POLYTECHNIC SCHOOL

MASTER DEVELOPMENT PLAN

APRIL 11, 2005

City of Pasadena
Department of Planning & Development
175 North Garfield Avenue
Pasadena, CA 91109-7215

TABLE OF CONTENTS

I. INTRODUCTION

This Master Development Plan or Master Plan presents a ten-year planning framework and development entitlement for Polytechnic School in Pasadena, California.

A Master Development Plan allows certain public and semi-public uses in the City of Pasadena to plan for future development without the need for conditional use permits for each development project on a single site. The purposes of a Master Development Plan are to reduce processing time and uncertainty in the development process and to ensure an orderly and thorough review of development plans, resulting in more compatible and desirable developments.

Applications for projects not consistent with this plan and which would normally require a conditional use permit (CUP) would require either a Master Plan amendment or a conditional use permit in accordance with Pasadena Municipal Code Chapter 17.88.

Once approved, a Master Development Plan supersedes all other sections of Title 17, Zoning, of the Pasadena Municipal Code. Where there is a conflict between the provisions of a Master Development Plan and P.M.C. Title 17, the provisions of the Master Development Plan would prevail. Where uncertainty exists regarding the extent or interpretation of any provision of the Master Development Plan, the Zoning Administrator would determine the intent of the provision. Master development plans are reviewed every five years for compliance with the features of the plan and any conditions of approval.

II. POLYTECHNIC SCHOOL

Founded in 1907, Polytechnic School is an independent co-educational day school serving students from pre-kindergarten through high school. The school's Campus is located in the south central area of the City of Pasadena adjacent to the California Institute of Technology. The Campus is bounded by California Boulevard on the north, Wilson Avenue on the east, Arden Road on the south and Catalina Street and abutting residential property on the west. Cornell Road bisects the Campus.

The Campus is organized as three distinct areas: (1) the North Campus, housing the Lower and Middle Schools (pre-K through 8th grade), which border on California Boulevard, (2) the Athletic Fields and Gym, lying between the North Campus and Cornell Road, and (3) the South Campus, housing the Upper School (9th through 12th grades), which is located between Cornell Road and Arden Road.

The school is widely recognized as one of California's premier schools for its educational excellence—100% of its students go on to four-year colleges, many to the University of California system as well as Ivy League universities. Virtually all students participate in team

athletics, and every student participates—from pre-school through high school—in the school's very active community service programs. While the school's excellent reputation draws students from many communities in Los Angeles County, more than half of its students are Pasadena residents.

III. 1992 MASTER DEVELOPMENT PLAN

In 1992, the City Council approved a Master Development Plan for Polytechnic School for a term of 10 years. At the time of approval, the floor area of the Campus was 126,306. There were also 39,854 square feet of covered outdoor walkways.

The 1992 Plan permitted expansion of the school's facilities by 33,890 square feet to a maximum of 200,050 square feet (including the existing covered walkway areas). However, from 1992 to the end of 2003, only 9,136 gross square feet of net new construction were actually completed. Thus, 24,754 square feet of new construction permitted under the 1992 plan have not yet been realized.

Table A summarizes demolition and new construction since 1992, and **Figure 1** shows the locations and floor areas of buildings demolished and built since 1992.

TABLE A SUMMARY '92-'03

	FLOOR AREA	COVERED OUTDOOR CIRCULATION
As of 1992	**126,306**	**39,854**
***Demolished* since 1992**		
Carriage House	-1,710	
Miehl House	-3,092	
McWilliams Building	-3,036	
Total	**-7,838**	**0**
***Actually* built under 1992 Plan**		
Science Classroom Addition	80	
North Campus Library Addition	512	
Maintenance Building Addition	162	
Fullerton Building	6,688	
Mudd Science Addition	730	
Language Arts Building	6,534	
South Campus Library Addition	2,268	
Total	**16,974**	**0**
Current floor area	**135,442**	**39,854**

The 1992 Plan also provided for certain public improvements, some of which were completed and others of which have not yet been fully realized. For example, the 1992 plan contemplated a seven-foot parkway along Wilson Avenue from California Boulevard to Cornell Road to create a four-foot-wide sidewalk. While the first segment, from California Boulevard south to the school's main entrance, was completed, the remaining expansion of the sidewalk south to Cornell Road remains uncompleted pending further redevelopment of the Campus.

The 1992 Plan required the addition of 31 parking spaces for a total of 152 on-site parking spaces based on then-current City parking requirements. Currently, there are 166 on-site parking spaces.

IV. PLAN OBJECTIVES

This 2004 Plan does not contemplate any increase in enrollment beyond that permitted in the 1992 plan (*i.e.*, 861 students). Instead, this plan provides for the enhancement over the next ten years of the school's current programs by providing for a limited amount of development to facilitate better-sized and more convenient classroom, athletics, faculty, administrative and storage facilities at the school. The plan also envisions construction of underground parking on the northeast corner of campus, away from residences, to allow for an increase in on-site parking.

The school's objective is to accomplish these upgrades in a manner that would be consistent with and respectful of the neighborhoods in which the school is located, and to ensure the provision of required parking. At the North Campus, new development would be focused toward the eastern half of the campus, away from residential neighborhoods and toward the Cal Tech campus.

The plan calls for renovation and conversion of existing facilities, and construction of new facilities, to meet the following needs of the school:

1. Sufficient classroom space appropriately sized to meet current and anticipated future educational activities and equipment.

2. Better science/language laboratories and arts facilities.

3. A centrally located library, media center and computer lab for the Lower and Middle Schools.

4. More and better-located meeting and reception spaces for faculty, student counseling and parent-teacher conferences.
5. Improved safety and security of the campus and surrounding neighborhood, supported by clearly articulated entrances.

6. Enhanced interior commons spaces for student assemblies, performances and lunches during inclement weather.

7. A swimming pool to serve current physical education programs and interscholastic athletic programs.

8. Better-arranged outdoor recreation areas.

9. Upgraded utilities and infrastructure.

10. Easily accessible administration and maintenance facilities.

V. COMMUNITY INVOLVEMENT

The preparation of the Plan involved ten meetings from March to October 2002 and a follow-up meeting in June 2003 with neighbors and other community members. The meetings were held to obtain neighbors' opinions on the school's impact on its surroundings; responses to the proposed plan elements, and suggestions for improvements to the plan and the school's operations. Neighbors from Catalina Street, Cornell Road, Dale Road and Arden Road attended and provided many helpful insights and suggestions. Representatives of the California Institute of Technology were also consulted on issues of mutual interest.

Neighbors appreciated the school's intention to remain at its current enrollment and expressed satisfaction with the functioning of the recently adopted parking district. The primary concerns raised by the community were traffic and congestion, parking, the handling of school buses, and the general treatment of the school's Catalina Avenue edges and the resulting effect on views across the playing fields. School representatives met with City staff during preparation of the plan to address these concerns raised by neighbors.

Also, while not an impact of the school's operations, both the community and the school voiced concerns about high traffic speeds on Catalina Street, Wilson Avenue and Cornell Road.

This plan addresses these concerns in the following ways:

1. Because this plan does not contemplate a larger student body, traffic volume is not expected to increase.
2. The addition of an on-site swimming pool would result in slightly less traffic, as it would eliminate the need to drive off-site and back for physical education, meets and practices.
3. The construction of a bus turnaround in the Garland parking lot would reduce school bus impacts on Catalina Street.
4. Beautification of Campus edges and fences along Catalina Avenue would improve the school's interface with that street.
5. Improvements to the Wilson Avenue sidewalk would help render streets safer and more visually appealing.
6. Longer term additions to on-site parking would help alleviate parking concerns.

VI. PLAN OVERVIEW

This plan does not contemplate any increase in enrollment beyond the maximum enrollment currently permitted under the 1992 plan (*i.e.*, 861 students). Enrollment for the 2003-2004 academic year is expected to be approximately 850 students. The plan does anticipate a possible modest increase (*i.e.*, not more than twelve full-time equivalents) over time in the number of faculty and staff, with the resulting additional parking demand to be met by increased on-site parking to comply with City parking regulations.

In addition to improvements to interiors of existing buildings, the plan permits the construction of a swimming pool, an underground parking structure, and up to 45,000 net new square feet of school buildings over the ten-year term of the plan (which is only 20,246 square feet more than the total approved in the 1992 plan). All new construction must conform to the height, setback, preservation, density and other restrictions contained in the plan.

The plan contemplates incremental improvement of existing facilities and the addition of new facilities to meet the school's educational and administrative needs. The school anticipates building (and this plan permits) up to 20,000 square feet of new construction in the North Campus, plus the construction of an underground parking structure; 10,000 square feet of new construction in the Athletic Fields and Gym area, plus the construction of a swimming pool to replace the existing tennis courts; and 20,000 square feet of new construction in the South Campus; provided that the aggregate gross floor area of the school, excluding underground parking, shall not be increased (net of demolished floor area) by more than 45,000 square feet. If it were all built, these 45,000 square feet would represent an increase of only 20,246 square feet over the 200,050 square feet permitted in the 1992 plan.

Other than the proposed new pool facility, no material modifications are proposed to outdoor athletic facilities. For a description of the school's current athletic programs, please see **Appendix A**.

New development on the South Campus would be compatible with the residential buildings adjacent to the South Campus, while new development on the North Campus would be compatible with the historic structures located on the North Campus. Replacement buildings would generally conform to the setback lines of the buildings they replace, and new buildings would generally conform to the setback lines of adjacent structures.

Buildings of historical merit would be retained, with no proposed modifications to the exteriors, while the school would be permitted to continue to adaptively reconfigure and modernize the interiors for its educational purposes. Three structures of possible historic merit are being considered for relocation.

Because the plan does not provide for any increase in enrollment, no increase in traffic volume or parking demand is expected. Nevertheless, the plan contemplates certain improvements in these areas, including the construction of a bus turnaround in the Garland parking lot and the future provision of underground parking. The underground parking structure would be located away from neighborhood residences and would accommodate parking demand currently met with a street permit system, plus additional parking related to a modest increase in the number of faculty over the term of the plan.

The term of this plan is ten years from the date that is thirty days after approval by the City Council of the City of Pasadena.

VII. MAP OF PLAN BOUNDARIES SHOWING RELATIONSHIP TO USES AND STRUCTURES WITHIN A 500-FOOT RADIUS

A map of the plan boundaries, showing the relationship to uses and structures within a 500-foot radius of the school is shown on **figure 2**.

VIII. MAP OF PLAN AREA SHOWING TOPOGRAPHICAL DATA, TERRAIN, VEGETATION

A map of the plan area showing topographical data, terrain and vegetation is shown on **Figure 3.** A tree survey is attached as **Figure 4.**

IX. RESOURCE INVENTORY OF EXISTING ARCHITECTURALLY OR HISTORICALLY SIGNIFICANT STRUCTURES

An historical survey of the school's existing buildings is attached to this plan as **Figure 5.** Existing facilities at the school include thirteen structures of architectural and historical merit, as noted on the attached survey. Hunt & Grey designed the ten earliest buildings on the Campus (on the North Campus) in a then-pioneering use of bungalow structures with adjoining courtyards. Of these, seven were built in 1907 and the rest in 1916. Gordon Kaufman designed two later buildings, fronting on California Boulevard, in the Spanish Revival style. At the center of the South Campus is the Administration Building, originally designed as a home by Joseph J. Blick in 1907.

The interiors of these structures have been modified over the years to meet the school's evolving administrative and educational programming needs. Over the next ten years various building systems, including plumbing, electrical and communications systems in these buildings (as well as others on Campus), may be upgraded and/or replaced, and additional interior modifications may be made to meet the school's educational objectives. However, in order to maintain the historical character of these buildings, no material modifications shall be made to the exteriors of the structures of historical merit other than the ordinary repair and replacement of worn or damaged parts with materials similar in character to the existing materials.

Because they would materially interfere with needed improvements, building #3, building #19 and building #20 on the historic survey may be relocated, either on or off the Campus.

X. SITE PLAN AND LIMITATIONS ON NEW DEVELOPMENT

The school shall be permitted to build as-of-right any new school facilities on the Campus, provided that they conform to the following restrictions applicable during the term of this plan. The school shall also be permitted to perform interior renovations and modeling of any and all existing facilities, provided that such work is done in accordance with current City and State building codes.

A. Existing and Proposed Uses

The school's existing uses include classrooms, athletic and outdoor play areas, common areas and administrative, faculty and service areas. A site plan illustrating the existing configuration of the school and existing uses is shown on Figure 6.

This plan continues the longstanding school uses on the existing site, without any increase in enrollment beyond the maximum permitted in the 1992 plan (*i.e.,* 861 students). Instead, this plan provides for the enhancement of the school's current programs by remodeling, reconfiguring and adding classroom, faculty, administrative and storage facilities.

B. Gross Floor Area

Because the school's needs evolve over time and are subject to certain limitations (such as the school calendar, fundraising capacity and the timing of the need for facilities) the exact floor areas of the planned new facilities have not been determined. Instead, the plan permits specified net amounts of new construction for each sub-area of the Campus. The plan does not define specific buildings (which have not yet been designed) or locate particular educational uses, but sets limits within which new buildings may be constructed, subject to the location, setback, density, height and other restrictions set forth in this plan.

The gross floor area of the existing facilities is 142,022 square feet, as more specifically shown on **Figure 7.** This consists of the 135,442 square feet on the existing campus, as shown in **Table A** above, plus the three residential buildings shown as building numbers 32,33 and 34 on Figure 7. The school may construct approximately 20,000 square feet of new construction on the North Campus, plus an underground parking structure; 10,000 square feet of new construction in the Athletic Fields and Gym area, plus a swimming pool (not to exceed 100 feet by 120 feet) to replace the existing tennis courts; and 20,000 square feet of new construction on the South Campus; provided that the aggregate gross floor area of all buildings at the school, excluding underground parking, shall not be increased (net of demolished square footage) by more than 45,000 square feet. In the course of demolition and construction, any trees located within the "Potential Development Area" shown on **Figure 8** may be removed. This is further illustrated on **Figure 16.**

The interior of any structure on the Campus may be remodeled. Any structure shown on **Figure 5** as "To Be Demolished", or any other structure built after 1950 may be demolished or reconfigured. Those buildings of possible historic merit listed on **Figure 5** as "To be Relocated" may also be relocated on the Campus.

New development, including additions to or replacements of existing structures, may occur as-of-right in any location shown on **Figure 8** as "Potential Development Areas", provided that such new development conforms to the restrictions set forth in this Plan.

In the event of material casualty to or destruction of a building or buildings in an area not shown as "Potential Development Area" on **Figure 8**, such building or buildings may be replaced as-of-right with buildings conforming to the restrictions set forth in this Plan.

The buildings to be constructed in the "Potential Development Area" would be developed and used for the uses described in *Section IV, Plan Objectives*, above. However, other than the swimming pool and underground parking structure, no specific uses have at this time been allocated to specific portions of the "Potential Development Area" on **Figure 8.**

C. Setbacks

Figure 9 shows the precise setbacks requirements for the entire Campus. Fences and walls, pergolas, heating, cooling and pool equipment, trees, shrubbery and similar features may be located within the setback areas.

A setback for playing field bleachers is shown on Figure 9 as two feet from the current Campus property line. This is consistent with the school's permit for the bleachers,

which requires that they be set back ten feet from the existing curb line, which is eight feet west of the Campus property line.

D. Density

The overall floor area ratio for the Campus shall not exceed 0.35/1.

E. Height

Building height limitations are as shown on **Figure 10.** Building heights shall be measured from the immediately adjacent grade on the side or sides of the building facing public rights of way. These limitations are based on consistency with building heights of nearby properties. A cross-section illustrating existing structures to be retained and proposed new buildings subject to these height limitations are shown on **Figure 11,** along with existing residential and Cal Tech structures, to illustrate that consistency.

F. Lighting

No new lighting is planned in connection with the redevelopment of the Campus, other than security lighting, shielded from neighboring properties. No event lighting for athletic facilities is planned, though the swimming pool would contain in-pool lighting for safety.

G. Parking

Based on the current faculty and staff population, grammar school homerooms and high school student population, 166 on-site parking spaces are required under current City regulations. There are currently 166 on-site parking spaces on Campus, as shown in more detail on **Figure 12.**

The plan anticipates that the school faculty and staff may modestly increase over the term of the plan, not to exceed twelve additional full-time equivalents. Accordingly, the plan identifies three sites on Campus, more specifically shown on **Figure 13**, where additional parking may be provided in the short-term to ensure that the school continues to meet its parking requirements.

In addition, the plan anticipates longer term construction of an underground parking structure on the northeast corner of campus, away from neighborhood residences, which would accommodate parking demand currently met with a street permit system and an increase in the number of faculty discussed above. (Figures 13 and 13.1).

The following parking requirements are applicable to the Campus during the term of this Plan:

Table B Parking Requirements

Use/User	Requirement	Current	Req'd Parking
FULL TIME EQUIV. FACULTY & STAFF	1 SPACE PER 2 FTE	141	71
GRAMMAR SCHOOL (PRE-K THRU 8) CLASSROOMS	1.5 SPACES PER CLASSROOM	28	42

	HIGH SCHOOL STUDENT	1 SPACE FOR EVERY 5 STUDENTS	346	69
			TOTAL	182
			-9% TDM	166

Under the 1992 plan, a discount of nine percent was applied to the normal parking requirements to account for transportation demand management benefits. This nine percent discount has been applied to the 2004 plan.

Recently, the City has adopted parking control measures in the neighborhood adjacent to the Campus on the west. Parking on the west side of Catalina Street is restricted to residents, while parking on the east side of Catalina is restricted to school use during school hours. This has reduced conflicts between neighborhood use and school-related parking and pick-up and drop-off.

For a description of the school's parking needs and management program, see **Appendix B** to this plan.

On-site faculty and staff parking may be provided in tandem parking spaces, which shall be subject to approval as a variance or under the City's "Minor CUP" Process. Additionally, the location of on-site parking spaces may be reconfigured on Campus as necessary to accommodate new construction and to make the traffic flow more efficient and convenient, provided that there is sufficient on Campus parking to meet the foregoing parking requirements.

XI. CIRCULATION PLAN

A. Projected traffic volumes within Plan Area and Vicinity

Because the plan does not provide for an increase in enrollment above that permitted by the 1992 plan and provides for only a modest increase in the number of faculty/staff, the plan would not have a significant impact on traffic volumes in either the plan area or the vicinity of the Campus. A traffic analysis confirming this conclusion has been prepared by Kaku & Associates and has been provided to the City.

In an effort to minimize bus traffic on neighborhood streets, the school would construct a bus turn-around area in the Garland Theater parking lot on Wilson Avenue. This would permit visiting buses to approach and depart the school on Wilson Avenue only, avoiding Catalina Street altogether as shown on **Figure 18.**

B. Transportation System Management

The school has submitted to the City a Transportation System Management plan. In addition to the plan, the school has implemented several procedures designed to reduce traffic congestion in the vicinity:

1. Strictly-enforced pick-up and drop-off procedures and parking policies designed to minimize traffic congestion and parking problems have been established. Students, parents, faculty and staff are regularly reminded of

them through announcements, posted signs, introductory packets for new students and regular newsletters. **Figure 18.1**

2. Staff is present at drop-off and pick-up periods to supervise and assist with loading and unloading.

3. Student parking privileges are limited to seniors and to juniors who carpool. Younger students are prohibited from driving to school.

4. Preferential parking spaces are set aside for carpools.

5. The implementation of the residential parking permit system has eliminated spillover parking into the adjoining neighborhoods; the school employs a security guard to patrol the adjacent streets, reminding students and parents of the rules of the permit system.

6. For special events such as graduation, the athletic field is opened to visitor parking.

C. Circulation and Other Street and Edge Improvements

The following improvements are planned:

1. The reconfiguration of the Garland parking lot on Wilson Avenue to create a bus turnaround, thus reducing school bus impacts on Catalina Street.

2. Improvements to landscaping and fencing along Campus boundaries, substantially as indicated on Figure 14.

3. New underground parking structure at the northeast corner of campus, as shown on Figures 13 and 13.1.

4. Following completion of the new underground parking structure described in item 3 above:

   A. Improvements to Wilson Avenue between California Boulevard and Cornell Road, substantially as shown on Figures 15 and 15.1.

   B. Improvements to Catalina Street between California Boulevard and Cornell Road, substantially as shown on Figures 15 and 15.1.

XII. PRELIMINARY DEVELOPMENT SCHEDULE AND PHASING

This plan provides the regulatory framework for campus development for the next ten years. The phasing of new development would generally be guided by the school's evolving programmatic needs and the ability to raise funds rather than a strict development schedule or deadlines. However, some general phasing and sequencing would be as follows:

Master Plan Phase	Anticipated Time Frame	Description
Phase I	Years 1-3	A. Swimming Pool, Including Its Surrounding Fencing And Landscaping. B. South Wilson Street Improvements From Mid-Block To Cornell. C. Interior Improvements, Renovations Of Existing Structures.
Phase II	Years 3-6	A. Interior Improvements, Renovations Of Existing Structures. B. Garland Lot Improvements. C. Landscaping And Fencing Improvements. D. Replacement building space to accommodate the square footage removed during development of the subterranean parking garage, but only after completion of Phase 1 street improvements. E. Street lighting improvements along Cornell, and Wilson between Cornell and Arden.
Five Year Review	At Year 5 Projects To Be Completed	1. Swimming Pool Completed. 2. Identify Potential Locations For Buildings #'S 3, 19, 20 3. South Wilson Street Improvements Completed. 4. Filed Preliminary Plan Check For Lower School/Parking Garage @ North Campus. 5. Update Status of Fundraising Drive/Building Program for New Development
Phase III	Years 6-8	A. Landscaping And Fencing Improvements. B. Interior Improvements, Renovations Of Existing Structures. C. Other Improvements Per Master Plan.
Phase IV	Years 8-10	1. Completion Of Parking Garage/Related Buildings. 2. Completion Of Remaining Street/Lighting Improvements Around Campus Perimeter. 3. Interior Improvements, Renovations Of Existing Structures. 4. Other Improvements Per Master Plan.
Ten Year Review	At Year 10 Projects To Be Completed	1. Lower School, Parking Garage Completed. 2. Completion Of Street And Lighting Improvements Along Catalina. 3. Other Improvements Per Master Plan.

Because construction of the Wilson Avenue and Catalina Street improvements would disrupt existing parking capacity on those streets, Phase 4 cannot occur until substantial completion of Phase 3.

XIII. FIVE AND TEN YEAR REVIEW REQUIRED

Pasadena Municipal Code Section 17.61 requires the Planning Commission to review all Master Plans every five years, commencing the fifth year after the approval date of the Master Plan, for compliance with the features of the plan and conditions of approval. This review will take place as provided by Sec. 17.61 of the Zoning Code.

The Planning Commission will review the Master Development Plan at years five and ten. Three projects are assigned for completion at each review. During the reviews, staff will report to the Planning Commission the progress of implementation of the Master Plan and the status of the three assigned projects. In the event that construction of the Lower School and Parking Garage are not initiated by year eight, the remaining street and lighting improvements along Catalina Avenue would need to be completed by year ten. In such a case, Polytechnic School would need to demonstrate improvement in the Transportation Demand Management Plan during the Ten Year Review to compensate for the loss of street parking along Catalina Avenue.

XIV. TREE PROTECTION

The Tree Protection Ordinance requires that the tree canopy of the project site be maintained or enhanced after full implementation of the Master Development Plan. The project site contains over 287 trees, most of which do not meet the minimum size to attain protected status. A total of 47 protected trees have been identified as being potentially impacted by new development proposed for the North and South Campuses. Of this, 13 trees would be removed through continued development of the school campus. When trees are removed, compliance with the City's Tree Protection Ordinance requires submission of a Landscape Plan to demonstrate creation of tree canopy coverage of equal to or greater than the protected tree being removed. Other trees would also be removed as a result of development. However, the majority of these other trees are located within the interior of the campus but are not protected under the Tree Protection Ordinance. Potentially impacted trees are noted below:

TREE NO.	*COMMON NAME*	BOTANICAL NAME	TRUNK DIAMETER	CANOPY DIAMETER	DEVELOPMENT AREA	PROTECTED
NC-001	Indian Laurel Fig	Ficus nitida	15"	27'	X	
NC-002	Indian Laurel Fig	Ficus nitida	13"	23'	X	
NC-003	Indian Laurel Fig	Ficus nitida	13"	25'	X	
NC-004	Indian Laurel Fig	Ficus nitida	12"	25'	X	
NC-005	Indian Laurel Fig	Ficus nitida	17"	36'	X	
NC-006	Redwood	Sequoia sempervirens	9"	12'	X	
NC-008	Purple Leaf Plum	Prunus cerasifera	5"	9'	X	
NC-009	Purple Leaf Plum	Prunus cerasifera	5"	8'	X	
NC-010	Purple Leaf Plum	Prunus cerasifera	5"	5'	X	
NC-011	Purple Leaf Plum	Prunus cerasifera	5"	8'	X	
NC-012	Carrotwood	Cupaniopsis anacardioides	8"	18'	X	
NC-013	Carrotwood	Cupaniopsis anacardioides	8"	18	X	
NC-015	Victorian Box	Pittosporum undulatum	8"; 8"	15'	X	
NC-016	Victorian Box	Pittosporum undulatum	7"	12'	X	
NC-017	Victorian Box	Pittosporum undulatum	8"; 8"; 8"	20'	X	
NC-018	Victorian Box	Pittosporum undulatum	12"; 12"	30'	X	
NC-019	Indian Laurel Fig	Ficus nitida	15"	25'	X	
NC-020	Indian Laurel Fig	Ficus nitida	15"	25'	X	
NC-021	Indian Laurel Fig	Ficus nitida	15"	30'	X	
NC-022	Indian Laurel Fig	Ficus nitida	15"	30'	X	
NC-023	Redwood	Sequoia sempervirens	6"	12'	X	
NC-024	Holly	Ilex sp.	6"	8'	X	
NC-025	Holly	Ilex sp.	6"	8'	X	
NC-026	Holly	Ilex sp.	6"	8'	X	
NC-027	Holly	Ilex sp.	6"	8'	X	
NC-028	Indian Laurel Fig	Ficus nitida	12"	38'	X	
NC-029	Evergreen Elm	Ulmus parvifolia	15"	50'	X	
NC-030	Indian Laurel Fig	Ficus nitida	12"	38'	X	
NC-031	Jacaranda	Jacaranda mimosifolia	6"	20'	X	
NC-032	Carob	Ceratonia siliqua	16"; 18"; 20"	45'	X	
NC-033	**Engelmann Oak**	**Quercus engelmannii**	**8"**	**18'**	**X**	**X**
NC-034	European White Birch	Betula pendula	5"	10'	X	
NC-035	Carrotwood	Cupaniopsis anacardioides	6"	25'	X	
NC-036	Carrotwood	Cupaniopsis anacardioides	6"	25'	X	
NC-037	Carrotwood	Cupaniopsis anacardioides	7"	25'	X	
NC-038	Carrotwood	Cupaniopsis anacardioides	6"	25'	X	
NC-039	Red Ironbark	Eucalyptus sideroxylon	6"	18'	X	
NC-041	Purple Leaf Plum	Prunus cerasifera	5"	12'	X	
NC-042	Fern Pine	Podocarpus gracilior	28'	48'		X
NC-044	Carob	Ceratonia siliqua	18'	35'	X	
NC-045	**Victorian Box**	**Pittosporum undulatum**	**18'**	**30'**	**X**	**X**
NC-047	**Bailey Acacia**	**Acacia baileyana**	**33'**	**35'**	**X**	**X**
NC-051	Victorian Box	Pittosporum undulatum	12"	25'		X
NC-062	Deodar Cedar	Cedrus deodara	24"	40'	X	
NC-063	Evergreen Elm	Ulmus parvifolia	20"	40'	X	
NC-064	Evergreen Elm	Ulmus parvifolia	16"	40"	X	

NC-065	Brush Cherry	Syzygium paniculata	14"	24'		X
NC-072	Bailey Acacia	Acacia baileyana	16"-multi	38"		X
NC-074	Victorian Box	Pittosporum undulatum	6"-multi	35'	X	
NC-075	Victorian Box	Pittosporum undulatum	8"-multi	30'	X	
NC-085	Southern Live Oak	Quercus Virginiana	12"	28		X
NC-096	Engelmann Oak	Quercus engelmannii	20"	30'		X
NC-097	Coast Live Oak	Quercus agrifolia	16"	20'		X
NC-101	Engelmann Oak	Quercus engelmannii	24"	35'		X
NC-103	Coast Live Oak	Quercus agrifolia	20"	20'		X
NC-107	Guadalupe Fan Palm	Brahea endulis	N/A	12' BT		X
NC-122	Indian Laurel Fig	Ficus nitida	15"	30'	X	
NC-123	Indian Laurel Fig	Ficus nitida	15"	30'	X	
SC-001	Engelmann Oak	Quercus engelmannii	20"	30'		X
SC-011	Canary Island Pine	Pinus canariensis	28"	40'		X
SC-019	Canary Island Pine	Pinus canariensis	30"	30'		X
SC-022	Victorian Box	Pittosporum undulatum	14"	25'		X
SC-023	Victorian Box	Pittosporum undulatum	12"	25'		X
SC-025	Engelmann Oak	Quercus engelmannii	12"	40'		X
SC-026	Engelmann Oak	Quercus engelmannii	12"	35'		X
SC-030	Aleppo Pine	Pinus halepensis	30"	60'		X
SC-031	Victorian Box	Pittosporum undulatum	16"	40'		X
SC-032	Engelmann Oak	Quercus engelmannii	30"	60'		X
SC-033	Southern Live Oak	Quercus Virginiana	12"	40'		X
SC-045	Fern Pine	Podocarpus gracilior	24"	45'		X
SC-048	Coast Live Oak	Quercus agrifolia	20"	30'		X
SC-048	Jacaranda	Jacaranda mimosifolia	14"	40		X
SC-049	Jacaranda	Jacaranda mimosifolia	16"	60'		X
SC-050	Canary Island Pine	Pinus canariensis	30"	30'		X
SC-051	Canary Island Pine	Pinus canariensis	48"	35'		X
SC-052	Canary Island Pine	Pinus canariensis	44"	35'		X
SC-054	Fern Pine	Podocarpus gracilior	20"; 24"	50'		X
SC-055	Carrotwood	Cupaniopsis anacardioides	12"	25'	X	
SC-056	Carrotwood	Cupaniopsis anacardioides	12"	25	X	
SC-057	Canary Island Pine	Pinus canariensis	24"	25'	X	
SC-058	Canary Island Pine	Pinus canariensis	24"	25'	X	
SC-059	Canary Island Pine	Pinus canariensis	24"	25'	X	
SC-060	Weeping Bottlebrush	Callistemon viminalis	4"	15'	X	
SC-061	Carrotwood	Cupaniopsis anacardioides	6"	15'	X	
SC-062	Carrotwood	Cupaniopsis anacardioides	6"	20'	X	
SC-063	Carrotwood	Cupaniopsis anacardioides	6"	18'	X	
SC-064	Canary Island Date Palm	Phoenix canariensis	N/A	25' BT	X	
SC-065	**Victorian Box**	**Pittosporum undulatum**	**12"**	**20'**	**X**	**X**
SC-066	Carrotwood	Cupaniopsis anacardioides	3"-multi	10'	X	
SC-067	Evergreen Elm	Ulmus parvifolia	6'	22'	X	
SC-068	Fern Fine	Podocarpus gracilior	14"	25'	X	
SC-069	Brazilian Pepper	Schinus terebinthefolius	6"	15'	X	
SC-070	Brazilian Pepper	Schinus terebinthefolius	6"	15'	X	
SC-071	Brazilian Pepper	Schinus terebinthefolius	6"	15'	X	
SC-072	Brazilian Pepper	Schinus terebinthefolius	6"	15'	X	
SC-073	Brazilian Pepper	Schinus terebinthefolius	6"	15'	X	
SC-074	Brazilian Pepper	Schinus terebinthefolius	6"	15'	X	
SC-075	Coast Live Oak	Quercus agrifolia	36"	45'		X
SC-077	Coast Live Oak	Quercus agrifolia	30"	50'		X
SC-079	Coast Live Oak	Quercus agrifolia	30"	60'		X
SC-080	Coast Live Oak	Quercus agrifolia	48"	70'		X
SC-081	Canary Island Pine	Pinus canariensis	17"	25'	X	
SC-082	Canary Island Pine	Pinus canariensis	17"	25'	X	
SC-083	Canary Island Pine	Pinus canariensis	17"	25'	X	
SC-084	Canary Island Pine	Pinus canariensis	17"	25'	X	
SC-085	Canary Island Pine	Pinus canariensis	17"	25'	X	
SC-086	Canary Island Pine	Pinus canariensis	16"	35'	X	
SC-087	Canary Island Pine	Pinus canariensis	16"	35'	X	
SC-088	Canary Island Pine	Pinus canariensis	16"	35'	X	
SC-091	Englemann Oak	Quercus engelmannii	30"	50'		X
SC-092	Englemann Oak	Quercus engelmannii	28"	55'		X
SC-097	Englemann Oak	Quercus englemannii	20"	35'		X

SC-098	Carnary Island Pine	Pinus canariensis	30"	20'	X	
SC-099	Victorian Box	Pittosporum undulatum	12"	20'	X	
SC-108	Englemann Oak	Quercus englemannii	6"	15'	X	
SC-109	Englemann Oak	Quercus englemannii	20"	32'		X
SC-110	Pine	Pinus sp.	24"	48'	X	
SC-111	Victorian Box	Pittosporum undulatum	12"-multi	25'		X
SC-114	Jacaranda	Jacaranda mimosifolia	12"-multi	30'		X

XV. DESIGN REVIEW

The design review process is intended to implement general plan urban design policies. More specifically, the purposes of design review are to ensure that the architectural design of structures and their materials and colors are harmonious with surrounding development and with the landscape of the areas in which new development in which they are proposed to be located. In addition, design review encourages excellence in architectural design to enhance the visual environment of the city.

The Master Development Plan is not proposing specific building and landscape designs at this time. Rather, the MDP is establishing building envelopes where new development will occur. At each building phase, the Director of Planning would review new construction projects less than 25,000 square feet to evaluate consistency with the approved Landscape, Tree Protection, and Master Development Plan. For new construction over 25,000 square feet, the Design Commission would review the proposed project in accordance with the thresholds of Design Review, Pasadena Municipal Code Chapter 17.92. The Director, at his discretion, may refer applications for final design to the Design Commission pursuant to PMC 17.92.070.

APPENDIX A
Polytechnic School
Master Development Plan

Athletic Programs and Facilities

Program Support

The school's athletic fields and gyms are an integral part of everyday student life, from physical education classes where students learn the basics of sport, cooperation and fair play, to athletic team events where high school students learn life's lessons in diversity, integrity and loyalty while honing athletic skills. The school's "no cut" policy, and approximate 90% participation rate, underscores its belief in the value of athletics in the overall development of students. Unlike classroom teaching, athletics provides a venue where coaches, parents and community friends alike gather and participate in creating many memorable moments for students of all ages.

Usage

Physical education classes use the fields and gyms during weekday school hours (until about 2:30pm). Athletic teams use the fields and gyms on weekdays for practices and events from approximately 3:00pm to 6:00pm, occasionally during the day on Saturdays, and for some evening events in the gyms (basketball games, for example).

The school expects the number of on-campus athletic events to remain at current levels, except for the addition of about 3-5 home meets per month for water polo and swimming (see "New Swimming Pool").

The school also supports local community athletics organizations (such as AYSO, little league, lacrosse league) by permitting them to utilize its athletic facilities primarily on weekends.

The school does not intend to add nighttime lighting to its fields.

New Swimming Pool

The school proposes construction of a swimming pool in the location of the two existing tennis courts, which would be removed. The pool would be approximately 25 meters by 25 yards with a seating capacity of about 110. Pool lighting would be limited to safety purposes and would not include lighting for nighttime events.

The school currently utilizes swimming pool facilities at nearby locations for physical education and athletic programs, but there is no guarantee that these arrangements can continue in the future. An on-site swimming pool is needed secure a location for the school's aquatic educational programs and to reduce student travel off-campus.

Program Support (pool)

The physical education program currently includes swimming classes for middle school students who utilize an off-site pool at nearby Cal Tech to learn swimming and water safety. An on-site pool would simplify the process of "getting to location", leaving more time for instructional learning, and permit introduction of swimming and water safety classes for lower school students and more PE options (water polo and diving) for all grades.

Athletic team practices and events for boys and girls Water Polo and Swimming/Diving are presently held at off-site facilities. An on-site pool would reduce traffic congestion during peak afternoon traffic (see "Parking and Traffic Impact" below).

Usage and Operations (pool)
Physical education classes would use the pool during weekday school hours (until about 2:30pm). After-school athletic team practices and events would use the pool from about 3:00pm to 6:00pm on weekdays and occasionally on Saturdays during the day. The athletic teams compete during mid-August through mid-May and would host approximately 3-5 on-campus events in total per month. While it is impossible to predict future attendance at athletic events, average attendance at water polo and swimming meets has historically been significantly less than the proposed pool's 110 seating capacity.

Summer School programs held during the weekday currently transport participants to neighborhood pools for daytime aquatics classes. These summer classes would likely use the new on-site pool. And weekend use of the pool may be permitted for school-sponsored aquatics instruction, but the school does not intend to open the pool for general community use.

Parking and Traffic Impact (pool)
An adequate number of parking spaces in on-site lots and school curbsides are vacated and available after school to provide sufficient parking for athletic events.

Traffic congestion would be reduced with an on-campus pool since Water Polo students would no longer depart for daily practices during the peak after-school time period, and spectator traffic for home meets would be somewhat neutralized due to the absence of out-bound student athlete/spectator traffic. Swimming team traffic would remain relatively unchanged since the team currently uses nearby Cal Tech, which is in walking distance.

APPENDIX B
Polytechnic School
Master Development Plan

Parking Management

Overview

Everyday parking demand is met through on-site parking lots and permitted curbside parking along school edges. Additional parking demand for periodic school events is met with athletic field and south campus driveway/lawn spaces. Off-site, fee-based parking lots provide additional capacity for the handful of very popular school events. A parking capacity of over 500 vehicles can be generated with these arrangements, which has been sufficient for the school's largest event, upper school graduation.

The school is committed to managing its parking requirements and minimizing any parking impacts on adjoining neighborhoods. The school:

- Upgraded its athletic field to accommodate additional parking;
- In cooperation with the surrounding neighborhoods, implemented a parking permit system on school curbsides;
- Discourages street parking in adjoining neighborhoods with patrols by school personnel and by providing off-site parking during popular events;
- Deploys a full-time traffic and safety employee and utilizes additional staff for popular school events;
- Organizes parking for school events and communicates parking arrangements to constituent groups;
- Issues parking permits only to seniors and car-pooling juniors;
- Sets aside preferential parking spaces for carpools to reduce demand;
- Staggers its grade division graduation ceremonies.

Regular School Day Parking

The five parking lots on-site have a combined capacity of 166 cars, which meets City requirements for on-site parking. These spaces are used for everyday parking needs such as students, employees, ADA, visitors, school vehicles and carpools.

Parking permits provide capacity for 94 additional vehicles along the curbsides that border the school's edges. The east side of Catalina Street and the west side of Wilson Avenue provide a total of 73 parking spaces for north campus employees and south campus student drivers. Both curbsides of Cornell Street (between Wilson Avenue and Catalina Street) provide 21 parking spaces for south campus employees and student drivers. These curbside spaces generally remain occupied throughout the school day until about 2:30 pm.

The northern-most section of the school's curbside on Catalina Street is a "green" 15-minute parking zone with a 16-car capacity. It provides supplemental parking for the drop-off and pick-up routine for Pre-K students who must be escorted to and from class

Athletics Parking

A. Vehicles: An adequate number of parking spaces in the five on-site lots and school curbsides are vacated and available after school to provide sufficient parking for athletic events. The posted hours for the permitted curbside spaces expire at the

end of the school day and become available to provide additional parking for athletic and other after-school events. Visitors to neighboring Caltech also use the curbside spaces on Wilson Avenue. When attendance is expected to exceed on-site and curbside capacity, the school rents spaces at off-site lots.

B. Buses: The school coordinates parking arrangements for athletic team buses prior to arrival. Three parking locations are utilized: along Wilson Avenue adjacent to the gym; in the south campus Garland lot; and in off-site, fee-based parking lots.

   Buses are also utilized from time-to-time during the school day for field trips. Short-term parking and loading for both campuses takes place on Wilson Avenue, and occasionally at the south campus Garland lot.

   The 2004 Master Plan accommodates a new bus turnaround in the south campus Garland parking lot that would direct bus traffic onto Wilson Avenue, away from adjoining neighborhoods.

Events Parking

A. During School Hours: Parking for events held during normal school hours is partially met by vacancies in the five on-site lots and school curbsides, and supplemented with 50 athletic field parking spaces.

B. After School Hours: Parking for events held after normal school hours, including evenings and weekends, is met by vacancies in the five on-site lots and school curbsides.

C. High Attendance Events: On-site, field and curbside parking capacity is supplemented with 14 spaces at the south campus driveway/lawn and over 200 spaces at two off-site, fee-based parking lots for the most popular day-time programmatic events (about 15 to 20 annually including graduation, Pet & Hobby Show, and visiting days). Rental of the off-site spaces is planned in advance. The combined capacity of these parking arrangements is over 500, which has proven to be sufficient for the school's largest event, upper school graduation.