MUSEUM MARKET PLAZA SPECIFIC PLAN

DRAFT ENVIRONMENTAL IMPACT REPORT

III. EXISTING ENVIRONMENT, PROJECT IMPACTS AND MITIGATION MEASURES

Introduction

This section of the EIR addresses those issues identified in the Initial Study, the responses provided to the Notice of Preparation, and the analysis of the project conducted for this document, which may impact the environment as a result of project implementation.

This section is divided into the issue areas included in the Initial Study. The thresholds of significance for each potential impact area are first described; the applicable policies and programs associated with the impact area are listed; and the existing conditions briefly described. The project's potential impacts are then provided, including an analysis of the level of impact expected to result from the implementation of the project. Finally, if impacts are determined to be potentially significant, mitigation measures and a mitigation monitoring program are provided, and a determination as to the level of significance after implementation is made.

A. Aesthetics

Introduction and Background

This section describes the existing visual resources within the project development site, the vicinity and the region, analyzes the potential impacts of the proposed Specific Plan on these resources and sets forth mitigation measures effective in reducing impacts. A wide range of data and information has been used in researching and analyzing the project and its potential effects.[1]

[1] City of Palm Springs General Plan, 2007

Thresholds of Significance/Criteria For Determining Significance

The California Environmental Quality Act is prescriptive in how the City of Palm Springs must address issues related to visual/scenic resources. The following thresholds or criteria are not those strictly recommended in 15064 of CEQA. Rather, they are derived from Appendix G of CEQA, which is used to determine the level of potential effect and whether a Negative Declaration or a Mitigated Negative Declaration may be issued, or whether an Environmental Impact Report is to be prepared. The proposed Museum Market Plaza Specific Plan will have a significant effect on visual resources if it:

a. Has a substantial adverse effect on a scenic vista.

b. Substantially damages scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

c. Substantially degrades the existing visual character or quality of the site and its surroundings.

d. Creates a new source of substantial light or glare which would adversely affect day or night-time views in the area.

City of Palm Springs General Plan Policy and Downtown Urban Design Plan

The Specific Plan area is located in Downtown Palm Springs. The Downtown District of the City is defined as a 'Special Design Consideration Area' in the City of Palm Springs 2007 General Plan. The General Plan includes both a Community Design Element and the Downtown Urban Design Plan (DUDP), which are to guide the aesthetic development of the City. The General Plan policies applicable to the proposed project are set forth below.

CD11.1 Use illumination levels that are appropriate to the activity level or the size of the area.

CD11.2 Encourage the use of unifying and visually pleasing lighting fixtures throughout the City and on private property.

CD11.3 Encourage the incorporation of lighting into signage design when appropriate. Such lighting should be designed to minimize glare and lighting spillage while accentuating the design of the signage. Spot, back-lit, and downward-facing lighting fixtures and internal illumination features are preferred methods of signage lighting.

CD11.5 Limit street lighting to safety lighting at intersections of streets designated as collectors or larger. The intensity of light should be related to the street classification, surrounding land uses, and traffic volumes.

CD11.7 Ensure that new projects and significant alterations to existing projects meet Title 24 outdoor lighting zone standards and energy conservation in lighting.

CD25.3 Require that all land uses and future development proposals respect and protect the scenic values of the desert and mountain terrain.

CD26.1 Protect and enhance view corridors by undergrounding and screening utility lines and facilities.

CD26.2 Create/enhance building height and massing restrictions to ensure the preservation of existing public view corridors.

CD26.3 Frame views along streets through the use of wide parkways and median landscaping.

CD26.4 Require specialized design review for development along scenic corridors including, but not limited to, building height restrictions, setback requirements, and site-orientation guidelines.

CD26.5 Orient new streets to maximize the view of open space, parks, mountains, and built landmarks where possible.

CD26.9 Seek to preserve and maintain, through acquisition or regulation, those areas or sites that are found to have exceptional scenic value.

CD30.1 Evaluate and adopt the appropriate regulatory tools in the Zoning Code to implement the Downtown Urban Design Plan such as Specific Plan, design overlay, and/or zoning amendment.

CD30.2 Distribute the Downtown Urban Design Plan to prospective merchants, developers, architects and others who might have an interest in developing projects Downtown.

CD30.3 Facilitate continued communication between the Downtown merchants association and City staff to help maintain the unique character of the Downtown area.

The Downtown Urban Design Plan includes, in its "Ideas and Strategies:"

<u>Building Height, Orientation, Massing & Design</u>

Goals: Allow for mixed-use development while preserving mountain views and eclectic nature of downtown; Preserve view corridors and create new ones when possible; Preserve and enhance eclectic architecture.
Proposed Actions: Orient buildings east-west to protect or create view corridors; Develop and implement massing guidelines to frame views; Step back the upper floors of taller buildings to protect view corridors; Vary height and massing to maintain eclectic nature of downtown; Design buildings to add to and reinforce the eclectic nature of downtown architecture.

1. Existing Conditions

Regional Setting

The topographic features of the Coachella Valley are the result of complex and active geological forces which have created a low desert surrounded by the ranges, ridges and peaks of the San Jacinto, San Bernardino, Little San Bernardino and Santa Rosa Mountains. Portions of the mountain ranges are frequently snow covered during winter months, presenting a startling visual foil to the low desert of the Valley. The unique topographical relief of the Coachella Valley provides attractive, highly valued viewsheds. Several Coachella Valley communities, including Palm Springs, are active participants in the preservation and protection of these important visual resources.

Planning Area Existing Conditions

The San Jacinto and Santa Rosa Mountains, together with the more distant Little San Bernardino Mountains, form a spectacular backdrop to the City and distinctive longitudinal views exist throughout the City, with all the east-west and north-south streets in the project area offering scenic mountain views. Palm Canyon Drive, Indian Canyon Drive and Tahquitz Canyon Way are designated scenic corridors in the General Plan.

The project site is generally flat and has for many years been fully developed to a level consistent with its Downtown location. Commercial development of one and two stories is prevalent along Palm Canyon and Indian Canyon Drives, as well as Tahquitz Canyon Way, in and around the project site. The built environment includes courtyards and pedestrian connections between major streets. Development of greater height and intensity exists immediately adjacent to the Specific Plan area, in the form of the Hyatt Hotel (72 feet high at parapet level) immediately north, and the Spa Resort Hotel (approximately 60 feet high) to the east.

The downtown area is well known for its unique Californian Modernist buildings, although it also includes many interesting examples of Spanish and Mediterranean styles. The Palm Springs Art Museum is located in a dramatic setting at the base of the mountains, adjacent to the western boundary of the project site. The building is widely recognized as an outstanding example of the Californian Modernist style. Another building complex of local significance is the Modernist Town and Country Center, located within the project area. Several listed historic buildings exist in close proximity to the project site. The 'Palm Springs Walk of Stars' occurs on the sidewalks of Palm Canyon Drive and other downtown streets, adding unique visual interest to the townscape.

Together with eclectic architecture, tall palm trees are definitive components of the Palm Springs Downtown, and the vertical rhythm of the palms acts as an effective foil to the general horizontality of the built form.

With the intention of preserving the character, spatial arrangements and mountain views, the City of Palm Springs has in the past controlled building heights and setbacks in the Downtown area. However, the City in 2007 adopted the DUDP, which allows for increased building height and

mass from what has previously been allowed in the Downtown. The Plan is a departure from the previous standards implemented on Palm Canyon and Indian Canyon Drives.

2. Project Impacts

The proposed Specific Plan would allow the construction of buildings ranging from 33 to 79 feet in height in the Downtown, immediately east of the San Jacinto Mountains. The mass and scale of these buildings, in the context of the development standards provided in the Specific Plan, could significantly impact the views of the mountains from within the project site and the surrounding areas. As planned, the project will result in an increased level of development in the Downtown area that could significantly alter the visual character of the site and its surroundings. In order to assess these potential impacts, and based upon consultation with City staff, a series of locations were selected for viewshed impact analysis, as follows.

1. View 1 is taken from the intersection of Indian Canyon Drive and Tahquitz Canyon Way, looking north along the west side of Indian Canyon Drive.

2. View 2 is taken from the east side of Indian Canyon Drive, approximately mid-way between the intersections with Tahquitz Canyon Way and Andreas Road, looking west.

3. View 3 is taken from the intersection of Indian Canyon Drive and Andreas Road, looking west along Andreas Road.

4. View 4 is taken from the east side of Palm Canyon Drive, approximately mid-way between the intersections with Tahquitz Canyon Way and Andreas Road at the pedestrian signal light, looking north along the west side of Palm Canyon Drive.

5. View 5 is taken from the east side of Palm Canyon Drive at a point opposite the Hyatt Hotel, looking south along the west side of Palm Canyon Drive.

6. View 6 is taken from within the O'Donnell Golf Course, looking in a southeasterly direction.

7. View 7 is taken from the northeastern corner of the Art Museum, looking across Museum Drive in a northeasterly direction.

8. View 8 is taken from the east side of Cahuilla Road, looking in a northwesterly direction.

9. View 9 is taken from the intersection of Belardo and Arenas Roads, looking in a northeasterly direction.

10. View 10 is taken from the intersection of Palm Canyon Drive and Tahquitz Canyon Way, looking west along the north side of Tahquitz Canyon Way.

11. View 11 is a montage of the east side of Palm Canyon Drive and illustrates how the new development at Blocks K1 & 2 integrates into the existing development on the east side of Palm Canyon Drive.

The viewsheds were digitally photographed and the images of the proposed building envelopes were incorporated into the photographs to simulate the appearance of the site at project completion. The simulations do not depict building architecture, as no specific building plans have been submitted as part of the proposed project. Rather, the simulations are designed to provide a concept illustrating the potential maximum building height, the minimum setback and stepbacks, and the spatial distribution of structures within the plan. Each viewshed and the potential impacts associated with the development of the project is discussed below.

Development of the project as planned will require the demolition of the Town and Country Center, a locally significant commercial complex in the Modernist style, constructed in 1948. Lykens Department Store is a historically significant Class I building that occurs at the southeast corner of Andreas Road and Palm Canyon Drive. Although not included within the site perimeter, the building is located immediately adjacent to the project boundary. These two potentially historic visual resources could be significantly impacted by the proposed project.

The Specific Plan proposes the opening of a new east-west street that will provide a mid-block east-west street between the Museum and Indian Canyon Drive. The intended work could significantly impact the 'Palm Springs Walk of Stars', which presently occurs on the sidewalks of Palm Canyon Drive and several other downtown streets.

The Specific Plan will also substantially increase the level of development in the project area and this will result in greater levels of illumination and glare.

Viewshed Analysis

Exhibit III-1, the Key Map on page III-7, shows the locations from which each of the following viewsheds was taken.

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Key Map
Palm Springs, California

Exhibit
III-1

View 1

This view is taken from the intersection of Indian Canyon Drive and Tahquitz Canyon Way, looking north along the west side of Indian Canyon Drive. Existing development includes two story structures and parking lots. No view of the mountains occurs, as the San Jacinto range is located to the west.

The existing built environment along the western side of Indian Canyon Drive is modest in scale. Implementation of the proposed project would result in buildings of up to 79 feet in height along the west side of Indian Canyon Drive. The proposed structures would represent considerably greater mass than the existing structures on this block.

Development of the proposed project would not, at this location, impact scenic vistas. There are currently no views of surrounding mountains to the northwest of the intersection. Views of the Little San Bernardinos, immediately north of Indian Canyon in the far distance for those traveling on Indian Canyon Drive, would not be affected by the proposed project.

This view does demonstrate that the development of the proposed project would significantly impact the potentially significant local historic resource of the Town and Country Center buildings, located in the middle visual range of the photograph. With implementation of the proposed project, the Town and Country Center would be demolished. Please see below for a more detailed discussion of the scenic resource impacts associated with the Center.

This view also shows that the implementation of the proposed project would significantly alter the existing visual character of the viewshed. The current two story development would be replaced by five story structures which would change the character of the area. The building heights allowed under the DUDP for the west side of Indian Canyon Drive extend from 30 to 45 feet. This would represent the second and third stories of the simulations shown in Exhibit III-2, below. The Specific Plan therefore allows approximately twice the mass and height as the Plan. The proposed project would result in impacts to the visual character of the area, which even when considering the higher buildings allowed under the DUDP for this area, would represent a significant change.

Existing View

Proposed View

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View 1
Palm Springs, California

View 2

This view is taken from the east side of Indian Canyon Drive, approximately mid-way between the intersections with Tahquitz Canyon Way and Andreas Road, looking west. The Town and Country Center is the defining feature of the existing view. Impacts associated with the historic significance of the Center are discussed in Section III-C, below. Impacts associated with the scenic impact to a potentially significant historic resource are discussed below in this section.

Under current conditions, the existing two story structures block all but the peaks of the San Jacinto Mountains to the west. Demolition of the existing buildings on the west side of Indian Canyon Drive, and the introduction of a new private street connecting with Museum Drive will open a significant new east-west view corridor of the flank of the San Jacintos across the project site. A vertically framed vista of the distinctive Art Museum building with the mountain behind will result. The implementation of the proposed project will implement one of the Key Design Concepts of the DUDP, by opening a new mid-block view corridor at this location (please see "Concept Sketch," page 17 of DUDP). The proposed project will change the scenic vista currently visible at this location, but will not significantly impact it.

In comparison to the present level of development, the Specific Plan proposes a more intense form that is overtly urban in scale. As previously stated, the DUDP allows building heights of 30 to 45 feet along Indian Canyon Drive. On the east side of Palm Canyon Drive, which is also visible in this view in the mid-range of the photograph, building heights of 30 to 60 feet are permitted. The buildings shown in the mid-range of the simulation are therefore consistent with the visual environment encouraged in the DUDP, and would be expected to similarly frame the viewshed. The buildings in the foreground, as previously stated, are of greater mass and height than allowed in the DUDP, and therefore have a greater impact on the scenic vista.

As can be clearly seen in Exhibit III-3, below, the proposed project will significantly change the character of the existing visual environment at this location. The creation of a vehicular and pedestrian access, and the elimination of the currently impermeable façade of the existing buildings represent a significant change in the visual character at this location. The quality of the viewshed of the San Jacinto Mountains at this location, however, will be improved under this scenario.

Existing View

Proposed View

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View 2
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View 3

This view is taken from the intersection of Indian Canyon Drive and Andreas Road, looking west along Andreas Road. Existing development at this location consists of a parking lot on the south side of Andreas, and a two story building on the north side, in the near view. In the mid-range, landscaping and a two story structure are partly visible at the southeast corner of Andreas and Palm Canyon, and the façade of the existing Desert Fashion Plaza occurs on the west side of Palm Canyon Drive.

The existing view to the west of Indian Canyon Drive is of unobtrusive, horizontal form and expansive views of the flank, slope and peaks and ridges of the San Jacinto mountains. Construction of the proposed buildings within the Specific Plan will block the southern half of the vista, but will not significantly change the northern half. The views of the flank and peaks of the mountains will still be visible. Under the DUDP, structures of 30 to 45 feet could be constructed adjacent to Indian Canyon. This would be equivalent to the second and third stories of the simulation shown in Exhibit III-4, below. Under the provisions of the DUDP, therefore, the tops of the mountains would remain visible, but the flank would be obstructed in the southern half of the view. The implementation of the proposed project would therefore result in a change in the scenic vista at this location, but this change would not be significant.

Implementation of the Specific Plan will significantly alter the existing character of this part of the project area, some of which is presently undeveloped. Implementation of the proposed project would significantly alter the visual character of this location, on its southern half. In consideration of the Downtown location, however, redevelopment of vacant land and the resultant alteration to the visual character of the area is to be expected. As described above, redevelopment of the property under the DUDP would result in structures of 30 to 45 feet in height, which would also substantially change the visual character of this location, on both the north and south sides of Andreas. The redevelopment of the north side will block much of the flank of the mountains, and also the ridgelines on the north end of this view. Implementation of the proposed project at this location will therefore have a significant impact on the visual character of the area.

Existing View

Proposed View

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View 3
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View 4

This view is taken from the east side of Palm Canyon Drive, approximately mid-way between the intersections with Tahquitz Canyon Way and Andreas Road, looking north along the west side of Palm Canyon Drive. Existing development consists of the Desert Fashion Plaza structures, one and two stories in height. Views of the base of the San Jacinto mountains are blocked by the structures, but the upper portion of the mountains, and the ridge lines are visible behind the built environment.

Although somewhat more intrusive, the level of development proposed to the west of Palm Canyon Drive largely corresponds with existing levels. The Plaza area proposed to include single story structures and open areas, will provide a view corridor through to the same upper portion of the mountains, and the ridge lines, as is currently seen. Implementation of the Specific Plan would have limited impact on views from Palm Canyon Drive at this point, and generally preserve the distinctive spatial and visual characteristics of Downtown Palm Springs.

There are no scenic resources, such as historic buildings, which would be impacted at this location.

The proposed project would not significantly impact the visual character at this location, insofar as the building mass is consistent with and similar to that already occurring in this area. Further, the DUDP would allow building heights of 30 to 60 feet in this area, and the structure depicted in the simulation is consistent with that building height.

Existing View

Proposed View

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View 4
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View 5

This view is taken from the east side of Palm Canyon Drive at a point opposite the Hyatt Hotel and south of Amado Road, looking south along the west side of Palm Canyon Drive.

The proposed buildings, occurring at a height of approximately 60 feet, are similar in mass to the existing Hyatt hotel, and will block the short range view of the mountains which currently can be seen above the existing Desert Fashion Plaza buildings. The long-range view, as shown in the simulation in Exhibit III-6, below, of the southern end of the San Jacinto range, will still be visible from this location. The building heights proposed in this area of the proposed project are consistent with those allowed in the DUDP, and would be expected to be similar in impact to those depicted in the simulation.

There are no scenic resources, such as historic buildings, which would be impacted in this location.

The implementation of the proposed project will not significantly change the visual character in this area. The mass and scale of the existing hotel is similar to that of the proposed structures, and would represent a continuation of the urban environment envisioned in the DUDP. The architectural style ultimately selected for the proposed structures, the level of articulation and stepbacks provided are expected to provide for varied mass and height in this area, thereby lowering the potential impacts associated with scenic resources in this area.

Existing View

Proposed View

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View 5
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View 6

This view is taken from within the O'Donnell Golf Course, looking in a southeastern direction. There are currently no mountain views from this location, as the mountains are located to the west, behind the photographer taking this view. The golf course is heavily shielded from the urban environment by mature landscaping which extends to 50 feet or more in height along the perimeter of the course.

The view demonstrates that implementation of the Specific Plan will have little impact on the visual resources of the area when viewed from this perspective. The implementation of the proposed project will not significantly impact the character of the scenic resources in this area, although the top of the northwestern most project buildings will be visible above the trees. This does not, however, represent a significant change in the visual character of the area.

There are no scenic resources, such as historic buildings, which would be affected by the proposed project at this location.

Existing View

Proposed View

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View 6
Palm Springs, California

View 7

This view is taken from the northeastern corner of the Art Museum, looking across Museum Drive in a northeasterly direction. The current built environment consists of the landscaping along the perimeter of the O'Donnell Golf Course, and the single-story parking garage within the project boundary. There are currently no views of the mountains from this location, as the San Jacintos are located to the west, behind the photographer.

Implementation of the Specific Plan will considerably increase the existing level of development in the northwest area of the project site and the new built form will have a greater presence when viewed from the Art Museum. However, major views across the project site are westward towards the mountains, and those views will be unaffected from the Museum property.

The visual character of the immediate area will be affected by the new structures at the north end of Museum Drive. The DUDP would allow structures extending 30 to 60 feet in this area. The proposed building is shown at a height of over 70 feet, as proposed in the Specific Plan. A structure built at 60 feet would represent similar height from a viewer on the Museum property. The view is currently of the built environment, and will not be significantly affected by the proposed project. Design of the structures, including sensitivity to mass and scale, could effectively lower impacts to visual resources in this area.

There are no scenic resources, such as historic structures, which would be affected by the proposed project at this location. The stand of trees surrounding the golf course will remain and be unaffected by the proposed project, as it is not within the project boundary.

Existing View

Proposed View

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View 7
Palm Springs, California

View 8

This view is taken from the east side of Cahuilla Road, looking in a northwestern direction. The existing environment consists of the vacant site previously planned for the Palm Hotel, and the parking lot of the Desert Fashion Plaza, on the north side of Tahquitz Canyon Way. Views of the foothills and slopes of the San Jacinto mountains are clearly visible as a backdrop to this view.

Implementation of the proposed project will significantly impact the scenic vistas at this location. The proposed building at the southwest corner of Cahuilla and Tahquitz Canyon, at a maximum height of 44 feet, will block the views of the mountains. The structures on the north side of Tahquitz Canyon, with a potential maximum height of over 60 feet, will have a limited impact on the viewshed, which occurs primarily in the western portion of the photograph. Building heights on the southwest corner of Cahuilla and Tahquitz Canyon are currently permitted at a maximum of 24 feet. This would represent only slightly more than the first floor of the simulation, which is scaled at 20 feet for the ground floor. At this height limitation, the foothills of the mountains would be obstructed, but the top portion of the slope would be visible above the structure. The proposed building height maximum of 44 feet in this area would obstruct both the foothills and the top portion of the slope. The proposed project would therefore have a greater, and significant impact on scenic resources at this location.

Implementation of the Specific Plan will significantly alter the existing character of this part of the project area. In consideration of the Downtown location, urban redevelopment of presently under utilized land and the resultant alteration to the visual character of the area is to be expected, and is consistent with both the DUDP and project objectives. Although build-out of the structure at the southwest corner of Cahuilla and Tahquitz Canyon causes loss of mountain views from Cahuilla Road, the site has long been designated for urban development and the proposed form is generally consistent with City guidelines and standards. Development on the north side of Tahquitz Canyon Way is currently urban in character, consisting of a parking structure and the buildings of the Fashion Plaza. The DUDP would allow structures of 30 to 60 feet in this area. The simulation shows structures in this height range. This portion of the project, therefore, although it will alter the visual character of the area, is generally consistent with the urban environment. The ultimate design of the structures could effectively lower impacts to visual resources in this area.

There are no scenic resources, such as historic structures, which would be affected by the proposed project at this location.

Existing View

Proposed View

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View 8
Palm Springs, California

View 9

This view is taken from the intersection of Belardo and Arenas Roads, looking in a northeastern direction. The current environment consists of the Rancho de las Flores parking lot. There are no scenic vistas from this location, insofar as the mountains are located to the west, behind the photographer.

Implementation of the proposed project will not significantly impact scenic vistas at this location. Major views across the project site are westward towards the mountain and while altering the visual character of the immediate area, the new structure will have little impact on any important viewsheds.

The environment currently consists of a paved parking lot, and is urban in character. The two story buildings of the existing commercial development can be seen in the background. This portion of the project site currently has no value in terms of scenic character. The parking structure is proposed to extend to a maximum height of 33 feet, which is consistent with the requirements of the DUDP. Therefore, this portion of the plan will not significantly impact the visual character of the area. The inclusion of landscaping and other design features will visually reduce the presence of the building. The ultimate design of the structures could effectively lower impacts to visual resources in this area.

There are no scenic resources, such as historic structures, which would be affected by the proposed project at this location.

Existing View

Proposed View

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Museum Market Plaza Specific Plan Draft EIR
View 9
Palm Springs, California

View 10

This view is taken from the intersection of Palm Canyon Drive and Tahquitz Canyon Way, looking west along the north side of Tahquitz Canyon Way. The current built environment consists of the two-story development within the Desert Fashion Plaza on the north side of Tahquitz Canyon; and the existing two-story development at the southwest corner, which is outside the project area. This location provides an existing view corridor to the slope and ridges of the San Jacinto Mountains to the west.

The implementation of the proposed project will have a less than significant impact on scenic vistas at this location. The height of the proposed buildings, which could extend to over 60 feet at this location, will block a small portion of the view currently visible, but the majority of the view corridor would remain intact. The future redevelopment of the structures on the south side of Tahquitz Canyon Way, which under the DUDP are allowed to extend to a height of 30 feet at this location, would be only slightly higher than those currently occurring there, and consistent with existing development in the area.

Implementation of the Specific Plan will have less than significant impacts on the visual character of this area. The existing built environment consists of urban development which is consistent with that proposed. Although the mass of the structures will be greater than what current occurs, the character of the area will be similar. The ultimate design of the structures could effectively lower impacts to visual resources in this area.

There are no scenic resources, such as historic structures, which would be affected by the proposed project at this location.

Existing View

Proposed View

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Museum Market Plaza Specific Plan Draft EIR
View 10
Palm Springs, California

View 11

This view is a montage of the east side of Palm Canyon Drive and illustrates how the new development at Blocks K1 & 2, and the new east-west roadway, will integrate into the existing built environment. Existing structures include one and two-story commercial structures, including the Town and Country Center, located in the center of the photograph. The impacts associated with the potential historic significance of this structure are addressed in Section III-C. of this document. There are no views of the mountains from this location, as they are located to the west, behind the photographer.

At this location, the proposed project will not significantly impact scenic vistas. Mountain views will not be affected at this location. The creation of the east-west street will provide a mid-block view corridor, as called for in the DUDP. Impacts to scenic vistas at this location will be less than significant.

Implementation of the proposed project would significantly impact scenic resources consisting at this location of the Town and Country Center. The Town and Country Center would no longer occur. The proposed project is also located one lot south of the Lykens Department Store building, a two-story structure which can be seen on the north end of the simulation. Development of the proposed structures would not directly impact this building, but would affect the visual character of the area. The aesthetic impacts associated with the potentially historic structures in and around the proposed project are discussed in more detail below.

From this location, the proposed buildings will significantly change the character of the area, characterized by less intensive levels of existing development to the north and south. In comparison to the present level of development, the Specific Plan proposes a more intense form, including greater height. When viewed from any direction, the new built form at Blocks K1 & 2 will have a particularly assertive presence, and implementation of the Specific Plan will significantly alter the existing visual character of the area. Building height under the DUDP in this area is 30 to 45 feet. Buildings to the north and south could, in the future, be redeveloped to these heights. This would be more in keeping with that proposed for the project at this location, but the project buildings will still dominate the character of the block.

Existing View

Proposed View

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Visual Simulation
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Museum Market Plaza Specific Plan Draft EIR
View 11
Palm Springs, California

Impacts to Scenic Resources

The Town and Country Center

The project proposes the demolition of the Town and Country Center, a commercial complex in the Modernist style, constructed in 1948. In 2003, the building was determined as eligible for listing in the National Register of Historic Places and the California Register of Historical Resources, with a local level of significance. The complex has considerable local repute as a distinctive example of Palm Springs Modernism, and makes an interesting visual contribution to Downtown's character. The project will have a potentially significant impact on the Town and Country Center and this aspect is fully analyzed as a Cultural Resource issue, in Section III C of this document.

Lykens Department Store

Lykens Department Store, a Class I historically significant building (considered locally significant), occurs at the southeast corner of Andreas Road and Palm Canyon Drive, one lot north of the project site. It is an architecturally distinctive, historic building that makes an interesting visual contribution to the Downtown character. Although not directly affected by the Specific Plan build out, the building could be negatively impacted by the scale of the proposed new development. The intervening building, also not part of the proposed project, helps to separate the Lykens building from the proposed project. However, the mass and height of the structure to the south, extending up to 79 feet, will indirectly impact the Lykens building..

The 'Palm Springs Walk of Stars'

The Specific Plan proposes considerable reworking of the sidewalks to Palm Canyon Drive and the opening of a new east-west street that will intersect the existing major north-south thoroughfare. The locally distinctive 'Palm Springs Walk of Stars' comprises approximately 250 decorative stars that are set in to the sidewalks of Palm Canyon Drive and several other Downtown streets. The stars commemorate Hollywood celebrities and local personalities, and trace the City's history and connection with the entertainment industry. The stars are locally distinctive elements that add unique visual interest to Downtown character. The stars are located in the right of way, and if removed for project improvements, must be returned to the "Walk" upon completion of the improvements, to assure that impacts to this locally significant visual character are less than significant.

Light and Glare

Most of the City of Palm Springs is included within Lighting Zone categories 1 and 2 of the California Energy Commission's Title 24. The City is also located within the boundary of the Special Lighting Area for the Mt. Palomar Observatory in northern San Diego County[2].

The Specific Plan occurs in the City's Downtown core. The area is already impacted by illumination from vehicular headlights, street lights, accent lighting, building lights and external safety lighting for parking lots and other public spaces, as well as glare from reflective surfaces such as vehicles, building materials and windows.

[2] City of Palm Springs General Plan, 2007

Light will continue to be emitted from the project site, and light from building sources will be increased from previous levels, insofar as the proposed structures include more square footage and greater mass than those presently existing on the site. Build out of the proposed project will therefore result in some increase in the existing levels of illumination, as well as some increase in glare from reflective building materials. The Specific Plan also includes a substantial multi-family residential component and thus introduces sensitive receptors to the area. Levels of lighting that are appropriate to other permitted uses in the project area may have some impact on residential uses. The area is urban in character, however, and the project will be required to comply with the City's lighting ordinances, which limit the amount of light spillage to adjacent property, regulate the intensity of lighting, and the use of screened fixtures. It is therefore expected that the implementation of the proposed project will have a less than significant impact on light and glare in the area. The residential uses will be located above street level on the major streets such as Palm Canyon and Indian Canyon Drives, where the majority of the lighting impact occurs at street level. On the surrounding streets, including Tahquitz Canyon Way, Belardo Road (extended) and the new east-west street, intensity of use is expected to be less, and screening will be required for ground floor units for privacy and noise attenuation. These project design features will also lower the potential impacts for these sensitive receptors.

Summary of Impacts

Development within the Specific Plan area will result in changes to the existing visual character of the project site. The planned construction of tall structures will result in partial obstruction of mountain views in several locations surrounding the project site. These impacts are in places significant, and although they will be partially mitigated through design, will remain in certain locations significant and unavoidable.

The reconstruction of sidewalks could impact some elements of the 'Palm Springs Walk of Stars'. The level of development will be considerably more intense than that presently existing in the Downtown area. The project will generate greater levels of illumination and glare, while concomitantly introducing sensitive receptors. However, impacts associated with project lighting are expected to be less than significant through implementation of the City's lighting regulations.

The Specific Plan will result in the demolition of the Town and Country Center and it may impact adversely upon the Lykens Department Store building. These scenic resources make contributions to the visual character of Downtown Palm Springs. The loss of the Town and Country Center represents a potentially significant impact, insofar as it will eliminate this scenic resource.

3. Mitigation Measures

Mitigation of potential adverse impacts to aesthetic resources is discussed on two levels below. The first describes how potential impacts are addressed and mitigated by the design principles and guidelines that are an integral part of the Specific Plan. The second level identifies additional mitigation measures that will further mitigate potentially significant impacts.

Mitigation by Design: Specific Plan Development Standards and Guidelines
The Specific Plan includes a comprehensive range of design features to substantially reduce the effect of the new development on the area's scenic vistas and resources, preserve distinctive local character and control light spillage. With the implementation of the design standards and guidelines, impacts on the scenic resources of the area are expected to be reduced to levels less than significant levels

The Specific Plan sets forth design concepts and principles that will preserve the scenic resources and unique visual character of Downtown Palm Springs, while allowing for changes necessary to ensure that the project area makes a continued economic contribution to the City. The Specific Plan's development standards include minimum requirements for setbacks and stepbacks, total square footage permitted within each block, and other standards designed to lessen the mass of the structures within the project.

Detailed design guidelines are provided for:

- Spatial arrangements, including permeability, connectivity and public open space.
- Building setbacks, heights, massing and stepped elevational treatments.
- Architectural treatments and building materials palette.
- Hard and soft landscaping, with materials and plant palettes.
- Lighting, street furniture and signage.

Mitigation Measures
In order to assure that development and build out of the Specific Plan will lower impacts to the greatest extent possible, the following additional mitigation measures shall be implemented:

1. Each application for Major Architectural Review or other discretionary permit involving structures within the Plan area shall include an analysis of the potential impacts associated with mountain views.

2. Design of structures shall be sensitive to surrounding mountain vistas, and shall incorporate visually permeable materials, step-backs and setbacks, and stepped building frontages to the greatest extent possible.

3. Building design for all structures along the perimeter of the Plan area, adjacent to existing buildings not in the Plan area, shall be set back from these buildings to the greatest extent possible to minimize indirect impacts associated with the visual character of the area.

4. All lighting proposals for the Museum Market Plaza will be reviewed by the City for compliance with the requirements of both the Specific Plan and the lighting ordinance. Permitted lighting levels shall be consistent with the urban core location and compatible with the mixed uses of the project.

5. All Developer proposals, including those for lighting and landscaping shall conform to the design guidelines set forth in the Museum Market Plaza Specific Plan.

6. Any elements of the 'Palm Springs Walk of Stars' that may be impacted during build out of the Specific Plan shall be carefully removed from the site, cleaned and safely stored. Once surrounding construction work is complete, the stars shall be reset into the sidewalk as close as possible to their original location. Reinstated stars shall be refurbished as required to restore their original appearance.

7. Signage shall be in compliance with the City's sign ordinance and the requirements of the Specific Plan.

Mitigation Monitoring/Reporting Program

A. All development plans, including lighting, landscape and signage proposals, shall be reviewed by the City to assure their substantial compliance with the basic design parameters set forth in the above mitigation measures, the Specific Plan development standards and guidelines, the Palm Springs Municipal Code, and as otherwise required by the City.
Responsible Party: City Planning Department

B. Building plans, including full architectural treatment details and materials palettes, will be reviewed for their responsiveness to the design criteria set forth in the Specific Plan Design Guidelines, the above mitigation measures and as otherwise required by the City.
Responsible Parties: City Planning Department, Architectural Advisory Committee, Planning Commission and/or City Council.

C. A plan that meets City approval shall be drawn up by the project proponent for the identification, removal, storage, reinstatement and refurbishment of any components of the 'Palm Springs Walk of Stars' that are impacted by the build out of the Specific Plan.
Responsible Party: Project Proponent; City Planning Department; City Engineer; Palm Springs Walk of Stars.

B. Air Quality

Introduction and Background

The following section describes the existing air quality conditions in the project vicinity and region; analyzes project impacts to air quality as a result of implementing the Specific Plan; determines the level of significance of these impacts; and sets forth mitigation measures to minimize impacts to air quality. Information and data included in this section was obtained from a variety of sources, including research and analysis conducted for the project site, and local and regional-scale planning and environmental documents, which were utilized in determining the potential effects of project implementation. The site-specific analysis describes short term as well as long term impacts associated with development of the project.

Thresholds of Significance/Criteria For Determining Significance

The following significant thresholds or criteria are not strictly those recommended in 15064.7 of CEQA, rather they are derived from Appendix G of CEQA, which is used to determine if and to what extent a project may have a potentially significant impact on air quality. The Museum Market Plaza Project would have a significant effect on air quality if it is determined that the project will:

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

b.) Violate any air quality standards or contribute substantially to an existing or projected air quality violation.

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).

d.) Expose sensitive receptors to substantial pollutant concentrations.

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

City of Palm Springs General Plan Policy

The City of Palm Springs General Plan includes the following policies relating to Air Quality and applicable to the proposed project.

AQ1.1 Work to attain ozone, nitrogen dioxide, carbon monoxide, lead, particulate matter, and sulfate standards as enforced by SCAQMD.

AQ1.4 Incorporate the provisions of the SCAQMD Air Quality Management Plan into project review procedures.

AQ1.8 Support and implement the provisions of the Coachella Valley Dust Control Ordinance, Handbook, and Memorandum of Understanding

AQ2.1 Require those projects meeting specialized criteria as identified in the Zoning Ordinance to submit a Fugitive Dust Control Plan prior to the issuance of grading or building permits.

AQ2.2 Encourage the use of landscaping, vegetation, and other natural materials to trap particulate matter or control other pollutants. Establish windbreaks immediately downwind of large open spaces. Tree species used for windbreaks should be drought tolerant.

AQ2.6 Prohibit the transport of earth/soil through the City when wind gusts exceed 25 miles per hour per the City's PM_{10} Ordinance.

AQ2.7 Require the planting of vegetative ground covers as soon as possible on construction sites.

AQ2.9 Phase mass grading in a way that minimizes, to the greatest extent possible, the exposure of large expanses of graded areas to wind that causes blowing sand.

AQ2.10 Encourage that landscape plans submitted with new development take into consideration drought tolerance and pollen generation through the selection of appropriate plantings.

AQ4.1 Encourage the use of mass transit, carpooling, and other transportation options, including alternative-fuel vehicles and bicycles, to reduce vehicular trips.

AQ4.3 Establish a shuttle service linking the airport, attractions, convention center, major resort activities, and the Downtown area.

AQ4.4 Encourage walking or bicycling for short-distance trips through the creation of pedestrian-friendly sidewalks and street crossings and efficient and safe bikeways.

AQ4.5 Integrate land use and transportation planning to the greatest extent possible.

AQ4.6 Encourage the development of mixed-use and multi-use projects.

1. Existing Conditions

Air quality is dependent on the amount of emitted and dispersed pollutants locally and regionally, and upon climatic conditions that may reduce or enhance the formation of pollutants. Local development and population growth, traffic, construction activities, and various site disturbances in the Coachella Valley contribute to its air quality. Air quality in the Valley is also impacted by sources outside of the area, including Los Angeles, Riverside, and San Bernardino

Counties. In Riverside County and the Coachella Valley, a noticeable air quality deterioration has occurred over the past few decades.

Climatic Conditions and Air Quality

Meteorological conditions in the Coachella Valley are largely attributed to its geographic setting. Surrounding mountains effectively isolate the Valley from moderating coastal influences and create a hot and dry low-lying desert. Strong winds are typical in the Coachella Valley, and occur due to the buildup of a thermal low pressure area, and the incidental influx of cooler coastal air through the narrow San Gorgonio Pass.

Aeolian processes (erosion caused by wind) have created unique geological features in the Coachella Valley. These strong winds sweep up, suspend and transport large quantities of sand and dust, reducing visibility, damaging property and constituting a significant health threat.

Geological conditions in the Coachella Valley can result in air inversions, which trap a layer of stagnant air near the ground where it can be further loaded with pollutants. Inversions create conditions of haziness caused by suspended water, dust, and a variety of chemical aerosols emitted by vehicles, furnaces, and other sources. During the past few decades, the region has experienced a decline in air quality as a result of increasing development and population growth, traffic, construction activity and various site disturbances.

Air Quality Management and Regulation

Over the past several decades, federal and state governments have established air quality standards for a variety of pollutants. The Environmental Protection Agency (EPA) established the National Ambient Air Quality Standards (NAAQS) in 1971. The California Clean Air Act (CCAA) became effective on January 1, 1989 and mandated health-based air quality standards at the state level. The California Air Resources Board (CARB) developed these state standards, which are generally more stringent than federal standards. State Implementation Plans (SIP) may also be prepared to help regional air quality management districts meet the federal and state ambient air quality standards by the deadlines specified in the federal Clean Air Act (CAA) and emission reduction targets of the California Clean Air Act.

Regional and local agencies have assumed some responsibility for assuring that state and federal air quality standards are achieved. The Coachella Valley and a portion of Riverside County are located within the Salton Sea Air Basin (SSAB), previously part of the Southeast Desert Air Basin. The South Coast Air Quality Management District (SCAQMD) is responsible for establishing air quality measurement criteria and relevant management policies for the SSAB and neighboring air basins.

The 2007 Air Quality Management Plan[3] sets forth policies and other measures designed to help the District achieve federal and state ambient air quality standards. The Plan is intended to satisfy the planning requirements of both the federal and state Clean Air Acts. The SCAQMD also monitors daily pollutant levels and meteorological conditions throughout the District.

3 "Final 2007 Air Quality Management Plan," prepared by South Coast Air Quality Management District, adopted June 1, 2007.

The Coachella Valley Association of Governments (CVAG) and its member cities have taken an active role in the control and reduction of suspended particulate matter (PM_{10}) through the implementation of the State Implementation Plan (SIP) for PM_{10} in the Coachella Valley. This has included assistance in the monitoring of air quality and meteorological conditions, testing a variety of mitigation strategies, coordinating programs and funding, and reporting on progress being made in reducing PM_{10} levels in the Coachella Valley.

Primary and Secondary Pollutants

Air quality contaminants are generally categorized either as primary or secondary pollutants. Primary pollutants are those that result directly from energy production and utilization, generally only affect local areas, and do not undergo chemical modification. Primary pollutants are a direct consequence of the combustion of petroleum and other fuels, and produce oxides of carbon, sulfur, nitrogen and a number of reactive hydrocarbons and suspended particulates. Secondary pollutants are those that disperse and undergo chemical changes after emission, particularly under high ambient temperatures and high rates of solar insulation.

Ozone (O_3) is formed from the reaction of byproducts of the internal combustion engine with ultraviolet sunlight. Ozone, a pungent, colorless, toxic gas, is a common component of photochemical smog. Although some ozone is produced locally, most ozone pollutants enter the Valley via coastal winds from major metropolitan areas such as Los Angeles, Riverside and San Bernardino Counties. Influx of ozone from these densely populated counties contributes to high ozone concentrations locally. Ozone exposure may result in diminished breathing capacity, increased sensitivity to infections, and inflammation of the lung tissue. Most susceptible to the effects of ozone are children, the elderly, and persons with pre-existing lung disease.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas formed by incomplete combustion of fossil fuels. Wood burning stoves, incinerators, and industrial processes also release carbon monoxide. Concentrations of carbon monoxide are typically higher in the winter, when meteorological conditions favor the build-up of directly emitted contaminants. Health warnings and emergency episodes occur almost entirely during the winter. The most significant source of carbon monoxide is the gasoline-powered automobile, as a result of incomplete fuel combustion. Various industrial processes also emit carbon monoxide.

Nitrogen Oxides (NOx) are byproducts of the internal combustion engine, thermal power stations, and pulp mills. Once in the atmosphere, these compounds act as the primary receptors of ultraviolet light, initiating the photochemical reactions which produce smog. Nitric oxide combines with oxygen in the presence of reactive hydrocarbons and sunlight to form nitrogen dioxide and ozone. Oxides of nitrogen are contributors to other air pollution problems including high levels of fine particulate matter, poor visibility, and acid deposition.

Sulfur Dioxide (SO2) results from the combustion of high sulfur content fuels including coal and petroleum. Fuel combustion is the major source of sulfur dioxide, while chemical plants, sulfur recovery plants, and metal processing are minor contributors. In the atmosphere, sulfur dioxide reacts with water vapor to form sulfuric acid, a major component of acid rain.

Particulate Matter (PM_{10} and $PM_{2.5}$) consists of fine suspended particles 10 or 2.5 microns or smaller in diameter. Sources of PM_{10} and $PM_{2.5}$ include road dust, diesel soot, combustion products, windstorms, construction operations, and tire and brake abrasions. Particle erosion and fragmentation creates the majority of the PM_{10} in the Coachella Valley. Vehicular traffic may further grind these eroded particles, which are then re-suspended in the air. PM_{10} is associated with strong desert winds and is one of the most prevalent forms of pollution in the Coachella Valley.

Public health risks stemming from fine particulate matter are significant, and primarily jeopardize the elderly, children, and adults with pre-existing respiratory or cardiovascular disease. Over half of the smallest particulates inhaled will be deposited in, and may permanently damage, the lungs. These particulates may interfere with the body's ability to clear the respiratory tract, or may carry absorbed toxic substances.

Existing federal and state standards have been directed at reducing particulate matter of 10 microns or smaller. In December of 2006 the EPA revised the 24-hour federal standard for $PM_{2.5}$ from 65 $\mu g/m^3$ to 35 $\mu g/m^3$.

State and federal ambient air quality standards for ozone, particulate matter and other primary and secondary pollutants are shown in Table III-1. State standards are generally more restrictive than federal standards.

Table III-1
State and Federal Ambient Air Quality Standards

	State Standards		Federal Standards	
Pollutant	Averaging Time	Concentration	Averaging Time	Concentration
Ozone	1 hour	0.09 ppm	1 hour	0.12 ppm
	8 hour	0.07 ppm	8 hour	0.08 ppm
Carbon Monoxide	1 hour	20.0 ppm	1 hour	35.0 ppm
	8 hours	9.0 ppm	8 hours	9.0 ppm
Nitrogen Dioxide (NO2)	1 hour	0.18 ppm	AAM	0.053 ppm
	AAM	0.030 ppm		
Sulfur Dioxide	1 hour	0.25 ppm	AAM	0.03 ppm
	24 hours	0.04 ppm	24 hours	0.14 ppm
Particulate Matter (PM10)	24 hours	50 $\mu g/m^3$	24 hours	150 $\mu g/m^3$
	AAM	20 $\mu g/m^3$	AAM	50 $\mu g/m^3$
Particulate Matter (PM2.5)	AAM	12 $\mu g/m^3$	AAM	15 $\mu g/m^3$
			24 hours	35 $\mu g/m^3$

Notes: ppm = parts per million ; µg/ m3 = micrograms per cubic meter of air;
AAM = Annual Arithmetic Mean;
Source: California Air Resources Board, March 2008

Regional Pollutants of Concern

Ozone, PM_{10}, and $PM_{2.5}$ are the most prevalent air quality pollutants in the Coachella Valley and the project area. Locally, air pollution is the result of a variety of activities, including construction and grading, vehicular traffic, and the operation of heating devices, cooling, and ventilation equipment. However, a substantial amount of the pollution in the Coachella Valley can be attributed to regional geographic and climatic conditions.

Ozone Emissions

The Coachella Valley has a history of exceeding the prescribed ozone standards, although the number of days and months exceeding the federal one-hour ozone standard have dropped steadily over the past decade. The Environmental Protection Agency (EPA) classifies the Coachella Valley as being in "Serious" non-attainment for the 8-hour ozone standard. The 2007 AQMP requires that the Coachella Valley achieve attainment of the federal ozone air quality standard by June 15, 2013. Preliminary modeling conducted by SCAQMD indicates that attainment of the federal 8-hour ozone standard may not be achieved until 2019, and the District will voluntarily request that the Valley be re-designated from "Serious" non-attainment to "Severe 15"[4].

Although some ozone is produced locally by motor vehicles and other sources in the Coachella Valley, ozone monitoring data indicate that federal ozone standard exceedances in the Coachella Valley are largely the result of pollutant transport from the South Coast Air Basin, through the Banning Pass, located at the western end of the Coachella Valley[5]. Pollutant transport pathways from the South Coast Air Basin into the Coachella Valley have been identified and monitored. It is difficult to effectively quantify the total amount of pollutants imported from other regions. Nonetheless, improved air quality in the Coachella Valley is partially dependent upon reduced ozone emissions in the entire South Coast Air Basin.

PM_{10} and $PM_{2.5}$ Emissions

The Coachella Valley has a history of elevated PM_{10} levels closely associated with natural conditions such as blowsand, and human activities such as agriculture, urban development, and traffic. Finer sized particulate matter, $PM_{2.5}$, is also of concern, since both have the potential to cause adverse air quality conditions, which can affect human health.

The primary source of naturally occurring particulate matter is from sand migration or blowsand conditions. This environmental condition generates direct particle erosion and fragmentation during strong wind events. Blowsand that is deposited on road surfaces during strong wind events can be ground into smaller particles by motor vehicles and re-suspended. In order to limit impacts associated with suspended particulate matter local, regional, and state agencies have adopted policies to assure that abatement measures are in place.

In November 1990, amendments to the federal Clean Air Act (CAA) were adopted, requiring that the State Implementation Plan (SIP) for PM_{10} be revised to incorporate "reasonably

[4] "Final 2007 Air Quality Management Plan," prepared by South Coast Air Quality Management District, adopted June 2007.

[5] Ibid.

available control measures" for PM_{10}, and to establish a future attainment date for all areas that were previously unable to meet federal PM_{10} standards[6]. In response to this requirement, the South Coast Air Quality Management District adopted the "State Implementation Plan for PM10 for the Coachella Valley" (90-CVSIP). In January 1993, the U.S. EPA reclassified the Coachella Valley from a "moderate" to "serious" non-attainment area for PM_{10}[7]. The EPA adopted the latest CVSIP on April 18, 2003. The 2007 AQMP notes that between 2002 and 2007, annual average PM_{10} levels have met the revoked federal standard of 50 $\mu g/m^3$ and peak 24-hour average PM_{10} levels have not exceeded the current federal standard of 150 $\mu g/m^3$. Therefore, the Coachella Valley is currently eligible for re-designation as being in attainment for PM_{10}.

Palm Springs, CVAG, and its member cities have worked to implement policies and programs that aid in regulating and reducing PM_{10}. Examples of control measures implemented by local governments include adopting City-based dust control ordinances, implementing street cleaning programs, and reducing the amount of blowsand through the use of chemical stabilizers, site watering, and landscape treatments. In addition, CVAG and SCAQMD developed "Guidelines for Dust Control Plan Review for Coachella Valley Jurisdictions" in November 2000. The guidelines supplement local dust control ordinances and assist local government staff in reviewing dust control plans submitted for construction projects in the Valley.

Air Quality Monitoring Stations

The South Coast Air Quality Management District operates and maintains regional air quality monitoring stations at numerous locations throughout its jurisdiction. The project area is located within Source Receptor Area (SRA) 30, which includes monitoring stations in Palm Springs and Indio. The Indio site has been operational since 1985 and the Palm Springs site since 1987.

Table III-2 shows the maximum concentration of PM_{10}, and the number of days exceeding state and federal standards in the Coachella Valley from 1990 through 2007. Since 1996, PM_{10} levels have not exceeded federal standards. However, the region's PM_{10} levels continue to exceed state standards.

Ozone levels at the Palm Springs and Indio air quality monitoring stations from 1990 through 2007 are illustrated in Table III-3. Recorded data from 1990 through 2007 indicate that ozone levels in the Coachella Valley were significantly reduced in the last several years, and the Indio monitoring station has not recorded an exceedance of the federal standard since 1999.

[6] "Coachella Valley PM10 Attainment Redesignation Request and Maintenance Plan," prepared by South Coast Air Quality Management District, September 1996.

[7] Ibid.

Table III-2
Coachella Valley Air Quality Monitoring
Exceedance of PM_{10} Standards

Monitoring Station	Year	Maximum Concentration ($\mu g/m^3$/24hours)	No. (%) Samples Exceeding 24-hr. Standards		Annual Average ($\mu g/m^3$)	
			Federal[1]	State[2]	AAM[3]	AGM[4]
Palm Springs	1990	83	0 (0.0%)	9 (15.3%)	34.5	30.5
	1991	197	1 (1.8%)	14 (25.0%)	42.9	36.6
	1992	175	1 (1.7%)	4 (6.7%)	29.6	24.3
	1993	58	0 (0.0%)	1 (1.7%)	27.0	23.6
	1994	97	0 (0.0%)	23 (38.3%)	48.7	45.3
	1995^	199	1 (1.6%)	27 (44.3%)	52.0	47.2
	1996	130	0 (0.0%)	2 (3.3%)	29.3	25.2
	1997a)	63	0 (0.0%)	1 (1.8%)	26.4	23.6
	1998	72	0 (0.0%)	3 (5.2%)	26.4	23.8
	1999	104	0 (0.0%)	3 (5.0%)	28.8	26.1
	2000	44	0 (0.0%)	0 (0.0%)	24.4	22.7
	2001*	53	0 (0.0%)	1 (2.0%)	26.7	23.9
	2002*	75	0 (0.0%)	3 (5.1%)	27.1	24.6
	2003	108	0 (0.0%)	4 (6.7%)	27.1	N/A
	2004	79	0 (0.0%)	2 (3.4%)	26.4	N/A
	2005	66	0 (0.0%)	2 (3.4%)	25.9	25.4
	2006	73	0 (0.0%)	2 (3.5%)	24.5	ID
	2007	83	0 (0.0%)	6 (11.0%)	30.5	N/A
Indio	1990	520	4 (6.8%)	41 (69.5%)	79.3	64.9
	1991	340	3 (5.1%)	37 (62.7%)	69.0	59.8
	1992	117	0 (0.0%)	18 (30.5%)	43.4	39.2
	1993	125	0 (0.0%)	25 (41.0%)	46.4	40.6
	1994	97	0 (0.0%)	23 (38.3%)	48.7	45.3
	1995	199	1 (1.6%)	27 (44.3%)	52.0	47.2
	1996*	117	0 (0.0%)	29 (50.0%)	50.8	46.1
	1997a)*	144	0 (0.0%)	23 (42.6%)	49.1	44.2
	1998	114	0 (0.0%)	32 (40.0%)	48.1	43.8
	1999	119	0 (0.0%)	30 (54.0%)	52.7	49.8
	2000*	114	0 (0.0%)	52 (50.0%)	51.9	48.4
	2001*	149	0 (0.0%)	50 (45.0%)	50.2	44.3
	2002*	139	0 (0.0%)	52 (45.2%)	50.6	49.1
	2003*	124	0 (0.0%)	47 (42.0%)	50.2	N/A
	2004*	83	0 (0.0%)	23 (19.5%)	39.3	40.6
	2005*	106	0 (0.0%)	39 (34.2%)	45.7	45.4
	2006	122	0 (0.0%)	57 (49.6%)	52.7	ID
	2007	146+	0 (0.0%)	51 (59.0%)	53.5	N/A

Table III-3
Coachella Valley Air Quality Trends
Exceedance of Ozone Standards

Monitoring Station	Year	Max. Concentration in 1 Hour	No. Days Standard Exceeded	
			Federal[1]	State[2]
Palm Springs	1990	0.17 ppm	27	73
	1991	0.18 ppm	22	72
	1992	0.15 ppm	21	69
	1993	0.17 ppm	20	79
	1994[3]	0.17 ppm	13	71
	1995[3]	0.16 ppm	12	60
	1996	0.16 ppm	12	60
	1997*	0.16 ppm*	4*	45*
	1998	0.17 ppm	8	40
	1999	0.13 ppm	1	27
	2000	0.12 ppm	0	40
	2001	0.14 ppm	6	53
	2002	0.14 ppm	2	49
	2003	0.14 ppm	4	54
	2004	0.13 ppm	1	36
	2005	0.14 ppm	4	41
	2006	0.13 ppm	2	37
	2007	0.13 ppm	1	29
Indio	1990	0.16 ppm	10	47
	1991	0.18 ppm	13	48
	1992	0.14 ppm	8	45
	1993	0.16 ppm	3	25
	1994[3]	0.17 ppm	13	71
	1995[3]	0.16 ppm	9	49
	1996	0.12 ppm	0	26
	1997	0.11 ppm	0	3
	1998	0.13 ppm	2	16
	1999	0.13 ppm	1	13
	2000	0.11 ppm	0	43
	2001	0.11 ppm	0	21
	2002	0.11 ppm	0	24
	2003	0.12 ppm	0	24
	2004	0.11 ppm	0	23
	2005	0.11 ppm	0	18
	2006	0.10 ppm	0	4
	2007	0.11 ppm	0	8

[1] = > 0.12 parts per million in 1 hour
[2] = > 0.09 parts per million in 1 hour
* Less than 12 full months of data; may not be representative.
Source: Annual air quality site monitoring reports, prepared by SCAQMD.

Air Quality and Climate Change

Air quality is a concern due to human health issues, and because air pollutants are thought to be contributing to global warming and climate change. Air pollution is defined as a chemical, physical or biological process that modifies the characteristics of the atmosphere. The primary contributor to air pollution is the burning of fossil fuels through the use of automobiles, power and heat generators, and industrial processes. The byproduct from the combustion of fossil fuels can contain a number of air polluting substances. These emissions are responsible for the poor air quality that is evident in industrial centers worldwide.

Some air polluting agents are also greenhouse gases (GHG), such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride), which are released into the atmosphere through natural processes and human activities. These gases are termed greenhouse gases due to their shared characteristic of trapping heat, and may be responsible for the global average increase in surface temperatures of 1.0-1.7°F that were observed during the 20th century[8]. The quantity of greenhouse gases in the atmosphere has increased drastically over a relatively short period. For example, by 2005 the concentration of CO_2 in the atmosphere had increased by 36%, methane by 148%, and nitrous oxide by 18% since pre-industrial times[9].

Carbon dioxide is the primary greenhouse gas that is stimulating concern, due to current and projected levels and the highly correlated temperature regression curve -- temperatures rise as carbon dioxide levels rise. Currently, carbon dioxide concentrations in the atmosphere are 382 parts per million (ppm). Comparatively, prior to the Industrial Revolution, about 250 years ago, CO_2 levels were 278 ppm; over the past 650,000 years carbon dioxide levels have fluctuated between 180 and 300 ppm,[10] making present day CO_2 levels greater than at any point in the past 650,000 years.

There is much debate over what the effects of climate change will be, but there is a general consensus that the levels of hydrocarbon emissions need to be reduced in order to minimize air pollution and limit the amount of carbon dioxide that is released. Carbon dioxide levels (382 ppm in 2006) are projected to increase to at least 540 ppm, and as much as 970 ppm, by the year 2100[11]. Currently, there are limited incentives for reducing emission and few laws that require reductions, however some regulations have been adopted.

California was the first state to establish regulations that require the reduction of emissions from motor vehicles. On September 24, 2004, the California Air Resources Board (CARB) implemented a bill that requires all 2009 and later vehicles to reduce their greenhouse gas emissions by about 30% by the year 2016[12]. In addition, the California Global Warming Solutions Act of 2006 has been passed in order to comprehensively limit GHG emissions at the

8 "Working Group III contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report,"; Climate Change 2007: Mitigation of Climate Change.

9 U.S. Environmental Protection Agency, Climate Change, Atmosphere Changes; http://www.epa.gov/climatechange/science/recentac.html

10 "Working Group III contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report,"; Climate Change 2007: Mitigation of Climate Change.

11 Ibid.

12 http://www.ucsusa.org/clean_vehicles/vehicles_health/californias-global-warming-vehicle-law.html

state level, by establishing an annual reporting program of GHG emissions for significant sources, and setting emissions limits to cut the state's GHG emissions to 1990 levels by 2020. It is anticipated that additional regulations will be adopted in future years as the effects of global warming become more problematic. In the interim, it is prudent to incorporate air pollution reduction techniques into any project's design.

GHG Thresholds

Assembly Bill 32, signed in 2006, requires the ARB to develop regulation on how the state will combat global warming. To date the CARB, Environmental Protection Agency (EPA), or other regulatory agencies, have not adopted thresholds to analyze project level impacts on climate change. In the absence of published CEQA thresholds for emissions of greenhouse gases, impacts would be considered significant if it were determined that the project interferes with the goals of AB 32. As mentioned above, the Global Warming Solutions Act (AB 32) requires the state to cut GHG emission to 1990 level by the year 2020. Therefore, for the purpose of the following analysis impacts associated with GHG emissions would be significant if GHG levels emitted by the project interfere with the ability AB 32 to achieve the intended reductions by 2020.

2. Project Impacts

Implementation of the proposed Museum Market Plaza Specific Plan will result in construction on approximately 20.6± acres in the City of Palm Springs. The site is predominantly occupied by underutilized buildings, most of which are vacant. Therefore, the project will require demolition of several existing structures. For purposes of this analysis, the land use plan is expected to include 955 high density residential units (condominiums), 275,000 square feet of retail commercial, 100,000 square feet of office space, 25,000 square feet of restaurant use, and 620 hotel rooms. At buildout, the project is expected to generate a total of 27,520 two-way vehicle trips per day[13]. All of these uses will contribute air pollutants locally and regionally. The most significant impacts are expected to come from the emission of pollutants by vehicular traffic. It is important to note that the project site is currently developed, and although underutilized, generates air emissions from existing vehicle trips. The analysis below details the emissions associated with the proposed project, including the project's vehicle trips, and provides information on those emissions, less the emissions which already occur as a result of existing development on the site.

Other important sources of pollutants will be emissions generated during site preparation activities, including fugitive dust from site disturbance, demolition, and construction activities. Upon operation, the utilization of natural gas and electricity will contribute to the degradation of air quality. The following discussion describes the major sources of air pollutants associated with the development of the project and calculates the potential emissions.

Air quality impacts are based the assumption that demolition will occur in 2010, construction will occur in 2012, and build out will occur in 2016. In order to be conservative, moving source emissions assume a fleet composition based on the build out year, 2016.

[13] "Palm Springs Museum Market Plaza Specific Plan Traffic Impact Study," Table 4-1: Site Trip Generation Forecast By Alternative, prepared by Endo Engineering, September 2008.

Fugitive Dust

Fugitive dust generation is associated with the grubbing, grading and demolition on the project site. The formula for estimating fugitive dust generation associated with the project, and its direct application to project acreage, is presented below.

Table III-4
Calculations of Fugitive Dust Potential

Area to be Disturbed	Factor	Total Potential Dust Generation
20.6 ± acres	26.4 lbs./day/acre	543.8 lbs./day

Source: Table A9-9, "CEQA Air Quality Handbook," prepared by South Coast Air Quality Management District, April 1993.

Fugitive dust generation is expected to occur on a short-term basis, with demolition and mass grading of the site to occur in the initial phase of development (2010). Emission estimates are indicators of potential maximum short-term impacts during the site grading and site preparation period. Without mitigation, mass grading of the site will exceed SCAQMD thresholds of significance, and represent a potentially significant impact.

As discussed above, grading is tightly regulated in the South Coast Air Quality Basin. Detailed grading and dust control plans including site stabilization strategies, must be approved prior to any site disturbance. Therefore, likely actual daily emissions associated with demolition, grubbing, grading, and other site disturbance will be substantially lower.

Site Preparation/Demolition

Local air quality will be impacted during the site preparation/demolition phase of the project. Emissions will be generated by demolition equipment as well as vehicles transporting workers to and from the project site. Table III-5 summarizes projected emissions associated with the demolition phase of the project. (Please also see Appendix B, Tables 1A and 1B.)

Table III-5
Demolition - Related Emissions Summary
(pounds per day)

Activity	CO	NOx	ROG	SOx	PM_{10}	$PM_{2.5}$	CO_2
Equipment Emissions	40.9	95.0	11.6	0.1	4.7	4.1	9,252
Workers' Vehicle Emissions	1.3	1.1	0.2	0.0	0.0	0.0	191
Total Emissions	**42.2**	**96.1**	**11.8**	**0.1**	**4.7**	**4.2**	**9,443**
SCAQMD Thresholds of Significance	**550**	**100**	**75**	**150**	**150**	**55**	**N/A**

As shown in the Table above, emissions during site preparation/demolition are not expected to exceed SCAQMD thresholds of significance for any criteria pollutant.

Grading Related Emissions

The following table (Table III-6) shows the summary of projected emissions associated with the grading of the project site, including equipment emissions and moving exhaust emissions for workers commuting to and from the site. The total number of vehicle trips per day assumes travel between work and home, with one trip each way, or two per worker per day. Detailed tables, which include equipment type and quantity, projected hours of operation, and emission factor, can be found in Appendix B.

Table III-6
Grading - Related Emissions Summary
(pounds per day)

Activity	CO	NOx	ROG	SOx	PM_{10}	$PM_{2.5}$	CO_2
Equipment Emissions	51.41	117.20	20.19	0.26	4.78	4.25	11,217
Workers' Vehicle Emissions	1.44	1.13	0.19	0.00	0.05	0.04	242
Total Emissions	**52.86**	**118.33**	**20.37**	**0.26**	**4.83**	**4.29**	**11,459**
SCAQMD Thresholds of Significance	**550**	**100**	**75**	**150**	**150**	**55**	**N/A**

As previously mentioned air quality projections are intended to represent the worst-case emissions in pounds per day. It should be noted that not all equipment will be utilized every day; that air quality impacts are short-term; and that they will occur only during the site-grading phase of the project. Table III-6 shows that one threshold criteria pollutant, nitrogen oxide, is expected to be exceeded without the implementation of mitigation measures during this phase of the project.

Construction Related Emissions

Air quality will be affected temporarily during the construction phase of the project. Emissions will be generated by construction equipment and vehicles transporting construction workers to and from the project site, as well as the application of asphalt and architectural coatings. Air quality impacts from construction related activities are assumed to start in 2010 with buildout occurring in 2016.

The following table (Table III-7) summarizes projected emissions in pounds per day from construction related activities for the proposed project. The table shows that no threshold criteria are expected to be exceeded during construction activities. As with other project emissions, estimates represent a worst case scenario in the event that several types of equipment are in use simultaneously, and that paving and architectural coatings are being applied concurrently. Air quality impacts from construction are short-term and will occur only during the construction phase of the project. (Please also see Appendix E Tables 4A through 4D.)

Table III-7
Construction Emissions Summary
(pounds per day)

Activity	CO	NOx	ROG	SOx	PM_{10}	$PM_{2.5}$	CO_2
Equipment Emissions	29.46	53.19	7.34	0.07	3.12	2.78	6,332
Workers' Vehicle Emissions	1.88	1.47	0.25	0.00	0.06	0.05	314
Asphalt Paving Emissions	-	-	5.40	-	-	-	-
Architectural Coatings Emissions	-	-	46.25	-	-	-	-
Total Construction Emissions	**31.34**	**54.66**	**59.23**	**0.07**	**3.18**	**2.83**	**6,646**
SCAQMD Thresholds of Significance	**550**	**100**	**75**	**150**	**150**	**55**	**N/A**

Operational Emissions

Stationary Source Emissions

Calculations of stationary source emissions include emissions from electrical power plants as well as the consumption of natural gas for space and water heating, cooking, and related activities. Power plant emissions consist primarily of combustion products, such as carbon monoxide (CO), oxides of nitrogen (NO_x), reactive organic gases (ROG), sulfur oxides (SO_x), particulate matter (PM_{10} and $PM_{2.5}$), and carbon dioxide (CO_2).

The cities in the Coachella Valley, in response to the desert environment, have placed stringent performance demands on development, which result in the use of superior building technologies and materials. These technologies and adherence to California Title 24 building codes ensure more efficient use of energy, and can also reduce emissions from power plants and the use of natural gas.

Table III-8 shows potential power plant emissions associated with annual electricity consumption by development on the project site. Electricity usage is estimated by applying the Southern California Edison electrical power usage rates to anticipated development on a per-unit or per square foot basis. These figures are multiplied by the emission generation factors set forth in the South Coast Air Quality Management District (SCAQMD) EIR Handbook[14].

[14] Table A9-11-A, "CEQA Air Quality Handbook," prepared by the South Coast Air Quality Management District, April 1993.

Table III-8
Power Plant Emission Projections at Project Buildout
(Lbs. per 1,000 kwh)

Land Use Type	Annual Electric Energy Usage (kwh/unit (s.f) /year)	Total No. Units/S.F.	Total Annual Electric Usage (kwh)
Residential (Dwelling Units)[1]	5,626.50	955	5,373,308
Hotel[2]	9.95	498,430	4,959,382
Retail / Commercial[3]	13.55	275,000	3,726,250
Office[4]	12.95	100,000	1,295,000
Restaurant[5]	47.45	25,000	1,186,250
		Total	**16,540,190**

Pollutants	Carbon Monoxide	Nitrogen Oxides	Reactive Organic Gases	Sulfur Oxides	Particulates
Project (mw/yr)	16,540.19	16,540.19	16,540.19	16,540.19	16,540.19
Factor (lbs/mw/hr)	0.2	1.15	0.12	0.04	0.01
Lbs./Year	3308.0	19021.2	1984.8	661.6	165.4
Lbs./Day	**9.063**	**52.11**	**5.44**	**1.81**	**0.45**

Source: Museum Market Plaza Specific Plan, Terra Nova Planning & Research, April 2008. Usage rates are based on Table A9-11-A, Electricity Usage Rate, "CEQA Air Quality Handbook," prepared by the South Coast Air Quality Management District, April 1993.
1) Residential: includes 955 attached units including those units.
2) Hotel includes all hotels within the planning area, and is based on an average hotel room size of 803.92 square feet.
3) Retail/Commercial is estimated to be 68.75% of total projected area for office and retail (400,000 square feet) as cited in the Specific Plan.
4) Office is estimated to be 25% of total projected area for office and retail (400,000 square feet) as cited in the Specific Plan.
5) Restaurant is estimated to be 6.25% of total projected area for office and retail (400,000 square feet) as cited in the Specific Plan.

Natural gas emissions are calculated using the average monthly consumption factor established by Southern California Gas Company/Sempra Energy. The same pollutants for power plant emissions are calculated for natural gas with emission factors specific to use of this fuel. Also, as with power plant emissions, the consumption factors vary with type of land use. Further, emission factor differ between residential and non-residential components, as seen in Table III-9 below.

Table III-9
Emissions Associated with Natural Gas Consumption at Project Buildout
(lbs./cubic foot)

Land Use Type	Usage Rate (cf/sqft/month)	Units/ Square Feet	Total Monthly Natural Gas Usage
Residential (Dwelling Units)[1]	4,011.5	955	3,830,983
Hotel[2]	4.8	498,430	2,392,466
Retail / Commercial[3]	2.9	275,000	797,500
Office[4]	2.0	100,000	200,000
Restaurant[5]	4.8	25,000	120,000
		Total	**7,340,948**

Pollutants	Carbon Monoxide	Nitrogen Oxides	Sulfur Oxides	Particulates	Reactive Organic Gases
Residential (cf/day/mil.)	0.13	0.13	0.13	0.13	0.13
Residential Factor (lbs/mil. cf)	20.0	80.0	5.3	Negligible	0.2
Non Residential (cf/day/mil.)	0.12	0.12	0.12	0.12	0.12
Non Residential Factor (lbs/mil. cf)	20.0	120.0	5.3	Negligible	0.2
Lbs./Day	**4.8**	**46.6**	**1.3**	**Negligible**	**0.0**

Source: Museum Market Plaza Specific Plan, Terra Nova Planning & Research, April 2008. Usage rates are based on Table A9-11-A, Electricity Usage Rate, "CEQA Air Quality Handbook," prepared by the South Coast Air Quality Management District, April 1993.
1) Residential: includes 955 attached units including those units.
2) Hotel includes all hotels within the planning area, and is based on an average hotel room size of 803.92 square feet.
3) Retail/Commercial is estimated to be 68.75% of total projected area for office and retail (400,000 square feet) as cited in the Specific Plan.
4) Office is estimated to be 25% of total projected area for office and retail (400,000 square feet) as cited in the Specific Plan.
5) Restaurant is estimated to be 6.25% of total projected area for office and retail (400,000 square feet) as cited in the Specific Plan.

Moving Source Emissions

A comprehensive traffic impact analysis was prepared to evaluate the potential traffic and circulation impacts associated with buildout of the project (See Appendix G). According to the traffic study, Table 4-1, project buildout is expected to result in a maximum of 27,520 two-way vehicle trips per day. As seen in Table 4-2 of the traffic study and described therein, after accounting for internal trip interactions, an adjusted maximum two-way trip rate of 26,060 trips per day is calculated at projected build out.

Emissions from vehicles at project buildout are shown in Table III-10, below. Emissions are calculated using emission factors provided by the California Air Resources Board (CARB) EMFAC2007 (version 2.3), in which emissions are projected to begin in Year 2016.

In order to quantify the daily emissions associated with 26,060 two-way trips, it was assumed that all trips would be approximately 6.8 miles round trip, consistent with the SCAQMD trip length assumption provided in the CEQA Handbook. Using this methodology it was estimated that 177,208 miles per day would be traveled at project buildout. In addition, to account for delivery trucks, which have higher emissions compared to passenger vehicles it was assumed that delivery trucks account for 2% of the total miles traveled and passenger vehicles account for 98% of the traffic mix.

Table III-10
Daily Exhaust Emission Projections at Project Build out
(pounds per day)

Total Miles Traveled per Day				=			**177,208**
Pollutant	**CO**	**NOx**	**ROG**	**SOx**	**PM_{10}**	**$PM_{2.5}$**	**CO2**
Passenger Vehicles	999.96	96.66	109.85	1.86	16.31	10.65	192,207.08
Delivery Trucks	38.30	41.57	5.72	0.10	1.65	1.34	10,034.73
Total Pounds per Day	**1,038.25**	**138.23**	**115.57**	**1.96**	**17.96**	**11.99**	**202,242**

Source: EMFAC 2007 (Version 2.3) Emissions Factors for On-Road Passenger Vehicles & Delivery Trucks. Passenger Vehicles are < 8500 lbs, and Delivery Trucks are > 8500 lbs. Passenger vehicles are assumed to be traveled by 98% of the total trips and delivery trucks represent 2% of total miles traveled.

It should be noted that the emission generation factors used in the above moving emission calculations are partially based on projected motor vehicle rates of emission for the year 2016. It is expected in all cases that, in the future, emitters will become more efficient and will emit less pollutants as new combustion technologies come on-line. The impact of new technologies is difficult to anticipate; and even projected future rates of emissions for vehicular traffic cannot be considered definitive, although substantial progress continues to be made in reductions per vehicle mile traveled.

Summary of Operational Impacts

The following table summarizes the potential generation and emission of pollutants associated with day-to-day operations of the proposed project at buildout, and includes power plant emissions, natural gas emissions, and emissions associated with vehicles.

It should be mentioned that the majority of the area's electrical power is generated in air basins outside the Coachella Valley, and development of the proposed project will also contribute to the cumulative impacts on air quality elsewhere.

The Coachella Valley is a major producer of essentially zero emission electricity via the wind farms in the San Gorgonio Pass. Very low emission electricity is also generated from geothermal resources at the south end of the Salton Sea, in Imperial County. Greater reliance on transitional fossil fuels such as natural gas will continue to lower pollutant emissions per kilowatt in the near to mid-term. Mandatory smog checks implemented by the State of California help assure compliance of motor vehicles with existing standards.

Table III-11 summarizes the worst-case air quality emissions in pounds per day at build out of the project. As shown in the table, three threshold criteria are expected to be exceeded without the application of mitigation measures; these include carbon monoxide, nitrogen oxides, and reactive organic gasses. These impacts can be mitigated to a certain degree, but will remain significant and unavoidable, and require Findings and a Statement of Overriding Considerations for emission that can not be reduced to levels below the SCAQMD thresholds. Regardless of mitigation measures, development of the Specific Plan will contribute to cumulative air quality impacts in the project area and region.

Table III-11
Anticipated Cumulative Project-Related Emissions
Associated with Build out of the Proposed Project

	Stationary Source Emissions		Moving Source Emissions	Total Anticipated Emissions (lbs./day)	SCAQMD Threshold Criteria* (lbs./day)
	Power Plants	Nat.Gas Consumption			
Carbon Monoxide	9.1	4.8	1,038.25	**1,052.14**	**550.0**
Nitrogen Oxides	52.1	46.6	138.23	**236.95**	**100.0**
Reactive Organic Gases	5.4	1.3	115.57	**122.29**	**75.0**
Sulfur Oxides	1.8	Negligible	1.96	**3.77**	**150.0**
Particulates	0.5	0.0	29.95	**30.45**	**55.0**
Carbon Dioxide	-	-	202,241.81	**202,241.81**	**N/A**

* Threshold criteria offered by the South Coast Air Quality Management District for assistance in determining the significance of air quality impacts. Source: "CEQA Air Quality Handbook," prepared by South Coast Air Quality Management District, April 1993; revised October 2006.

Existing Emissions and Net Contribution

As mentioned, existing users onsite generate emissions, as shown in Table III-12 below. This table quantifies the total existing emissions that are generated daily onsite based on 380,977 square feet of development, and assumes that 68.75% is commercial, 25% is office, and 6.25% is restaurant uses. Detailed tables for existing emissions can be found in Appendix B.

Table III-12
Existing Daily Emissions

	Stationary Source Emissions		Moving Source Emissions	Total Anticipated Emissions (lbs./day)	SCAQMD Threshold Criteria* (lbs./day)
	Power Plants	Nat.Gas Consumption			
Carbon Monoxide	3.65	23.14	408.77	**435.56**	**550.0**
Nitrogen Oxides	20.98	36.53	54.42	**111.93**	**100.0**
Reactive Organic Gases	2.19	6.13	45.50	**53.82**	**75.0**
Sulfur Oxides	0.73	Negligible	0.77	**1.50**	**150.0**
Particulates	0.18	0.23	11.79	**12.21**	**55.0**
Carbon Dioxide	-	-	79,624	**79,624**	**N/A**

* Threshold criteria offered by the South Coast Air Quality Management District for assistance in determining the significance of air quality impacts. Source: "CEQA Air Quality Handbook," prepared by South Coast Air Quality Management District, April 1993.

It should be noted that emission projections set forth above for the proposed project identify the gross contribution of criteria pollutants at build out of the Specific Plan. Net emissions, which account for the difference between the existing and proposed emissions, are presented in Table III-13 below.

Table III-13
Net Emissions at Build out of the Proposed Project

	Gross Emissions	Existing Emissions	Net Emissions	SCAQMD Thresholds
Carbon Monoxide	1,052.14	435.56	**616.58**	**550.0**
Nitrogen Oxides	236.95	111.93	**125.02**	**100.0**
Reactive Organic Gases	122.29	53.82	**68.47**	**75.0**
Sulfur Oxides	3.77	1.5	**2.27**	**150.0**
Particulates	30.45	12.21	**18.24**	**55.0**
Carbon Dioxide	202,242	79,624	**122,618**	**N/A**
Source: Based on Tables III-? and III-?.				

As seen in Table III-13 above, after accounting for the existing emissions onsite, two criteria pollutants, carbon monoxide, and nitrogen oxides, will exceed thresholds as established by SCAQMD. Furthermore, estimated nitrogen oxides currently exceed established thresholds. Although all reasonable mitigation measures have been incorporated in the measures provided below, emissions are expected to continue to exceed thresholds, thereby constituting unavoidable significant impacts to air quality, which will require Findings and a Statement of Overriding Considerations.

Climate Change and Greenhouse Gases

The proposed project has the potential to incrementally contribute to global climate change, primarily through the combustion of fossil fuels used in automobiles, as well as indirectly through the generation of electricity at power plants. These activities contribute to climate change and global warming by releasing greenhouse gases (GHG).

Although CEQA has yet to establish significance thresholds for greenhouse gases, for the purposes of this analysis it was assumed that development activities and operations that interfere with the objectives of AB 32 would be considered to have a significant impact. As previously mentioned, AB 32 requires a coordinated effort to curb greenhouse gas emissions within the state of California. Specifically, the Bill requires the state board to adopt a statewide greenhouse gas emissions limit, so that by the year 2020 GHG emissions are at or below 1990 emission levels.

The Museum Market Plaza Specific Plan is designed to reduce per capita emissions. This is accomplished by the increased efficiency that results from high density. Onsite structures will utilize passive and active design parameters to reduce heating and cooling, and all appliances will be energy efficient. Furthermore, the site's location, in Downtown Palm Springs, will allow residents access to nearby amenities without the need to use a vehicle. These efforts will reduce overall emissions associated with build out of the proposed project, which will limit emission of greenhouse gases and the project's cumulative contribution to global warming.

Table III-14 shows that at build out, the annual CO_2 equivalent emissions for indirect electricity use onsite is estimated at 6,045 metric tons or 36,512 pounds per day.

Table III-14
Projected Emissions from Indirect Electricity Use at Project Buildout

Electricity Use[1]	**kwh per year**	**16,540,190**	**mwh per year**	**16,540**
Emissions	**Emission Factor (Lbs/MWh)[2]**	**Projected Emissions (Lbs/Year)**	**Projected Emissions (Tons/Year)**	**Metric Tons per Year**
Carbon Dioxide (CO2)	804.54	13,307,244	6,654	6,035
Methane (CH4)	0.0067	110.82	0.0554	0.05
Nitrous Oxide (N2O)	0.0037	61.20	0.0306	0.03
Total		**13,307,416**	**6,654**	**6,035**
			CO_2 Equivalent per Year[3]	**6,045**

1 Electricity Usage rate is estimated using SCAQMD CEQA Handbook, Table A9-11-A, 1993.
2 Emission factors from "California Climate Action Registry General Reporting Protocol: Tables E.1, C5 and C6," version 3.0 prepared by California Climate Action Registry, April 2008.
3 CO2 Equivalent is based on SAR (1996) global warming potential of 21 for CH4 and 310 for N20.
Note that electricity consumption does not consider the transport of water.

As shown in Table III-15, carbon dioxide equivalent emissions from natural gas use onsite are expected to average approximately 4,823 metric tons per year or 29,131 pounds per day.

Table III-15
Projected Emissions from Natural Gas Use at Project Build Out

Natural Gas Use[1]	**Cubic Feet per Day**	**241,346**	**Cubic Feet per Year**		**88,091,376**
			MMBtu[2]		**90,558**
Emissions	**Emission Factor**	**Unit**	**Projected Emissions (kg/Year)**	**Projected Emissions (Tons/Year)**	**Metric Tons per Year**
Carbon Dioxide (CO2)[3]	0.0546	kg CO2/ cubic foot	4,809,789	5,302	4,808.76
Methane (CH4)[4]	0.0059	kg CH4/ MMBtu	534.29	0.59	0.53
Nitrous Oxide (N2O)[4]	0.0001	kg CH4/ MMBtu	9.06	0.01	0.01
		Total	**4,810,332**	**5,302**	**4,809**
				CO_2 Equivalent per Year[5]	**4,823**

1 Natural Usage rate is estimated using SCAQMD CEQA Handbook, Table A9-12, 1993.
2 Btu assumes 1,028 Btu per cubic foot. "Table A4 Approximate Heat Content of Natural Gas 1949-2007," energy information administration.
3 "Calculations and References," of the Greenhouse Gas Equivalencies Calculator, prepared by EPA and last updated on August 4, 2008.
4 Emission factors from "California Climate Action Registry General Reporting Protocol: Equations III.8d," version 3.0 prepared by California Climate Action Registry, April 2008.
5 CO_2 Equivalent is based on SAR (1996) global warming potential of 21 for CH4 and 310 for N20.

Greenhouse gas emissions from moving sources are estimated to be 29,791 metric tons of carbon dioxide equivalent per year or 179,940 pounds per day, as shown in Table III-16.

Table III-16
Projected GHG Emissions from Moving Sources

Vehicle Type	**Miles Per Day[1]**		**Miles Per Year**		**Gallons Per Year[2]**
Passenger Car	173,664		63,387,302		3,217,630
Light Duty Truck	3,544		1,293,618		65,666
Total	**177,208**		**64,680,920**		**3,283,296**
Emission Type	**Emission Factor Car[5]**	**Emission Factor Truck[6]**	**Unit[3]**	**Metric Tons per Year**	**CO2 Equivalent per Year[7]**
Carbon Dioxide (CO2)[3]	0.00881	0.00881	metric tons / gallon	28,926	28,926
Methane (CH4)[4]	0.04	0.05	grams/mile	2.60	55
Nitrous Oxide (N2O)[4]	0.04	0.06	grams/mile	2.61	810
			Total	**28,931**	**29,791**

1 Miles per year are based on the "Palm Springs Museum Market Plaza Specific Plan Traffic Impact Study," Table 4-1: Site Trip Generation Forecast By Alternative, prepared by Endo Engineering, September 2008. The mix of vehicles assumes 98 percent of total miles traveled are passenger cars and 2 percent are light duty trucks.
2 To quantify the estimated gallons of gasoline that the project will use per year for the Moving Source component, 19.7 miles per gallon was assumed.
3 Emission factor for CO2 is from "Calculations and References," of the Greenhouse Gas Equivalencies Calculator, prepared by EPA and last updated on August 4, 2008.
4 Emission factors from "California Climate Action Registry General Reporting Protocol: Tables C5 and C6," version 3.0 prepared by California Climate Action Registry, April 2008.
5 Passenger cars are based on factors given for the use of gasoline and are based on model year 2000 to present.
6 Light duty trucks assume the use of gasoline and are based on model year 2000 to present.
7 CO2 Equivalent is based on SAR (1996) global warming potential of 21 for CH4 and 310 for N20.

In summary, build out of the proposed project is estimated to generate 40,658 metric tons of carbon dioxide equivalent per year, or 245,577 pounds per day, as shown in Table III-17.

Table III-17
Annual GHG Summary

Emission Source	**CO_2 Equivalent Metric Tons**	**CO_2 Equivalent Million Metric Tons**
Electricity	6,044.49	0.006
Natural Gas	4,822.78	0.005
Moving Source	29,790.50	0.030
Total	**40,657.78**	**0.041**

Source: Tables III-14 through III-16.

In comparison, the total carbon dioxide equivalent emissions in California for the year 2004 was estimated to be 500 million metric tons. At build out the project will contribute approximately 0.008% of the total California emissions estimated for 2004. In 2005 the total carbon dioxide equivalent emissions for the United States was estimated at 7,260.4 million metric tons. The project represents 0.001% of the total emissions for the US as estimated in year 2005. As state and federal requirements are established in coming years, to reduce and limit greenhouse gas emissions, project developers, owners, tenants, and residents will be obligated to follow these regulations.

Existing Emissions and Net Contribution for GHG

As previously mentioned, existing land uses onsite contribute to greenhouse gas emissions. Table III-18 below, estimated the existing annual ghg emissions onsite to be 14,923 metric tons of carbon dioxide equivalent, or 90,136 pounds per day. See Appendix B, Tables 16A through 16C.

Table III-18
Existing GHG Emissions
Annual Summary

Emission Source	CO_2 Equivalent Metric Tons	CO_2 Equivalent Million Metric Tons
Electricity	2,433.69	0.002
Natural Gas	760.24	0.001
Moving Source	11,728.72	0.012
Total	**14,922.66**	**0.015**

In order to quantify the amount of greenhouse gas emissions that will be added to the existing emissions the following Table was prepared. As seen in Table III-19 below, the net carbon dioxide equivalent at project build out is estimated to be 25,735 metric tons per year or 155,441 pounds per day.

Table III-19
Net GHG Emissions
(Metric Tons)

Emission Source	Gross CO_2 Equivalent	Existing CO_2 Equivalent	Net CO_2 Equivalent
Electricity	6,044.49	2,433.69	3,610.80
Natural Gas	4,822.78	760.24	4,062.54
Moving Source	29,790.50	11,728.72	18,061.78
Total	**40,657.78**	**14,922.66**	**25,735.12**

For comparison purposes and as previously stated, the total carbon dioxide equivalent emissions in California for the year 2004 was estimated to be 500 million metric tons. At build out the project's net GHG contribution is estimated to be 0.005% of the total California emissions estimated for 2004. In 2005 the total carbon dioxide equivalent emissions for the United States

was estimated at 7,260.4 million metric tons. The project represents 0.0004% of the total emissions for the US as estimated in year 2005.

3. Mitigation Measures

There are several actions that can be taken to further reduce the various project impacts on air quality. Mitigation measures listed below are embodied in the Palm Springs General Plan and associated EIR, as well as other measures promulgated by CVAG and SCAQMD to mitigate development impacts within the Coachella Valley. These measures shall be applied to all phases of project development. However, operational air quality impacts are expected to be significant, even with the implementation of mitigation measures. The following general control and mitigation measures shall ensure that impacts to air quality and climate change are reduced to the greatest extent possible.

1. Grading and development permits shall be reviewed and conditioned to require the provision of all reasonably available methods and technologies to assure the minimal emissions of pollutants from the development (see Table III-20 below), including proper vehicle maintenance and site watering schedules.

Table III-20
Available Emission Reduction Technologies

	Daily Emission Reduction Factors				
Diesel Equipment	ROG	NOx	PM_{10}	CO	SOx
Aqueous Fuel	0%	14%	63%	0%	0%
Diesel Particle Filter	0%	0%	80%	0%	0%
Cooled Exhaust Gas Recirculation	90%	40%	85%	90%	0%
Lean NOx Catalyst	0%	20%	0%	0%	0%
Diesel Oxidation Catalyst	0%	20%	0%	0%	0%
Worker Trips	ROG	NOx	PM_{10}	CO	SOx
Use Shuttle to Retail Establishments at Lunch	1%	1.3%	1.3%	1.3%	1.3%

Source: Urban Emissions Model (URBEMIS2002) version 8.7.0 April 2005; developed by the California Air Resources Board (CARB) as a modeling tool to assist local public agencies with estimating air quality impacts from land use projects when preparing a CEQA environmental analysis.

2. The City shall coordinate with the project developers to encourage the phasing and staging of development to assure the lowest construction-related pollutant emission levels practical. As part of the grading permit process, the applicant shall concurrently submit a dust control plan as required by SCAQMD in compliance with Rule 403 (see Table III-21 below).

Table III-21
Fugitive Dust Control Methods

Daily PM_{10} Reduction	
Apply Soil Stabilizers to Inactive Areas	30%
Replace Ground Cover in Disturbed Areas Quickly	15%
Water Exposed Surfaces 2 Times Daily	34%
Water Exposed Surfaces 3 Times Daily	50%

Source: Urban Emissions Model (URBEMIS2002) version 8.7.0, April 2005.

3. In response to requirements of SCAQMD to monitor air quality impacts associated with fugitive dust from site disturbance and grading activities, all construction activities within the project boundary shall be subject to Rule 401 Visible Emissions, Rule 402 Nuisance, and Rule 403 Fugitive Dust[15].

4. To reduce PM_{10} emissions, the developer shall implement the following the greatest extent practicable:
    - chemically treat soil at construction sites where activity will cease for at least four consecutive days;
    - pave on-site construction access roads as they are developed; extend paving at least 120 feet from roadway into construction site and clean roadways at the end of each working day;
    - restore vegetative ground cover as soon as construction activities have been completed;
    - chemically treat unpaved roads that carry 20 vehicle trips per day or more;
    - plant tree windbreaks utilizing non-invasive species on the windward perimeter of construction projects, where feasible;
    - all construction grading operations and earth moving operations shall cease when winds exceed 30 miles per hour;
    - prior to turf raking, implement effective PM_{10} control programs for turf over-seeding as outlined in the CV-SIP;
    - water site and equipment morning and evening and during all earth-moving operations;
    - spread soil binders on site, unpaved roads, and parking areas;
    - operate street-sweepers on paved roads adjacent to site;
    - re-establish ground cover on construction site through seeding and watering or other appropriate means; and
    - pave construction access roads, as appropriate.

5. To minimize construction equipment emissions, the developer and contractors shall implement the following:
    - wash off trucks leaving the site;
    - require trucks to maintain two feet of freeboard;

[15] "Final 2003 Coachella Valley PM10 State Implementation Plan," prepared by the South Coast Air Quality Management District, August 1, 2003.

- properly tune and maintain construction equipment; and
- use low sulfur fuel for construction equipment.

6. To reduce construction-related traffic congestion, the developer and contractors shall implement the following:

    - configure construction parking to minimize traffic interference;
    - provide a flag person to ensure safety at construction sites, as necessary; and
    - schedule operations affecting roadways for off-peak hours, as practical.

7. To minimize indirect source emissions, the developer shall:
    - install low-polluting and high-efficiency appliances;
    - install energy-efficient street lighting; and
    - landscape with native and other appropriate drought-resistant species to reduce water consumption and to provide passive solar benefits.

8. To minimize building energy requirements, the developer may also implement the following:
    - assure the thermal integrity of buildings and reduce the thermal load with automated time clocks or occupant sensors;
    - use efficient window glazing, wall insulation and ventilation methods;
    - introduce efficient heating and other appliances, such as water heaters, cooking equipment, refrigerators, furnaces and boiler units;
    - incorporate appropriate passive solar design, including solar heaters, and solar water heaters, to the greatest extent feasible;
    - use devices that minimize the combustion of fossil fuels; and
    - capture waste heat and re-employ this heat, where feasible.

9. Architecture and construction activities and materials shall utilize green buildings and alignment principles, as appropriate, including standards as defined in the Leadership in Energy and Environmental Design (LEED) Green Building standards for municipal buildings to the greatest extent possible. The use of solar panels is encouraged.

Mitigation Monitoring, and Reporting

A. Grading and development permits, as well as required dust control plans, shall be reviewed and conditioned to require the provision of all appropriate methods and technologies to assure the minimal emissions of pollutants from the development, in accordance with existing standards established by the City of Palm Springs.
Responsible Parties: City of Palm Springs Public Works and Engineering, Planning Services, and Building and Safety Departments.

B. Building and landscape plans shall be reviewed for assurance of optimized energy efficiency and soil stabilization, respectively. California Code of Regulations Title 24 and other applicable energy efficiency codes and regulations shall be appropriately applied. **Responsible Parties**: Palm Springs Public Works and Engineering, and Building and Safety Departments.

C. Cultural Resources

Introduction and Background

Cultural resources are an integral part of a community and provide a meaningful sense of history and heritage. In the Palm Springs area, cultural resources include Native American sites and historical elements from the City's early settlement and development.

A site-specific cultural resources analysis has been prepared on the project site. The study includes a records search, a historical background review of the project area, and a reconnaissance-level field inspection. CRM Tech conducted the Cultural Resources analysis in May 2008. The report is included in Appendix C. The discussion below summarizes the findings of the report.

This section of the EIR describes the existing condition of cultural resources within the project site and immediate environs, analyzes the potential impacts of the Specific Plan on these resources, and sets forth mitigation measures to reduce the impacts if possible.

The California Environmental Quality Act (CEQA) is prescriptive in how the City of Palm Springs must address issues relating to archaeological, historic and paleontological resources. The CEQA guidelines state that the term 'historical resources' applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources.

Thresholds of Significance/Criteria For Determining Significance

The following thresholds or criteria are not those strictly recommended in 15064 of CEQA. Rather, they are derived from Appendix G of CEQA, which is used to determine the level of potential effect and whether a Negative Declaration or a Mitigated Negative Declaration may be issued, or whether an Environmental Impact Report is to be prepared. The proposed Museum Market Plaza Specific Plan will have a significant effect on cultural resources if it:

a. Causes a substantial adverse change in the significance of a historical resource as defined in 15064.5

b. Causes a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5

The State of California's Public Resources Code (PRC) Section 5020.1 defines 'historical resources' as including but not limited to 'any object, building, structure, site, area, place record or manuscript' which is determined to be historically or archaeologically significant. Historical resources may also include those that are determined to be significant 'in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California'. Similarly, the CEQA Guidelines state that the term 'historical resources' applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources. The relevant criteria for determining significance are briefly described below.

The California Environmental Quality Act (CEQA) Guidelines mandate that, in order for a resource to be considered historically significant, it must meet the criteria for listing on the California Register of Historical Resources (Title 14, California Code of Regulations (CCR) Section 15064.5(a)(1)-(3)).[16] Inclusion in the Register may occur if the resource meets any of the following criteria:

a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

b. Is associated with the lives of persons important in our past.

c. Embodies the distinctive characteristics of a type, period, region, method of construction, or represents the work of an important creative individual, or possesses high aesthetic value.

d. Has yielded, or may be likely to yield, information important in pre-history or history.

Criteria for the consideration of cultural resources of potential significance , and their appropriate disposition, are established in Section 15126.4(b)(3) of the CEQA Guidelines.[17]

City of Palm Springs General Plan Policy
The following policies included in the Palm Springs General Plan Recreation, Open Space and Conservation Element relate to cultural resources and are applicable to the proposed project.

RC10.1 Support the preservation and protection of historically, architecturally, or archaeologically significant sites, places, districts, structures, landforms, objects, native burial sites and other features.

RC10.2 Encourage and support the retention and adaptive reuse of buildings of architectural, historic, or cultural significance where financially feasible.

RC10.3 Continue to support the role of the Historic Site Preservation Board to nominate and recommend to the City Council potential historic sites and the designation of historic districts in the City.

RC10.4 Continue to protect individual historic sites, buildings, and neighborhoods as set forth by the Historic Preservation Ordinance and other related historic ordinances.

[16] Guidelines for Implementation of the California Environmental Quality Act, California Code of Regulations, Title 14, Division 6, Chapter 3. Section 15064.5(a)(1)-(3)

[17] California Environmental Quality Act – Statutes and Guidelines, prepared by the Governor's Office of Planning and Research, State of California, 1998

1. Existing Conditions

Pre-historic Context

The City of Palm Springs and the Coachella Valley lie within the historical territory of the Desert Cahuilla, a Native American Tribe. Around 1000BC the Cahuilla became a distinct tribe as indicated by linguistic evidence. The Coachella Valley yields evidence of Cahuilla settlements dating more than 500 years ago, to a time when a large population of the tribe was living adjacent to Ancient Lake Cahuilla. With the rapid evaporation of Lake Cahuilla, the mountains and canyons surrounding the valley became increasingly important and the canyons adjacent to Palm Springs have yielded evidence of use by the tribe as sources of water, plant and animal foods, and rock for tool-making. Tahquitz Canyon in particular has evidence of long term pre-historic use, with one rock shelter pre-dating 2000BC and others ranging from 1000 to 150 years ago.[18] The nearby hot springs have been recorded as the location of an early Cahuilla village, and there is evidence of another in Andreas Canyon. The Cahuilla's earliest contacts with Europeans occurred in the 1770's, as Spaniards, in search of new land routes between Mexico and northern California, crossed through Cahuilla territory. Over time, conflicts over religious and cultural practices, as well as land ownership and exploitation, increased strains between the Cahuilla and European settlers. Smallpox and other European diseases for which the native peoples had no immunity devastated the Cahuilla population in the 19th century. In 1891, the Agua Caliente Reservation was established in the Palm Springs area for the Agua Caliente Band of Cahuilla Indians[19].

Archaeological Resources

Outside the project area boundaries, but within a half mile radius, three archaeological sites with surface scatters of artifacts and bedrock milling features have been recorded, and a prehistoric burial site is reportedly located on the edge of the Downtown area. However, the project site is currently developed and much of it has undergone several phases of redevelopment over many decades. Ground disturbance, excavation, grading and other construction activities associated with both previous and existing levels of development have considerably lowered the potential for archaeological remains or buried pre-historic cultural resources at the site. However, as the proposed project may require additional excavation beyond that already done within the project area, the potential exists for buried resources to occur on the site.

Senate Bill 18 and Native American Consultation

In accordance with SB18, the City of Palm Springs is required to offer consultation with Californian Native American Tribes regarding proposed local land use planning decisions involving the adoption of Specific Plans. The purpose of SB18 is to protect traditional tribal cultural places. The proposed project will result in the adoption of a Specific Plan, and it is therefore subject to SB18.

Based on a listing of Native American Tribes provided by the Native American Heritage Commission (NAHC), the City of Palm Springs consulted eight Native American tribal

[18] Environmental Impact Report, Section 14 Master Development Plan; Agua Caliente Planning, Building and Engineering Department, July 2002

[19] Ibid

representatives from tribes within the Coachella Valley. The NAHC confirmed that according to a search of the Sacred Lands File, no sites are recorded within the Specific Plan area.[20] The Agua Caliente Band of Cahuilla Indians responded to the City's request for consultation, but had no concerns with the project as planned.

Historical Context

The City's modern history began in the early 1870s, when John Guthrie McCallum purchased land in the area and later subdivided it. From very early in its modern history, the town showed signs of becoming a resort community. In the mid 1890's Welwood Murray opened the first health lodge in a wood and adobe structure known as Murray's Palm Springs Hotel. In 1909, Harry and Nellie Coffman opened the Village Inn, a sanitarium located one block south of the site of today's Desert Fashion Plaza. Nellie Coffman subsequently opened another establishment catering to both patients and vacationers, known as the Desert Inn, on the site of the Desert Fashion Plaza, and within the boundaries of the proposed Specific Plan. These early health lodges defined the core of Palm Springs at the intersection of Palm Canyon Drive and Tahquitz Canyon Way. Rapid expansion in the area began in the 1920s, with the City's spreading reputation as both a health resort and a desert retreat, and the increased interest of the Hollywood movie community. Until the end of World War II, architecture in the town was primarily of Mission Revival and Spanish Colonial Revival styles, with hotel and retail development centered around Palm Canyon Drive. During the post WW II period, tourism stimulated the rapid urban growth of Palm Springs and the City is now widely known for its excellent examples of Desert Modernist architecture.

Historical Resources in the Specific Plan Area

Historic resources in the project site previously included two designated sites of historic interest that extend between Palm Canyon Drive and Museum Drive. The designated sites were previously occupied by early 20th century structures of historic interest. However, the buildings were demolished in the mid 1960s as part of the construction of the Desert Fashion Plaza.

The project site currently includes the Town and Country Center, a commercial complex in the Modernist style, constructed in 1948. The Center was built for the Palm Springs Corporation in 1948 and formed an important component of Palm Spring's Downtown commercial core, extending between the major thoroughfares of Palm Canyon Drive and Indian Canyon Drive. In 2004, during the preparation of a City-wide inventory of potentially historic structures, the building was determined eligible for listing in the National Register of Historic Places and the California Register of Historical Resources, with a local level of significance. The site qualified with a rating of 5S3, on the basis that it "appears to be individually eligible for local listing or designation through survey evaluation," as described in the California Historic Resources Status Codes. The site is also listed in the Downtown Urban Design Plan's listing of historically significant buildings.

[20] NAHC letter to the City of Palm Springs, dated June 18, 2008

The Center was designed by two architects who rose to national distinction in their careers. Paul R. Williams and A. Quincy Jones collaborated on the Center as well as the Palm Springs Tennis Club restaurant and Romanoffs on the Rocks, also a restaurant, in the same period.

A. Quincy Jones has been extensively studied for his commitment to improving quality of life through architecture. This commitment led to his introduction of new materials and design elements in modern homes, including glass walls, usable atriums, high ceilings and post and beam construction. He was also considered an innovator at integrating and improving the efficiency of mechanical systems while maximizing usable space.

Paul R. Williams was a prominent African-American architect and best known for designing homes for the rich and famous, including Frank Sinatra, Lucille Ball and Barbara Stanwyk. He is also well known for buildings in Los Angeles, including the Beverly Hills Hotel, Chasen's and Perino's restaurant, and the theme building at the Los Angeles Airport.

The Cultural Resources Study of the site finds that it makes a material contribution to the historic character of Downtown Palm Springs.[21] The Center is composed of a series of buildings, extending from Palm Canyon Drive to Indian Canyon Drive, and centered on a courtyard. The orientation of the project on the courtyard was a significant innovation at the time. During its heyday, the landscaped courtyard was the focal point of the Center. It included a large rounded turret on one side, and an angled exterior staircase, leading to the Town and Country Restaurant, on the other. The broad concrete staircase, resting on a multi-level asymmetrical podium, and framed by a substantial planter which extended from the building behind, led to a balcony across the front of the restaurant. The interaction of the geometric shapes designed as part of the Center's courtyard, and the intersecting plans around the entry to the restaurant, were one of the most notable defining elements of the Center's Modernist design.

The buildings include 146-174 North Palm Canyon Drive, and 167-181 North Indian Canyon Drive. The City's 2004 Survey had identified the buildings at 156-166 and 170-174 North Palm Canyon Drive, and 167-181 North Indian Canyon Drive. The buildings in the southwestern portion of the site, consisting of 146-150 and 168 North Palm Canyon Drive, were not identified in the 2003 survey as being of historic interest. The core of the Center, as identified by the 2004 City survey, consists of three two-story buildings arranged around the courtyard. The Palm Canyon elevation features a flat roof and vertically hung, painted corrugated aluminum panels. The Indian Canyon elevation is characterized by projecting cornices and a wide, undecorated frieze.

The Bank of America formerly occupied 146-152 North Palm Canyon, a structure which is characterized by a series of vertical louvers separated by mirrored glass. The two levels are divided by an angled sunbreak which also serves as a marquis for the shops on the first level. Historic photographs show the original façade as aggressively Modernist in style, with the contrast between the large concrete louvers and the massive towers which anchored both ends of the façade. Bank of America's name was spelled out across the tope of the sunbreak, in bright,

[21] The Museum Market Plaza Project, Cultural Resources Survey Report, CRM Tech, May 2008. (p. ii)

widely spaced letters. The three separate storefronts which occur now were once all part of the bank, making a significant statement on Palm Canyon Drive.

The building at 168 North Palm Canyon consists of a later addition, and is a scored concrete, single story "box." This building has also impacted the original courtyard of the center, which has been reduced in size because of the building's construction.

The buildings at 156-166 and 170-174 North Palm Canyon appear to retain most of their original characteristics, although the corrugated metal components were installed after 1983. The northern building's rear wing forms the northern wall of the courtyard. These buildings were intended to be of plainer design, especially when compared to the restaurant building and entrance, on the Indian Canyon frontage. In the courtyard however, the turret which forms the rear of the northern building, with its curved sunbreak and large ribbon windows on both levels, were intended to be one of the architectural highlights of the courtyard. The buildings' current condition shows signs of their age. City records indicate that remodeling efforts have been made over the years to all the structures. Significant alterations have been made to the restaurant, including enclosing the balcony and gutting the interior.

Finally, the Study performed by CRM Tech finds that the early history of the complex represents a notable chapter in the rapid urban growth of Downtown Palm Springs during the 1940s and 50s, when it became the dominant urban center in the Coachella Valley. The tourism-driven urban growth of the City in the post WWII period is an important theme in regional history.[22] The Town and Country Center was best known for its trendy restaurant and proximity to the Desert Inn. The Center combined retail shops, offices and apartments linked together through the courtyard, and accessed through a narrow arcade. The second pharmacy in Palm Springs, Patterson's Drug Store, located in the Center; as did the Desert Sun newspaper.

Several other listed historic buildings exist in close proximity to the project site, including Lykkens Department Store, a Class I historically significant building that was constructed in 1914. It is an architecturally distinctive building, located at the corner of Andreas Road and Palm Canyon Drive, one lot north of the project site. No direct impact on the Lykkens building will result from development of the proposed project, nor will development of the proposed project cause a substantial adverse change in its significance, as no alteration is planned, and the building will not be affected by the project.

[22] Ibid (p. i)

2. Project Impacts

Prehistoric Resources
As described above, the project area has been extensively disturbed, and has limited potential for archaeological resources. However, the surrounding area, including the project site, has been identified as having the potential to harbor such resources. As development of the proposed project may result in the excavation of areas previously not impacted by significant excavations, the potential exists for buried resources to occur. A mitigation measure has been included below to assure that impacts to these resources are reduced to less than significant levels, if they are identified.

Designated Historic Sites
The Specific Plan proposes the demolition of most of the Desert Fashion Plaza, which is located over the previous sites of two designated historic buildings located between Palm Canyon Drive and Museum Drive. However, the significance of the sites is purely commemorative in nature, as the existing Desert Fashion Plaza bears no physical vestiges of the early 20th century buildings that previously occupied the site.

Given the extensive ground disturbances associated with the construction of the Desert Fashion Plaza, it is also unlikely for any substantial and intact archaeological remains to have survived from the previous period. Redevelopment will not have an adverse effect on the significance of the sites, provided on-site commemorative signs or displays recognizing their historic value are incorporated into the proposed project.

Demolition of the Desert Fashion Plaza will therefore have no impact on either historic or archaeological resources.

Sites with Potential for Historic Designation
The City's Municipal Code, Section 8.05.125, establishes standards for the listing of locally significant sites. "Class 3" structures are those which were "constructed before 1945, or a year to be determined by the city council, or construction date cannot be confirmed. Eligible for a six-month stay of demolition. Action of the HSPB may include recommendation to reclassify. All structures built prior to the subject date would be automatically so classified."

<u>The Town and Country Center</u>
The Specific Plan proposes the demolition of the Town and Country Center. In 2004, the building was determined eligible for listing in the National Register of Historic Places and the California Register of Historical Resources, with a local level of significance. As described above, the site qualifies as a locally significant historic resource.

The Cultural Resource Study found that the 2004 City survey had correctly identified the Center's importance as a locally significant resource in terms of its relationship to the rapid expansion of Downtown Palm Springs in the post World War II era.

The alteration of the façade of the former restaurant, and those of the former Bank of America building together have altered the Modernist statement being made by Jones and Williams in their original design. However, the buildings are considered good examples of Modern commercial architecture, and contribute to the historical fabric of the Downtown village, and to the City's repertory of Desert Modern Architecture.

The California Environmental Quality Act (CEQA) Guidelines mandate that, in order for a resource to be considered historically significant, it must meet the criteria for listing on the California Register of Historical Resources. Inclusion in the Register may occur if the resource meets any of the following criteria:

a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

b. Is associated with the lives of persons important in our past.

c. Embodies the distinctive characteristics of a type, period, region, method of construction, or represents the work of an important creative individual, or possesses high aesthetic value.

d. Has yielded, or may be likely to yield, information important in pre-history or history.

Based on this criteria, the Town and Country Center meets the criteria "c" for listing, and can be considered a significant resource. The Study also concluded that despite its significant alterations, and current condition, the Center meets the definition of a historic resource as put forward in CEQA.

Demolition of the Center would therefore be a significant impact. The study includes mitigation measures to preserve a record of the buildings according to federal standards, and to include displays within the proposed project which would commemorate the Center. However, as the Center has been determined a historically significant structure, its demolition will result in an unavoidable significant impact which cannot be fully mitigated.

3. Mitigation Measures

The following Mitigation measures shall be implemented to reduce impacts to cultural resources.

1. On-site commemorative signs or displays recognizing the historic value of the two previously occurring historic sites to the west of Palm Canyon Drive shall be incorporated into the proposed project.

2. A comprehensive documentation program shall be completed for the Town and Country Center prior to any building altering activities on the property. The documentation shall be consistent with Historic American Building Survey (HABS) procedures, and shall include detailed architectural description, photographic records, scaled mapping and

completion of a historic record of the property. The resulting records shall be curated at the City of Palm Springs and the Eastern Information Center.

Commemorative signage and displays shall be incorporated into the proposed project.

3. In the event that inadvertent archaeological discovery is made on the project site during ground disturbing activities, all activity shall stop in the vicinity of the discovery, and the City and Tribal Historic Preservation Officer shall be contacted. If determined necessary by the Tribe and the City, a qualified archaeologist shall be hired by the contractor to assess the find. If the find is determined significant, a Treatment Plan shall be prepared and submitted to the Tribe and City for approval.

With implementation of these mitigation measures, impacts to archaeological resources shall be reduced to less than significant levels. Impacts to historical resources, however, will remain significant and unavoidable.

Mitigation Monitoring/Reporting Program

A. A plan that meets City approval shall be drawn up by the project proponent for the design and installation of on-site commemorative signs or displays that acknowledge the historic value of the two previously occurring historic sites to the west of Palm Canyon Drive.
Responsible Party: Project proponent; City Planning Department

B. A plan that meets City approval shall be drawn up by the project proponent for the design and installation of on-site commemorative signs or displays that acknowledge the historic value of the Center.
Responsible Party: Project Proponent; City Planning Department

D. Geology and Soils

Introduction and Background

This section of the EIR describes the existing geological setting at the project development site, the vicinity and regionally, and analyzes the potential constraints, risks and opportunities associated with these existing conditions. It assesses the potential impacts of the proposed Specific Plan relative to geotechnical issues and sets forth mitigation measures that may be effective in reducing impacts. A wide range of data and information, including regional-scale soils and geological resource documents, as well as site-specific geotechnical investigations, have been used in researching and analyzing the project and its potential effects. These are further discussed under Existing Conditions, below.

Thresholds of Significance/Criteria For Determining Significance

The following significant thresholds or criteria are not strictly those recommended in 15064.7 of CEQA, rather they are derived from Appendix G of CEQA, which is used to determine if and to what extent a project may have a potentially significant impact on air quality. The Museum Market Plaza Project would have a significant effect on geology and soils if it is determined that the project will:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

   - 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.
   - Strong seismic ground shaking.
   - Seismic-related ground failure, including liquefaction.
   - Landslides.

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

c. Locate the project on a geologic units 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.
d. Locate structures or other improvements on expansive soil, as defined in Section 1802.3.2 of the 2007 California Building Code (CBC), creating substantial risks to life or property.

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

Alquist-Priolo Earthquake Fault Zoning Act
The Alquist-Priolo Earthquake Fault Zoning Act has been established to prohibit the location of structures for human occupancy across active surface traces of fault lines until geotechnical investigations determine that a potential building site is safe for habitation. The Act also requires cities, through the use of maps and other appropriate materials, to disclose to the general public areas that are subject to seismic hazards.

Seismic Hazard Mapping Act
The Seismic Hazards Mapping Act (SHMA) was enacted by the State of California in 1990 for the purpose of protecting the health and safety of the public from seismically induced ground failure, including groundshaking, liquefaction, and slope stability. The California Geological Survey (CGS), pursuant to the 1990 SHMA, has been [updating and] releasing seismic hazards maps [every six years] since 1997. Most of Riverside County, including the City of Palm Springs, has not been mapped yet.[23] The California Division of Mines and Geology is responsible for implementing the Act and providing local governments with maps that identify areas susceptible to such hazards.

City of Palm Springs Municipal Code
Unreinforced Masonry Law. The Unreinforced Masonry Law (Section 8875 et seq. of the California Government Code) required all cities and counties in Seismic Zone 4 (zones near historically active faults) to identify potentially hazardous URM buildings in their jurisdictions, establish a URM loss reduction program, and report their progress to the state by 1990.

Soil Reports. For all divisions of land for which a soils report is not otherwise required by the Subdivision Map Act, adequate tests may be required by the director of planning and zoning or city engineer. The soils reports, to be done by a soils or geologic engineer registered in this state, and based upon adequate test borings, may be required at the time of submission for consideration of a tentative map, or may be postponed by the city engineer, to be submitted at the time of, and in connection with, the final map or parcel map (9.64.110, Soils reports).

Palm Springs General Plan
The Palm Springs General Plan recognizes the hazardous nature of faulting and groundshaking by providing policies that require buildings be constructed away from faults, and that seismic design standards be met. It also sets forth policies to reduce, to the greatest extent possible, the physical and environmental effects of geologic hazards within the city. The Plan's Safety Element included policies relevant to the proposed project are set forth below:

SA1.1 Minimize the risk to life and property through the identification of potentially hazardous areas, adherence to proper construction design criteria, and provision of hazards information to all residents and business owners.

[23] "City of Palm Springs General Plan Update DEIR, Vol. II Appendices," The Planning Center, March 2007.

SA1.4 Enforce the requirements of the California Seismic Hazards Mapping and Alquist-Priolo Earthquake Fault Zoning Acts when siting, evaluating, and constructing new projects within the City.

SA1.12 Ensure that the highest and most current professional standards for seismic design are used in the design of Critical, Sensitive and High-Occupancy facilities such as water tanks, dams, levees and hospitals.

SA1.13 Require liquefaction assessment studies in those areas identified as having susceptibility to liquefaction.

SA2.1 Minimize grading and otherwise changing the natural topography to protect public safety and reduce the potential for property damage as a result of geologic hazards.

SA2.2 Require geologic and geotechnical investigations in areas of potential geologic hazards as part of the environmental and/or development review process for all structures.

SA2.16 Provide protection for roadways and utility lines from erosion and sedimentation.

SA2.17 Encourage the incorporation of wind barriers, architectural design or features and drought resistant ground coverage in new development site designs to mitigate the impacts from erosion and windblown sand.

1. Existing Conditions

A number of resources were employed in order to prepare the discussion on the geology and soils found within the Museum Market Plaza Specific Plan Site. Impact assessments are based on the City of Palm Springs General Plan and DEIR, prepared by The Planning Center, March 2007, and the Desert Fashion Plaza Property Condition Report and Phase I Environmental Assessment, prepared by Building Diagnostics, Ltd., January 1998. The Soil Survey of Riverside County, California, Coachella Valley Area, September 1980, and the USDA Natural Resources Conservation Service Web Soil Survey/National Cooperative Soil Survey were also used. Several other sources were consulted and are duly referenced.

Regional Geologic Setting

The Museum Market Plaza site is located in the northwestern Coachella Valley and is part of the tectonically active Salton Basin. The Salton Basin is a closed, internally draining trough that was filled with a complex series of fractured rock materials during Pleistocene and Holocene time. The Pleistocene and Holocene are the two most recent periods of geologic time, spanning from two to three million years ago to the present.[24]

The Palm Canyon fault is exposed in the bedrock in the southern portion of the Palm Springs area along the east side of Palm Canyon and has been inferred by several researchers as extending northward beneath the City of Palm Springs under the alluvium. No evidence to date

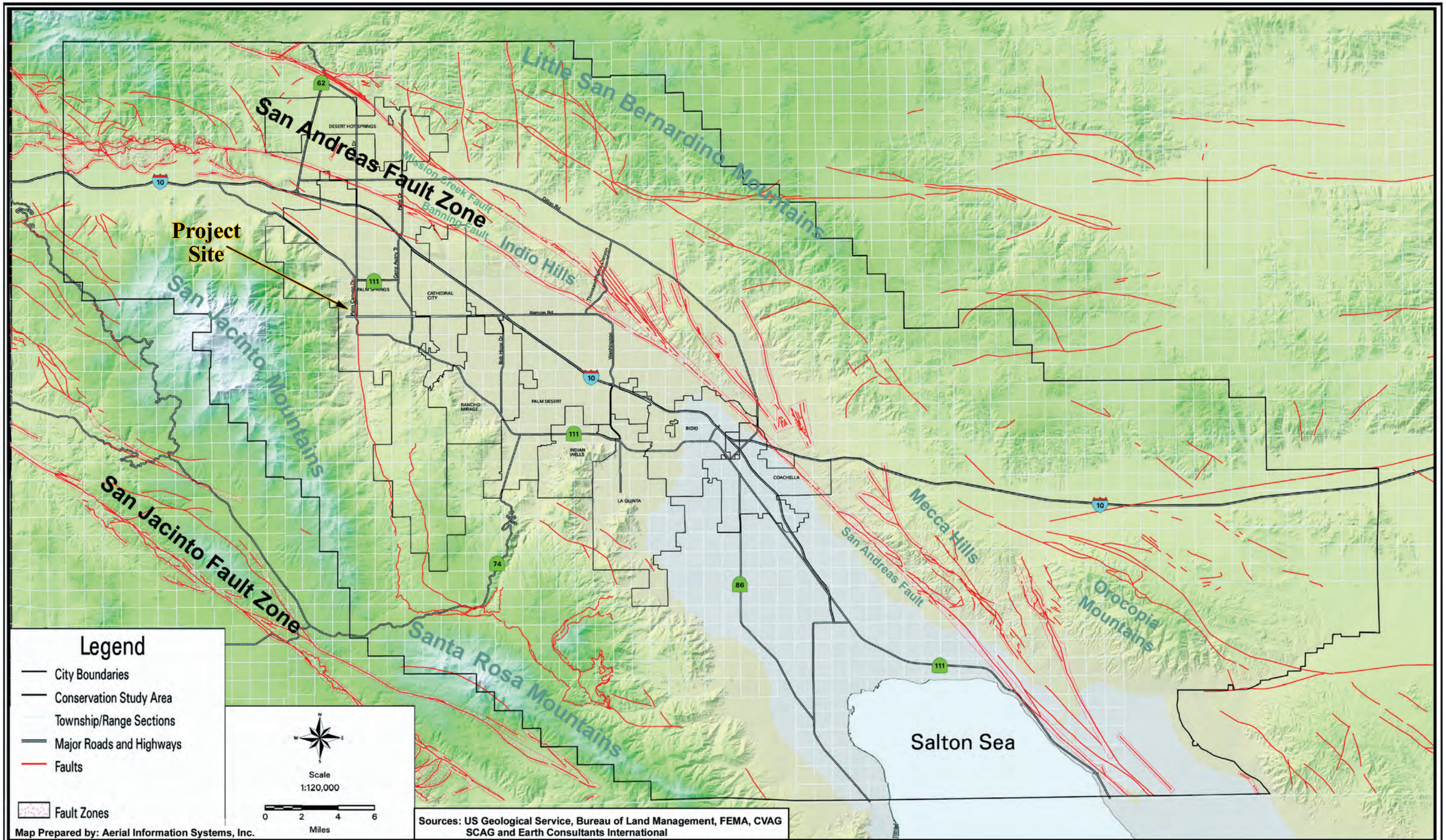
[24] Brian Mooney and Associates, 1994.

has been presented as to the existence or precise location of the Palm Canyon fault within the alluvial deposits, or regarding the potential activity of this feature.[25]

Site Specific Geological Setting

The Palm Springs area and the project site lie within Seismic Zone 4, the designation assigned to a geographic location with a high probability of significant seismic activity. No major active or potentially active fault is known to cross the subject property, nor is the site located within an Alquist-Priolo Earthquake Fault Zone. Because of the relatively low ground water level, the potential for liquefaction is very low at the project site, with the exception of the immediate area surrounding the Agua Caliente Springs, located at the northeast corner of Tahquitz Canyon Way and Indian Canyon Drive. Other geotechnical hazards concerning the project site include seismically induced ground settlement, and surface susceptibility to caving within deeper excavations. The subject property also lies within the boundaries of an Active Blowsand Hazard Area, and therefore potential sand accumulation on the subject property is likely to occur. Incidents of rock fall and seismically induced landslide hazards are low to none within the planning area.

[25] "Palm Springs General Plan", 1992


San Andreas Fault Zone
Little San Bernardino Mountains
Mission Creek Fault
Banning Fault
Indio Hills
Project Site
San Jacinto Mountains
San Jacinto Fault Zone
Santa Rosa Mountains
Mecca Hills
San Andreas Fault
Orocopia Mountains
Salton Sea
DESERT HOT SPRINGS
PALM SPRINGS
CATHEDRAL CITY
RANCHO MIRAGE
PALM DESERT
INDIAN WELLS
LA QUINTA
INDIO
COACHELLA
Palm Canyon Dr
Gene Autry Tr
Ramon Rd
Bob Hope Dr
Washington
Dillon Rd
Thousand Palms Canyon
62
10
111
74
86
Legend
City Boundaries
Conservation Study Area
Township/Range Sections
Major Roads and Highways
Faults
Fault Zones
N
W
E
S
Scale
1:120,000
0 2 4 6
Miles
Map Prepared by: Aerial Information Systems, Inc.
Sources: US Geological Service, Bureau of Land Management, FEMA, CVAG
SCAG and Earth Consultants International

Site-Specific Soils

The soil type found within the Museum Market Plaza project site is described below and shown in Exhibit II-3. This soil description is from the USDA Natural Resources Conservation Service Web Soil Survey/National Cooperative Soil Survey.[26]

Myoma Fine Sand, 0-5% Slopes (MaB)

Nearly level or gently sloping soil on alluvial fans where they merge with the finer textured flood plain and basin soils. The hazard of blowing sand is high and runoff is very slow.

Geologic and Soil Hazards

The following section describes the potential hazards associated with the soil types and geology found onsite and in the project vicinity.

Active Faults

The Coachella Valley, a northwest trending basin, is bounded to the east by the southern San Andreas fault. The City of Palm Springs is located in an area of the Coachella Valley where numerous active faults are present: the active Banning fault and the potentially active[27] Garnet Hill fault, believed to be related to the Coachella Valley segment of the Banning fault[28], extend through portions of the City. Both fault zones are capable of causing damage in the City. Other faults in the region, such as the San Andreas, San Gorgonio, and San Jacinto faults, also have the potential to produce strong seismic shaking in Palm Springs.

The San Andreas fault is a complex strike-slip system[29] that represents the boundary between the Pacific and the North American tectonic plates. The fault system extends from San Francisco to the Salton Sea. There are three major segments of the San Andreas faulting system in southern California: 1) Mojave Desert segment, 2) San Bernardino segment, and 3) Coachella Valley segment, in which Palm Springs and the Museum Market Plaza project site are located.

In a continuing attempt to breach the San Gorgonio Pass slip barrier, right slip on the San Andreas Fault has reactivated the Banning fault in the Salton Trough to produce the Coachella Valley segment of the Banning fault[30]. The Banning fault strand of the San Andreas Fault Zone, also known as the South Branch fault, is located approximately five miles to the northeast of the project site. This fault has the potential of generating significant ground shaking in the project vicinity. The Garnet Hill fault is located approximately four miles to the northeast and has the potential to move in sympathy with a strong seismic event in the immediate vicinity.

[26] websoilsurvey.nrcs.usda.gov

[27] According to the 2007 Palm Springs General Plan, although the Garnet Hill fault is not designated as an Alquist-Priolo Fault Zone, Riverside County has established Fault Management Hazard Zones in order to require subsurface investigations of the Garnet Hill fault to determine, over time, if the traces of the fault are active.

[28] "Mountain View IV Wind Energy Project", Bureau of Land Management, February 2007.

[29] A boundary at which two tectonic plates slide past each other.

[30] "The San Andreas Fault System: Displacement, Palinspastic Reconstruction, and Geologic Evolution", Powell, Weldon, Matti; Geological Society of America, 1993.

Seismic Activity

The project site is not located within an Alquist-Priolo Earthquake Fault Zone, nor are there any faults transecting the site. However, if the Coachella Valley segment of the Banning fault were to break along its entire length, it could potentially generate a maximum magnitude earthquake of 7.2. Since this segment of the Banning fault extends through the northern portion of Palm Springs, such an earthquake would be capable of generating horizontal ground accelerations in the city of between about 0.18g and 0.71g.[31]

Although no active faults or potentially active faults are found within the Museum Market Plaza Specific Plan site, there are nearby active faults that could cause moderate to intense ground shaking, including the San Andreas, San Jacinto, Elsinore, and Banning faults. Although fault rupture is not anticipated, development of the project site would be subject to moderate to severe groundshaking, resulting in risks to public safety and potentially significant damage to structures and other property.

Liquefaction

Liquefaction is the loss of soil strength from sudden shock (usually earthquake shaking), causing the soil to become a fluid mass. In general, for the effects of liquefaction to be manifested at the surface, groundwater levels must be within 50 feet of the ground surface and the soils within the saturated zone must also be susceptible to liquefaction. The northern and eastern areas of the City have a low possibility of being affected by liquefaction, as the approximate depth to groundwater is greater than 50 feet.

When soils liquefy, the structures built on them can sink, tilt, and suffer significant structural damage. Liquefaction-related effects include loss of bearing strength, ground oscillations, lateral spreading, and flow failures or slumping, The excess water pressure is relieved by the ejection of material upward through fissures and cracks. A water-soil slurry bubbles onto the ground surface, resulting in features called “sand boils’, “sand blows”, or “sand volcanoes”. Site-specific geotechnical studies are the only practical, reliable way to determine the liquefaction potential of a site.[32] The City will require the submittal of such studies with building permit applications for the proposed project.

In the vicinity of the project site, the regional ground water gradient is towards the east. Typically, ground water in the area of the project site occurs at a depth of approximately 235 feet below the ground surface. According to Desert Water Agency, ground water was measured at a depth of approximately 219 feet in wells #5 and 18, located approximately a quarter mile north-northwest of the subject property. Site-specific depth to groundwater, however, was not reasonably ascertainable for the subject property. Based on the location of the subject property, ground water is expected to be found at depths greater than 50 feet. A previous ESA indicates groundwater is found at depths greater than 200 feet below ground surface. Site-specific depth to groundwater, however, was not reasonably ascertainable for the subject property.[33]

[31] “City of Palm Springs General Plan Update DEIR, Vol. II Appendices,” The Planning Center, March 2007.
[32] Ibid.
[33] “Desert Fashion Plaza Property Condition Report and Phase I Environmental Assessment”, Building Diagnostics, Ltd., January 1998

Shallow groundwater that can contribute to the occurrence of liquefaction is known to occur locally in the downtown area, immediately surrounding the Agua Caliente Springs. A strong earthquake could cause liquefaction in this area, most likely expressed as "sand volcanoes" immediately surrounding the spring. Seasonal fluctuations in groundwater levels and the introduction of residential irrigation increase liquefaction risk.[34]

Spa Hotel Thermal Well

The eastern extreme of the project area is located approximately 100 feet northwest of the artesian thermal well that serves the Spa Hotel. Consultations with the Agua Caliente Tribal hydrogeologist indicate that groundwater measurements at the well date back to at least 1958 and included the development of several monitoring wells, including one (#10) located near the southeast corner of Block K2 where the depth to groundwater in 1958 was measured at 79 feet.

Since the 1958 thermal well assessment, additional analysis of the thermal well has been conducted and the Tribe expects to be considering an in-house report in late 2008; it is uncertain when this report may be available to the public. The recent analysis indicates that the vent forming the well is quite discrete (approximately 30-feet) and limited in area, being roughly oriented northeast by southwest.

Ground Subsidence

Ground subsidence is typically a gradual settling or sinking of the ground surface with little or no horizontal movement, although fissures (cracks and separations) are common. Subsidence is one of the most diverse forms of ground failure, ranging from small or local collapses to broad regional lowering of the earth's surface. While subsidence typically occurs throughout a susceptible valley, additional displacement and fissures occur at or near the valley margin. Susceptible valleys are predominantly filled with unconsolidated sand, and silty sand that includes thin layers of silt and clayey silt. Fine-grained alluvium and organic matter often underlie the fissure areas.

The causes of subsidence are as diverse as the forms of failure, and include dewatering of peat or organic soils, dissolution in limestone aquifers, first-time wetting of moisture-deficient low-density soils (hydrocompaction), natural compaction, liquefaction, crustal deformation, subterranean mining, and withdrawal of fluids (ground water, petroleum, geothermal). Most of the damaging levels of subsidence are induced by human activities. In the areas of southern California where ground subsidence has been reported, the phenomenon is usually associated with the extraction of oil, gas or ground water from below the ground surface, or the organic decomposition of peat deposits, with a resultant loss in volume.

Ground subsidence can also occur as a response to natural forces such as earthquake movements, and the evolution of a sedimentary basin as it folds and subsides. Earthquakes can cause abrupt elevation changes of several feet.[35]

[34] "City of Palm Springs General Plan", adopted October 2007.
[35] "Slope and Soil Instability Hazards – County of Riverside", Earth Consultants International, August 1, 2000.

Settlement is a more localized phenomenon and is related to the loading of soils and their subsequent compression as a result of construction activities. Differential settlement results when settlement across an area settles at different rates or in different amounts. Settlement can result if the native soils are porous or weak such that the weight to a building or other structure causes the soil to compress. This can occur in native soils or in manmade fills. The amount of settlement depends on the thickness of the weak compressible soils or fill, the load imposed by the construction, as well as the original density of the soils. Non-uniform or differential settlement can occur if the compressible soil section beneath the structure is variable, if the soil is heterogeneous, or if there are variable loads imposed across the footprint of the structure. If a structure is constructed such that it spans native soil and bedrock or native soil and a section of fill, differential settlements can be expected.

Expansion Potential

The Valley and canyon areas of the city of Palm Springs are underlain by alluvial and aolian sediments that are largely composed of granular soils (silty sand, sand, gravel, and boulders). Such units are typically in the very-low to low-range for expansion potential. The soils onsite are expected to have a very low expansion potential, and are not expected to be vulnerable to shrinking and swelling.

Landslide Risk

A combination of geologic conditions leads to landslide vulnerability. These include high seismic potential, rapid uplift and erosion resulting in steep slopes and deeply incised canyons, severely fractured and folded rock, and rock with inherently weak components, such as silt or clay layers. These conditions are present in the portions of the city that encompass the mountains and hillsides. Rupture of the faults in the Palm Springs region could reactivate existing landslides and cause new slope failures throughout the elevated areas of Palm Springs, especially in the rocky terrain in the southern part of the city, where unstable slopes are present. In general, slopes steeper than about 15 degrees are most susceptible; however, failures can occur on flatter slopes if unsupported, weak rock units are exposed in the slope face. The General Plan Update designates the areas overlain by these types of hazards primarily as Open Space–Mountain, allowing only one dwelling unit per 40 acres. Although located close to the toe of slope of the San Jacinto Mountains, the proposed project is not expected to be subject to landslide risk due to distance and intervening development.

Wind Erosion

The extreme topographic relief between the Valley and the surrounding mountains makes erosion and sedimentation an important issue for Palm Springs. The fractured condition of the bedrock forming the mountains, combined with rapid geologic uplift and infrequent but powerful winter storms, leads to high erosion rates. New development has the potential to accelerate the natural erosion process through construction activities and reduction in the surface area available for infiltration, leading to increased flooding and sedimentation downstream.

Wind erosion is an environmental problem that affects the Coachella Valley and the Palm Springs area. Sufficiently thick sand dune deposits occur in the locally at the base of the San Jacinto Mountains in the northwestern portion of the Palm Springs area. Also, starting near the

city's northeastern corner and extending south into the rest of the Coachella Valley, is a thick accumulation of these wind-blown sands which form a broad, southeast-trending ridge that rises to as much as 100 to 120 feet above the valley floor. This feature is known as the Palm Springs Sand Ridge, and covers a significant portion of the Coachella Valley floor.

2. Project Impacts

Development of the Museum Market Plaza site is feasible from a geotechnical standpoint, with the implementation of mitigation measures set forth below. Development of the project site is expected to proceed on a Planning Area basis, and has the potential to impact soils and cause wind erosion impacts. Due to onsite soil conditions and the geological setting, long-term seismic related impacts such as liquefaction and ground shaking are also of potential concern. With proper mitigation measures these impacts can be reduced to insignificant levels.

Seismic Activity
Seismic activity in the region has a 10% chance of producing a PHGA of 0.85g in the next 50 years and subsequently poses potential impacts to onsite structures. The Museum Market Plaza site, while located near an active fault (San Andreas), is not located within an Alquist-Priolo Earthquake Fault Zone, nor does any known active fault occur onsite. Therefore, the occurrence of a surface rupture on the project site is considered unlikely. Nonetheless, ground shaking has the potential to impact structures. In order to reduce impacts from such an event, development on-site shall comply with all applicable building codes as discussed under the Mitigation Measures, below.

The Federal Emergency Management Agency (FEMA) defines a hazardous building as "any inadequately earthquake resistant building, located in a seismically active area, that presents a potential for life loss or serious injury when a damaging earthquake occurs." Building damage is commonly classified as either structural or nonstructural. Structural damage impairs the building's support. This includes any vertical and lateral force-resisting systems, such as frames, walls, and columns. Nonstructural damage does not affect the integrity of the structural support system, but includes such things as broken windows, collapsed or rotated chimneys, unbraced parapets that fall into the street, and fallen ceilings.

Earthquake damage also depends on the characteristics of buildings and other structures. The interaction of ground motion with the built environment is complex. Governing factors include a structure's height, construction, and stiffness, which determine the structure's resonant period; the underlying soil's strength and resonant period; and the periods of the incoming seismic waves. Other factors include architectural design, condition, quality of construction, and age of the structure.[36]

The City will require that any portion of the project site remaining be made compliant with current Building Codes. This may be of particular concern at the northwestern corner of the property, where the existing parking structure may remain. Should this occur, the City will

[36] "City of Palm Springs General Plan Update DEIR", The Planning Center, March 2007.

require a structural analysis, and compliance with the Building Code requirements in place at the time that construction occurs.

Liquefaction
Groundwater levels in the area of the project site have been recorded at depths exceeding 50 feet. The General Plan Seismic Hazards Map identifies the project site as having a Low potential for liquefaction, due to depth to groundwater. As a result, liquefaction is not expected to occur at the project site.

Spa Hotel Thermal Well
The construction at the eastern boundary of the proposed project will be located adjacent to the hotel's well. The depth to groundwater at the wellhead is approximately two feet, and drops off rapidly with distance. Based upon historic groundwater levels in this area and the results of recent measurements, the thermal well is not expected to create a high groundwater table under any portion of the project site. Nonetheless, in order to assure that plans for development of the subject Block K2 do not impact the well, development plans should be accompanied by a groundwater monitoring report for this area.

Ground Subsidence
The potential for seismically induced ground subsidence is considered to be low to moderate at the project site. Dry sands tend to settle and densify when subjected to strong earthquake shaking. The amount of subsidence is dependent on relative density of the soil, ground motion, and earthquake duration. Potential impacts due to seismically induced ground subsidence are considered less than significant.

In early 2008 the Coachella Valley Water District released a report that showed measurable subsidence in the eastern portion of the Valley. Desert Water Agency was led to conduct a similar study of their service area, in which the Museum Market Plaza project site is located. According to the Domestic Water System Subsidence Report prepared by Krieger and Stewart Incorporated, it was determined that there has been no decrease in elevation over time in the Palm Springs area, and it is reasonable to conclude that no significant subsidence has taken place in the area.[37]

Expansion Potential
Fine-grained soils, such as silts and clays, may contain variable amounts of expansive clay minerals. These minerals can undergo significant volumetric changes as a result of changes in moisture content. The upward pressures induced by the swelling of expansive soils can have significant harmful effects upon structures and other surface improvements.

The valley and canyon areas of the City, including the project site, are underlain by alluvial and aeolian sediments that are largely low-range for expansion potential.

[37] "Staff Report to Desert Water Agency Board of Directors, July 1, 2008"; Desert Water Agency.

Lateral Spreading
Lateral spreading may accompany a seismic event and is symptomatic of liquefaction. Once liquefaction transforms the subsurface layer into a fluid-like mass, gravity plus inertial forces caused by the earthquake may move the mass downslope towards a cut slope or free face (such as a river channel or a canal). Lateral spreading most commonly occurs on gentle slopes that range between 0.3 and 3 degrees, and can displace the ground surface by several meters to tens of meters. Such movement damages pipelines, utilities, bridges, roads, and other structures.[38] To prevent such occurrences, onsite-grading plans should be evaluated and conducted accordingly.

Wind Erosion
The project site will be subject to the City's requirements for fugitive dust generation. These standard requirements include site watering and other measures which reduce the potential for blowsand during construction. These issues are more thoroughly analyzed in the Air Quality section, above.

3. Mitigation Measures

As previously noted, the Museum Market Plaza Specific Plan is considered feasible for development. The implementation of mitigation measures, set forth below, will sufficiently limit potential impacts to less than significant levels.

1. The proposed project shall comply with the City's mandatory strengthening mitigation program. The strengthening mitigation standard chosen by Palm Springs for its URMs is the Modified 1987 Edition of the Seismic Safety Commission Model Ordinance (SSC, 2003).

2. Temporary erosion-control measures shall be provided during the construction phase of the project site development, as required by local building codes and ordinances, as well as state and federal stormwater pollution regulations. In addition, permanent erosion control and clean water runoff measures are required for new developments, which are discussed further in the Hydrology and Water Quality, Sections III-F and III-G, of this document.

   Mitigation measures including planting stabilizing vegetation, covering soils with impervious surfaces, and installing wind fencing can significantly reduce wind related erosion. Additionally, the project applicant will be required to submit a Fugitive Dust Plan to the City prior to initiation of grading. These issues are also discussed in Section III-C, Air Quality.

3. Construction plans for any portion of Block K shall be accompanied by a well monitoring report to assess the status and potential impact of the hot spring located at the Spa Hotel property. The report shall include any required improvements which will assure no impacts to either the building(s) on Block K, or the springs on the hotel property.

[38] "City of Palm Springs General Plan Update DEIR," The Planning Center, March 2007.

4. The proposed project will be required to comply with the construction standards of the Palm Springs Fire Department, the Palm Springs Building Codes, and the seismic engineering requirements of the Uniform Building Code (UBC). As appropriate engineering design features and structural requirements are applied, any potential impacts would be mitigated.

5. Subsequent to preparation of final development plans and specifications, but prior to grading and construction, the foundation plans shall be reviewed by the geological consultant and/or the City Building and Safety Department to verify compatibility with site geotechnical conditions and conformance with recommendations contained herein.

6. Rough grading of the project site shall be performed under geological and engineering observation of the geological consultant and/or the City's Engineer. Rough grading includes, but is not limited to, grading of overexcavated cuts, fill placement, and excavation of temporary and permanent cut slopes.

7. As determined appropriate by the City and consulting geologist, the geotechnical consultant and/or the City Building and Safety Department shall perform the following observations during site grading and construction of foundations to verify or modify, if necessary, conclusions and recommendations in the project's geotechnical report:

    a) Observation of all grading operations.
    b) Geologic observation of all cut slopes.
    c) Observation of all key cuts and fills benching.
    d) Observation of all retaining wall back cuts, during and following completion or excavation.
    e) Observation of all surface and subsurface drainage systems.
    f) Observation of backfill wedges and subdrains for retaining walls.
    g) Observation of pre-moistening of subgrade soils and placement of sand cushion and vapor barrier beneath the slab.
    h) Observation of all foundation excavations for the structure or retaining walls prior to placing forms and reinforcing steel.
    i) Observation of compaction of all utility trench backfill.

Mitigation Monitoring/Reporting Programs

A. During project site preparation, the City Building and Safety Department staff shall conduct site inspections to ensure compliance with applicable City ordinances and conditions of approval, as well as any additional erosion control mitigation measures specified.
Responsible Parties: City Building and Safety Department, Developer, Grading Contractor.

E. Hazards and Hazardous Materials

Introduction and Background

This section of the EIR describes the potential for hazardous and toxic materials and waste to occur within the project boundary and the vicinity, analyzes the potential impacts associated with implementing the proposed project, and sets forth mitigation measures to minimize impacts. A wide range of data and information, ranging from research and analysis conducted for specific projects in the area, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects.

Hazardous and toxic "material" refers to substances that have a value or can be used, whereas hazardous "waste" is defined as a waste substance or byproduct of industrial, manufacturing, agricultural, and other uses, which can pose a substantial or potential hazard to human health or the environment when improperly managed.[39] Hazardous waste possesses at least one of these four characteristics: ignitability, corrosivity, reactivity, or toxicity; or appears on special U.S. EPA lists. This includes items such as used oil, mercury or products containing mercury, over the counter prescription drugs, and home medical waste. The most common type of hazardous waste is termed "universal waste," and includes many common items, such as fluorescent lights, cathode ray tubes, instruments that contain mercury, batteries, and others.

The transport, use, and disposal of these materials and wastes are regulated by county, state, and federal agencies. Responsibility for the regulation of these hazardous materials is shared across several county, state, and federal agencies. The use, storage and disposal of hazardous materials and wastes are regulated by a variety of state, federal, and regional agencies, based on the type and volume of these materials being generated and stored. When federal regulation is warranted, such as for "large-scale" generators of hazardous materials and wastes, such uses are regulated by the U.S. Environmental Protection Agency (EPA).

Thresholds of Significance/Criteria For Determining Significance

Standards and criteria have been drawn from a variety of sources, including Appendix G of the Environmental Checklist Form of the California Environmental Quality Act (CEQA) guidelines, and the Palm Springs General Plan. In order to adequately address the hazardous and toxic materials related impacts that may arise from the development of the Museum Market Plaza Specific Plan, and to suggest appropriate mitigation measures, the following thresholds/criteria should be considered:

California Environmental Quality Act (CEQA) Guidelines

The proposed project would have a significant impact on the environment if it would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous material

[39] U.S. Environmental Protection Agency, http://www.epa.gov/

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.

Palm Springs General Plan

The Palm Springs General Plan acknowledges the need to decrease the risk of exposure of life, property, and the environment to hazardous and toxic materials and waste, and to protect the lives and property of residents, business owners, and visitors from the hazards of urban and wildland fires. Policies relevant to the proposed project from the Plan's Safety Element are set forth below.

SA5.1 Promote the proper disposal, handling, transport, delivery, treatment, recovery, recycling, and storage of hazardous materials in accordance with applicable federal, state, and local regulations.

SA5.2 Encourage businesses to utilize practices and technologies that will reduce the generation of hazardous wastes at the source.

SA5.5 Follow the response procedures outlined within the Riverside County Fire Department's Hazardous Materials Area Plan in the event of a hazardous materials emergency.

SA5.9 Regulate and limit the use of herbicides, pesticides, and other hazardous chemicals associated with the maintenance of landscaped areas in the City.

SA7.9 Require that all buildings subject to City jurisdiction adhere to fire safety codes.

SA8.1 Take measures to reduce the level of death, injury, property damage, economic and social dislocation, and disruption of vital services that would result in the event of a major disaster.

SA8.3 Implement the Emergency Response Plan adopted by the City incorporating the following three emphases: hazard mitigation, disaster response, and self-sufficiency/mutual support of residents, business, and industry.

SA8.4 Ensure the availability of both the Safety Element and City emergency-preparedness plans to employers and residents of Palm Springs.

SA8.11 Formulate and implement a fire safety and emergency evacuation program for multistory structures. Such a program should include zoning and building code requirements for the use of sprinklers, smoke alarms, emergency evacuation stairways and other routes, fire-resistant building materials, architectural design elements that do not obstruct or hinder emergency access, and other pertinent components.

SA4.1 Evaluate the adequacy of access routes to and from fire hazard areas relative to the degree of development or use (e.g., road width, road type, length of dead-end roads, etc.).

1. Existing Conditions

Regulatory Environment

The Museum Market Plaza project site, located within the City of Palm Springs, is under the supervision of various federal and state regulations and programs which regulate the use, storage, and transportation of hazardous materials. Regulations can be used to reduce or mitigate the danger that hazardous substances may pose to Palm Springs residents, businesses, and visitors, both in normal day-to-day conditions, and as a result of a regional disaster, such as an earthquake or major flood. Several of the existing federal and state programs are summarized in the following paragraphs.

The Resource Conservation and Recovery Act (RCRA) is the principal federal law that regulates generation, management, and transportation of waste materials. Hazardous waste management includes the treatment, storage, or disposal of hazardous waste. Only one transporter of hazardous waste is listed by the EPA in the Palm Springs area.

Riverside County, the City of Palm Springs, and other cities in the county have jointly developed the Riverside County Hazardous Waste Management Plan (HWMP) to address the disposal, handling, processing, storage, and treatment of local hazardous materials and waste products. The Riverside County HWMP assures that adequate treatment and disposal capacity will be available to manage the hazardous wastes generated within the jurisdiction. To implement the HWMP, the Riverside County Community Health Agency, Department of Environmental Health, Hazardous Materials Management Division (DEH-HMMD), maintains a list of hazardous waste management small-quantity generator operations within the City of Palm Springs and its Sphere-of-Influence. The EPA defines a small quantity generator as a facility that produces between 100 and 1,000 kilograms (kg) of hazardous waste per month.

In 2000, U.S. Congress passed the Disaster Mitigation Act of 2000 requiring states and counties to create and implement mitigation strategies in order to remain eligible for federal damage assistance. In 2004 the City adopted its most recent Multi-Hazard Functional Plan. The plan is designed to address planned response to extraordinary emergency situations, whether manmade or naturally caused.

The City of Palm Springs has also developed a CERT program to help its citizens and visitors prepare for potential disasters. The CERT course is certified by FEMA and the State Office of Emergency Services (OES).

Interstate 10 (I-10) and a railroad line extend across Palm Springs and its Sphere-of-Influence to the north. The interstate, and railroad line are used to transport hazardous materials, posing a potential for spills or leaks from non-stationary sources to occur within the area.

The California Highway Patrol (CHP) is responsible for cleaning up hazardous waste spills that occur in or along freeways, and coordinate with CalTrans and the local sheriff and fire departments for additional enforcement and routing assistance.

The Department of Toxic Substances Control (DTSC) is a state department that provides assistance through an Emergency Response Program (ERP) for actual and potential releases of hazardous substances that pose a threat to public health or the environment.[40]

Site-Specific Conditions[41]

According to a Phase I Environmental Site Assessment prepared for Desert Fashion Plaza in 1998 (Appendix D), the project site is described as consisting of one building with a total of 358,227 square feet. It was initially constructed between 1968 and 1971 on 11 acres, and renovated in 1986. The building was designed, constructed, and maintained in compliance with local fire and building code requirements. Aerial photographs and building permits indicated that the site vicinity has been a shopping and resort center as early as 1948. Since 1948, the surrounding land uses have not changed substantially even though some buildings have been torn down and replaced.

Based on a review of historical sources, prior land use of potential environmental concern was not identified on the subject property, nor was there evidence of adjoining properties that would have a negative environmental impact in the subject property.

Fluorescent light fixtures were observed in some of the storefronts within the Fashion Plaza. Since the property was constructed in 1968, there is some potential for the fluorescent light ballasts to contain PCBs. However, the lights were in good condition and no leaks were observed.

The USEPA defines Asbestos Containing Material (ACM) as any material containing more than 1% asbestos as identified during laboratory analysis. Although banned in the construction of new building materials, "in stock" supplies of ACM were still used during building construction until approximately mid-1981. Under OSHA, certain materials in any building built prior to 1981 must be presumed to contain asbestos, including all thermal system insulation, surfacing materials, and vinyl floor tile.

Based on the construction date of the original mall (1968-1971), there is a potential for asbestos to be found in the acoustical ceiling panels, spray-applied acoustical ceiling, vinyl floor tile and vinyl sheet flooring, and carpet mastic found in the units that predate the 1985 structural renovation. A preliminary asbestos survey was conducted and bulk samples of various materials, including joint compound, drywall, acoustic ceiling tile, spray acoustic ceiling material, sprayed fireproofing material, vinyl sheet flooring, thermal pipe insulation, and carpet mastic and analyzed via Polarized Light Microscopy (PLM). None of the samples contained asbestos except for the spray-applied acoustical ceiling samples taken from Ted Land Shoes. These samples

40 http://www.dtsc.ca.gov/SiteCleanup/ERP/index.cfm

41 "The Property Condition Report & Phase I Environmental Site Assessment for Desert Fashion Plaza," Building Diagnostics, Ltd., January 1998

contained 3 percent chrysotile, (white asbestos). Since the mall was structurally remodeled in 1985 there is less potential for the newer building materials to contain asbestos.

At the time of the site survey, small amounts of chemicals were stored on the subject property. These chemicals were restricted to small quantities of cleaning solutions, paint, floor stripping agents, and diesel fuel. No leaks or spills were observed in the storage areas.

Two roof-mounted and one pad-mounted diesel powered generators were observed on the property. The two roof-mounted generators each had a 50-gallon above-ground tank attached to them and the pad-mounted generator had a 150-gallon above-ground tank attached to it. No spills or leaks were observed from these generators.

No evidence of underground storage tanks was observed on the project site. A lead-based paint survey was not conducted. Based on the date of original construction, there is some potential for lead-based paint, but because of structural renovations done in 1985, there is little potential for lead to be present in exposed paint.

No oil or gas wells are located on, or in close proximity to the site. The closest plugged and abandoned wells (dry hole) are located approximately seven miles from the subject property. Based on data review it is unlikely that the site would be affected by past oil or gas exploration activities. The Phase I Environmental Assessment concludes that there is low potential for hazardous materials on the Desert Fashion Plaza site.

A Phase I Environmental Site Assessment has not been completed for the Town and Country Center property. However, the Center was built in 1948, and has been renovated on a number of occasions since that time. The single story structure in the courtyard was constructed in the mid-1950s. Because of the age of the buildings, it can be expected that both ACM and lead paint occur within the structures.

Fire Hazards

Fire hazards are based on a combination of several factors, which include fuel loading, slope, weather, dwelling density, wildfire history, and whether or not there are local mitigation measures in place, such as an adequate network of fire hydrants, fire-rated construction, and fuel modification zones. The Palm Springs Fire Department constantly monitors the fire hazard in the city, and has ongoing programs for investigation and alleviation of hazardous situations. Firefighting resources in the Palm Springs area include five fire stations located throughout the city, so that the response time to any location is under five minutes. The station closest to the project site is station #441, located at 277 North Indian Canyon, about 0.5 mile from the project site. Section III Public Services discusses in further detail fire protection, project impacts, and mitigation measures.

Airport Safety

The Palm Springs International Airport (PSP), encompassing roughly 923 acres, is located in the southeastern portion of the City of Palm Springs and is approximately two miles northeast of the Museum Market Plaza project site. Because of the long-term use of the facility by aircraft, many of the existing surrounding land uses are industrial or commercial, with residential uses predominantly to the north and industrial uses to the south. State-of-the-art aircraft rescue and firefighting equipment, modern facilities and skilled firefighters provide a safe environment for conducting air transportation. To meet Federal Aviation Administration compliance requirements the PSP has at its disposal 2 Oshkosh STI-1500's and 1 Oshkosh STI-3000 with snozzle. The airport employs City of Palm Springs fire department staff, supporting all personnel and operating cost from revenues generated through aviation activities[42]. The airport is located approximately 3 miles from the project site, and no flight patterns occur over the project site.

2. Project Impacts

Based on the Phase 1 Environmental Site Assessment conducted for Desert Fashion Plaza, there are currently no hazardous materials on-site with the exception of the 3 percent asbestos identified in sprayed ceiling materials on site. There is a very low probability that off-site contaminants have migrated to the subject property and impacted underlying soils or groundwater. Additionally, since there has never been any agriculture on-site, pesticides and/or herbicides are not expected to be present within underlying soils.

Except for the 3 percent asbestos finding, there is no evidence that potentially hazardous materials were ever generated or deposited on the property in the past; however, development of the site has the potential to result in an increase in the transport, storage, use, and generation of hazardous materials and wastes, and will increase the demand for proper disposal of such materials. The use of hazardous material in the commercial sector is well regulated through City and federal law, and no high-volume hazardous waste generators are expected to be present on-site. Impacts related to hazardous materials and waste can be reduced to less than significant levels through proper hazardous waste management and the use of appropriate mitigation measures.

The proposed project would allow for the demolition of the existing buildings and the construction of a commercial, retail, office, residential, resort, and public buildings, and parking structures. Although hazardous materials were not identified within the Desert Fashion Plaza property, they are expected to occur in the Town and Country Center. Demolition debris generated may include asphalt paving, dirt, concrete, flooring and ceiling materials, and other building materials. The demolition of the project site has the potential to release hazardous materials into the environment, without appropriate mitigation.

Although no “large scale” hazardous waste producing industries are planned for the project site, there are a number of businesses that have the potential to use hazardous materials and produce hazardous wastes. Commercial service providers such as dry cleaners and film processors, and others have the potential to use and produce hazardous materials and wastes.

[42] Palm Springs International Airport, http://www.palmspringsairport.com/ops_security.html

As noted above, these hazardous material users and hazardous waste generators are regulated by county, state, and federal law, and are required to comply with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, chapter 6.5) and the California Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). These regulations help ensure a level of safety, in which no persons are exposed to hazardous materials or waste.

An increase in the residential population will lead to an associated increase in the use of common household cleaners, batteries, fluorescent lighting, mercury-containing devices, and electronics. All of these products, termed universal wastes, are considered hazardous materials, since they could harm people or the environment if they are not disposed of properly. In order to safely dispose of these wastes the County maintains three collection sites that accept antifreeze, batteries, oil, and latex paint. One of such site is located in Palm Springs, near the airport, and operates from 9:00 am until 2:00 pm on Saturdays.

Based on the Phase I Environmental Site Assessment conducted for Desert Fashion Plaza, there were no records or visible indication of potentially hazardous petroleum hydrocarbon[43] use on the project site. Similarly, no underground storage tanks, clarifiers, sumps, or other potentially hazardous material-containing structures were observed within the project boundaries.
Impacts from proposed development may include hazardous and toxic materials and wastes generated by commercial and resort establishments, and residences. Potential impacts can be reduced to less than significant levels through the implementation of mitigation measures set forth below.

3. Mitigation Measures

The following mitigation measures will help ensure to protect future residents, visitors and lands from exposure to such materials.

1. Prior to any demolition of any structures within the Town and Country Center, a Phase I Environmental Site Assessment shall be completed. The study shall include an evaluation for Asbestos Containing Materials (ACM) and lead paint. Should either be identified, a remediation plan (Phase II) shall be prepared and submitted to the City for approval. All remediation shall be completed to the satisfaction of the City.

2. All asbestos-related work, including demolition and renovation, shall be performed by a licensed Asbestos-abatement Contractor under the supervision of a certified Asbestos Consultant. Asbestos shall be removed and disposed of in compliance with notification and asbestos-removal procedures outlined in South Coast Air Quality Management District Rule 1403 to reduce asbestos-related health risks.

[43] Petroleum hydrocarbons are gasoline, diesel, and other crude oil containing products.

3. During project construction and implementation, the handling, storage, transport, and disposal of all chemicals, including herbicides and pesticides, runoff, hazardous materials and waste used on, or at, the project site, shall be in accordance with the project's BMP/Integrated Waste Management Plan, other relevant regulatory plans, and applicable City, county, state, and federal regulations.

4. Ongoing development within the Specific Plan area shall require continued coordination with the City of Palm Springs Fire Department to reduce the level of potential risk of exposure to hazardous and toxic material and waste, and facilitate fire department response in the event of a hazardous material or waste related emergency.

5. Future development within the Specific Plan area shall be required to comply with all applicable federal, state, and regional permitting requirements for hazardous and toxic materials generation and handling, including but not limited to the following:

    a. If it is determined that hazardous wastes are, or will be, generated by any proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If so, the proposed facility shall obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942.
    b. If hazardous wastes are (a) stored in tanks or containers for more than ninety days, (b) treated onsite, or (c) disposed of onsite, then a permit from the Department of Toxic Substances Control (DTSC) may be required. If so, the proposed facility shall contact DTSC at (818) 551-2171 to initiate pre-application discussions and determine the permitting process applicable to the facility.

6. Hazardous material and waste storage within the proposed project shall be secured so as to minimize risk of upset in the event of groundshaking associated with earthquakes.

Mitigation Monitoring and Reporting

A. Concurrent with the submittal and processing of development plans and permits for uses, which may include or involve the production, storage, dispensing or disposal of hazardous or toxic materials, storage and disposal plans shall be reviewed and properly conditioned or regulated.
Responsible Parties: Planning Department, County Environmental Health, California Regional Water Quality Control Board

F. Hydrology

Introduction and Background

This section of the EIR describes the existing hydrological setting at the project development site, the vicinity and regionally, and analyzes the potential constraints, risks and opportunities associated with these existing conditions. It assesses the potential impacts of the proposed Specific Plan relative to hydrological issues, including the generation of storm runoff and associated infrastructure needs, and sets forth mitigation measures that will be effective in reducing impacts to levels that are less than significant. A wide range of data and information, including regional-scale hydrological resource documents and the City Master Drainage Plan, as well as site-specific hydrology investigations, have been used in researching and analyzing the project and its potential effects and impacts.

Thresholds of Significance/Criteria For Determining Significance

Standards and criteria have been drawn from a variety of sources, including Appendix G: Environmental Checklist Form of the California Environmental Quality Act (CEQA) Guidelines and the City General Plan and associated EIR. In order to adequately address the potential flooding and hydrology impacts that may arise from the development of the Museum Market Plaza Specific Plan, and to direct the development of appropriate mitigation measures, the following factors should be considered. Please note that potential project impacts to water resources and water quality are also addressed in Section III-G of this EIR:

a. Violate any water quality standards or waste water discharge requirements.

b. 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 flooding on- or off-site.

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

d. Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Palm Springs General Plan Policies

The following policies are taken from the Palm Springs General Plan, and address flooding and hydrology-related issues, such as potential flooding risks, flood control structures, on-site storage retention, storm drain design, and the provision of adequate permeable surface area landscaping that may arise from development of the Museum Market Plaza site as proposed in the Specific Plan.

SA3.2 Evaluate all development proposals located in areas that are subject to flooding to minimize the exposure of like and property to potential flood risks.

SA3.3 Require that future planning for new development consider the impact on flooding potential as well as the impact of flood control structures on the environment, both locally and regionally.

SA3.7 Provide direction and guidelines for the development of on-site stormwater retention facilities consistent with local and regional drainage plans and community design standards.

SA3.11 Design underground storm drains serving local neighborhoods to accommodate runoff from a 10-year frequency storm for conveyance to a downstream outlet and locate them in existing or proposed street rights-of-way where possible. Flows exceeding the 10-year frequency storm will be carried within public rights-of-way.

SA3.16 Require the extensive landscaping of open-space areas in new development, provide the maximum permeable surface area to reduce site runoff, and prohibit unnecessary paving.

1. Existing Conditions

Regional Conditions

The Museum Market Plaza site is located in the western and central portion of the downtown urban core of the City of Palm Springs, at the foot of the San Jacinto Mountains, in the western Coachella Valley, a low and dry desert valley basin. The surrounding mountains isolate the region from moist and cool maritime air masses from the west, creating a dry subtropical desert climate. Summer daytime temperatures can occasionally exceed 125°F and winter temperatures occasionally fall below freezing. The Valley is part of the West Basin of the Colorado River Watershed and drains into the Salton Trough and its terminal lake, the Salton Sea, which straddles the Riverside and Imperial County lines. Mean annual rainfall is between 2 and 3 inches[44], and while some years record no measurable rainfall, other years may be subjected to flash flood events resulting from increased levels of precipitation.

Flooding events play a key role in shaping the Valley's hydrological setting and generally result from one of the following storm conditions: winter storms with high-intensity rainfall in combination with rapidly melting snow; tropical storms out of the southern Pacific Ocean; or summer thunderstorms.

Benchmark storms are used by the Army Corps of Engineers to gauge the potential for future flooding and include two distinct storm events that occurred in 1939 and 1979. The 1939 storm event occurred on September 24, was centered over Indio and originated off the west coast of Mexico. This storm generated 6.45 inches of rain in a 6-hour period. The 1979 storm event was due to Tropical Storm Kathleen, which impacted the area from September 9th through the 11th and generated 6.81 inches of rain in the low-lying areas of the central Valley, and as much as 14 inches in the surrounding mountains.

[44] "Mean Annual Isohyets based on combined data of 1879-80 season to 1953-54 (from 1961 U.S. A.C.E. Report) and 1935-60 (From 1973-74 Riverside CO F.C.D. Report)"

Area and Site Specific Conditions

The City maintains the local stormwater drainage system in parts of the City, including the Downtown. In the Downtown, the City maintains the Baristo Channel. Larger storm drains (greater than 36-inch diameter) are part of the City's Master Drainage Plan and have been maintained by Riverside County Flood Control District (RCFC or RCFCWCD) since 1945; the RCFC has jurisdiction over flood control facilities both regionally and within the City of Palm Springs[45]. Other areas, including the Whitewater River flood plain to the north of the urbanized portions of the City, are under the jurisdiction of both the RCFC and the Coachella Valley Water District (CVWD).

The drainage plan covered by the Master Drainage Plan for the Palm Springs Area is approximately 26.5 square miles in size and consists mostly of moderately flat Valley terrain, sloping generally to the east. Steep mountainous terrain dominates the westerly portion of the city's drainage area. The plan determines the quantity and points of concentration of storm runoff in the area, establishes a boundary map, determines the location, size, and capacity of the proposed drainage projects, investigates alternatives for selecting the most sound economics and engineering, and prepares preliminary design plans and supporting cost estimates.[46]

Flood hazards can be classified into two general categories: flash flooding down natural channels, and sheet flooding across the alluvial fans upon which most of the development in the city currently lies. The extent of flooding along the Whitewater River, Palm Canyon Wash, Tahquitz Creek, and other drainages in the City has been analyzed through flood insurance studies as part of the NFIP.

Flash floods are short in duration but have high peak volumes and high velocities. This type of flooding occurs in response to the local geology and geography and the built environment (manmade structures). The local mountains are very steep and consist of rock types that are fairly impervious to water. Consequently, little precipitation infiltrates the ground and rainwater instead flows across the surface as runoff, collecting in major drainages that pass through the city. When a major storm moves in, water collects rapidly and runs off quickly, making a steep, rapid descent from the mountains into manmade and natural channels within developed areas. Because of the steep terrain, scarcity of vegetation, and the constant shedding of debris from mountain slopes (primarily as dry gravel and rock falls), flood flows often carry large amounts of mud, sand, and rock fragments. Sheet flow occurs when the capacities of the existing channels (either natural or man made) are exceeded and water flows over and into the adjacent areas.

Major flood control structures in the Palm Springs area include the Whitewater River and Levee, the Chino Canyon Levee and Channel, and the Palm Canyon Wash Levee. The levee between the Whitewater River and Indian Canyon Drive, maintained by the RCFCWCD, protects the portion of the City south of the Whitewater River from flooding. The Chino Canyon Levee and Channel protect the northern part of the highly developed Palm Springs area from 100- and 500-year flooding from Chino Creek and the Whitewater River. The Palm Canyon Wash levee directs

[45] "Desert Fashion Plaza Property Condition Report and Phase I Environmental Assessment"; Building Diagnostics. Ltd./ATC Environmental Inc., January 1998.
[46] "Palm Springs General Plan", adopted October 2007.

flows from Palm Canyon and Arenas Canyon northeastward to Tahquitz Creek, then eastward to the Whitewater River. It provides 100-year storm protection on the north side of the Palm Canyon Wash down to Tahquitz Creek and on the south side of Tahquitz Creek channel to the Whitewater River.

There are several other major flood control facilities located within the Palm Springs area. These facilities are as follows:

Arenas Cone Levee. The Arenas Cone levee extends northwesterly from South Palm Canyon Drive and diverts flows from the Arenas Canyon fan to an area behind the Palm Canyon Wash levee. The levee has a 10-foot bottom width, 2:1 sideslopes, and a 12-foot-deep trapezoidal riprap channel.

Tahquitz Creek Debris Basin and Storm Channel. This structure captures floodwaters and debris from Tahquitz Creek and directs it via a six-foot-deep levied channel through highly developed areas of the city to the vicinity of the Mesquite Country Club. 100-year flood flows within this reach of the creek are contained within the artificial channel.

Baristo Storm Water Channel. Located north of Tahquitz Channel, Baristo Wash consists of a reinforced concrete trapezoidal or rectangular channel with 1.5:1 sideslopes. The channel discharges into Tahquitz Creek in the central part of the city.

Gene Autry Trail (Bogie Road) Bridge and Levee. Located on the north side of Tahquitz Creek in the vicinity of its confluence with Palm Canyon Wash, this concrete-lined levee protects the developed area to the north of the creek from 100 and 500-year floods.

Tachevah Creek Detention Reservoir and Channel. This 100-year-storm capacity basin is designed to temporarily detain floodwaters emanating from Tachevah Canyon, thereby reducing peak discharges by allowing the impounded water to be released into downstream channels at significantly lower flow rates. Built in 1964 by the ACOE, the basin protects the highly urbanized central part of the City from floods and debris flows. The outlet channel, from the spillway to Baristo Channel, is 11,400 feet long and consists of reinforced concrete pipe ranging in size from 54 to 72 inches in diameter.

Retention Basins. Several retention basins are present throughout the urbanized part of the city. These are designed to reduce flood flows by retaining the water for a short period of time before release into downstream structures. At the base of the mountains these basins are designed to catch debris as well. The existing flood control structures have provided significant protection from flooding; nevertheless, as indicated by the current FEMA maps, additional protection is needed.

The Palm Springs Master Drainage Plan indicates many new structures are proposed, including open channels, storm drains, box culverts, and debris basins. See Exhibit III-15, Storm Drainage

Plan. Additional studies by Riverside County are now in progress to address flooding issues in areas near Palm and Blaisdell canyons.[47]

The City's drainage system is currently financed by area drainage fees assessed, depending on the drainage area, to new developments. However, dramatic increases in the cost of new construction are outstripping the drainage acreage fee, which provides the majority of funding for drainage projects. To be consistent with today's construction costs, Riverside County Flood Control District has initiated a process of reassessing the fee structure to address revenue needs.[48]

The City also requires new development to retain the incremental run-off due to the development with on- site retention structures. By doing so, added burden to the storm drainage system is minimized. The City also advocates for the most efficient systems of storm water control, including infiltration and percolation where feasible. These approaches are acknowledged as the best means of controlling both solid and liquid pollutants. [49]

The Federal Emergency Management Agency (FEMA), as part of its responsibilities to carry out the National Flood Insurance Program, has mapped most of the flood risk areas within the United States. These maps, called Flood Insurance Rate Maps, depict flood hazards across the United States. The maps show "special flood hazard areas" for those areas that are affected by a flood having a one-percent chance of occurrence in a given year. The special flood hazard areas are shown on the Flood Insurance Rate Maps with flood zone designations that begin with the letter A or V. By law, federally regulated lending institutions must require the purchase of flood insurance for mortgages on buildings shown in the special flood hazard areas on these maps. Outside of the special flood hazard areas, flood zone designations B, C, and X identify areas of moderate or minimal hazard from the principal source of flooding.

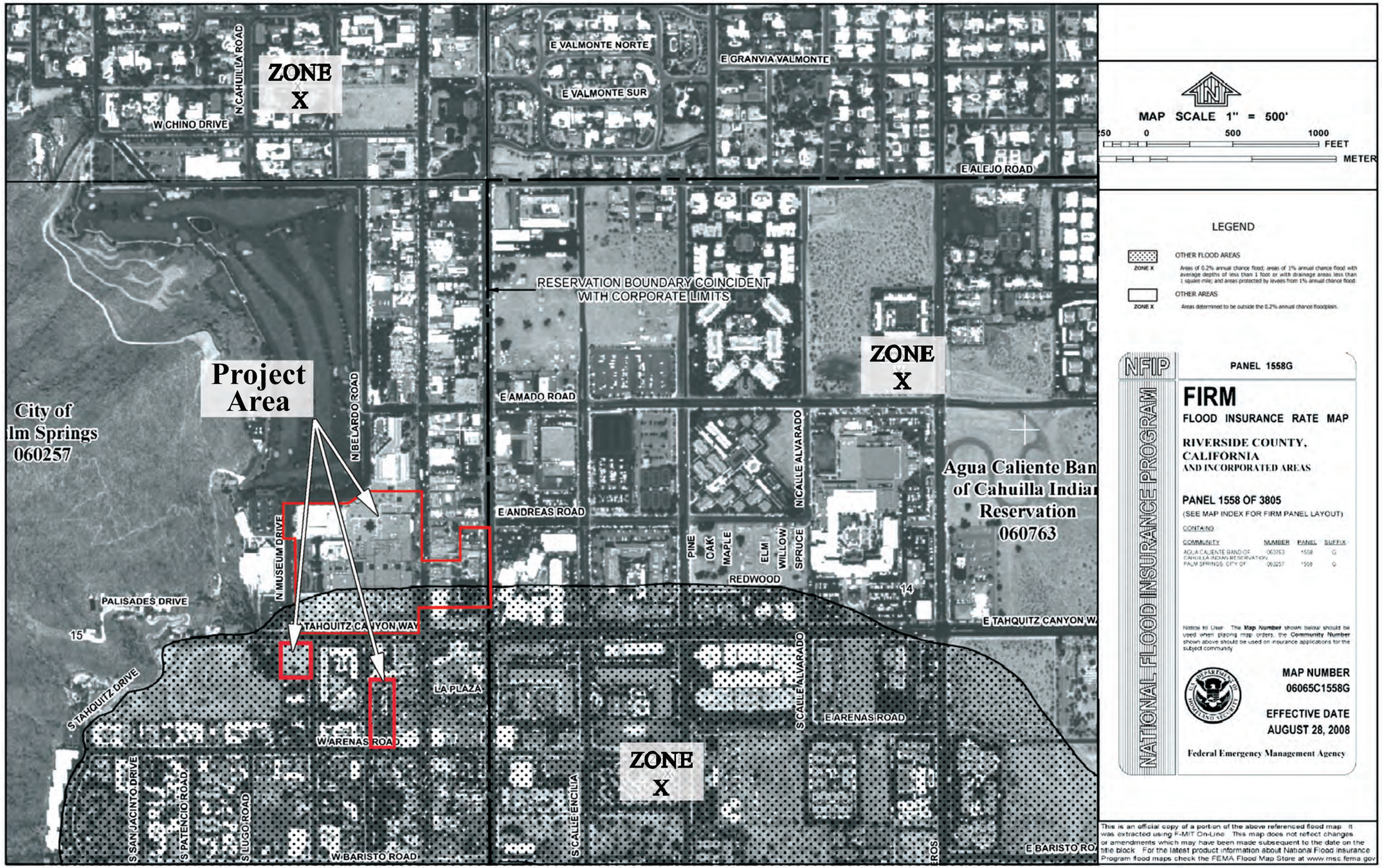
The City of Palm Springs participates in the Community Rating System (CRS) as part of the National Flood Insurance Program. The City has a higher than average rating and participation in the CRS has resulted in a reduction in insurance premiums for property owners in special flood hazard zones within the City. Palm Springs is the only City in the Coachella Valley to participate in this program.

FEMA has designated the Museum Market Plaza project site under Flood Zones X, which are characterized as areas being protected from flooding, or having a less than 2% annual chance of flooding.

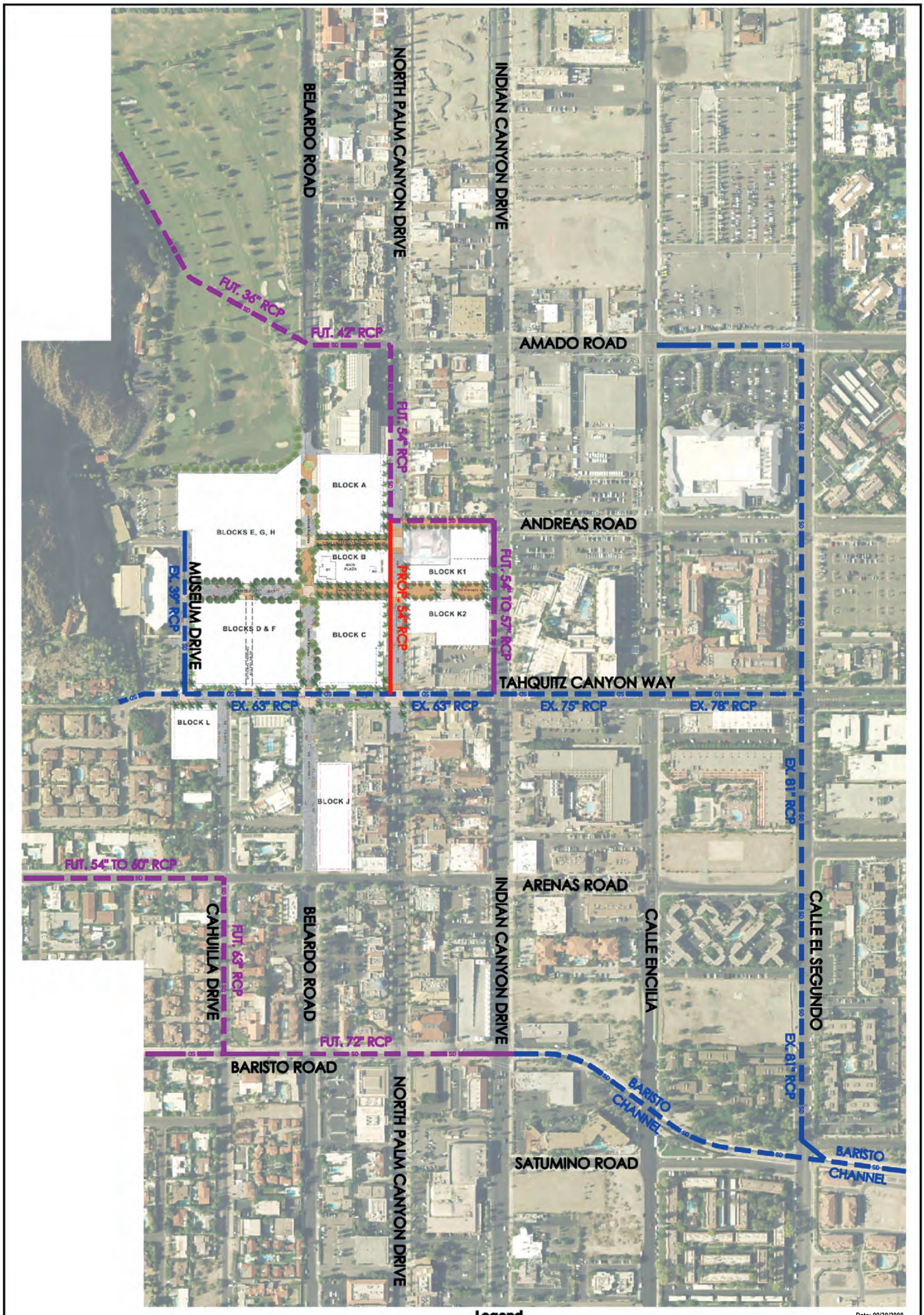
The elevation of the Museum Market Plaza project site is approximately 460 feet above mean sea level, with surface topography sloping gently to the east. Surface drainage from the project site and adjacent development flows primarily to public streets which act as storm drains.

[47] "City of Palm Springs General Plan Update Draft EIR"; The Planning Center, March 2007.
[48] "Riverside LAFCO: Western Coachella Valley Municipal Service Review", Final Draft, February 2007.
[49] "Riverside LAFCO: Western Coachella Valley Municipal Service Review", Final Draft, February 2007

A system of surface and subsurface drainage facilities are located at and in the vicinity of the project site. Existing facilities include a 39-inch storm drain, known as Lateral 15BA, occurring in Museum Drive north of Tahquitz Canyon, and a 63-inch reinforced concrete pipe (RCP), known as Lateral 15B, in Tahquitz Canyon Drive west of Palm Canyon Drive, and in the Tahquitz Canyon Drive right of way between Indian Canyon Drive and North Palm Canyon Drive. Lateral 15B then connects to Lateral 15A in Calle El Segundo and flows south into the reinforced concrete trapezoidal or rectangular Baristo Channel, which discharges into Tahquitz Creek in the central part of the city.



Source: Federal Emergency Management Agency, Riverside, Flood Insurance Map, August 28, 2008



Sources: MSA Consulting, Inc.
NelsenPartners Austin/Scottsdale
TKD Associates Incorporated

TERRA NOVA®
Planning & Research, Inc.

Museum Market Plaza Specific Plan Draft EIR
Storm Drainage Plan Revised
Palm Springs, California

Exhibit
III-15

2. Project Impacts

Development of the Museum Market Plaza Specific Plan will result in the construction of residential and commercial buildings, institutional uses, parking lots, streets and sidewalks, and other impervious surfaces, which will increase stormwater runoff originating from the subject property. However, due to the urban setting of the site and surrounding area, the Museum Market Plaza project will not significantly change drainage patterns. Roof drains from the buildings as well as area drains from the landscaped areas around the buildings will be connected to an on-site underground drainage system.

The development proposed the construction in a 36-inch storm drain in the extension of Belardo Road, from Tahquitz Canyon to the new east-west private street. This facility will collect storm flows from throughout the project in catch basins, direct them to the existing facilities on surrounding streets, and will deliver peak runoff values not exceeding existing conditions[50]. Therefore, the project would not result in any significant impacts related to the amount or rate of stormwater runoff or drainage system effects. Project-specific impacts associated with drainage and surface runoff and the potential for increased flooding would be less than significant.

A project-related significant adverse effect would also occur if the proposed project would substantially increase the probability that polluted runoff would reach the storm drain system. Runoff from the project site would be collected on the site and directed towards the existing storm drain in Tahquitz Canyon Way. All contaminants gathered during such routine drainage would be disposed of in compliance with applicable stormwater pollution prevention permits, required by the City under its National Pollution Discharge Elimination System (NPDES) process. Therefore, the project would not provide substantial additional sources of polluted runoff to the storm drain system or increase storm water runoff from the Project site above existing levels.

Development of the Museum Market Plaza project would result in further development and redevelopment in an already urbanized area. As discussed above, the project site is served by existing storm drains. Runoff from the surrounding urban uses is typically directed into the adjacent streets, where it flows to the nearest drainage improvements. The Museum Market Plaza development would also drain to the surrounding street system. However, little if any additional cumulative runoff would be expected from the project site since this part of the City is already fully developed with impervious surfaces. Therefore, cumulative impacts to the existing or planned stormwater drainage systems would be less than significant. In addition, the project site would be subject to uniform site development and construction standards under NPDES, that are designed to ensure water quality and hydrological conditions are not adversely affected. The project would be required to implement Best Management Practices and to conform to the existing NPDES water quality program and the State Water Resources Control Board (SWRCB) General Construction Activity Storm Water Permit process. Therefore, cumulative water quality impacts would also be less than significant.

[50] "Museum Market Plaza Specific Plan"; Terra Nova Planning & Research, Inc., April 2008.

3. Mitigation Measures

No significant hydrology-related impacts are anticipated. Compliance with the requirements of NPDES Permit No. CA0061654 and the SWRCB General Construction Activity Storm Water Permit process, and the use of Best Management Practices in the required Water Quality Management Plan, would ensure that the Museum Market Plaza project does not create any significant water quality impacts.

G. Water Quality/Resources

Introduction and Background

The existing water resources for the project site, the vicinity and region are described in this section of the EIR. Potential impacts of the proposed Specific Plan relating to water quality issues are analyzed, and constraints, risks and opportunities associated with development are identified. Finally, mitigation measures are set forth that may be effective in reducing potential impacts to water quality and resources.

A wide range of data and information, including site specific and regional-scale water resource documents and water quality investigations have been used in researching and analyzing the project and its potential effects. These are further discussed under Existing Conditions, below.

Thresholds of Significance/Criteria For Determining Significance

Standards and criteria have been drawn from a variety of sources, including Appendix G of the Environmental Checklist Form of the California Environmental Quality Act (CEQA) Guidelines[51] and the Palm Springs General Plan. In order to adequately address water resource impacts that may arise from the development of the Museum Market Plaza Specific Plan site, and to suggest appropriate mitigation measures, the following factors should be considered. The Museum Market Plaza Specific Plan project would have a significant effect on water resources/quality if it is determined that the project will:

a. Violate any water quality standards or waste water discharge requirements.

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 of 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.

Palm Springs General Plan Policies[52]

The following policies of the General Plan apply to the proposed project.

HS 4.3 *Implement Water Conservation Programs*. Palm Springs recognizes the finiteness of its water supply and the importance of water conservation. The City implements a program to use reclaimed water for public golf courses. To further conserve water, the Palm Springs Municipal Code provides for a water efficiency landscape program. Prior to construction and installation of any new or rehabilitated landscaping, the developer must submit a landscape document package for review and approval. The City shall review applications and approve, conditionally approve, or deny such application and shall assure conformity.

[51] "California Environmental Quality Act Statutes and Guidelines," California Association of Environmental Professionals, 2007.

[52] "Palm Springs General Plan," prepared by The Planning Center, adopted October 2007.

HS 4.4 Encourage the conservation of water resources through the incorporation of native plant landscaping and noninvasive species that are specially adapted to the desert climate.

CR 10.1 Enact ordinances that promote water conservation in existing facilities, and that make water conservation a mandatory requirement for all new development.

CR 10.13 Work with the Desert Water Agency, Coachella Valley Water District, and Mission Springs Water District to promote water and wastewater conservation practices.

RC 8.11 Utilize solar technologies to replace conventional water heating, as well as space cooling and heating requirements, whenever possible.

RC 8.18 Recess planter beds and lawns below adjoining sidewalks and other hardscape to contain irrigation water. Mounds shall be designed to prevent sheet-flow across hardscape areas.

RC 8.19 Control water pressure within irrigation systems to prevent drifting onto sidewalks, roads, or bike paths during wind conditions.

RC 8.20 Encourage the use of mulch and proper topsoil preparation in planter beds to increase the water absorption capacity of the soil.

RC 9.1 Work with the Desert Water Agency, Coachella Valley Water District, and Mission Springs Water District to ensue that a sufficient quantity and quality of potable water is available for current and future residential, business, and visitor uses.

RC 9.2 Encourage the responsible management and use of water resources through appropriate water conservation measures, financial incentives, and regulations.

RC 9.3 Ensure the highest quality of potable water resources continues to be available by managing stormwater runoff, wellhead protection, septic tanks, and other potential sources of pollutants.

RC 9.4 Encourage the preservation and management of natural floodplain areas that allow for water percolation, replenishment of natural aquifers, proper drainage, and prevention of flood damage.

RC 9.5 Protect the quality and quantity of water from adverse impacts of development activities so that sufficient water is available to sustain habitats and wildlife.

SA 4.8 Ensure that public and private water distribution and supply facilities have adequate capacity and reliability to supply both everyday and emergency firefighting needs.

CD 7.1 Encourage the use of native desert plants and tress that require minimal water and maintenance.

CD 8.2 Require that developers incorporate appropriately sized vegetation and provide sufficient watering and maintenance in the landscaping of the project site that will provide a mature-looking landscape within three to five years of installation.

1. Existing Conditions

Introduction

The Museum Market Plaza project site is part of the West Basin of the Colorado River Watershed, which drains into the Salton Trough. As is typical in desert environments, the region is very dry, receiving less than 6 inches of rainfall per year. Water sources, especially in the desert, are a limited and valuable resource. Demand for water comes from both urban and agricultural needs, and cannot be satisfied through local groundwater supplies alone. In order to prevent adverse impacts from the depletion of groundwater reserves throughout the Coachella Valley, a groundwater replenishment program has been implemented. Through this program the Coachella Valley acquires water from Northern California, the Colorado River, limited surface flows, and from local groundwater sources and reservoirs.

Water from northern California is transported via the California Aqueduct to Southern California, where it provides drinking water to over 23 million people and irrigation water for about 755,000 acres[53]. The amount of water that is transferred to southern California varies with the weather, such that in wet years additional water is available, but in dry years the amount of water delivered declines.

Based on a 1964 Supreme Court ruling (Arizona vs. California), California is entitled to 4.4 million-acre feet of Colorado River water per year. Water from the Colorado River is the main source of imported water for the Coachella Valley and used for crop irrigation and to recharge the groundwater basin. Colorado River water is considered of lesser quality than other sources, being higher in total dissolved solids than groundwater or surface water resources.

The Palm Springs Subarea of the Whitewater River Subbasin underlies the Museum Market Plaza Specific Plan site. In this Subarea, the top of the water table ranges from 300 to 400 feet below the surface, and the aquifer is believed to be at least 1,000 feet thick, however, the thickness of these water-bearing materials is not definitively known[54]. The Palm Springs Subarea is an unconfined aquifer that makes up a triangular area between the Garnet Hill Fault on the northwest and the east slope of the San Jacinto Mountains southeast to Cathedral City. The fill materials within this Subarea are made up of heterogeneous alluvial fan deposits with little sorting and fine grained material content.

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53 "Department of Water Resources News / People", Summer 2007 edition, prepared by the California Department of Water Resources and Public Affairs, July 2007.

54 "Coachella Valley Water District Engineers Report on Water Supply and Replenishment Assessment for the Upper Whitewater River Subbasin Area of Benefit," prepared by Water Resources Branch, Engineering Department, Coachella Valley Water District, April 2008.

In 1964, the California Department of Water Resources estimated that the Palm Springs Subarea had approximately 4.6 million acre-feet of water in storage. Since the Department of Water Resources' 1964 analysis, demand has exceeded the recharged supply in the Palm Springs Subarea and has resulted in a net reduction in water storage of approximately 220,000 acre-feet, leaving a current estimate of approximately 4.38 million acre-feet of water in storage in the Palm Springs Subarea[55].

Although the Palms Springs Subarea is estimated to contain over 4 million acre feet of water, water table levels fluctuate with demand. In order to prevent adverse impacts from the depletion of groundwater reserves, a groundwater replenishment program and a source substitution program has been initiated to further reduce demand on groundwater.

Regional Water Demand

As the population in the Coachella Valley continues to grow, water demand increases. The Coachella Valley experienced a rapid depletion of its groundwater in storage during the twentieth century. Total water production within the Whitewater River Subbasin increased from approximately 93,000 acre-feet per year in 1966, to 203,000 acre-feet per year in 1999[56]. From 2003 through 2007, the annual production in the Whitewater River Subbasin has averaged about 209,000 acre-feet per year[57]; approximately three-fourths (156,750 acre-feet) of which was produced within CVWD's service area and approximately one-forth (52,250 acre-feet) was produced within DWA's service area. This represents approximately 0.73% of the expected storage capacity of the Whitewater River Subbasin, and 4.5% of the Palm Springs Subarea.

Groundwater Replenishment

From 1973 through 2007, more than 1.9 million acre-feet[58] of Colorado River water was delivered to the spreading and percolation basins located in the northwest end of the Valley. This imported supply has offset overdraft in the Whitewater River Subbasin. Recharge facilities are one way to lessen the impact from groundwater extraction and to ensure that the Valley's groundwater supply is not depleted.

Domestic Water Services

Water services are provided to the project site by the Desert Water Agency. DWA was formed in 1961 to assure that an adequate water supply would be available for the northwesterly portion of the upper Coachella Valley. The service area for DWA includes most of the city of Palm Springs, the southwest portion of Cathedral City, and some unincorporated areas of Riverside County. The municipal service system is comprised of a series of wells located in the Upper Whitewater River Basin, as well as surface water diversions, and recycled water for irrigation. Groundwater makes up approximately 90% of the supply for DWA's service area, with surface water making up approximately 4% and recycled water about 6% of the total supply.

55 Ibid.
56 "Engineer's Report Groundwater Replenishment and Assessment for the Whitewater River Subbasin," prepared by Desert Water Agency, April 2008.
57 Ibid.
58 Ibid.

Water Resources and Climate Change

Increasing levels of carbon dioxide (CO_2) and other greenhouse gases (GHG) in the atmosphere have triggered climatic changes. Although the outcome of these climatic changes remains uncertain, there is a general consensus about certain trends, and an urgency to address those issues through proper management and planning has ensued. The primary concern in dealing with climate change is adequately predicting future hydrological cycles and water resource conditions so that appropriate management techniques can be established.

The most agreed upon effect of climate change is that temperatures are rising, which has the potential to cause a shift in the hydrological cycle. While predicted patterns vary with latitude and global location, roughly 75% of analyzed climate change models agree that within the western United States there will be a 10% to 40% decrease in stream flows by 2050[59]. This may be due to a decrease in precipitation levels, which has been evident in the drought conditions suffered by the southwest in recent years, as well as an increase in evaporation, which is temperature dependant and increases as temperatures climb. It has been predicted that a change in the global average surface temperature of 2°C would be at the low end of the possible range[60]. According to the Institute for the Study of Planet Earth at the University of Arizona, it is estimated that a 2°C increase in temperature corresponds to a 9% to 21% decrease in stream flow on the Colorado River[61].

Although there is a general consensus that global warming is causing average temperatures to rise, there is much debate over how global warming will affect precipitation levels[62]. Historic precipitation figures collected by NOAA from 1950 through 2003 indicate an average increase in precipitation levels of 20% in the southwest region of the United States[63], however it is unclear if this trend will continue. One scenario suggests that if this trend does continue, then the increased precipitation level will be offset by an increase in evaporation and transpiration[64] rates, such that the net effect would be an overall decrease in stream flow of 8% to 20%[65].

Other climate models suggest that precipitation levels will decline. An article published in the Journal of Climate Change in 2004 suggests that the Colorado River area will experience a 6% decline in annual precipitation by the end of the 21st century[66]. This corresponds to an 18%

59 "Global Pattern of Trends in Stream Flow and Water Availability in a Changing Climate," by P.C.D. Milly et al., Nature Letter 2005.

60 "Working Group III contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report," Climate Change 2007: Mitigation of Climate Change.

61 "Climate Change in the Colorado River Basin and CAP: a model study," prepared by the Institute for the Study of Planet Earth at The University of Arizona July 18, 2000.

62 "Climate Change: Effects on Southwest Water Resources," written by Gregg Garfin PhD, Program Manager, Climate Assessment for the Southwest, University of Arizona, January/February 2007.

63 *Ibid*.

64 Water uptaken through a plant's root system and released as water vapor through stomata.

65 "Climate Change in the Colorado River Basin and CAP: a model study," prepared by the Institute for the Study of Planet Earth at The University of Arizona July 18, 2000.

66 "The Effects of Climate Change on the Hydrology and Water Resources of the Colorado River Basin," by Niklas S. Christensen et al., Climate Change, 2004.

reduction in stream flow in that same period, and a 40% decrease in the basin's water storage. Climate change models predict conflicting scenarios in regard to future precipitation levels. Despite these differences, many models agree that a shift in the seasonality of precipitation will occur.

A potential impact of a warming climate is a shift in precipitation type and time. Namely, with warmer conditions, precipitation will fall as rain rather than snow, and where snow does accumulate it will melt earlier in the season. This will result in an increase of winter runoff, a decrease of spring runoff[67], and an earlier peak snowmelt runoff time[68].

Water Quality

The quality of the groundwater is dependent on a number of factors, including the source of the water, the type of water-bearing materials in which it occurs, hydrologic factors such as groundwater recharge, and the quality of well maintenance. The California Regional Water Quality Control Board implements federal and state laws to assure that water quality standards are met. Planning, management, and enforcement of these laws has resulted in good to excellent water quality in the Whitewater River Subbasin.

Total Dissolved Solids

Historic data collected by the California Department of Water Resources indicate that the quantity of total dissolved solids (TDS) in regional groundwater has increased markedly since the 1930's. TDS concentrations in the Coachella Valley during the 1930's were typically less than 250 mg/L[69]. Data samples taken from 1989 to 1999 indicate that in the upper aquifer, TDS concentrations average about 540 mg/L. Higher TDS concentration in this portion of the aquifer are associated with the San Andreas Fault system and imported Colorado River water. In the lower Valley aquifer, TDS levels average about 160 mg/L. The lower TDS in this portion of the aquifer is associated with natural recharge of higher quality water.

The increase in TDS concentrations is associated with the use of river water for groundwater replenishment, and the leaching of minerals from nearby faults. The importation and percolation of Colorado River water, which is high in TDS, has affected regional water quality. Colorado River water in the Coachella Canal averaged 748 mg/L of dissolved solids in 1999. Higher TDS concentrations are typically detected along Valley margins adjacent to major faults, including the San Andreas and Garnet Hill Faults.

Nitrates

Historic increases in regional nitrate levels have also been observed. During the 1930's nitrate concentrations were typically less than 4 mg/L[70] and increased to more than 45 mg/L in wells

67 "Climate Change in the Colorado River Basin and CAP: a model study," prepared by the Institute for the Study of Planet Earth at The University of Arizona July 18, 2000.

68 "River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability," The National Research Council, February 2007. Based on comities report (co-riv-man).

69 "Coachella Valley Final Water Management Plan State," prepared by Coachella Valley Water District, Adopted September 2002.

70 Ibid.

adjacent to the Coachella Valley Stormwater Channel by the 1970's. High nitrate levels are associated with the application of fertilizers on agricultural lands and golf courses, and discharge of effluent from wastewater treatment plants and on-lot septic tanks. The use of recycled water for groundwater recharge is also contributing to high nitrate concentrations. Studies conducted by the University of Riverside indicate that recycled water used for irrigation is preferred to direct recharge because it limits the quantity of fertilizers needed and captures nitrates in the root zone before percolating into the groundwater[71]. Nitrates can be introduced from project landscaping fertilizers and similar products, and from improper function of septic systems.

Water Quality Regulation

A number of federal and state laws have been established to assure adequate planning, implementation, management, and enforcement of water quality control efforts. Federal water quality legislation includes the Clean Water Act and the National Environmental Policy Act (NEPA). California statutes and administrative laws that are applicable to water quality include, but are not limited to the California Water Code, California Environmental Quality Act (CEQA), California Code of Regulations, and other codes such as the Health and Safety Code, Fish and Game Code, and Public Resources Code. The California Regional Water Quality Control Board (WCQB) implements federal and state laws pertaining to water quality.

National Pollutant Discharge Elimination System (NPDES)

The NPDES implements the federal Clean Water Act and was adopted in 1990. Under the NPDES, plans and programs for stormwater management must be developed, adopted and implemented to assure that municipalities "effectively prohibit non-storm water discharge into the storm drain and require controls to reduce the discharge of pollutants from storm water esystems to waters of the United States to the maximum extent possible."

The primary concern affecting water quality is stormwater runoff, since runoff tends to be high in pollutants. Stormwater drainage from streets, parking lots, businesses and residences have the potential to accumulate petroleum residues, pesticides and herbicides, heavy metals, paint, household chemicals, and other pollutants, which can affect plants and wildlife and adversely affect water supplies.

[71] Ibid.

Existing Development On-Site
Existing water consumption on the project site consists primarily of indoor water use associated with 380,977 square feet of commercial/retail, office, and restaurant uses. Based on an average annual demand rate of 30.5 gallons per square foot per year for commercial and office uses, and 230.5 gallons per square foot of restaurant space per year, it is estimated that the existing indoor water demand onsite is approximately 63.1 acre-feet of groundwater per year or 0.2 mgd (also see Table III-? below). To calculate the estimated existing demand for irrigation of landscaping, it was assumed that an area equal to 10% of the total square footage contains landscaping. It was assumed that 35% of the water used for landscaping returned to the underlying aquifer via percolation. Thus the total demand for landscaping, net of return flow, is approximately 1.8 acre-feet per year. Therefore, the existing water demand within the project site is estimated at 64.9 acre-feet per year.

2. Project Impacts

Project Water Demand Analysis
For purposes of this analysis, build out of the Museum Market Plaza Specific Plan was assumed to result in up to 955 high density residential units, 620 hotel rooms (498,430 square feet), 275,000 square feet of retail commercial development, 100,000 square feet of office space, and 25,000 square feet of restaurant space, and 18,000 square feet of open space land use, all of which will require some level of water service for potable and landscaping uses.

The Palm Springs Municipal Code requires the project to conform to the requirements of the State of California Water Conservation Landscaping Act. The Museum Market Plaza Specific Plan encourages water conservation through the use of low flow toilets, showers, and other water-using appliances. The project will result in landscaping that is consistent with the existing downtown environment, which is predominated by palm trees and planter boxes. The proposed open space area at the center of the development will utilize colored bricks and patterned walkways, with limited turf to enhance the aesthetic appeal and reduce water demand.

A Water Supply Assessment was conducted for the Museum Market Plaza Specific Plan, and quantifies the estimated water demand at build out. In consultation with DWA staff and other water use professionals, an estimate of water demand for the proposed Museum Market Plaza project was calculated using demand factors that closely reflect the proposed development. After accounting for return flows, which are applied only to the landscaping demand, this project-specific analysis resulted in an estimated water demand of 259.3 acre-feet per year (ac-ft/yr) or 0.23 million gallons per day (mgd).

Table III-22
Museum Market Plaza Specific Plan
Project-Specific Estimate of Water Service Demands

Land Use Designation	Landscaping* (ac-ft/yr)	Potable** (ac-ft/yr)	Total Annual Demand (ac-ft/yr)	Daily Demand (mgd)
High Density Residential	1.4	155.7	157.1	0.14
Hotel/Motel	0.5	45.6	46.1	0.04
Retail/Commercial	0.7	25.7	26.4	0.02
Professional Office	0.2	9.4	9.6	0.01
Restaurant	0.1	17.7	17.7	0.02
Open Space	1.2	0.0	1.2	0.00
Streetscape	1.2	0.0	1.2	0.00
Total	**5.2**	**254.0**	**259.3**	**0.23**

Source: "Museum Market Plaza Water Resources Projections", Appendix A to the Museum Market Plaza Water Supply Assessment, prepared by Terra Nova Planning & Research, October 8, 2008.
*Accounts for 35% non-consumptive return flows in the Palm Springs Subarea.
**Does not account for any return flows.
Note that mgd = million gallons per day; ac=acre; ft=feet; yr=year; return flows=35%

Based on the above calculations, from the approved Water Supply Assessment[72], at build out the project will use 259.3 acre-feet of water per year or 0.23 mgd. To meet this need, water will come from the local groundwater aquifer. Project water conservation measures are built in to the Museum Market Plaza Specific Plan and are described below.

Existing Water Demand

As previously mentioned, the proposed project contains approximately 380,977 square feet of land uses that currently receive water services, and generate an estimated water demand of 64.9 acre-feet per year or 0.06 mgd (see table III-23 below). This existing demand is contained within the estimated water demand for the DWA service area.

Table III-23
Museum Market Plaza Specific Plan
Estimate of Existing Water Service Demands

Land Use Designation	Landscaping* (ac-ft/yr)	Potable** (ac-ft/yr)	Total Annual Demand (ac-ft/yr)	Daily Demand (mgd)
Retail/Commercial	1.4	28.1	29.4	0.03
Professional Office	0.2	3.4	3.6	0.00
Restaurant	0.2	31.7	31.9	0.03
Total	**1.8**	**63.2**	**64.9**	**0.06**

Source: "Museum Market Plaza Water Resources Projections: Existing Water Demand," Appendix A to the Museum Market Plaza Water Supply Assessment, prepared by Terra Nova Planning & Research, October 8, 2008.
*Accounts for 35% non-consumptive return flows in the Palm Springs Subarea.
**Does not account for any return flows.
Note that mgd = million gallons per day; ac=acre; ft=feet; yr=year; return flows=35%

[72] "Water Supply Assessment for the Museum Market Plaza Specific Plan," prepared by Terra Nova Planning & Research, Inc. for Desert Water Agency, October 8, 2008.

Summary Comparison of Water Demand

As noted above, the existing water use at the project site, which is for commercial, office and restaurant land uses, is estimated at approximately 64.9 acre-feet per year. At buildout, it is estimated that the Museum Market Plaza Specific Plan will use approximately 259.3 acre-feet per year. Thus the net annual water demand for the project is estimated to be 194.3 acre-feet, as presented in Table III-24below.

Table III-24
Museum Market Plaza Specific Plan
Net Water Service Demand

Water Demand	Total Annual Demand (ac-ft/yr)
Project Water Demand	259.3
Existing Water Demand	64.9
Net Water Demand	**194.3**

Source: "Museum Market Plaza Water Supply Assessment," prepared by Terra Nova Planning & Research, October 8, 2008.

Projected Water Supply

DWA has existing water entitlements, rights and contracts to meet future demand as needed over time, and has committed sufficient capital resources and planned investments in various water programs and facilities to serve existing and planned customers. Groundwater, imported water, and recycled water are the supply sources available within DWA's service area.

Supply has been historically available within the Whitewater River Subbasin. During historic water shortages of imported water, DWA's customers were not affected by the dry conditions because the Palm Springs Subarea, which has an existing groundwater supply of approximately 4.4 million acre-feet of water, provides adequate supply. During drought years, the groundwater basin would be pumped to meet demands and replenished during wet years, or when additional water is available for purchase.

State Water Project surplus water is occasionally available to water contractors for purchase. In order to supplement artificial recharge of the Whitewater River Subbasin, DWA and CVWD, the water companies that jointly manage the basin, have regularly requested surplus water in addition to their yearly allocations of State Water Project water. In the past, the availability to DWA and CVWD of these waters has ranged from about 200 acre-feet (during a dry year) up to about 4,000 acre-feet (during a wet year).

DWA and CVWD have negotiated two water transfers that will begin in 2010, including 16,000 acre-feet per year of Berrenda Mesa Water District State Water Project water and 7,000 acre-feet per year of Tulare Lake Water Basin Storage District water. These transfers will bring an additional 5,750 acre-feet of water into DWA's service area. Any surplus State Water Project water secured by DWA and CVWD is exchanged with Metropolitan Water District (MWD) for like quantities of Colorado River Water. Table III-25 below summarizes CVWD and DWA's total allocation of State Water Project (Table A) water.

Table III-25
Summary of CVWD and DWA
State Water Project Table A Allocations

Water Transfers	CVWD Table A	DWA Table A	Total
Existing Allotment (2007)	121,100	50,000	171,100
Tulare Lake Water Storage District (2010)	5,250	1,750	7,000
Berrenda Mesa Water District (2010)	12,000	4,000	16,000
Total	**138,350**	**55,750**	**194,100**

The impacts associated with buildout of the Palm Springs General Plan were accounted for in the DWA 2005 UWMP, as part of the development projections used to set future water demand requirements. However, the General Plan and the UWMP did not address the increased land use intensity and related water demand increase associated with the Museum Market Plaza Specific Plan. Nonetheless, the Water Supply Assessment prepared for the project demonstrates DWA's ability to meet the additional water demand generated by the project.

The UWMP and the WSA considers potential reductions in State Water Project deliveries and demonstrates the ability to meet demand with anticipated supplies through increased conservation requirements, increased use of recycled water, and/or purchase of additional water supplies.

The WSA estimates that in a Normal Water Year, DWA would maintain a positive cumulative water balance through 2030. For the 20-year model period, the net project demand represents no more than 0.32% of DWA's total projected demand. Supplies will exceed demand through 2019, which will allow DWA to bank surplus supplies. Based on the normal year model scenario, in year 2020 water demands will exceed supplies. It should be mentioned that without the inclusion of the proposed project, DWA's 2005 UWMP estimated that in year 2020 demand will still exceed supplies. Therefore, inclusion of the project will not result in a substantial change to the existing conditions. Banking water supplies for several years will allow DWA to withdraw water as needed to service water users without contributing to additional overdraft. Thus, sufficient water supplies are available to meet demand during the normal water year scenario.

The cumulative water balance in 2030 would represent a surplus of 1.48% of the estimated groundwater in storage in the Palm Springs Subarea,[73] and 0.47% of the Upper Whitewater River Subbasin. As a result, the amount of water that would remain in storage in the Subarea at the end of the modeled period is approximately 4.41 million acre-feet.

[73] Percentages are derived from the total estimated groundwater in storage of 4,348,614 acre-feet in the Palm Springs Subarea in 2007 divided by the total estimated reduction in supply during normal, single, and multiple dry years as described above.

Table III-26
Normal Water Years 2010 – 2030
(acre-feet/year)

Supply Sources	**2010**	**2015**	**2020**	**2025**	**2030**
Surface Water	2,800	2,800	2,800	2,800	2,800
Natural Groundwater	7,250	7,250	7,250	7,250	7,250
Table A Water[1]	36,012	36,012	36,012	36,012	36,012
Groundwater Recharge	11,739	13,160	12,543	13,908	15,273
Recycled Water	6,000	6,000	8,000	8,000	8,000
Total Supply	**63,801**	**65,222**	**66,605**	**67,970**	**69,335**
Demand					
Recycled Water	6,000	6,000	8,000	8,000	8,000
Water Production	50,650	54,550	58,500	62,400	66,300
Net Project Demand[2]	32	194	194	194	194
Total Demand with Project	**56,682**	**60,744**	**66,694**	**70,594**	**74,494**
Annual Balance[3]	**7,119**	**4,478**	**-89**	**-2,624**	**-5,159**
Cumulative Balance[4]	**52,519**	**80,190**	**92,945**	**84,959**	**64,298**
Net Project Demand as a % of Total Demand	0.06%	0.32%	0.29%	0.27%	0.26%
Net Project Demand as a % of Cumulative Balance	0.06%	0.24%	0.21%	0.23%	0.30%

Source: "Desert Water Agency 2005 Urban Water Management Plan Final Report," Table 15, prepared by Krieger & Stewart Inc., December 2005.
1) Modified in accordance with " Engineer's Report Groundwater Replenishment and Assessment for the Whitewater River Subbasin," Table 2, prepared by Krieger & Stewart Inc., April 2008, which is based on DWR SWP 2007 Reliability Report.
2) Net Project Demand is the difference between existing demand onsite (64.9 ac-ft/yr) and projected demand (259.3 ac-ft/yr) at buildout of the Museum Market Plaza Specific Plan. Note that the project will initiate in 2010 and buildout in 2015, in the interim years an annual additional water demand of 32.4 ac-ft/yr are assumed.
3) The annual difference between total supply and total demand.
4) The cumulative difference in the input/output model assuming a starting balance of 45,400 acre-feet in storage in accordance with DWA 2005 UWMP year 2009. Total water in the Palm Springs Subbasin in 2007 is estimated at 4.35 million acre-feet.

The WSA further estimates that in a single dry year, although the annual demand will exceed supplies after year 2020 and during the single year drought event, the cumulative balance in 2030 would be 26,386 acre-feet. The cumulative balance in year 2030 would represent a surplus of 0.61% of the estimated groundwater in storage in the Palm Springs Subarea. As a result, the amount of water that would remain in storage in the Subarea at the end of the modeled period would be approximately 4.38 million acre-feet.