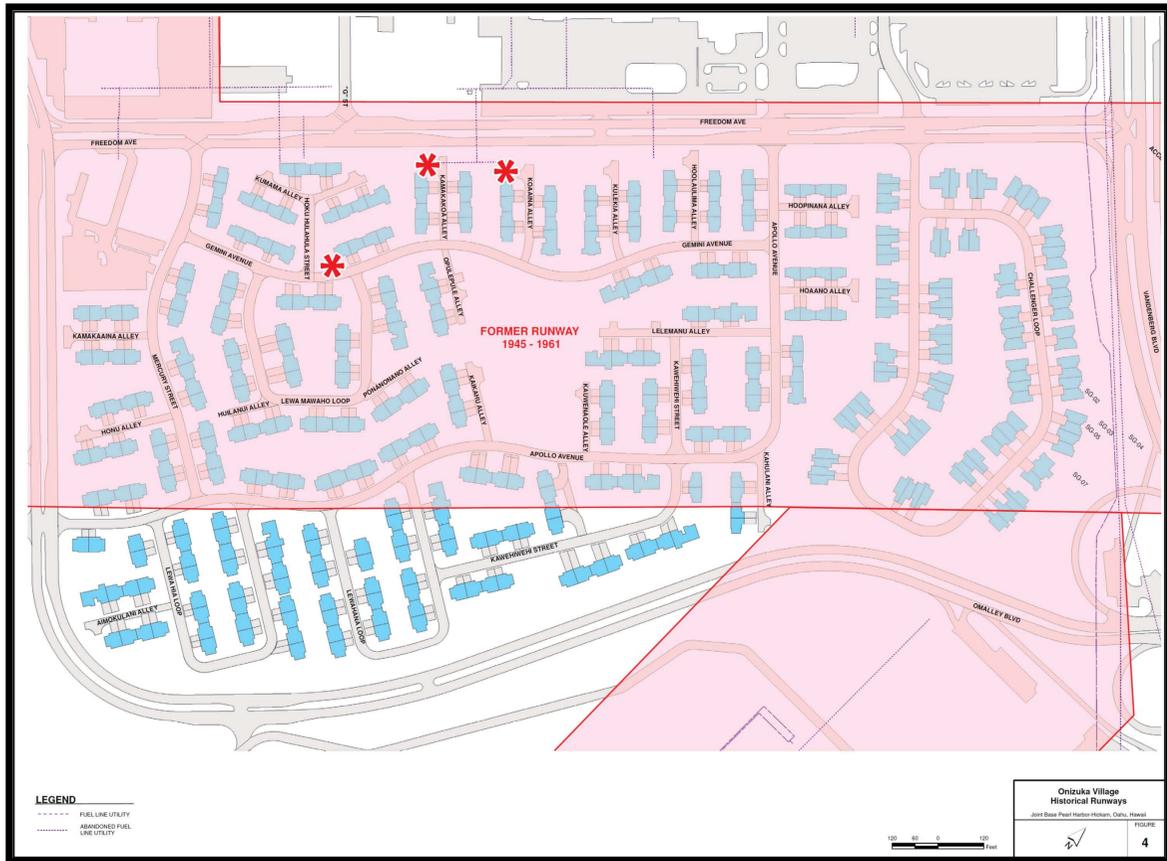


Onizuka Village

The housing area is built over a former runway

- Area was used as an airfield in the 1940s and 1950s.
- The first Onizuka Village housing was built in 1992 over part of a former flight line runway and aircraft parking area.
- Current Onizuka Village housing was redeveloped/remodeled in 2009.

 During redevelopment in 2009, buried petroleum affected soil was observed in three locations.



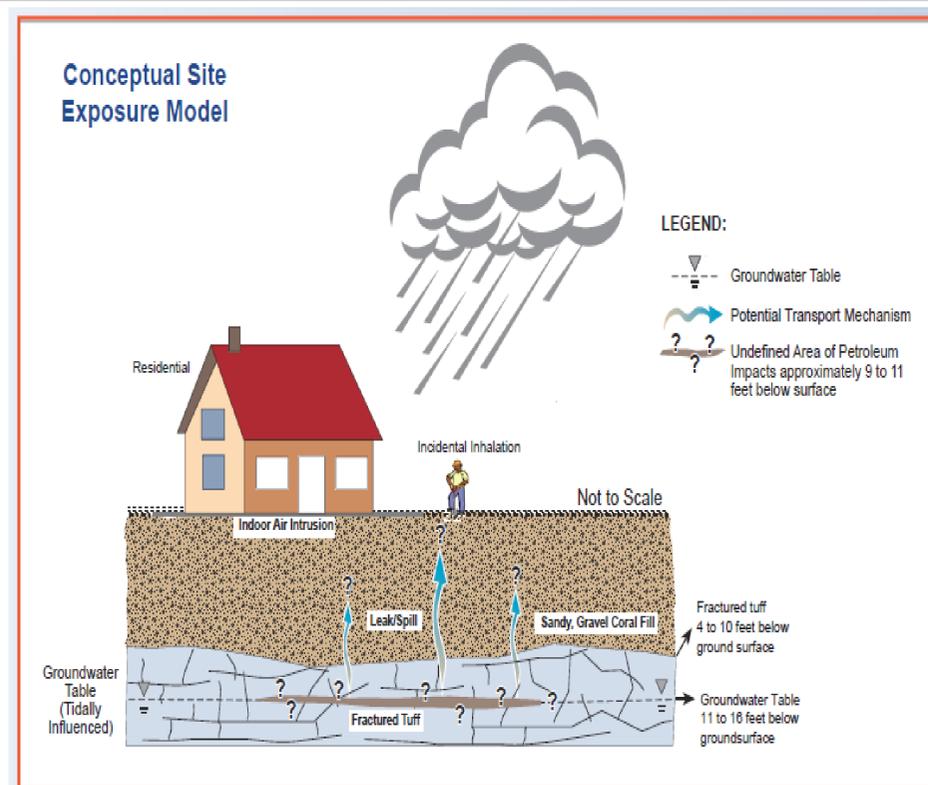
Petroleum in Soil

- Petroleum affected soil likely came from underground pipelines used to transfer fuel or from spills during refueling of aircraft.
- Limited soil vapor sampling conducted in 2011 found fuel-related chemicals (including several volatile organic compounds or VOCs) above Hawaii Department of Health recommended levels.
- A **3-Phased Remedial Investigation** will evaluate where petroleum affected soil is located in Onizuka Village, how much is present, and if environmental cleanup is needed.



Soil Vapor & Vapor Intrusion

- Soil vapor is the air found in the spaces between soil particles.
- Over time, VOCs present underground in soil or groundwater can evaporate and move into soil vapor.
- Elevated levels of VOCs in soil vapor that migrate into indoor air can pose a Vapor Intrusion concern.
- To ensure the Navy identifies all potential environmental concerns, the Remedial Investigation includes soil, groundwater, and soil vapor sampling between February and August 2013. The results will determine if additional action is needed.



Vapor Intrusion may occur when vapors from contaminated groundwater or soil evaporate and then seep up through the soil and enter buildings through cracks and holes in foundations or slabs of buildings.

Remedial Investigation

Phase I

February – March 2013

- Real-time soil vapor screening in most utility corridors and about 165 small soil borings with hand-held instruments
- Shallow soil vapor sampling down to 5 feet deep was conducted at 64 locations
 - Petroleum vapor at elevated levels 4-5 feet below ground surface at 7 locations
 - Methane also found above lower explosive limit 4-5 feet below ground surface at 4 locations.



LEGEND

- Building
- Active Soil Gas Sampling Location with Soil Gas Concentration Above HDOH Tier 1 EAL for Total Petroleum Hydrocarbons-gasoline and Methane Above Lower Explosive Limit
- Active Soil Gas Sampling Location with Soil Gas Concentration Above HDOH Tier 1 EAL for Total Petroleum Hydrocarbons-gasoline
- Active Soil Gas Sampling Location with Soil Gas Concentration Below HDOH Tier 1 EAL for Total Petroleum Hydrocarbons-gasoline



Results indicate 7 areas needing additional investigation for possible vapor intrusion

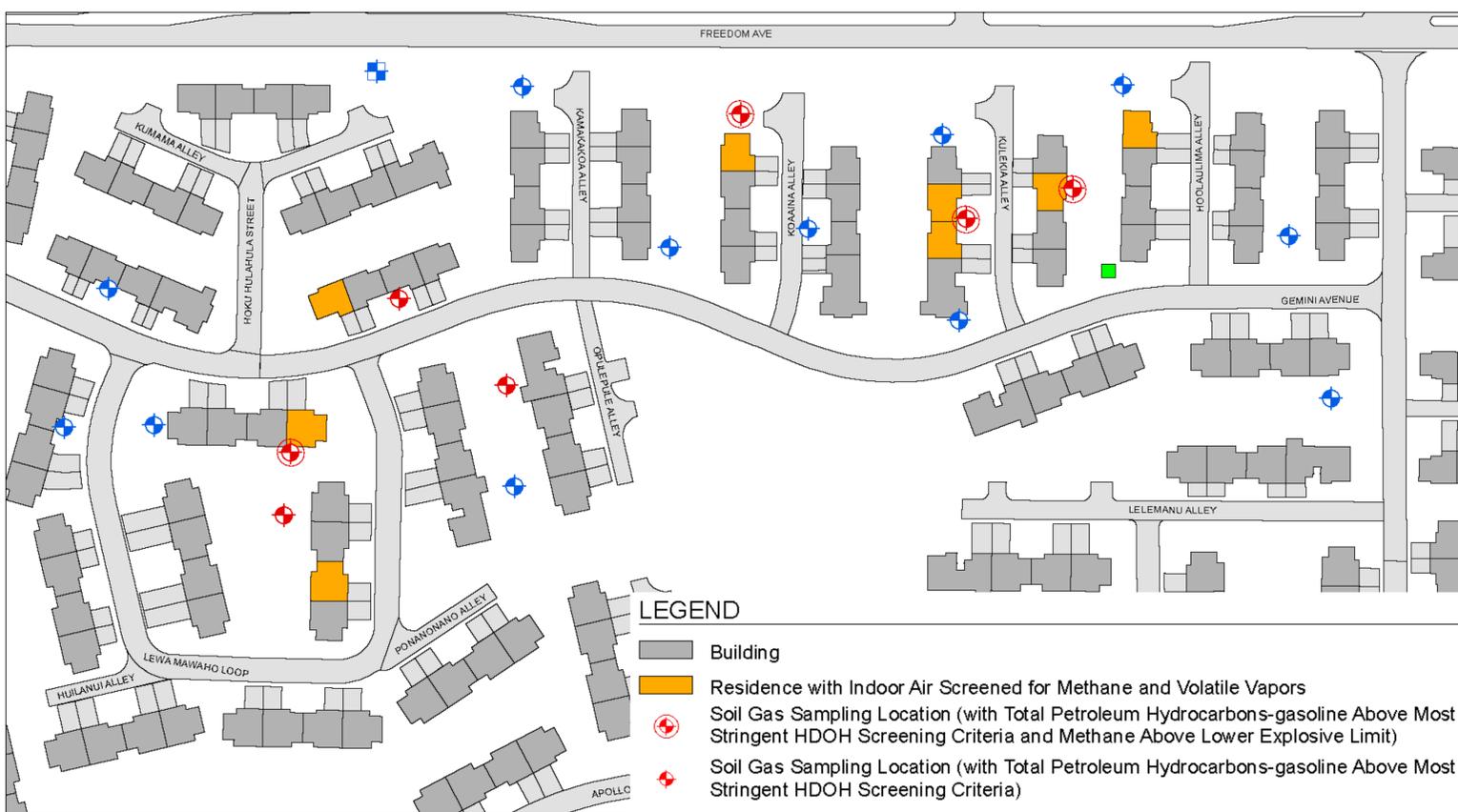
Phase II

April – May 2013

- Focused on 7 areas identified in Phase I
- Subsurface soil and groundwater samples collected from 20 locations

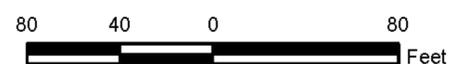


Results indicate soil and groundwater do not pose an environmental concern in Onizuka Village, but the potential for vapor intrusion needs to be further evaluated



LEGEND

- Building
- Residence with Indoor Air Screened for Methane and Volatile Vapors
- Soil Gas Sampling Location (with Total Petroleum Hydrocarbons-gasoline Above Most Stringent HDOH Screening Criteria and Methane Above Lower Explosive Limit)
- Soil Gas Sampling Location (with Total Petroleum Hydrocarbons-gasoline Above Most Stringent HDOH Screening Criteria)
- Soil and Groundwater Sampling Location
- Groundwater Sampling Location
- Soil Sampling Location



June – July 2013

- Initial indoor air screening for methane and VOCs, using hand-held instruments was conducted in 8 nearby residences

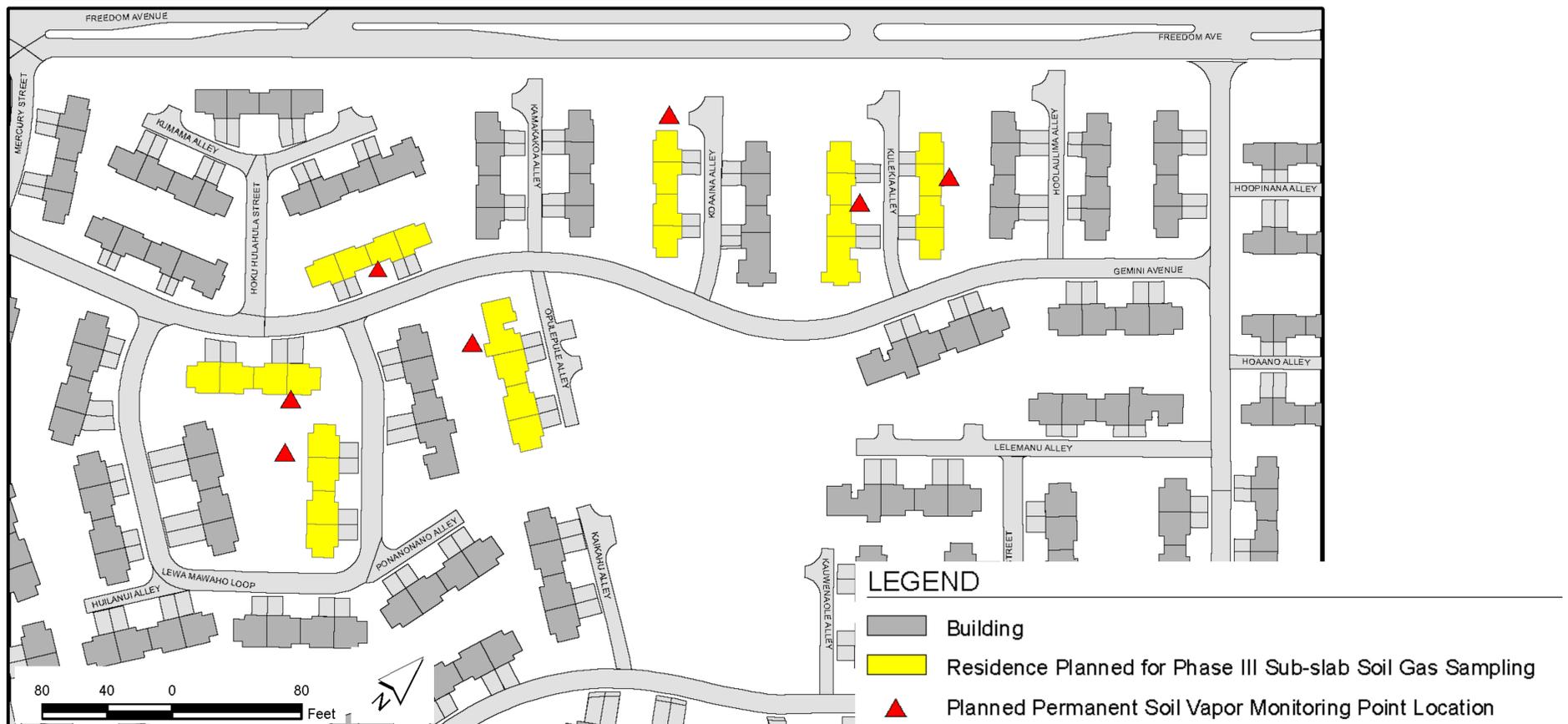
Initial screening results indicate air quality inside homes is at safe levels

Upcoming Work

Phase III

July – August 2013

- **Focus on 7 buildings located closest to the 7 potential vapor intrusion areas identified in Phases I & II**
 - **Install Permanent Groundwater and Vapor Monitoring Points** – outdoors at the 7 potential vapor intrusion areas and collect additional groundwater and soil vapor samples to test for petroleum products and methane.
 - **Collect Sub-Slab Vapor Samples From Homes** – Soil gas samples will be taken from directly beneath the foundation of the 7 buildings. These results show what can be entering the building and indicate if there could be a potential Vapor Intrusion problem.



Garage Sub-Slab Vapor Sampling

- Hand-held drills will be used to make one small hole in the garage floor of the 28 homes in the 7 buildings.
- A small probe will be inserted in the hole and connected to a canister to collect the sample.
- If results indicate a potential vapor intrusion concern, indoor air sampling will be required.

Two-Step Sampling Process

- The sub-slab sampling port will be installed and left for a few days to ensure the seal is set and tight.
- The sub-slab sample will be collected a few days later.



Sampling Results

Will be compared to Hawaii Department of Health Action Levels:

Residents' health and safety is the Navy's top priority with this project. Immediate action will be taken to prevent vapor intrusion and protect safety if a vapor intrusion concern is identified in any unit.

The Navy will review results with Hawaii Department of Health to determine if additional sampling is needed.

The Navy will share the sampling results and plans for additional action or installation of mitigation equipment with Onizuka Village housing residents

For more information visit: <http://goo.gl/x6rN2> or https://portal.navfac.navy.mil/portal/page/portal/navfac/navfac_ww_pp/navfac_navfachi_pp/env:onizuka_village