

ATTACHMENT B



DATE: July 6, 2022

AGENDA ITEM # 3

TO: Design Review Commission
FROM: Sean K. Gallegos, Senior Planner
SUBJECT: V21-0003 & DR22-0067 – 10900 Beechwood Lane

RECOMMENDATION:

Approve variance application V21-0003 and design review application DR22-0067 subject to the listed findings and conditions

PROJECT DESCRIPTION

This is an application for a Variance for a 10-foot front yard setback, where a 25-foot setback is required in the R1-10 Zoning District and design review applications for an emergency generator in a sound attenuating accessory structure for a pre-existing community facility, an existing potable water pump station at 10900 Beechwood Lane. No other improvements are proposed for the site. The following table summarizes the project's technical details:

GENERAL PLAN DESIGNATION: Single-Family, Residential
ZONING: R1-20
PARCEL SIZE: 26,555 square feet (net)
MATERIALS: Metal exterior

	Existing	Proposed	Allowed/Required
COVERAGE:	251 square feet	351 square feet	6,390 square feet
FLOOR AREA:			
Buildings	251 square feet	251 square feet	
Generator Enclosure	-	100 square feet	
Total	251 square feet	351 square feet	5,350 square feet
SETBACKS:			
Front	50 feet	13.5 feet	30 feet
Rear	25 feet	145.6 feet	35 feet
Right side	25 feet/25 feet	74 feet/-	25 feet/25 feet
Left side	35 feet/35 feet	43 feet/-	25 feet/25 feet
HEIGHT:	27 feet	11.52 feet	12 feet

BACKGROUND

The project site, which is located at 10900 Beechwood Lane, is designated as a “Single Family (2 du/net acre)” land use in the General Plan and is in the Single-Family (R1-20) District.

Prior to the incorporation of the City of Los Altos, Santa Clara County approved the steel tank for water storage, tank for hydropneumatic pressure, and a booster pumping station enclosed within a one-story structure that currently exists at the site. The site is enclosed with a six-foot tall chain link fence along the street frontage and a six-foot tall wood fence along the side and rear property lines. The site is located adjacent to a single-family residence (10950 Beechwood Lane) to the north, a single-family residence (10850 Beechwood Lane) to the south, two single-family residences (2244 Sycamore Court and 2254 Sycamore Court) to the east, and the Beechwood Lane right-of-way is located to the west along its front property line.

Application History

The existing facility has non-conforming 23.6-foot rear setback, where a 35-foot setback is required in the R1-10 Zoning district. The setback encroachment was created at the time of construction of the potable water pump facility, and it is therefore considered to be a legal nonconforming structure. Since the project will not eliminate or replace more than 50 percent of the pump facility, the non-conforming setback can be maintained.

DISCUSSION

Variance

The applicant is seeking a variance for a ten-foot front yard setback, where 30 feet is required by the Zoning Code. A variance justification letter from the applicant that provides additional information about the variance requests is included in Attachment A.

In order to approve a variance, the Commission must make three positive findings pursuant to Section 14.76.070 of the Zoning Code:

1. The granting of the variance will be consistent with the objectives of the City’s zoning plan;
2. That the granting of the variance will not be detrimental to the health, safety, or welfare of persons living or working in the vicinity or injurious to property or improvements in the vicinity; and
3. Variances from the provisions of this chapter shall be granted only when, because of special circumstances applicable to the property, including size, shape, topography, location, or surroundings, the strict application of the provisions of this chapter deprives such property of privileges enjoyed by other property in the vicinity and under identical zoning classifications.

The granting of the variance is consistent with the objectives of the zoning plan because maintaining the encroachment into the yard areas would still ensure the Zoning Code’s objective of a harmonious, convenient relationship among the adjacent residential properties which have existed in this location since 1948.

The proposed emergency generator will be located in a 11.3-foot-tall sound attenuating accessory structure with a ten-foot front setback, 74-foot right side setback, 43-foot left side setback and 150-foot rear setback. The side and rear yard complies with the setback requirements of the R1-20 District.

The site plan shows a new proposed six-foot tall solid fence with two feet of lattice, with a six-foot tall wood fence along all property lines. The 35-foot front yard is landscaped with 15 trees, which include 12 Silver Wattle (*Acacia Delbata*) trees and three willow peppermint (*Eucalyptus Nicholii*) trees, and side and rear yards are planted with 28 trees of various species. The applicant proposes to remove four silver wattle trees due to conflicting with the footprint of the generator and accessory structure. The tree removals are consistent with the tree removal criteria (Section 11.08.090) under the Tree Protection Ordinance.

The variance will not be detrimental to persons living or working in the vicinity or injurious to any properties in the vicinity because the proposed accessory structure and generator will not further impact the relationship of the structure to surrounding properties and the persons living in those houses, and it will comply with the City's Noise Ordinance.

The generator will be placed inside a custom enclosure specifically built to reduce the sound pressure level. Hammett & Edison, Inc., Consulting Engineers performed a noise study, which is provided as Attachment C. The Noise Study found the maximum calculated noise levels at the surrounding parcels to the north, west, and south are 50.9, 51.2, and 55.0 dBA. The projected noise levels would exceed the maximum permitted noise level of 45 dBA between 10:00 pm to 7:00 am. However, Section 6.16.090.A of the Noise Ordinance exempts the generator from the Noise Ordinance standards when the utilities activities are associated with the emission of sound in the performance of emergency work, such as the operation of a back-up power generator during an emergency, when commercial power is unavailable. Therefore, the generator noise levels are permissible for a public utility site under the performance of emergency work.

After the installation of the generator, the generator will be tested intermittently for 15 minutes per week. The noise study found the generator custom outdoor enclosure, meets the City's daytime limit of 60dbA for short-duration noise in residential areas. Therefore, the custom-built reduced-noise generator complies with Section 6.16.050A.2.B of the Noise Ordinance. Condition No. 3 requires that all generator testing will occur between 7:30 am to 3:30 pm and the maximum testing period shall be 15 minutes.

Variations from the provisions of this chapter shall be granted only when, because of special circumstances applicable to the property, including size, shape, topography, location, or surroundings, the strict application of the provisions of this chapter deprives such property of privileges enjoyed by other property in the vicinity and under identical zoning classifications

There is a special circumstance applicable to the property due to the existing location of the tank and ancillary structure for the potable water pump station, which constrains or limits the potential alternative locations on the subject site. The strict application of the provisions of the chapter would require the generator be installed at the rear of the site, which create potential noise impacts to five adjacent properties. The proposed generator location reduces potential noise impacts to the street frontage due to limiting potential noise impacts to two adjoining properties, and it is consistent with City's Noise Ordinance.

Staff recommends approval of the variance application subject to the findings and conditions attached to the agenda report.

Design Review

A generator is proposed at the subject site, and it will be located in a 11.52-foot-tall noise attenuating accessory structure with a depth of five feet and width of 18.5 feet. As noted on Sheet LAS9-3575-C-004, the structure will be painted an earth tone color to improve its screening from public view.

Procedurally, the Community Development Director typically acts on design review applications for accessory structures (generator and generator enclosure). Since the generator and enclosure requires a variance application, the review was referred to Design Review Commission.

The proposed structure or alteration complies with all provisions of the Zoning Ordinance and Noise Ordinance. On the cover sheet in the project plans, the Zoning Compliance table indicates the site exceeds the maximum permissible floor area and lot coverage for the R1-20 zoning district. However, the applicant incorrectly counted the water tank as a building. Under the building code, a water tank is neither a non-habitable or habitable building or structure. Therefore, the water tank does not count toward the floor area or coverage for the site. The proposed emergency generator will be in a 11.3-foot-tall sound attenuating accessory structure with propose a ten-foot front setback, 74-foot right side setback, 43-foot left side setback and 150-foot rear setback. The side and rear yard complies with the setback requirements of the R1-20 District. With approval of the variance for a reduced front yard setback of ten feet, where a 30-foot front setback required, the proposed generator and enclosure will comply with the Zoning Ordinance.

As discussed above, Section 6.16.090.A of the Noise Ordinance exempts the generator from the Noise Ordinance standards when the utilities activities are associated with the emission of sound in the performance of emergency work, such as the operation of a back-up power generator during an emergency, when commercial power is unavailable. Therefore, the generator noise levels are permissible for a public utility site under the performance of emergency work, which would occur if the site lost commercial power.

After the installation of the generator, the generator will be tested intermittently for 15 minutes per week. The generator in the custom enclosure meets the City's daytime limit of 60dbA for short-duration noise in residential areas. Therefore, the custom-built reduced-noise generator complies with Section 6.16.050A.2.B of the Noise Ordinance. Condition No. 3 requires that all generator testing will occur between 7:30 am to 3:30 pm and the maximum testing period shall be 15 minutes.

The height, elevations, and placement on the site of the generator structure, when considered with reference to the nature and location of residential structures on adjacent lots, will not create unreasonable interference with views and privacy and its finished floor height and structure's overall height considers the topographic constraints imposed by site conditions.

The natural landscape will be preserved insofar as practicable by minimizing tree and soil removal; grade changes shall be minimized and will be in keeping with the general appearance of neighboring developed areas. The 35-foot front yard is landscaped with 15 trees, which include 12 Silver Wattle

(Acacia Delbata) trees and three willow peppermint (Eucalyptus Nicholii) trees, and side and rear yards are planted with 28 trees of varies species. The applicant proposes to remove four silver wattle trees due to conflicting with the footprint of the generator and accessory structure. The tree removals are consistent with the tree removal criteria (Section 11.08.090) under the Tree Protection Ordinance. The development does not create significant grade changes for the proposed generator, and it is in keeping with the general appearance by painting the structure an earth tone color to blend into the environment. The generator will be screened from public view by a six-foot tall solid fence with two-feet of lattice, and four new 15-gallon evergreen screening trees (prunus caroliana or podocarpus gracilior) along the street front and the existing mature landscaping that exists between the existing fence and street.

General architectural considerations, including the character, size, scale, and quality of the design, the architectural relationship with the site and other buildings, building materials, and similar elements have been incorporated in order to insure the compatibility of the development with its design concept and the character of adjacent buildings. The 100-square foot generator enclosure has a maximum height of 11.52 feet, which is below the maximum permitted 12-foot height for an accessory structure. The structure size and overall height reduces the overall appearance of size and scale. The metal building will be painted an earth tone color to be consistent with surrounding neighborhood, and the structure will be screened by fencing and evergreen screening vegetation. The generator enclosure has a similar architectural design style and shares similar architectural elements of existing on-site structures. Pursuant to the Zoning Code, the generator enclosure meets the specific site development and objective design standards in the Municipal Code.

The proposed addition has been designed to follow the natural contours of the site with minor grading to reduce the overall height of the structure, and 100 square-foot footprint of the structure minimizes impacts to impervious cover and does not create greater erosion protection.

Landscaping

The 35-foot front yard is landscaped with 15 trees, which include 12 Silver Wattle (Acacia Delbata) trees and three willow peppermint (Eucalyptus Nicholii) trees, and side and rear yards are planted with 28 trees of varies species. The applicant proposes to remove four silver wattle trees due to conflicting with the footprint of the generator and accessory structure. The tree removals are consistent with the tree removal criteria (Section 11.08.090) under the Tree Protection Ordinance.

The applicant proposes four new 15-gallon evergreen screening trees (prunus caroliana or podocarpus gracilior) along the street frontage. The landscaping is taller than the top of the generator.

ENVIRONMENTAL REVIEW

This project is categorically exempt from environmental review under Section 15303 of the California Environmental Quality Act because it involves the construction of an accessory structure and under Section 15301 due to negligible expansion of an existing facility of a public utility service

PUBLIC CONTACT

For this meeting, a public hearing notice was published in the *Town Crier*, a public meeting notice was posted on the property and mailed to 13 nearby property owners on Beechwood Lane, Sycamore Court, and Aspen Drive. The Notification Map is included in Attachment B. The applicant has provided an outreach letter, and it is provided as Attachment C. The applicant also posted the public notice sign (24" x 36") in conformance with the Planning Division posting requirements, as shown in Attachment d.

Cc: California Water Service, Applicant, Engineer and Owners

Attachments:

- A. Justification Letter
- B. Notification Map
- C. Noise Study
- D. Proof of Public Notice

FINDINGS

V21-0003 and DR22-0067 – 10900 Beechwood Lane

1. With regard to the front setback variances for a ten-foot front setback, the Design Review Commission finds the following in accordance with Section 14.76.070 of the Municipal Code:
 - a. The granting of the variance is consistent with the objectives of the zoning plan set forth in Article 1 of Chapter 14.02 because maintaining the encroachment into the yard areas would still ensure the Zoning Code’s objective of a harmonious, convenient relationship among the adjacent residential properties which have existed in this location since 1948; the modified structure will maintain the existing exterior wall setbacks at the front, left, and right side yard areas; The proposed emergency generator will be located in a 11.3-foot-tall sound attenuating accessory structure proposes a ten-foot front setback, 74-foot right side setback, 43-foot left side setback and 150-foot rear setback. The side and rear yard complies with the setback requirements of the R1-20 District. With approval of the variance for a reduced front yard setback of ten feet, where a 30-foot front setback required, the proposed generator and enclosure will comply with the Zoning Ordinance; and
 - b. The granting of the variances will not be detrimental to the health, safety, or welfare of persons living or working in the vicinity or injurious to property or improvements in the vicinity because section 6.16.090.A of the Noise Ordinance exempts the generator from the Noise Ordinance standards when the utilities activities are associated with the emission of sound in the performance of emergency work, such as the operation of a back-up power generator during an emergency, when commercial power is unavailable. Therefore, the generator noise levels are permissible for a public utility site under the performance of emergency work, which would occur if the site lost commercial power; and after the installation of the generator, the generator will be tested intermittently for 15 minutes per week. The generator custom outdoor enclosure meets the City’s day time limit of 60dbA for short-duration noise in a residential area.
 - c. There is a special circumstance applicable to the property due to the existing location of the tank and ancillary structure for the potable water pump station, which constrains or limits the potential alternative locations on the subject site. The strict application of the provisions of the chapter would require the generator be installed at the rear of the site, which create potential noise impacts to five adjacent properties. The proposed generator location reduces potential noise impacts to the street frontage and limits potential noise impacts to two adjoining properties.
2. With regard to one-story addition and remodel of the existing residence, the Design Review Commission finds the following in accordance with Section 14.76.060 of the Municipal Code:
 - a. The proposed addition complies with all provision of this chapter;
 - b. The height, elevations, and placement on the site of the addition, when considered with reference to the nature and location of residential structures on adjacent lots, will avoid

unreasonable interference with views and privacy and will consider the topographic and geologic constraints imposed by particular building site conditions;

- c. The natural landscape will be preserved insofar as practicable by minimizing tree and soil removal; grade changes shall be minimized and will be in keeping with the general appearance of neighboring developed areas;
- d. The orientation of the proposed addition in relation to the immediate neighborhood will minimize the perception of excessive bulk and mass;
- e. General architectural considerations, including the character, size, scale, and quality of the design, the architectural relationship with the site and other buildings, building materials, and similar elements have been incorporated in order to insure the compatibility of the development with its design concept and the character of adjacent buildings; and
- f. The proposed addition has been designed to follow the natural contours of the site with minimal grading, minimum impervious cover, and maximum erosion protection.

CONDITIONS

V21-0003 and DR22-0067 – 10900 Beechwood Lane

GENERAL

1. Expiration

The Design Review Approval will expire on July 6, 2024 unless prior to the date of expiration, a building permit is issued, or an extension is granted pursuant to Section 14.76.090 of the Zoning Code.

2. Approved Plans

The approval is based on the plans and materials received on June 6, 2022, except as may be modified by these conditions and specifically as follows:

3. Generator Testing

All generator testing will occur between 7:30 am to 3:30 pm and the maximum testing period shall be 15 minutes.

4. Protected Trees

Trees Nos. 306 to 343 shall be protected under this application and cannot be removed without a tree removal permit from the Community Development Director. Trees Nos. 301 to 305 shall be removed as part of this design review permit

5. Tree Removal Approved

Trees Nos. 301 to 305 shown to be removed on plan Sheet LAS9-3575-C0-00c of the approved set of plans are hereby approved for removal. Tree removal shall not occur until a building permit is submitted and shall only occur after issuance of a demolition permit or building permit. Exceptions to this condition may be granted by the Community Development Director upon submitting written justification.

6. Encroachment Permit

An encroachment permit shall be obtained from the Engineering Division prior to doing any work within the public right-of-way including the street shoulder. All work within the public street right-of-way shall be in compliance with the City's Shoulder Paving Policy.

7. Landscaping

The landscape plan is subject to the City's Water Efficient Landscape Regulations pursuant to Chapter 12.36 of the Municipal Code.

8. Underground Utilities

Any new utility service drops may need be located underground from the nearest convenient existing pole pursuant to Chapter 12.68 of the Municipal Code.

9. Fire Sprinklers

Fire sprinklers may

be required pursuant to Section 12.10 of the Municipal Code

10. Indemnity and Hold Harmless

The applicant/owner agrees to indemnify, defend, protect, and hold the City harmless from all costs and expenses, including attorney's fees, incurred by the City or held to be the liability of the

City in connection with the City's defense of its actions in any proceedings brought in any State or Federal Court, challenging any of the City's action with respect to the applicant's project.

INCLUDED WITH THE BUILDING PERMIT SUBMITTAL

11. Conditions of Approval

Incorporate the conditions of approval into the title page of the plans.

12. Tree Protection Note

On the grading plan and/or the site plan, show all tree protection fencing for the tree Nos. 306 to 314, and 334 to 342 and also for trees on neighboring properties where dripline areas encroach into the subject site and add the following note: "All tree protection fencing shall be chain link and a minimum of five feet in height with posts driven into the ground."

13. Underground Utility Location

Show the location of underground utilities pursuant to Section 12.68 of the Municipal Code. Underground utility trenches shall avoid the drip-lines of all protected trees unless approved by the project arborist and the Planning Division.

14. Storm Water Management

Show how the project is in compliance with the New Development and Construction Best Management Practices and Urban Runoff Pollution Prevention program, as adopted by the City for the purposes of preventing storm water pollution (i.e. downspouts directed to landscaped areas, minimize directly connected impervious areas, etc.).

PRIOR TO ISSUANCE OF BUILDING OR DEMOLITION PERMIT

15. Tree Protection

Tree protection fencing shall be installed around the driplines of tree Nos. 306 to 314, and 334 to 342 and for trees on neighboring properties where dripline areas encroach into the subject site. Tree protection fencing shall be chain link and a minimum of five feet in height with posts driven into the ground and shall not be removed until all building construction has been completed unless approved by the Planning Division.



CALIFORNIA WATER SERVICE

Los Altos District 949 B Street
Los Altos, CA 94024 Tel: (650) 917-0152

ATTACHMENT A

October 8, 2021

Design Review Commission
Los Altos City Hall
1 North San Antonio Road
Los Altos, CA 94022

Re: Generator Installation at Pump Station 9 (10900 Beechwood Lane)

Dear Design Review Commission,

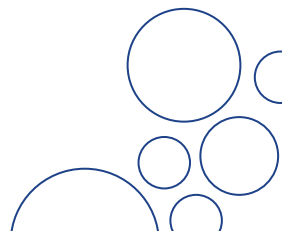
This is a variance/use permit justification letter regarding California Water Service (Cal Water) installing a 125 kW emergency generator at pump station 9 (10900 Beechwood Lane, Los Altos, CA 94024). The generator would provide backup power to the pump that provides potable drinking water and fire protection to several hundred homes. This emergency backup generator also would provide power to the on-site radio communication equipment that is necessary to control the water pump. The variance being requested is regarding the front setback, lot coverage, and floor area as discussed below.

Front Setback

The generator is in the front yard of the station and is considered a detached accessory structure. The generator distance from the nearest station property line meets the standard distance according to National Fire Protection Association (NFPA) 30, which is a minimum of 10 feet distance from the property line. However, the generator location does not meet 30 feet setback required by the R1-20 zoning requirements (14.10.080). Cal Water proposes this location as it complies with NFPA 30 regulations, is constructible, free of underground utilities, and complies with the City noise ordinance. Three other locations on the property were studied but these locations did not comply with NFPA 30 or the city noise ordinance. Therefore, Cal Water is requesting a variance on the front yard setback.

We understand there may be concern about how the generator will affect the visual aesthetic of the neighborhood and how noisy it will be if it is installed in the front yard setback. More information on these items is included below.

Screening. The generator will be screened from public view by the existing mature landscaping that exists between the existing fence and street. The landscaping is taller than the top of the generator would be. The existing landscaping is shown in Figure 1.





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Noise. The generator will be placed inside a custom enclosure specifically built to reduce the sound pressure level. This generator custom enclosure sound rating is 65dbA at 23 feet. H&E performed a noise study, refer exhibit A. This study shows that the generator custom outdoor enclosure, meets the City's daytime limit of 60dbA for short-duration noise in residential areas. Therefore, the custom-built reduced-noise generator meets municipality code 6.16.050A.2.B. After installation is complete, the generator will be tested by operating it for 15 minutes every week. All generator testing would be done between 7:30 a.m. and 3:30 p.m.



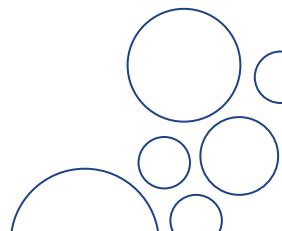
Figure 1. 10900 Beechwood Existing Landscaping Looking North

Lot Coverage and Floor Area

The existing potable water storage tank has a 27% lot coverage which exceeds the less than 25% lot coverage requirement for the R1-20 zoning. The generator does not add much footprint, so the site coverage would remain at 27% after the generator is installed. Furthermore, the floor area is at 27% percent with the tank and the zoning requires it to be less than 21%. The generator does not add much footprint, so the floor area would remain at 27% after the generator is installed.

City comments shown in bold are addressed below.

- 1. That the proposed location of the conditional use is desirable or essential to the public health, safety, comfort, convenience, prosperity, or welfare;**





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Continuous operation of the pump is essential to provide potable drinking water and fire protection to several hundred homes. The pump needs electricity that would be provided by the generator when grid power is not available.

2. That the proposed location of the conditional use is in accordance with the objectives of the zoning plan as stated in Chapter 14.02 of this title;

The zoning plan objectives include the following.

A. To guide community growth along sound lines;

This project does not affect this objective.

B. To ensure a harmonious, convenient relationship among land uses;

Potable water is essential to the surrounding land uses. During an emergency, having the installed generator will make this neighborhood more resilient.

C. To promote a safe, workable traffic circulation system;

This project does not affect this objective.

D. To provide appropriate locations for needed community facilities;

This project does not affect this objective.

E. To promote business activities of appropriate types;

This project does not affect this objective.

F. To protect and enhance real property values within the city; and

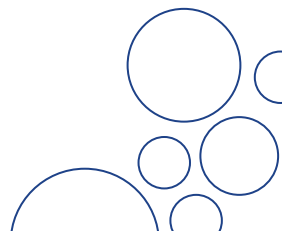
Having a robust water supply is a benefit to the neighborhood.

G. To conserve the city's natural beauty, to improve its appearance, and to preserve and enhance its distinctive physical character.

As requested by the City, a solid fence with lattice is provided to screen the generator. There is also existing mature vegetation that would screen the generator.

3. That the proposed location of the conditional use, under the circumstances of the particular case, will not be detrimental to the health, safety, comfort, convenience, prosperity, or welfare of persons residing or working in the vicinity or injurious to property or improvements in the vicinity.

This project is not detrimental to the health, safety, comfort, convenience, prosperity, or welfare of persons residing or working in the vicinity or injurious to property or improvements in the vicinity. The project benefits health and safety as potable water would be able to continue to be





CALIFORNIA WATER SERVICE

provided during a power outage. The generator noise has been mitigated as discussed in this letter and is not considered detrimental to the neighbors.

4. That the proposed conditional use will comply with the regulations prescribed for the district in which the site is located and the general provisions of Chapter 14.02.

This project will comply with the regulations and general provisions of Chapter 14.02 of the Los Altos Municipal Code as listed in the answer to Question 2. The variance being requested in this letter is regarding the requirements for front setback, lot coverage, and floor area.

5. The variance(s) shall be granted only when, because of special circumstances applicable to the property, including size, shape, topography, location, or surroundings, the strict application of the provisions of the Zoning Ordinance deprive the subject property of privileges enjoyed by other properties in the vicinity and under identical zoning classifications.

This application is unique as the property is used to provide a safe and reliable water supply to the neighboring properties.

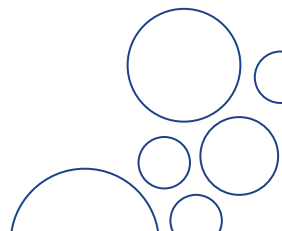
Protecting customer health and safety is Cal Water's highest priority. This water system upgrade will help ensure that we can continue providing both a reliable supply of high quality water to our neighbors in this portion of Los Altos and sufficient fire protection for first responders in emergencies. If you have any questions, please contact the project engineer, Mandy Macatiag, at (408) 828-0522.

Sincerely,

A handwritten signature in blue ink that reads "Dawn Smithson".

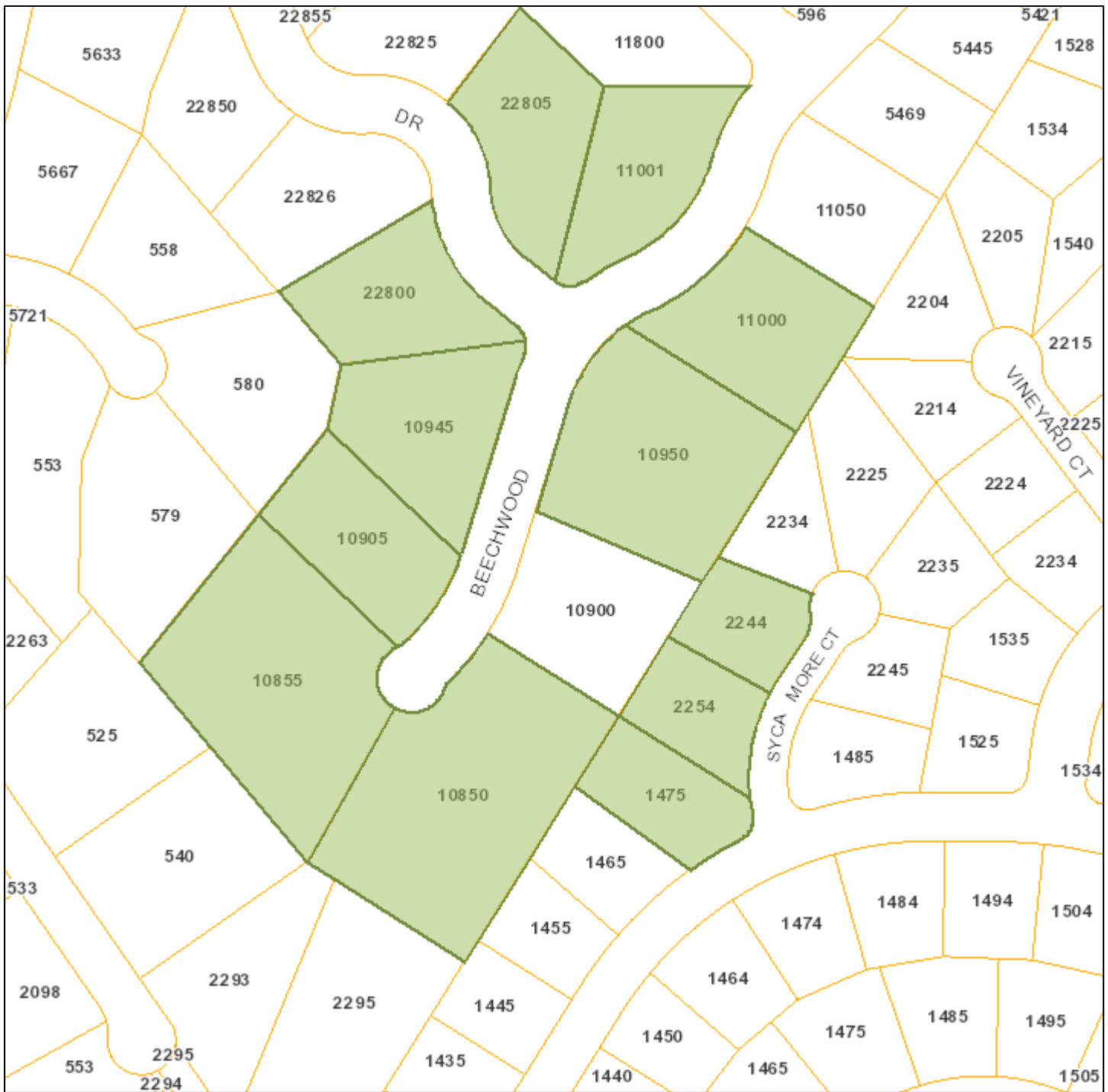
Dawn Smithson, P.E.
District Manager

Attachments
Exhibit A
Drawings
Arborist Report



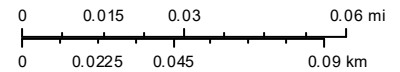
ATTACHMENT B








Notification Map



Print Date: July 15, 2021

12,257



-  Schools
-  Park and Recreation Areas
-  City Limit
-  Road Names
-  Waterways
-  Situs Label
-  TaxParcel

The information on this map was derived from the City of Los Altos' GIS. The City of Los Altos does not guarantee data provided is free of errors, omissions, or the positional accuracy, and it should be verified.

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

ATTACHMENT C

California Water Service Company • Los Altos Station 9
10900 Beechwood Lane • Los Altos, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of the California Water Service Company to evaluate the proposed installation of a generator at “Los Altos Station 9,” located at 10900 Beechwood Lane in Los Altos, California, for compliance with appropriate guidelines limiting sound levels from the installation.

Executive Summary

CalWater proposes to install a generator at its facility at 10900 Beechwood Lane in Los Altos. Noise levels from the generator operation can comply with the City’s permitted limits.

Prevailing Standard

The City of Los Altos sets forth limits on sound levels in Table 1 of Section 6.16.050 “Exterior Noise Limits” of its Municipal Code, including the following limits for noise lasting more than 30 minutes in any hour in the indicated zones:

Zone	“Day”	“Night”
	7 am to 10 pm	10 pm to 7 am
R-1	55 dBA	45 dBA
R-3/PCF	55	50
OA	60	55
C	65	60

The more restrictive noise limits apply whenever adjacent parcels have different zoning. Higher levels are allowed for shorter time periods, including an increase of 5 dBA for noise lasting no more than 15 minutes within any hour.

Section 6.16.090.A exempts from the above standard those activities associated with the emission of sound in the performance of emergency work, such as the operation of a back-up power generator during an emergency, when commercial power is unavailable; nevertheless, for the purpose of this study, the generator’s operation during periodic, no-load testing* is evaluated for compliance.

Figure 1 attached describes the calculation methodology used to determine applicable noise levels for evaluation against the prevailing standard.

* Back-up power generators are typically exercised for a 15-minute period once a week during daytime hours on a non-holiday weekday.



**California Water Service Company • Los Altos Station 9
10900 Beechwood Lane • Los Altos, California**

Site & Facility Description

Based upon information provided by CalWater, including drawings dated October 10, 2019, and April 2022, it is proposed to install a Caterpillar Model C7.1 125 kW back-up diesel power generator, configured with a custom sound-reducing enclosure, at its facility at 10900 Beechwood Lane in Los Altos. The surrounding area is zoned R-1 and includes residential parcels to the north, west, and south, approximately 72, 69, and 45 feet from the generator, respectively.

Study Results

Caterpillar reports[†] that the maximum noise level from its generator as configured is 60.8 dBA, measured at a reference distance of 23 feet. On the day the generator is tested, the maximum calculated noise levels at the surrounding parcels to the north, west, and south are 50.9, 51.2, and 55.0 dBA, respectively, all meeting the City's daytime limit of 60 dBA for short-duration noise in residential areas.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the back-up power generator proposed to be installed at the CalWater facility located at 10900 Beechwood Lane in Los Altos, California, can comply with that City's requirements for limiting acoustic noise emission levels.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2023. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



A handwritten signature in blue ink that reads "William F. Hammett".

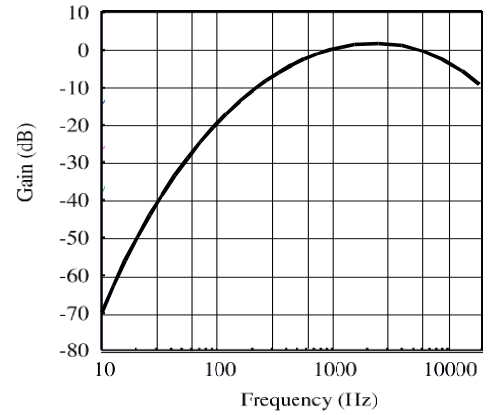
William F. Hammett, P.E.
707/996-5200

May 16, 2022

[†] See attached three-page description from Caterpillar.

Noise Level Calculation Methodology

Most municipalities and other agencies specify noise limits in units of dBA, which is intended to mimic the reduced receptivity of the human ear to Sound Pressure (“L_p”) at particularly low or high frequencies. This frequency-sensitive filter shape, shown in the graph to the right as defined in the International Electrotechnical Commission Standard No. 179, the American National Standards Institute Standard No. 5.1, and various other standards, is also incorporated into most calibrated field test equipment for measuring noise levels.



30 dBA	library
40 dBA	rural background
50 dBA	office space
60 dBA	conversation
70 dBA	car radio
80 dBA	traffic corner
90 dBA	lawnmower

The dBA units of measure are referenced to a pressure of 20 μPa (micropascals), which is the threshold of normal hearing. Although noise levels vary greatly by location and noise source, representative levels are shown in the box to the left.

Manufacturers of many types of equipment, such as air conditioners, generators, and telecommunications devices, often test their products in various configurations to determine the acoustical emissions at certain distances. This data, normally expressed in dBA at a known reference distance, can be used to determine the corresponding sound pressure level at any particular distance, such as at a nearby building or property line. The sound pressure drops as the square of the increase in distance, according to the formula:

$$L_p = L_K + 20 \log(D_K/D_p),$$

where L_p is the sound pressure level at distance D_p and L_K is the known sound pressure level at distance D_K.

Individual sound pressure levels at a particular point from several different noise sources cannot be combined directly in units of dBA. Rather, the units need to be converted to scalar sound intensity units in order to be added together, then converted back to decibel units, according to the formula:

where L_T is the total sound pressure level and L₁, L₂, etc are individual sound pressure levels.

$$L_T = 10 \log (10^{L_1/10} + 10^{L_2/10} + \dots),$$

Certain equipment installations may include the placement of barriers and/or absorptive materials to reduce transmission of noise beyond the site. Noise Reduction Coefficients (“NRC”) are published for many different materials, expressed as unitless power factors, with 0 being perfect reflection and 1 being perfect absorption. Unpainted concrete block, for instance, can have an NRC as high as 0.35. However, a barrier’s effectiveness depends on its specific configuration, as well as the materials used and their surface treatment.

Cat C7.1 DIESEL GENERATOR SETS



Standby & Prime: 60 Hz, 480V



Engine Model	Cat® C7.1 In-line 6, 4-cycle diesel
Bore x Stroke	105mm x 127mm (4.1in x 5.0 in)
Displacement	7.01 L (428 in³)
Compression Ratio	16.7:1
Aspiration	Turbocharged Air-to-Air-Aftercooled
Fuel Injection System	Electronic, Common Rail

Standby	Prime	Performance Strategy
125 ekW	114 ekW	EPA TIER III

PACKAGE PERFORMANCE

Performance	Standby		Prime	
Genset power rating	156.3 kVA		142.5 kVA	
Genset power rating with fan @ 0.8 power factor	125 ekW		114 ekW	
Performance number	P4392A-00		P4392C-00	
Fuel Consumption				
100% Load with fan	37.8 L/hr	10.0 g/hr	35.2 L/hr	9.3 g/hr
75% Load with fan	30.3 L/hr	8.0 g/hr	28.2 L/hr	7.4 g/hr
50% Load with fan	21.9 L/hr	5.8 g/hr	20.3 L/hr	5.4 g/hr
Cooling System¹				
Radiator air flow restriction (system)	0.12 kPa	0.48 in Water	0.12 kPa	0.48 in Water
Engine coolant capacity	9.5 L	2.5 gal	9.5	L 2.5 gal
Radiator coolant capacity	11.5 L	3.0 gal	11.5	L 3.0 gal
Total coolant capacity	21.0 L	5.5 gal	21.0 L	L 5.5 gal
Inlet Air				
Combustion air inlet flow rate	14.4 m³/min	508.5 cfm	13.9 m³/min	490.9 cfm
Max. allowable combustion air inlet temp	51°C, 124°F			
Exhaust System				
Exhaust stack gas temperature	450°C	843°F	439°C	822°F
Exhaust gas flow rate	29.9 m³/min	1056 cfm	28.8 m³/min	1017 cfm
Exhaust system backpressure (maximum allowable)	15.0 kPa	60.2 in water	15.0 kPa	60.2 in water
Exhaust flange size (internal diameter)	89.0 mm	3.5 in	89.0 mm	3.5 in
Heat Rejection				
Heat rejection to Coolant (total)	75.0 kW	4368 Btu/min	69.0 kW	3924 Btu/min
Heat rejection to Exhaust (total)	128.0 kW	7496 Btu/min	120.0 kW	6796 Btu/min
Heat rejection to Aftercooler	32.0 kW	2138 Btu/min	30.0 kW	1689 Btu/min
Heat rejection to Atmosphere from Engine	28.0 kW	1649 Btu/min	26.0 kW	1496 Btu/min
Heat rejection from alternator	9.8 kW	557.3 Btu/min	8.8 kW	500.4 Btu/min
Lube System				
Sump refill with filter	17.5 L	4.6 gal	17.5 L	4.6 gal



Emissions (Nominal) ²	Standby		Prime	
NO _x + HC	4.0 g/kW-hr		4.0 g/kW-hr	
CO	1.0 g/kW-hr		1.0 g/kW-hr	
PM	0.2 g/kW-hr		0.2 g/kW-hr	
Alternator ³				
Voltages	480V		480V	
Motor starting capability @ 30% Voltage Dip	363 skVA		363 skVA	
Frame Size	LC3114G		LC3114G	
Excitation	Self Excited		Self Excited	
Temperature Rise	130°C	234°F	105°C	189°F

DEFINITIONS AND CONDITIONS

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% Prime load. This information should not be used for permitting purposes and is subject to change without notice. Contact your Caterpillar dealer for further details.

³ Generator temperature rise is based on a 40°C (104°F) ambient per NEMA MG1-32

APPLICABLE CODES AND STANDARDS:

AS1359, CSA C22.2 No 100-04, UL142, UL489, UL601, UL869, UL2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, 72/23/EEC, 98/37/EC, 2004/108/EC.

PRIME: Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

Fuel Rates are based on fuel oil to specification EPA 2D 89.330-96 with a density of 0.845 – 0.850 kg/L (7.052 – 7.094 lbs/U.S. gal.) @ 15°C (59°F) and fuel inlet temperature 40°C (104°F). Additional ratings may be available for specific customer requirements, contact your Cat representative for details.

LEHE1582-00 (03/18)

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* CUSTOMER: Peterson Power

* QUOTATION #: 0

* PROJECT NAME: California Water

* DATE: 07/01/2021

* SKIDED GEN-SET SIZE CAT C7.1 125kW 0

		Octave Band Center Frequency (Hz.)								
		31.5	63	125	250	500	1000	2000	4000	8000
Step	Description:									
1	GEN-SET Casing PWL	92.8	93.7	97.2	104.1	100.2	98.0	96.1	93.2	91.0
2	SILENCER D.I.L. (36")	-5.3	-7.9	-10.5	-15.1	-26.7	-37.2	-37.2	-29.3	-16.1
3	NO Discharge Elbow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Distance Attenuation	-21.0	-21.0	-21.0	-21.0	-21.0	-21.0	-21.0	-21.0	-21.0
5	SPL @ Distance (dB)	66.5	64.8	65.7	68.0	52.5	39.8	37.9	42.9	53.9
6	"A"-Weighting	-39.0	-26.0	-16.0	-9.0	-3.0	0.0	1.0	1.0	-1.0
7	SPL @ Distance (dBA)	27.5	38.8	49.7	59.0	49.5	39.8	38.9	43.9	52.9

PERFORMANCE: 65.0 dBA AT 23.0 FEET = 7.0 Meters

Baffle Panels: 36.0 " Deep

ACTUAL PERFORMANCE: 60.8 dBA AT 23.0 FEET = 7.0 Meters

ATTACHMENT D



NOTICE OF DEVELOPMENT PROPOSAL

125kW Back-up Generator – 10900 Beechwood Ln



Project Description:

Variance for a 30-foot front yard setback, where a 25-foot setback is required in the R-30 Zoning District and Design Review for the installation of a 125kW Diesel Emergency Back-up Generator.

Applicant:

Devin Smithson
951.390.0284
dsmithson@cutwater.com

Property Owner:

California Water Service
(951) 367-8200

Project Planner:

To submit comments or get additional information, please contact:
Devin Gallegos
(951) 367-3540
dgallegos@cutwater.com

Public Meeting Dates (as scheduled below):

Design Review
Commission Meeting
July 6, 2022

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