 FISCAL ANALYSIS

II.5.4.14.1 Threshold Standard

1. The GMOC shall be provided with an annual fiscal impact report, which provides an evaluation of the impacts of growth on the City, both in terms of operations and capital improvements. This report should evaluate actual growth over the previous 12-month period, as well as projected growth over the next 12-18 month period, and 3-5 year period.
2. The GMOC shall be provided with an annual "economic monitoring report" which provides an analysis of development impact fees collected and expended over the previous 12-month period.

II.5.4.14.2 Facility Master Plan

There is no existing Master Plan for fiscal issues. However, the City of Chula Vista has a fiscal model that is used to determine the land use changes to the General Plan. A *Memorandum of the Eastern Urban Center Fiscal Analysis, dated March 31, 2009, by Economic Research Associates* (ERA) was prepared for the City of Chula Vista. This analysis is based on the city's model and identifies the estimated fiscal impact that the EUC project will have on the operation and maintenance of the budgets of the City of Chula Vista (general fund). This report is based on information that was current as of March 2009 and there has been no update of ERA's research effort since such date. The fiscal analysis section of this PFFP is predicated on the ERA analysis. In addition, supporting fiscal data is presented in the ERA tables in Appendix B.

II.5.4.14.3 Project Processing Requirements

The SPA Plan and the PFFP are required by the Growth Management Program to prepare a phased fiscal/economic report dealing with revenue vs expenditures including maintenance and operations.

II.5.4.14.4 Fiscal Analysis of Project

The EUC will serve as a new urban center for the Otay Ranch and eastern Chula Vista community. The area will include regional-serving commercial, financial, urban residential, professional, entertainment and cultural uses. The EUC is planned to have an intense mixture of uses similar to a traditional downtown and development is anticipated be denser relative to the City of Chula Vista as a whole.

Table P.1 describes the development program and the projected absorption schedule. The development program outlines approximately 2 million square feet of office, 980,000 square feet of retail, two 250-room hotels, and approximately 3,000 medium to high density residential units. The absorption schedule is expected to extend for a 22-year period and has been based on the EUC Traffic Analysis.

II.5.4.14.5 Methodology

The EUC SPA fiscal analysis has been prepared using the Fiscal Impact Framework created by ERA to provide consistent evaluation of Chula Vista Specific Plans. The Framework

Table P.1
Project Absorption – Eastern Urban Center

		Period 1												Period 2										
			10%					20%			20%	10%	40%				60%					40%		
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	TOTAL
Non Residential Uses																								
Retail (s.f.)		-	73,850	-	-	-	-	147,700	-	-	147,700	73,850	295,400	-	-	-	144,900	-	-	-	-	96,600	-	980,000
Office >5 Stories (s.f.)		-	40,820	-	-	-	-	81,640	-	-	81,640	40,820	163,280	-	-	-	665,700	-	-	-	-	443,800	-	1,517,700
Office <5 Stories (s.f.)		-	47,830	-	-	-	-	95,660	-	-	95,660	47,830	191,320	-	-	-	-	-	-	-	-	-	-	478,300
Hotel (Rooms)		250.00						250																500
Parks (acres)		1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.08	-	-	-	-	-	-	-	-	-	-	13.15
Park Equivalent Amenities (acres)		0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84											10.21
Open Space/ROWs/Other (acres)		2.58	2.92	2.34	2.34	2.34	2.34	3.75	2.34	2.34	3.51	2.92	4.63	-	-	-	3.24	-	-	-	-	2.16	-	40
																								-
Non Residential Acreage																								-
Commercial Acreage		7	5	-	-	-	-	17	-	-	10	5	19	-	-	-	10	-	-	-	-	6	-	78
Residential Uses																								
Acreage																								
Single Family																								-
Multi Family		13.02	11.86	11.86	6.32	6.23	6.23	6.23	6.23	6.23	6.23	6.23	3.26	-	-	-	-	-	-	-	-	-	-	89.89
Attached Townhome/Rowhouse																								
Podium Product																								
High Rise Luxury Building																								
Mobile Homes																								-
Units																								
Single Family		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								-
Multi Family[1]		249	249	249	249	249	249	249	249	249	249	249	244											2,983
High Density Single Family		*78*																						*78*
Attached Townhome/Rowhouse		*171*	*249*	*249*	*4*																			*673*
Podium Product					*245*	*249*	*249*	*249*	*249*	*249*	*249*	*249*	*8*											*1,996*
High Rise Luxury Building													*236*											*236*
Mobile Homes																								-
Total Units		249	249	249	249	249	249	249	249	249	249	249	244	-	-	-								2,983
																								-
Population																								-
Single Family Persons/DU@	3.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Multi Family Persons/DU@	2.58	643	643	643	643	643	643	643	643	643	643	643	630	-	-	-	-	-	-	-	-	-	-	7,707
Mobile Homes																								-
Cumulative Population		643	1,287	1,930	2,573	3,217	3,860	4,503	5,147	5,790	6,434	7,077	7,707	7,707	7,707	7,707	7,707	7,707	7,707	7,707	7,707	7,707	7,707	
																								-
Employment																								-
Retail Emp/s.f. @	450	-	164	-	-	-	-	328	-	-	328	164	656	-	-	-	322	-	-	-	-	215	-	2,178
Office Emp/s.f. @	300	-	296	-	-	-	-	591	-	-	591	296	1,182	-	-	-	2,219	-	-	-	-	1,479	-	6,653
Hotel Emp./Rm @	0.75	188	-	-	-	-	-	188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	375
Total		188	460	-	-	-	-	1,107	-	-	919	460	1,838	-	-	-	2,541	-	-	-	-	1,694	-	9,206
Cumulative Employment		188	647	647	647	647	647	1,754	1,754	1,754	2,673	3,133	4,971	4,971	4,971	4,971	7,512	7,512	7,512	7,512	7,512	9,206	9,206	

[1]Multifamily detail based on aggregation of typologies provided by McMillian residential economic profile. (Adjusted by 6% to accurately account for SPA unit count).

Source: Economics Research Associates

Source: ERA

utilizes the City of Chula Vista's budget to identify and allocate variable revenues and costs that grow proportionally with incremental development and sets up a consistent method to calculate revenue and cost impacts that may change according to the specific development program and SPA, such as property taxes, VLF in Lieu fees, sales tax receipts, and transient occupancy tax receipts. The memorandum "SPA Fiscal Analysis –Fiscal Model Methodology Including the Development of Fiscal Factors in the Analysis of SPA Proposals", dated February 2008, details the methodology for the overall Specific Plan Area Framework.

The Framework is built based off of the City of Chula Vista's Fiscal Year 2006 Adopted Budget. For this EUC analysis, all factors have been inflated to reflect 2008 values and the results of the analysis are presented in 2008 dollars.

II.5.4.14.6 Specific Plan Area Fiscal Impact Framework Modifications for the EUC

As described in the City of Chula Vista's SPA Fiscal Impact Framework, specific fiscal analyses may call for additional adjustments and customization to best reflect the nuances of each unique SPA or project. For the EUC SPA, the framework was modified to better account for (1) development program units (2) police costs, and (3) sales tax.

Development Program Units
The SPA Fiscal Impact Framework provides consistent analysis based on estimated land use acres. The EUC SPA development program was provided in terms of square feet and, for hotel uses, hotel rooms. To better fit the EUC inputs, both revenue and cost factors were translated from acres to square feet and hotel rooms. Police cost factors are the only exception; they are calculated based on acres as identified in the original SPA Fiscal Impact Framework.

Public Safety Costs
Public safety costs in the SPA Fiscal Impact Framework are calculated proportionally based on land use for commercial and industrial uses and, for residential uses, are calculated proportionally based on dwelling units and people density. ERA made adjustments to the original SPA Fiscal Impact Framework for both police and fire costs.

For police services, density may be a factor, but, given the significant difference in the density of the EUC development in relation to the city on average, these costs are overestimated using the model on a square foot basis. Police service costs increase with developed acres, but there is no clear relationship with the building square footage on each acre, as police typically patrol neighborhoods and areas rather than buildings. For the ERA analysis, police service costs are calculated on an acreage basis for commercial and industrial development and on a per unit basis for residential with no adjustment for density.

Fire costs were also adjusted in the ERA analysis to account for the, relatively high, density of the commercial and residential developments in the EUC. In the original SPA Framework, fire costs were adjusted to directly increase with residential persons per acre density[36], as shown by historical Chula Vista service call data, but given the uniqueness of the EUC within Chula Vista as a dense urban center, the residential density adjustment over allocated fire costs to residential development.

[36] High rise buildings require special equipment and, given the event of a fire, may call upon more operational fire resources than low and mid-rise buildings.

To more appropriately account for fire costs, ERA first revised the residential density adjustment factor to reflect the new persons-per-acre density within the Fiscal Analysis Zone (FAZ) as a result of the project instead of solely the new persons-per-acre density within the project residences. This substantially reduces the residential density adjustment factor. ERA then allocated a per square foot-per-acre density adjustment factor to the commercial developments.

Sales Tax
The retail planned for the EUC is more regional-serving in nature and is likely to draw on a larger area (including future developments in the San Diego Otay Mesa area and shoppers from Mexico) than a more traditional neighborhood or community level shopping center. For purposes of the ERA analysis, retail revenues were evaluated on the basis of the amount of total sales expected at each retail center.

While it is anticipated that EUC development will help recapture any leakage of dollars outside of Chula Vista, an adjustment of was made to account for sales transfers between centers already existing in Chula Vista and the EUC retail. Adjustments of 10 percent were made for neighborhood and other retail centers; adjustments of 25 percent were made for community shopping centers and adjustments of 30 percent was made for regional shopping centers.

Transient Occupancy Taxes
Transient Occupancy Taxes are taxes generated by hotel room revenue. Transient occupancy tax receipts in this model reflect a two-year growth period for each hotel to reach a full stable occupancy rate of 70 percent.

II.5.4.14.7 Net Fiscal Impact

Table P.2 presents the net fiscal impacts of the EUC SPA on the City of Chula Vista.

Annual fiscal impacts are positive from Year 1. In the first year there is a net fiscal revenue of $300,000 and this grows to an annual net fiscal revenue of $5 million by Build Out, Year 22.

Fiscal revenues are initially supported primarily by transient occupancy tax. In the first year transient occupancy tax makes up almost 80 percent of revenues. Property taxes and VLF revenues begin to outweigh the transient occupancy tax in Year 5, but transient occupancy tax remains a key revenue until Year 10.

At Build Out, property taxes are the greatest source of revenue generated by the EUC. Property tax and property transfer taxes make up approximately 30 percent of revenues, followed by vehicle license fees (VLF) revenues (approximately 20 percent of revenues), and sales tax receipts (approximately 20 percent of revenues). Transient occupancy taxes make up 18 percent of revenues.

It should be noted that revenues do not follow a completely straight linear growth path because property transfer taxes are one-time revenue. Thus, revenue generated in the EUC jumps the year after development comes online, but this new revenue is reduced slightly in the second year due to a smaller share of property transfer taxes.

Public safety—police and fire—service requirements due to new developments are expected to be the most significant public service costs generated by the EUC.

Both police and fire costs are allocated to the EUC proportionally based on developed units. While the Police Department does not anticipate the need for a new substation and may currently have some existing capacity, the model presents an average cost distribution of police costs. The Fire Department anticipates that a new station will be required to service the EUC and fire department costs are expected to increase due to the dense nature of the area.

Police service costs make up approximately 30 percent of total public service costs and fire service costs are anticipated to cost approximately 43 percent of costs.

II.5.4.14.8 Sensitivity Analysis

In addition to the base case, ERA performed a sensitivity analysis of fiscal costs to evaluate two scenarios in which public service costs increase at a higher rate than revenues. ERA evaluated the net fiscal impact of the EUC SPA with a real expenditure appreciation rate at 1 percent and a real expenditure appreciation rate of 2 percent.

One Percent Expenditure Real Appreciation

Table P.3 presents the net fiscal impacts generated by the EUC with an expenditure appreciation factor of 1 percent. In this case, annual net fiscal impacts of the EUC SPA are still a net fiscal revenue of $300,000 in the first year, but annual net fiscal revenues only grow to $3.6 million at build out.

Two Percent Expenditure Real Appreciation

Table P.4 presents the net fiscal impacts generated by the EUC with an expenditure appreciation factor of 2 percent. In this case, annual net fiscal impacts of the EUC SPA are still a net fiscal revenue of $300,000 in the first year, but annual net fiscal revenues grow to $1.9 million at build out.

II.5.4.14.9 Potential Risks

The absorption of development units are based on the EUC SPA traffic plan. A comprehensive market and retail analysis was not included in the scope of ERA study and actual absorption may vary, depending on the pace of recovery from the existing economic recession.

ERA observes that the length and breadth of the current economic recession is unknown and it is likely that the office and office-related hotel development, which is driven by employment growth, will be impacted most significantly; actual absorption of these units could be pushed back relative to the projected absorption in this analysis. The pace of residential is also likely to be impacted as a result of the credit crunch; however, population growth and the persistent lack of residential supply in California may help reinitiate residential development prior to the restart of commercial development.

In the case that commercial developments get pushed back further than residential developments, the City may face higher costs associated with residential while additional commercial revenues sources, such as sales tax and transient occupancy tax, will be delayed until the commercial is developed.

Table P.2
Eastern Urban Center Net Fiscal Impact
(Expenditure Real Appreciation Rate of 0%)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Revenues										
Property Taxes	$ -	$ 135.3	$ 280.0	$ 376.4	$ 480.9	$ 589.6	$ 702.4	$ 1,706.1	$ 2,692.4	$ 3,222.3
Property Transfer Taxes	-	68.7	77.8	57.9	66.1	72.4	79.0	155.6	270.6	245.0
VLF Revenues	98.6	203.8	275.1	352.1	432.1	514.9	719.0	1,568.2	1,968.7	2,347.0
Sales and Use Taxes	9.5	179.6	187.5	195.3	203.2	211.0	545.1	1,731.6	2,098.9	2,343.8
Transient Occupancy Tax	495.0	841.6	990.1	990.1	990.1	990.1	1,485.1	1,980.1	1,980.1	1,980.1
Other Revenues	34.1	71.7	85.9	95.0	104.0	112.9	187.3	392.4	514.5	596.0
Subtotal Revenues	**$ 637.2**	**$ 1,500.7**	**$ 1,896.5**	**$ 2,066.8**	**$ 2,276.3**	**$ 2,490.9**	**$ 3,717.9**	**$ 7,533.9**	**$ 9,525.3**	**$ 10,734.1**
Expenditures										
Police Costs	128.9	240.9	317.4	393.9	470.4	547.0	746.9	1,376.5	1,448.1	1,495.8
Fire Costs[1]	91.9	211.6	267.3	325.9	386.8	449.8	685.4	1,500.6	1,875.9	2,126.2
Other Expenditures	126.9	285.1	387.8	490.4	593.0	695.7	933.7	1,833.5	2,027.4	2,156.7
Subtotal Expenditures	**$ 347.7**	**$ 737.6**	**$ 972.4**	**$ 1,210.3**	**$ 1,450.3**	**$ 1,692.4**	**$ 2,365.9**	**$ 4,710.5**	**$ 5,351.4**	**$ 5,778.7**
Net Fiscal Impact	**$ 289.5**	**$ 763.1**	**$ 924.0**	**$ 856.6**	**$ 826.0**	**$ 798.5**	**$ 1,352.0**	**$ 2,823.4**	**$ 4,173.9**	**$ 4,955.4**

[1]Aggregation of both fire costs allocated to dwelling units and fire costs allocated to commercial and other uses under the Consolidated Per Unit Cost Factors.

Source: Economics Research Associates

TableP.3
Eastern Urban Center Net Fiscal Impact
(Expenditure Real Appreciation Rate of 1%)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Revenues										
Property Taxes	$ -	$ 135.3	$ 280.0	$ 376.4	$ 480.9	$ 589.6	$ 702.4	$ 1,706.1	$ 2,692.4	$ 3,222.3
Property Transfer Taxes	-	68.7	77.8	57.9	66.1	72.4	79.0	155.6	270.6	245.0
VLF Revenues	98.6	203.8	275.1	352.1	432.1	514.9	719.0	1,568.2	1,968.7	2,347.0
Sales and Use Taxes	9.5	179.6	187.5	195.3	203.2	211.0	545.1	1,731.6	2,098.9	2,343.8
Transient Occupancy Tax	495.0	841.6	990.1	990.1	990.1	990.1	1,485.1	1,980.1	1,980.1	1,980.1
Other Revenues	34.1	71.7	85.9	95.0	104.0	112.9	187.3	392.4	514.5	596.0
Subtotal Revenues	**$ 637.2**	**$ 1,500.7**	**$ 1,896.5**	**$ 2,066.8**	**$ 2,276.3**	**$ 2,490.9**	**$ 3,717.9**	**$ 7,533.9**	**$ 9,525.3**	**$ 10,734.1**
Expenditures										
Police Costs	128.9	243.3	323.8	405.9	489.6	574.9	792.8	1,535.7	1,698.0	1,843.4
Fire Costs[1]	91.9	213.7	272.7	335.8	402.5	472.7	727.5	1,674.1	2,199.7	2,620.3
Other Expenditures	126.9	288.0	395.5	505.3	617.1	731.2	991.1	2,045.5	2,377.3	2,657.9
Subtotal Expenditures	**$ 347.7**	**$ 745.0**	**$ 992.0**	**$ 1,246.9**	**$ 1,509.1**	**$ 1,778.7**	**$ 2,511.5**	**$ 5,255.4**	**$ 6,275.0**	**$ 7,121.6**
Net Fiscal Impact	**$ 289.5**	**$ 755.7**	**$ 904.5**	**$ 819.9**	**$ 767.1**	**$ 712.2**	**$ 1,206.5**	**$ 2,278.6**	**$ 3,250.3**	**$ 3,612.5**

[1]Aggregation of both fire costs allocated to dwelling units and fire costs allocated to commercial and other uses under the Consolidated Per Unit Cost Factors.

Source: Economics Research Associates

Table P.4
Eastern Urban Center Net Fiscal Impact
(Expenditure Real Appreciation Rate of 2%)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Revenues										
Property Taxes	$ -	$ 135.3	$ 280.0	$ 376.4	$ 480.9	$ 589.6	$ 702.4	$ 1,706.1	$ 2,692.4	$ 3,222.3
Property Transfer Taxes	-	68.7	77.8	57.9	66.1	72.4	79.0	155.6	270.6	245.0
VLF Revenues	98.6	203.8	275.1	352.1	432.1	514.9	719.0	1,568.2	1,968.7	2,347.0
Sales and Use Taxes	9.5	179.6	187.5	195.3	203.2	211.0	545.1	1,731.6	2,098.9	2,343.8
Transient Occupancy Tax	495.0	841.6	990.1	990.1	990.1	990.1	1,485.1	1,980.1	1,980.1	1,980.1
Other Revenues	34.1	71.7	85.9	95.0	104.0	112.9	187.3	392.4	514.5	596.0
Subtotal Revenues	**$ 637.2**	**$ 1,500.7**	**$ 1,896.5**	**$ 2,066.8**	**$ 2,276.3**	**$ 2,490.9**	**$ 3,717.9**	**$ 7,533.9**	**$ 9,525.3**	**$ 10,734.1**
Expenditures										
Police Costs	128.9	245.7	330.2	418.0	509.2	603.9	841.1	1,711.5	1,987.9	2,267.1
Fire Costs[1]	91.9	215.8	278.1	345.9	418.7	496.6	771.8	1,865.8	2,575.2	3,222.6
Other Expenditures	126.9	290.8	403.4	520.4	641.9	768.1	1,051.5	2,279.7	2,783.2	3,268.9
Subtotal Expenditures	**$ 347.7**	**$ 752.3**	**$ 1,011.7**	**$ 1,284.3**	**$ 1,569.8**	**$ 1,868.6**	**$ 2,664.4**	**$ 5,856.9**	**$ 7,346.3**	**$ 8,758.6**
Net Fiscal Impact	**$ 289.5**	**$ 748.3**	**$ 884.7**	**$ 782.5**	**$ 706.5**	**$ 622.4**	**$ 1,053.5**	**$ 1,677.0**	**$ 2,178.9**	**$ 1,975.5**

[1]Aggregation of both fire costs allocated to dwelling units and fire costs allocated to commercial and other uses under the Consolidated Per Unit Cost Factors.

Source: Economics Research Associates

II.5.4.15 PUBLIC FACILITY FINANCE

II.5.4.15.1 Overview

The City will ensure the appropriate public facilities financing mechanisms are utilized to fund the acquisition, construction and maintenance of public facilities required to support the planned development of the EUC SPA project in compliance with the City's Growth Management Program.

Public facilities are generally provided or financed in one of the following three ways:

1. Subdivision Exaction:	Developer constructed and financed as a condition of project approval.
2. Development Impact Fee:	Funded through the collection of an impact fee. Constructed by the public agency or developer constructed with a reimbursement or credit against specific fees.
3. Debt Financing:	Funded using one of several debt finance mechanisms. Constructed by the public agency or developer.

It is anticipated that all three methods will be utilized for the EUC SPA project to construct and finance public facilities.

II.5.4.15.2 Subdivision Exactions

Neighborhood level public improvements will be developed simultaneously with related residential and non-residential subdivisions. Through the Subdivision Map Act, it is the responsibility of the developer to provide for all local street, utility and recreation improvements. The use of subdivision conditions and exactions, where appropriate, will insure that the construction of neighborhood facilities is timed with actual development.

The imposition of subdivision conditions and exactions does not preclude the use of other public facilities financing mechanisms to finance the public improvement, when appropriate.

II.5.4.15.3 Development Impact Fee Programs

Development Impact Fees are imposed by various governmental agencies, consistent with State law, to contribute to the financing of capital facilities improvements within the City of Chula Vista. The distinguishing factor between a fee and a subdivision exaction is that exactions are requested of a specific developer for a specific project whereas fees are levied on all development projects throughout the City or benefit area pursuant to an established formula and in compliance with State law.

The EUC SPA, through policy decisions of the City of Chula Vista and other governing agencies, is subject to fees established to help defray the cost of facilities that benefit the project and areas beyond this specific project. These fees may include but not be limited to:

1. Eastern Chula Vista TDIF — established to provide financing for circulation element road projects of regional significance in the area east of I-805.
2. Traffic Signal Fee — to pay for traffic signals associated with circulation element streets.

3. Public Facilities Development Impact Fee — Public Facilities DIF established to collect funds for Civic Center Facilities, Police Facilities, Corporation Yard, Libraries, Fire Suppression System, Geographical Information System (GIS), Mainframe Computer, Telephone System Upgrade, Records Management System and Recreation.
4. Park Acquisition and Development Fee — PAD Fee established to pay for the acquisition and development of park facilities.
5. Poggi Canyon Sewer Basin Development Impact Fee — to pay for constructing sewer improvements within the Poggi Canyon basin.
6. Salt Creek Basin Development Impact Fee — to pay for constructing sewer improvements within the Salt Creek basin.
7. Otay Water District Fees — It should be noted that the Water District may require the formation of or annexation to an existing improvement district or creation of some other finance mechanism which may result in specific fees being waived.

II.5.4.15.4 Debt Finance Programs

In the past the City of Chula Vista has used assessment districts to finance a number of street improvements, as well as sewer and drainage facilities. However, the city preferred finance program is Community Facilities Districts or CFD's. Both school districts have implemented Mello-Roos Community Facilities Districts to finance school facilities.

Mello-Roos Community Facilities Act of 1982

The Mello-Roos Community Facilities Act of 1982 authorizes formation of community facilities districts, which impose special taxes to provide the financing of certain public facilities or services. Facilities that can be provided under the Mello-Roos Act include the purchase, construction, expansion, or rehabilitation of the following:

1. Local park, recreation, or parkway facilities;
2. Elementary and secondary school sites and structures;
3. Libraries;
4. Any other governmental facilities that legislative bodies are authorized to construct, own or operate including certain improvements to private property.

II.5.4.15.5 Other Methods Used to Finance Facilities

General Fund

The City of Chula Vista's general fund pays for many public services throughout the City. Those facilities and services identified as being funded by general fund sources represent those that will benefit not only the residents of the proposed project, but also Chula Vista residents throughout the City. In most cases, other financing mechanisms are available to initially construct or provide the facility or service, and then general fund monies would only be expected to fund the maintenance costs once the facility is accepted by the City.

State and Federal Funding

Although rarely available to fund an entire project, Federal and State financial and technical assistance programs have been available to public agencies, in particular the public school districts.

Dedications
Dedication of sites by developers for public capital facilities is a common financing tool used by many cities. In the case of the project, the following public sites are proposed to be dedicated:

1. Roads (if public)
2. Open space and public trail systems

Homeowners Associations
One or more Community Homeowner Associations may be established by the developer to manage, operate and maintain private facilities and common areas within the project.

Developer Reimbursement Agreements
Certain facilities that are off-site of project and/or provide regional benefits may be constructed in conjunction with the development of the project. In such instances, developer reimbursement agreements will be executed to provide for a future payback to the developer for the additional cost of these facilities. Future developments are required to pay back their fair share of the costs for the shared facility when development occurs.

Special Agreements/Development Agreement
This category includes special development programs for financing construction of special public facilities. It also includes any other special arrangements between the City and the developer such as credits against fees, waiver of fees, timing for payment of fees, waiver of fees, or charges for the construction of specific facilities.

A development agreement can play an essential role in the implementation of the Public Facilities Financing Plan. The Public Facilities Financing Plan clearly details all public facility responsibilities and assures that the construction of all necessary public improvements will be appropriately phased with actual development, while the development agreement identifies the obligations and requirements of both parties.

II.5.4.15.6 Public Facility Finance Policies

The following finance policies were included and approved with the Growth Management Program to maintain a financial management system that will be implemented consistently when considering future development applications. These policies will enable the City to effectively manage its fiscal resources in response to the demands placed on the City by future growth.

1. Prior to receiving final approval, developers shall demonstrate and guarantee that compliance is maintained with the City's adopted threshold standards.

2. The Capital Improvement Program Budget will be consistent with the goals and objectives of the Growth Management Program. The Capital Improvement Program Budget establishes the timing for funding of all fee related public improvements.

3. The priority and timing of public facility improvements identified in the various City fee programs shall be made at the sole discretion of the City Council.

4. Priority for funding from the City's various fee programs shall be given to those projects which facilitate the logical extension or provision of public facilities as defined in the Growth Management Program.

5. Fee credits, reimbursement agreements, developer agreements or public financing mechanisms shall be considered only when it is in the public interest to use them or these financing methods are needed to rectify an existing facility threshold deficiency. Such action shall not induce growth by prematurely extending or upgrading public facilities.

6. All fee credit arrangements or reimbursement agreements will be made based upon the City's plans for the timing and funding of public facilities contained in the Capital Improvement Program Budget.

7. Public facility improvements made ahead of the City's plans to construct the facilities will result in the need for additional operating and maintenance funds. Therefore all such costs associated with the facility construction shall become the responsibility of the developer until such time as the City had previously planned the facility improvement to be made.

II.5.4.15.7 Cumulative Debt

The City of Chula Vista has an established policy limiting the maximum debt to be placed on a residential dwelling unit to an additional one percent above the property tax. This policy was restated in the adopted Growth Management Program.

Like many other cities, Chula Vista has long understood that it is not the only agency that can utilize public finance mechanisms and, therefore, cannot always guarantee that the total debt will remain at or below a maximum of 2 percent. As a result, the City makes an effort to coordinate its debt finance programs with the other special districts (school and water), which provide service to the residents of Chula Vista, to ensure that the cumulative debt does not become excessive. Coordination is also necessary to guarantee all public facilities needed to support a development can be financed and constructed as needed.

Debt capacity is found by totaling the assessed value of residential and commercial/industrial property and applying to this total the two percent rate cap established by City policy as can be seen in Table Q.1. Subtracting from this total assessed value the value of taxes resulting from application of the effective property tax rate as determined by the County Tax Collector (1.08133%) produces the revenue available from indebtedness that could be placed on the property.

Table Q.2 identifies $1.4 million as the estimated cost of facilities that may qualify for debt financing. This amount is less than all the alternative interest cost and bond term examples identified on the following page. Using the alternative of 5.0% net interest cost (NIC) and 30 year bond term applied to a conservative $4 million in available annual debt service allows for the financing of approximately $61 million in eligible improvements. This results in excess bond capacity of approximately $60 million. Therefore, there appears to be sufficient revenue capacity available to finance the improvements listed, although additional analysis will be required at the time of the first utilization of debt financing in the SPA.

The Public Works Department generally requires the preparation of an assessment district feasibility plan for the build-out of a master planned community prior to initiation of the first

assessment district in order to determine the debt capacity limits and benefit zones related to using public financing to fund infrastructure improvements.

Table Q.1
Estimated Revenue Available for Debt Service on Land Secured Financings

Units or Acres	Assessed Value/Unit or Acre[1]	FAR[2]	Total AV[3]
2,983 Multi-Family Units	$350,000	N/A	$1,044,050,000
980,000 Square Feet (SF) Retail	$366.00	N/A	$358,680,000
1,996,000 Square Feet (SF) Office	$331.00	N/A	$660,676,000
500 Hotel Rooms	$200,000	N/A	$100,000,000
		Total Assessed Value	**$2,163,406,000**
		2.0% Tax Rate Cap by City Policy	$43,268,120
		1.08133% Tax Rate Utilized	$23,393,558
Annual revenue available to pay debt service@ 2.00% - 1.08133%			**$19,874,562**

1 Assumptions based on market data from ERA's EUC Fiscal Impact Study.
2 Floor Area Ratio. Used as a percentage to calculate building square footage from parcel acreage.
3 Assessed value does not account for appreciation or economic inflation at build out.

Source: Economics Research Associates

Using $4 million as a conservative amount available for annual debt service and varying the net interest cost (NIC) and term of bond, the following public facilities costs could be funded through a financing vehicle such as a Mello-Roos and special assessment districts bonds.

- A 5.0% (NIC) and 30 year term will fund approximately $61 million.
- A 5.5% (NIC) and 30 year term will fund approximately $58 million.
- A 6.5% (NIC) and 25 year term will fund approximately $49 million.
- A 6.5% (NIC) and 20 year term will fund approximately $44 million.
- A 7.5% (NIC) and 25 year term will fund approximately $45 million.
- A 7.5% (NIC) and 20 year term will fund approximately $41 million.

Table Q.2
Preliminary Estimate of Facilities Cost Potentially Funded from Debt Service [1]

Facility	Intersection	Estimated Costs [2]
A	Olympic Pkwy & Brandywine Ave.	$150,000
B	Olympic Pkwy & Heritage Rd.	$100,000
C	Main St & Heritage Rd.	$250,000
D	Birch Rd & La Media Rd.	$100,000
E	Birch Rd & Magdalena Ave.	$150,000
F	Rock Mountain Rd & Magdalena Ave.	$250,000
G	Hunte Pkwy between SR-125 and Street A	$350,000
Total Costs		**$1,350,000**

1 Estimate is subject to change based on detailed construction cost estimates

II.5.4.15.8 Lifecycle Cost

Section 19.09.060 Analysis subsection F (2) of the Growth Management Ordinance requires the following:

> "...The inventory shall include Life Cycle Cost ("LCC") projections for each element in 19.09.060(E)...as they pertain to City fiscal responsibility. The LCC projections shall be for estimated life cycle for each element analyzed. The model used shall be able to identify and estimate initial and recurring life cycle costs for the elements..."

Background

The following material presents information on the general aspects of life cycle cost analysis as well as its specific application to the City of Chula Vista operations. The discussion regarding the general benefits and process of LCC is meant to provide a common base of understanding upon which further analysis can take place.

Life cycle costing (LCC) is a method of calculating the total cost of asset ownership over the life span of the asset. Initial costs and all subsequent expected costs of significance are included in the life cycle cost analysis as well as disposal value and any other quantifiable benefits to be derived as a result of owning the asset. Operating and maintenance costs over the life of an asset often times far exceed initial costs and must be factored into the (decision) process.

Life cycle cost analysis should not be used in each and every purchase of an asset. The process itself carries a cost and therefore can add to the cost of the asset. Life Cycle Cost analysis can be justified only in those cases in which the cost of the analysis can be more than offset by the savings derived through the purchase of the asset.

Four major factors which may influence the economic feasibility of applying LCC analysis are:

1. Energy Intensiveness — LCC should be considered when the anticipated energy costs of the purchase is expected to be large throughout its life.
2. Life Expectancy — for assets with long lives (i.e., greater than five years), costs other than purchase price take on added importance. For assets with short lives, the initial costs become a more important factor.
3. Efficiency — The efficiency of operation and maintenance can have significant impact on overall costs. LCC is beneficial when savings can be achieved through reduction of maintenance costs.
4. Investment Cost — as a general rule, the larger the investment the more important LCC analysis becomes.

The four major factors listed above are not, however, necessary ingredients for life cycle cost analysis. A quick test to determine whether life cycle costing would apply to a purchase is to ask whether there are any post-purchase costs associated with it. Life cycle costs are a combination of initial and post-purchase costs.

Applications for LCC Analysis

The City of Chula Vista utilizes the concepts of life cycle cost analysis in determining the most cost effective purchase of capital equipment as well as in the determination of replacement costs for a variety of rolling stock. City staff uses LCC techniques in the preparation of the City's Five Year Capital Improvement Budget (CIP) as well as in the Capital Outlay sections of the annual Operating Budget.

In addition to these existing processes, the City should require the use of LCC analysis prior to or concurrent with the design of public facilities required by new development. Such a requirement will assist in the determination of the most cost effective selection of public facilities.

APPENDIX

A. Regulating Plan (Street & Block Identification)

B. Fiscal Impact Analysis Tables

Regulating Plan

Street & Block Identification

"A" Street Reference Identification
27 Block Reference Identification
P2 Park Reference Identification

Eastern Urban Center
OTAY RANCH
CITY OF CHULA VISTA

Urban Design: RTKL
Cinti Land Planning
San Diego, CA (619) 223-7408
0 200 400 600

Appendix A

Appendix B
Fiscal Impact Analysis Tables

Appendix Table 1
Conversion Factors from Per Acre to Per Building SF

	City-wide Factors			EUC Factors			
	Density Factor	Building Efficiency	Occupancy Rate	Density	Building Efficiency	Occupancy Rate	Acre to EUC Building SF Conversion Factor
Retail	0.28 FAR	80%	88%	0.88 FAR	0.96	0.93	0.0001040
Office	0.56 FAR	80%	88%	2.01 FAR	0.94	0.93	0.0000509
Hotel[1]	0.30 FAR	80%		0.61 FAR	0.8	0.7	0.0000765
Weighted Commercial	0.33 FAR	80%	83%	1.39 FAR	0.932	0.91	0.0000885

[1]Rooms are assumed to occupy 600 s.f. on a gross basis

Source: Economics Research Associates and the City of Chula Vista

Appendix Table 2

Consolidated Incremental per Unit Cost Factors (Based on FY 2006 Budget)

Citywide Cost Factors by Function/Department

		Land Uses								
	Population	Retail	Office	Hotel	Parks (per acre)		Public Use	Open Space	Other	Residential
	(Per person)	(Per Acre)	(Per Acre)	(Per Acre)	Private	Public	(Per Acre)	(Per Acre)	(Per Acre)	(Per DU)
LEGISLATIVE AND ADMINISTRATION										
City Council	$1.87									
Boards and Commissions										
City Clerk	$0.72									
City Attorney		$37.30	$40.28	$23.84						$ 5.64
Administration	$0.08									$ 0.40
Management and Information Services	$1.33									
Human Resources										
Finance										
DEVELOPMENT AND MAINTENANCE SERVICES										
Community Development	$0.82	$906.12	$978.61	$579.20					$8.32	$ 8.00
Planning and Building Services	$1.32	$106.60	$114.59	$70.54					$15.71	$ 15.92
Engineering		$1,245.44	$659.35	$293.05		$76.91			$76.91	$ 13.92
Public Works		$2,544.11	$1,346.88	$598.61		$29.93	$149.65		$149.65	$ 28.43
General Services	$17.18									
PUBLIC SAFETY										
Police (Excluding Residential & Commercial Uses)	$7.19					$2,140.94	$2,140.94		$2,140.94	
Fire (Excluding Residential)[1]	$1.17	$2,538.77	$9,112.39	$2,538.77	$132.27	$132.27	$132.27	$132.27	$132.27	
CULTURE AND LEISURE										
Parks and Recreation	$27.19									
Library	$55.09									
Nature Center										$ 7.51
Sub-Total Unit Cost	**$113.96**	**$ 7,378.35**	**$12,252.11**	**$ 4,104.01**	**$ 132.27**	**$2,380.05**	**$ 2,422.86**	**$ 132.27**	**$ 2,523.80**	**$ 79.82**
Commercial Acre to EUC Bldg SF Conversion		0.0001040	0.0000509	0.0000765						
Sub-Total Unit Cost (with Comm'l in Bldg .SF)	$113.96	$0.77	$0.62	$0.31	$132.27	$2,380.05	$2,422.86	$132.27	$2,523.80	$79.82

[1]Fire costs for office has been adjusted to account for the increased density anticipated in the EUC.

Source: Economics Research Associates

Appendix Table 3
Police Service Costs Allocated to EUC Commercial Development

Police Service Cost per Acre[1]	$ 7,420.11

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Commercial Acreage	*7.1*	*11.8*	*11.8*	*11.8*	*11.8*	*11.8*	*28.5*	*62.0*	*71.6*	*78.1*
Commercial Police Service Costs ($ 000)	52	88	88	88	88	88	211	460	531	579

[1]From SPA Fiscal Impact Framework, inflated to 2008 $

Source: Economics Research Associates

Appendix Table 4

Public Safety Costs - EUC Residential Scenario

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Residential Uses											
Units											
Single Family		-	-	-	-	-	-	-	-		
Multi Family		249	249	249	249	249	249	249	244	-	-
Mobile Homes		-	-	-	-	-	-	-	-	-	-
Cumulative Units		249	498	747	996	1,245	1,494	1,743	2,983	2,983	2,983
Population											
Single Family Persons/DU@	3.33	-	-	-	-	-	-	-	-	-	-
Multi Family Persons/DU@	2.58	642	642	642	642	642	642	642	630	-	-
Mobile Homes											
Cumulative Population		642	1,285	1,927	2,570	3,212	3,855	4,497	7,696	7,696	7,696
Cumulative Acres		13	25	37	43	49	55	62	90	90	90
FAZ	FAZ 5 Southeast										
FAZ Current Persons + EUC	20,083	20,725	21,368	22,010	22,653	23,295	23,937	24,580	27,779	27,779	27,779
FAZ Currently Built Res. Acres + EUC	783	796	808	820	827	833	839	845	873	873	873
FAZ adjusted by Project Density - Coefficient	25.63	26.02	26.43	26.84	27.41	27.97	28.53	29.08	31.81	31.81	31.81
(Persons/Acre)											
Current Citywide Density Coefficient		24.04	persons/acre								
Density Coefficient Variation		*8.3%*	*10.0%*	*11.6%*	*14.0%*	*16.4%*	*18.7%*	*21.0%*	*32.3%*	*32.3%*	*32.3%*
Current Police Service Costs (2008 $)		$ 307.29	/ DU								
Current Fire Service Costs (2008 $)		$ 191.12	/DU								
EUC Public Safety Costs per Dwelling Unit											
Police		$ 307	$ 307	$ 307	$ 307	$ 307	$ 307	$ 307	$ 307	$ 307	$ 307
(Density Adjusted) Fire		$ 207	$ 210	$ 213	$ 218	$ 222	$ 227	$ 231	$ 253	$ 253	$ 253
Annual Public Safety Costs (Allocated to DUs)											
Police ($000s)		$ 77	$ 153	$ 230	$ 306	$ 383	$ 459	$ 536	$ 917	$ 917	$ 917
Fire ($000s)		$ 52	$ 105	$ 159	$ 217	$ 277	$ 339	$ 403	$ 754	$ 754	$ 754

Source: Economics Research Associates

Appendix Table 5

Incremental Expenditure Summary - EUC

Real Appreciation 0%

Cumulative	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Retail (Bldg. SF)	-	73,850	73,850	73,850	73,850	73,850	221,550	738,500	883,400	980,000
Office (Bldg. SF)	-	88,650	88,650	88,650	88,650	88,650	265,950	886,500	1,552,200	1,996,000
Hotel (Bldg. SF)	187,500	187,500	187,500	187,500	187,500	187,500	375,000	375,000	375,000	375,000
Parks (acres)	1.10	2.20	3.29	4.39	5.49	6.59	7.68	13.15	13.15	13.15
Dwelling Units	249	498	747	996	1,245	1,494	1,743	2,983	2,983	2,983
Population (Persons)	643	1,287	1,930	2,573	3,217	3,860	4,503	7,707	7,707	7,707

Expense Drivers	Unit Cost (2008 $)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
						(Expenses in $000s)					
Real Appreciation Factor	0%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Retail (Bldg. SF)	$ 0.83	$ -	$ 61	$ 61	$ 61	$ 61	$ 61	$ 184	$ 613	$ 733	$ 813
Office (Bldg. SF)	$ 0.67	-	60	60	60	60	60	179	598	1,047	1,346
Hotel (Bldg. SF)	$ 0.34	64	64	64	64	64	64	127	127	127	127
Parks (acres)	$ 2,574	3	6	8	11	14	17	20	34	34	34
Dwelling Units	$ 86	21	43	64	86	107	129	150	258	258	258
Population (Persons)	$ 123	79	159	238	317	396	476	555	950	950	950
Police Costs Allocated to DU & Comm'l		129	241	317	394	470	547	747	1,376	1,448	1,496
Fire Costs Allocated to DUs		52	105	159	217	277	339	403	754	754	754
		348	738	972	1,210	1,450	1,692	2,366	4,711	5,351	5,779

Source: Economics Research Associates

ERA

Appendix Table 6

Chula Vista - Other Discretionary Revenue Allocation Factors

Current Citywide Conditions

Population	220,036
Dwelling Units	76,304
Employees	56,083

Land Uses	Developed Acres	Employees (estimated)	AV Share (Estimates)
Commercial	1,965	35,658	13%
Industrial	943	17,925	7%
Residential	19,358		79%
Subtotal Taxable	22,266	53,583	
Other (Parks, Public/Quasi-public, Open Spa	7,074	2,500	
Total	29,339	56,083	

Incremental Revenue Factors by Development Unit

Revenue Category	Current Revenues	Allocation Method	Share	Allocation	Units	EUC Bldg. Conversion Factor	Allocation in EUC Bldg. SF
Property Taxes							
Current Taxes - Secured	$ 18,637,563	Calculated Separately		-			
State Secured - Unitary	350,000	Commercial AV	13%	$23.79	Acre	0.00008854	$ 0.002
		Industrial AV	7%	$27.76	Acre		
		Residential AV	79%	$14.31	Acre		
Current Taxes - Unsecured	840,000	Commercial AV	13%	$57.09	Acre	0.00008854	$ 0.005
		Industrial AV	7%	$66.63	Acre		
		Residential AV	79%	$34.35	Acre		
Delinquent Taxes	206,000	Commercial AV	13%	$14.00	Acre	0.00008854	$ 0.001
		Industrial AV	7%	$16.34	Acre		
		Residential AV	79%	$8.42	Acre		
Other Local Taxes							
Sales and Use Taxes	26,788,000	Calculated Separately					
Franchise Fees[1]	10,249,651	Commercial Land	7%	$365.06	Acre	0.00008854	$ 0.032
		Industrial Land	3%	$326.15	Acre		
		Residential Land	90%	$476.54	Acre		
Utility Taxes[1]	7,435,816	Commercial Land	9%	$340.51	Acre	0.00008854	$ 0.030
		Industrial Land	4%	$315.48	Acre		
		Residential Land	87%	$334.19	Acre		
Business License Tax	1,169,456	Employees (Non-Public)		$21.83	Employee		
Transient Occupancy Taxes	2,410,301	Calculated Separately		-			
Real Property Transfer Tax	2,407,777	Calculated Separately		-			
Revenues from other Agencies							
Sales Tax: Public Safety Augment	764,051	People		$3.47	Person		
State Homeowners Property Tax Relief	200,000	Dwelling Units		$2.62	DU		
State Motor Vehicle Licenses	18,424,278	Calculated Separately		-			
TOTAL DISCRETIONARY REVENUES	$ 89,882,893						

[1]Allocation shares by land use based on FIND model estimates

Source: Economics Research Associates

ERA

Appendix Table 7
Chula Vista - Revenue Factors

EUC Revenues from General Plan Revenue Factors (2006)

General Plan Variables	Incremental Revenue Factor	Unit
Population	$3.47	/Person
Private Employment	$21.83	/Employee
Dwelling Units	$2.62	/DU
Commercial SF[1]	$0.07	/SF
Residential Land	$867.82	/Acre
TOTAL		

[1]Commercial SF Incremental Revenue Factor translated into SF and also adjusted for higher occupancy and higher bldg. efficiency expected in the EUC.

Source: Economics Research Associates

ERA

Appendix Table 8

Chula Vista - Estimated Assessed Valuation by Land Use Type (Taxable Land Uses)

	Citi-wide Factors												EUC Factors				
Land Uses	Density Factor		Units/Acre		Value per Unit	Rent /s.f./mo.	Building Efficiency	Occupancy Rate	Net Income/acre	Capitalization Rate	Assessed Value per Acre		Density	Building Efficiency	Occupancy Rate	EUC AV per SF	
Non-Residential Uses																	
Retail[2]	0.28	FAR[1]	12,197	s.f.		$ 2.70	80%	88%	$ 236,474	7.50%	$ 3,153,000		0.88	0.96	0.93	$ 366.41	SF
Office[3]	0.56	FAR[1]	24,394	s.f.		$ 2.60	80%	88%	$ 455,430	7.00%	$ 6,506,000		2.01	0.94	0.93	$ 331.20	SF
Hotel[4]	0.30	FAR[1]	22	Rooms	$ 200,000						$ 4,356,000		0.61	0.8	0.7	$ 200,000	Unit
Residential Uses						Rent/s.f./mo.	Avg. Unit size	Occupancy	Net Income/Unit	Cap. Rate	AV per DU						
Multi Family (owner occupied)[5]											$ 352,700						
High Density "Single Family"											*$ 350,000*						
Attached Townhome/Rowhouse											*$ 325,000*						
Podium Product											*$ 340,000*						
High Rise Luxury Building											*$ 540,000*						

[1]FAR is Floor Area Ratio defined as the ratio of land area to building floor area (this is a measure of building density)
[2]Retail rents are based on CoStar data for 3rd Q 2008 in the Eastern Chula Vista area
[3]Office rents are based on CoStar data for 3rd Q 2008 in the Eastern Chula Vista and comparable office buildings in Northern San Diego areas
[4]ERA estimates. Rooms are assumed to occupy 600s.f. on a gross basis
[5]Weighted Avg. of all units. ERA estimates for each typology based on 3rd quarter 2007 data for comparable projects from Market Pointe Realty and Lopez, Price and Cox, Inc.

Note: The above estimates are for future development and includes land and improvement values.

Source: Economics Research Associates, CoStar, CB Richard Ellis, Market Pointe Realty, DataQuick Inc., Lopez, Price and Cox Inc., Real Estate Economics and the City of Chula Vista

Appendix Table 9

Project Assessed Value Absorption - EUC

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 22
Income Producing Products										(Millions of Dollars)									
Retail (acres)		$ -	$ 27	$ -	$ -	$ -	$ -	$ 54	$ -	$ -	$ 54	$ 27	$ 108	$ -	$ -	$ -	$ 53	$ -	$ -
Office (acres)		$ -	$ 29	$ -	$ -	$ -	$ -	$ 59	$ -	$ -	$ 59	$ 29	$ 117	$ -	$ -	$ -	$ 220	$ -	$ -
Hotel (acres)[2]		$ 50	$ -	$ -	$ -	$ -	$ -	$ 50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Gross Income Producing AV		$ 50	$ 56	$ -	$ -	$ -	$ -	$ 163	$ -	$ -	$ 113	$ 56	$ 226	$ -	$ -	$ -	$ 274	$ -	$ -
Less Existing AV	15%	(8)	(8)	-	-	-	-	(24)	-	-	(17)	(8)	(34)	-	-	-	(41)	-	-
Net New Inc. Product AV		$ 43	$ 48	$ -	$ -	$ -	$ -	$ 138	$ -	$ -	$ 96	$ 48	$ 192	$ -	$ -	$ -	$ 233	$ -	$ -
For-Sale Residential Products																			
Single Family		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Multi Family (Ownership)		83	164	245	329	414	499	583	668	753	837	922	1,052	1,052	1,052	1,052	1,052	1,052	1,052
High Density Single Family		*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*
Attached Townhome/Rowhouse		*56*	*137*	*217*	*219*	*219*	*219*	*219*	*219*	*219*	*219*	*219*	*219*	*219*	*219*	*219*	*219*	*219*	*219*
Podium Product		-	-	-	*83*	*168*	*253*	*337*	*422*	*507*	*591*	*676*	*679*	*679*	*679*	*679*	*679*	*679*	*679*
High Rise Luxury Building		-	-	-	-	-	-	-	-	-	-	-	*127*	*127*	*127*	*127*	*127*	*127*	*127*
Gross For Sale AV		$ 83	$ 164	$ 245	$ 329	$ 414	$ 499	$ 583	$ 668	$ 753	$ 837	$ 922	$ 1,052	$ 1,052	$ 1,052	$ 1,052	$ 1,052	$ 1,052	$ 1,052
Less Existing AV[1]		(1)	(1)	(1)	(2)	(2)	(2)	(2)	(3)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Net New For Sale Product AV		$ 82	$ 163	$ 243	$ 328	$ 412	$ 496	$ 581	$ 665	$ 750	$ 834	$ 918	$ 1,049	$ 1,049	$ 1,049	$ 1,049	$ 1,049	$ 1,049	$ 1,049

[1]ERA estimated value based on average land sales per acre in the area.

Source: Economics Research Associates

Appendix Table 10

Property Tax Estimates - EUC

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Annual For Sale Products AV Increment ($Millions)		$ 82	$ 80	$ 80	$ 84	$ 84	$ 84	$ 84	$ 84	$ 84	$ 84	$ 84
Annual Income Producing Products AV ($Millions)		$ 43	$ 48	$ -	$ -	$ -	$ -	$ 138	$ -	$ -	$ 96	$ 48
APPRECIATION FACTOR:												
Year After Property First Sold	*Annual Rate*	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Real Appreciation Rate	2.0%	100%	102%	104%	106%	108%	110%	113%	115%	117%	120%	122%
Inflation Rate	0.0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proposition 13 AV Limitation less Inflation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Income Products Annual Turnover Rate	5.0%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
For-Sale Products Annual Turnover Rate	10.0%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
For Sale Products												
FOR SALE PRODUCTS ASSESSED VALUE												
(In $ Millions)		$ 82	$ 166	$ 253	$ 348	$ 446	$ 548	$ 654	$ 764	$ 878	$ 997	$ 1,120
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Income Products												
INCOME PRODUCTS ASSESSED VALUE												
(In $ Millions)		$ 43	$ 92	$ 94	$ 96	$ 98	$ 100	$ 258	$ 263	$ 268	$ 388	$ 454
TOTAL ASSESSED VALUE (in $ Millions)												
Residential and Commercial		$ 125	$ 258	$ 347	$ 444	$ 544	$ 648	$ 912	$ 1,027	$ 1,147	$ 1,385	$ 1,574
TOTAL PROPERTY TAXES COLLECTED[1] ($000s) @	1.00%		$ 1,249	$ 2,584	$ 3,472	$ 4,437	$ 5,439	$ 6,480	$ 9,119	$ 10,271	$ 11,465	$ 13,850
ANNUAL INCREMENTAL PROPERTY TAXES TO THE CITY												
Potential Share to Chula Vista Gen. Fund @	10.84%	$ -	$ 135,329	$ 280,048	$ 376,368	$ 480,911	$ 589,560	$ 702,363	$ 988,395	$ 1,113,256	$ 1,242,716	$ 1,501,152
Net Annual Property Taxes to Chula Vista Gen. Fund		$ -	$ 135,329	$ 280,048	$ 376,368	$ 480,911	$ 589,560	$ 702,363	$ 988,395	$ 1,113,256	$ 1,242,716	$ 1,501,152

[1]Reflects 1-year lag in Property Tax receipts

Source: Economics Research Associates

Appendix Table 10 (Cont.)

Property Tax Estimates - EUC

		Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
Annual For Sale Products AV Increment ($Millions)		$ 130	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Income Producing Products AV ($Millions)		$ 192	$ -	$ -	$ -	$ 233	$ -	$ -	$ -	$ -	$ 155
APPRECIATION FACTOR:											
Year After Property First Sold	*Annual Rate*	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
Real Appreciation Rate	2.0%	124%	127%	129%	132%	135%	137%	140%	143%	146%	149%
Inflation Rate	0.0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proposition 13 AV Limitation less Inflation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Income Products Annual Turnover Rate	5.0%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
For-Sale Products Annual Turnover Rate	10.0%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
		Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
For Sale Products											
FOR SALE PRODUCTS ASSESSED VALUE											
(In $ Millions)		$ 1,304	$ 1,330	$ 1,356	$ 1,383	$ 1,411	$ 1,439	$ 1,468	$ 1,498	$ 1,527	$ 1,558
		Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
Income Products											
INCOME PRODUCTS ASSESSED VALUE											
(In $ Millions)		$ 702	$ 716	$ 730	$ 745	$ 1,073	$ 1,094	$ 1,116	$ 1,138	$ 1,161	$ 1,415
TOTAL ASSESSED VALUE (in $ Millions)											
Residential and Commercial		$ 2,006	$ 2,046	$ 2,087	$ 2,128	$ 2,484	$ 2,534	$ 2,584	$ 2,636	$ 2,689	$ 2,973
TOTAL PROPERTY TAXES COLLECTED[1] ($000s) @	1.00%	$ 15,740	$ 20,057	$ 20,458	$ 20,867	$ 21,284	$ 24,840	$ 25,336	$ 25,843	$ 26,360	$ 26,887
ANNUAL INCREMENTAL PROPERTY TAXES TO THE CITY											
Potential Share to Chula Vista Gen. Fund @	10.84%	$ 1,706,064	$ 2,173,944	$ 2,217,421	$ 2,261,767	$ 2,307,001	$ 2,692,355	$ 2,746,200	$ 2,801,123	$ 2,857,144	$ 2,914,285
Net Annual Property Taxes to Chula Vista Gen. Fund		$ 1,706,064	$ 2,173,944	$ 2,217,421	$ 2,261,767	$ 2,307,001	$ 2,692,355	$ 2,746,200	$ 2,801,123	$ 2,857,144	$ 2,914,285

[1]Reflects 1-year lag in Property Tax receipts

Source: Economics Research Associates

Appendix Table 11

Real Property Transfer Tax Estimates - EUC

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Annual For Sale Products AV Increment ($Millions)		$ 82	$ 80	$ 80	$ 84	$ 84	$ 84	$ 84	$ 84	$ 84	$ 84	$ 84
Annual Income Producing Products AV ($Millions)		$ 43	$ 48	$ -	$ -	$ -	$ -	$ 138	$ -	$ -	$ 96	$ 48
APPRECIATION FACTOR:												
Year After Property First Sold	*Annual Rate*	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Real Appreciation Rate	2.0%	100%	102%	104%	106%	108%	110%	113%	115%	117%	120%	122%
Income Producing Products Turnover	5.0%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
For Sale Products Turnover	10.0%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%

Real Property Transfer Tax[1] (including annual turnovers) in $000s

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
For Sale Products											
For Sale Products											
	$ 45,295	$ 49,753	$ 55,352	$ 63,429	$ 69,756	$ 76,277	$ 83,031	$ 90,025	$ 97,265	$ 104,759	$ 112,513
For Sale Products Property Transfer Tax (with lag period)[2]		**$ 45,295**	**$ 49,753**	**$ 55,352**	**$ 63,429**	**$ 69,756**	**$ 76,277**	**$ 83,031**	**$ 90,025**	**$ 97,265**	**$ 104,759**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Income Products ($000s)											
Income Products											
	$ 23,375	$ 28,096	$ 2,588	$ 2,640	$ 2,693	$ 2,746	$ 88,533	$ 7,230	$ 7,374	$ 70,566	$ 43,040
Income Products Property Transfer Tax (with Lag)[2]		**$ 23,375**	**$ 28,096**	**$ 2,588**	**$ 2,640**	**$ 2,693**	**$ 2,746**	**$ 88,533**	**$ 7,230**	**$ 7,374**	**$ 70,566**
TOTAL ANNUAL PROPERTY TRANSFER TAX[2]											
	$ -	**$ 68,670**	**$ 77,849**	**$ 57,940**	**$ 66,068**	**$ 72,449**	**$ 79,024**	**$ 171,564**	**$ 97,255**	**$ 104,639**	**$ 175,324**

[1]$0.55 for every $1000 of real property sale value

[2]One year time lag

Source: Economics Research Associates

Appendix Table 11 (Cont.)

Real Property Transfer Tax Estimates - EUC

		Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22
Annual For Sale Products AV Increment ($Millions)		$ 130	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Income Producing Products AV ($Millions)		$ 192	$ -	$ -	$ -	$ 233	$ -	$ -	$ -	$ -	$ 155	$ -
APPRECIATION FACTOR:												
Year After Property First Sold	*Annual Rate*	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22
Real Appreciation Rate	2.0%	124%	127%	129%	132%	135%	137%	140%	143%	146%	149%	152%
Income Producing Products Turnover	5.0%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
For Sale Products Turnover	10.0%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%

Real Property Transfer Tax[1] (including annual turnovers) in $000s

	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22
For Sale Products											
For Sale Products											
	$ 151,732	$ 73,137	$ 74,600	$ 76,092	$ 77,614	$ 79,166	$ 80,749	$ 82,364	$ 84,011	$ 85,692	$ 87,405
For Sale Products Property Transfer Tax (with lag period)[2]	**$ 112,513**	**$ 151,732**	**$ 73,137**	**$ 74,600**	**$ 76,092**	**$ 77,614**	**$ 79,166**	**$ 80,749**	**$ 82,364**	**$ 84,011**	**$ 85,692**

	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22
Income Products ($000s)											
Income Products											
	$ 143,927	$ 19,690	$ 20,084	$ 20,486	$ 193,024	$ 30,092	$ 30,694	$ 31,308	$ 31,934	$ 159,268	$ 39,685
Income Products Property Transfer Tax (with Lag)[2]	**$ 43,040**	**$ 143,927**	**$ 19,690**	**$ 20,084**	**$ 20,486**	**$ 193,024**	**$ 30,092**	**$ 30,694**	**$ 31,308**	**$ 31,934**	**$ 159,268**
TOTAL ANNUAL PROPERTY TRANSFER TAX[2]											
	$ 155,553	**$ 295,659**	**$ 92,827**	**$ 94,684**	**$ 96,577**	**$ 270,637**	**$ 109,258**	**$ 111,443**	**$ 113,672**	**$ 115,945**	**$ 244,960**

[1]$0.55 for every $1000 of real property sale value

[2]One year time lag

Source: Economics Research Associates

Appendix Table 12

Motor Vehicle License Fee Estimates - EUC SPA

VLF Revenues

Current Population 0f the City [1] =		220,036
Current Allocation of 0.65% VLF =	$	1,328,857
Per Capita VLF Allocation =	$	6.04

		Year 1		Year 2		Year 7		Year 12		Year 17		Year 22
Project Population Growth		643		1,287		4,503		7,707		7,707		7,707
VLF Revenues Attributed To Sunbow	**$**	**3,885**	**$**	**7,771**	**$**	**27,198**	**$**	**46,547**	**$**	**46,547**	**$**	**46,547**

Motor Vehicle In Lieu Fees (MVLF) Adjustment

Base Year (2004) Assessed Valuation of the City ($000) =	$	15,596,196
Base Year (2004) Motor Vehicle In Lieu Fees Adjustment (MVLF) ($000) =	$	11,832

		Year 1		Year 2		Year 7		Year 12		Year 17		Year 22
Adjusted AV of Development($000)	$	124,854	$	258,373	$	911,894	$	2,005,682	$	2,533,646	$	3,032,307
Cumulative Citywide AV Growth ($000s)	$	15,721,050	$	15,854,568	$	16,508,089	$	17,601,878	$	18,129,842	$	18,628,503
Percent Increase in AV		0.801%		0.849%		1.625%		2.514%		0.275%		0.320%
Cumulative Citywide MVLF[2] ($000s)	$	11,927	$	12,028	$	12,524	$	13,354	$	13,754	$	14,133
Annual MVLF Adjustment Attributed To Sunbow	**$**	**94,721**	**$**	**196,015**	**$**	**691,812**	**$**	**1,521,619**	**$**	**1,922,161**	**$**	**2,300,472**
TOTAL ANNUAL VLF REVENUES	**$**	**98,607**	**$**	**203,786**	**$**	**719,009**	**$**	**1,568,165**	**$**	**1,968,707**	**$**	**2,347,018**

[1]ERA estimates based on dwelling unit inventory

[2]Applying the Citywide AV Growth Rate (includes AV growth due to each scenario) to Current MVLF

Source: Economics Research Associates, County of San Diego Property Tax Services and California State Controller's Office

Appendix Table 13

Estimated Onsite Retail Sales Taxes (Years in which retail is absorbed are displayed)

		Year 1	Year 2	Year 7	Year 10	Year 11	Year 12	Year 16	Year 21	Year 22
Retail SF		-	73,850	147,700	147,700	73,850	295,400	144,900	96,600	-
Retail by Type										
Neighborhood Center		-	73,850	221,550	221,550	221,550	221,550	221,550	221,550	221,550
Community Center					147,700	221,550	221,550	221,550	221,550	221,550
Regional Center							295,400	440,300	536,900	536,900
Super Regional Center										
Other Centers										
EUC On-Site Sales ($000s)										
Neighborhood Center	$375	$ -	$ 27,694	$ 83,081	$ 83,081	$ 83,081	$ 83,081	$ 83,081	$ 83,081	$ 83,081
Community Center	$325	-	-	-	48,003	72,004	72,004	72,004	72,004	72,004
Regional/ Life Style Center	$350	-	-	-	-	-	103,390	154,105	187,915	187,915
Super Regional Center	$300	-	-	-	-	-	-	-	-	-
Other Centers	$300	-	-	-	-	-	-	-	-	-
On-site Sales Adjusted for Transfers ($000s)	Transfer Adj.									
Neighborhood Center	90%	$ -	$ 24,924	$ 74,773	$ 74,773	$ 74,773	$ 74,773	$ 74,773	$ 74,773	$ 74,773
Community Center	75%	-	-	-	36,002	54,003	54,003	54,003	54,003	54,003
Regional/ Life Style Center	70%	-	-	-	-	-	72,373	107,874	131,541	131,541
Super Regional Center	75%	-	-	-	-	-	-	-	-	-
Other Centers	75%	-	-	-	-	-	-	-	-	-
Taxable Retail Sales ($000s)										
	% Taxable									
Neighborhood Center	64%	$ -	$ 15,839	$ 47,517	$ 47,517	$ 47,517	$ 47,517	$ 47,517	$ 47,517	$ 47,517
Community Center	77%	-	-	-	27,691	41,537	41,537	41,537	41,537	41,537
Regional Center	97%	-	-	-	-	-	70,446	105,001	128,038	128,038
Super Regional Center	100%	-	-	-	-	-	-	-	-	-
Other Centers	97%	-	-	-	-	-	-	-	-	-
Total Taxable Retail Sales ($000s)		$ -	$ 15,839	$ 47,517	$ 75,208	$ 89,054	$ 159,499	$ 194,055	$ 217,091	$ 217,091
Annual Sales Taxes to the City @	**1%**	**$ -**	**$ 158,389**	**$ 475,168**	**$ 752,080**	**$ 890,537**	**$ 1,594,995**	**$ 1,940,547**	**$ 2,170,914**	**$ 2,170,914**

Source: Economics Research Associates

ERA

Appendix Table 14

Estimated Offsite Chula Vista Retail Sales Taxes

Average HH Incomes	
Multi Family	
Ownership[1]	$ 86,000

		Year 1	Year 2	Year 7	Year 10	Year 11	Year 12	Year 17	Year 22
Households									
Multi Family									
Ownership		249	498	1,743	2,490	2,739	2,983	2,983	2,983
Cumulative Units		249	498	1743	2490	2739	2983	2983	2983
Total Employees		188	647	1,754	2,673	3,133	4,971	7,512	9,206
Aggregate Incomes ($ Millions)		$ 21.41	$ 42.83	$ 149.90	$ 214.14	$ 235.55	$ 256.54	$ 256.54	$ 256.54
Average Annual Income/HH		$ 86,000	(at buildout)						
Countywide Income /HH		$ 76,975							
Countywide Retail Exp/HH		$ 31,616							
Retail Expenditure/HH Adj. Factor for EUC		106.1%	$ 33,533						
Gross Retail Sales from EUC Residents ($000s)									
Neighborhood Center	33%	$ 2,795	$ 5,591	$ 19,568	$ 27,954	$ 30,750	$ 33,489	$ 33,489	$ 33,489
Community Center	20%	1,639	3,278	11,473	16,390	18,029	19,635	19,635	19,635
Regional Center	4%	298	597	2,089	2,984	3,282	3,575	3,575	3,575
Super Regional Center	7%	613	1,225	4,289	6,127	6,740	7,341	7,341	7,341
Other Centers	36%	3,004	6,008	21,028	30,041	33,045	35,988	35,988	35,988
Chula Vista Offsite Capture ($000s)									
Neighborhood Center	10%	$ 280	$ 559	$ 1,957	$ 2,795	$ 3,075	$ 3,349	$ 3,349	$ 3,349
Community Center	20%	328	656	2,295	3,278	3,606	3,927	3,927	3,927
Regional Center	30%	90	179	627	895	985	1,072	1,072	1,072
Super Regional Center	20%	123	245	858	1,225	1,348	1,468	1,468	1,468
Other Centers	5%	150	300	1,051	1,502	1,652	1,799	1,799	1,799
Gross Retail Sales from SPA Employees ($000s)									
Annual Expenditure / Employee	$ 1,175								
Neighborhood Center	60%	$ 132	$ 456	$ 1,236	$ 1,885	$ 2,209	$ 3,505	$ 5,296	$ 6,490
Community Center	20%	44	152	412	628	736	1,168	1,765	2,163
Regional Center	0%	-	-	-	-	-	-	-	-
Super Regional Center	0%	-	-	-	-	-	-	-	-
Other Centers	20%	44	152	412	628	736	1,168	1,765	2,163
Taxable Retail Sales ($000s)									
	% Taxable								
Neighborhood Center	64%	$ 262	$ 645	$ 2,029	$ 2,974	$ 3,358	$ 4,355	$ 5,494	$ 6,253
Community Center	77%	286	621	2,082	3,004	3,340	3,919	4,378	4,685
Regional Center	97%	87	174	610	871	958	1,044	1,044	1,044
Super Regional Center	100%	123	245	858	1,225	1,348	1,468	1,468	1,468
Other Centers	97%	188	438	1,417	2,063	2,313	2,874	3,452	3,838
Total Taxable Retail Sales ($000s)		$ 945	$ 2,124	$ 6,996	$ 10,138	$ 11,317	$ 13,660	$ 15,836	$ 17,287
Annual Sales Taxes to the City @	**1%**	**$ 9,455**	**$ 21,240**	**$ 69,964**	**$ 101,383**	**$ 113,168**	**$ 136,604**	**$ 158,364**	**$ 172,870**

[1]Based on mortgage-to-income ratio of 25% on weighted average home cost with assumption of 15% downpayment.

Source: Economics Research Associates

ERA

Appendix Table 15

Chula Vista - Incremental Transient Occupancy Tax Estimates

EUC

Estimated Annual Revenue @	$155	/Room (ADR)[1]
Estimated Room-nights @	70%	Occupancy

Incremental Transient Occupancy Tax (TOT)		**Per Room**
Estimated Annual Incremental Revenue		$39,603
Estimated incremental annual TOT @	10%	**$3,960**

[1]Estimated average room rate based on Developer input.

Source: Economics Research Associates

Appendix Table 16

Revenue Drivers	2009 Year 1	2010 Year 2	2011 Year 3	2012 Year 4	2013 Year 5	2014 Year 6	2015 Year 7	2016 Year 8	2017 Year 9	2018 Year 10	2019 Year 11	2020 Year 12	2025 Year 17	2030 Year 22
Population (Persons)	643	1,287	1,930	2,573	3,217	3,860	4,503	5,147	5,790	6,434	7,077	7,707	7,707	7,707
Private Employment (Employees)	188	647	647	647	647	647	1,754	1,754	1,754	2,673	3,133	4,971	7,512	9,206
Dwelling Units	249	498	747	996	1,245	1,494	1,743	1,992	2,241	2,490	2,739	2,983	2,983	2,983
Commercial SF	187,500	350,000	350,000	350,000	350,000	350,000	862,500	862,500	862,500	1,187,500	1,350,000	2,000,000	2,810,600	3,351,000
Industrial Land (Acres)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential Land (Acres)	13	25	37	43	49	55	62	68	74	80	87	90	90	90
Hotel Rooms	250	250	250	250	250	250	500	500	500	500	500	500	500	500

Annual Revenues	*Revenue Factors (2008$)*	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 17	Year 22
								(Revenues in $000s)							
Population (Persons)	$ 3.76	$ 2.42	$ 4.83	$ 7.25	$ 9.67	$ 12.08	$ 14.50	$ 16.91	$ 19.33	$ 21.75	$ 24.16	$ 26.58	$ 28.95	$ 28.95	$ 28.95
Private Employment (Employees)	$ 23.61	4.4	15.3	15.3	15.3	15.3	15.3	41.4	41.4	41.4	63.1	73.9	117.3	177.3	217.3
Dwelling Units	$ 2.83	0.7	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.4	7.1	7.8	8.5	8.5	8.5
Commercial SF	$ 0.08	14.4	26.8	26.8	26.8	26.8	26.8	66.1	66.1	66.1	91.0	103.5	153.3	215.4	256.9
Residential Land (Acres)	$ 938.64	12.2	23.3	34.5	40.4	46.2	52.1	57.9	63.8	69.6	75.5	81.3	84.4	84.4	84.4
Property Taxes		-	135.3	280.0	376.4	480.9	589.6	702.4	988.4	1,113.3	1,242.7	1,501.2	1,706.1	2,692.4	3,222.3
Property Transfer Taxes		-	68.7	77.8	57.9	66.1	72.4	79.0	171.6	97.3	104.6	175.3	155.6	270.6	245.0
VLF Revenues		98.6	203.8	275.1	352.1	432.1	514.9	719.0	810.3	904.8	1,089.6	1,236.9	1,568.2	1,968.7	2,347.0
Sales and Use Taxes		9.5	179.6	187.5	195.3	203.2	211.0	545.1	553.0	560.8	853.5	1,003.7	1,731.6	2,098.9	2,343.8
Transient Occupany Tax[1]	$ 3,960.25	495.0	841.6	990.1	990.1	990.1	990.1	1,485.1	1,821.7	1,980.1	1,980.1	1,980.1	1,980.1	1,980.1	1,980.1
Total Revenues ($000s)		**637.2**	**1,500.7**	**1,896.5**	**2,066.8**	**2,276.3**	**2,490.9**	**3,717.9**	**4,541.2**	**4,861.5**	**5,531.3**	**6,190.3**	**7,533.9**	**9,525.3**	**10,734.1**

[1]Transient Occupancy Tax reflects a two-year growth period to reach the stable occupancy for each new hotel.

Source: Economics Research Associates

Appendix Table 17

Net Fiscal Impacts - Eastern Urban Center
Appreciation of Expenditures @ 0%

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Total Expenditures ($000s)	**$ 347.7**	**$ 737.6**	**$ 972.4**	**$ 1,210.3**	**$ 1,450.3**	**$ 1,692.4**	**$ 2,365.9**	**$ 4,710.5**	**$ 5,351.4**	**$ 5,778.7**
Total Revenues ($000s)	**$ 637.2**	**$ 1,500.7**	**$ 1,896.5**	**$ 2,066.8**	**$ 2,276.3**	**$ 2,490.9**	**$ 3,717.9**	**$ 7,533.9**	**$ 9,525.3**	**$ 10,734.1**
Net Fiscal Impacts	**$ 289.5**	**$ 763.1**	**$ 924.0**	**$ 856.6**	**$ 826.0**	**$ 798.5**	**$ 1,352.0**	**$ 2,823.4**	**$ 4,173.9**	**$ 4,955.4**

Source: Economics Research Associates

Appendix Table 18

Incremental Expenditure Summary - EUC

Real Appreciation 1%

Cumulative	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Retail (Bldg. SF)	-	73,850	73,850	73,850	73,850	73,850	221,550	738,500	883,400	980,000
Office (Bldg. SF)	-	88,650	88,650	88,650	88,650	88,650	265,950	886,500	1,552,200	1,996,000
Hotel (Bldg. SF)	187,500	187,500	187,500	187,500	187,500	187,500	375,000	375,000	375,000	375,000
Parks (acres)	1.10	2.20	3.29	4.39	5.49	6.59	7.68	13.15	13.15	13.15
Dwelling Units	249	498	747	996	1,245	1,494	1,743	2,983	2,983	2,983
Population (Persons)	643	1,287	1,930	2,573	3,217	3,860	4,503	7,707	7,707	7,707

Expense Drivers	Unit Cost (2008 $)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
						(Expenses in $000s)					
Real Appreciation Factor	1%	1.00	1.01	1.02	1.03	1.04	1.05	1.06	1.12	1.17	1.23
Retail (Bldg. SF)	$ 0.83	$ -	$ 62	$ 63	$ 63	$ 64	$ 64	$ 195	$ 684	$ 860	$ 1,002
Office (Bldg. SF)	$ 0.67	-	60	61	62	62	63	190	667	1,228	1,659
Hotel (Bldg. SF)	$ 0.34	64	64	65	66	66	67	135	142	149	157
Parks (acres)	$ 2,574	3	6	9	12	15	18	21	38	40	42
Dwelling Units	$ 86	21	43	66	89	112	136	160	287	302	317
Population (Persons)	$ 123	79	160	243	327	413	500	589	1,060	1,114	1,171
Police Costs Allocated to DU & Comm'l		129	243	324	406	490	575	793	1,536	1,698	1,843
Fire Costs Allocated to DUs		52	106	163	224	288	356	428	842	885	930
		348	745	992	1,247	1,509	1,779	2,511	5,255	6,275	7,122

Source: Economics Research Associates

Appendix Table 19

Sensitivity Analysis

Net Fiscal Impacts - Eastern Urban Center

Appreciation of Expenditures @ 1%

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Total Expenditures ($000s)	**$ 347.7**	**$ 745.0**	**$ 992.0**	**$ 1,246.9**	**$ 1,509.1**	**$ 1,778.7**	**$ 2,511.5**	**$ 5,255.4**	**$ 6,275.0**	**$ 7,121.6**
Total Revenues ($000s)	**$ 637.2**	**$ 1,500.7**	**$ 1,896.5**	**$ 2,066.8**	**$ 2,276.3**	**$ 2,490.9**	**$ 3,717.9**	**$ 7,533.9**	**$ 9,525.3**	**$ 10,734.1**
Net Fiscal Impacts	**$ 289.5**	**$ 755.7**	**$ 904.5**	**$ 819.9**	**$ 767.1**	**$ 712.2**	**$ 1,206.5**	**$ 2,278.6**	**$ 3,250.3**	**$ 3,612.5**

Source: Economics Research Associates

Appendix Table 20

Incremental Expenditure Summary - EUC

Real Appreciation 2%

Cumulative	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Retail (Bldg. SF)	-	73,850	73,850	73,850	73,850	73,850	221,550	738,500	883,400	980,000
Office (Bldg. SF)	-	88,650	88,650	88,650	88,650	88,650	265,950	886,500	1,552,200	1,996,000
Hotel (Bldg. SF)	187,500	187,500	187,500	187,500	187,500	187,500	375,000	375,000	375,000	375,000
Parks (acres)	1.10	2.20	3.29	4.39	5.49	6.59	7.68	13.15	13.15	13.15
Dwelling Units	249	498	747	996	1,245	1,494	1,743	2,983	2,983	2,983
Population (Persons)	643	1,287	1,930	2,573	3,217	3,860	4,503	7,707	7,707	7,707

Expense Drivers	Unit Cost (2008 $)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
						(Expenses in $000s)					
Real Appreciation Factor	2%	1.00	1.02	1.04	1.06	1.08	1.10	1.13	1.24	1.37	1.52
Retail (Bldg. SF)	$ 0.83	$ -	$ 63	$ 64	$ 65	$ 66	$ 68	$ 207	$ 762	$ 1,006	$ 1,233
Office (Bldg. SF)	$ 0.67	-	61	62	63	65	66	202	744	1,437	2,041
Hotel (Bldg. SF)	$ 0.34	64	65	66	68	69	70	143	158	175	193
Parks (acres)	$ 2,574	3	6	9	12	15	19	22	42	46	51
Dwelling Units	$ 86	21	44	67	91	116	142	169	320	354	390
Population (Persons)	$ 123	79	162	248	337	429	525	625	1,181	1,304	1,440
Police Costs Allocated to DU & Comm'l		129	246	330	418	509	604	841	1,711	1,988	2,267
Fire Costs Allocated to DUs		52	107	166	230	300	374	454	938	1,036	1,144
		348	752	1,012	1,284	1,570	1,869	2,664	5,857	7,346	8,759

Source: Economics Research Associates

Appendix Table 21

Sensitivity Analysis

Net Fiscal Impacts - Eastern Urban Center

Appreciation of Expenditures @ 2%

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 12	Year 17	Year 22
Total Expenditures ($000s)	**$ 347.7**	**$ 752.3**	**$ 1,011.7**	**$ 1,284.3**	**$ 1,569.8**	**$ 1,868.6**	**$ 2,664.4**	**$ 5,856.9**	**$ 7,346.3**	**$ 8,758.6**
Total Revenues ($000s)	**$ 637.2**	**$ 1,500.7**	**$ 1,896.5**	**$ 2,066.8**	**$ 2,276.3**	**$ 2,490.9**	**$ 3,717.9**	**$ 7,533.9**	**$ 9,525.3**	**$ 10,734.1**
Net Fiscal Impacts	**$ 289.5**	**$ 748.3**	**$ 884.7**	**$ 782.5**	**$ 706.5**	**$ 622.4**	**$ 1,053.5**	**$ 1,677.0**	**$ 2,178.9**	**$ 1,975.5**

Source: Economics Research Associates