

RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASADENA  
CERTIFYING THE FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT  
REPORT FOR THE CALIFORNIA INSTITUTE OF TECHNOLOGY MASTER  
DEVELOPMENT PLAN AMENDMENT PROJECT, AND ADOPTING  
ENVIRONMENTAL FINDINGS AND A MITIGATION MONITORING AND  
REPORTING PROGRAM**

**WHEREAS**, the amendment to the California Institute of Technology Master Development Plan (the “Project”) proposes to construct a new Chemistry and Chemical Engineering (“CCE”) Laboratory in the open space between Beckman Behavioral Biology (“BBB”) Laboratory and Noyes Laboratory, or the demolition of the existing Mead Laboratory and constructing a new laboratory on the site of Mead Laboratory, rehabilitation of the existing North Undergraduate Houses (Lloyd, Page, and Ruddock) or construction of new student housing, construction of a new dormitory in place of the existing Braun and Marks Graduate Houses, construction of a new Campus Center in place of the existing Physical Plant offices and shops, and revision to the Master Development Plan design guidelines and design thresholds, and requires approval by the City Council; and

**WHEREAS**, the City of Pasadena is the lead agency for the Project pursuant to the California Environmental Quality Act (“CEQA”, California Public Resource Code §21000 *et seq.*), the State CEQA Guidelines (the “Guidelines,” 14 California Code Regulations §15000 *et seq.*), and the City’s local environmental policy guidelines; and

**WHEREAS**, an EIR for the California Institute of Technology Master Development Plan was certified by the City in 1989; and

**WHEREAS**, pursuant to Section 15063 of the Guidelines, the City prepared an Initial Environmental Study (the “Initial Study”) for the Project. Pursuant to Guidelines Section 15162, the Initial Study examined (a) whether the Project constituted substantial changes to the 1989 Master Plan which would require major revisions to the 1989 EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects, (b) whether substantial changes had occurred with respect to the circumstances under which implementation of the Master Plan as amended by the Project was to be undertaken which would require major revisions to the 1989 EIR, or (c) whether new information of substantial importance had developed, which was not and could not have been known at the time the 1989 EIR was certified and which showed that the Project would (i) have additional significant effects not analyzed in the 1989 EIR, (ii) significant effects previously examined would be substantially more severe than shown in the 1989 EIR, mitigation measures or alternatives previously found not feasible, or (iii) new or considerably different mitigation measure or alternatives, would in fact be feasible and reduce a significant effect; and

**WHEREAS**, the Initial Study concluded that there was substantial evidence that the Project might have a significant environmental impact on several specifically identified resources including: (1) aesthetics; (2) air quality; (3) biological resources; (4) historic resources; (5) traffic and circulation; and (6) utilities and service systems.

**WHEREAS**, the Initial Study concluded that the Project would not have a significant impact on the following resources, and therefore they are not addressed in the Supplemental Environmental Impact Report (SEIR): agricultural resources, energy,

geology/soils, hazards/hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services, and recreation; and

**WHEREAS**, pursuant to Guidelines Section 15163, and based upon the information contained in the Initial Study, the City ordered the preparation of a supplemental environmental impact report for the Project (“SEIR”). On March 21, 2005, the City prepared and sent a Notice of Preparation of the Draft SEIR and a copy of the Initial Study to responsible, trustee, and other interested agencies and persons in accordance with Guidelines Sections 15082(a) and 15375; and

**WHEREAS**, pursuant to Guidelines Section 15082, the City solicited comments from potential responsible and trustee agencies for a 30-day period, from March 21, 2005 through April 20, 2005, requesting details about the scope and content of the environmental information related to their area of statutory responsibility that should be studied in the SEIR, as well as the significant environmental issues, reasonable alternatives and mitigation measures that the responsible agency would have analyzed in the Draft SEIR, and the City received five comment letters in response to the NOP; and

**WHEREAS**, pursuant to Public Resources Code Section 21092, the City provided a public Notice of Completion and Availability (“NOA”) of the Draft SEIR on August 24, 2006, through notice published in the Pasadena Star News, a newspaper of general circulation in the Project area. The NOA was also mailed to residents and property owners within 500 feet of the Project, on August 22, 2006. The NOA also gave notice of the Design Commission meeting on August 28, 2006, Historic Preservation Commission meeting on September 5, 2006, Transportation Advisory Commission meeting on September 7, 2006, and the Planning Commission meeting on September 13,

2006. Copies of the Draft SEIR were also placed at the City's Planning and Development Department at 175 North Garfield Avenue, as well as the Pasadena Central Library, the Hill Avenue Branch Library, and on the City's website; and

**WHEREAS**, the Draft SEIR was circulated, together with technical appendices, to the public and other interested persons for a 45-day public comment period, from August 22, 2006 through October 6, 2006. During the comment period, the City held four duly noticed public meetings at which the public was given the opportunity to provide comments on the Draft SEIR, as follows: Design Commission meeting on August 28, 2006; Historic Preservation Commission meeting on September 5, 2006; Transportation Advisory Commission meeting on September 7, 2006; and the Planning Commission meeting on September 13, 2006; and

**WHEREAS**, during the public comment period the City received written and oral comments on the Draft SEIR, and consulted with all responsible and trustee agencies, other regulatory agencies and others pursuant to Guidelines Section 15086. The City prepared written responses to all written comments received on the Draft SEIR and made revisions to the Draft SEIR, as appropriate, in response to those comments. The Final SEIR with the responses to comments was distributed on October 30, 2006, in accordance with the provisions of Public Resources Code Section 21092.5 and Guidelines Section 15088. The Final SIER responses to comments were made available for a 10-day period of public review before the commencement of the public meeting regarding the certification of the Final SEIR. After reviewing the responses to comments and the revisions to the Draft SEIR, the City concluded that the information and issues

raised by the comments and the responses thereto did not constitute new information requiring recirculation of the Final SEIR; and

**WHEREAS**, the Final SEIR is comprised of: the Draft SEIR, dated August 2006 and numbered State Clearinghouse No. 2005031137; the Comments and Responses to Comments on the Draft SEIR set forth in Appendix G of the Final SEIR; and other Technical Appendices; and

**WHEREAS**, the Planning Commission held a duly noticed public meeting on the Final SEIR and the Project on November 8, 2006 and December 6, 2006; and

**WHEREAS**, the City Council held a duly noticed public meeting on the Final SEIR and the Project on December 11, 2006; and

**WHEREAS**, the findings made in this resolution are based upon the information and evidence set forth in the Final SEIR and upon other substantial evidence that has been presented at all public meetings regarding the Project and in the record of the proceedings. The documents, staff reports, technical studies, appendices, plans, specifications, and other materials that constitute the record of proceedings on which this resolution is based are on file and available for public examination during normal business hours in the Planning Department and with the Director of Planning and Development, who serves as the custodian of these records; and

**WHEREAS**, the City Council finds that agencies and interested members of the public have been afforded ample notice and opportunity to comment on the Final SEIR and that the comment process has fulfilled all requirements of State and local law; and

**WHEREAS**, the City Council has independently reviewed and considered the contents of the Final SEIR prior to deciding whether to approve the Project; and

**WHEREAS**, the City Council finds that the comments regarding the Draft SEIR and the responses to those comments have been received by the City; that the City Council and Planning Commission received public testimony regarding the adequacy of the Final SEIR; and that the City Council, as the decision-making body for the lead agency, has reviewed and considered all such documents and testimony prior to acting on the Project; and

**WHEREAS**, all other legal prerequisites to the adoption of this Resolution have occurred; and

**WHEREAS**, this Resolution serves only to certify the Final SEIR as required by CEQA, and not to approve the Project. By separate action, the City Council will decide whether to approve the Project.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF PASADENA RESOLVES AS FOLLOWS:**

**I. RESOLUTION REGARDING CERTIFICATION OF THE SEIR**

Pursuant to State CEQA Guidelines Section 15090, the City Council certifies that: (1) the City of Pasadena has reviewed and considered the Final SEIR in evaluating the proposed Project, (2) the Final SEIR is an accurate and objective statement that fully complies with CEQA, the State CEQA Guidelines, the City's local environmental guidelines, and (3) the Final SEIR reflects the independent judgment of the City of Pasadena. The City Council certifies the Final SEIR based on the findings and conclusions herein and as set forth below.

The City Council finds that the additional information provided in the staff report, in the responses to comments received after circulation of the Draft SEIR, and in the

evidence presented in written and oral testimony presented at public meetings, does not constitute new information requiring recirculation of the Final SEIR under CEQA. None of the information presented to the City Council after circulation of the Draft SEIR has deprived the public of a meaningful opportunity to comment upon a substantial environmental impact of the Project or a feasible mitigation measure or alternative that the City has declined to implement.

## **II. RESOLUTION REGARDING ENVIRONMENTAL IMPACTS NOT ANALYZED IN THE SEIR**

The City Council hereby finds that the following potential environmental impacts of the Project were found to be less than significant in the Initial Study, did not require the imposition of mitigation measures, and therefore did not require study in the SEIR: agricultural resources, energy, geology/soils, hazards/hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services, and recreation.

## **III. RESOLUTION REGARDING ENVIRONMENTAL IMPACTS MITIGATED TO BELOW A LEVEL OF SIGNIFICANCE**

The City Council finds that mitigation measures have been identified in the Final SEIR which would reduce the following potentially significant environmental impacts to below a level of significance.

### **A. AESTHETICS**

#### **1. Potential Significant Impacts**

**Impact AES-1:** The proposed Master Plan Amendments could potentially affect scenic resources, such as native and specimen trees, a public art element, and open space within the campus.

**Impact AES-2:** The proposed Master Plan Amendments would change the visual character of the Caltech campus. Overall, these changes are anticipated to introduce buildings that are primarily visually compatible with the architectural treatment, and materials of nearby buildings. However, the scale of proposed residence halls has the potential to conflict with massing norms at the campus.

**Impact AES-3:** The proposed revisions to the Caltech Master Development Plan design guidelines and design review thresholds would broaden the range of architectural styles and landscape designs utilized for future development within the Caltech campus.

Overall, these changes would encourage architectural and landscaping design that would implement the objectives of the Master Plan.

## **2. Proposed Mitigation**

### **Mitigation Measure AES-1(a): Landscaping Plan**

For each building in connection with the proposed amendments, the applicant shall submit a landscape plan that will have as a goal to restore the theme and visual integrity of existing landscaped areas. The design of landscaping at the new buildings should continue to promote integration of open space between existing and new buildings. Landscaped areas between new facilities within building envelopes should be consistent with the general character of the surrounding area and should promote a unified image for the campus. The landscaping plan required under BIO-1 will follow the provisions herein; therefore no significant impacts on aesthetics will result from the proposed amendments.

### **Mitigation Measure AES-1(b): Public Art Location**

Avoidance of development within Location 1 for Amendment 1 would be the preferred scenario in order to avoid impacts to a scenic resource. If avoidance of Location 1 is not feasible, prior to development the applicant shall comply with the City of Pasadena Arts and Culture Commission's deaccession procedures and policy.

### **Mitigation Measure AES-1(c): Avoidance of Open Space**

Avoidance of Open Space Encroachment. Caltech shall avoid encroachment into or obstructing the open space area west of the Athenaeum. Replacement of the North Undergraduate House rather than rehabilitation would avoid this impact and would be the preferred scenario for preservation of the existing open space and preservation of existing visual resources in the area. However, if avoidance of this open space encroachment is not feasible, the rehabilitation scenario shall incorporate a landscape element along the



southern building façade. Landscaping should be developed to soften the visual impacts of new development within the existing north-south open space corridor east of the Athenaeum.

**Mitigation Measure AES-2(a): Façade Articulation**

Any addition or new construction associated with the residential houses shall be designed in a manner that clearly articulates the massing of the new building as distinct from the existing residential structures. Façades shall be designed in a manner that incorporates changes in relief such that no façade can measure greater than 150 feet without interruption. Articulated fenestration, parapets, and rooflines are encouraged.

**Mitigation Measure AES-2(b): Replacement Landscaping**

Any addition or new construction associated with removal of landscaping and ornamental vegetation shall design and implement replacement landscaping of a suitable nature. Landscaping shall integrate the surrounding landscape design and incorporate the new developments in order to soften the affect of building massing.

**3. Findings Pursuant to CEQA Guidelines Section 15091**

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible mitigation measures or project alternatives identified in the Final EIR.

**4. Supporting Explanation**

Development of several of the Master Plan Amendments would require the removal of up to 84 trees, of which at least 48 are protected mature native and specimen trees protected pursuant to Chapter 8.52 of the City's Tree Ordinance, and a tree removal permit will have be secured before these trees can be removed. Removal of native and specimen trees would be considered a potentially significant impact to scenic resources. The landscaping plan required under mitigation measure AES -1(c) and BIO-1 will mitigate the aesthetic impacts of tree removal through required restoration of the theme

and visual integrity of existing landscaped areas, and therefore no significant impacts on aesthetics will result from the proposed amendments.

The construction of the CCE Laboratory between the Noyes Laboratory and Beckman Behavior Biology Laboratory would result in the removal of a Pasadena Public Art program art element and would result in a direct impact to scenic resources. If this location is chosen, mitigation measure AES-1(b) requires that the applicant replace the piece or make a contribution to the City's art fund, either of which will mitigate the impact to below a level of significance.

The construction or rehabilitation of the North Undergraduate Houses (Lloyd, Page, and Ruddock) would not result in a direct impact to the surrounding buildings or site features of the campus. However, the rehabilitation and additional construction has the potential for indirect impacts to other buildings and site features, most notably the Athenaeum, South Undergraduate Houses, and the landscape design for the Athenaeum, which has been identified as significant historic resources. If encroachment into the open space is the development option chosen, mitigation measure AES-1(c) requires review and approval of the replacement landscaping plan, to ensure that impacts to the Athenaeum, South Undergraduate Houses, and the landscape design for the Athenaeum are less than significant.

Development of the proposed amendments would remove several buildings that lack architectural notability and generally inconsistent with the original campus architecture. Replacement of these buildings with improved buildings consistent with the design principles outlined in the CMDP would further implement the intent of the CMDP, "to provide a unified, balanced, and attractive plan for future growth." The

residence hall portion of the Project has the potential for significant aesthetic impacts arising from building massing that significantly impacts aesthetics, under the rehabilitation or the reconstruction scenario. Compliance with mitigation measures AES-2(a) and (b) will address possible massing impacts. Articulation will give the appearance of reduced building bulk, and appropriately designed landscape will incorporate the new or rehabilitated structures into the already-existing environment, and contribute to an appearance of reduced mass. Implementation of this measure will mitigate potential impacts of outscaled massing of new residential structures.

The changes to the design guidelines will, as a whole, provide for improved visual appearance of development on the site, are consistent with the original spirit of the Master Plan, and allow for flexibility to provide overall better design and contextual setting. No mitigation is required for impact AES-3.

**Cumulative Impacts:** The Caltech Master Development Plan and the City's General Plan provide a variety of design guidelines specifically intended to ensure that future development in the Caltech area occurs in an orderly manner and recognizes the campus' important visual features. Compliance with Master Development Plan principles and guidelines for new development, as well as the mitigation measures above, would be expected to achieve the proper balance in new development across the campus, and thus the Project does not incrementally contribute to an aesthetic impact.

## **B. AIR QUALITY**

### **1. Potential Significant Impacts**

**Impact AQ-1:** Project construction would generate air pollutant emissions that would exceed SCAQMD thresholds for the ozone precursor ROG (Reactive Organic Gases).

**Impact AQ-2:** Operation of the proposed project would not generate air pollutant emissions exceeding SCAQMD operational significance thresholds.

**Impact AQ-3:** Project-generated traffic would incrementally increase traffic congestion and associated carbon monoxide concentrations at area intersections. However, ambient concentrations are well below state and federal standards and the project would not trigger any of the criteria for potential CO impacts.

## 2. Proposed Mitigation

**Mitigation Measure AQ-1(a): ROG Control.** The following shall be implemented to minimize daily ROG emissions related to the application of architectural coatings:

- Low VOC architectural and asphalt coatings shall be used on site and shall comply with AQMD Rule 1113-Architectural Coatings.
- Daily coating use shall be restricted to 65 gallons per day (assuming a VOC content of 1.1 pounds per gallon).

**Mitigation Measure AQ-1(b): Ozone Precursor Control.** The following shall be implemented during construction to minimize emissions from construction equipment:

- Equipment engines should be maintained in good condition and in proper tune as per manufacturer's specifications;
- Lengthen construction periods during the smog season so as to minimize the number of vehicles and equipment operating simultaneously; and
- Use new technologies to control ozone precursor emissions as they become available.
- Diesel oxidation catalysts and particulate filters shall be installed on all on and off road construction vehicles.

**Mitigation Measure AQ-1(c): Fugitive Dust Control.** The following shall be implemented during construction to minimize fugitive dust emissions:

- Water trucks shall be used during construction to keep all areas of vehicle movements damp enough to prevent dust from leaving the site. At a minimum, this will require twice daily applications (once in late morning and once at the end of the workday). Increased watering is required whenever wind speed exceeds 15 mph. Grading shall be suspended if wind gusts exceed 25 mph.
- If importation, exportation and stockpiling of fill material is involved, soil with 5% or greater silt content that is stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting material shall be tarped from the point of origin or shall maintain at least two feet of freeboard.
- All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering should occur at least twice daily with

emissions can be reduced to below a level of significance, as demonstrated by the analysis in the Final SEIR. While it was not necessary to impose additional mitigation measures for any other air quality contaminants because levels of significance were not exceeded, the Final SEIR recommended mitigation measures AQ1-(b) and (c) to reduce air quality impacts as much as possible.

With regard to air quality impacts arising from traffic, the Final SEIR concluded that the Project impacts would be less than significant, and no mitigation is required. The project involves redevelopment of existing facilities, consistent with those currently in operation at the campus. The Project would increase traffic volumes at certain intersections by no more than 2%, and increase volume to capacity ratios to increase by no more than 1.5%, both of which are below a level of significance.

**Cumulative Impacts:** In addition to the Project, buildout of the cumulative projects listed in the Final SEIR would involve construction of an estimated 3,327 dwelling units and 1,379,824 square feet of commercial and industrial development. It is anticipated that each development would undergo evaluation for air quality impacts at the project level, thereby incorporating mitigation to reduce impacts to the greatest extent feasible. However, increased emissions associated with cumulative development could potentially hinder the attainment of State and Federal air quality standards if numerous individual projects cannot fully mitigate associated emissions. Cumulative impacts to regional air quality may be significant; however, the Project's emissions are fully mitigated. Thus, the Project does not incrementally contribute to a cumulative effect, and its impacts are not cumulatively considerable.

complete coverage, preferably in the late morning and after work is done for the day.

- All clearing, grading, earth moving, or excavation activities shall cease during periods of high winds (i.e., greater than 20 mph averaged over one hour) so as to prevent excessive amounts of dust.
- All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- Face masks shall be used by all employees involved in grading or excavation operations during dry periods to reduce inhalation of dust which may contain the fungus which causes San Joaquin Valley Fever.
- All active portions of the construction site shall be sufficiently watered to prevent excessive amounts of dust.

### **3. Findings Pursuant to CEQA Guidelines Section 15091**

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible mitigation measures or project alternatives identified in the Final EIR.

### **4. Supporting Explanation**

The Final SEIR analyzed worst case scenarios for air quality impacts associated with the highest level of demolition possible at the Project, as well as grading and off-site trucking, and concluded that demolition and grading would not exceed any air quality significance thresholds. With regard to construction impacts, the Final SEIR also analyzed the worst-case scenario for construction, assuming maximum daily air pollutant emissions from Project construction, and found that reactive organic gases (“ROG”) produced under this scenario would exceed the threshold level of significance. ROG is released primarily during the finishing phases of construction upon application of paints and varnishes. Through the implementation of mitigation measure AQ-1(a), ROG

## C. BIOLOGICAL RESOURCES

### 1. Potential Significant Impacts

**Impact BIO-1:** Development of the Master Plan Amendments would require removal of up to 84 trees, of which about 48 are protected as native and specimen trees.

**Impact BIO-2:** Removal of up to 84 trees has the potential to affect nesting raptors and migratory birds.

### 2. Proposed Mitigation

**Mitigation Measure BIO-1: Construction Practices.** Construction of individual campus developments associated with the proposed Master Plan amendments shall adhere to the following:

- No grading or development shall occur within 5 feet from the driplines of mature native or specimen trees that are not to be removed as part of the project, but that occur near the construction area.
- All mature native or specimen trees within 25 feet of proposed ground disturbances, which are not to be removed as part of the project, shall be temporarily fenced with chain-link or other material satisfactory to the City throughout all grading and construction activities. The fencing shall be installed six feet outside the dripline of each specimen oak tree, and shall be staked every six feet.
- No construction equipment shall be parked, stored or operated within six feet of any mature native or specimen tree dripline.
- No fill soil, rocks, or construction materials shall be stored or placed within six feet of the dripline of a mature native or specimen tree (pervious paving and other materials are allowed, as approved by the City).
- Any roots encountered that are one inch in diameter or greater shall be cleanly cut. This shall be done under the direction of a City approved arborist/oak tree consultant.
- No permanent irrigation shall occur within the critical root zone of any mature native or specimen tree. Drainage plans shall be designed so that tree trunk areas are properly drained to avoid ponding.
- Any trenching required within the dripline or sensitive root zone of any mature native or specimen tree shall be done by hand. In addition, trenching in the protected zone needs to preserve roots over 1 inch by tunneling.

**Mitigation Measure BIO-1(a): City Trees and Tree Protection Ordinance.** Prior to the issuance of a building permit for each individual building in connection with the proposed amendments, the applicant shall submit a landscape plan including proposed tree removals and replacement, for review and approval by the Planning and Development Director and the Design Commission, according to the review thresholds in

the CMDP. Such plan shall show the square feet of tree canopy coverage proposed to be removed within the development site. The area of removed canopy shall be replaced at a ratio of 1:1 through a combination of relocated and new trees planted within areas of the development site that are suitable for new tree planting. While canopy replacement on the development site shall be the first priority, any canopy that cannot be reasonably replaced onsite, shall be replaced within other areas of the campus that are targeted by the CMDP for landscaping. While incorporating a range of species necessary to maintain the landscaping theme existing in the campus, the landscape plan shall also provide for the replacement of removed trees with native and specimen trees protected under the Tree Protection Ordinance. Further, replacement trees shall achieve equal or greater canopy than the canopy removed within 5 years of implementation of the landscaping plan.

A Tree Protection Plan shall be prepared in accordance with the Tree Protection Guidelines per Chapter 8.52 of the Pasadena Municipal Code. The plan shall detail the protective measures to be used during demolition and construction of each building site proposed in the amendment. The plan shall be reviewed and approved by the Planning staff prior to issuance of any grading or building permits.

The applicant shall submit a landscape/planting plans for review and approval as provided in the provisions of the amended Master Plan.

**Mitigation Measure BIO-2: Bird Nesting Surveys.** Prior to any earthmoving activities during the breeding and nesting season (typically March 1 to September 1 or as early as February 1 for raptors), the applicant shall have a field survey conducted by a qualified biologist to determine if active nests of breeding birds are present within the area of potential influence of the activity. If nesting birds protected under the Migratory Bird Treaty Act are found within the area of potential influence, an appropriate buffer as determined by the biologist will be recommended and the nest shall not be disturbed until the young have fledged. This survey shall be conducted within three (3) days prior to commencement of grading for each development amendment.

### **3. Findings Pursuant to State CEQA Guidelines Section 15091**

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible mitigation measures or project alternatives identified in the Final EIR.

### **4. Supporting Explanation**



Removal of native and specimen trees is protected by the City's Tree Protection Ordinance, at Chapter 8.52 of the Municipal Code. At worst case, the Project could result in the removal of 16 protected trees, and their removal would require a tree removal permit. This impact will be mitigated with the implementation of mitigation measure BIO-1, which serves to reduce impacts related to the disturbance of trees and tree groupings, by requiring that driplines and trees are protected from disturbance during construction. BIO-1(a) adds the requirement of compliance with the Tree Protection Ordinance. In addition, impacts will be mitigated further through the implementation of mitigation measure AES-1, which requires submittal of a landscape plan that will have as a goal to restore the theme and visual integrity of existing landscaped areas.

In response to the Notice of Preparation for the SEIR, the California Department of Fish and Game recommended adoption of the standard procedures set forth in mitigation measure BIO-2 to avoid nesting habitat for birds within an urban environment. With adoption of that mitigation measure, any impacts to nesting birds remains below a level of significance.

**Cumulative Impacts.** Urban development in the City Pasadena has essentially eliminated many of the natural biological communities that once existed within the Caltech campus and surrounding areas. The proposed Caltech Master Development Plan Amendments, in combination with the other developments within the City of Pasadena on the Final SEIR's list of projects, would continue to alter an already urban environment, with little to no habitat or wildlife resources. While cumulative impacts to biological resources in that urban environment arising from the list of projects are

considered potentially significant, the Project's incremental effect on an already fully urbanized campus is fully mitigated and thus not considered cumulatively considerable.

## **D. HISTORIC RESOURCES**

### **1. Potential Significant Impacts**

**Impact H-1:** The Project includes the removal or reconstruction of five buildings.

**Impact H-2:** The potential removal and reconstruction of the North Undergraduate Houses may have an adverse impact on the setting of eligible historic resources on the campus: the Athenaeum, South Undergraduate Houses and the Landscape Design for the Athenaeum.

### **2. Proposed Mitigation**

**H-2 Design Review.** The design of any construction on the location of the North Undergraduate Houses (either alterations to the existing building or demolition and construction of new buildings) shall be subject to the review by the Pasadena Design Commission in order to assure its conformance with the Secretary of Interior's Standards with respect to its potential impacts on the Athenaeum, South Undergraduate Houses, and the landscape features.

### **3. Findings Pursuant to State CEQA Guidelines Section 15091**

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible mitigation measures or project alternatives identified in the Final EIR.

### **4. Supporting Explanation**

After updated study in the Final SEIR, the SEIR concluded that none of the buildings proposed for removal or renovation as part of the Project were found to be

significant historic resources for purposes of CEQA. Therefore, no direct adverse impacts to historical resources would occur under buildout of the Project, and no mitigation was necessary to address impact H-1.

However, other campus buildings and landscape features that may be eligible for designation are located in proximity to some of the Project activities. Most notably, the Athenaeum, South Undergraduate Houses, and the landscape design for the Athenaeum, have been identified as significant historic resources which may be impacted by Project construction and construction staging. Mitigation measure H-2 imposes on the Project the requirement that its design comply with Secretary of Interior Standards, and its guidelines for new in-fill construction. Adhering to the Standards is the only method described within CEQA for reducing project impacts on historic resources, and doing so reduces the Project impacts to less than significant.

**Cumulative Impacts.** Historic resource impacts are generally site specific. All projects on the Final SEIR's list of projects would be subject to review under CEQA and by the City of Pasadena's Historic Preservation Commission. Thus, cumulative impacts to historic resources would be minimized through the City's review process, just as the Project's impacts are reduced to below a level of significance through that same review. The Project's incremental effect is not cumulatively considerable, and thus there are no significant cumulative impacts to historic resources subject to mitigation.

## **E. TRAFFIC AND CIRCULATION**

### **1. Potential Significant Impacts**

**Impact TC-1:** The proposed project would incrementally increase traffic levels

at study area intersections, but would not generate impacts exceeding adopted significance criteria at any intersection.

**Impact TC-2:** The proposed project would incrementally increase traffic levels along study area roadways. However, the projected increases are less than the adopted thresholds on all road segments.

**Impact TC-3:** The proposed project would incrementally reduce the on-campus parking supply; however, with the recent completion of the California Parking Structure, the campus would be expected to have a surplus of parking capacity.

**Impact TC-4:** The proposed project would not generate trips exceeding Congestion Management Program (“CMP”) criteria at CMP locations.

**2. Proposed Mitigation: None.**

**3. Findings Pursuant to State CEQA Guidelines Section 15091**

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible mitigation measures or project alternatives identified in the Final EIR.

**4. Supporting Explanation**

Development of future traffic projections included the estimation of project trip generation, trip distribution, and trip assignment. These future traffic projections were then analyzed under two scenarios, one with the project and one without the project. Results of these analyses were then compared with existing conditions.

The Final SEIR studied nine intersections around the campus. Traffic associated with the Project would incrementally increase delays at study area intersections. However, the changes demonstrated at those intersections by the intersection capacity utilization method of intersection analysis would not be significant at any study area intersections, as measured by the City's thresholds of significance, and thus no mitigation for intersection impacts is required.

With regard to street segment impacts, the Final SEIR analyzed the percentage increase in average daily trip volumes on five study area street roadway segments, based on a projected net increase in weekly daily traffic generated by the Project at approximately 1,461 trips. This results in an increased traffic flow of less than 2.4% on the analyzed street segments. While this level of increase requires review by the City Transportation Department, no physical mitigation is required pursuant to CEQA and the impact on street segments is less than significant.

With regard to parking, the Project at worst case would result in a net reduction in the existing on-campus parking supply of approximately 61 parking spaces. Even with this reduction, the Final SEIR concluded that the projected supply of on-campus parking at Project completion in 2015 would exceed the future 2015 demand for parking on site of 3,219 spaces by approximately 114 spaces. These calculations are within 2% of the estimated total future parking need for the future campus population. Thus, with the forecasted growth in campus population and the completion of the Project, the future on-campus parking supply would accommodate the needs of the campus, and the impact is below a level of significance.

Finally, the CMP for Los Angeles County requires that the traffic impact of individual development projects of potentially regional significance be analyzed. The Project would not create a significant regional impact at the analyzed CMP arterial monitoring intersection, Arroyo Parkway and California Boulevard, as the incremental impact resulting from the addition of project traffic is less than the 2% threshold. Both of the analyzed segments along the I-210 freeway and the SR 134 segment are projected to operate at LOS F during the afternoon peak period in the southbound or eastbound direction. The Project is not expected to significantly affect any of the freeway segments because the incremental impact of project traffic on the freeway segments is much less than the 2% CMP criteria or the 1% Caltrans criteria. Thus, the Project impact is less than significant and no mitigation is required.

**Cumulative Impacts.** Traffic from the list of projects in the Final SEIR was added to future ambient traffic growth to create the cumulative scenario. As shown in the Final SEIR, traffic would incrementally worsen with cumulative + project traffic, but would remain below the respective significance thresholds. Cumulative impacts from the list of projects combined with planned roadway improvements would not be significant and the Project's incremental contribution to the overall change would not be cumulatively considerable.

## **F. UTILITIES AND SERVICE SYSTEMS**

### **1. Potential Significant Impacts**

**Impact USS-1:** Buildout of the proposed Master Development Plan Amendments would generate an estimated increase of approximately 54,295 gallons per day (gpd) of wastewater.

**Impact USS-2:** Buildout of the proposed Master Development Plan Amendments would generate an estimated increase of approximately 54,295 gallons per day (gpd) of wastewater.

**Impact USS-3:** Buildout of the Master Development Plan Amendments would increase demand for water by approximately 60,430 gallons per day.

**2. Proposed Mitigation: None.**

**3. Findings Pursuant to State CEQA Guidelines Section 15091**

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible mitigation measures or project alternatives identified in the Final EIR.

**4. Supporting Explanation**

The Final SEIR concluded that there would be less than significant impacts from the Project's generation of wastewater. The wastewater generated by buildout under the Master Development Plan and amendments represents about 0.31% of the currently unused 27 million gallons per day (mgd) of excess capacity at the San Jose Creek Water Reclamation Plant, Whittier Narrows Water Reclamation Plant, and Los Coyotes Water Reclamation Plant, as shown in Table 4.6-2. These facilities have sufficient capacity to accommodate development of the Project.

Wastewater generated by the proposed new campus facilities would be conveyed via new connections to City of Pasadena Public Works collector lines, which would in turn

connect with the existing Los Angeles County trunk sewers located in the project area. Since the current average peak flows in trunk sewer lines in the project area are well within the capacities of these lines (both within the City and County lines), the lines will be able to accommodate the increase in wastewater generated by the new development, and no expansion of sewer conveyance facilities is necessary. No mitigation is required for Project impacts to the local wastewater system.

The total Project-related water demand is estimated at 60,430 gallons, or about 0.19 acre-feet per day, resulting in an annual increase in water demand of about 70 acre-feet per year. This represents an increase in demand of about 0.20% of the total amount of water supplied by Pasadena Water and Power to its service area in 2005 (35,902 acre-feet), and 0.18% of the supply projected for 2010 (approximately 39,957 acre-feet). The City has available up to 16,900 acre-feet per year of groundwater and up to 90% of its base demand from the Metropolitan Water District. The Project's water supply demand of 70 acre-feet per year represents less than 1% of the City's currently projected demand for water over the next 10 years, which the City will be able to supply from its current sources. Impacts related to water supply are less than significant.

### **Cumulative Impacts.**

Wastewater. The Jose Creek Water Reclamation Plant, the Whittier Narrows Water Reclamation Plant, and the Los Coyotes Water Reclamation Plant have a combined excess capacity of about 22 mgd. The Final SEIR states that buildout of the Project and the list of projects would cumulatively increase wastewater flow to the Plants by approximately 4% of the remaining 22 million gallons per day capacity of the existing plant facilities. Wastewater associated with this cumulative demand increase is within



the current capacity of the Plants. Implementation of required water conservation measures on all future development would minimize wastewater generation. Significant cumulative impacts to wastewater treatment capacity and infrastructure are not anticipated.

Water. The Pasadena Water and Power Department has developed an Urban Water Management Plan that accounts for the demand for water of current and future projects as far forward as 2030. The PWP does not anticipate problems supplying enough water to meet the projected demands of the service area. Implementation of required water conservation measures on all future development would minimize water demand to the degree feasible. Therefore, significant cumulative impacts to water supply and infrastructure capacity are not anticipated.

## **I. RESOLUTION REGARDING ALTERNATIVES**

The City Council declares that it has considered and rejected as infeasible the alternatives identified in the Final SEIR as set forth herein. CEQA requires that an EIR evaluate a reasonable range of alternatives to a project, or to the location of a project, which: (1) offer substantial environmental advantages to the proposed project, and (2) may be feasibly accomplished in a successful manner within a reasonable period of time considering the economic, environmental, social and technological factors involved. An EIR must only evaluate reasonable alternatives to a project which could feasibly attain most of the basic project objectives, and evaluate the comparative merits of the alternatives. In all cases, the consideration of alternatives is to be judged against a rule of reason. The lead agency is not required to choose the environmentally superior alternative identified in the EIR if the alternative does not provide substantial advantages

over the proposed project, and (1) through the imposition of mitigation measures the environmental effects of a project can be reduced to an acceptable level, or (2) there are social, economic, technological or other considerations which make the alternative infeasible.

The Final SEIR identified the objectives for the Project as follows:

1. To provide for the future growth of Caltech's academic divisions;
2. To provide an appropriate interface between the campus and surrounding residential neighborhoods;
3. To minimize uncertainty about Caltech's future development on the part of its neighbors and the City of Pasadena and at the same time streamline development procedures; and
4. To provide a unified, balanced, and attractive plan for future growth.

**a. No Project/No Build Alternative**

Pursuant to Guidelines Section 15126.6, the Final SEIR discussed a No Project/No Build alternative. Under this alternative, the Project would not be constructed, there would be no new amendments to the Master Plan, and no revision to the Master Plan's Design Review thresholds. The No Project/No Build Alternative would not result in any significant environmental impacts. This alternative, however, fails to meet any of the Project objectives, as it does not provide for necessary growth on campus, and does not allow for design guideline changes to match them with the City's current design review procedures. For these reasons, the City finds that the No Project/No Build alternative is infeasible.

**b. Reduced Massing Project Alternative**

This alternative was drafted to address the massing impact from the reconstruction/rehabilitation of the North Undergraduate housing facilities, and would

restrict reconstruction or rehabilitation of the North Undergraduate facility to its current boundaries and would require that the development not exceed its existing setbacks from adjacent open space and view corridors.

Because the projected growth in campus population would be the same under this alternative as under the Project, this alternative's impacts with respect to traffic, air quality, and utility and service systems would be identical to those of the Project. This alternative would reduce significant impacts to scenic resources as well as potential historic resources, such as native and specimen trees, open space and view corridors near the North Undergraduate Housing facilities and nearby buildings such as the Athenaeum. The mitigation measures recommended for the Project would still apply. This alternative would also reduce biological resource impacts. Constraining the reconstruction or rehabilitation to within the existing footprint would minimize the impacts of the Project on the protected trees adjacent to the current North Undergraduate Housing facilities. The mitigation measures recommended for the Project would still apply. This alternative would meet all of the Project objectives. However, since this alternative does not avoid any of the already less than significant environmental impacts of the Project, it is rejected.

**c. Limited Location Project Alternative**

This alternative would limit development of the CCE Lab to the area occupied by the Mead Laboratory and adjacent parking lot, and would prevent development within the open space area between the BBB Lab and the Noyes Lab. This alternative assumes that all other amendments, guidelines and CMDP developments would be identical to those of the Project.

Because the projected growth in campus population would be the same under this alternative as under the Project, this alternative's impacts with respect to traffic, air quality, and utility and service systems would be identical to those of the Project. With regard to aesthetic impacts, this alternative would avoid impacts related to removal of unstructured, heavily planted open space, an art element, and numerous native and specimen trees. The mitigation measures recommended for the Project would apply and would reduce this alternative's biological resource impacts to a less than significant level.

This alternative would meet all of the Project objectives. However, since this alternative does not avoid any of the already less than significant environmental impacts of the Project, it is rejected.

**d. Reduced Massing and Limited Location Project Alternative**

This alternative would combine the Reduced Massing and Limited Location Alternatives, and would: (1) restrict reconstruction or rehabilitation of the North Undergraduate facility to its current boundaries, (2) restrict the development to its existing setbacks from adjacent open space and view corridors, and (3) limit development of the CCE Lab to the area occupied by the Mead Lab and adjacent parking lot, Location 2. Otherwise, this alternative would be identical to the Project.

Because the projected growth in campus population would be the same under this alternative as under the Project, this alternative's impacts with respect to traffic, air quality, and utility and service systems would be identical to those of the Project. With regard to aesthetics and biology, this alternative would reduce significant impacts near the North Undergraduate Housing facilities and the areas between the Noyes and Beckman Laboratory, and would be more sensitive to the original campus' visual

character, massing and established open space through the preservation of established areas of open space, view corridors, would leave in place the public art element, and would protect up to 49 trees, including at least 18 native and specimen trees. The mitigation measures recommended for the Project, in the resource areas of aesthetics and biology, would still apply.

This alternative would meet all of the Project objectives. However, since this alternative does not avoid any of the already less than significant environmental impacts of the Project, it is rejected.

CEQA Guidelines Section 15126.6(c) requires that, if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. The No Project Alternative is the environmentally superior alternative, but would not achieve any of the Project objectives. Among the other alternatives, the Reduced Massing and Limited Location Alternative would be the environmentally superior alternative.

## **II. RESOLUTION REGARDING SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES**

State CEQA Guidelines Section 15126.2(c) requires a discussion of the significant irreversible environmental changes which would be caused by the proposed project. An impact would occur under this category if, for example: (1) the Project involved a large commitment of nonrenewable resources; (2) the primary and secondary impacts of the Project would generally commit future generations to similar uses; (3) the Project involves uses in which irreversible damage could result from any potential environmental

incidents associated with the Project; and (4) the proposed consumption of resources are not justified (for example, results in wasteful use of resources).

The Project would result in an irretrievable and irreversible commitment of natural resources through the use of fossil fuels and construction materials.

### **III. RESOLUTION REGARDING GROWTH-INDUCING IMPACTS**

State CEQA Guidelines Section 15126.2(d) requires an EIR to discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth inducement, however, is not considered necessarily detrimental, beneficial, or significant to the environment.

The Project is consistent with the City's General Plan and Zoning Code. The Project would not directly generate growth in enrollment, faculty, or staffing, as the Project is intended to accommodate the current and future needs of the campus population. The increase in campus population represents about a 0.04% population increase over the current City of Pasadena population of about 146,600 (City of Pasadena, 2006) and 7% to 11% increase over the current campus population. The increase in campus faculty and staff would be within the projected 27.3% increase in occupation estimated by the Southern California Association of Governments. This level of population growth would not change the demographic character of the City or exceed citywide population projections. The Project site is located within a highly urbanized area that is well-served by existing infrastructure. No improvements to water, sewer and drainage infrastructure would be required to accommodate the Project. No new roads would be required. Because the Project constitutes infill development within an

urbanized area, and does not require the extension of new infrastructure through undeveloped areas, Project implementation would not remove an obstacle to growth.

**IV. RESOLUTION ADOPTING A MITIGATION MONITORING PLAN**

Pursuant to Public Resources Code Section 21081.6, the City Council hereby adopts the Mitigation Monitoring and Reporting Plan attached to this Resolution as Exhibit A, and incorporated herein.

**V. RESOLUTION REGARDING CUSTODIAN OF RECORDS**

The documents and materials that constitute the record of proceedings on which these findings have been based are located at the City of Pasadena, City's Planning and Development Department at 175 North Garfield Avenue, Pasadena, California 91101.

**VI. RESOLUTION REGARDING NOTICE OF DETERMINATION**

Staff is directed to file a Notice of Determination with the Clerk of the County of Los Angeles within five working days of final Project approval.

Adopted at the regular meeting of the City Council on the \_\_\_\_\_ day of \_\_\_\_\_, 2006, by the following vote:

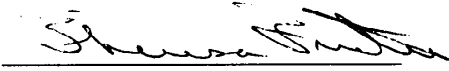
AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED AS TO FORM:

A handwritten signature in black ink, appearing to read "Theresa E. Fuentes", written over a horizontal line.

Theresa E. Fuentes  
Deputy City Attorney

TEF Ordinances/Resolutions/Caltech resolution certifying EIR



**EXHIBIT A**

Caltech Master Development Plan Amendment Project EIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure/Condition of Approval	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification	
					Initial	Date
<b>AESTHETICS</b>						
<b>AES-1(a) Landscaping Plan.</b> For each building in connection with the proposed amendments, the applicant shall submit a landscape plan that will have as a goal to restore the theme and visual integrity of existing landscaped areas. The design of landscaping at the new buildings should continue to promote integration of open space between existing and new buildings. Landscaped areas between new facilities within building envelopes should be consistent with the general character of the surrounding area and should promote a unified image for the campus. The landscaping plan required under B10-1 will follow the provisions herein; therefore no significant impacts on aesthetics will result from the proposed amendments.	Review and approve landscape plans for each individual building	Prior to issuance of individual building permits	Once for each individual building	CPPD		
<b>AES-1(b) Public Art Relocation.</b> Avoidance of development within Location 1 for Amendment 1 would be the preferred scenario in order to avoid impacts to a scenic resource. If avoidance of Location 1 is not feasible, prior to development the applicant shall comply with the City of Pasadena Arts and Culture Commission's deaccession procedures and policy.	Verification that Amendment 1 avoids the open space area between Noyes and Beckman Labs  OR IF AVOIDANCE IS INFEASIBLE  Verification that the applicant has replaced the art piece or contributed to an arts fund	Prior to issuance of building permit for Amendment 1	Once	CPACC and CPPD		
<b>AES-1(c) Avoidance of Open Space.</b> Caltech shall avoid constricting or obstructing the open space area west of the Athenaeum. Replacement of the North Undergraduate Houses rather than rehabilitation would avoid this impact and would be the preferred scenario for preservation of the existing open space and preservation of existing visual resources in the area. However, if avoidance of this open space area is not	Verification that North Undergraduate Housing does not encroach into the open space area west of Athenaeum  OR	Prior to approval of building permit for North Undergraduate Housing	Once	CPDC and CPPD		

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Caltech Master Development Plan Amendment Project EIR  
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Mitigation Measure/Condition of Approval	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification	
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feasible, the rehabilitation scenario shall incorporate a landscape element along the southern building façade. Landscaping should be developed to soften the visual impacts of new development within the existing north-south open space corridor west of the Athenaeum.	Review and approval of landscape plans for North Undergraduate Housing					
<b>AES-2(a) Facade Articulation.</b> Any addition or new construction associated with the residential houses shall be designed in a manner that clearly articulates the massing of the new building as distinct from the existing residential structures. Façades shall be designed in a manner that incorporates changes in relief such that no façade can measure greater than 150 feet without interruption. Articulated fenestration, parapets, and rooflines are encouraged.	Verification that new student residences meet specified requirements	Prior to issuance of building permits for student residences	Once for each student residence	CPDC and CPPD		
<b>AES-2(b) Replacement Landscaping.</b> Any addition or new construction associated with removal of landscaping and ornamental vegetation shall design and implement replacement landscaping of a suitable nature. Landscaping shall integrate the surrounding landscape design and incorporate the new developments in order to soften the affect of building massing.	Verification that replacement landscape meet specific requirements	Prior to issuance of individual building permits	Once for each individual building	CPDC and CPPD		
<b>AIR QUALITY</b>						
<b>AQ-1(a) ROG Control.</b> The following shall be implemented to minimize daily ROG emissions related to the application of architectural coatings:  <ul style="list-style-type: none"> <li>• Low VOC architectural and asphalt coatings shall be used on site and shall comply with AQMD Rule 1113-Architectural Coatings.</li> <li>• Daily coating use shall be restricted to 65 gallons per day (assuming a VOC content of 1.1 pounds per gallon).</li> </ul>	<ul style="list-style-type: none"> <li>• Review and approval of final construction specifications</li> <li>• Field verification of compliance with required specifications</li> </ul>	<ul style="list-style-type: none"> <li>• Specification review prior to issuance of individual building permits</li> <li>• Field verification as necessary during construction</li> </ul>	<ul style="list-style-type: none"> <li>• Specification review once for each building</li> <li>• Field verification as necessary</li> </ul>	CPPD		
<b>AQ-1(b) Ozone Precursor Control.</b> The following shall be implemented during construction to minimize	<ul style="list-style-type: none"> <li>• Review and approval of final construction</li> </ul>	<ul style="list-style-type: none"> <li>• Specification review prior to final construction</li> </ul>	<ul style="list-style-type: none"> <li>• Specification review once</li> </ul>	CPPD		

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Caltech Master Development Plan Amendment Project EIR  
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<p>emissions from construction equipment:</p> <ul style="list-style-type: none"> <li>• Equipment engines should be maintained in good condition and in proper tune as per manufacturer's specifications;</li> <li>• Lengthen construction periods during the smog season so as to minimize the number of vehicles and equipment operating simultaneously; and</li> <li>• Use new technologies to control ozone precursor emissions as they become available.</li> <li>• Diesel oxidation catalysts and particulate filters shall be installed on all on and off road construction vehicles.</li> </ul>	<ul style="list-style-type: none"> <li>• specifications</li> <li>• Field verification of compliance with required specifications</li> </ul>	<p>to issuance of individual building permits</p> <ul style="list-style-type: none"> <li>• Field verification as necessary during construction</li> </ul>	<p>for each building</p> <ul style="list-style-type: none"> <li>• Field verification as necessary</li> </ul>			
<p><b>AQ-1(c) Fugitive Dust Control.</b> The following shall be implemented during construction to minimize fugitive dust emissions:</p> <ul style="list-style-type: none"> <li>• Water trucks shall be used during construction to keep all areas of vehicle movements damp enough to prevent dust from leaving the site. At a minimum, this will require twice daily applications (once in late morning and once at the end of the workday). Increased watering is required whenever wind speed exceeds 15 mph. Grading shall be suspended if wind gusts exceed 25 mph.</li> <li>• If importation, exportation and stockpiling of fill material is involved, soil with 5% or greater silt content that is stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting material shall be tarped from the point of origin or shall maintain at least two feet of freeboard.</li> <li>• All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering should occur at least twice daily with complete coverage, preferably in the late morning</li> </ul>	<p>Field verification of compliance with specifications</p>	<p>Throughout construction of individual buildings</p>	<p>As necessary during construction</p>	<p>CPPD</p>		

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Caltech Master Development Plan Amendment Project EIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure/Condition of Approval	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>and after work is done for the day.</p> <ul style="list-style-type: none"> <li>▪ All clearing, grading, earth moving, or excavation activities shall cease during periods of high winds (i.e., greater than 20 mph averaged over one hour) so as to prevent excessive amounts of dust.</li> <li>▪ All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.</li> <li>▪ Face masks shall be used by all employees involved in grading or excavation operations during dry periods to reduce inhalation of dust which may contain the fungus which causes San Joaquin Valley Fever.</li> <li>▪ All active portions of the construction site shall be sufficiently watered to prevent excessive amounts of dust.</li> </ul>							
<b>BIOLOGY</b>							
<p><b>BIO-1 Construction Practices.</b> Construction of individual campus developments associated with the proposed Master Plan amendments shall adhere to the following:</p> <ul style="list-style-type: none"> <li>• No grading or development shall occur within 5 feet from the driplines of mature native or specimen trees that are not to be removed as part of the project, but that occur near the construction area.</li> <li>• All mature native or specimen trees within 25 feet of proposed ground disturbances, which are not to be removed as part of the project, shall be temporarily fenced with chain-link or other material satisfactory to the City throughout all grading and construction activities. The fencing shall be installed six feet outside the dripline of each specimen oak tree, and shall be staked every six feet.</li> <li>• No construction equipment shall be parked, stored or operated within six feet of any mature native or</li> </ul>	Requires protection of mature trees	During construction	Once per project application.  At least once, as required.	CPPD			

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Caltex Master Development Plan Amendment Project EIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure/Condition of Approval	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification	
					Initial	Date
<p>specimen tree dripline.</p> <ul style="list-style-type: none"> <li>No fill soil, rocks, or construction materials shall be stored or placed within six feet of the dripline of a mature native or specimen tree (pervious paving and other materials are allowed, as approved by the City).</li> <li>Any roots encountered that are one inch in diameter or greater shall be cleanly cut. This shall be done under the direction of a City approved arborist/oak tree consultant.</li> <li>No permanent irrigation shall occur within the critical root zone of any mature native or specimen tree. Drainage plans shall be designed so that tree trunk areas are properly drained to avoid ponding.</li> <li>Any trenching required within the dripline or sensitive root zone of any mature native or specimen tree shall be done by hand. In addition, trenching in the protected zone needs to preserve roots over 1 inch by tunneling.</li> </ul>						
<p><b>BIO-1(a) City Trees and Tree Protection Ordinance.</b>                      Prior to the issuance of a building permit for each individual building in connection with the proposed amendments, the applicant shall submit a landscape plan including proposed tree removals and replacement, for review and approval by the Planning and Development Director and the Design Commission, according to the review thresholds in the CMDP. Such plan shall show the square feet of tree canopy coverage proposed to be removed within the development site. The area of removed canopy shall be replaced at a ratio of 1:1 through a combination of relocated and new trees planted within areas of the development site that are suitable for new tree planting. While canopy replacement on the development site shall be the first priority, any canopy that cannot be reasonably replaced onsite, shall be replaced within other areas of the campus that are targeted by the CMDP for landscaping.</p>	<ul style="list-style-type: none"> <li>Review and approval of tree preservation and replacement plan to ensure consistency with required specifications</li> <li>Field verification of compliance</li> </ul>	<ul style="list-style-type: none"> <li>Plan review prior to issuance of individual building permits</li> <li>Field verification prior to issuance of individual occupancy permits</li> </ul>	Once for each individual building	CPPD Development Director and CPDC		

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Caltech Master Development Plan Amendment Project EIR  
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<p>While incorporating a range of species necessary to maintain the landscaping theme existing in the campus, the landscape plan shall also provide for the replacement of removed trees with native and specimen trees protected under the Tree Protection Ordinance. Further, replacement trees shall achieve equal or greater canopy than the canopy removed within 5 years of implementation of the landscaping plan.</p> <p>A Tree Protection Plan shall be prepared in accordance with the Tree Protection Guidelines per Chapter 8.52 of the Pasadena Municipal Code. The plan shall detail the protective measures to be used during demolition and construction of each building site proposed in the amendment. The plan shall be reviewed and approved by the Planning staff prior to issuance of any grading or building permits.</p> <p>The applicant shall submit a landscape/planting plans for review and approval as provided in the provisions of the amended Master Plan.</p>						
<p><b>BIO-2 Bird Nesting Surveys.</b> Prior to any earthmoving activities during the breeding and nesting season (typically March 1 to September 1 or as early as February 1 for raptors), the applicant shall have a field survey conducted by a qualified biologist to determine if active nests of breeding birds are present within the area of potential influence of the activity. If nesting birds protected under the Migratory Bird Treaty Act are found within the area of potential influence, an appropriate buffer as determined by the biologist will be recommended and the nest shall not be disturbed until the young have fledged. This survey shall be conducted within three (3) days prior to commencement of grading for each development amendment.</p>	<p>Verification that specified bird nesting surveys have been conducted</p>	<p>Three days prior to grading for individual buildings</p>	<p>Once for each individual building</p>	<p>CPPD</p>		

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Caltech Master Development Plan Amendment Project EIR  
**Mitigation Monitoring and Reporting Program**

Mitigation Measure/Condition of Approval	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<b>HISTORIC RESOURCES</b>							
H-2 Design Review. The design of any construction on the location of the North Undergraduate Houses (either alterations to the existing building or demolition and construction of new buildings) shall be subject to the review by the Pasadena Design Commission in order to assure its conformance with the Secretary of Interior's Standards with respect to its potential impacts on the Athenaeum, South Undergraduate Houses, and the landscape features.	Verification that Pasadena Design Commission and Historic Preservation Commission review and approval has occurred	Prior to issuance of building permit for North Undergraduate Hall	Once	CPDC, HPC, and CPPD			

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