ALL ABOARD FLORIDA
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HNTB

September 14, 2015

Keven Klopp
Director of Development Services
City of Hallandale Beach
400 South Federal Highway
Hallandale Beach, FL 33009

RE: Hallandale Beach Blvd at N. Dixie Hwy Intersection Operations Description

Dear Mr. Klopp:

The intersection of Hallandale Beach Boulevard and North Dixie Highway will be modified as part of a collaborative effort between the City of Hallandale Beach, Broward County, FDOT and All Aboard Florida. At the City's request, All Aboard Florida is providing a description of the intersection efficiency for the preliminary and final designs.

Existing Condition: Hallandale Beach Boulevard is a six lane urban arterial. The roadway is intermittently divided with a landscaped median and undivided with a left turn lane. At the grade crossing with the FEC railway, the typical section of the roadway includes three westbound through lanes, one westbound left turn lane, two eastbound through lanes, and one eastbound left turn lane. To the west and east of the crossing, Hallandale Beach Boulevard intersects with North Dixie Highway and NE/SE 1st Avenue, respectively. Both of these intersections are signalized, and North Dixie Highway and NE/SE 1st Avenue are southbound and northbound one-way pairs. The signalized intersections have video cameras for vehicle detection.

The Hallandale Beach Boulevard and North Dixie Highway intersection is described as follows:

- Southbound:
  - 2 dedicated through lanes
  - 1 shared through and left turn lane
  - 1 share through and right turn lane

- Westbound:
  - 3 dedicated through lanes
  - 1 dedicated left turn lane

- Eastbound:
  - 2 dedicated through lanes
  - 1 shared through and right turn lane

The Hallandale Beach Boulevard and NE/SE 1st Avenue intersection is described as follows:

- Northbound:
  - 1 dedicated through lane
  - 1 dedicated right turn lane
  - 1 dedicated left turn lane

- Westbound:
  - 2 dedicated through lanes
  - 1 shared through and right turn lane
  - 1 shared through and U-turn lane

- Eastbound:
  - 2 dedicated through lanes
  - 1 dedicated left turn lane

Warning devices at the highway-rail grade crossing include entrance gates in the northeast and southwest quadrants with gate arms extending across the travel lanes in each direction of travel. The number of westbound lanes results in a roadway width that exceeds the maximum length of a gate arm. As a consequence, the westbound left turn lane is only partially covered by the gate arm, which is an undesirable non-standard condition.

Quiet Zone Construction: Hallandale Beach Boulevard was selected by the Metropolitan Planning Organization in conjunction with the municipalities within Broward County as a grade crossing to receive quiet zone supplemental safety treatments, specifically the addition of exit gates. To accommodate these features, a median must be constructed along Hallandale Beach Boulevard on both sides of the grade crossing with FECR. Entrance and exit gates will descend from both the newly constructed median and the outside of the roadway, and cover all lanes of traffic.

30% Plans/Diagnostic Review Preliminary Design: Initial plans developed placed the median in the existing westbound left turn lane, modifying the traffic movements in that direction at the crossing to have one shared left turn/through movement and two dedicated through movements. The traffic signal phasing would be adjusted to accommodate the shared left turn/through movements by either providing a leading all green westbound traffic phase or simply eliminating the left turn only phase and permitting left turns during the through phases. Either of these phasing options would have to potential to result in regular queueing of westbound left turning vehicles across the grade crossing as westbound through traffic may be waiting behind permissive left turning vehicles. There is also a potential for an increase in the number of rear end and left turn type collisions due to a shared left turn/through lane movement in the inside westbound travel lane.

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Final Proposed Design: Hallandale Beach Boulevard will be improved to include a 10-ft wide median to the west and east of the grade crossing with the FEC railway. This concrete median will take the place of the westbound left turn lane. The eastbound lanes and turn designation will remain unchanged; the westbound lanes will be modified to have three dedicated through lanes. Left turning traffic will follow signage to complete three right turns following the intersection onto southbound North Dixie Highway. This configuration removes any need for protected phasing for the westbound left turn movement as all vehicles are signed to travel through the intersection. Eliminating this phase allows the intersection to operate more efficiently, thereby reducing the potential for vehicle queueing across the grade crossing and improving overall safety. An intersection turning movement count collected at the intersection in 2011 indicates that the number of westbound left turns at the intersection during the typical AM, midday, and PM peak hours ranges between 40 and 60 vehicles per hour. Therefore, impacts related to the diversion of traffic "around the block" will not be significant.

In both the preliminary and final design, the intersection at NE/SE 1st Avenue and Hallandale Beach Boulevard will be modified due to the construction of the concrete median to a westbound U-turn only lane instead of the existing shared through/U-turn lane.

Thank you for your time and cooperation as we work towards a successful project for both All Aboard Florida and the City of Hallandale Beach.

Sincerely,

Michael Lefevre
Manager of Operations Planning

CC: Jonathan Overton, Assistant District Traffic Operations Engineer, FDOT District 4;
Scott Brunner, Director, Traffic Engineering Division, Broward County Public Works Dept.