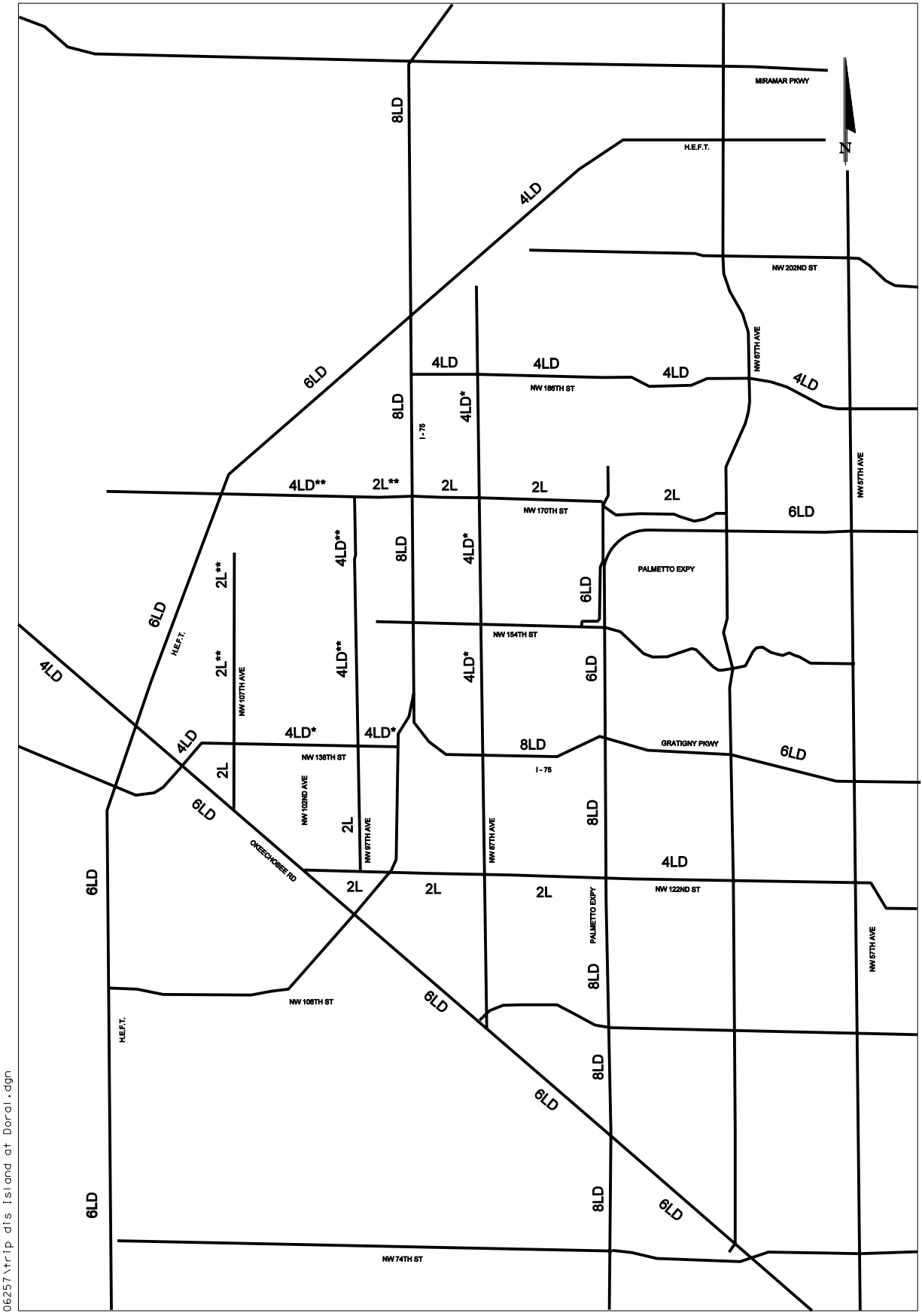


APPENDIX 21-1 (R)
Approved Methodology

Revised April 2008



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* COMMITTED IMPROVEMENTS
 ** PROJECT RELATED IMPROVEMENTS

Source: David Plummer & Associates

EXISTING AND COMMITTED ROADWAY NETWORK
 Beacon County Line DRI

BEACON COUNTYLINE DRI
QUESTION 21. TRANSPORTATION

Revised October 24, 2007

Beacon Countyline DRI is a proposed commercial mixed-use development located in northwest Miami-Dade County, within the Hialeah Heights section of the City of Hialeah. The project will be developed in a single phase with buildout anticipated ten years from the effective DRI development order (2018). It is anticipated that the first two years after development order approval will be devoted to landfill environmental closure, and other site preparation issues, which are unique to this particular property. The proposed development program is shown in Question 10 – General Project Description section of this summary document.

A transportation methodology meeting with all the review agencies will be held as part of the Pre-Application Conference. The intent of this document is to establish the approved methodology and assumptions that will be used as the basis for preparing Question 21: Transportation, of the Application for Development Approval (ADA) for this project.

STUDY AREA/ EXISTING ROADWAY NETWORK

For traffic analysis purposes, the preliminary study area for the project will be bound by the Miramar Parkway to the north, NW 74 Street to the south, NW 57 Avenue (Red Road) to the east, and theoretical NW 157 Avenue to the west. Ultimately, the boundaries of the final study area, as well as the segments to be analyzed, will be shaped by determination of significant impact. According to DRI rules, “significant impact” is measured as development traffic volumes consuming 5% or more of the roadway’s peak hour Service Volume (as described in the corresponding section). The preliminary study area will be extended if significant consumption is established beyond the proposed limits.

The preliminary study area, along with the existing number of lanes, is shown in **Map J – Existing Transportation Network**.

For roadways (and intersections) under study, the following conditions will be analyzed.

- X Existing conditions.
- X Future conditions without the project.
- X Future conditions with the project.

EXISTING TRAFFIC CONDITIONS

1. Existing Traffic Counts

Local municipalities Comprehensive Plan will be researched to establish the analysis period for

roadways within their boundaries. For roadways within Miami-Dade County, PM peak period average annual traffic conditions will be analyzed for all roadways within the Miami-Dade County for all scenarios consistent with the adopted practices of the Miami-Dade County Comprehensive Development Master Plan (CDMP). Consistent with the adopted practices of the Broward County Comprehensive Plan, for roadways within Broward County, all scenarios will analyzed for the 100th highest hour PM peak hour traffic conditions.

For purposes of this study, 2007 will represent existing traffic conditions. Existing traffic counts will be obtained from the Miami-Dade County Concurrency database, the latest available counts from Miami-Dade and Broward Counties, local municipalities (if available), Florida Department of Transportation (FDOT) traffic count volume data, recent transportation studies in the area, and, where necessary, 24-hour machine counts and/or peak hour intersection turning movement counts to be taken by David Plummer and Associates. Traffic counts will be collected only during typical weekday conditions (Tuesday through Thursday).

Counts taken in 2006 will be adjusted to 2007 conditions using the area background traffic growth rate. When needed, existing traffic counts will be converted to directional peak period counts by applying actual “K” and “D” factors published in the Miami-Dade County Concurrency database, Broward County or FDOT. K100 factors will be used on all FIHS/SIS roadways. K factors for all other state roads will be checked against the FDOT’s minimums. All counts used in the ADA will be documented in an appendix.

2. Level of Service Standards

The Level of Service (LOS) standards adopted in the local jurisdictions Comprehensive Plan will be considered the required minimum LOS for all non-FIHS (Florida Intrastate Highway System) / SIS (Strategic Intermodal System) roadways. FIHS and/or SIS standards (as reflected in the appropriate Comprehensive Plan) will be used for any significantly impacted FIHS/SIS roadway.

3. Maximum Service Volumes

For roadways within the study area, as well as those within Broward County, generalized service volumes from the FDOT’s 2002 *Quality/Level of Service Handbook* and the supplemental *Level of Service Issues – 2002 QLOS Handbook Addendum-May 17 2007* will be used and/or specific service volumes will be calculated based on these guidelines, where appropriate. The source of the service volumes used will be documented in an appendix.

For those roadways in the study area where Miami-Dade County Service Volumes will be used the limits of the segments will be consistent with those established in the concurrency database. Other roadway links will be segmented by section line roads. Links adjacent to the project will be further segmented by the proposed driveways.

INTERSECTION AND RAMP ANALYSIS

Intersection analysis will be performed where the adjacent link is projected to operate below the adopted level of service and project traffic consumption of the adopted maximum service volume is 5% or more (significant impact). In addition, intersection capacity analysis will be performed for all project driveways. Since the exact location of all proposed driveways has not yet been determined, the following intersections will be analyzed as the main accesses from the project to the external roadway network: NW 107 Avenue/NW 162 Street, NW 97 Avenue/NW 170 Street, NW 97 Avenue/NW 162 Street, NW 97 Avenue/NW 156 Street, NW 102 Avenue/NW 170 Street.

The most current McTRANS Highway Capacity Software (based on the 2000 Highway Capacity Manual (HCM) Update), HCS+, will be used for the intersection capacity analysis. The HCS intersection summary report will be provided, which shows LOS, delay and V/C results. The back of queue portion of the report will also be provided showing anticipated queues at the intersection.

Ramp analysis (merging/diverging) will be performed for ramps where the project traffic is projected to be 200 vph. AM Peak hour analysis will be performed in the reverse direction for the ramps impacted. Weaving analysis will also be performed at the junction of HEFT and I-75. The most current McTRANS Highway Capacity Software (based on the 2000 Highway Capacity Manual (HCM) Update), HCS+, will be used for the ramp capacity analysis.

ROADWAY IMPROVEMENTS

As part of this project, the developers anticipate that a full interchange at HEFT and NW 170 Street will be designed and constructed. The interchange will be subject to justification and approval of Florida's Turnpike Enterprise. The traffic impact analysis performed for the ADA will determine the appropriate timing for the opening of this improvement. Analysis of future traffic conditions for this project will include an interchange at this location.

In order to establish how much development can be supported before the interchange is needed, a sensitivity analysis will be prepared as an appendix to the main report. This analysis will determine how many project trips can be supported by the committed surface streets. The transportation model will be run with the committed roadways improvements but without the interchange to obtain a project distribution in the vicinity of the project. The number of trips generated by this scenario will be reflected in this model run. Project volumes for this scenario accessing NW 170 Street to the east, and NW 107 Avenue and/or NW 97 Avenue to the south will be limited to the volumes projected at project buildout with the proposed interchange. A total number of trips originating at the site will then be established that can be accommodated using the committed roadway network.

Miami-Dade County's and Broward County's *2008 Transportation Improvement Programs (TIP)* will be reviewed to determine which roadways in the study area are programmed for improvements. Corresponding TIP page excerpts will be included in the response to Question 21. The City of Hialeah will also be consulted to assure that all programmed improvements within the City are included in the analysis. As required by laws governing DRI's, only those improvements programmed for construction in the first 3 years will be considered in this study. The appropriate agency(ies) will be contacted to confirm the current status of these improvements.

If applicable, Development Orders (DOs) for approved Developments of Regional Impacts (DRIs) will be reviewed to determine if there are roadway improvements required by the developers. In addition, Development Orders of other approved projects will be reviewed to identify other required roadway improvements. Improvements anticipated to be fully funded by any of these developments will also be incorporated into the traffic study, given that the timing coincides with the proposed buildout date of this DRI.

Planned improvements within the study area will be researched in both the Miami-Dade and Broward County's Long Range Transportation Plan. These improvements will be provided for informational purposes only. Therefore, confirmation of these improvements will not be requested.

BACKGROUND TRAFFIC GROWTH

Background growth rates will be based on a historical trend analysis over the last five years. Separate growth rates will be used for the Homestead Extension of the Florida Turnpike (HEFT), I-75, SR 826, the Broward County portion of the study area, and the Miami-Dade County surface streets.

Historic increases in traffic comprise a number of components, including existing development traffic, normal increases or decreases in traffic volumes due to motorist travel behavior, and traffic generated by new development. The proposed analysis would specifically account for committed development projects (see Attachment 1). Therefore, it is anticipated that the compounded background traffic growth rate (excluding committed developments) will be half of the historic growth rate, in addition to committed developments in the area.

PLANNED AND COMMITTED DEVELOPMENTS

Consistent with the DRI guidelines, committed developments are those approved projects generating 400 or more net new external trips during the PM peak hour. Trip generation will be based on previously approved traffic reports, if applicable. Otherwise, calculations to determine whether significant recently approved projects meet this threshold will be performed using *Trip Generation*, 7th edition, published by the Institute of Transportation Engineers (ITE). A list of approved developments will be requested from Miami-Dade and Broward Counties, as well as local jurisdictions within the study area, to identify developments that may fall under this category. In addition, other traffic studies and/or annual reports for previously approved DRIs in the study area will be reviewed to determine the portions that remain unbuilt.

Research of approved DRIs and major projects in (or partially included) the study area yielded the following projects:

1. FEC Park of Industry and Commerce DRI
2. Country Lakes West (Huntington) DRI
3. Blue Grass Lakes DRI

4. East Miramar Areawide DRI

This is a preliminary list of committed developments and is subject to change upon coordination with the South Florida Regional Planning Council, Miami-Dade County and all municipalities in the study area.

Committed developments trips will be assigned to the roadway network using the appropriate cardinal distribution from the long range plan update published by Metro-Dade Metropolitan Planning Organization, or if available, they will be based in traffic studies performed for their approval process. Although the study area for some committed developments do not coincide with the study area for this project, trips from these developments will be carried through the regionally significant roadways in this DRI's study area. Committed Developments distribution and assignment will be documented in the ADA.

PROJECT TRAFFIC

1. Trip Generation

Trip generation was estimated using rates and/or equations (as applicable) published by ITE in *Trip Generation*, 7th Edition (see Attachment 2). All ITE Land Use Codes utilized for each of the proposed land uses for this DRI have been identified. ITE prescribed adjustments to the trip generation are described in the following sections.

Due to the proposed warehouse component of the project, a survey of sites with similar uses developed by the applicant will be performed to identify the percent trucks generated by the project. A passenger car equivalent will be applied to the net new external project trips, based on Highway Capacity Manual recommended methodology.

2. Internal Trips

ITE recognizes that data obtained to establish trip generation rates and/or equations is collected at single-use, free-standing sites, and that mixed-use developments provide a potential for interaction of trips within the site, which must be accounted for separately. This will be a mixed-use project which will include features to encourage interaction between the proposed land uses will be incorporated into the design, resulting in some project trips satisfied on-site (*internal trips*).

ITE's *Trip Generation Handbook*, published in March 2001, provides guidelines for establishing internal capture for mixed-use developments. These guidelines, where available, will be followed in determining the potential for trip interactions within the site. Attachment 2 shows the proposed trip generation and internalization matrix for this project.

3. Pass-by and Diverted Linked Trips

Research shows that a percentage of retail trips to and from a site are “*pass-by*” trips. ITE describes *pass-by* as trips “*attracted from traffic passing the site on an adjacent street*”. *Pass-by* trips are already using the existing roadway network. ITE has established that, typically, for retail centers with approximately 550,000 square feet of gross leasable space (SF GLA), such as the one proposed, approximately 23% of the trips are *pass-by*. FDOT’s *Site Impact Handbook* suggests that the number of *pass-by* trips should not exceed 10% of the traffic passing-by on the adjacent street(s). It is anticipated that *pass-by* trips will be attracted from non-project related traffic on NW 170 Street and NW 97 Avenue. For the retail portion of this project, the rate of *pass-by* users will likely be defined by the projected vehicles traveling on the adjacent street. However, *Pass-by* for this project will not exceed the *pass-by* percentages recommended by ITE or 10% of the traffic passing-by on the adjacent street, whichever is less. Consistent with ITE’s recommendations in the *Trip Generation Handbook*, deductions for *pass-by* trips will be taken after *internal* trips are deducted.

ITE also recognizes that “*diverted linked trips*” are characteristic of shopping centers. ITE describes these as “*trips attracted from the traffic volume on roadways within the vicinity of the generator but which require a diversion from that roadway to another roadway to gain access to the site*”. FDOT’s *Site Impact Handbook* acknowledges that *Diverted Trips* are not new to the system overall. *Diverted linked trips* are already using roads in the area, but would deviate momentarily from those roads to access the Project. ITE data shows that for retail establishments approximately 550,000 square feet of gross leasable area, *diverted linked trips* could account for up to 19% of the retail trips. For purposes of this analysis it is proposed that *diverted linked trips* will constitute less than 10% of the retail trips, as long as the *diverted* volume does not exceed 10% of the volume on the streets where the diversions come from. Diversions will be limited to the Homestead Extension of the Florida Turnpike (HEFT).

Pass-by trips and *diverted linked trips* will be deducted from the total external trips. However, these must be manually added to project driveways in order to properly establish the total project impacts. *Diverted linked trips* must also be added to roadways affected by those diversions.

4. Other Modes of Transportation

A review of transit availability in the vicinity of the project site indicates that there are no existing Miami-Dade bus routes serving this area within a mile of the project Site. The City of Hialeah Transit System offers two bus routes serving the city, which operate between 6:00 AM and 9:00 PM on weekdays. The City has expressed their commitment to extend existing transit services to the project site. It is anticipated that Miami-Dade Transit (MDT) may also extend their transit system to this area. For this analysis, the average countywide mode split of 1.5%, will be used for project buildout.

Accommodations will be made within the project for bus bays, bus stops, shelters and the like to promote ridership.

5. Trip Distribution and Assignment

Model Selection

The trip distribution and traffic assignment for the project will be based on a select-zone run using the Modified MPO's Adopted Long Range Transportation Plan FSUTMS model for Miami-Dade County with adjustments made by the Turnpike Enterprise for validation purposes. The Turnpike Enterprise has performed extensive up-to-date validation of the Miami Dade approved transportation model to accurately reflect existing volumes on this facility as well as on the surface streets in this area. This model extends HEFT into Broward County within the study area. Model outputs will be provided in an appendix to Question 21.

For project traffic traveling north on I-75 into Broward County, it is proposed that a ratio be taken between existing mainline traffic and ramp off-volumes. This percent will be applied to project traffic using the mainline to determine how much traffic will leave/enter I-75 at interchange(s) in Broward County.

Representative Zone

The subject site is in Miami-Dade County's Traffic Analysis Zone (TAZ) 7. New zone(s) will be introduced into the model to represent project traffic, which will be assigned as special generator(s). Project traffic assignment will be determined by tracking daily project traffic via a select-zone analysis using the County's FSUTMS 2030 model and converting it into a project trip percent distribution. ITE pm peak hour trip generation will then be applied to the trip distribution to obtain the pm peak hour project assignment. Assigned pm peak hour project trips will be checked to ensure that they reflect at least 99% of the net new external trips obtained from the adjusted trip generation as described in sections above. Manual adjustments to the model generated distribution might be needed to accurately portray project demand on HEFT.

The model's network will be reviewed in order to verify that only committed roadway improvements, as described in the section addressing committed roadway improvements, as well as any committed improvements by private approved developments within the time frame of this DRI, are incorporated into the model for the study area. Any roadway improvement within the current 2030 model network, which does not fall under the definition of committed roadway improvement for this project, will be removed from the model network in the study area.

FUTURE TRAFFIC CONDITIONS

Future traffic conditions will be established using existing traffic conditions as a base, applying a traffic growth rate through project buildout for each phase, and adding additional traffic generated by the committed developments and project traffic.

FUTURE ROADWAY NETWORK

Based on the future traffic volumes projected as described above, a recommended roadway network

to support all area development coincident project buildout will be recommended. Roadways with project trips that represent 5% or more of the service volume consumption will be considered to be significantly impacted by the project. Roadways that operate below the adopted LOS standard and meet or exceed the 5% service volume consumption by the project will be considered to be significantly and adversely impacted by the project. Mitigation of regional transportation facilities will be pursuant to Rule 9J2.045 of the Florida Administrative Code.

NUMBER AND LOCATION OF ACCESS POINTS TO THE PROJECT SITE

A conceptual site plan showing the proposed access points to and from the project will be provided. These driveways will be described in the ADA. Consideration will be given to ways to minimize their impacts on the adjacent roadway network.

PROVISIONS TO ENCOURAGE OTHER MODES OF TRANSPORTATION

Pedestrian linkages will be integrated into the project design to ensure maximum non-vehicular travel. The developer will coordinate with Miami-Dade Transit Agency to facilitate the provision of transit. Additionally, Traffic Demand Management (TDM), Transportation Systems Management (TSM) and Mobility Management strategies will be considered as a form of mitigating project impacts.

TRAFFIC CONCURRENCY

Separate from this DRI analysis, a concurrency analysis will be provided to the City of Hialeah as part of their local review.