

EXECUTIVE SUMMARY

North Brunswick TOD Associates is seeking to develop a Transit Village at the former Johnson & Johnson facility in the Township of North Brunswick, Middlesex County, New Jersey. A transit village is a walkable mixed-use community within 1/3 mile of a transit facility. A transit village is a compact, mixed-use neighborhood with a strong residential component, walkable neighborhoods, mass transit accessibility, sustainable economic and social development, and preserved green open space. This adheres to the core principals of Smart Growth, which is desired by the New Jersey Department of Transportation.

The site is a 212-acre property located along Route 1. Access to Route 130 will also be provided to and from Route 130. Train tracks for the New Jersey Transit Northeast Corridor train line runs along the eastern border of the site.

The transit village will contain a mix of housing, retail, offices, civic buildings and a train station. The mix of uses and a well connected system of streets, sidewalks and paths will function to create a true town center – a place where residents can live, work, socialize and shop. The transit village will include:

- 3,700 residential units,
- 350,000 square feet (sq ft) of retail,
- 720,000 sq ft of office,
- 200 room hotel,
- 66,000 sq ft library,
- 34,000 sq ft community center, and
- a train station with 3,000 parking spaces.

We determined that the intersections most impacted by this mixed use development are:

- Route 1 and Finnegan's Lane,
- Route 1 and Aaron Road,
- Route 1 and Commerce Boulevard,
- Route 1 and Adams Lane/Cozzens Lane,
- Route 130 and Finnegan's Lane/Davidson's Mill Road,
- Route 130 and Renaissance Boulevard South/Apple Orchard Road,

- Route 130 and Renaissance Boulevard East, and
- Route 130 and Adams Lane.

TRAFFIC ANALYSIS

This section outlines the process that was used to project traffic flow within the study area.

Intersection Counts

As part of the Township of North Brunswick Master Plan, counts were conducted at the following intersections:

- Route 1 and Finnegan's Lane,
- Route 1 and Commerce Boulevard,
- Route 1 and Adams Lane/Cozzens Lane,
- Route 130 and Finnegan's Lane/Davidson's Mill Road, and
- Route 130 and Renaissance Boulevard East.

Additionally, we conducted counts on January 4, 2007 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM at the following intersections:

- Route 1 and Aaron Road,
- Route 130 and Renaissance Boulevard South/Apple Orchard Road, and
- Route 130 and Adams Lane.

Travel Projections

We conservatively increased the existing peak hour volumes by a compounded annual growth rate of 2.25 percent, established by NJDOT for Middlesex County, to derive the 2012 No-Build traffic volumes.

Trip Generation

We prepared trip generation estimates for the proposed mixed-use development using data compiled in by ITE as contained in the Trip Generation, 7th edition.

We expect interaction between the various land-uses. These trips within a mixed-use development are called "internal capture" trips. We calculated internal capture trips using methods described in the ITE published Trip Generation Handbook, 2nd edition. Additionally, as

the Trip Generation Handbook does not account for all the land uses in this mixed-use development, we have taken additional reductions.

A certain percentage of traffic attracted to retail and other land uses generally relate to the volume of traffic passing by a site. Such trips are known as “pass-by” trips. Specifically, a certain percentage of existing trips are expected to divert from the adjacent passing travel stream then continue along the original path after exiting the site. Pass-by trips are not new to the area.

Trip Distribution

We prepared a gravity model for the anticipated market area of the proposed mixed-use development to determine the trip distribution for the new site generated trips. We defined the market area using a 20-minute travel time as is appropriate for the proposed mixed-use development. We identified the population for each municipality within the anticipated market area through the 2000 Census Data. We developed a gravity model in accordance with NJDOT requirements based on the travel time and population within the market area.

We used the results of the gravity model to assign the new site generated traffic onto the adjacent road network.

Future Traffic Volumes

We added the trips generated by the mixed-use development to the 2012 No-Build Volumes to determine the 2012 Build Volumes.

TOWNSHIP OF NORTH BRUNSWICK MASTER PLAN

Heyer, Gruel & Associates and Urban Engineer, Inc. prepared the Township of North Brunswick Master Plan, under the direction of the township. The Master Plan identified the following intersection improvements:

- Route 1 and Finnegan’s Lane
 - ◆ Widen Route 1 northbound and southbound to provide three lanes in each direction;
 - ◆ Widen Finnegan’s Lane eastbound to provide double left-turn lanes; and
 - ◆ Provide new traffic signal system.

- Route 1 and Commerce Boulevard
 - ◆ Re-stripe eastbound approach for double left-turn lanes and a shared through and right-turn lane.

- Route 1 and Adams Lane/Cozzens Lane (Phase A)
 - ◆ A new connection from Cozzens Lane to Adams Lane;
 - ◆ An extension of Adams Lane to Hartland Commons;
 - ◆ A connection from Cozzens Lane to the new Adams Lane Extension; and
 - ◆ A connection from the new Adams Lane Extension to Hartland Commons (south of Elizabeth Street).

- Route 1 and Adams Lane/Cozzens Lane (Phase B)
 - ◆ An extension of Cozzens Lane across Route 1 via a grade separated structure;
 - ◆ A new connector from the Cozzens Lane Extension to Adams Lane;
 - ◆ A new connector from Adams Lane to Cozzens Lane;
 - ◆ Close median across Route 1;
 - ◆ Remove signal at Route 1 and Adams Lane intersection
 - ◆ Remove jug-handle from southbound Route 1 to Adams Lane; and
 - ◆ Remove existing connector from Cozzens Lane to Adams Lane.

- Route 130 and Finnegan's Lane/Davidson's Mill Road
 - ◆ Add exclusive right-turn lanes northbound and southbound on Route 130;
 - ◆ Re-stripe eastbound approach to provide an exclusive left-turn lane, and a shared through and right-turn lane; and
 - ◆ Modify signal timing.

RECOMMENDED IMPROVEMENTS

We conducted capacity analysis for the 2012 No-Build and 2012 Build scenarios using the improvements included in the North Brunswick Master Plan. The 2012 Build scenario requires improvements beyond those recommended in the Master Plan.

We performed capacity analyses and determined that the addition of the train station to the existing Johnson & Johnson facility would require improvements beyond the recommended Master Plan improvements. The addition of the mixed-use community will not necessitate additional improvements.

We are recommending these additional improvements to mitigate delay resulting from the transit village:

- Route 1 and Finnegan's Lane
 - ◆ Grade separation will be required at this intersection.

- Route 1 and Aaron Road
 - ◆ Widen Aaron Road to provide a left-turn lane, three through lanes, and a right-turn lane eastbound; and
 - ◆ Widen Aaron Road to provide two left-turn lanes, a through lane and two right-turn lanes westbound; and
 - ◆ Modify signal timing.

- Route 1 and Commerce Boulevard
 - ◆ Grade separation will be required at this intersection.

- Route 130 and Finnegan's Lane/Davidson's Mill Road
 - ◆ Widen Davidson's Mill Road to provide an exclusive left-turn lane and a shared through and right-turn lane westbound;
 - ◆ Widen Route 130 to provide an additional northbound through lane;
 - ◆ Widen Route 130 to provide two exclusive left-turn lanes, two through lanes and a shared through and right-turn lane southbound; and
 - ◆ Modify signal timing.

- Route 130 and Renaissance Boulevard South
 - ◆ Provide a shared eastbound left-turn and through lane and exclusive right-turn lane on Renaissance Boulevard South;
 - ◆ Provide two exclusive left-turn lanes, two through lanes and a shared through and right-turn lane northbound;
 - ◆ Provide an exclusive left-turn lane, two through lanes and a shared through and right-turn lane southbound; and
 - ◆ Provide new traffic signal system.

- Route 130 and Renaissance Boulevard East
 - ◆ Widen Route 130 to provide three southbound through lanes.

- Route 130 and Adams Lane
 - ◆ Widen eastbound Adams Lane to provide an exclusive left-turn lane, through lane and exclusive right-turn lane;
 - ◆ Widen Route 130 northbound to provide two exclusive left-turn lanes;
 - ◆ Widen Route 130 southbound to provide an additional through lane.

CONCLUSION

There are numerous local and regional benefits with a train station in North Brunswick. The new train station would take cars off the road, attract funding to fix area bottlenecks and would move the area bottlenecks up higher on the NJDOT project priority list.

Additionally, as a transit village promotes Smart Growth initiatives, the transit village would move the area bottlenecks further to the top of the NJDOT project priority list.

Further, our analyses show that with the Master Plan improvements as well as the improvements recommended in this study, the area road network is expected to operate better than today.