Polling of American Planning Association-Hawai'i Chapter (APA-HI) Membership on Overhead vs. Underground vs. Street-Grade Transit in Urban Honolulu

As a member of APA-HI, you are invited to participate in a short survey to express your opinion on whether the City’s proposed high-capacity transit system should consider technologies that can operate at street-grade in the portion of the alignment in urban Honolulu – i.e., east of Iwilei. The survey should take no longer than 10 minutes, including the review of this introduction. The results of this survey will be used as the basis of APA-HI’s position on this issue. Because of this, the survey is limited to APA-HI members only. Please honor that restriction.

The City has begun the procurement process to select a transit technology. As discussed in APA-HI’s Transit and Transit-Oriented Development issue paper, which is available on our website, some technologies (e.g., “third rail”) can operate only on a grade-separated or dedicated alignment, while others (e.g., “light rail”) can also run also within the street system. The Request for Information (RFI) that the City has distributed to potential transit vendors appears to allow only technologies that require grade separation for the entire alignment. While it is conceptually possible to consider an underground transit tunnel through urban Honolulu, the cost of this alternative is very high. At present, a street-grade segment through urban Honolulu appears to be the most viable alternative to an overhead guideway from a construction cost standpoint.

This topic is covered more thoroughly in the APA-HI issue paper, but a summary of the “pros” and “cons” for at-grade vs. overhead in urban Honolulu is provided below.

The following arguments have been made in favor or an overhead viaduct (or underground tunnel):

- A transit vehicle operating on a grade-separated guideway can potentially be fully automated. Over the long term, this reduces labor costs and the risk of stoppage due to a labor dispute.
- Because the overhead guideway (or underground tunnel) allows the transit vehicle to travel outside the mix of grade-level traffic, the operating speed of the transit vehicles is higher and schedules are more reliable.
- Since no travel lanes need to be removed or dedicated exclusively or semi-exclusively for transit, and no adjustments are required to traffic control signs and signals to give priority to transit, the traffic capacity of existing streets can be maintained.
- An elevated alignment (but not a tunnel, obviously) will create a new public vantage point from which to enjoy scenic views.

Arguments in favor of an at-grade system within Honolulu, eastward from Iwilei, include:

- The construction cost per mile for an overhead viaduct in the urban core is much higher than in outlying areas.
- An at-grade transit system allows greater potential for future extensions and additional routes to provide greater coverage to high-density areas (e.g., Waikiki, UH-Manoa, the King-Beretania corridor) because it is cheaper and faster to build, and is generally more acceptable to adjoining urban neighborhoods.
- Direct and convenient pedestrian access and bus connection to stations is more important in the urban core than in outlying areas, where commuters are more likely to drive to the stations. Grade-level stations tend to activate the street, which in turn can stimulate more transit ridership and economic vitality within the neighborhood.
- An overhead viaduct running along the downtown waterfront and through the older, narrower streets of urban Honolulu has adverse impact on adjacent land uses. It discourages improvement of adjacent properties between stations and diminishes the quality of the streetscape. Since it is very difficult to retrofit an overhead viaduct into a densely built urban core, engineers must resort to awkward solutions: e.g., the flyover above the H-1 viaduct near UH Manoa, or the station placed at 80 feet above grade at Ala Moana Center.
- Virtually all transit cities bring their system either underground or at-grade as it passes through the urban core, even if outlying areas have overhead viaducts.