

HDOT proposes this highway widening project as a solution to reduce congestion and improve roadway operations on Interstate Route H-1 (H-1) in the eastbound direction between Waikēle and Halawa, approximately from milepost (MP) 7.3 to 14.8, a total distance of approximately 8 miles.

The Ewa end of the project area begins 475 feet west of the Lumiaina Street Overpass where the Paiwa Street off-ramp begins. The Diamond Head end of the project area extends approximately 350 feet south of the Radford Drive overpass to where the zipper lane begins. Some interchange/intersection areas of the freeway, including some located mauka of the freeway, are included where those areas may be needed for staging, sign installation, and/or traffic control.



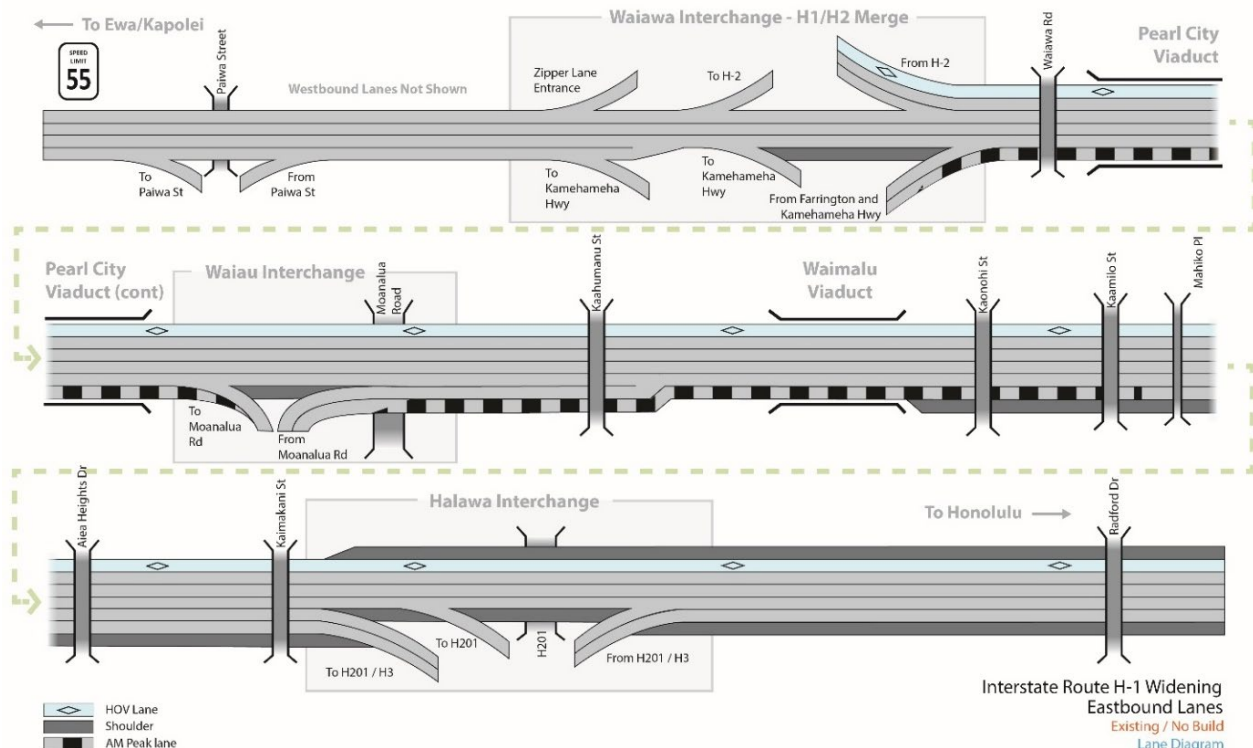
- Constructing new piers and widening existing freeway viaducts and bridges;
- Paving, including base course and substructure construction;

- Installing or relocating highway lighting and signage;
- Installation of guardrails;
- Modifications to drainage and storm drain systems;
- Utility relocations;
- Construction of retaining walls in discrete areas;
- Minor adjustments to Moanalua Road to accommodate improvements to the Freeway above; and
- Restriping.

Alternatives Being Considered

We have preliminarily identified possible alternatives that would address the project purpose and need. Possible alternatives include but are not necessarily limited to:

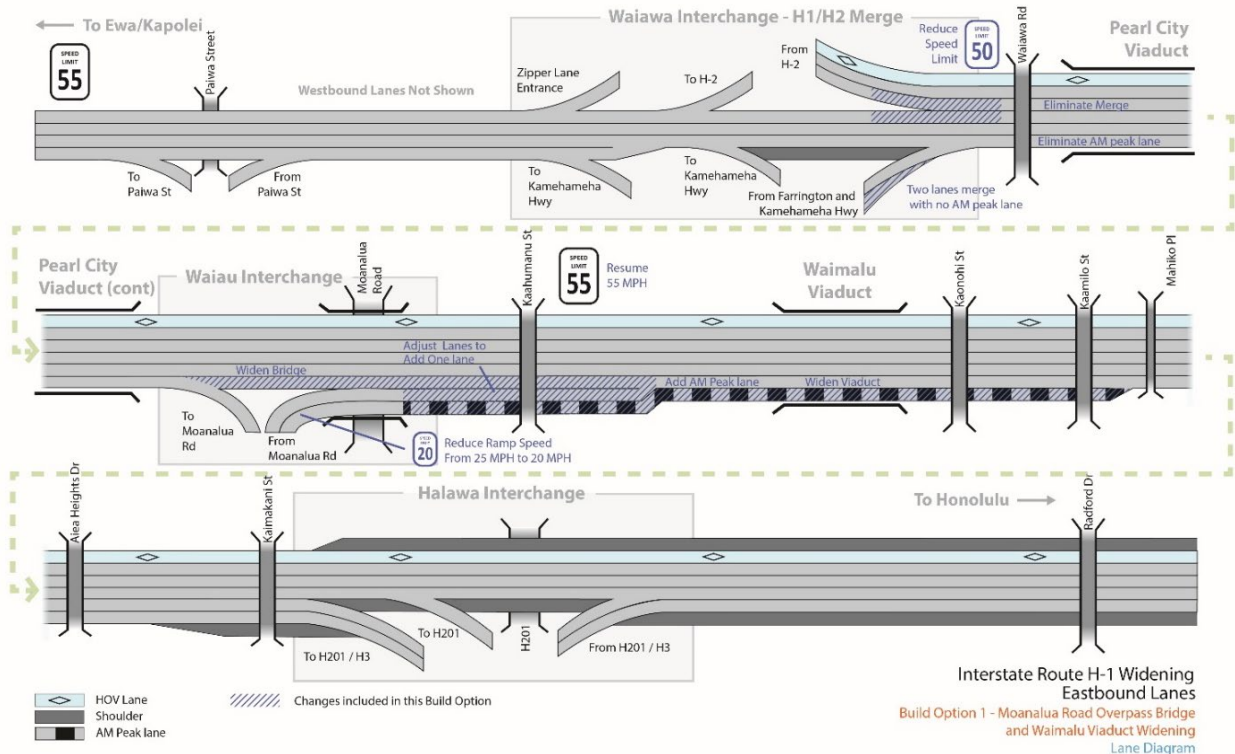
- **Existing / No-Build Scenario.** This alternative would leave the freeway without any changes. This alternative serves as a baseline for evaluating the alternatives being considered.



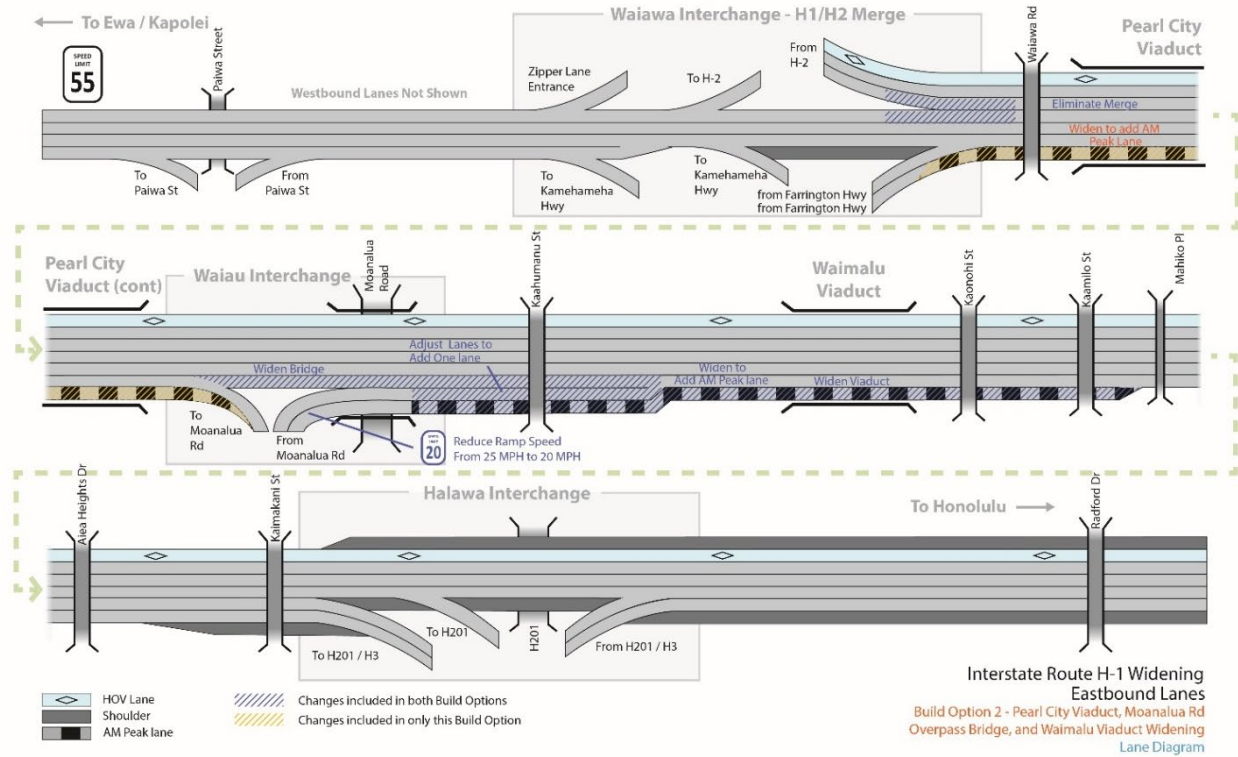
- **Transportation Systems Management (TSM) Only.** This alternative would not involve widening the freeway but would instead only involve low cost measures to reduce congestion and improve freeway traffic operations. TSM techniques used may include expanded incident management (such as the Freeway Safety Patrol); adjustments to roadway or lane geometry (restriping to narrow lanes or create more efficient traffic flows); discrete modifications at on- and off-ramps and interchanges such as adjusting

ramp lengths and tapers, improving signage, incorporating auxiliary features such as ramp metering, and/or simplifying merge maneuvers to facilitate movement of vehicles.

- Build Option 1: Moanalua Road Overpass Bridge and Waimalu Viaduct Widening (Preferred Alternative).** This scenario would restripe the H-1 between Waiawa Interchange and Waiau Interchange to convert the existing shoulder lane into a permanent through lane. H-1 would be widened between Waiau Interchange, including the interchange itself and the Moanalua Road Overpass Bridge, and the Kaonohi Street Overpass, which is located near the east end of the of the Waimalu Viaduct, by approximately 14 feet. This would result in six (6) through lanes and one (1) shoulder lane compared to the existing five (5) through lanes and one (1) shoulder lane between Waiau Interchange and Mahiko Place Pedestrian Overpass. Due to the restricted area under the Mahiko Place pedestrian bridge, the AM Peak shoulder lane would be merged leaving six (6) through lanes without a shoulder lane to the Halawa Interchange.

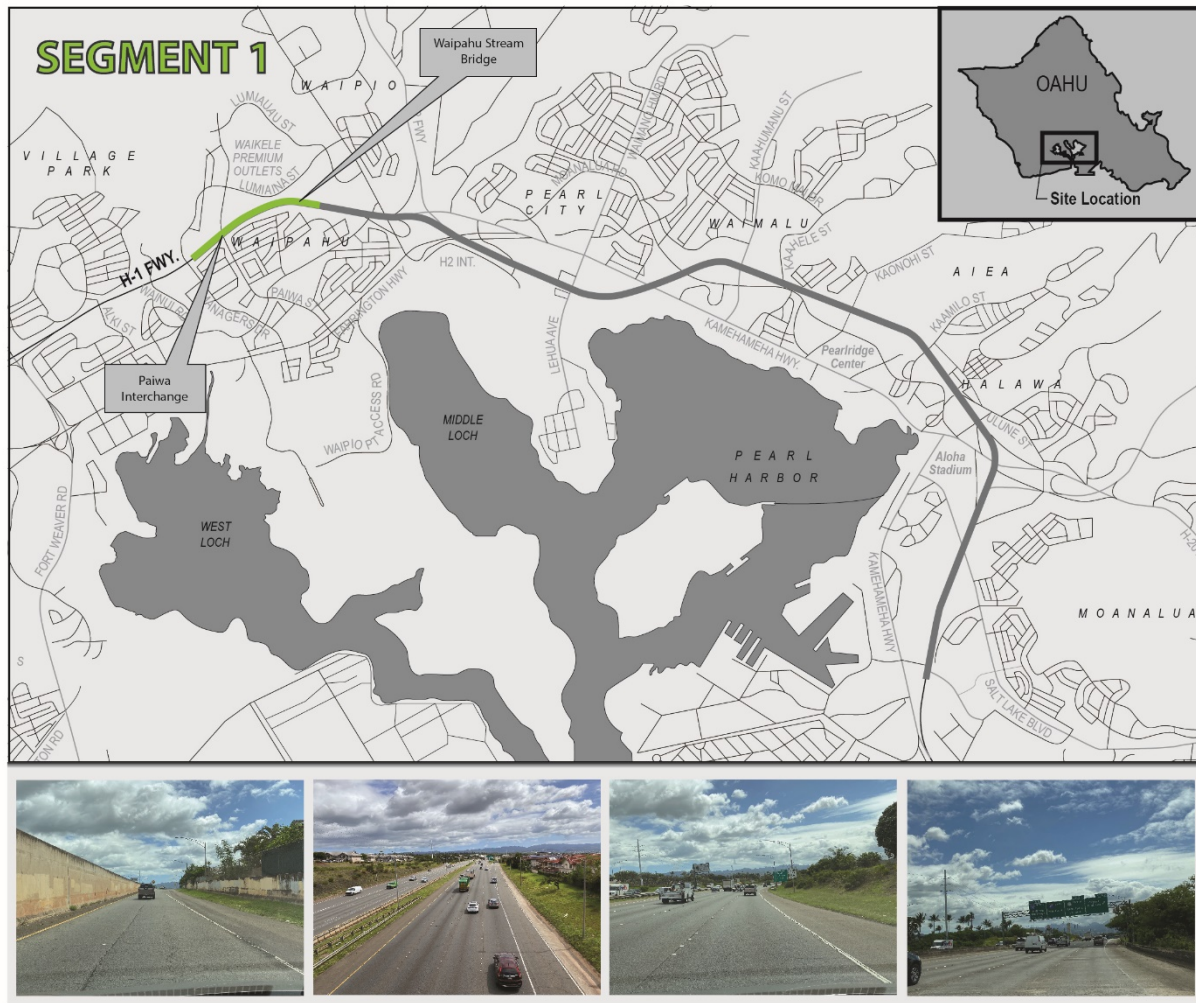


- Build Option 2 - Pearl City Viaduct, Moanalua Road Overpass Bridge, and Waimalu Viaduct Widening.** This scenario is similar to Build Option 1 except the limits of the widening will cover the entire area from the Pearl City Viaduct to east of Waimalu Viaduct. In this alternative, rather than restripe H-1 between Waiawa Interchange and Waiau Interchange, H-1 would be widened to provide an additional permanent through lane (for a total of six [6] through lanes) and one (1) shoulder lane from the Moanalua Road on-ramp to the Mahiko Street pedestrian overpass.



The Project Corridor

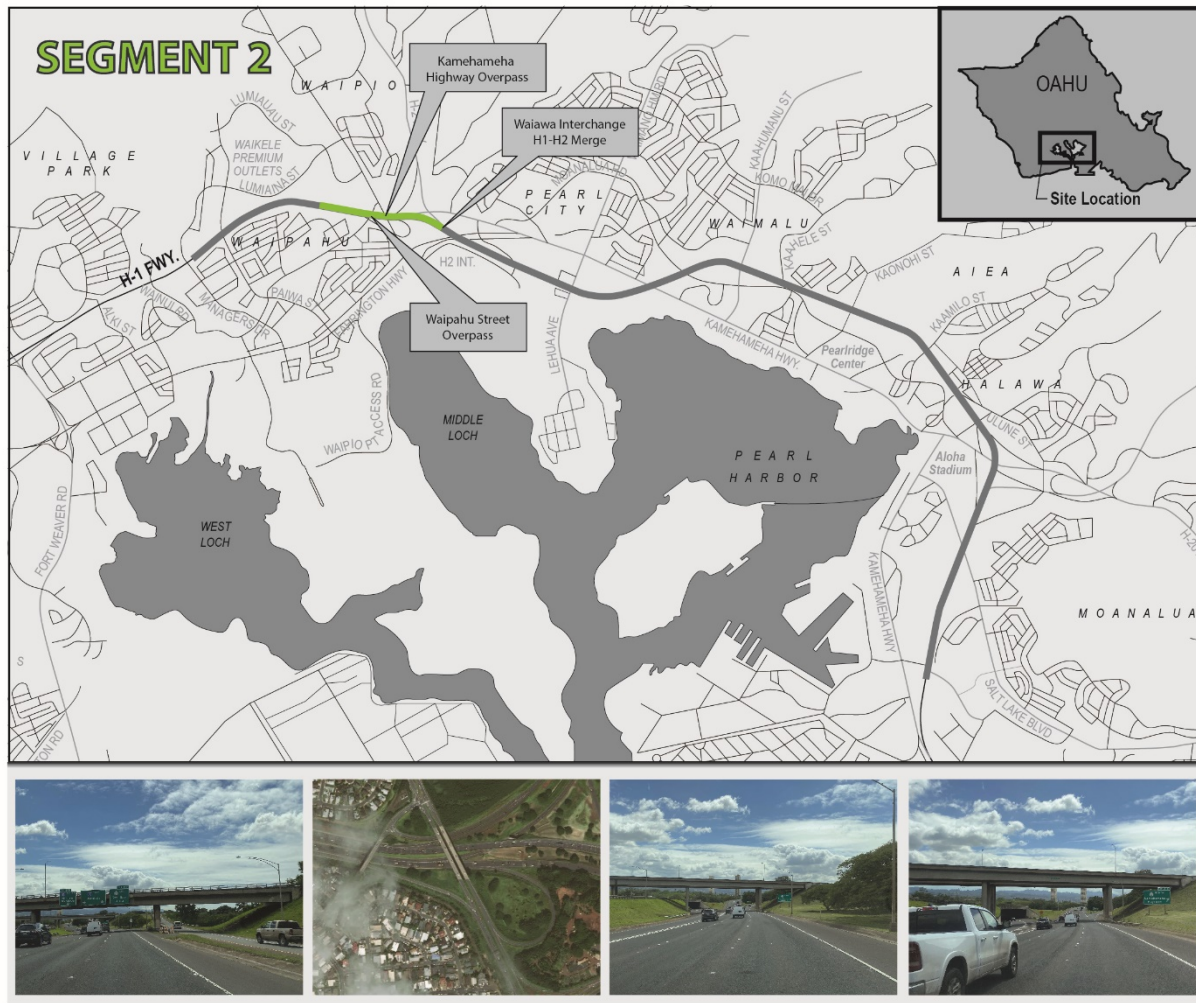
Conditions vary along the 8-mile project corridor. In order to describe this varied project corridor, the project area has been divided into the following segments based on the similar conditions that occur within each segment. Each segment includes what changes are proposed under Build Options 1 and 2. No changes under TSM Only Option have been identified that would be effective at meeting the purpose and need of the project, therefore no discussion of the TSM Only Option is included. The segments are as follows:



Segment 1 – Paiwa Street to Waiawa Interchange: This section of the freeway is mostly at ground level. Raised sections include the Paiwa Street Overpass and the Waipahu Stream Bridge. The main feature of this segment is the close proximity of residential properties along the makai edge of the right of way.

Build Option 1 and 2

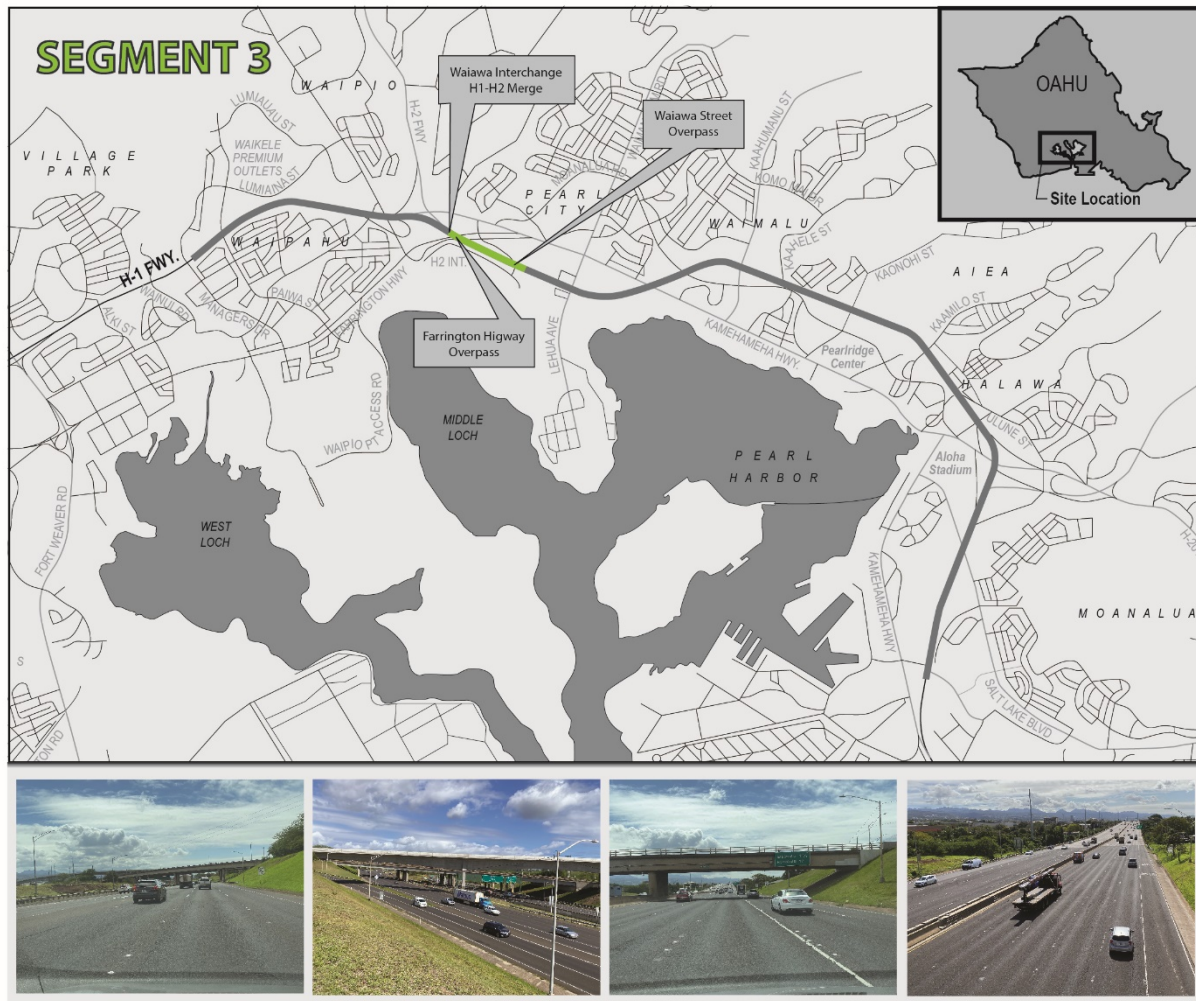
Changes proposed for this area would be minimal. For both Build Options 1 and 2, the changes in this area would be limited to possible restriping and signage needed to facilitate the newly configured H-1/H-2 merge in Segment 3.



Segment 2 – Waiawa Interchange Up to the H1-H2 Merge: This section is entirely at ground level and is comprised of the beginning portion of the Waiawa Interchange leading up to the H-1/H-2 merge. Since the H-1/H-2 merge is a key area that currently causes congestion, changes in this segment will be focused on improving highway operations at the merge. The highway geometry in this segment is fairly complicated with interchange connections that include: a left lane exit to the AM Zipper lane, a right lane exit to Kamehameha Highway southbound, a left lane exit leading to H-2, and a right lane exit to Kamehameha Highway northbound. The piers of the Waipahu Street overpass and the Kamehameha Highway overpass are in close proximity to the existing edge of pavement.

Build Option 1 and 2

Changes proposed for this area would be minimal. For both Build Option 1 and 2, the changes in this area would include restriping and shoulder resurfacing to adjust both lane position and lane width and also the installation of signage needed to facilitate the newly configured H-1/H-2 merge in Segment 3.



Segment 3 – H-1/H-2 Merge to the Pearl City Viaduct: This section of the freeway is largely at-grade. This section includes the critical H-1/H-2 merge where six (6) lanes are merged down to five (5) lanes. An HOV lane begins in the vicinity of the Farrington Highway Overpass shortly after the merge. This segment also includes a two lane on-ramp from both Kamehameha and Farrington Highways with the right-most lane being carried through as an AM Peak Shoulder lane. The piers of the Farrington Highway Overpass are in close proximity to the existing edge of pavement. The highway is also crossed by the Honolulu Rail Transit Project viaduct and the Waiaua Road overpass in this segment.

Build Option 1

Lane positions and widths would be adjusted along with some shoulder resurfacing to eliminate the merge of the left-most lane of H-1 and the right-most lane of the H-2. The current two-lane Farrington Highway on-ramp will be merged into a single lane. The current AM Peak lane between the Farrington Highway on-ramp and the Waiau Interchange, will be converted into a permanent through-lane.

Build Option 2

Lane positions and widths would be adjusted to eliminate the merge of the left-most lane of H-1 and the right-most lane of the H-2. Additional lane width would be added from the Farrington Highway on-ramp to the Waiau Interchange including widening the Pearl City Viaduct. The additional lane width would allow the H-1/H-2 merge to be eliminated and also retain the two-lane Farrington Highway on-ramp configuration and the AM Peak lane between the on-ramp and the Waiau Interchange.



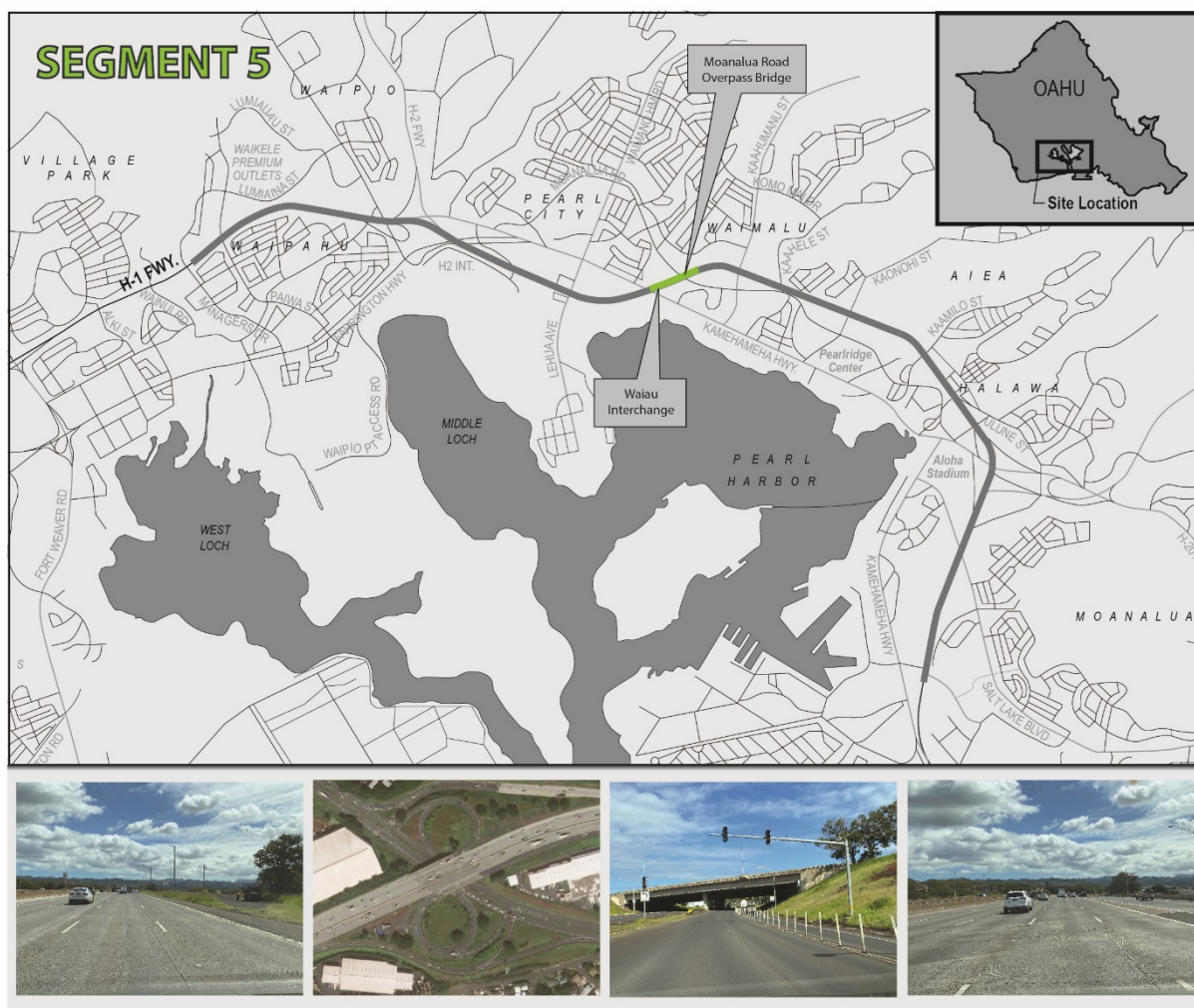
Segment 4 – Pearl City Viaduct: This section of the freeway is elevated on piers. A total of six (6) lanes including the HOV lane on the left and the AM Peak lane on the right are carried through this segment. The Pearl Harbor Bike Path is located approximately 30 feet makai of the current edge of the viaduct, at ground level. A portion of the viaduct is within the Special Management Area (SMA).

Build Option 1

Lane position and widths would be modified to allow for the current shoulder to be converted to a permanent through-lane with a small shoulder.

Build Option 2

The viaduct would be widened by 14 feet. This would increase the lane count to six (6) lanes and one (1) AM Peak Use Lane. Widening the viaduct would require additional piers and footings. Additionally, the widening of the Pearl City Viaduct would impact properties adjacent to the Pearl City Viaduct, particularly in the vicinity of Lehua Avenue and 1st Street. Depending on final design, the widened viaduct may require permanent easements to accommodate pier footings and to facilitate maintenance access. Due to the proximity of the existing viaduct to adjacent structures, some right-of-way acquisition may be required. Even where right-of-way acquisition would not be required, the edge of the widened viaduct may overhang some adjacent properties. Construction easements along the Pearl City Viaduct may also be necessary to provide access for construction equipment and supplies.



Segment 5 – Waiau Interchange: The Waiau interchange provides access to and from Moanalua Road. The interchange includes tight radius on- and off-ramps in close proximity to each other. In the eastbound direction, the right lane and AM Peak shoulder lane are merged into one off-ramp lane, leaving five (5) lanes continuing on. Two eastbound on-ramp lanes from Moanalua Road are carried across the Moanalua Road Overpass bridge. During non-peak hours

the right-most on-ramp lane is merged shortly after crossing the overpass bridge. During peak hours, the right-most lane continues on as an AM Peak Shoulder lane.

Build Option 1

Moanalua Road Overpass would be widened by approximately three feet (3') and the existing shoulder utilized to accommodate an additional lane across the bridge. This additional bridge width would allow the rightmost through-lane to be carried through across the bridge thereby eliminating the need to merge to the right-most lanes before crossing the overpass.

Build Option 2

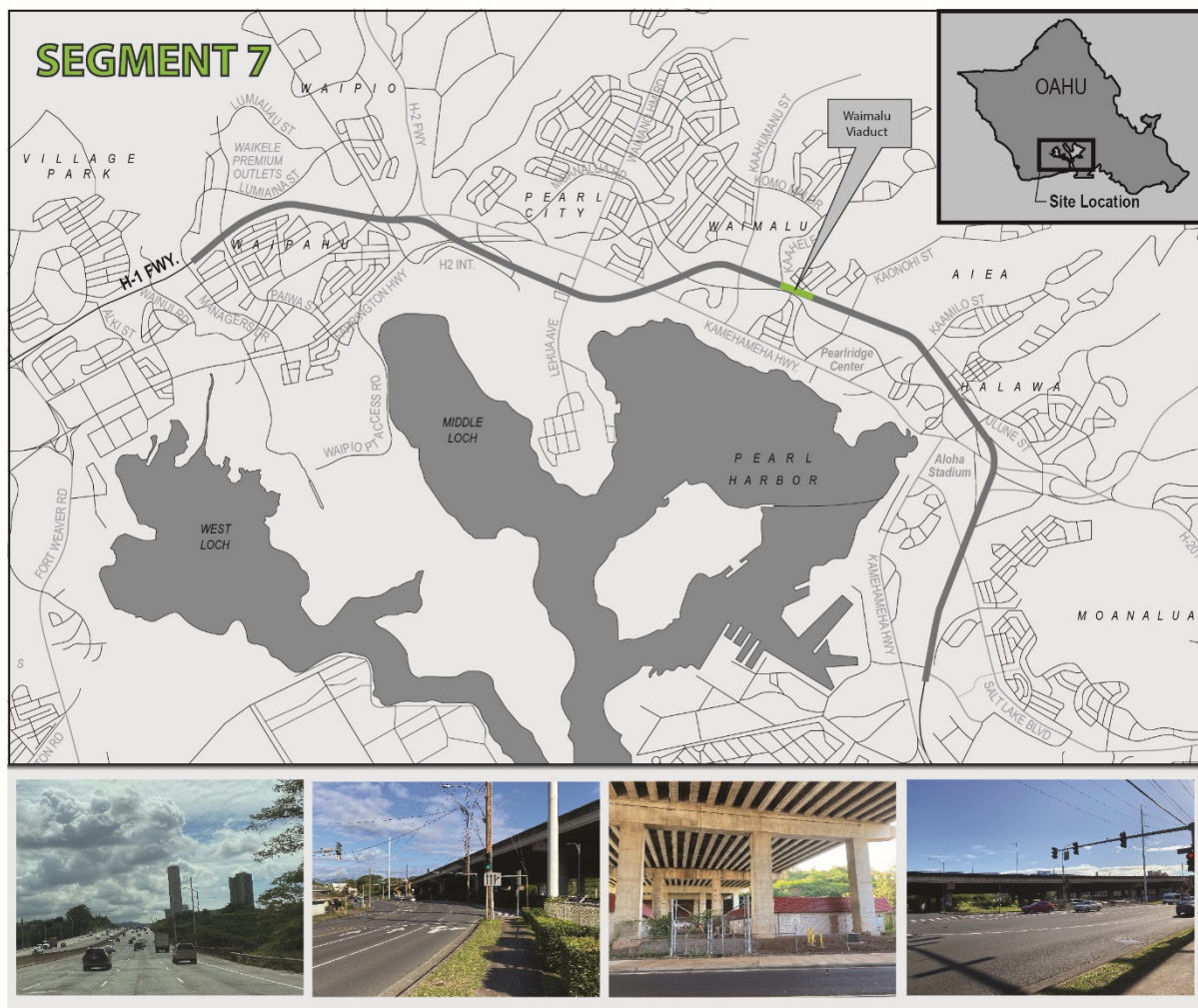
Adjustments in Segment 5 for this alternative are the same as Build Option 1 with the exception of the termination of the AM Peak lane added in segment 4 at the off-ramp to Moanalua Road.



Segment 6 - Waiau Interchange to Waimalu Viaduct: This segment includes the at-grade freeway between Waiau Interchange and Waimalu Viaduct. For much of this segment, the makai edge of the right-of-way consists of a downward slope bordered by commercial properties. The abutments of the Kaahumanu Street Overpass, which crosses over the freeway in this segment, are close to the current edge of the freeway. The HOV lane and the AM Peak lane are carried through this segment, but the two rightmost non-shoulder lanes are merged resulting in five (5) lanes plus the AM shoulder lane.

Build Option 1 and 2

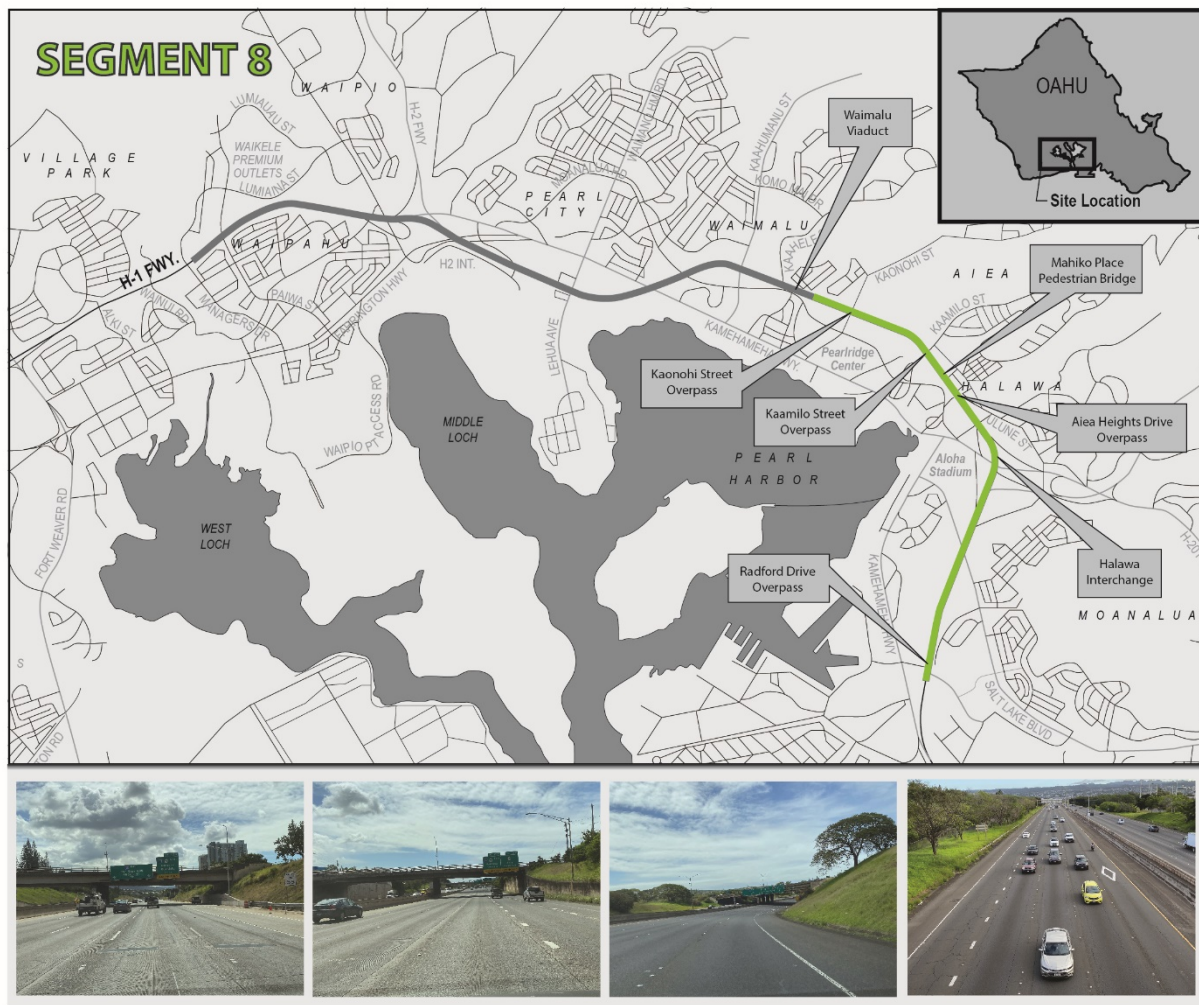
Widen H-1 from Waiau Interchange to the east of Waimalu Viaduct, near Mahiko Place Pedestrian Overpass, by up to 14 feet.



Segment 7 - Waimalu Viaduct: At the Waimalu Viaduct, the freeway is elevated on piers. The viaduct crosses over the Waimalu Stream. A curving section of the City and County of Honolulu owned Moanalua Road is located immediately adjacent to the edge of the existing viaduct. Utilities, including those strung along utility poles, occur in close proximity to the elevated freeway deck.

Build Option 1 and 2

The Waimalu Viaduct would be widened by approximately 14 feet including the addition of new piers to support the widened deck. This widening would tie into the shoulder widening constructed under the recently completed Interstate H-1 Shoulder Work & PCCP Rehabilitation project, which added shoulder width to the freeway from just east of the Waimalu Viaduct to the Kaamilo Street overpass. The widened bridge deck of the Waimalu Viaduct would overhang a section of Moanalua Road in the vicinity of Hekaha Street. Additional piers associated with the widened deck would be immediately adjacent to Moanalua Road with part of the pier footings under Moanalua Road. Sidewalks along the roadway would also be reconfigured.



Segment 8 – Kaonohi Street Overpass to the Radford Drive overpass: This is the largest segment of the project which begins near the Kaonohi Street overpass where the shoulder was recently widened through the Radford Drive Overpass near the AM zipper lane entrance. This segment is included as one segment, because no widening is planned in this section due to prohibitive constraints primarily associated with the close proximity of overpass piers and abutments that support the Kaamilo Street Overpass, the Mahiko Place Pedestrian Bridge, and

the Aiea Heights Drive Overpass being in close proximity to the existing edge of pavement. This segment includes the Halawa Interchange which has on- and off-ramps to H-201 and H-3. Elevated portions of this segment include a bridge over Halawa Stream and the approximately 1,900-foot-long bridge over Kahuapaani Street. The HOV lane continues throughout this segment.

Build Option 1 and 2

Changes in this segment would be minimal such as minor adjustments to striping and signage.