

Attachment 1

**CITY OF PASADENA
175 NORTH GARFIELD AVENUE
PASADENA, CA 91101-1704**

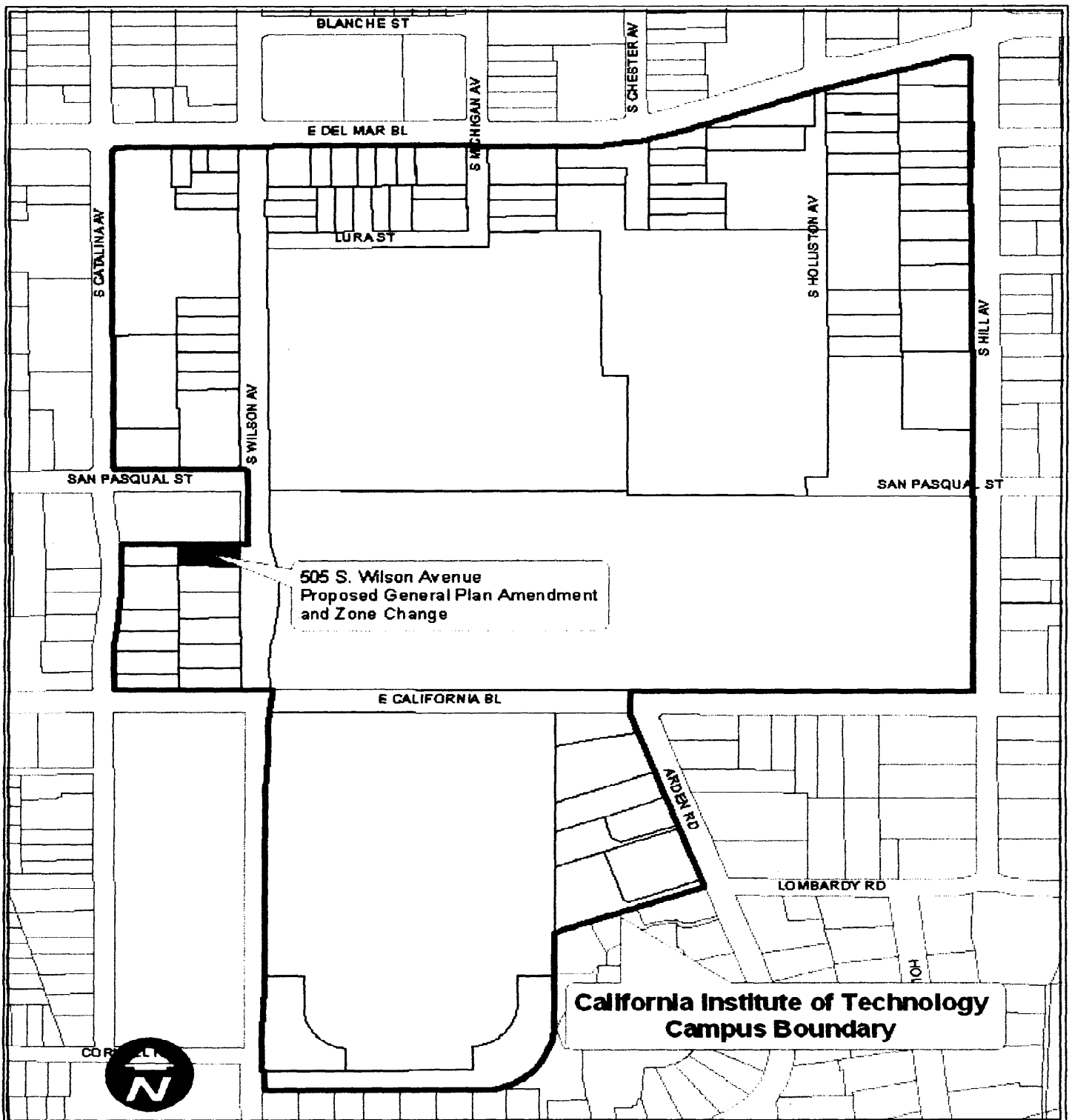
INITIAL STUDY

In accordance with the Environmental Policy Guidelines of the City of Pasadena, this analysis, the associated "Master Application Form," and/or Environmental Assessment Form (EAF) and supporting data constitute the Initial Study for the subject project. This Initial Study provides the assessment for a determination whether the project may have a significant effect on the environment.

SECTION I – PROJECT INFORMATION

1. Project Title: California Institute of Technology (Caltech)
General Plan Amendment and Zone Change for 505 S. Wilson Avenue
2. Lead Agency Name and Address: City of Pasadena
Planning and Development Department
175 N. Garfield Avenue
Pasadena, CA 91101
3. Contact Person and Phone Number: Lanny Woo
(626) 744-6776
4. Project Location: 505 S. Wilson Avenue – West side of Wilson Avenue between San Pasqual Street and California Boulevard within the Caltech Master Development Plan boundary area.
Pasadena, California (Los Angeles County)
5. Project Sponsor's Name and Address: California Institute of Technology (Caltech)
1200 E. California Boulevard
Pasadena, CA 91125
6. General Plan Designation: Medium-High Density Residential (0-32 dwelling/units net acre)
7. Zoning: RM-32 (Multi-family Residential District, 32 dwelling/units net acre)

Figure 1



8. **Description of the Project:** The applicant, Caltech, is proposing a General Plan Amendment from Medium-High Density Residential (0-32 dwelling/units net acre) to Institutional and a zone change from RM-32 (Multi-family Residential District, 32 dwelling/units net acre) to PS (Public and Semi-Public) for the property at 505 S. Wilson Avenue that is within the Caltech Master Development Plan boundary area (Figure 1). The property was exempted from the Master Plan because it was not under Caltech ownership at the time of adoption of the Master Plan. Now that the subject property is owned by Caltech, the Zoning needs to reflect the PS zoning district for the campus. No change in the use of the property, as defined and analyzed in the adopted Master Plan, is anticipated as a result of the General Plan Amendment and Zone Change. In accordance with the provisions of the Master Plan, a zone change to PS zoning must be obtained for properties within the Master Plan boundaries as they are acquired by Caltech. Currently, on the project site is an existing single-family residence. According to the provisions of the Caltech Master Development Plan and analyzed in the 1988 Final Environmental Impact Report for the Master Plan, the existing houses fronting on Wilson Avenue, within the boundary area of the Master Plan, will be retained on their current sites and used as academic or administrative offices, and/or faculty residences. Caltech is proposing to maintain the single-family residence onsite. No development is proposed for the project site. The Planning Commission will provide a recommendation of the General Plan Amendment and Zone Change to the City Council for review and approval.

9. **Surrounding Land Uses and Setting:** (Briefly describe the project's surroundings): North of the project site are multi-family residential dwelling units. To the west are single-family residences, and to the east and south are institutional uses (Caltech campus).

10. **Other public agencies whose approval is required (e.g. permits, financing approval, or participation agreement):** City of Pasadena City Council

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Geology and Soils		Population and Housing
	Agricultural Resources		Hazards and Hazardous Materials		Public Services
	Air Quality		Hydrology and Water Quality		Recreation
	Biological Resources		Land Use and Planning		Transportation/Traffic
	Cultural Resources		Mineral Resources		Utilities and Service Systems
	Energy		Noise		Mandatory Findings of Significance

DETERMINATION: (to be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	- X -
I find that, although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.	
I find that the proposed MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	
I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	

Prepared By/Date

Reviewed By/Date

Printed Name

Printed Name

Negative Declaration/Mitigated Negative Declaration adopted on: _____

Adoption attested to by: _____
Printed name/Signature
Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
 - 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
 - 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
 - 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The Lead Agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 20, "Earlier Analysis," may be cross-referenced).
 - 5) Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. See CEQA Guidelines Section 15063(c)(3)(D). Earlier analyses are discussed in Section 20 at the end of the checklist.
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are "less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier documents and the extent to which address site-specific conditions for the project.
 - 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
 - 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
 - 8) The explanation of each issue should identify:
 - a) The significance criteria or threshold, if any, used to evaluate each question; and
 - b) The mitigation measure identified, if any, to reduce the impact to less than significant
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SECTION II - ENVIRONMENTAL CHECKLIST FORM

1. BACKGROUND.

Date checklist submitted: November 15, 2007
 Department requiring checklist: Planning and Development Department
 Case Manager: Lanny Woo

2. ENVIRONMENTAL IMPACTS. (explanations of all answers are required):

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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3. AESTHETICS. Would the project:

a. *Have a substantial adverse effect on a scenic vista?* ()

WHY? The applicant, Caltech, is proposing a General Plan Amendment from Medium-High Density Residential (0-32 dwelling units/net acre) to Institutional and a Zone Change from RM-32 (Multi-family Residential District, 32 dwelling units/net acre) to PS (Public and Semi-Public) for the project site at 505 S. Wilson Avenue. Currently, onsite is an existing single-family residence. According to the provisions of the Caltech Master Development Plan, the existing houses fronting on Wilson Avenue, within the boundary of the Master Plan, will be retained on their current sites and used as academic or administrative offices, and/or faculty residences. The Master Plan also states that the City shall institute zone change proceedings to establish PS zoning districts for those properties within the Master Plan boundaries not currently owned by Caltech, but subsequently acquired by the Institute. No development is proposed for the site. Caltech is proposing to maintain the single-family residence on the project site.

The project site is not in an area that offers views of the San Gabriel Mountains, the Arroyo Seco, the San Rafael Hills, Eaton Canyon, or Old Town Pasadena. Furthermore, the project would not in any way obstruct the views of any of these scenic resources. Therefore, the project would have no impact to scenic vistas.

b. *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?* ()

WHY? The only designated state scenic highway in the City of Pasadena is the Angeles Crest Highway (State Highway 2), which located north of Arroyo Seco Canyon in the extreme northwest portion of the City. The project site is not within the viewshed of the Angeles Crest Highway, and not along any scenic roadway corridors identified in the City's General Plan documents. Therefore, the proposed project would have no impacts to state scenic highways or scenic roadway corridors. California Boulevard is designated as an unofficial City designated scenic corridor.

c. *Substantially degrade the existing visual character or quality of the site and its surroundings?* ()

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

WHY? The proposed project is an amendment to the General Plan Land Use from Medium-High Density Residential (0-32 dwelling/units net acre) to Institutional and a Zone Change from RM-32 (Multi-family Residential, 32 dwelling units/net acre) to PS (Public and Semi-Public) at 505 S. Wilson Avenue. According to the provisions of the Caltech Master Plan, the City shall institute zone change proceedings to establish PS zoning districts for those properties within the Master Plan boundaries not currently owned by Caltech, but subsequently acquired. The Master Plan also states that the six houses fronting on the west side of Wilson Avenue, between California Boulevard and San Pasqual Street, will be retained on their current sites and used as academic or administrative offices, and/or faculty residences. No development is proposed for the project site; therefore, approval of the proposed amendment to the General Plan Land Use and zone change would not lead to any demonstrable negative aesthetic impact.

- d. *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?* ()

WHY? The proposed project consists of a General Plan Amendment and Zone Change for the property at 505 S. Wilson Avenue, which is within the Caltech Master Plan boundary area. Currently, onsite is an existing single-family residence. In accordance with the provisions of the Master Plan, the single-family residence will be retained on its current site and used as academic or administrative office, and/or faculty residence. No development is proposed for the site. The existing house will not have a significant impact on light and glare because it will be required to comply with the standards in the zoning code that regulate glare and outdoor lighting. The only outdoor lighting that would be used is pedestrian safety lighting and landscaping lights. The project is within the Caltech campus boundary area where existing streetlights are in place and are consistent with the surrounding lighting in the area. These lights are not substantial sources of glare and are an aide to public safety. Therefore, there will be no impact.

4. AGRICULTURAL RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- a. *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?* ()

WHY? The City of Pasadena is a developed urban area surrounded by hillsides to the north and northwest. The western portion of the City contains the Arroyo Seco, which runs from north to south through the City. It has commercial recreation, park, natural and open space. The City contains no prime farmland, unique farmland, or farmland of statewide importance, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency.

- b. *Conflict with existing zoning for agricultural use, or a Williamson Act contract?* ()

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

WHY? The City of Pasadena has no land zoned for agricultural use other than commercial growing areas. Commercial Growing Area/Grounds is permitted in the CG (General Commercial), CL (Limited Commercial), and IG (General Industrial) zones and conditionally in the RS (Residential Single-Family), and RM (Residential Multi-Family) districts. The use is also permitted within certain specific plan areas.

c. *Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? ()*

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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WHY? There is no known farmland in the City of Pasadena; therefore the proposed project would not result in the conversion of farmland to a non-agricultural use.

5. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a. *Conflict with or obstruct implementation of the applicable air quality plan? ()*

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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WHY? The City of Pasadena is within the South Coast Air Basin (SCAB), which is bounded by the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, and the Pacific Ocean to the south and west. The air quality in the SCAB is managed by the South Coast Air Quality Management District (SCAQMD).

The SCAB has a history of recorded air quality violations and is an area where both state and federal ambient air quality standards are exceeded. Because of the violations of the California Ambient Air Quality Standards (CAAQS), the California Clean Air Act requires triennial preparation of an Air Quality Management Plan (AQMP). The AQMP analyzes air quality on a regional level and identifies region-wide attenuation methods to achieve the air quality standards. These region-wide attenuation methods include regulations for stationary-source pollutants; facilitation of new transportation technologies, such as low-emission vehicles; and capital improvements, such as park-and-ride facilities and public transit improvements.

The most recently adopted plan is the 2007 AQMP, adopted on June 1, 2007. This plan is the South Coast Air Basin's portion of the State Implementation Plan (SIP). This plan is designed to achieve the five percent annual reduction goal of the California Clean Air Act.

The SCAQMD understand that southern California is growing. As such, the AQMP accommodates population growth and transportation projections based on the predictions made by the Southern California Association of Governments (SCAG). Thus, projects that are consistent with employment and population forecasts are consistent with the AQMP.

In addition to the region-wide AQMP, the City of Pasadena participates in a sub-regional air quality plan – the West San Gabriel Valley Air Quality Plan. This plan, prepared in 1992, is intended to be a guide for the

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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16 participating cities, and identifies methods of improving air quality while accommodating expected growth.

The proposed project is currently not consistent with the Zoning and General Plan Land Use designations for the site. However, the Final Environmental Impact Report (EIR) prepared for Caltech in September 1988, analyzed that remaining properties with the campus boundaries which are not zoned PS will be rezoned to the PS district. The project is a General Plan Amendment from Medium-High Density Residential (0-32 dwelling units/net acre) to Institutional and a Zone Change from RM-32 (Multi-family Residential, 32 dwelling units/net acre) to PS (Public and Semi-Public) at 505 S. Wilson Avenue is consistent with the provisions of the Caltech Master Development Plan, which allows for zone change proceedings to establish PS zoning districts for those properties within the Master Plan boundaries as they are acquired by Caltech. The provisions of the Caltech Master Plan allows for the existing houses fronting on Wilson Avenue, within the boundary of the Master Plan, to be retained on their current sites and used as academic or administrative office, and/or faculty residences. No development is proposed for the site. No development is proposed for the site. Caltech is proposing to maintain the existing single-family residence on the project site. Therefore, the project will not have any impacts due to conflicts with the applicable AQMP.

b. *Violate any air quality standard or contribute to an existing or projected air quality violation?* ()

WHY? Due to its geographical location and the prevailing off shore daytime winds, Pasadena receives smog from downtown Los Angeles and other areas in the Los Angeles basin. The prevailing winds, from the southwest, carry smog from wide areas of Los Angeles and adjacent cities, to the San Fernando Valley and to Pasadena in the San Gabriel Valley where it is trapped against the foothills. For these reasons the potential for adverse air quality in Pasadena is high.

Pasadena is located in a non-attainment area, an area that frequently exceeds national ambient air quality standards. However, the project itself is well below the South Coast Air Quality Management District's (SCAQMD) land use, construction, and mobile emission thresholds for significant air quality impacts, according to the 1993 updated SCAQMD's CEQA Air Quality Handbook. No development is proposed for the project site. The proposed project consists of a General Plan Amendment and Zone Change for the property at 505 S. Wilson Avenue, within the Caltech Master Plan boundary area. The project would be consistent with the Caltech Master Plan allowing remaining properties within the campus boundaries, which are not zoned PS be rezoned to the PS zoning district. In accordance with the provisions of the Master Plan, the existing single-family residence onsite will be retained and used as academic or administrative office, and/or a faculty residence. Therefore, the proposed project would not violate and air quality standard or substantially contribute to an existing or projected air quality violation, and would have no related significant impacts.

c. *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?* ()

WHY? The City of Pasadena is within the South Coast Air Basin (SCAB). This basin is a non-attainment area for Ozone (O₃), Fine Particulate Matter (PM_{2.5}), Respirable Particulate Matter (PM₁₀), and Carbon Monoxide (CO), and is in a maintenance area for Nitrogen Dioxide (NO₂). Projects that contribute to a

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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significant cumulative increase in O₃, PM_{2.5}, PM₁₀, CO, or NO₂ will be considered to be significant and require the consideration of mitigation measures.

As shown in Section 5.b, the proposed project of a General Plan Amendment and a Zone Change at 505 S. Wilson Avenue is within the Caltech Master Plan boundary area. No development is proposed for the parcel. Currently onsite is a single-family residence. According to the provisions of the Caltech Master Plan, the single-family residence onsite will be retained and used as academic or administrative office, and/or faculty residence; therefore, the project will not exceed the SCAQMD's Thresholds for Significance. The SCAQMD established these thresholds in consideration of cumulative air pollution in the SCAB. Thus, projects that do not exceed the SCAQMD's thresholds do not significantly contribute to cumulative air quality impacts. Since the proposed project would not exceed the SCAQMD's thresholds, the project would not result in a cumulatively considerable net increase of any criteria pollutant, and the project would have no related significant impacts.

d. *Expose sensitive receptors to substantial pollutant concentrations?* ()

WHY? According to Figure 5-1 and Table 5-1 of the 1993 SCAQMD's CEQA Air Quality Handbook the project is located near sensitive receptors and is not likely to generate any significant toxic air emissions. The proposed project consists of a General Plan Amendment and Zone Change for 505 S. Wilson Avenue and would not emit toxic air emissions. The provisions of the Caltech Master Plan allows for the existing single-family residence onsite to be retained and used as academic or administrative office, and/or a faculty residence. No development is proposed for the site.

e. *Create objectionable odors affecting a substantial number of people?* ()

WHY? This type of use is not shown on the 1993 SCAQMD's CEQA Air Quality Handbook Figure 5-5 "Land Uses Associated with Odor Complaints." Therefore, the proposed project would not create objectionable odors, and would have no associated impacts.

6. BIOLOGICAL RESOURCES. Would the project:

a. *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

()

WHY? The project is in a developed urban area. There are no known unique, rare or endangered plants or animal species or habitats on or near the site.

b. *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?* ()

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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WHY? There are no designated natural communities in the City. The Final EIR for the 1994 Land Use and Mobility Elements contains the best available City-wide documented biological resources. This EIR identifies the natural habitat areas within the City's boundaries to be the upper and lower portions of the Arroyo Seco, the City's western hillside area, and Eaton Canyon. The project is not located near any of these natural habitat areas.

The project is located in a developed urban area. The only vegetation present onsite is landscaping. The project site and surrounding area does not include any vegetation that constitutes a plant community.

- c. *Have a substantial adverse effect of federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? ()*

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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WHY? Drainage courses with definable bed and bank and their adjacent wetlands are "waters of the United States" and fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE) in accordance with Section 404 of the Clean Water Act. Jurisdictional wetlands, as defined by the USACE are lands that, during normal conditions, possess hydric soils, are dominated by wetland vegetation, and are inundated with water for a portion of the growing season.

The project site does not include any discernable drainage courses, inundated areas, wetland vegetation, or hydric soils, and thus does not include USACE jurisdictional drainages or wetlands. Therefore, the proposed project would have no impact to federally protected wetlands as defined by Section 404 of the Clean Water Act.

The project is located in a developed urban area. There is no known naturally occurring wetland habitat.

- d. *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? ()*

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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WHY? The project is located in a developed urban area and does not involve the dispersal of wildlife nor will the project result in a barrier to migration or movement. Therefore, the project will have no impact to wildlife movement.

- e. *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? ()*

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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WHY? The only local ordinance protecting biological resources in the City of Pasadena is Ordinance No. 6896 "City Trees and Tree Protection Ordinance". The site contains two native and three specimen trees protected by the Ordinance No. 6896 "City Trees and Tree Protection Ordinance" as detailed in the table below:

Potentially Significant Impact Significant Unless Mitigation is Incorporated Less Than Significant Impact No Impact

#	Genus & Species	Common Name	Diameter	Remain	Move	Replace	Remove
1	Eucalyptus camaldulensis	Red Gum	65"	X			
2	Eucalyptus camaldulensis	Red Gum	80"	X			
3	Quercus agrifolia	Coast Live Oak	39"	X			
4	Cedrus deodara	Deodar Cedar	94"	X			
5	Quercus agrifolia	Coast Live Oak	37"	X			
6	Citrus sinensis cultivar	Navel Orange	2 @ 23" 1 @ 24"	X			
7	Pittosporum tobira	Tobira "Mock Orange"	1 @ 8" 1 @ 14" 2 @ 18"	X			
8	Magnolia grandiflora	Southern Magnolia	46"	X			
9	Washington filifera	California Fan Palms (three palms in a cluster)	53" 64" 51"	X			

The project consists of a General Plan Amendment and Zone Change for the property at 505 S. Wilson Avenue. According to the provisions of the Caltech Master Plan, the existing single-family residence onsite will be retained and used as academic or administrative office, and/or a faculty residence. No development is proposed for the project site. No trees are proposed to be removed or relocated; therefore, the proposed project would not conflict with any local policies or ordinances protecting biological resources, and would have no related impacts.

f. Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan? ()

WHY? Currently, there are no adopted Habitat Conservation or Natural Community Conservation Plans within the City of Pasadena. There are also no approved local, regional or state habitat conservation plans.

7. CULTURAL RESOURCES. Would the project:

a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5? ()

WHY? Currently on the project site at 505 S. Wilson Avenue, is a single-family residence built in 1928 and remodeled in 1937. The house was owned by Anna Tyson, the widow of H.M. Tyson, a former professor in the Engineering Department at Caltech. The house was a single-story structure and became a two-story house in 1937 when a major remodeling of the structure was accomplished. The house does retain its 1937 integrity and contributes to the neighborhood as a whole. A Historic Resources Inventory prepared for the Caltech Master Plan in 1986 determined that the single-family residence is of historic significance; however, California Institute of Technology (Caltech) Initial Study November 15, 2007 Page 12
General Plan Amendment and Zone Change

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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the structure is not scheduled for demolition. Demolition of this structure would require an amendment to the Master Plan with additional environmental review. Demolition of this building would also be subject to the review of the Historic Preservation Commission. The Commission may deny or delay a demolition, relocation, or significant alteration for periods as long as 180-405 days.

According to the provisions of the Caltech Master Plan, the single-family residence onsite will be retained and used as academic or administrative office, and/or a faculty residence. No change to the structure, including the exterior of the existing dwelling unit, garage, driveway or landscaping is currently proposed. While parking has been provided at the rear of the five Caltech owned houses to the south of the subject site, there is no potential for such parking in the present case. This is because the existing dwelling unit is set at the rear of the parcel and the only area available for parking is within the driveway/garage. Therefore, the proposed project would not cause a substantial adverse change in the significance of a historical resource, and the project would have no related impacts.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? ()

WHY? There are no known prehistoric or historic archeological sites on the project site. In addition, the project site does not contain undisturbed surficial soils. Currently on the site is a single-family residential dwelling unit. The single-family residence is not scheduled for demolition or relocation; however, the structure onsite will be retained and used as academic or administrative office, and/or a faculty residence. No development is proposed for the project site. Therefore, the project would have no impacts to archaeological resources. See also 7.a.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? ()

WHY? The project site lies on the valley floor in an urbanized portion of the City of Pasadena. This portion of the City does not contain any unique geologic features and is not known or expected to contain paleontological resources. Therefore, the proposed project would not destroy a unique paleontological resource or unique geologic feature, and would have no related impacts.

d. Disturb any human remains, including those interred outside of formal ceremonies? ()

WHY? There are no known human remains on the site. The project site is not part of a formal cemetery and is not known to have been used for disposal of historic or prehistoric human remains. Thus, human remains are not expected to be encountered during construction of the proposed project. In the unlikely event that human remains are encountered during project construction, State Health and Safety Code Section 7050.5 requires the project to halt until the County Coroner has made the necessary findings as to the origin and disposition of the remains pursuant to Public Resources Code Section 5097.98. Compliance with these regulations would ensure the proposed project would not result in significant impacts due to disturbing human remains.

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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8. ENERGY. Would the proposal:

a. *Conflict with adopted energy conservation plans?* ()

WHY? The project does not conflict with the 1983 adopted Energy Element of the General Plan. The proposed intensity of the project is within the intensity allowed by the Zoning Code and envisioned in the City's approved General Plan. Further the project will comply with the energy standards in the California Energy Code, Part 6 of the California Building Standards Code (Title 24). Measures to meet these performance standards may include high-efficiency Heating Ventilation and Air Conditioning (HVAC) and hot water storage tank equipment, lighting conservation features, higher than required rated insulation and double-glazed windows.

The project proposal is also consistent with the adopted Caltech Master Plan, in that the Plan provides for property acquired by Caltech to institute zone change proceedings to establish PS (Public and Semi-Public) zoning districts for those properties within the Master Plan boundary area.

b. *Use non-renewable resources in a wasteful and inefficient manner?* ()

Why? The proposed project, a General Plan Amendment and Zone Change for the property at 505 S. Wilson Avenue, within the Caltech Master Plan boundary area, will not create a high enough demand for energy to require this project of new energy sources.

Consumption of gasoline by project-generated vehicles will be reduced by adherence to the Trip Reduction Ordinance to a level that is not significant. Currently, Caltech is subject to the Trip Reduction Ordinance.

The long-term impact from increased energy use by this project is not significant in relationship to the number of customers currently served by the electrical and gas utility companies. Supplies are available from existing mains, lines and substations in the area. Occupation of the project will result in an insignificant increase in the consumption of natural gas. This consumption will be lessened by adherence to the performance standards of California Energy Code, Part 6 of the California Building Standards Code Title 24. This project will result in the increased consumption of 123 net kilowatt-hours of electrical energy per day. This increased consumption will be reduced to an insignificant level by meeting the above referenced energy standards. Measures to meet these performance standards may include high efficiency Heating Ventilation and Air Conditioning (HVAC) and hot water storage tank equipment, lighting conservation features, higher than required rated insulation and double-glazed windows. The energy conservation measures will be prepared by the developer and shown on a building plan(s). This plan will be submitted to the Water and Power Department and Building Official for review and approval prior to the issuance of a building permit.

Installation of energy-saving features will be inspected by a Building Inspector prior to issuance of a Certificate of Occupancy.

The proposed project consists of a General Plan Amendment and a Zone Change for the property at 505 S. Wilson Avenue, within the Caltech Master Development Plan boundary area. Currently, onsite is an existing single-family residential dwelling unit. In accordance with the provisions of the Master Plan, the single-family residence onsite will be retained and used as academic or administrative office, and/or faculty residence. The proposed project would not increase the demand for water; however, the use from a single-

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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family residence to an academic or administrative office would increase the demand for water. The use will result in an increase of approximately 91 gallons per day in water consumption. The current use, single-family residence, consumes approximately 260 gallons of water per day. The net gain in water consumption would be 351 gallons of water per day. However, this impact will be mitigated during drought periods by the applicant adhering to the Water Shortage Procedures Ordinance, which restricts water consumption to 90% of expected consumption during each billing period. Installation of plumbing will be inspected by a Building Inspector prior to issuance of a Certificate of Occupancy.

9. GEOLOGY AND SOILS. Would the project:

- a. *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*
 - i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ()*

WHY? According to the 2002 adopted Safety Element of the City of Pasadena's General Plan, the San Andreas Fault is a "master" active fault and controls seismic hazard in Southern California. This fault is located approximately 21 miles north of Pasadena.

The County of Los Angeles and the City of Pasadena are both affected by Alquist-Priolo Earthquake Fault Zones. Pasadena is in four USGS Quadrants, the Los Angeles, and the Mt. Wilson quadrants were mapped for earthquake fault zones under the Alquist-Priolo Act in 1977. The Pasadena and Condor Peak USGS Quadrangles have not yet been mapped per the Alquist-Priolo Act.

These Alquist-Priolo maps show only one Fault Zone in or adjacent to the City of Pasadena, the Raymond (Hill) Fault Alquist-Priolo Earthquake Fault Zone. This fault is located primarily south of City limits, however, the southernmost portions of the City lie within the fault's mapped Fault Zone. The 2002 Safety Element of the City's General Plan identifies the following three additional zones of potential fault rupture in the City:

- The Eagle Rock Fault Hazard Management Zone, which traverses the southwestern portion of the City;
- The Sierra Madre Fault Hazard Management Zone, which includes the Tujunga Fault, the North Sawpit Fault, and the South Branch of the San Gabriel Fault. This Fault Zone is primarily north of the City, and only the very northeast portion of the City and portions of the Upper Arroyo lie within the mapped fault zone.
- A Possible Active Strand of the Sierra Madre Fault, which appears to join a continuation of the Sycamore Canyon Fault. This fault area traverses the northern portion of the City as is identified as a Fault Hazard Management Zone for Critical Facilities Only.

The project site is not within any of these potential fault rupture zones. The proposed project is 7.2 miles south of the Sierra Madre Fault, approximately 4.1 miles south of a potentially active strand of the Sierra Madre Fault, 2.1 miles north of the Raymond Fault, and approximately 2.3 miles northeast of the Eagle Rock Fault. Therefore, the proposed project would not expose people or structures to potential substantial adverse effects caused by the rupture of a known fault. No related significant impacts would result from the proposed project.

Potentially Significant Impact

Significant Unless Mitigation is Incorporated

Less Than Significant Impact

No Impact

The project includes an onsite single-family residential dwelling unit built in 1928 that was remodeled in 1937. This structure will not be demolished; however, will be retained and used as academic or administrative office, and/or faculty residence as provided in the Caltech Master Plan. No development is proposed for the site.

ii. Strong seismic ground shaking? ()

WHY? Since the City of Pasadena is within a larger area traversed by active fault systems, such as the San Andreas and Newport-Inglewood Faults, any major earthquake along these systems will cause seismic ground shaking in Pasadena. Much of the City is on sandy, stony or gravelly loam formed on the alluvial fan adjacent to the San Gabriel Mountains. This soil is more porous and loosely compacted than bedrock, and thus subject to greater impacts from seismic ground shaking than bedrock.

The risk of earthquake damage is minimized because new structures shall be built according to the Uniform Building Code and other applicable codes, and are subject to inspection during construction. Structures for human habitation must be designed to meet or exceed California Uniform Building Code standards for Seismic Zone 4. Conforming to these required standards will ensure the proposed project would not result in significant impacts due to strong seismic ground shaking. See also 9.a.i.

iii. Seismic-related ground failure, including liquefaction as delineated on the most recent Seismic Hazards Zones Map issued by the State Geologist for the area or based on other substantial evidence of known areas of liquefaction? ()

WHY? The project site is not within a Liquefaction Hazard Zone or Landslide Hazard Zone as shown on Plate P-1 of the 2002 Safety Element of the General Plan. This Plate was developed considering the Liquefaction and Earthquake-Induced Landslide areas as shown on the State of California Seismic Hazard Zone maps for the City. Therefore, the project will have no impacts from seismic related ground failure.

iv. Landslides as delineated on the most recent Seismic Hazards Zones Map issued by the State Geologist for the area or based on other substantial evidence of known areas of landslides? ()

WHY? The project site is not within a Landslide Hazard Zone as shown on Plate P-1 of the 2002 Safety Element of the General Plan. This Plate was developed considering the Earthquake-Induced Landslide areas as shown on the State of California Seismic Hazard Zone maps for the City. Therefore, the project will have no impacts from seismic induced landslides.

b. Result in substantial soil erosion or the loss of topsoil? ()

WHY? The proposed project is a General Plan Amendment and Zone Change for the property at 505 S. Wilson Avenue. Currently, on the project site is an existing single-family residential dwelling unit.

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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According to the provisions of the Caltech Master Development Plan, the existing houses fronting on Wilson Avenue, within the boundary of the Master Plan, will be retained and used as academic or administrative offices, and/or faculty residences. In accordance with the provisions of the Master Plan, the City shall institute zone change proceedings to establish PS (Public and Semi-Public) zoning districts for those properties within the Master Plan boundaries not currently owned by Caltech, but subsequently acquired by Caltech. Caltech is proposing to retain the existing single-family residence on the site. No development is proposed onsite. Therefore, there is no impact to soil erosion or the loss of topsoil

The natural water erosion potential of soils in Pasadena is low, unless these soils are disturbed during the wet season. Both the Ramona and Hanford soils associations, which underlay much of the City, have high permeability, low surface runoff and slight erosion hazard due to the gravelly surface layer and low topographic relief away from the steeper foothill areas of the San Gabriel Mountains.

c. *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?* ()

WHY? The City of Pasadena rests primarily on an alluvial plain. To the north, the San Gabriel Mountains are relatively new in geological time. These mountains run generally east-west and have the San Andreas Fault on the north and the Sierra Madre Fault to the south. The action of these two faults in conjunction with the north-south compression of the San Andreas tectonic plate is pushing up the San Gabriel Mountains. This uplifting combined with erosion has helped form the alluvial plain. As shown on Plate 2-4 of the Technical Background Report to the 2002 Safety Element, the majority of the City lies on the flat portion of the alluvial fan, which is expected to be stable.

The proposed project is not located on known unstable soils or geologic units, and therefore, would not likely cause on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse. Modern engineering practices and compliance with established building standards, including the California Building Code, will ensure the project will not cause any significant impacts from unstable geologic units or soils.

d. *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?* ()

WHY? According to the 2002 adopted Safety Element of the City's General Plan the project site is underlain by alluvial material from the San Gabriel Mountains. This soil consists primarily of sand and gravel and is in the low to moderate range for expansion potential.

e. *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?* ()

WHY? Currently, the single-family residence on the project site is connected to the existing sewer system. Therefore, soil suitability for septic tanks or alternative wastewater disposal systems is not applicable in this case, and the proposed project would have no associated impacts.

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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10. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

a. *Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?* ()

WHY? The project does not involve the use or storage of hazardous substances other than the small amounts of pesticides, fertilizers and cleaning agents required for normal maintenance of the structure and landscaping. The project must adhere to applicable zoning and fire regulations regarding the use and storage of any hazardous substances. Further there is no evidence that the site has been used for underground storage of hazardous materials.

b. *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?* ()

WHY? The project does not involve hazardous materials. Therefore, there is no significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions, which could release hazardous material.

c. *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?* ()

WHY? The project does not involve hazardous emissions or the handling of hazardous materials, substance, or waste and is not within one-quarter mile of an existing or proposed school. Therefore, the proposed project would have no hazardous material related impacts to schools.

d. *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?* ()

WHY? The project site is not located on the State of California Hazardous Waste and Substances Sites List of sites published by California Environmental Protection Agency (CAL/EPA). The site is not known or anticipated to have been contaminated with hazardous materials and no hazardous material storage facilities are known to exist onsite.

e. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?* ()

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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WHY? The project site is not within an airport land use plan or within two miles of a public airport or public use airport. The nearest public use airport is the Bob Hope Airport in Burbank, which is operated by a Joint Powers Authority with representatives from the Cities of Burbank, Glendale and Pasadena. Therefore, the proposed project would not result in a safety hazard for people residing or working in the vicinity of an airport and would have no associated impacts.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? ()

WHY? The project site is not within the vicinity of a private airstrip. Therefore, the proposed project would not result in a safety hazard for people residing or working in the vicinity of a private airstrip and would have no associated impacts.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? ()

WHY? The City of Pasadena maintains a citywide emergency response plan, which goes into effect at the onset of a major disaster (e.g., a major earthquake). The Pasadena Fire Department maintains the disaster plan. In case of a disaster, the Fire Department is responsible for implementing the plan, and the Pasadena Police Department devises evacuation routes based on the specific circumstance of the emergency. The City has pre-planned evacuation routes for dam inundation areas associated with Devil's Gate Dam, Eaton Wash, and the Jones Reservoir. Currently, Fire Station #34 1360 E. Del Mar Boulevard is located within the Caltech Master Plan boundary area and would respond to any emergencies on the campus.

The construction and operation of the proposed project would not place any permanent or temporary physical barriers on any existing public streets. To ensure compliance with zoning, building and fire codes, if any development is to occur on the site, the applicant is required to submit appropriate plans for plan review prior to the issuance of a building permit. Adherence to these requirements ensures that the project will not have a significant impact on emergency response and evacuation plans.

h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? ()

WHY? As shown on Plate P-2 of the 2002 Safety Element, the project site is not in an area of moderate or very high fire hazard. In addition, the project site is surrounded by urban development and not adjacent to any wildlands. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, and the project would have no associated impacts.

11. HYDROLOGY AND WATER QUALITY. Would the project:

a. Violate any water quality standards or waste discharge requirements? ()

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

WHY? Section 303 of the federal Clean Water Act requires states to develop water quality standards to protect the beneficial uses of receiving waters. In accordance with California's Porter/Cologne Act, the Regional Water Quality Control Boards (RWQCBs) of the State Water Resources Control Board (SWRCB) are required to develop water quality objectives that ensure their region meets the requirements of Section 303 of the Clean Water Act.

Pasadena is within the greater Los Angeles River watershed, and thus, within the jurisdiction of the Los Angeles RWQCB. The Los Angeles RWQCB adopted water quality objectives in its Stormwater Quality Management Plan (SQMP). This SQMP is designed to ensure stormwater achieves compliance with receiving water limitations. Thus, stormwater generated by a development that complies with the SQMP does not exceed the limitations of receiving waters, and thus does not exceed water quality standards.

Compliance with the SQMP is ensured by Section 402 of the Clean Water Act, which is known as the National Pollution Discharge Elimination System (NPDES). Under this section, municipalities are required to obtain permits for the water pollution generated by stormwater in their jurisdiction. These permits are known as Municipal Separate Storm Sewer Systems (MS4) permits. Los Angeles County and 85 incorporated Cities therein, including the City of Pasadena, obtained an MS4 (Permit # 01-182) from the Los Angeles RWQCB, most recently in 2001. Under this MS4, each permitted municipality is required to implement the SQMP.

In accordance with the County-wide MS4 permit, all new developments must comply with the SQMP. In addition, as required by the MS4 permit, the City of Pasadena has adopted a Standard Urban Stormwater Mitigation Plan (SUSMP) ordinance to ensure new developments comply with SQMP. This ordinance requires most new developments to submit a plan to the City that demonstrates how the project will comply with the City's SUSMP.

The proposed project is a General Plan Amendment and Zone Change for the parcel at 505 S. Wilson Avenue, within the Caltech Master Plan boundary area. Currently onsite is an existing single-family residence. In accordance with the Caltech Master Plan, the single-family residence onsite will be retained and used as academic or administrative office, and/or a faculty residence. No development is proposed onsite. None of the proposed uses are point source generators of water pollutants, and thus, no quantifiable water quality standards apply to the project. As an urban development, the proposed project would add typical, urban, nonpoint-source pollutants to storm water runoff. As discussed, these pollutants are permitted by the County-wide MS4 permit, and would not exceed any receiving water limitations. Furthermore, the proposed project does not meet the City's SUSMP requirement thresholds, and thus, water pollutants generated from the project are considered negligible. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements, and would have no related significant impacts.

The Pasadena Department of Public Works has imposed the following standard condition for the approval of the General Plan Amendment and Zone Change for the retention of the single-family residence and the change of use to academic or administrative office:

1. A closed circuit television (CCTV) inspection of the house sewer serving the property shall be performed and a CCTV inspection tape submitted to the Department of Public Works for review. The applicant shall correct any defects revealed by the inspection. Defects may include, excessive tuberculation, offset joints, excessive root intrusion, pipe joints that can allow water infiltration, cracks, and corrosion or deterioration of the pipe or

Potentially Significant Impact	Significant Unless Mitigation is Incorporated	Less Than Significant Impact	No Impact
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joint material, damaged or cracked connection to the sewer main, or other defects as determined by the City Engineer. The method of correction of the defects shall be subject to the approval of the City Engineer, and may include partial or total replacement of the house sewer, or installation of a structural or non-structural pipe liner. The applicant shall be responsible for all costs required to obtain the CCTV inspection of the existing sewer connection, and if required, to correct the defects.

- b. *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? ()*

WHY? The project would not install any groundwater wells, and would not otherwise directly withdraw any groundwater. In addition, there are no known aquifer conditions at the project site or in the surrounding area, which could be intercepted by excavation or development of the project. Therefore, the proposed project would not physically interfere with any groundwater supplies.

The project will use the existing water supply system provided by the Pasadena Department of Water and Power. The source of some of this water supply is ground water, stored in the Raymond Basin. Thus, the project could indirectly withdraw groundwater. However, the proposed water usage would be negligible in comparison to the overall water service provided by the Department of Water and Power. This minor amount of water use would not result in significant impacts from depletion of groundwater supplies. Under normal operation the project (if used as academic or administrative office) will use approximately 351 gallons of water per day.

During drought conditions, the project must comply with the Water Shortage Procedures Ordinance (Chapter 13 of the Pasadena Municipal Code) the project shall only consume 90% of expected consumption. To ensure compliance with this ordinance, the applicant shall submit a water conservation plan limiting the project's water consumption to 90% of expected consumption. This plan shall be submitted to and approved by the City's Water and Power Department and the Building Division prior to the issuance of a building permit. The applicant's irrigation and plumbing plans shall comply with the approved water conservation plan.

- c. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on-or off-site? ()*

WHY? The project site is currently virtually flat and runoff onsite drains as sheet flow from northwest to southeast. The project site does not contain any discernable streams, rivers, or other drainage features. In accordance with the Caltech Master Plan provisions, the existing single-family residence will be retained onsite and used as academic or administrative office, and/or a faculty residence. No development is proposed onsite; therefore, there will be no alteration to the drainage pattern of the site or surrounding area.

- d. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site? ()*