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July 17, 2017

VIA HAND DELIVERY AND EMAIL

President London Breed
c/o Angela Calvillo, Clerk of the Board
San Francisco Board of Supervisors
1 Dr. Carlton B. Goodlett Place
City Hall, Room 244
San Francisco, CA 94102

Re: Appeal of CEQA Mitigated Negative Declaration
Planning Case No. 2013.1383ENV
Building Permit Application Nos. 2013.12.16.4318 and 2013.12.16.4322
3516 and 3526 Folsom Street ("Project Site")

Dear President Breed and Honorable Members of the Board of Supervisors:

This letter is written on behalf of neighbors of the proposed project at 3516 and 3526 Folsom Street (BPA Nos. 2013.12.16.4318 & 2013.12.16.4322, the "Project"). The appellants – Bernal Heights South Slope Organization, Bernal Safe & Livable, Neighbors Against the Upper Folsom Street Extension, Gail Newman, and Ann Lockett oppose the above-captioned Project, *inter alia,* on the grounds that the Project's Mitigated Negative Declaration ("MND," Exhibit A) violates the California Environmental Quality Act ("CEQA").

Appellants appealed two previous Categorical Exemption determinations for this Project, once in June of 2016, the second in November of 2016, and the Planning Department took the unprecedented step of twice rescinding the Categorical Exemptions prior to the Board's hearings on the appeals. While we appreciate the Planning Department acknowledging the inadequacy of the previous CEQA determinations, this new Mitigated Negative Declaration is still inadequate and legally erroneous for the same reasons. This is a highly unusual situation, with a development proposed for a uniquely dangerous location above a major 26" diameter natural gas transmission pipeline, which is not covered by asphalt, on an extremely steep slope.

Pursuant to San Francisco Administrative Code Section 31.16, Appellants hereby appeal the MND approved by the Planning Commission on June 15, 2017 at a hearing of the Preliminary

MND issued on April 26, 2017[1], amended on June 8, 2017 and appealed to the Planning Commission by the Appellants on May 16, 2017 during the public comment period for filing comments on the Preliminary MND. The appeal is supported by the SF Sierra Club, the Bernal Heights Democratic Club, the Bernal Heights Neighborhood Center, Bernal Heights neighborhood associations, and hundreds of San Francisco residents.

The following documents are attached:

1. A copy of the Final MND and Initial Study dated 6/8/17
2. A copy of the Planning Commission's approval of the MND dated 6/15/17
3. The Application to Request a Board of Supervisors Appeal Fee Waiver
4. A check in the amount of $578 payable to the San Francisco Planning Department
5. Additional supporting documentation

A copy of this letter of appeal will be concurrently submitted to the Environmental Review Officer.

PROJECT DESCRIPTION

On its face, the Project looks innocuous enough: the construction of two single-family homes and an extension of Folsom Street and utilities to service them. However, the street extension would be built on an extraordinarily steep slope (even by San Francisco standards). Moreover, a uniquely dangerous PG&E gas transmission pipeline runs directly underneath.

The Project site is the only High Consequence Area[2] in San Francisco where a 26-inch PG&E Gas Transmission Pipeline is unprotected by asphalt for 125 feet – buried in "variable topography" terrain. It runs up a sharply pitched hillside in a residential area before it re-enters paved street-cover on Bernal Heights Boulevard.[3]

UC Berkeley Professor Emeritus Robert Bea – a pipeline safety expert with UC Berkeley's Center for Catastrophic Management, who testified in PG&E's San Bruno trial – states the concern surrounding this particular Bernal Heights location of an aging transmission pipeline "is

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[1] Erroneously dated April 19, 2017.

[2] According to the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration, *"Pipeline safety regulations use the concept of "High Consequence Areas" (HCAs), to identify specific locales and areas where a release could have the most significant adverse consequences. Once identified, operators are required to devote additional focus, efforts, and analysis in HCAs to ensure the integrity of pipelines."*

[3] Pavement protects gas transmission pipelines from accidental rupture and is especially important in urban areas where accidental rupture would be catastrophic. The gas transmission line is unprotected by asphalt at the Project Site.

identical to the list of concerns that summarized causation of the San Bruno Line 132 gas pipeline disaster." To wit, in 1989 the San Francisco Department of Public Works replied to an inquiry about this open space area, stating, "It was too dangerous to ever develop."

Additionally, the Project site's proposed street is located at a blind intersection that serves as the only viable access point for emergency vehicles to reach 28 homes in the neighborhood. The proposed dead-end street is too steep for emergency vehicles to climb, it is too narrow for them to turn around, and its intersection will cause trucks to 'bottom out' and become stuck – blocking access to the neighborhood.

The Planning Department's latest effort to avoid an Environmental Impact Report (EIR) – especially in light of the Millennium Tower and San Bruno PG&E pipeline disaster – is deeply troubling.

DEFICIENT MITIGATION PLAN

The MND violates CEQA, *inter alia*, by failing to reduce the risk of a catastrophic PG&E gas transmission pipeline accident to a level that is "clearly insignificant" and thus continues to have a "significant effect."

Under CEQA Guidelines Section 15070, a mitigated negative declaration is only appropriate where "There is **no** substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment." (Emphasis added.)

> [A]doption of a mitigated negative declaration is proper only where the conditions imposed on the project reduce its adverse environmental impacts **to a level of insignificance**. (§ 21064.5; Guidelines, § 15064, subd. (f)(2).) By statutory definition, a mitigated negative declaration is one in which (1) the proposed conditions "avoid the effects or mitigate the effects to a point where **clearly no significant effect** on the environment would occur, *and* (2) there is **no substantial evidence** in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (§ 21064.5, emphasis added.)

Architectural Heritage Ass'n v. County of Monterey (2004) 122 Cal.App.4th 1095, 1118–19)

In this case, substantial evidence exists to the contrary.

1. A qualified pipeline safety expert has stated on the record that an unacceptably high risk of catastrophic impacts still exists.

Pipeline Safety Expert and Geotechnical Engineer Rune Storesund writes, "the adequacy and feasibility of the proposed mitigation actions are very much in question." Particularly, he says, "there are a number of site-specific factors that make this site unique that do not appear to have been accounted for in the analyses." (Letter from Rune Storesund, attached hereto.)

"The analyses fall short of a rigorous evaluation of pipeline integrity and assurance of public safety," Storesund writes, "given the potential harm as a result of rupture and ignition of natural gas from this transmission pipeline."

He points out the analyses are "unclear," rely on "inference," are not "data-driven," and that "the analyses associated with this negative declaration are indirect." He states that although an assessment of vibration has been completed by acoustical engineering experts, "no direct assessment of pipeline integrity impacts has been evaluated" or proposed. Storesund continues:

> While a discussion was presented by Illingworth & Rodkin, Inc. about anticipated Peak Particle Velocities (PPVs), there was no explicit analysis of actual impact to the pipeline integrity. Illingworth & Rodkin, Inc. infer in their analyses that typical PPV thresholds apply to Line 109. However, there are a number of site-specific factors that make this site unique that do not appear to have been accounted for in the analyses. For example, the pipeline is situated on an incline with a 90-degree bend at the top of the hill. Most conventional pipelines are horizontal in utility trenches on much flatter ground. Ground vibrations will have a different extensional effect on an inclined pipe than a horizontal pipe. The only reliable method to ascertain the impact of these simplifications and generalizations is to calculate pipeline integrity model bias (comparison of predicted value vs actual value). No model bias value for this site was presented.

A mitigation plan based on assumptions runs counter to the recommendations of the American Society of Mechanical Engineers (ASME). According to Storesund, the AMSE presents standard guidance on evaluation of pipeline integrity that includes critical factors affecting pipeline integrity, such as joint factor, bending method, joining method, encroachment, soil cover, depth, etc.

The MND states that "enforcement of the mitigation measure is the responsibility of the Planning Department and the Department of Building Inspection." However, these departments are not in a position to adequately analyze the additional fatigue to be exerted on the pipeline, and a speculative after-the-fact plan which might be developed by PG&E is clearly inadequate. Storesund points out that no "risk validation and process" is identified nor even "referenced" as

recommended by ASME B31.5.

Storesund's concerns are even more troubling in light of PG&E's well-publicized history of safety non-compliance and lost record-keeping – especially in terms of weld and installation methods and pipeline location and depth. These safety concerns are validated in a criminal conviction.

It is not inconsequential that SF City Attorney Dennis Herrera has publicly come out critical of PG&E's safety record: "PG&E has demonstrated time and again that outside oversight is needed to protect the public from a company that is driven by profits, not safety," Herrera said in a May 3, 2017 San Francisco Chronicle article.

Storesund is clear about the mitigation plan's failure to safeguard the public: "Based on the facts and new analyses associated with the proposed development, it is my expert opinion that a reasonable possibility of a significant effect still exists...."

As an experienced and practicing pipeline safety expert, Storesund states that site-specific assessments may "reveal a lower actual pipeline integrity vs an assumed pipeline integrity." Because of the "uncertainties" surrounding pipeline integrity, Storesund concludes, "strong consideration should be given to replacing the segment of pipeline to ensure maximum integrity and minimal exposure of residents to potential undue injury or death as a result of the anticipated heavy excavation and ground disturbance activities."

There is no doubt this MND fails to meet CEQA requirements to avoid an EIR. It fails to mitigate the effects "down to a point where the effects are clearly insignificant" and there remains "substantial evidence before the agency that the project as revised may have a significant effect." Indeed, the deficiencies in this MND underscore the need for an EIR in order to arrive at a "full understanding of the environmental consequences" and "assure the public that those consequences are taken into account."

2. Although the following mitigation measure has been identified for inclusion in the MND vibration management plan, it has not been incorporated into the project plan.

"Section I, Mitigation Measures, Structures: Permanent structures must be located a minimum distance of 10 feet from the edge of Pipeline 109. A total width of 45 feet shall be maintained for pipeline maintenance. No storage of construction or demolition materials is permitted within the 45 foot zone."

The Project violates these requirements on both counts. First, PG&E considers stairs to be permanent structures. The proposed stairway to access Bernal Heights Boulevard from the end of the Folsom Street extension will be installed less than 10 feet from the edge of Pipeline 109 and remains in the plan. Second, the public right-of-way is only 39.5 feet wide—less than the required 45 feet for pipeline maintenance.

3. The mitigation measures are inadequate and do not provide sufficient accountability and independent oversight of the vibration management and monitoring plan.

In light of PG&E's criminal safety record and the extreme consequence of the worst-case scenario of construction over a major pipeline, it is imperative that construction be safe and that rigorous and transparent oversight be required. The public needs immediate and readily available access to all plans and communications around project safety. The vibration safety standards relied upon for this Project appear to be pulled from thin air, with insufficient data or analysis to justify these standards. (*See* March 17, 2017 letter from PG&E Gas Transmission Pipeline Services – Integrity Management to Joy Navarrete, p. 2: "Specific to this project, please ensure max PPV vibration levels are less than 2in/sec.") There is no data, analysis, or justification for using a PPV vibration standard of 2in/sec.

4. The mitigation measures do not include a safety plan, ensuring adequate emergency response and evacuation as recommended by the US DOT Pipeline and Hazardous Materials Safety Administration.

In assessing and ranking its risks, PG&E acknowledges that the risk of catastrophic pipeline failure may result in "significant environmental damage." [See page 20 of PG&E 2016 Gas Safety Plan.] In other words, the risk is not zero; there is a possibility of significant environmental damage. The possibility of such a risk is more compelling given PG&E's recent track record. See Exhibit C of our letter dated and submitted on January 24, 2017 for the Board of Supervisors 1/24/17 hearing, File #161278, see Post-Packet Materials 012417 (available at https://sfgov.legistar.com/View.ashx?M=F&ID=4939382&GUID=DE320C6C-1C98-457E-8BCF-89FC65DDA523).

The Mitigated Negative Declaration (MND) fails to consider significant, unmitigated environmental impacts regulated by CEQA. We urge that a more rigorous evaluation of the entire project be conducted through a full Environmental Impact Report.

ENVIRONMENTAL IMPACTS

CUMULATIVE IMPACTS

There is substantial evidence supporting a fair argument that the project may have a significant, adverse, unmitigated effect on the environment. The Initial Study and the MND are deficient, failing to adequately address several issues, which include but are not limited to the following:

1. Although the Project Description acknowledges the Folsom Street extension of the "paper street," it does not assess its environmental impact. The same is true of the cumulative impacts of the four additional houses for which utilities will be installed under this Project.

According to the Planning Department Environmental Review Process Summary, dated March17, 2011:

"Projects subject to CEQA are those actions that have the potential for resulting in a physical change of some magnitude on the environment and that require a discretionary decision by the City, such as public works construction and related activities, developments requiring permits (which in San Francisco are discretionary and thus not exempt from CEQA), use permits, activities supported by assistance from public agencies, ... No action to issue permits, allocate funds, or otherwise implement a discretionary project may be taken until environmental review is complete."

Violating SF's Environmental Review Guidelines, the MND errs in not individually listing "past, present, and probable future projects that might result in related impacts" (Environmental Review Guidelines, San Francisco Planning Department, p. 3-13, available at http://sfmea.sfplanning.org/EP%20Environmental%20Review%20Guidelines%2010-5-12.pdf), despite acknowledging that "improvements proposed by the development would facilitate future development" of four lots – and "would require further environmental review." The new road is not listed as a separate cumulative impact, although it is a part of the project and poses a significant impact on the stability on the pipeline. Likewise for the various impacts related to development of the four additional vacant lots.

"For a phased development project, even if details about future phases are not known, future phases must be included in the project description if they are a reasonably foreseeable consequence of the initial phase and will significantly change the initial project or its impacts." *Laurel Heights Improvement Association v Regents of University of California* (1988) 47 Cal. 3d 376.

The MND errs in proposing a mitigation that does not take into account the cumulative impacts of a proposed street and four "probable future" homes for which utilities will now be installed, thus violating CEQA's cumulative impact requirement. Appellants have filed a declaration that confirms future development of at least two of the additional lots.

2. <u>If the Folsom Street extension and the six remaining vacant lots along the "paper street" were subdivided today, they would automatically be subject to an environmental impact analysis.</u>

The six remaining vacant lots along the Folsom "paper street" were created in 1861, predating the first Map Act in 1893, the creation of Chapman Street intersecting the Folsom "paper street" in 1957, the installation of the PG&E gas transmission pipeline in 1932, CEQA in 1970 and the California Subdivision Map Act in 2008.

3. The MND errs in describing the "relevant area affected" by using a misleading "reasonable explanation" of the geographic area.

The MND limits the project area to a thumbnail description that involves two houses and a "paper street" with four additional utility extensions, thus violating CEQA by not describing the "whole" of a project. There is no mention of the unusual geographic and geotechnical conditions of this hillside area that were made uniquely dangerous in 1932 when PG&E laid a 26-inch Gas Transmission Pipeline in this steep, once rural Bernal hillside, rendering the land dangerous.

It consistently downplays the introduction of a new road into a radically steep hillside – under which the pipeline is buried – with euphemisms such as "street improvements" or "vehicular access." It will be a new 150-foot road constituting an entirely new block in Bernal Heights on Folsom Street, a major cross-town thoroughfare.

INCOMPLETE GEOTECHNICAL REPORT

The geotechnical report dated August 3, 2013 focuses solely on the footprint sites of the two proposed houses, with no acknowledgement of the "revised" Project scope. Thus, it is incomplete and fails to address the entire scope of the Project.

The Project Site is unusual and of special concern because the aging 26-inch PG&E gas transmission pipeline is in a rare location where it is unprotected by asphalt on steep terrain. The pipeline's presence on this unimproved steep terrain presents unusual grading and excavation challenges not addressed in the geotechnical report. The Project Site is in a residential High Consequence Area, a designation that denotes catastrophic results in the event of accidental gas pipeline rupture.

The current "incomplete" geotechnical report raises the following concerns:

• UNCERTAINTIES REGARDING SOIL STABILITY: The report acknowledges the uncertainty of the depth of soil to bedrock, which "can vary across the site," and that due to this uncertainty, assumptions about "soil stability, site settlements, and foundations" could change. Given the expanded site scope with excavation activity and grading next to, over, and under the gas transmission pipeline, more thorough review is needed.

• NO MENTION OF BACKFILL SOIL OVER PIPELINE: The transmission pipeline is covered with loose backfill soil, which is different from the other soil on this site. The conditions surrounding the pipeline substantially differ from the soil borings of this report yet are not a part of the report.

• SIGNIFICANT RISK: Lateral and overhead earth movement from excavation activities on this steep hillside pose a significant risk of accidental pipeline rupture. The pipeline will be located under the driveways of the proposed houses, adjacent to excavation activity of 10 feet deep or more. The report affirms, "Excavations extending deeper into bedrock may require extra effort,

such as heavy ripping, hoe-jams or jack-hammering." *Federal pipeline safety guidelines point out that most pipeline accidents happen during construction/excavation activities.*

• DISCREPANCIES: The Project Site is located on an extreme slope. Serious inconsistencies exist in the MND regarding the Project site's slope percentage. The MND's representation of the grade (28%) substantially differs from the geotechnical report (32%). The Project Sponsors' own figures have varied from between 34% to 37%, due to the uncertainties regarding the depth of the transmission pipeline.

• EARTHQUAKES AND LANDSLIDES: The Initial Study violates Section 101.1 of the Planning Code, which establishes eight Priority Policies, including "*maximization of earthquake preparedness*" by not requiring earthquake hazard mitigation for this project. The project site borders on and is below a Seismic Hazard Zone prone to landslides. "Guidelines for Evaluating and Mitigating Seismic Hazards in California" state:

> "The fact that a site lies outside a mapped zone of required investigation does not necessarily mean that the site is free from seismic or other geologic hazards, nor does it preclude lead agencies from adopting regulations or procedures that require site-specific soil and/or geologic investigations and mitigation of seismic or other geologic hazards. It is possible that development proposals may involve alterations (for example, cuts, fills, and/or modifications...) that could cause a site outside the zone to become susceptible to earthquake-induced ground failure."

Given that a steep hillside will be graded and a new street introduced – and that retaining walls will not be allowed over a gas transmission pipeline which runs under the project site – the City must evaluate the landslide risks involved and how they will be mitigated. This winter a landslide occurred on Bernal Hillside in close proximity to the proposed project site. "The EIR's function is to ensure that government officials who decide to build or approve a project do so with a full understanding of the environmental consequences and, equally important, that the public is assured those consequences have been taken into account." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 449, citing *Laurel Heights I* (1988) 47 Cal.3d at pp. 391–392, 253.)

• SITE DRAINAGE: The report addresses the importance of site drainage issues, but no mention is made of the water and fertilizer drainage from the adjacent Community Garden, which abuts the revised Project Site. Importantly, years of fertilizer runoff from the adjacent community garden may have eroded the gas transmission line's protective coating.

DANGEROUSLY STEEP STREET, LIABILITY ISSUES, GARAGE ACCESS

The proposed steep street presents a significant threat to residents and drivers. It will be among the steepest streets in SF. There will be no turn-around at the top, and it will be too narrow to turn around within the proposed street.

• Existing steep streets are substandard but grandfathered in. It is irresponsible governance to create a new one. According to an October 26, 2016 letter from DPW, a Major Encroachment permit would be required for this proposed street but there is no certainty it would be granted. This unclear situation casts doubts on the entire proposed Project Site, which includes garages, sidewalks, and driveways.

• The proposed street plans contain dangerous break-over angles and unclear plans for garage access to current residents.

TRAFFIC AND NEIGHBORHOOD IMPACTS

• The Folsom/Chapman intersection at the Project Site is the primary access point to the 28 existing homes along and above Chapman Street. The other two access points are dangerous: Prentiss Street is the third steepest street in SF at 37% grade that curves, where large vehicles and fire trucks get stuck, and Nevada Street is an unimproved roadway at 35% grade that connects to a rutted dirt trail.

• Due to the usage of the Folsom/Chapman intersection by most drivers and emergency and delivery vehicles, the additional traffic to and from two additional residences potentially increases existing traffic volumes significantly. For six additional residences, it will dramatically increase traffic volumes.

PUBLIC VIEWS

The Planning Department uses inaccurate and misleading data to dismiss the significant impacts on the public vista from Bernal Heights Park and Bernal Heights Blvd.

• The largest intact panorama of the Bay and valley below on the south side of Bernal Heights Park is impacted by this site. This vista is created by a unique stretch of undeveloped DPW and Recreation and Park land that abuts the Project Site. The vista has significant importance to Park visitors and residents. Hundreds of park visitors walk around the Park daily, and enjoy this vista from the sidewalk on Bernal Heights Blvd. directly above the Project Site.

ADDITIONAL IMPACTS

Cumulative Impacts

1) There is a more than insignificant Impact of many hundreds of trips of heavy equipment, including cement trucks driving over speed bumps within a few feet of the pipeline. The area on the uphill side of Bernal Heights Boulevard has already suffered from landslides due to soil instability. Cement trucks and other heavy equipment driving over the speed bumps every day on a street that is designated "No Trucks" presents a hazard that has not been investigated or considered in any reports. These vibrations may cause further instability in the surrounding soil and on the pipeline that runs under that area.

2) We question the accuracy of the soils report and are concerned it does not include the street in its survey. Since developing the street right-of-way is an essential part of the project, the cumulative impact would also include soils impacts in areas affected by street construction.

3) The Bernal Heights East Slope Guidelines were not followed for this project.

4) There is a conflict in whether or not the Folsom Street right-of-way or the proposed 'subdivision' is included in the Slope Protection Act. Maps have conflicting information.

5) If the Folsom Street extension were properly included in the project description, the total square footage of the whole project would trigger the requirement that a stormwater management plan be completed before the environmental review is completed.

Transportation and Circulation

1) The project would cause a significant danger to residents who will not be accessible for Fire trucks or other Emergency vehicles during street construction. The only access to homes off Chapman Street is to come up Folsom and continue onto Chapman. There is no room to park vehicles at this corner, though the MND states that the staging for street construction will be located there. There is also a construction project planned for the near future at that same corner on a currently vacant undersized lot.

2) Pedestrians will lose access to the only sidewalk along Bernal Heights Boulevard during construction, and hundreds of people use it every week.

Construction

Since the local residents' lives will be at risk, how will the community have input into the construction plan with regards to street blockage and pedestrian access, as well as equipment loads and vibration levels? Many questions regarding construction have not been addressed and could cause substantial harm to the environment. Who will monitor this plan? What is the

recourse if the plan is altered or not followed? How will staging occur away from the 45' PG&E safety area?

Emergency Access

Emergency access will not be available at all times during construction. If the corner of Chapman and Folsom is blocked, there is no access for emergency vehicles to residences on or north of Chapman Street. Some emergency vehicles are unable to navigate Prentiss Street between Powhattan and Chapman, which is the only other access. Additionally, emergency vehicles will not be able to access the new Folsom Street extension due to its steep slope and narrow width.

Structures

We question the feasibility of staging the project construction in a way that follows the requirement that "A total width of 45 feet shall be maintained for pipeline maintenance. No storage of construction or demolition materials is permitted within the 45 foot zone."

Impact WS-2

How does the addition of the fence/railing on the roof deck affect the shadow on the nearby Community Garden or other property?

Impact C-UT-1

Sunset Scavenger provides a service for the City picking up garbage and recycling. The current staging area is at the corner of Chapman and Powhattan, There is now a home being constructed at that corner, which means there is no place for the extra garbage, recycling, and compost containers at that corner, or anywhere within 2 blocks. No plan has been put forth to adequately accommodate garbage, compost, and recycling needs.

Impact PS-2

The construction phase of the street right-of-way will cause congestion at the corner of Chapman and Folsom, prohibiting access by fire vehicles, especially the hook and ladder, which can only access homes on and north of Chapman street through this corner.

Because of the extra vulnerability of construction over a PG&E pipeline, the likelihood of an explosion is increased, making emergency access even more important.

If a family has a special education student at a local public school, the bus will need to pick up that child in front of the house. At these homes a bus would not be able to turn around at the top of the hill, and backing up a hill so steep is exceedingly dangerous.

Impact GE-1

Because of the proximity to the Gas Line, this area becomes a higher-risk location in the event of an earthquake. When the project is in-process and excavation is occurring near the pipeline, the adjacent homes are even more at risk due to pipeline damage or fire.

There is no evacuation plan the public is aware of.

There is a question as to the validity of the Seismic Hazards Map indication that the site is not located in an area subject to landslide, since a significant landslide occurred on the hill just a few feet away from the construction site and PG&E pipeline.

Impact GE-5

28% is not the accurate slope of the project site. The street is estimated to be 32 - 37% slope.

The stormwater management plan does not comply with the PG&E requirements.

Impact HY-3

Stormwater is currently absorbed into the hillside. Once the street is installed, stormwater will flow down the street, causing a significant change in drainage.

Impact HZ-4

There is not an adequate plan for evacuation in the event of a pipeline accident.

CONCLUSION

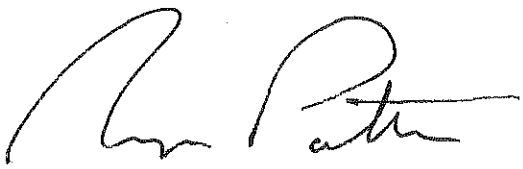
The Mitigated Negative Declaration (MND) fails to consider the substantial evidence demonstrating significant, unmitigated environmental impacts regulated by CEQA. We strongly urge that a more rigorous evaluation of the entire project be conducted through a full Environmental Impact Report.

Appellants reserve the right to submit additional written and oral comments, bases, and evidence in support of this appeal to the City up to and including the final hearing on this appeal and any and all subsequent permitting proceedings or approvals for the Project. Appellants request that this letter and exhibits be placed in and incorporated into the administrative record for Case No. 2013.1383ENV.

Appellants respectfully request that the Board of Supervisors reject the Mitigated Negative Declaration and require a full Environmental Impact Report pursuant to CEQA. If the Mitigated Negative Declaration is upheld, Appellants are prepared to file suit to enforce their and the public's rights.

Very truly yours,

ZACKS, FREEDMAN & PATTERSON, PC



Ryan J. Patterson
Attorneys for Herb Felsenfeld and Gail Newman

cc: Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103
Lisa.Gibson@sfgov.org

cc: Susan Brandt-Hawley
Susanbh@preservationlawyers.com

Enclosures

July 15, 2017

To Whom It May Concern:

We hereby authorize Zacks, Freedman & Patterson, PC to file an appeal on our behalf of the CEQA Mitigated Negative Declaration for Case No. 2013.1383ENV, Building Permit Application Nos. 2013.12.16.4318 and 2013.12.16.4322 (3516 & 3526 Folsom Street, SF).

Signed,

Kathy Angus for Bernal Heights South Slope Organization

Marilyn Waterman for Bernal Safe and Livable

Sam Orr for Bernal Safe and Livable

Herbert E. Felsenfeld for Neighbors Against the Upper Folsom Street Extension

Gail Newman

Ann Lockett

EXHIBIT A

SAN FRANCISCO
PLANNING DEPARTMENT

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Mitigated Negative Declaration

Date:	April 19, 2017; amended on June 8, 2017
Case No.:	2013.1383ENV
Project Title:	3516 and 3526 Folsom Street
Zoning:	RH-1 (Residential—House, One Family) Use District 40-X Height and Bulk District Bernal Heights Special Use District
Block/Lot:	5626/013 and 5626/014
Lot Size:	1,750 square feet (each lot)
Project Sponsor:	Fabien Lannoye, Bluorange Designs 415-626-8868 Fabien@bluorange.com
Staff Contact:	Justin Horner – (415) 575-9023 Justin.Horner@sfgov.org

PROJECT DESCRIPTION

The project site is located on the block bounded by Bernal Heights Boulevard to the north, Gates Street to the west, Powhattan Avenue to the south and Folsom Street to the east. The project site is located along the west side of an approximately 145-foot-long unimproved segment of Folsom Street, north of Chapman Street, that ends at the Bernal Heights Community Garden. This unimproved right-of-way is known as a "paper street." Undeveloped land along this unimproved segment of Folsom Street has been subdivided into six lots, three on each side of Folsom Street. PG&E Natural Gas Transmission Pipeline 109 (PG&E Pipeline 109) runs along Folsom Street adjacent to the project site. The project site is at a slope of 28%.

The proposed project involves the construction of two single-family residences on two of the vacant lots along the west side of the unimproved portion of Folsom Street, ~~and~~ the construction of the connecting segment of Folsom Street to provide vehicle and pedestrian access to the project site, and the construction of a stairway between Folsom Street and Bernal Heights Boulevard. The Folsom Street extension and stairway would be subject to approval by San Francisco Public Works (Public Works) Each single-family home would be 27 feet tall, two stories over-garage with two off-street vehicle parking spaces accessed from a twelve-foot-wide garage door.

The 3516 Folsom Street building would be approximately 2,230 square feet in size with a side yard along its north property line. The 3526 Folsom Street building would be approximately 2,210 square feet in size with a side yard along its south property line. The proposed buildings would include roof decks and a full fire protection sprinkler system. The proposed buildings would be supported by a shallow building foundation using a mat slab with spread footings.

The proposed Folsom Street extension improvements would include an approximately 20-foot-wide road with an approximately 10-foot-wide sidewalk on the west side of the street, adjacent to the proposed residences. The proposed sidewalk would be stepped, would incorporate landscaping that would perform storm water retention, and would provide public access to Bernal Heights Boulevard/Bernal Heights Park. The stairway would run to the northwest of Folsom Street, within Public Works property, and at least 15 feet downhill from an existing stand of hummingbird sage, a locally sensitive plant species, along Bernal Heights Boulevard. The proposed project would not create direct vehicular access to Bernal Heights Boulevard as the Folsom Street extension would terminate ~~at~~ south of the Bernal Heights Community Garden. Construction of the street extension would require the removal of the existing vegetation within the public right-of-way on the "paper street." An existing driveway utilized by both the 3574 Folsom Street and 3577 Folsom Street buildings would also be removed; however, the extension would provide access to the two existing residences.

The proposed project would include the installation of new street trees (subject to approval from PG&E) and street lighting on the west side of the street. No on-street parking would be provided along the Folsom Street extension. In addition to providing utilities for the proposed residences, the project sponsor would install utilities for the four vacant lots located on the "paper street" segment of Folsom Street (one on the west side and three on the east side). No residences are proposed at this time on those lots; the proposed connections would be provided to minimize disruption in the case of future development. Construction would continue for approximately 12 months and would require excavation of up to approximately 10 feet below the existing ground surface.

FINDING

This project could not have a significant effect on the environment. This finding is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance), and 15070 (Decision to prepare a Negative Declaration), and the following reasons as documented in the Initial Evaluation (Initial Study) for the project, which is attached. Mitigation measures are included in this project to avoid potentially significant effects. See pages 113-114

In the independent judgment of the Planning Department, there is no substantial evidence that the project could have a significant effect on the environment.

7/11/2017
Date

Jessica Range for
Lisa Gibson
Environmental Review Officer

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3516-3526 Folsom Street

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACL	Absolute Cumulative Limits
ADRP	Archeological Data Recovery Plan
ACIP	Auger cast in place
AMP	Archeological Monitoring Program
ARB	California Air Resources Board
ARDTP	Archeological Research Design and Treatment Plan
ATP	Archeological Testing Plan
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BCDC	Bay Conservation and Development Commission
bgs	below grade surface
BMPs	best management practices
BMR	below market rate
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
Cal/OSHA	State Occupational Safety and Health Administration
Caltrans	Californian Department of Transportation
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CCAA	California Clean Air Act
CGS	California Geological Survey
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2e	carbon dioxide equivalents
CRHR	California Register of Historical Resources
CSO	Combined Sewer Overflow
dB	decibel
dBA	decibel (A-weighted)
DBI	Department of Building Inspection
DEHP	bis (2-ethylhexyl) phthalate
DPH	Department of Public Health
DPM	diesel particulate matter
DSM	deep soil mixing
DTSC	Department of Toxic Substances Control
ERO	Environmental Review Officer
ESA	Environmental Site Assessment
ESLs	Environmental Screening Levels
FAR	floor area ratio
FARR	Final Archeological Resource Report
FEMA	Federal Emergency Management Agency

FTA	Federal Transit Administration
GHG	greenhouse gas
gsf	gross square feet
g/hp-hr	gram per horsepower per hour
g/bhp-hr	gram per brake horsepower per hour
HCD	California Department of Housing and Community Development
HEPA	High Efficiency Particulate Air Filter
HRE	Historic Resources Evaluation
HVAC	heating, ventilation and air conditioning
in/sec	inches per second
IWMP	Integrated Waste Management Plan
L_{dn}	day-night noise level
LEED	Leadership in Energy and Environmental Design
L_{eq}	equivalent continuous sound level
LUST	leaking underground storage tank
mgd	million gallons per day
mg/kg	milligram per kilogram
mg/L	milligram per liter
MLD	Most Likely Descendant
MLP	maximum load point
mph	miles per hour
MRZ-4	Mineral Resource Zone 4
MSTL	District Market Street Theatre and Loft National Register Historic District
MTBE	methyl tertiary-butyl ether
MTC	Metropolitan Transportation Commission
$MTCO_2E$	metric ton of carbon dioxide equivalents
Muni	San Francisco Municipal Railway
Mw	moment magnitude
NAHC	California State Native American Heritage Commission
NAVD88	1988 North American Vertical Datum
NCT	Neighborhood Commercial Transit (zoning designation)
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NO_x	oxides of nitrogen
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
NSR	New Source Review
NWIC	Northwest Information Center
OPR	State Office of Planning and Research
OS	open space
PAHs	polynuclear aromatic hydrocarbons
PAR	Preliminary Archeological Review
PCBs	polychlorinated biphenyls
PM	particulate matter
$PM_{2.5}$	PM composed of particulates that are 10 microns in diameter or less
PM_{10}	PM composed of particulates that are 2.5 microns in diameter or less

POPOS	privately owned public open spaces
ppm	parts per million
PPV	peak particle velocity
QACL	Qualified Archaeological Consultants List
RED	Residential Enclave (zoning designation)
RMS	root mean square
ROG	reactive organic gases
RWQCB	Bay Area Regional Water Quality Control Board
SB	Senate Bill
SamTrans	San Mateo County Transit District
SEWPCP	Southeast Water Pollution Control Plant
sq. ft.	square feet
SFBAAB	San Francisco Bay Area Air Basin
SFCTA	San Francisco County Transportation Authority
SFFD	San Francisco Fire Department
sfh	square foot hours
SFMTA	San Francisco Municipal Transportation Agency
SFO	San Francisco International Airport
SFPD	San Francisco Police Department
SFPL	San Francisco Public Library
SFPUC	San Francisco Public Utilities Commission
SFPW	San Francisco Public Works
SFUSD	San Francisco Unified School District
SO_2	sulfur dioxide
SOMA	South of Market
SoMa	South of Market
STLC	soluble threshold limit concentration
SUD	Special Use District
TAAS	Theoretically Available Annual Sunlight
TACs	toxic air contaminants
TASC	Transportation Advisory Staff Committee
TBACT	Best Available Control Technology
TCLP	toxicity characteristic leaching procedure
TDM	Transportation Demand Management
TEP	Transit Effectiveness Project
TTLC	total threshold limit concentration
U.S. EPA	U.S. Environmental Protection Agency
USGS	United States Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
VDECS	verified diesel emission control strategy
VMT	vehicle miles traveled
WSA	Water Supply Assessment

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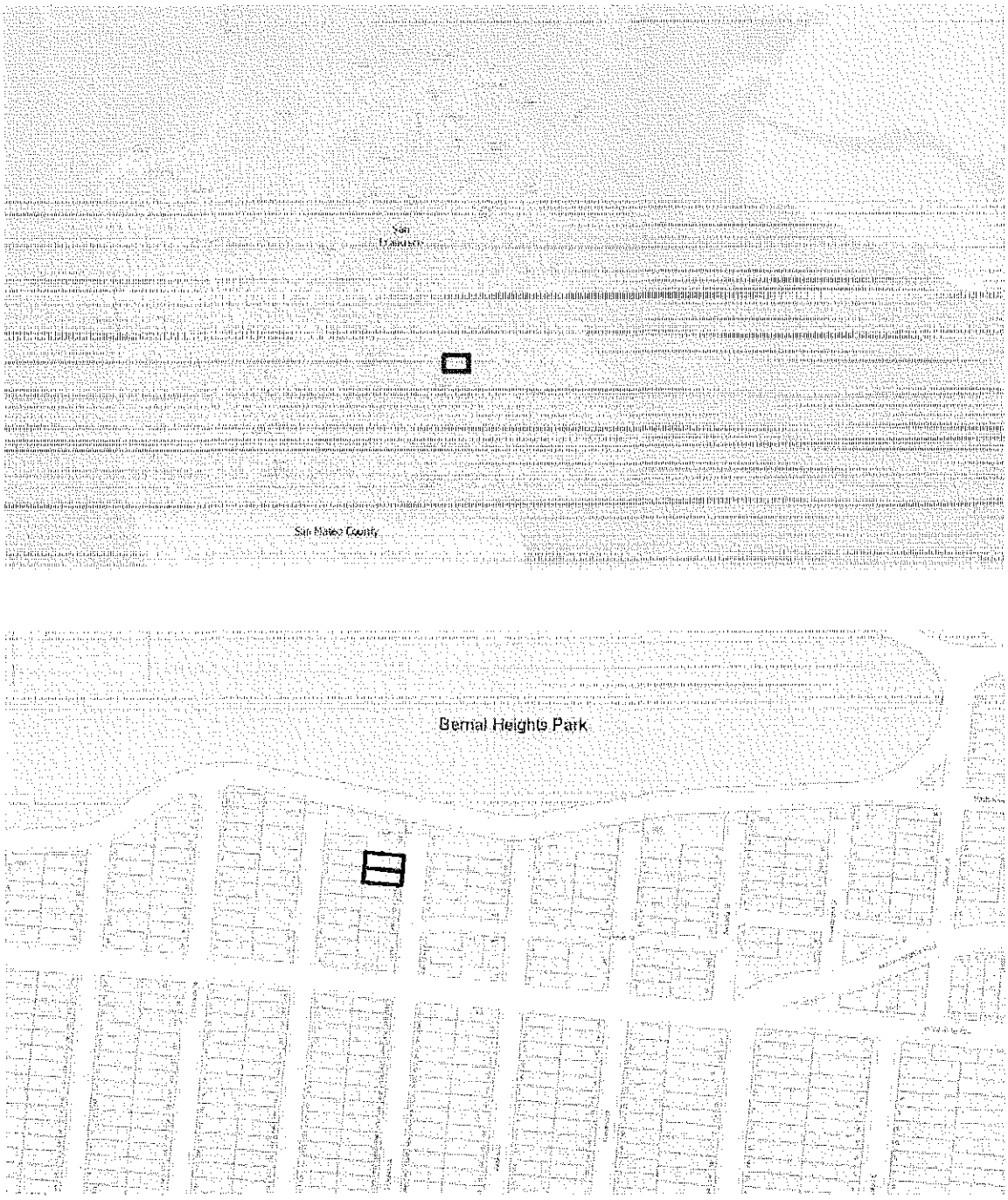
Initial Study
3516-3626 Folsom Street Project
Planning Department Case No. 2013.1383ENV

The proposed 3516-3526 Folsom Street Project (project) would result in the development of two residential units on two 1,750 square-foot parcels (Assessor's Block 5626, Lots 013 and 014) located at 3516-3526 Folsom Street, the improvement of a "paper street" section of Folsom Street, and a new stairway between the project site and Bernal Heights Boulevard in the Bernal Heights neighborhood in the City of San Francisco (City). The two buildings would each be approximately 2,230 gross square feet (gsf) in size, and each would include a two-car garage. The proposed buildings would not exceed 30 feet in height. A complete description of the proposed project, a detailed description of the proposed project's regional and local context, planning process and background, as well as a discussion of requested project approvals is included below.

A. PROJECT SITE

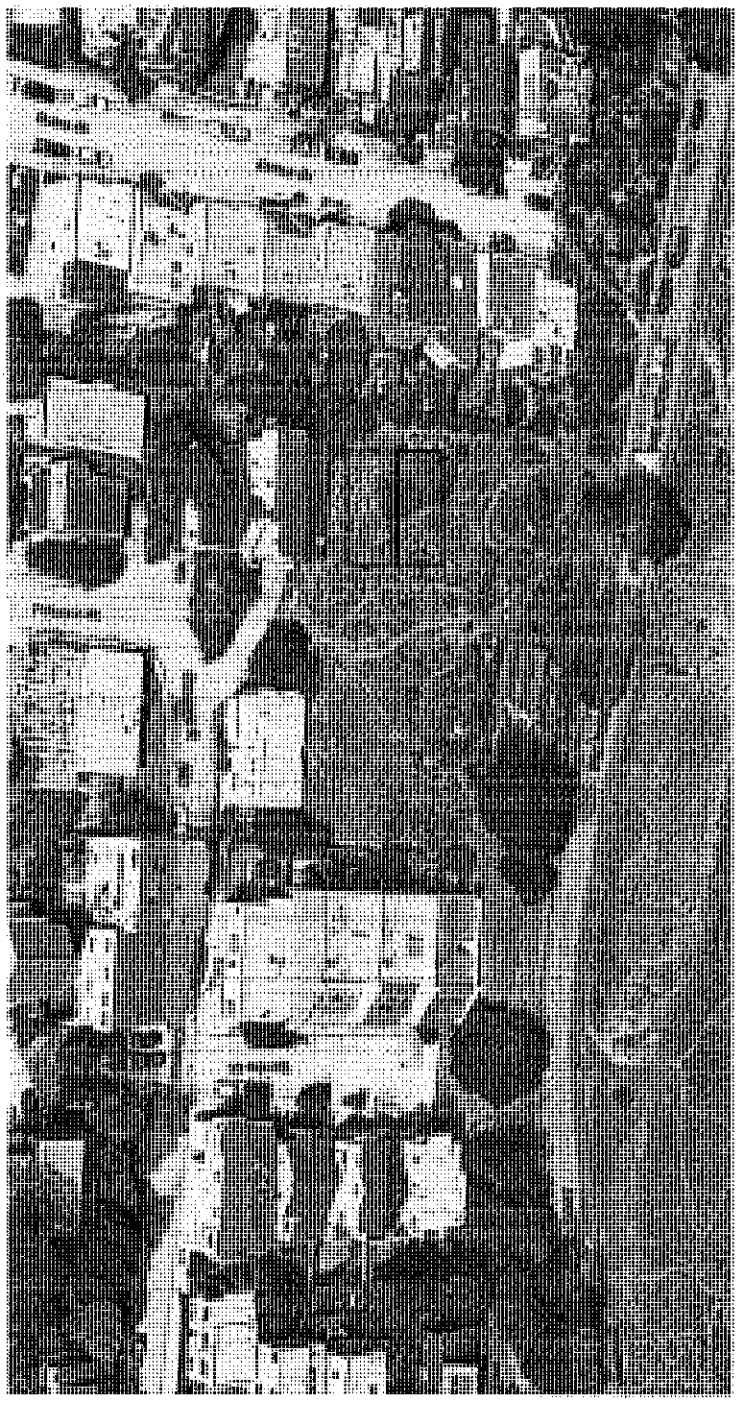
The approximately 6,500 square-foot project site (two lots at 1,750 sf (25 feet by 70 feet) each and an approximately 2,000 sf street improvement) is located in the Bernal Heights neighborhood and is located within a block bounded by Bernal Heights Boulevard to the north, Gates Street to the west, Powhattan Avenue to the south and Folsom Street to the east. The site is located on the west side of an approximately 145 foot long unimproved segment of Folsom Street, north of Chapman Street, that ends at the Bernal Heights Community Garden. This unimproved right-of-way is known as a "paper street." Undeveloped land along this unimproved segment of Folsom Street has been subdivided into six lots, three on each side of Folsom Street. There are two existing residences on this unimproved segment of Folsom Street (3574 and 3577 Folsom Street) that are accessible via private driveways running from Chapman Street. **Figure 1** shows the location of the project site and **Figure 2** provides an aerial view of the site. **Figure 3** illustrates the project site.

Figure 1: Project Location and Regional Vicinity Map



Source: San Francisco Planning Department

Figure 2: Existing Site Conditions



The project site is currently vacant and has not been previously developed. There are bushes and other small plants on the project site. The project site is at a slope of 28% and slopes downward from north to south.

B. PROPOSED PROJECT

The project sponsor proposes the construction of two single-family residences on two of the vacant lots along the west side of the unimproved portion of Folsom Street, ~~and~~ the construction of the connecting segment of Folsom Street to provide vehicle and pedestrian access to the project site and the construction of a stairway to provide pedestrian access from the improved section of Folsom Street to Bernal Heights Boulevard that would run to the northwest of Folsom Street, within Public Works property, and at least 15 feet downhill from an existing stand of hummingbird sage, a locally sensitive plant species. Both single-family homes would be 27 feet tall, two-story-over-garage buildings and would each include two off-street vehicle parking spaces accessed from a twelve-foot-wide garage door. Vehicle access would be provided by a 10-foot wide curb cut on Folsom Street.

The existing, unimproved project site is represented in **Figure 4**. Plans for the proposed project are depicted in **Figures 5 through 12**.

Project Building Characteristics

The proposed project would result in the construction of two immediately adjacent single-family homes, each with three levels of living area (a garage and recreation room with two levels above). Each building would be approximately 2,230 gsf.

Each building would be set back between approximately three and three-and-a-half feet from the street front property line at grade and stepped back up to 10 feet from the building façade at the second level. Each building would be set back approximately 24-and-a-half feet from the rear property line.

Figure 3: Project Site

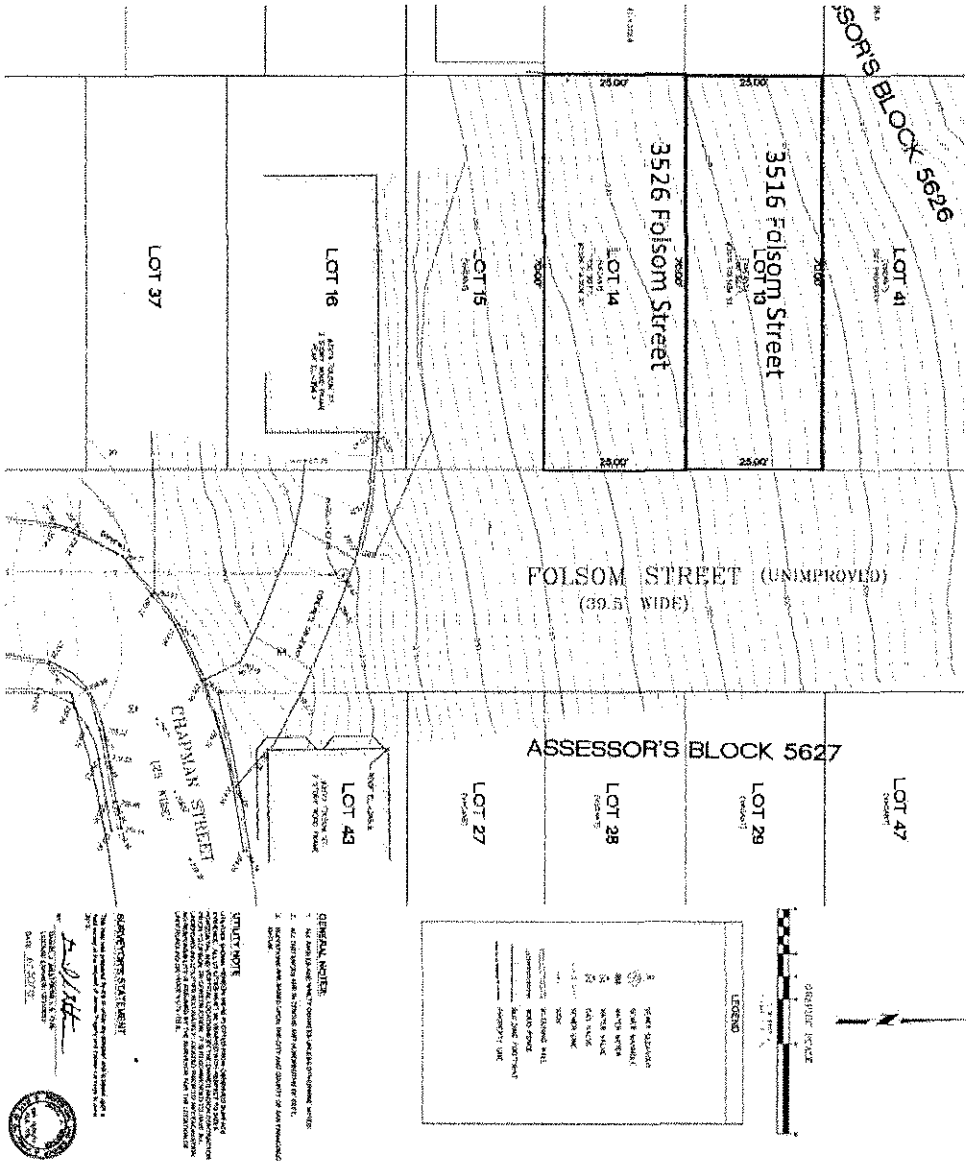


Figure 4: 3526 Folsom Street: Garage and First Floor Plans

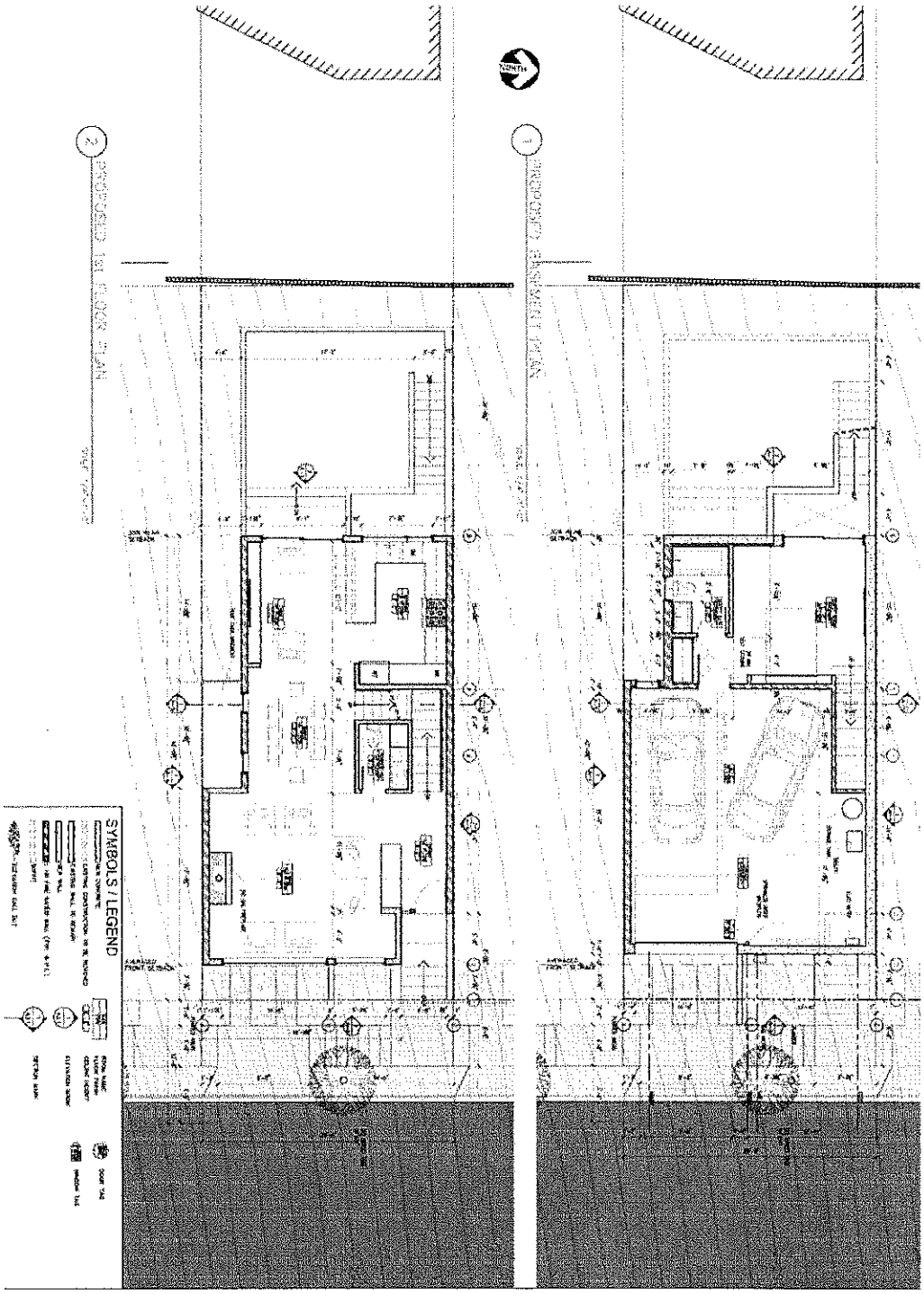


Figure 5: 3526 Folsom Street: Second Floor and Roof Plans

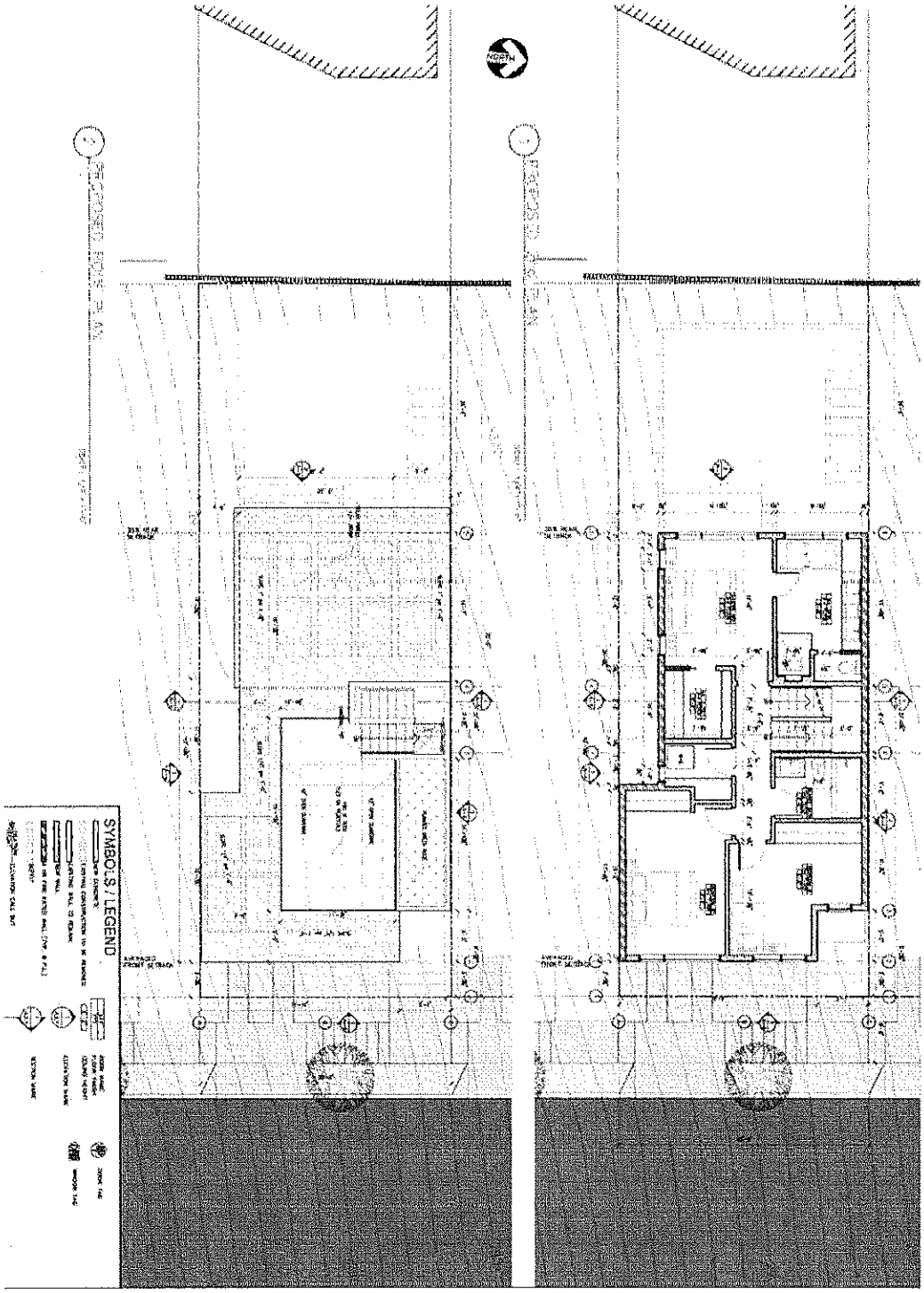


Figure 6: 3526 Folsom Street: North and South Elevations

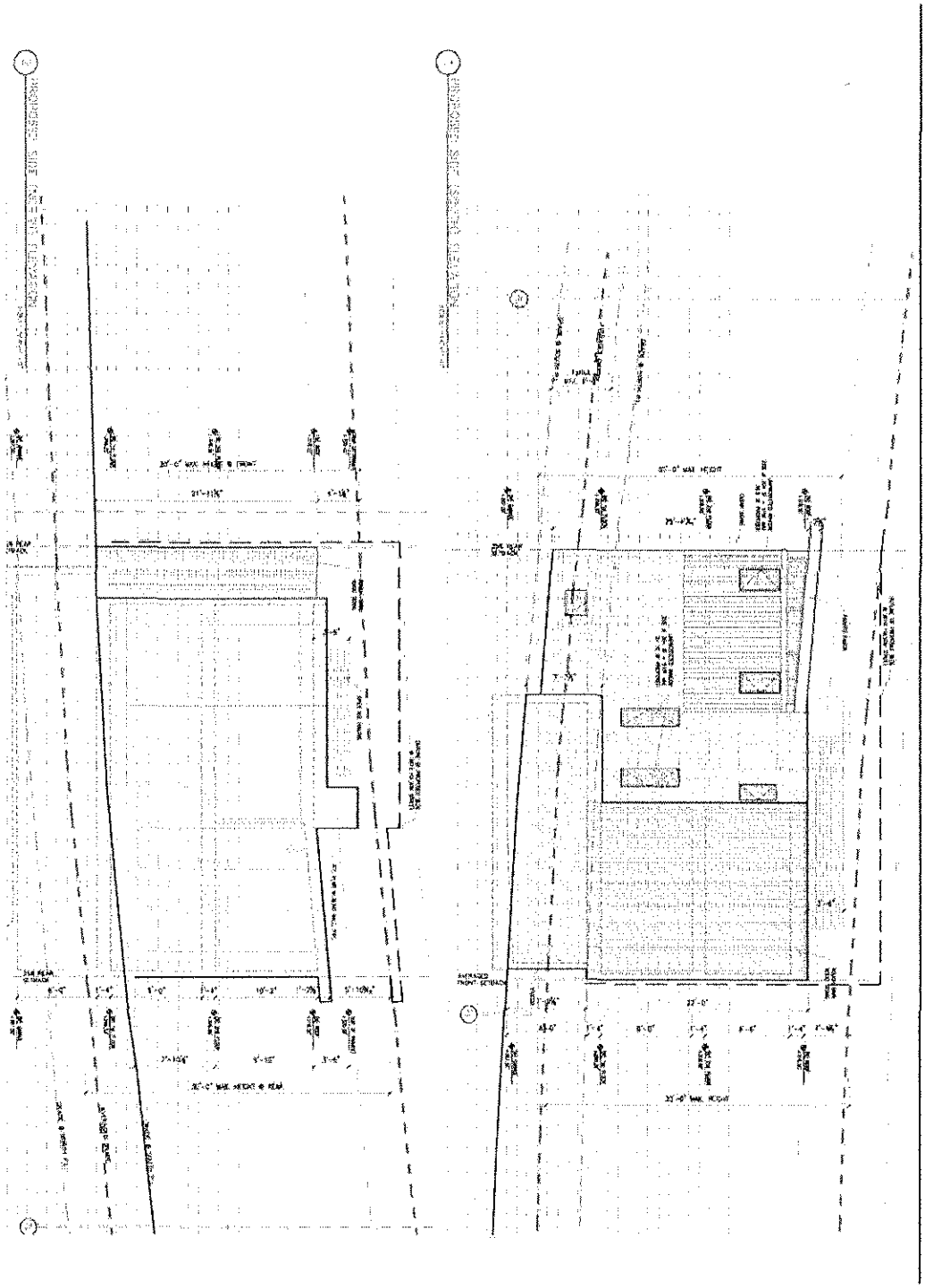


Figure 7: 3526 Folsom Street: East and West Elevations

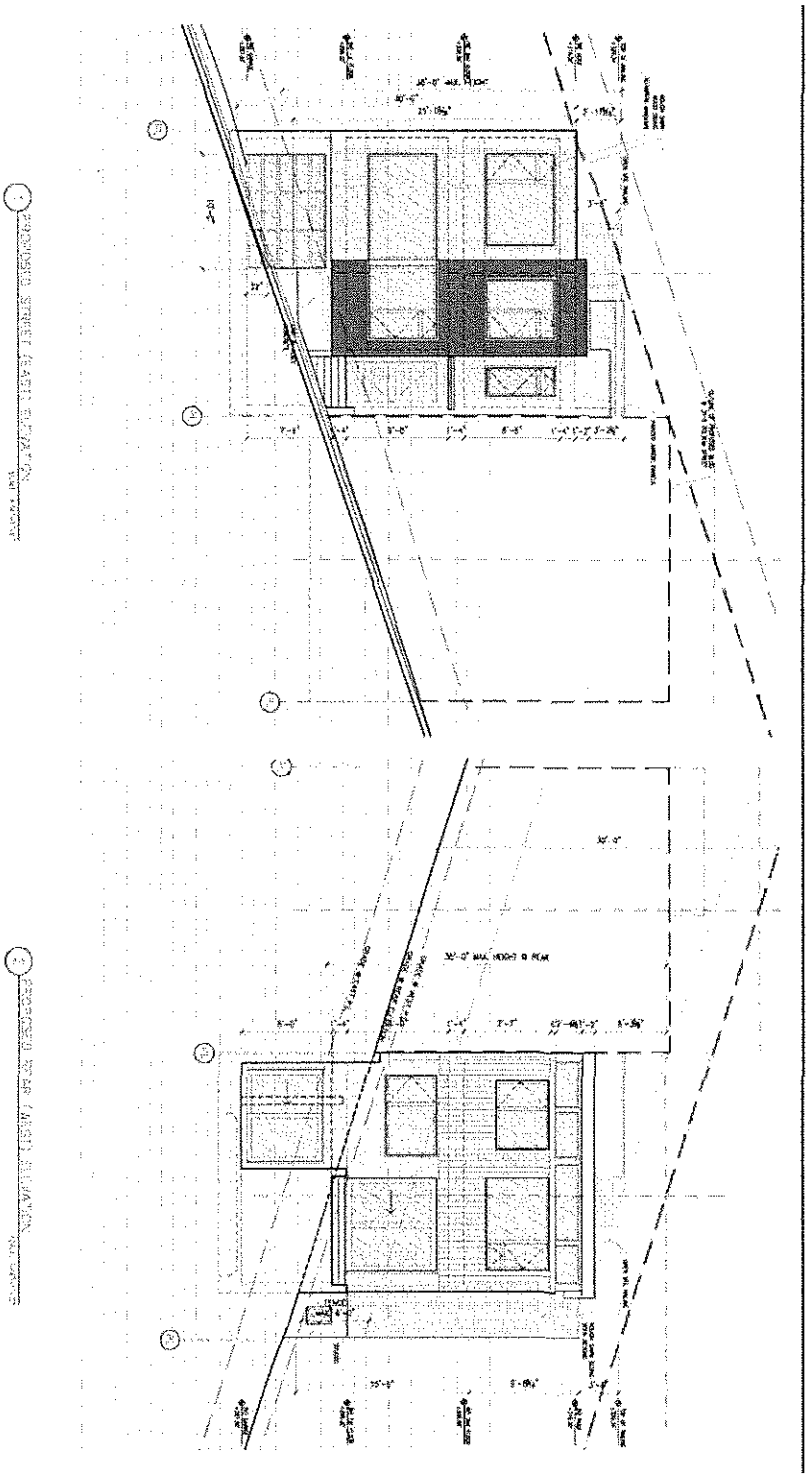


Figure 8: 3516 Folsom Street: Garage and First Floor Plans

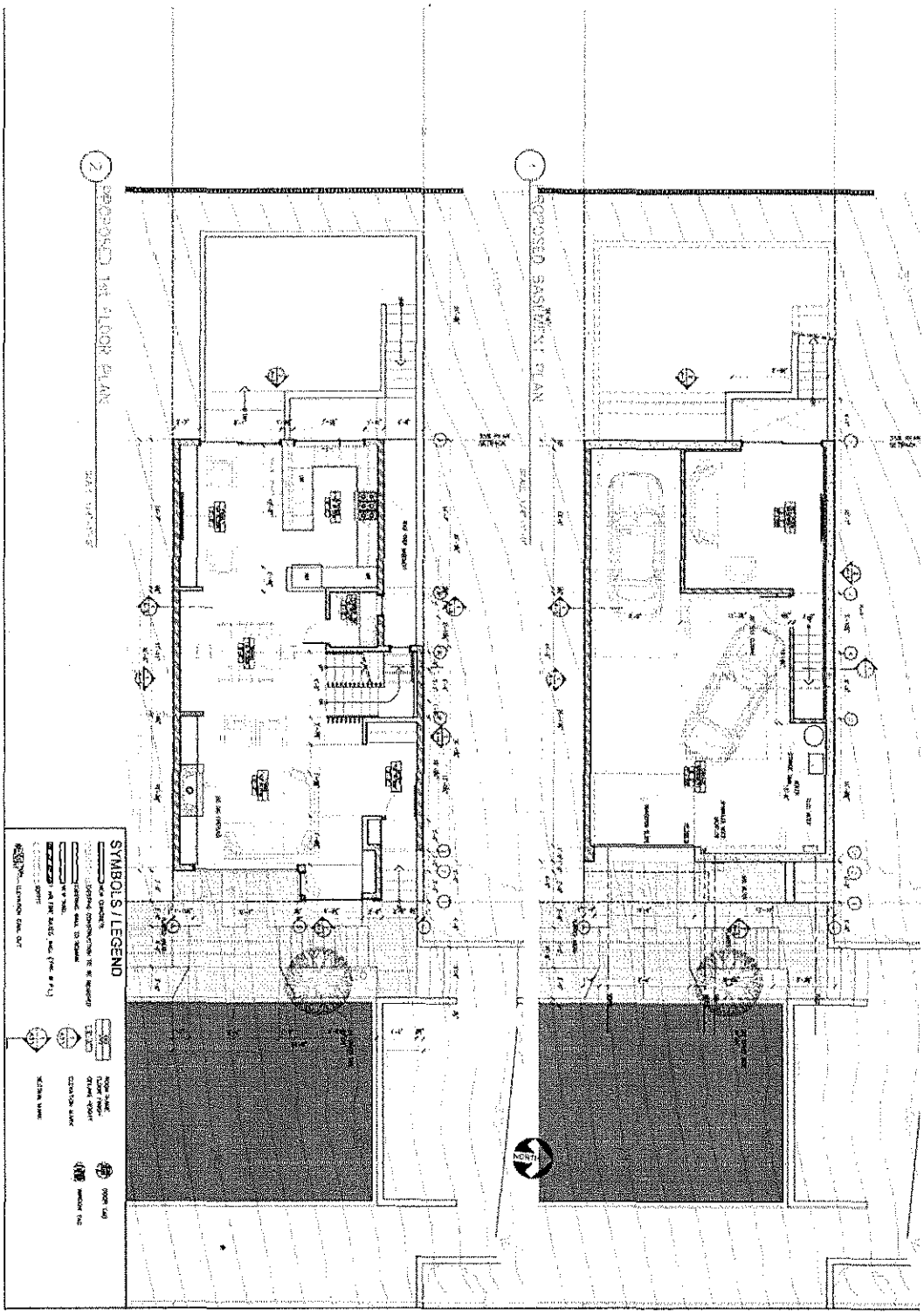


Figure 9: 3516 Folsom Street: Second Floor and Roof Plans

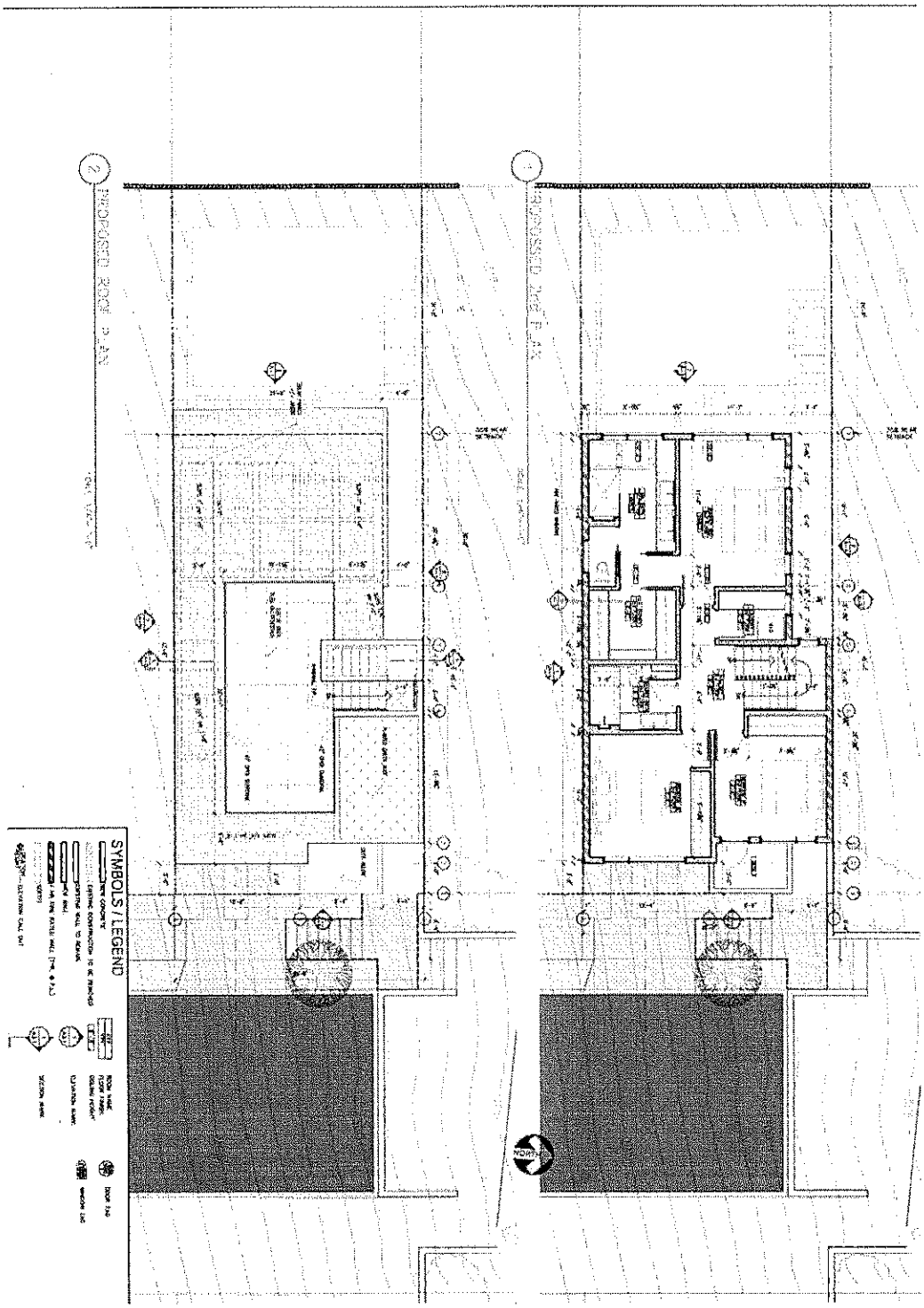


Figure 10: 3516 Folsom Street: North and South Elevations

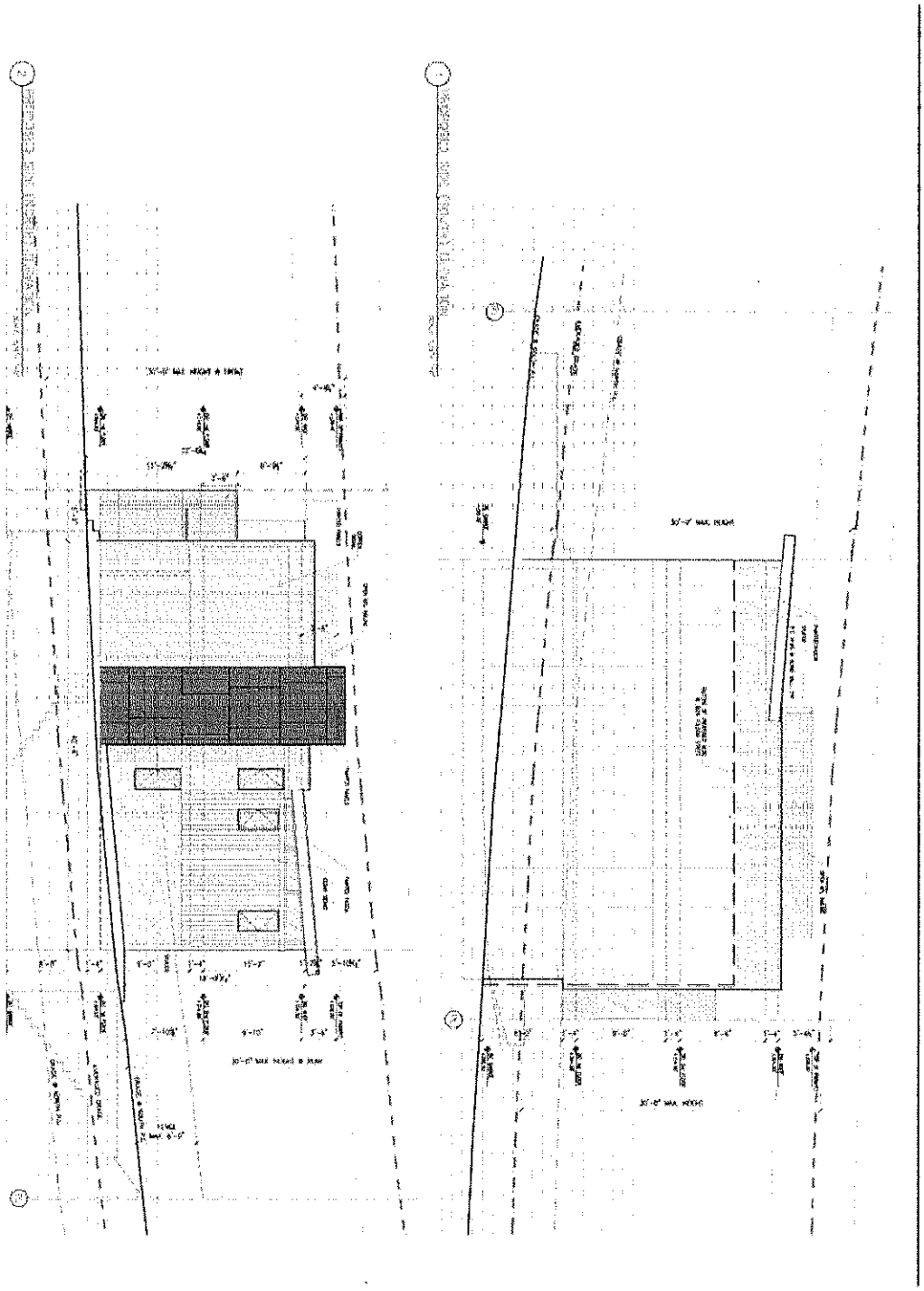


Figure 11: 3516 Folsom Street: East and West Elevations

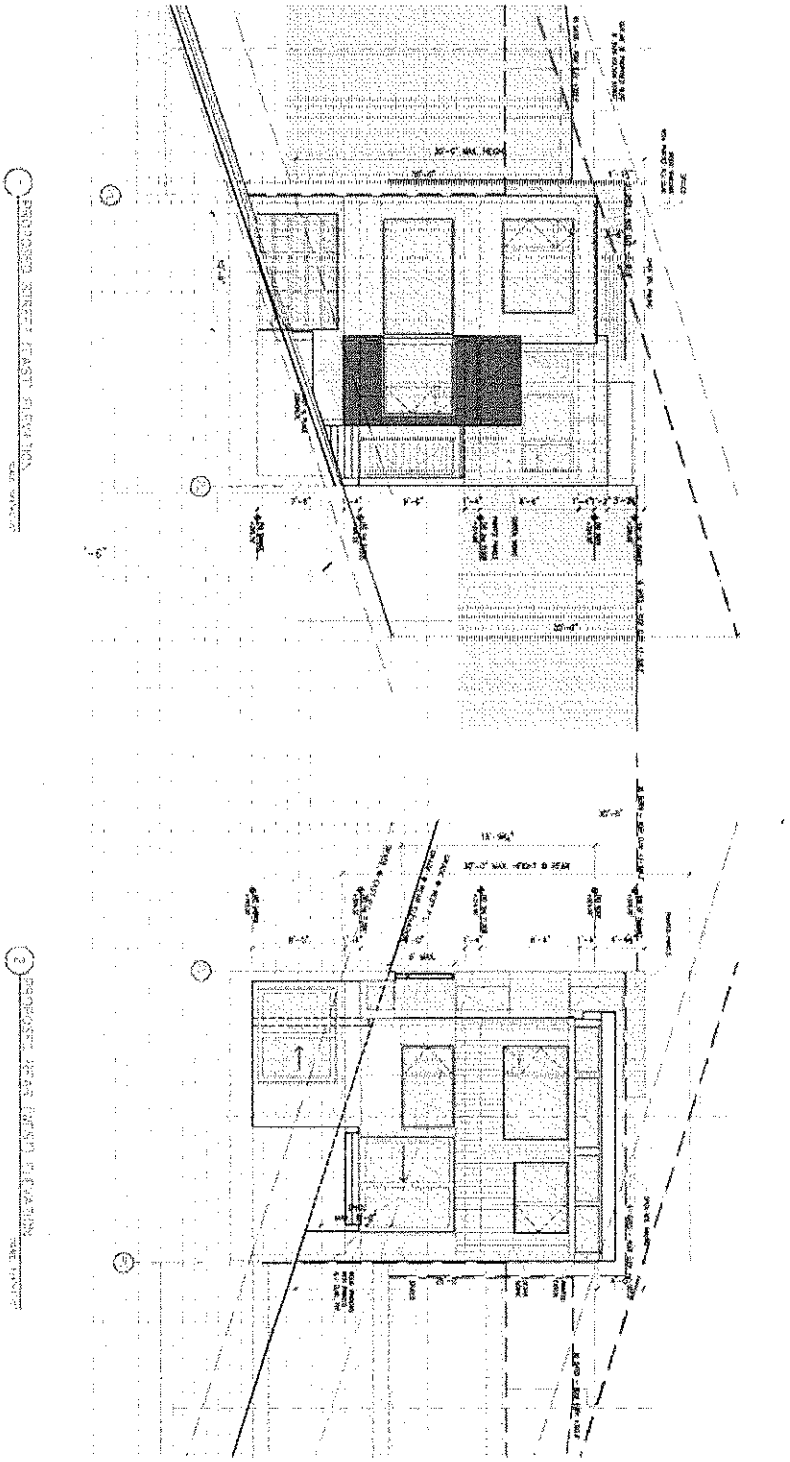
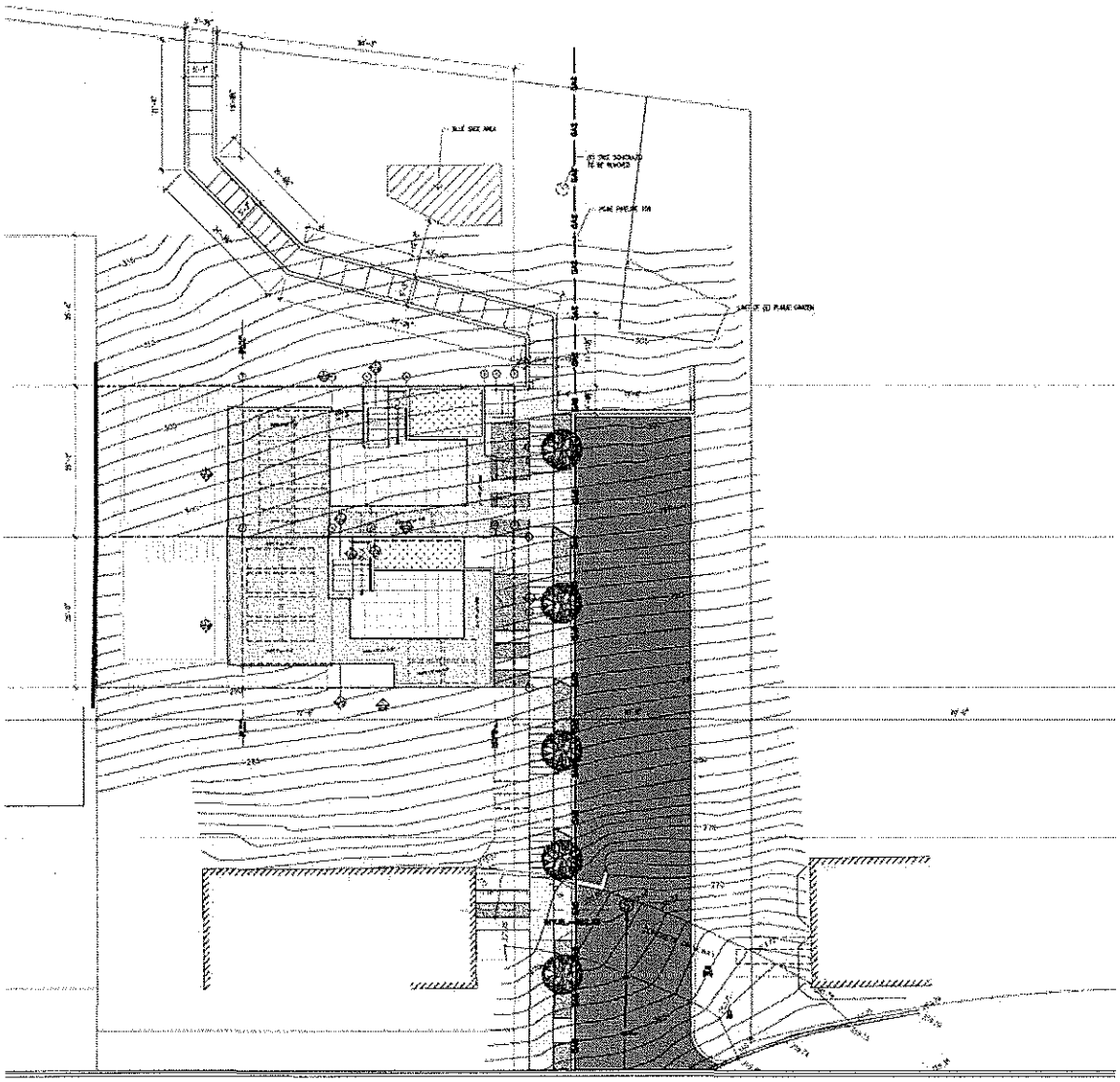


Figure 12: Proposed Street Improvement and Stairway Alignment



Access and Parking

Pedestrian and vehicle access to the proposed project would be provided via Folsom Street, and pedestrian access to the project site would be provided by a stairway connecting Folsom Street and Bernal Heights Boulevard, which would be improved consistent with a Street Improvement Permit

that would be issued by San Francisco Public Works (Public Works). Resident access to each unit would be provided from within the ground level garage and through a front door along Folsom Street. A total of four parking spaces (two for each unit) would be provided on site. New curb cuts for each proposed garage access driveway would be 12 feet in width.

Demolition and Construction

Construction activities at the project site would begin with clearing the site. A total of approximately 650 cubic yards of soil would be excavated from the site to accommodate new foundations and utility connections. Excavated materials would be delivered to 20 cubic yard capacity haul trucks located on Bernal Heights Boulevard by conveyor belt. The excavation of 3516 Folsom Street would include approximately 30 truck trips and the excavation of 3526 Folsom Street would include approximately 25 truck trips. Construction of the proposed project is anticipated to occur over a 12 month period. The concrete required for each foundation slab would require four cement truck trips for each residence (eight, total) plus another four trips per residence for the concrete retaining walls for each residence (eight, total). Concrete trucks and concrete pumps would operate from Bernal Heights Boulevard, and all materials deliveries would occur from Bernal Heights Boulevard. The proposed project would connect to water, sewer, electrical, natural gas, and telecommunications connections that would be brought to the project site by the improvement of the "paper street" section of Folsom Street. The proposed project would include approximately two weeks of excavation, eight weeks of foundation work, and ten weeks for framing. The construction of the two houses would take approximately twelve months. Trucks would access the project site to and from the 101 freeway via Cesar Chavez Street, to Folsom Street and Bernal Heights Boulevard.

The improvement of the "paper street" segment of Folsom Street would be performed under a separate Street Improvement Permit issued by the Department of Public Works. This improvement would include the removal of plants and topsoil along the current right-of-way and the creation of a paved roadway and the construction of a stairway between Folsom Street and Bernal Heights Boulevard. The proposed road improvement would require 92 cubic yards of material to be removed from the project site, which would result in approximately seven haul truck trips. Concrete imported onto the project site for the road improvement would require about ten truck trips. Road work would be conducted from the intersection of Folsom Street and Chapman Street.

C. PROJECT APPROVALS

The project is located in the RH-1 (Residential House, Single-Family) residential zoning district and within the 40-X height and bulk district and within the Bernal Heights Special Use District which reflects the special characteristics and hillside topography of an area of the City that has a collection of mostly older buildings situated on lots generally smaller than the lot patterns in other low-density areas of the City. The proposed project would require the following City, State, and regional approvals. These approvals may be considered in conjunction with the required environmental review, but will not be granted until the required environmental review has been completed:

- Approval of building permits by the Department of Building Inspection (DBI);
- Street Improvement Permit from Department of Public Works for improvement of Folsom Street.

The approval of the building permits by the Department of Building Inspection constitutes the Approval Action for the proposed project, pursuant to Section 31.04(h)(3) of the San Francisco Administrative Code. The Approval Action date establishes the start of the 30-day appeal period for the California Environmental Quality Act determination pursuant to Section 31.16(d) of the San Francisco Administrative Code.

D. PROJECT SETTING

As previously noted, the project site occupies two parcels located on the west side of an unimproved section of Folsom Street in the Bernal Heights neighborhood of San Francisco. Existing uses within the same block consist of unimproved open space, two other primarily two- to three-story single-family residential homes and the Bernal Heights Community Garden. Two-to-three-story residential uses border the site to the south and west, and unimproved lots border the site to the north and east. A two-story residential building borders the site to the south. **Figure 2** illustrates the surrounding residential and open space land uses within the vicinity of the site.

No MUNI bus or light rail lines border the proposed project site. The project site is within ¼ mile of MUNI bus line 24-Divisidero and 67-Bernal Heights. The nearest BART station is 24th Street Mission, which is approximately ¾ mile from the project site. There are no bike routes within 250 feet of the project site.

E. CUMULATIVE SETTING

Past, present and reasonably foreseeable cumulative development projects within ¼-mile radius of the project site include three residential additions and renovations as well as new construction, including a new single family home at 495 Chapman Street, a vertical addition to a home at 100 Gates Street, a demolition of an existing home and construction of a new home at 49 Nevada Street, and a subdivision with new construction at 40 Bernal Heights Blvd. These cumulative projects are the subject of individual Environmental Evaluation Applications on file with the Planning Department, where applicable.[1] There are no active planning applications for any adjacent properties or for the other four lots on this unimproved section of Folsom Street.

F. COMPATIBILITY WITH ZONING AND PLANS

	Applicable	*Not Applicable*
Discuss any variances, special authorizations, or changes proposed to the Planning Code or Zoning Map, if applicable.	☐	☒
Discuss any conflicts with any adopted plans and goals of the City or Region, if applicable.	☐	☒
Discuss any approvals and/or permits from City departments other than the Planning Department or the Department of Building Inspection, or from Regional, State, or Federal Agencies.	☒	☐

San Francisco Planning Code and Zoning Maps

The San Francisco Planning Code (Planning Code) incorporates by reference the City's Zoning Maps, governs permitted uses, densities, and the configuration of buildings within San Francisco. Permits to construct new buildings (or to alter and demolish existing ones) may not be issued unless: 1) the proposed project conforms to the Planning Code; 2) allowable exceptions are granted pursuant to provisions of the Planning Code; or 3) legislative amendments to the Planning Code are included as part of the proposed project.

[1] 100 Gates Street (Case #2016-011777ENV), 49 Nevada Street (Case #2013-0223ENV), 40 Bernal Heights Blvd (Case #2014-002982ENV).

The project site is located in the RH-1 District. As stated in Planning Code Section 209.1, the RH-1 District allows up to one dwelling unit per lot and up to one unit per 3,000 square feet of lot area with conditional use approval. Under the Bernal Heights Special Use District, buildings on lots which have a depth of 70 feet or less shall have a rear yard depth equal to 35 percent of the total depth of the lot. The proposed project would result in the development of two residential units with two buildings on two existing 1,750 square-foot lots, each with a rear yard with a depth that is 35% of the total depth of the lot. Within the RH-1 District, the proposed residential uses are principally permitted.

The project site is located within a 40-X Height and Bulk District, which permits a maximum building height of 40 feet, and the Bernal Heights Special Use District, which does not permit any dwelling unit to exceed a height of 30 feet. The proposed project buildings would be less than 30 feet in height. Bernal Heights Special Use District bulk controls reduce the size of a building's floorplates as the building increases in height. Therefore, the proposed structures would comply with existing height and bulk controls.

According to Planning Code Section 242, two off-street parking spaces are required for a dwelling unit with a usable floor area of between 1,201 square feet (-sf) and 2,250-sf, as is the case with each unit of the proposed project. Thus, the proposed four off-street parking spaces (two per building) would comply with Planning Code Section 242. Planning Code Section 155.2 requires new residential buildings to provide one secured (Class 1) bicycle parking space per each dwelling unit. As the proposed project would provide Class 1 bicycle parking spaces in each garage (for a total of four spaces), the project would comply with the Planning Code's bicycle parking requirements.

Plans and Policies

San Francisco General Plan

The San Francisco General Plan (General Plan) establishes objectives and policies to guide land use decisions related to physical development in the City. It is comprised of ten elements, each of which addresses a particular topic that applies citywide: Air Quality; Arts; Commerce and Industry; Community Facilities; Community Safety; Environmental Protection; Housing; Recreation and Open Space; Transportation; and Urban Design.

Two General Plan elements that are particularly applicable to planning considerations associated with the proposed project are the Housing and Urban Design elements. These elements are discussed in more detail below. Other elements of the General Plan that are applicable to technical aspects of the proposed project include Air Quality, Community Safety, Recreation and Open Space, and Transportation. The proposed project's potential to conflict with the individual policies contained in these more technical elements is discussed in the appropriate topical sections of this Initial Study.

Objectives of the General Plan's Urban Design Element that are applicable to the proposed project include emphasizing the characteristic pattern which gives the City and its neighborhoods an image, a sense of purpose, and a means of orientation and conserving resources which provide a sense of nature, continuity with the past, and freedom from overcrowding.

The Housing Element Update was originally adopted by the Planning Commission on March 2011 and certified by the California Department of Housing and Community Development in July 2011.[2] The key objective of the Housing Element is to promote the development of new housing in San Francisco and the retention of existing housing in a way that is protective of neighborhood identity, sustainable, and is served by adequate community infrastructure. A particular focus of the Housing Element is on the creation and retention of affordable housing, which reflects intense demand for such housing, a growing economy (which itself puts increasing pressure on the existing housing stock), and a constrained supply of land (necessitating infill development and increased density). In general, the Housing Element supports projects that increase the City's housing supply (both market-rate and affordable housing), especially in areas that are close to the City's job centers and are well-served by transit. The proposed project, which is a residential project consisting of two dwelling units, would not obviously conflict with any objectives or policies in the Housing Element.

[2] Pursuant to a court order, the 2011 certification was set aside and a partially Revised Environmental Impact Report (Revised EIR) for the 2004 and 2009 Housing Element was later certified by the Planning Commission on April 24, 2014. No changes were made to the objectives or policies contained within the Housing Element as a result of this action.

The proposed project would not obviously or substantially conflict with any goals, policies, or objectives of the General Plan. A conflict between a proposed project and a General Plan policy does not, in itself, indicate a significant effect on the environment within the context of the California Environmental Quality Act (CEQA). Any physical environmental impacts that could result from such conflicts are analyzed in this Initial Study. In general, potential conflicts with the General Plan are considered by the decisions-makers (typically the Planning Commission) independently of the environmental review process. Thus, in addition to considering inconsistencies that affect environmental issues, the Planning Commission considers other potential inconsistencies with the General Plan independently of the environmental review process, as part of the decision to approve or disapprove a proposed project. Any potential conflict not identified in this environmental document would be considered in that context and would not alter the physical environmental effects of the proposed project that are analyzed in this Initial Study.

The Accountable Planning Initiative

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the Planning Code to establish eight Priority Policies. These policies are: 1) preservation and enhancement of neighborhood-serving retail uses; 2) protection of neighborhood character; 3) preservation and enhancement of affordable housing; 4) discouragement of commuter automobiles; 5) protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership; 6) maximization of earthquake preparedness; 7) landmark and historic building preservation; and 8) protection of open space. The Priority Policies, which provide general policies and objectives to guide certain land use decisions, contain certain policies that relate to physical environmental issues. Where appropriate these issues are discussed in the topical sections of this Initial Study.

Prior to issuing a permit for any project which requires an Initial Study under CEQA; prior to issuing a permit for any demolition, conversion, or change of use; and prior to taking any action which requires a finding of inconsistency with the General Plan, the City is required to find that the proposed project or legislation would be consistent with the Priority Policies. As noted above, the physical environmental effects of the project as they may relate to the Priority Policies are addressed in the analyses in this Initial Study. The information contained in this Initial Study will be referenced

as appropriate in the Planning Department's comprehensive project analysis and findings regarding the consistency of the proposed project with the Priority Policies.

Other Local Plans and Policies

In addition to the *General Plan*, the *Planning Code* and Zoning Maps, and the Accountable Planning Initiative, other local plans and policies that are relevant to the proposed project are discussed below.

- The *San Francisco Sustainability Plan* is a blueprint for achieving long-term environmental sustainability by addressing specific environmental issues including, but not limited to, air quality, climate change, energy, ozone depletion, and transportation. The goal of the *San Francisco Sustainability Plan* is to enable the people of San Francisco to meet their present needs without sacrificing the ability of future generations to meet their own needs.
- The *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Emissions* is a local action plan that examines the causes of global climate change and the human activities that contribute to global warming, provides projections of climate change impacts on California and San Francisco based on recent scientific reports, presents estimates of San Francisco's baseline greenhouse gas emissions inventory and reduction targets, and describes recommended actions for reducing the City's greenhouse gas emissions. The 2013 Climate Action Strategy is an update to this plan.
- The *Transit First Policy* (City Charter, Section 8A.115) is a set of principles that underscore the City's commitment to prioritizing travel by transit, bicycle, and on foot over travel by private automobile. These principles are embodied in the objectives and policies of the Transportation Element of the *General Plan*. All City boards, commissions, and departments are required by law to implement Transit First principles in conducting the City's affairs.
- The *San Francisco Bicycle Plan* is a citywide bicycle transportation plan that identifies short-term, long-term, and other minor improvements to San Francisco's bicycle route network. The overall goal of the *San Francisco Bicycle Plan* is to make bicycling an integral part of daily life in San Francisco.
- The *San Francisco Better Streets Plan* consists of illustrative typologies, standards, and guidelines for the design of San Francisco's pedestrian environment, with the central focus of enhancing the livability of the City's streets.

- *Transportation Sustainability Fee Ordinance* requires that development projects that filed environmental review applications prior to July 21, 2015, but have not yet received approval, pay 50 percent of the applicable Transportation Sustainability Fee (TSF). TSF funds may be used to improve transit services and pedestrian and bicycle facilities.

The proposed project has been reviewed in the context of these local plans and policies and would not obviously or substantially conflict with them. Staff reports and approval motions prepared for the decision makers would include a comprehensive project analysis and findings regarding the consistency of the proposed project with applicable local plans and policies.

Regional Plans and Policies

There are several regional planning agencies whose environmental, land use, and transportation plans and policies consider the growth and development of the nine-county San Francisco Bay Area. Some of these plans and policies are advisory, and some include specific goals and provisions that must be considered when evaluating a project under CEQA. The regional plans and policies that are relevant to the proposed project are discussed below.

- The principal regional planning documents and the agencies that guide planning in the nine-county Bay Area include *Plan Bay Area*, the region's first Sustainable Communities Strategy, developed in accordance with Senate Bill 375 and adopted jointly by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) on July 18, 2013. *Plan Bay Area* is a long-range land use and transportation plan that covers the period from 2010 to 2040. *Plan Bay Area* calls for concentrating housing and job growth around transit corridors, particularly within areas identified by local jurisdictions as Priority Development Areas. In addition, *Plan Bay Area* specifies strategies and investments for maintaining, managing, and improving the region's multi-modal transportation network and proposes transportation projects and programs to be implemented with reasonably anticipated revenue. *Plan Bay Area* will be updated every four years;
- *Plan Bay Area* includes the population and employment forecasts from ABAG's Projections 2013, which is an advisory policy document used to assist in the development of local and regional plans and policy documents, and MTC's 2040 *Regional Transportation Plan*, which is a policy

document that outlines transportation projects for highway, transit, rail, and related uses through 2040 for the nine Bay Area counties;

- The *Regional Housing Needs Plan* for the San Francisco Bay Area: 2014–2022 reflects projected future population growth in the Bay Area region as determined by ABAG and addresses housing needs across income levels for each jurisdiction in California. All of the Bay Area's 101 cities and nine counties are given a share of the Bay Area's total regional housing need. The Bay Area's regional housing need is allocated to each jurisdiction by the California Department of Housing and Community Development (HCD) and finalized though negotiations with ABAG;
- The Bay Area Air Quality Management District (BAAQMD)'s *2010 Clean Air Plan* updates the Bay Area 2005 Ozone Strategy, in accordance with the requirements of the California Clean Air Act (CCAA), to implement feasible measures to reduce ozone and provide a control strategy to reduce ozone, particulate matter (PM), air toxics, and greenhouse gas emissions throughout the region; and
- The San Francisco Regional Water Quality Control Board's *Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan)* is a master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the state, including surface waters and groundwater, and includes implementation programs to achieve water quality objectives.

The proposed project has been reviewed against these regional plans and policies. Due to the relatively small size and infill nature of the proposed project, there would be no anticipated conflicts with regional plans. Therefore, the proposed project would not obviously or substantially conflict with regional plans or policies.

Other Related Policies

The proposed project includes work in proximity to Pacific Gas & Electric (PG&E) gas Pipeline 109, and is therefore subject to PG&E's rules and regulations regarding work near their facilities. In a letter to the San Francisco Planning Department, PG&E outlined the requirements that would apply

to the proposed project.[3] These requirements include the physical presence of a PG&E inspector whenever work within 10 feet of the pipeline is performed; grading and digging standards; the placement of pipeline markers during demolition and construction; standards for construction machinery and loading near and on top of underground pipelines; and limitations on placing landscaping, structures or fencing within certain distances from the pipeline.

Subsequent to the proposed project receiving entitlements from the City of San Francisco, the proposed project would be submitted to PG&E for their review to ensure the safety and integrity of their pipeline. Compliance with PG&E's regulations, and additional requirements found necessary subsequent to project approval, would be a requirement of the proposed project.

G. SUMMARY OF ENVIRONMENTAL EFFECTS

Environmental effects are discussed with mitigation measures, where appropriate, in **Section H, Evaluation of Environmental Effects,** of this Initial Study. All mitigation measures identified are listed in **Section I, Mitigation Measures and Improvement Measures,** have been agreed to by the project sponsor, and will be incorporated into the proposed project. For items designated "Not Applicable" or "No Impact," the conclusions regarding potential significant environmental effects are based upon field observations, staff and consultant experience and expertise on similar projects, and/or standard reference materials available within the San Francisco Planning Department, such as the California Natural Diversity Database and maps published by the California Department of Fish and Wildlife, the California Division of Mines and Geology Mineral Resource Zone designations, and the California Department of Conservation's Farmland Mapping and Monitoring Program. For each checklist item, the evaluation has considered both individual and cumulative impacts of the proposed project.

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[3] John Dolcini, Pipeline Engineer-Gas Transmission, Pacific Gas and Electric Company, *Letter Re: 3516/3526 Folsom Street*, March 30, 2017

H. EVALUATION OF ENVIRONMENTAL EFFECTS

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
1. LAND USE AND LAND USE PLANNING—Would the project:					
a) Physically divide an established community?	☐	☐	☒	☐	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐	☐

Impact LU-1: The proposed project would not physically divide an established community. *(Less-Than-Significant Impact)*

The division of an established community would typically involve the construction of a barrier to neighborhood access (such as a new freeway segment) or the removal of a means of access (such as a bridge or roadway). The proposed project would result in the construction of two two-story, up to 30-foot-tall buildings with a total of two dwelling units and street improvements, including a pedestrian connection between Bernal Heights Boulevard and Folsom Street. The proposed project would be incorporated into the existing street configuration. The proposed project includes the improvement of a currently unimproved "paper street" segment of Folsom Street, which would improve connectivity between Bernal Heights Park to the north and the existing residential neighborhood south of the project site. The proposed project would not construct a physical barrier to neighborhood access or remove an existing means of access, such as a bridge or roadway which would create an impediment to the passage of persons or vehicles. The existing access driveway for two existing buildings adjacent to the project site would be replaced by the proposed extension of Folsom Street. As such, the proposed project would not physically divide an established community.

The established community surrounding the project site includes primarily residential uses. The proposed project would introduce new residential uses within an existing residential area and would not alter the land use pattern of the immediate area. The proposed project would not introduce any new land uses, such as industrial uses, that would either create potential conflicts through incompatible uses or result in disruptions to the community's established land use patterns.

For these reasons, the proposed project would not physically divide an established community. This impact would be less than significant and no mitigation measures would be required.

Impact LU-2: The proposed project would not conflict with any applicable land use plans, policies or regulations of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. ***(Less-Than-Significant Impact)***

Land use impacts are also considered to be significant if the proposed project would conflict with any plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Environmental plans and policies are those, like the Bay Area Air Quality Management District's 2017 Clean Air Plan, which directly address environmental issues and/or contain targets or standards that must be met in order to preserve or improve characteristics of the City's physical environment.

The General Plan contains objectives and policies that guide land use decisions, as well as some objectives and policies that relate to physical environmental issues. As identified in **Section F, Compatibility with Zoning and Plans** (page 16), the proposed project does not conflict with any existing General Plan objectives or policies. Therefore, this impact would be less than significant and no mitigation measures would be required.

Impact C-LU-1: The proposed project would not make a considerable contribution to any significant cumulative land use impacts. ***(Less-Than-Significant Impact)***

The project as proposed is for the construction of two single-family residences on two vacant lots located on the "paper street" segment of Folsom Street as well as utility extensions and street improvements that would serve the two homes and four undeveloped lots along this segment of

Folsom Street. The four adjacent lots are all under different ownership than the project lots and no Environmental Evaluation applications are on file with the Planning Department for development of those lots. Any future development proposals on the adjacent lots would require further environmental review and City approval.

Since the 3516 and 3526 Folsom Street project is the first proposed development on the "paper street" segment of Folsom Street, the project sponsor would be required to construct pedestrian and vehicular access to this segment of Folsom Street. The project sponsor has also agreed to construct utilities to service the remaining four undeveloped lots so as to avoid any need to excavate the improved section of Folsom Street in the event homes are proposed for the four remaining vacant lots in the future.

Pursuant to CEQA, cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other physical environmental impacts. The proposed project would construct two single-family homes, improve a segment of Folsom Street, and provide utilities for the two proposed homes and four adjacent lots. While there are no Environmental Evaluation applications on file with the Planning Department for the four adjacent lots, the improvements proposed by the project would facilitate future development of those lots. Any subsequent development would be required to comply with the same regulations as the proposed project including, but not limited to, compliance with the San Francisco Building and Fire Codes, Slope Protection Act, PG&E regulations for work in proximity to their pipeline, the SFPUC's Stormwater Management Ordinance and Construction Site Runoff Ordinance, the Migratory Bird Treaty Act (MBTA) and Department of Fish and Wildlife (DFW) regulations protecting nesting birds and the Bernal Heights East Slope Design Guidelines. These regulations would ensure that development of the adjacent lots would not result in significant environmental effects.

The proposed project and cumulative projects would be consistent with the envisioned land uses for this area, and no other potential conflicts with policies adopted for the purpose of mitigating an environmental effect have been identified. Thus, the proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in a considerable cumulative land use impact.

Topics:		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
2.	**POPULATION AND HOUSING— Would the project:**					
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐	☐
b)	Displace substantial numbers of existing housing units or create demand for additional housing, necessitating the construction of replacement housing?	☐	☐	☒	☐	☐
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐	☐

Impact PH-1: The proposed project would not directly or indirectly induce substantial population growth in San Francisco. ***(Less-Than-Significant Impact)***

In general, a project would be considered growth-inducing if its implementation would result in a substantial population increase and/or new development that might not occur if the project were not approved and implemented. The addition of the two new residential units would increase the residential population on the site by approximately five persons,[4] resulting in a direct increase in population on the project site and contributing to anticipated population growth in both the neighborhood and citywide context.

However, the addition of five residents represents an incremental increase in the population of the area and would not result in a substantial increase to the population of the larger neighborhood or

[4] The project site is located in Census Tract 252, which is generally bounded by Cesar Chavez Street to the north, Cortland Ave to the south, Nebraska and Alabama Streets to the east, and Elsie Street to the west. The population calculation is based on Census 2010 data, which estimates 2.52 people per household in Census Tract 252. It should be noted that this census tract has somewhat larger households than the citywide average of 2.26 persons per household.

citywide. The 2010 U.S. Census indicates that the population in the project vicinity (Census Tract 252) is approximately 5,369 persons.[5] The proposed project would increase the population near the project site by approximately 0.1 percent. The proposed project could indirectly induce additional population growth in the project area because the proposed improvement of the "paper street" section of Folsom Street could enable additional development of four additional houses in the currently undeveloped area. However the addition of four units, with approximately 10 residents, would not be considered substantial population growth. The project would also not generate new employment on the site which could in turn indirectly increase the demand for housing elsewhere. Therefore, the proposed project would not directly or indirectly induce substantial population growth in San Francisco. This impact would be less than significant and no mitigation measures are necessary.

Impact PH-2: The proposed project would not displace substantial numbers of existing housing units or people and would not create demand for additional housing elsewhere. ***(Less-Than-Significant Impact)***

The project site is currently undeveloped, and there are no existing housing units on the project site. Therefore, implementation of the proposed project would not displace existing housing units or residents. The proposed project would result in the development of two new residential units and would not include uses that could generate demand for additional housing citywide, such as commercial space. Therefore, this impact would be less than significant and no mitigation measures are necessary.

[5] The population estimate is based on data from the 2010 Census for Census Tract 252.

Impact C-PH-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulative impact related to population and housing. ***(Less-Than-Significant Impact)***

The proposed project includes the improvement of the "paper street" segment of Folsom Street which could induce the development of the four remaining lots adjacent to the project site.[6] Four more single-family homes could increase the area population by an additional ten residents, or a 0.2 percent increase in the population of the census tract. As described under Impact PH-1, the proposed project's individual contribution to population and employment growth would not be considerable and represents a minimal percentage of overall population increase within the neighborhood and Citywide. The population of San Francisco is projected to increase by approximately 280,490 persons for a total of 1,085,725 persons by 2040.[7] The residential population introduced as a result of the proposed project would constitute less than one percent of projected city-wide growth. Thus, this population increase would be accommodated within the planned growth for San Francisco. Furthermore, these additional residential units would provide more opportunities for housing, which is a Citywide need. Additionally, the proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in the displacement of substantial numbers of housing units as the majority of the approved and proposed projects would include development of housing or unimproved parcels or the expansion of existing residential properties.

For these reasons, the proposed project in combination with other past, present, and reasonably foreseeable future projects would not result in a cumulatively considerable impact related to population and housing.

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[6] Assumes the City of San Francisco average of 2.52 persons per household.

[7] ABAG, *Plan Bay Area*, p. 40. Available online at http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf, accessed January 25, 2017.

Topics:		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
3.	**CULTURAL RESOURCES— Would the project:**					
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco *Planning Code*?	☐	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐	☐
c)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐	☐
d)	Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074?	☐	☐	☒	☐	☐

Impact CP-1: Implementation of the proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco *Planning Code*. *(Less-Than-Significant Impact)*

As discussed on page 1 of **Section A, Project Site**, the project site is currently vacant, undeveloped land, and does not include any historic resources. Neither the project site nor the immediately surrounding neighborhood is within a historic district designated under federal, state or local regulations. Therefore, the proposed project would result in a Less-Than-Significant Impact on historical resources.

Impact CP-2: The proposed project would not result in a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. *(Less-Than-Significant Impact)*

This section discusses archaeological resources, both as historical resources according to Section 15064.5 as well as unique archaeological resources as defined in Section 21083.2(g).

The potential for encountering archaeological resources is determined by several relevant factors including archaeological sensitivity criteria and models, local geology, site history, and the extent of a potential projects soils disturbance/modification, as well as any documented information on known

archaeological resources in the area. A Planning Department archaeologist completed a preliminary archeological review (PAR) for the proposed project.[8] The PAR determined that there is a no potential to adversely affect archaeological resources. There are no documented or recorded archaeological sites in the immediate vicinity of the proposed project. Therefore, the proposed project construction would have a Less Than Significant Impact on prehistoric or historical archaeological resources.

Impact CP-3: Construction activities for the proposed project would not result in the disturbance of human remains, including those interred outside of formal cemeteries, should such remains exist beneath the project site. ***(Less-Than-Significant Impact)***

There are no known human remains, including those interred outside of formal cemeteries, located in the immediate vicinity of the site. It is considered highly unlikely that human remains would be encountered at the project site during excavation and grading for the proposed project. Therefore, this impact is considered less than significant.

Impact CP-4: Construction activities for the proposed project would not result in the disturbance of tribal resources, should such resources exist beneath the project site. ***(Less-Than-Significant Impact)***

CEQA Section 21074.2 requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in Section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on the national, State, or local register of historical resources. Based on discussions with Native American tribal representatives, in San Francisco, prehistoric archeological resources are presumed to be potential tribal cultural resources. A tribal cultural resource is adversely affected when a project causes a substantial adverse change in the resource's significance.

[8] Randall Dean, Archeologist, San Francisco Planning Department, Preliminary Archeological Review, 3516-26 Folsom Street, September 23, 2013.

Pursuant to CEQA Section 21080.3.1(d), within 14 days of a determination that an application for a project is complete or a decision by a public agency to undertake a project, the Lead Agency is required to contact the Native American tribes that are culturally or traditionally affiliated with the geographic area in which the project is located. Notified tribes have 30 days to request consultation with the Lead Agency to discuss potential impacts on tribal cultural resources and measures for addressing those impacts. On March 29, 2017, the Planning Department contacted Native American individuals and organizations for the San Francisco area, providing a description of the project and requesting comments on the identification, presence and significance of tribal cultural resources in the project vicinity.

No Native American tribal representatives have contacted the Planning Department to request consultation as of the publication of this Initial Study. Department staff has determined that the proposed project would not be expected to affect legally-significant archeological resources, including prehistoric archeological resources. Therefore, the proposed project would have a Less-Than-Significant Impact on previously unknown tribal cultural resources.

Impact C-CP-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity would not result in cumulative impacts to historic architectural resources. ***(Less-Than-Significant Impact)***

The proposed project would have Less-Than-Significant Impacts on historical resources, and there are no proposed projects within the vicinity of the project that would result in historical resources impacts, so the proposed project could not result in a cumulatively considerable contribution to cumulative historic resource impacts.

Impact C-CP-2: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity would not result in a substantial adverse change in the significance of previously undiscovered archaeological resources, human remains, including those interred outside of formal cemeteries; and tribal resources should such resources exist on or beneath the project site. ***(Less-Than-Significant Impact)***

Archeological resources and tribal cultural resources are non-renewable and finite, and all adverse effects to subsurface archeological resources and tribal cultural resources have the potential to erode a dwindling cultural/scientific resource base. Past, present, and reasonably foreseeable future

development projects within San Francisco and the Bay Area region would include construction activities that could disturb archaeological resources and tribal cultural resources and could contribute to cumulative impacts related to the loss of significant historical, scientific, and cultural information about California, Bay Area, and San Francisco history and prehistory including the historic and prehistory of Native American peoples. Similar to the proposed project, development projects within San Francisco would be subject to the City's standard archeological and human remains mitigation measures, thereby reducing the potential for cumulative archeological-related and tribal-cultural-resource-related impacts.

As discussed above, the proposed project would have Less-Than-Significant Impacts on archeological resources, and therefore the proposed project could not contribute to cumulative impacts and would not be cumulatively considerable. Therefore, this impact would be less than significant with mitigation.

Topics:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less-Than-Significant Impact*	*No Impact*	*Not Applicable*
4. TRANSPORTATION AND CIRCULATION— Would the project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐	☐
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☐	☒

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?	☐	☐	☒	☐	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐	☐

The proposed project would not result in a change in air traffic patterns, and would therefore not cause substantial air traffic safety risks. Therefore, topic 4c is not applicable to the project.

Setting

The proposed project includes two single-family homes along the west side of a "paper street" section of Folsom Street in the Bernal Heights neighborhood. The immediate vicinity of the project site is made up of two- to-three story residential properties and is exclusively residential, save for the Bernal Heights Community Garden and Bernal Heights Park, both to the north of the project site. The project site is not adjacent to any MUNI transit lines. The project site is within ¼ mile of MUNI bus line 24-Divisidero and 67-Bernal Heights. The nearest BART station is 24th Street Mission, which is approximately ¾ mile from the project site. There are no bike routes within 250 feet of the project site. The proposed project will include the improvement of the paper street and the addition of a sidewalk and stairs to create a pedestrian connection between Bernal Heights Boulevard and Folsom Street and the immediate neighborhood to the south.

Background on Vehicle Miles Traveled (VMT) in San Francisco and Bay Area

In January 2016, OPR published for public review and comment a Revised Proposal on Updates to CEQA Guidelines on Evaluating Transportation Impacts in CEQA[9] (proposed transportation impact guidelines) recommending that transportation impacts for projects be measured using a VMT metric. VMT measures the amount and distance that a project might cause people to drive, accounting for the number of passengers within a vehicle. OPR's proposed transportation impact guidelines provides substantial evidence that VMT is an appropriate standard to use in analyzing transportation impacts to protect environmental quality and a better indicator of greenhouse gas, air quality, and energy impacts than automobile delay. Acknowledging this, San Francisco Planning Commission Resolution 19579, adopted on March 3, 2016:

- Found that automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall no longer be considered a significant impact on the environment pursuant to CEQA, because it does not measure environmental impacts and therefore it does not protect environmental quality.
- Directed the Environmental Review Officer to remove automobile delay as a factor in determining significant impacts pursuant to CEQA for all guidelines, criteria, and list of exemptions, and to update the Transportation Impact Analysis Guidelines for Environmental Review and Categorical Exemptions from CEQA to reflect this change.
- Directed the Environmental Planning Division and Environmental Review Officer to replace automobile delay with VMT criteria which promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses; and consistent with proposed and forthcoming changes to CEQA Guidelines by OPR.

Planning Commission Resolution 19579 became effective immediately for all projects that have not received a CEQA determination and all projects that have previously received CEQA determinations, but require additional environmental analysis.

[9] This document is available online at: https://www.opr.ca.gov/s_sb743.php.

Many factors affect travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development at great distance from other land uses, located in areas with poor access to non-private vehicular modes of travel, generate more automobile travel compared to development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Given these travel behavior factors, San Francisco has a lower vehicle miles traveled (VMT) ratio than the nine-county San Francisco Bay Area region. In addition, some areas of the City have lower VMT ratios than other areas of the City. These areas of the City can be expressed geographically through transportation analysis zones (TAZs). TAZs are used in transportation planning models for transportation analysis and other planning purposes. The zones vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas like the Hunters Point Shipyard.

The San Francisco County Transportation Authority (Transportation Authority) uses the San Francisco Chained Activity Model Process (SF-CHAMP) to estimate VMT by private automobiles and taxis for different land use types. Travel behavior in SF-CHAMP is calibrated based on observed behavior from the California Household Travel Survey 2010-2012, Census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. SF-CHAMP uses a synthetic population, which is a set of individual actors that represents the Bay Area's actual population, who make simulated travel decisions for a complete day. The Transportation Authority uses tour-based analysis for office and residential uses, which examines the entire chain of trips over the course of a day, not just trips to and from the project. For retail uses, the Transportation Authority uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to an entire chain of trips). A trip-based approach, as opposed to a tour-

based approach, is necessary for retail projects because a tour is likely to consist of trips stopping in multiple locations, and the summarizing of tour VMT to each location would over-estimate VMT.[10,11]

Impact TR-1: The proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. ***(Less-Than-Significant Impact)***

VMT Analysis

Land use projects may cause substantial additional VMT. The following identifies thresholds of significance and screening criteria used to determine if a residential land use project would result in significant impacts under the VMT metric. For residential projects, a project would generate substantial additional VMT if it exceeds the regional household VMT per capita minus 15 percent.[12] As documented in the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* ("proposed transportation impact guidelines"), a 15 percent threshold below existing development is "both reasonably ambitious and generally achievable."[13] OPR's proposed transportation impact guidelines provides screening criteria to identify types, characteristics, or locations of land use projects that would not exceed these VMT thresholds of significance. OPR recommends that if a project or land use proposed as part of the project meets any

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[10] To state another way: a tour-based assessment of VMT at a retail site would consider the VMT for all trips in the tour, for any tour with a stop at the retail site. If a single tour stops at two retail locations, for example, a coffee shop on the way to work and a restaurant on the way back home, then both retail locations would be allotted the total tour VMT. A trip-based approach allows us to apportion all retail-related VMT to retail sites without double-counting.

[11] San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

[12] OPR's proposed transportation impact guidelines state a project would cause substantial additional VMT if it exceeds both the existing City household VMT per capita minus 15 percent and existing regional household VMT per capita minus 15 percent. In San Francisco, the City's average VMT per capita is lower (8.4) than the regional average (17.2). Therefore, the City average is irrelevant for the purposes of the analysis.

[13] Governor's Office of Planning and Research, *Revised Proposal on Updates to CEQA Guidelines on Evaluating Transportation Impacts in CEQA*, January 20, 2016, p. III:20. This document is available online at: https://www.opr.ca.gov/s_sb743.php.

of the below screening criteria, then VMT impacts are presumed to be less than significant for that land use and a detailed VMT analysis is not required. These screening criteria and how they are applied in San Francisco are described below:

- Map-Based Screening for Residential, Office, and Retail Projects. OPR recommends mapping areas that exhibit where VMT is less than the applicable threshold for that land use. Accordingly, the Transportation Authority has developed maps depicting existing VMT levels in San Francisco for residential, office, and retail land uses based on the SF-CHAMP 2012 base-year model run. The Planning Department uses these maps and associated data to determine whether a proposed project is located in an area of the City that is below the VMT threshold.
- Small Projects – OPR recommends that lead agencies may generally assume that a project would not have significant VMT impacts if the project would either: (1) generate fewer trips than the level required for studying consistency with the applicable congestion management program or (2) where the applicable congestion management program does not provide such a level, fewer than 100 vehicle trips per day. The Transportation Authority's 2015 San Francisco Congestion Management Program does not include a trip threshold for studying consistency. Therefore, the Planning Department uses the 100 vehicle trip per day screening criterion as a level generally where projects would not generate a substantial increase in VMT.
- Proximity to Transit Stations. OPR recommends that residential, retail, and office projects, as well projects that are a mix of these uses, proposed within ½ mile of an existing major transit stop (as defined by CEQA Section 21064.3) or an existing stop along a high quality transit corridor (as defined by CEQA Section 21155) would not result in a substantial increase in VMT. However, this presumption would not apply if the project would: (1) have a floor area ratio[14] of less than 0.75; (2) include more parking for use by residents, customers, or employees of the project than required or allowed, without a conditional use; or (3) is inconsistent with the applicable Sustainable Communities Strategy.[15]

[14] Floor area ratio means the ratio of gross building area of the development, excluding structured parking areas, proposed for the project divided by the net lot area.

[15] A project is considered to be inconsistent with the Sustainable Communities Strategy if development is located outside of areas contemplated for development in the Sustainable Communities Strategy.

The existing average daily VMT per capita for the transportation analysis zone the project site is located in, TAZ 432, is below the existing regional average daily VMT. For residential uses in TAZ 432, the average daily VMT per capita is 10.2, which is about 41 percent below the existing regional average daily VMT per capita of 17.2.

Thus, as described above, the project site is located within an area of the City where the existing VMT is more than 15 percent below the regional VMT, and the proposed project land uses would not generate substantial additional VMT.[16]

Trip Generation

The proposed project would result in the construction of two new single-family residences. Trip generation rates from the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 9th Edition, were used to estimate the daily and peak-hour trip generation for the proposed project. Table 1 below summarizes the trip generation for the proposed project.

Table 1: Project Trip Generation

Land Use	Units	Daily Person Trips	PM Peak Hour
Residential—Single Family	2	20	2

Notes: Rates per ITE *Trip Generation Manual, 9th Edition;* Land Use Code (230) Residential Condominium/Townhouse

Source: San Francisco Planning Department, Trip Generation Table for 3516-3526 Folsom Street, 2017.

[16] The Map-Based Screening for Residential, Office, and Retail Projects was applied to the proposed project. The project site is located within TAZ 432, which is within an area of the City where the existing VMT is more than 15 percent below the regional VMT thresholds, as documented in Executive Summary Resolution Modifying Transportation Impact Analysis, Attachment F (Methodologies, Significance Criteria. Thresholds of Significance, and Screening Criteria for Vehicle Miles Traveled and Induced Automobile Travel Impacts), Appendix A (SFCTA Memo), March 3, 2016. Available online at http://commissions.sfplanning.org/cpcpackets/Align-CPC%20exec%20summary_20160303_Final.pdf. Accessed March 21, 2016.

As shown in Table 1 above, the proposed project is expected to generate approximately 20 daily vehicle trips, with 2 trips occurring during the PM peak hour.

Construction

Construction of the proposed project would be expected to take approximately 12 months. During this period, temporary and intermittent transportation impacts would result from truck movements to and from the project site during excavation and construction activities associated with the proposed buildings. Construction activities would generate construction worker trips to and from the project site and a temporary demand for parking and public transit. However, the additional trips would not exceed the capacity of local or regional transit service. Due to the temporary nature of the construction activities, the construction related impacts on transportation and circulation would be less than significant.

Due to the limited addition of project-related traffic (2 PM peak hour trips), the proposed project is not anticipated to result in a conflict with any established plans or policies. In addition, as discussed above, the proposed project would meet the VMT Map screening criteria. Implementation of the proposed project would result in Less Than Significant construction-related transportation impacts. Therefore, the proposed project would not conflict with any plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system or congestion management program. This impact would be less than significant and no mitigation measures would be required.

Impact TR-2: The proposed project would not result in substantially increased hazards due to particular design features (e.g., sharp curves or dangerous intersections) or incompatible uses. ***(Less-Than-Significant Impact)***

The proposed project would include the construction of two two-story buildings with a total of two residential units, which is considered a compatible use with the surrounding area. Access to the project site would be provided by the improvement of a "paper street" section of Folsom Street. The proposed project would not result in roadway design changes that would include sharp curves or other roadway design elements that would create dangerous conditions, and the improved street section would not be a through street; that is, the improved section would not be used by the general public but would typically be limited to the residents of the proposed project. The improved section

would not include any on-street parking facilities. The proposed design of the street must be reviewed and approved by San Francisco Public Works (Public Works) and found consistent with the City's Subdivision Regulations. The proposed project would result in a Less-Than-Significant Impact related to hazards associated with a design feature and no mitigation is required.

Impact TR-3: The proposed project would not result in inadequate emergency access. ***(Less-Than-Significant Impact)***

Emergency access to the project site would remain mostly unchanged from existing conditions. The Project Sponsor has consulted the San Francisco Fire Department (SFFD) regarding emergency access.[17] While the width and grade of the proposed street improvement preclude SFFD apparatus from traversing the proposed street, the proposed project conforms to Fire Code Section 503.1.1, which requires all portions of the exterior walls of the first story of any constructed building to be within 150 feet of an approved fire apparatus access road. Both Folsom Street and Bernal Heights Boulevard are accessible to SFFD apparatus and are within 150 feet of all portions of the exterior walls of the first floor of both proposed homes. Furthermore, Fire Code Section 503.1.1 allows a Fire Code Official to offer an exception to the 150 foot requirement if subject buildings are equipped with an approved automatic sprinkler system. While the Project Sponsor is not requesting an exception to Fire Code Section 503.1.1, the proposed homes would include automatic sprinkler systems. As the proposed houses are within 150 feet of approved fire access roads and include automatic sprinkler systems, the proposed project conforms with the Fire Code. Therefore, the proposed project would not result in inadequate emergency access and the impacts would be less than significant.

[17] Sponsor meeting with SFFD Assistant Fire Marshall Rich Hill, April 29, 2016.

Impact TR-4: The proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, or cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity or alternative travel modes. ***(Less-Than-Significant Impact)***

Implementation of the proposed project would add two residential units to the project site, increasing the residential population on the site by approximately five persons.[18] The proposed project would not substantially increase the population in the project vicinity and would result in a minimal number of transit trips, pedestrian, and bicycle trips. The proposed project would include street improvements which would increase pedestrian access and pedestrian network connectivity between Bernal Heights Boulevard and the improved section of Folsom Street and the neighborhood to the south. Thus, the proposed project would not substantially effect the utilization of local and regional transit service, pedestrian facilities, or bicycle facilities. Therefore the proposed project would not result in changes to the City's transportation and circulation system that could conflict with adopted policies, plans, or programs regarding transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, or cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity or alternative travel modes. Therefore, this impact would be less than significant and no mitigation measures would be required.

Impact C-TR-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in substantial cumulative transportation impacts. ***(Less-Than-Significant Impact)***

VMT, by its very nature, is largely a cumulative impact. The VMT associated with past, present, and future projects contributes to physical secondary environmental impacts. It is likely that no single project by itself would be sufficient in size to prevent the region or state from meeting its VMT reduction goals. Instead, a project's individual VMT contributes to cumulative VMT impacts. The

[18] The population estimate is based on Census 2010 data, which estimates 2.52 per household in Census Tract 252.

VMT and induced automobile travel project-level thresholds are based on levels at which new projects are not anticipated to conflict with state and regional long-term greenhouse gas emission reduction targets and statewide VMT per capita reduction targets set in 2020. For residential uses in TAZ 432, the average daily VMT per capita in 2040 is estimated to be 8.9, which is about 45 percent below the estimated 2040 regional average daily VMT per capita of 16.1. Therefore, because the estimated average daily VMT for TAZ 432 would be more than 15 percent below the estimated regional average daily VMT, the proposed project would not be considered to result in a cumulatively considerable contribution to VMT impacts.

Based on the foregoing, in combination with past, present, and reasonably foreseeable future projects, the proposed project would not contribute considerably to any substantial cumulative increase in VMT, impacts to the effectiveness of the circulation system, impacts related to design features or incompatible uses, inadequate emergency access, or conflicts with alternative modes of transportation. Therefore, this impact would be less than significant and no mitigation measures would be required.

Topics:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less-Than-Significant Impact*	*No Impact*	*Not Applicable*
5. NOISE— Would the project:					
a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐	☐
b) Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐	☐
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	☐
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	☐

Topics:		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
e)	For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☐	☒
f)	For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☐	☒
g)	Be substantially affected by existing noise levels?	☐	☐	☐	☐	☒

The project site is not within an airport land use plan area or in the vicinity of a private airstrip. Therefore, topics 5e and 5f are not applicable and will not be further discussed.

Fundamentals of Environmental Noise and Groundborne Vibration

A project will normally have a significant effect on the environment related to noise if it would substantially increase the ambient noise levels for adjoining areas or conflict with the adopted environmental plans and policies of the community in which it is located. Noise impacts can be described in three categories. The first is audible impacts that increase noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 decibels (dB) or greater since this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, is the change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered when analyzing the effects of project-generated noise.

Operational Noise and Vibration

The primary existing noise sources contributing to ambient noise in the project area are traffic associated with Bernal Heights Boulevard and surrounding residential streets and other noise from motor vehicles, the interaction between the tires and the road, and vehicle exhaust systems. Existing

ambient noise levels at the project site range from 55 to 60 dBA.[19] Residential land uses are not considered sources of vibration and observation indicates that there are no major sources of vibrations at the project site.

Construction Noise and Vibration

The operation of heavy construction equipment, particularly pile-driving equipment and other impact devices (e.g., pavement breakers), creates seismic waves that radiate along the surface of the ground and downward. These surface waves can be felt as ground vibration. Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. The most frequently used method to describe vibration impacts is peak particle velocity (PPV). PPV is defined as the maximum instantaneous peak of the vibration signal in inches per second (in/sec).[20]

Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. This attenuation is a complex function of how energy is imparted into the ground as well as the soil or rock conditions through which the vibration is traveling. Variations in geology can result in different vibration levels, with denser soils generally resulting in more rapid attenuation over a given distance. The effects of groundborne vibration on buildings include movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The rumbling sound caused by the vibration of room surfaces is called groundborne noise, which can occur as a result of the low-frequency components from a specific steady source of vibration, such as a rail line. Receptors sensitive to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and

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[19] City and County of San Francisco, *General Plan, Environmental Protection Element, Map 1 (Background Noise Levels, 2009)*, 2009. This document is available for review at: http://generalplan.sfplanning.org/images/I6.environmental/ENV_Map1_Background_Noise%20Levels.pdf.

[20] Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, May 2006, pp. 8-1 to 8-3, Table 8-1. Available online at https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed February 7, 2017.

vibration-sensitive equipment. Fragile buildings and underground facilities, in particular those that are considered historic, are included because groundborne vibration can result in structural damage. In extreme cases, high levels of vibration can damage fragile buildings or interfere with sensitive equipment. With the exception of long-term occupational exposure, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. People may tolerate infrequent, short duration vibration levels, but human annoyance to vibration becomes more pronounced if the vibration is continuous or occurs frequently. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. Annoyance generally occurs in reaction to newly introduced sources of noise that interrupt ongoing activities. Community annoyance is a summary measure of the general adverse reaction of people to noise that causes speech interference, sleep disturbance, or interference with the desire for a tranquil environment.[21] People react to the duration of noise events, judging longer events to be more annoying than shorter ones, and transportation noise is usually a primary cause of community dissatisfaction. Construction noise or vibration also often generates complaints, especially during lengthy periods of heavy construction, when nighttime construction is undertaken to avoid disrupting workday activity, or when the adjacent community has no clear understanding of the extent or duration of the construction.[22]

The City does not have regulations that define acceptable levels of vibration. Therefore, this document references a Federal Transit Administration (FTA) publication concerning noise and vibration impact assessment from transit activities[23] and other relevant sources.

Noise Compatibility

San Francisco addresses noise in the General Plan's Environmental Protection Element.[24] This element includes a Transportation Noise section that provides general guidance for reducing

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[21] Ibid, pp. 2-13 to 2-17

[22] Ibid. p. 12-1.

[23] Ibid.

[24] City and County of San Francisco, *City of San Francisco General Plan*, December 2, 2004. This document is available for review at www.sf-planning.org/ftp/general_plan/index.htm.

transportation noise through "sound land use planning and transportation planning." It also states: "in a fully developed city, such as San Francisco, where land use and circulation patterns are by and large fixed, the ability to reduce the noise impact through a proper relationship of land use and transportation facility location is limited."[25]

The General Plan focuses on the effect of noise on the community due to ground transportation noise sources and establishes the "Land Use Compatibility Chart for Community Noise" for determining when noise reduction requirements for new development should be analyzed, such as providing sound insulation for affected properties. The land use compatibility standards for community noise determine the maximum acceptable noise environment for each newly developed land use, and are shown in Table 2. Although Table 2 presents a range of noise levels that are considered compatible or incompatible with various land uses, the maximum "satisfactory" noise level is 60 dBA L_{dn} for residential and hotel uses; 65 dBA L_{dn} for schools, classrooms, libraries, churches and hospitals; 70 dBA L_{dn} for playgrounds, parks, offices, retail commercial uses, and noise-sensitive manufacturing/ communication uses; and 77 dBA L_{dn} for other commercial uses such as wholesale, certain retail, industrial/manufacturing, transportation, communications, and utilities uses. If these uses are proposed to be located in areas with noise levels that exceed these guidelines, a detailed analysis of noise reduction requirements will typically be necessary prior to final building review and approval.

Overall, the General Plan recognizes that transportation noise remains a problem and provides guidance to manage incompatible transportation noise levels through various transportation noise-related policies. The City's background noise levels map identifies the project site to be exposed to traffic noise levels between 50 and 60 dBA L_{dn}.[26] According to the City's General Plan, new development should incorporate noise insulation features if the noise levels exceed the sound level guidelines shown in the land use compatibility chart.

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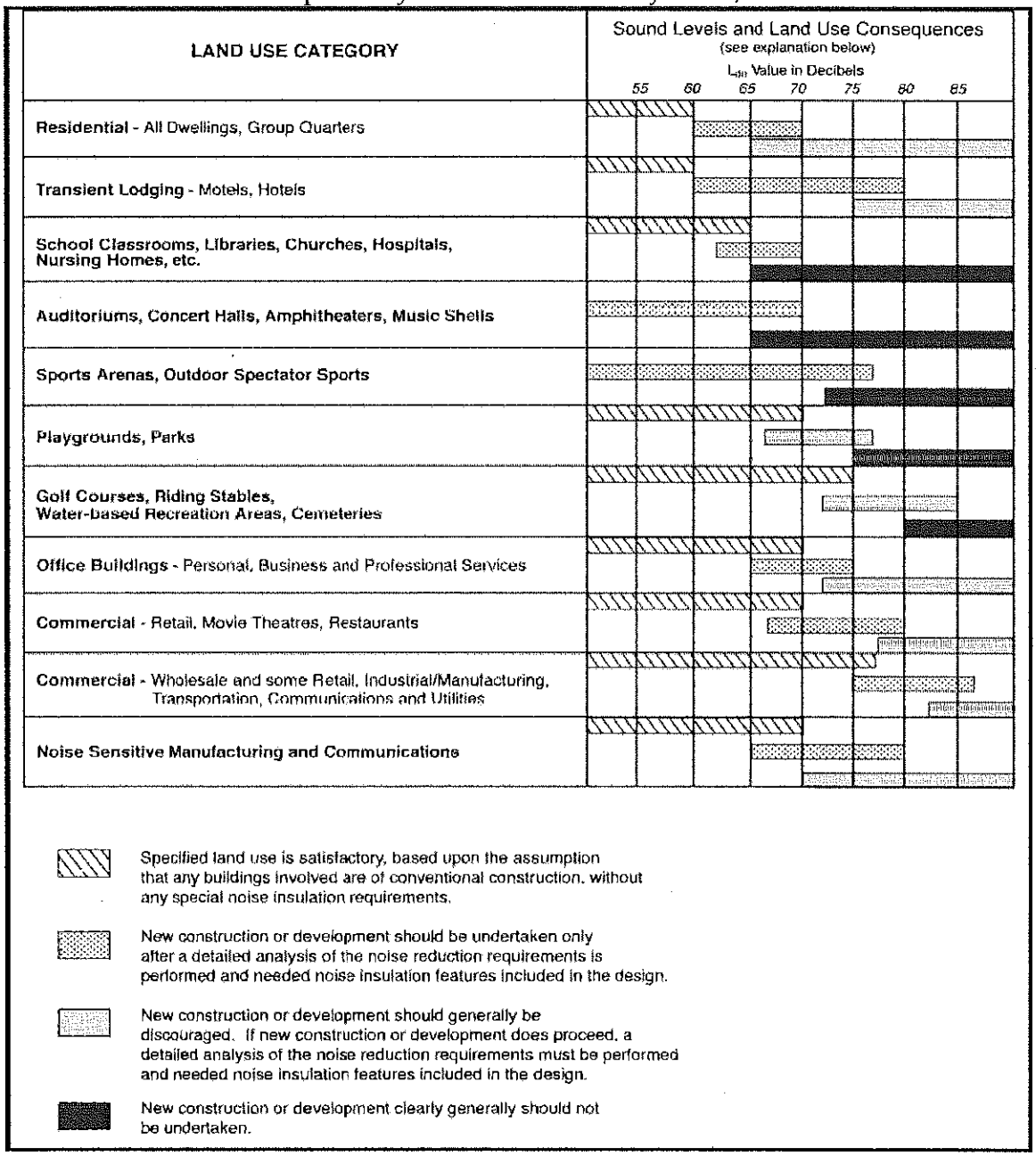
[25] Ibid.

[26] City and County of San Francisco, *General Plan, Environmental Protection Element, Map 1 (Background Noise Levels, 2009)*, 2009. This document is available for review at: http://generalplan.sfplanning.org/images/I6.environmental/ENV_Map1_Background_Noise%20Levels.pdf.

Table 2: Land Use Compatibility Chart for Community Noise, dBA



Source: City and County of San Francisco, City of San Francisco General Plan, December 2, 2004. This document is available for review at: www.sf-planning.org/ftp/general_plan/index.htm.

Noise Regulations

The San Francisco Noise Ordinance (Noise Ordinance) regulates both construction noise and stationary-source noise within the City, including noise from transportation, construction, mechanical equipment, entertainment, and human or animal behavior. Found in Article 29, "Regulation of Noise," of the San Francisco Police Code, the Noise Ordinance addresses noise from construction equipment, nighttime construction work, and noise from stationary mechanical equipment and waste processing activities.[27] The following regulations are applicable to the proposed project.

Section 2907, Construction Equipment, and Section 2908, Construction Work at Night

Section 2907(a) requires that construction work be conducted in the following manner: (1) noise levels of construction equipment, other than impact tools, must not exceed 80 dBA at a distance of 100 feet from the source (the equipment generating the noise); (2) impact tools must have intake and exhaust mufflers that are approved by the Director of San Francisco Public Works or the Director of the DBI to best accomplish maximum noise reduction; and (3) if the noise from the construction work would exceed the ambient noise levels at the site property line by 5 dBA, the work must not be conducted between 8:00 p.m. and 7:00 a.m. unless the Director of Public Works authorizes a special permit for conducting the work during that period.

Section 2909, Noise Limits

This section of the Noise Ordinance regulates noise from mechanical equipment and other similar sources. This includes all equipment, such as electrical equipment (transformers, emergency generators) as well as mechanical equipment that is installed on commercial/industrial and residential properties. Mechanical equipment operating on residential property must not produce a noise level more than 5 dBA above the ambient noise level at the property boundary. Section 2909 also states in subsection (d) that no fixed (permanent) noise source (as defined by the Noise Ordinance) may cause the noise level inside any sleeping or living room in a dwelling unit on

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[27] City and County of San Francisco, *Article 29 of the San Francisco Police Code, Regulation of Noise*, 2012. This document is available for review at: www.amlegal.com/nxt/gateway.dll/California/police/article29regulationofnoise?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca. Accessed April 17, 2017.

residential property to exceed 45 dBA between 10:00 p.m. and 7:00 a.m. or 55 dBA between 7:00 a.m. and 10:00 p.m. when windows are open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

Existing Sensitive Receptors

Certain land uses are considered more sensitive to noise than others. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project site occupies parcels located on the west side of an unimproved section of Folsom Street. Existing uses within the same block consist primarily of two- to three-story medium-density residential uses.

Impact NO-1: The proposed project would not result in exposure of persons to, or generation of, noise levels in excess of standards established in San Francisco's Noise Ordinance, nor would the proposed project result in a substantial permanent increase in ambient noise levels above levels existing without the project. ***(Less-Than-Significant Impact)***

For the purpose of this analysis, operation of the proposed project would result in a significant noise impact if:

1. Implementation of the proposed project would increase ambient noise levels from traffic-generated sources by greater than 3 (dBA)[28] *and* the resulting noise level is greater than the "satisfactory" standards for adjacent land uses cited in Table 2. Land Use Compatibility Chart, below, or
2. Where the existing or existing plus project noise levels are within "satisfactory" standards for adjacent land uses (again, according to Table 2) if implementation of the proposed project would result in project-related traffic noise increases above ambient noise levels by more than 5 dBA.

[28] A-weighted decibels, abbreviated dBA, are an expression of the relative loudness of sounds in air as perceived by the human ear. In the A-weighted system, the decibel values of sounds at low frequencies are reduced, compared with unweighted decibels, in which no correction is made for audio frequency.

Additionally, the proposed project would result in a significant operational noise impact if noise from the project exceeds the standards in Section 2909 (a) and (d) of the San Francisco Noise Ordinance (Noise Ordinance), discussed above.

As discussed above in **Section H.4, Transportation and Circulation,** the increase in traffic associated with the proposed project would be minimal. An estimated two PM peak-hour vehicle trips would be generated by the project. As such, project-related increases in traffic noise levels are also anticipated to be minimal along Folsom Street and would not be perceptible by the human ear. Therefore, project-related traffic noise on off-site land uses would be less than significant, and no mitigation would be required.

In addition to generating imperceptible traffic-related noise, the proposed project is also anticipated to result in less than significant noise levels associated with operation of mechanical systems. The proposed project would include two residential units, which are not typically associated with high levels of operational noise. In addition, the proposed project's mechanical equipment would be required to comply with the San Francisco Noise Ordinance restricting equipment operating on residential property from generating noise greater than 5 dBA above the ambient noise level at the property boundary and ensuring that the mechanical equipment does not exceed 55 dBA during daytime hours, and 45 dBA during nighttime hours inside nearby residential uses. Therefore, project-related operational noise impacts would be less than significant, and no mitigation would be required.

Impact NO-2: Project demolition and construction would result in a temporary and periodic increase in ambient noise levels in the project vicinity above existing conditions. ***(Less-Than-Significant Impact)***

In terms of construction impacts, construction activities are temporary and intermittent. Therefore, for purposes of this analysis, the proposed project would result in significant construction-related impacts if the proposed project's construction noise levels would result in a substantial temporary or periodic increase in ambient noise levels. Construction noise is evaluated for its potential to exceed the requirements in Section 2907, Construction Equipment, and Section 2908, Construction Work at

Night of the Noise Ordinance, and considering other qualitative factors such as duration and frequency of noise events in excess of Noise Ordinance standards.

Short-term noise impacts would occur during demolition, grading and site preparation activities. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the project area but would cease once construction of the project is completed.

The proposed project would require construction for approximately 12 months. Two types of short-term noise impacts could occur during construction of the proposed project. The first type involves construction crew commutes and the transport of construction equipment and materials to the project site, which would incrementally increase noise levels on roads leading to the site. The excavation of 3516 Folsom Street would include approximately 30 truck trips and the excavation of 3526 Folsom Street would include approximately 25 truck trips. Construction of the proposed project is anticipated to occur over a 12 month period. The concrete required for each foundation slab would require four cement truck trips for each residence (eight, total) plus another four trips per residence for the concrete retaining walls (eight, total). Trucks would access the project site to and from the 101 freeway via Cesar Chavez Street, to Folsom Street and Bernal Heights Boulevard. The improvement of the "paper street" segment of Folsom Street would be performed under a separate Street Improvement Permit issued by the Department of Public Works and the proposed road improvement would require 92 cubic yards of material to be removed from the project site, which would result in approximately seven haul truck trips. Concrete imported onto the project site would require about ten truck trips. Road work would be conducted from the intersection of Folsom Street and Chapman Street.

The second type of short-term noise impact is related to noise generated during excavation, grading, and construction on the project sites. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Table 3, below, lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor. The Noise Ordinance limits construction equipment to 80 dBA at 100 feet. Noise attenuates by approximately 6 dBA to 7.5 dBA per doubling of distance.[29] Therefore, noise levels in Table 3 were adjusted by 6 dBA to generate noise levels of typical construction equipment at 100 feet. As shown in Table 3, there would be a relatively high single-event noise exposure potential at a maximum level of 82 dBA for haul trucks passing at 100 feet. Haul trucks would access the project site to and from the 101 freeway via Cesar Chavez Street, to Folsom Street and Bernal Heights Boulevard. The location nearest the project site on Bernal Heights Boulevard (where Bernal Heights Boulevard meets the Folsom Street right of way, near the Bernal Heights Community Garden) is approximately 115 feet away, and downhill, from the nearest sensitive receptor, with other nearby receptors located 125 feet, 140 feet, and 145 feet away and downhill from Bernal Heights Boulevard.

Typical maximum noise levels for construction equipment range from 76 to 80 dBA at 100 feet. The site preparation phase, including excavation and grading of the site, tends to generate the highest noise levels because earthmoving machinery is the noisiest construction equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

[29] The 1.5-dBA variation in attenuation rate (6 dBA vs. 7.5 dBA) can result from ground-absorption effects, which occur as sound travels over soft surfaces such as soft earth or vegetation (7.5 dBA attenuation rate) versus hard ground such as pavement or very hard-packed earth (6 dBA rate) (U.S. Housing and Urban Development, The Noise Guidebook, 1985, p. 24. Available online at https://www.hudexchange.info/onecpd/assets/File/Noise-Guidebook-Chapter-4.pdf. Accessed April 24, 2017.

Table 3: Project Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Range of Maximum Sound Levels (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)	Maximum Sound Levels (dBA) at 100 feet
Jackhammers	75 to 85	82	76
Pneumatic Tools	78 to 88	85	79
Haul Trucks	83 to 94	88	82
Hydraulic Backhoe	81 to 90	86	80
Hydraulic Excavators	81 to 90	86	80
Air Compressors	76 to 89	86	80
Trucks	81 to 87	86	80

Source: Bolt, Beranek & Newman, 1987. *Noise Control for Buildings and Manufacturing Plants.*

Sensitive receptors are located immediately adjacent to the proposed project at 55 Gates Street, 61 Gates Street, 65 Gates Street, and 3574 Folsom Street. During the construction period for the proposed project of approximately twelve months, occupants of the nearby properties could be disturbed by construction noise. Times may occur when noise could interfere with indoor activities in nearby residences and other businesses near the project site.

As shown in Table 3, above, construction equipment would comply with the limits in the Noise Ordinance and would not exceed 80 dBA at 100 feet, with the exception of haul trucks. In the case of haul trucks, the noise impact would be less than significant, as the analysis above is based on the maximum value in the range of maximum sound level and estimated noise presented in Table 3 is at a distance 15 feet closer to the nearest actual sensitive receptor to the proposed project. Additionally, the Federal Highway Administration, in a more recent publication than that used above, estimates dump trucks to generate noise at a level closer to 70 dBA at 100 feet, a noise level 24 dBA less than the estimate utilized in the above analysis.[30] Therefore, haul trucks used during construction of the project are anticipated to meet the noise levels in the Noise Ordinance. The increase in noise in the project area during project construction would not be considered a significant impact of the proposed

[30] US Department of Transportation, Federal Highway Administration, *Construction Noise Handbook*, Table 9.1, July 2011.

project because the construction noise would be temporary, intermittent, and restricted in occurrence and level, as the contractor would be required to comply with the Noise Ordinance. Therefore, given the above, construction noise would be less than significant.

Impact NO-3: The proposed project could result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels. ***(Less-Than-Significant Impact with Mitigation Incorporated)***

Project operation associated with residential uses would not generate substantial groundborne noise and vibration. Construction of the proposed project would involve site preparation and other construction activities. It would include the use of construction equipment that could result in groundborne vibration affecting properties adjacent to the project site or to PG&E Pipeline 109. No pile driving, blasting, or substantial levels of excavation or grading activities are proposed.

Given the proposed project's proximity to PG&E Pipeline 109, a construction vibration analysis was performed for the proposed project to assess any potential adverse impact on the Pipeline from vibration due to construction related equipment and work.[31] The report evaluated vibratory impacts related to excavation of the site for the purpose of developing a proper foundation for the buildings, digging trenches for utilities to the residences, and the extension of Folsom Street for access to the residences.

The analysis assumed work on the proposed project would include:

- For the foundations, the excavation and the installation of a 12-inch to 18-inch thick concrete slab, with a potential of drilling holes for piers. If needed, compaction of the site would be done by hand, and there is potential of hand operated jack hammering being required.
- For the utility trenches, excavation would be done at distances no closer than 5 feet from Pipeline 109. For the street extension, top soil up to as much as 12 inches will be removed, and a cement concrete road surface with a thickness of 8 to 10 inches would be installed.

[31] Illingworth and Rodkin, Inc., *Construction Vibration Evaluation for 3516 and 3526 Folsom Street*, March 24, 2017.

- For both the foundations and the street extension, the soils from the sites would be transported out by a conveyor belt to Bernal Heights Boulevard.

In order to estimate the vibration level at the Pipeline, the analysis utilized the following equation:

$$PPV_{equip}=PPV_{ref}(25/D)^n$$

PPV_{equip}: the Peak Particle Velocity (PPV) at 25 feet measured in inches/sec
PPV_{ref}: the PPV at the distance being measured
D: the distance being measured
n: a value determined by soil conditions, ranging from 1.5 to 1[32]

The PPV_{equip} values for the equipment to be used for the proposed were collected from three sources: the Federal Transit Authority (FTA), the New Hampshire Department of Transportation, and from a study of vibration from construction activities for a project at the Haleakala National Park in Hawaii. The PPVs for each pieces of equipment proposed to be used during project construction activities are summarized in the following table:

Table 4: Peak Particle Velocities (PPVs) of Project Construction Equipment

	Source of Data		
Equipment (project phase)	**FTA**	**New Hampshire DOT**	**Haleakala Project**
Excavator (foundation and utility trenches)		0.04 PPV	0.18 PPV
Jackhammer, if needed (foundation)	0.04 PPV		
Small Bulldozer (grading)	0.003 PPV		
Caisson drilling, if needed (piers)	0.09 PPV		

[32] *Ibid.*

For the purposes of analysis, the higher (more conservative) value of 0.18 was used for the examining the impacts of the excavator. For the n-value in the equation above, the California Department of Transportation (Caltrans) recommends a value of 1.1 for "very stiff" and "firm" soils which, according to the August 2013 soils report, characterize the top 3 to 4 feet of the project site, which is also underlain with chert bedrock.[33] Caltrans suggests an *n*-value of 1.0 for "hard, competent rock: bedrock, exposed hard rock," which characterizes the chert bedrock located beneath the soils on the project site.[34] Utilizing the equation above, a lower *n*-value is associated with a lower PPV level—that is, harder rock reduces vibration more quickly than looser rock or soils. For the purposes of the analysis, however, to obtain a conservative (worst-case) result, an *n*-value of 1.5, the maximum value, was used.

To determine the potential for an adverse impact to the PG&E Pipeline 109, the analysis compared the highest estimated PPV for each piece of equipment at its nearest proximity to the pipe during project work. The criteria for damage to a pipeline due to vibration cover a wide range of PPV, as documented by Caltrans.[35] For example, a PPV value of 25 in/sec associated with an "explosive near [a] buried pipe" resulted in no damage, as did PPV values for "explosive[s] near [a] buried pipe" of 50-150 PPV. The analysis prepared for the proposed project utilized a conservative 12 inches/second, a value based on the West Roxbury Lateral Project in Massachusetts, as the criteria for potential damage to the pipe.[36]

The calculated maximum PPVs for each type of equipment proposed to be used during project construction activities are summarized below in Table 5.

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[33] H. Allen Gruen, *Report Geotechnical Investigation Planned Residence at 3516 Folsom Street, San Francisco, California*, August 3, 2013.

[34] Illingswoth & Rodkin Inc, Memo: *Ground Characteristics and Effect on Predicted Vibration*, April 14, 2017.

[35] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, September 2013, page 76.

[36] The analysis notes that buried pipes can withstand higher PPV because they are constrained and do not amplify ground motion, like freestanding structures, like historic buildings, do. According to the Caltrans report cited in the analysis, PPV values as high as 150 have been shown to not harm underground pipes.

Table 5: PPV Estimates and Damage Potential of Project Construction Equipment			
Equipment (project phase)	**Closest Proximity to Pipe**	**Highest Estimated PPV (inches/second)**	**Damage criteria PPV at the Pipeline (inches/second)**
Excavator (foundation)	13 feet	0.48	12
Jackhammer (foundation)	13 feet	0.11	12
Drilling (piers)	12 feet	0.24	12
Small bulldozer (road construction)	1 foot	0.38	12
Excavator (utility trenches)	5 feet	2.01	12

Although the vibration assessment for the proposed project is based on damage criteria of 12 in/sec, PG&E has evaluated the proposed project and, through its regulatory authority for work in proximity to its pipeline, has set a PPV standard of 2 in/sec for this section of Pipeline 109.[37] It is noted that this standard is highly conservative in that it is a factor of 10 lower (more stringent) than the already conservative damage criteria used in the vibration assessment.

As discussed above, on page 23, the proposed project would be required to comply with PG&E regulations for construction work within 10 feet of a pipeline. These requirements include the physical presence of a PG&E inspector whenever work within 10 feet of a pipeline is performed; grading and digging standards; the placement of pipeline markers during demolition and construction; standards for construction machinery and loading near and on top of underground pipelines; and limitations on placing landscaping, structures or fencing within certain distances from

[37] PG&E Gas Transmission Pipeline Services—Integrity Management, 3516/26 Folsom Street, March 30, 2017.

the pipeline. These practices, as required by law, are in place to ensure construction activities do not substantially affect underground services, including natural gas pipelines. Furthermore, the proposed project, including street improvements, would be subject to the same PG&E plan approvals and oversite as other excavation and street improvements in San Francisco.

In accordance with CEQA, the Planning Department does not require mitigation measures for impacts that would be less than significant through compliance with applicable regulatory requirements. Further, the vibration analysis for the project indicates that the proposed project would not exceed PG&E's highly conservative 2 in/sec PPV value (which is measured as a value rounded to a whole number). However, in an abundance of caution for the purposes of this project's environmental evaluation, this Initial Study finds that project construction would have a significant vibration impact to Pipeline 109. Implementation of Mitigation Measures M-NO-3 would ensure that PPV values remain at or below PG&E's 2 in/sec PPV value. With implementation of M-NO-3, below, there would be no possibility of a significant vibration effect on PG&E's Pipeline 109.

Mitigation Measure M-NO-3, Vibration Management Plan:

The Project Sponsor shall retain the services of a qualified structural engineer to develop, and the Project Sponsor shall adopt, a vibration management and continuous monitoring plan to cover any construction equipment operations performed within 20 feet of PG&E Pipeline 109. The vibration management and monitoring plan shall be submitted to PG&E and Planning Department staff for review and approval prior to issuance of any construction permits. The vibration management plan shall include:

- **Vibration Monitoring:** Continuous vibration monitoring throughout the duration of the major structural project activities to ensure that vibration levels do not exceed the established standard.
- **Maximum PPV Vibration Levels:** Maximum PPV vibration levels for any equipment shall be less than 2 inches per second (in/sec). Should maximum PPV vibration levels exceed 2 in/sec, all construction work shall stop and PG&E shall be notified to oversee further work.
- **Standby Inspection:** A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity within 10 feet of the gas pipeline(s). This

includes all grading, trenching, gas line depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection would be coordinated through the Underground Service Alert (USA) service at **811 or 1-800-227-2600**. A minimum notice of 48 hours is required.

- **Grading/Excavation**: Any excavations, including grading work, above or around Pipeline 109 must be performed with a PG&E inspector present. This includes all laterals, subgrades, and gas line depth verifications (potholes). Work in the vicinity of Pipeline 109 must be completed consistent with PG&E Work Procedure TD-4412P-05 "Excavation Procedures for Damage Prevention." Any plans to expose and support Pipeline 109 across an open excavation must be approved by PG&E Pipeline Engineering in writing prior to performing the work. Any grading or digging within two (2) feet of Pipeline 109 shall be dug by hand. Water jetting to assist vacuum excavating must be limited to 125 pounds per square inch gage (psig).
- **Pipeline Markers**: Prior to the commencement of project activity, pipeline markers must be placed along the pipeline route. With written PG&E approval, any existing markers can be temporarily relocated to accommodate construction work, but must be reinstalled once construction is complete.
- **Fencing**: No parallel fencing is allowed within 10 feet of Pipeline 109 and any perpendicular fencing shall require 14 foot access gates to be secured with PG&E corporation locks.
- **Structures**: Permanent structures must be located a minimum distance of 10 feet from the edge of Pipeline 109. A total width of 45 feet shall be maintained for pipeline maintenance. No storage of construction or demolition materials is permitted within this 45 foot zone.
- **Construction Loading**: To operate or store any construction equipment within 10 feet of Pipeline 109 that exceeds the half-axle wheel load (half axle weight is the gross weight upon any one wheel, or wheels, supporting one end of an axle) in the table below, approval from a PG&E gas transmission pipeline engineer is required. Pipeline 109 may need to be potholed by hand in to confirm the depth of the existing cover. These weight limits also depend on the support provided by the Pipeline's internal gas pressure. If PG&E's operating conditions require the Pipeline to be depressurized, maximum wheel

loads over the pipeline will need to be further limited. For compaction within two feet of Pipeline 109, walk-behind compaction equipment shall be required. Crane and backhoe outriggers shall be set at least 10 feet from the centerline of Pipeline 109. Maximum PPV vibration levels for any equipment shall be less than 2 in/sec.

Depth of Cover to Top of Pipe (ft.)	Maximum Half-Axle Wheel Loading (lbs)
2	4,580
3	6,843
4	7,775
5	7,318

With implementation of **Mitigation Measure M-NO-3** significant vibration impacts to PG&E's Pipeline 109 would be reduced to a less-than-significant level.

Impact NO-4: The proposed project would not be substantially affected by existing noise levels. ***(Not Applicable)***

This impact is only to be analyzed if the proposed project would exacerbate the existing noise environment. Impact NO-1 concluded the proposed project would not result in a significant noise impact. Therefore, this impact need not be analyzed. Impacts NO-2 and No-3 address construction related noise and vibration impacts, which would not affect the proposed project as the project site would not be occupied until completion of construction activities. However, the following is provided for informational purposes.

Roadway noise is the predominant source of noise in the project vicinity. The City's background noise levels map identifies the project site to be exposed to traffic noise levels between 55 and 60 dBA L_{dn}.[38] The City's land use compatibility chart shows that "satisfactory" sound levels for residential

[38] City and County of San Francisco, *General Plan, Environmental Protection Element, Map 1 (Background Noise Levels, 2009)*, 2009. This document is available for review at: http://generalplan.sfplanning.org/images/l6.environmental/ENV_Map1_Background_Noise%20Levels.pdf.

land uses are 60 dBA L_{dn} for outdoor environments. For indoor environments, the noise level inside any sleeping or living room in a dwelling unit on residential property should not exceed 45 dBA between 10:00 p.m. and 7:00 a.m. or 55 dBA between 7:00 a.m. and 10:00 p.m.

According to the City's General Plan, new development should incorporate noise insulation features if the noise levels exceed the sound level guidelines shown in the land use compatibility chart. The proposed project would be required to comply with the California Noise Insulation Standards in Title 24. The Title 24 acoustical requirement for residential structures is incorporated into Section 1207 of the San Francisco Building Code and requires these structures be designed to prevent the intrusion of exterior noise so that the noise level with windows closed, attributable to exterior sources, shall not exceed 45 dBA in any habitable room. With use of standard construction materials and compliance to the Title 24 standards, the proposed project would feasibly attain acceptable interior noise levels.

Impact C-NO-1: The proposed project in combination with past, present, and reasonably foreseeable future projects would not create a significant cumulative noise or vibration impact. ***(Less-Than-Significant Impact)***

Construction

Construction of the proposed project, such as excavation, grading, or demolition and construction of other buildings in the area, would occur on a temporary and intermittent basis. In general, compliance with Noise Ordinance requirements would maintain the noise impact from project construction at a Less Than Significant level. Project construction-related noise would not substantially increase ambient noise levels at locations greater than a few hundred feet from the project site. There are no future projects identified within the immediate vicinity of the site that would have the potential to result in cumulative construction noise or vibration impacts.

Operations

The proposed project would include new fixed noise sources that would produce operational noise on the project site, as well as new mobile sources. The project-related contribution of two PM peak-hour vehicle trips would represent a small fraction of existing traffic volumes and would be imperceptible. In addition, any new residents that would result from implementation of the

cumulative development in the project vicinity would generate a similarly low amount of new PM peak-hour trips. Furthermore, the proposed project and future projects in the vicinity primarily consist of residential uses, which are uses that do not typically generate substantial sources of operational noise, and would be subject to the Noise Ordinance's requirements for residential noise limits.

Given this, the proposed project, in combination with past, present, and reasonably foreseeable future projects would not result in considerable contribution to a permanent increase in noise or vibration in the project area. This impact would be less than significant and no mitigation measure is required.

Topics:		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
6.	**AIR QUALITY— Would the project:**					
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐	☐
b)	Violate any air quality standard 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, State, or regional 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?	☐	☐	☒	☐	☐

The San Francisco Bay Area Air Basin (SFBAAB) encompasses San Francisco, Alameda, Contra Costa, San Mateo, and Napa Counties, and includes parts of Solano and Sonoma Counties. Although air quality in the air basin has generally improved over the last several decades, elevated levels of ozone, carbon monoxide, and particulate matter have been observed. The federal Clean Air Act and California Clean Air Act contain ambient air standards and related air quality reporting systems to be

used by regional regulatory agencies in developing air pollution control measures. The Bay Area Air Quality Management District (BAAQMD) is the primary responsible regulatory agency in the Bay Area for planning, implementing, and enforcing the federal and State ambient air quality standards for criteria pollutants. Criteria air pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter ($PM_{2.5}$ and PM_{10}), and lead.

In most of the Bay Area, transportation-related sources account for a majority of air pollutant emissions. Therefore, a major focus of the BAAQMD is on reducing vehicle trips associated with new development. Localized air quality issues include CO hotspots associated with traffic.

Health Vulnerable Locations

San Francisco adopted Article 38 of the San Francisco Health Code in 2008, requiring an Air Quality Assessment for new residential projects of 10 or more units located in proximity to high-traffic roadways, as mapped by the Department of Public Health (DPH), to determine whether residents would be exposed to unhealthful levels of $PM_{2.5}$. The air quality assessment evaluates the concentration of $PM_{2.5}$ from local roadway traffic that may impact a proposed residential development site. If the DPH air quality assessment indicates that the annual average concentration of $PM_{2.5}$ at the site would be greater than 0.2 $\mu g/m^3$, Health Code Section 3807 requires development on the site to be designed or relocated to avoid exposure greater than 0.2 $\mu g/m^3$, or a ventilation system to be installed that would be capable of removing 80 percent of ambient $PM_{2.5}$ from habitable areas of the residential units. The proposed project consists of four residential units and, according to the City's Air Pollutant Exposure Zone Map, the proposed project is not within the air pollutant exposure zone.[39]

[39] City and County of San Francisco. *Air Pollutant Exposure Zone Map*. April 10, 2014. This document is available for review at: www.sfdph.org/dph/files/EHSdocs/AirQuality/AirPollutantExposureZoneMap.pdf.

Impact AQ-1: Implementation of the proposed project would not conflict with or obstruct implementation of the local applicable air quality plan. ***(Less-Than-Significant Impact)***

The applicable air quality plan is the BAAQMD's 2017 Clean Air Plan, which was adopted on April 19, 2017. The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines a control strategy to reduce emissions and ambient concentrations of air pollntants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce greenhouse gas emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project does the following: 1) supports the goals of the Clean Air Plan; 2) includes applicable control measures from the Clean Air Plan; and 3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

The 2017 Clean Air Plan includes measures and programs to reduce emissions of fine particulates and toxic air contaminants. In addition, the Regional Climate Protection Strategy is included in the 2017 Clean Air Plan, which identifies rules, control measures, and strategies that the BAAQMD can pursue to reduce greenhouse gases throughout the Bay Area.

The proposed project would not conflict with any of the control measures identified in the plan or designed to bring the region into attainment. Additionally, the proposed project would not substantially increase the population, vehicle trips, or vehicle miles traveled. The proposed project would not hinder the region from attaining the goals outlined in the Clean Air Plan. Therefore, the proposed project would not hinder or disrupt implementation of any control measures from the Clean Air Plan.

Additionally, as indicated in the analysis that follows, below, the proposed project would result in Less Than Significant operational and construction-period emissions.

Impact AQ-2: Implementation of the proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. ***(Less-Than-Significant Impact)***

The proposed project would generate air emissions during project construction and operation. Long-term operational emissions are associated with stationary sources and mobile sources. Stationary source emissions result from the consumption of natural gas and electricity. Mobile source emissions result from vehicle trips and result in air pollutant emissions affecting the entire air basin. Short-term construction emissions would occur in association with construction activities, including demolition, excavation, and vehicle/equipment use.

Operational Air Quality Emissions

Long-term air emission impacts are those associated with area sources and mobile sources related to the proposed project. In addition to the short-term construction emissions, the project would also generate long-term air emissions, such as those associated with changes in permanent use of the project site. These long-term emissions are primarily mobile source emissions that would result from vehicle trips associated with the proposed project. Area sources, such as natural gas heaters, landscape equipment, and use of consumer products, would also result in pollutant emissions.

The BAAQMD has developed screening criteria to provide lead agencies with a conservative indication of whether the proposed project would result in potentially significant air quality impacts. If all of the screening criteria are met by a proposed project, then the lead agency would not need to perform a detailed air quality assessment of the proposed project's emissions. These screening levels are generally representative of new development without any form of mitigation measures taken into consideration. In addition, the screening criteria do not account for project design features, attributes, or local development requirements that could also result in lower emissions.

For single family land uses, the BAAQMD screening size for operational criteria pollutants is 325 dwelling units. Since the proposed project would only include two dwelling units, based on the BAAQMD's screening criteria, operation of the proposed project would result in a Less-Than-

Significant Impact to air quality from criteria air pollutant and precursor emissions and no mitigation measures would be required.

Localized CO Impacts

The BAAQMD has also established a screening methodology that provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD CEQA Guidelines, a proposed project would result in a less-than significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

Implementation of the proposed project would not conflict with the San Francisco County Transportation Authority San Francisco Transportation Plan (SFTP) for designated roads or highways, a regional transportation plan, or other agency plans. The project site is not located in an area where vertical or horizontal mixing of air is substantially limited. In addition, the proposed project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour and would not result in localized CO concentrations that exceed State or federal standards. This impact would be less than significant and no mitigation measures would be required.

Construction Emissions

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities. Emissions from construc-

tion equipment are also anticipated and would include CO, NO_x, ROG, directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and toxic air contaminants (TACs) such as diesel exhaust particulate matter.

As discussed above, the BAAQMD has developed screening criteria to provide lead agencies with a conservative indication of whether the proposed project would result in potentially significant air quality impacts. If all of the screening criteria are met by a proposed project, then the lead agency would not need to perform a detailed air quality assessment of the proposed project's emissions. For single family residential land uses, the BAAQMD screening size for construction criteria pollutants is 114 dwelling units. Since the proposed project would only include two dwelling units, based on the BAAQMD's screening criteria, construction of the proposed project would result in a Less-Than-Significant Impact to air quality from criteria air pollutant and precursor emissions and no mitigation measures would be required.

Impact AQ-3: Implementation of the proposed project would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal, State, or regional ambient air quality standard. ***(Less-Than-Significant Impact)***

CEQA defines a cumulative impact as two or more individual effects, which when considered together, are considerable or which compound or increase other environmental impacts. According to the BAAQMD, air pollution is largely a cumulative impact and no single project is sufficient in size to itself result in nonattainment of ambient air quality standards. In developing the thresholds of significance for air pollutants used in the analysis above, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The BAAQMD CEQA Air Quality Guidelines indicate that if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. If daily average or annual emissions of operational-related criteria air pollutants exceed any applicable threshold established by the BAAQMD, the proposed project would result in a cumulatively significant impact.

As discussed above, implementation of the proposed project would generate Less Than Significant criteria air pollutant and precursor emissions. Therefore, the project would not make a cumulatively

considerable contribution to regional air quality impacts. No mitigation measures would be required.

Impact AQ-4: Implementation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. ***(Less-Than-Significant Impact)***

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks. As noted above, the project site is not located within an Air Pollutant Exposure Zone.

Excessive Cancer Risk

According to the BAAQMD, a project would result in a significant impact if it would: individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient $PM_{2.5}$ increase greater than 0.3 $\mu g/m^3$. A significant cumulative impact would occur if the project in combination with other projects located within a 1,000-foot radius of the project sites would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient $PM_{2.5}$ increase greater than 0.8 $\mu g/m^3$ on an annual average basis. Impacts from substantial pollutant concentrations are discussed below. As discussed below, this impact would be less than significant.

The project site is located in a residential neighborhood, and the closest sensitive receptors are residential uses located immediately adjacent to the proposed project. Construction of the proposed project may expose surrounding sensitive receptors to airborne particulates, as well as a small quantity of construction equipment pollutants (i.e., usually diesel-fueled vehicles and equipment). However, project construction emissions would be below the BAAQMD's significance thresholds and once the project is constructed, the project would not be a source of substantial emissions. Therefore,

sensitive receptors are not expected to be exposed to substantial pollutant concentrations during project construction or operation, and potential impacts would be considered less than significant.

Based on the foregoing, the proposed project would not expose sensitive receptors substantial pollutant contributions. Therefore, this impact would be less than significant, and no mitigation measures would be required.

Impact AQ-5: Implementation of the proposed project would not create objectionable odors affecting a substantial number of people. ***(Less-Than-Significant Impact)***

During project construction, some odors may be present due to diesel exhaust. However, these odors would be temporary and limited to the construction period. The proposed project would not include any activities or operations that would generate objectionable odors and once operational, the project would not be a source of odors. Therefore, the proposed project would not create objectionable odors affecting a substantial number of people, and no mitigation is required.

Impact C-AQ-1: The proposed project, in combination with past, present, and reasonably foreseeable future development in the project area would not contribute to a cumulative air quality impact. ***(Less-Than-Significant Impact)***

As discussed above, regional air pollution is by its very nature largely a cumulative impact. Emissions from past, present, and future projects contribute to the region's adverse air quality on a cumulative basis. No single project by itself would be sufficient in size to result in regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative adverse air quality impacts. The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Therefore, because the proposed project's construction and operational emissions would not exceed the project-level thresholds for criteria air pollutants, the proposed project would not result in a cumulatively considerable contribution to regional air quality impacts. This impact would be less than significant and no mitigation measures would be required.

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
7. GREENHOUSE GAS EMISSIONS— Would the project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐	☐
b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐	☐

Greenhouse gas (GHG) emissions and global climate change represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead, the combination of GHG emissions from past, present, and future projects have contributed and will continue to contribute to global climate change and its associated environmental impacts.

The Bay Area Air Quality Management District (BAAQMD) has prepared guidelines and methodologies for analyzing GHGs. These guidelines are consistent with CEQA Guidelines Sections 15064.4 and 15183.5 which address the analysis and determination of significant impacts from a proposed project's GHG emissions. CEQA Guidelines Section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. CEQA Guidelines Section 15183.5 allows for public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of GHGs and describes the required contents of such a plan. Accordingly, San Francisco has prepared *Strategies to Address Greenhouse Gas Emissions*[40] which presents a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's qualified GHG reduction strategy in compliance with the CEQA guidelines. These GHG reduction actions have

[40] San Francisco Planning Department, *Strategies to Address Greenhouse Gas Emissions in San Francisco*, 2010. This document is available online at: http://www.sf-planning.org/index.aspx?page=2627.

resulted in a 23.3 percent reduction in GHG emissions in 2012 compared to 1990 levels,[41] exceeding the year 2020 reduction goals outlined in the BAAQMD's *Bay Area 2010 Clean Air Plan,* Executive Order (EO) S-3-05, and Assembly Bill (AB) 32 (also known as the Global Warming Solutions Act).[42] Given that the City' has met the State and region's 2020 GHG reduction targets and San Francisco's GHG reduction goals are consistent with, or more aggressive than, the long-term goals established under EO S-3-05[43], EO B-30-15,[44,45] and Senate Bill (SB) 32 [46,47] the City's GHG reduction goals are consistent with EO S-3-05, EO B-30-15, AB 32, SB 32 and the *Bay Area 2010 Clean Air Plan.* Therefore, proposed projects that are consistent with the City's GHG reduction strategy would be consistent with the aforementioned GHG reduction goals, would not conflict with these plans or result in significant GHG emissions, and would therefore not exceed San Francisco's applicable GHG threshold of significance.

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[41] ICF International, *Technical Review of the 2012 Community-wide GHG Inventory for the City and County of San Francisco,* January 21, 2015. Available at http://sfenvironment.org/sites/default/files/fliers/files/icf_verificationmemo_2012sfecommunityinventory_2015-01-21.pdf, accessed March 16, 2015.

[42] Executive Order S-3-05, Assembly Bill 32, and the *Bay Area 2010 Clean Air Plan* set a target of reducing GHG emissions to below 1990 levels by year 2020.

[43] Office of the Governor, Executive Order S-3-05, June 1, 2005. Available at http://www.pcl.org/projects/2008symposium/proceedings/Coatsworth12.pdf, accessed March 16, 2016. Executive Order S-3-05 sets forth a series of target dates by which statewide emissions of GHGs need to be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 million metric tons of carbon dioxide equivalents ($MTCO_2E$)); by 2020, reduce emissions to 1990 levels (approximately 427 million $MTCO_2E$); and by 2050 reduce emissions to 80 percent below 1990 levels (approximately 85 million $MTCO_2E$). Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

[44] Office of the Governor, *Executive Order B-30-15,* April 29, 2015. Available at https://www.gov.ca.gov/news.php?id=18938, accessed March 3, 2016. Executive Order B-30-15, issued on April 29, 2015, sets forth a target of reducing GHG emissions to 40 percent below 1990 levels by 2030 (estimated at 2.9 million $MTCO_2E$).

[45] San Francisco's GHG reduction goals are codified in Section 902 of the Environment Code and include: (i) by 2008, determine City GHG emissions for year 1990; (ii) by 2017, reduce GHG emissions by 25 percent below 1990 levels; (iii) by 2025, reduce GHG emissions by 40 percent below 1990 levels; and by 2050, reduce GHG emissions by 80 percent below 1990 levels.

[46] Senate Bill 32 amends California Health and Safety Code Division 25.5 (also known as the California Global Warming Solutions Act of 2006) by adding Section 38566, which directs that statewide greenhouse gas emissions to be reduced by 40 percent below 1990 levels by 2030.

[47] Senate Bill 32 was paired with Assembly Bill 197, which would modify the structure of the State Air Resources Board; institute requirements for the disclosure of greenhouse gas emissions criteria pollutants, and toxic air contaminants; and establish requirements for the review and adoption of rules, regulations, and measures for the reduction of greenhouse gas emissions.

The following analysis of the proposed project's impact on climate change focuses on the project's contribution to cumulatively significant GHG emissions. Because no individual project could emit GHGs at a level that could result in a significant impact on the global climate, this analysis is in a cumulative context, and this section does not include an individual project-specific impact statement.

Impact C-GG-1: The proposed project would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions. (*Less-Than-Significant Impact*)

Individual projects contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during construction and operational phases. Direct operational emissions include GHG emissions from new vehicle trips and area sources (natural gas combustion). Indirect emissions include emissions from electricity providers; energy required to pump, treat, and convey water; and emissions associated with waste removal, disposal, and landfill operations.

The proposed project would increase the intensity of use of the site by constructing two residential units on a currently vacant site. Therefore, the proposed project would contribute to annual long-term increases in GHGs as a result of increased vehicle trips (mobile sources) and residential operations that result in an increase in energy use, water use, wastewater treatment, and solid waste disposal. Construction activities would also result in temporary increases in GHG emissions. The proposed project would be subject to regulations adopted to reduce GHG emissions as identified in the GHG reduction strategy. As discussed below, compliance with the applicable regulations would reduce the project's GHG emissions related to transportation, energy use, waste disposal, wood burning, and use of refrigerants.

Compliance with the City's bicycle parking requirements would reduce the proposed project's transportation-related emissions. These regulations reduce GHG emissions from single-occupancy vehicles by promoting the use of alternative transportation modes with zero or lower GHG emissions on a per capita basis.

The proposed project would be required to comply with the energy efficiency requirements of the City's Green Building Code which would promote energy and water efficiency, thereby reducing the proposed project's energy-related GHG emissions.[48]

The proposed project's waste-related emissions would be reduced through compliance with the City's Recycling and Compositing Ordinance, and Construction and Demolition Debris Recovery Ordinance. These regulations reduce the amount of materials sent to a landfill, reducing GHGs emitted by landfill operations. These regulations also promote reuse of materials, conserving their embodied energy[49] and reducing the energy required to produce new materials.

Compliance with the City's Street Tree Planting requirements would serve to increase carbon sequestration. Other regulations, the Wood Burning Fireplace Ordinance would reduce emissions of GHGs and black carbon, respectively. Regulations requiring low-emitting finishes would reduce volatile organic compounds (VOCs).[50] Thus, the proposed project was determined to be consistent with San Francisco's GHG reduction strategy.[51]

The project sponsor is required to comply with these regulations, which have proven effective as San Francisco's GHG emissions have measurably decreased when compared to 1990 emissions levels, demonstrating that the City has met and exceeded EO S-3-05, AB 32, and the *Bay Area 2010 Clean Air Plan* GHG reduction goals for the year 2020. Other existing regulations, such as those implemented through AB 32, will continue to reduce a proposed project's contribution to climate change. In addition, San Francisco's local GHG reduction targets are consistent with the long-term GHG

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[48] Compliance with water conservation measures reduce the energy (and GHG emissions) required to convey, pump and treat water required for the project.

[49] Embodied energy is the total energy required for the extraction, processing, manufacture and delivery of building materials to the building site.

[50] While not a GHG, VOCs are precursor pollutants that form ground level ozone. Increased ground level ozone is an anticipated effect of future global warming that would result in added health effects locally. Reducing VOC emissions would reduce the anticipated local effects of global warming.

[51] San Francisco Planning Department, *Greenhouse Gas Analysis: Compliance Checklist for 3516-26 Folsom Street*, February 16, 2017

reduction goals of EO S-3-05, EO B-30-15, AB 32, SB 32 and the *Bay Area 2010 Clean Air Plan.* Therefore, because the proposed projects is consistent with the City's GHG reduction strategy, it is also consistent with the GHG reduction goals of EO S-3-05, EO B-30-15, AB 32, SB 32 and the *Bay Area 2010 Clean Air Plan*, would not conflict with these plans, and would therefore not exceed San Francisco's applicable GHG threshold of significance. As such, the proposed project would result in a Less-Than-Significant Impact with respect to GHG emissions. No mitigation measures are necessary.

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
8. WIND AND SHADOW— Would the project:					
a) Alter wind in a manner that substantially affects public areas?	☐	☐	☒	☐	☐
b) Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas?	☐	☐	☒	☐	☐

Impact WS-1: The proposed project would not alter wind in a manner that substantially affects public areas within the vicinity of the project area. ***(Less-Than-Significant Impact)***

A proposed project's wind impacts are directly related to its height, orientation, design, location and surrounding development context. Based on wind analyses for other development projects in San Francisco, a building that does not exceed 80 feet generally has little potential to cause substantial changes to ground-level wind conditions. The proposed project would construct two 30-foot-tall buildings that would be about the same height as existing adjacent and nearby buildings. The proposed project would also be oriented towards Folsom Street in a similar manner as buildings surrounding the project site. As such, the proposed project would not alter wind in a manner that substantially affects public areas. This impact would be less than significant, and no mitigation measures would be required.

Impact WS-2: The proposed project would not create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas. ***(Less-Than-Significant Impact)***

In 1984, San Francisco voters approved an initiative known as "Proposition K, The Sunlight Ordinance," which was codified as Planning Code Section 295 in 1985. Planning Code Section 295 generally prohibits new structures above 40 feet in height that would cast additional shadows on open space that is under the jurisdiction of the San Francisco Recreation and Park Commission between one hour after sunrise and one hour before sunset, at any time of the year, unless that shadow would not result in a significant adverse effect on the use of the open space. Public open spaces that are not under the jurisdiction of the Recreation and Park Commission as well as private open spaces are not subject to Planning Code Section 295.

Implementation of the proposed project would result in the construction of two 30-foot-tall buildings (including parapets and roof deck railings), which would be similar in size to existing surrounding buildings. The project site is located to the southwest of the Bernal Heights Community Garden. Therefore, a shadow analysis was prepared by the Project Sponsor/Architect. The shadow analysis provides simulations that show that the proposed project would cast new shadow on the Bernal Heights Community Garden, but that shadow would be limited to only certain periods in the winter and summer and the new shadow would only fall on a portion of the southwestern corner of the community garden mainly in the evening after 5:30 pm. In most cases throughout the year, the shadow cast by the proposed project either does not fall on the community garden or is contained within shadow already cast by existing structures on Gates Street.

While the proposed project would cast new shadow on the community garden, it is not expected to substantially affect the use or enjoyment of the Bernal Heights Community Garden such that a significant environmental effect would occur. For these reasons, the proposed project would not create new shadow in a manner that substantially affects outdoor recreation facilities and other public areas. This impact would be less than significant, and no mitigation measures would be required.

Impact C-WS-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulative wind or shadow impacts. *(Less-Than-Significant Impact)*

As discussed above, buildings shorter than 80 feet have little potential to cause substantial changes to ground-level wind conditions. Given that the height limit in the project vicinity is 30 feet, none of the nearby cumulative development projects would be tall enough to alter wind in a manner that substantially affects public areas. The proposed project would not shadow any nearby parks or open spaces such that a significant environmental effect would occur. Therefore, the proposed project would not contribute to any potential cumulative shadow impact on parks and open spaces. For these reasons, the proposed project would not combine with past, present, and reasonably foreseeable future projects in the project vicinity to create a significant cumulative wind or shadow impact.

Topics:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less-Than-Significant Impact*	*No Impact*	*Not Applicable*
9. RECREATION— Would the project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☒	☐	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐	☐
c) Physically degrade existing recreational resources?	☐	☐	☒	☐	☐

Impact RE-1: The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. *(Less-Than-Significant Impact Impact)*

The neighborhood parks or other recreational facilities closest to the project site are the Bernal Heights Community Garden (60 feet northeast of the project site) and Bernal Heights Park (120 feet north. The proposed project would increase the population of the project site by about five residents. This residential population growth would increase the demand for recreational facilities. The project

residents may use parks, open spaces, and other recreational facilities in the project vicinity. The Bernal Heights Community Garden has a controlled membership and may not be available for use by residents of the proposed project. The additional use of these recreational facilities is expected to be modest based on the size of the projected population increase and would not result in the substantial physical deterioration of recreational facilities. Therefore this impact would be less than significant and no mitigation measures would be required.

Impact RE-2: The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. ***(Less-Than-Significant Impact)***

The project site is within walking distance to parks, open spaces, or other recreational facilities, as discussed above. It is anticipated that these existing recreational facilities would be able to accommodate the increase in demand for recreational resources generated by the project residents. For these reasons, the construction of new or the expansion of existing recreational facilities, both of which might have an adverse physical effect on the environment, would not be required. This impact would be less than significant and no mitigation measures would be required.

Impact RE-3: The proposed project would not physically degrade existing recreational resources. ***(Less-Than-Significant Impact)***

The proposed project would not result in the physical alteration or degradation of any recreational resources in the project vicinity or the City as a whole. Project-related construction activities would occur within the boundaries of the project site, which does not include any existing recreational resources. This impact would be less than significant and no mitigation measures would be required.

Impact C-RE-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulative impact on recreational facilities or open space resources. ***(Less-Than-Significant Impact)***

Cumulative development in the project vicinity would result in a minor intensification of land uses and a cumulative increase in the demand for recreational facilities and resources. The City has accounted for such growth as part of the Recreation and Open Space Element of the General Plan. In

addition, San Francisco voters passed two bond measures, in 2008 and 2012, to fund the acquisition, planning, and renovation of the City's network of recreational resources. As discussed above, there are open spaces and other recreational facilities within less than 1/4 mile of the project site. It is expected that these existing recreational facilities would be able to accommodate the increase in demand for recreational resources generated by the proposed project and nearby cumulative development projects. For these reasons, the proposed project would not combine with past, present, and reasonably foreseeable future project in the project vicinity to create a significant cumulative impact on recreational facilities or resources. This impact would be less than significant and no mitigation measures would be required.

Topics:		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
10.	**UTILITIES AND SERVICE SYSTEMS— Would the project:**					
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐	☐
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	☐
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	☐
d)	Have sufficient water supply available to serve the project from existing entitlements and resources, or require new or expanded water supply resources or entitlements?	☐	☐	☒	☐	☐
e)	Result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐	☐
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐	☐
g)	Comply with federal, State, and local statutes and regulations related to solid waste?	☐	☐	☒	☐	☐

The project site is within an urban area that is served by utility service systems, including water, wastewater and stormwater collection and treatment, and solid waste collection and disposal. The proposed project would add new daytime and nighttime population to the site that would increase the demand for utilities and service systems on the site, but not in excess of amounts expected and provided for in the project area.

Impact UT-1: Implementation of the proposed project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, would not exceed the capacity of the wastewater treatment provider that would serve the project, and would not require the construction of new or expansion of existing wastewater treatment or stormwater drainage facilities. ***(Less-Than-Significant Impact)***

Project-related wastewater and stormwater would flow to the City's combined stormwater/sewer system and would be treated to standards contained in the City's National Pollutant Discharge Elimination System (NPDES) Permit for the Southeast Water Pollution Control Plant prior to discharge into San Francisco Bay. The NPDES standards are set and regulated by the San Francisco Bay Area Regional Water Quality Control Board (RWQCB). Therefore, the proposed project would not conflict with RWQCB requirements related to wastewater discharge.

For the reasons specified above, the proposed project would not generate wastewater or stormwater discharges that have the potential to degrade water quality or contaminate a public water supply. Additionally, the proposed project is required to comply with the Stormwater Management Ordinance, which requires the project to maintain or reduce the existing volume and rate of stormwater runoff at the site by retaining runoff onsite, promoting stormwater reuse, and limiting site discharges before entering the combined sewer collection system.

The proposed project would also be required to comply with requirements of the Construction Site Runoff Ordinance, which regulates the discharge of sediment or other pollutants from construction sites and prevents erosion and sedimentation due to construction activities. Furthermore, before the street improvement permit can be finalized, SFPUC must review and approve the proposed plans.

Therefore, the proposed project would not have significant environmental impacts related to water quality.

For the reasons discussed above, the proposed project would incrementally increase demand for and use of these services, but not in excess of amounts expected and provided for in this area. The proposed project would not exceed any applicable wastewater treatment requirements or otherwise conflict with RWQCB requirements, and the minor population increase associated with the proposed project would not exceed the capacity of the existing wastewater treatment provider or substantially increase the demand for wastewater treatment or stormwater drainage facilities requiring the construction of new facilities or expansion of existing facilities. This impact would be less than significant and no mitigation measures are required.

Impact UT-2: The proposed project would not require expansion or construction of new water supply or treatment facilities. ***(Less-Than-Significant Impact)***

The proposed project would add two residential units to the project site, which would increase the demand for water on the site compared to existing conditions, but not in excess of amounts expected and provided for in the project area. Although the proposed project would incrementally increase the demand for water in San Francisco, the estimated increase in demand could be accommodated within anticipated water use and supply for the City.[52] The proposed project would also be designed to incorporate water-conserving measures, such as low-flush toilets and urinals, as required by the San Francisco Green Building Ordinance. The project site is not located within a designated recycled water use area, as defined in the Recycled Water Ordinance 390-91 and 393-94; thus, the project is not required to install a recycled water system. Since the proposed project's water demand could be accommodated by the existing and planned supply anticipated under the San Francisco Public Utilities Commission's (SFPUC's) 2010 Urban Water Management Plan (UWMP), as updated by the

[52] San Francisco Public Utilities Commission, *2010 Urban Water Management Plan*, June 2011. This document is available for review at: www.sfwater.org/Modules/ShowDocument.aspx?documentID=1055.

SFPUC's 2013 Water Availability Study, the proposed project would result in less-than-significant impacts related to water services and no mitigation measures would be required.

Impact UT-3: The proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. ***(Less-Than-Significant Impact)***

In September 2015, the City entered into a landfill disposal agreement with Recology, Inc. for disposal of all solid waste collected in San Francisco at the Recology Hay Road Landfill in Solano County for nine years or until 3.4 million tons have been disposed whichever occurs first. The City would have an option to renew the agreement for a period of six years or until an additional 1.6 million tons have been disposed, whichever occurs first.[53] The Recology Hay Road Landfill is permitted to accept up to 2,400 tons per day of solid waste, at that maximum rate the landfill would have capacity to accommodate solid waste until approximately 2034. At present, the landfill receives an average of approximately 1,850 tons per day from all sources, with approximately 1,200 tons per day from San Francisco; at this rate landfill closure would occur in 2041. The City's contract with the Recology Hay Road Landfill is set to terminate in 2031 or when 5 million tons have been disposed, whichever occurs first. At that point, the City will either further extend the Recology Hay Road Landfill contract or find and entitle another landfill site. The proposed project, which would include construction waste and operational waste associated with the residential use, would generate a minimal amount of solid waste to be deposited at the landfill. Therefore, the proposed project would be served by landfills with sufficient permitted capacity to accommodate its solid waste disposal needs. This impact would be less than significant and no mitigation measures would be required.

[53] San Francisco Planning Department, *Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County Final Negative Declaration*, Planning Department Case No. 2014.0653, May 21, 2015. Available online at: sfmea.sfplanning.org/2014.0653E_Revised_FND.pdf.

Impact UT-4: Construction and operation of the proposed project would comply with all applicable statutes and regulations related to solid waste. ***(Less-Than-Significant Impact)***

The California Integrated Waste Management Act of 1989 (AB 939) requires municipalities to adopt an Integrated Waste Management Plan (IWMP) to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. Reports filed by the San Francisco Department of the Environment showed the City generated approximately 870,000 tons of waste material in 2000. By 2010, that figure decreased to approximately 455,000 tons. Waste diverted from landfills is defined as recycled or composted.[54] San Francisco has a goal of 75 percent landfill diversion by 2010 and 100 percent by 2020. As of 2012 (the most recent year reported), 80 percent of San Francisco's solid waste was being diverted from landfills, indicating that San Francisco met the 2010 diversion target.[55]

In September, 2015, the City approved an Agreement with Recology, Inc., for the transport and disposal of the City's municipal solid waste at the Recology Hay Road Landfill in Solano County. The City began disposing its municipal solid waste at Recology Hay Road Landfill in January, 2016, and that practice is anticipated to continue for approximately nine years, with an option to renew the Agreement thereafter for an additional six years. San Francisco had a goal of 75% solid waste diversion by 2010, which it exceeded at 80% diversion, and has a goal of 100% solid waste diversion or "zero waste" to landfill or incineration by 2020. San Francisco Ordinance No. 27-06 requires mixed construction and demolition debris be transported by a Registered Transporter and taken to a Registered Facility that must recover for reuse or recycling and divert from landfill at least 65% of all received construction and demolition debris. The San Francisco Green Building Code also requires certain projects to submit a Recovery Plan to the Department of the Environment

[54] CalRecycle, Jurisdiction Diversion/Disposal Rate Detail. Available online at: www.calrecycle.ca.gov/LGCentral/Reports/Viewer.aspx?P=OriginJurisdictionIDs%3d438%26ReportYear%3d2013%26ReportName%3dReportEDRSJurisDisposalByFacility.

[55] San Francisco Department of the Environment, Zero Waste Program, "San Francisco Sets North American Record for Recycling and Composting with 80 Percent Diversion Rate." Available online at www.sfenvironment.org/news/press-release/mayor-lee-announces-san-francisco-reaches-80-percent-landfill-waste-diversion-leads-all-cities-in-north-america.

demonstrating recovery or diversion of at least 75% of all demolition debris. San Francisco's Mandatory Recycling and Composting Ordinance No. 100-09 requires all properties and everyone in the city to separate their recyclables, compostables, and landfill trash.

Therefore, given the above, the construction and operation of the project would result in a Less-Than-Significant Impact regarding compliance with all applicable statutes and regulations related to solid waste and no mitigation measures would be required.

Impact C-UT-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulative impact related to utilities or service systems. ***(Less-Than-Significant Impact)***

Cumulative development in the project site vicinity would incrementally increase demand on citywide utilities and service systems, but not beyond levels anticipated and planned for by public service providers. The SFPUC has accounted for such growth in its water demand and wastewater service projections, and the City has implemented various programs to divert 80 percent of its solid waste from landfills. Nearby cumulative development projects would be subject to the same water conservation, wastewater discharge, recycling and composting, and construction demolition and debris ordinances applicable to the proposed project. Compliance with these ordinances would reduce the effects of nearby cumulative development projects to Less Than Significant levels. For these reasons, the proposed project would not combine with past, present, and reasonably foreseeable future projects in the project vicinity to create a significant cumulative impact on utilities and service systems.

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
11. PUBLIC SERVICES— Would the project:					
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as fire protection, police protection, schools, parks, or other services?	☐	☐	☒	☐	☐

The proposed project's impacts on parks and recreation are discussed under **Section 11.9, Recreation.** Impacts to other public services are discussed below.

Impact PS-1: The proposed project would not result in a substantial adverse physical impact associated with the provision of police services. ***(Less-Than-Significant Impact)***

The project site currently receives police services from the San Francisco Police Department (SFPD). The proposed project would result in the addition of two residential units on the currently unoccupied project site and is unlikely to result in an increase in demand for police service calls in the project area. Police protection is provided by the Ingleside Police Station located at 1 Sgt John V Young Lane, approximately 2.5 miles east of the project site. The Ingleside Station would be able to provide the necessary police services and crime prevention in the area. Meeting the service demand associated with two residential units at the project site would not require the construction of new police facilities that could cause significant environmental impact. As such, the impact would be less than significant, and no mitigation measures would be required.

Impact PS-2: The proposed project would not result in a substantial adverse physical impact associated with the provision of fire services. ***(Less-Than-Significant Impact)***

The project site receives fire protection services from the San Francisco Fire Department (SFFD). Fire stations located nearby include Station 32, at 194 Park Street approximately 0.8 miles southwest of the project site; and Station 9 at 2245 Jerrold Avenue approximately 1.5 miles from the project. The proposed project would result in the addition of two residential units on the currently unoccupied

project site and is unlikely to result in an increase in demand for fire service calls in the project area. Moreover, the proposed project would be required to comply with all applicable building and fire code requirements, which identify specific fire protection systems, including, but not limited to, the provision of State-mandated smoke alarms, fire alarm and sprinkler systems, fire extinguishers, fire-rated walls, the required number and location of egress with appropriate distance separation, and emergency response notification systems. Compliance with all applicable building and fire codes, would further reduce the demand for Fire Department service and oversight.

Given that the prosed project would not result in a fire service demand beyond the projected growth for the area or the city, the proposed project would not result in the need for new fire protection facilities, and would have no adverse impact on the physical environment related to the construction of new or physically altered fire protection facilities. This impact would be less than significant and no mitigation measures would be required.

Impact PS-3: The proposed project would not result in a substantial adverse physical impact associated with the provision of school services. ***(Less-Than-Significant Impact)***

The San Francisco Unified School District (SFUSD) provides public primary and secondary education in the City and County of San Francisco. Junipero Serra Elementary School at 625 Holly Park Circle Street is approximately 0.7 mile southwest of the project site. Willie L Brown Jr Middle School at 2055 Silver Avenue is located approximately 1.5 miles southeast of the site. The nearest high school to the project site is Thurgood Marshall High School at 45 Conkling Street, approximately 1.4 miles southeast of the project site.

Based on a student generation rate employed by SFUSD of 0.203 students per dwelling unit, the two residential units that would be built as part of the proposed project could generate approximately one K-12 student. Similar to other City-wide developments, the proposed project would be assessed $2.42 per gross square foot of residential space as a school impact fee. The estimated one additional new student would not require the construction or expansion of school facilities. It is anticipated that the new student could be accommodated by existing schools under the jurisdiction of the SFUSD since the SFUSD is currently not experiencing high growth rates, and public school facilities throughout

the City and County of San Francisco are generally underutilized. The SFUSD is not planning to construct new schools near the project site.

Given that SFUSD has adequate facilities to accommodate growth, the new student generated by the proposed project would not substantially increase demand for school facilities in San Francisco and would not result in a significant impact. In addition, as with all new development, the project sponsor would be required to pay one-time school impact fees under Government Code Section 65995(b)(3), as stated above, which could be used by SFUSD for costs associated with providing facilities for new students.

In addition, The Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), restricts the ability of local agencies, such as the City of San Francisco, to deny land use approvals on the basis that public school facilities are inadequate. SB 50 establishes the base amount of allowable developer fees for school facilities at $2.24 per square foot of residential construction and $0.21 per square foot of commercial construction as of 2006. These fees are intended to address local school facility needs resulting from new development. Public school districts may, however, impose higher fees provided they meet the conditions outlined in the act.

Based on the foregoing, the proposed project would not result in a substantially increased demand for school facilities, and would not require new or expanded school facilities. Therefore, this impact would be less than significant and no mitigation measures would be required.

Impact PS-4: The proposed project would not result in a substantial adverse physical impact associated with the provision of other public services, such as libraries. ***(Less-Than-Significant Impact)***

Implementation of the proposed project would add approximately five residents to the project site which would increase the demand for other public services such as libraries. This increase in demand would not be substantial given the overall demand for library services on a citywide basis. The San Francisco Public Library (SFPL) operates 29 branches throughout the City and it is anticipated that the Bernal Heights Branch Library, which is located 0.4 miles south of the project site, would be able to accommodate the minor increase in demand for library services generated by the proposed project.

For these reasons, the proposed project would not require the construction of new or alteration of existing governmental facilities. This impact would be less than significant and no mitigation measures would be required.

Impact PS-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a cumulative impact on public services. ***(Less-Than-Significant Impact)***

Cumulative development in the project vicinity would result in a minor intensification of land uses and a cumulative increase in the demand for fire protection, police protection, school services, and other public services. The Fire Department, the Police Department, the SFUSD, SFPL, and other City agencies have accounted for such growth in providing public services to the residents of San Francisco. Nearby cumulative development projects would be subject to many of the same development impact fees applicable to the proposed project. For these reasons, the proposed project would not combine with past, present, and reasonably foreseeable future projects in the project vicinity to create a significant cumulative impact on public services. This impact would be less than significant and no mitigation measures would be required.

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
12. BIOLOGICAL RESOURCES— Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☐	☒

The project site is located within a built environment and does not contain riparian habitat or other sensitive natural communities as defined by the California Department of Fish and Wildlife and the United States Fish and Wildlife Service; therefore, Topic 12.b is not applicable to the proposed project. In addition, the project area does not contain wetlands as defined by Section 404 of the Clean Water Act; therefore, Topic 12.c is also not applicable. Finally, there are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, of other approved local, State, or regional habitat conservation plans applicable to the project site. Therefore, implementation of the proposed project could not conflict with the provisions of any such plan and Topic 12.f is not applicable to the proposed project.

Impact BI-1: The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species, riparian habitat or sensitive natural communities, and would not interfere substantially with any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. ***(Less-Than-Significant Impact)***

The project site is an undeveloped lot in a built urban environment and does not include any candidate, sensitive, or special-status species, any riparian habitat, or other sensitive natural community identified in regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, nor would it interfere substantially with any native resident or migratory species, or species movement or migratory corridors.

A sensitive plant species, hummingbird sage (*Salvia spathacea*) is present on the northern portion of Public Works' property adjacent to the project site, to the north, along Bernal Heights Boulevard. The proposed stairway between Folsom Street and Bernal Heights Boulevard would be located at least 15 feet downhill from where the plants are located and would not run through or otherwise disturb the existing hummingbird sage. The proposed alignment would both avoid the sensitive species during construction and direct pedestrians along a route that would avoid contact with the plants.

Migrating birds do pass through San Francisco. Nesting birds, their nests, and eggs are fully protected by *California Fish and Game Code* (Sections 3503, 3503.5) and the federal Migratory Bird Treaty Act (MBTA). Although the proposed project would be subject to the MBTA, the site does not contain habitat supporting migratory birds.

San Francisco is within the Pacific Flyway, a major north-south route of travel for migratory birds along the western portion of the Americas. Planning Code Section 139, Standards for Bird-Safe Buildings, establishes building design standards to reduce avian mortality rates associated with bird strikes. This ordinance focuses on location-specific hazards and building feature-related hazards. Location-specific hazards apply to buildings in, or within 300 feet of and having a direct line of sight to, an Urban Bird Refuge, which is defined as an open space "two acres and larger dominated by vegetation, including vegetated landscaping, forest, meadows, grassland, or wetlands, or open water." Although the project site is within 300 feet of an Urban Bird Refuge, Bernal Heights Park,

Planning Code Section 139 exempts projects that are less than 45 feet in height and have an exposed façade comprised of less than 50% glass, such as the proposed project, from the requirement to implement birdsafe design standards. Even though the Planning Code deems structures such as the proposed project too small to require birdsafe design, the likelihood of even occasional bird strikes to the proposed project having a substantial adverse impact on candidate, sensitive, or special-status bird species is very low.

Given the above, implementation of the proposed project would not modify any natural habitat and this impact would be Less Than Significant.

Impact BI-2: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. ***(No Impact)***

The City's Urban Forestry Ordinance, *Public Works Code* Sections 801 et. seq., requires a permit from San Francisco Public Works to remove any protected trees. There are no existing trees or other vegetation on the project site that would be removed as part of the proposed project, and as previously discussed, the proposed project includes one street tree per unit, and the subsequent street improvement would include the planting of additional street trees, upon approval by Public Works. The proposed project would not conflict with any local policies or ordinances that protect biological resources, and no impact would occur. Also, as mentioned above, a sensitive plant species, hummingbird sage (*Salvia spathacea*) is present on the northern portion of Public Works property adjacent to the north of the project site, along Bernal Heights Boulevard. The proposed stairway between Folsom Street and Bernal Heights Boulevard would be located at least 15 feet downhill from where the plants are located, and would not run through or otherwise disturb the existing hummingbird sage.

Impact C-BI-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulative impact related to biological resources. ***(Less-Than-Significant Impact)***

Cumulative development in the project vicinity would result in the construction of multi-story buildings that can injure or kill birds in the event of a collision and would result in the removal of

existing street trees or other vegetation. Moreover, while there is a sensitive plant species on a property adjacent to the project site, the property is publically-owned and the proposed project's stairway alignment would be downhill from the plant and would direct future pedestrian traffic around it. No other candidate, sensitive or special-status species, any riparian habitat, or other sensitive natural community in the project vicinity. For these reasons, the proposed project would not combine with past, present, and reasonably foreseeable future projects in the project vicinity to create a significant cumulative impact on biological resources. This impact would be less than significant and no mitigation measures would be required.

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
13. GEOLOGY AND SOILS— Would the project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☒	☐	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐	☐
iv) Landslides?	☐	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐	☐
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?	☐	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☐	☒
f) Change substantially the topography or any unique geologic or physical features of the site?	☐	☐	☒	☐	☐
g) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐	☐

The project site would be connected to the City's existing sewer system and would not require use of septic systems. Therefore, Topic 13.e would not be applicable to the project site.

The analysis in this section is based, in part, on the Geotechnical Investigations prepared for the proposed project.[56] The project site is underlain by three to four feet of soil overlying chert bedrock. The soil is characterized as very stiff, lean clay at one boring location, and very stiff, silty clayey sand overlying sandy lean clay at another boring location. Groundwater was not encountered at the maximum boring depth of five feet. The proposed project includes a maximum depth of excavation of ten feet for installation of the spread footing foundations for the proposed residences.

Impact GE-1: The proposed project would not result in exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, seismic groundshaking, liquefaction, lateral spreading, or landslides. ***(Less-Than-Significant Impact)***

The project site is not located within an Earthquake Fault Zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act and no known or potentially active fault exists on the site.[57] No active faults have been mapped on the project site by the United States Geological Survey (USGS) or the California Geological Survey (CGS).[58] In a seismically active area, such as the San Francisco Bay Area, the possibility exists for future faulting in areas where no faults previously existed. However, since faults with known surface rupture have been mapped in California, and no evidence of active faulting on the site has been found, the potential for impacts to the proposed project due to fault rupture are less than significant.

However, although the project site is not located within a seismic hazard zone, it may be subject to ground shaking in the event of an earthquake on regional fault lines like the entire San Francisco Bay

[56] H. Allen Gruen, Geotechnical Engineer, Geotechnical Investigation, Planned Development at 3516 Folsom Street, San Francisco, California, August 3, 2013. H. Allen Gruen, Geotechnical Engineer, Geotechnical Investigation, Planned Development at 3526 Folsom Street, San Francisco, California, August 3, 2013.

[57] California Department of Conservation, California Geological Survey, Alquist-Priolo Fault Zones in Electronic Format, 2010. This document is available for review at www.quake.ca.gov/gmaps/ap/ap_maps.htm

[58] U.S. Geological Survey and California Geological Survey, Quaternary Fault and Fold Database for the United States, 2010. This document is available for review at www.earthquake.usgs.gov/hazards/qfaults .

Area would.[59] The site is located approximately six miles northeast of the San Andreas Fault. The 2007 Working Group on California Earthquake Probabilities estimates that there is a 63 percent chance that a magnitude 6.7 or greater earthquake will occur in the San Francisco Bay Area within 30 years. The Association of Bay Area Governments (ABAG) has classified the Modified Mercalli Intensity Shaking Severity Level of ground shaking in the project vicinity due to an earthquake on the North Golden Gate segment of the San Andreas Fault System as "VIII-Very Strong."[60] Therefore, it is likely that the site would experience periodic minor or major earthquakes associated with a regional fault, resulting in strong to very strong ground shaking.

Ground shaking associated with an earthquake on one of the regional faults around the project site may result in ground failure, such as that associated with soil liquefaction, lateral spreading, and differential compaction. The project site does not lie within a liquefaction potential zone as mapped by the California Division of Mines and Geology, and borings at the site indicate that the liquefaction potential at the site is low. Because the project site's liquefaction potential is low, lateral spreading would be unlikely to occur. Risks associated with liquefaction and differential compaction would be reduced with implementation of standard building engineering and design measures.

As shown on the official State of California Seismic Hazards Zone Map for San Francisco prepared under the Seismic Hazards Mapping Act of 1990,[61] the project site is not located within an area subject to landslides (see Map 5 of the Community Safety Element). Therefore, the proposed project would result in Less Than Significant landslide-related impacts.

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[59] California Division of Mines and Geology, State of California Seismic Hazard Zones, City and County of San Francisco Official Map, November 17, 2000. This document is available for review at gmw.consrv.ca.gov/shmp/download/pdf/ozn_sf.pdf.

[60] Association of Bay Area Governments, Earthquake Shaking Hazard Map, San Francisco Scenario, North Golden Gate Segment of the San Andreas Fault System, 2003. This document is available for review at resilience.abag.ca.gov/earthquakes and at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2015-011274ENV.

[61] The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This Act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones.

Given the above, the proposed project would not result in exposure of people or structures to potential substantial adverse effects, nor would it aggravate existing seismic hazards, including the risk of loss, injury, or death involving rupture of a known earthquake fault, seismic groundshaking, liquefaction, lateral spreading, or landslides. This impact would be less than significant and no mitigation measures would be required.

Impact GE-2: The proposed project would not result in substantial loss of topsoil or erosion. ***(Less-Than-Significant Impact)***

The proposed project is currently underdeveloped, and is covered with pervious surf top soil. Although excavation would occur as part of the proposed project, compliance with the City's Construction Site Water Pollution Prevention Program[62] would require the project sponsor to prepare and implement an erosion and sediment-control plan subject to review by the City. Compliance with this regulation would reduce and control site runoff during construction activities and reduce the potential for erosion to a Less Than Significant level. No mitigation measures would be required and the effect is Less Than Significant.

Impact GE-3: The proposed project would not be located on a geologic unit 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. ***(Less-Than-Significant Impact)***

The project site and vicinity do not include any hills or cut slopes that could cause or be subject to a landslide. Temporary slopes would be necessary during site excavations. If excavations undermine or remove support from the existing and adjacent structures, it may be necessary to underpin those structures. The final design of the foundation system would be included in a design-level geotechnical investigation that is based on site-specific data in accordance with building code requirements. According to the Geotechnical Investigation, soils at the site are capable of supporting a conventional spread footing foundation in accordance with industry standards and building code requirements. Drilled piers may also be utilized to support the foundation or for shoring and

[62] San Francisco Municipal Code (Public Works Code) Part II. Chapter 10. Article 4.1. 40 GF Section 403.

underpinning. Excavation activities would require the use of shoring and underpinning in accordance with the recommendations of the geotechnical report and *San Francisco Building Code* requirements. Groundwater is not anticipated to be encountered during excavation and grading activities.

Adherence to San Francisco Building Code requirements would ensure that the project applicant include analysis and avoidance of any potential impacts related to unstable soils as part of the design-level geotechnical investigation prepared for the proposed project; therefore, any potential impacts related to unstable soils would be less than significant and no mitigation measures would be required.

Impact GE-4: The proposed project could be located on expansive soil, as defined in the California Building Code, but would not create substantial risk to life or property. ***(Less-Than-Significant Impact)***

Expansive soils expand and contract in response to changes in soil moisture, most notably when near surface soils vacillate between a saturated, low-moisture, and a saturated, high-moisture content condition. The presence of expansive soils is typically determined based on site specific data. As noted above, the site is underlain by firm to very stiff, sandy lean clay as well as firm to hard, lean clay with varying amounts of sand. Expansive soils may be encountered at the site; the San Francisco Building Code includes a requirement that the project applicant include analysis of the potential for soil expansion as part of the design-level geotechnical investigation prepared for the proposed project. Compliance with existing building code requirements (which the design-level geotechnical report would be required to comply with), would ensure that any potential impacts related to expansive soils would be less than significant. No mitigation measures would be required and the effects of the proposed project would be Less Than Significant.

Impact GE-5: The proposed project would not substantially change the topography of the site or any unique geologic or physical features of the site. ***(Less-Than-Significant Impact)***

The project site is located on a steep slope of approximately 28 percent. Although minor excavations would be required to support the building foundation, the proposed project would follow the

recommendations in the geotechnical report and have Less-Than-Significant Impacts with respect to alterations to topographical features. The hillside would remain intact and the proposed project would be required to follow the City's stormwater management requirements for the new construction and the roadway extension to provide adequate drainage to the site. The proposed project would not include any work that would significantly alter the grade of the hillside or the character of the project site as part of a hillside residential area Structures in the immediate vicinity of the proposed project are similarly built into the hillside. This impact would be less than significant and no mitigation measures would be required.

Impact GE-6: The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. ***(Less-Than-Significant Impact)***

Paleontological resources include fossilized remains or traces of animals, plants, and invertebrates, including their imprints, from a previous geological period. Collecting localities and the geologic formations containing those localities are also considered paleontological resources as they represent a limited, non-renewable resource and once destroyed, cannot be replaced.

The project site is underlain by fill and sandy to clayey soils on top of chert bedrock. The likelihood of discovery of paleontological resources or unique geological features as a result of the proposed project is low. Therefore, there would be a Less-Than-Significant Impact and no mitigation measures would be required.

Impact C-GE-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulative impact related to geology and soils. ***(Less-Than-Significant Impact)***

The proposed project would result in Less-Than-Significant Impacts related to topographical features and risk of injury or death involving landslides. Impacts related to rupture of an earthquake fault, seismic ground shaking or ground failure, unstable soil, or the loss of top soil would be less than significant. Impacts to paleontological resources and geologic features would also be less than significant. Geology and soils impacts are generally site-specific and localized and do not have cumulative effects with other projects. These impacts are specific to the project and would not

combine with similar impacts associated with past, present, and reasonably foreseeable future projects in the site vicinity. These impacts would be less than significant and no mitigation measures would be required.

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
14. HYDROLOGY AND WATER QUALITY— Would the project:					
a) Violate any water quality standards or waste 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 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)?	☐	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion of siltation on- or off-site?	☐	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐	☐
e) 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?	☐	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map?	☐	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☐	☒

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☐	☒

The project is located well inland from both the San Francisco Bay and the Pacific Ocean, and is not subject to seiche or potential inundation in the event of a levee or dam failure or tsunami occurring along the San Francisco coast (Maps Five, Six and Seven of the Community Safety Element of the General Plan).[63] In addition, the developed area of the project site would not be subject to mudflow. Therefore, Topic 14.j does not apply. The project site is also not located within a 100-year flood hazard area designated on the City's interim floodplain map, and would not place housing or structures within a 100-year flood hazard area that would impede or redirect flood flows.[64] Therefore, Topics 14.g, 14.h, and 14.i are also not applicable.

Impact HY-1: The proposed project would not violate water quality standards or otherwise substantially degrade water quality. ***(Less-Than-Significant Impact)***

Wastewater and stormwater flows generated on the project site flow into the City's combined sewer system and into the Southeast Water Pollution Control Plant, where they are treated prior to discharge into San Francisco Bay. Treatment is undertaken consistent with the effluent discharge standards established by the plant's National Pollutant Discharge Elimination System (NPDES) permit. In accordance with the permit, discharges of treated wastewater and stormwater into San Francisco Bay meet the requirements of the Clean Water Act, Combined Sewer Overflow Control

[63] San Francisco, City and County of, *San Francisco General Plan, Community Safety Element*, April 2007. This document is available for review at the Planning Department in Case File No. 2011.0409E.

[64] FEMA Preliminary Flood Insurance Rate Map, 2016. Available online at: sfgsa.org/sites/default/files/Document/SF_NE.pdf.

Policy, and associated State requirements in the Water Quality and Control Plan for the San Francisco Bay Basin and do not violate water quality standards.

The construction and operation of two single-family homes, built consistent with the Planning Code and Building Code, in a residential area would not be expected result in wastewater or stormwater flows that would degrade water quality nor violate water quality standards. This impact would be less than significant and no mitigation measures would be required.

Impact HY-2: The proposed project would not 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. ***(Less-Than-Significant Impact)***

The proposed project includes the construction of two single family homes and street improvements to serve those homes. The proposed project does not include any elements that would tap into, or remove, existing ground water. The two residential units would be constructed consistent with the Building Code and any subsequent street improvement would be required to include design elements to minimize impervious surfaces and to not interfere with groundwater recharge. Existing city regulations would ensure that the project would not 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. This impact would be less than significant and no mitigation measures would be required.

Impact HY-3: The proposed project would not result in altered drainage patterns that would cause substantial erosion or flooding. ***(Less-Than-Significant Impact)***

The project site is currently an unimproved hillside and stormwater flows are currently uncontrolled. The proposed project would include drainage elements that would control stormwater runoff and direct it into the City's combined stormwater/sewer system. The proposed project would be required to comply with SFPUC's Stormwater Management Requirements and Design Guidelines, which include meeting specific performance measures for impervious surfaces and stormwater run-off rate, the approval of a Preliminary Stormwater Control Plan before receiving a Site or Building Permit, and the approval of a Final Stormwater Control Plan before receiving the Certificate of Final

Completion.[65] Therefore, the proposed project would not be expected to result in substantial erosion or flooding associated with changes in drainage patterns. This impact would be less than significant and no mitigation measures would be required.

Impact HY-4: The proposed project would not contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. ***(Less-Than-Significant Impact)***

During operation of the proposed project, all wastewater and stormwater runoff from the project site would be treated at the Southeast Water Pollution Control Plant. Treatment would be provided pursuant to the effluent discharge standards contained in the City's NPDES permit for the plant. During construction and operation, the proposed project would be required to comply with all local wastewater discharge and water quality requirements, which would ensure that all stormwater generated by the proposed project is managed on-site such that the project would not contribute additional volumes of polluted runoff to the City's stormwater infrastructure. Therefore, the proposed project would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. As such, this impact would be less than significant, and no mitigation measures would be required.

Impact C-HY-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the site vicinity, would result in Less Than Significant cumulative impacts to hydrology and water quality. ***(Less-Than-Significant Impact)***

As stated above, the proposed project would result in no impacts or Less-Than-Significant Impacts related to water quality, groundwater levels, alteration of drainage patterns, capacity of drainage infrastructure, 100-year flood zones, failure of dams or levees, and/or seiche, tsunami, and/or mudflow hazards. The proposed project would adhere to the same water quality and drainage control requirements that apply to all land use development projects in San Francisco. Since all development projects would be required to follow the same drainage, dewatering and water quality

[65] San Francisco Public Utilities Commission, *How Do I Comply with the Stormwater Management Requirements*, http://sfwater.org/index.aspx?page=1006. Accessed: May 25, 2017.

regulations, peak stormwater drainage rates and volumes for the design storm would gradually decrease over time with the implementation of new, conforming development projects. Thus, no substantial adverse cumulative effects with respect to drainage patterns, water quality, stormwater runoff, or stormwater capacity of the combined sewer system would occur.

Further, San Francisco's limited use of groundwater would preclude any significant adverse cumulative effects to groundwater levels, and the proposed project would not contribute to any cumulative effects with respect to groundwater. In general, hazards related to 100-year flood zones, failure of dams or levees, and/or seiche, tsunami, and/or mudflows are extremely unusual and are not considered to be substantive impacts in San Francisco such that any cumulative significant impacts would be anticipated, particularly in the interior areas of the city where the project site is located. Given that cumulative impacts are not anticipated since all development projects would be required to follow the same drainage, dewatering and water quality regulations as the proposed project, the proposed project would not contribute to any such cumulative effects. Thus, cumulative hydrology and water quality impacts would be less than significant and no mitigation measures would be required.

Topics:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less-Than-Significant Impact*	*No Impact*	*Not Applicable*
15. HAZARDS AND HAZARDOUS MATERIALS—Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	☐
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?	☐	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐	☐

Topics:		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐	☐
h)	Expose people or structures to a significant risk of loss, injury or death involving fires?	☐	☐	☒	☐	☐

The project site is not located within an airport land use plan area or in the vicinity of a private airstrip. Therefore, Questions 15.e and 15.f are not applicable.

As discussed above under Impact NO-3, construction of the proposed project would result in ground vibration that could potentially affect the integrity of PG&E's gas Pipeline 109. The discussion above describes those impacts and sets forth vibration-related mitigation measures to reduce those potential impacts to less than significant.

Impact HZ-1: The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. ***(Less-Than-Significant Impact)***

Construction activities would require the use of limited quantities of hazardous materials such as fuels, oils solvents, paints, and other common construction materials. The City would require the project sponsor and its contractor to implement Best Management Practices (BMPs) as part of their construction activities, including hazardous materials management measures, which would reduce

the hazards associated with short-term construction-related transport, and use and disposal of hazardous materials to Less Than Significant levels.

The proposed project's residential uses would involve the use of relatively small quantities of hazardous materials such as cleaners and disinfectants for routine purposes. These products are labeled to inform users of potential risks and to instruct them in appropriate handling procedures. Most of these materials are consumed through use, resulting in relatively little waste. For these reasons, the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This impact would be less than significant and no mitigation measures would be required.

Impact HZ-2: The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable conditions involving the release of hazardous materials into the environment. ***(Less-Than-Significant Impact)***

The project site is not currently located in a Maher Area, meaning that it is not known or suspected to contain contaminated soils and/or groundwater.[66] Based on mandatory compliance with existing regulatory requirements, the proposed project would not result in a significant hazard to the public or environment from contaminated soil and/or groundwater, asbestos, or lead-based paint, and the proposed project would result in a Less-Than-Significant Impact with respect to these hazards and no mitigation would be required.

[66] San Francisco Planning Department, Expanded Maher Map Area, March 2015. This document is available for review at: www.sf-planning.org/ftp/files/publications_reports/library_of_cartography/Maher%20Map.pdf.

Impact HZ-3: The proposed project would not result in hazardous emissions or in the handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 of a mile of an existing school. ***(Less-Than-Significant Impact)***

There are no schools within a quarter-mile of the project site. As such, the proposed project would have a Less-Than-Significant Impact related to hazardous emissions or the handling of hazardous materials within a quarter mile of a school and this impact would be less than significant.

Impact HZ-3: The project site is not inclnded on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and the proposed project would 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. ***(Less-Than-Significant Impact)***

The project site is not included on a list of hazardous materials sites compiled by the California Department of Toxic Substance Control pursuant to Government Code Section 65962.5 and, as previously discussed, the project site is not located in a Maher Area. As such, the proposed project is not included on a list of hazardous materials sites and the proposed project would not result in the accidental release of hazardous materials into the environment. This impact would be less than significant and no mitigation measures would be required.

Impact HZ-4: The proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan and would not expose people or structures to a significant risk of loss, injury, or death involving fires. ***(Less-Than-Significant Impact)***

The proposed project would develop residential uses on an existing "paper street' segment of Folsom Street and would not alter the existing street grid. The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The City requires that existing and new buildings meet fire safety standards through compliance with the applicable provisions of the Building Code and Fire Code. Therefore, the proposed project's compliance with Building Code and Fire Code requirements would result in a Less-Than-Significant Impact related to the exposure of persons or structures to fire risks.

Impact C-HZ-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the site vicinity, would result in Less Than Significant cumulative impacts related to hazards and hazardous materials. ***(Less-Than-Significant Impact)***

Hazards-related impacts are generally site-specific and typically do not combine with impacts from other planned and foreseeable projects to result in significant cumulative impacts. New developments in the vicinity of the project site would be subject to similar regulatory requirements and mitigation measures as the proposed project. Therefore, large, unexpected releases of hazardous materials of the type that would contribute to significant cumulative impacts are not expected. Compliance with existing regulations pertaining to the treatment and management of hazardous materials would ensure that the proposed project would not make a significant cumulative contribution to the release of hazardous materials. Therefore, cumulative hazards impacts would be less than significant and no mitigation would be required.

Topics:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less-Than-Significant Impact*	*No Impact*	*Not Applicable*
16. MINERAL AND ENERGY RESOURCES— Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☐	☒
c) Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?	☐	☐	☒	☐	☐

All land in the City of San Francisco, including the project site, is designated by the CGS as Mineral Resource Zone Four (MRZ-4) under the Surface Mining and Reclamation Act of 1975. The MRZ-4 designation indicates that adequate information does not exist to assign the area to any other MRZ; thus, the area is not designated to have significant mineral deposits. The area surrounding the project site has previously been developed, and future evaluations of the presence of minerals at this

site would therefore not be affected by the proposed project. Further, the development and operation of the proposed project would not have an impact on any off-site operational mineral resource recovery sites. Therefore, Topics 16.a and 16.b are not applicable to the proposed project.

Impact ME-1: The proposed project would not encourage activities which would result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner. ***(Less-Than-Significant Impact)***

Development of new residential uses as part of the proposed project would not result in the consumption of large amounts of fuel, water, or energy. As two new buildings in San Francisco, the proposed project is required to conform to energy conservation standards specified by the San Francisco Building Code, including the San Francisco Green Building Ordinance. The measures required by the San Francisco Green Building Ordinance are intended to reduce greenhouse gas emissions associated with new construction and rehabilitation activities, increase energy efficiency, reduce water use, and realize other environmental gains. Compliance with the San Francisco Green Building Ordinance would reduce the use of energy and water by the proposed project.
Based on the above information, the proposed project would not result in the consumption of large amounts of fuel, water, or energy. This impact would be less than significant and no mitigation measures would be required.

Impact C-ME-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the site vicinity, would result in Less Than Significant cumulative impacts to minerals and energy. ***(Less-Than-Significant Impact)***

As described above, no known mineral resources exist at the project site, and therefore the proposed project would not contribute to any cumulative impacts related to mineral resources. Compliance with current State and local standards regarding energy consumption and conservation, including Title 24 of the California Code of Regulations and the San Francisco Green Building Ordinance, would ensure that the project would not in and of itself require a major expansion of power facilities. Therefore, the energy demand associated with the proposed project would result in a Less Than Significant physical environmental effect. The proposed project would not contribute to cumulatively considerable impacts related to energy and natural resources. Overall, the proposed project would

not result in cumulatively considerable impacts related to mineral and energy resources. This impact would be less than significant and no mitigation measures would be required.

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
17. AGRICULTURE AND FOREST RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **—Would the project:**					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined by Public Resources Code Section 4526)?	☐	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non-forest use?	☐	☐	☐	☐	☒

The project site is located within an urbanized area of San Francisco. No land in San Francisco County has been designated by the California Department of Conservation's Farmland Mapping and Monitoring Program as agricultural land. The project site does not contain agricultural uses and is not zoned for such uses. As such, the proposed project would not require the conversion of any land designated as prime farmland, unique farmland, or Farmland of Statewide Importance to non-agricultural use. The proposed project would not conflict with any existing agricultural zoning or

Williamson Act contracts and the California Department of Conservation designates the project site as "Urban and Built-Up Land." No land in San Francisco is designated as forest land or timberland by the State Public Resource Code. Therefore, the proposed project would not conflict with zoning for forest land, cause a loss of forest land, or convert forest land to a different use. For these reasons, Topics 17.a, 17.b, 17.c, 17.d, and 17.e are not applicable to the proposed project.

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	Not Applicable
18. MANDATORY FINDINGS OF SIGNIFICANCE—Would the project:					
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐	☐
b) Have impacts that would be individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐	☐

a) As discussed, the proposed project is anticipated to have Less-Than-Significant Impacts or Less-Than-Significant Impacts with mitigation incorporated on the environmental topics identified in this Initial Study.

b) The proposed project in combination with past, present and foreseeable projects as described in Section E, would not result in cumulative impacts to land use, population and housing, cultural resources, transportation and circulation, noise and vibration, air quality, wind and shadow, GHG emissions, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral and energy resources, and agricultural and forest resources.

c) The proposed project with mitigation incorporated, as discussed above, would not result in significant adverse impacts on human beings, either directly or indirectly.

I. MITIGATION MEASURES

The following mitigation measure has been identified to reduce potentially significant environmental impacts resulting from the proposed project to Less Than Significant levels.

Mitigation Measure M-NO-3, Vibration Management Plan:

The Project Sponsor shall retain the services of a qualified structural engineer to develop, and the Project Sponsor shall adopt, a vibration management and continuous monitoring plan to cover any construction equipment operations performed within 20 feet of PG&E Pipeline 109. The vibration management and monitoring plan shall be submitted to PG&E and Planning Department staff for review and approval prior to issuance of any construction permits. The vibration management plan shall include:

- **Vibration Monitoring**: Continuous vibration monitoring throughout the duration of the major structural project activities to ensure that vibration levels do not exceed the established standard.
- **Maximum PPV Vibration Levels**: Maximum PPV vibration levels for any equipment shall be less than 2 inches per second (in/sec). Should maximum PPV vibration levels exceed 2 in/sec, all construction work shall stop and PG&E shall be notified to oversee further work.
- **Standby Inspection**: A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity within 10 feet of the gas pipeline(s). This includes all grading, trenching, gas line depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection would be coordinated through the Underground Service Alert (USA) service at **811 or 1-800-227-2600**. A minimum notice of 48 hours is required.
- **Grading/Excavation**: Any excavations, including grading work, above or around Pipeline 109 must be performed with a PG&E inspector present. This includes all laterals, subgrades, and gas line depth verifications (potholes). Work in the vicinity of Pipeline 109 must be completed consistent with PG&E Work Procedure TD-4412P-05 "Excavation Procedures for Damage Prevention." Any plans to expose and support Pipeline 109 across an open excavation must be approved by PG&E Pipeline Engineering in writing prior to performing the work. Any grading or digging within two (2) feet of Pipeline 109

shall be dug by hand. Water jetting to assist vacuum excavating must be limited to 125 pounds per square inch gage (psig).

- **Pipeline Markers**: Prior to the commencement of project activity, pipeline markers must be placed along the pipeline route. With written PG&E approval, any existing markers can be temporarily relocated to accommodate construction work, but must be reinstalled once construction is complete.
- **Fencing**: No parallel fencing is allowed within 10 feet of Pipeline 109 and any perpendicular fencing shall require 14 foot access gates to be secured with PG&E corporation locks.
- **Structures**: Permanent structures must be located a minimum distance of 10 feet from the edge of Pipeline 109. A total width of 45 feet shall be maintained for pipeline maintenance. No storage of construction or demolition materials is permitted within this 45 foot zone.
- **Construction Loading**: To operate or store any construction equipment within 10 feet of Pipeline 109 that exceeds the half-axle wheel load (half axle weight is the gross weight upon any one wheel, or wheels, supporting one end of an axle) in the table below, approval from a PG&E gas transmission pipeline engineer is required. Pipeline 109 may need to be potholed by hand in to confirm the depth of the existing cover. These weight limits also depend on the support provided by the Pipeline's internal gas pressure. If PG&E's operating conditions require the Pipeline to be depressurized, maximum wheel loads over the pipeline will need to be further limited. For compaction within two feet of Pipeline 109, walk-behind compaction equipment shall be required. Crane and backhoe outriggers shall be set at least 10 feet from the centerline of Pipeline 109. Maximum PPV vibration levels for any equipment shall be less than 2 in/sec.

Depth of Cover to Top of Pipe (ft.)	Maximum Half-Axle Wheel Loading (lbs)
2	4,580
3	6,843
4	7,775
5	7,318

J. PUBLIC NOTICE AND COMMENT

This Mitigated Negative Declaration has been prepared by the Planning Department pursuant to the Department's rescinding of a July 8, 2016 Categorical Exemption determination to allow for further analysis of potential environmental impacts. The Categorical Exemption was rescinded prior to a scheduled CEQA appeal hearing before the Board of Supervisors in December 2016. The Appellants included individual neighbors and nearby neighborhood organizations, and supporters of the appeal included dozens of individuals, the Sierra Club, and the Bernal Heights Democratic Club. The proposed project was also the subject of Discretionary Review requests by nine individuals and two neighborhood organizations, with the support of neighbors and organizations similar to those supporting the CEQA appeal.

In the course of both the Discretionary Review process and the appeal filed on the July 2016 Categorical Exemption, public comments included concerns about the appropriateness of a Categorical Exemption for the proposed project due to the unique nature of the project site; concerns about cumulative impacts of the development of the remaining lots; concerns about the integrity and safety of PG&E Pipeline 109; emergency access; traffic; and public vistas.

As a result of these public comments, the Planning Department decided to rescind the Categorical Exemption and issue a Mitigated Negative Declaration for the proposed project to ensure that potential environmental impacts to these and other resource areas are properly analyzed, and mitigations instituted, if appropriate.

K. DETERMINATION.

On the basis of this Initial Study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Jessica Range for

Lisa Gibson
Environmental Review Officer
for
John Rahaim
Director of Planning

DATE 7/11/2017

L. INITIAL STUDY PREPARERS

REPORT AUTHORS

Planning Department, City and County of San Francisco
Environmental Planning Division
165 Mission Street, Suite 400
San Francisco, CA 94103

Acting Environmental Review Officer: Lisa Gibson
Senior Environmental Planner: Joy Navarrete
Environmental Planner: Justin Horner

PROJECT SPONSOR

Bluorange Designs

Project Sponsor: Fabien Lannoye

EXHIBIT B

SAN FRANCISCO
PLANNING DEPARTMENT

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
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Planning
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Planning Commission Motion No. [XXXX]

HEARING DATE: June 15, 2017

Case No.:	**2013.1383ENV**
Project Title:	**3516 and 3526 Folsom Street**
Zoning:	RH-1 (Residential—House, One Family) Use District 40-X Height and Bulk District Bernal Heights Special Use District
Block/Lot:	5626/013 and 5626/014
Lot Size:	1,750 square feet (each lot)
Project Sponsor:	Fabien Lannoye, Bluorange Designs 415-626-8868 Fabien@bluorange.com
Staff Contact:	Justin Horner – (415) 575-9023 Justin.Horner@sfgov.org

ADOPTING FINDINGS RELATED TO THE APPEAL OF THE PRELIMINARY MITIGATED NEGATIVE DECLARATION, FILE NUMBER 2013.1383E FOR THE PROPOSED DEVELOPMENT ("PROJECT") AT 3516-26 FOLSOM STREET.

MOVED, that the San Francisco Planning Commission (hereinafter "Commission") hereby AFFIRMS the decision to issue a Mitigated Negative Declaration, based on the following findings:

1. On September 25, 2013, pursuant to the provisions of the California Environmental Quality Act ("CEQA"), the State CEQA Guidelines, and Chapter 31 of the San Francisco Administrative Code, the Planning Department ("Department") received an Environmental Evaluation Application form for the Project, in order that it might conduct an initial evaluation to determine whether the Project might have a significant impact on the environment.

2. On April 26, 2017 the Department determined that the Project, as proposed, could not have a significant effect on the environment.

3. On April 26, 2017 a notice of determination that a Mitigated Negative Declaration would be issued for the Project was duly published in a newspaper of general circulation in the City, and the Mitigated Negative Declaration posted in the Department offices, and distributed all in accordance with law.

4. On May 16, 2017 an appeal of the decision to issue a Mitigated Negative Declaration was timely filed by Kathy Angus for the Bernal Heights South Slope Organization ("appellant").

5. A staff memorandum, dated June 8, 2017, addresses and responds to all points raised by appellant in the appeal letter. That memorandum is attached as Exhibit A and staff's findings as to those points are incorporated by reference herein as the Commission's own findings. Copies of that memorandum

have been delivered to the City Planning Commission, and a copy of that memorandum is on file and available for public review at the San Francisco Planning Department, 1660 Mission Street, Suite 500.

6. On June 15, 2017 the Commission held a duly noticed and advertised public hearing on the appeal of the Preliminary Mitigated Negative Declaration, at which testimony on the merits of the appeal, both in favor of and in opposition to, was received.

7. All points raised in the appeal of the Preliminary Mitigated Negative Declaration at the June 15, 2017 San Francisco Planning Commission hearing have been responded to either in the Memorandum or orally at the public hearing.

8. After consideration of the points raised by appellant, both in writing and at the June 15, 2017 hearing, the San Francisco Planning Department reaffirms its conclusion that the proposed project could not have a significant effect upon the environment.

9. In reviewing the Preliminary Mitigated Negative Declaration issued for the Project, the Planning Commission has had available for its review and consideration all information pertaining to the Project in the Planning Department's case file.

10. The Planning Commission finds that Planning Department's determination on the Mitigated Negative Declaration reflects the Department's independent judgment and analysis.

The San Francisco Planning Commission HEREBY DOES FIND that the proposed Project, could not have a significant effect on the environment, as shown in the analysis of the Mitigated Negative Declaration, and HEREBY DOES AFFIRM the decision to issue a Mitigated Negative Declaration, as prepared by the San Francisco Planning Department.

I hereby certify that the foregoing Motion was ADOPTED by the Planning Commission on June 15, 2017.

Jonas P. Ionin

Commission Secretary

AYES:

NOES:

ABSENT:

ADOPTED:

EXHIBIT C

Storesund Consulting
154 Lawson Road, Kensington, CA 94707
510-225-5389 (cell) email. rune@storesundconsulting.com

June 14, 2017

SF Board of Supervisors
San Francisco City Hall
1 Dr Carlton B Goodlett Pl #244
San Francisco, CA 94102

Subject: Review of Proposed Pipeline Impacts
3516 & 3526 Folsom Street
San Francisco, California

Dear President Breed and Honorable Members of the Board of Supervisors,

I have reviewed the analyses upon which the proposed mitigation options[1] relative to PG&E's natural gas Line 109 (the "Transmission Line") have been generated. In my opinion, the analyses are inadequate, incomplete, and fall short of a rigorous evaluation of pipeline integrity and assurance of public safety given the potential harm as a result of rupture and ignition of natural gas from this transmission pipeline. As a result, a reasonable possibility of a significant effect still exists with respect to degradation of the Transmission Line integrity and the adequacy and feasibility of the proposed mitigation actions are very much in question.

While an assessment of a potential suite of ground velocities has been completed, no direct assessment of pipeline integrity impacts have been evaluated. The analyses presented associated with this negative declaration are indirect. The current analysis infers that peak particle velocities (PPV) below a certain threshold will not degrade pipeline integrity. Inference is not equivalent to a data-driven validated relationship by PG&E that explicitly establishes a direct correlation between peak particle velocity and degradation of pipeline integrity.

The American Society of Mechanical Engineers (ASME) has a standard (ASME B31.8S) that presents guidance on evaluation of gas pipeline integrity[2]. A multitude of factors that impact pipeline integrity are presented in this document. These factors include: pipe wall thickness, diameter, seam type and joint factor, year of installation, bending method, joining method and process of inspection, depth of cover, field coating methods, soil backfill, cathodic protection, coating type, nominal maximum and minimum operating pressures, leak/failure history, pipe wall temperature, OD/ID corrosion monitoring, pressure fluctuations, encroachments, vandalism, and external forces. It is unclear that all of these factors are fully accounted for in the PPV-Integrity relationship proposed by PG&E.

Further, ASME B31.8S recommends that validation of any assessment process is vital. "Validation of risk analysis results is one of the most important steps in any assessment process. This shall be done to assure that the methods used have produced results that are usable and are consistent with the operator's and industry's experience... A risk validation and process shall be identified and documented in the integrity and management program. Risk result validations can be

[1] San Francisco Planning Department, Mitigated Negative Declaration (April 19, 2017; amended June 8, 2017)
[2] ASME B31.8S-2004 "Managing System Integrity of Gas Pipelines"

successfully performed by conducting inspections, examinations, and evaluations at locations that are indicated as either high risk or low risk to determine if methods are correctly characterizing the risks." No such validation has been provided orreferenced.

Based on the facts and new analyses associated with the proposed development, it is my expert opinion that a reasonable possibility of a significant effect still exists with respect to degradation of the Transmission Line integrity.

Given the uncertainties of actual pipe integrity, strong consideration should be given to replacing the segment of pipeline to ensure maximum integrity and minimal exposure of residents to potential undue injury or death as a result of the anticipated heavy excavation and ground disturbance activities.

No payments for services have been received and no future promises of compensation have been offered.

I reserve the right to update my independent review based on new information.

Please contact me with any questions or comments by phone at (510) 225-5389 or via email at rune@storesundconsulting.com.

Sincerely,

STORESUND CONSULTING

Rune Storesund, D.Eng., P.E., G.E.
Consulting Engineer

UC Berkeley Center for Catastrophic Risk Management
Executive Director

EXHIBIT D

Storesund Consulting
154 Lawson Road, Kensington, CA 94707
510-225-5389 (cell) email: rune@storesundconsulting.com

June 5, 2017

SF Board of Supervisors
San Francisco City Hall
1 Dr Carlton B Goodlett Pl #244
San Francisco, CA 94102

Subject: Independent Project Review
3516 & 3526 Folsom Street
San Francisco, California

Dear President Breed and Honorable Members of the Board of Supervisors,

This letter is in response to additional evaluations performed with regards to potential construction-induced degradation of the integrity and safety of PG&E's natural gas Line 109. I reviewed a memorandum prepared by Illingworth & Rodkin, Inc. (dated March 24, 2017), a letter prepared by Illingworth & Rodkin, Inc. (dated April 14, 2017), and a letter prepared by Mr. John Dolcini of Pacific Gas and Electric Company dated March 30, 2017.

In previous letters, I noted that construction-related stressing, as well as accidental 3rd party damage, has the potential to degrade the integrity of the PG&E natural gas transmission line, exposing the surrounding neighbors to increased risk of death and injury from the potential of construction-induced puncture or degradation of pipeline integrity.

As noted earlier, unlike lots further west and further east (Gates Street, Banks Street) that are not immediately adjacent to a transmission line, these specific parcels are unique in their proximity to a significant hazard. As a result of the increased risk exposure, this site should receive more scrutiny.

I raised the concern about impact to pipeline integrity. While a discussion was presented by Illingworth & Rodkin, Inc. about anticipated Peak Particle Velocities (PPVs), there was no explicit analysis of actual impact to the pipeline integrity. Illingworth & Rodkin, Inc. infer in their analyses that typical PPV thresholds apply to Line 109. However, there are a number of site-specific factors that make this site unique that do not appear to have been accounted for in the analyses. For example, the pipeline is situated on an incline with a 90-degree bend at the top of the hill. Most conventional pipelines are horizontal in utility trenches on much flatter ground. Ground vibrations will have a different extensional effect on an inclined pipe than a horizontal pipe. The only reliable method to ascertain the impact of these simplifications and generalizations is to calculate pipeline integrity model bias (comparison of predicted value vs actual value). No model bias value for this site was presented.

Mr. Dolcini's letter actually illustrates that PG&E's requirement of a minimum of 36 inches of soil cover is very likely violated at this location, with a PG&E-estimated 24 inches of soil cover. This 'discovery' would only have occurred through our strong suggestion that PG&E certify the integrity of the pipeline. It would not be surprising if a site-specific assessment will find additional

deviations to be discovered that reveal a lower actual pipeline integrity vs an assumed pipeline integrity.

PG&E is the only organization in a position to analyze the additional fatigue expected to be exerted on the pipeline from the bedrock excavation activity and certify that no appreciable degradation will occur. This pipeline has the potential to catastrophically fail and result in deaths within the blast radius of the pipeline. To date, no such certification has been provided by PG&E.

Based on the facts and new analyses associated with the proposed development, it is my expert opinion that a reasonable possibility of a significant effect still exists with respect to degradation of the Transmission Line integrity as a result of the required rock excavation to achieve the delineated site grades shown in the project plans.

Given the uncertainties of actual pipe integrity, strong consideration should be given to replacing the segment of pipeline to ensure maximum integrity and minimal exposure of residents to undue injury or death as a result of the anticipated heavy excavation and ground disturbance activities.

My qualifications are presented in the attached resume. I am a practicing Geotechnical Engineer (CA License Number 2855), I provide gas pipeline risk reviews for the State of California Department of Education, and have participated in forensic engineering projects over the last 10 years with damage claims in excess of $2 billion and more than 8,000 hour of direct forensic analyses. My most recent engagement was a geotechnical forensic evaluation of the March 2014 Oso Landslide in Washington State, which resulted in the tragic loss of 43 individuals. In addition to private consulting, I am the Executive Director of the Center for Catastrophic Risk Management at UC Berkeley.

No payments for services have been received and no future promises of compensation have been offered.

I reserve the right to update my independent review based on new information.

Please contact me with any questions or comments by phone at (510) 225-5389 or via email at rune@storesundconsulting.com.

Sincerely,

STORESUND CONSULTING

Rune Storesund, D.Eng., P.E., G.E.
Consulting Engineer

UC Berkeley Center for Catastrophic Risk Management
Executive Director

EXHIBIT E

GARAVAGLIA ARCHITECTURE INC.
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SAN FRANCISCO, CA 94104
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F: 415.391.9647
www.garavaglia.com

12 December 2016

RE: 3516 / 26 Folsom Street

To whom it may concern,

The rendering (Exhibit A) depicting the North side of 3516 Folsom Street (view looking South) was prepared in an appropriate manner. Fixed-length story poles were used to establish the proposed building height in a photograph (Exhibit B) and then a sketch of the proposed project was overlaid to provide an accurate rendition of the project as it would be seen from Bernal Heights Blvd. The story poles were placed by measuring off known property corners. All dimensions were taken from the Project Sponsors drawings.

The proposed design will block a public viewshed from a public street and over City- owned property- one of the last panoramic views of the Bay and valley from the South side of Bernal Heights Blvd.

It is interesting to note that the Project's grading / topography and building height elevation data points coincide with a Department of Public Works topographic map (Exhibit C) for the area. The elevation of Bernal Heights Blvd. adjacent to the proposed project aligns with or is below the top of the new building - thus blocking the view from a vantage point on Bernal Heights Blvd. adjacent to the new building.

Also, from my review of the drawings, the driveway design will not be maneuverable for most cars across this area w/o bottoming out. The uphill side of the driveway slopes down at a 38% grade - the City's DPW recommends (or may limit) that to 25%. This would also need transition ramps of about 10%. If they were to raise the building out of the ground they may be better able to accomplish getting cars into the garage. This of course will make the building even higher. Being auto access is so limited by the steep slopes and extreme warping, the project ostensibly is not providing parking. The Folsom Street extension itself calcs out to about a 36% grade - one of the steepest in San Francisco.

Sincerely,

Michael Garavaglia, A.I.A., LEED AP BD+C
President, Garavaglia Architecture, Inc.

MICHAEL GARAVAGLIA, AIA, LEED AP BD+C
PRINCIPAL-IN-CHARGE, PRESERVATION ARCHITECT (LIC. C14833)
Exceeds Secretary of the Interior Professional Qualifications Standards – Historic Architecture

With more than 30 years of experience in the architectural profession and as principal, Mr. Garavaglia leads the firm with preservation architectural services that respond to the specific needs of cultural resources and their environment. He believes strongly in the role of sustainability in historical rehabilitation, its merit in economic development, and the significance of retaining cultural resources for local communities. He seeks opportunities for creative teaming in his staff and consultants to create the most responsive team for each unique project and client. He directs his firm to constantly evolve its preservation services and work products to maintain the relevance and quality control of the firm's work. As such, a preservation project delivery methodology integrating historical knowledge in the design process is key. His work with the preservation community, primarily through involvement with the California Preservation Foundation, focuses on organizational involvement, educational programs, and stewardship development.

Mr. Garavaglia received his professional Bachelor of Architecture degree from California State Polytechnic University at San Luis Obispo, which included a special study program in Historic Preservation. He is a LEED Accredited Professional with specialization in Building Design and Construction, a Conservation Assessment Program (CAP) Assessor, and he is listed in the Heritage Preservation database maintained by the National Institute for Conservation. Mr. Garavaglia is licensed to practice architecture in California, is a qualified Historic Architect with the California Historical Resources Information System (CHRIS) and Nevada SHPO, and is a member of the American Institute of Architects (AIA). Mr. Garavaglia has been included in several publications including *Northern California Home & Garden, Architectural Record,* and the *San Francisco Chronicle.*

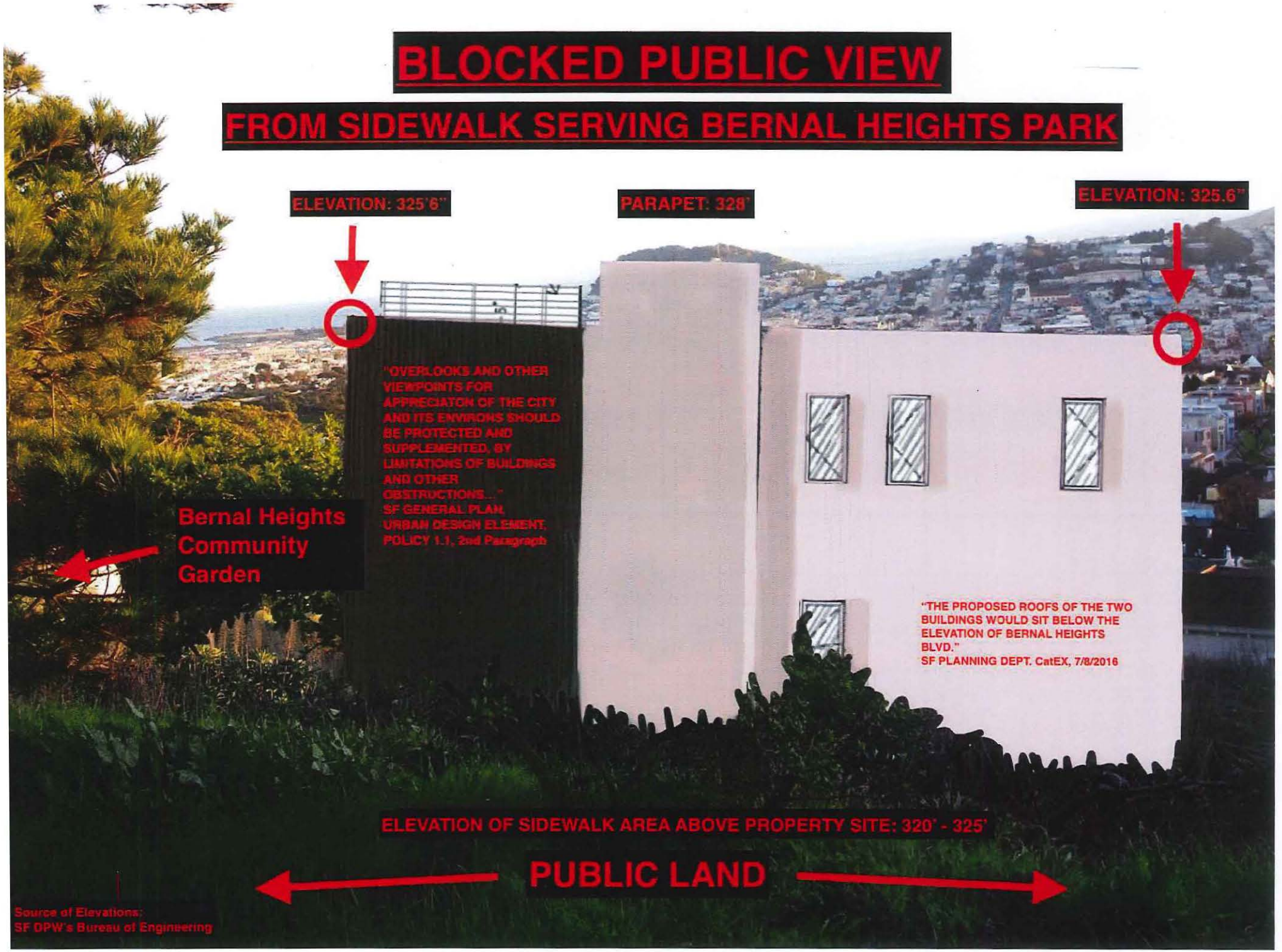
Select projects with his major technical and management involvement for historic building rehabilitation projects and reports include:

- State of California Department of Parks and Recreation, Multiple Projects for the Northern District Service Center, CA
- Angel Island Immigration Station Rehabilitation, Angel Island State Historic Park, CA
- As-Needed Preservation Services for San Francisco City Hall and Civic Center Campus, San Francisco, CA
- Hangar One Conditions Assessment and Rehabilitation Plan, U.S. Naval Air Station, Moffett Field, Mountain View, CA
- Lorenz Hotel, Redding, CA
- Columbia State Historic Park: Cultural Landscape Report and Burns Cottage Condition Assessment Report, Columbia State Historic Park and National Historic Landmark District
- Palo Alto History Museum, Palo Alto, CA
- Bodie Benton Depot, Bodie State Historic Park, CA
- Presidio Post Chapel Feasibility Study, Presidio of San Francisco, CA
- Doyle Drive Building Relocation Study and Historic Structures Reports, Presidio of San Francisco National Landmark District Buildings 201, 204 and 228, San Francisco, CA
- 450 McAllister Street Window Assessment, San Francisco, CA

Exhibit A

BLOCKED PUBLIC VIEW

FROM SIDEWALK SERVING BERNAL HEIGHTS PARK



Source of Elevations:
SF DPW's Bureau of Engineering

Exhibit B

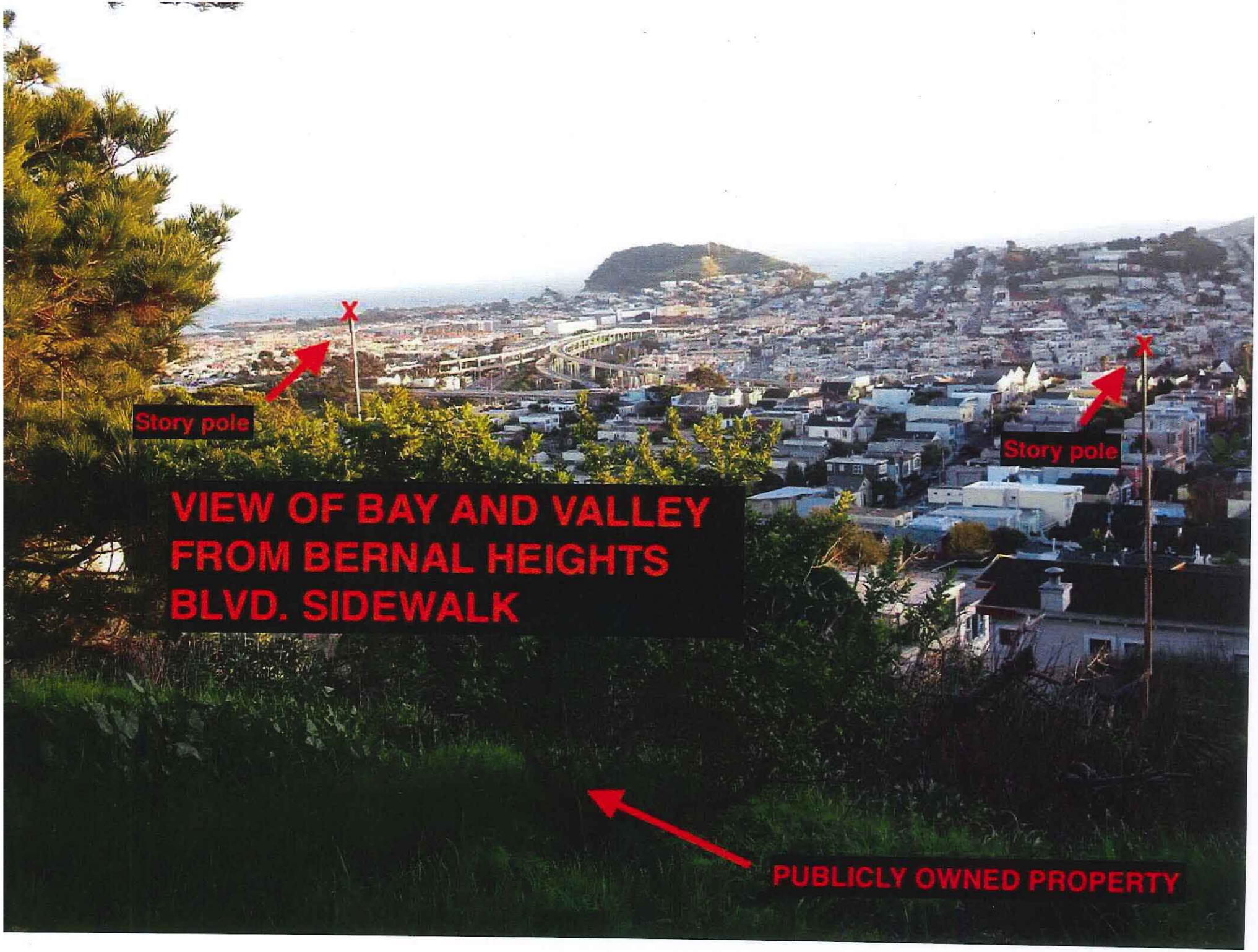
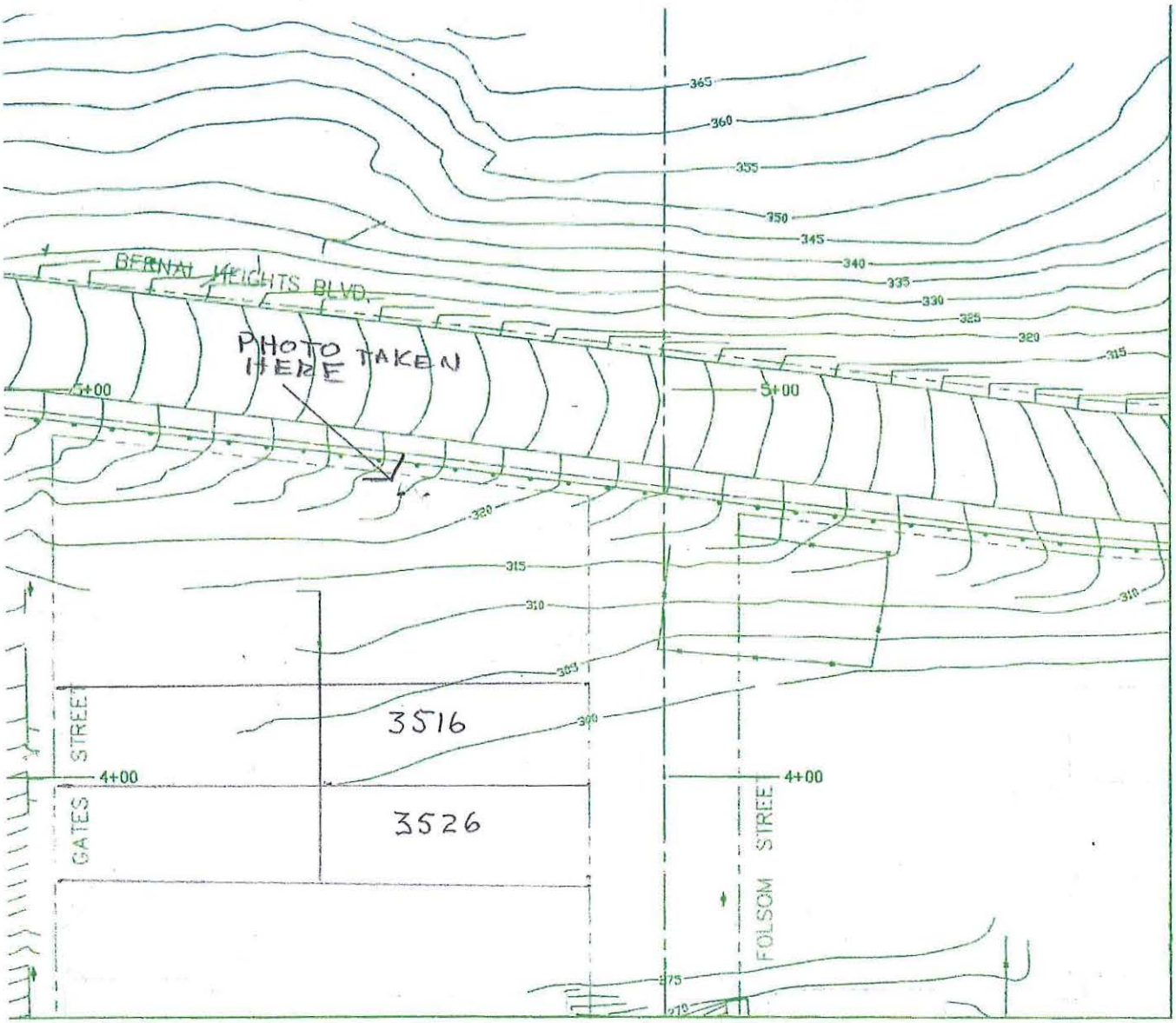

Story pole
Story pole
VIEW OF BAY AND VALLEY
FROM BERNAL HEIGHTS
BLVD. SIDEWALK
PUBLICLY OWNED PROPERTY

Exhibit C

ELEVATIONS

BERNAL HEIGHTS BLVD
℄
FOLSOM STREET



MATCH LINE "A" SEE SHEET R-4

MATCH LINE "B" SEE SHEET R-5

0' 10' 20' 40' 60'
GRAPHIC SCALE

NEERING	DESIGNED: NK DATE: 10/98	APPROVED	SCALE: 1" = 20'	BERNAL HEIGHTS STREET IMPROVEMENTS	SPECIFICATIO 1145

Exhibit D

METHODOLOGY FOR USING STORY POLES ON 3516 NORTH ELEVATION
by Marilyn Waterman

1) I REFERRED TO SUBMITTED BLUEPRINTS AND HAD TWO PEOPLE DOUBLE CHECK MEASUREMENTS.

2) EASTERN CORNER OF HOUSE OF NORTH ELEVATION WAS MEASURED AT 23'4".

3) WESTERN CORNER OF HOUSE OF NORTH ELEVATION WAS MEASURED AT 19.1"

4) WE DID NOT INCLUDE ANY OTHER ASPECT OF HOUSE IN MEASUREMENT EXCEPT NORTH ELEVATION CORNERS AND MADE EVERY ATTEMPT TO BE ACCURATE.

5) WE MEASURED 24'6" FROM BACK FENCE AND SET FIRST STORY POLE. WE USED FENCE PROPERTY LINE OF ABUTTING HOUSE AS GUIDE FOR NORTH PROPERTY LINE.

6) FIRST STORY POLE WAS HELD APROXIMATELY FIVE FEET INSIDE PROPERTY LINE TO ACCOUNT FOR BLUE PRINT DESIGN SET BACK - WHILE TRYING NOT TO STEP ON PROPERTY.

7) USING FENCE LINE OF ABUTTING HOUSE AS GUIDE, 40'6' WAS MEASURED FROM WESTERN STORY POLE TO EASTERN STORY POLE.

8) PICTURE WAS TAKEN WITH STORY POLES.

9) GRAPHIC ARTIST USED DEVELOPER'S RENDITION OF NORTH ELEVATION AND SUPERIMPOSED IT OVER PICITURE, USING STORY POLES AS A GUIDE.

Dec. 11, 2016

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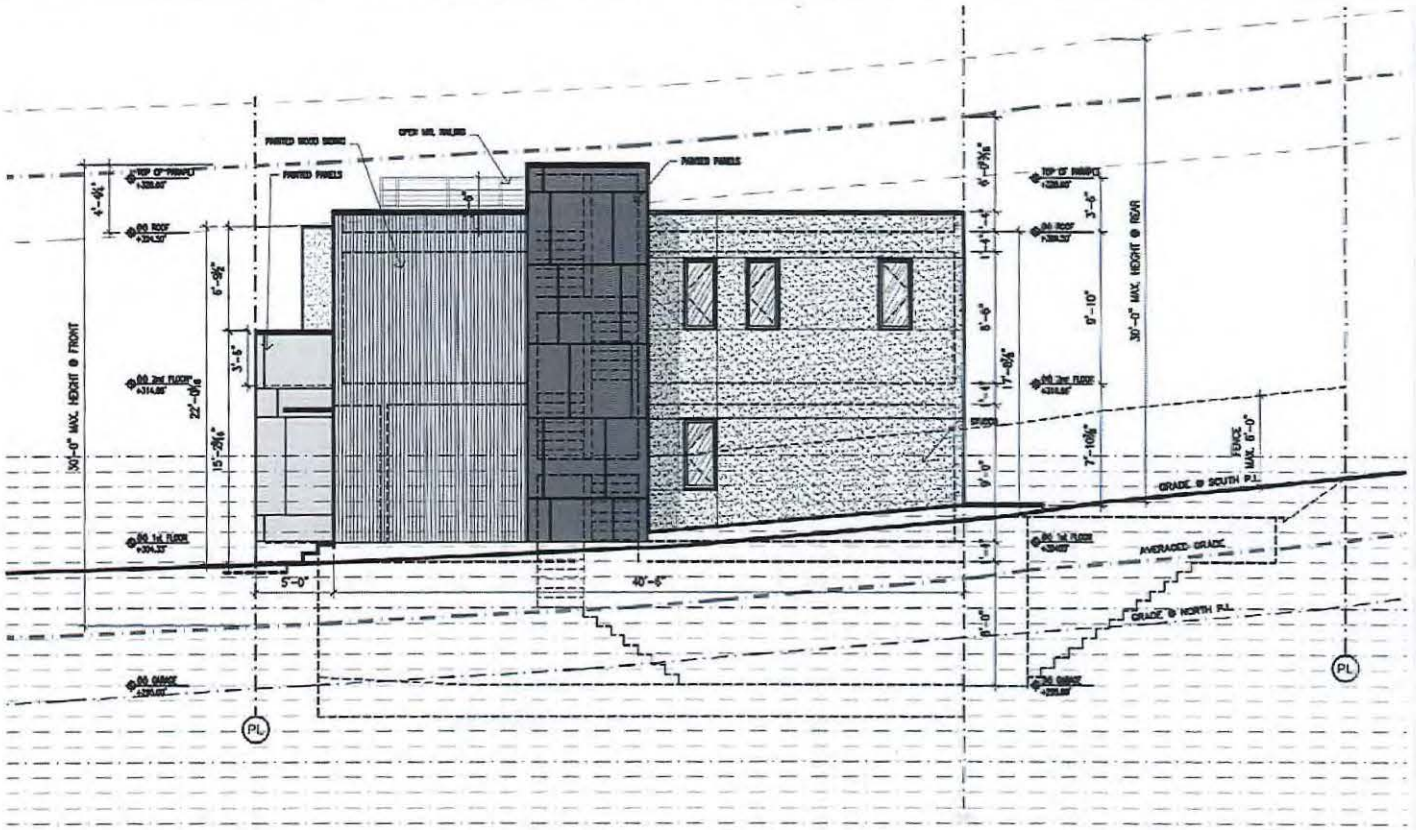

LSOM Street - Side (North) ELEVATION

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Site Perr
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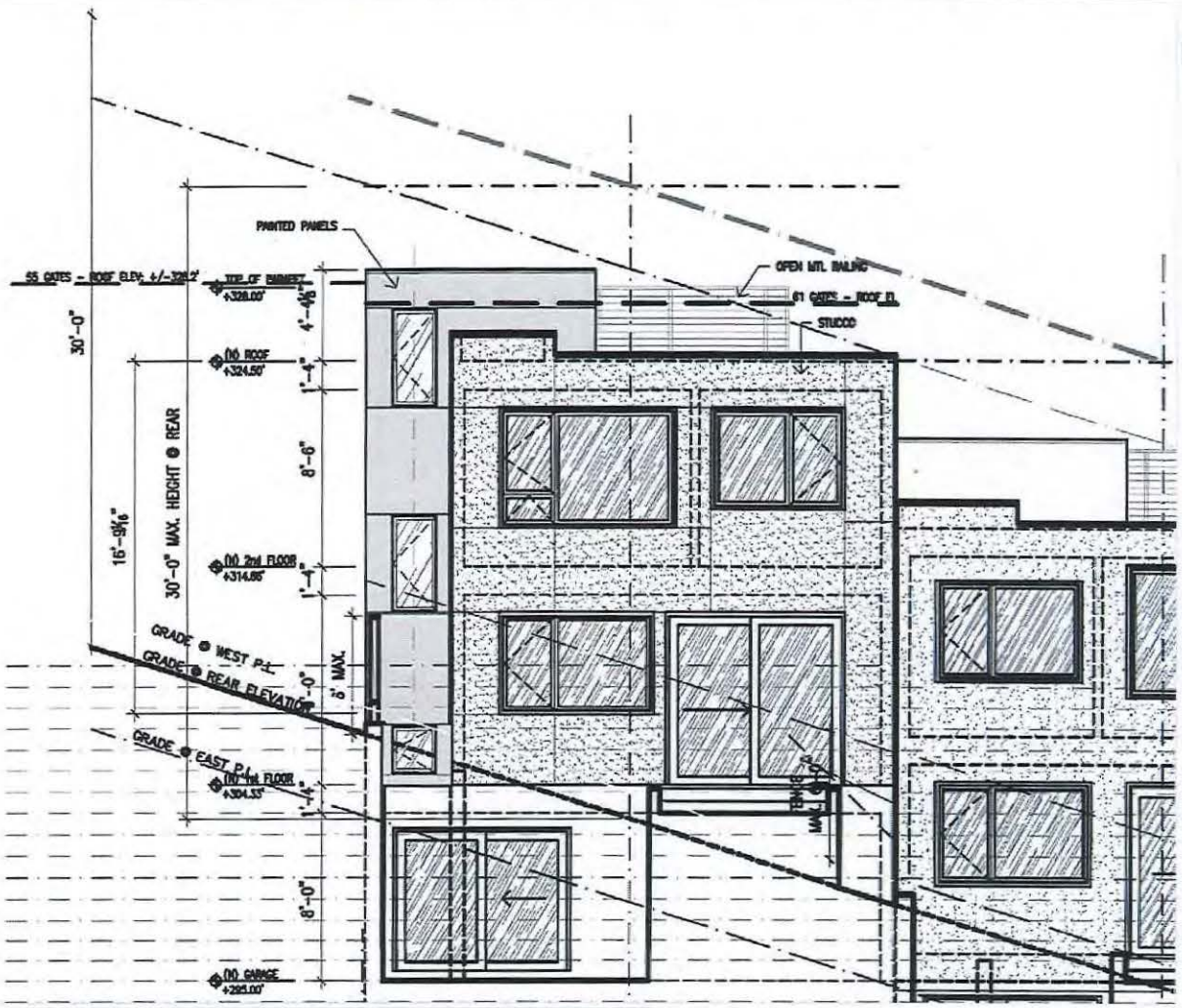

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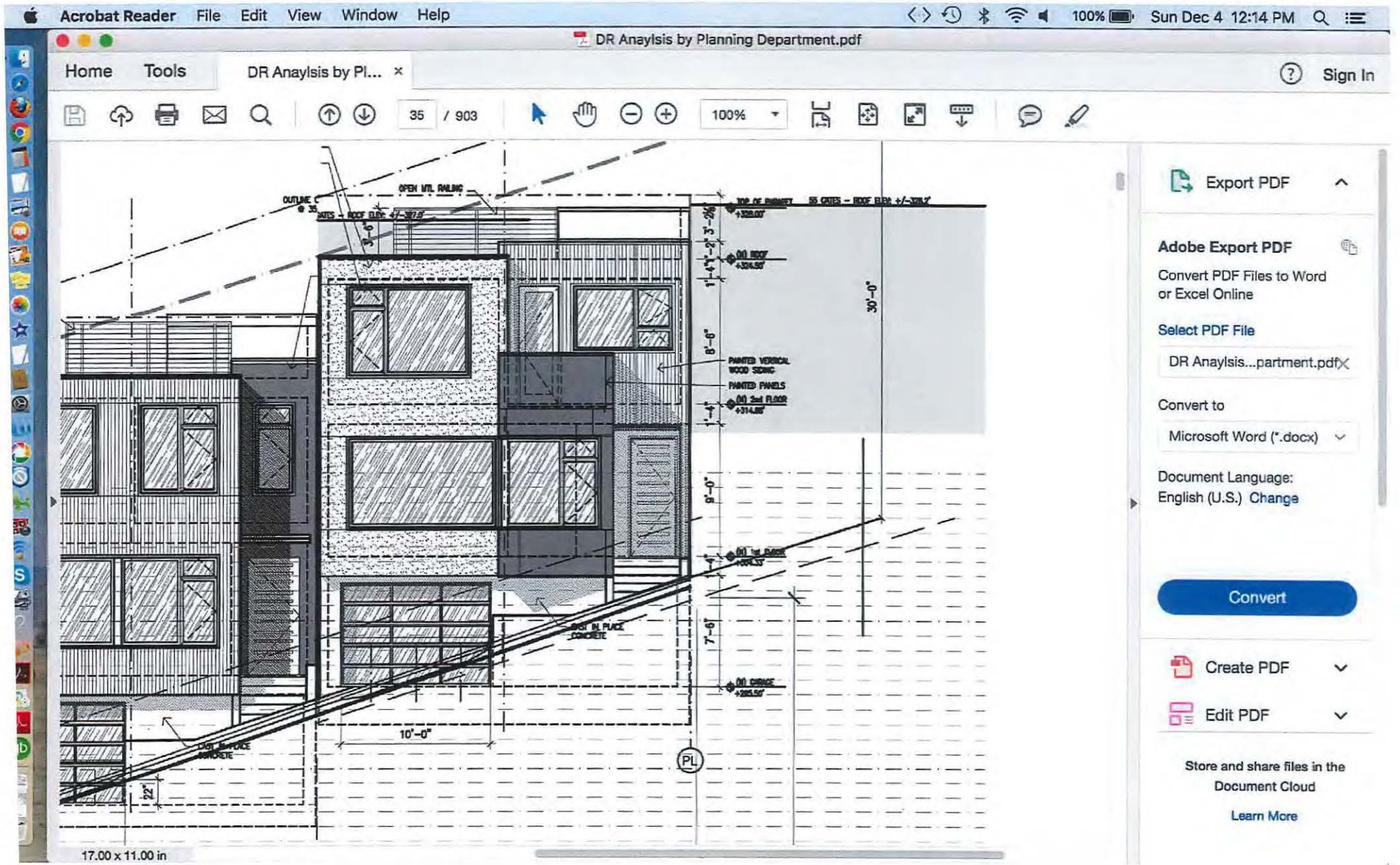
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EXHIBIT F

Storesund Consulting
154 Lawson Road, Kensington, CA 94707
510-225-5389 (cell) email: rune@storesundconsulting.com

December 11, 2016

SF Board of Supervisors
San Francisco City Hall
1 Dr Carlton B Goodlett Pl #244
San Francisco, CA 94102

Subject: Impact to PG&E Transmission Line 109
3516 & 3526 Folsom Street
San Francisco, California

Dear President Breed and Honorable Members of the Board of Supervisors,

This letter is in response to a request for an independent assessment of potential damage to the PG&E Transmission Line 109 associated with construction activities of the proposed 3516 & 3526 Folsom Street development. I am a practicing Geotechnical Engineer (CA License Number 2855), I provide gas pipeline risk reviews for the State of California Department of Education, and have participated in forensic engineering projects over the last 10 years with damage claims in excess of $2 billion and more than 8,000 hour of direct forensic analyses. My most recent engagement was a geotechnical forensic evaluation of the March 2014 Oso Landslide in Washington State, which resulted in the tragic loss of 43 individuals. In addition to private consulting, I am the Executive Director of the Center for Catastrophic Risk Management at UC Berkeley.

This geotechnical review is the requested independent assessment and is based on documents included in the Discretionary Review, Full Analysis by San Francisco Planning Department (dated October 4, 2016) as well as a set of geotechnical reports prepared by Mr. H. Allen Gruen (dated August 3, 2013). I also reviewed the "Categorical Exemption Appeal" (3516-3526 Folsom Street), prepared by the San Francisco Planning Department (dated December 5, 2016) and "Appeal of CEQA Categorical Exemption Determination," prepared by Mr. Charles Olson (dated December 2, 2106).

I previously prepared a letter dated December 1, 2016 that presented my initial review of the proposed project, with respect to potential construction impacts to the PG&E Transmission Line.

Based on the facts associated with the proposed development, it is my expert opinion that a reasonable possibility of a significant effect exists with respect to degradation of the Transmission Line integrity as a result of the required rock excavation to achieve the delineated site grades shown in the project plans.

Fact 1: The proposed developments anticipate excavations on the order of 8-10 feet below grade. (see sheet A-3 from 3516 Folsom Street drawings).

Fact 2: Geotechnical soil borings performed at the site show the presence of chert bedrock at a depth of 3 to 5 feet below grade. See geotechnical reports prepared by Mr. H. Allen Gruen (dated August 3, 2013).

Fact 2: The geotechnical soil borings encountered 'refusal' at a depth of 3 to 5 feet. The borings were not advanced to the target depth of the proposed excavation. Typical geotechnical field exploration programs advance borings past the anticipated depth of structure foundations. This demonstrates that the ground conditions are hard bedrock and not softer soil subsurface conditions.

From 3516 Folsom Geotechnical Report (page 6):

"Bedrock was encountered in our borings at a depth of about 3 to 4 feet below the ground surface. We anticipate that excavations in the upper portion of bedrock at the site can be conducted with conventional equipment, although localized ripping may be required. Excavations extending deeper into the bedrock may require extra effort, such as heavy ripping, hoe-rams, or jack-hammering. We anticipated that the bedrock will become harder and more massive with increasing depth."

Fact 3: Bedrock excavations require heavy excavation equipment or rock blasting. These bedrock excavation techniques result in higher peak ground velocities than conventional soil excavation. Higher peak ground velocities result in increased fatigue on pipelines. Increased fatigue degrades pipeline integrity and results in premature failure of pipelines.

Fact 4: Stress concentrations occur at pipeline elbows. Elbows are located on PG&E Transmission Line 109 as the pipeline goes from a north-south alignment up Folsom Street, to an east-west alignment along Bernal Heights Boulevard. This pipeline bend is immediately adjacent to the proposed construction activity and is susceptible to fatigue-induced failure. (See Figure 1 on page 4 of the San Francisco Planning Department's Certificate of Determination, Exemption from Environmental Review, dated July 8, 2016).

Fact 5: PG&E has not 'cleared' the proposed rock excavation work associated with the development. PG&E is the only organization in a position to analyze the additional fatigue expected to be exerted on the pipeline from the bedrock excavation activity and certify that no appreciable degradation will occur. This pipeline has the potential to catastrophically fail and result in deaths within the blast radius of the pipeline.

To date, PG&E has only said the proposed construction activity would "present no particular issues with respect to patrolling and maintaining the pipeline." (Source: last paragraph, page 4, San Francisco Planning Department's Certificate of Determination, Exemption from Environmental Review, dated July 8, 2016). Being able to patrol a pipeline is very different from monitoring the integrity and time to failure of a major transmission pipeline.

PG&E has stated that "PG&E patrols its gas transmission pipeline at least quarterly to look for indicators of missing pipeline markers, construction activity and other factors that may threaten the pipeline. Line 109 through the neighborhood was last patrolled in May 2014 and everything was found to be normal." (source: Austin Sharp Q&A, Question 8).

Note that this does not address pipeline integrity and additional fatigue to the pipeline as a result of the proposed excavation in bedrock to construct these projects.

Further, PG&E notes that there are three integrity assessments. An in-line inspection allows for identification of metal loss or geometric abnormalities. Direct excavation allows for visual

observation of the pipeline. Pressure testing allows for confirmation that the pipeline can sustain prescribed pressure levels. While PG&E has performed evaluations to ascertain corrosion, this is not representative of the full integrity of the pipeline.

Thus, the unusual circumstance warranting more thorough environmental review is the proposed excavation into bedrock, resulting in enhanced ground velocities resulting in additional fatigue on the PG&E transmission line, which has the possibility to fail catastrophically. The actual integrity of Line 109 has not been characterized by PG&E, nor has the useful serviceable life been established. Based on this setting and the associated uncertainties with respect to actual pipeline integrity, it is my expert opinion that a reasonable possibility of a significant effect exists.

No payments for services have been received and no future promises of compensation have been offered.

I reserve the right to update my independent review based on new information.

Please contact me with any questions or comments by phone at (510) 225-5389 or via email at rune@storesundconsulting.com.

Sincerely,

STORESUND CONSULTING

Rune Storesund, D.Eng., P.E., G.E.
Consulting Engineer

UC Berkeley Center for Catastrophic Risk Management
Executive Director

EXHIBIT G

Storesund Consulting
154 Lawson Road, Kensington, CA 94707
510-225-5389 (cell) email: rune@storesundconsulting.com

December 1, 2016

SF Board of Supervisors
San Francisco City Hall
1 Dr Carlton B Goodlett Pl #244
San Francisco, CA 94102

Subject: Independent Project Review
3516 & 3526 Folsom Street
San Francisco, California

Dear President Breed and Honorable Members of the Board of Supervisors,

This letter is in response to a request for an independent assessment of the proposed 3516 & 3526 Folsom Street development. My qualifications are presented in the attached resume. I am a practicing Geotechnical Engineer (CA License Number 2855), I provide gas pipeline risk reviews for the State of California Department of Education, and have participated in forensic engineering projects over the last 10 years with damage claims in excess of $2 billion and more than 8,000 hour of direct forensic analyses. My most recent engagement was a geotechnical forensic evaluation of the March 2014 Oso Landslide in Washington State, which resulted in the tragic loss of 43 individuals. In addition to private consulting, I am the Executive Director of the Center for Catastrophic Risk Management at UC Berkeley.

This geotechnical review is the requested independent assessment and is based on documents included in the Discretionary Review, Full Analysis by San Francisco Planning Department (dated October 4, 2016) as well as a set of geotechnical reports prepared by Mr. H. Allen Gruen (dated August 3, 2013).

The proposed projects are located immediately adjacent to a major PG&E transmission natural gas pipeline (Figure 1, Figure 2, Figure 3). This major pipeline is located immediately below the primary access road for the construction (Figure 4, Figure 5), immediately adjacent to significant proposed new utility work (e.g. gas service, water supply, sewer) as well as removal of existing pipeline soil cover (Figure 6, Figure 7), and immediately adjacent to significant proposed bedrock excavation (depths on the order of 6 to 10 feet per the submitted architectural elevations (such as sheet A-3), as seen in .

Construction-related stressing, as well as accidental 3rd party damage, has the potential to degrade the integrity of the PG&E natural gas transmission line, exposing the surrounding neighbors to increased risk of death and injury from the potential of construction-induced puncture or degradation of pipeline integrity.

Unlike lots further west and further east (Gates Street, Banks Street) that are not immediately adjacent to a transmission line, these specific parcels are unique in their proximity to a significant hazard.

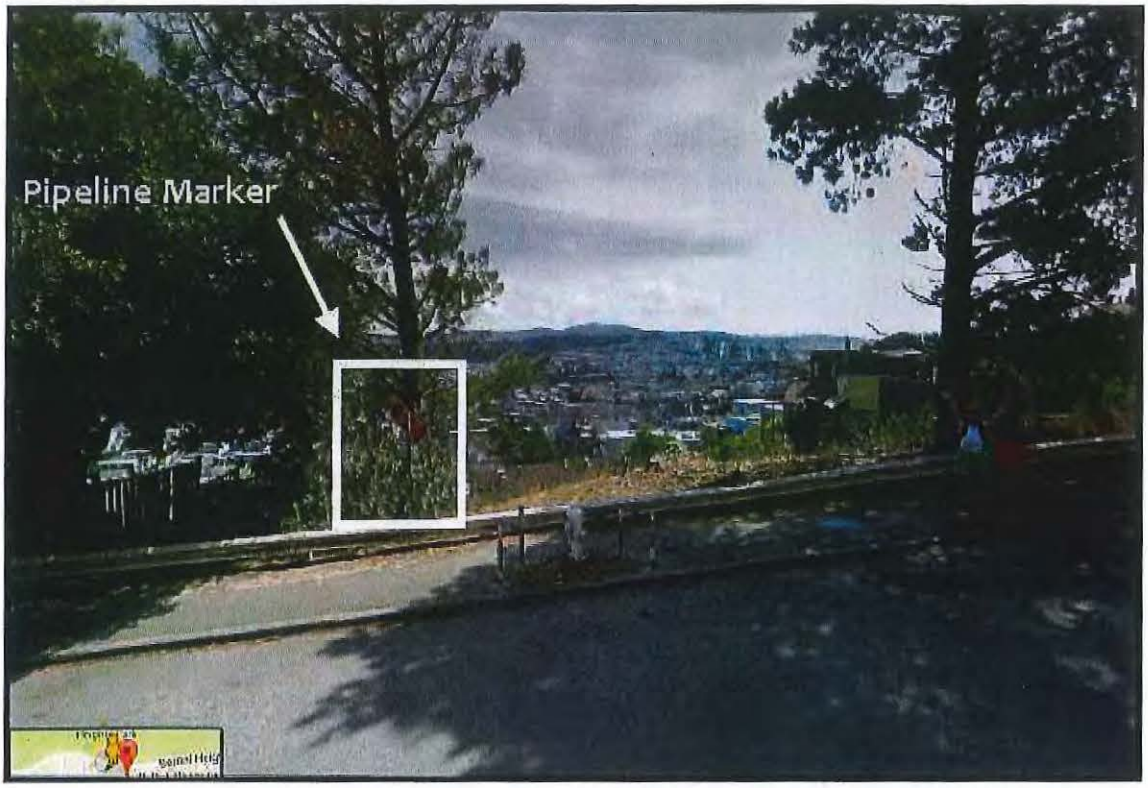
Major items of concern include at this particular project site:

- Geotechnical borings do not extend to the proposed depth of excavation, providing information on competence of bedrock and anticipated level of effort to excavate;
- No explicit discussion about induced ground vibrations during rock excavation and associated potential degradation of the PG&E transmission line integrity;
- No explicit discussion about negative impacts of construction traffic to the PG&E transmission line integrity; and
- Significant construction operations immediately adjacent to the active PG&E transmission pipeline.

Given the uncertainties of actual pipe integrity, strong consideration should be given to replacing the segment of pipeline to ensure maximum integrity and minimal exposure of residents to undue injury or death as a result of the anticipated heavy excavation and ground disturbance activities.

Figure 1: Overview of parcels with proposed development. Note that the PG&E transmission line is directly under the primary access.

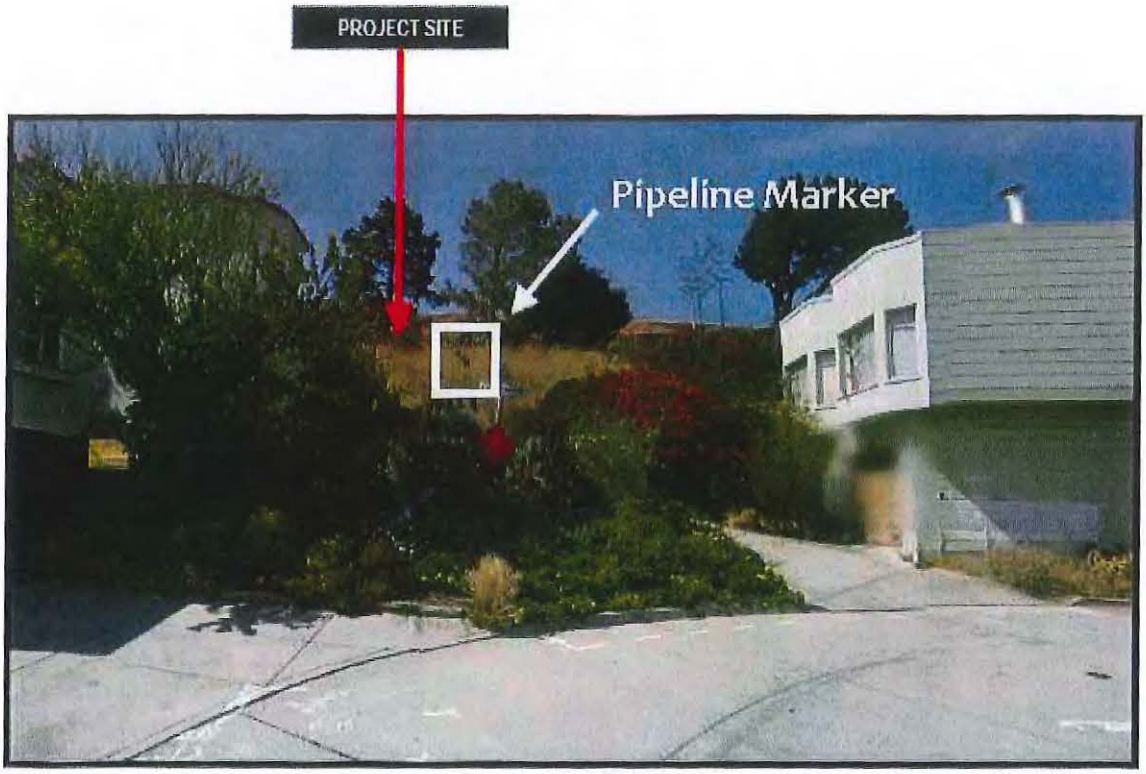
Site Photo



View from Bernal Heights Boulevard, near intersection with Folsom Street
(Source: Google Maps, July 2015; Accessed March 23, 2016)

Figure 2: Pipeline marker at Bernal Heights Boulevard.

Site Photo



View of Folsom Street (looking up to Project Site)
(Source: Google Maps, July 2015; Accessed March 18, 2016)

Figure 3: Pipeline marker at corner of Folsom & Chapman.

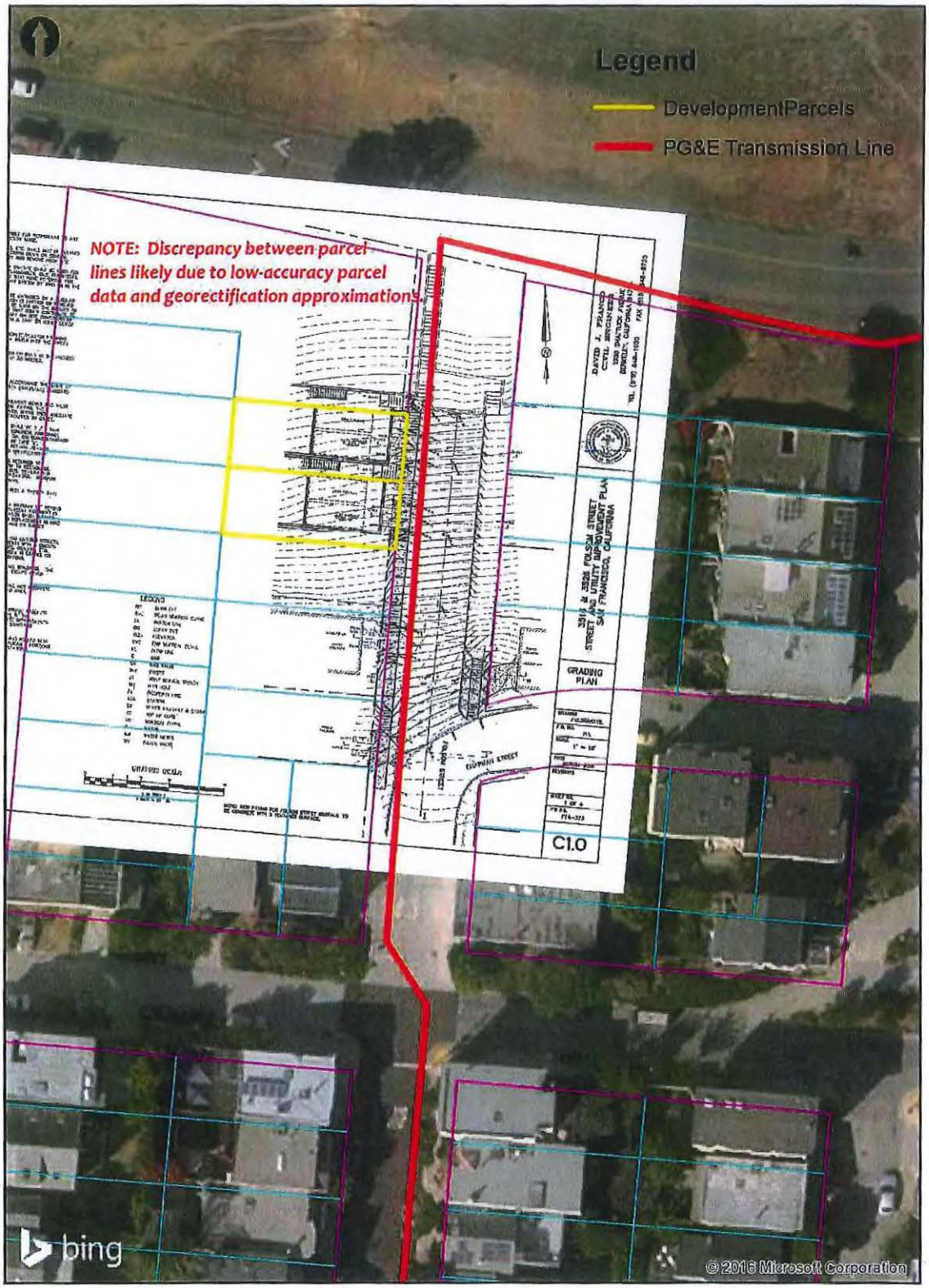


Figure 4: PG&E transmission line relative to proposed site plan.

CAMERA 5: View from Chapman Street at Folsom Street looking North-West

Figure 5: Approximate PG&E transmission gas line alignment relative to proposed structures.

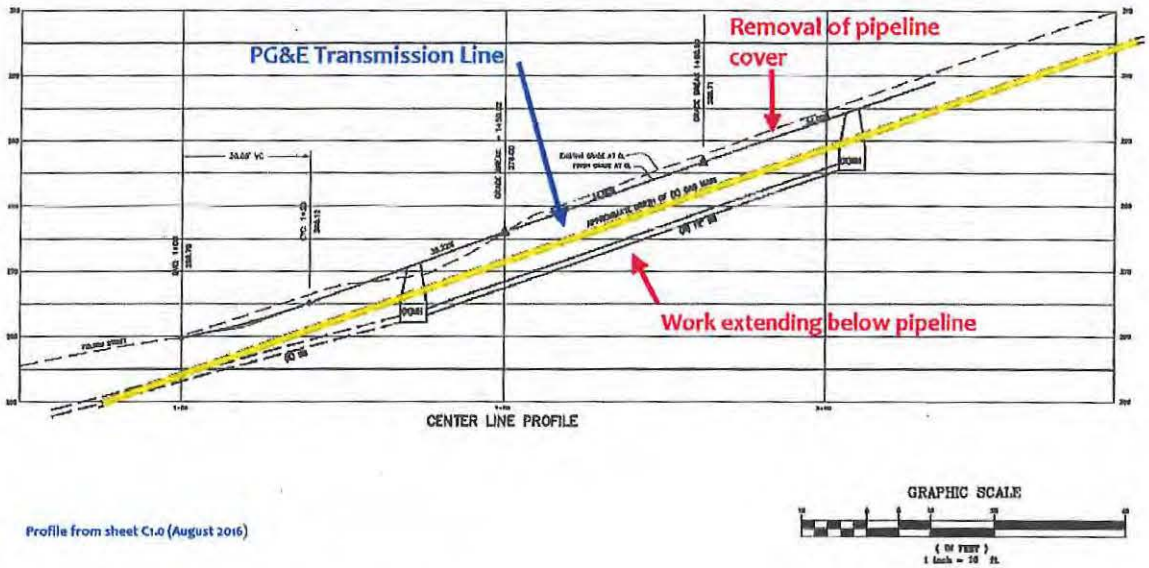


Figure 6: Plans call for removal of pipeline cover as well as construction work below the existing pipeline.

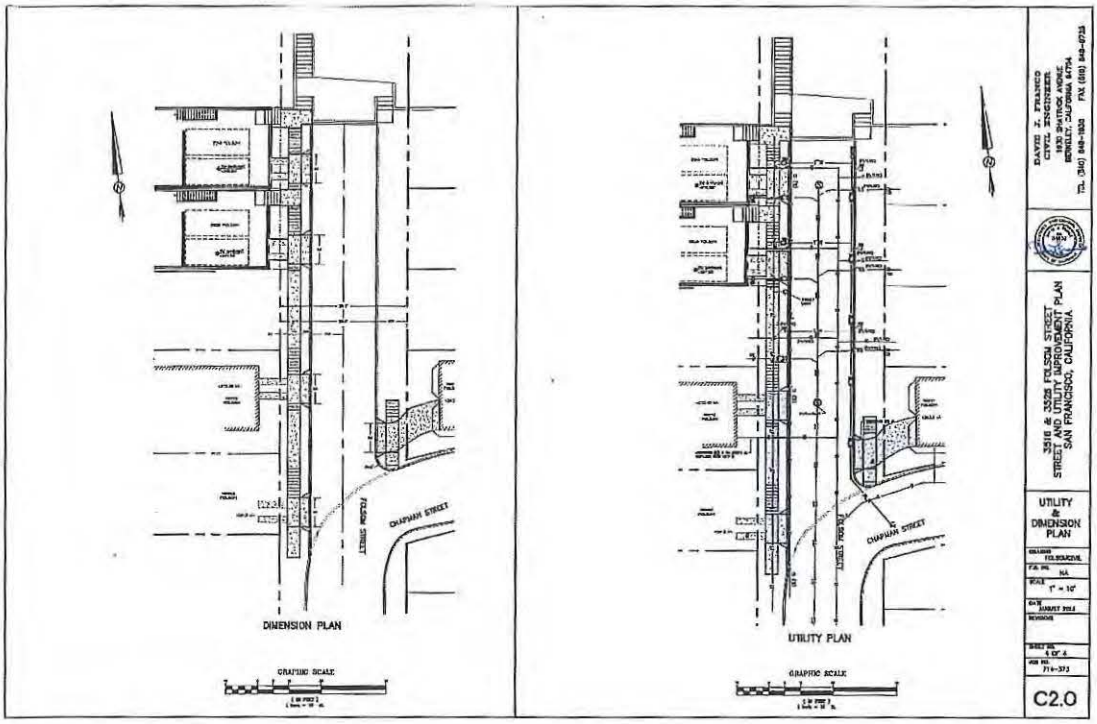


Figure 7: Proposed utilities immediately adjacent to the PG&E transmission line.

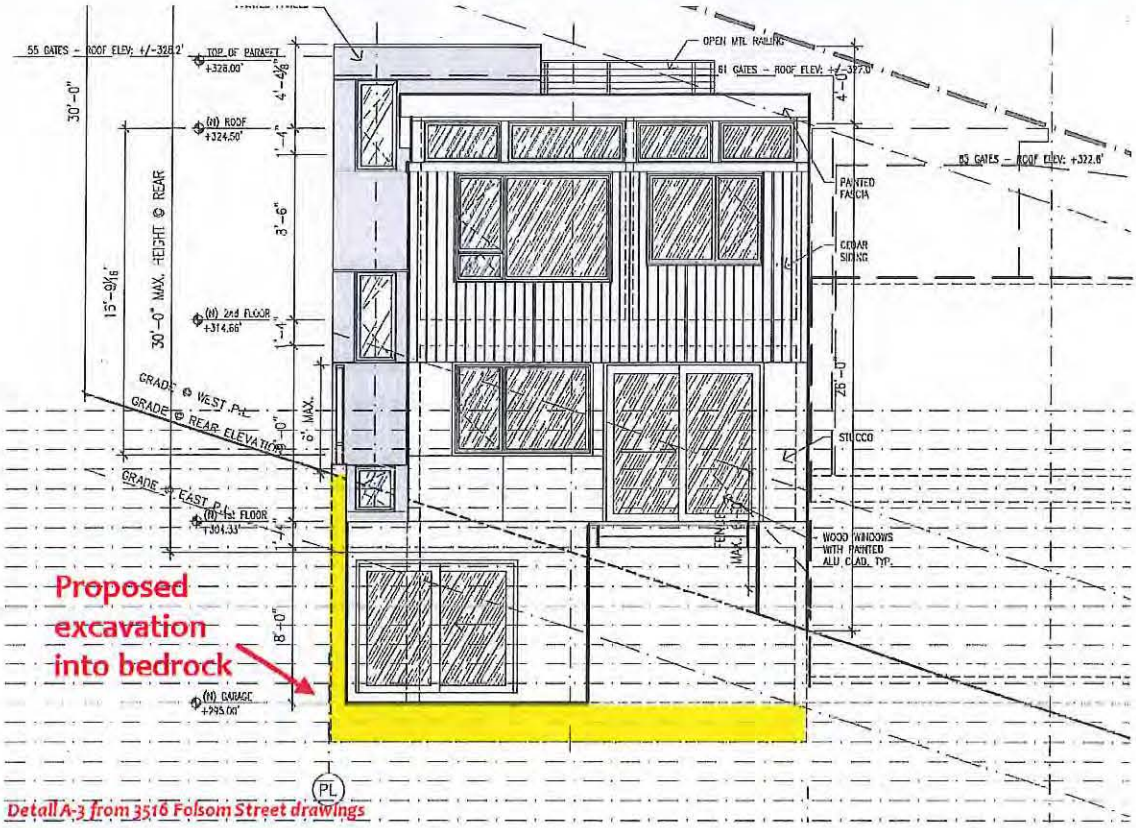


Figure 8: Significant cuts into bedrock resulting in ground vibrations.

No payments for services have been received and no future promises of compensation have been offered.

I reserve the right to update my independent review based on new information.

Please contact me with any questions or comments by phone at (510) 225-5389 or via email at rune@storesundconsulting.com.

Sincerely,

STORESUND CONSULTING

Rune Storesund, D.Eng., P.E., G.E.
Consulting Engineer

UC Berkeley Center for Catastrophic Risk Management
Executive Director

Attachment Dr. Rune Storesund Resume

PROFESSIONAL RESUME

Rune Storesund, D.Eng., P.E., G.E.
Consulting Engineer

EDUCATION:

D. Eng Civil Engineering, University of California, Berkeley, 2004-2009
(Dissertation: Life-Cycle Reliability-Based River Restoration)
Management of Technology Certificate Program, HAAS, UC Berkeley, 2007
M.S. Civil Engineering, University of California, Berkeley, 2002 (Geotechnical Engineering)
B.S. Civil Engineering, University of California, Berkeley, 2000
B.A. Anthropology, University of California, Santa Cruz, 2000

QUALIFICATIONS:

- California, Civil Engineer, RCE 64473
- California, Geotechnical Engineer, GE 2855
- Louisiana, Civil Engineer, RCE 35034
- Hawaii, Civil Engineer PE-15439
- Washington, Civil Engineer PE 52924
- California Safety Assessment Program Disaster Service Worker
- NAUI Scuba Diver Openwater I (1994)
- Offshore Survival Certification

EXPERIENCE:

Dr. Storesund has 16 years of planning, design, engineering, and construction experience and has worked on a variety of projects throughout California, the United States, and internationally. Dr. Storesund provides consulting services in all aspects of civil, geotechnical, water resources, ecological, restoration, and sustainability engineering projects. His expertise is on the application of reliability and risk-based approaches to engineering projects (with a specialization in environmental restoration and flood control projects) in order to effectively manage project uncertainties. Dr. Storesund has participated in all aspects of engineering projects; from preliminary reviews to detailed analyses to construction observations and post-project monitoring. He provides expert forensic engineering services for geotechnical and civil infrastructure systems. In addition to traditional engineering services, he provides consultations on field instrumentation and monitoring programs as well as Terrestrial LiDAR field survey services. His doctoral research was on life-cycle, reliability-based river restoration.

Dr. Storesund is the Executive Director of UC Berkeley's Center for Catastrophic Risk Management (risk.berkeley.edu). The Center for Catastrophic Risk Management (CCRM) is a group of academic researchers and practitioners who recognize the need for interdisciplinary solutions to avoid and mitigate tragic events. This group of internationally recognized experts in the fields of engineering, social science, medicine, public health, public policy, and law was formed following the tragic consequences of Hurricane Katrina to formulate ways for researchers and experts to share their lifesaving knowledge and experience with industry and government. CCRM's international membership provides experience across cultures and industries that demonstrate widespread susceptibility to pervasive threats and the inadequacy of popular, checklist-based remedies that are unlikely to serve in the face of truly challenging problems.

Dr. Storesund serves as an on-call expert Geotechnical Engineer to the State of California's Department of Consumer Affairs for their annual examination.

PROJECTS: Projects Dr. Storesund has worked on are listed below:

Environmental Restoration

Louisiana Coastal Protection and Restoration (LACPR): Working with Environmental Defense, Dr. Storesund provided consultation services on proposed coastal restoration efforts in Louisiana, submitted by the United States Army Corps of Engineers (USACE). Dr. Storesund developed planning and design evaluation metrics by which to evaluate the adequacy of the proposed restoration alternatives. Additionally, Dr. Storesund is perfored a technical review of the risk-based design prepared by the USACE.

Yosemite Slough Restoration: Dr. Storesund served as a project engineer, providing geotechnical recommendations during design. Project specifications were developed for this restoration project in San Francisco, California. The USACE SPECSINTACT program was used to develop the specifications.

Hamilton Wetland Restoration Project Shaping Contract, Novato, California: Dr. Storesund served as the geotechnical engineer of record for this earthwork project to shape dredge spoils into habitat features. Four areas (North Seasonal Wetland, Wildlife Corridor, Tidal Panne, and South Seasonal Wetland), each having different habitat requirements, were configured as part of the restoration project. A special low-permeability bottom was developed to minimize water infiltration and maximize salt retention in the seasonal tidal areas (habitat feature).

Redwood Creek, Napa County, California: Dr. Storesund provided topographic as-built and photographic documentation for this in-stream habitat enhancement project. Boulder features were added to provide channel roughness and resting pools for migrating fish.

Upper Napa River Restoration Project, Napa County, California: Dr. Storesund served as the lead engineer providing civil, geotechnical, environmental, hydrological engineering and topographic mapping services for a four-mile stretch of the Napa River south of Calistoga, California. The project was sponsored by the California Land Stewardship Institute.

Sulphur Creek Monitoring, Hayward, California: Dr. Storesund is conducting annual geomorphic monitoring (for a total of 10 years) of this completed restoration project in Hayward, California. The project included slope stabilization and installation of habitat features (rock boulders). The monitoring includes surveys (cross-sectional, thalweg) and photo monitoring.

Kirby Canyon Landfill Mitigation, Santa Clara County, California: Dr. Storesund provided geotechnical engineering recommendations for this dam removal and creek restoration project. The site is located in a very steep canyon, with high gradients. In addition, the dam had been overtopped during previous storms, resulting in very deeply incised ravines forming (which needed to be backfilled).

Waldo Point Wetland Restoration, Marin County, California: This project is a wetland restoration project. Dr. Storesund provided topographic survey and piezometer monitoring services to establish connectivity parameters between San Francisco Bay and the proposed wetland mitigation site.

Huichica Creek Fish Passage: A fish-friendly culvert was designed as part of Caltran's Highway 36 widening project in Sonoma County, California. Dr. Storesund developed the conceptual and final designs, project specifications, and project cost estimate.

Great Valley Grasslands, Merced County, California: Dr. Storesund served as the project manager and project engineer for this floodplain reconnection project at the Great Valley Grasslands State Park. His evaluations consisted of a site reconnaissance, erosion/scour susceptibility screening, and hydraulic analysis of inundation through a series of existing culverts.

Pond 1 Restoration, Mountain View, California: Storesund Consulting performed a topographic survey of existing conditions to develop a base map for grading to alter onsite flood discharge to minimize inundation times (and prevent die-off of vegetation due to temporary storm water retainage). We developed grading plans, specifications, performed construction staking and performed an as-built survey using Terrestrial LiDAR methods.

ECCC Souzal, Antioch, California: Storesund Consulting performed a high resolution RTK GPS survey of this wildlife area in order to generate a detailed topo to evaluate micro-watersheds for vernal pool development.

Hess Creek Restoration, Clayton, California: Storesund Consulting performed a high-resolution RTK GPS survey of this incised creek stretch to be restored. The survey results were integrated with available aerial LiDAR topography. We also provided geotechnical recommendations for the restoration plans.

Rancho San Vicente, New Almaden, California: Storesund Consulting provided geotechnical recommendations for this restoration project which involved the removal/stabilization of 16,000 CY of earthen fill dumped into a ravine on County Park Land. The recommendations involved environmental contamination, grading operations, temporary haul roads, slope stability, and earthwork.

Port of Richmond, Operable Unit 2: Dr. Storesund provided geotechnical design on this environmental remediation and restoration project within the Port of Richmond. The mitigation consisted of a subaqueous cap (comprised of Bay Mud) in the inlet, installation of rip-rap along the shoreline revetment zone, and installation of a concrete facing and asphalt concrete cap to isolate in place sediments.

Port of Oakland, Operable Unit 2: Dr. Storesund provided geotechnical design support services to Land Marine Geotechnics on this reclamation and restoration project within the Port of Oakland. Dredged spoils were used to abandon a deep-draft U.S. Navy pier at the Port of Oakland.

Storm Water Pollution Prevention Plans

Oakley Civic Center Frontage Improvements, State Route 4, Oakley, California: A SWPPP was prepared for this widening project in Oakley. The existing Main Street in the project limits has two westbound lanes and one lane eastbound. The project added pavement, roadway entries/exits, curb, gutter and sidewalks on the south side of Main Street, as well as street lights along both sides of Main Street.

Brentwood Boulevard Widening and Reconstruction From Woodfield Lane to Central Boulevard, Brentwood, California: A SWPPP was prepared for this project which widens the current Brentwood Boulevard (State Route 4) between Woodfield Lane and Central Boulevard from the existing geometry of a three-lane with two way left turn lanes to a four-lane roadway with a raised landscape median and turn pockets at intersections. Project demolition included removal of curb and gutter, sidewalk sections, damaged pavement sections, and removal of select trees.

Mainstreet Roadway Improvement Plans for Subdivision 8916, Oakley, California: A SWPPP was prepared for this roadway improvement project in Oakley, California. The project added pavement curb & gutter and sidewalk to the west side of the existing roadway in order to facilitate future addition of a second eastbound lane.

Sand Creek Road Intersection Improvement Project, Brentwood, California: A SWPPP was prepared for this project which expands an existing intersection and widens the roadway. The project added pavement, curb & gutter, and sidewalks.

Sausalito Yacht Harbor, Sausalito, California: Dr. Storesund developed a design for treatment of storm water runoff in the large parking lot adjacent to the Sausalito Yacht Harbor as part of a bulkhead wall replacement project. The design involved the installation of a permeable rock infiltration zone under a walkway area. This infiltration area was designed to treat storm water runoff before it enters Richardson Bay.

Flood Control

California Rural Levee Repair Criteria Committee: This advisory committee was charged with developing rural levee repair and improvement criteria to be applied for planned or emergency work. The group worked in conjunction with DWR, interested stakeholders, and USACE. Dr. Storesund provided engineering (seismic, geotechnical marine, ecological, water resources) and risk-based decision making input to this group. This committee was active between 2012 and 2014.

USACE West Sacramento Flood Control Project, West Sacramento, California: Dr. Storesund served as a field engineer responsible for field construction quality control program, which consisted of sand cone density testing, nuclear gauge density testing, associated geotechnical laboratory testing, and issuing a final services during construction report.

Warm Springs Dam Control Structure Study, Sonoma County, California: Dr. Storesund served as the project manager and project engineer for this crack evaluation study for the San Francisco US Army Corps of Engineers. The study was performed in conjunction with PB. The vertical control structure for Warm Springs Dam suffered from water infiltration due to cracking of the concrete control structure. A LiDAR imaging and visual observation mapping was conducted of the cracks. Repair recommendations and cost estimate were provided to the US Army Corps of Engineers.

Las Gallinas Coastal Inundation Study, Marin County, California: Dr. Storesund served as a project engineer for this study (for the San Francisco US Army Corps of Engineers) that evaluated overtopping conditions during storm events for an existing flood protection system. Dr. Storesund developed a GIS terrain and inundation maps based on overtopping analyses.

Upper Penitencia Creek, Subsurface Geotechnical Exploration, Santa Clara County, California: Dr. Storesund served as the project engineer for this United States Corps of Engineers project which consists of on-land, subsurface geotechnical exploration along a portion of Upper Penitencia Creek. The requested services include drilling, sampling, field classification, laboratory testing, and Unified Soil Classification System (USCS) for soil borings at select locations along the creek alignment. The purpose of the soil borings was to provide subsurface data for the preliminary design of flood control structures, such as levees, floodwalls, culverts, and weirs along Upper Penitencia Creek. Dr. Storesund coordinated and managed Fugro's field operation exploration program that consisted of 22 soil test borings. Following the field exploration, Dr. Storesund managed the QA/QC review of all field and laboratory data. Dr. Storesund also managed the data report preparation.

Geotechnical Study Northern Borrow Area, Bulge And Pacheco Pond Levees, Hamilton Wetlands Restoration Area, Novato, California: Dr. Storesund served as the project engineer for this project which consisted of a geotechnical study for the Bulge and Pacheco Levees located in the Hamilton Wetlands Restoration Area. The project site is situated at the former Hamilton Army Air Field in Novato, California. The purpose of the geotechnical field exploration and laboratory testing program was to obtain information on subsurface conditions in the Northern Borrow Area in order to estimate the amount and nature of potential borrow material. The scope of services performed included:

- Conducting a field exploration program consisting of 18 test pits to determine the subsurface profile in the Northern Borrow Area;
- Conducting a laboratory testing program to obtain soil properties of the samples collected during our field exploration; and
- Preparing this geotechnical report presenting the results of our geotechnical field exploration, laboratory testing program, and a discussion of the exploration results.
- Specified development / review

USACE San Lorenzo Flood Control, Santa Cruz, California: Dr. Storesund served as a field engineer responsible for field density testing, performing associated geotechnical laboratory testing, and issuing a final services during construction report for this levee project in Santa Cruz.

USACE Napa River Flood Protection, Napa, California: Dr. Storesund served as a field engineer responsible for field density testing, performing associated geotechnical laboratory testing, and issuing a final services during construction report for this levee project in Napa.

Codornices Creek Restoration Project, Between Fifth and Eighth Streets, Albany and Berkeley, California: Dr. Storesund served as the project engineer for this geotechnical study. The purpose of this project is to restore the existing Codornices Creek, located between the City of Albany and the City of Berkeley, to a more natural setting using bioengineering and biotechnical methods. Dr. Storesund was responsible for the geotechnical field exploration and laboratory-testing program. The scope of our services included: Compiling and reviewing available geotechnical and geologic data; conducting a field exploration and laboratory-testing program; evaluation of slope stability and erosion susceptibility; development of embankment fill recommendations and general construction considerations; and preparing a final geotechnical report that included the results of our geotechnical field exploration and laboratory testing program, discussion of geotechnical issues, and geotechnical recommendations

Water Storage Reservoirs

Napa, Sonoma, and Lake Counties, California: Provided engineering design recommendations and construction observations services for water storage reservoirs for various agricultural clients. Reservoirs are off-stream, agricultural purpose reservoirs or are on-stream reservoirs with embankment heights less than 25 feet and store less than 50 acre-feet. Thus, the reservoirs are not within the jurisdiction of the California Department of Dam Safety (DSOD). Projects include construction of earth embankments and placement of either low permeability compacted soil liners or installation of geosynthetic liner systems.

- **Brooks Reservoir, Napa County, California:** 2.5 acre-foot, off-stream water storage reservoir formed by constructing three earthen embankments and lined with a geosynthetic liner.
- **Platt Reservoir, Sonoma County, California:** An off-stream reservoir formed by constructing a compacted earthen embankment with on-site soils. The reservoir was lined with a geosynthetic liner. The project included installation of an underdrain system to preclude the "floating" of the synthetic liner if the reservoir is drained during periods of high groundwater as well as a cut slope drain to intercept hillside groundwater flows. Dr. Storesund was also responsible for issuing a final services during construction report for the project.

- **Mondavi Dutra Dairy Reservoir, Napa County, California:** Dr. Storesund served as a field engineer responsible for embankment keyway inspections, field density testing, and concrete placement quality control during the enlargement of this reservoir in Napa County. Dr. Storesund was also responsible for issuing a final geotechnical services during construction report for the project.
- **Amber Knolls Reservoir, Lake County, California:** Dr. Storesund served as a field engineer responsible for embankment keyway inspections, field density testing, and concrete placement quality control during the construction of this reservoir in Lake County. Dr. Storesund was also responsible for issuing a final geotechnical services during construction report for the project.
- **Red Hills Reservoir, Lake County, California:** Dr. Storesund served as a field engineer responsible for embankment keyway inspections, field density testing, and concrete placement quality control during the construction of this reservoir in Lake County. Dr. Storesund was also responsible for issuing a final geotechnical services during construction report for the project.
- **Chimney Rock Vineyard, Napa County, California:** Dr. Storesund served as a field engineer responsible for embankment keyway inspections and field density testing during the construction of this reservoir in Napa County.
- **Hershey Vineyard Reservoir, Sonoma County, California:** Dr. Storesund served as a staff engineer responsible for generating design recommentions and issuing of a final geotechnical design report for this reservoir project in Sonoma County.
- **BV Reservoir No. 10 Rehabilitiation, St. Helena, California:** Dr. Storesund served as a field engineer responsible for the execution of the field investigation program and issuance of a final geotechnical design report for this reservoir rehabilitation project in St. Helena.

Off-Stream Storage Projects (Sonoma and Santa Clara Counties, California): Dr. Storesund worked in close conjunction with the Center for Ecosystem Management and Restoration (CEMAR) and Trout Unlimited (TU) on a number of off-stream water storage reservoir projects, designed to help landowners manage water resources in a manner that balances water use with habitat and minimum required in-stream flows for listed coho salmon and steelhead trout. These projects include:

- **Grape Creek Streamflow Stewardship Project, Healdsburg, California:** Dr. Storesund served as the project manager and project engineer for this off-stream reservoir storage project, providing all aspects of engineering planning (permit assistance, conceptual layouts), design (site geotechnical exploration and survey, analyses, development of plans, specifications, and estimates), and construction oversight during construction. The Grape Creek Streamflow Stewardship Project (GCSSP) is a cooperative project designed to help landowners manage water resources in a manner that balances water use with habitat and minimum required in-stream flows for listed coho salmon and steelhead trout. An existing flashboard dam and containment berm was replaced with a new reservoir adjacent to the creek to allow passage of river flows while providing the farmer with an agricultural water supply.
- **Little Arthur Creek Streamflow Stewardship, Healdsburg, California:** Dr. Storesund served as the project manager and project engineer for this off-stream reservoir storage project, providing all aspects of engineering planning (permit assistance, conceptual layouts), design (site geotechnical exploration and survey, analyses, development of plans, specifications, and estimates), and construction oversight during construction. The Little Arthur Creek Streamflow Stewardship Project (LACSSP) is a cooperative project designed to help landowners develop water supply security in a manner that improves in stream flows and habitat for listed steelhead trout.
- **Pescadero Creek Streamflow Stewardship, Healdsburg, California:** Dr. Storesund served as the project manager and project engineer for this off-stream reservoir storage project, providing all aspects of engineering planning (permit assistance, conceptual layouts), design (site geotechnical exploration and survey, analyses, development of plans, specifications, and estimates), and construction oversight during construction. The Pescadero Creek Streamflow Stewardship Project is a cooperative project designed to help landowners develop water supply security in a manner that improves in stream flows and habitat.

Whitethorn Elementary School Auxiliary Water Storage System, Whitethorn, California: Dr. Storesund served as the principal engineer on this conservation project performed in collaboration with Trout Unlimited and Sanctuary Forest. The project entailed installation of sixteen 5,000 gallon water tanks so that the school could divert water during wet months. Dr. Storesund performed the permitting, planning, engineering, construction bid documentation, and review services.

Residential

MLK Plaza Homes, Oakland, California: Dr. Storesund provided field density testing services for this low income housing project in Oakland. The project consisted of constructing thirteen new two-story residential structures at the site as well as associated improvements.

Standard Pacific Homes' Dublin Ranch, Dublin, California: Dr. Storesund served as a field engineer for this residential development in Dublin, observing mass grading operations, performed field density tests on housing pads, roadways, utility trenches, special inspections on rebar placement, concrete placement, post-tensioning, and performed related geotechnical laboratory testing. Dr. Storesund was also responsible for inspection and evaluation of erosion control systems in place during mass grading operations.

Palomares Hills, San Anselmo, California: Dr. Storesund served as a field engineer providing construction observations and field density testing during construction of retaining walls for this residential development.

Lund Ranch Creek, Pleasanton, California: Dr. Storesund provided construction observation services during a creek restoration project located within the Lund Ranch Creek residential development in Pleasanton. The restoration project involved bank erosion mitigation through placement of rock rip rap.

University Avenue Housing, Berkeley, California: Dr. Storesund served as a field and project engineer for this multi-unit residential housing project. An existing Salvation Army structure and parking lot were demolished and replaced with the new housing structure. Dr. Storesund performed the field exploration, engineering analyses, foundation recommendations, and prepared the final geotechnical design report.

The Estates at Happy Valley, Sun City, Arizona: Dr. Storesund served as a field engineer responsible for the execution of a field investigation program, which involved hollow stem auger drilling and geotechnical sampling for this mass grading residential development project in Sun City.

Educational

Children's Hospital Oakland Upgrade, Oakland, California: Dr. Storesund served as a staff engineering providing pipeline thrust block design recommendations for this facility upgrade project in Oakland.

Bessie Carmichael School, San Francisco, California: Dr. Storesund served as a staff engineer providing drilled pier design recommendations for this new school situated between the existing Saint Michael Ukrainian Orthodox Church and the Vineyard Christian Fellowship Church in San Francisco. It is three-story structure with a total footprint area of approximately 24,000 square feet. The facility features a single-story gymnasium and multi-purpose room with an elevated roof, a central courtyard area, and an asphalt-paved playground adjacent to the school building.

Blue Oaks School, Napa, California: Dr. Storesund served as a field engineer for this school renovation project in Napa. The field services consisted of field density testing on pavement subgrades and base rock.

Vista College Facility, Berkeley, California: Dr. Storesund served as a field engineer responsible for logging test pits to identify the foundations for existing structures surrounding the project site. The facility upgrade consisted of a new six to eight-story building for Vista College on the south side of Center Street, between Shattuck Avenue and Milvia Street in Berkeley. Excavations on the order of 15 to 20 feet were required to construct the basement level. The new foundations consisted of 36-inch diameter drilled piers with lengths from 50 to 70 feet.

New Alameda Elementary School, Alameda, California: Dr. Storesund served field as a field engineer responsible for the execution of the field exploration for this project. The new school will consist of classroom buildings and multi-use buildings. The scope of work for this investigation included a site reconnaissance by a State of California Certified Engineering Geologist, subsurface exploration utilizing both exploratory borings and Cone Penetration Testing, laboratory testing, engineering analyses of the field and laboratory data, and preparation of this report. The data obtained and the analyses performed were for the purpose of providing design and construction criteria for site earthwork, building foundations, slab-on-grade floors, retaining walls and pavements.

Ocean Branch Library, San Francisco, California: Dr. Storesund served as a staff engineer responsible for generating foundation recommendations for this new library structure in San Francisco.

Commercial

Clear Channel Outdoor, Oakland, California: Dr. Storesund served as a staff engineer responsible for providing drilled pier design recommendations for this outdoor billboard structure. The proposed billboard structure was supported by four 24-inch diameter, 3/8-inch thick hollow steel pipe columns.

JB Radiator Complex, Sacramento, California: Dr. Storesund provided geotechnical recommendations for foundation grading for a new storage tank at a site with expansive soils.

Linde Processing Facility, Richmond, California: Dr. Storesund performed a field exploration program (CPT) to characterize onsite soil conditions and provided foundation design recommendations for new infrastructure developments at the property.

Moraga Country Club Landslide Mitigation, Moraga, California: Dr. Storesund served as a field engineer for three landslide mitigation projects at the Moraga Country Club. Dr. Storesund provided field density testing services and general construction observations. He was responsible for summarizing the field data and issuing a construction report.

Moss Landing Powerplant, Moss Landing, California: Dr. Storesund served as a field engineer for this power plant upgrade project in Moss Landing. Dr. Storesund provided construction observations auger cast pile installation for the main generating structure and piezometer monitoring during the construction and dewatering of the water cooling intake structure.

Coliseum Lexus Dealership, Oakland, California: Dr. Storesund served as a staff engineer responsible for generating foundation design recommendations and issuing the final geotechnical report for this dealership in Oakland.

Infiniti of Oakland Dealership, Oakland, California: Dr. Storesund served as a field engineer responsible for the implementation and execution of the field investigation program for this project which consisted of advancing three cone penetration tests (CPTs). In addition, he was also responsible for generating foundation design recommendations and issuing a final geotechnical design report.

Sho*Ka*Wah Casino Bridge, Hopland, California: Dr. Storesund served as a field engineer for this bridge and parking lot and suspension bridge project in Hopland. Dr. Storesund provided concrete sampling, keyway inspection, and field density testing services during construction.

Anthropologie – Berkeley, Berkeley, California: Dr. Storesund served as a field engineer responsible for executing the field exploration program for this structural upgrade project in Berkeley. Dr. Storesund was also responsible for the issuing of a final geotechnical design report

2150 Shattuck, Berkeley, California: Dr. Storesund served as a field engineer for this seismic retrofit project in Berkeley. Dr. Storesund was responsible for the monitoring of micropile installation and load testing. He was also responsible for quality control of the injected micropile grout.

Bayer Building 55, Berkeley, California: Dr. Storesund served as a field engineer responsible for field density testing services during construction for this new commercial facility in Berkeley.

Chino Bandito, Chandler, Arizona: Dr. Storesund served as a field engineer responsible for the execution of the field investigation program, which involved hollow stem auger drilling and geotechnical sampling for this 11,500 square foot commercial development project in Chandler.

150 Powell Street, San Francisco, California: Dr. Storesund served as the project manager and project engineer for this structural renovation project near Union Square. The historic building required the façade structure to be saved and incorporated into the new structure. Dr. Storesund developed and implemented an exploration program that involved test pits to expose and evaluate the condition of spread footings. Foundation design services were also provided for temporary construction features (tieback walls, support frame for façade) and permanent features (foundations) as well as support and observation services during construction.

390 Fremont Street, San Francisco, California: Dr. Storesund provided geotechnical engineering support to a property owner adjacent to a high-rise construction project that involved installation of a shoring system, excavation to a depth of 70 ft, excavation of soil and bedrock, and development and evaluation of a monitoring program during the excavation activities.

Waterfront and Offshore Facilities

California Tsunami Hazard Policy Committee: The California Tsunami Policy Working Group (CTPWG) is a voluntary advisory body operating under the California Natural Resources Agency (CNRA), Department of Conservation, and is composed of experts in earthquakes, tsunamis, flooding, structural and coastal engineering and natural hazard policy from government, industry, and non-profit natural hazard risk-reduction organizations. The working group serves a dual purpose as an advisor to State programs addressing tsunami hazards and as a consumer of insights from the SAFRR Tsunami Scenario project, raising awareness and facilitating transfer of policy concepts to other coastal states in the nation. CTPWG's role is to identify, evaluate and make recommendations to resolve issues that are preventing full and effective implementation of tsunami hazard mitigation and risk reduction throughout California's coastal communities. Dr. Storesund provided engineering (seismic, geotechnical marine, ecological, water resources) and risk-based decision making input to this group. This committee was active between 2011 and 2013.

Emeryville Shoreline Protection Project, Emeryville, California: Dr. Storesund was a project engineer overseeing the construction of this shoreline improvement project. Site grades were raised 2-4 feet above existing grade and an enlarged shoreline breakwater slope was constructed.

Alcatraz Hydrodynamic Evaluation, City and County of San Francisco, California: Dr. Storesund was the project manager and project engineer for this coastal hazard screening evaluation at Alcatraz. The purpose of the screening was to inform long-range planning activities, accounting for shoreline erosion and sea level rise. The recommendations were provided to the National Park Service, in association with Kleinfelder.

Emeryville Marina Breakwater, Emeryville, California: Dr. Storesund was a project engineer responsible for the planning and execution of a field exploration and geotechnical laboratory testing program for this breakwater and pier project in Emeryville. Dr. Storesund also completed the geotechnical design recommendations and issued the design report.

Nelson's Marine Shoreline Stabilization, Alameda, California: Dr. Storesund served as the project manager and project engineer for this shoreline stabilization and remediation project at an abandoned boat yard within the Oakland Estuary. The project required an alternatives analysis (approach and cost estimate), decision matrix, development of remediation plans, specifications, and estimates. Field efforts included site surveys (RTK GPS) and geotechnical exploration.

Seadrift Shoreline Study, Stinson Beach, California: Dr. Storesund served as a project engineer and performed a site characterization study (based on historical topographic maps and aerial photographs), conducted hydrodynamic characterization, and aided with the design of the extension of an existing sheet pile bulkhead system along Bolinas Lagoon.

Loch Lomond Breakwater Improvement Project, San Rafael, California: Dr. Storesund was the project manager and a project engineer for the improvement of an existing 1,500 foot long rip rap breakwater structure. He performed a hydrodynamic evaluation during the planning phase to establish design criteria, managed the project (preparation of project plans, specifications, and estimates), and provided civil and geotechnical engineering expertise.

Harbor Point Shoreline Stabilization Project, Tiburon, California: Dr. Storesund served as a project engineer and performed a site characterization study (based on historical topographic maps and aerial photographs), conducted hydrodynamic characterization, and aided with the design of a shoreline stabilization solution.

Martin Luther King Jr. Drive Shoreline Study, Bay farm Island, California: Dr. Storesund served as the project manager and project engineer for this Bay Trail feasibility study for the East Bay Regional Park District (teamed with Creegan D'Angelo Engineers). Dr. Storesund prepared a screening-level coastal engineering guidance document and technical review of alternative plan elements.

Richmond Marina Breakwater Improvements, Richmond, California: Dr. Storesund served as a support staff engineer for this breakwater improvement project in Richmond. The project entailed wave and tide surveys, wind pattern evaluations, and preliminary foundation recommendations to upgrade an existing breakwater structure.

Third Street Boat Ramp, Lakeport, California: Dr. Storesund was a staff engineer responsible for organizing and performing the geotechnical exploration for this public boat ramp improvement project in Lakeport.

Dow Chemical Wharf, Pittsburg, California: Dr. Storesund was the project manager and a project engineer for the evaluation of an existing wharf to evaluate its ability to accommodate larger supply ships. After the initial review, Dr. Storesund was responsible for the development of alternatives, preparation of project permits, design of a new mooring system (including specifications and cost estimate), and construction observations and load testing.

Alviso Marina County Park, Alviso, California: Dr. Storesund served as a field engineer responsible for the implementation of Fugro's geotechnical exploration for the Alviso Marina County Park, Phase I Master Plan Implementation Project in Alviso. The geotechnical exploration consisted of two test borings, two Cone Penetration Tests (CPTs). Fugro evaluated the geotechnical conditions for the design and construction of the new parking area, a planted mound area (which includes the placement and compaction of up to 5 feet of engineered fill), and a 24-inch high by 18-inch wide flood control wall.

Brooklyn Basin Dredging Study, Oakland, California: Dr. Storesund served as the project manager for this maintenance dredging study commissioned by the San Francisco US Army Corps of Engineers to URS Corporation.

Pipelines and Water tanks

NCFCWCD South Segment Sewer Replacement, Napa, California: Dr. Storesund served as a field engineer, observing construction of a 54-inch to 66-inch diameter sanitary sewer line in Napa. The project, separated into two segments, realigned and replaced approximately 4,500 lineal feet of mainline sewer outside the river flood plain as part of the Napa River Project. Construction observations pertained to pressure grouting ground improvement, pipeline subgrade inspections, pipe bedding and backfill observations, trench backfill density testing, AC pavement density testing, concrete sampling, pipe segment seal testing, and observations of lightweight concrete backfill of old sewer line.

PG&E Line 131 Pigging Project, Alameda County, California: Dr. Storesund served as field engineer, coordinating and conducting geotechnical exploratory test pits for a new PG&E maintenance access facility to service two 18-inch, high-pressure, gas mains. Site improvements included an enlarged access road and maintenance pad, rock cut slopes, and minor pipeline realignment.

Newby Island Gas Transmission Pipeline, Milpitas, California: Dr. Storesund served as a field engineer providing construction observations on trench backfill operations on a landfill methane gas recovery pipeline installed at the base of an existing Santa Clara County Flood Control Levee. Trench backfill consisted of lightweight concrete slurry, designed to isolate the installed pipeline and protect the structural integrity of the existing levee system.

South Transmission System Project Tanks, Sonoma County, California: Dr. Storesund served as a field engineer during the geotechnical exploration of this project. Seven water tank sites were evaluated during the field operations. Geotechnical explorations included seismic refraction studies, vertical soil borings, and geologic reconnaissance mapping.

Girard Vineyard, 50k Gallon Water Tank, Napa County, California: Dr. Storesund served as a field engineer during the geotechnical exploration of this project. Two tank sites were evaluated during the field operations by excavating test pits. Site-specific foundation design recommendations were generated.

Granada Sanitary District CIP, San Mateo County, California: Dr. Storesund organized and performed the field exploration for this project which consisted of "jack and bore" operations under Highway 1 in Granada. Engineering foundation design recommendations were generated for temporary shoring required during the construction process.

Earthquake Fault Explorations

North Livermore Properties, Livermore, California: Dr. Storesund served as a support field engineer for the project geologist on this fault rupture hazard study in Livermore. Tasks included geologic mapping, study of stereo-paired aerial photographs, and an extensive fault trenching investigation. Dr. Storesund was responsible for the setup of the fault trench shoring and dewatering pumping system design. Dr. Storesund also assisted the project geologist in field logging the excavated fault trench.

Centex Homes' Farber Property, Livermore, California: Dr. Storesund served as a field engineer, assisting the project geologist, for a fault rupture hazard study for a proposed residential development located within the Alquist-Priolo Special Studies Zone for the Greenville Fault. The investigation included excavation and detailed logging of two trenches, totaling over 800 feet in length.

Alameda County Sherriff's Facility Landslide Assessment, Hayward, California: Dr. Storesund served as a field engineer providing assistance during the fault trenching phase of the field investigation. The project involves demolishing the existing Animal Control Facility and constructing a new 160,000 square foot building that will include facilities for the Sheriff and Coroner and a parking garage for about 500 cars. The proposed building will be a multi-level structure, and the garage will extend one or two levels below grade. The structure will be a critical facility and must remain operational following an earthquake. Other improvements will include driveways, a visitor's parking lot, underground utilities and landscaping. Preliminary schematics suggest that the facility will occupy the entire 4-acre site. The project included evaluating potential landslide and surface fault rupture hazards at the site.

Osgood Road Fault Trench, Fremont, California: Dr. Storesund served as the project manager responsible for the organization and implementation of backfill operations on a fault rupture hazard study for a proposed new PG&E gas main alignment in Fremont within a BART right-of-way zone. A total of three trenches (totaling approximately 350 linear feet and 12 feet deep) were excavated and backfilled according to BART specifications.

Dumbarton Quarry and Associates, Hayward, California: Dr. Storesund served as a support field engineer for the project geologist on this fault rupture hazard study project at the La Vista Quarry in Hayward. Tasks included geologic mapping, study of stereo-paired aerial photographs, and an extensive fault trenching investigation. Dr. Storesund was responsible for the setup of the fault trench shoring and dewatering pumping system design. Dr. Storesund also assisted the project geologist in field logging the excavated fault trench

LBL-50X AP Fault Study, Berkeley, California: Dr. Storesund acted as a field engineer for the fault location study for a proposed 6-story building to be constructed on a steep hillside within the State designated Fault Rupture Hazard Zone for the active Hayward Fault. The steep, vegetated slope made excavation of continuous trenches difficult and numerous trenches had to be excavated to provide appropriate coverage. No evidence of active or potentially active faulting was encountered in the trenches.

Transportation

Caltrans I-238 Widening Project, Alameda County, California: Dr. Storesund served as both a field engineer responsible for the coordination and implementation of the field investigation program and a staff engineer performing design calculations and analyses. The I-238 project includes the widening of the freeways and related replacement or improvement of existing connectors, overcrossings, and railroad underpasses. Existing embankments are to be widened which requires installation of concrete and MSE retaining wall. Field investigations performed for the project included an extensive subsurface exploration program utilizing continuous flight solid and hollow stem augers, rotary wash borings and Cone Penetration Test (CPTs) soundings. In addition, available subsurface data from previous investigations was reviewed as were published geologic and soil survey data. The field exploration program was complemented with geotechnical laboratory testing. Following completion of the field investigation and laboratory testing, analyses were performed to evaluate geotechnical engineering aspects of project, particularly settlement and liquefaction hazard studies.

Caltrans I-880/Mission Boulevard Widening Project, Alameda County, California: Dr. Storesund served as a support staff engineer for the I880/Mission Boulevard Widening Project. The project involved over 100 test borings, geotechnical laboratory analyses, engineering foundation design recommendations, flexible pavement design, and seismic design criteria for five roadway bridges and one railroad bridge. Other improvements included: a cut and cover tunnel box, box culverts, retaining walls, and ancillary structures.

Caltrans Guadalupe Highway 87 Renovation, San Jose, California: Dr. Storesund served as a field engineer providing AC pavement density testing Quality Control services during the construction phase of this project. The project included widening of the existing Highway 87, construction of a new overpass over Highway 101, and other retaining walls and street improvements.

Port of Oakland's Oakland Airport Expansion, Oakland, California: Dr. Storesund served as a field engineer for this roadway widening and expansion project, providing construction observations and testing services for, utility trench backfill compaction testing, roadway subgrade and base rock density testing, AC pavement testing, and concrete sampling. The project consisted of the construction of new roadway over and underpasses, roadway widening, and utility upgrades.

Petaluma Transit Mall, Petaluma, California: Dr. Storesund was the project engineer for this streetscape project in Petaluma who was responsible for the organization and execution of the field exploration program as well as generating design recommendations. The proposed streetscape improvements included sidewalks, PCC and AC pavements, information kiosks, and lighting standards.

Reid-Hillview Airport, San Jose, California: Dr. Storesund was the field engineer for this runway rehabilitation project. Dr. Storesund was responsible for quality control observations related to pavement section construction.

Nut Tree Airport, Fairfield, California: Dr. Storesund was a field engineer for this runway rehabilitation and expansion project in Fairfield. Dr. Storesund was responsible observations during new runway grading operations, pavement section construction, and provided support during asphalt content laboratory analyses.

First Street Bridge Replacement Project, Napa, California:
Dr. Storesund served as the project engineer for this project which involved the First Street Bridge Replacement Project located in Napa, California. Dr. Storesund coordinated and managed Fugro's field operation exploration program, performed the field exploration, analyzed the collected data, and provided a preliminary geotechnical design report.

Independent Technical Reviews (ITR)

Pier 36/Brannan Street Wharf Demolition, City and County of San Francisco, California: Dr. Storesund served as the project manager and project engineer for this technical review (on behalf of the San Francisco District US Army Corps of Engineers), which consisted of a geotechnical evaluation of submitted calculations and plans. The project entails the demolition of an existing wharf to make room for the construction of a new public open space wharf and associated boating facilities.

Hamilton Wetland Restoration Levee Raising Project, Novato, California: Dr. Storesund served as a project engineer for this technical review (on behalf of the San Francisco District US Army Corps of Engineers), which consisted of a geotechnical evaluation of submitted calculations, plans, and specifications. The project entails the raising of existing flood protection levees to account for settlements (experienced and anticipated) to the levees.

Marysville Unified School District Pipeline Review, Marysville, California: Dr. Storesund, as part of CCRM, performed a review of a natural gas pipeline risk assessment (per California Department of Education protocols) for the Marysville Unified School District.

Twin Rivers Unified School District Pipeline Review, Sacramento, California: Dr. Storesund, as part of CCRM, performed a review of a natural gas field risk assessment (per California Department of Education protocols) for the Twin Rivers Unified School District.

Milford Township School District Pipeline Review, Milford, Pennsylvania: Dr. Storesund, as part of CCRM, performed a review of a natural gas field risk assessment for the Milford Township School District on the citing of a new school.

Princeville, North Carolina Flood Risk Management Feasibility Study Integrated Feasibility Report and Environmental Assessment: Dr. Stroresund served as an expert reviewer for this USACE IEPR for the proposed Princeville flood protection improvement project. The tentatively selected plan (TSP) included measures to extend the existing levee and raise U.S. Highway 258 and Shiloh Farm Road north of the Town of Princeville to create a barrier to circumvention of the existing levee, as well as ramping residential, farm, and commercial driveways and subdivision streets to meet the new elevation. The TSP also includes non-structural measures consisting of an updated flood warning and evacuation plan, continued floodplain management and updating of local building and zoning codes, a flood risk management education and communication plan for both the community and local schools, and flood warning measures, all of which were ultimately deemed essential to an adequate flood risk management strategy for the Town of Princeville. The estimated cost of the TSP is $21,096.00 million.

Risk Assessments

Multiple Lines of Defense, Coastal Louisiana: Dr. Storesund worked in conjunction with the Lake Pontchartrain Basin Foundation to conduct an initial qualitative risk assessment of the hurricane flood protection system in the greater New Orleans area. The assessments follow the Quality Management Assessment System (QMAS) protocols. The assessment provides the basis for initial definition of the system, stakeholders, and identifies primary Factors of Concern. This assessment is the pre-cursor to detailed quantitative risk assessments.

Tsunami Risk-Based Design Committee, Northern California: Dr. Storesund is the Chair of this committee, sponsored by the ASCE San Francisco Section. The aim of the Working Group is to accomplish the following: (1) Formulate a group of appropriate stakeholders (local, county, state, federal levels); (2) Conduct a summary of 'best practices' and available resources (perhaps through a series of workshops) (a) Risk standards (b) Hazard studies (reports, maps, etc) (c) Design standards; (3) Develop Policy Statement (goals based on best practices and available info); and (4) Develop Guidelines for Risk-Based Tsunami Design Criteria in Coastal California.

PG&E Risk Management Framework Assessment: Dr. Storesund served as the project manager on an assessment committee to provide insights on their risk management framework. The insights included: (a) is the right RMF being used for the stated goals?; (b) are all significant RMR relationships being captured?; (c) strategies for visualizing and mapping risk; (d) identifying the 'right' risks and prioritizing; and (e) RMF resilience and maturity. Potential actionable outputs include: (1) reference practices (organizational examples); (2) listing of RMF activities to expand and advance; (3) listing RMF activities to modify/reconfigure; and (4) RMF performance metrics (i.e. targeted monitoring and review, leading/lagging indicators).

Forensic Evaluations

Bayer Communications Building, Berkeley, California: Dr. Storesund served as the field engineer to survey and evaluate settlements in the Bayer Communications Building, which was the 'nerve center' for all communication operations at the facility. Site surveys consisted of floor level surveys, review of historical soil exploration programs, and review of nearby construction activities. The study found that excavation operations associated with the upgrade of a sewer line immediately adjacent to the structure led to lateral stress relaxation and vertical displacement of the footings.

Bell Carter Foods Distressed Structure, Lafayette, California: Dr. Storesund organized and performed the foundation exploration which involved drilling soil test borings within the structure using portable hydraulic drilling equipment. The purpose of the project was to identify the foundation instability mechanism and provide mitigation strategies.

Mississippi River Gulf Outlet Wave-Induced Erosion, St. Bernard Parish, Louisiana: Dr. Storesund provided state of the art engineering analyses examining the contribution of damage to the Mississippi River Gulf Outlet levees as a result of wave action from Hurricane Katrina in 2005. The evaluations required the development of a validated method to assess the plausible range of erosion susceptibilities due to wave impact and run-up. These evaluations were published in the ASCE Journal of Waterway, Port, Coastal and Ocean Engineering.

Investigation of the Greater New Orleans Area Flood Defense System Failure, New Orleans, Louisiana: Dr. Storesund was a consultant for the National Science Foundation sponsored investigation of the failure of the New Orleans Flood Defense System. He aided in the initial field reconnaissance to survey system damage and contributed to the technical analyses evaluating system failure mechanisms. He aided in the use of state of the art methods for erosion sampling and testing as well as LiDAR remote sensing survey methods on the Mississippi River Gulf Outlet levees. Copies of the findings from the evaluation can be accessed at: www.ce.berkeley.edu/~new_orleans.

Upper Jones Tract Levee Failure, San Joaquin County, California: Dr. Storesund provided engineering evaluations associated with the June 2004 breach of the Upper Jones Tract Levee in conjunction with Dr. J. David Rogers. The evaluations included bathymetric surveys, RTK GPS surveys, development of digital terrain models using bathymetry and Aerial LiDAR data, hydraulic modeling, and levee failure analyses (seepage, slope stability). Dr. Storesund was responsible for: project management, planning, and tracking; geotechnical engineering evaluation and analyses; hydrodynamic evaluations; general engineering evaluations; standard of care evaluations; technical data evaluation; computer graphics/animations; digital cartography; scientific and technical writing. Dr. Storesund provided deposition and trial testimony.

East Bank Industrial Area (Lower 9th Ward), New Orleans, Louisiana: Dr. Storesund provided engineering support services to Dr. Robert Bea and Dr J. David Rogers for a field exploration program that included geoprobes, CPTs, and pump testing of the onsite "swamp/marsh" material in order to back calculate the permeability of this deposit. The work was performed in close coordination with all experts (plaintiffs and defense). Dr. Storesund served as the project manager for his $1.3 million project (completed in 3 months). Dr. Storesund was responsible for: project management, planning, and tracking; geotechnical engineering evaluation and analyses; hydrodynamic evaluations; general engineering evaluations; standard of care evaluations; technical data evaluation; computer graphics/animations; digital cartography; scientific and technical writing.

PNG Landslide, Papua New Guinea: Storesund Consulting worked in conjunction with Prof. J. David Rogers, Prof. Calvin Alexander, and Mr. Eldon Gath to assess the causal mechanism(s) of a landslide in Papua New Guinea. Available data was reviewed and a field reconnaissance trip to the failure site was performed in summer of 2012. Dr. Storesund provided geotechnical and liar data interpretation services.

LiDAR Surveys

Sunol Dam Removal, Alameda County, California: In 2006, the San Francisco Public Utilities Commission removed Sunil dam to improve fish passage, restore a self-sustaining population of steelhead to the Alameda Creek watershed, and reduce or eliminate an existing public safety hazard. The dam contained an estimated 37,000 yd^3 of impounded sediment. To create a baseline for future monitoring of impounded sediment transport, a combination of Aerial Liar, Terrestrial LiDAR, and conventional survey data was compiled and synthesized to generate a three dimensional model of the study area. High resolution characterization of the impounded sediments was accomplished using Terrestrial LiDAR, with an approximate point spacing of centimeters.

Pit Dam 3 Mapping, Burney, California: Storesund Consulting provided a Terrestrial LiDAR scan of select areas at the PGE Pit Dam 3 facility to aid in the evaluation of a fault system at the site. A high-accuracy point cloud was rendered of the fault are, allowing field geologists to geolocate fault features with high accuracy. Additionally, fault trenches were scanned and rectified orthoimages were rendered to aid in mapping fault trace features.

Quadrus Hill, Menlo Park, California: Storesund Consulting performed Terrestrial LiDAR scanning services for this office complex in a landscaped boulder area where high-precision mapping of boulder features was required to correctly situate a new deck.

Intarcia, Fremont, California: Dr. Storesund provided Terrestrial LiDAR scanning services for this project to map existing structural conditions as well as mechanical, electrical, and plumbing (MEP) facilities to facilitate BIM modeling and routing of new utilities (using 'clash detection').

1245 Market, San Francisco, California: Dr. Storesund provided Terrestrial LiDAR scanning services for this project to map existing structural conditions as well as mechanical, electrical, and plumbing (MEP) facilities to facilitate BIM modeling and routing of new utilities (using 'clash detection').

Veterans Administration Facility, Mather, California: Dr. Storesund provided Terrestrial LiDAR scanning services for this project to map existing structural conditions as well as mechanical, electrical, and plumbing (MEP) facilities to facilitate BIM modeling and routing of new utilities (using 'clash detection').

Yosemite Slough Wetland Erosion Study, San Francisco, California: Storesund Consulting performed annual erosion/deposition monitoring using Terrestrial LiDAR for the wetland restoration project. Hydrodynamic modeling was performed estimating erosion/deposition. This monitoring program provided a high resolution digital terrain model by which to measure erosion/deposition across the restoration area (3 acres).

Causby Mine Survey, Stanislaus County, California: Dr. Storesund served as the project manager and project engineer for this LiDAR mapping project of an abandoned mine tunnel for the U.S. Forest Service. Mapping consisted of the entrance and exit (for construction access) as well as the interior of the tunnel (for volume estimates and layout purposes). State of the Art LiDAR processing software was used to model the interior of the tunnel in 3D.

Tocaloma Backwater Project, Marin County, California: Dr. Storesund provided RTK GPS and Terrestrial LiDAR surveys for this backwater restoration project for the County of Marin. The work was provided for Balance Hydrologics (who performed the design). Aerial LiDAR was merged with the Terrestrial LiDAR to create a full 3D terrain model of the restoration area.

Arroyo de la Laguna, Alameda County, California: Arroyo de la Laguna is part of the stream system that includes the Dublin, Pleasanton, Livermore, as well as upland portions of northern Santa Clara County. Watershed hydrology and channel function have been historically impacted by urbanization (including drainage and flood control), roads, railroads, gravel mining, and the construction of Del Valle Reservoir, resulting in channel incision on the order of six meters. Severe stream bank erosion was identified on the outer bends of an "S" curve of the Arroyo de la Laguna Creek. Terrestrial LiDAR was used to generate cost-effective, high-accuracy mapping of as-built conditions of newly completed stream and river restoration projects, thereby establishing a baseline by which future monitor efforts can evaluate overall project performance through time.

Salt Pond A21, Alameda County, California: Dr. Storesund performed Terrestrial LiDAR survey for researchers at the University of California at Berkeley on this 160-acre wetland restoration project in Fremont, California. The surveys were used to monitor sediment accretion, scour, and erosion progression within this recently breached salt pond.

Tennessee Hollow, San Francisco, California: A storm drain creek daylighting project was completed at the San Francisco Presidio. LiDAR surveys were used to establish baseline topography following completion of construction in January of 2006. Subsequent surveys were performed to evaluate vegetation growth rates and growth zones. The baseline survey is anticipated to serve as an overall baseline by which future channel stability can be evaluated.

AMR, Roseville, California: Storesund Consulting provided high-resolution RTK GPS topographic survey and Terrestrial LiDAR surveys of vernal pools to provide a baseline micro-topographic terrain model which became the design 'template' for restoration of 150 acre vernal pool site.

Cache Creek, Woodland, California: Terrestrial LiDAR surveys were conducted at two specific locations where the creek channel shifted into the creek bank, causing the formation of a tall vertical bank. The terrestrial LiDAR surveys were conducted to map the conditions of the vertical bank. Additionally, aerial LiDAR surveys were also performed at this site and future studies will compare and contrast the resolution and accuracy between these two methods at this site.

Goodwin Creek, Oxford, Mississippi: The Goodwin Creek watershed is organized and instrumented for conducting extensive research on upstream erosion, stream erosion and sedimentation, and watershed hydrology. Land use and management practices that influence the rate and amount of sediment delivered to streams from the uplands range from timbered areas to row crops. About 13 percent of the watershed total area is under cultivation and the rest in idle pasture and forest land. Terrestrial LiDAR surveys were performed at one location in an attempt to evaluate the feasibility of utilizing LiDAR to measure and quantify sediment transport and vertical bank retreat rates.

Coldwater Creek, Mississippi: Coldwater Creek is part of a United States Department of Agriculture National Sedimentation Laboratory research watersheds. The quantity and quality of aquatic habitats along the lowland floodplain rivers in agricultural landscapes are in steep decline as a result of nonpoint source pollution. Terrestrial LiDAR surveys were performed at the site of an ephemeral gully in order to ascertain the feasibility of mapping these features with LiDAR to develop 3D surfaces by which more detailed analyses can be performed (including erosion rates) as opposed to the traditional cross-sectional survey method, which may not fully capture the behavior of the site.

Tolay Lake, Petaluma, California: This collaborative effort between the Sonoma County Parks and Recreation, Ducks Unlimited, and United States Geological Survey, will restore a seasonal lake on Tolay Creek in Sonoma County. Existing agricultural fields will be converted to a county park and will serve as a duck reserve in the fall and winter. Terrestrial LiDAR surveys were preformed to develop a detailed topographic map of the project site. Over 200 acres were surveyed in two days.

Ben Mar, Benicia, California: Dr. Storesund performed Terrestrial LiDAR survey for the United States Geological Survey on this 25-acre wetland restoration project in Benicia, California as part of a Caltrans mitigation project. The surveys were used to monitor sediment accretion within the completed restoration area.

Tilden Step Pool, Berkeley, California: Storesund Consulting worked in conjunction with Dr. Anne Chin (University of Colorado, Boulder) by mapping as-built conditions of a step pool sequence in Tilden Park. Change analyses will be performed over three storm events to ascertain step pool stability.

Colorado Wildfire Step Pool Evaluation, Colorado: Storesund Consulting worked in conjunction with Dr. Anne Chin (University of Colorado, Boulder) by analyzing terrestrial LiDAR scans of study areas before and after storm events to ascertain step pool stability.

Verona Bridge Creek Restoration, Pleasanton, California: Storesund Consulting performed a Terrestrial LiDAR survey of this in-stream habitat enhancement and slope stability restoration project in Pleasanton. The project was designed by the National Resource Conservation District.

Tubb, Vallejo, California: Dr. Storesund performed Terrestrial LiDAR survey for the United States Geological Survey on this 60-acre wetland restoration project in Sonoma County, California. The surveys were used to monitor sediment accretion within the completed restoration area.

Rodeo Creek, Hercules, California: LiDAR scanning services were performed on the newly acquired Rodeo Creek East Bay Regional Park property in Rodeo, California. Rodeo Creek was incised 20-30 feet below the floodplain and heavily vegetated, making it difficult to perform conventional topographic surveys. As a result of the LiDAR surveys, a 3D surface, topography, and cross-sections over a 1,000 foot stretch of creek was cost-effectively mapped.

Winfield Pin Oaks Levee Investigation, Winfield, Missouri: The Winfield Pin Oak levee is maintained by the Cap Au Gris Drainage and Levee District. The levee system (Figure 23) is estimated to prevent flooding of the protected area (493 hectares) up to a 14-year return period flood event on the Mississippi River. This site was overtopped for an extended period of time and breached as a result of overtopping-induced erosion. Terrestrial LiDAR surveys (georeferenced using RTK GPS) were performed in October 2008 for subsequent forensic analyses.

Norton Woods Levee Investigation, Elsberry, Missouri: The Elsberry levee at Norton Woods is maintained by the Elsberry Drainage District. This breach was the result of either a through-seepage induced or overtopping-induced (low crest elevation) failure. High water marks observed in the field indicate that the floodwaters did not exceed the general levee crest elevation. Terrestrial LiDAR surveys (georeferenced using RTK GPS) were performed in October 2008 for subsequent forensic analyses.

Kickapoo Levee Investigation, Elsberry, Missouri: The Elsberry levee at Kickapoo is maintained by the Elsberry Drainage District. This breach was reported by local residents to have been the result of through-seepage in the roadway base course that traversed the levee crest. The extents of levee erosion were generally limited to the pre-breach roadway alignment. Terrestrial LiDAR surveys (georeferenced using RTK GPS) were performed in October 2008 for subsequent forensic analyses.

San Francisco Pier 9, San Francisco, California: Storesund Consulting provided Terrestrial LiDAR scanning services for this renovation project to enable a 3D check against existing as-built documentation and facilitate BIM modeling. The new facility is a 3D printing center for Autodesk.

AT&T Facility MEP Scanning, California: Storesund Consulting provided Terrestrial LiDAR scanning services for this expansion project to map existing mechanical, electrical, and plumbing (MEP) facilities to facilitate BIM modeling as well as routing of a new fuel supply pipeline (using 'clash detection').

UCSF Helen Diller Center, San Francisco, California: Storesund Consulting provided Terrestrial LiDAR scanning services for this project to map existing structural conditions as well as mechanical, electrical, and plumbing (MEP) facilities to facilitate BIM modeling and routing of new utilities (using 'clash detection').

Novartis, Burlingame, California: Storesund Consulting provided Terrestrial LiDAR scanning services for this project to map existing structural conditions as well as mechanical, electrical, and plumbing (MEP) facilities to facilitate BIM modeling and routing of new utilities (using 'clash detection').

San Antonio Station, Mountain View, California: Storesund Consulting provided Terrestrial LiDAR scanning services for this project to map existing structural conditions as well as mechanical, electrical, and plumbing (MEP) facilities to facilitate BIM modeling and routing of new utilities (using 'clash detection').

Veterans War Memorial Building, San Francisco, California: Storesund Consulting provided Terrestrial LiDAR scanning services for this project to map existing structural conditions as well as mechanical, electrical, and plumbing (MEP) facilities to facilitate BIM modeling and routing of new utilities (using 'clash detection').

HWY 84 Interchange, Redwood City, California: Storesund Consulting performed a Terrestrial LiDAR scan of the HWY 84/HWY101 interchange in Redwood City to facilitate an improvement program.

Bryants Creek Levee Investigation, Elsberry, Missouri: The Elsberry levee at Kickapoo is maintained by the Elsberry Drainage District. This breach (Figure 52) occurred at the location of a duck pond that was reported to have been installed immediately adjacent to the levee system in order to attract ducks for the duck club located at the site. Terrestrial LiDAR surveys (georeferenced using RTK GPS) were performed in October 2008 for subsequent forensic analyses.

Indian Graves Levee Investigation, Quincy, Illinois: The Indian Graves Levee system is maintained by the Indian Graves Drainage District. The estimated protection level for the levee system is a 50-year return period flood and the protected area encompasses over 2,800 hectares. The sand with clay core levee system is situated immediately East of the Mississippi River. There were three breaches, two under seepage induced and one overtopping induced breach. Terrestrial LiDAR surveys (georeferenced using RTK GPS) were performed in October 2008 for subsequent forensic analyses.

Two Rivers Levee Investigation, Oakdale, Iowa: The Two Rivers Levee system is maintained by the Iowa Flint Creek Levee District No. 16. The estimated protection level for the levee system is a 100-year return period flood and the protected area encompasses approximately 7,100 hectares. The levee system is situated immediately South of the Iowa River, and west of the Mississippi River. Terrestrial LiDAR surveys (georeferenced using RTK GPS) were performed in October 2008 for subsequent forensic analyses.

Emeryville Shoreline Protection Project, Emeryville California: Terrestrial LiDAR was used to measure the volume of boulder rip-rap placed for this shoreline protection project. Due to the high void ratio and irregularity of the boulders, the very high point density of the Terrestrial LiDAR survey provided a more accurate modeling of rip-rap volume than traditional survey methods.

Dutra San Rafael Rock Quarry, San Rafael, California: The Dutra San Rafael quarry is one of the most active quarries in the Bay Area. LiDAR was used to image the physical configuration of the quarry, to create a 3D baseline survey. Subsequent LiDAR surveys will be compared against the initial baseline survey to determine material quantities as well as overall slope stability within the quarry.

Dutra Richmond Quarry, Richmond, California, California: LiDAR surveys were used to monitor a reclamation slope at the inactive Dutra Richmond Quarry. Due to the location of the slope and the geologic contacts, monitoring was required to demonstrate that no active movements are occurring and that the slope is stable. An initial baseline survey was performed in August, 2006 and subsequent surveys will be compared to the initial baseline to determine activity level.

Lower Santa Ynez, Santa Barbara County, California: The Lower Santa Ynez Bank Stabilization project was a collaborative effort with the California Conservation Corps and California Department of Fish and Game to utilize biotechnical methods to stabilize a 1,000-foot length of stream bank, adjacent to agricultural lands. Terrestrial LiDAR surveys were conducted to develop pre-project topography, as-built topography, erosion and scour quantities and estimated rates, and a coarse vegetation monitoring study.

Emery Point, Emeryville, California: Baseline Terrestrial LiDAR surveys were performed to monitor wave-induced erosion on Point Emery in Emeryville, California, which has experienced significant scour in the last 5 years. This man-made peninsula is a popular location with windsurfers and SF Bay Trail users. It is estimated that the location will be completely eroded in the next 25 years without mitigation.

Fremont Landing, Yolo County, California: The Fremont Landing project site is located along the south bank of the Sacramento River from RM 78.8 to 80.4 in one of the most hydraulically-complex portions of the river. At least five (5) major tributaries or distributaries are located within 2 miles of the site and all influence the hydrodynamics of the site. Terrestrial LiDAR surveys were performed to aid PWA develop a 2D hydrodynamic model of the project site and surrounding tributaries/distributaries. The model was used to allow examination of design issues related to fish stranding, rearing habitat, and flood conveyance.

Hamilton Wetland Restoration, Novato, California: This is a United States Army Corps of Engineers and California Coastal Commission joint project to convert over 500 acres of a decommissioned army airfield to a wetland restoration area using dredged spoil material. The area will consist of seasonal and tidal wetlands. Terrestrial LiDAR is being used to monitor fill placement and obtain volume quantities.

Mississippi River Gulf Outlet, New Orleans, Louisiana: LiDAR surveys were conducted of the southeastern completed levee segment. This survey was to serve as a baseline from which future LiDAR surveys can be conducted and analyses and evaluations of wind-induced wave impacts can be studies.

East Sand Slough Restoration, Red Bluff, California: Dr. Storesund provided terrestrial LiDAR mapping of this channel restoration project on the Sacramento River in Red Bluff, California. The LiDAR survey was integrated with existing bathymetry data. Habitat mapping using the collected LiDAR data was also conducted in general conformance with the California Rapid Assessment Method (CRAM) for Wetlands.

CZ-1 Site, Fresno County, California: Dr. Storesund provided terrestrial LiDAR mapping of this tree-root excavation and measurement study by Dr. Peter Hartsough (UC Davis) as part of his climate change research. The mapping of the tree roots provided Dr. Hartsough the ability to establish high-resolution digital root system baselines for future comparisons.

Research Projects

RESIN: Contemporary infrastructure, the systems necessary to provide sustainable services within the nation's power, transportation, waste management, water, and telecommunication sectors, has become very *complex*; that is adaptive, interdependent, unpredictable, nonlinear, and dynamic. This research seeks to discover new fundamental methods to assess and manage the resilience and sustainability of such complex systems (termed 3ICIS). These methods will facilitate the characterization of both resilience and sustainability by addressing multi-infrastructure, multi-physics, multi-scale (spatial, temporal), and multi-resource phenomena that impact the likelihood of these systems failing to achieve acceptable resilience and sustainability, as well as the associated consequences. The setting selected to develop these methods is the California Sacramento Delta focusing primarily on the following four critical infrastructure services, as well as interfaces with other critical infrastructure sectors as necessary:

- Water Supply – Includes water supply system for agriculture, commercial/industry, government, and the public. Issues of importance include supply, conveyance, and quality (*note: wastewater is part of this, but not addressed here*);
- Flood Protection – Includes the structural elements (levees, floodwalls, flood gates, dams, diversion channels, storm drain systems) as well as the natural rivers corridors, subsidence, settlement & consolidation, and hydrologic hazards (rain storms, snow melt) that inundate low lying areas and floodplains;
- Power Supply – Elements of the electrical power grid that supply electricity to agricultural, commercial/industrial, government and the public; and
- Ecosystem – Physical and biological components of the environment. Physical attributes include habitat areas, soil substrates, water supply and quality. Biological considerations include flora and fauna.

The California Sacramento Delta 3ICIS is a very complex highly interactive 'legacy' system embedded in similarly complex natural environmental and social - political systems. It is of critical importance directly for the population and environment of the State of California and indirectly for the rest of the United States.

The goals of this research project are to develop the following Quality Management Assessment System Process (QMAS):

1. System Definition and Conceptualization
2. Domain Expert / Key Informant Assessment Team Identification and Formation
3. Identification of the key vulnerabilities or chokepoints (aka Factors of Concern)
4. Failure Scenario Development
5. Detailed Qualitative and Quantitative Risk Assessment and Management that accounts for 3ICIS spatial variability, temporal variability (historical, current, future), and non-linearity (SYRAS++)

This research will answer the following fundamental questions:

1. What are the major drivers that threaten Resilience & Sustainability (current, future)?
2. What is the current Resilience & Sustainability state of the 3ICIS?
3. What future Resiliency & Sustainability states are expected given the status quo persists?
4. What are the potential consequences/impacts associated with future Resiliency & Sustainability states given the status quo persists?
5. What adaptation and mitigation strategies can be employed to create an "acceptable" Resilient & Sustainable 3ICIS?

2008 Midwest Levee Failure Investigation: Dr. Storesund was the lead researcher for this National Science Foundation sponsored collaborative research investigation between UC Berkeley, Texas A&M University, and the Missouri University of Science and Technology. The research was an immediate effort to collect sensitive and time-dependent perishable data will comprehensively characterize select levee failure locations to provide essential levee characterization and performance data for use in subsequent numerical analyses. The levee characterization consisted of:

1. An initial field reconnaissance to visit known breach sites along the Mississippi River between St. Louis, MO and Davenport, IA to document (via photographs) site conditions, collect eyewitness accounts, and develop a list for detailed site-specific analyses;

2. Conducting high-detail laser imaging survey (Terrestrial LiDAR) of breach and erosion/scour features in the levees. These surveys will be used to validate future numerical simulations that predict the final scour/erosion profile for specified overtopping conditions;

3. Characterization of the vegetative/grass cover on the earthen levee side slopes to determine erosion-resistance provided. This levee characteristic is frequently omitted from field characterization studies, yet is very important in the performance of the levee during overtopping conditions;

4. Characterization of the levee soil materials, including the United States Soil Classification (USCS) soil types, plasticity (Atterberg Limits), grain size distribution (sieve sizes), in-situ density, maximum dry density, Erosion Function Apparatus (EFA) erodibility characterization and jet erosion testing; and

5. Documentation of the river stage at the location of the levee failure based on eyewitness accounts as well as available USGS Stream Gage Data. This data is essential to correctly evaluate overtopping depths and durations and associated water velocities on the 'protected side' of the flood protection levee.

The sites investigated include: Brevator (Missouri); Winfield (MO); Cap au Gris (MO); Kings Lake (MO); Norton Woods (MO); Kickapoo (MO); Bryants Creek (MO); Indian Graves (IL); Two Rivers (IA).

National River Restoration Science Synthesis: The National River Restoration Science Synthesis (NRRSS) was a nation-wide effort to characterize the practice of river restoration. It consisted of three phases: synthesis of national and state restoration databases, phone surveys with select river restoration practitioners, and detailed river restoration post-project appraisals within California. Dr. Storesund was active, under the direction of Dr. G. M. Kondolf, and participated in the completion of 40 post project appraisals (PPA) of California river restoration projects. The PPA evaluations consisted of watershed delineations, hydraulic and hydrology characteristics determinations, review of planning and design approaches, review of permit applications, field surveys and performance assessments, and engineering documentation of post-construction performance.

Projects evaluated:

Ackerman Creek Restoration Project	Alameda Creek (Niles Dam Removal)
Alameda Creek (Sunol Dam Removal)	Alamo Creek (Main Branch)
Alamo Creek (East Branch) Project	Arroyo de la Laguna Bank Stabilization
Arroyo Mocho	Arroyo Viejo Creek Restoration
Baxter Creek (Booker T. Anderson)	Baxter Creek (Gateway)
Baxter Creek (Pointsett Park)	Bear Creek Restoration Project
Blackberry Creek (Thousand Oaks)	Brandy Creek (A-Frame Dam Removal)
Carmel River at deDampierre	Carmel River at Schulte Road
Castro Valley Creek Restoration	Cerrito Creek (El Cerrito Plaza)
Chorro Flats Enhancement Project	Clarks Creek
Clear Creek (McCormic Dam Removal)	Cold Creek
Crocker Creek Dam Removal	Cuneo Creek Restoration
Green Valley Creek	Lower Guadalupe River Reach B
Lower Ritchie Creek Dam Removal	Lower Silver Creek Reach I
Martin Canyon Creek	Miller Creek
Redwood Creek	Sausal Creek Restoration Project
Strawberry Creek	Tassajara Creek
Tennessee Hollow (Thompson Reach)	Uvas Creek Restoration
Village Creek (UC Berkeley)	Wildcat Creek at Alvarado Park
Wildcat Creek Flood Control Channel	Wilder Creek Restoration Project

More information on the NRRSS study ...

PROFESSIONAL AFFILIATIONS:

ASCE Leadership and Management Committee
Chair 2010 - 2012
Corresponding Member 2003 – 2009
ASCE San Francisco Section
Past President 2012-2013
President 2011-2012
President Elect 2010-2011
Vice President 2009 - 2010
American Society of Civil Engineers: San Francisco Section YMF President 2003-2004
ASCE San Francisco Section Water Resources Group
Director 2009 -2011
ASCE San Francisco Section Geotechnical Society Steering Committee
ASCE San Francisco Section Infrastructure Report Card Committee
ASCE GEO-Institute
National Academy of Forensic Engineers
National Society of Professional Engineers
California Society of Professional Engineers
UC Berkeley Geotechnical Engineering Society
UC Berkeley Engineering Alumni Society

AWARDS:

Eagle Scout, Troop 27, Eureka, California (1992)

Outstanding YMF Civil Engineer (2004) San Francisco Section ASCE

Outstanding YMF Civil Engineer in the Private Sector (2008) Western Regional Younger Member Council, ASCE

Outstanding ASCE Younger Member Forum Officer, ASCE Region 9 (2009)

President's Award, San Francisco Section ASCE (2012)

H.J. Brunnier Award, San Francisco Section ASCE (2013)

ASCE Edmund Friedman Young Engineer Award for Professional Achievement (2013)

EXHIBIT H

Mario Ballard & Associates
Building and Fire Code Consultants

March 23, 2016

Subject: 3516-3526 Folsom Street
Fire Department Access

References:

-California Fire Code Section 503 "Fire Apparatus Access Roads"
-San Francisco Fire Department Informational Bulletin 5.01
-Department of Public Works 2015 Subdivision Regulation
-Table of contents Appendix-Technical Specifications Related to Engineering Document Section XII-B-3

The California Fire Code, San Francisco Fire Department Technical Bulletin 5.01 and the DPW 2015 Subdivision regulation include specific guidelines and requirements related to street widths, grade, angles of approach and departure and maximum grade related to Ariel truck operation.

Based on the information reviewed, the proposed development of Folsom Street North of Chapman will not meet the required specifications for Fire Department apparatus (See SFFD Bulletin 5.01) or Fire Department ambulance (EMR) access. All equipment, ladders, hoses as well as emergency medical equipment and supplies will need to be manually transported to the incident site which could impact firefighting operations and EMR response.

Mario Ballard

Mario Ballard

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Mario Ballard, Principal

CAREER SUMMARY

Principal, Mario Ballard and Associates	5/1/2007-Present
Principal, Zari Consulting Group	1/1/2013-Present
Captain, Bureau of Fire Prevention, Plan Review Division	2001- 4/21/2007
Lieutenant, Bureau of Fire Prevention, Plan Check Division	1994 - 2001
Inspector, San Francisco Fire Department	1991 - 1994
Firefighter, San Francisco Fire Department	1974 - 1991
Linebarger Plumbing and Construction, SF CA	1974 - 1980
Servadei Plumbing Company, SF CA	1974
United States Army, Army Security Agency	1972 - 1974

LICENSES

ICC, International Code Conference Certified Building Plans Examiner

CERTIFICATIONS

ICC Advanced Occupancy
ICC Advanced Schematic Design
ICC Building Areas and Fire Design
ICC Advanced Types of Construction
ICC Advanced Means of Egress
CFCA Certificate of Training of Locally Adopted Ordinances and Resolutions
IFC Institute Certificate Application of the UBC for Fire Code Enforcement
ICBO Certificate on Course Completion on Fundamentals of Exiting
ICBO Certificate on Course Completion Complex Exiting
ICBO Certificate on Course Completion Building Use and Construction Type
ICBO Certificate on Course Completion Fire Protection, Building Size and Location
ICBO Course Overview of the Uniform Building Code
California Fire Chief's Association Fire Prevention Officers' Section Fire Alarm Levels I & II
Fire Sprinkler Advisory Board of Northern California & Sprinkler Fitter Local 483 Fire Sprinkler Seminar
National Fire Sprinkler Association, Inc., Hydraulics for Sprinklers
EDI Code International, Innovative Code Enforcement Techniques
Certification State of California Title 19/Title 24

EDUCATION

Fire Strategy & Tactics 1981-1993
Fire Service Supervision
Fire Prevention 1A, 1B, 1C
Fire Prevention 2A, 2B
Fire Prevention Officer Level One
Firefighter Level One and Two
Arson 1A, 1B
Hazardous Materials 1A, 1B
Instructor 1A
Fire Management 1A

City College of San Francisco 1970-1972

COMMITTEE INVOLVEMENT

Building Code Advisory Committee
Hunters Point Development Team
Mission Bay Task Force
Treasure Island Development Team
Trans-Bay Transit Center
Muni Metro, Light Rail Third Street Corridor
Department of Building Inspection MIS Case Development
San Francisco Board of Examiners Fire Department Representative
Member California Fire Chief's Association Fire Prevention Officers
BOMA Code Advisory Committee
Mayor's Office of Economic Development Bio-Teck Task Force
Hunters Point Redevelopment Task Force
Building Code Standards Committee 1996-1999
Participant in the Eighth Annual California Fire Prevention-Institute Workshop, "*Providing the Optimum in Fire and Life Safety Training*"
Participant North/South California Fire Prevention Officers Workshops 1996 - 1998
Guest Speaker at SMACNA (Sheet Metal and Air Conditioning Contractors National Association)

PUBLIC SERVICE

Rooms That Rock For Chemo (RTR4C), Director Secretary 2011-Present
San Francisco Spina Bifida Association, (Past) Vice President

California Fire Code Section 503

"Fire Apparatus Access Roads"

FIRE COMMAND CENTER.

FIRE DEPARTMENT MASTER KEY.

FIRE LANE.

KEY BOX.

TRAFFIC CALMING DEVICES.

SECTION 503
FIRE APPARATUS ACCESS ROADS

503.1 Where required. Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3.

503.1.1 Buildings and facilities. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Exception: The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
3. There are not more than two Group R-3 or Group U occupancies.

503.1.2 Additional access. The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

503.1.3 High-piled storage. Fire department vehicle access to buildings used for high-piled combustible storage shall comply with the applicable provisions of Chapter 32.

503.2 Specifications. Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.8.

[California Code of Regulations, Title 19, Division 1, §3.05(a)] Fire Department Access and Egress. (Roads)

(a) Roads. Required access roads from every building to a public street shall be all-weather hard-surfaced (suitable for use by fire apparatus) right-of-way not less than 20 feet in width. Such right-of-way shall be unobstructed and maintained only as access to the public street.

***Exception:** The enforcing agency may waive or modify this requirement if in his opinion such all-weather hard-surfaced condition is not necessary in the interest of public safety and welfare.*

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than ~~20 feet (6096~~ mm), exclusive of shoulders, except for approved security gates in accordance with ~~Section 503.6, and~~ an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

503.2.2 Authority. The fire code official shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.

503.2.3 Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

503.2.4 Turning radius. The required turning radius of a fire apparatus access road shall be determined by the fire code official.

503.2.5 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) in length shall be provided with an approved area for turning around fire apparatus.

503.2.6 Bridges and elevated surfaces. Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by the fire code official. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs or both shall be installed and maintained when required by the fire code official.

503.2.7 Grade. The grade of the fire apparatus access road shall be within the limits established by the fire code official based on the fire department's apparatus.

503.2.8 Angles of approach and departure. The angles of approach and departure for fire apparatus access roads shall be within the limits established by the fire code official based on the fire department's apparatus.

503.3 Marking. Where required by the fire code official, approved signs or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

503.4 Obstruction of fire apparatus access roads. Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in ~~Section 503.2.1~~ shall be maintained at all times.

San Francisco Fire Department
Informational Bulletin 5.01

5.01 Street Widths for Emergency Access

Reference: 2010 S.F.F.C. Sections 503 and Appendix D, Section D105

The Division of Planning and Research of the San Francisco Fire Department has established requirements for minimum street widths to facilitate emergency equipment access. These requirements are specified as follows:

Minimum Street Widths and Access Roads

1. The San Francisco Fire Code (503.2.1) requires a minimum of 20 feet of unobstructed roadway and a vertical clearance of not less than 13' 6' for existing roadways. While a 20 foot wide roadway is permissible, past practice has shown that making ninety degree turns are not possible without the trucks moving into oncoming traffic. The vehicles can make the turn only on one way streets.
2. The San Francisco Fire Code (503.2.5) requires a turnaround for all dead-end fire access roads in excess of 150'. The San Francisco Fire Department has determined an 80 foot turnaround and a 40' radius to be sufficient.
3. The San Francisco Fire Code requires a minimum 26' wide street for new developments where the new buildings are greater than 30' in height from the lowest level of fire department vehicle access and are unsprinklered. These streets shall be located a minimum of 15' and a maximum of 30' from the buildings and shall be parallel to one entire side of the buildings.

SAN FRANCISCO FIRE DEPARTMENT VEHICLE SPECIFICATIONS

	ENGINES	TRUCKS
Outside tire extremity	8 ft. 2 in.	8 ft. 3 in.
Vehicle width (with mirrors)	10 ft. 4 in.	10 ft 1 in.
Truck width with one jack extended	n/a	12 ft. 9 in.
Truck width with two jacks extended	n/a	17 ft. 9 in.
Vehicle height	11 ft.	12 ft.
Length of vehicle	30 ft.	57 ft.
Gross vehicle weight	40,400 lbs.	70,000 lbs.
Street grades maximum	26% maximum	26% maximum
Approach and departure	15% maximum	15% maximum
Truck aerial operations	n/a	14% maximum

The Fire Department will determine, on a case-by-case review, where the truck aerial operations may not be required.

Department of Public Works 2015
Subdivision Regulation

C. STREET GUIDELINES

1. Alignment

All streets shall, as far as practicable, align with existing streets. The Subdivider shall justify any deviations based on written environmental and design objectives.

2. Intersecting Streets

Intersecting streets shall meet at right angles or as nearly so as practicable.

3. Naming

Streets of a proposed subdivision which are in alignment with existing streets shall bear the names of the existing streets. The Department of Public Works shall approve names for all new streets.

4. Street Grades

DPW shall not approve street grades in excess of 17% except as an exception and under unusual conditions.

Streets having grades in excess of 14% shall require separate consultation with the Fire Department prior to use for fire access purposes.

No gutter grade shall be less than 0.5%. The Subdivider shall provide concrete on any pavement grade less than 1.0%.

The Subdivider shall connect all changes in street grades, the algebraic sum of which exceeds 1.5%, with vertical curves of DPW-approved length sufficient to provide safe stopping sight distances and good riding quality. All changes in street grades shall have an absolute value of the algebraic difference in grades which does not exceed fifteen percent (15%), regardless of any vertical curves.

The Director with the consent of the SFFD may approve of any design modification to this standard on a case-by-case basis.

5. Surface Drainage

a. Subdivider shall grade streets to provide a continuous downhill path.

b. At low end cul-de-sacs and sumps, in addition to sewer drainage facilities, Subdivider shall provide surface drainage channels in dedicated easements as relief of overflow to prevent flooding of adjoining property.

c. Subdivider shall design street and drainage channel cross-sections to provide a transport channel for overland or surface flow in excess of the 5-years storm capacity of the sewer system. The channel capacity shall be the difference between the sewer capacity and the quantity of runoff generated by a 100-year storm as defined by the NOAA National Weather Service or by City-furnished data, applied over the tributary area involved.

d. Subdivider shall round street curb intersections by a curve generally having a radius equivalent to the width of the sidewalk and the design shall be in accordance with the Better Streets Plan. While allowing vehicle movements for emergency vehicles, the Subdivider shall use the smallest possible radius.

D. PRIVATE STREETS

Private streets shall have a minimum right-of-way width of 40 feet for through streets. Dead-end private streets shall have a minimum right-of-way width of 60 feet. The Subdivider shall consult with the Fire Department and Department of Building Inspection for all designs that might result in less than the minimum width.

E. BLOCKS

Technical Specifications Related to Engineering Document Section XII-B-3

DPW Disabilities Coordinator for specific provisions related to pavement materials, passenger loading zones, and path of travel for disabled persons.[27]

3. Fire Department Operations.

a. *All streets shall provide a minimum clear width of 20 feet of travel way between* obstructions. Obstructions may include parked vehicles, certain curbs greater than 6 inches in height[28] or any other fixed object that prevents emergency vehicular travel.

b. For purposes of calculating the clear width of the travel way, such width may include any combination of the following:

   i. That portion of any adjacent curbside parking space having a width greater than 7 feet,

   ii. a bike lane or any other adjacent pavement capable of supporting emergency vehicles *where such lane or pavement is separated from the vehicular lanes by paint striping* (Class II) or a mountable curb being no more than 2 inches in height (Class I), or other forms of pavement separation that may vary in material type, color, and texture.

c. Where adjacent buildings are greater than 40 feet in height and not of Type 1 (fire resistive) building construction, and the building entrance locations are not yet specified, the Director may require an operational width of at least 26 feet to accommodate Fire Department operational requirements along each street fronting such a building.

   i. *"Operational width" shall be the combined total of the clear width of the travel way* together with those unobstructed portions of adjacent pavement or sidewalks (if

---

[27] See also *Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way* as published by the United States Access Board.

[28] See San Francisco Fire Code Sec. 503.4, providing additional guidance on what may be considered an obstruction; see also Board of Supervisors Ordinance No. 116-13.

capable of supporting emergency vehicles).Reservation of portions of curbside parking for fire-only access or use of alternative mountable curb designs that allow for safe fire vehicle access to the sidewalk may accomplish this goal. The Fire Department, in consultation with other affected City agencies, may approve other proposals developed in the future.

ii. In such cases, the Subdivider shall provide sufficient right-of-way width on all abutting sides of a proposed development block to accommodate the foreseeable street design alternatives.

iii. Where DPW requires the portion of the block to have additional operational width (greater than 20 feet clear), the design engineer shall be locate this in segments along the building frontages with a maximum length of 200 feet for any one segment. Segments may have a minimum length of as little as 100 feet. The Subdivider shall ensure the existence of adequate space for emergency vehicles to pass each other and set up operations at the front entrance of the building. In addition, the design shall provide for meaningful traffic calming measures to ensure safe vehicle speeds along the street, including returning to the standard 20 foot travel way between widened segments. This provision shall not apply to blocks less than 200 feet in length.

iv. Subdividers are encouraged to consult with the Fire Department early in the subdivision process in advance of when the Subdivider anticipates the construction of such buildings. Information such as building access points, size of building and type of building construction are essential elements needed for constructive agency review.

v. Any decision to accommodate street widths having greater than 20 feet of travel way shall be approved by the Director only after consultation with and approval by an interagency working group composed of the Fire Department, the Municipal Transportation Agency, the Planning Department and any other affected city agency. When discussing the most appropriate widths of the travel way, the interagency working group shall consider such factors as the role and intended character of the street in the overall street network, the width of adjacent streets, the length of the street(s) in question, the anticipated traffic volume, and emergency and medical response.

4. Bicycle Lanes

All bicycle facilities shall meet or exceed the minimum lane widths provided in the *California Highway Design Manual*, the *California Manual on Uniform Traffic Control Devices*. Subdivider's shall design bicycle facilities in accordance with the *NACTO Urban Bikeway Design Guide*.

5. Parking Lane

The width of a curbside parallel parking lane shall be 8 feet. SFMTA may approve on a case by case basis angled curbside parking designs.

6. Curb Intersection Radii and Turning Movements

Subdividers shall design intersections for and accommodate turning vehicles in accordance with the Better Streets Plan. [29]

[29] http://www.sfbetterstreets.org/find-project-types/pedestrian-safety-and-traffic-calming/traffic-calming-overview/curb-radius-changes/

EXHIBIT I

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Attorneys for Appellants,
Herb Felsenfeld and Gail Newman

SAN FRANCISCO BOARD OF SUPERVISORS

BOS File No. 161278
Planning Case No. 2013.1383ENV

DECLARATION OF BARBARA UNDERBERG IN SUPPORT OF APPEAL

CEQA Categorical Exemption Appeal
Subject Address: 3516-3526 Folsom Street
Hearing Date: January 24, 2017

I, Barbara Underberg, declare as follows:

1. I make this declaration in support of the above-captioned appeal. Unless otherwise stated, I have personal knowledge of the facts stated herein and, if called as a witness, could and would testify competently thereto.

2. I am a resident of 76 Rosenkranz Street in Bernal Heights, near 3516-3526 Folsom Street (the "Project Site").

3. On or about November 21, 2016, I submitted a request for public records to the San Francisco Planning Department regarding Building Permit Application Nos. 2013.12.16.4318 & 2013.12.16.4322 (the "Project"), pursuant to the San Francisco Sunshine Ordinance and California Public Records Act. On or about November 30, 2016, Planning Department staff member Christine Lamorena produced a number of paper and electronic records.

4. Included in the Planning Department's record production was an email and letter attachment from Paul Kontos to the Planning Commission, dated March 25, 2016. A true and correct copy of the email and letter is attached hereto as Exhibit A.

5. I am informed and believe that Paul Kontos is "the owner of lots 27 & 28 directly across the street from the project (3516 & 3526 Folsom St.)." In his letter, Mr. Kontos encourages the Planning Commission to approve the Project and states that, "Right now, I will be trying to develop my lots."

6. Additionally, I attended the Planning Commission Discretionary Review hearing on the Project on March 31, 2016. A video record of the hearing is available at http://sanfrancisco.granicus.com/MediaPlayer.php?view_id=20&clip_id=25047&meta_id=487872. A true and correct partial transcript of the hearing is attached hereto as Exhibit B.

7. Mr. Kontos attended the hearing and stated, "I own two lots on the other of the street. I was going to build those for my children." Exh. B at p. 48.

8. Another neighbor, Ramon Romero, also spoke at the hearing in support of the Project. I am informed and believe that Mr. Romero owns Lot 29. He stated, "I bought the lot behind my house to help preserve open space. I didn't think it would last forever. I knew market conditions would change someday that would make them." Exh. B at p. 47.

9. I am informed and believe that the Project will install a new street and utilities to Lots 27, 28, and 29, which will enable them to be developed.

10. I have significant expertise in public safety matters. I was chairperson of the Bernal Heights East and South Slope Improvement Committee – a committee elected by the residents and property owners of an area subject to life/safety improvements funded by Propositions B and K. I was also the chairperson of the San Francisco Neighborhood

ZACKS, FREEDMAN & PATTERSON, PC
235 MONTGOMERY STREET, SUITE 400
SAN FRANCISCO, CALIFORNIA 94104

Emergency Response Team (NERT) Advisory Board, a citywide program administered by the San Francisco Fire Department. I was also a member of the Bernal Heights East Slope Design Review Board from 1993-1997 and the chairperson in 1997.

11. Attached hereto as Exhibit C is a compilation of information regarding the Project's environmental impacts which I have researched and prepared.

I declare, under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated: January 24, 2017

Barbara Underberg

Barbara Underberg

ZACKS, FREEDMAN & PATTERSON, PC
235 MONTGOMERY STREET, SUITE 400
SAN FRANCISCO, CALIFORNIA 94104

Exhibit A

From:	Paul Kontos
To:	Sucre, Richard (CPC); Fabien
Subject:	letter to commission
Date:	Saturday, March 26, 2016 7:14:16 PM
Attachments:	Fabien letter.docx

Attached letter for the commission hearing on March 31, 2016

Thank you,

Paul Kontos

Paul Kontos
711 N. Voluntario St.
Santa Barbara, CA 93103

March 25, 2016

President Rodney Fong & Planning Commission Members
San Francisco Planning Department
1650 Mission St. #400
San Francisco, CA 94103

Dear President Fong and Members of the Planning Commission:

I am the owner of lots 27 & 28 directly across the street from the project (3516 & 3526 Folsom St.) in question is to start. I bought these lots years ago with the intent to develop them when my son and daughter needed housing. Fortunately or unfortunately for them, that time has come.

From attending several of the ESDRB meetings, I can see that the neighbors are very much in support of the development, but many are not. I have seen those naysayers use stalling tactics, scare tactics and overall selfish NIMBY tactics to try and stop or at least postpone indefinitely any kind of construction. None of their reasons to deny the said project from being developed have any socially beneficial merit.

The development of that end of Folsom Street can only benefit the community: It provides tax revenue for the city, desperately needed housing, participation by the residents for community betterment, and all at little or no cost to the city.

These lots have been designated as buildable lots, designed to provide housing and community for the city. Mr. Fabien Lannoye and Mr. Jim Fogarty's project fall exactly in line with the purpose of these lots. They have been gracious and accommodating to their neighbors, at great time and expense, working to design buildings to reasonably satisfy them.

Right now, I will be trying to develop my lots. I have two adult children, with children. Housing for them is a necessity, or they won't be able to afford San Francisco.

Your imprimatur on this project can only help all of us as a community

Very truly yours,

Paul Kontos

Exhibit B

Page 1

PARTIAL TRANSCRIPTION OF

VIDEOTAPE OF THE

SAN FRANCISCO PLANNING COMMISSION

MEETING

HELD ON THURSDAY, MARCH 31, 2016

---oOo---

Entire Portion Relating to Items 11.a and 11.b

Concerning

3516 Folsom Street and

3526 Folsom Street

(Includes previously transcribed portion of this videotape on the same matter, for continuity)

---oOo---

Transcribed by: Carol-Joy Harris
C.S.R. No. 13938
Job No. 18297

Page 2

---oOo---

MR. IONIN: Commissioners, that will place us on our final two items, 11a. and -b., for Case Nos. 2013.1383 DRP-10 at 3516 Folsom Street and Case No. 2013.1383 DRP-09 at 3526 Folsom Street.

These are discretionary reviews of two separate buildings that are essentially one project of two separate single-family dwellings.

Commissioners, there are 19 separate DRs that were filed on these two projects. Through the Chair, we agreed to provide the DR requesters a combined 20-minute presentation. The project sponsor would receive a 10-minute presentation. The combined DR requesters would then receive a 10-minute rebuttal, with the project sponsor receiving the usual 2 minutes for their rebuttal.

All members of the public who are not a party to the DR -- in other words, they're just basically members of the public, okay, who did not file a DR or are a party to the DR, who are not part of the DR requesters' team -- will receive 3 minutes.

All right?

MR. SUCRE: Good evening, Commissioners. Rich Sucre, Department staff.

The item before you is a request for a

Page 3

discretionary review for the building permit applications associated with the new construction of two single-family residences at 3516 and 3526 Folsom Street.

The proposed projects would be located on two vacant lots, each measuring 20 feet by 70 feet in the RH-1 zoning district, Bernal Heights Special Use District, in a 40-X height and bulk district.

Currently, these parcels do not have vehicular street access or direct pedestrian access via sidewalks or other street improvements. This portion of Folsom Street is a paper street and is currently not improved.

The two new single-family residences are both two and one-half stories tall, with two off-street parking spaces. The two residences each measure approximately 2,200 gross square feet.

To date, the Department has received a number of public comments on the project, both for and against the request for a discretionary review. Included with two of the DR applications are petitions in opposition to the project signed by approximately 136 individuals, several of which would include the DR requesters.

Since publication of the Commission packets, the Department has received an additional 22 public comments, including 4 letters in support and 18 letters in opposition.

Page 4

In addition to the Commissioner packets I provided to you is a letter from the project sponsor's attorney that I neglected to include in the Commission packet.

Provided to you are copies of the additional public comments received after publication of the staff report.

The DR requesters have a number of issues with the proposed project, including: Paving of Folsom Street; emergency and infrastructure access; impacts on the underground PG&E pipeline; future development of the vacant lots along this portion of Folsom Street; impact on neighboring residences; on-street parking; construction; compliance with the Bernal Heights East Slope design guidelines; size and scale of the new residences; size yard setback of the new residences; off-street parking; rooftop, stair penthouses; public views from Bernal Heights Park; impact on open space; and affordability; among other issues as outlined in the staff report.

Issues surrounding Folsom Street and the PG&E pipeline are not under the purview of the Planning Commission. The Department of Public Works, or DPW, is the responsible agency for guiding and reviewing the extension and/or paving of Folsom Street.

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The projects are located in a residential district and have been reviewed by the Residential Design Team, or RDT. RDT found that the project does not create any extraordinary or exceptional circumstances and did not recommend any changes to the proposed project.

The Department finds the overall massing, form, and scale to be appropriate given the underlying zoning and height and bulk limits.

The proposed project is consistent with the residential character of the surrounding neighborhood and meets the requirements of the Bernal Heights East Slope design guidelines, the Bernal Heights Special Use District, and the residential design guidelines.

The projects will add two new single-family homes on a privately owned vacant lot at the base of Bernal Heights Park.

The project does not have any direct impacts on the adjacent Bernal Heights Community Garden or Bernal Heights Park.

The project sponsor has revised the garage layout to avoid the variance for parking access.

Therefore, the project is a fully code-compliant project and is not seeking any variances or special entitlements from the Planning Commission.

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mandatory mass reduction that's required, which in this case was exceeded.

The project sponsor made changes in the design at the request of Planning, made changes in design at the request of the East Slope Design Review Board.

As to whether or not they've complied with the Review Board's requirements, if you look at their table of contents for the -- what they require: Nine-foot curb cut, check; landscaping front yard setback, street trees, check; entry treatment, check; side yards, check; roof treatment, check; facade elements, check; colors and materials, check.

The only comment made in the DR request by the Design Review Board after five meetings was some additional design articulation or interest in the north facade of the north structure, and that is the one that is closest to the Bernal Heights Street, and that is where bedrooms will be placed.

The project sponsor has offered to do additional things to provide some additional elements or interest in that, but there are issues of privacy for the family.

But otherwise, as the Planning Department found, it met the design guidelines, met the residential design guides, the East Slope Design guidelines,

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complies with the planning code, complies with the Bernal Heights Special Use District.

Other issues raised by the DR requesters, garbage, mail service, these issues can all be dealt with.

Whether cars can actually drive out of the driveways up and down the street, again, the project sponsors are working with DPW. There's a preliminary approval for the street, including the grade, and they will continue to work with them after they get their approvals.

Finally, let me just talk about CEQA for a minute because that came up. I've been practicing CEQA case law and CEQA practice for 30 years. If -- if a project in San Francisco could not use a categorical exemption because it was subject to seismic shaking, then every single house in San Francisco would require an EIR.

There are six lots on this street, but there are only applications for two projects right now. It's categorically exempt, less than three units. There are no applications, as was put forth in the Planning report, no applications for the other four lots. In San Francisco, unless there's an application in, that's not a reasonably foreseeable project.

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As to the pipeline, the issue will be dealt with. That is not a significant issue that would cause an exception to the categorical exemption. If there was, I would have dealt with it a long time ago.

So with that, I know you've all had a long day. We've had a long day. Two couples, trying to build two modest residences, and trying very hard to be good neighbors in the process.

So thank for your time.

COMMISSION PRESIDENT FONG: Okay. DR request-- I'm sorry; speakers in support of the project sponsor.

MR. FOGERTY: Commissioners, Jim Fogerty (phonetic). My wife and I own the lot at 3526 Folsom Street since May 2013.

When the lots were placed on the market, before we purchased the lots, we met with the Planning Department and other city agencies regarding the feasibility of their development. Satisfied with the responses, we proceeded to design two residences that comply with the City's design guidelines.

We worked with the Planning Department, made modifications in response to their suggestions. We met five times with --

MR. IONIN: I'm sorry, sir. Are you the owner

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of the property --

MR. FOGERTY: Yes.

MR. IONIN: -- or an owner of the property? Then you are part of the project sponsor's team, and your time to speak was during that initial 10 minutes.

You will have a two-minute rebuttal if you'd like to address the Commission at that time, or they may have questions for you later.

COMMISSION PRESIDENT FONG: So, asking for speakers who are in support of the project sponsor but not part of the ownership or project sponsor team.

MR. ROMERO: Thank you. I'm not part of the -- the project team. My name is Ramone Romero (phonetic). I am a resident at 66 Banks Street.

I own Lot 29 and the space behind my home, which is directly across the street, the proposed street, that this project might be built on.

And I sent you a letter. I hope you saw it in your packet.

I served on the San Francisco Redevelopment Commission for almost 12 years. I was president of it for two terms.

You can imagine how many project that came before us that would fall into the classification that you probably know as NIMBYs. Okay?

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These are privately owned, buildable lots, properly zoned, and I honestly -- you've heard all the arguments here. I think the residents are very well organized. Obviously, they're very political folks.

I can tell you that when I moved into my house, I had nothing to do with the development of it. If you look on Banks Street, where I live, there's five relatively new homes there. A street was built as an extension of Banks Street in order to make those lots buildable.

Three homes were built by the same developer, and I happened to be one of the people who bought one of those homes. Little did I know that there had been this tremendous struggle to get those houses built and tremendous organization by the neighbors in opposition, just as you see here today.

I purchased my home in 1994, so I've been there 22 years. I love living there. I love the neighborhood. These are good people that have come here to raise these concerns with you. And, you know, I think they do it in good faith.

But I don't think any of them are actually really valid. I went to two of the meetings of the East Slope Design Committee, and, you know, as you can see, as I said earlier, I've been to so many of these

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meetings in the Redevelopment Commission where these kinds of projects are before you. It's easy to get lost in emotion and in arguments that sound pretty good but really aren't necessarily, and I think this is -- this is a situation where you have that.

Steep street. Are there steep streets in San Francisco?

The firefighter, the fire danger. Well, the fire department had stairways built from Bernal Heights Boulevard above where these houses were built just recently, within the last five years, in order to provide firefighter access to these places.

It's a beautiful, open field. I bought the lot behind my house to help preserve open space. I didn't think it would last forever. I knew market conditions would change someday that would make them --

MR. IONIN: Thank you, sir. Your time is up.

MR. ROMERO: Okay. Thank you.

MR. SAFFLE: Good evening. My name is Tom Saffle (phonetic). I'm a resident at 307 Mullen Avenue.

I live on the same block that Fabian developed a house a few years ago, and I'm here tonight to say what a good neighbor he is and what a good person he is.

I think a lot of people in this room who are now treating him as an outsider because he is to them

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today. But I can tell you that I lived alongside him for three years. He's a really good guy.

And the way he built his house was very honorable. It's a house that fits into the neighborhood very well, despite being modern and despite our houses being built in 1907. He did build the house courteously. He was respectful of noise and dust.

He is a good man, and I hope that one day the people in this room get to take him in as their neighbor and discover that for themselves so they can treat him more like kin than an outsider.

Thank you.

MR. CANTOS: My name is Paul Cantos (phonetic). I own two lots on the other of the street. I was going to build those for my children.

The only thing I want to say about this project is give them a chance, for the proper agencies and the engineers to look at the project that they've gotten together, and let them do their work to see how well it's proposed, and give it a chance to ride it out completely to see how it stands.

Thank you.

COMMISSION PRESIDENT FONG: If there are any other speakers in support of the project sponsor.

I know you're coming up. You can certainly

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make your way to the mic here.

MR. KEIGHRAN: Good evening, Commissioners. Sean Keighran, RBA.

This project is consistent with the Bernal Heights Special Use District and the Eastern Slope Design guidelines. Those design guidelines call for a maximum mass of 650 feet less. These two houses are an additional 200 square feet.

Now, if you take that 200 square feet and apply it to the house we looked at earlier of 8,000 square feet, it may not be significant. But these houses are only about 2,000 square feet. That is a significant reduction.

I'm here also to address some concerns put forward about a whole variety of issues that really don't belong in this room. Let's start with the fire department. I spoke to the assistant fire marshal this afternoon. No such position has been taken with these streets or with these sites.

Project sponsor met with the captain in their pre-application meeting, and they were advised that these sites could be supported by the department.

Key components left out of the letter, hired -- done by consultants state, streets less than 150 long will be treated differently. Houses fully sprinkled

which I have no speaker cards.

COMMISSION PRESIDENT FONG: Is there any general public comment this evening?

Okay. Not seeing any, general public comment is closed.

And the meeting is adjourned.

/////

TRANSCRIBER'S CERTIFICATE

I, Carol-Joy Harris, hereby certify that the foregoing video recording was by me accurately transcribed to best of my ability.

I further certify that I am not in any way interested in the outcome of said action nor connected with nor related to any of the parties in said action nor to their respective counsel.

In witness whereof I have hereunto subscribed my hand this 18th day of April, 2016.

Carol-Joy Harris

Carol-Joy Harris
C.S.R. No. 13938

Exhibit C

CEQA Appeal PG&E Pipeline Safety Issues – 3516-3526 Folsom Street

CEQA 15061(b)(3): ***"Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA."***

In assessing and ranking its risks, PG&E acknowledges that the risk of catastrophic pipeline failure may result in "significant environmental damage." [See page 20 of PG&E 2016 Gas Safety Plan.] In other words, the risk is not zero, there is a possibility of significant environmental damage; therefore, the activity in question, development, including excavation over, under and around an unprotected 26-inch gas transmission line in hard bedrock and steep terrain, is subject to CEQA. The possibility of such a risk is more compelling given PG&E's recent track record, which is documented herein.

1) High Consequence Area (HCA) Identification

https://primis.phmsa.dot.gov/comm/FactSheets/FSHCA.htm, (excerpts):

"Pipeline safety regulations use the concept of "High Consequence Areas" (HCAs), to identify specific locales and areas where a release could have the most significant adverse consequences. Once identified, operators are required to devote additional focus, efforts, and analysis in HCAs to ensure the integrity of pipelines.

"HCAs for natural gas transmission pipelines:

- *An equation . . . estimates the distance from a potential explosion at which death, injury or significant property damage could occur. This distance is known as the "potential impact radius" (or PIR), and is used to depict potential impact circles.*
- *Operators must calculate the potential impact radius for all points along their pipelines . . . to identify what population is contained within each circle.*
- *Potential impact circles that contain 20 or more structures intended for human occupancy are defined as HCAs. "*

Absent site-specific information, the default PIR is 660 feet. Per PG&E, the current Maximum Allowable Operating Pressure (MAOP) for the 26-inch diameter line 109 is 150 pounds per square inch gauge (psig), which means the current PIR for PG&E line 109 is 220 feet. According to PG&E's FAQ, *"after the September 2010 San Bruno pipeline accident, we substantially reduced the pressure on pipelines that had segments with characteristics similar to the pipeline that ruptured. This was performed as a precautionary step until we can confirm the safety of the pipelines."* Per NTSB Accident Report PAR-11/01 (page 35), line 109 operated at MAOP 375 psig prior to the reductions, which means the PIR for line 109 used to be 347 feet. According to PG&E, the higher pressure and increased PIR could return.

2) Integrity Management Programs

PG&E had an inadequate pipeline integrity management program, which failed to detect and repair or remove the defective pipe section in San Bruno, and the California Public Utilities Commission (CPUC) failed to detect the inadequacies of PG&E's pipeline integrity management program.

NTSB Pipeline Safety Study adopted 1/27/15 "Integrity Management of Gas Transmission Pipelines in High Consequence Areas"
http://www.ntsb.gov/safety/safety-studies/Documents/SS1501.pdf:

(1st excerpt):
"The NTSB undertook this study because of concerns about deficiencies in the operators' integrity management programs and the oversight of these programs by PHMSA and state regulators -- concerns that were also identified in three gas transmission pipeline accident investigations conducted by the NTSB in the last five years. These accidents resulted in 8 fatalities and over 50 injuries, and they also destroyed 41 homes." [Includes San Bruno.]

(2nd excerpt regarding previous NTSB investigation of San Bruno, California: 9/9/2010):

"The NTSB found that PG&E's pipeline IM [Integrity Management] program was deficient and ineffective because it
(1) was based on incomplete and inaccurate pipeline information (that was contained in the operator's GIS),
(2) did not consider the design and materials contribution to the risk of a pipeline failure,
(3) failed to consider the presence of previously identified welded seam cracks as part of its risk assessment,
(4) resulted in the selection of an examination method that could not detect weld seam defects, and
(5) led to internal assessments of the program that were superficial and resulted in no improvement.

"Furthermore, the NTSB also determined that the California Public Utilities Commission, the pipeline safety regulator within the state of California, failed to detect the inadequacies in PG&E's IM program and that the IM program inspection tool used by state and federal inspectors, also known as the PHMSA IM inspection protocols, needed improvement."

Gas Transmission Integrity Management: FAQs
https://primis.phmsa.dot.gov/gasimp/faqs.htm#top2, (excerpt):

"Operators must . . . assess the risks associated with pipeline segments in HCAs . . . enhance damage prevention programs and implement additional risk control measures beyond those already required . . . Examples . . . include: . . . conducting drills with local emergency responders and implementing additional inspection and maintenance programs."

Gas Transmission Integrity Management: Fact Sheet
https://primis.phmsa.dot.gov/gasimp/fact.htm

3) Excavation damage is a significant cause of pipeline accidents.

As reported by PHMSA's Office of Pipeline Safety, the major causes of pipeline accidents include: corrosion, excavation damage, incorrect operation, material/weld/equipment failure, natural force damage, and other outside force damage.

The predominant failure causes of gas transmission significant onshore incidents (right-of-way line pipe only 2005-2009) are corrosion (28%), material/weld failures (23%), and excavation damage (20%). (For the diagram, see page 16 of "Building Safe Communities" in link below).

Building Safe Communities: Pipeline Risk and its Application to Local Development Decisions
http://primis.phmsa.dot.gov/comm/publications/PIPA/PIPA-PipelineRiskReport-Final-20101021.pdf

4) Welds. Lack of record of history of welds. Documentation of type of welds.
We need to know what the welds are and their history before construction can begin.

http://www.sfgate.com/bayarea/article/PG-E-s-63-blast-an-early-warning-on-lines-safety-2366695.php

5) Recordkeeping.
http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M162/K888/162888429.PDF, (news release excerpts):

"June 1, 2016 - The California Public Utilities Commission (CPUC) today issued a decision by an Administrative Law Judge that penalizes Pacific Gas and Electric Company (PG&E) $24.3 million for failure to comply with laws and regulations in maintaining accurate records of its natural gas distribution system.

". . . determined that PG&E's inaccurate records were relied on for locating and marking underground facilities in anticipation of excavation. The inaccurately mapped, and consequently inaccurately marked, facilities led to excavators damaging the distribution system in several instances. Release of natural gas, service interruptions and, in one case, significant property damage resulted."

[See Appendix A for list of violations.]

6) Lack of overall responsibility about public safety within SF. No agency is taking responsibility for PG&E-related public safety -- and the resulting additional public safety problems caused by the presence of this pipeline: steep street, traffic congestion and obstructions, parking, etc. No agency is looking at the totality of public safety issues and impacts on the surrounding neighborhood. Hence, we need an EIR to address these issues.

[See Appendix B for email exchange concerning agencies involved in the ROW approval process.]

2/14/12, Herrera sues feds for failing to enforce gas pipeline safety standards before and after San Bruno blast. PHMSA 'still asleep at the switch,' City Attorney says, after ignoring S.F.'s concerns, recommendations of federal investigators. News Release:
http://www.naturalgaswatch.org/wp-content/uploads/2012/02/SF-PHMSA-complaint.pdf

Court Rejects San Francisco Lawsuit Against Federal Pipeline Safety Regulators:
http://cdn.ca9.uscourts.gov/datastore/opinions/2015/07/30/13-15855.pdf, (excerpts):

"The panel held that the plain statutory language, the statutory structure, the legislative history, the structure of similar federal statutes, and interpretations of similar statutory provisions by the Supreme Court and other circuits led to its conclusion that the Pipeline Safety Act did not authorize mandamus-type citizen suits against the Agency.

"San Francisco has presented very troubling allegations about the Agency's approach to monitoring the CPUC's regulation of intrastate pipelines. However, "[w]e hove no authority to compel agency action

merely because the agency is not doing something we may think it should do." Zixiang Li v. Kerry, 710 F.3d 995, 1004 (9th Cir. 2013). Neither the Pipeline Safety Act nur the APA authorize San Francisco's claims. Therefore, the district court properly dismissed the action. We need not, and do not, reach any other argument raised by the parties."

7) Pipeline and Hazardous Materials Safety Administration (PHMSA) recommendations:

Creating Consultation Zones for Pipeline Safety
http://www.naco.org/sites/default/files/documents/FINAL_Pipeline%20FAQ.pdf, (excerpts):

"All pipeline safety is reguloted by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA). In 2010, PHMSA formed the Pipelines and Informed Planning Alliance (PIPA), a group of more than 130 stokeholder groups and individuals made up of property developers/owners, local government officials, pipeline operators, real estate commissions and relevant national organizations, including NACo, to develop recommended practices on land use and development near transmission pipelines. Although local governments do not have the regulatory or enforcement authority to propose pipcline transmission sofety standards, PIPA developed recommendations for how local governments con apply their land use and development authority to reduce pipeline safety risks to overall public health. One of these recommended practices for local governments is the creation of consultation zones around transmission pipelines.

*"A consultation zone is a local ordinance thot requires communication and review among property developers, property owners and pipeline operators when new lond uses and property developments are being planned within a designated distance of a pipeline. The **main purpose for creating consultation zones is to avoid situations where public safety and access to pipeline facilities is not considered before o new project is approved ond permits are issued. "***

Absent site-specific information, PIPA recommends that a standard consultation zone distance is 660 feet on either side of the centerline of natural gas pipeline.

Skagit County, Washington has implemented Consultation Zones for pipeline safety in land use and planning.

Pipelines and Informed Planning Alliance (PIPA). 2010. "Partnering to Further Enhance Pipeline Safety in Communities Through Risk-Informed Land Use Planning: Final Report of Recommended Practices."
http://primis.phmsa.dot.gov/comm/publications/PIPA/PIPA-Report-Final-20101117.pdf

Land Use Planning and Transmission Pipelines (additional resource materials)
http://primis.phmsa.dot.gov/comm/pipa/landuseplanning.htm

Hazard Mitigation Planning: Practices for Land Use Planning and Development near Pipelines
http://www.fema.gov/media-library-data/1422297186422-e43ce828d6821027c258e96eae10fd6d/PIPA_Hazard_Mitigation_Primer_Final.pdf

8) Inform residents within the Potential Impact Radius (PIR) of the emergency response plan for a pipeline incident, including evacuation plans.
Under PHMSA's Integrity Management Program, pipeline operators must implement additional risk control measures beyond those already required, such as conducting drills with local emergency responders.

9) Pipeline depth and utility clearance regulations, and setback protocols.
Elevations of the utilities crossing over the 26" PG&E gas transmission pipeline have not been determined. It may not be possihle for utilities to cross over the pipeline while maintaining a safe separation.

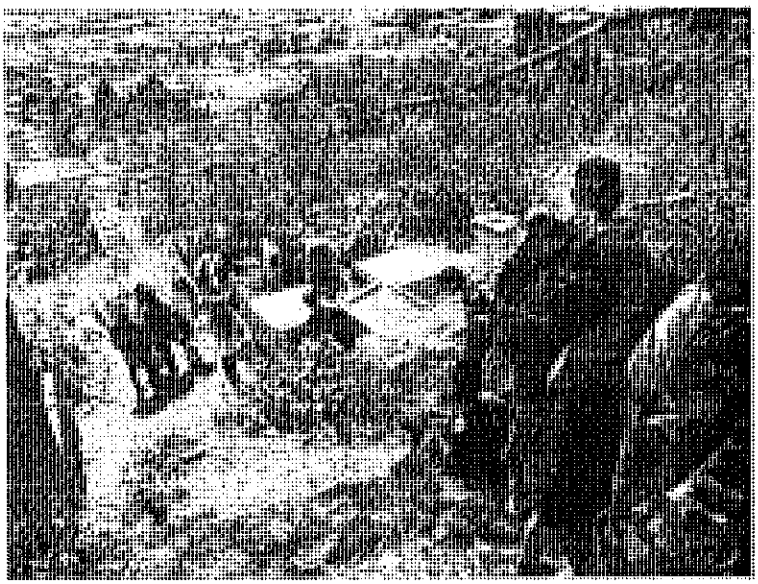
Minimum depth of cover over gas transmission pipeline is 3'-4'.
Minimum crossing clearance distance is 24".
Excavation within 24" of pipeline must be done by hand and supervised by a PG&E monitor.

In conversation with a PG&E representative at their open house on 6/28/16 regarding the upcoming hydrostatic pressure test on line 109, PG&E requires a 15' clearance on either side of the pipeline centerline for pipeline maintenance heavy equipment access, if necessary. A 50' setback would be ideal, but not possible for development in the city.

The state of Minnesota, after considering the various "setbacks" found in present law and by example, established a minimum setback distance equal to the pipeline easement boundaries.
Minnesota considered the following:
--The Federal Housing Administration denies financing to any home within 10 feet of a high pressure pipeline.
--The fire marshal's association urged consideration of a 60 foot setback to accommodate fire equipment access to a pipeline failure.
--Industry representatives indicated that a general setback of 50 to 100 feet is sought through the purchase process of right-of-way.
--The city of Edmonton, Canada, was the only community found to have a specific setback.

10) PG&E's regular surveillance for pipeline hazards – critically inadequate
Although PG&E claims regular surveillance of gas transmission pipelines for activities and encroachments that endanger the integrity of and inhibit access to pipelines, a 30-foot pine tree has been allowed to grow for years on top of PG&E Gas Transmission Pipeline 109 within the Project Area. Other large vegetation also grows over the pipeline in this area against safety recommendations.

In addition, several small structures have been allowed to be built adjacent and over the pipeline:



This situation refutes PG&E's claims of regular patrols to examine safety breaches -- and directly contradicts published national and PG&E safety guidelines regarding trees, vegetation, and structures over and near transmission pipelines:

Pipelines and Informed Planning Alliance (PIPA). 2010. "Partnering to Further Enhance Pipeline Safety in Communities Through Risk-Informed Land Use Planning: Final Report of Recommended Practices." http://primis.phmsa.dot.gov/comm/publications/pipa/PIPA-Report-Final-20101117.pdf, (excerpt):

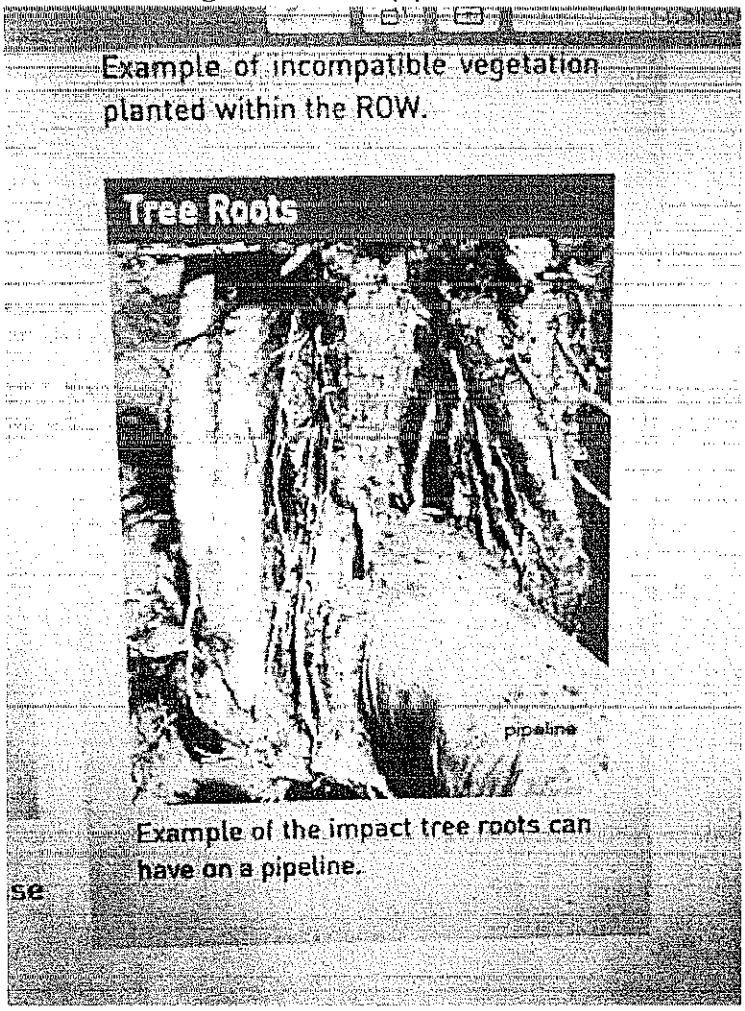
*"**ND 15 Plan and Locate Vegetation to Prevent Interference with Transmission Pipeline Activities, Practice Statement**: Trees and other vegetation should be planned and located to reduce the potential of interference with transmission pipeline operations, maintenance, and inspections."*

PG&E "The Community Pipeline Safety Initiative" Putting Safety First:
http://www.pge.com/en/safety/gassafety/pipeline/emergencyaccess/index.page, (excerpt):

"Trees, tree roots, brush and structures can threaten safety because they can block firefighters' access during emergencies and can prevent our crews from performing important safety and maintenance work. Tree roots also pose a safety risk because they can damage the protective coating of underground pipelines—leading to corrosion and leaks."

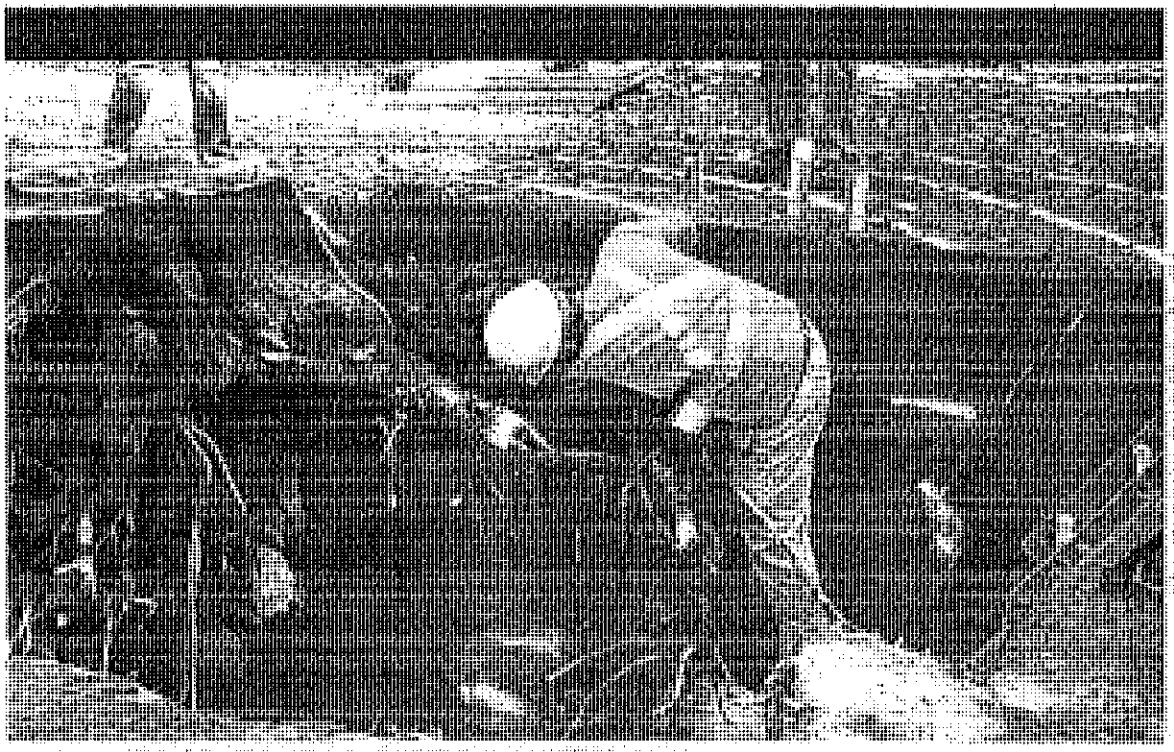
11) Proposed planting beds and trees over pipeline pose immediate and long-term dangers

The Project Plans propose building planting beds and putting trees over the pipeline -- ignorant of the dangers involved -- and against the recommendations of national and PG&E guidelines regarding planting over pipelines. There will be no street covering protecting the pipeline in this location – unlike other sections of gas transmission pipelines in San Francisco.



Tree root damage is a major cause of protective coating corrosion on pipelines. See **Final Report, Volume 1, Pacific Gas & Electric, "Tree Root Interference Assessment", January 17, 2014**: http://www.pge.com/includes/docs/pdfs/myhome/customerservice/other/treetrimming/pipelinerightofway/PGE_TreeRootStudyReport.pdf, (excerpt):

"At locations where pipelines and tree root systems co-exist, there is a high occurrence of tree roots causing damage to the external coating on the pipeline (40 out of 53 sites, or approximately 75%). The susceptibility for external corrosion to occur on the pipeline is increased because the primary protective barrier, namely the external coating, is compromised."



A thirty-foot tall pine tree, various large shrubs, and agaves with tap roots sit on top or adjacent to the transmission pipeline in violation of national and PG&E Safety Guidelines. [See 1st image.]

PG&E Community Gas Safety, Guidance from Industry Experts:
http://www.pge.com/includes/docs/pdfs/myhome/customerservice/other/treetrimming/pipelinerightofway/GuidancePipelineSafetyExperts.pdf

Fronting homeowners and renters within a High Consequence Area will be responsible for enforcing safe practices -- with the very real possibility of one tree pole pounded in at the wrong place potentially causing a catastrophic accident.

12) Partial list of 'reported' PG&E natural gas pipeline accidents just in northern California since San Bruno explosion (thru June 2016):

--June 17, 2016, San Francisco: Miraloma neighborhood evacuated when SFPUC crew hit a natural gas line while installing a new water main. Large gas leak took an hour to cap.

--March 17, 2016, Morgan Hill, CA: 100 people were evacuated or asked to shelter in place due to accidental rupture by private contractor of distribution gas line during construction activity.

--2012 - 2015, Sacramento, CA: Journalist uncovered six pipeline "strikes" by contractors during a two and one half hour period that went unreported by PG&E. One incident included a rupture that went undetected for 48 hours until the pregnant homeowner smelled gas in her backyard. Experts said a spark from a water heater would have ignited a deadly explosion.

August 26, 2015, San Jose, Ca: Five businesses were destroyed by a car crash puncturing a natural gas line.

--April 17, 2015, Fresno, CA: One person was killed and eight people were injured when excavation activity by a large, earth-moving tractor punctured a 12-inch PG&E transmission gas pipeline while on a steep slope during excavation. Fireball went 150 feet in the air. One fatality and entire work crew fifty feet away suffered critical and serious injuries. 400 feet of train tracks were warped by the heat. Operator error was cited by the state as to the cause of the explosion.

--March 3, 2014, Carmel, CA: Home exploded due to PG&E crew working on four-inch gas pipeline using faulty PGE records. Crew escaped injuries due to standing behind a truck. PG&E allowed dangerous leak to persist without calling 911 for 30 minutes, when leak exploded. Crew did not have proper equipment to stop leak; which took one hour to halt. Area not evacuated prior to explosion. House was destroyed. Shrapnel and debris were hurled into neighboring houses. People walking by were showered with debris. Nearby house windows were blown out by shock waves. PG&E fined $10.8 million dollars.

--Post March 3, 2014, Carmel, CA: Five pipeline accidents subsequent to the Carmel March 14th explosion "have shaken our confidence in the company's commitment to safety...", according to then Carmel mayor Jason Burnett, "despite PG&E's lip service and empty promises." Two examples: A gas leak at a major hotel took PG&E five hours to respond. At another hotel, third-party crews hit a gas pipe that sent a 20-foot gas cloud into the air. PG&E crews took one hour to stop the leak.

--July 13, 2013, Mountain View, CA: PG&E welding crews accidently melted an "unmapped" plastic insert in a steel pipe. Leak forced evacuations. PG&E recently conceded it has lost 12 years of gas-line paper repair records for the South Bay.

--January 13, 2012, Rio Vista, CA: 8-inch pipeline exploded in field.

--June, 2012, Morgan Hill, CA: Contractor accidently bit gas distribution pipeline on Main Street line that caused evacuations due to leak. PG&E worker was blamed for mistakenly identifying pipeline as decommissioned.

--October, 2012, Milpitas, CA: **Error in PG&E records caused PG&E replacement crew to accidently turn off gas valve**. Gas lost to 1,000 homes for 12 hours.

--November 20, 2012, Madera, CA: **Heavy equipment operator accidently punctured a 12-inch transmission pipeline**. Houses and businesses were evacuated. Adjacent highway shut down for hours.

--August 31, 2011, Cupertino, CA: **Condo gutted after faulty plastic pipeline fitting filled garage with gas**. Six other plastic pipe failures were found near blast site. According to a Wikipedia list of pipeline accidents, PG&E has 1,231 miles of pre-1973 defective plastic pipes that federal regulators have singled out as being at risk of failing. **50 people have died in accidents caused by this type of defective plastic pipe since 1971.**

--Sept. 7, 2011, San Francisco, CA: **Construction crew ruptured a 10-inch gas pipeline at Post and Mason**, shutting down the neighborhood.

--Sept. 9, 2010, San Bruno, CA: High Consequence Area **catastrophic explosion** resulted in eight deaths, numerous burn victims, 38 houses destroyed. **PG&E's faulty record keeping, bad welds, response errors -- the list goes on -- caused catastrophic explosion.**

13) Liability and Maintenance issues

[See Appendix B for email exchange concerning agencies involved in the ROW approval process.]

Appendix A

In the Recordkeeping Violations Decision, the CPUC found that PG&E committed 33 violations, many of them continuing for years, for a total of 350,189 days in violation. These violations are:

1. PG&E's lack of accurate and sufficient records to determine whether it had used salvaged pipe in Segment 180 impacted its ability to safely maintain and operate this segment in violation of Pub. Util. Code § 451. (Felts Violation 1) **This violation ran from 1956 to September 9, 2010.**
2. PG&E violated Pub. Util. Code § 451 for failing to retain the necessary design and construction records in Job File GM 136471 for the construction of Segment 180. (Felts Violation 2) This violation ran from 1956 to September 9, 2010.
3. PG&E violated ASME B.31.8 § 841 and Pub. Util. Code § 451 for failing to perform a post-installation pressure test on Segment 180 and retaining the record of that test for the life of the facility. (Felts Violation 3) This violation ran from 1956 to September 9, 2010.
4. PG&E violated Pub. Util. Code § 451 by increasing the MAOP of Line 132 from 390 psi to 400 psi without conducting a hydrostatic test. (Felts Violation 4) This violation ran from December 10, 2003 to September 9, 2010.
5. PG&E violated Pub. Util. Code § 451 by operating Line 132 above 390 psi on December 11, 2003, December 9, 2008 and September 9, 2010 without having records to substantiate the higher operating pressure. (Felts Violation 11) These constitute three separate violations. The first violation ran from December 11, 2003 to September 9, 2010; the second violation ran from December 9, 2008 to September 9, 2010; and the final violation occurred on September 9, 2010.
6. PG&E violated Pub. Util. Code § 451 by failing to provide the proper clearance procedures for work performed at the Milpitas Terminal on September 9, 2010. (Felts Violation 5) This violation ran from August 27, 2010 to September 9, 2010.
7. PG&E violated Pub. Util. Code § 451 by failing to have accurate drawings and computer diagrams of the Milpitas Terminal. (Felts Violation 7) This violation ran from December 2, 2009 to July 2011.
8. PG&E violated Pub. Util. Code § 451 by failing to have accurate Supervisory Control and Data Acquisition System (SCADA) diagrams. (Felts Violation 7 and 9) This violation ran from December 2, 2009 to October 27, 2010.
9. PG&E violated Pub. Util. Code § 451 by failing to have the necessary backup software readily available at the Milpitas Terminal on September 9, 2010. (Felts Violation 8) This violation occurred on September 9, 2010.
10. PG&E's October 10, 2011 data response about the video recording for Camera 6 misled Commission staff and impeded their investigation into the San Bruno explosion. (Felts Violation 13) This is a violation of Rule 1.1 of the Commission's Rules of Practice and Procedure.
11. PG&E violated Rule 1.1 by misleading CPSD in two separate data responses regarding personnel present at the Milpitas Terminal who were working on the pressure problem on September 9, 2010. (Felts Violation 14) The first violation occurred on October 10, 2011, PG&E's response to DR 30, Q 8.d; the second violation occurred on December 17, 2011, PG&E's response to DR 30, Q 2. Both violations ran until January 15, 2012.
12. PG&E's recordkeeping practices with respect to Job Files adversely impacts its ability to operate its gas transmission pipeline system in a safe manner and violates Pub. Util. Code § 451. (Felts Violation 16) This violation ran from 1987 to December 12, 2012.
13. PG&E has failed to retain pressure test records for all segments of its gas transmission pipeline system as required by Pub. Util. Code § 451, ASME B.31.8, GO 112 through 112-B and PG&E's internal records retention policies. (Felts Violation 18) This violation ran from 1956 through December 20, 2012.
14. PG&E violated ASME B.31.8 § 828.2, GO 112 through 112-B § 206.1, 49 CFR 192.241 and 192.243

and PG&E's Standard Practice 1605 by failing to retain weld inspection reports. (Felts Violation 19) This violation ran from 1955 through December 20, 2012.

15. PG&E violated Pub. Util. Code § 451 for failing to maintain records necessary to ensure the safe operations of its gas transmission pipeline system by failing to create and retain operating pressure records over the life of the pipe. (Felts Violation 20) This violation ran from 1955 to December 17, 2004.

16. Starting in 1955, inaccurate and incomplete data in PG&E's leak reports would prevent PG&E from operating its gas transmission pipeline system safely, as required by Pub. Util. Code § 451. (Felts Violations 21 and 22) This violation ran from 1955 to December 20, 2012.

17. PG&E violated Pub. Util. Code § 451 by failing to retain records of reconditioned and reused pipe in its transmission pipeline system. (Felts Violation 23) This violation ran from 1940 to December 20, 2012.

18. PG&E violated Pub. Util. Code § 451 by failing to ensure the accuracy of data in its Geographic Information System (GIS) system and assuming values for missing data that were not conservative. (Felts Violation 24) This violation ran from 1995 to December 20, 2012.

19. PG&E violated Pub. Util. Code § 451 because its ability to assess the integrity of its pipeline system and effectively manage risk is compromised by the availability and accuracy of its pipeline data. (Felts Violation 25) This Violation ran from December 17, 2004 to December 20, 2012.

20. PG&E violated Pub. Util. Code § 451 for failing to retain a metallurgist report concerning a 1963 fire and explosion on Line 109 caused by a failure in a circumferential weld. (Felts Violation 27) This violation ran from 1963 to December 20, 2012.

21. The shortcomings in PG&E's records management activities has resulted in PG&E's inability to operate and maintain PG&E's gas transmission line in a safe manner and violate Pub. Util. Code § 451; GO 112 through 112-B, Section 107; ASME B.31.8. (Duller/North Violation A.1) This violation ran from 1955 to December 20, 2012.

22. PG&E violated ASME B.31.8 § 851.5 by failing to retain records of Leak Survey Maps for as long as the line remains in service. (Duller/North Violation B.1) This violation ran from April 16, 2010 to December 20, 2012.

23. PG&E violated ASME B.31.8 § 851.5 by failing to retain records of Line Patrol Reports for as long as the line remains in service. (Duller/North Violation B.2) This violation ran from September 1, 1964 to December 20, 2012.

24. PG&E violated ASME B.31.8 § 851.5 by failing to retain records of Line Inspection Reports as long as the line remains in service. (Duller/North Violation B.3) This violation ran from December 17, 1991 to December 20, 2012.

25. PG&E violated ASME B.31.8 § 851.417 by failing to retain pressure test records for the useful life of the pipeline. (Duller/North Violation B.4) This violation ran from September 1, 1964 to December 20, 2012.

26. PG&E violated ASME B.31.8 § 851.5 by failing to retain records of transmission line inspections for as long as the line remains in service. (Duller/North Violation B.5) This violation ran from September 1, 1964 to December 20, 2012.

27. PG&E violated 49 CFR 192.13(c) for failing to comply with its internal records retention policies. (Duller/North Violation B.6) This violation ran from 1955 to December 20, 2012.

28. PG&E violated Pub. Util. Code § 451 by failing to identify and include in the Gas Pipeline Replacement Plan (GPRP) all pipe segments with unusual longitudinal seams and joints. (Duller/North Violation C.1) This violation ran from June 1988 to December 20, 2012.

29. PG&E violated Pub. Util. Code § 451 because missing and inaccurate pipeline records prevented PG&E from properly identifying and replacing those pipelines that were prone to damage during severe earthquakes. (Duller/North Violation C.2) This violation ran from June 1992 to December 20, 2012.

30. PG&E violated Pub. Util. Code § 451 for failing to maintain a definitive, complete and readily accessible database of all gas leaks for their pipeline system. (Duller/North Violation C.3) This violation ran from 1957 to December 20, 2012.

Appendix B

From: "Shah, Rahul (DPW)" <Rahul.Shah@sfdpw.org>
To: barbara underberg <bjunderberg@yahoo.com>
Cc: Kathy Angus <kathyangus@comcast.net>; "Fong, Lynn (DPW)" <Lynn.Fong@sfdpw.org>
Sent: Friday, June 24, 2016 12:18 PM
Subject: RE: 3500 Block Folsom Street Right-of-Way

Hi Barbara,

It is important to keep in mind what Public Works' review entails.

CPUC compliance is verified by SFPUC, and if SFPUC approves, CPUC guidelines are being met.

We only review the right-of-way. Rec. and Park property cannot be reviewed by Public Works. Any modifications to Rec. & park property requires approvals from Rec. and park.

Maintenance is tied to the property, and maintenance responsibility may only be transferred if authorized by Public Works. If there is new ownership, the encroachment is recorded to the title of the property, so any subsequent owners are responsible for maintenance and should be aware before purchasing the property since it is recorded on the title.

The project sponsor is responsible for construction, but if something were to happen, I am certain other parties including OSHA would become involved and perform an investigation, so I cannot fully answer this question since there are several variables that may affect the distinguishing of responsibility.

All construction liability will follow standard construction requirements and necessary inspection practices, and all OSHA requirements are required to be met.

The proposal, if a Major Encroachment, ultimately goes to SFMTA and the traffic review team for review and a final decision.

The receptacle location will need to be coordinated with Recology. All guidelines of maintaining path of travel in the public right-of-way will apply. SFMTA is responsible for any obstruction to vehicular access.

Rahul

From: barbara underberg [mailto:bjunderberg@yahoo.com]
Sent: Friday, June 24, 2016 11:56 AM
To: Shah, Rahul (DPW)
Cc: Kathy Angus; Fong, Lynn (DPW)
Subject: Re: 3500 Block Folsom Street Right-of-Way

Thanks, Rahul, for this helpful information -- which leads me to additional questions:

Due to the presence of the 26" gas transmission pipeline, is the CPUC involved in any part of the review process?

Due to the proposed stairway through SF Rec & Park property, will they also be involved in the review process?

What happens to the maintenance responsibility of the Major Encroachment Permit incurred by the project sponsor, if he subsequently sells his property? Does it transfer to the new owner?

Due to the roadway design and alignment, it will not cover and protect the 26" gas pipeline. Who is liable in the event of a pipeline incident resulting from inappropriate usage of the area above the pipeline over time (e.g., repeated incursions of heavy equipment or vehicles on the unpaved portion)?

Is any agency responsible for taking into account the effects of the roadway design on the surrounding neighborhood (not just the mechanics of making the proposed street passable)? The design of the roadway will have a significant traffic impact on the functioning of the intersection at Folsom and Chapman Streets, which due to topography is the main access point to 28 homes bounded by Chapman, Folsom, Nevada Streets and Bernal Heights Boulevard.

This last issue by itself merits a larger discussion, but to cite just one example of concern: the design does not accommodate 24 garbage/recycling/compost bins to be set out weekly for collection (anticipating the eventual development of all eight lots in this block -- two existing residences, six undeveloped to-date). Where will they go? Due to the proposed 37% grade, Recology will not drive on this block. If the bins are placed at the bottom of the proposed roadway, they will obstruct this critical intersection.

Again, thanks for your help.
Regards,

Barbara Underberg

From: "Shah, Rahul (DPW)" <Rahul.Shah@sfdpw.org>
To: barbara underberg <bjunderberg@yahoo.com>
Cc: Kathy Angus <kathyangus@comcast.net>; "Fong, Lynn (DPW)" <Lynn.Fong@sfdpw.org>
Sent: Friday, June 24, 2016 8:18 AM
Subject: RE: 3500 Block Folsom Street Right-of-Way

Hi Barbara,

I apologize for the delay. At this time, the status has not changed much since we last spoke. I have received a tentative approval from the Streets and Highways Division regarding the proposed grading of the roadway. However, they are still required to satisfy SFPUC requirements, SFFD requirements, and obtain the proper information from PG&E regarding the main. I have not seen these yet, and so they are unable to move forward at this point. I know they are currently working with Planning, but I am uncertain at exactly what stage they stand except that the CEQA clearance is being re-reviewed.

In regards to the Public Works process, in this case, they will need to obtain consent from each fronting property owner on that block since the fronting property owner will become responsible for the improvements up to the centerline for the width of their respective frontages. If they are unable to obtain consent, a Major Encroachment Permit is required which places the maintenance responsibility solely on the project sponsor. In this case, all relevant City agencies (e.g Planning, SFPUC, SFFD, SFMTA, etc.) review the project and must provide approval. There is then a Public Hearing held By Public Works, and if the Director determines it can move forward, it will go to the Board of Supervisors who will ultimately determine if this may be approved. The Board of Supervisors meetings are public and also allow for public comment.

At this point, since I have not seen any significant changes and because the development team is still working on obtaining necessary approvals, I do not think a meeting would be a good use of time. I hope this helps provide some clarity.

Thank you,

Rahul Shah, P.E.
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Bureau of Street-Use & Mapping
San Francisco Public Works
City and County of San Francisco
1155 Market St. 3rd Fl
San Francisco, CA 94103
(415) 554-5811
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From: barbara underberg [mailto:bjunderberg@yahoo.com]
Sent: Thursday, June 23, 2016 1:57 PM
To: Shah, Rahul (DPW)
Cc: Kathy Angus
Subject: 3500 Block Folsom Street Right-of-Way

Hi Rahul,

To clarify the message I left you a few weeks ago, these are some of the questions we have:

What is the status of plans for the right-of-way of the 3500 block of Folsom Street?
Could you please refer us to information regarding the approval process for changes to public rights-of-way, in general?
Would it be helpful to meet about this?

Thanks, in advance, for any information you can provide.

Regards,
Barbara Underberg

<image001.jpg>

Appendix C – Selected Related Newspaper Articles

Chronicle (primarily Jaxon Van Derbeken and Bob Egelko) reporting on San Bruno and other PG&E gas related stories:

http://www.sfchronicle.com/sanbrunoblast/, primarily Jaxon Van Derbeken and Bob Egelko reporting on San Bruno and other PG&E gas related stories.

http://www.sfchronicle.com/bayarea/article/Judge-asked-to-fine-PG-E-112-million-for-Carmel-6861837.php, 2/29/16, updated 3/3/16

http://www.sfchronicle.com/news/article/Carmel-fears-PG-E-tampered-with-records-in-2014-6764498.php, 1/16/16

http://www.sfchronicle.com/news/article/State-blames-Fresno-County-for-fatal-gas-line-6799536.php, 2/1/16

From the SF Bay Guardian archives:

https://issuu.com/sf.guardian/docs/45.23, see page 12 for the article "For safety's sake, Gaps in PG&E pipeline info could carry implications for land-use decisions" by Rebecca Bowe dated March 9-15, 2011

https://issuu.com/sf.guardian/docs/48.28, see page 15 for the article "PG&E Indictment Falls Short" by Steven T. Jones dated April 9-15, 2014

Jaxon Van Derbeken reports (previously with the Chronicle, with NBC Bay Area as of 3/14/16):

http://www.nbcbayarea.com/news/local/PGEs-Assessment-of-San-Bruno-Pipeline-Challenged-385276591.html, 7/1/16 (excerpt, trial coverage):

Federal regulations preclude using corrosion only methods on gas lines with histories of seam weld failures or leaks.

Prosecutors highlighted a 2008 exchange between Aguiar and a supervisor in the integrity management division triggered when Aguiar blamed weld failure for a 2006 leak that sprung just after PG&E used the corrosion method to declare a gas line safe.

That supervisor, Bill Manegold, warned Aguiar to "watch" what he wrote as an inspection "process that walks right over active leaks and declares pipes safe is not a process I want to advertise too loudly."

Aguiar said no one was "advertising" the method could detect weld flaws.

"We are advertising that we've assessed the pipe and it is fit for service," Manegold shot back, adding that the leaks -- like the one found in 2006 on a girth weld – "are not minor."

http://www.nbcbayarea.com/news/local/Pipeline-Test-Records-Missing-Key-Data-in-PGE-Case-385117511.html, 6/30/16 (excerpts, trial coverage):

Some of the pipeline test records that PG&E hoped would vindicate the company from federal pipeline safety charges actually are missing key data required by federal law to validate them, a company engineer acknowledged in the federal trial Thursday.

Many of the reports dated to after September 2010 San Bruno gas pipeline explosion. She asked whether the company launched a large-scale test effort in 2011. "Yes we did," he said, and he also acknowledged that several lines – a total of ten, according to prosecutors – had failed those tests.

Earlier, Hoffman showed Arnett some emails in which engineers declared it would simply be "too expensive" to test pipelines with missing records.

http://www.nbcbayarea.com/news/local/PGE-Failed-to-Follow-Agencys-Guidance-on-Pipeline-Safety-Testimony_383884691.html, 6/22/16 (excerpt, trial coverage):

A U.S. pipeline safety agency engineer testified Tuesday that the agency's website offers specific instructions about what utilities should do to inspect pipes following pressure surges, something prosecutors say the utility failed to mind so as to maximize profits.

http://www.sfgate.com/crime/article/PG-E-management-allegedly-ordered-papers-6754580.php, Chronicle 1/12/16 (excerpt, pre-trial coverage):

A former Pacific Gas and Electric Co. official hired after the San Bruno gas-pipeline explosion to clean up the company's records said management ordered her to destroy documents, and that she found a telltale prehlast analysis of the pipe in the garbage, according to a federal court filing.

http://www.sfgate.com/bayarea/article/PG-E-s-shady-conduct-hindered-probe-6501122.php, Chronicle 9/14/15 (excerpt, pre-trial coverage):

. . . new court filings that shed light on prosecutors' decision to seek a criminal obstruction-of-justice case against the company.

"PG&E really stood out as a company that was not forthcoming and lacked cooperation," Ravi Chhatre, lead investigator in the San Bruno case for the National Transportation Safety Board, told a team of federal investigators and prosecutors last year, the documents show.

http://www.sfchronicle.com/news/article/Five-years-after-San-Bruno-PG-E-s-gas-safety-6491783.php, 9/8/15, updated 9/9/15 (excerpt):

Five years after the catastrophic San Bruno blast, Pacific Gas and Electric Co. still accounts for the bulk of gas safety violations in California and nearly all the regulatory fines levied by the state, leaving regulators struggling to find ways to hold the company more accountable.

http://www.sfchronicle.com/bayarea/article/State-considers-safety-audit-of-PG-E-6449751.php, 8/17/15 (excerpt):

Nearly five years after the San Bruno gas pipeline explosion, state regulators called Monday for a $2 million utility-financed investigation into whether Pacific Gas and Electric Co. is putting enough emphasis on safety.

http://www.sfchronicle.com/news/article/Regulator-s-gas-safety-efforts-lag-since-PG-E-6195293.php, 4/12/15 (excerpt):

The California Public Utilities Commission's gas safety enforcement efforts have deteriorated since the deadly 2010 pipeline explosion in San Bruno, undermined by an atmosphere of mistrust in the agency, outmoded technology and a lack of vision among top officials, according to a scathing new audit.

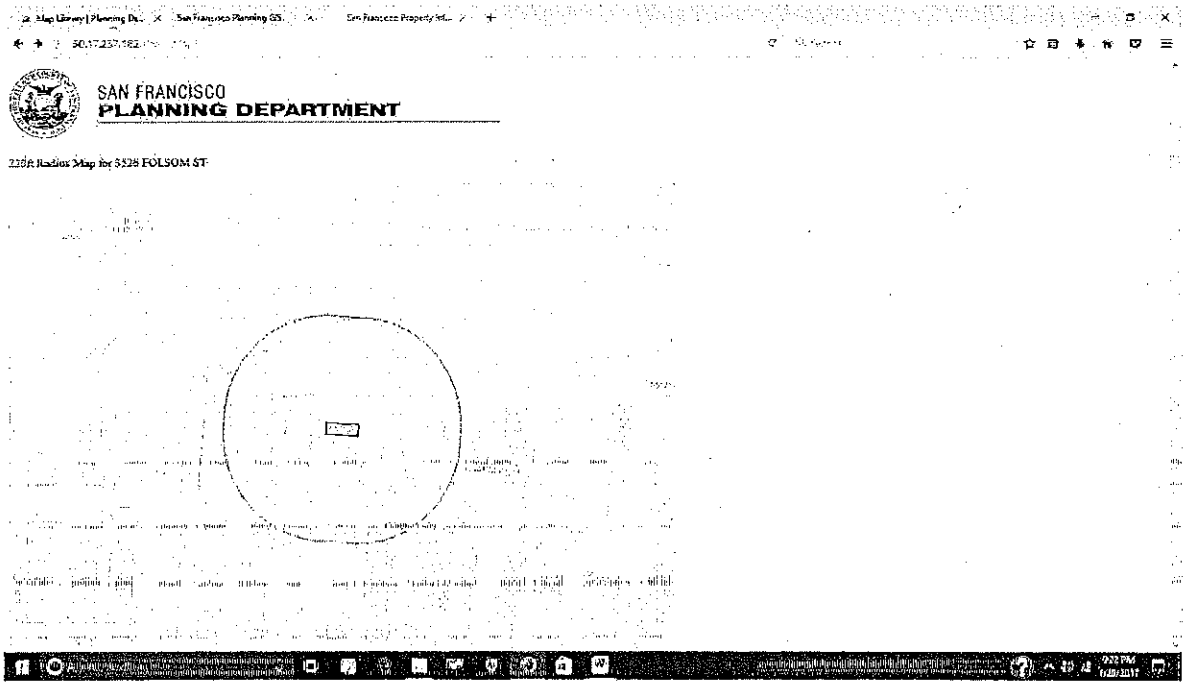
http://www.sfchronicle.com/news/article/U-S-safety-board-says-agency-overseeing-6044595.php, 1/27/15 (excerpt):

The federal pipeline agency responsible for preventing disasters such as the 2010 natural gas explosion in San Bruno needs to strengthen its enforcement efforts, the National Transportation Safety Board said Tuesday.

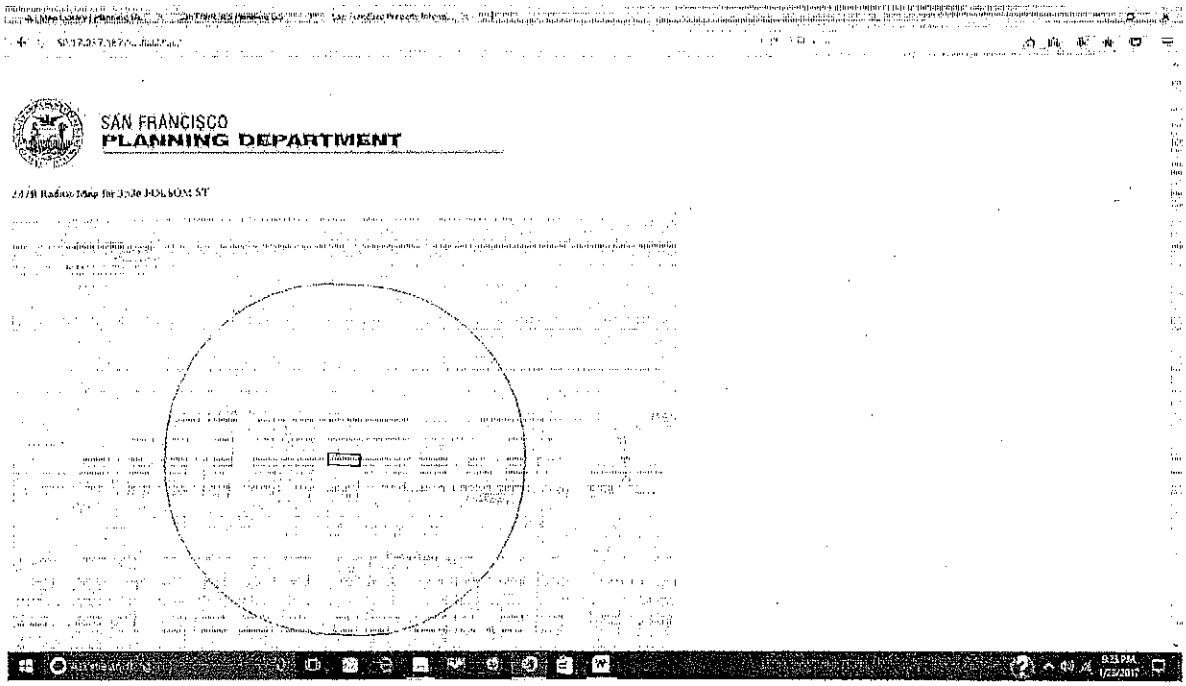
http://www.sfchronicle.com/news/article/State-PUC-blistered-in-audit-for-slow-sloppy-6001010.php, 1/8/15 (excerpt):

The state agency responsible for ensuring Pacific Gas and Electric Co. and other utilities operate their natural-gas systems safely has a two-year backlog of unfinished investigations, and its probes are often poorly documented and seldom result in penalties against the companies, a federal audit has found.

Appendix D – Potential Impact Radii



Potential Impact Radius of 220 feet, based on MAOP of 150 psig.



Potential Impact Radius of 347 feet, based on MAOP of 375 psig.