34 Corte Madera Avenue
Mill Valley, CA 94941

June 8, 2015

TO: Clara / 6th LLC
505 Sansome Street, Suite 400
San Francisco, CA 94111

SUBJECT: 363 6th Street Shadow Analysis with Cumulative Analysis of 345 6th Street

**OVERVIEW**

The Planning Department prepared an initial shadow fan that indicated the proposed project at 363 6th Street may cast a shadow on Gene Friend Recreation Center and Victoria Manalo Draves Park (collectively the "Recreation Center and Park"), each a property under the jurisdiction of the San Francisco Recreation and Park Department ("Recreation and Park Department"). Under *Planning Code Section 295*, a shadow analysis is required to measure and quantify any potential shadow impact of the proposed project on the Recreation Center and Park since the proposed project is over 40 feet in height and the Recreation Center and Park are within the jurisdiction of the Recreation and Park Department.

The project is also located adjacent to 345 6th Street. 345 6th Street is proposing a project that is over 40 feet in height and also may cast a shadow on the Recreation Center and Park. An impact analysis of the potential cumulative shadow impact of both projects on the Recreation Center and Park has also been requested by the Planning Department and Recreation and Park Department.

CADP was retained to prepare a shadow analysis for the proposed project, and a cumulative shadow analysis of the proposed project and 345 6th Street. The following is a summary of CADP's findings.

**BACKGROUND ON PLANNING CODE SECTION 295**

*Planning Code Section 295* was adopted in 1985 in response to voter-approved Proposition K which required Planning Commission disapproval of any structure greater than 40 feet in height that cast a shadow on property under the jurisdiction of the Recreation and Park Department, unless the Planning Commission found the shadow would not be significant. To implement *Planning Code Section 295* and Proposition K, the Planning Commission and Recreation and Park Commission in 1989 jointly adopted a memorandum establishing qualitative criteria for evaluating shadow impacts as well as Absolute Cumulative Limits ("ACLs") for certain parks. ACLs are "shadow" budgets that establish absolute cumulative limits for additional shadows expressed as a percentage of Theoretically Available Annual Sunlight ("TAAS") on a park with no adjacent structures present. To date, ACL standards have been established for fourteen (14) downtown parks. An ACL standard of zero percent (0%) has been adopted for Gene Friend Recreation Center[1]. An ACL standard has not been adopted for Victoria Manalo Draves Park.

[1] At the time the ACL standard was imposed, the Gene Friend Recreation Center was known as the South of Market Park.

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The 1989 Memorandum sets forth qualitative criteria to determine when a shadow would be significant as well as information on how to quantitatively measure shadow impacts. Qualitatively, shadow impacts are evaluated based on (1) existing shadow profiles, (2) important times of day, (3) important seasons in the year, (4) location of the new shadow, (5) size and duration of new shadows, and (6) the public good served by buildings casting a new shadow. Quantitatively, new shadows are to be measured by the additional annual amount of shadow-square foot-hours as a percent of TAAS.

Where an ACL has not been adopted for a park, the Planning Commission's decision on whether a structure has a significant impact on property under the jurisdiction of the Recreation and Park Department is based on a review of qualitative and quantitative factors. Where an ACL has been adopted for a park, the Planning Commission must, upon recommendation of the General Manager of the Recreation and Park Department and in consultation with the Recreation and Park Commission, adopt a resolution raising the ACL for additional shadow on the park. A determination to raise an ACL for a park is also based on qualitative factors and whether the additional shadow cast would have an adverse impact on the park.

**PROPOSED PROJECT**

*Site Description and Present Use*

The Project site is located at 363 6th Street in San Francisco, California (Assessor's Block 3753, Lot 079), at the corner of 6th Street and Clara Street. The Project site has 160 linear feet of frontage along Clara Street and 80 linear feet of frontage along 6th Street. It is currently developed with a two-story building used as a church.

*Surrounding Properties and Neighborhood*

The Project site is located in the South of Market ("SOMA") neighborhood. It is adjacent to a vacant lot and single-story office building (345 6th Street) to the northwest. To the southwest, across 6th Street is a row of multi-story mixed-use structures with heights ranging from 13 to 52 feet. To the southeast, across Clara Street, is a vacant lot with an abandoned structure in the corner at Clara Street and 6th Street. An area map showing the project is included below as **Figure 1**.

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**Figure 1.** Area Map

*Project Description*

The Project proposes to demolish the existing building on site and construct a 104 unit multi-family residential building comprised of 59 two-bedroom units, 24 one-bedroom units and 21 studio units, 49 off-street parking spaces and 109 bicycle spaces. The building would extend along 6th Street and Clara Street in an elegant and contemporary architectural style. Images of the proposed building are included in **Figures 2** and **3**.

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**Figure 2.** View from Clara Street

**Figure 3.** View at corner of 6th Street and Clara Street

The proposed building would be approximately 85-feet tall. It includes a 4-foot parapet at the perimeter of the roof, and a 16-foot elevator penthouse enclosure in the middle of the structure. Because the structure is greater than 40 feet in height, a shadow analysis under Proposition K is required. The shadow analysis was modeled based on the building, parapet, and penthouse enclosure dimensions identified on the elevations and roof plan supplied by the client Clara / 6th LLC. (*See* **Exhibit A**).

**POTENTIALLY AFFECTED PROPERTIES**

The proposed Project would potentially cast a shadow on two properties under the jurisdiction of the Recreation and Park Department. A discussion of each property is included below.

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**Victoria Manalo Draves Park**

Victoria Manalo Draves Park is a 2.52 acre accessible park located three blocks from the proposed project site (Assessor's Block 3754, Lot 016). It covers an entire block and is bounded by Columbia Square to the northeast, Folsom Street to the northwest, Sherman Street to the southwest and Harrison Street on the southeast.

Victoria Manalo Draves Park contains landscaped areas, walkways and areas for active and passive uses, including a basketball court, community garden, two children's play areas, and picnic areas. A 5 to 10-foot-tall fence and guardrails encircle the park and is locked at night. Access to the park is through three points: one at the corner of Folsom Street and Columbia Square, another on Sherman Street, and the third one on Columbia Square. An Image of Victoria Manalo Draves Park is included in **Figure 5** below.


**Figure 5**. Victoria Manalo Draves Park

Hours of operation for the park are from sunrise to midnight, every day of the year.[2]

[2] www.sfrecpark.org/destination/victoria-manalo-draves-park

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**Gene Friend Recreation Center**

Gene Friend Recreation Center is a 1.02[3] acre park (44,618 square feet) located at 270 6th Street (Assessor's Block 3731, Lots 010, 011, 012 and 111), two blocks from the proposed project site. It is bounded by a two-story, 26-foot-high private property on the northwest, Harriet Street on the west, Folsom Street on the south, and 6th Street on the east.

Gene Friend Recreation Center provides a mix of outdoor and indoor recreation space. It includes a sports court, playground and green field to the west along Harriet Street and a 24- to 34-foot-high structure (with a 16,835 square-foot footprint (the "Rec Center Building") to the east along 6th Street. The Rec Center Building includes a full indoor gymnasium, activity room, weight room and auditorium and occupies approximately ¾ of the 6th Street frontage.

A 9-foot-tall fence and guardrails encircles Gene Friend Recreation Center and is locked at night. Access to the park is provided via three gates: one at the corner of Folsom and 6th Streets, another on Harriet Street, and the third on 6th Street. An Image of Gene Friend Recreation Center is included in **Figure 4** below.

[3] www.sfrecpark.org/destination/gene-friend-rec-center-soma/

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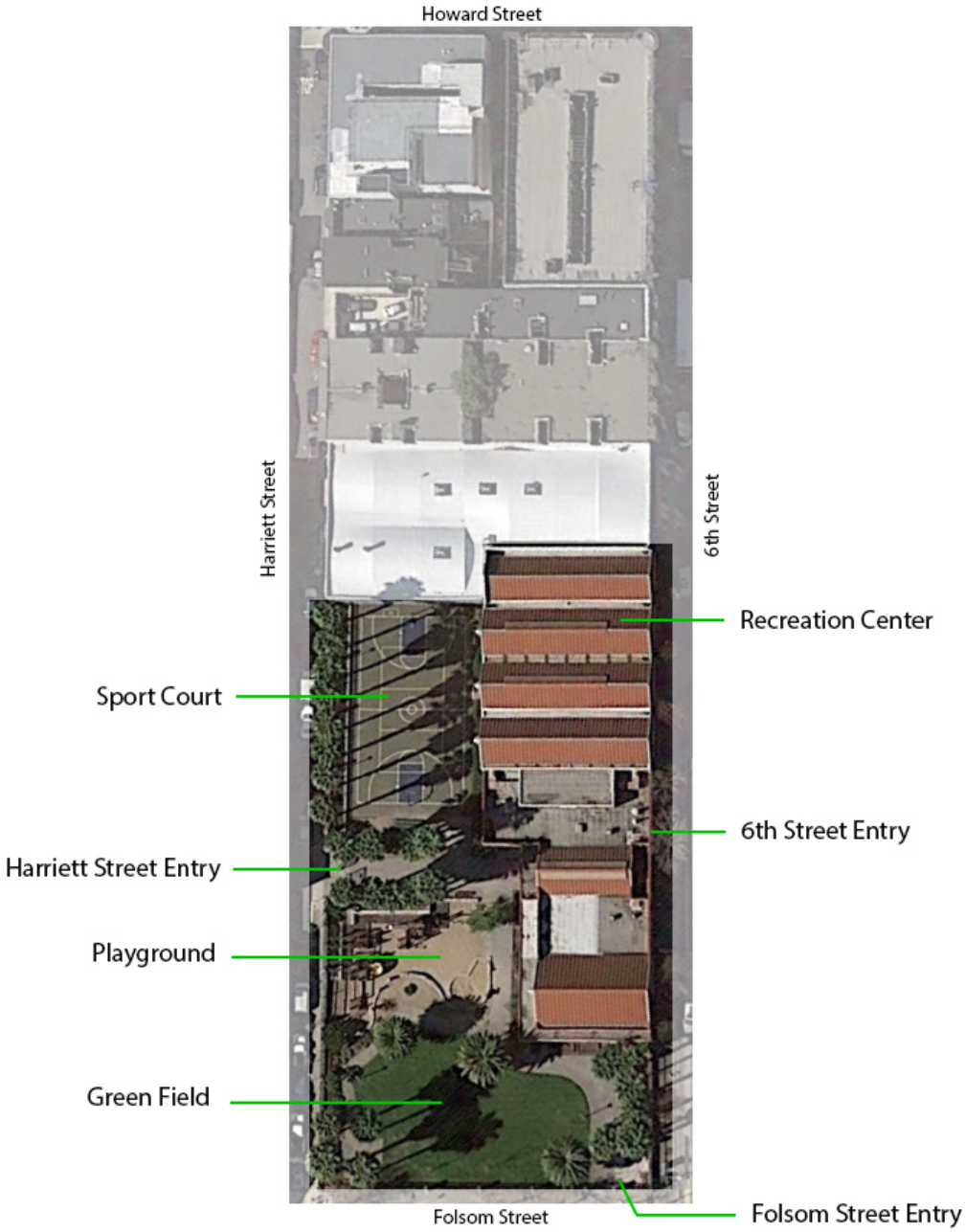


**Figure 4**. Gene Friend Recreation Center

Gene Friend Recreation Center is open from 9 AM to 9 PM Tuesday through Friday.[4] It is open from 9 AM to 5 PM on Saturdays and is closed on Sundays and Mondays. **When closed, the park gates are locked, and access is not allowed**.

[4] http://sfrecpark.org/destination/gene-friend-rec-center-soma/

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**SHADOW METHODOLOGY AND RESULTS**

A shadow analysis was prepared to quantify the amount of new shadow that would be cast by the proposed Project on the Recreation Center and Park. The analysis was based on a "solar year" to provide a sample of representative sun angles throughout the entire calendar year. The solar year is from June 21st through December 20th. The sun angles from December 21st through June 20th mirror the solar year sun angles.[5] **Since the angles are mirrored, an analysis of the remaining time period is not conducted and, instead, a multiplier is used to put the sample results into calendar year units. Using a multiplier does not change the percentages**.

Shadow impacts are calculated based on square-foot hours recorded. To ensure a complete and accurate description of the proposed projects' potential shadow impacts, this analysis identifies the days when shadow cast by the proposed projects: (1) would be at its largest size by area, and (2) would result in the overall greatest shadow impacts in terms of size and duration (i.e., the maximum net new shadow as measured in square-foot hours).

**Victoria Manalo Draves Park**

Victoria Manalo Draves Park has 409,342,835.8-square-foot hours ("sfh") of TAAS, which is the amount of theoretically available sunlight on the park, annually, if there were no shadows from structures, trees, or other facilities. Shadows currently exist on Victoria Manalo Draves Park, predominately in the morning and evening hours. The existing shadow load for Victoria Manalo Draves Park is 22,167,617.2 sfh annually.[6] This is approximately 5.42 percent of the total TAAS for Victoria Manalo Draves Park.

The proposed Project would not cast new shadow on Victoria Manalo Draves Park. The location of the proposed Project's new shadow falls on areas of the park that are already shaded by the adjacent or nearby structures. As a result, the **proposed Project would add no new square foot hours of shadow on the park**. This conclusion is based on higher resolution terrain data obtained by CADP, building information provided to CADP, and the precise positioning of the project. An excel spreadsheet summarizing the findings of the shadow analysis and a diagram showing the shadow of the proposed Project is attached to this report as **Exhibit B**. A complete copy of the findings is included under separate cover.[7] A graphical depiction of the shadow that is cast and would be cast by the proposed Project on an hourly basis from sunrise +1 hour till sunset -1 for four days, the Summer Solstice (June 21st), the Winter Solstice (December 21st) and the Spring/Fall Equinox (March 21/September 21) is provided under separate cover due to its size.

**Because the proposed Project does not cast any shadow on Victoria Manalo Draves Park, no further discussion or analysis is required.**

[5] The "solar year" dates and the mirror dates are both provided. Mirror dates are shown in *italics*.

[6] The existing shadow load for Victoria Manalo Draves Park has been calculated by CADP for purposes of this analysis only, and should not be considered a "baseline" of shadow on the park. The Planning Department is currently conducting baseline shadow analyses for all parks under the control of the Recreation and Park Department.

[7] A copy of the data findings is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2012.0793E.

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**Gene Friend Recreation Center**

Gene Friend Recreation Center has 166,041,425.20 sfh of TAAS. Shadows currently exist on Gene Friend Recreation Center in the morning and evening hours. The existing shadow load, including the shadow from the Rec Center Building, is 38,089,089.18 sfh annually. This is approximately 22.94 percent of the total TAAS for Gene Friend Recreation Center.[8] The footprint of the Rec Center Building (building footprint only and NOT the shadow created by the building) creates an additional existing shadow load of 62,649,769 sfh annually. This is approximately 37.73 percent of the total TAAS for Gene Friend Recreation Center. The total existing shadow load including the footprint of the Gene Friend Recreation Center is 100,738,858.17 sf annually. This is approximately 60.67 percent of the total TAAS for Gene Friend Recreation Center.

The proposed project would add **46,297.80 sfh** of shadow on Gene Friend Recreation Center. This is a **0.02788 percent increase** in shadow as a percentage of TAAS.

New shadow would be cast by the proposed project on 20 days in the fall and winter from Sunrise +1 hour (7:30 AM to 8:22 AM) **with all shadows gone no later than 8:41 AM**. The longest duration of new shadow would be approximately 22 minutes and the average shadow would be cast for less than 12 minutes. **All new shadow cast occurs before the park opens** and is mostly projected on walkways, a small portion of the green field adjacent to the corner of 6th Street and Folsom Street. An excel spreadsheet summarizing the findings of the shadow analysis is included in **Exhibit C**. Shadow diagrams showing the location of the potential new shadow is included in **Exhibit D**.[8]

The maximum net new shadow would occur on October 25th / *February 15th*. On these days, the proposed project would cast new shadow on Gene Friend Recreation Center for approximately 8 minutes from Sunrise +1hr (7:30 AM) to approximately 7:53 AM. The new shadow load on those days would be approximately 802.55 sfh and would be localized to the southern quarter of the park, along walkways, a portion of the green field south of the Rec Center Building and the south eastern corner of the playground in the sand box area.

The largest new shadow by area would also occur on October 25th / *February 15th* at 7:30 AM. At its maximum, the new shadow area would be 6,023.83 square feet. A figure showing the maximum net new shadow day and largest shadow by area day is included below in **Figure 6**.

[8] **Exhibit D** also includes the shadow figures for 345 6th Street, the adjacent project evaluated for cumulative shadow impacts.

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**Figure 6**. Maximum Net New Shadow and Largest Shadow By Area Day

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Because the proposed project would cast new shadow on Gene Friend Recreation Center, under *Planning Code Section 295*, the Planning Commission can only approve the proposed project if it finds that its net new shadow is not significant and it raises the ACL limit on Gene Friend Recreation Center.

The 1989 Memorandum sets forth quantitative and qualitative criteria to assist the Planning Commission in reaching its determination as to whether the net new shadow is significant. The quantitative and qualitative criteria are described below.

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**SHADOW EVALUATION**

**Gene Friend Recreation Center**

**Quantitative Criteria**

*Proposed Annual Available Sunlight*

The existing shadow load for the Gene Friend Recreation Center is approximately 23 percent of the total TAAS.[9] The proposed project would increase the total percentage of TAAS to 23.028 percent. **Table 1** is a summary of those findings. A complete copy of the findings is included under a separate cover.[10]

**Table 1**
**SUMMARY OF RESULTS (Gene Friend Recreation Center)**

| | |
|---|---|
| Annualized net new shadow | 46,297.80 sfh |
| Theoretical Annual Available Sunlight | 166,041,425.20 sfh |
| **TOTAL New Shadow as a Percentage of TAAS** | **0.028%** |
| Annualized Existing Shadows on Park (no-footprint) | 38,089,089.19 |
| Percentage of Existing Shadow as a Percentage of TAAS | 23% |
| **TOTAL New + Existing Shadow as a Percentage of TAAS** | **23.028%** |

*Recommended Permitted Additional Shadow*

Under the 1989 Memorandum, new shadow is not recommended to be permitted on small parks (i.e., those less than two acres) if the park is already shadowed 20% of the time. The 1989 Memo also adopted an ACL limit of 0 percent for Gene Friend Recreation Center.

Gene Friend Recreation Center has an ACL standard of zero (0) percent. Additional shadow load is not recommended unless qualitative criteria can be met, and the ACL standard is increased by 0.02379 percent.

**Qualitative Criteria**

*Time of Day (morning, mid-day, afternoon) – Important Times of Day*

Gene Friend Recreation Center is an enclosed park that is locked when not in operation. Site visits were conducted to evaluate the use of the open areas of the park.[11] In the morning, the number of individuals

[9] This analysis only includes a quantitative analysis of the open areas of Gene Friend Recreation Center as the area of the park where the Rec Center Building is located is already in shadow 100 percent of the time and new shadow would not impact uses of that area. As noted above, with the Rec Center Building the total existing shadow load of Gene Friend Recreation Center is approximately 60.67 percent of the total TAAS annually.

[10] A copy of the data findings is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2012.0793E.

[11] PLEASE NOTE THE DATES AND TIMES OF ANY VISITS

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using the open areas varied from 6 to 17 people with most visitors using the lawn area and surrounding benches to rest or sleep. As the day progresses, the playground and basketball court become more active with children and youth utilizing the open areas in the afternoon. The peak use of Gene Friend Recreation Center's open areas is in the afternoon.

**The proposed project casts new shadow on Gene Friend Recreation Center in the morning before the park is open**. All shadow would be gone by 8:41 AM, 19 minutes before the gates open. The new shadow cast is not during an important time of day for the park and would not adversely affect the usage pattern of Gene Friend Recreation Center.

*Time of Year (Spring, Summer, Fall, Winter) – Important Times of Year*

Gene Friend Recreation Center is active throughout the year with a combination of outdoor and indoor recreational space. San Francisco has a temperate climate that allows outdoor recreational spaces to be used year round. Based on San Francisco's historic weather patterns, the important times of year for Gene Friend Recreation Center, when individuals are more likely to use the open areas, are spring and fall which historically have the most sunshine and lowest levels of rain and/or fog.

The proposed project would cast new shadow on Gene Friend Recreation Center for a few minutes, on 20 days in the fall and winter. As a percentage, new shadow would be cast on approximately 5 percent of the days of the year (i.e., 20 out of 365 days) and, assuming, only days when the park is open (Tuesday-Saturday), new shadow would only be cast on approximately 8 percent of the days of the year (i.e., 20 out of 240 days).[12]

*Size of Shadow*

The proposed project would cast a 6,023.83 square-foot shadow at its largest. This shadow occurs at 7:30 AM and is gone by 7:38 AM. At its largest the new shadow would be cast on 13% of the total area of the Gene Friend Recreation Center.

*Duration of Shadow*

New shadow cast by the proposed project would have an average duration of approximately 12 minutes. At its shortest, new shadow would be cast for 5 minutes and 24 seconds, and at its longest, new shadow would be cast for 22 minutes and 48 seconds.
*Location of Shadow*

The proposed project would cast a majority of new shadow passive recreational areas such as the walkways and a portion of the green field south of the Rec Center Building. New shadow cast on the green field is also in the corner, adjacent to existing trees and a 3-foot tall wall that encloses the park and new shadow on the playground is adjacent to trees. Both the trees and 3-foot wall cast existing shadows on these portions of the park, although those shadows were not considered in the shadow calculations as

[12] This figure is high as new shadow would fall on days when the park is closed reducing the total percentage of days when new shadow occurs.

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per Planning Department policy. Images of the wall and existing trees are attached as **Exhibit E**. Some shadow is also cast on the south eastern corner of the playground in the sand box area.

*Proposed Project-Related Public Good*

A discussion of the proposed project-related public good is discussed once, at the end of the analysis.

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**CUMULATIVE ANALYSIS**

As noted above, the proposed project is adjacent to 345 6th Street. An application to develop 345 6th Street is on file with the Planning Department. Because the proposed project and 345 6th Street may create potentially cumulatively shadow impacts on Gene Friend Recreation Center, a cumulative shadow analysis has been requested.[13]

**Cumulative Proposed Project Overview**

*345 6th Street Project ("345 6th Street")*

345 6th Street is in San Francisco, California (Assessor's Block 3753, Lot 081), located at the corner of 6th Street and Shipley Street. It has 125 linear feet of frontage along on Shipley Street and 75 linear feet of frontage along 6th Street. It is currently developed with a single story, 2,973 square-foot structure covering approximately 50 percent of the lot (4,687 square feet) with the remaining portion of the lot (4,697 square feet) currently vacant, but used as a parking lot until 2012. It is adjacent to a two-story office building (363 6th Street) to the southeast and a two-story residential building to the northeast. Across 6th Street, to the southwest, there is a row of multi-story mixed-use structures ranging in height from 13 to 52 feet. Across Shipley Street, to the northwest, there is a three-story mixed-use building and a 100-foot-wide parking lot containing a single-story car wash.

345 6th Street is proposed to be developed with an eight story, 80-foot-tall mixed-used building with 89 residential units and commercial/retail space at the street level. The proposed structure extends an additional five (5) feet on a portion of the west corner of the building for a total height of 85 feet. A 4-foot high parapet also surrounds the perimeter of the roof[14], and a 10-foot-high staircase and two penthouses are proposed in the middle of the structure on top of the roof. The building, parapet, and penthouse enclosure dimensions used for the shadow analysis are based on the elevations and roof plan provided by the Planning Department and attached as **Exhibit F**.

A shadow analysis was prepared to quantify the amount of new shadow that would be cast by 345 6th Street on Gene Friend Recreation Center. An excel spreadsheet summarizing the findings of that shadow

[13] Additional projects in the vicinity include 301 6th Street and 377 6th Street. At the time the scope of the shadow study was finalized, project applications were not on file. Planning Department policy does not require consideration of these projects in this analysis.

[14] The shadow analysis assumes a four (4) foot parapet around the 345 6th Street structure based on direction provided from Planning Department staff.

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analysis is included in **Exhibit G**. Shadow diagrams showing the location of new shadows are included in **Exhibit H**.

The existing shadow load for the Gene Friend Recreation Center is approximately 23 percent of the total TAAS. 345 6th Street would increase the annual shadow on Gene Friend Recreation Center as a percentage of TAAS to 23.0684 percent. **Table 3** is a summary of the findings. A complete copy of the findings is included under separate cover.[15]

**Table 3**
**SUMMARY OF RESULTS (345 6th Street)**

| | |
|---|---|
| **Gene Friend Recreation Center** | |
| Annualized net new shadow | 113,616.94 sfh |
| Theoretically Annual Available Sunlight | 166,041,425.20 sfh |
| **TOTAL New Shadow as a Percentage of TAAS** | **0.0684%** |
| Annualized Existing Shadows on Park (no-footprint) | 38,089,089.19 |
| Percentage of Existing Shadow as a Percentage of TAAS | 23% |
| **TOTAL New + Existing Shadow as a Percentage of TAAS** | **23.0684%** |

**CUMULATIVE (Proposed Project And 345 6th Street) SHADOW RESULTS**

**Gene Friend Recreation Center**

Cumulatively, the proposed project and 345 6th Street would add **144,662.42 sfh** of shadow on Gene Friend Recreation Center. This is a **0.0871 percent increase** in shadow as a percentage of TAAS for Gene Friend Recreation Center.[16] New shadow cast by the proposed project and 345 6th Street would occur on 26 days in the fall and winter from Sunrise +1 hour (7:30 AM to 8:22 AM) with **all shadows gone no later than 9 AM.** The longest duration of the new shadow would be approximately 29 minutes and with the average shadow being cast for less than 18 minutes. **All shadow that would be cast occurs before the park opens** and would be projected on the walkways, the green field south of the Rec Center Building and a small corner of the sandbox. An excel spreadsheet summarizing the findings of the cumulative shadow analysis is included in **Exhibit I** and cumulative shadow diagrams are shown in **Exhibit H**.

The cumulative maximum net new shadow would occur on October 18th/*February 22nd*. On these days, new shadow would be cast on Gene Friend Recreation Center for approximately 29 minutes and 24 seconds from Sunrise +1hr (8:22 AM) to approximately 9 AM. The new shadow load on those days would be approximately 1,973.81 sfh and would be localized to the southern quarter of the park, along the Folsom Street entry, and the green field south of the playground.

[15] A copy of the data findings is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2012.0793E.
[16] As noted above, this analysis only includes a quantitative analysis of the open areas of Gene Friend Recreation Center as the area of the park where the Rec Center Building is located is already in shadow 100 percent of the time.

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The largest new shadow by area would also occur on October 18th/*February 22nd* at 8:22 AM. At its maximum, new shadow area would be 10,554.80 square feet.

New shadow from the proposed project and 345 6th Street transect, with each project capturing a portion of new shadow cast by the other project. The first building constructed will cast more new shadow than the second building, resulting in a decreased new shadow load for the second building. For example, if 345 6th Street is constructed before the proposed project, it will **reduce, by 80 percent,** the proposed project's new shadow to 8,166.8 sfh (a reduction of 31,326.71 sfh) and **reduce, by 93 percent,** its increase in shadow as a percentage of TAAS to 0.00492 percent increase (a reduction of 0.06348 percent).

**Figure 8** shows the maximum net new shadow, the largest shadow by area and how new shadows of the proposed project and 345 6th Street transect.


**Figure 8**. Cumulative Maximum Net New Shadow and Largest Shadow by Area

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A comparison of new shadows that would be cast on Gene Friend Recreation Center by the proposed project and 345 6th Street are shown on **Table 4**. The information related to the cumulative new shadows cast by both projects is also included.

**Table 4**
**SUMMARY of INDIVIDUAL AND CUMULATIVE NEW SHADOWS**

| | Proposed Project (363 6th Street) | 345 6th Street | Cumulative |
|---|---|---|---|
| **New Shadow** | 46,297.80 sfh | 113,616.94 sfh | 144,662.42 sfh |
| **% of New Shadow** | 0.02788% | 0.0684% | 0.0871% |
| **Maximum Net New Shadow** | 783.10 sfh | 1,074 sfh | 1,973.81 sfh |
| **Largest Shadow by Area** | 6,023.83 sf | 8,949 sf | 10,554.80 sf |
| **Date of Max. Shadow & Largest Shadow** | October 25th / *February 15th* | October 11th / *March 1st* | October 18th / *February 22nd* |

**CUMULATIVE SHADOW ANALYSIS**

**Quantitative Criteria**

*Proposed Annual Available Sunlight*

The existing shadow load for the outdoor areas of Gene Friend Recreation Center is approximately 23 percent of the total TAAS. The proposed project and 345 6th Street would cumulatively increase the annual shadow on Gene Friend Recreation Center as a percentage of TAAS to 23.087 percent. **Table 5** is a summary of those findings and a complete copy of the findings is included under separate cover.[17]

**Table 5**
**SUMMARY OF CUMULATIVE RESULTS**

| | |
|---|---|
| Annualized net new shadow | 144,662.42 sfh |
| Theoretically Annual Available Sunlight | 166,041,425.20sfh |
| **TOTAL New Shadow as a Percentage of TAAS** | **0.0871%** |
| Annualized Existing Shadows on Park (no-footprint) | 38,089,089.19 |
| Percentage of Existing Shadow as a Percentage of TAAS | 23% |
| **TOTAL New + Existing Shadow as a Percentage of TAAS** | **23.0871%** |

[17] A copy of the data findings is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2012.0793E.

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*Recommended Permitted Additional Shadow*

Under the 1989 Memorandum, new cumulative shadow load is not required to be taken into consideration in making a recommendation on a proposed project's new shadow on parks. For informational purposes only, cumulative qualitative criteria are included.

As discussed above, additional shadow load is not recommended unless qualitative criteria can be met and the ACL standard for shadow on Gene Friend Recreation Center is increased by 0.0871%.

**Qualitative Criteria**

*Time of Day (morning, mid-day, afternoon) – Important Times of Day*

As discussed above, the peak use of Gene Friend Recreation Center's open areas is in the afternoon.

The cumulative new shadow from the proposed project and 345 6th Street would be cast on Gene Friend Recreation Center in the morning **before the park is open**. All shadow would be gone by 9 AM.

*Time of Year (Spring, Summer, Fall, Winter) – Important Times of Year*

As discussed above, the important times of year for Gene Friend Recreation Center spring and fall.

The proposed project and 345 6th Street would cumulatively cast new shadow on Gene Friend Recreation Center for a few minutes, on 26 days in the fall and winter. As a percentage, new shadow would be cast on approximately 7 percent of the days of the year (i.e., 26 out of 365 days) and, assuming, only days when the park is open (Tuesday-Saturday), new shadow would only be cast on less than 11 percent of the days of the year (i.e., 26 out of 240 days).[18]

*Size of Shadow*

The proposed project and 345 6th Street would cumulatively cast a 10,554.80 square-foot shadow at its largest. This shadow occurs at 8:22 AM and is gone by 8:30 AM. At its largest the new shadow would be cast on 24 percent of Gene Friend Recreation Center.

*Duration of Shadow*

The proposed project and 345 6th Street would cumulatively cast a shadow with average duration of less than 18 minutes. At its shortest, new shadow would be cast for 5 minutes and 24 seconds, and at its longest, new shadow would be cast for 29 minutes and 24 seconds.

[18] As noted above, this figure is high as new shadow would fall on days when the park is closed reducing the total percentage of days when new shadow occurs.

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*Location of Shadow*

The proposed project and 345 6th Street would cast a new shadow on the same areas of Gene Friend Recreation Center as the proposed project. New shadow would be cast on the walkways, green field and playground. Because 345 6th Street is closer to Gene Friend Recreation Center than the proposed project, cumulatively new shadow would cover a greater portion of these areas.

**PROPOSED PROJECT-RELATED PUBLIC GOOD**

To fully evaluate the potential impacts associated with the proposed project, decision makers must weigh the amount and duration of shadow cast by the proposed project against the public good or public benefits associated with the proposed project. Factors to consider are: (1) the public interest in terms of a needed use, (2) building design and urban form, (3) impact fees, and (4) other public benefits.

The proposed project will add up to 104 new residential dwelling units. By adding to the City's housing stock, the proposed project conforms to the Eastern Neighborhoods Plan and supports the City's planning goals for more residential development in the area and the City.

The proposed project will comply with the Inclusionary Affordable Housing Program under *Planning Code Section 415 et seq.* by providing 12 percent on-site inclusionary housing. In addition, it will contribute **$1.8MM** in impact fees for new public infrastructure and capital improvements to schools. **Cumulatively, the proposed project and 345 6th Street will contribute over $3.2MM in impact fees** (345 6th Street would contribute $1.4MM).

The proposed project will also improve the streetscape along Clara Street by planting street trees to comply with the Better Streets requirements, replacing the existing sidewalk, and putting the utilities underground, and all of which will greatly enhance the pedestrian experience.

As set forth in the letter dated April 17, 2015, provided by Realtex, the project developer for Clara/6th LLC, for this analysis, Realtex is working with WalkSF and neighbors along Clara Street to implement the street improvements recently cut from the SOMA Alleyway Improvement project along Clara Street. These streetscape improvement measures include furnishing zones for greening on both sides of Clara Street, and providing traffic calming circles. These improvements improve pedestrian safety along Clara Street and create a "mini-park" type atmosphere along this alley encouraging outdoor use and activity.

Realtex has also been active in the local neighborhood supporting various community efforts including supporting Gene Friend Recreation Center and Victoria Manalo Draves Park. Realtex has partnered with Bessie Carmichael Elementary School, which is adjacent to Victoria Manalo Draves Park, to support annual the Bike and Roll to School Day and is working with Recreation and Park Department staff on identifying capital improvements it can help fund to improve both facilities.

A complete list of the proposed project-related public good is included the attached letter from Realtex. (*See* **Exhibit J**).

34 Corte Madera Avenue
Mill Valley, CA 94941

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Please direct questions regarding this report directly to Adam Noble.

Regards,

Adam B. Noble

Digitally signed by Adam B. Noble
DN: cn=Adam B. Noble, o=CADP, ou, email=abnoble@pacbell.net, c=US
Date: 2015.06.09 09:27:55 -07'00'

Adam Noble
President