

## LIGHT RAIL IN THE I-275 MEDIAN DISCUSSION PAPER MPO TRANSIT STUDY

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The Tampa Rail Plan FEIS identified the western half of the locally preferred alternative as an alignment from downtown Tampa to Westshore beginning at Polk Street, crossing the Hillsborough River, turning north on N. Boulevard, west on W. Main Street, then following W. Cypress St. to N. Trask St., and turning north to serve the Westshore area. The MPO is now questioning whether LRT on I-275 between downtown and the Howard Franklin Bridge with a crossing to St. Petersburg would be a more advantageous alignment.

The first question in determining the mode and alignment of any transit line is: what markets are we trying to serve? A higher-speed transit line between two city CBDs serving markets with origins and destinations in those two urban cores, or connecting to an intercity rail network, requires a different alignment and equipment than an urban transit system that connects many communities along the line. The higher-speed line would strive for few intermediate stations (only those with high passenger volumes), grade separated road crossings, and track geometry that allows higher sustained speeds. An urban transit system, on the other hand, would strive to provide access to the largest number of residents, connecting major activity centers, with many intermediate stops, likely using at-grade crossings and tight turning radii to fit within existing developed areas, or using grade-separated guideway (tunnel or aerial structure) to maintain higher average speeds while building several pedestrian connections to each station to improve accessibility.

Several transit systems in the U.S. and abroad have constructed transit lines within the median of or adjacent to interstate or other controlled access highways. These include light rail (Portland Metro on Banfield Expressway, San Diego MDTA, Denver RTD along I-25) and heavy rail (Washington, D.C. WMATA's Orange Line and future Dulles extension, Atlanta North Line in GA 400, Baltimore Metro in I-795, San Francisco BART east and to the airport, and Chicago (CTA) to O'Hare Airport). All of those lines, with a few small exceptions, were built in the outlying areas of their respective urban core areas, serving the drive-up commuter market with large park-and-ride facilities. Highways are generally not used near the urban core because few residents and businesses are within walking distance of highways. Existing streets and grade-separated alignments are typically used to locate the station access within walking distance of major concentrations of people.

The following pictures compare the physical and community characteristics of highway transit alignments and local/arterial roadway alignments.



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*Portland MAX local*



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*Portland MAX highway*



*Portland MAX local*



*Portland MAX highway*



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*Chicago CTA highway*

If the intent of the I-275 alignment is to provide a fast connection between Tampa and St. Petersburg, with few intermediate stops, and little or no walk-up passengers other than at the two ends in the respective downtowns, the I-275 alignment might well serve that purpose, although ridership might be low because the market for that specific travel pattern is not large.<sup>1</sup> If the intent is to provide an urban transit system, connecting the communities and major activity centers on the west side of Tampa, the I-275 alignment would not serve this purpose well unless the guideway is routed off the highway at many locations, reducing the speed advantage of locating the alignment along the highway.

The I-275 alignment does not work well as an urban transit line for the following reasons:

- Few people live and work within walking distance of I-275. An alignment along I-275 would not serve many major markets and activity centers between the river and Old Tampa Bay unless it was routed off of the interstate to serve them. The majority of the development within a ¼ mile of the guideway is low to medium density residential. Business development exists at N. Dale Mabry Hwy, along Cypress St. between US 60 and N. Louis Avenue, and surrounding the Westshore Mall, but to serve those areas well requires the guideway to exit off of the interstate to locate a station within the core of the development. Tampa International Airport is 2 miles north of I-275 and will require a transfer regardless.
- Little or no opportunity for park-and-ride lots and little use in building them. If few people live and work within walking distance of the interstate, the majority of passenger origins will be drive-access, people driving to the park-and-ride lot at a station. Locating stations and park-and-ride facilities along I-275 will be difficult (though not impossible) in this built-up environment.

More importantly, few residents are likely to view these facilities as an attractive option for traveling to downtown Tampa because the distance is not very great, with the possible exception of residents in the Westshore area. Residents would have to drive to a station, locate a parking space, walk to the platform, wait for the train, ride to their destination station, and walk to their final destination. This is an attractive option for passengers living in outlying areas facing long, congested commutes, but not for passengers who live within 1-2 miles of their destination, as would be the case for residents living between N. Dale Mabry Hwy and N. Boulevard traveling to downtown Tampa.

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<sup>1</sup> Note there is another, far less costly alignment alternative along the South Tampa CSX alignment to the Gandy Bridge.

- Interestingly, these stations may be attractive to Tampa residents commuting to St. Petersburg, as the savings in time and hassle may be favorable compared to driving to St. Petersburg. Likewise, stations along I-275 in Pinellas County may be attractive to their residents commuting to downtown Tampa.
- Physically locating stations along a highway can be challenging. If located within the median, the median has to be wide enough to accommodate the station building, at least 55 feet. When this section of I-275 is rebuilt, it will have a wide median designed to accommodate a high-speed rail. If stations are in the median, pedestrian connections will likely be by tunnel if the stations are built between streets, or by vertical circulation from the sidewalks of cross-streets if the station were built over or adjacent to the cross-street. Long pedestrian tunnels are perceived to be unsafe unless continual activity is present, which happens only in our major cities. Vertical circulation from sidewalks of crossing streets is acceptable, but the connecting sidewalk network is often unattractive for pedestrians because of high auto traffic volumes.

If the guideway were constructed adjacent to one side of the interstate highway, two issues become important: a) avoiding highway ramps and b) connectivity to the other side of the interstate. If physically located within 50 feet of the shoulder, the transit guideway will have to fly-over the on/off ramps on aerial structure or swing out away from the ramps, likely on aerial structure as well since I-275 is mostly elevated on fill through this area. Locating stations along one side of the interstate can limit access to the other side; the highway effectively isolates one side from the station if the highway cross-section is large.

Using portions of I-275 as a means to avoid community or environmental impacts, or to avoid areas with low ridership potential, is appropriate if the additional time to reach I-275 doesn't offset the time savings along the highway, but an alignment solely along I-275 would not provide significant benefits to many West Tampa residents.

Alternatively, a LRT crossing near the Howard Franklin Bridge could connect easily with the proposed Tampa Rail Plan alignment at W. Cypress St. and N. Trask St., providing the desired connection to the Tampa International Airport and serving as an urban transit system for both St. Petersburg and Tampa. This arrangement could serve both the local collection/distribution purpose of an urban transit system as well as connecting the two metro areas. Express trains could also be run with careful scheduling, reducing the travel time between major stations.

One of the concerns about transit along an urban arterial or local roadway is the presumption that travel times will be slow. This will be the case if no signal priority or preemption is provided to transit; transit will face the same traffic signals as the automobile, though assisted by dedicated lanes to bypass queues. If light rail is the mode, full signal preemption is possible, but this policy decision must come from above traffic department staff. Highway or railroad alignments appear attractive for higher speed service, but residents and businesses are often not located along these transportation corridors. It becomes a question of which markets are being served, where those markets exist or will exist, and the challenges and costs of building each line.

These types of questions are best answered through a coordinated study of an alternative system of alignments, stations, and operating plans, as are currently being conducted with the MPO Transit Study. Through this approach, the relative benefits of higher-speed service can be compared to more localized services.