

Noise Variance Consultation

Pali Highway Improvements (Por.)
Vineyard Boulevard to Waokanaka Street



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Vineyard Boulevard to Waokanaka Street



Noise Regulations

- HAR Title 11, Chapter 46 sets the rules and restrictions on sound levels for construction projects. It states:
 - *“No permit shall allow any construction activities which emit noise:*
 - *Monday thru Friday before 7 a.m. and after 6 p.m. of the same day*
 - *Saturday before 9 a.m. and after 6 p.m.*
 - *Sundays and on Holidays”*
- A Noise Variance must be obtained for any construction activities to occur outside the permissible hours (i.e. after 6 p.m. weekdays).

Noise Variance Consultation

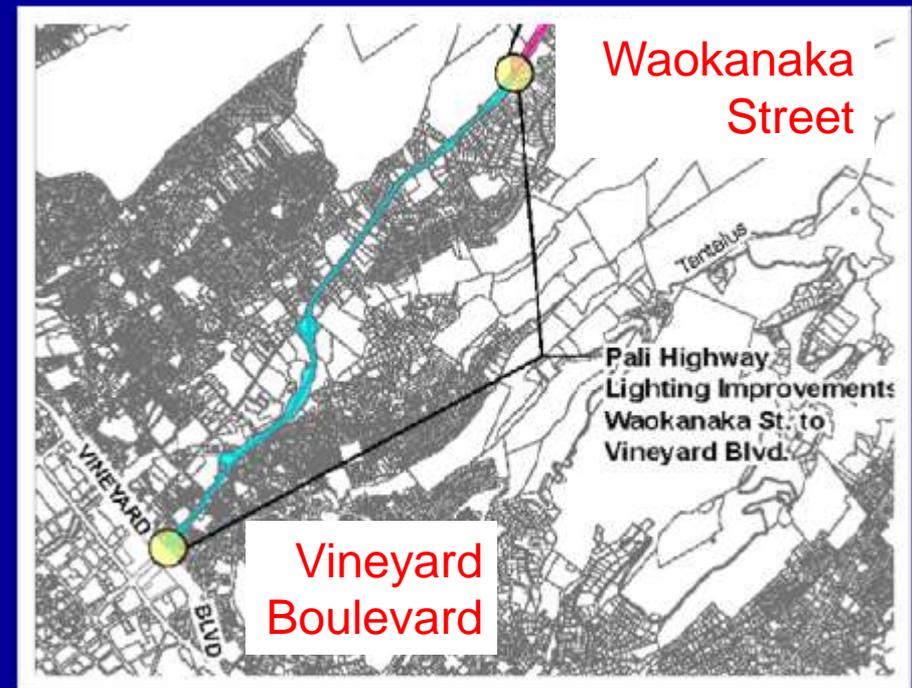
Pali Highway Improvements (Por.)

Vineyard Boulevard to Waokanaka Street



HDOT is applying a Noise Variance for
Pali Highway Improvements project
from

**VINEYARD BOULEVARD to
WAOKANAKA STREET**



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Scope of Work

Vineyard Boulevard to Waokanaka Street

- Resurface/Reconstruct highway surface
- Construct concrete median barrier in some locations
- Replace all guardrails and crash cushions
- Replace all regulatory and warning signs and pavement markings
- Upgrade highway lighting
- Improve pedestrian facilities
- Widen Honolulu-bound roadway for highway lighting replacement and Dowsett Highlands Relief Sewer project



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Schedule (2 Phases):

- Anticipated Construction Start: Fall 2017
- Anticipated Construction End: Winter 2020

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Proposed Noise Variance

- Noise Variance Application for Pali Highway Improvements (Por.) Vineyard Boulevard to Waokanaka Street was submitted to DOH
 - Requested that work be allowed 24 hours, 7 days a week from Fall 2017 to Winter 2020
- We anticipate that most of the work will occur during the day, but night work may be required
- We will work with the Contractor to decide on the least impactful schedule

Noise Variance Consultation

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Proposed Noise Variance

Prohibition within 500 feet of residences:

Type of Equipment	Proposed Restriction
Hoe Ram, Walk Behind Saw, and Jackhammers	Prohibited after 10 PM
Cold Planers	Prohibited after midnight
Excavators, Backhoes, Loaders, and Vibratory Rollers	No Restriction

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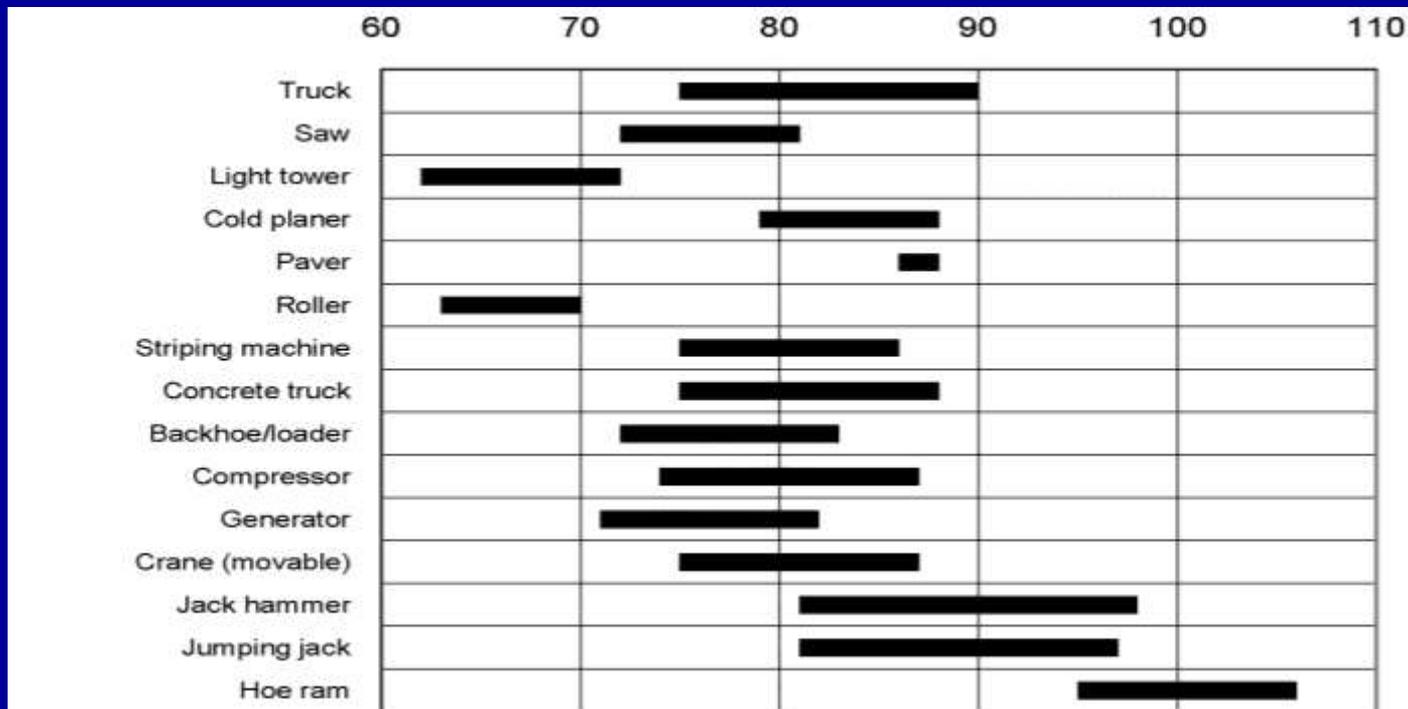
- As sound travels away from its source, it becomes quieter.
- More sound is received by an ear 10 feet from a source than at 20 feet from the source.
- For construction, noise decreases at a rate of 6 to 8 dBA each time the distance from the source doubles.



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Construction Equipment Noise Level

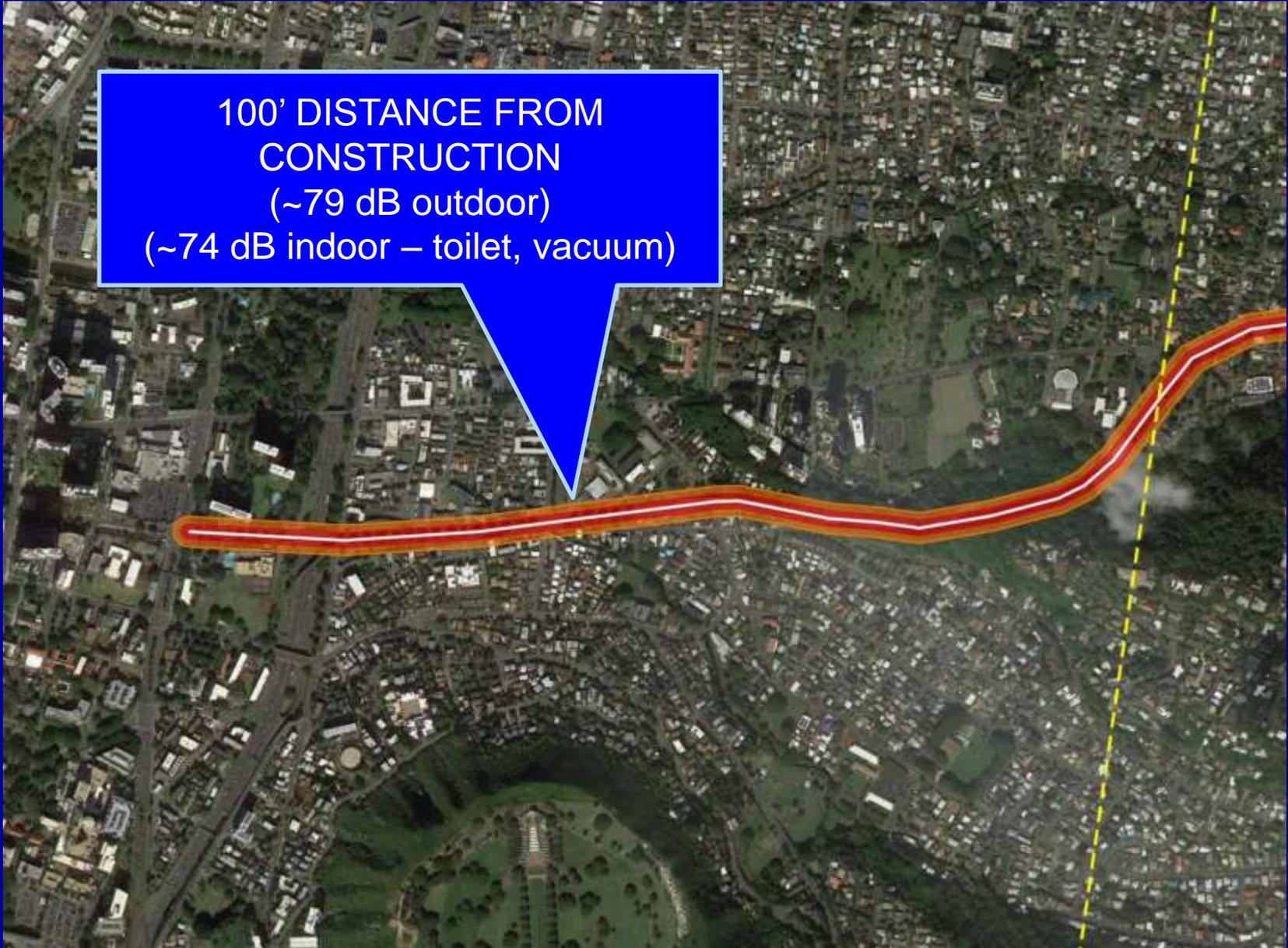
VINEYARD BLVD TO WYLLIE ST

50' DISTANCE FROM
CONSTRUCTION
(~85 dB outdoor)
(~80 dB indoor – garbage disposal)



VINEYARD BLVD TO WYLLIE ST

100' DISTANCE FROM
CONSTRUCTION
(~79 dB outdoor)
(~74 dB indoor – toilet, vacuum)

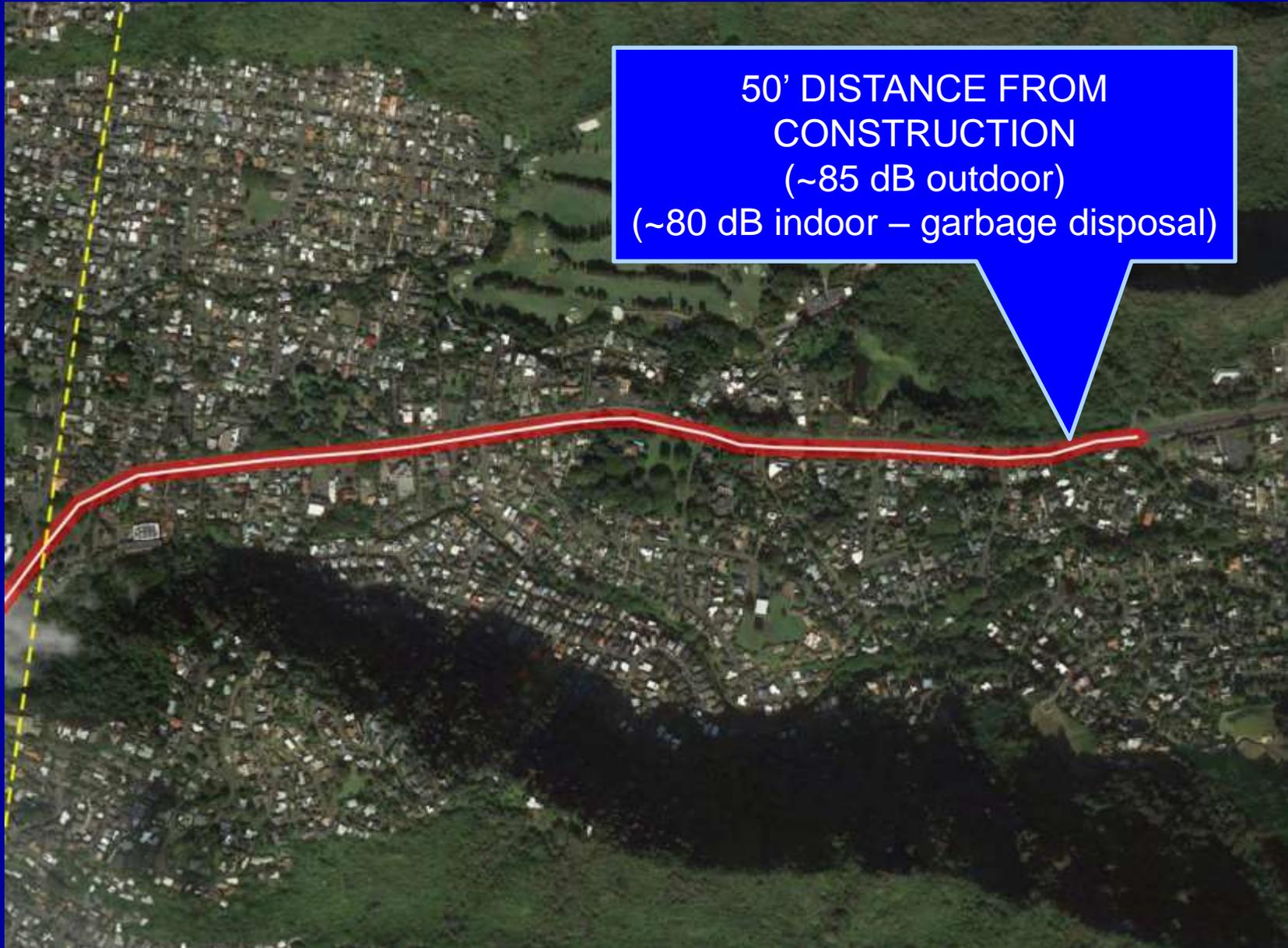


VINEYARD BLVD TO WYLLIE ST

200' DISTANCE FROM
CONSTRUCTION
(~73 dB outdoor)
(~68 dB indoor – shower, dishwasher)

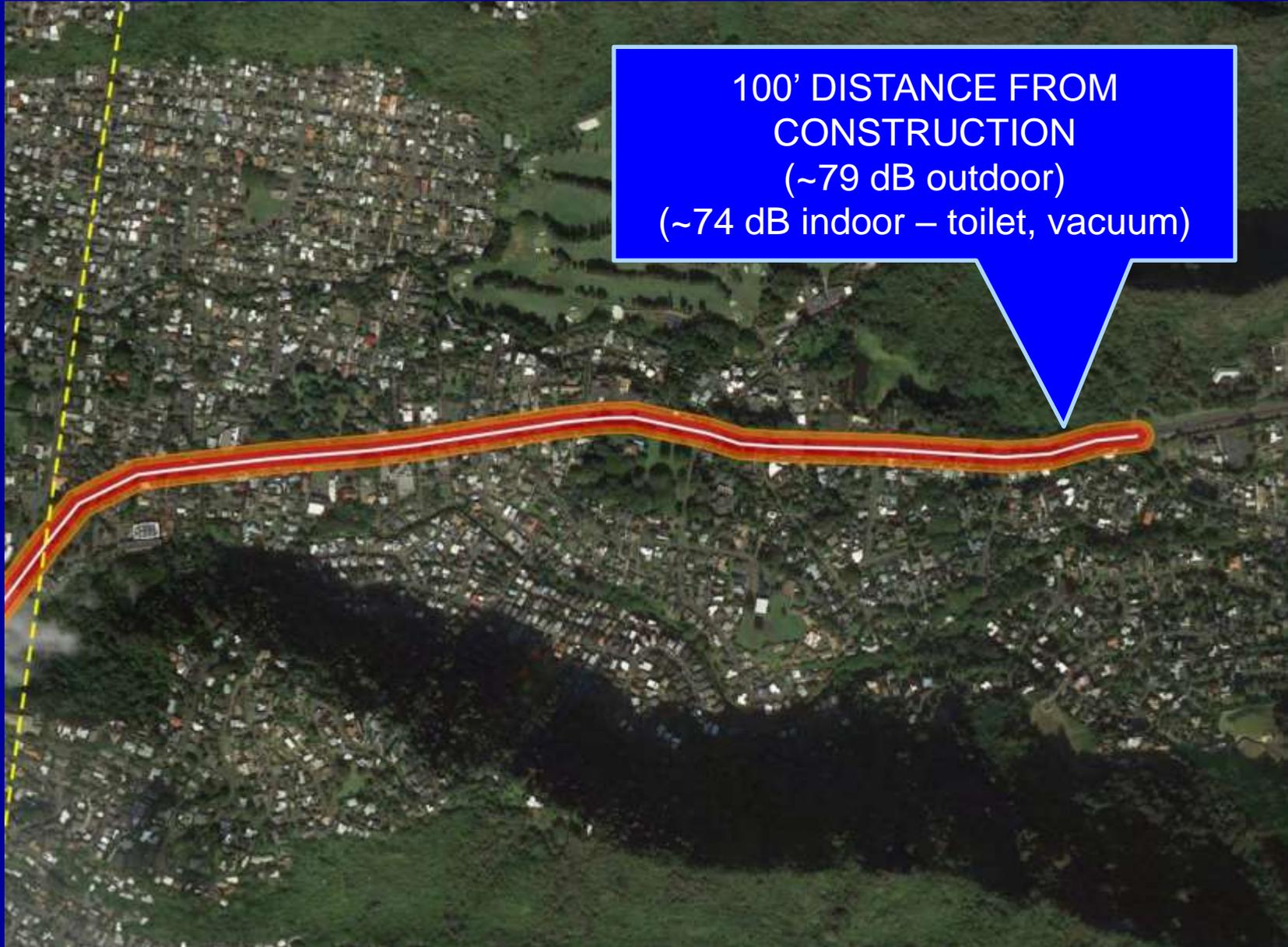


WYLLIE ST TO WAOKANAKA

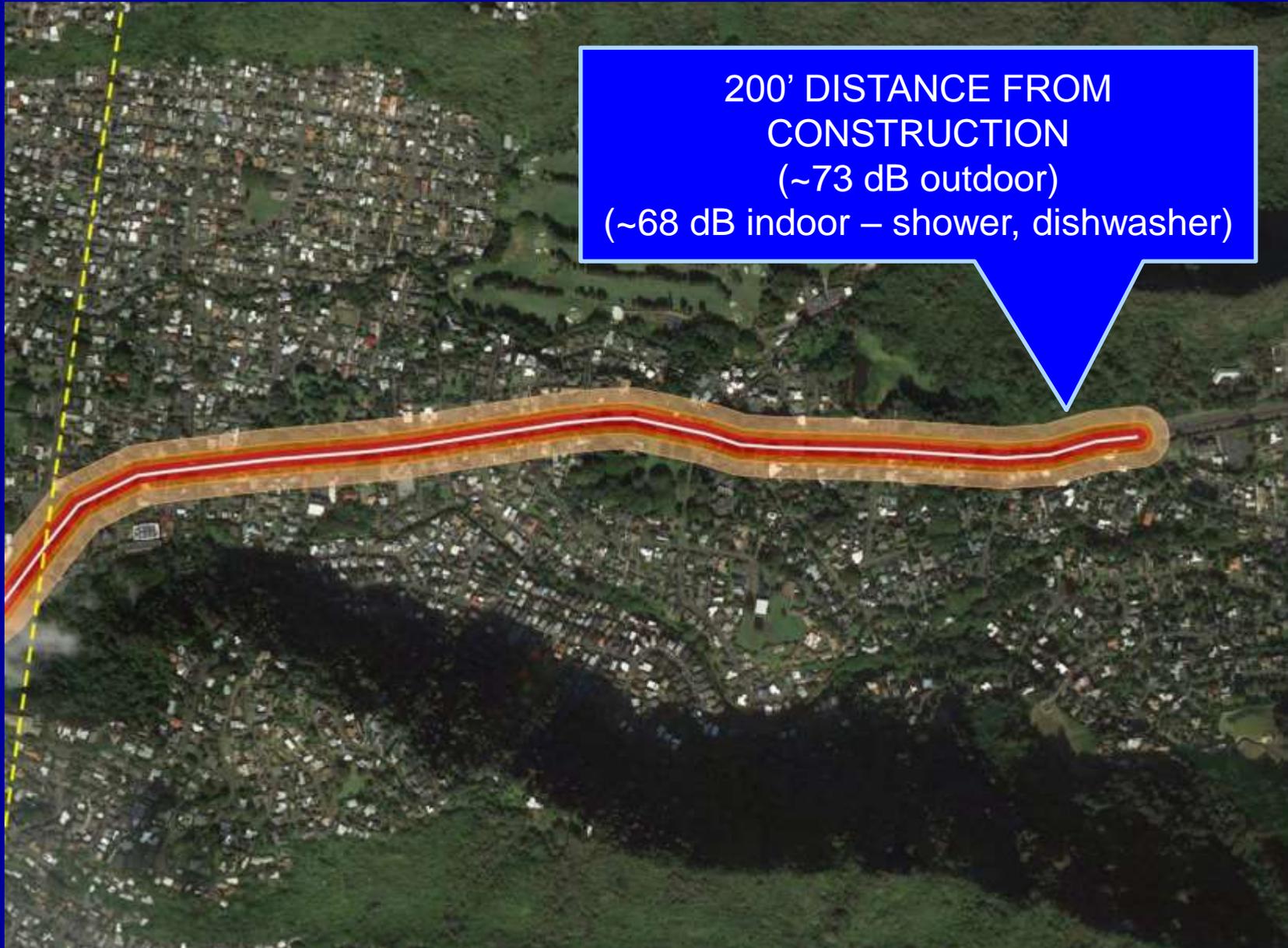


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WYLLIE ST TO WAOKANAKA



WYLLIE ST TO WAOKANAKA



Noise Variance Consultation

Pali Highway Improvements (Por.)

Vineyard Boulevard to Waokanaka Street



Noise Abatement

- All equipment with an exhaust of gas or air will be equipped with mufflers
- HDOT field personnel and the Contractor will monitor all equipment and construction activities on the job site
- Instructional meetings will be held for construction crews and truck drivers
- A job-site representative will be designated to whom immediate complaints can be forwarded for prompt response and who will have the general responsibility of monitoring quiet work procedures
- The Contractor will have a corrective action program

Noise Variance Consultation

Pali Highway Improvements (Por.)

Vineyard Boulevard to Waokanaka Street



Potential impact if Noise Variance is not granted:

- Increase construction duration by at least 2 years
- Increase construction cost
- Prolong duration of lane closure period
- Domino delay effect on all projects on Pali Highway

Noise Variance Consultation

Pali Highway Improvements (Por.)

Vineyard Boulevard to Waokanaka Street



- Any comments regarding the proposed Noise Variance for HDOT's Pali Highway Improvement (Por.) Vineyard Blvd to Waokanaka St ?
- Make comments here tonight or take home a comment form and mail it to us on or before August 25, 2017



- Please be respectful to those speaking
- Please keep focused on the Noise Variance



HDOT

dotpao@hawaii.gov

hidot.hawaii.gov

HDOT Facebook & Twitter

(808) 587-2160

Question?

Dowsett Highlands Relief Sewer Noise Variance Consultation

**July 26, 2017 - 6:30-8:30 pm
Nuuanu Elementary School**



**City & County of Honolulu
Department of Environmental Services
Department of Design & Construction**

Website: <http://palisewer.org>

NOISE VARIANCE CONSULTATION PROJECT SCOPE OF WORK NUUANU AVENUE

- Scope of work as presented in the PIM presentation to install relief sewer along Nuuanu Avenue from School Street to Wyllie Interchange.
- Open cut excavation which includes trenching, excavation and backfill, paving, new sewer line and manholes, traffic controls, and pavement markings shall be utilized along Nuuanu Avenue from School Street to Wyllie Interchange.

NOISE VARIANCE CONSULTATION PROJECT SCOPE OF WORK PALI HIGHWAY

- Scope of work as presented in the PIM presentation to install relief sewer along Pali Highway from Wyllie Interchange to Nuuanu Pali Drive.
- Utilization of Pilot Tube Microtunneling (PTMT) for relief sewers along Pali Highway where possible. PTMT is trenchless however will require excavated 10' diameter pits strategically situated at new sewer manhole locations for the tunneling / jacking machine.
- Contractor shall have an option to install sewer line via open-cut excavation in Pali Highway.

NOISE VARIANCE CONSULTATION

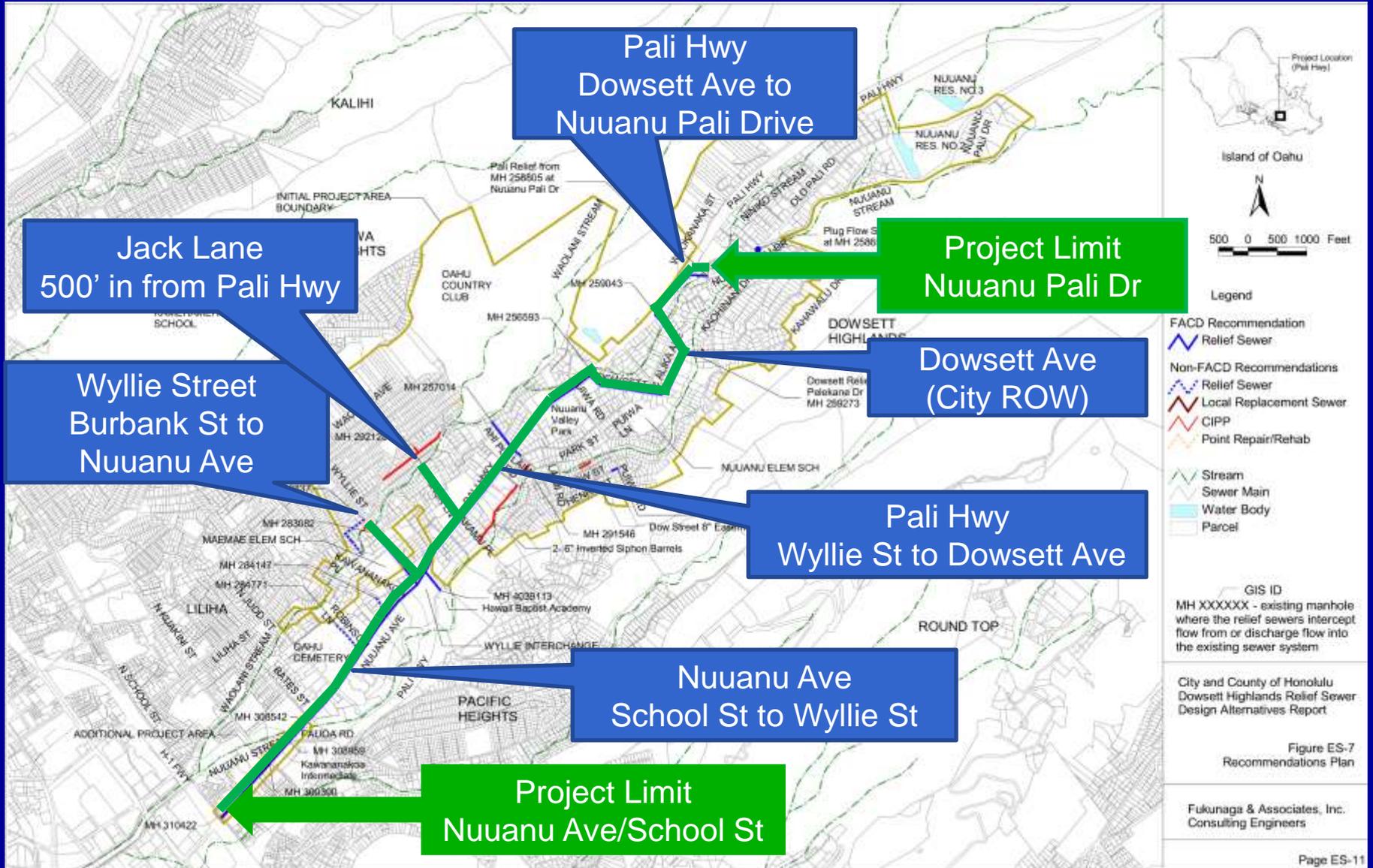
Noise Regulations

- HAR Title 11, Chapter 46 sets the rules and restrictions on sound levels for construction projects. It states:
“No permit shall allow any construction activities which emit noise:
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 - *Saturday before 9 a.m. and after 6 p.m.*
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- A Noise Variance must be obtained for any construction activities to occur outside the permissible hours (i.e. after 6 p.m. weekdays).

NOISE VARIANCE CONSULTATION

- Noise Variance Application for construction has been submitted to DOH.
- Requesting work be allowed 24 hours, 7 days a week during project schedule of June 2018 to June 2020.
- Night work will be required to meet Consent Decree deadline.
- Night work will increase safety to both motorists and pedestrians in the construction area to minimize the interaction between construction equipment and passenger vehicles.

NOISE VARIANCE CONSULTATION



NOISE VARIANCE CONSULTATION

Schedule:

- **Advertise:** **December 2017**
- **Anticipated Construction Start:** **June 2018**
- **Anticipated Construction End:** **June 2020**

NOISE VARIANCE CONSULTATION

- Once a Contractor has been awarded the project, coordination will begin to establish a viable construction schedule which minimizes impact to the public.
- Contractor shall notify residents of construction in their neighborhood with at least one week advance notice.
- Contractor shall have a hotline phone number available 24 hours to receive inquiries and any complaints answered by a live person.

NOISE VARIANCE CONSULTATION

SOUND PROPAGATION

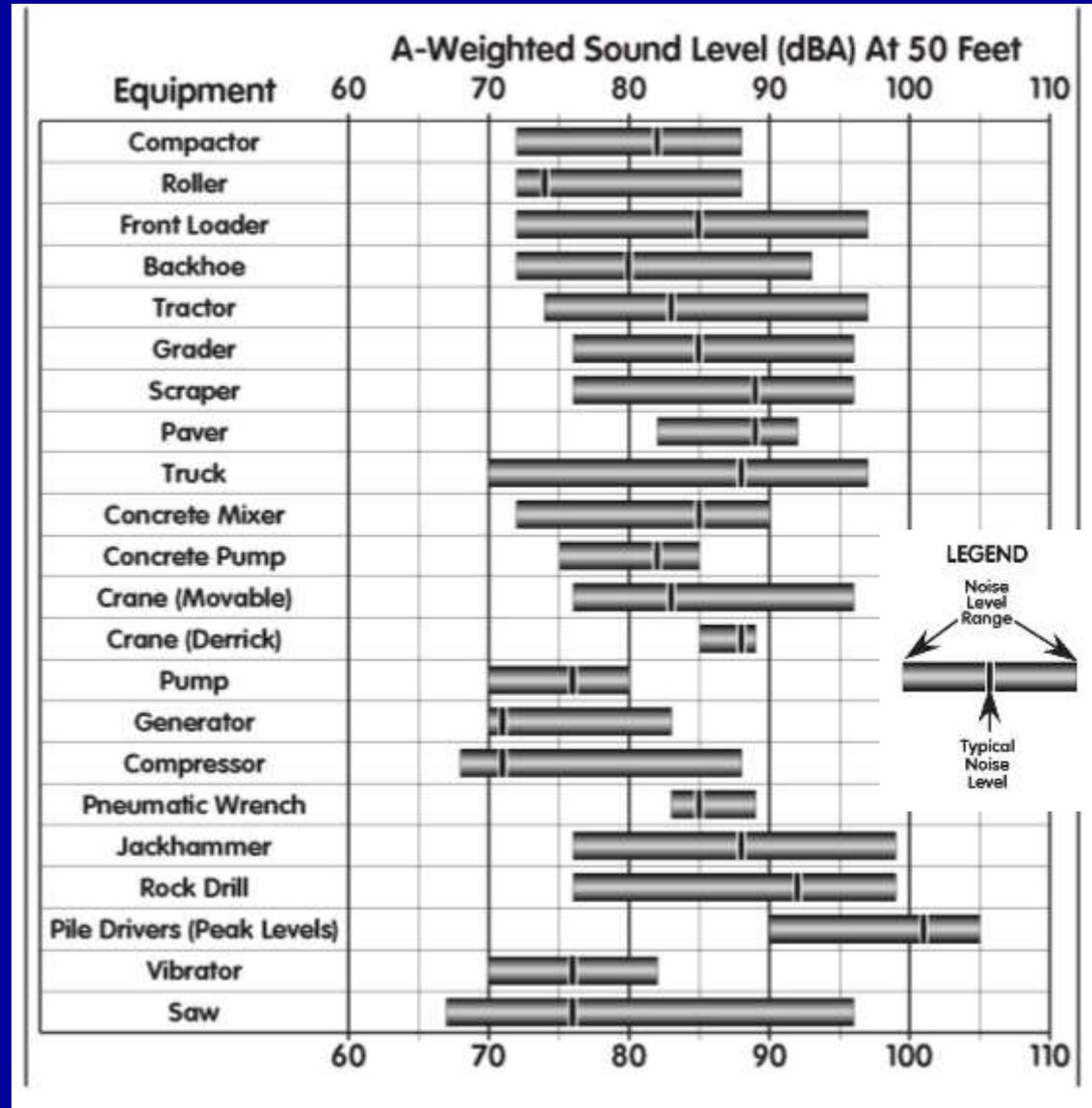
- Sound propagates uniformly outward in a spherical pattern and decreases with distance and shielding.
- As sound propagates over a distance, it changes in level and frequency. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from the point source.
- As sound propagates over terrain with large objects or barriers in the path between a source and a receiver, the sound level can decrease at least 5 dB.

NOISE VARIANCE CONSULTATION

CONSTRUCTION EQUIPMENT SOUND LEVEL

This table illustrates sound levels of typical construction equipment anticipated to be used during construction.

Most of the equipment generates sound at a levels in the mid 80s at a distance of 50 feet however the distance is typically greater which reduces the sound level.



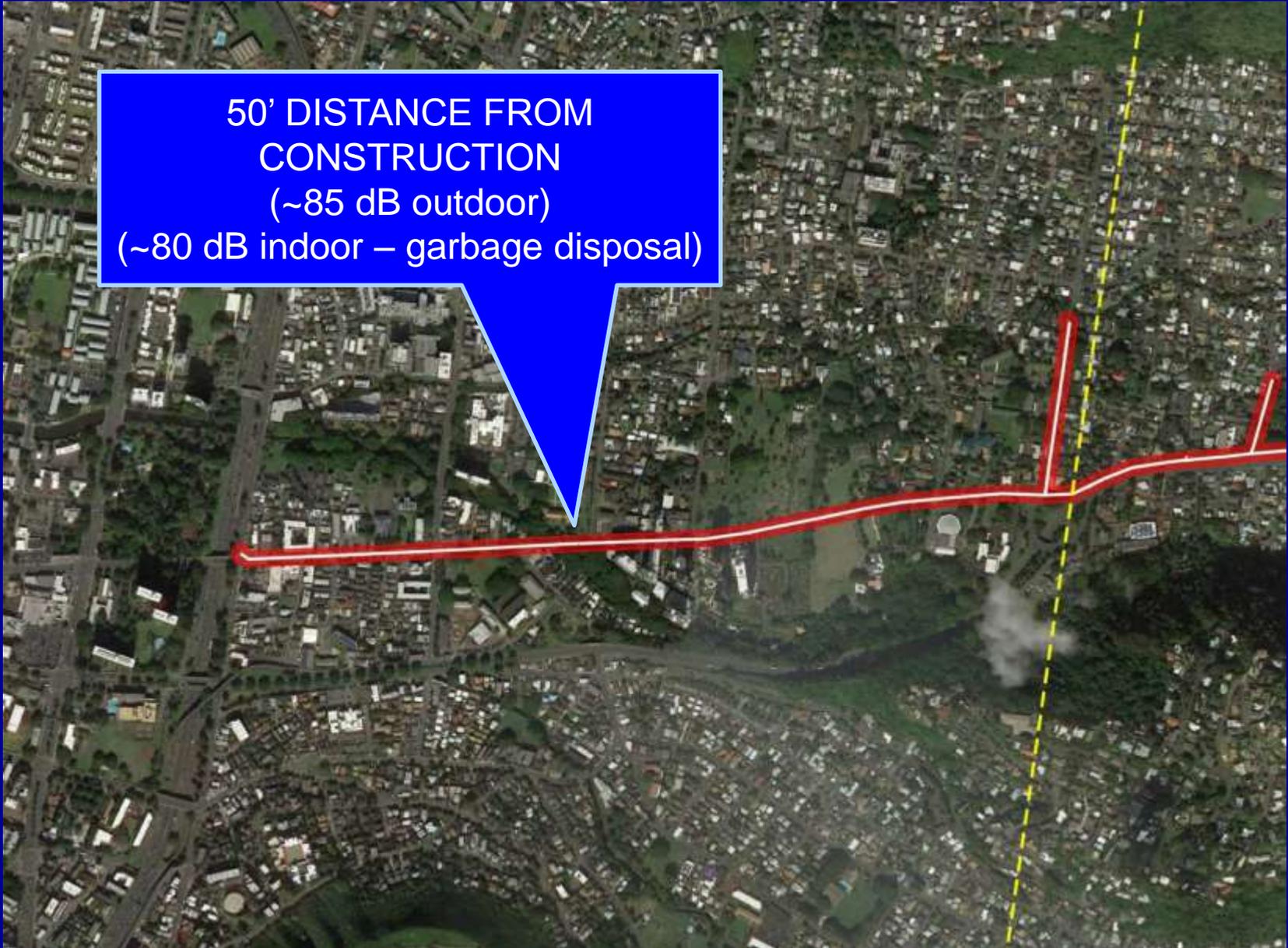
NOISE VARIANCE CONSULTATION

SOUND LEVELS AND LOUDNESS

dBA	Example	Home & Yard Appliances	Workshop & Construction
0	healthy hearing threshold		
10	a pin dropping		
20	rustling leaves		
30	whisper		
40	babbling brook	computer	
50	light traffic	refrigerator	
60	conversational speech	air conditioner	
70	shower	dishwasher	
75	toilet flushing	vacuum cleaner	
80	alarm clock	garbage disposal	
85	passing diesel truck	snow blower	
90	squeeze toy	lawn mower	arc welder
95	inside subway car	food processor	belt sander
100	motorcycle (riding)		handheld drill
105	sporting event		table saw
110	rock band		jackhammer
115	emergency vehicle siren		riveter
120	thunderclap		oxygen torch
125	balloon popping		
130	peak stadium crowd noise		
135	air raid siren		
140	jet engine at takeoff		
145	firecracker		
150	fighter jet launch		
155	cap gun		
160	shotgun		
165	.357 magnum revolver		
170	safety airbag		
175	howitzer cannon		
180	rocket launch		
194	sound waves become shock waves		

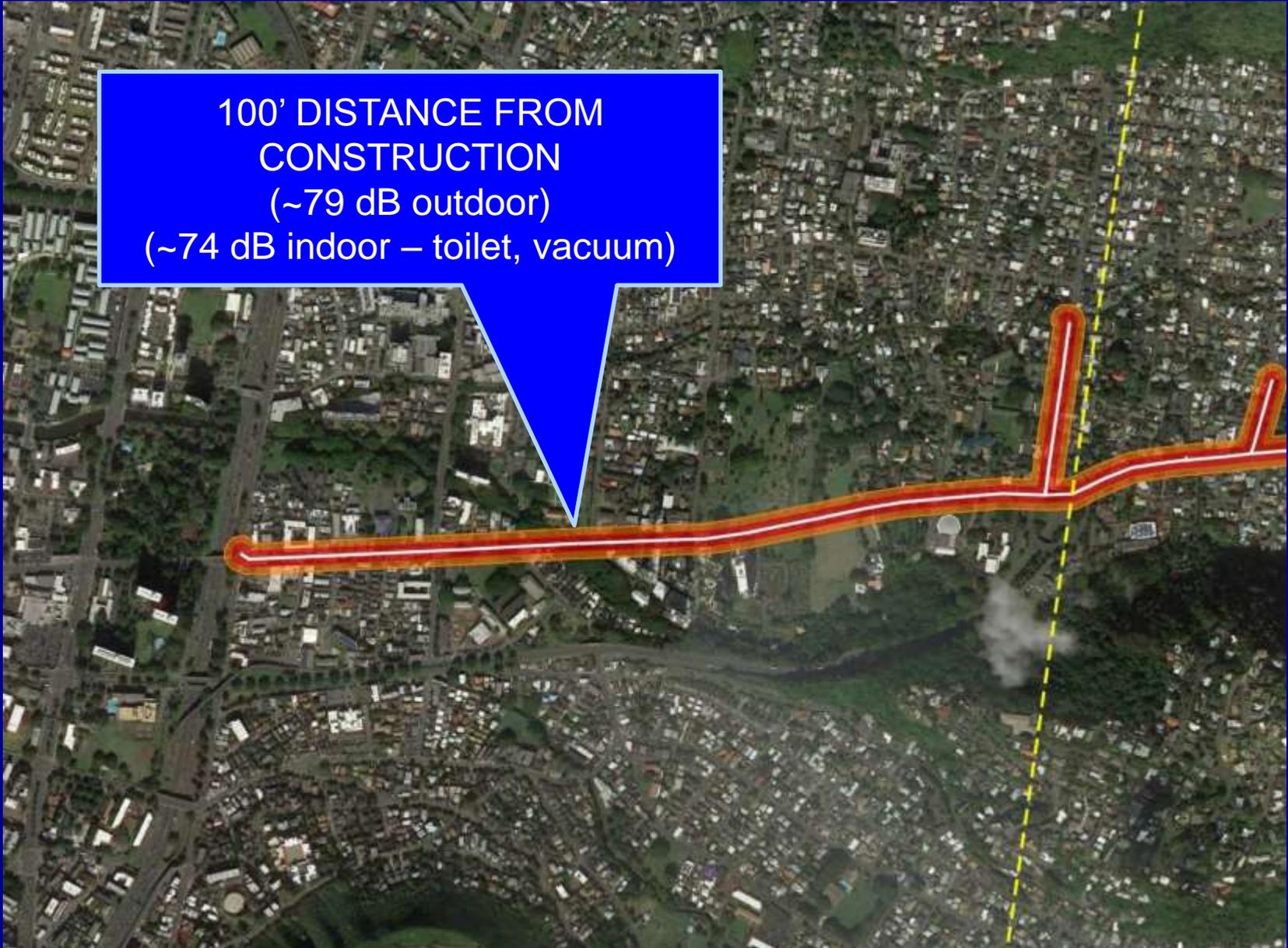
NUUANU AVE (SCHOOL ST TO WYLLIE ST)

50' DISTANCE FROM
CONSTRUCTION
(~85 dB outdoor)
(~80 dB indoor – garbage disposal)



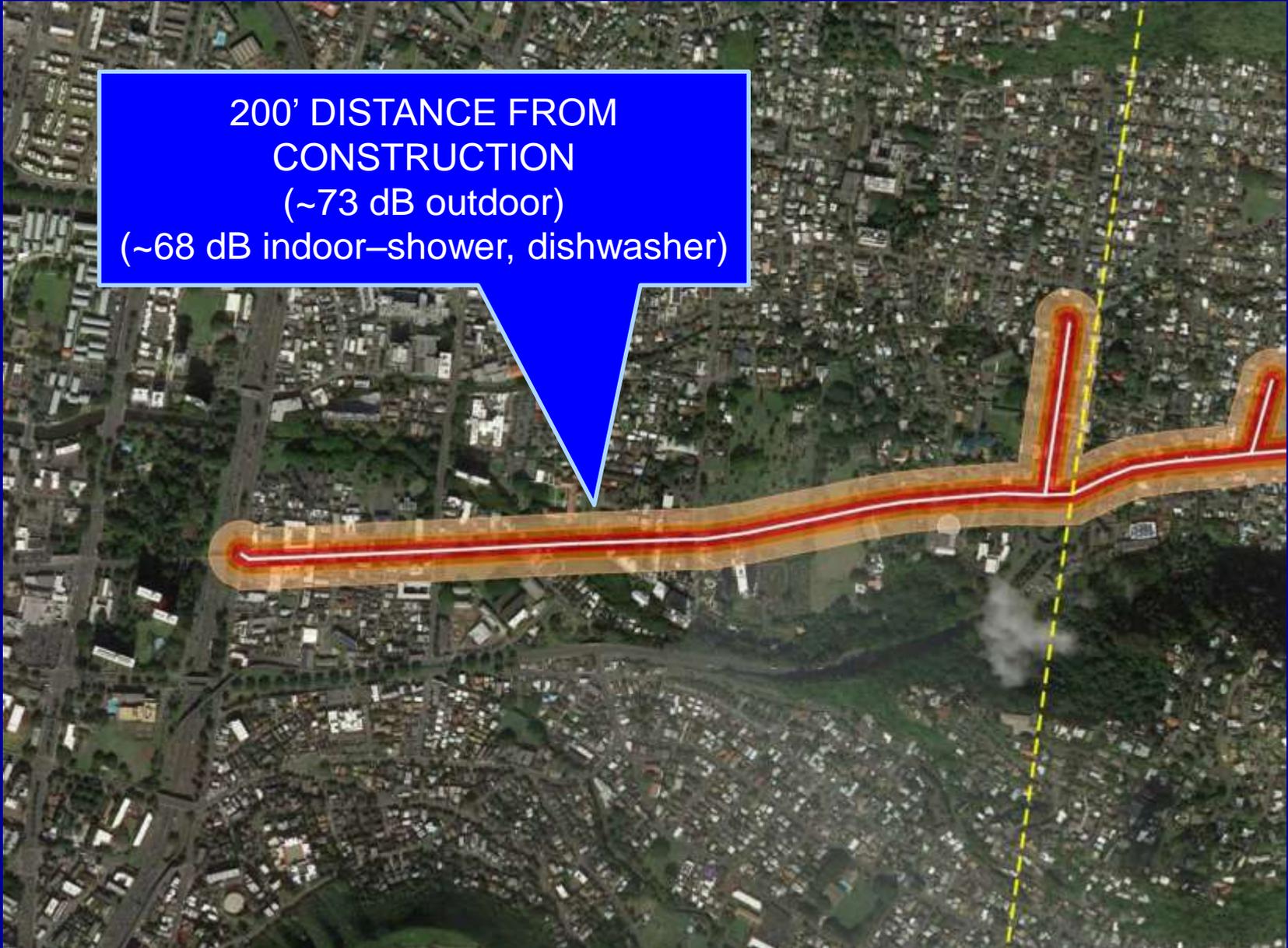
NUUANU AVE (SCHOOL ST TO WYLLIE ST)

100' DISTANCE FROM
CONSTRUCTION
(~79 dB outdoor)
(~74 dB indoor – toilet, vacuum)



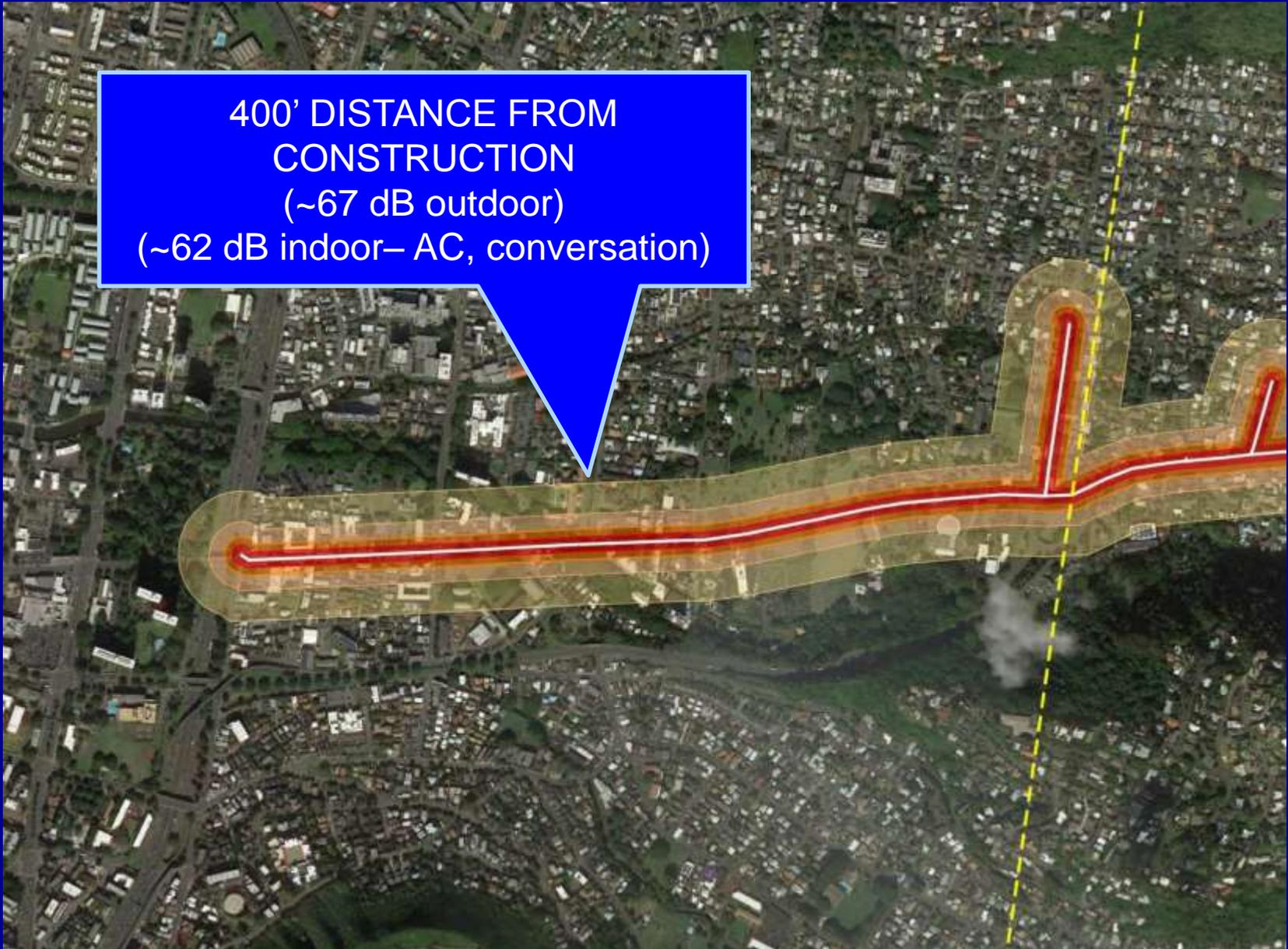
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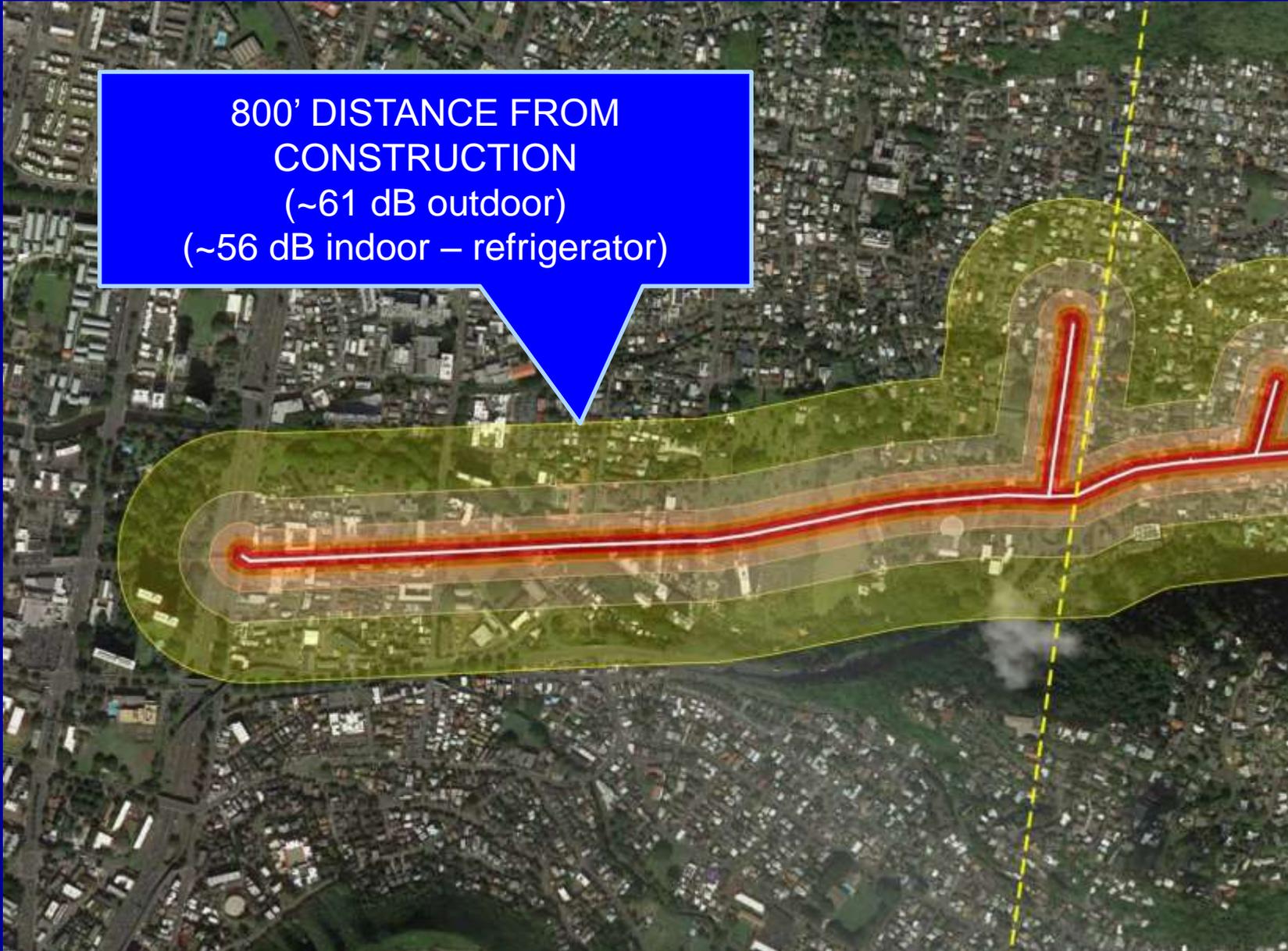


NUUANU AVE (SCHOOL ST TO WYLLIE ST)

400' DISTANCE FROM
CONSTRUCTION
(~67 dB outdoor)
(~62 dB indoor– AC, conversation)



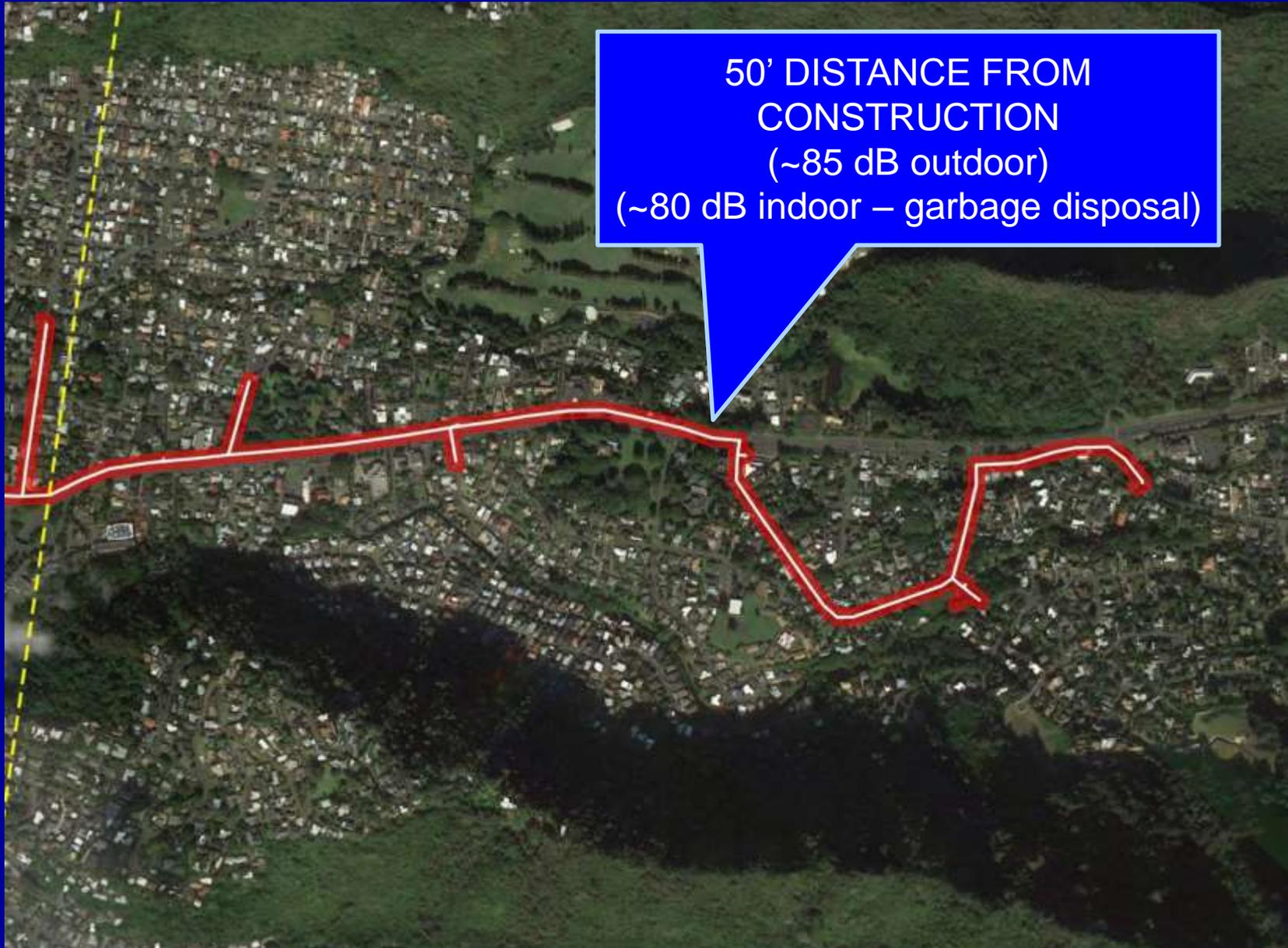
NUUANU AVE (SCHOOL ST TO WYLLIE ST)



800' DISTANCE FROM
CONSTRUCTION
(~61 dB outdoor)
(~56 dB indoor – refrigerator)

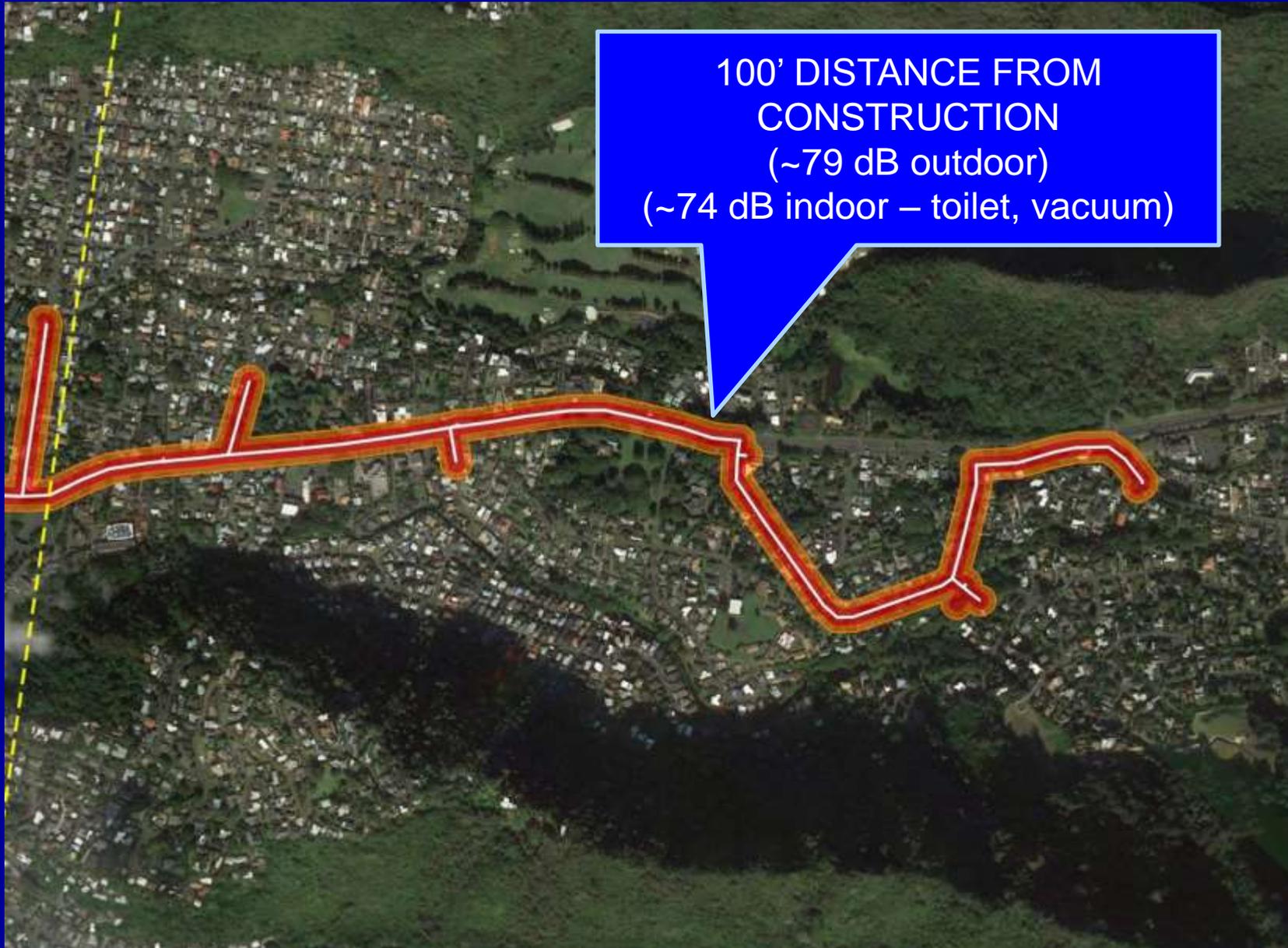
The image is an aerial photograph of a residential area. A red line representing the construction site for Nuuanu Ave runs horizontally across the middle. A yellow dashed line is vertical on the right side. A blue callout box points to a specific location on the road. The background shows a dense residential neighborhood with houses and trees.

PALI HWY (WYLLIE TO NUUANU PALI DRIVE)



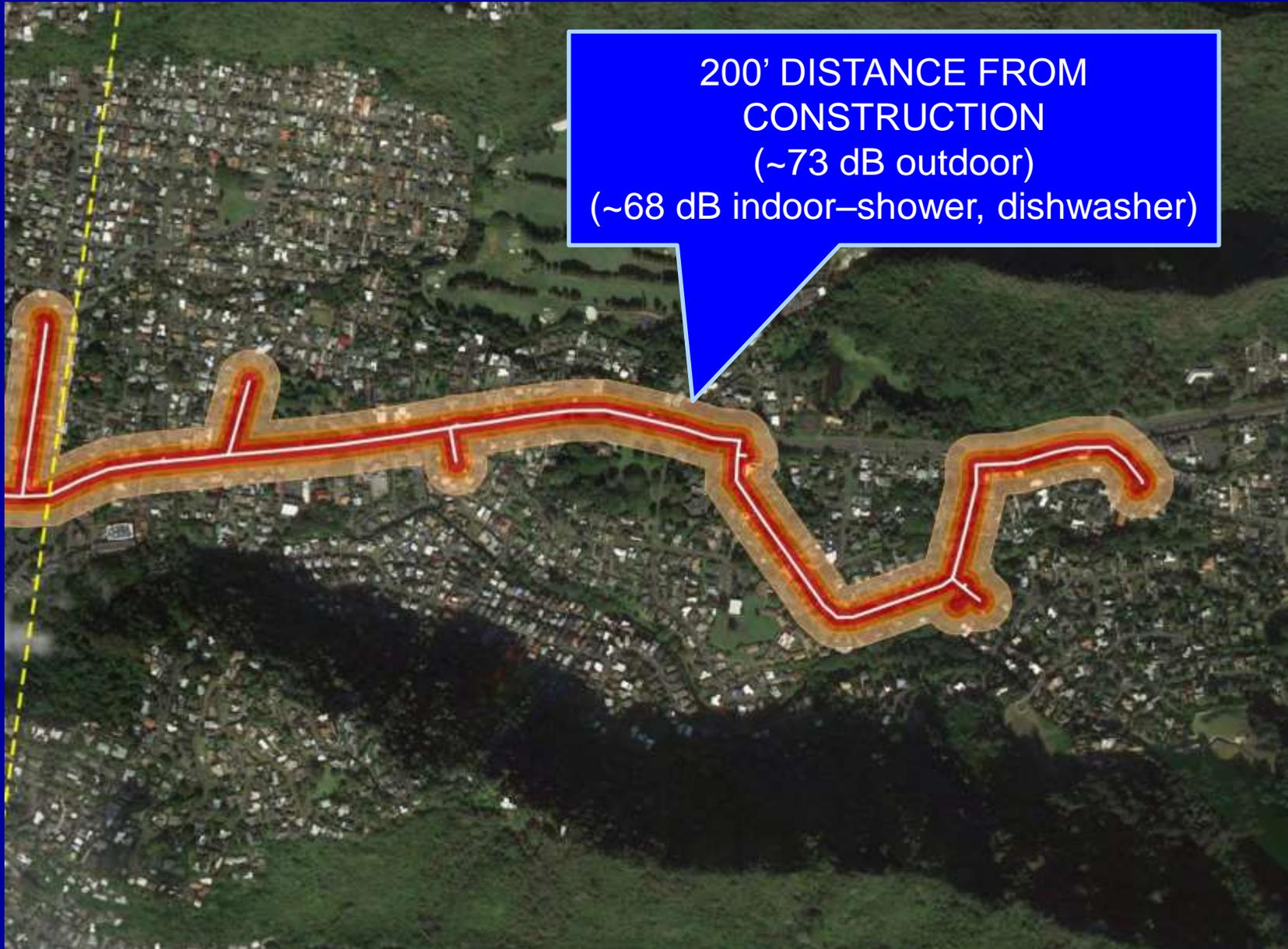
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PALI HWY (WYLLIE TO NUUANU PALI DRIVE)

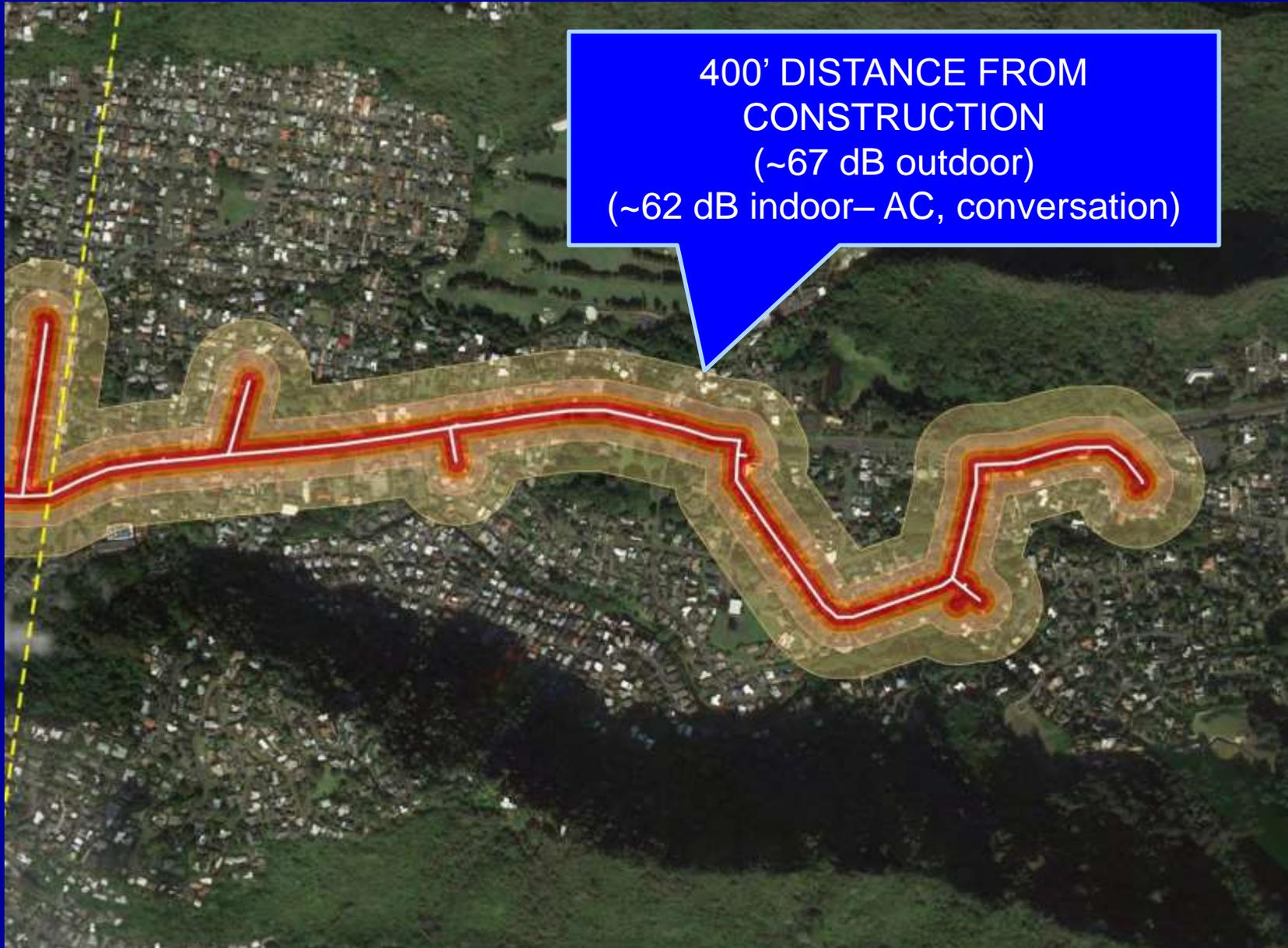


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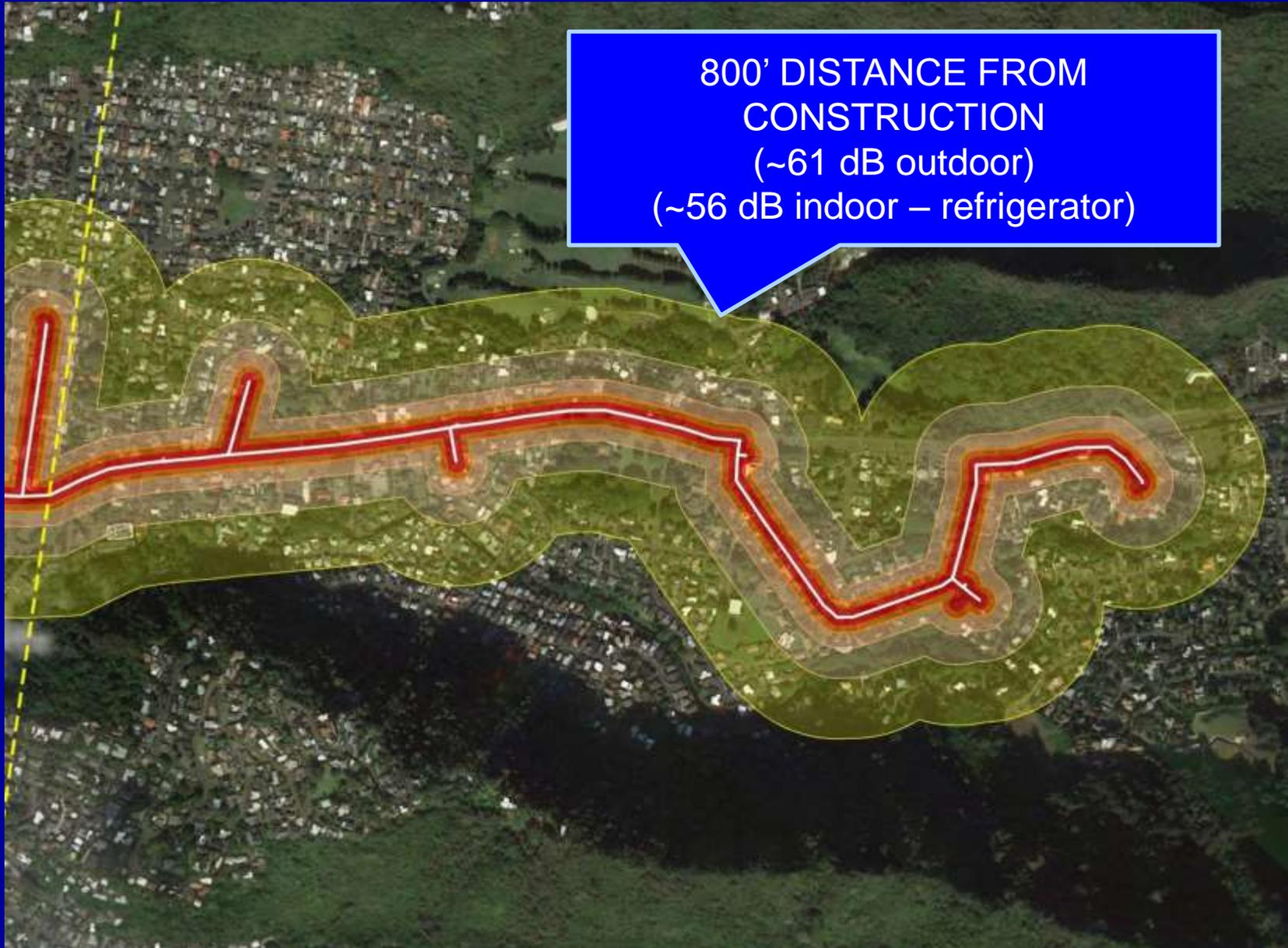
PALI HWY (WYLLIE TO NUUANU PALI DRIVE)



PALI HWY (WYLLIE TO NUUANU PALI DRIVE)



PALI HWY (WYLLIE TO NUUANU PALI DRIVE)



NOISE VARIANCE CONSULTATION

NOISE ABATEMENT

- Limit excavation work at night along the project areas.
- The louder construction equipment (such as hoe rams, jackhammers, walk behind saw, etc.) and activities would be limited to be used no later than 10:00 PM.
- Pilot Tube Microtunneling Work continuing uninterrupted from day operations into the night hours optimizes construction progress. PTMT equipment such as the Horizontal Boring Hydraulic Jack Machine will be located at bottom of ~20' deep excavated pit which provides a solid barrier all around and reduces the sound level at least an additional 5dB.

NOISE VARIANCE CONSULTATION

NOISE ABATEMENT

Noise Abatement measures include the following:

- Contractor will be required to maintain all equipment in good working order.
- All equipment with an exhaust of gas or air will have mufflers.
- City personnel and Contractor will monitor all equipment and construction activities to ensure utilization of noise abatement measures.
- Instructional training sessions for construction crews and truck drivers to discuss proper noise abatement procedures for use of engine brakes, loading and unloading cargo, shouting, use of signal callers, and best management practices to reduce sound.
- A job-site representative will be designated to immediately field any complaints for prompt response and will have the responsibility of monitoring quiet work procedures. The Contractor will have a corrective action program to respond to complaints and correct deficiencies.

NOISE VARIANCE CONSULTATION

Potential impact if Noise Variance is not granted:

- Interaction between construction equipment and the public will increase.
- Project will not meet Consent Decree deadline.
- Construction time and traffic duration will increase.
- Delay for all projects on Pali Highway.

NOISE VARIANCE CONSULTATION PUBLIC COMMENTS AND QUESTIONS

- Q&A SESSION
- Please be respectful to those speaking
- Please keep focused on the Noise Variance
- Any other project-related questions will be answered once we complete discussing the Noise Variance
- Any comments regarding the proposed Noise Variance for the City's Dowsett Highlands Relief Sewer Project?
- Make comments here tonight or take home a comment form and mail it to us on or before August 25, 2017
- Website: www.palisewer.org

Questions?