

Exhibit 1

Parcel A

32-2016-000-0020

LEGAL DESCRIPTION

DESCRIPTION OF A PORTION OF LAND BEING AND LYING IN SECTION 16, TOWNSHIP 52 SOUTH, RANGE 40 EAST IN DADE COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS: THE SOUTHEAST ONE-QUARTER OF SECTION 16, TOWNSHIP 52 SOUTH RANG 40 EAST:

LESS BEGINNING AT THE SOUTHEAST CORNER OF THE ABOVE MENTIONED SECTION 16, THENCE N89d34'49"E ALONG THE SOUTH LINE OF SECTION 16 FOR A DISTANCE OF 1441.84 FEET, THENCE N00d25'14"W FOR A DISTANCE OF 140.00 FEET, THENCE S89d34'48"W FOR A DISTANCE OF 1197.72 FEET TO THE WEST LINE OF THE SOUTHEAST QUARTER OF SECTION 16, THENCE S02d37'29"E FOR A DISTANCE OF 140.05 FEET TO THE POINT OF BEGINNING.

LESS A PORTION OF LAND LYING AND BEING AT THE SE ¼ OF SECTION 16, TOWNSHIP 52 SOUTH, RANGE 40 EAST IN MIAMI-DADE COUNTY, FLORIDA; BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SE CORNER OF SAID SECTION 16; THENCE S89°34'49"W ALONG THE SOUTH LINE OF THE SE ¼ OF SAID SECTION 16 FOR A DISTANCE 67.90 FEET TO A POINT; THENCE N00°25'11"E FOR 50.00 FEET TO THE POINT OF BEGINNING; THENCE S89°34'49"W ALONG A LINE 50 FEET NORTH AND PARALLEL WITH THE SOUTH LINE OF THE SE ¼ OF SAID SECTION 16 WITH A DISTANCE OF 485.40 FEET TO A POINT; THENCE N00°25'11"W FOR 564.21 FEET TO A POINT; THENCE N29°56'58"E FOR 375.94 FEET TO A POINT; THENCE N87°24'00"E FOR 87.27 FEET TO A POINT; THENCE N02°36'00"W FOR 20.00 FEET TO A POINT; THENCE N87°24'00"E FOR 200.00 FEET; THENCE S02°36'00"E ALONG A LINE 40 FEET WEST AND PARALLEL WITH THE EAST LINE OF THE SE ¼ OF SECTION 16 WITH A DISTANCE OF 894.18 FEET TO A POINT OF CURVATURE OF A CIRCULAR CURVE CONCAVE TO THE NORTHWEST AND HAVING FOR ITS ELEMENTS A CENTRAL ANGLE OF 92°10'49", A RADIUS OF 25.00 FEET, AN ARC DISTANCE OF 40.22 FEET AND A CHORD DISTANCE OF 36.02 FEET TO THE POINT OF BEGINNING.

CONTAINING 146.70 ACRES MORE OR LESS.

Parcel B

32-2015-001-0500

Tracts 41 through 46, inclusive of Section 15, Township 52 South, Range 40 East, of FLORIDA'S FRUIT LANDS COMPANY'S SUBDIVISION NUMBER 1, as recorded in Plat Book 2, Page 17 of the Miami-Dade County Public Records.

Parcel C

A portion of folio 32-2016-000-0020

A PORTION OF LAND LYING AND BEING AT THE SE $\frac{1}{4}$ OF SECTION 16, TOWNSHIP 52 SOUTH, RANGE 40 EAST IN MIAMI-DADE COUNTY, FLORIDA; BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCE AT THE SE CORNER OF SAID SECTION 16; THENCE S89°34'49"W ALONG THE SOUTH LINE OF THE SE $\frac{1}{4}$ OF SAID SECTION 16 FOR A DISTANCE 67.90 FEET TO A POINT; THENCE N00°25'11"E FOR 50.00 FEET TO THE POINT OF BEGINNING; THENCE S89°34'49"W ALONG A LINE 50 FEET NORTH AND PARALLEL WITH THE SOUTH LINE OF THE SE $\frac{1}{4}$ OF SAID SECTION 16 WITH A DISTANCE OF 485.40 FEET TO A POINT; THENCE N00°25'11"W FOR 564.21 FEET TO A POINT; THENCE N29°56'58"E FOR 375.94 FEET TO A POINT; THENCE N87°24'00"E FOR 87.27 FEET TO A POINT; THENCE N02°36'00"W FOR 20.00 FEET TO A POINT; THENCE N87°24'00"E FOR 200.00 FEET; THENCE S02°36'00"E ALONG A LINE 40 FEET WEST AND PARALLEL WITH THE EAST LINE OF THE SE $\frac{1}{4}$ OF SECTION 16 WITH A DISTANCE OF 894.18 FEET TO A POINT OF CURVATURE OF A CIRCULAR CURVE CONCAVE TO THE NORTHWEST AND HAVING FOR ITS ELEMENTS A CENTRAL ANGLE OF 92°10'49", A RADIUS OF 25.00 FEET, AN ARC DISTANCE OF 40.22 FEET AND A CHORD DISTANCE OF 36.02 FEET TO THE POINT OF BEGINNING. CONTAINING 9.50 ACRES MORE OR LESS.

Exhibit 2

Legal Description of Northwest 87 Avenue Right-of-Way

PARCEL NO. 1

The East 40.00 feet of the South 1275.00 feet of the SE 1/4 of Section 16, Township 52 South, Range 40 East, Miami-Dade County, Florida,

A PART OF

The East 40.00 feet of the SE 1/4 of Section 16, Township 52 South, Range 40 East, Miami-Dade County, Florida.

PARCEL NO. 1A

The East 40.00 feet of the SE 1/4 of Section 16, Township 52 South, Range 40 East, in Miami-Dade County, Florida, LESS the South 1275.00 feet thereof,

A PART OF

The East 40.00 feet of the SE 1/4 of Section 16, Township 52 South, Range 40 East, in Miami-Dade County, Florida.

PARCEL NO. 5

All those portions of Tracts 41 through 46, inclusive, of FLORIDA FRUIT LANDS COMPANY'S SUBDIVISION NO. 1 of Section 15, Township 52 South, Range 40 East, Miami-Dade County, Florida, according to the plat thereof recorded in Plat Book 2 at Page 17 of the Public Records of Miami-Dade County, Florida, which lies within the West 40.00 feet of the SW 1/4 of said Section 15,

A PART OF

All those portions of Tracts 41 through 48, inclusive, of FLORIDA FRUIT LANDS COMPANY'S SUBDIVISION NO. 1 of Section 15, Township 52 South, Range 40 East, Miami-Dade County, Florida, according to the plat thereof recorded in Plat Book 2 at Page 17 of the Public Records of Miami-Dade County, Florida, which lies within the West 40.00 feet of the SW 1/4 of said Section 15;

AND

All that part of said Tract 48, which lies within the East 26.16 feet of the West 66.16 feet of the North 35.00 feet of the SW 1/4 of said Section 15;

AND

All that part of said Tract 48 which lies within the external area formed by a 25.00 foot radius arc concave to the Southeast, tangent to the East line of the West 40.00 feet of the SW 1/4 of said Section 15, and tangent to the South line of the North 35.00 feet of the SW 1/4 of said Section 15.

PARCEL NO. 10

All that part of the North 254.81 feet of Tract 5 of FLORIDA FRUIT LANDS COMPANY'S SUBDIVISION NO. 1 of Section 9, Township 52 South, Range 40 East, Miami-Dade County, Florida, according to the plat thereof recorded in Plat Book 2 at Page 17 of the Public Records of Miami-Dade County, Florida, which lies within the East 40.00 feet of the NE 1/4 of said Section 9.

PARCEL NO. 10A

All that part of Tracts 1 through 4, inclusive, of FLORIDA FRUIT LANDS COMPANY'S SUBDIVISION NO. 1 of Section 9, Township 52 South, Range 40 East, Miami-Dade County, Florida, according to the plat thereof as recorded in Plat Book 2 at Page 17 of the Public Records of Miami-Dade County, Florida, which lies within the East 40.00 feet of the NE 1/4 of said Section 9, LESS all that part which lies within the North 100.00 feet thereof.

Exhibit 3

GENERAL LEGAL DESCRIPTION OF NW 154th STREET RIGHT OF WAY

Generally the southern fifty (50') feet of Sections 15 and 16, in Township 52, Range 40 abutting, and adjacent to, the Dunnwoody Lake and Dunwoody Forest Property described in the preceding EXHIBIT 1.

Exhibit 4

Declaration of Restrictions

02R720305 2002 NOV 19 10:22

This instrument prepared by:
Stanley B. Price, Esquire
Bilzin Sumberg Dunn Baena Price & Axelrod LLP
2500 First Union Financial Center
200 South Biscayne Boulevard
Miami, Florida 33131-2336

(Space Above For Recorder's Use Only)

DECLARATION OF RESTRICTIONS

WHEREAS, the undersigned Owners hold the fee simple title to the land in the Town of Miami Lakes, Miami-Dade County, Florida, described in Exhibit "A" attached hereto and hereinafter called the "Property."

WHEREAS, Owners have filed a zoning application with the Town of Miami Lakes (sometimes referred to as the "Town") through the Miami-Dade County Department of Planning and Zoning referred to as Public Hearing Application No. 02-01 ("Application");

IN ORDER TO ASSURE the Town that the representations made to them by the Owners during consideration of Public Hearing No. 02-01 will be abided by the Owners, their successors or assigns freely, voluntarily and without duress, the Owners make the following Declaration of Restrictions covering and running with the Property:

- (1) That the Property shall be developed in substantial compliance with the plans entitled "Dunnwoody Lake" as prepared by Robayna and Associates, Inc., consisting of 8 sheets labeled S-1, S-4 and S-5 dated last revised October 2, 2002, sheets S-3, L-1 and L-3 dated last revised September 18, 2002, sheet S-2 dated last revised July 17, 2002, and sheet L-2 dated August 8, 2002.
- (2) That the residential development of the Property shall be limited to no more than 509 units. No zoning application to increase the density in excess of 509 residential units may be filed with the Town without the express written consent of the Royal Palm Homeowners Association or its successor thereto.
- (3) That notwithstanding the requested RU-3M zoning classification for the residential portion of the Property, the residential portion of the Property along the northern,

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eastern and southern perimeters of the Property shall be limited to single-family detached homes as shown on the site plan described in paragraph one (1) herein.

- (4) The development of the residential portion of the site shall be phased such that there will be balanced and concurrent development of the represented housing types. Prior to the issuance of the first residential building permit, the Owners, their successors or assigns, shall submit to the Town for approval, a residential phasing plan in accordance with this paragraph.
- (5) The Owners, their successors or assigns, shall construct or cause to be constructed an automatically operated underground irrigation system to service all landscaped areas as shown on the site plan described in paragraph one (1). Prior to the issuance of the first residential building permit, the Owners, their successors or assigns, shall submit to the Town for approval, a residential landscaping and irrigation plan in accordance with this paragraph. Automatically operated irrigation will be provided in all parts of the development, including rights-of-way, parks, common areas and roads constructed by the Owners, their successors or assigns.
- (6) Prior to the submission of an application for the first building permit, Owners, their successors or assigns, will submit to the Town for approval a homeowners association document which will provide for high quality architectural controls, an architectural review committee and assurances that the maintenance of all properties within the subdivision will be maintained solely by the association and at no cost or liability to the Town. The homeowners association shall be fully responsible for the maintenance of the lake and landscaping within the subdivision.
- (7) At no cost to the Town, Owners, their successors or assigns, shall construct or cause to be constructed a wall along the residential portion of the east property line adjacent to N.W. 87th Avenue and the residential portion of the south property line adjacent to N.W. 154th Street, subject to approval of the Town. This wall shall also separate the commercial and residential properties. Maintenance and repair of the wall shall be the sole responsibility and obligation of the homeowners association as described in paragraph six (6) herein.
- (8) Recreational use of the lake as shown on the site plan described in paragraph one (1) herein shall exclude the operation of motorized vessels including, but not limited to, motorized boats and jet skis.
- (9) In order to help meet the future educational needs generated by this Application, the Owners, their successors or assigns, shall voluntarily contribute funds to the Town equal to Three Hundred Thousand Dollars (\$300,000) (the "Contribution"). However, this Contribution is intended to be used for educational purposes specifically serving the children of the Town. The total Contribution shall be made

Declaration of Restrictions

Page 3

in one (1) payment in the amount of \$300,000 prior to issuance of the first residential building permit for any portion of the Property or after the effective date of an executed interlocal agreement between the Town and the Miami-Dade County School Board, whichever is later. Once the interlocal agreement is in effect, the Contribution shall be transferred to the School Board pursuant to the interlocal agreement. The Owners, their successors or assigns, acknowledge and agree that the Contribution to the Town shall not entitle the Owners or their successors or assigns to a credit against the amount of the educational facilities impact fee that will be assessed against the future development of the Property under Chapter 33K of the Miami-Dade County Code. The Owners, their successors or assigns, intend to construct a total of 509 units and the amount of the contribution is based on this amount. To the extent that less than 509 units are approved by the Town Council of the Town, the amount of the Contribution shall be reduced on a pro rata basis.

- (10) Development of the commercial portion of the Property shall not commence until such time as the Owners, their successors or assigns, have presented the Town with a final site plan detailing the proposed commercial development(s) and the same has been approved by the Town after public hearing.
- (11) Despite the commercial zoning on a portion of the Property as depicted on the site plan referenced in paragraph one (1), the commercial uses shall be limited to:
- (a) Grocery stores;
 - (b) Drugstores, including drive-thru facilities;
 - (c) Restaurants and drive-thru restaurants;
 - (d) Office buildings and related uses;
 - (e) Banking and financial institutions, including drive-thru facilities; and
 - (f) Other neighborhood retail and service uses.
- (12) The commercial portion of the Property shall not be developed with gasoline service stations, free-standing convenience stores, pawn shops, liquor stores, adult entertainment uses, or other uses specifically prohibited by the Town's Code of Ordinances.
- (13) That prior to the issuance of the first building permit, Owners, their successors or assigns, shall, at no cost to the Town, dedicate (a) to Miami-Dade County its portion of the required right-of-way for N.W. 87th Avenue in Section 16, Township 52 South, Range 40 East, and (b) to the Town its portion of the required right-of-way for N.W. 154th Street in Section 16, Township 52 South, Range 40 East.

Declaration of Restrictions

Page 4

- (14) Prior to issuance of the first residential building permit, Owners, their successors or assigns, shall construct or cause to be constructed N.W. 154th Street at no cost to the Town. Said construction shall be in accordance with the applicable standards of the Town and Miami-Dade County. Construction of N.W. 154th Street shall consist of constructing a four-lane roadway adjacent to N.W. 87th Avenue, from approximately N.W. 84th Avenue (from the west end of the current four lane section) to approximately 60 feet west of N.W. 89th Avenue, as illustrated on the plans described in paragraph one (1). The proposed construction of N.W. 154th Street shall connect to the ending paved roadway located west of N.W. 84th Avenue.
- (15) At no cost to the Town, Owners, their successors or assigns, shall construct or cause to be constructed lighted, landscaped, and irrigated roadway medians and swales along those portions of the roads adjacent to the Property which are constructed by them, including as applicable, N.W. 154th Street or the portion of N.W. 87th Avenue located in Section 16, Township 52 South, Range 40 East. Said lighting fixtures and landscaping design shall be comparable or higher than the aesthetic quality of roadway medians and swales existing in the immediate surrounding area, as acceptable to the Town.
- (16) Owners, their successors or assigns, agree that prior to the submission of an application for the first building permit, it will submit to the Town for approval a detailed plan illustrating all lot and parks as shown on the plans detailed in paragraph one (1). The Property shall contain at least 3.85± acres of parks or Owners, their successors or assigns shall provide to the Town the fair market value cash contribution on a pro rata basis for any deficiency for park land as amended by the Town's Comprehensive Plan. The Owners, their successors or assigns agree that such park acreage or cash contribution in lieu of park acreage shall not entitle the Owners, their successors or assigns to a credit against the amount of park impact fees that will be assessed against the future development of the Property under the park impact fee ordinance.
- (17) **Sale of Property to Fire Department.**
- (a) In order to further address the impact of the development of the Property on the Miami-Dade County Fire Rescue Department (the "Fire Department"), and to help meet the future Fire Department needs generated by this application and other development in the Town, the Owners, their successors or assigns, hereby agree to offer to the Fire Department for the construction of a fire rescue station that certain site consisting of approximately 200' x 200' located due west of the commercial property as depicted on the plans

Declaration of Restrictions
Page 5

referenced in paragraph one (1) and fronting on N.W. 154th Street. A copy of the proposed area is attached as Exhibit "B" to this Agreement ("Fire Department Site").

- (b) The Fire Department shall have, until April 9, 2003, an irrevocable option to purchase the Fire Department Site. The Fire Department must exercise this option in writing, to the Owners, their successors or assigns, within this period, or the option automatically expires at which time the Owners, their successors or assigns, are under no obligation whatsoever to sell the Fire Department Site to the Fire Department and the Fire Department Site will be developed with residential units substantially in accordance with the site plans referenced in paragraph one (1). However, if the Fire Department exercises its option, the Fire Department shall have until October 9, 2003 to close on the Fire Station Site.

If the Fire Department exercises its option referenced in this paragraph 17, the Owners must provide a legal description of the Fire Department Site. The Fire Department shall, at its own expense, secure an appraisal for the Property to determine the fair market value of the Property. In the event the Owners, their successors or assigns dispute the appraisal amount, Owner shall be entitled to obtain an additional appraisal at its own expense. If the two appraisals differ by less than 5 %, the Fire Department appraisal shall govern. In the event the appraisals differ by greater than 5%, the Fire Department and Owners shall agree on a third appraisal. The Fire Department and Owners, their successors or assigns shall be bound by either the original Fire Department appraisal or the third appraisal, whichever is greater.

- (c) Should the Fire Department elect to purchase the Fire Department Site, it shall be responsible for their costs associated with rezoning the Fire Department Site with the Town of Miami Lakes, and for all costs associated with replatting the Fire Department Site to create a separate platted parcel. The Owners, their successors or assigns agree to fully cooperate and execute all documents necessary to effectuate the change in the approved site plan.
- (d) In the event the Fire Department elects to exercise its option, final transfer of the Property shall occur by a warranty deed free of all encumbrances and liens.
- (e) The Owners, its successors or assigns agree that the sale of the Fire Department Site to the Fire Department shall not entitle the Owners, their successors or assigns to a credit against the amount of fire impact fees that

Declaration of Restrictions
Page 6

will be assessed against the future development of the Property under Chapter 33J of the Code of Miami-Dade County.

- (f) Owners, their successors or assigns shall provide all utilities including water lines, sewer lines, electric service, and telephone service at the perimeter of the Fire Department Site in a sufficient operational state to meet all applicable building and zoning codes and support full development of a fire station. The Owners, their successors or assigns shall provide, at their expense, paved road access along N.W. 154th Street to the fire station site.
 - (g) Nothing contained in this paragraph 17 of this Agreement shall be interpreted to preclude Owners, their successors or assigns from proceeding with the development of the remainder of the Property during the above-described option period, except for the Fire Department Site.
- (18) **Town Inspection.** As further part of this Declaration, it is hereby understood and agreed that any official inspector of the Town of Miami Lakes, or its agents duly authorized, may have the privilege at any time during normal working hours of entering and inspecting the use of the premises to determine whether or not the requirements of the building and zoning regulations and the conditions herein agreed to are being complied with.
- (19) **Covenant Running with the Land.** This Declaration on the part of the Owners shall constitute a covenant running with the land and shall be recorded, at Owners' expense, in the public records of Miami-Dade County, Florida and shall remain in full force and effect and be binding upon the undersigned Owners, and their heirs, successors or assigns until such time as the same is modified or released. These restrictions during their lifetime shall be for the benefit of, and limitation upon, all present and future owners of the real property and for the public welfare.
- (20) **Term.** This Declaration is to run with the land and shall be binding on all parties and all persons claiming under it for a period of thirty (30) years from the date this Declaration is recorded after which time it shall be extended automatically for successive periods of ten (10) years each, unless an instrument signed by a majority of the then owner(s) of the Property has been recorded agreeing to change the covenant in whole, or in part, provided that the Declaration has first been modified or released by the Town of Miami Lakes.

Declaration of Restrictions

Page 7

(21) **Modification, Amendment, Release.**

- (a) This Declaration may be modified, amended or released as to the residential portion of the Property herein described, or any portion thereof, by a written instrument, including joinders of all mortgagees, if any, executed by the then owner(s) of all of the residential portion of the Property provided that the same is also approved by the Town Council after public hearing.
- (b) This Declaration may be modified, amended or released as to the commercial portion of the Property herein described, or any portion thereof, by a written instrument, including joinders of all mortgagees, if any, executed by the then owner(s) of all of the commercial portion of the Property provided that the same is also approved by the Town Council after public hearing.
- (c) Should this Declaration be so modified, amended or released, the Town Manager or the executive officer of the successor of such Town Manager, or in the absence of such Manager or executive officer, by his assistant in charge of the office in his absence, shall forthwith execute a written instrument effectuating and acknowledging such modification, amendment or release.

(22) **Enforcement.** Enforcement shall be by action against any parties or person violating, or attempting to violate, any covenants. The prevailing party in any action or suit pertaining to or arising out of this Declaration shall be entitled to recover, in addition to costs and disbursements allowed by law, such sum as the Court may adjudge to be reasonable for the services of his or her attorney. This enforcement provision shall be in addition to any other remedies available at law or in equity or both.

(23) **Authorization for Town of Miami Lakes to Withhold Permits and Inspections.** In the event payments or improvements or donations are not made in accordance with the terms of this Declaration, in addition to any other remedies available, the Town is hereby authorized to withhold any further permits, and refuse to make any inspections or grant any approvals, until such time as this Declaration is complied with.

(24) **Election of Remedies.** All rights, remedies and privileges granted herein shall be deemed to be cumulative and the exercise of any one or more shall neither be deemed to constitute an election of remedies, nor shall it preclude the party exercising the same from exercising such other additional rights, remedies or privileges.

Declaration of Restrictions

Page 8

- (25) **Severability.** Invalidation of any one of these covenants, by judgment of Court, in no way shall affect any of the other provisions which shall remain in full force and effect.

- (26) **Recording.** This Declaration shall become final and shall be filed of record in the public records of Miami-Dade County, Florida at the cost of the Owners following the adoption by the Town Council of a final ordinance approving the application and expiration of all appellate time frames.

[SIGNATURE PAGES FOLLOW]

Declaration of Restrictions

Page 9

Signed, witnessed, executed and acknowledged this ___ day of _____, 2002.

Witnesses:

[Signature]

Lowell S. Dunn

Print Name: *[Signature]*

Shanna Moreno

Print Name: *[Signature]*

Mercy CANOURA

[Signature]

Betty L. Dunn

Print Name: *[Signature]*

Shanna Moreno

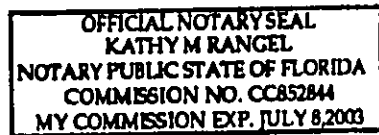
Print Name: *[Signature]*

Mercy CANOURA

STATE OF FLORIDA }
COUNTY OF MIAMI-DADE } ss:

The foregoing instrument was acknowledged before me this 4 day of OCTOBER, 2002 by LOWELL S. DUNN who is personally known to me or produced a valid driver's license as identification.

Notary Public
Sign Name: Kathy M Rangel
Print Name: KATHY M RANGEL
My Commission Expires: 7-8-03
Serial No. (None, if blank): CC852844
[NOTARIAL SEAL]



20812PG4776

Declaration of Restrictions

Page 10

STATE OF FLORIDA }
COUNTY OF MIAMI-DADE } SS:

The foregoing instrument was acknowledged before me this 4 day of OCTOBER, 2002 by BETTY L. DUNN who is personally known to me or produced a valid driver's license as identification.

Notary Public

Sign Name: Kathy M Rangel
Print Name: KATHY M RANGEL

My Commission Expires: 7-8-2003

Serial No. (None, if blank): CC852844
[NOTARIAL SEAL]

OFFICIAL NOTARY SEAL
KATHY M RANGEL
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC852844
MY COMMISSION EXP. JULY 8, 2003

20812PG4777

EXHIBIT "A"

LEGAL DESCRIPTION

Description of a portion of land being and lying in Section 16 Township 52 South, Range 40 East in Dade County, Florida, more particularly described as follows:

The southeast one quarter of Section 16, Township 52 South, Range 40 East;

Less

Commence at the southeast corner of the above mentioned Section 16, thence S89°34'49"W along the south line of Section 16 for a distance of 1441.84 feet to the point of beginning; thence N00°25'11"W for 140.00 feet; thence S89°34'49"W for 1203.11 feet to a point on the west line of the southeast quarter of Section 16; thence along said line S02°37'29"E a distance of 140.10 feet; thence N89°34'49"E for 1197.72 feet to the point of beginning.

Containing 156.20 acres more or less.

EXHIBIT "B"

LEGAL DESCRIPTION OF THE PROPOSED FIRE STATION SITE

A PORTION OF LAND LYING AND BEING AT THE SE ¼ OF SECTION 16,
TOWNSHIP 52 SOUTH, RANGE 40 EAST IN MIAMI-DADE COUNTY, FLORIDA;
BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SE CORNER OF SAID SECTION 16; THENCE S89°34'49"W,
ALONG THE SOUTH LINE OF THE SE ¼ OF SAID SECTION 16 FOR A
DISTANCE OF 553.30 FEET TO A POINT; THENCE N00°25'11"W FOR 50.00 FEET
TO THE POINT OF BEGINNING; THENCE CONTINUE N00°25'11"W FOR 205.00
FEET; THENCE S89°34'49"W FOR 183.65 FEET; THENCE S 29°27'42"W FOR 32.70
FEET; THENCE S00°25'11"E FOR 176.55 FEET TO A POINT ON A LINE 40 FEET
NORTH OF AND PARALLEL WITH THE SOUTH LINE OF SAID SE ¼ OF
SECTION 16; THENCE N89°34'49"E ALONG THE PREVIOUSLY DESCRIBED
LINE FOR 200.00 FEET TO THE POINT OF BEGINNING. CONTAINING 0.94
ACRES MORE OR LESS.

RECORDED IN OFFICIAL RECORDS BOOK
OF DADE COUNTY, FLORIDA
RECORD VERIFIED
HARVEY RUVIN
CLERK CIRCUIT COURT

Exhibit 5

Resolution No. 06-01 Miami Dade County Historic Preservation Board
(Includes sketch and legal of Archaeological Zone)



**MIAMI-DADE COUNTY
HISTORIC PRESERVATION BOARD**
STEPHEN P. CLARK CENTER
111 N. W. FIRST STREET
SUITE 695
MIAMI, FLORIDA 33128
305-375-4958
Facsimile 305- 372-6394



CFN 2006R1366999
OR Bk 25221 Pgs 3665 - 3668; (4pgs)
RECORDED 12/26/2006 16:07:05
HARVEY RUVIN, CLERK OF COURT
MIAMI-DADE COUNTY, FLORIDA

MIAMI-DADE COUNTY HISTORIC PRESERVATION BOARD

RESOLUTION NO. 06-01

Madden's Hammock Archaeological Zone Designation

WHEREAS, the Madden's Hammock Archaeological Zone contains well-preserved materials of scientific importance representing aboriginal and subsistence patterns over a period of at least 2500 years; and,

WHEREAS, the Madden's Hammock Archaeological Zone encompasses prehistoric archaeological resources of local and regional significance; and,

WHEREAS, the Madden's Hammock Archaeological Zone contains evidence of trade or contact between the Spanish and Tequesta; and,

WHEREAS, the Madden's Hammock Archaeological Zone contains the remains of prehistoric Native Americans; and,

WHEREAS, the Madden's Hammock Archaeological Zone meets the requirements for designation as described by criteria "a" and "d" of Section 16A-10 (I) of the Miami-Dade County Code; and,

WHEREAS, the *Madden's Hammock Archaeological Zone Designation Report* dated June 2006 is incorporated by reference; and,

WHEREAS, the people of Miami-Dade County desire to protect and preserve those sites of outstanding historical and archaeological character; and,

NOW, THEREFORE, BE IT RESOLVED,

1. Madden's Hammock is designated as an archaeological zone pursuant to Chapter 16A-10 of the Miami-Dade County Historic Preservation Code.



**MIAMI-DADE COUNTY
HISTORIC PRESERVATION BOARD**
STEPHEN P. CLARK CENTER
111 N. W. FIRST STREET
SUITE 695
MIAMI, FLORIDA 33128
305-375-4958
Facsimile 305- 372-6394

Madden's Hammock Archaeological Zone Designation

Resolution No. 06-01

Page 2 of 4

2. The legal description of the Madden's Hammock Archaeological Zone is as follows: A portion of the West ½ of the SW ¼ of Section 15, Township 52 South, Range 40 East, lying and being in Miami-Dade County, Florida and being more particularly described as follows: Commence at the SW corner of the SW ¼ of Section 15, Township 52 South, Range 40 East, lying and being in Miami-Dade County, Florida. Thence run N89degrees43'56"E along the South line of the SW ¼ of Section 15, Township 52 South, Range 40 East a distance of 702.16 feet; thence N00degrees16'04"W a distance of 481.52 feet to the Point of Beginning; thence N43degrees15'37"E a distance of 181.46 feet; thence N17degrees09'29"W a distance of 149.27 feet; thence N06degrees37'52"W a distance of 47.90 feet; thence N22degrees30'42"W a distance of 115.04 feet; thence N27degrees58'33"E a distance of 159.55 feet; thence N27degrees56'45"W a distance of 59.15 feet; thence N68degrees01'42"W a distance of 106.04 feet; thence N46degrees40'57"W a distance of 127.11 feet; thence N69degrees20'00"W a distance of 150.32 feet; thence S77degrees34'39"W a distance of 149.42 feet; thence S09degrees39'40"W a distance of 152.09 feet; thence S02degrees13'38"W a distance of 165.35 feet; thence S13degrees34'10"E a distance of 97.70 feet; thence S25degrees53'09"E a distance of 121.31 feet; thence S40degrees46'50"E a distance of 86.07 feet; thence S53degrees11'42"E a distance of 88.02 feet; thence S59degrees57'10"E a distance of 264.43 feet to the Point of Beginning.

3. The Madden's Hammock Archaeological Zone designation will be subject to the following conditions:

a) No ground disturbing activities will be conducted within the archaeological zone boundaries, without first obtaining a Certificate of Appropriateness or Certificate to Dig, pursuant to Chapter 16A of the Miami-Dade County Historic Preservation Code.

b) Any removal of weeds within the archaeological zone or 100 feet outside of the archaeological zone boundaries will be conducted with a mower.

c) All ground disturbing activities (other than mowing) occurring 100 feet outside of the archaeological zone boundaries will be subject to monitoring by a professional archaeologist.



**MIAMI-DADE COUNTY
HISTORIC PRESERVATION BOARD
STEPHEN P. CLARK CENTER
111 N. W. FIRST STREET
SUITE 695
MIAMI, FLORIDA 33128
305-375-4958
Facsimile 305- 372-6394**

**Madden's Hammock Archaeological Zone Designation
Resolution No. 06-01
Page 3 of 4**

d) All working cattle pens and central feeding areas will be placed outside of the archaeological zone boundaries.

e) The County Archaeologist will be allowed to conduct inspections of the site and of all ground disturbing activities by coordinating access to the site with the owner. The County Archaeologist shall provide a minimum of 72 hours written notice to the owner for access to the site, unless access is necessary to enforce provisions of the Code.

A handwritten signature in cursive script that reads "Alberta W. Godfrey".

Alberta Godfrey, Chair
Miami-Dade County Historic Preservation Board

Dec. 20, 2006
Date

Prepared by:

A handwritten signature in cursive script that reads "Ivan A. Rodriguez".
Ivan A. Rodriguez, Director
Office of Historic Preservation



**MIAMI-DADE COUNTY
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**Madden's Hammock Archaeological Zone Designation
Resolution No. 06-01
Page 4 of 4**

<u>Board Members</u>	<u>Vote</u>	<u>Board Members</u>	<u>Vote</u>
Adriana Cantillo	absent	Armando Gutierrez, Jr.	yes
Ruth Campbell	yes	Hyacinth O. Johnson	absent
Richard Cohen	yes	Robert L. Mckinney	yes
Paul George	absent	JoEllen Phillips	yes
Alberta Godfrey, Chair	yes	Enid Pinkney	yes

**STATE OF FLORIDA
COUNTY OF MIAMI-DADE**

The foregoing instrument was acknowledged before me on Wednesday, December 20, 2006 by Alberta Godfrey, Chair, Miami-Dade County Historic Preservation Board.


David J. Hertzberg

 David J. Hertzberg
My Commission DD267682
Expires January 09, 2008

Personally Known Yes
OR Produced Identification N/A Type of Identification Produced N/A.

**SKETCH OF
DR. CARR ARCHAEOLOGICAL
SURVEY AREA**

LEGAL DESCRIPTION:

A PORTION OF THE WEST 1/2 OF THE SW 1/4 OF SECTION 15, TOWNSHIP 52 SOUTH, RANGE 40 EAST, LYING AND BEING IN MIAMI-DADE COUNTY, FLORIDA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SW CORNER OF THE SW 1/4 OF SECTION 15, TOWNSHIP 52 SOUTH, RANGE 40 EAST, LYING AND BEING IN MIAMI-DADE COUNTY, FLORIDA. THENCE RUN N89°43'56"E ALONG THE SOUTH LINE OF THE SW 1/4 OF SECTION 15, TOWNSHIP 52 SOUTH, RANGE 40 EAST A DISTANCE OF 702.16 FEET; THENCE N00°16'04"W A DISTANCE OF 481.52 FEET TO THE POINT OF BEGINNING; THENCE N43°15'37"E A DISTANCE OF 181.46 FEET; THENCE N17°09'29"W A DISTANCE OF 149.27 FEET; THENCE N06°37'52"W A DISTANCE OF 47.90 FEET; THENCE N22°30'42"W A DISTANCE OF 115.04 FEET; THENCE N27°56'33"E A DISTANCE OF 159.55 FEET; THENCE N27°56'45"W A DISTANCE OF 59.15 FEET; THENCE N68°01'42"W A DISTANCE OF 106.04 FEET; THENCE N46°40'57"W A DISTANCE OF 127.11 FEET; THENCE N69°20'00"W A DISTANCE OF 150.32 FEET; THENCE S77°34'39"W A DISTANCE OF 149.42 FEET; THENCE S09°39'40"W A DISTANCE OF 152.09 FEET; THENCE S02°13'38"W A DISTANCE OF 165.35 FEET; THENCE S13°34'10"E A DISTANCE OF 97.70 FEET; THENCE S25°53'09"E A DISTANCE OF 121.31 FEET; THENCE S40°46'50"E A DISTANCE OF 86.07 FEET; THENCE S53°11'42"E A DISTANCE OF 88.02 FEET; THENCE S59°57'10"E A DISTANCE OF 264.43 FEET TO THE POINT OF BEGINNING.

SURVEYOR'S NOTES:

- 1) This is not a BOUNDARY SURVEY, but only a GRAPHIC DEPICTION of the description shown hereon.
- 2) North arrow direction is based on SECTION 15, TOWNSHIP 52 SOUTH, RANGE 40 EAST, of the Public Records of Miami-Dade County, Florida.
- 3) Not valid without the signature and the original raised seal of a Florida Licensed Surveyor and Mapper. Additions or deletions to survey maps or reports by other than the signing party or parties are prohibited without written consent of the signing party or parties.
- 4) There may be additional Restrictions not shown on this survey that may be found in the Public Records of this County, Examination of **ABSTRACT OF TITLE** will have to be made to determine recorded instruments, if any affecting this property.
- 5) No Title search has been performed to determine if there are any conflict existing or arising out of the creation of the Easements, Right of Ways, Parcel Descriptions, or any other type of encumbrances that the herein described legal may be utilized for.

SURVEYOR'S CERTIFICATE:

I Hereby Certify to the best of my knowledge and belief that this drawing is a true and correct representation of the **SKETCH AND LEGAL DESCRIPTION** of the real property described hereon.

I further certify that this survey was prepared in accordance with the applicable provisions of Chapter 61G17-6, Florida Administrative Code.

Field Date: October 6, 2006



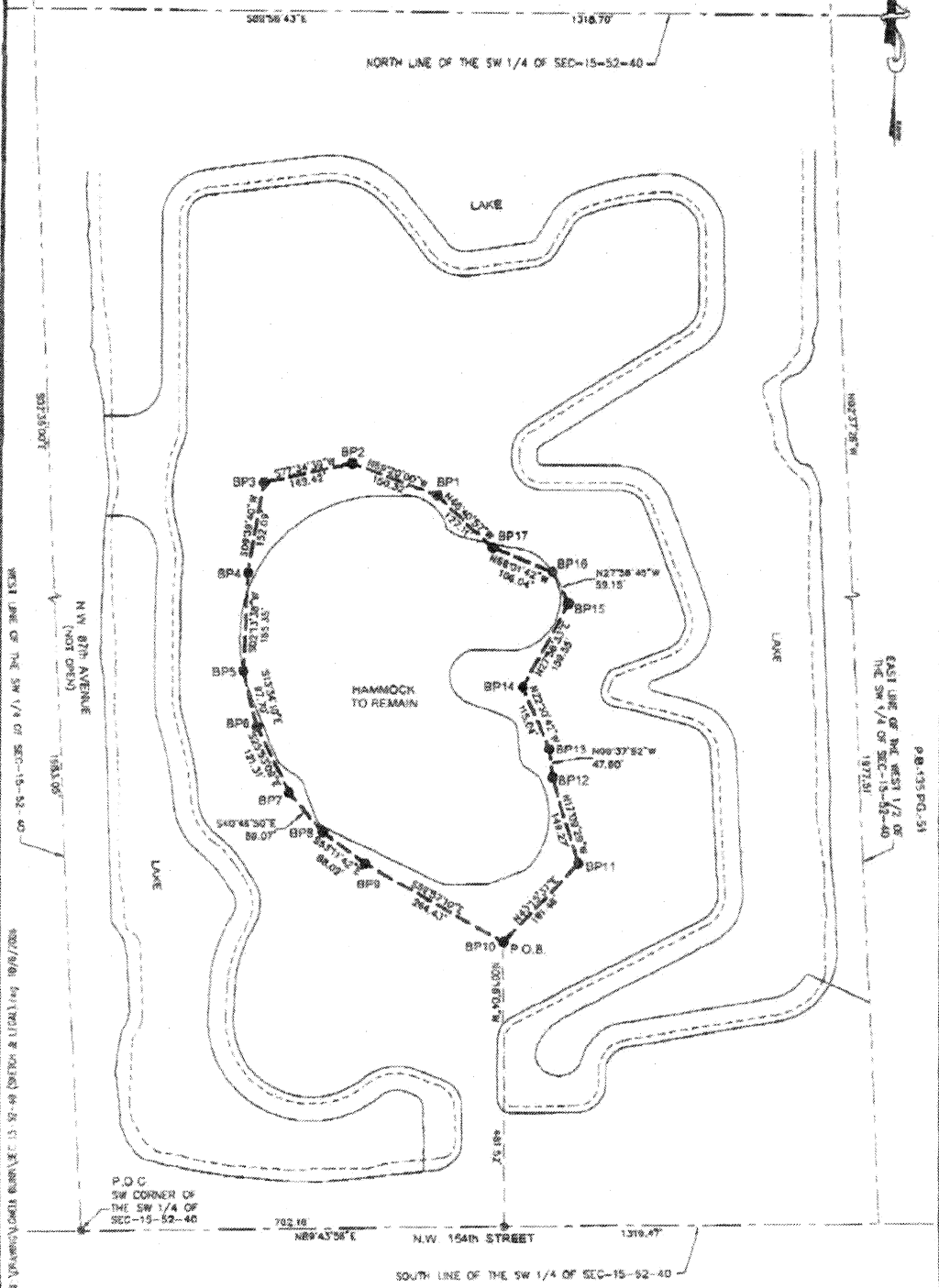
Pablo J. Alfonso P.S.M.
Professional Surveyor & Mapper
State of Florida Reg. No.5880



8175 NW 153RD STREET, SUITE 121, MIAMI LAKES, FLORIDA 33014
PHONE: 305-822-0062 * FAX: 305-827-9669

SKETCH OF DR. CARR ARCHAEOLOGICAL SURVEY AREA

SCALE: 1" = 20'



ROYAL
LAND SURVEYORS, INC.
PHONE: 305-822-4062 * FAX: 305-827-9659
8175 NW 153rd STREET SUITE 321
MIAMI LAKES, FL 33014

Exhibit 6

Future Land Use Map

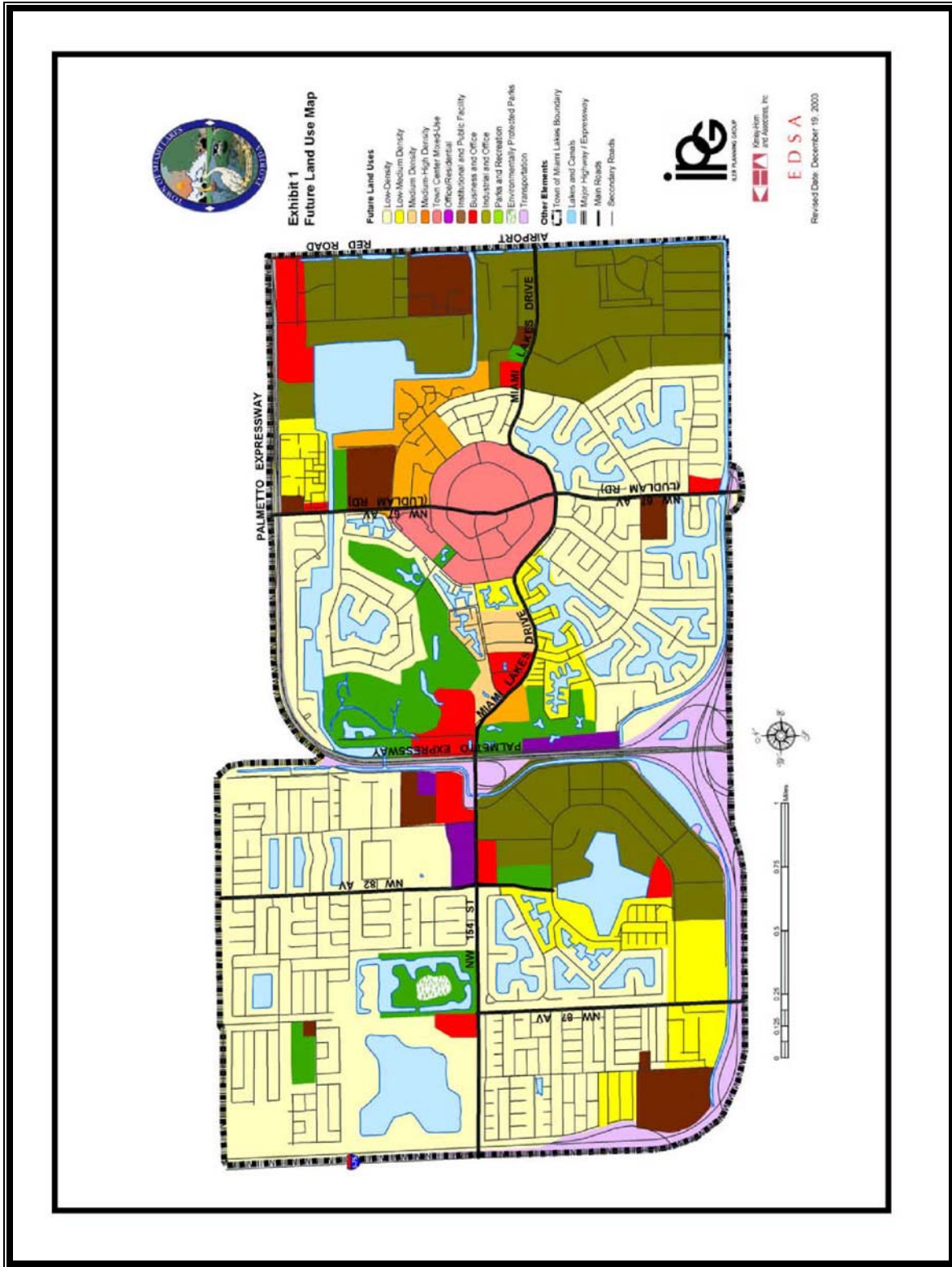


Exhibit 7

Settlement Agreement

IN THE CIRCUIT COURT OF THE 11TH
JUDICIAL CIRCUIT OF FLORIDA
IN AND FOR MIAMI-DADE COUNTY

GENERAL JURISDICTION DIVISION

CIVIL ACTION NO: 08-51917 CA 20

Parcels 1, 1A and 5

MIAMI-DADE COUNTY, a political
Subdivision of the State of Florida,
Petitioner,

-vs-

THE GENET FAMILY LIMITED
PARTERSHIP NO. 2, a Florida
Limited Liability Company, et al.,

Defendants.

SETTLEMENT AGREEMENT AS TO PARCELS 1, 1A AND 5

It is stipulated and agreed by and between Petitioner,
Miami-Dade County, and the Respondents, Betty L. Dunn,
Individually and as Personal Representative of the Estate of
Lowell S. Dunn (collectively "Dunn") (Owners of Parcels 1 and 1A),
F69-1, a Florida Limited Liability Company ("F-69") (Owner of
Parcel 5), and F71-1, LLC, a Florida Limited Liability Company,
that:

1. Parties hereto waive trial by jury in the above-styled
cause, and consent to the immediate entry of Final Judgment
vesting fee simple title as to Parcel Nos. 1, 1A, and 5 as same

are described in the Petition in County Eminent Domain Proceedings (the "Parcels"), subject to the conditions herein.

2. The Final Judgment shall convey all right, title and interest in the Parcels to Petitioner, Miami-Dade County. Such Final Judgment shall also convey the right to immediate possession in and to the Parcels to Petitioner.

2. Petitioner shall pay no compensation at this time for the Parcels; provided however that if the remainder property is developed including folio numbers 32-2016-000-0020 and 32-2015-001-0500, pursuant to a proposed development agreement between the Respondents and the Town of Miami Lakes, within the time period set forth within such development agreement, Miami-Dade County shall pay for traffic related impact fees assessed by Miami-Dade County at that time for the development of the remainder property. Notwithstanding the amount of the Miami-Dade County impact fees payable at such time, payment by Miami-Dade County will be capped at \$3,060,000, with Respondents or its successors or assigns responsible for paying any balance due.

3. This settlement is contingent upon the approval of the development agreement between Respondents and the Town of Miami Lakes. Respondents agree to provide Petitioner with the approved development agreement within five days of its approval. This settlement is voidable by Petitioner, in its discretion, at any

time prior to entry of a Stipulated Final Judgment in this matter by providing Respondents with written notice of same. This settlement is contingent upon full and binding approval of the Board of County Commissioners of Miami-Dade County, Florida.

4. This settlement includes all damages of any nature of Respondents for which Petitioner might otherwise be liable in this proceeding, and includes all claims and counterclaims arising from the acquisition of Parcels 1, 1A, and 5, and includes, but is not limited to, any claims by F71-1, LLC, a Florida Limited Liability Company, Torres & Torres Construction, Inc., a Florida corporation, the State of Florida Department of Revenue, and the Town of Miami Lakes related to the acquisition of these parcels, but is exclusive of Respondents' attorney's fees, experts fees, and costs, if any, for which the Court will reserve jurisdiction to award.

5. Upon entry of the final judgment in this cause, it is agreed by the parties that Respondents shall pay all liens with respect to the Parcels, and all taxes prorated to the date of taking with respect to the Parcels within ten days of Petitioner providing Respondents the prorated amount due.

DATED this ____ day of _____, 2011.

R.A. CUEVAS, JR.
Miami-Dade County Attorney
Stephen P. Clark Center
111 N.W. 1st Street, #2810

Miami FL 33128

By: 

DEBRA HERMAN, ESQ.
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Fax: 305/858-5828
Email: jmuniz@brighammoore.com

Exhibit 8

Terms of Covenant for Limited Public Access

EXHIBIT 8

Limited Public Access to Madden's Hammock

Upon the Town's exercise of the right of first refusal as set forth in the Development Agreement or prior to the issuance of the first building permit for a Principal Structure for Parcel B, the Owner shall negotiate the terms of a covenant running with the land with the Town that shall be recorded into the Public Records of Miami-Dade County that, at a minimum, limits public access as follows:

1. Hours of Visitation – The hours and days in which Miami Lakes residents are permitted to visit Madden's Hammock shall be limited to protect the "Archaeological Zone" and the unique resource area and ensure compatibility with adjacent residential uses.
2. Uses – The uses permitted within Madden's Hammock shall be limited to educational study and passive recreational activity by pedestrians only. No animals, equipment, vehicles, noise-making devices or littering shall be permitted.
3. Special Requests – A reasonable process to secure permission from the Owner (or successor Homeowner Association) and the Town for any groups in excess of ten individuals at one time for educational purposes, such as school field trips, or archaeological expeditions shall be established. Special requests may be approved, approved with conditions, such as a deposit or supervision, or denied.
4. Geographic Extent of Access – Pedestrian access shall be limited to raised walkways or similar facilities developed for such park purposes. Access to areas in the "Archaeological Zone" beyond the walkways shall be limited except as approved via the special request process.

Exhibit 9

Traffic Impact Analysis JMD Engineering, Inc. (February 28, 2011 and March 4, 2011)



JMD ENGINEERING, INC.

TRAFFIC IMPACT ANALYSIS

**DUNNWOODY LAKE &
DUNNWOODY FOREST**

MIAMI LAKES, FLORIDA

**BM-09-15
FEBRUARY 2011
© JMD ENGINEERING, INC.**



JMD ENGINEERING, INC.

TRAFFIC IMPACT ANALYSIS

DUNNWOODY LAKE & DUNNWOODY FOREST MIAMI LAKES, FLORIDA

**BM-09-15
FEBRUARY 28, 2011
© JMD ENGINEERING, INC.**

John M. Donaldson, P.E.
Florida Registration Number 40568

TABLE OF CONTENTS

INTRODUCTION	1
INVENTORY	2
Existing Land Use	2
Proposed Land Use and Access.....	2
EXISTING CONDITIONS	3
Roadway System.....	3
Intersections	4
TRAFFIC COUNTS.....	5
TRIP GENERATION	7
TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT	8
TRAFFIC ANALYSES	9
Determination of Significance	9
Future Conditions Traffic Volumes	9
Diversion Analyses.....	10
Level of Service Analyses.....	13
Project Access.....	14
CONCLUSIONS AND RECOMMENDATIONS	15

LIST OF FIGURES

FIGURE 1 – Project Location Map.....
FIGURE 2– Study Area.....
FIGURE 3 – Count Locations.....
FIGURE 4– Residential Assignment- Dunnwoody Lake
FIGURE 4- Residential Assignment – Dunnwoody Forest.....
FIGURE 5– Commercial Assignment
FIGURE 6– Project Traffic – Dunnwoody Lake.....
FIGURE 6A- Project Traffic – Dunnwoody Forest.....
FIGURE 7– Existing Peak Hour Volumes (Year 2010).....
FIGURE 8– Diverted Peak Hour Volumes.....
FIGURE 9– Dunnwoody Lakes Project Volumes.....
FIGURE 9A-Dunnwoody Forest Project Volumes.....
FIGURE 10– Total Peak Hour Volumes (Year 2030)
FIGURE 11– Dunnwoody Lake Driveway Volumes.....
FIGURE 11A-Dunnwoody Forest Driveway Volumes.....

LIST OF TABLES

TABLE 1 – Trip Generation.....
TABLE 2– Miami-Dade Model Project Trip Distribution.....
TABLE 3 – Dunnwoody Lake Link Significance AM Peak
TABLE 3A – Dunnwoody Forest Link Significance AM Peak.....
TABLE 4– Dunnwoody Lake Link Significance PM Peak.....
TABLE 4A– Dunnwoody Forest Link Significance PM Peak.....
TABLE 5– 2010 Existing AM Peak Hour Link Analysis
TABLE 6– 2030 Background AM Peak Hour Link Analysis.....
TABLE 7 – 2030 Total Traffic AM Peak Hour Link Analysis.....
TABLE 8– 2010 Existing PM Peak Hour Link Analysis
TABLE 9– 2030 Background PM Peak Hour Link Analysis.....
TABLE 10– 2030 Total PM Peak Hour Link Analysis.....
TABLE 11 –2010 AM Peak Hour Intersection Capacity Analysis.....
TABLE 12– 2010 PM Peak Hour Intersection Capacity Analysis.....
TABLE 13 – 2030 Total AM Peak Hour Intersection Capacity Analysis
TABLE 14– 2030 Total PM Peak Hour Intersection Capacity Analysis
TABLE 15– 2030 Total AM Peak Hour Intersection Capacity Analysis W/Improvement
TABLE 16– 2030 Total AM Peak Hour Intersection Capacity Analysis W/Improvement.....
TABLE 17– 2030 AM Peak Hour ARTPLAN Analysis
TABLE 18– 2030 PM Peak Hour ARTPLAN Analysis.....

INTRODUCTION

Dunnwoody Lake is a proposed mixed-use development (residential and retail) proposed on the northwest corner of NW 154th Street and NW 87th Avenue and Dunnwoody Forest is a proposed single family development at the northeast corner of NW 154th Street and NW 87th Avenue in the Town of Miami Lakes, Florida. The location of the proposed projects is illustrated in Figure 1.

JMD Engineering, Inc. was retained by the owner to perform a traffic concurrency study in connection with the proposed projects that meets Chapter 10.2 Traffic Concurrency Management Program (TCMP) requirements of the Town of Miami Lakes Land Development Code. This study addresses trip generation, access to the site, internal site capture, and the traffic impacts created by the proposed development on the adjacent transportation network. A pre-application conference was held with town representatives and their traffic consultant and a scope was agreed upon for this analysis as required in the TCMP. (See Appendix A). In addition, this report was revised to address specific comments from Town of Miami Lakes staff and their traffic consultant. A list of comments and responses to the comments can be found in Appendix A.

INVENTORY

Existing Land Use

The project sites are currently vacant

.

Proposed Land Use and Access

Proposed for the Dunnwoody Lake site is a retail shopping center with a gross building area of 140,000 square feet, 256 single-family detached homes and 253 townhomes. Access to the site will be provided via two driveways on NW 154th Street and three driveways on NW 87th Avenue. For purposes of this traffic study, the project is anticipated to be built and fully occupied by the year 2030. It is anticipated that the commercial phase of the site will be built first and completed by 2015. The residential phase will began upon completion of the commercial phase and completed by 2030.

Proposed for the Dunnwoody Forest site is an 84 unit single family residential development with a driveway access to NW 154th Street and a driveway access to NW 87th Avenue. For purposes of this traffic study, the project is anticipated to be built and fully occupied by the year 2030

A copy of the previously submitted site plans for the projects is located in Appendix B of this report.

EXISTING CONDITIONS

Roadway System

The roadway system located in the vicinity of the proposed project includes NW 154th Street (Miami Lakes Drive), NW 87th Avenue, NW 89th Avenue, NW 162nd Street, NW 82nd Avenue, NW 79th Avenue and NW 77th Court.

NW 154th Street (Miami Lakes Drive) is a major east-west roadway with two through lanes in each direction (four-lane divided facility) from the Palmetto Expressway to NW 83rd Avenue. From NW 83rd Avenue west to I-75 it is a two lane section. NW 154th Street has a posted speed limit of 35 miles per hour.

NW 170th Street is a two lane east-west facility with a posted speed limit of 30 miles per hour.

NW 79th Avenue is a two lane north-south facility with a posted speed limit of 30 miles per hour.

NW 77th Court (Frontage Road) is a two lane north-south facility with a posted speed limit of 30 miles per hour. This roadway is located immediately west of The Palmetto Expressway.

NW 89th Avenue is a two-lane local street oriented in the north-south direction and is located south of the project site. There is a posted speed of 30 miles per hour.

NW 87th Avenue borders the project site. Miami-Dade County has a portion of the facility (from NW 154th Street to NW 186th Street) in their five year plan as a widening project. This will make NW 87th Avenue a four lane divided facility within the Town of Miami Lake municipal limits.

Intersections

As documented in the traffic analysis section of this report, the proposed mixed use development will significantly impact the segments of NW 154th Street (Miami Lakes Drive) between I-75 and the Palmetto Expressway as well as NW 87th Avenue from I-75 to NW 170th Street and NW 82nd Avenue from NW 154th Street north to NW 170th Street. The signalized intersections located on the affected roadway segments which carry two percent or more of the adopted levels of service threshold capacity were selected for analysis purposes. These intersections include the following:

1. NW 154th Street & NW 79th Avenue
2. NW 154th Street & NW 82nd Avenue
3. NW 154th Street & NW 87th Avenue
4. NW 87th Avenue & NW 146th Street
5. NW 87th Avenue & Industrial Way
6. NW 162nd Street & NW 82nd Avenue
7. NW 170th Street & NW 87th Avenue
8. NW 170th Street & NW 82nd Avenue

Figure 2 depicts roadways and signalized intersections located within the study area of the proposed project and required to be analyzed in this study.

TRAFFIC COUNTS

JMD Engineering, Inc. collected intersection turning movement counts and 24 hour link traffic counts at the following locations:

- 1. NW 154th Street & NW 87th Avenue – Signalized (06/10)**
- 2. NW 154th Street & NW 82nd Avenue – Signalized (12/10)**
- 3. NW 170th Street & NW 82nd Avenue – Signalized (12/10)**
- 4. NW 87th Avenue & Industrial Way – Signalized (06/10)**
- 5. NW 87th Avenue & NW 146th Street – Signalized (06/10)**
- 6. NW 82th Avenue & NW 162nd Street – Signalized (06/10)**
- 7. NW 87th Avenue & NW 170th Street – Stopped Controlled (12/10)**
- 8. NW 87th Avenue North of I-75 – 24 Hour Tube Count (06/10)**
- 9. NW 87th Avenue South of NW 154th Street – 24 Hour Count (06/10)**
- 10. NW 87th Avenue North of NW 170th Street – 24 Hour Count (06/10)**
- 11. NW 82nd Avenue North of 154th Street – 24 Hour Count (06/10)**
- 12. NW 82nd Avenue North of 162nd Street – 24 Hour Count (06/10)**
- 13. NW 154th Street West of NW 87th Avenue – 24 Hour Count (06/10)**
- 14. NW 170th Street East of NW 87th Avenue – 24 Hour Count (06/10)**
- 15. NW 79th Avenue North of NW 155th Street – 24 Hour Count (06/10)**

In addition, the Town of Miami Lakes provided count data from their records including the count data from the “Traffic Operational Analysis Report for NW 154th Street and Palmetto Expressway” collected by Gannett Fleming in December 2009 and the “Miami Lakes West Fire Rescue Station” with counts collected in November 2009. Please note that the June 2010 counts were made when school was not in session. Additional counts taken in December 2010 indicate than an additional 10% factor should be applied to the June 2010 AM Peak Hour counts to reflect typical conditions is shown in Appendix C. The appropriate FDOT peak seasonal factors will be added to this.

The turning movement counts and 72-hour tube count locations are shown in Figure 3 and are summarized in Appendix C. Appendix C also contains the raw count data as collected by JMD Engineering, Inc. as well as counts conducted by others and provided by the Town of Miami Lakes. The signal-timing plans for the signalized intersections are included in Appendix D of this report.

TRIP GENERATION

The trip generation for the project was based on information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* (8th Edition). Table 1 summarizes the trip generation associated with the proposed Dunnwoody Lake Mixed-Use development while Table 1A summarizes the Dunnwoody Forest projected trip generation.

As indicated in Table 1, the gross trips anticipated to be generated by the proposed Dunnwoody Lake project consists of 12,362 daily trips, 485 trips during the AM peak hour, and 1,171 trips during the PM peak hour. Gross trips were reduced by internal capture (Appendix I) and pass-by rates published by ITE and the methodology agreed upon during the pre-application and project scoping process as well as a subsequent meeting after the first report submittal. The internal capture calculated was 2,600 daily trips, 44 AM peak hour trips and 244 PM peak hour trips and there were 2,524 daily, 59 AM peak hour and 242 PM peak hour pass-by trips. Therefore, the net external trips associated with the proposed development are 7,238 daily trips, 382 trips during the AM peak hour, and 705 trips during the PM peak hour which impact the adjacent roadway network.

For Dunnwoody Forest, the net external trips associated with the proposed development are 886 daily trips, 69 trips during the AM peak hour, and 90 trips during the PM peak hour which impact the adjacent roadway network.

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for the proposed Dunnwoody Lake Mixed-Use development and Dunnwoody Forest residential development was based on Miami-Dade County's cardinal distribution information for the study area (Traffic Analysis Zone 11) which is included in Appendix E. Examination of the existing/future surrounding roadway network characteristics, review of existing/future current traffic volumes, and existing/future land use patterns were utilized to assign the traffic to the adjacent roadway network. Table 2 summarizes the county's cardinal distribution data for traffic zone 11, which is the location of the subject project.

Using the trip distribution documented in Table 2 and supplementing with the location of approved and developed projects in the study area and a physical inspection of roadway network within the study area, the proposed project was assigned to the project driveways and nearby transportation network. The project traffic assignment is illustrated in Figures 4, 5 and 6.

TRAFFIC ANALYSIS

Determination of Significance

A determination of significance was undertaken for the proposed projects independently. However, both projects will be analyzed concurrently and the impacts of each development will be analyzed based on the sum of project traffic. A significantly impacted link is defined as a roadway segment where the net peak hour external project traffic equals or exceeds one percent (1%) of the service volume at the applicable level of service standard. This significance analysis is presented in Tables 3 and 3A for the AM peak hour and Tables 4 and 4A for the PM peak hour.

Future Conditions Traffic Volumes

Future traffic volumes (Year 2030) were developed. The first set includes project build-out conditions without the proposed project and the second set adds the project anticipated to be generated by the Dunnwoody Lake and Dunnwoody Forest developments.

In order to develop year 2030 traffic volumes without the proposed projects, two separate analyses were undertaken. The first analysis converts the existing AM and PM peak hour traffic counts collected in the field to peak season conditions based on FDOT's Peak Season Factor Category report (refer to the Appendix F). The second analysis includes a growth factor to project 2010 peak season traffic volumes to the year 2030 as well as the addition of approved, but un-built project traffic (as supplied by the Town of Miami Lakes and shown in Appendix G). Based on traffic growth data for several traffic count station located near the project site and inside the study area, traffic has grown (Year 2007 to Year 2010) at a flat rate compounded annually, within the project's study area (refer to Appendix F). Hence, a 0.5% growth rate, compounded annually, was assumed for the study area for the twenty year build out period.

Diversion Analysis and NW 87th Avenue Traffic Projections

As previously discussed, the proposed Dunnwoody Lake and Dunnwoody Forest projects each have a build-out date of 2030. During this time, a roadway improvement that will significantly impact the traffic patterns on the west side of the Town of Miami Lakes will occur. This improvement is the widening of NW 87th Avenue to a four lane divided section from NW 154th Street north to NW 186th Street. This widening includes the construction of the “missing link” of NW 87th Avenue from NW 154th Street to NW 162nd Street.

In order to help determine what impacts this construction would have on traffic patterns in the study area, a FSUTMS model run was conducted with and without NW 87th Avenue from NW 154th Street to NW 162nd Avenue. The resulting FSUTMS model runs and select link analysis of NW 87th Avenue and NW 154th Avenue (included in the Appendix H) as well as reviewing current traffic patterns based on counts taken at critical locations where the diversions will occur indicated the following:

1. No significant reduction in two-way peak hour traffic in the study area is anticipated east of 79th Avenue.
2. NW 82nd Avenue will see a decrease of approximately 40% as traffic shifts to the west to utilize the fully functional NW 87th Avenue. A reduction of 40 % of the existing counts was applied to appropriate movements at NW 154th Street and NW 82nd Avenue.
3. NW 79th Avenue will see a decrease of approximately 10% as traffic shifts to the west to utilize the fully functional NW 87th Avenue. A reduction of 10 % of the existing counts was applied to appropriate movements at NW 154th Street and NW 79th Avenue.
4. The northbound right turns and westbound left turn movements at NW 154th Street and NW 87th Avenue were reduced based on the other diversions of existing traffic. In addition, the southbound left turn and westbound right turn were increased as appropriate.

5. The remainder of the “new” traffic on NW 87th Avenue will come from locations outside the Town of Miami Lakes. For example, traffic that presently travels on NW 186th Street that wishes to travel south will be diverted to NW 87th Avenue.

Instead of attempting to build the projected opening day peak hour and 24-hour traffic volumes on NW 87th Avenue solely from the diversion analysis, it was decided to utilize the results of a previous study submitted to the Miami-Dade Metropolitan Planning Organization (MPO) in 2007. The study, “Arterial Grid Analysis Study” by Kimley-Horn and Associates, Inc. in which the “missing link” was included and a Year 2015 24-hour traffic volume was developed. This 24 hour volume was converted to AM and PM peak hour directional volumes for use in this study based on the count data collected as a part of this study. Fifteen years of growth at 0.50% a year was then added to give the 2030 background traffic used in this analysis. The appropriate sections of the “Arterial Grid Analysis Study” are included in the Appendix H.

Figures 7 through 10 depict traffic volumes for the study area. Figure 7 depicts existing (2010) peak season volumes, Figure 8 illustrates the diversion of traffic, Figures 9 and 9A shows the additional traffic anticipated to be generated by the Dunnwoody Lake Mixed-Use development and the Dunnwoody Forest development while Figure 10 shows the total traffic anticipated for the Year 2030.

Project Traffic Volumes

The project traffic for each assigned to the adjacent roadway network and intersections for the AM peak hour and the PM peak hour. These volumes were added to the existing, growth and diverted traffic to obtain 2030 total traffic volumes. The intersection volume development worksheets are included in the Appendix J of this report.

Level of Service Analyses

Roadway link and intersection capacity/level of service analyses were performed for the required links and intersections located within the project study area. The analyses were undertaken following the capacity/level of service procedures outlined in the Highway

Capacity Manual utilizing Synchro 7. The results of the link capacity analyses are summarized in Tables 5 through 10 while the intersection analyses are shown in Tables 11 through 16. Appendix K contains the computer printouts of the intersection capacity analyses utilizing Synchro 7.

The link analysis indicated that the following links were over capacity in the Year 2030.

- NW 154th Street from NW 87th Avenue to SR 826
- NW 87th Avenue from NW 147th Terrace to NW 138th Street
- NW 82nd Avenue from NW 154th Street to NW 162nd Street

The intersection analysis indicated that the following intersections were operating at an unacceptable level of service in the Year 2030:

- NW 154th Street & NW 82nd Avenue
- NW 154th Street & NW 79th Avenue
- NW 138th Street & NW 87th Avenue

In order to provide adequate levels of service on these links and at these intersections, the following link improvement is required:

- ◆ Widen NW 154th Street to four lanes from NW 83rd Avenue west to NW 87th Avenue
- ◆ Add an additional southbound left turn lane a separate eastbound right turn lane and a separate westbound right turn lane at NW 154th Street & NW 82nd Avenue
- ◆ Along NW 154th Street, add an additional eastbound through lane from NW 79th Court west to NW 77th Court
- ◆ Add an additional southbound left turn lane at NW 154th Street and NW 79th Avenue
- ◆ Add a separate northbound right turn lane at NW 138th Street and NW 87th Avenue

Project Access

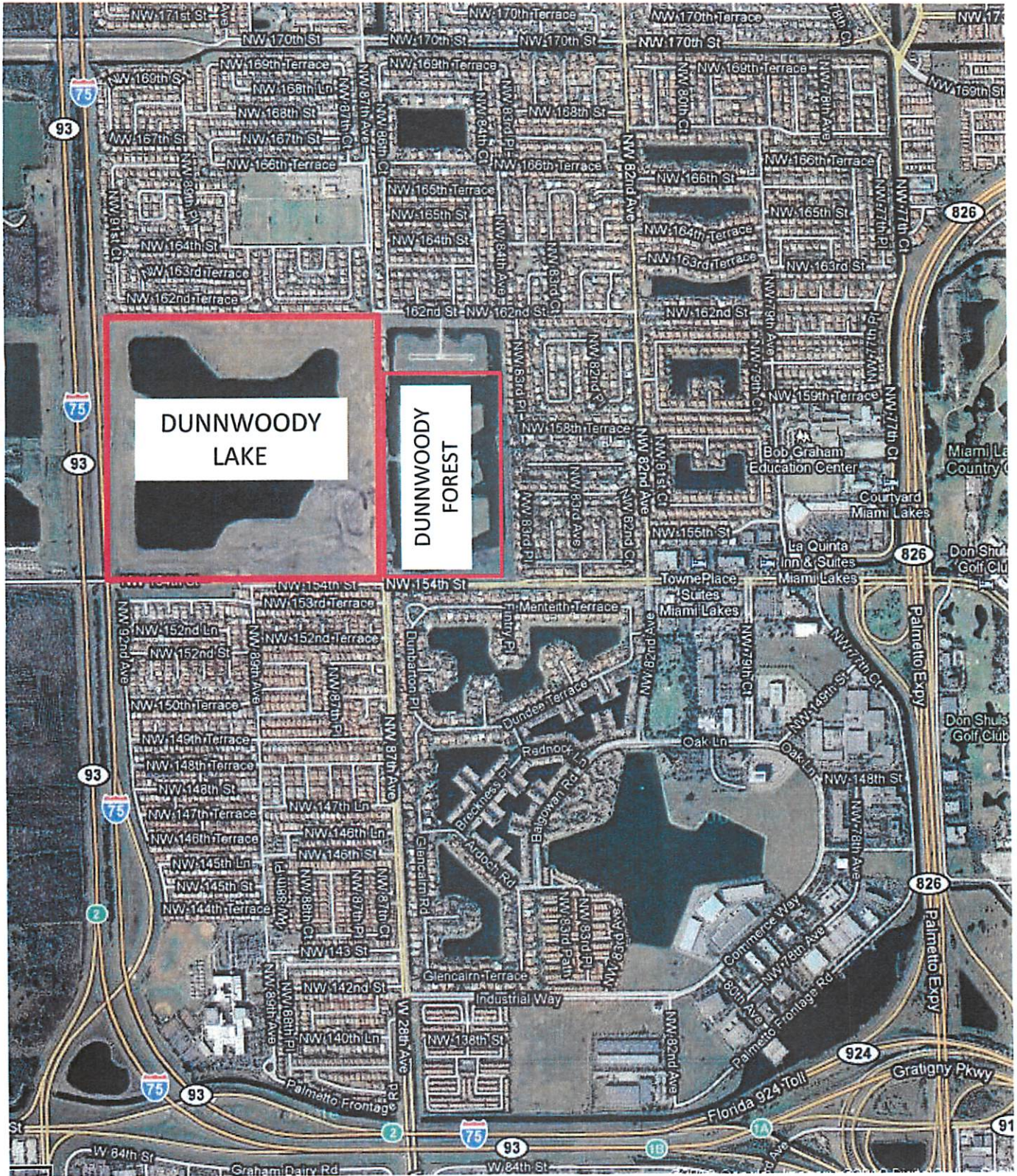
Access to the Dunnwoody Lake project will be provided via two full-access driveways on NW 154th Street and three driveways on NW 87th Avenue. Figure 11 presents the projected turning movement volumes at the project driveways. Although projected volumes do not warrant signalization, the site driveway at NW 154th Street and NW 89th Avenue should continue to be monitored for signalization prior to build out of the residential element of the proposed project.

Access to Dunnwoody Forest will be provided via one driveway on NW 154th Street and one driveway on NW 87th Avenue. Figure 11A presents the projected turning movement volumes at the project driveways.

CONCLUSIONS AND RECOMMENDATIONS

Dunnwoody Lake Mixed-Use development is a proposed mixed use project planned to be located on the north side of NW 154th Street west of NW 87th. The project site is currently vacant. The proposed Dunnwoody Lake Mixed-Use development is anticipated to generate a net of 7,238 daily trips, approximately 382 AM peak hour trips, and approximately 705 trips during PM peak hour. Dunnwoody Forest is an 84 unit residential project and the net external trips associated with the proposed development are 886 daily trips, 69 trips during the AM peak hour, and 90 trips during the PM peak hour which impact the adjacent roadway network

Without the recommended improvements, the intersections of NW 154th Street and NW 82nd Avenue and well as NW 154th Street and NW 79th Avenue would operate below acceptable levels of service. In fact, this holds true without the proposed project in place. However, with signal timing adjustments and the improvements recommended, all links and intersections significantly impacted are projected to operate at acceptable levels of services in the year 2030 with the proposed project Dunnwoody Lake and Dunnwoody Forest projects in place. Therefore, the proposed Dunnwoody Lake and Dunnwoody Forest projects will meet the TCMP requirements of the Town of Miami Lakes with the recommended improvements.



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PROJECT LOCATION MAP

FIGURE 1
DUNNWOODY
MIAMI LAKES, FL



SIGNALIZED INTERSECTIONS TO BE ANALYZED



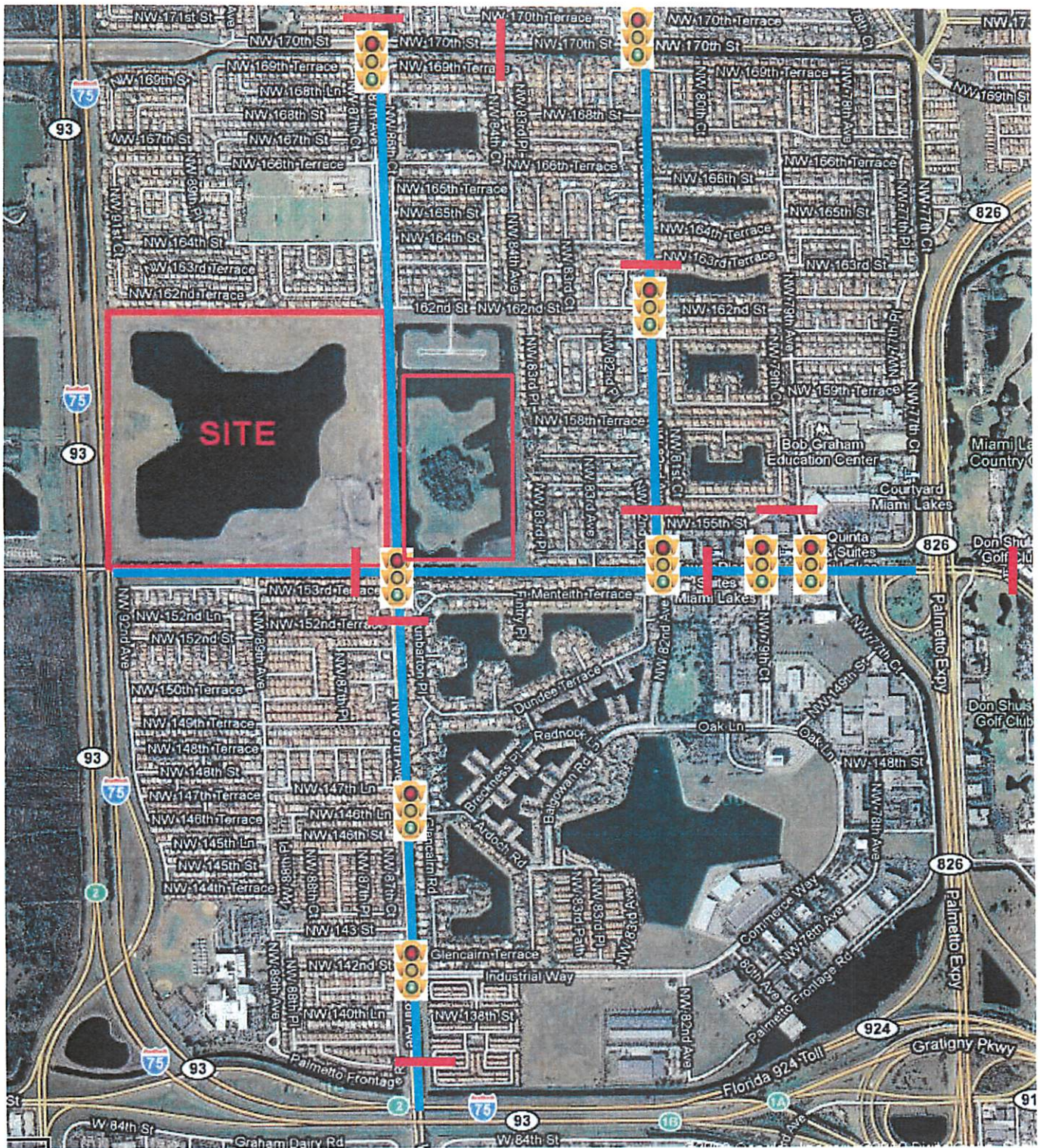
LINKS TO BE ANALYZED





ENGINEERING, INC.

STUDY AREA (SIGNIFICANT LINKS)

FIGURE 2
DUNNWOODY
MIAMI LAKES, FL

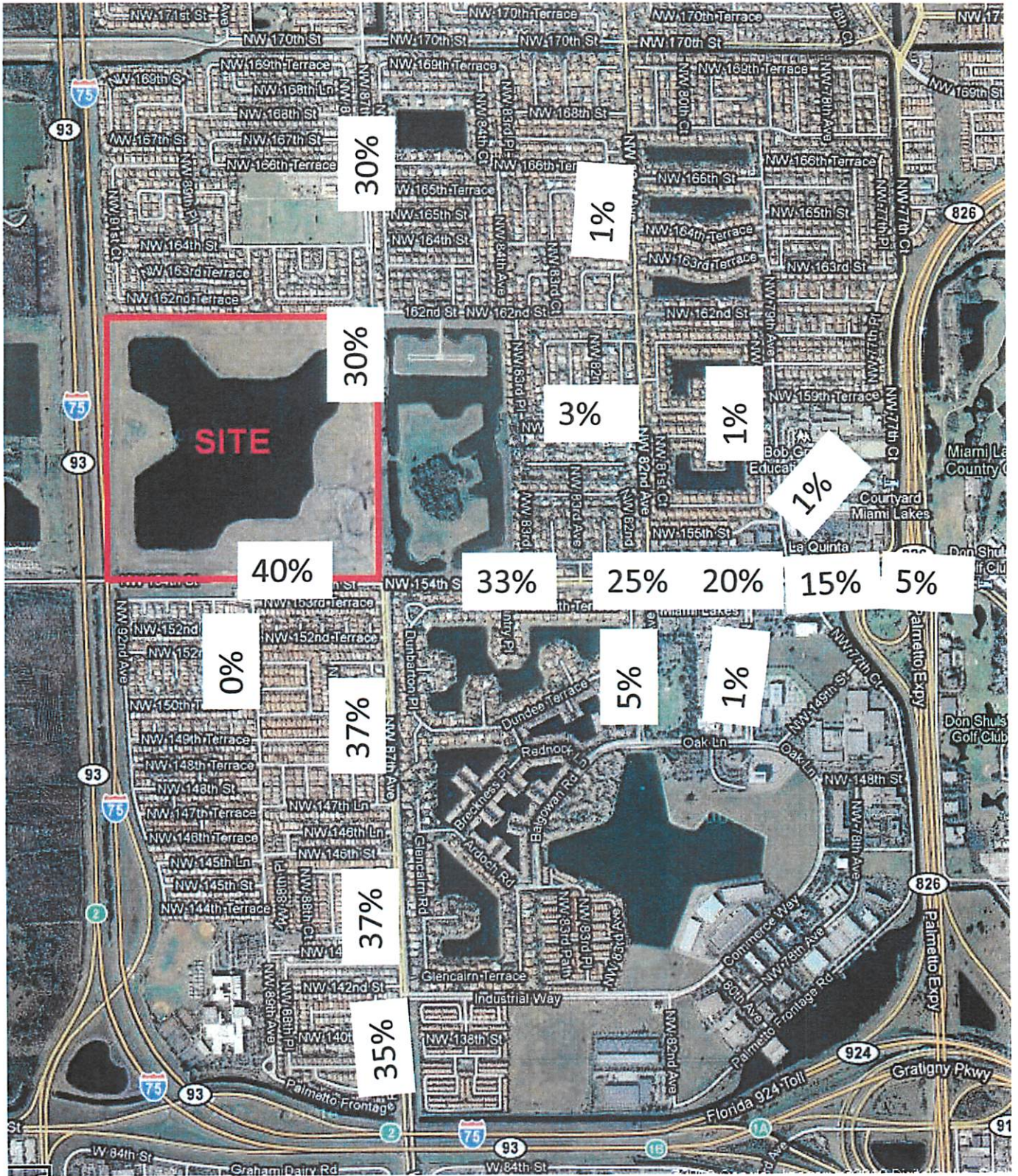


 SIGNALIZED INTERSECTIONS COUNTED
 24 HOUR COUNT LOCATIONS



TRAFFIC COUNT LOCATIONS

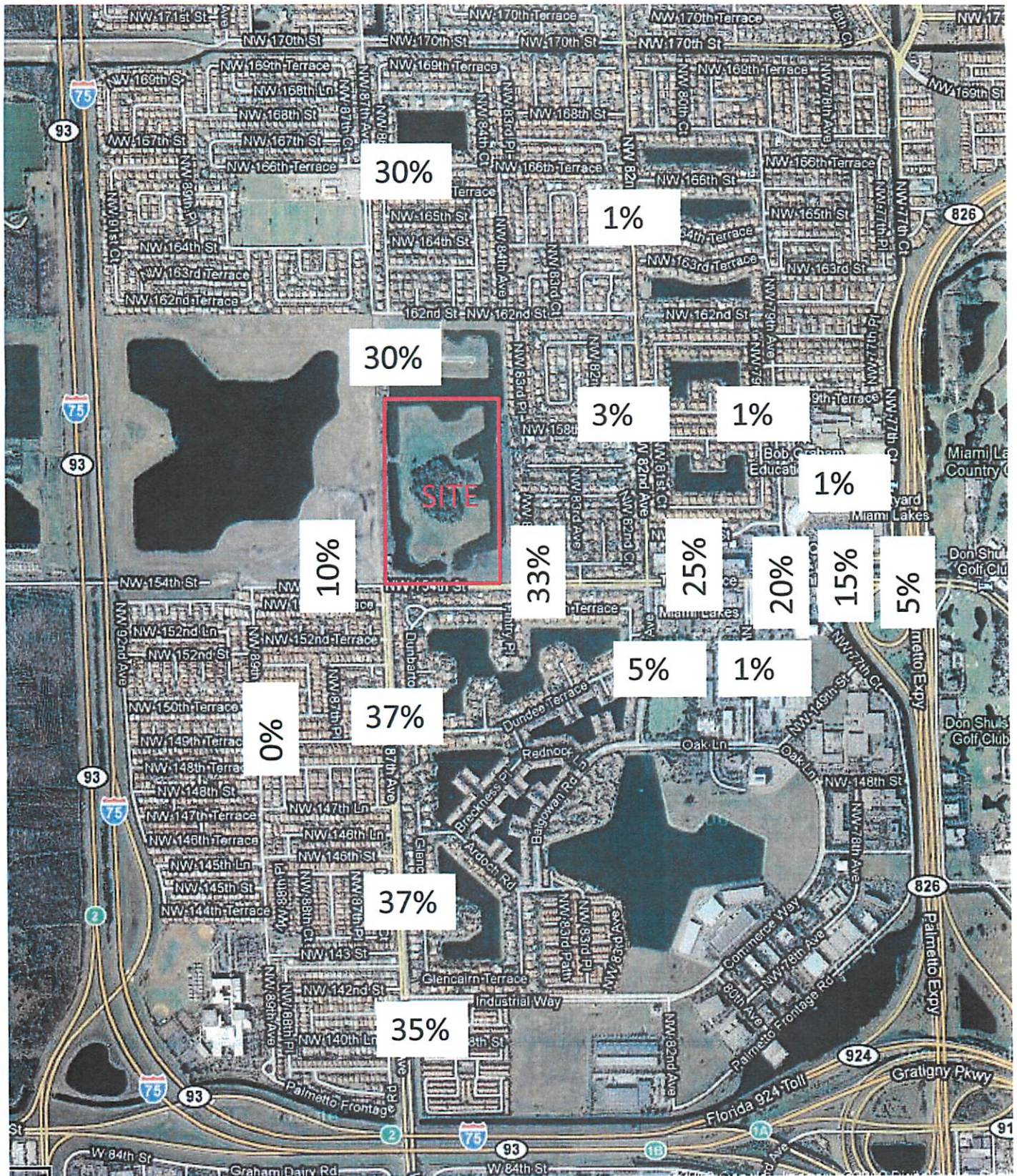
FIGURE 3
 DUNNWOODY
 MIAMI LAKES, FL



ENGINEERING, INC.

DUNNWOODY LAKE RESIDENTIAL ASSIGNMENT

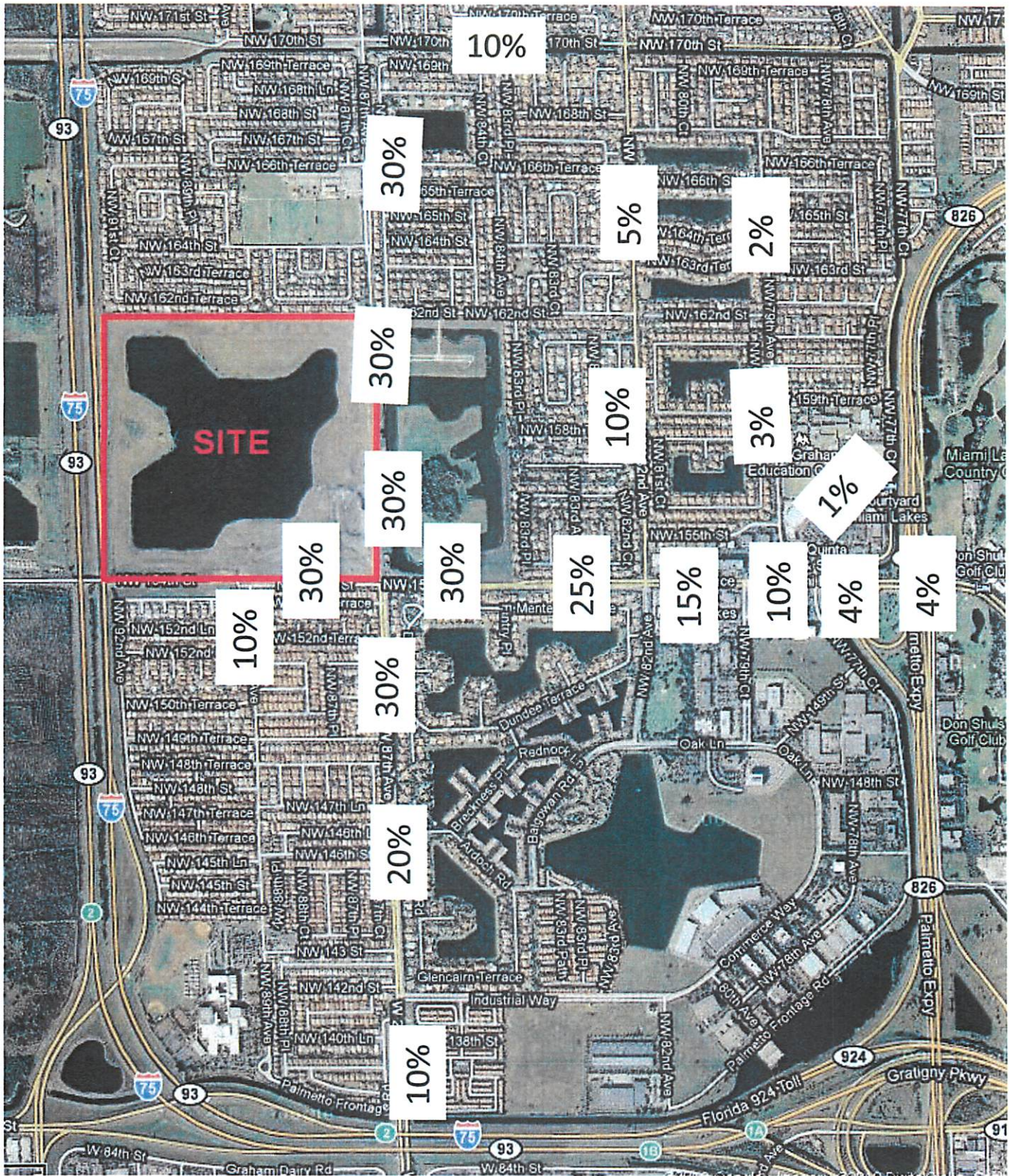
**FIGURE 4
DUNNWOODY
MIAMI LAKES, FL**



ENGINEERING, INC.

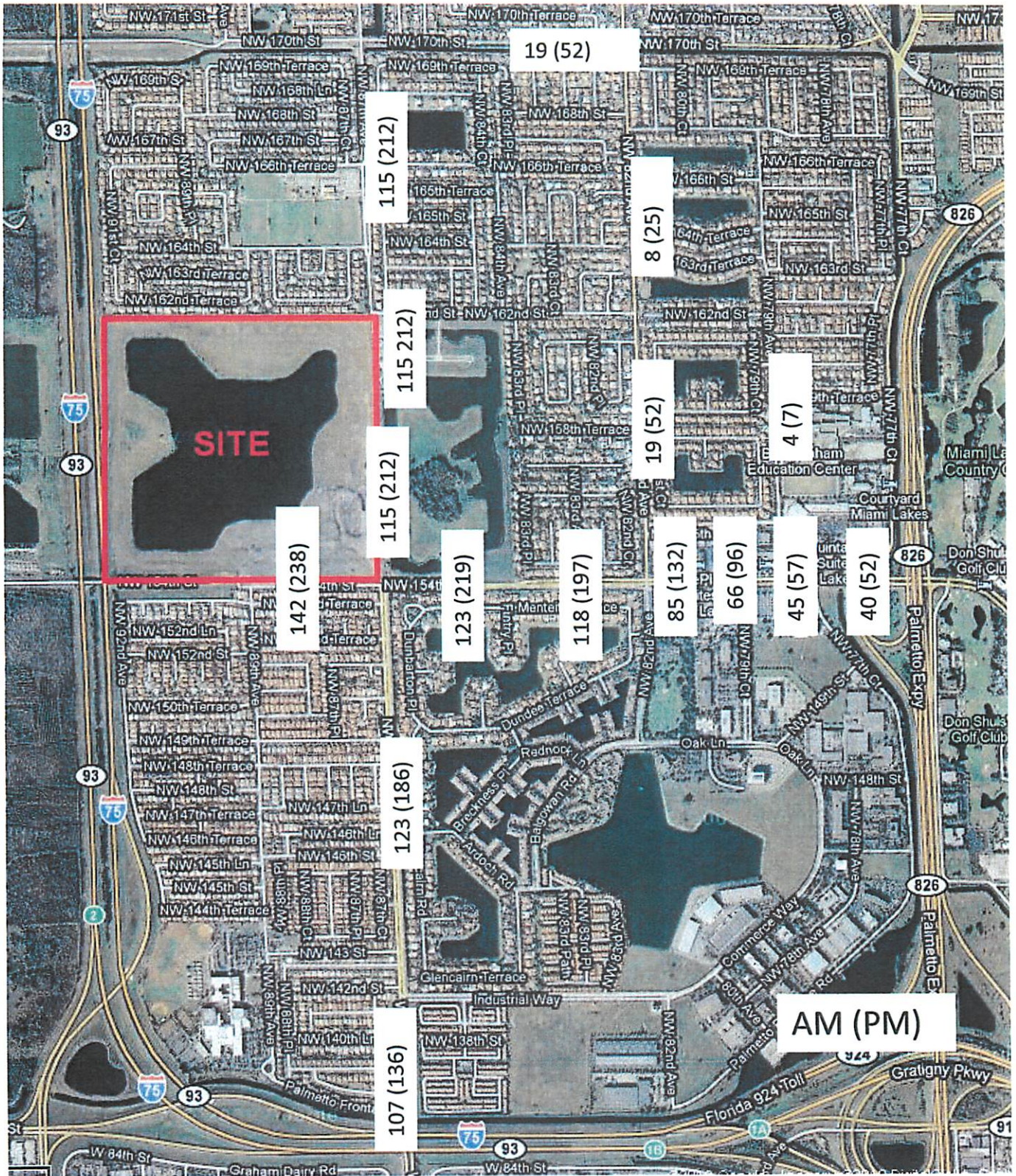
DUNNWOODY FOREST RESIDENTIAL ASSIGNMENT

FIGURE 4A
DUNNWOODY
MIAMI LAKES, FL



DUNNWOODY LAKE COMMERCIAL ASSIGNMENT

**FIGURE 5
DUNNWOODY
MIAMI LAKES, FL**



ENGINEERING, INC.

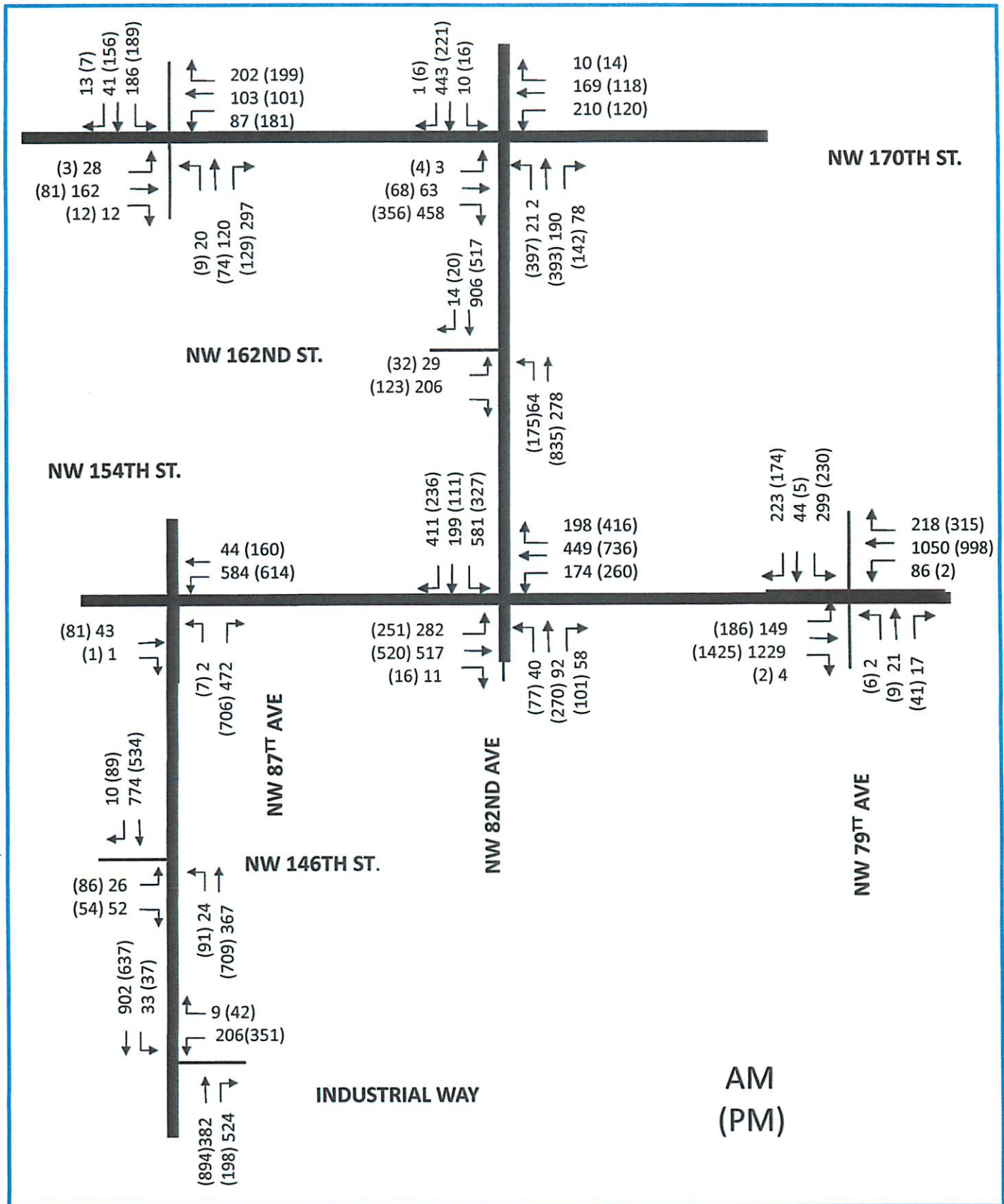
DUNNWOODY LAKE PROJECT TRAFFIC

**FIGURE 6
DUNNWOODY
MIAMI LAKES, FL**



DUNNWOODY FOREST PROJECT TRAFFIC

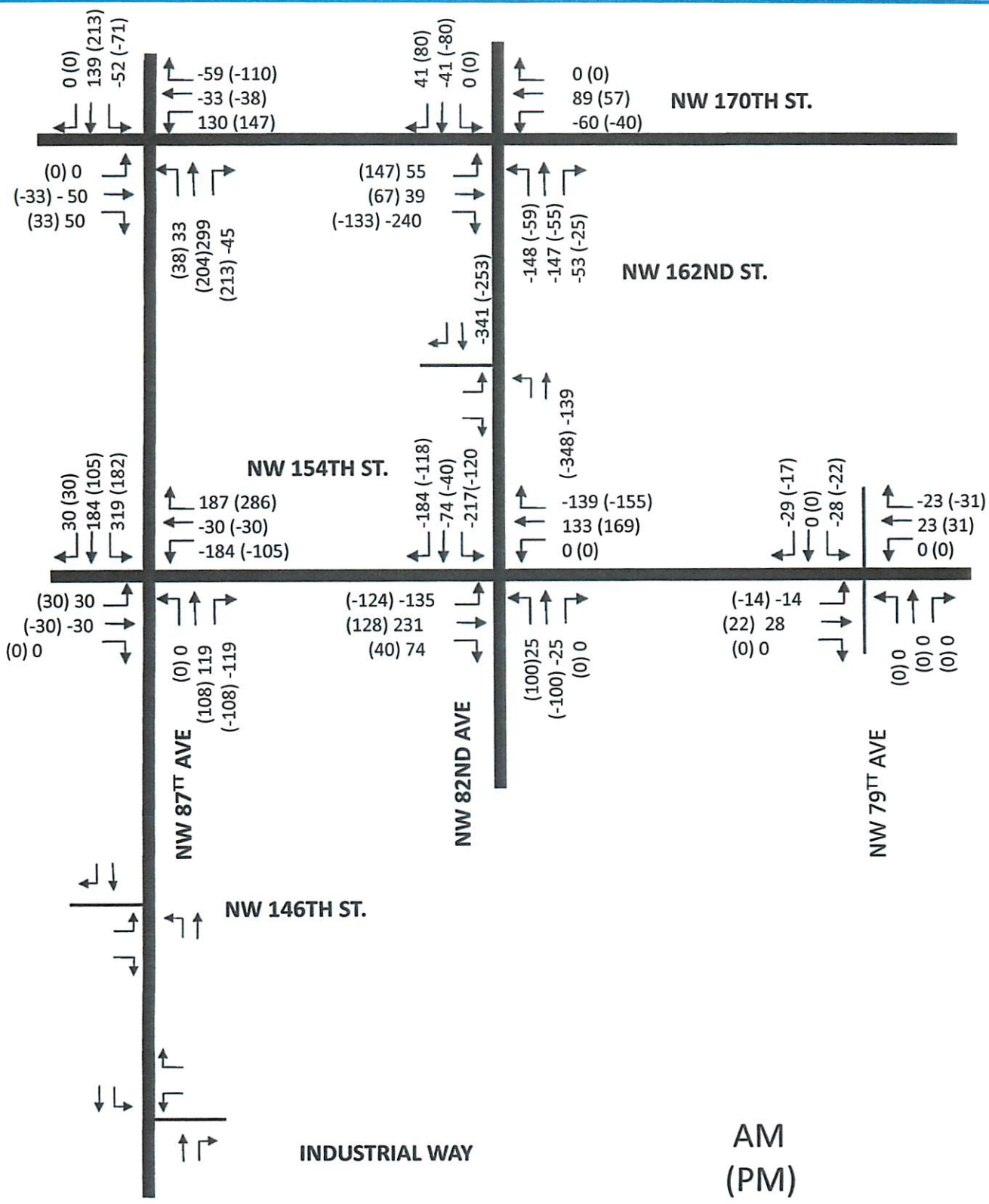
FIGURE 6A
DUNNWOODY
MIAMI LAKES, FL



ENGINEERING, INC.

**2010 PEAK SEASON
PEAK HOUR VOLUMES**

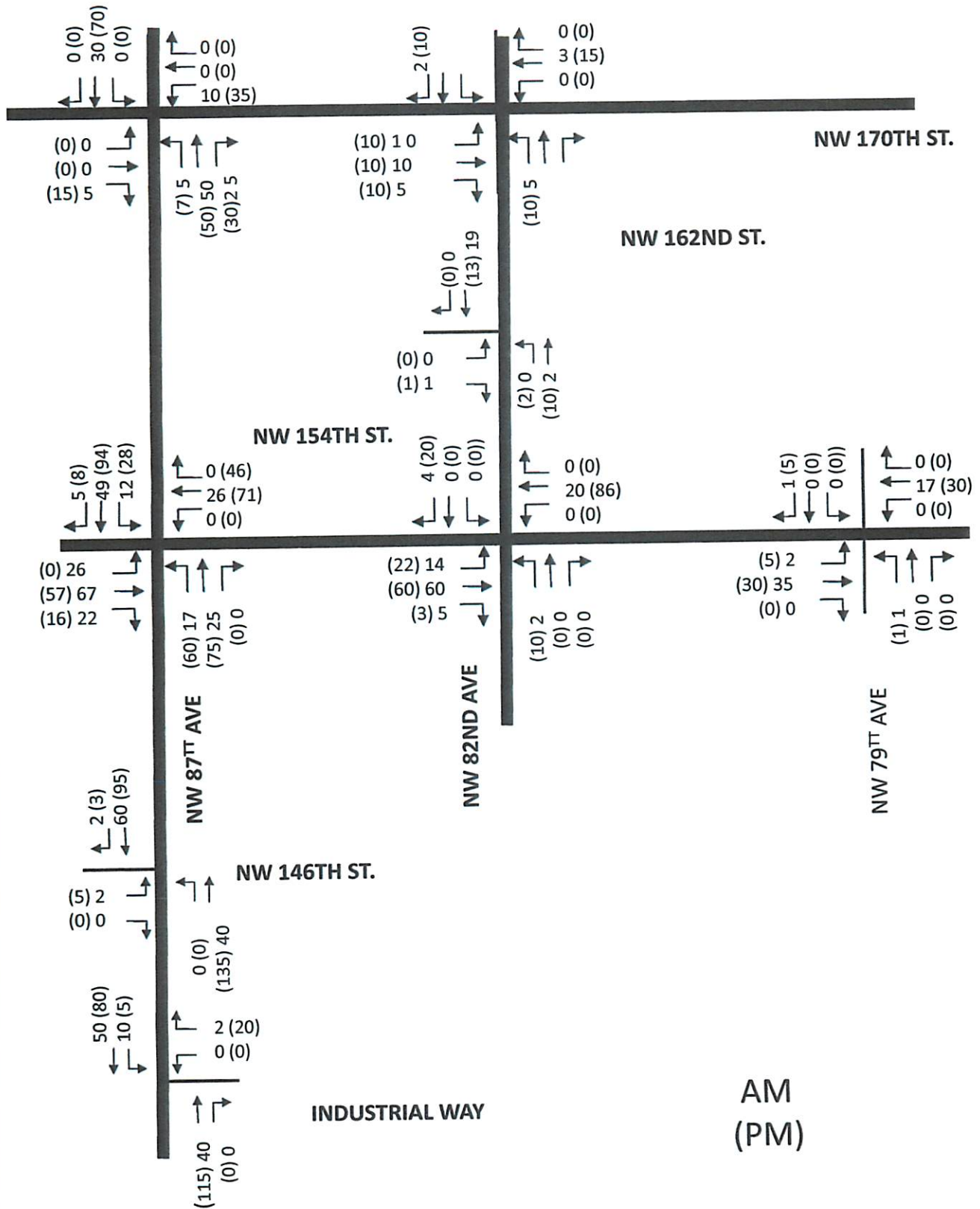
**FIGURE 7
DUNNWOODY
MIAMI LAKES, FL**



ENGINEERING, INC.

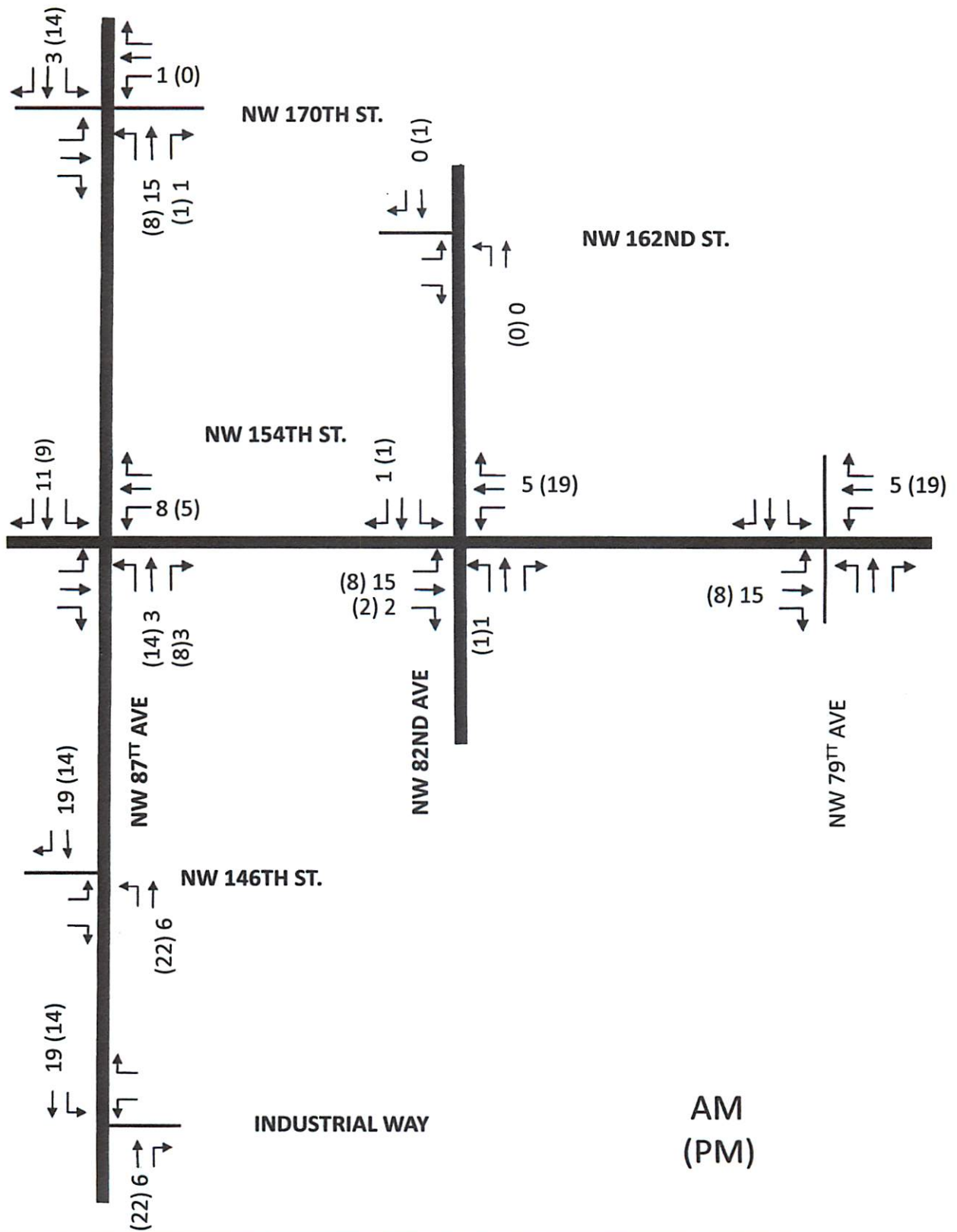
DIVERTED PEAK HOUR VOLUMES

**FIGURE 8
DUNNWOODY
MIAMI LAKES, FL**



DUNNWOODY LAKE PEAK HOUR VOLUMES

**FIGURE 9
DUNNWOODY
MIAMI LAKES, FL**



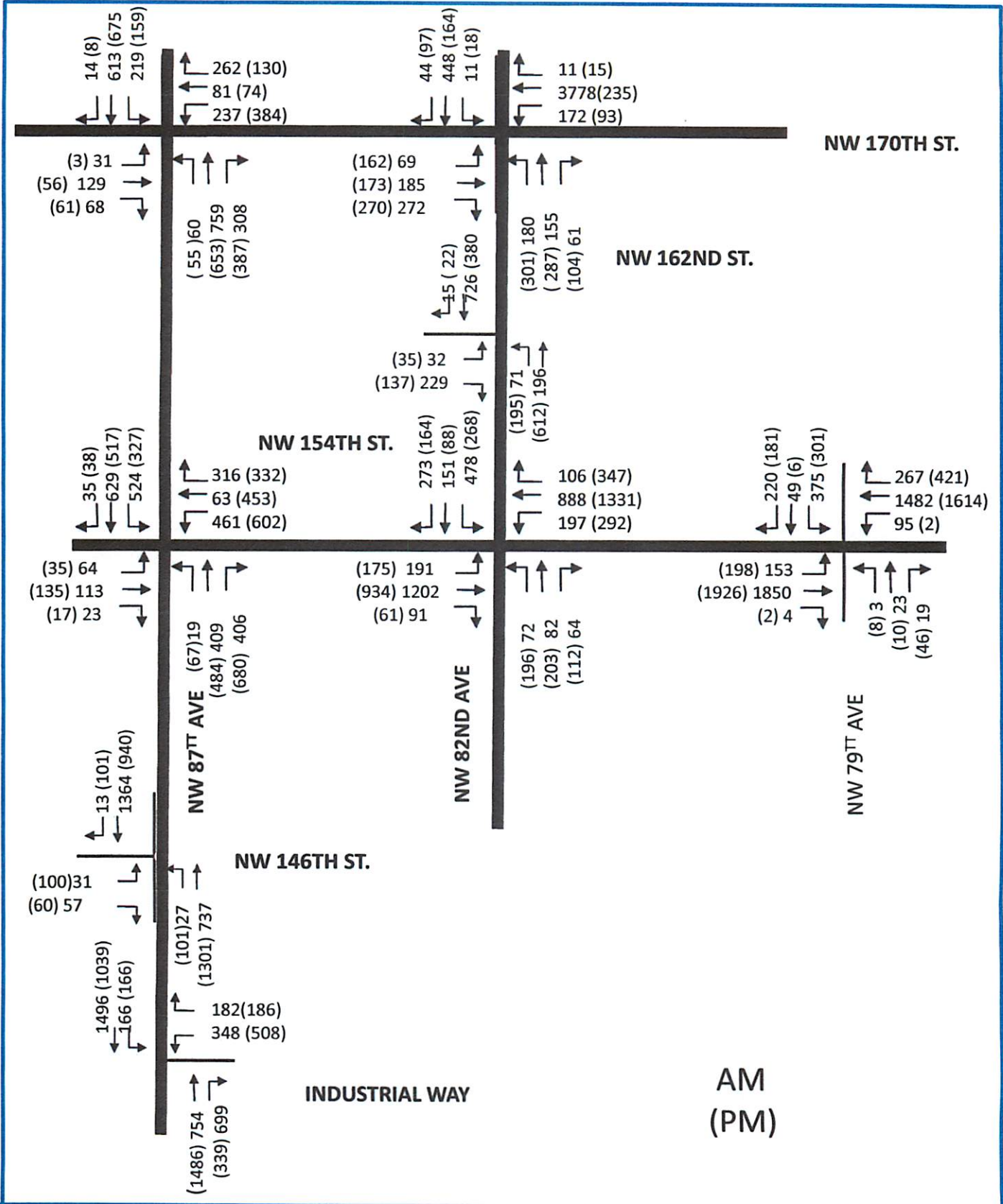
AM
(PM)



ENGINEERING, INC.

DUNNWOODY FOREST PEAK HOUR VOLUMES

FIGURE 9A
DUNNWOODY LAKE
MIAMI LAKES, FL

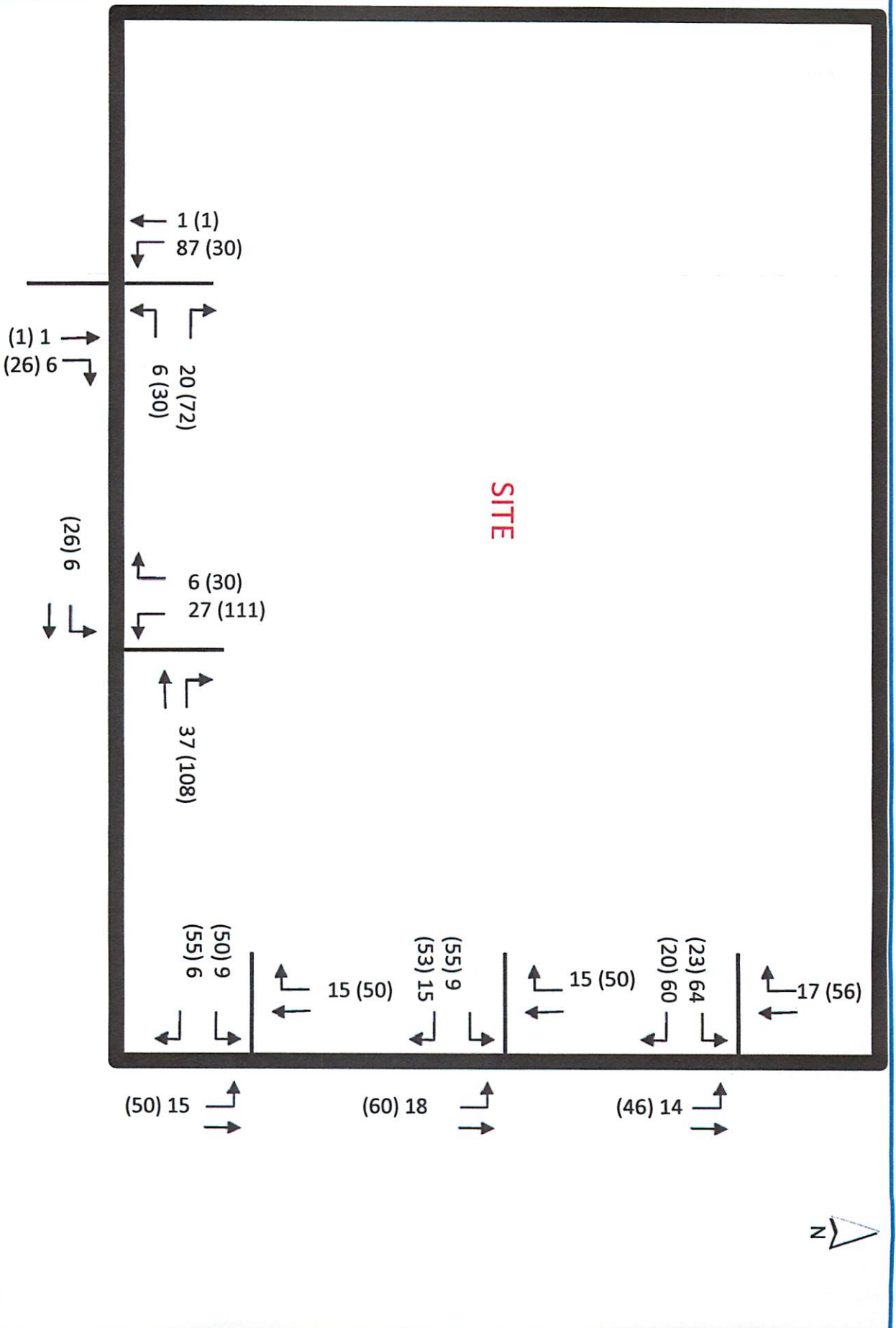


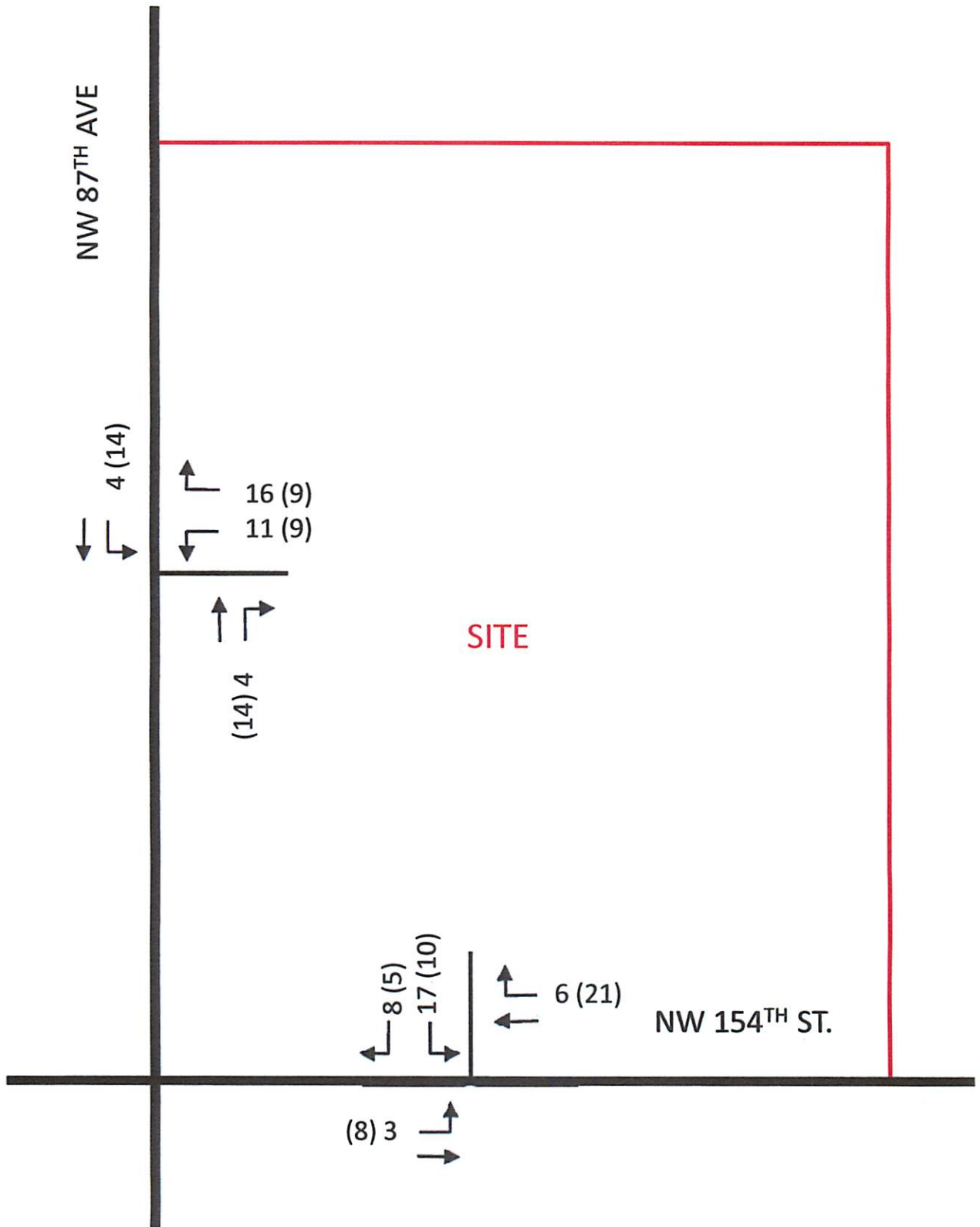
ENGINEERING, INC.

**2030 PEAK SEASON
PEAK HOUR VOLUMES**

**FIGURE 10
DUNNWOODY
MIAMI LAKES, FL**

SITE DRIVEWAY TRAFFIC





ENGINEERING, INC.

PROJECT DRIVEWAY VOLUMES

FIGURE 11A
DUNNWOODY FOREST
MIAMI LAKES, FL

**TABLE 1
DUNNWOODY LAKE
TRIP GENERATION**

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Proposed Site Traffic								
General Commercial Retail	140,000 S.F.	8,451	188	115	73	797	391	406
Residential Condominium/Townhouse	253 DU	1,442	108	18	90	129	86	43
Single-Family Detached Housing	256 DU	2,469	189	47	142	245	154	91
		12,362	485	180	305	1,171	631	540
Internal Capture (per ITE)								
General Commercial Retail		1,301	22	12	10	112	57	55
Residential Condominium/Townhouse		512	11	5	6	50	27	23
Single-Family Detached Housing		787	11	5	6	62	28	34
Sub-total		2,600	44	22	22	224	112	112
External								
General Commercial Retail		7,150	166	103	63	685	334	351
Residential Condominium/Townhouse		930	97	13	84	79	59	20
Single-Family Detached Housing		1,682	178	42	136	183	126	57
Pass-By Capture								
Retail Pass-By Trips	35.30%	2,524	59	36	23	242	118	124
Net New External Traffic								
General Commercial Retail		4,626	107	67	40	443	216	227
Residential Condominium/Townhouse		930	97	13	84	79	59	20
Single-Family Detached Housing		1,682	178	42	136	183	126	57
Total		7,238	382	122	260	705	401	304
Driveway Volumes		9,762	441	158	283	947	519	428

Note: Trip generation was calculated using the following data:

Daily

Single-Family Detached Housing [ITE 210] = $\ln(T) = 0.92\ln(X) + 2.71$
 Residential Condominium/Townhouse [ITE 230] = $\ln(T) = 0.87\ln(X) + 2.46$
 General Commercial Retail [ITE 820] = $\ln(T) = 0.65 * \ln(X) + 5.83$

AM Peak

Single-Family Detached Housing [ITE 210] = $T = 0.70(X) + 9.74$ (25% in, 75% out)
 Residential Condominium/Townhouse [ITE 230] = $\ln(T) = 0.80\ln(X) + 0.26$ (17% in, 83% out)
 General Commercial Retail [ITE 820] = $\ln(T) = 0.59 * \ln(X) + 2.32$

PM Peak

Single-Family Detached Housing [ITE 210] = $\ln(T) = 0.90\ln(X) + 0.51$ (63% in, 37% out)
 Residential Condominium/Townhouse [ITE 230] = $\ln(T) = 0.82\ln(X) + 0.32$ (67% in, 33% out)
 General Commercial Retail [ITE 820] = $\ln(T) = 0.67 * \ln(X) + 3.37$ (49% in, 51% out)

Pass-by for retail based on ITE equation of $\ln(T) = -0.291 * \ln(X) + 5.001$

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**TABLE 1A
DUNNWOODY FOREST
TRIP GENERATION**

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Proposed Site Traffic								
Single-Family Detached Housing	84 DU	886	69	17	52	90	57	33

Note: Trip generation was calculated using the following data:

Daily			
Single-Family Detached Housing	[ITE 210]	=	$\text{Ln}(T) = 0.92\text{Ln}(X) + 2.71$
AM Peak			
Single-Family Detached Housing	[ITE 210]	=	$T = 0.70(X) + 9.74$ (25% in, 75% out)
PM Peak			
Single-Family Detached Housing	[ITE 210]	=	$\text{Ln}(T) = 0.90\text{Ln}(X) + 0.51$ (63% in, 37% out)

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TABLE 2
Miami-Dade Model Project Trip Distribution
Dunnwoody Lake Mixed-Use Development

Direction		% of Total Trips
North:	Northwest	15.73%
	Northeast	2.17%
South:	Southwest	6.00%
	Southeast	33.99%
East:	Northeast	17.49%
	Southeast	15.62%
West:	Northwest	6.83%
	Southwest	2.17%
Total		100.00%

Source: Miami-Dade Interim Cost Feasible Plan Report



**TABLE 3
DUNNWOODY LAKE
ROADWAY PROJECT LINK SIGNIFICANCE - AM PEAK**

Roadway From To		2010		Project Traffic				Total AM Volume	Significance
		Number of Lanes	Capacity	Comm. Assignment	Peak Hour Volume	Res. Assignment	Peak Hour Volume		
NW 154TH STREET									
SITE	NW 87TH AVE	2	1,110	30%	32	40%	110	142	12.79%
NW 87TH AVE	NW 83RD AVE	2	1,110	30%	32	33%	91	123	11.08%
NW 83RD AVE	NW 82ND AVE	4	2,950	25%	27	33%	91	118	4.00%
NW 82ND AVE	NW 79TH CT	4	2,950	15%	16	25%	69	85	2.88%
NW 79TH CT	NW 79TH AVE	4	2,950	10%	11	20%	55	66	2.24%
NW 79TH AVE	NW 77TH COURT	4	2,950	4%	4	15%	41	45	1.53%
NW 77TH COURT	SR 826	4	2,950	4%	4	13%	36	40	1.36%
SR 826	FAIRWAY DR	4	3,120	3%	3	5%	14	17	0.54%
FAIRWAY DR	NW 67TH AVE	4	3,120	3%	3	4%	11	14	0.45%
NW 67TH AVE	MIAMI LAKEWAY N	4	3,120	2%	2	3%	8	10	0.32%
NW 87TH AVENUE									
NW 170TH ST	SITE	4	2,950	30%	32	30%	83	115	3.90%
SITE	NW 154TH ST	4	2,950	30%	32	30%	83	115	3.90%
NW 154TH ST	NW 138TH ST	4	2,950	30%	32	37%	102	134	4.54%
NW 138TH ST	NW 147TH TER	4	2,950	10%	11	35%	96	107	3.63%
NW 82ND AVENUE									
NW 170TH ST	NW 162ND ST	2	1,110	5%	5	1%	3	8	0.72%
NW 162ND ST	NW 154TH ST	4	2,950	10%	11	3%	8	19	0.64%
NW 79TH AVENUE									
NW 167TH TER	NW 159TH TER	2	1,110	2%	2	1%	3	5	0.45%
NW 159TH TER	NW 154TH ST	2	1,110	3%	3	1%	3	6	0.54%
NW 77TH COURT									
NW 154TH ST	NW 149TH ST	2	1,110	1%	1	1%	3	4	0.36%
FAIRWAY DRIVE									
MIAMI LAKES DR	MIAMI LAKEWAY N.	2	1,180	1%	1	1%	3	4	0.34%
NW 170TH STREE									
NW 87TH AVE	NW 82ND AVE	2	1,110	10%	11	3%	8	19	1.71%

Capacities per Miami Lakes Concurrency Report :



**TABLE 4
DUNNWOODY LAKE
ROADWAY LINK PROJECT SIGNIFICANCE - PM PEAK**

Roadway From To		2010		Project Traffic				Total PM Volume	Significance
		Number of Lanes	Capacity	Comm. Assignment	Peak Hour Volume	Res. Assignment	Peak Hour Volume		
NW 154TH STREET									
SITE	NW 87TH AVE	2	1,110	30%	133	40%	105	238	21.44%
NW 87TH AVE	NW 83RD AVE	2	1,110	30%	133	33%	86	219	19.73%
NW 83RD AVE	NW 82ND AVE	4	2,950	25%	111	33%	86	197	6.68%
NW 82ND AVE	NW 79TH CT	4	2,950	15%	66	25%	66	132	4.47%
NW 79TH CT	NW 79th AVE	4	2,950	10%	44	20%	52	96	3.25%
NW 79TH AVE	NW 77TH COURT	4	2,950	4%	18	15%	39	57	1.93%
NW 77TH COURT	SR 826	4	2,950	4%	18	13%	34	52	1.76%
SR 826	FAIRWAY DR	4	3,120	3%	13	5%	13	26	0.83%
FAIRWAY DR	NW 67TH AVE	4	3,120	3%	13	4%	10	23	0.74%
NW 67TH AVE	MIAMI LAKEWAY N	4	3,120	2%	9	3%	8	17	0.54%
NW 87TH AVENUE									
NW 170TH ST	SITE	4	2,950	30%	133	30%	79	212	7.19%
SITE	NW 154TH ST	4	2,950	30%	133	30%	79	212	7.19%
NW 154TH ST	NW 138TH ST	4	2,950	30%	133	37%	97	230	7.80%
NW 138TH ST	NW 147TH TER	4	2,950	10%	44	35%	92	136	4.61%
NW 82ND AVENUE									
NW 170TH ST	NW 162ND ST	2	1,110	5%	22	1%	3	25	2.25%
NW 162ND ST	NW 154TH ST	4	2,950	10%	44	3%	8	52	1.76%
NW 79TH AVENUE									
NW 167TH TER	NW 159TH TER	2	1,110	2%	9	1%	3	12	1.08%
NW 159TH TER	NW 154TH ST	2	1,110	3%	13	1%	3	16	1.44%
NW 77TH COURT									
NW 154TH ST	NW 149TH ST	2	1,110	1%	4	1%	3	7	0.63%
FAIRWAY DRIVE									
MIAMI LAKES DR	MIAMI LAKEWAY N.	2	1,180	1%	4	1%	3	7	0.59%
NW 170TH STREE									
NW 87TH AVE	NW 82ND AVE	2	1,110	10%	44	3%	8	52	4.68%

Capacities per Miami Lakes Concurrency Report :

**TABLE 3A
DUNNWOODY FOREST
ROADWAY LINK PROJECT SIGNIFICANCE - AM**

Roadway		2010		Project Traffic		Significance
		Number of Lanes	Capacity	Assignment	Peak Hour Volume	
From	To					
NW 154TH STREET						
I-75	NW 87TH AVE	2	1,110	10%	7	0.63%
NW 87TH AVE	NW 83RD AVE	2	1,110	50%	35	3.15%
NW 83RD AVE	NW 82ND AVE	4	2,950	33%	23	0.78%
NW 82ND AVE	NW 79TH CT	4	2,950	25%	17	0.58%
NW 79TH CT	NW 79th AVE	4	2,950	20%	14	0.47%
NW 79TH AVE	NW 77TH COURT	4	2,950	15%	10	0.34%
NW 77TH COURT	SR 826	4	2,950	13%	9	0.31%
SR 826	FAIRWAY DR	4	3,120	5%	3	0.10%
FAIRWAY DR	NW 67TH AVE	4	3,120	4%	3	0.10%
NW 67TH AVE	MIAMI LAKEWAY N	4	3,120	3%	2	0.06%
NW 87TH AVENUE						
NW 170TH ST	SITE	4	2,950	30%	21	0.71%
SITE	NW 154TH ST	4	2,950	30%	21	0.71%
NW 154TH ST	NW 147TH TER	4	2,950	37%	26	0.88%
NW 147TH TER	NW 138TH ST	4	2,950	35%	24	0.81%
NW 82ND AVENUE						
NW 170TH ST	NW 162ND ST	2	1,110	1%	1	0.09%
NW 162ND ST	NW 154TH ST	4	2,950	3%	2	0.07%
NW 79TH AVENUE						
NW 167TH TER	NW 159TH TER	2	1,110	1%	1	0.09%
NW 159TH TER	NW 154TH ST	2	1,110	1%	1	0.09%
NW 77TH COURT						
NW 154TH ST	NW 149TH ST	2	1,110	1%	1	0.09%
FAIRWAY DRIVE						
MIAMI LAKES DR	MIAMI LAKEWAY N.	2	1,180	1%	1	0.08%

Capacities per Miami Lakes Concurrency Report :



**TABLE 4A
DUNNWOODY FOREST
ROADWAY LINK PROJECT SIGNIFICANCE - PM**

Roadway		2010		Project Traffic		Significance
		Number of Lanes	Capacity	Assignment	Peak Hour Volume	
From	To					
NW 154TH STREET						
I-75	NW 87TH AVE	2	1,110	10%	9	0.81%
NW 87TH AVE	NW 83RD AVE	2	1,110	50%	45	4.05%
NW 83RD AVE	NW 82ND AVE	4	2,950	33%	30	1.02%
NW 82ND AVE	NW 79TH CT	4	2,950	25%	23	0.78%
NW 79TH CT	NW 79th AVE	4	2,950	20%	18	0.61%
NW 79TH AVE	NW 77TH COURT	4	2,950	15%	14	0.47%
NW 77TH COURT	SR 826	4	2,950	13%	12	0.41%
SR 826	FAIRWAY DR	4	3,120	5%	5	0.16%
FAIRWAY DR	NW 67TH AVE	4	3,120	4%	4	0.13%
NW 67TH AVE	MIAMI LAKEWAY N	4	3,120	3%	3	0.10%
NW 87TH AVENUE						
NW 170TH ST	SITE	4	2,950	30%	27	0.92%
SITE	NW 154TH ST	4	2,950	30%	27	0.92%
NW 154TH ST	NW 147TH TER	4	2,950	37%	33	1.12%
NW 147TH TER	NW 138TH ST	4	2,950	35%	32	1.08%
NW 82ND AVENUE						
NW 170TH ST	NW 162ND ST	2	1,110	1%	1	0.09%
NW 162ND ST	NW 154TH ST	4	2,950	3%	3	0.10%
NW 79TH AVENUE						
NW 167TH TER	NW 159TH TER	2	1,110	1%	1	0.09%
NW 159TH TER	NW 154TH ST	2	1,110	1%	1	0.09%
NW 77TH COURT						
NW 154TH ST	NW 149TH ST	2	1,110	1%	1	0.09%
FAIRWAY DRIVE						
MIAMI LAKES DR	MIAMI LAKEWAY N.	2	1,180	1%	1	0.08%

Capacities per Miami Lakes Concurrency Report :

TABLE 5 DUNNWOODY FOREST & DUNNWOODY LAKE ROADWAY LINK CONCURRENCY ANALYSIS - 2010 EXISTING AM PEAK HOUR									
Roadway From	To	2010			Committed Background Traffic	Total Traffic	Maximum v/c	Meets LOS Standard?	
		Number of Lanes	Capacity	Peak Hour Volume					
NW 154TH STREET	NW 87TH AVE	2	1,110	114	46	160	0.14	YES	
NW 89TH AVE	NW 83RD AVE	2	1,110	1,710	322	2,032	1.83	NO	
NW 87TH AVE	NW 82ND AVE	4	2,950	1,710	441	2,151	0.73	YES	
NW 83RD AVE	NW 79TH CT	4	2,950	2,906	441	3,347	1.13	NO	
NW 82ND AVE	NW 79th AVE	4	2,950	2,558	559	3,117	1.06	NO	
NW 79TH CT	NW 77TH COURT	4	2,950	2,880	678	3,558	1.21	NO	
NW 79TH AVE	SR 826	4	2,950	3,780	1,728	5,508	1.87	NO	
NW 77TH COURT									
NW 87TH AVENUE	SITE	2	1,110	577	656	1,233	1.11	NO	
NW 170TH ST	NW 154TH ST	0	0	N/A	N/A	N/A	N/A	N/A	
SITE	NW 147TH TER	4	2,950	958	598	1,556	0.53	YES	
NW 154TH ST	NW 138TH ST	4	2,950	1,876	598	2,474	0.84	YES	
NW 147TH TER									
NW 82ND AVENUE	NW 162ND ST	2	1,110	1,162	89	1,251	1.13	NO	
NW 170TH ST	NW 154TH ST	4	2,950	1,521	89	1,610	0.55	YES	
NW 162ND ST									
NW 170TH STREE	NW 82ND AVE	2	1,110	918	163	1,081	0.97	YES	
NW 87TH AVE									

Capacities per Miami Lakes Concurrency Report except for:



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TABLE 6

DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2030 W/O PROJECT AM PEAK HOUR

Roadway	From	To	2010		Committed Background Traffic	Historical Growth		Link Diversion	Total Background Traffic	Maximum v/c	Meets LOS Standard?	
			Number of Lanes	Capacity		Peak Hour Volume	Annual Rate					2030 Growth
NW 154TH STREET												
NW 89TH AVE		NW 87TH AVE	2	1,110	114	46	0.50%	126	0	172	0.15	YES
NW 87TH AVE		NW 83RD AVE	2	1,110	1,710	322	0.50%	1889	-378	1,833	1.65	NO
NW 83RD AVE		NW 82ND AVE	4	2,950	1,710	441	0.50%	1889	-378	1,952	0.66	YES
NW 82ND AVE		NW 79TH CT	4	2,950	2,906	441	0.50%	3211	-161	3,491	1.18	NO
NW 79TH CT		NW 79th AVE	4	2,950	2,558	559	0.50%	2826	-141	3,244	1.10	NO
NW 79TH AVE		NW 77TH COURT	4	2,950	2,880	678	0.50%	3182	0	3,860	1.31	NO
NW 77TH COURT		SR 826	4	2,950	3,780	1,728	0.50%	4177	0	5,905	2.00	NO
NW 87TH AVENUE												
NW 170TH ST		SITE	4	2,950	577	656	0.50%	638	507	1,801	0.61	YES
SITE		NW 154TH ST	4	2,950	1,016	656	0.50%	1123	507	2,286	0.77	YES
NW 154TH ST		NW 147TH TER	4	2,950	958	598	0.50%	1058	0	1,656	0.56	YES
NW 147TH TER		NW 138TH ST	4	2,950	1,876	598	0.50%	2073	0	2,671	0.91	YES
NW 82ND AVENUE												
NW 170TH ST		NW 162ND ST	2	1,110	1,162	89	0.50%	1284	-514	859	0.77	YES
NW 162ND ST		NW 154TH ST	4	2,950	1,521	89	0.50%	1681	-672	1,098	0.37	YES
NW 170TH STREE												
NW 87TH AVE		NW 82ND AVE	2	1,110	918	163	0.50%	1014	-254	924	0.83	YES

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA
Capacities per Miami Lakes Concurrency Report except for:

TABLE 7 DUNNWOODY FOREST & DUNNWOODY LAKE ROADWAY LINK CONCURRENCY ANALYSIS - 2030 TOTAL TRAFFIC AM PEAK HOUR															
Roadway	From	To	2010		Peak Hour Volume	Committed Background Traffic	Historical Growth		Link Diversion	Total Background Traffic	Dunnwoody Forest Traffic	Dunnwoody Lake Traffic	Total 2030 Traffic	Maximum v/c	Meets LOS Standard?
			Number of Lanes	Capacity			Annual Rate	2030 Growth							
NW 154TH STREET															
NW 89TH AVE		NW 87TH AVE	2	1,110	114	46	0.50%	126	0	172	7	142	321	0.29	YES
NW 87TH AVE		NW 83RD AVE	2	1,110	1,710	322	0.50%	1889	-378	1,833	35	123	1,991	1.79	NO
NW 83RD AVE		NW 82ND AVE	4	2,950	1,710	441	0.50%	1889	-378	1,952	23	118	2,093	0.71	YES
NW 82ND AVE		NW 79TH CT	4	2,950	2,906	441	0.50%	3211	-161	3,491	17	85	3,593	1.22	NO
NW 79TH CT		NW 79th AVE	4	2,950	2,558	559	0.50%	2826	-141	3,244	14	66	3,324	1.13	NO
NW 79TH AVE		NW 77TH COURT	4	2,950	2,880	678	0.50%	3182	0	3,860	10	45	3,915	1.33	NO
NW 77TH COURT		SR 826	4	2,950	3,780	1,728	0.50%	4177	0	5,905	9	40	5,954	2.02	NO
NW 87TH AVENUE															
NW 170TH ST		SITE	4	2,950	577	656	0.50%	638	507	1,801	21	115	1,937	0.66	YES
SITE		NW 154TH ST	4	2,950	1,016	656	0.50%	1123	507	2,286	21	115	2,422	0.82	YES
NW 154TH ST		NW 147TH TER	4	2,950	958	598	0.50%	1058	0	1,656	26	134	1,816	0.62	YES
NW 147TH TER		NW 138TH ST	4	2,950	1,876	598	0.50%	2073	0	2,671	24	107	2,802	0.95	YES
NW 82ND AVENUE															
NW 170TH ST		NW 162ND ST	2	1,110	1,162	89	0.50%	1284	-514	859	1	8	868	0.78	YES
NW 162ND ST		NW 154TH ST	4	2,950	1,521	89	0.50%	1681	-672	1,098	2	19	1,119	0.38	YES
NW 170TH STREE		NW 82ND AVE	2	1,110	918	163	0.50%	1014	-254	924	2	19	945	0.85	YES

Note: NW 87TH Avenue volume from 2007 Aerial Grid Analysis by KHA

Capacities per Miami Lakes Concurrency Report excerpt for:

TABLE 8 DUNNWOODY FOREST & DUNNWOODY LAKE ROADWAY LINK CONCURRENCY ANALYSIS - 2010 EXISTING PM PEAK HOUR									
Roadway	From	To	2010			Committed Background Traffic	Total Traffic	Maximum v/c	Meets LOS Standard?
			Number of Lanes	Capacity	Peak Hour Volume				
NW 154TH STREET	NW 87TH AVE	NW 87TH AVE	2	1,110	238	48	286	0.26	YES
NW 89TH AVE	NW 83RD AVE	NW 83RD AVE	2	1,110	1,838	292	2,130	1.92	NO
NW 87TH AVE	NW 83RD AVE	NW 82ND AVE	4	2,950	1,838	408	2,246	0.76	YES
NW 83RD AVE	NW 82ND AVE	NW 79TH CT	4	2,950	3,468	408	3,876	1.31	NO
NW 82ND AVE	NW 79TH AVE	NW 79th AVE	4	2,950	2,554	540	3,094	1.05	NO
NW 79TH CT	NW 77TH COURT	NW 77TH COURT	4	2,950	3,312	710	4,022	1.36	NO
NW 79TH AVE	SR 826	SR 826	4	2,950	4,207	1,718	5,925	2.01	NO
NW 77TH COURT									
NW 87TH AVENUE									
NW 170TH ST	SITE	SITE	2	1,110	561	515	1,076	0.97	YES
NW 154TH ST	NW 154TH ST	NW 154TH ST	0	0	N/A	N/A	N/A	N/A	N/A
SITE	NW 147TH TER	NW 147TH TER	4	2,950	1,292	479	1,771	0.60	YES
NW 154TH ST	NW 138TH ST	NW 138TH ST	4	2,950	2,187	479	2,666	0.90	YES
NW 147TH TER									
NW 82ND AVENUE									
NW 170TH ST	NW 162ND ST	NW 162ND ST	2	1,110	1,340	69	1,409	1.27	NO
NW 162ND ST	NW 154TH ST	NW 154TH ST	4	2,950	1,718	69	1,787	0.61	YES
NW 170TH STREE									
NW 87TH AVE	NW 82ND AVE	NW 82ND AVE	2	1,110	906	51	957	0.86	YES

Capacities per Miami Lakes Concurrency Report except for:

TABLE 9

**DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2030 W/O PROJECT PM PEAK HOUR**

Roadway	From	To	2010		Peak Hour Volume	Historical Growth		Total Background Traffic	Link Diversion	Maximum v/c	Meets LOS Standard?	
			Number of Lanes	Capacity		Committed Background Traffic	Annual Rate					2030 Growth
NW 154TH STREET												
NW 80TH AVE		NW 87TH AVE	2	1,110	238	48	0.50%	263	0	0.28	YES	
NW 87TH AVE		NW 83RD AVE	2	1,110	1,838	292	0.50%	2031	-406	1.73	NO	
NW 83RD AVE		NW 82ND AVE	4	2,950	1,838	408	0.50%	2031	-368	0.70	YES	
NW 82ND AVE		NW 79TH CT	4	2,950	3,468	408	0.50%	3832	-192	1.37	NO	
NW 79TH CT		NW 79th AVE	4	2,950	2,554	540	0.50%	2822	-141	1.09	NO	
NW 79TH AVE		NW 77TH COURT	4	2,950	3,312	710	0.50%	3659	0	1.48	NO	
NW 77TH COURT		SR 826	4	2,950	4,207	1,718	0.50%	4648	0	2.16	NO	
NW 87TH AVENUE												
NW 170TH ST		SITE	4	2,950	561	515	0.50%	620	573	0.58	YES	
SITE		NW 154TH ST	4	2,950	1,194	515	0.50%	1319	573	0.82	YES	
NW 154TH ST		NW 147TH TER	4	2,950	1,292	479	0.50%	1428	0	0.65	YES	
NW 147TH TER		NW 138TH ST	4	2,950	2,187	479	0.50%	2416	0	0.98	YES	
NW 82ND AVENUE												
NW 170TH ST		NW 162ND ST	2	1,110	1,340	69	0.50%	1481	-592	0.86	YES	
NW 162ND ST		NW 154TH ST	4	2,950	1,718	69	0.50%	1898	-759	0.41	YES	
NW 170TH STREE												
NW 87TH AVE		NW 82ND AVE	2	1,110	906	51	0.50%	1001	-250	0.72	YES	

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

Capacities per Miami Lakes Concurrency Report except for:

TABLE 10 DUNNWOODY FOREST & DUNNWOODY LAKE ROADWAY LINK CONCURRENCE ANALYSIS - 2030 TOTAL TRAFFIC PM PEAK HOUR															
Roadway	From	To	2010		Peak Hour Volume	Historical Growth		Total Background Traffic	Link Diversion	Dunnwoody Forest Traffic	Dunnwoody Lake Traffic	Total 2030 Traffic	Maximum v/c	Meets LOS Standard?	
			Number of Lanes	Capacity		Committed Background Traffic	Annual Rate								2030 Growth
NW 154TH STREET															
NW 89TH AVE	NW 87TH AVE		2	1,110	238	48	0.50%	311	0	9	238	558	0.50	YES	
NW 87TH AVE	NW 83RD AVE		2	1,110	1,838	292	0.50%	1,917	-406	45	219	2,181	1.96	NO	
NW 83RD AVE	NW 82ND AVE		4	2,950	1,838	408	0.50%	2,071	-368	30	197	2,298	0.78	YES	
NW 82ND AVE	NW 79TH CT		4	2,950	3,468	408	0.50%	4,048	-192	23	132	4,203	1.42	NO	
NW 79TH CT	NW 79th AVE		4	2,950	2,554	540	0.50%	3,221	-141	18	96	3,335	1.13	NO	
NW 79TH AVE	NW 77TH COURT		4	2,950	3,312	710	0.50%	4,369	0	14	57	4,440	1.51	NO	
NW 77TH COURT	SR 826		4	2,950	4,207	1,718	0.50%	6,366	0	12	52	6,430	2.18	NO	
NW 87TH AVENUE															
NW 170TH ST	SITE		4	2,950	561	515	0.50%	1,708	573	27	212	1,947	0.66	YES	
SITE	NW 154TH ST		4	2,950	1,194	515	0.50%	2,407	573	27	212	2,646	0.90	YES	
NW 154TH ST	NW 147TH TER		4	2,950	1,292	479	0.50%	1,907	0	33	230	2,170	0.74	YES	
NW 147TH TER	NW 138TH ST		4	2,950	2,187	479	0.50%	2,895	0	32	136	3,063	1.04	NO	
NW 82ND AVENUE															
NW 170TH ST	NW 162ND ST		2	1,110	1,340	69	0.50%	957	-592	1	25	983	0.89	YES	
NW 162ND ST	NW 154TH ST		4	2,950	1,718	69	0.50%	1,208	-759	3	52	1,263	0.43	YES	
NW 170TH STREE															
NW 87TH AVE	NW 82ND AVE		2	1,110	906	51	0.50%	802	-250	3	52	857	0.77	YES	

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA
Capacities per Miami Lakes Concurrence Report except for:

TABLE 11 Existing Total Traffic - AM Peak Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS	Approach LOS			
			NB	SB	EB	WB
NW 154TH ST & NW 79TH AVE	Signalized	D	D	F	E	C
NW 154TH ST & NW 82ND AVE	Signalized	F	F	F	F	F
NW 154TH ST & NW 87TH AVE	Signalized	B	B		A	B
NW 170TH ST & NW 82ND AVE	Signalized	D	C	C	C	F
NW 146TH ST & NW 87TH AVE	Signalized	A	A	A	B	
INDUSTRIAL WAY & 87TH AVE	Signalized	B	A	A		B
NW 162ND ST & NW 82ND AVE	Signalized	A	A	A	B	

TABLE 12 Existing Total Traffic - PM Peak Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS	Approach LOS			
			NB	SB	EB	WB
NW 154TH ST & NW 79TH AVE	Signalized	C	C	D	B	C
NW 154TH ST & NW 82ND AVE	Signalized	F	F	E	E	F
NW 154TH ST & NW 87TH AVE	Signalized	C	B		A	C
NW 170TH ST & NW 82ND AVE	Signalized	C	C	C	C	D
NW 146TH ST & NW 87TH AVE	Signalized	A	A	A	B	
INDUSTRIAL WAY & 87TH AVE	Signalized	B	B	A		C
NW 162ND ST & NW 82ND AVE	Signalized	A	A	A	B	

TABLE 13 2030 Total Traffic - AM Peak Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS	Approach LOS			
			NB	SB	EB	WB
NW 154TH ST & NW 79TH AVE	Signalized	D	D	F	D	C
NW 154TH ST & NW 82ND AVE	Signalized	E	F	D	E	E
NW 154TH ST & NW 87TH AVE	Signalized	D	D	D	E	E
NW 170TH ST & NW 87TH AVE	Signalized	C	C	C	D	C
NW 170TH ST & NW 82ND AVE	Signalized	D	C	C	F	E
NW 146TH ST & NW 87TH AVE	Signalized	A	A	A	C	
INDUSTRIAL WAY & 87TH AVE	Signalized	B	B	B		E
NW 162ND ST & NW 82ND AVE	Signalized	B	B	C	B	

TABLE 14 2030 Total Traffic - PM Peak Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS	Approach LOS			
			NB	SB	EB	WB
NW 154TH ST & NW 79TH AVE	Signalized	E	C	F	F	B
NW 154TH ST & NW 82ND AVE	Signalized	F	F	E	E	F
NW 154TH ST & NW 87TH AVE	Signalized	C	C	C	D	C
NW 170TH ST & NW 87TH AVE	Signalized	C	C	B	C	E
NW 170TH ST & NW 82ND AVE	Signalized	D	C	C	E	D
NW 146TH ST & NW 87TH AVE	Signalized	A	A	B	B	
INDUSTRIAL WAY & 87TH AVE	Signalized	E	E	B		F
NW 162ND ST & NW 82ND AVE	Signalized	A	A	B	A	

TABLE 15 2030 Total Traffic - AM Peak W/Improvements Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS	Approach LOS			
			NB	SB	EB	WB
NW 154TH ST & NW 79TH AVE	Signalized	C	C	D	C	C
NW 154TH ST & NW 82ND AVE	Signalized	D	E	D	C	C
NW 154TH ST & NW 87TH AVE	Signalized	D	D	D	E	D
NW 170TH ST & NW 87TH AVE	Signalized	C	C	C	D	C
NW 170TH ST & NW 82ND AVE	Signalized	D	C	D	D	D
NW 146TH ST & NW 87TH AVE	Signalized	A	A	A	C	
INDUSTRIAL WAY & 87TH AVE	Signalized	B	A	A		D
NW 162ND ST & NW 82ND AVE	Signalized	B	B	C	B	

TABLE 16 2030 Total Traffic - PM Peak W/Improvements Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS	Approach LOS			
			NB	SB	EB	WB
NW 154TH ST & NW 79TH AVE	Signalized	D	C	D	E	B
NW 154TH ST & NW 82ND AVE	Signalized	D	F	D	D	D
NW 154TH ST & NW 87TH AVE	Signalized	C	C	C	D	C
NW 170TH ST & NW 87TH AVE	Signalized	C	C	B	C	E
NW 170TH ST & NW 82ND AVE	Signalized	D	C	C	E	D
NW 146TH ST & NW 87TH AVE	Signalized	A	A	B	B	
INDUSTRIAL WAY & 87TH AVE	Signalized	C	C	C		D
NW 162ND ST & NW 82ND AVE	Signalized	A	A	B	A	

TABLE 17

DUNNWOODY FOREST & DUNNWOODY LAKE

ROADWAY LINK CONCURRENCY ANALYSIS - 2030 TOTAL TRAFFIC AM PEAK HOUR WITH IMPROVEMENTS & ARTPLAN ANALYSIS

Roadway	From	To	2010		Historical Growth		Link Diversion	Total Background Traffic	Dunnwoody Forest Traffic	Dunnwoody Lake Traffic	Total 2030 Traffic	Maximum v/c	Meets LOS Standard?
			Number of Lanes	Capacity	Peak Hour Volume	Committed Background Traffic							
NW 154TH STREET													
NW 89TH AVE	NW 87TH AVE		2	1,110	114	46	0	172	7	142	321	0.29	YES
NW 87TH AVE	NW 83RD AVE		4	2,950	1,710	322	-378	1,833	35	723	1,991	0.67	YES
NW 83RD AVE	NW 82ND AVE		4	2,950	1,710	441	-378	1,952	23	118	2,093	0.71	YES
* NW 82ND AVE	NW 79TH CT		4	4,640	2,906	441	-161	3,491	17	85	3,593	0.77	YES
* NW 79TH CT	NW 79th AVE		4	4,640	2,558	559	-141	3,244	14	66	3,324	0.72	YES
* NW 79TH AVE	NW 77TH COURT		4	4,640	2,880	678	0	3,860	10	45	3,915	0.84	YES
* NW 77TH COURT	SR 826		4	7,020	3,780	1,728	0	5,905	9	40	5,954	0.85	YES
NW 87TH AVENUE													
NW 170TH ST	SITE		4	2,950	577	656	507	1,801	21	115	1,937	0.66	YES
SITE	NW 154TH ST		4	2,950	1,016	656	507	2,286	21	115	2,422	0.82	YES
NW 154TH ST	NW 147TH TER		4	2,950	958	598	0	1,656	26	134	1,816	0.62	YES
* NW 147TH TER	NW 138TH ST		4	3,530	1,876	598	0	2,671	24	107	2,802	0.79	YES
NW 82ND AVENUE													
NW 170TH ST	NW 162ND ST		2	1,110	1,162	89	-514	859	1	8	868	0.78	YES
NW 162ND ST	NW 154TH ST		4	2,950	1,521	89	-672	1,098	2	19	1,119	0.38	YES
NW 170TH STREE													
NW 87TH AVE	NW 82ND AVE		2	1,110	918	163	-254	924	2	19	945	0.85	YES

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

ARTPLAN USED TO DETERMINE CAPACITY



TABLE 18

DUNNWOODY FOREST & DUNNWOODY LAKE

ROADWAY LINK CONCURRENCY ANALYSIS - 2030 TOTAL TRAFFIC PM PEAK HOUR WITH IMPROVEMENTS & ARTPLAN ANALYSIS

Roadway	From	To	2010		Historical Growth		Link Division	Total Background Traffic	Dunnwoody Forest Traffic	Dunnwoody Lake Traffic	Total 2030 Traffic	Maximum v/c	Meets LOS Standard?
			Number of Lanes	Capacity	Peak Hour Volume	Committed Background Traffic							
NW 154TH STREET													
NW 89TH AVE		NW 87TH AVE	2	1,110	238	48	0	311	9	238	558	0.50	YES
NW 87TH AVE		NW 83RD AVE	4	2,950	1,838	292	-406	1,917	45	219	2,181	0.74	YES
NW 83RD AVE		NW 82ND AVE	4	2,950	1,838	408	-368	2,071	30	197	2,298	0.78	YES
NW 82ND AVE		NW 79TH CT	4	4,640	3,468	408	-192	4,048	23	132	4,203	0.91	YES
NW 79TH CT		NW 79th AVE	4	4,640	2,554	540	-141	3,221	18	96	3,335	0.72	YES
NW 79TH AVE		NW 77TH COURT	4	4,640	3,312	710	0	4,369	14	57	4,440	0.96	YES
NW 77TH COURT		SR 826	4	7,020	4,207	1,718	0	6,366	12	52	6,430	0.92	YES
NW 87TH AVENUE													
NW 170TH ST		SITE	4	2,950	561	515	573	1,708	27	212	1,947	0.66	YES
SITE		NW 154TH ST	4	2,950	1,194	515	573	2,407	27	212	2,646	0.90	YES
NW 154TH ST		NW 147TH TER	4	2,950	1,292	479	0	1,907	33	230	2,170	0.74	YES
NW 147TH TER		NW 138TH ST	4	3,530	2,187	479	0	2,895	32	136	3,063	0.87	YES
NW 82ND AVENUE													
NW 170TH ST		NW 162ND ST	2	1,110	1,340	69	-592	957	1	25	983	0.89	YES
NW 162ND ST		NW 154TH ST	4	2,950	1,718	69	-759	1,208	3	52	1,263	0.43	YES
NW 170TH STREE													
NW 87TH AVE		NW 82ND AVE	2	1,110	906	51	-250	802	3	52	857	0.77	YES

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

ARTPLAN USED TO DETERMINE CAPACITY



APPENDIX A

PRE-APPLICATION SCOPE & RESPONSES TO COMMENTS



Proposed Scope

TRIP GENERATION – Trip generation will be calculated from ITE Trip Generation Handbook. Appropriate internal capture and pass-by rates will be calculated based on ITE methodology. Attached to this scope is the draft trip generation calculation for the proposed development.

RADIUS OF INFLUENCE – Radius of influence will be determined by the “net” trip generation of the proposed development as per Table 1 in Article 10 – Concurrency Regulations. For this proposed project, the radius of influence is assumed to be 3 miles.

TRIP ASSIGNMENT – Trip assignment will be based on Miami-Dade cardinal distribution with adjustments based on existing and future travel patterns within the study area.

DIVERSION OF TRAFFIC – As this project will include the construction of a new roadway segment; a diversion of future traffic to/from parallel facilities is anticipated. This diversion will be based on a FSUTMS modeling run. Final details of the modeling effort to be determined and agreed upon at a later date.

LINK AND INTERSECTION ANALYSIS – Analysis will be performed as outlined in Article 10 – Concurrency Regulations. Links within the study area where project traffic is greater than 1% of the adopted level of service volume will be analyzed. In addition, analysis will be performed on links that provide direct access to the site and have an impact of at least 2% of the adopted level of service threshold. Counts utilized in this analysis must be from January 2009 or later.

ALTERNATE LEVEL OF SERVICE – Alternate level of service thresholds may be utilized in this analysis provided they utilize the latest HCM or latest FDOT Quality/Level of Service Handbook.

If you have any questions or need any additional information, please do not hesitate to call.

JMD ENGINEERING, INC.

John M. Donaldson, P.E.

**TABLE 1
DUNN PROPERTY
TRIP GENERATION**

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Proposed Site Traffic								
General Commercial Retail	100,000 S.F.	6,817	154	94	60	636	305	331
Residential Condominium/Townhouse	254 DU	1,447	109	19	90	129	81	48
Single-Family Detached Housing	255 DU	2,460	188	47	141	249	167	82
		10,724	451	160	291	1,014	553	461
Internal Capture								
General Commercial Retail		625	0	0	0	67	28	39
Residential Condominium/Townhouse		312	0	0	0	33	19	14
Single-Family Detached Housing		313	0	0	0	34	20	14
Net New External Traffic		1,250	0	0	0	134	67	67
Pass-By Capture								
Retail Pass-By Trips	39.00%	2,415	60	37	23	222	108	114
Net New External Traffic		7,059	391	123	268	658	378	280
Driveway Volumes		10,724	451	160	291	1,014	553	461

Note: Trip generation was calculated using the following data:

Daily

Single-Family Detached Housing [ITE 210] = $\ln(T) = 0.92\ln(X) + 2.71$
 Residential Condominium/Townhouse [ITE 230] = $\ln(T) = 0.87\ln(X) + 2.46$
 General Commercial Retail [ITE 830] = $\ln(T) = 0.77 * \ln(X) + 3.65$

AM Peak

Single-Family Detached Housing [ITE 210] = $T = 0.70(X) + 9.43$ (25% in, 75% out)
 Residential Condominium/Townhouse [ITE 230] = $\ln(T) = 0.80\ln(X) + 0.26$ (17% in, 83% out)
 General Commercial Retail [ITE 830] = $\ln(T) = 0.59 * \ln(X) + 2.32$

PM Peak

Single-Family Detached Housing [ITE 210] = $\ln(T) = 0.90\ln(X) + 0.53$ (63% in, 37% out)
 Residential Condominium/Townhouse [ITE 230] = $\ln(T) = 0.82\ln(X) + 0.32$ (67% in, 33% out)
 General Commercial Retail [ITE 830] = $\ln(T) = 0.67 * \ln(X) + 3.37$

c:\documents and settings\johnd\my documents\jmd_2009\2010 projects\bm-10-07\051010_trip_list.xls\trip_generation



© 2010, JMD Engineering, Inc.

**TABLE 2
DUNN
ROADWAY LINK PROJECT SIGNIFICANCE**

Roadway		2010		Project Traffic				Significance
		Number of Lanes	Capacity	Comm. Assignment	Peak Hour Volume	Res. Assignment	Peak Hour Volume	
From	To							
NW 154TH STREET								
1-75	SITE	2	1,110	5%	17	5%	16	2.97%
SITE	NW 87TH AVE	2	1,110	30%	104	45%	140	21.98%
NW 87TH AVE	NW 83RD AVE	2	1,110	30%	104	40%	124	20.54%
NW 83RD AVE	NW 82ND AVE	4	2,950	25%	87	35%	109	6.64%
NW 82ND AVE	NW 79TH AVE	4	2,950	15%	52	30%	93	4.92%
NW 79TH AVE	NW 77TH COURT	4	2,950	15%	52	25%	78	4.41%
NW 77TH COURT	SR 826	4	2,950	10%	35	25%	78	3.83%
SR 826	FAIRWAY DR	4	3,120	5%	17	5%	16	1.06%
FAIRWAY DR	NW 67TH AVE	4	3,120	5%	17	4%	12	0.93%
NW 67TH AVE	MIAMI LAKEWAY N	4	3,120	4%	14	3%	9	0.74%
NW 87TH AVENUE								
NW 170TH ST	SITE	4	2,950	25%	87	20%	62	5.05%
SITE	NW 154TH ST	4	2,950	25%	87	30%	93	6.10%
NW 154TH ST	NW 138TH ST	4	2,950	15%	52	25%	78	4.41%
NW 138TH ST	NW 147TH TER	4	2,950	10%	35	25%	78	3.83%
NW 82ND AVENUE								
NW 170TH ST	NW 162ND ST	2	1,110	3%	10	1%	3	1.17%
NW 162ND ST	NW 154TH ST	4	2,950	5%	17	3%	9	0.88%
NW 79TH AVENUE								
NW 167TH TER	NW 159TH TER	2	1,110	2%	7	1%	3	0.90%
NW 159TH TER	NW 154TH ST	2	1,110	2%	7	1%	3	0.90%
NW 77TH COURT								
NW 154TH ST	NW 149TH ST	2	1,110	1%	3	1%	3	0.54%
FAIRWAY DRIVE								
MIAMI LAKES DR	MIAMI LAKEWAY N.	2	1,180	1%	3	1%	3	0.51%

Table 7.2 Unconstrained Internal Capture Rates for Trip Destinations Within a Multi-Use Development

		WEEKDAY		
		MIDDAY PEAK HOUR	P.M. PEAK HOUR OF ADJACENT STREET TRAFFIC	DAILY
to OFFICE	from Office	6%	6%	2%
	from Retail	38%	31%	15%
	from Residential	0%	0%	N/A
to RETAIL	from Office	4%	2%	4%
	from Retail	31%	20%	28%
	from Residential	5%	9%	9%
to RESIDENTIAL	from Office	0%	2%	3%
	from Retail	37%	31%	33%
	from Residential	N/A	N/A	N/A

Caution: The estimated typical internal capture rates presented in this table rely directly on data collected at a limited number of multi-use sites in Florida. While ITE recognizes the limitations of these data, they represent the only known credible data on multi-use internal capture rates and are provided as illustrative of typical rates. *If local data on internal capture rates by paired land uses can be obtained, the local data may be given preference.*

N/A — Not Available; logic indicates there is some interaction between these two land uses; however, the limited data sample on which this table is based did not record any interaction.

**Table 7.1 Unconstrained Internal Capture Rates for Trip Origins
within a Multi-Use Development**

		WEEKDAY		
		MIDDAY PEAK HOUR	P.M. PEAK HOUR OF ADJACENT STREET TRAFFIC	DAILY
from OFFICE	to Office	2%	1%	2%
	to Retail	20%	23%	22%
	to Residential	0%	2%	2%
from RETAIL	to Office	3%	3%	3%
	to Retail	29%	20%	30%
	to Residential	7%	12%	11%
from RESIDENTIAL	to Office	N/A	N/A	N/A
	to Retail	34%	53%	38%
	to Residential	N/A	N/A	N/A

Caution: The estimated typical internal capture rates presented in this table rely directly on data collected at a limited number of multi-use sites in Florida. While ITE recognizes the limitations of these data, they represent the only known credible data on multi-use internal capture rates and are provided as illustrative of typical rates. *If local data on internal capture rates by paired land uses can be obtained, the local data may be given preference.*

N/A — Not Available; logic indicates there is some interaction between these two land uses; however, the limited data sample on which this table is based did not record any interaction.

Analyst JMD
Date 6/18/10

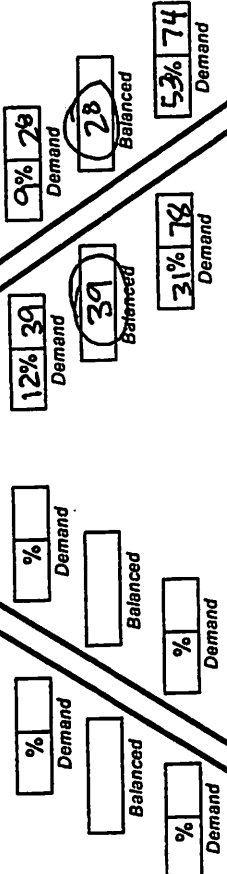
Name of Dvlpt DUNN
Time Period PM PEAK

$39 + 28 = 67$
 $67 / 1026 = 6.5\%$
 $\times 2$
13.0%

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

LAND USE A

ITE LU Code	830		
Size	100,000		
Enter	Total	Internal	External
284	312	28	284
285	324	39	285
569	636	67	569
%	100	10.5	89.5



LAND USE B

ITE LU Code	509 DU		
Size	100,000		
Enter	Total	Internal	External
251	251	39	212
139	139	28	111
290	290	67	323
%	100	17.1	82.9

LAND USE C

ITE LU Code	509 DU		
Size	100,000		
Enter	Total	Internal	External
251	251	39	212
139	139	28	111
290	290	67	323
%	100	17.1	82.9

Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	284	212		
Exit	285	111		
Total	569	323		
Single-Use Trip Gen. Est.				INTERNAL CAPTURE 13%

Source: Kaku Associates, Inc.

Name of Dvlpmt DUJ
 Time Period DAILY

**MULTI-USE DEVELOPMENT
 TRIP GENERATION
 AND INTERNAL CAPTURE SUMMARY**

Analyst JMD
 Date 6/18/10

LAND USE A 830
 ITE LU Code 830 Size 100,000

Total	Internal	External
Enter	3908	
Exit	3909	
Total	6817	
%		

Exit to External
 Enter from External

2816

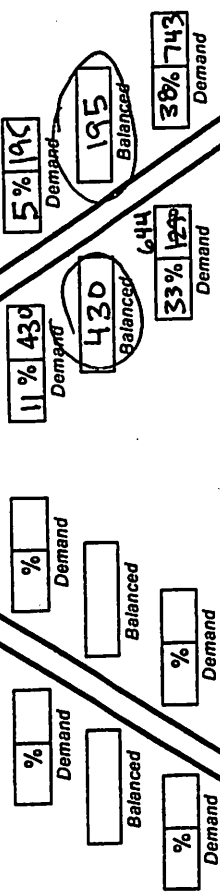
3

1921

430+195 = 625

625/10724 = 5.8%

x2
 11.6%



LAND USE B 509 DU
 ITE LU Code 509 DU Size 509 DU

Total	Internal	External
Enter	1953	
Exit	1954	
Total	3907	
%		

Enter from External
 Exit to External

LAND USE C 509 DU
 ITE LU Code 509 DU Size 509 DU

Total	Internal	External
Enter		
Exit		
Total		
%		

Enter from External
 Exit to External

Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter				
Exit				
Total				
Single-Use Trip Gen. Est.				
INTERNAL CAPTURE				11.6%

Source: Kaku Associates, Inc.

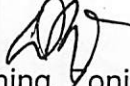
BM-0975



Town of Miami Lakes

MEMORANDUM

To: John Donaldson, P.E.
JMD Engineering, Inc.
12773 W. Forest Hill Blvd., Suite 1207
Wellington, FL 33414

From: David J. Ofstein 
Director of Planning, Zoning and Code Compliance

Date: October 27, 2010

Re: Transmittal of Dunnwoody Lakes traffic impact review report from
Kimley-Horn

Enclosed please find a copy of the Dunnwoody Lakes traffic impact review report from the Town's traffic engineering consultant, Kimley-Horn. The report is based on a review of the traffic study you provided, dated July 2010.

Please review and respond to the comments accordingly. Thank you in advance for your attention,



Kimley-Horn
and Associates, Inc.

Memorandum

■
Suite 109
5200 NW 33rd Avenue
Fort Lauderdale, Florida
33309-6343

To: Alex Rey
Town of Miami Lakes

Copies To: David Ofstein
Town of Miami Lakes

From: J. Suzanne Danielsen, P.E. *jsd.*
Florida License 42533

Date: October 27, 2010

Subject: **Traffic Impact Report Review**
Dunnwoody Lake

As requested, staff of Kimley-Horn and Associates, Inc., has reviewed a Traffic Impact Study prepared by JMD Engineering, Inc. specific to site plan approval of the proposed Dunnwoody Lake mixed-use development. The report dated July 2010 shows that 100,000 square feet of retail space, 256 single family detached homes, and 253 townhomes are proposed along the west side of NW 87th Avenue at NW 154th Street within municipal limits of the Town of Miami Lakes. The project site is currently vacant.

According to formulae published by the Institute of Transportation Engineers (ITE) in the report *Trip Generation*, 8th Edition the use proposed is expected to produce in excess of 10,000 vehicle trips per day with significant volumes during both AM and PM peak hours.

A site plan prepared by Robayna and Associates, Inc. in June 2002 shows the Dunnwoody Lake mixed-use development will have access as follows:

- NW 154th Street (residential) – full access,
- NW 154th Street (commercial) – full access,
- NW 87th Avenue (residential) – full access, and
- NW 87th Avenue (commercial) – full access (2 locations).

A report methodology was discussed during a conference call conducted Thursday June 17, 2010 between City staff and the Applicant. The following are our comments based upon review of the aforementioned report.



GENERAL

1. All Synchro files should be provided electronically.
2. Service/delivery access and circulation for the commercial property should be specifically addressed.
3. Documentation should be provided showing the Applicant has conceptual approval from governing agencies for all proposed access locations.
4. All tables and figures provided in the Appendix should be clearly referenced and/or described in the text portion of the report.

TRAFFIC COUNTS

5. As school was not in session during the week of June 28, 2010 when data collection occurred, an additional adjustment factor should be considered, validated, and applied to the traffic volume count data collected to reflect peak use of the roadways. Alternately, the Applicant may wish to recount key locations. Specific concern has been raised by Town staff regarding the Mater Lakes Charter School whose traffic study (prepared in October 2008) projected 30 percent of school-related traffic will travel south on NW 87th Avenue.
6. The peak season conversion factor specific to 'Miami-Dade North' should be incorporated rather than the 'Miami-Dade Expressway' factor used in the analysis provided. For the data collected in June this means a 1.05 peak season factor and for the data obtained from other sources (and collected in November 2009) this means a peak season factor of 1.07. The analysis should be revised accordingly.
7. Page 5. Count data specific to the intersection of NW 162nd Street at NW 82nd Avenue was not included in the Appendix. Please provide.
8. Page 5. 24-hour machine count data is included in the Appendix for NW 82nd Avenue north of NW 154th Street and NW 154th Street east of SR 826. These locations however are not mentioned on page 5. Please address the discrepancy.
9. Page 5. In addition, page 5 references a 24-hour machine count at NW 87th Avenue north of NW 170th Street. This data is not included in the Appendix. Please provide.



10. Pages 6–10. All tables included within the text portion of the report should be numbered and referenced within the Table of Contents.
11. Figure 2. Please show approximate locations of 24-hour machine counts.
12. Figure 2. The intersection of NW 170th Street and NW 82nd Avenue is signalized and should be indicated as such in Figure 2.
13. Page 10. Raw count data should be verified and a source reference provided. Calculations may be shown in footnotes if necessary.
14. Page 10. Traffic volume count data should be acknowledged and analyzed for NW 87th Avenue between the project site and NW 170th Street. While NW 87th Avenue does not currently exist between NW 154th Street and the project site, it is a fully constructed and operational 4-lane divided roadway adjacent to Royal Oaks Park and a 2-lane undivided facility between the park and NW 170th Street.
15. NW 87th Avenue is misrepresented in much of the existing (year 2010) analysis as a 4-lane roadway. Tables 3, 4, 5, and 8 for example should be revised. Table 8 should also include an appropriate traffic volume for NW 87th Avenue between the project site and NW 170th Street.
16. In all tables, figures and analyses, the correct classification and capacity of NW 82nd Avenue should be verified.

TRIP GENERATION

17. Table 1. The formula used for LUC 210 (Single-Family Detached Housing) should be compared against that provided within the ITE 8th Edition of the report *Trip Generation*. There appears to be an inconsistency.
18. Table 1. Entering and exiting percentages may not have been applied correctly to the LUC 230 (Residential Condominium/Townhouse) PM peak hour total. Please revise as necessary.
19. Table 1. Please verify the existence of LUC 830 (General Commercial Retail) within the 8th Edition of the report *Trip Generation* or provide necessary documentation if it is not published data.
20. Table 1. Provide internalization calculations incorporating corrected trip generation estimates.



21. Table 1. Provide documentation showing the pass-by capture estimate is less than 10 percent of the adjacent street traffic as recommended by the Florida Department of Transportation (FDOT) in the reference document *Transportation Impact Handbook*.

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

22. Provide Miami-Dade County's cardinal distribution information for Traffic Analysis Zone 11 as transmitted by County staff.
23. Figure 3. Please provide a discussion regarding the distribution north and south on NW 87th Avenue. Specifically, the estimate of 30% to the north seems high and the estimate of 35% to the south seems low.
24. Figure 3. Please provide a discussion regarding the distribution of 5% south on 82nd Avenue. The estimate seems high.
25. Figure 3. Please provide additional detail regarding the distribution of project traffic along NW 154th Street as it nears SR 826. It is unclear where all traffic is going particularly in the vicinity of NW 82nd Avenue, NW 79th Court and NW 79th Avenue.
26. Figure 4. Is the 10% shown within the neighborhood south of the project site gaining access from NW 154th Street or NW 87 Avenue? Additional detail on this figure would be appreciated.

TRAFFIC ANALYSIS

27. Please research FDOT count stations prior to settling on the 0.5% growth rate. Recent development projects within the area have documented higher historic growth.
28. The Applicant should contact Town staff for a list of approved but as yet unbuilt development as traffic from these land uses must be considered as background traffic volumes for the proposed project.
29. Confirmation should be provided that the amount of commercial square footage will not exceed that proposed within the report provided (100,000 square feet).

Additional review of the materials provided including the Dunwoody Forest report is not prudent at this time as the above concerns significantly affect development of traffic volumes and subsequent analyses in all three development scenarios (existing, future without project traffic and future with project traffic).



Kimley-Horn
and Associates, Inc.

Mr. Alex Rey, October 27, 2010 Page 5

The Applicant should provide an acceptable response to each concern expressed herein as well as an updated report. Additional review is required upon receipt of information requested.



JMD ENGINEERING, INC.

**To: Mr. David Ofstein
Director of Planning
Town of Miami, Lakes FL**

**From: John M. Donaldson, P.E., PTOE
JMD Engineering, Inc.**

Re: Dunnwoody Lake & Dunnwoody Forest

RESPONSE TO TRAFFIC CONSULTANT COMMENTS

1. All Synchro files should be provided electronically.

All Synchro files will be submitted with the revised report in electronic format.

2. Service/delivery access and circulation for the commercial property should be specifically addressed.

Service and delivery access and circulation will be addressed at the time of site plan approval.

3. Documentation should be provided showing the Applicant has conceptual approval from governing agencies for all proposed access locations.

Acknowledged. Please note that NW 87th Avenue has not yet been constructed and prior to site plan approval conceptual approval for all driveways will be obtained.

4. All tables and figures provided in the Appendix should be clearly referenced and/or described in the text portion of the report.

Report has been revised to accommodate this comment.

5. As school was not in session during the week of June 28, 2010 when data collection occurred, an additional adjustment factor should be considered, validated, and applied to the traffic volume count data collected to reflect peak use of the roadways. Alternately, the Applicant may wish to recount key locations. Specific concern has been raised by Town staff regarding the Mater Lakes Charter School whose traffic study (prepared in October 2008) projected 30 percent of school-related traffic will travel south on NW 87 Avenue.



Discussions with the Town of Miami Lakes staff and traffic consultant resulted in three intersections and two roadway segments being counted during the week of December 6, 2010 to be utilized in this analysis. Based on these counts, a 10% increase in AM traffic was observed. No PM adjustments were made as the PM peak occurs after school hours. Therefore, intersections previously counted in June 2010 counts were adjusted by 10% in the AM peak to reflect additional school traffic not present at the time of the counts..

The peak season conversion factor specific to 'Miami-Dade North' should be incorporated rather than the 'Miami-Dade Expressway' factor used in the analysis provided. For the data collected in June this means a 1.05 peak season factor and for the data obtained from other sources (and collected in November 2009) this means a peak season factor of 1.07. The analysis should be revised accordingly.

Analysis has been revised to reflect the peak season factors requested by the consultant.

6. Page 5. Count data specific to the intersection of NW 162ⁿ Street at NW 82^m Avenue was not included in the Appendix. Please provide.

Report has been revised to accommodate this comment.

7. Page 5. 24-hour machine count data is included in the Appendix for NW 82ⁿ Avenue north of NW 154th Street and NW 154th Street east of SR 826. These locations however are not mentioned on page 5. Please address the discrepancy.

Report has been revised to accommodate this comment.

8. Page 5. In addition, page 5 references a 24-hour machine count at NW 87th Avenue north of NW 170th Street. This data is not included in the Appendix. Please provide.

Report has been revised to accommodate this comment.

10. Pages 6 — 10. All tables included within the text portion of the report should be numbered and referenced within the Table of Contents.

Report has been revised to accommodate this comment.

11. Figure 2. Please show approximate locations of 24-hour machine counts.

Report has been revised to accommodate this comment..

12. Figure 2. The intersection of NW 170th Street and NW 82ⁿ Avenue is signalized and should be indicated as such in Figure 2.

Report has been revised to accommodate this comment.

13. Page 10. Raw count data should be verified and a source reference provided. Calculations may be shown in footnotes if necessary.

Report has been revised to accommodate this comment.



14. Page 10. Traffic volume count data should be acknowledged and analyzed for NW 87th Avenue between the project site and NW 170th Street. While NW 87th Avenue does not currently exist between NW 154th Street and the project site, it is a fully constructed and operational 4-lane divided roadway adjacent to Royal Oaks Park and a 2-lane undivided facility between the park and NW 170th Street.

Report has been revised to accommodate this comment.

15. NW 87th Avenue is misrepresented in much of the existing (year 2010) analysis as a 4-lane roadway. Tables 3, 4, 5, and 8 for example should be revised. Table 8 should also include an appropriate traffic volume for NW 87th Avenue between the project site and NW 170th Street.

Report has been revised to accommodate this comment.

16. In all tables, figures and analyses, the correct classification and capacity of NW 82nd Avenue should be verified.

Report has been revised to accommodate this comment.

17. Table 1. The formula used for LUC 210 (Single-Family Detached Housing) should be compared against that provided within the 1st Edition of the report *Trip Generation*. There appears to be an inconsistency.

Report has been revised to accommodate this comment.

18. Table 1. Entering and exiting percentages may not have been applied correctly to the LUC 230 (Residential Condominium/Townhouse) PM peak hour total. Please revise as necessary.

Report has been revised to accommodate this comment.

19. Table 1. Please verify the existence of LUC 830 (General Commercial Retail) within the 8th Edition of the report *Trip Generation* or provide necessary documentation if it is not published data.

Report has been revised to accommodate this comment.

20. Table 1. Provide internalization calculations incorporating corrected trip generation estimates.

Report has been revised to accommodate this comment.

21. Table 1. Provide documentation showing the pass-by capture estimate is less than 10 percent of the adjacent street traffic as recommended by the Florida Department of Transportation (FDOT) in the reference document *Transportation Impact Handbook*.

Report has been revised to accommodate this comment.

22. Provide Miami-Dade County's cardinal distribution information for Traffic Analysis Zone 11 as transmitted by County staff.

Report has been revised to accommodate this comment.

23. Figure 3. Please provide a discussion regarding the distribution north



and south on NW 87th Avenue. Specifically, the estimate of 30% to the north seems high and the estimate of 35% to the south seems low.

The site traffic for assignment purposes was separated between the commercial and residential components. Based on a physical review of the area, existing traffic count locations and existing and future developments (including Graham West) we feel the distribution assumed is reasonable.

- 24 Figure 3. Please provide additional detail regarding the distribution of project traffic along NW 154th Street as it nears SR 826. It is unclear where all traffic is going particularly in the vicinity of NW 82nd Avenue, NW 79th Court and NW 79th Avenue.

There are several opportunities for trip ends in this corridor by the 2030 build-out time frame and included in these are the approved developments provided by the Town of Miami Lakes that are a component of the 2030 background traffic. For the residential element, there is shopping and employment opportunities both existing and future. For the commercial element, there are several residential developments/neighborhoods that will potentially utilize the neighborhood shopping center proposed. We feel the assignment of trips in this corridor is reasonable and justified.

- 25 Figure 4. Is the 10% shown within the neighborhood south of the project site gaining access from NW 154th Street or NW 87th Avenue? Additional detail on this figure would be appreciated.

It is gaining access from 87th Avenue. Report has been revised to accommodate this comment.

- 26 Please research FDOT count stations prior to settling on the 0,5% growth rate. Recent development projects within the area have documented higher historic growth.

We determined the growth rate based on count stations within the Town of Miami Lakes as these reflect the actual growth on the links to be analyzed. There is a significant amount of approved development traffic that is also included in the analysis and therefore the 0.5% per year growth rate is reasonable.

- 27 The Applicant should contact Town staff for a list of approved but as yet un-built development as traffic from these land uses must be considered as background traffic volumes for the proposed project.

Staff was contacted and a list of approved un-built projects was provided and incorporated into the revised analysis being submitted as part of 2030 background traffic.

28. Confirmation should be provided that the amount of commercial square footage will not exceed that proposed within the report provided (100,000 square feet). herein as well as an updated report.

Per discussions with Town of Miami Lakes staff, 140,000 square feet of commercial is the maximum proposed for the site.



If you have any questions or need any additional information, please do not hesitate to call.

JMD ENGINEERING, INC.

A handwritten signature in black ink, appearing to read 'JMD', with a stylized flourish extending to the right.

John M. Donaldson, P.E.

TABLE APPENDIX

DUNNWOODY LAKE

PASS-BY CHECK FOR 10% FDOT STANDARD

Roadway	From	To	2010		Historical Growth		Link Diversion	Total Background Traffic	10% of Background Traffic	Dunnwoody Lake pass-by	Meets 10% Standard?		
			Number of Lanes	Capacity	Peak Hour Volume	Committed Background Traffic						Annual Rate	2030 Growth
NW 154TH STREET			2	1,100	1,838	292	0.50%	2031	-406	1,917	192	73	YES
NW 87TH AVE	NW 83RD AVE		4	2,950	1,838	408	0.50%	2031	-368	2,071	207	61	YES
NW 83RD AVE	NW 82ND AVE		4	2,950	3,468	408	0.50%	3832	-192	4,048	405	36	YES
NW 82ND AVE	NW 79TH CT		4	2,950	2,554	540	0.50%	2822	-141	3,221	322	24	YES
NW 79TH CT	NW 79th AVE		4	4,130	3,312	710	0.50%	3659	0	4,369	437	19	YES
NW 79TH AVE	NW 77TH COURT		4	4,130	4,207	1,718	0.50%	4648	0	6,366	637	12	YES
NW 77TH COURT	SR 826												
NW 87TH AVENUE			4	2,950	561	515	0.50%	620	573	1,708	171	73	YES
NW 170TH ST	SITE		4	2,950	1,194	515	0.50%	1319	573	2,407	241	73	YES
SITE	NW 154TH ST		4	2,950	1,292	479	0.50%	1428	0	1,907	191	48	YES
NW 154TH ST	NW 147TH TER		4	2,950	2,187	479	0.50%	2416	0	2,895	290	24	YES
NW 147TH TER	NW 138TH ST												
NW 82ND AVENUE			2	1,110	1,340	69	0.50%	1481	-592	957	96	12	YES
NW 170TH ST	NW 162ND ST		2	1,100	1,718	69	0.50%	1898	-759	1,208	121	24	YES
NW 162ND ST	NW 154TH ST												
NW 170TH STREE			2	1,100	906	51	0.50%	1001	-250	802	80	24	YES
NW 87TH AVE	NW 82ND AVE												

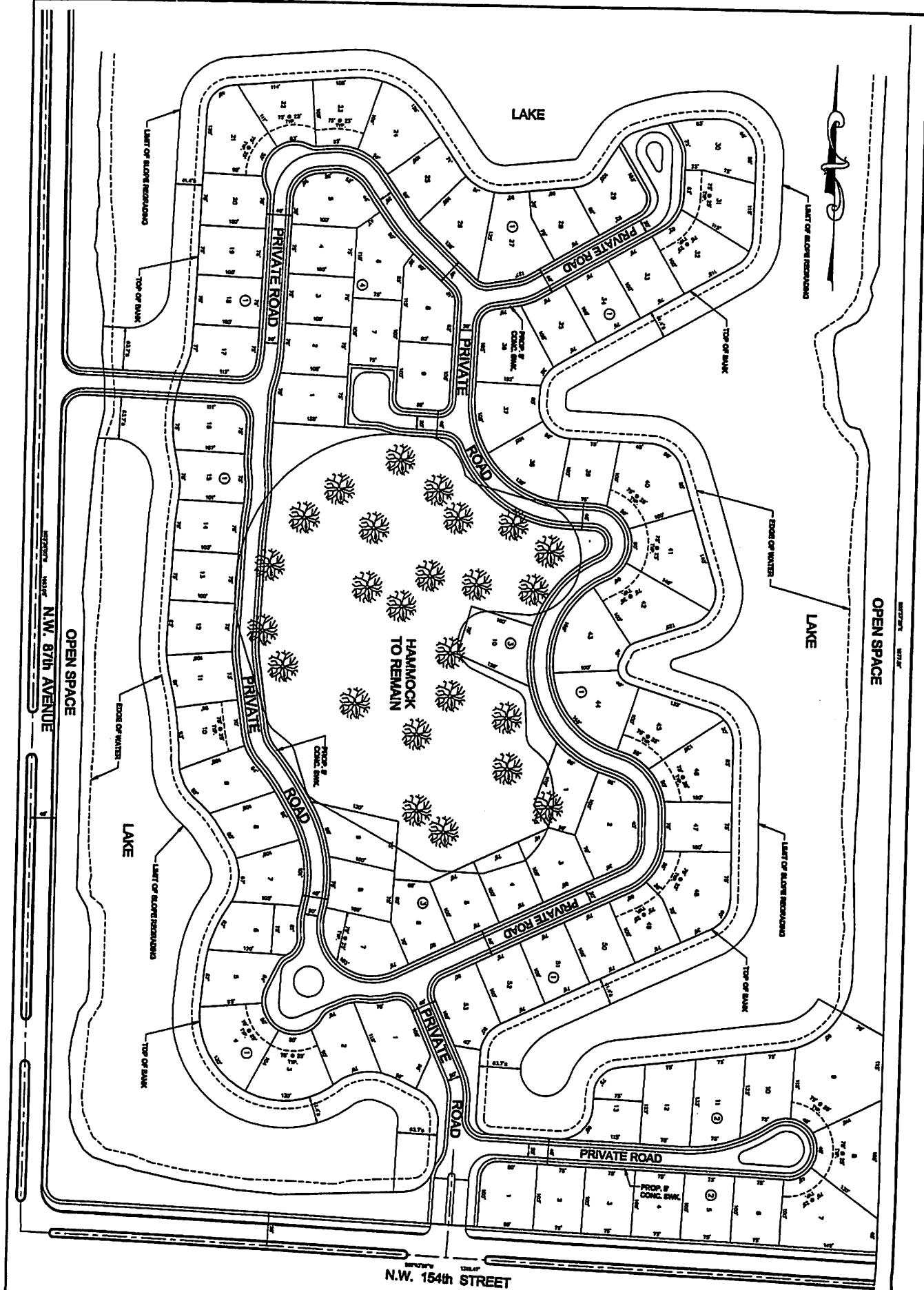
Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

Capacities per Miami Lakes Concurrency Report except for:

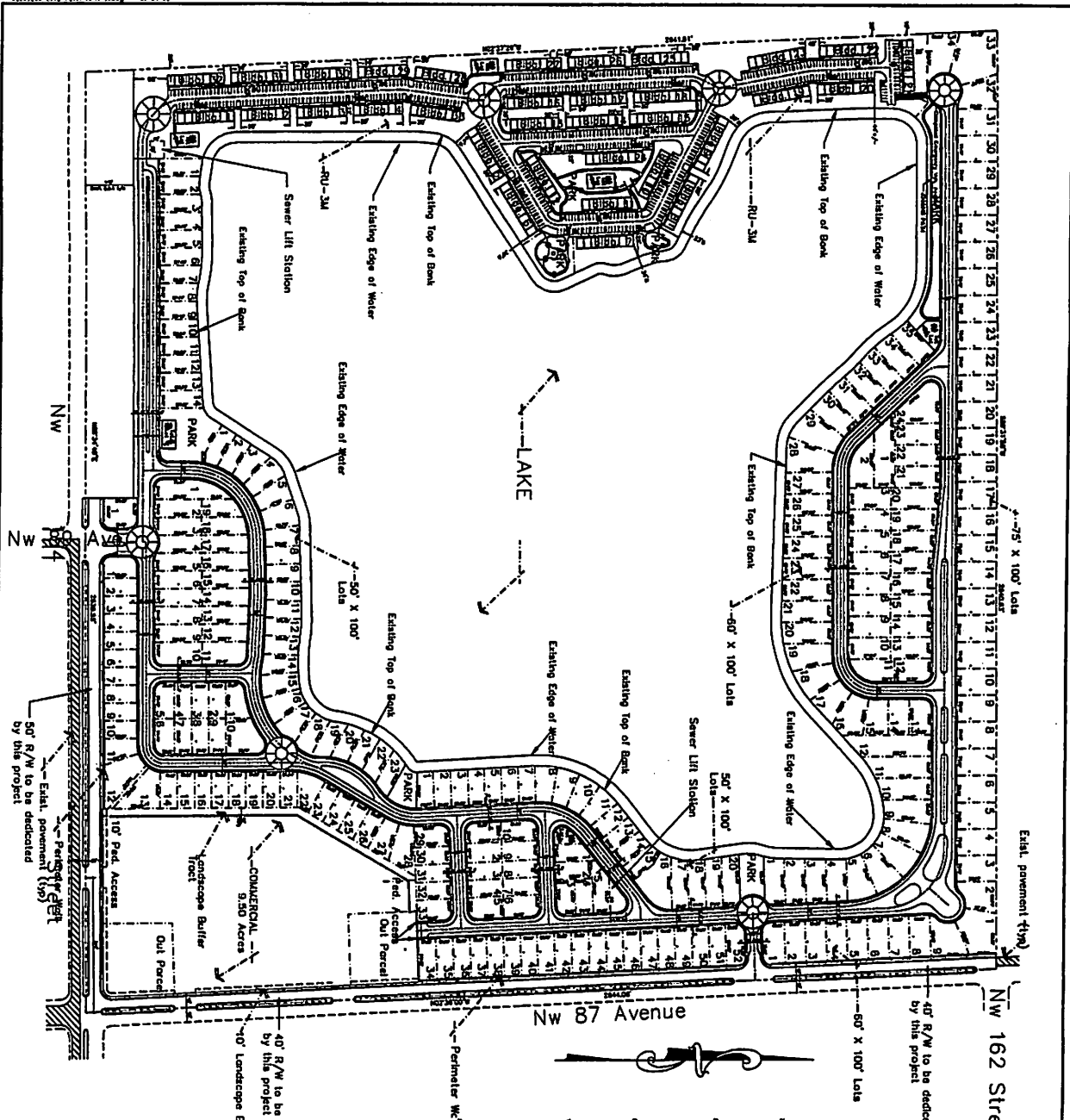
NW 154th St. from NW 79th Ave to SR 826 capacity derived from ARTPLAN

APPENDIX B

SITE PLAN AND PREVIOUS APPROVAL DATA



SHEET NO. S-2	DRAWING NAME SITE PLAN	PREPARED FOR LOWELL DUNN CO.	ROBYNA AND ASSOCIATES INC. ENGINEERS, PLANNERS, SURVEYORS 8625 W. 126th STREET MIAMI LAKES, FL 33154 PH: (305) 822-8214	RECORD RLR	COPY/OWNER	APPROVALS	DATE	REVISIONS	DATE
	PROJECT DUNWOODY FOREST			DRAWN RLW	CHECKED RLR	SCALE OF PLAN 1" = 60'	REVISIONS REVISIONS TO BE COMPLETED ADD REVISIONS FOR EASING SHOW LINES OF LAKE BLANK EASING REVISIONS TO BE COMPLETED	05-21-04 05-21-04 05-21-04	



LEGAL DESCRIPTION

SECTION 16 OF THE STATUTES OF THE DISTRICT OF COLUMBIA, D.C. CODE, TITLE 22, CHAPTER 100, SUBCHAPTER 100.01, ARTICLE 100.01, SECTION 100.01.01, AS AMENDED, IS HEREBY REFERRED TO AS "ARTICLE 100.01.01".

SECTION 16 OF THE STATUTES OF THE DISTRICT OF COLUMBIA, D.C. CODE, TITLE 22, CHAPTER 100, SUBCHAPTER 100.01, ARTICLE 100.01, SECTION 100.01.01, AS AMENDED, IS HEREBY REFERRED TO AS "ARTICLE 100.01.01".

SETBACK DATA

TYPE OF LOT	TOTAL AREA	MINIMUM SETBACK	MAXIMUM SETBACK
FRONT	121.00	12.00	12.00
REAR	121.00	12.00	12.00
SIDE	121.00	12.00	12.00
DIAGONAL	121.00	12.00	12.00

PROPERTY CALCULATIONS

PROPERTY	AREA	PERCENTAGE
TOTAL AREA	121.00	100%
MINIMUM SETBACK	12.00	9.9%
MAXIMUM SETBACK	12.00	9.9%
SIDE SETBACK	12.00	9.9%
DIAGONAL SETBACK	12.00	9.9%

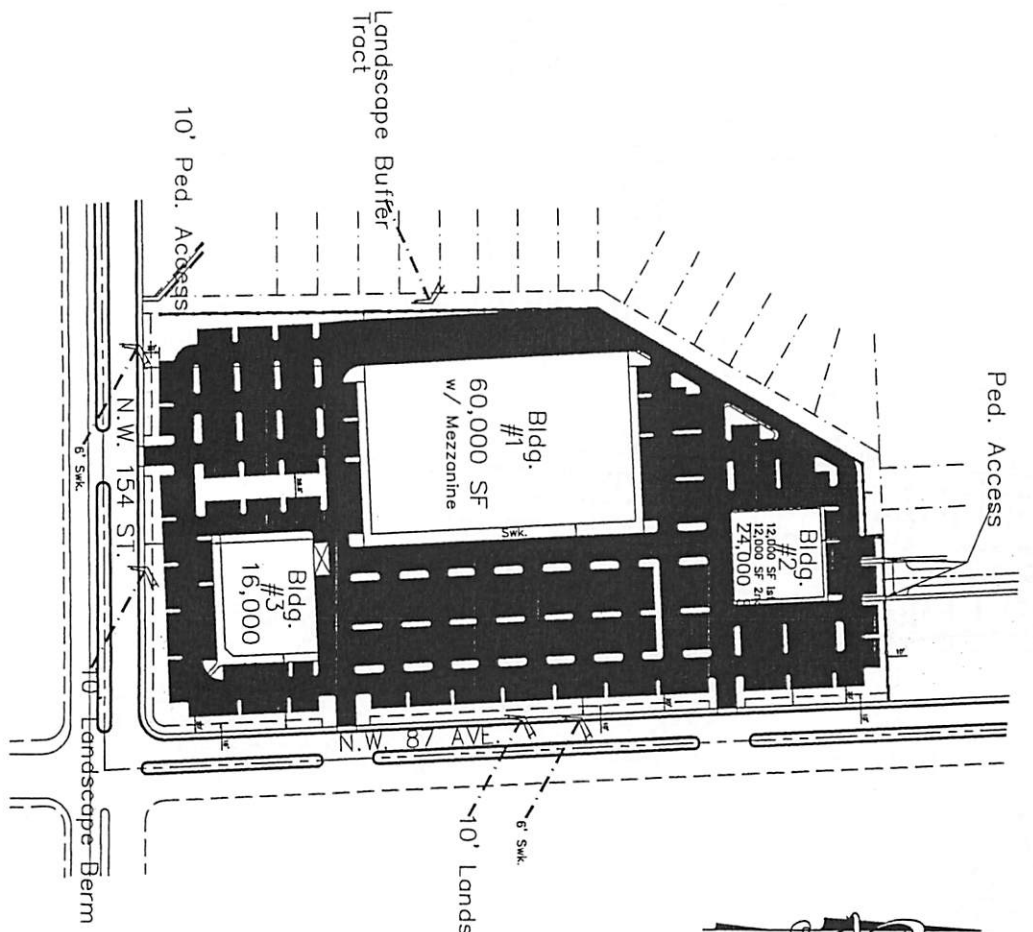
COMBINED CALCULATIONS

PROPERTY	AREA	PERCENTAGE
TOTAL AREA	121.00	100%
MINIMUM SETBACK	12.00	9.9%
MAXIMUM SETBACK	12.00	9.9%
SIDE SETBACK	12.00	9.9%
DIAGONAL SETBACK	12.00	9.9%

NET EXISTING AND PROPOSED

LOT	NET EXISTING	NET PROPOSED
1	121.00	121.00
2	121.00	121.00
3	121.00	121.00
4	121.00	121.00
5	121.00	121.00
6	121.00	121.00
7	121.00	121.00
8	121.00	121.00
9	121.00	121.00
10	121.00	121.00
11	121.00	121.00
12	121.00	121.00
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14	121.00	121.00
15	121.00	121.00
16	121.00	121.00
17	121.00	121.00
18	121.00	121.00
19	121.00	121.00
20	121.00	121.00
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22	121.00	121.00
23	121.00	121.00
24	121.00	121.00
25	121.00	121.00
26	121.00	121.00
27	121.00	121.00
28	121.00	121.00
29	121.00	121.00
30	121.00	121.00
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32	121.00	121.00
33	121.00	121.00
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87	121.00	121.00
88	121.00	121.00
89	121.00	121.00
90	121.00	121.00
91	121.00	121.00
92	121.00	121.00
93	121.00	121.00
94	121.00	121.00
95	121.00	121.00
96	121.00	121.00
97	121.00	121.00
98	121.00	121.00
99	121.00	121.00
100	121.00	121.00

<p>ROBAYNA AND ASSOCIATES INC. ARCHITECTS PLANNERS SURVEYORS 1423 NW 24th Ave Fort Lauderdale, FL 33304 TEL: (305) 447-1111 FAX: (305) 447-1112</p>	<p>SITE PLAN</p>	<p>DATE: APR 1992</p>	<p>SCALE: 1" = 120'</p>	<p>PROJECT: DUNNWOODY LAKE</p>	<p>CLIENT: BETTY & LOWELL DUNN</p>																																
	<p>REVISIONS:</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> <tr> <td>2</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> <tr> <td>3</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> <tr> <td>4</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> <tr> <td>5</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> <tr> <td>6</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> <tr> <td>7</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> <tr> <td>8</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> <tr> <td>9</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> <tr> <td>10</td> <td>04-15-92</td> <td>ISSUED FOR PERMITS</td> </tr> </tbody> </table>	NO.	DATE	DESCRIPTION	1	04-15-92	ISSUED FOR PERMITS	2	04-15-92	ISSUED FOR PERMITS	3	04-15-92	ISSUED FOR PERMITS	4	04-15-92	ISSUED FOR PERMITS	5	04-15-92	ISSUED FOR PERMITS	6	04-15-92	ISSUED FOR PERMITS	7	04-15-92	ISSUED FOR PERMITS	8	04-15-92	ISSUED FOR PERMITS	9	04-15-92	ISSUED FOR PERMITS	10	04-15-92	ISSUED FOR PERMITS	<p>DATE: APR 1992</p>	<p>SCALE: 1" = 120'</p>	<p>PROJECT: DUNNWOODY LAKE</p>
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10' Landscape E

DATA

PROPOSED ZONING BU-1A

AREAS	NET SITE AREA	TOTAL BUILDING AREA	PAVEMENT AREA	SIDEWALKS	LANDSCAPE AREA	TOTAL FLOOR AREA	PARKING PROVIDED	HANDICAP SPACES PROVIDED	REQUIRED/ALLOWED	PROVIDED (MIN)	REQUIRED/ALLOWED	PROVIDED
	413,917 SF	48,800 SF	23,750 SF	19,348 SF	68,738 SF	100,000 SF	100,000 SF / 250 SF/SP	514 SPACES	100.00%	20 FEET	20 FEET	20 FEET
	2.02 AC.	2.12 AC.	0.44 AC.	1.58 AC.	16.61%	0.24	400 SPACES	16 SPACES	21.26%	27.6 FEET	27.6 FEET	27.6 FEET
	1.58 AC.	1.58 AC.	1.58 AC.	1.58 AC.	16.61%	0.51	123 SPACES	16 SPACES	4.68%	15 FEET	15 FEET	15 FEET
	1.58 AC.	1.58 AC.	1.58 AC.	1.58 AC.	16.61%	0.51	16 SPACES	16 SPACES	15.5%	33 FEET	33 FEET	33 FEET (STORMS)

LANDSCAPE BUFFERS

AN ADDITIONAL 10-FOOT LANDSCAPE BUFFER IS PROVIDED BETWEEN RESIDENTIAL AREA AND THE REAR OF THE BUILDING PARCEL (AS SHOWN). AN ADDITIONAL 10' OF LANDSCAPING NOTES: 1-USES PERMITTED AS PER RESTRICTIVE COVENANT

PREPARED BY: BETTY & LOWELL DUNN	DRAWN BY: S-5	CHECKED BY: RLW	DATE: APR 1982	SCALE: 1" = 80'	PROJECT NO.: 214	SHEET NO.: 1	TOTAL SHEETS: 1
COMMERCIAL TRACT SITE PLAN DUNNWOODY LAKE		ROBAYNA AND ASSOCIATES INC. ENGINEERS, PLANNERS, SURVEYORS 1116 W. 9th Street, Suite 181 WICHITA, KANSAS 67203 PHONE: 843-8116		REVIEWED BY: RLW		DATE: APR 15 1982	

020092

**METROPOLITAN DADE COUNTY PLAT COMMITTEE
NOTICE OF ACTION**

Plat No.: T-21681 --- 3-CORR.
Sec. 16 Twn. 52 Rng. 40
Municipality: MIAMI-DADE COUNTY
Zoning: RU-3M / BU-1A

Name: DUNNWOODY LAKE

Location by Streets: NW 162 STREET & NW 87 AVE

District: 13

Owner: LOWELL & BETTY DUNN
8083 NW 103 STREET
HIALEAH GARDENS, FL 33016

PHONE: (305)821-8300

Surveyor: ROBAYNA & ASSOCIATES, INC.
2100 W. 76 STREET SUITE 101
HIALEAH, FL 33016

PHONE: (305)823-9316

This is to advise you that on March 12, 2004 the Dade County Plat Committee reviewed the above plat and that the same was:

- Recommended approval as a Tentative Plat, the requirement for platting has not been waived subject to the conditions indicated on the attached action copy.
- Recommended approval subject to conditions indicated on action copy
- Approved as an extension of time.
- Deferred for reasons indicated below...
- Not approved for the reasons indicated below...



Jeb Bush
Governor

John O. Agwunobi, M.D., MBA
Acting Secretary

James J. James, M.D., P.H.D., M.H.A., Director

To: Control Section Subdivision
Miami-Dade County Department of Public Works

From: Florida Department of Health
District XI
On-Site Sewage Disposal System

Agenda Date: 3/5/04

Tentative Plat No.: 21681-3-Cor. 16/52/40

Waiver of Plat No.: _____

- 1. A public water supply and sewer system must be utilized to serve this entire subdivision.
- 2. A public water supply must be utilized to serve this entire subdivision.

Plans showing the design and locations of the proposed septic tank systems must be approved by this office prior to issuance of individual permits.

- 3. Individual wells for potable use are acceptable for this subdivision.

Plans showing the design and location of the proposed septic tank systems and the well must be approved by this office prior to issuance of individual building permits.

- 4. Other: _____

By: Jorge M. Millan Date: 3/4/04
Jorge M. Millan
Engineer III



MEMORANDUM

TO: Subdivision and Platting Section
Public Works Department

AGENDA DATE: 2/5/04

FROM: Office of Plan Review Services
Department of Environmental Resources Management

TENTATIVE PLAT NO.: T21681- 3 col

This office has reviewed the referenced plat and recommends the following:

<input checked="" type="checkbox"/>	A public water supply must be utilized to serve this entire subdivision. Plans for the extension of the existing water mains to serve this property, must be approved by The Health Department prior to the recordation of this plat.
<input checked="" type="checkbox"/>	A public sewerage system must be utilized to serve this entire subdivision. Plans for the extension of the existing sanitary sewer system to serve this property must be approved by this department prior to the recordation of this plat.
<input type="checkbox"/>	A public water supply must be utilized to serve this entire subdivision. The Health Department has approved plans for extension of existing water mains. Therefore, we have no objection to the recordation of this plat.
<input type="checkbox"/>	A public sewerage system must be utilized to serve this entire subdivision. This department has approved plans for the extension of the existing sanitary sewer system. Therefore, we have no objection to the recordation of this plat. APPROVAL #
<input type="checkbox"/>	Existing public water lines must be utilized to serve this subdivision. This office has no objection to the recordation of this plat. APPROVAL #
<input type="checkbox"/>	Existing public sewer lines must be utilized to serve this subdivision. This office has no objection to the recordation of this plat.
<input type="checkbox"/>	The use of septic tanks is acceptable for this subdivision.
<input type="checkbox"/>	Individual wells for potable use are acceptable for this subdivision.
<input type="checkbox"/>	A restrictive land use covenant must be executed with this office prior to the recordation of this plat. Forms for this covenant may be obtained at this office at 11805 SW 26 th Street, Suite 124, Miami, Florida.
<input type="checkbox"/>	Development information not furnished.
<input checked="" type="checkbox"/>	This Department has performed a concurrency review for water and sewer on the above subject Development Order. Based on currently available information, the following determinations have been made: <ol style="list-style-type: none"> Public Water-Existing facilities and services meet the Level of Service (LOS) standards set forth in the CDMP. Furthermore, the proposed development order, if approved, will not result in a reduction in the LOS standards subject to compliance with the conditions stipulated by DERM for this proposed development order, if any. Public Sanitary Sewer-Existing facilities and services meet the Level of Service (LOS) standards set forth in the CDMP. Furthermore, the proposed development order, if approved, will not result in a reduction in the LOS standards subject to compliance with the conditions stipulated by DERM for this proposed development order, if any. <p>Please note that this concurrency determination does not constitute a final concurrency statement on the proposed development order as provided for in the adopted methodology for concurrency review. One or more additional concurrency determinations will be required.</p>
<input type="checkbox"/>	Concurrency Issued by the Municipality
<input checked="" type="checkbox"/>	Please note that the regional sewer system is operating under a capacity allocation program in accordance with the First Partial Consent Decree between Miami-Dade County and the United States of America (Case NO. 93-1109 CIV Moreno). Under the terms of this Consent Decree, this approval does not constitute an allocation or certification of adequate treatment and transmission system capacity, which will be evaluated and determined at the time of agency review of the building permit plans for the referenced project.

Date Reviewed: 2/2/04

By:

MEMORANDUM

TO: Julio Delgado
Plat Review Section

DATE: March 4, 2004

FROM: Janet Gil, Biologist II *JG*
FOR Wetlands and Forest Resources
Section

SUBJECT: T-21681-3-Corr
Dunwoody Lake
Section 16-52-40

This Section has no objection to this tentative plat.

This Section has reviewed the above-referenced tentative plat for the subject property located at approximately NW 162nd Street and NW 87th Avenue in Section 16, Township 52 South, Range 40 East, Miami-Dade County, Florida. The subject property occurs in the East Turnpike Wetlands Basin, in an area that is generally considered to be jurisdictional wetlands. However, the subject property does not contain jurisdictional freshwater wetlands as defined by Chapter 24-3 of the Code of Miami-Dade County. Therefore, a Class IV Permit will not be required for work to occur on this property.

Please be advised that the Army Corps of Engineers (305-526-7181), the Florida Department of Environmental Protection (561-681-6600), and the South Florida Water Management District (1-800-432-2045) may require permits for the proposed project. It is the applicant's responsibility to contact these agencies.



MEMORANDUM

TO: Subdivision and Platting Section
Public Works Department

AGENDA DATE: 3/12/04

FROM: Office of Plan Review Services
Department of Environmental Resources Management

TENTATIVE PLAT NO.: T21681-3ca

This office has reviewed the referenced plat and recommends the following:

<input checked="" type="checkbox"/>	A public water supply must be utilized to serve this entire subdivision. Plans for the extension of the existing water mains to serve this property must be approved by The Health Department prior to the recordation of this plat.
<input checked="" type="checkbox"/>	A public sewerage system must be utilized to serve this entire subdivision. Plans for the extension of the existing sanitary sewer system to serve this property must be approved by this department prior to the recordation of this plat.
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<input type="checkbox"/>	Development Information not furnished.
<input checked="" type="checkbox"/>	This Department has performed a concurrency review for water and sewer on the above subject Development Order. Based on currently available information, the following determinations have been made: <ol style="list-style-type: none"> Public Water-Existing facilities and services meet the Level of Service (LOS) standards set forth in the CDMP. Furthermore, the proposed development order, if approved, will not result in a reduction in the LOS standards subject to compliance with the conditions stipulated by DERM for this proposed development order, if any. Public Sanitary Sewer-Existing facilities and services meet the Level of Service (LOS) standards set forth in the CDMP. Furthermore, the proposed development order, if approved, will not result in a reduction in the LOS standards subject to compliance with the conditions stipulated by DERM for this proposed development order, if any. <p>Please note that this concurrency determination does not constitute a final concurrency statement on the proposed development order as provided for in the adopted methodology for concurrency review. One or more additional concurrency determinations will be required.</p>
<input type="checkbox"/>	Concurrency Issued by the Municipality
<input checked="" type="checkbox"/>	Please note that the regional sewer system is operating under a capacity allocation program in accordance with the First Partial Consent Decree between Miami-Dade County and the United States of America (Case NO. 93-1109 CIV Moreno). Under the terms of this Consent Decree, this approval does not constitute an allocation or certification of adequate treatment and transmission system capacity, which will be evaluated and determined at the time of agency review of the building permit plans for the referenced project.

Date Reviewed: 3/9/04

Bv:

MEMORANDUM

TO: Tony Toledo, Supervisor
Department of Planning & Zoning

DATE: 11/14/03

FROM: Camilo Ignacio, Engineer III
Water Control Section
DERM

SUBJECT: T-21681-1
S16 T52 R40

NOT SUPERSEDED

The Water Control Section has reviewed the subject Tentative Plat and recommends a) Approval b) Disapproval for the following reasons:

— A No-Notice Surface Water Management General Permit is in effect.

— This project qualifies for a Surface Water Management General Permit which must be obtained from DERM prior to Final Plat approval, and prior to obtaining Plan Review Section and Public Works Department approval of Paving & Drainage plans.

✓ This project qualifies for a Surface Water Management Individual Permit issued by the South Florida Water Management District. Proof of permit or approval by the District must be submitted to this Section prior to Final Plat.

✓ Site shall be filled in accordance with the requirements of Chapter 11C of the Miami-Dade County Code.

✓ Site shall be filled in a manner so as to prevent the flooding of adjacent properties. Interceptor swales shall be constructed on-site with no encroachment over adjacent properties.

— ___ feet of canal right-of-way and/or ___ feet of canal maintenance easement shall be dedicated for ___ by plat or by deed prior to Tentative Plat approval and prior to the release of any excess canal reservation.

✓ Covenant running with the land to secure stormwater mitigation area must be recorded and submitted to the Water Control Section of DERM prior to final plat approval.

— Project may qualify for a National Pollutant Discharge Elimination System (NPDES) permit. Contact the Florida Department of Environmental Protection (FDEP) for more information at (305) 921-9904.

— This proposed development is located within: BIRD DRIVE BASIN where 30% / NORTH TRAIL BASIN or BASIN B where 28.6% of the total project area shall be set aside for lake excavation, or submit cut and fill calculation as required under chapter 24, to comply with the official Dade County report for that basin. Said condition must be met prior to Tentative Plat approval.

— The total land area of this project is under 4.5 acres (since September 30, 1997), therefore, financial participation into the Stormwater Compensating Trust Fund is acceptable.

— Deferred to show: County Flood Criteria / Flood Zone / Base Flood Elevation.

✓ Others: Existing Lake is 44% of Total Projectsite Area.

DUNNWOODY LAKE

TENTATIVE PLAT NO. 21681-3-COR.

Sec. 16 Twp. 52 Rge. 40

Municipality: **MIAMI LAKES**

Zoned: **RU-3M**

RECOMMENDS APPROVAL 3-12-05 *[Signature]*
Date Miami-Dade Co. Dept. of Planning & Zoning

RECOMMENDS APPROVAL 3-12-05 *[Signature]*
Date Miami-Dade Co. Public Works Dept

Items Required	Yes	No
St. Grading Plan	/	
Drainage Plan	/	

- The tentative plat recommended approval is valid for 9 months from the date indicated above, but will not exceed concurrency expiration date. Tentative recommended approval does not necessarily guarantee final plat approval.
- No road, sidewalks or drainage facilities are to be constructed or installed without prior knowledge, approval and complete progressive inspection by the Public Works Dept. Construction or installation of these facilities does not guarantee acceptance by the county unless final plat is approved and recorded.
- Final approval and recording subject to D.E.R.M. and Florida Department of Health approval on sewage disposal facilities and water supply.
- Site to be filled to County Flood Criteria Elevation of 6.8 N.G.V.D. or to and elevation not less than the approved crown elevation of the road fronting the property. Cutting of existing grade is not permitted below the established base flood elevation of the F.L.R.M. for Dade County Florida Community #125098.
- Property owner must provide the needed improvements within the right of way.
- For removal of any tree a Permit is required.

- Recommends approval as a tentative plat, the requirements to platting have not been waived, and subject to the requirements checked below:
- Recommends approval subject to the requirements checked below:
- Recommends approval subject to the Town of Miami Lakes requirements and the requirements checked below:
- Recommends approval as a Master Plan for major road(s) alignment only. Master paving and drainage plan required, and subject to the requirements checked below:
- Recommends approval as a "Fast Track" subject to approval of Public Hearing Application No. _____ and subject to the requirements checked below: (Concurrency capacity is not reserved at this time)
- Name of subdivision is to be changed and submitted prior to next action. Contact the Land Development Division for selection of a new name.
- Paved Public Access must be provided prior to recordation of this plat.
- Tentative Plat No. T-_____ shall be recorded prior to the recordation of this plat.
- Road closing petition must be approved by the County Commissioners to vacate a public road, prior to final plat review.
- Utility review by MDWASD required prior to approval of the Paving and Drainage plans.
- _____ to be improved using _____ typical Section.
- _____ to be improved using _____ typical Section.
- Interior roads to be improved using 21.1 typical Section and valley gutter.
- Guardrail to be provided on all roads adjacent to lake and/or canal.
- Note: This property lies within two miles of a rock mining operation where blasting is permitted.

42

- Florida Department of Transportation hearing required for street crossing of a railroad track prior to final plat review.
- Florida Department of Transportation permit required for a improvement within State Road right of way.
- Florida Department of Transportation approval required prior to final plat review.
- A contribution of 25% of the cost for the installation of a traffic signal at the intersection of NW 15th St. and NW 87th Ave. is required.
- All private roads are to be constructed to meet Miami-Dade County Road Standards (P.W.D. permit req'd.) and to be identified in accordance with Miami-Dade County numbering system.
- Letters from utility companies accepting vacation of existing easement are required prior to final plat review.
- All non-conforming structures must be removed prior to final plat review.
- Rear lot lines of all double frontage lots are to be shown as a limited access line on the final plat; the design of a decorative barrier to be approved by the Plat Committee prior to final plat review.
- Tracts to be lettered. Lots and Blocks to be numbered consecutively from previous section of the Master Plan.
- Property Owners Association agreement for maintenance of palms, trees, double frontage wall, common areas and lake is required.
- Lake excavation permit required from the Dept. of Planning and Zoning - lake to be completed and approved by the Dept. of Planning and Zoning, Public Works and DERM prior to final plat review. Top of Lake Slope to be shown on final plat. The use of explosives is strictly prohibited.
- Lot lines to be extended to edge of water/center of the lake.
- It will be necessary to establish use rights and ownership of the lake with the adjacent lots, on the final plat.
- Areas adjacent to lake and/or canal, to be graded so as to prevent direct overland discharge of storm water into lake and/or canal.
- Class III permit required from Water Control for culvert crossing.
- See attached DERM memorandum for environmental concern and requirements.
- South Florida Water Management District approval required.
- Concurrency approval by the Municipality is required prior to final plat review and prior to the issuance of a building permit. City concurrency review to include all City, State and County roads.
- School Board approval required prior to final plat review.
- Concurrency capacity reservation is valid until March 11, 2005 *If tentative plat is kept active** (* See attached memo and ** See item number 1 above)
- _____ S.U.R.'s, required prior to final plat review. A plat restriction to this effect is required.
- No permit is to be issued until official Tentative Plat approval is given. Concurrency review is not given at this time.
- A special taxing district must be created for street lighting and / or landscape, lake, decorative wall, tree preservation area maintenance.
- An additional tract to be shown on final plat for lake maintenance. Tract to be deeded to Miami-Dade County and dedicated by plat.
- Traffic study required prior to Final Plat submitted to determine if a traffic signal is warranted.
- NW 87th Ave. full dedication must be shown on the Final Plat.
- Tentative Plat recommended approval is contingent to obtaining concurrency approval from the Town of Miami-Lakes.

**DUNNWOODY LAKE
2010 COUNT DATA**

Roadway	Peak Season		AM Two-Way	PM Two-Way
	AM Two-Way	PM Two-Way		
NW 154th Street (Miami Lakes Drive)				
NW 89th Avenue to NW 87th Avenue	109	227	114	238
NW 87th Avenue to NW 83rd Avenue	1,598	1,718	1710	1838
NW 83rd Avenue to NW 82nd Avenue	1,598	1,718	1710	1838
NW 82nd Avenue to NW 79th Court	2,716	3,241	2906	3468
NW 79th Court to NW 79th Avenue	2,391	2,387	2558	2554
NW 79th Avenue to NW 77th Court	2,692	3,095	2880	3312
NW 77th Court to SR 826	3,533	3,932	3780	4207
SR 826 to Fairway Drive	2,135	2,494	2242	2619
NW 87th Avenue				
NW 154th Street to NW 146th Street	912	1,230	958	1292
NW 146th Street to I-75 Overpass	1,788	2,083	1877	2187
NW 154th Street to Site Driveway	0	0	0	0
Site Driveway to NW 170th Street	539	524	577	561
NW 82nd Avenue				
NW 170th Street to NW 162nd Street	1,107	1,276	1162	1340
NW 162nd Street to NW 154th Street	1,449	1,636	1521	1718
NW 170TH STREET				
NW 87th Avenue to NW 82nd Avenue	858	847	918	906

NOTE:
 NW 154th Street from 82nd Ave to 87th Ave calculated using TMC
 NW 87th Avenue south of NW 170th Street calculated using TMC
 NW 154th Street from 79th Ct to 79th Ave calculated using TMC



APPENDIX C

TRAFFIC COUNT DATA

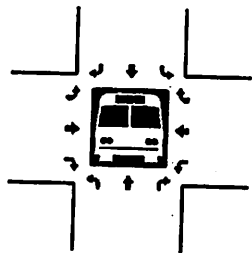
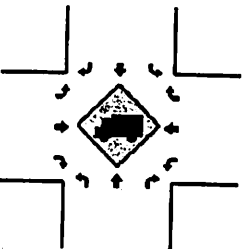
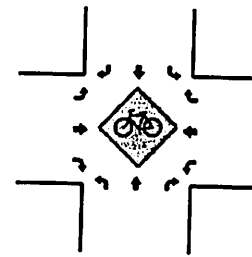
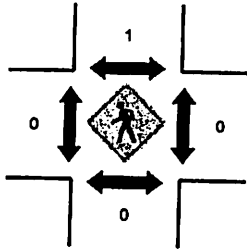
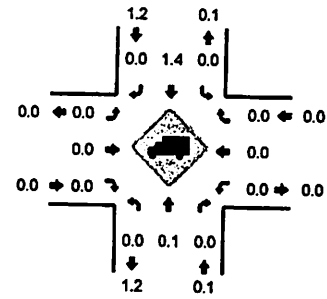
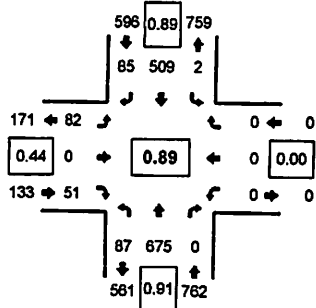
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NW 87th Ave -- NW 146th St
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516402
 DATE: 6/29/2010

Peak-Hour: 5:00 PM -- 6:00 PM
 Peak 15-Min: 5:30 PM -- 5:45 PM



15-Min Count Period Beginning At	NW 87th Ave (Northbound)				NW 87th Ave (Southbound)				NW 146th St (Eastbound)				NW 146th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	13	101	0	0	0	102	3	0	3	0	2	0	0	0	0	0	224	
4:15 PM	18	113	0	0	0	101	5	0	6	0	6	0	0	0	0	0	249	
4:30 PM	10	141	0	0	0	105	1	0	5	0	8	0	0	0	0	0	270	
4:45 PM	19	132	0	0	0	98	5	2	5	0	10	0	0	0	0	0	271	
5:00 PM	19	165	0	0	0	109	10	0	8	0	12	0	0	0	0	0	317	1107
5:15 PM	30	179	0	1	0	134	21	0	7	0	9	0	0	0	0	0	361	1299
5:30 PM	23	167	0	0	0	186	36	0	11	0	12	0	0	0	0	0	319	1389
5:45 PM	24	174	0	0	0	130	24	1	14	0	7	0	0	0	0	0	374	1491

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	76	628	0	0	0	544	120	4	212	0	92	0	0	0	0	0	1676
Heavy Trucks	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	12
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

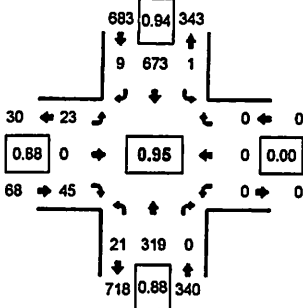
Comments:

Type of peak hour being reported: Intersection Peak

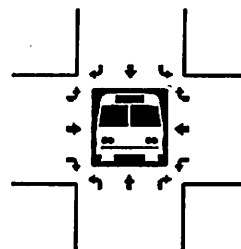
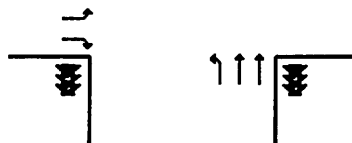
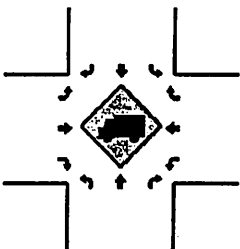
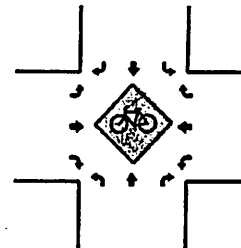
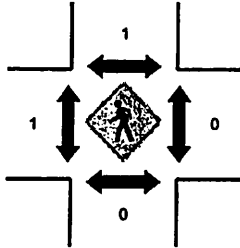
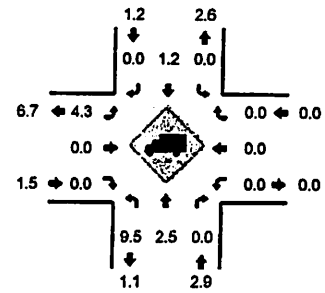
Method for determining peak hour: Total Entering Volume

LOCATION: NW 87th Ave – NW 146th St
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516415
 DATE: 6/30/2010



Peak-Hour: 8:00 AM -- 9:00 AM
 Peak 15-Min: 8:30 AM -- 8:45 AM



15-Min Count Period Beginning At	NW 87th Ave (Northbound)				NW 87th Ave (Southbound)				NW 146th St (Eastbound)				NW 146th St (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM	2	41	0	0	0	80	1	2	3	0	9	0	0	0	0	0	0	138	
7:15 AM	5	40	0	0	0	109	3	1	4	0	12	0	0	0	0	0	0	174	
7:30 AM	5	43	0	0	0	152	9	0	8	0	15	0	0	0	0	0	0	232	
7:45 AM	3	58	0	0	0	162	6	1	5	0	16	0	0	0	0	0	0	251	795
8:00 AM	2	68	0	0	0	177	5	0	8	0	16	0	0	0	0	0	0	278	933
8:15 AM	7	76	0	0	0	153	1	0	7	0	7	0	0	0	0	0	0	251	1010
8:30 AM	5	84	0	0	0	172	1	0	7	0	10	0	0	0	0	0	0	288	1066
8:45 AM	5	85	0	0	0	171	1	1	1	0	12	0	0	0	0	0	0	278	1091

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Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	28	360	0	0	0	688	8	0	28	0	40	0	0	0	0	0	0	1152
Heavy Trucks	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	16
Pedestrians		0				0				0				0				0
Bicycles																		
Railroad																		
Stopped Buses																		

Comments:

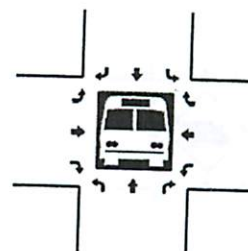
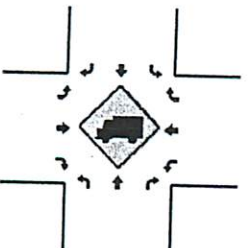
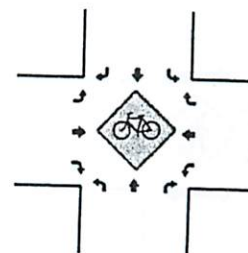
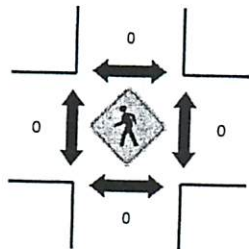
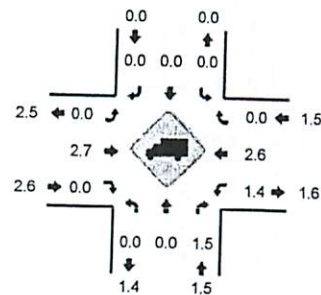
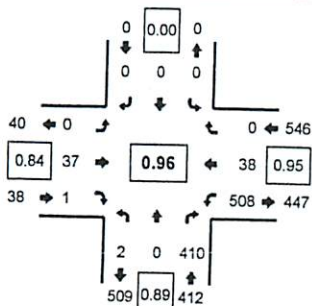
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NW 87th Ave -- NW 154th St
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516414
 DATE: 6/30/2010

Peak-Hour: 8:00 AM -- 9:00 AM
 Peak 15-Min: 8:45 AM -- 9:00 AM



15-Min Count Period Beginning At	NW 87th Ave (Northbound)				NW 87th Ave (Southbound)				NW 154th St (Eastbound)				NW 154th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	74	0	0	0	0	0	0	7	0	0	45	6	0	0	132	
7:15 AM	0	0	72	0	0	0	0	0	0	7	0	0	77	9	0	0	165	
7:30 AM	0	0	71	0	0	0	0	0	0	14	0	0	127	6	0	0	218	
7:45 AM	1	0	85	0	0	0	0	0	0	10	1	0	120	8	0	0	225	740
8:00 AM	0	0	90	0	0	0	0	0	0	10	1	0	139	5	0	0	245	853
8:15 AM	2	0	96	0	0	0	0	0	0	11	0	0	119	11	0	0	239	927
8:30 AM	0	0	108	0	0	0	0	0	0	7	0	0	127	11	0	0	253	962
8:45 AM	0	0	116	0	0	0	0	0	0	9	0	0	123	11	0	0	259	996

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	464	0	0	0	0	0	0	36	0	0	492	44	0	0	1036
Heavy Trucks	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

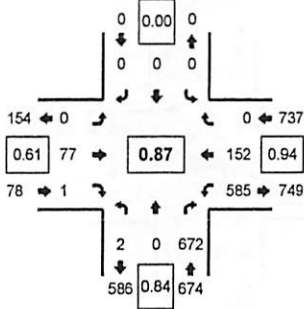
Comments:

Type of peak hour being reported: Intersection Peak

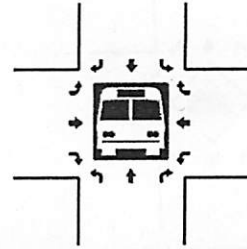
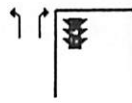
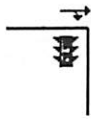
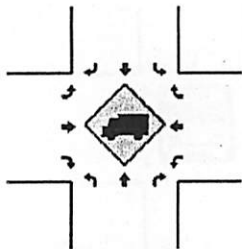
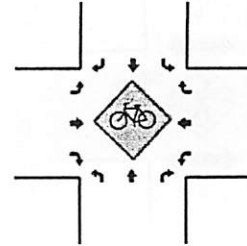
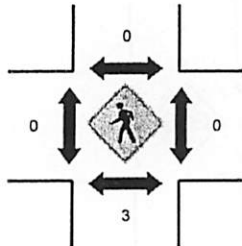
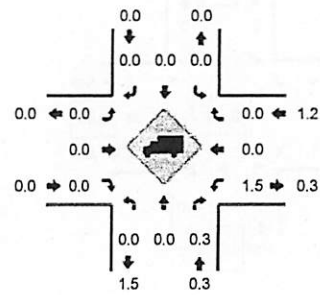
Method for determining peak hour: Total Entering Volume

LOCATION: NW 87th Ave -- NW 154th St
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516401
 DATE: 6/29/2010



Peak-Hour: 5:00 PM -- 6:00 PM
 Peak 15-Min: 5:30 PM -- 5:45 PM



15-Min Count Period Beginning At	NW 87th Ave (Northbound)				NW 87th Ave (Southbound)				NW 154th St (Eastbound)				NW 154th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	114	0	0	0	0	0	0	9	1	0	109	29	0	0	262	
4:15 PM	0	0	114	0	0	0	0	0	0	10	0	0	116	26	0	0	266	
4:30 PM	1	0	129	0	0	0	0	0	0	11	1	0	94	23	0	0	259	
4:45 PM	0	0	136	0	0	0	0	0	0	12	0	0	95	22	0	0	265	1052
5:00 PM	0	0	152	0	0	0	0	0	0	16	0	0	129	33	0	0	330	1120
5:15 PM	0	0	157	0	0	0	0	0	0	10	1	0	149	41	0	0	358	1212
5:30 PM	0	0	200	0	0	0	0	0	0	32	0	0	153	43	0	0	428	1381
5:45 PM	2	0	163	0	0	0	0	0	0	19	0	0	154	35	0	0	373	1489

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	800	0	0	0	0	0	0	128	0	0	612	172	0	0	1712
Heavy Trucks	0	0	0		0	0	0		0	0	0		16	0	0		16
Pedestrians			0				0			0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

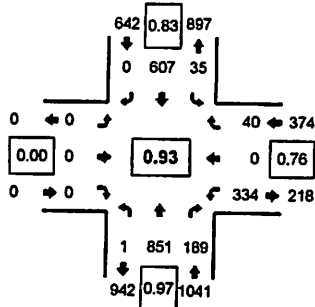
Comments:

Type of peak hour being reported: Intersection Peak

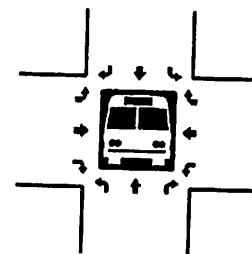
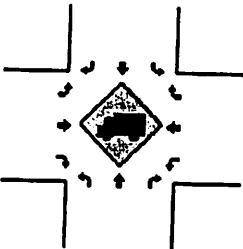
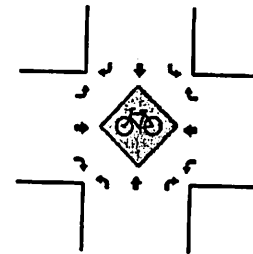
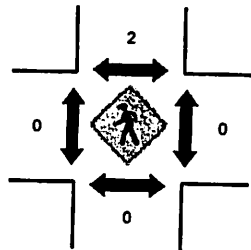
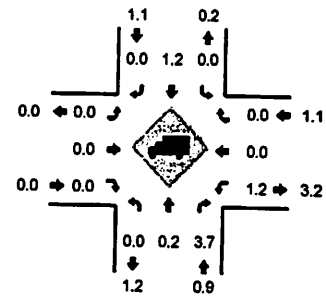
Method for determining peak hour: Total Entering Volume

LOCATION: NW 87th Ave -- Industrial Way
CITY/STATE: Miami Lakes, FL

QC JOB #: 10516403
DATE: 6/29/2010



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM



15-Min Count Period Beginning At	NW 87th Ave (Northbound)				NW 87th Ave (Southbound)				Industrial Way (Eastbound)				Industrial Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	121	31	0	4	104	0	1	0	0	0	0	36	0	4	0	301	
4:15 PM	0	150	21	0	7	108	0	2	0	0	0	0	34	0	2	0	324	
4:30 PM	0	170	38	0	5	123	0	2	0	0	0	0	49	0	7	0	394	
4:45 PM	0	166	45	0	3	107	0	0	0	0	0	0	41	0	4	0	366	
5:00 PM	0	198	44	0	8	127	0	2	0	0	0	0	101	0	22	0	500	1385
5:15 PM	0	222	41	0	8	155	0	2	0	0	0	0	78	0	7	0	511	1584
5:30 PM	0	209	69	0	2	184	0	0	0	0	0	0	74	0	9	0	511	1774
5:45 PM	0	223	45	1	3	144	0	2	0	0	0	0	72	0	2	0	554	1934
																	482	2057

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	832	236	0	48	724	0	0	0	0	0	0	340	0	36	0	2216
Heavy Trucks	0	0	12	0	0	4	0	0	0	0	0	0	8	0	0	0	24
Pedestrians																	0
Bicycles																	0
Railroad																	0
Stopped Buses																	0

Comments:

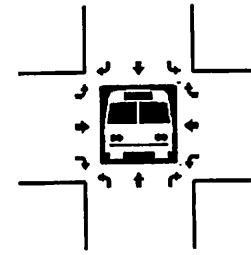
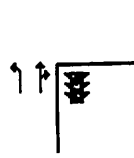
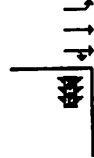
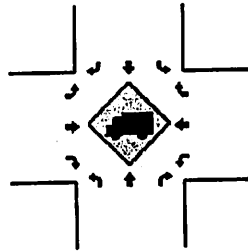
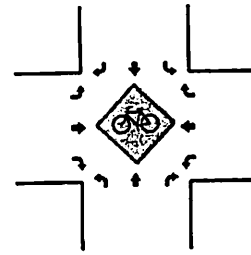
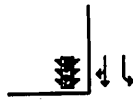
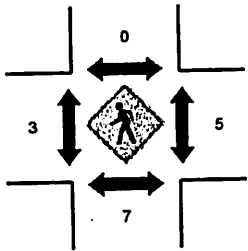
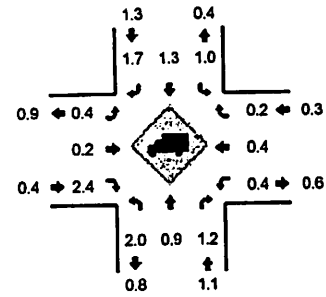
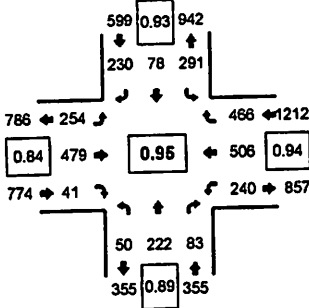
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NW 82nd Ave -- NW 154th St
CITY/STATE: Miami Lakes, FL

QC JOB #: 10516406
DATE: 6/29/2010

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM



15-Min Count Period Beginning At	NW 82nd Ave (Northbound)				NW 82nd Ave (Southbound)				NW 154th St (Eastbound)				NW 154th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	14	31	15	0	48	10	38	0	31	85	7	0	34	109	94	2	518	
4:15 PM	17	27	14	0	71	19	36	0	42	74	3	0	39	77	94	0	513	
4:30 PM	16	42	20	0	67	17	33	0	55	84	2	0	36	76	81	0	529	
4:45 PM	12	32	20	0	66	20	27	0	63	99	4	0	54	97	98	2	594	2154
5:00 PM	12	56	18	0	78	18	48	0	57	108	8	0	51	115	114	2	684	2320
5:15 PM	8	45	25	0	79	16	66	0	57	103	9	0	58	124	118	7	709	2516
5:30 PM	10	81	21	0	68	19	62	0	73	145	11	0	57	136	113	1	778	2789
5:45 PM	20	80	20	0	65	25	66	0	67	123	13	0	70	131	121	0	771	2840

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	40	244	80	0	272	76	248	0	292	580	44	0	228	544	452	4	3104
Heavy Trucks	0	4	4		4	0	8		0	0	0		0	8	4		32
Pedestrians		12				0				4				8			24
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

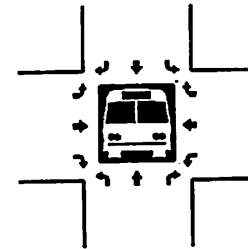
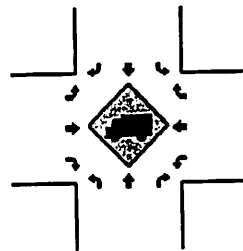
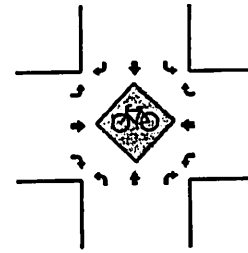
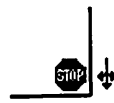
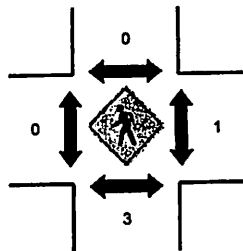
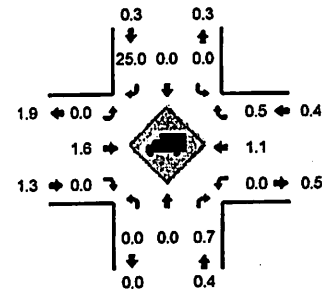
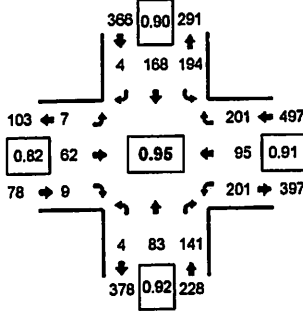
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NW 87th Ave -- NW 170th St
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516405
 DATE: 6/29/2010

Peak-Hour: 5:00 PM -- 6:00 PM
 Peak 15-Min: 5:15 PM -- 5:30 PM



15-Min Count Period Beginning At	NW 87th Ave (Northbound)				NW 87th Ave (Southbound)				NW 170th St (Eastbound)				NW 170th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	14	22	0	44	19	0	0	1	12	3	0	31	17	47	0	211	
4:15 PM	2	12	17	0	38	36	1	0	1	12	2	0	39	15	38	0	213	
4:30 PM	0	15	22	0	32	25	1	0	1	10	1	0	34	8	50	0	199	
4:45 PM	1	15	21	0	41	29	3	0	2	14	2	0	39	18	36	0	221	844
5:00 PM	2	21	28	0	40	38	1	0	3	19	4	0	48	22	42	0	270	903
5:15 PM	0	20	27	0	57	45	4	0	3	18	2	0	52	24	50	0	301	1011
5:30 PM	1	23	37	0	57	37	3	0	3	16	3	0	54	25	44	0	301	1011
5:45 PM	1	19	33	0	40	48	1	0	0	9	2	0	46	28	65	0	289	1169
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	80	168	0	228	180	0	0	4	72	0	0	208	96	200	0	1236	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians																		
Bicycles																		
Railroad																		
Stopped Buses																		

Comments:

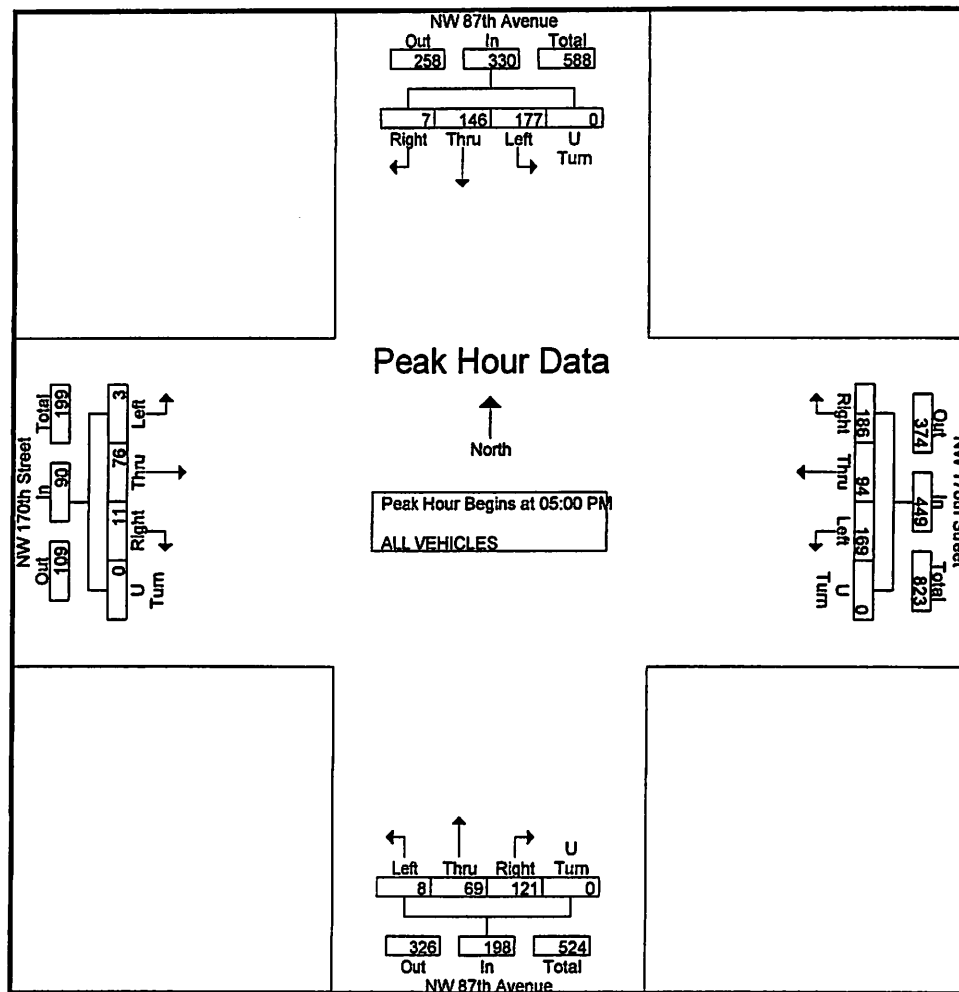
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 87th Avenue
 Miami Lakes, Florida
 Counted By: Itzhak Bendahan
 Not Signalized

File Name : NW170thStreet&87thAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 3

Start Time	NW 87th Avenue From North					NW 170th Street From East					NW 87th Avenue From South					NW 170th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	30	28	0	60	43	24	42	0	109	30	14	4	0	48	6	17	0	0	23	240
05:15 PM	3	45	60	0	108	48	23	38	0	109	34	13	3	0	50	1	17	0	0	18	285
05:30 PM	0	30	56	0	86	46	22	43	0	111	23	19	1	0	43	0	26	1	0	27	267
05:45 PM	2	41	33	0	76	49	25	46	0	120	34	23	0	0	57	4	16	2	0	22	275
Total Volume	7	146	177	0	330	186	94	169	0	449	121	69	8	0	198	11	76	3	0	90	1067
% App. Total	2.1	44.2	53.6	0		41.4	20.9	37.6	0		61.1	34.8	4	0		12.2	84.4	3.3	0		
PHF	.583	.811	.738	.000	.764	.949	.940	.918	.000	.935	.890	.750	.500	.000	.868	.458	.731	.375	.000	.833	.936



Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

File Name : NW170thStreet&87thAvenue

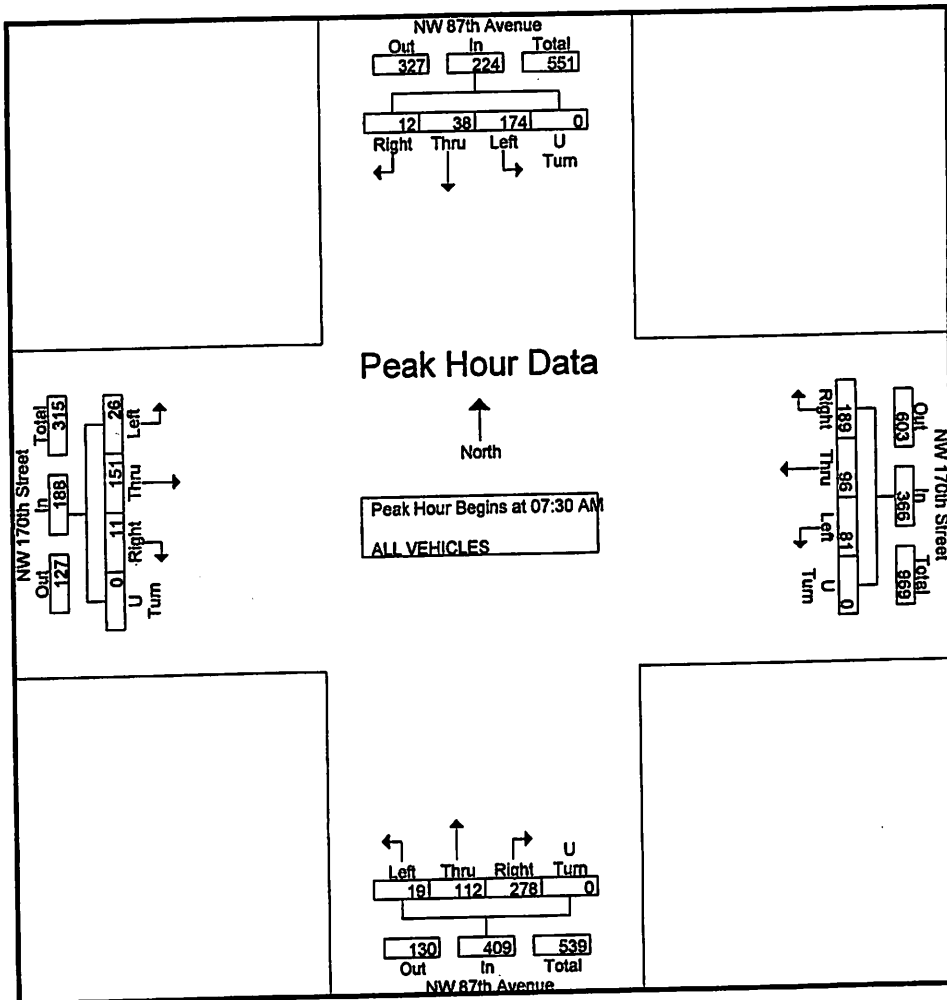
Site Code : 100117

Start Date : 12/7/2010

Page No : 2

NW 170th Street & NW 87th Avenue
 Miami Lakes, Florida
 Counted By: Itzhak Bendahan
 Not Signalized

Start Time	NW 87th Avenue From North					NW 170th Street From East					NW 87th Avenue From South					NW 170th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	3	3	62	0	68	51	23	21	0	95	66	37	1	0	104	4	35	1	0	40	307
07:45 AM	5	10	48	0	63	61	34	17	0	112	87	32	1	0	120	1	45	8	0	54	294
08:00 AM	4	13	32	0	49	43	19	25	0	87	79	16	9	0	104	3	29	7	0	39	236
08:15 AM	0	12	32	0	44	34	20	18	0	72	46	27	8	0	81	11	151	26	0	188	1187
Total Volume	12	38	174	0	224	189	96	81	0	366	278	112	19	0	409	11	151	26	0	188	1187
% App. Total	5.4	17	77.7	0		51.6	26.2	22.1	0		68	27.4	4.6	0		5.9	80.3	13.8	0		1187
PHF	.600	.731	.702	.000	.824	.775	.706	.810	.000	.817	.799	.757	.528	.000	.852	.688	.839	.650	.000	.855	.848



Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 87th Avenue
 Miami Lakes, Florida
 Counted By: Itzhak Bendahan
 Not Signalized

File Name : NW170thStreet&87thAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 1

Groups Printed- ALL VEHICLES

Start Time	NW 87th Avenue From North				NW 170th Street From East				NW 87th Avenue From South				NW 170th Street From West				Int. Total
	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	
07:00 AM	1	5	27	0	28	14	16	0	57	28	2	0	1	34	2	0	215
07:15 AM	2	4	31	0	45	13	11	1	55	26	1	0	2	16	3	1	211
07:30 AM	3	3	62	0	51	23	21	0	66	37	1	0	4	35	1	0	307
07:45 AM	5	10	48	0	61	34	17	0	87	32	1	0	3	42	10	0	350
Total	11	22	168	0	185	84	65	1	265	123	5	0	10	127	16	1	1083
08:00 AM	4	13	32	0	43	19	25	0	79	16	9	0	1	45	8	0	294
08:15 AM	0	12	32	0	34	20	18	0	46	27	8	0	3	29	7	0	236
08:30 AM	0	6	39	0	30	6	23	0	35	19	0	0	7	34	1	0	200
08:45 AM	1	10	42	0	22	10	13	0	38	17	0	0	0	17	2	0	172
Total	5	41	145	0	129	55	79	0	198	79	17	0	11	125	18	0	902
04:00 PM	0	29	52	0	31	29	38	0	29	6	3	0	2	22	4	0	245
04:15 PM	1	15	54	0	37	21	48	0	25	13	0	0	1	19	0	0	234
04:30 PM	2	33	47	0	40	21	52	0	23	13	3	0	4	21	1	0	260
04:45 PM	3	22	36	0	34	15	40	0	23	22	0	0	0	10	2	0	207
Total	6	99	189	0	142	86	178	0	100	54	6	0	7	72	7	0	946
05:00 PM	2	30	28	0	43	24	42	0	30	14	4	0	6	17	0	0	240
05:15 PM	3	45	60	0	48	23	38	0	34	13	3	0	1	17	0	0	285
05:30 PM	0	30	56	0	46	22	43	0	23	19	1	0	0	26	1	0	267
05:45 PM	2	41	33	0	49	25	46	0	34	23	0	0	4	16	2	0	275
Total	7	146	177	0	186	94	169	0	121	69	8	0	11	76	3	0	1067
Grand Total	29	308	679	0	642	319	491	1	684	325	36	0	39	400	44	1	3998
Apprch %	2.9	30.3	66.8	0	44.2	22	33.8	0.1	65.5	31.1	3.4	0	8.1	82.6	9.1	0.2	
Total %	0.7	7.7	17	0	16.1	8	12.3	0	17.1	8.1	0.9	0	1	10	1.1	0	

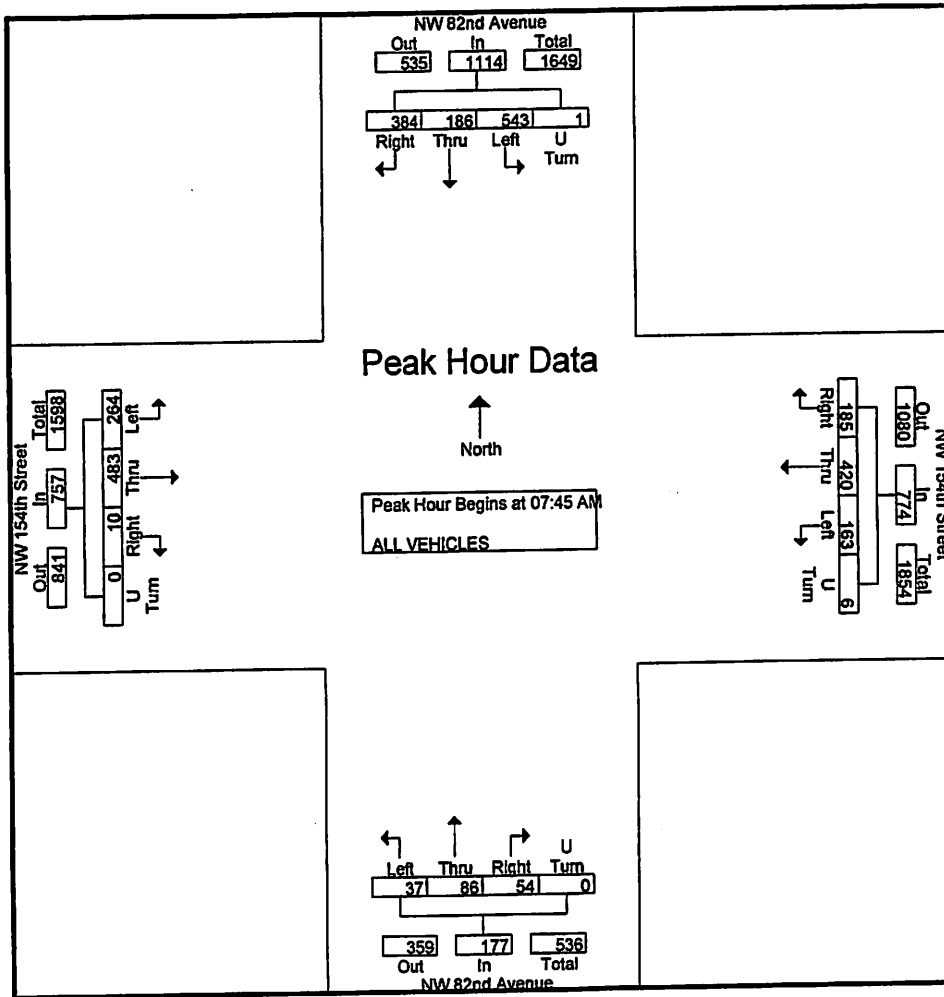
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 154th Street & NW 82nd Avenue
 Miami Lakes, Florida
 Counted By: Maxie Espinosa
 Signalized

File Name : NW154thStreet&82ndAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 2

Start Time	NW 82nd Avenue From North					NW 154th Street From East					NW 82nd Avenue From South					NW 154th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	101	42	128	0	271	63	103	41	2	209	10	26	7	0	43	2	97	58	0	157	680
08:00 AM	112	46	138	0	296	43	106	51	3	203	23	19	12	0	54	4	123	64	0	191	744
08:15 AM	93	46	150	1	290	40	119	31	0	190	12	23	7	0	42	3	152	84	0	239	761
08:30 AM	78	52	127	0	257	39	92	40	1	172	9	18	11	0	38	1	111	58	0	170	637
Total Volume	384	186	543	1	1114	185	420	163	6	774	54	86	37	0	177	10	483	264	0	757	2822
% App. Total	34.5	16.7	48.7	0.1		23.9	54.3	21.1	0.8		30.5	48.6	20.9	0		1.3	63.8	34.9	0		
PHF	.857	.894	.905	.250	.941	.734	.882	.799	.500	.926	.587	.827	.771	.000	.819	.625	.794	.786	.000	.782	.927



Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 154th Street & NW 82nd Avenue
Miami Lakes, Florida
Counted By: Maxie Espinosa
Signalized

File Name : NW154thStreet&82ndAvenue
Site Code : 100117
Start Date : 12/7/2010
Page No : 1

Groups Printed- ALL VEHICLES

Start Time	NW 82nd Avenue From North				NW 154th Street From East				NW 82nd Avenue From South				NW 154th Street From West				Int. Total
	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	
07:00 AM	119	33	121	0	25	110	18	0	16	8	5	0	3	135	57	0	650
07:15 AM	60	43	132	0	30	59	18	0	10	20	3	0	11	143	75	0	604
07:30 AM	77	43	141	0	44	72	21	0	14	27	9	0	7	68	57	1	581
07:45 AM	101	42	128	0	63	103	41	2	10	26	7	0	2	97	58	0	680
Total	357	161	522	0	162	344	98	2	50	81	24	0	23	443	247	1	2515
08:00 AM	112	46	138	0	43	106	51	3	23	19	12	0	4	123	64	0	744
08:15 AM	93	46	150	1	40	119	31	0	12	23	7	0	3	152	84	0	761
08:30 AM	78	52	127	0	39	92	40	1	9	18	11	0	1	111	58	0	637
08:45 AM	55	44	121	0	44	83	38	1	16	11	6	0	1	76	34	0	530
Total	338	188	536	1	166	400	160	5	60	71	36	0	9	462	240	0	2672
04:00 PM	23	19	73	0	81	131	46	2	16	34	13	0	2	107	56	0	603
04:15 PM	36	23	51	0	84	112	40	0	21	30	5	0	7	81	55	0	545
04:30 PM	41	22	65	0	88	111	49	1	17	46	9	0	3	96	65	0	613
04:45 PM	37	24	73	0	76	98	42	1	37	35	13	0	1	80	59	0	576
Total	137	88	262	0	329	452	177	4	91	145	40	0	13	364	235	0	2337
05:00 PM	46	21	74	0	97	165	51	1	32	53	17	0	1	108	55	1	722
05:15 PM	55	21	76	0	89	185	75	1	18	70	24	0	4	127	53	0	798
05:30 PM	56	31	77	0	114	172	58	1	22	68	17	0	7	131	57	0	811
05:45 PM	64	31	79	0	89	166	51	5	22	61	14	0	3	120	70	0	775
Total	221	104	306	0	389	688	235	8	94	252	72	0	15	486	235	1	3106
Grand Total	1053	541	1626	1	1046	1884	670	19	295	549	172	0	60	1755	957	2	10630
Apprch %	32.7	16.8	50.5	0	28.9	52.1	18.5	0.5	29	54	16.9	0	2.2	63.3	34.5	0.1	
Total %	9.9	5.1	15.3	0	9.8	17.7	6.3	0.2	2.8	5.2	1.6	0	0.6	16.5	9	0	

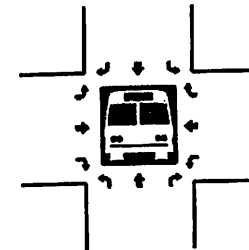
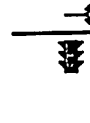
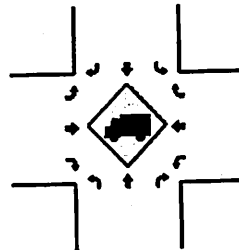
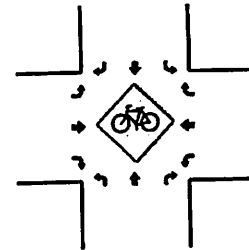
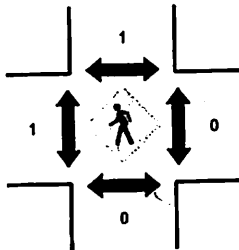
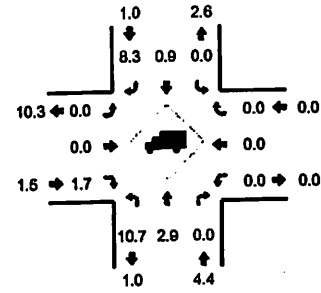
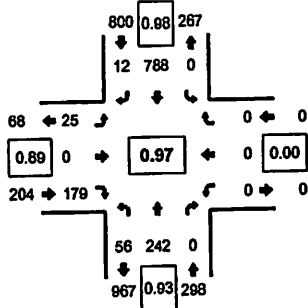
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NW 82nd Ave -- NW 162nd St
CITY/STATE: Miami Lakes, FL

QC JOB #: 10516417
DATE: 6/30/2010

Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



15-Min Count Period Beginning At	NW 82nd Ave (Northbound)				NW 82nd Ave (Southbound)				NW 162nd St (Eastbound)				NW 162nd St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	39	0	0	0	118	1	0	3	0	29	0	0	0	0	0	198	
7:15 AM	4	38	0	0	0	155	3	0	3	0	48	0	0	0	0	0	251	
7:30 AM	9	47	0	0	0	170	2	0	6	0	53	0	0	0	0	0	287	
7:45 AM	16	64	0	0	0	197	5	0	8	0	48	0	0	0	0	0	336	1072
8:00 AM	18	57	0	0	0	201	4	0	6	0	36	0	0	0	0	0	322	1188
8:15 AM	9	64	0	0	0	197	1	0	5	0	58	0	0	0	0	0	332	1277
8:30 AM	13	57	0	0	0	193	2	0	6	0	41	0	0	0	0	0	312	1302
8:45 AM	13	58	0	0	0	178	5	0	9	0	48	0	0	0	0	0	311	1277
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	64	256	0	0	0	788	20	0	32	0	184	0	0	0	0	0	1344	
Heavy Trucks	8	8	0	0	0	4	0	0	0	0	4	0	0	0	0	0	24	
Pedestrians		0				0											0	
Bicycles																		
Railroad																		
Stopped Buses																		

Comments:

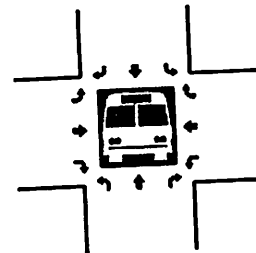
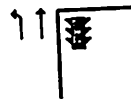
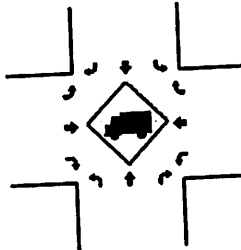
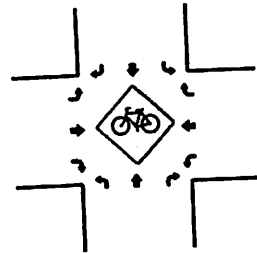
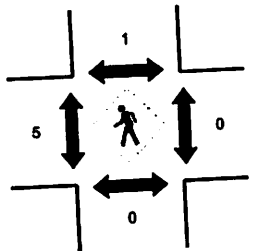
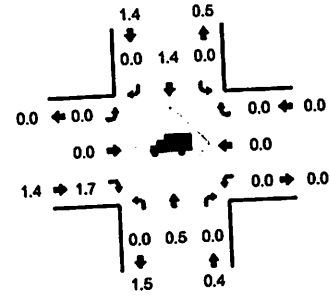
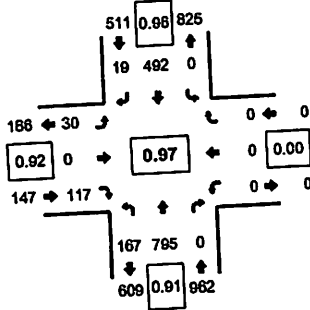
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NW 82nd Ave -- NW 162nd St
CITY/STATE: Miami Lakes, FL

QC JOB #: 10516404
DATE: 6/29/2010

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

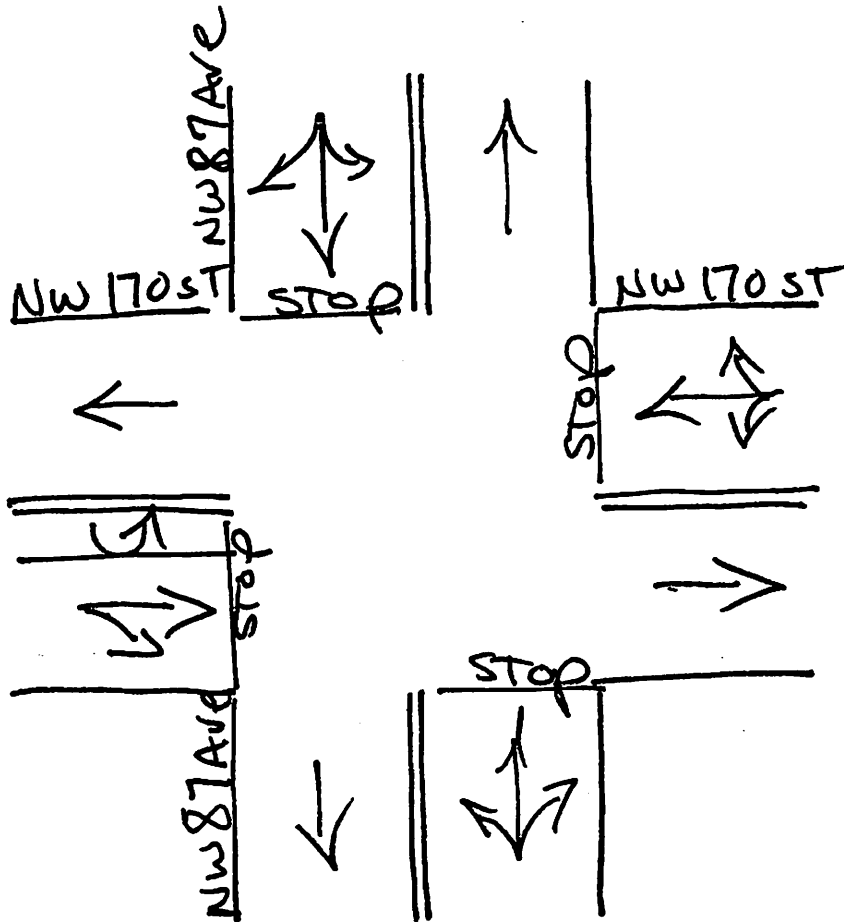


15-Min Count Period Beginning At	NW 82nd Ave (Northbound)				NW 82nd Ave (Southbound)				NW 162nd St (Eastbound)				NW 162nd St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	37	132	0	0	0	91	3	0	5	0	20	0	0	0	0	0	288	
4:15 PM	33	126	0	0	0	77	11	0	13	0	33	0	0	0	0	0	293	
4:30 PM	35	134	0	0	0	85	5	0	6	0	27	0	0	0	0	0	292	1180
4:45 PM	40	151	0	0	0	88	2	0	4	0	22	0	0	0	0	0	392	1284
5:00 PM	37	188	0	0	0	123	5	0	7	0	32	0	0	0	0	0	395	1386
5:15 PM	48	174	0	0	0	126	7	0	6	0	34	0	0	0	0	0	416	1510
5:30 PM	42	209	0	0	0	129	3	0	7	0	28	0	0	0	0	0	417	1620
5:45 PM	40	224	0	0	0	114	4	0	10	0	25	0	0	0	0	0		
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	160	896	0	0	0	456	16	0	40	0	100	0	0	0	0	0	1668	0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians		0				4				4							8	
Bicycles																		
Railroad																		
Stopped Buses																		

Comments:

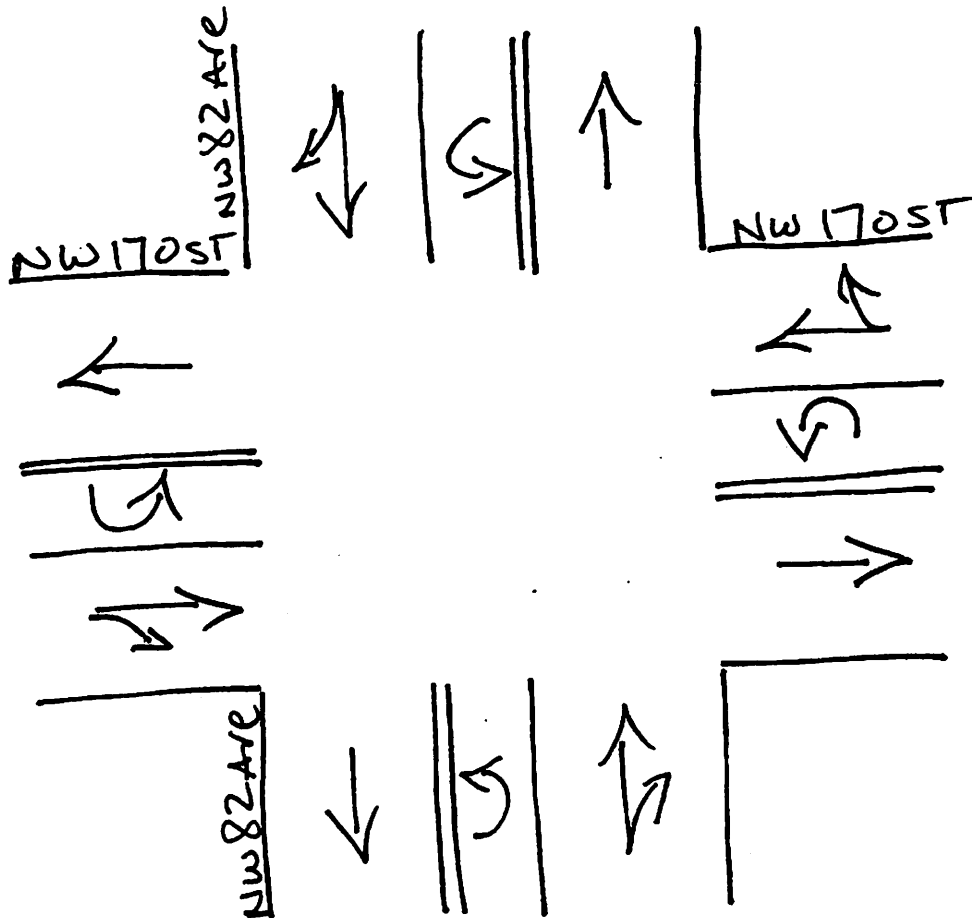
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

↑
North



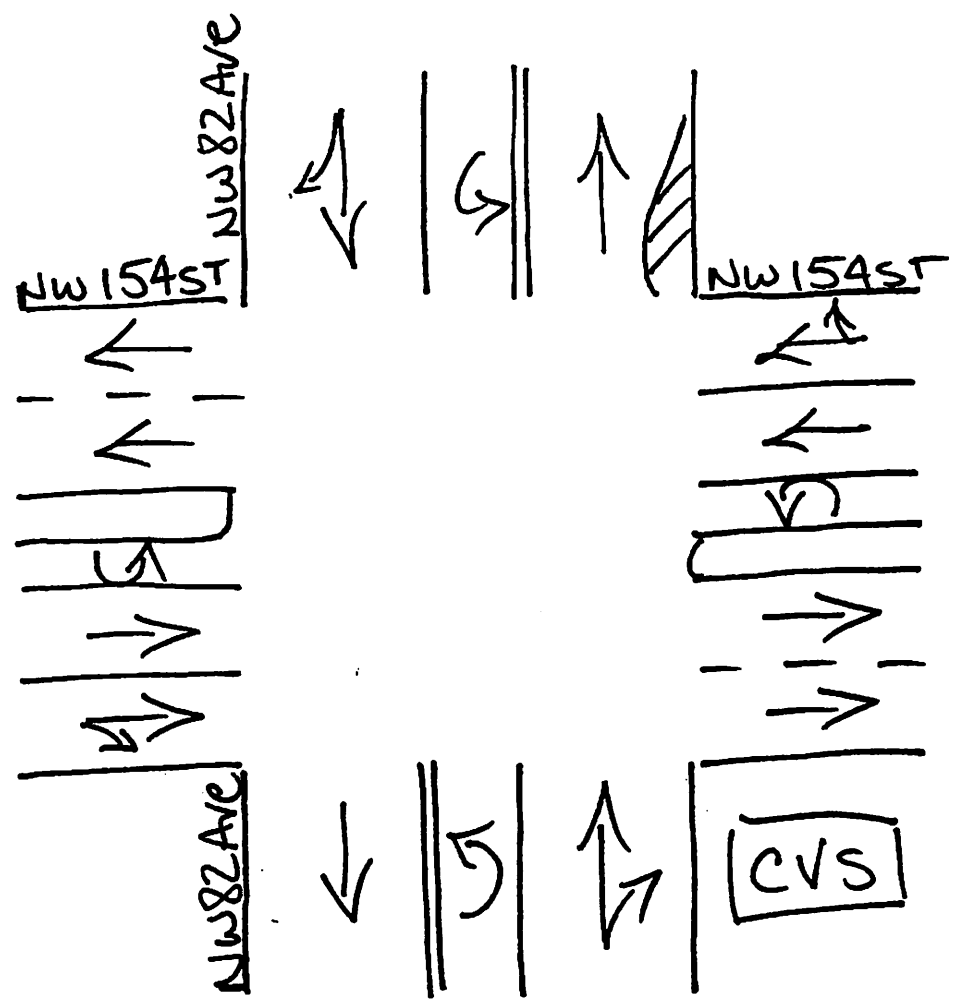
Miami Lakes, Florida
December 08, 2010
drawn by: Luis Palomino
NOT signalized

↑
North



Miami Lakes, Florida
December 08, 2010
drawn by: Luis Palomino
Signalized

↑
North



Miami Lakes, Florida
December 08, 2010
drawn by: Luis Palomino
signalized

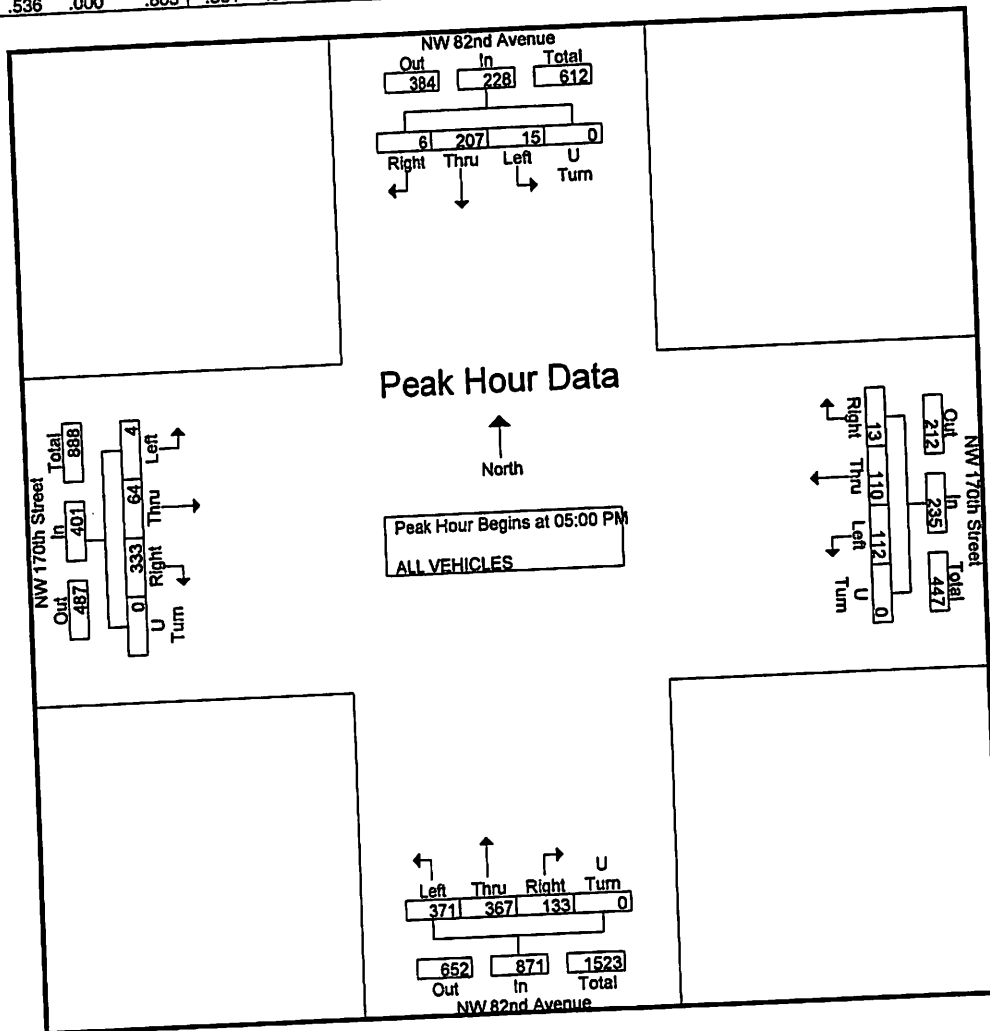
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 82nd Avenue
 Miami Lakes, Florida
 Counted By: Sebastian Salvo
 Signalized

File Name : NW170thStreet&82ndAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 3

Start Time	NW 82nd Avenue From North					NW 170th Street From East					NW 82nd Avenue From South					NW 170th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	59	0	0	59	0	22	31	0	53	32	104	83	0	219	71	10	1	0	82	413
05:15 PM	3	32	6	0	41	1	32	27	0	60	32	77	101	0	210	94	20	1	0	115	426
05:30 PM	2	67	2	0	71	3	24	25	0	52	44	95	98	0	237	91	17	1	0	109	469
05:45 PM	1	49	7	0	57	9	32	29	0	70	25	91	89	0	205	77	17	1	0	95	427
Total Volume	6	207	15	0	228	13	110	112	0	235	133	367	371	0	871	333	64	4	0	401	1735
% App. Total	2.6	90.8	6.6	0		5.5	46.8	47.7	0		15.3	42.1	42.6	0		83	16	1	0		
PHF	.500	.772	.536	.000	.603	.361	.859	.903	.000	.839	.756	.882	.918	.000	.919	.886	.800	1.000			



Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 82nd Avenue

Miami Lakes, Florida

Counted By: Sebastian Salvo

Signalized

File Name : NW170thStreet&82ndAvenue

Site Code : 100117

Start Date : 12/7/2010

Page No : 1

Groups Printed- ALL VEHICLES

Start Time	NW 82nd Avenue From North				NW 170th Street From East				NW 82nd Avenue From South				NW 170th Street From West				Int. Total
	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	
07:00 AM	2	88	5	0	4	8	19	0	11	34	49	0	104	24	0	1	349
07:15 AM	1	79	2	0	2	24	29	0	35	48	50	0	85	29	0	0	384
07:30 AM	1	83	2	0	1	47	33	0	24	42	54	0	107	18	1	0	413
07:45 AM	0	104	2	0	3	58	51	0	20	48	58	0	91	14	1	0	450
Total	4	354	11	0	10	137	132	0	90	172	211	0	387	85	2	1	1596
08:00 AM	0	109	3	0	3	30	53	0	14	49	45	0	104	13	1	0	424
08:15 AM	0	118	2	0	2	23	59	0	15	39	41	0	126	14	0	0	439
08:30 AM	0	91	7	0	1	17	41	0	17	23	40	0	93	20	2	1	353
08:45 AM	1	66	6	0	0	12	36	0	14	32	33	0	83	27	3	0	313
Total	1	384	18	0	6	82	189	0	60	143	159	0	406	74	6	1	1529
04:00 PM	0	42	8	0	3	31	23	0	12	61	82	0	69	20	1	0	352
04:15 PM	2	39	1	0	1	26	17	0	20	59	95	0	77	19	1	0	357
04:30 PM	2	40	0	0	3	27	20	0	19	71	86	0	67	25	1	0	361
04:45 PM	1	51	5	0	3	26	23	0	18	69	62	0	63	14	1	0	336
Total	5	172	14	0	10	110	83	0	69	260	325	0	276	78	4	0	1406
05:00 PM	0	59	0	0	0	22	31	0	32	104	83	0	71	10	1	0	413
05:15 PM	3	32	6	0	1	32	27	0	32	77	101	0	94	20	1	0	426
05:30 PM	2	67	2	0	3	24	25	0	44	95	98	0	91	17	1	0	469
05:45 PM	1	49	7	0	9	32	29	0	25	91	89	0	77	17	1	0	427
Total	6	207	15	0	13	110	112	0	133	367	371	0	333	64	4	0	1735
Grand Total	16	1117	58	0	39	439	516	0	352	942	1066	0	1402	301	16	2	6266
Apprch %	1.3	93.8	4.9	0	3.9	44.2	51.9	0	14.9	39.9	45.2	0	81.5	17.5	0.9	0.1	
Total %	0.3	17.8	0.9	0	0.6	7	8.2	0	5.6	15	17	0	22.4	4.8	0.3	0	

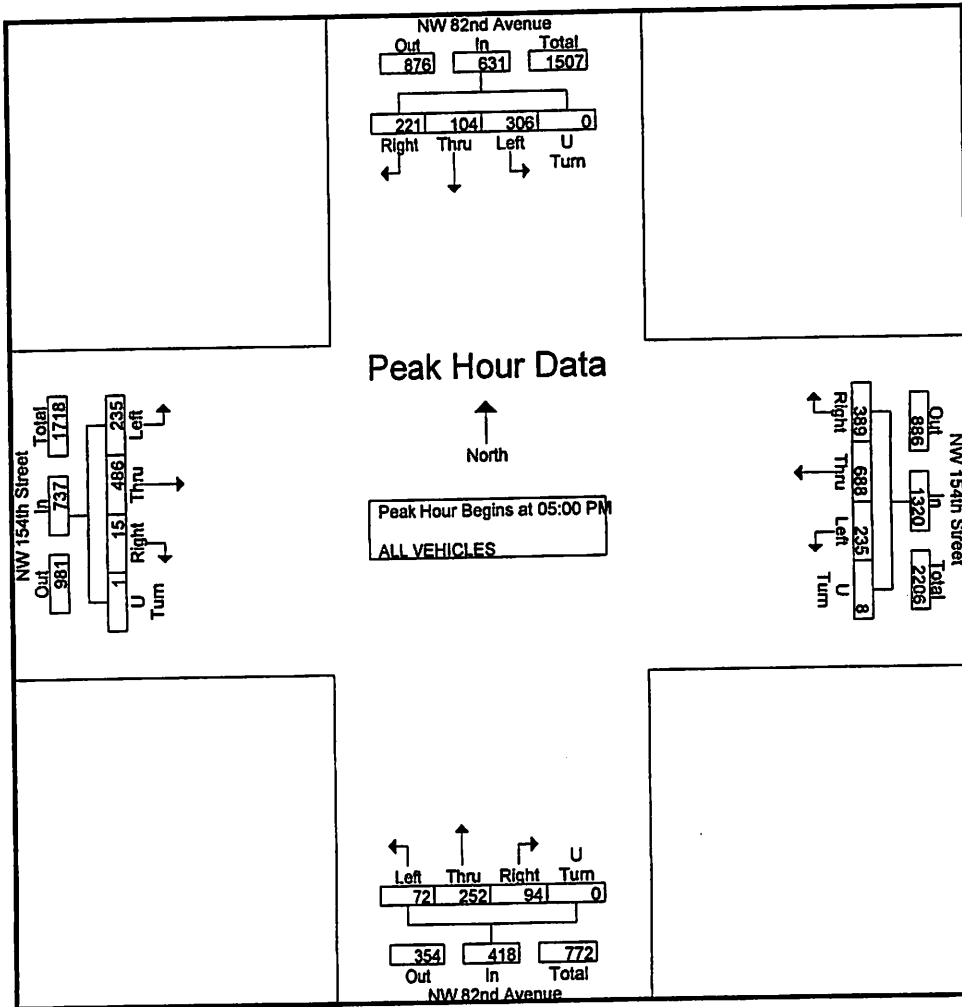
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 154th Street & NW 82nd Avenue
 Miami Lakes, Florida
 Counted By: Maxie Espinosa
 Signalized

File Name : NW154thStreet&82ndAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 3

Start Time	NW 82nd Avenue From North					NW 154th Street From East					NW 82nd Avenue From South					NW 154th Street From West					Int. Total
	Righ t	Thru	Left	U Turn	App. Total	Righ t	Thru	Left	U Turn	App. Total	Righ t	Thru	Left	U Turn	App. Total	Righ t	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	46	21	74	0	141	97	165	51	1	314	32	53	17	0	102	1	108	55	1	165	722
05:15 PM	55	21	76	0	152	89	185	75	1	350	18	70	24	0	112	4	127	53	0	184	798
05:30 PM	56	31	77	0	164	114	172	58	1	345	22	68	17	0	107	7	131	57	0	195	811
05:45 PM	64	31	79	0	174	89	166	51	5	311	22	61	14	0	97	3	120	70	0	193	775
Total Volume	221	104	306	0	631	389	688	235	8	1320	94	252	72	0	418	15	486	235	1	737	3106
% App. Total	35	16.5	48.5	0		29.5	52.1	17.8	0.6		22.5	60.3	17.2	0		2	65.9	31.9	0.1		
PHF	.863	.839	.968	.000	.907	.853	.930	.783	.400	.943	.734	.900	.750	.000	.933	.536	.927	.839	.250	.945	.957



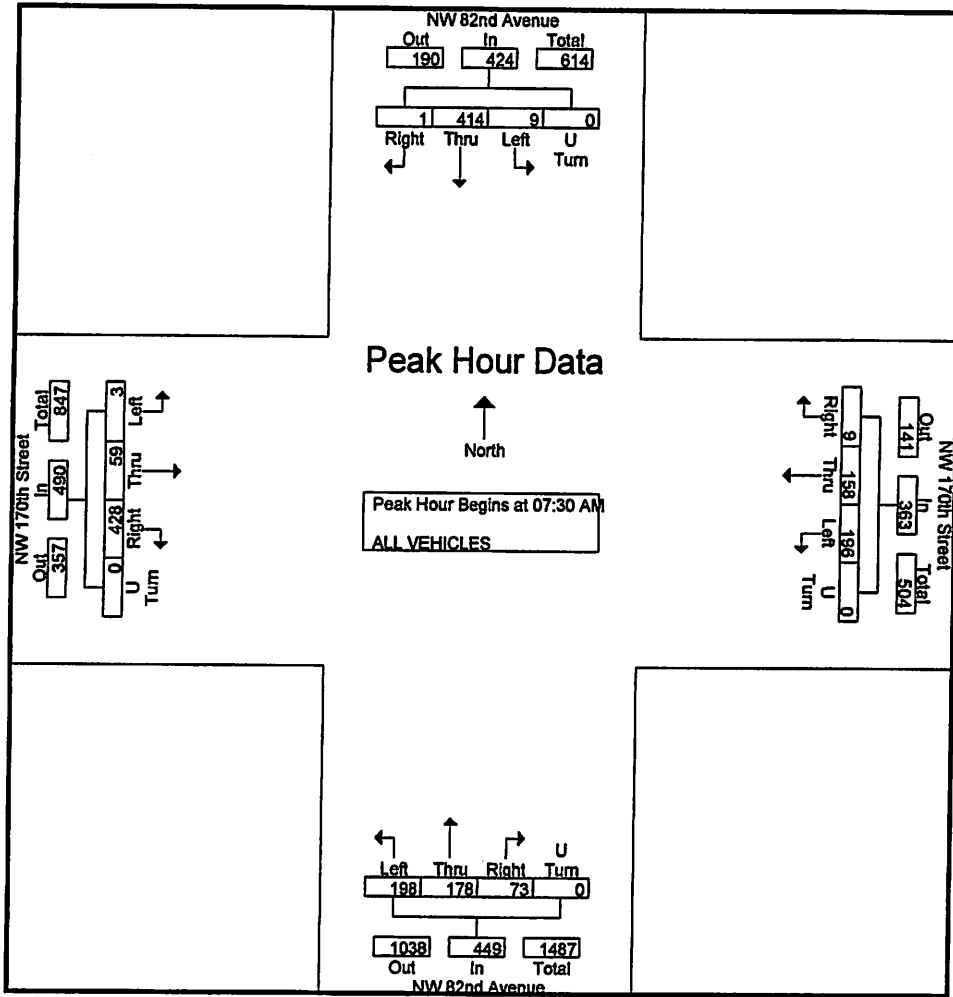
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 82nd Avenue
 Miami Lakes, Florida
 Counted By: Sebastian Salvo
 Signalized

File Name : NW170thStreet&82ndAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 2

Start Time	NW 82nd Avenue From North					NW 170th Street From East					NW 82nd Avenue From South					NW 170th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	1	83	2	0	86	1	47	33	0	81	24	42	54	0	120	107	18	1	0	126	413
07:45 AM	0	104	2	0	106	3	58	51	0	112	20	48	58	0	126	91	14	1	0	106	450
08:00 AM	0	109	3	0	112	3	30	53	0	86	14	49	45	0	108	104	13	1	0	118	424
08:15 AM	0	118	2	0	120	2	23	59	0	84	15	39	41	0	95	126	14	0	0	140	439
Total Volume	1	414	9	0	424	9	158	196	0	363	73	178	198	0	449	428	59	3	0	490	1726
% App. Total	0.2	97.6	2.1	0		2.5	43.5	54	0		16.3	39.6	44.1	0		87.3	12	0.6	0		
PHF	.250	.877	.750	.000	.883	.750	.681	.831	.000	.810	.760	.908	.853	.000	.891	.849	.819	.750	.000	.875	.959



Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 87th Avenue
 Miami Lakes, Florida
 Counted By: Itzhak Bendahan
 Not Signalized

File Name : NW170thStreet&87thAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 1

Groups Printed- ALL VEHICLES

Start Time	NW 87th Avenue From North				NW 170th Street From East				NW 87th Avenue From South				NW 170th Street From West				Int. Total
	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	
07:00 AM	1	5	27	0	28	14	16	0	57	28	2	0	1	34	2	0	215
07:15 AM	2	4	31	0	45	13	11	1	55	26	1	0	2	16	3	1	211
07:30 AM	3	3	62	0	51	23	21	0	66	37	1	0	4	35	1	0	307
07:45 AM	5	10	48	0	61	34	17	0	87	32	1	0	3	42	10	0	350
Total	11	22	168	0	185	84	65	1	265	123	5	0	10	127	16	1	1083
08:00 AM	4	13	32	0	43	19	25	0	79	16	9	0	1	45	8	0	294
08:15 AM	0	12	32	0	34	20	18	0	46	27	8	0	3	29	7	0	236
08:30 AM	0	6	39	0	30	6	23	0	35	19	0	0	7	34	1	0	200
08:45 AM	1	10	42	0	22	10	13	0	38	17	0	0	0	17	2	0	172
Total	5	41	145	0	129	55	79	0	198	79	17	0	11	125	18	0	902
04:00 PM	0	29	52	0	31	29	38	0	29	6	3	0	2	22	4	0	245
04:15 PM	1	15	54	0	37	21	48	0	25	13	0	0	1	19	0	0	234
04:30 PM	2	33	47	0	40	21	52	0	23	13	3	0	4	21	1	0	260
04:45 PM	3	22	36	0	34	15	40	0	23	22	0	0	0	10	2	0	207
Total	6	99	189	0	142	86	178	0	100	54	6	0	7	72	7	0	946
05:00 PM	2	30	28	0	43	24	42	0	30	14	4	0	6	17	0	0	240
05:15 PM	3	45	60	0	48	23	38	0	34	13	3	0	1	17	0	0	285
05:30 PM	0	30	56	0	46	22	43	0	23	19	1	0	0	26	1	0	267
05:45 PM	2	41	33	0	49	25	46	0	34	23	0	0	4	16	2	0	275
Total	7	146	177	0	186	94	169	0	121	69	8	0	11	76	3	0	1067
Grand Total	29	308	679	0	642	319	491	1	684	325	36	0	39	400	44	1	3998
Apprch %	2.9	30.3	66.8	0	44.2	22	33.8	0.1	65.5	31.1	3.4	0	8.1	82.6	9.1	0.2	
Total %	0.7	7.7	17	0	16.1	8	12.3	0	17.1	8.1	0.9	0	1	10	1.1	0	

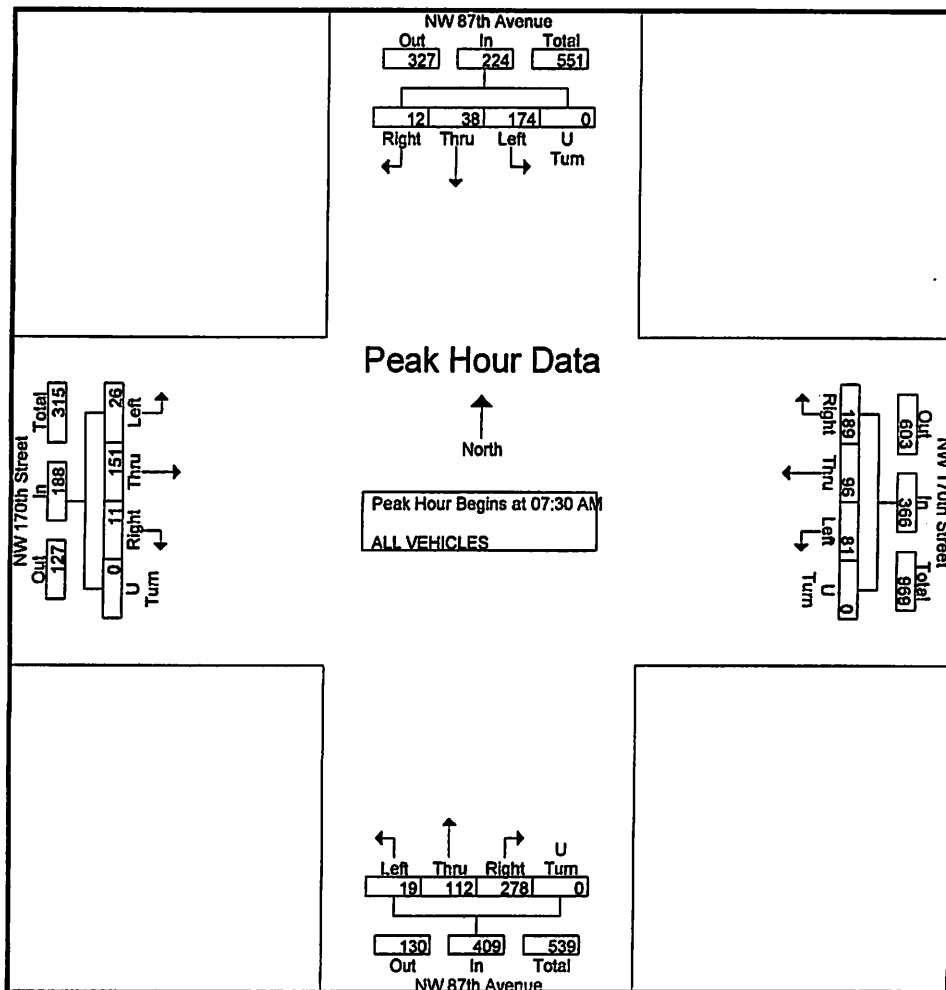
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 87th Avenue
Miami Lakes, Florida
Counted By: Itzhak Bendahan
Not Signalized

File Name : NW170thStreet&87thAvenue
Site Code : 100117
Start Date : 12/7/2010
Page No : 2

Start Time	NW 87th Avenue From North					NW 170th Street From East					NW 87th Avenue From South					NW 170th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	3	3	62	0	68	51	23	21	0	95	66	37	1	0	104	4	35	1	0	40	307
07:45 AM	5	10	48	0	63	61	34	17	0	112	87	32	1	0	120	3	42	10	0	55	350
08:00 AM	4	13	32	0	49	43	19	25	0	87	79	16	9	0	104	1	45	8	0	54	294
08:15 AM	0	12	32	0	44	34	20	18	0	72	46	27	8	0	81	3	29	7	0	39	236
Total Volume	12	38	174	0	224	189	96	81	0	366	278	112	19	0	409	11	151	26	0	188	1187
% App. Total	5.4	17	77.7	0		51.6	26.2	22.1	0		68	27.4	4.6	0		5.9	80.3	13.8	0		
PHF	.600	.731	.702	.000	.824	.775	.706	.810	.000	.817	.799	.757	.528	.000	.852	.688	.839	.650	.000	.855	.848



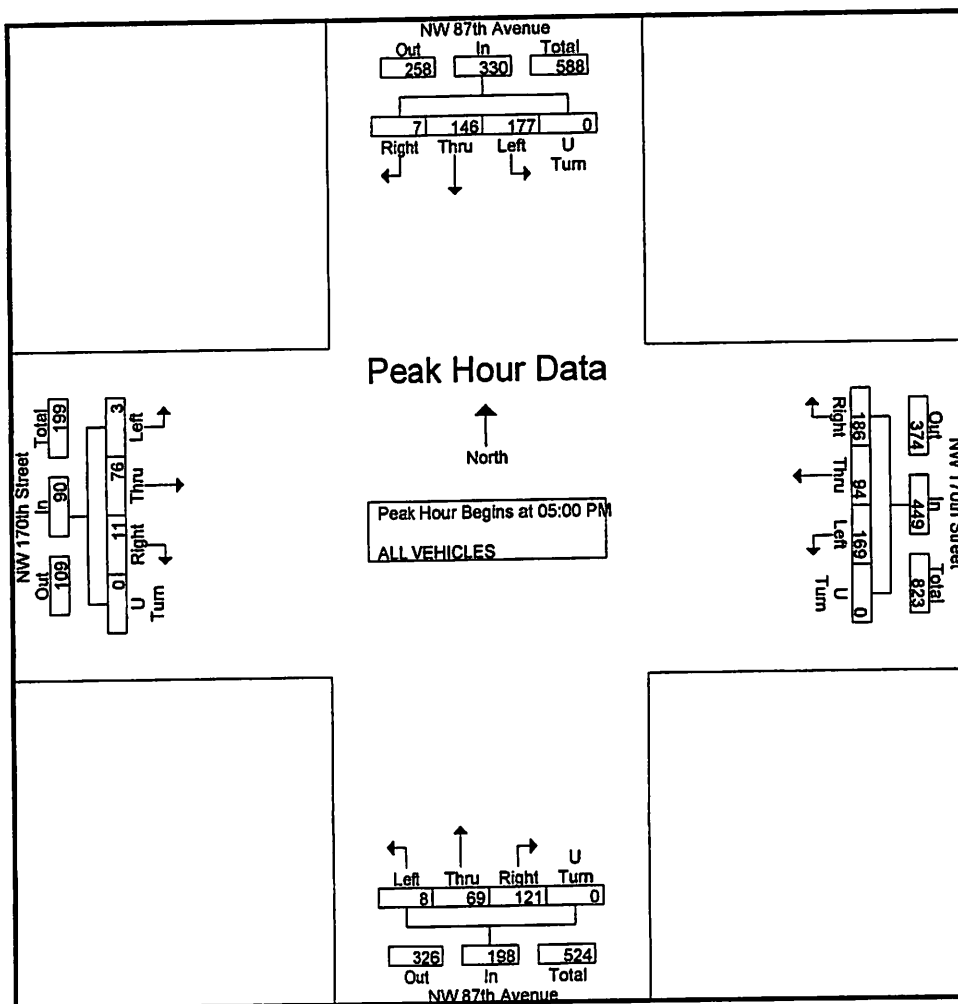
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 87th Avenue
Miami Lakes, Florida
Counted By: Itzhak Bendahan
Not Signalized

File Name : NW170thStreet&87thAvenue
Site Code : 100117
Start Date : 12/7/2010
Page No : 3

Start Time	NW 87th Avenue From North					NW 170th Street From East					NW 87th Avenue From South					NW 170th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	30	28	0	60	43	24	42	0	109	30	14	4	0	48	6	17	0	0	23	240
05:15 PM	3	45	60	0	108	48	23	38	0	109	34	13	3	0	50	1	17	0	0	18	285
05:30 PM	0	30	56	0	86	46	22	43	0	111	23	19	1	0	43	0	26	1	0	27	267
05:45 PM	2	41	33	0	76	49	25	46	0	120	34	23	0	0	57	4	16	2	0	22	275
Total Volume	7	146	177	0	330	186	94	169	0	449	121	69	8	0	198	11	76	3	0	90	1067
% App. Total	2.1	44.2	53.6	0		41.4	20.9	37.6	0		61.1	34.8	4	0		12.2	84.4	3.3	0		
PHF	.583	.811	.738	.000	.764	.949	.940	.918	.000	.935	.890	.750	.500	.000	.868	.458	.731	.375	.000	.833	.936



Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 82nd Avenue
 Miami Lakes, Florida
 Counted By: Sebastian Salvo
 Signalized

File Name : NW170thStreet&82ndAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 1

Groups Printed- ALL VEHICLES

Start Time	NW 82nd Avenue From North				NW 170th Street From East				NW 82nd Avenue From South				NW 170th Street From West				Int. Total
	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	
07:00 AM	2	88	5	0	4	8	19	0	11	34	49	0	104	24	0	1	349
07:15 AM	1	79	2	0	2	24	29	0	35	48	50	0	85	29	0	0	384
07:30 AM	1	83	2	0	1	47	33	0	24	42	54	0	107	18	1	0	413
07:45 AM	0	104	2	0	3	58	51	0	20	48	58	0	91	14	1	0	450
Total	4	354	11	0	10	137	132	0	90	172	211	0	387	85	2	1	1596
08:00 AM	0	109	3	0	3	30	53	0	14	49	45	0	104	13	1	0	424
08:15 AM	0	118	2	0	2	23	59	0	15	39	41	0	126	14	0	0	439
08:30 AM	0	91	7	0	1	17	41	0	17	23	40	0	93	20	2	1	353
08:45 AM	1	66	6	0	0	12	36	0	14	32	33	0	83	27	3	0	313
Total	1	384	18	0	6	82	189	0	60	143	159	0	406	74	6	1	1529
04:00 PM	0	42	8	0	3	31	23	0	12	61	82	0	69	20	1	0	352
04:15 PM	2	39	1	0	1	26	17	0	20	59	95	0	77	19	1	0	357
04:30 PM	2	40	0	0	3	27	20	0	19	71	86	0	67	25	1	0	361
04:45 PM	1	51	5	0	3	26	23	0	18	69	62	0	63	14	1	0	336
Total	5	172	14	0	10	110	83	0	69	260	325	0	276	78	4	0	1406
05:00 PM	0	59	0	0	0	22	31	0	32	104	83	0	71	10	1	0	413
05:15 PM	3	32	6	0	1	32	27	0	32	77	101	0	94	20	1	0	426
05:30 PM	2	67	2	0	3	24	25	0	44	95	98	0	91	17	1	0	469
05:45 PM	1	49	7	0	9	32	29	0	25	91	89	0	77	17	1	0	427
Total	6	207	15	0	13	110	112	0	133	367	371	0	333	64	4	0	1735
Grand Total	16	1117	58	0	39	439	516	0	352	942	1066	0	1402	301	16	2	6266
Apprch %	1.3	93.8	4.9	0	3.9	44.2	51.9	0	14.9	39.9	45.2	0	81.5	17.5	0.9	0.1	
Total %	0.3	17.8	0.9	0	0.6	7	8.2	0	5.6	15	17	0	22.4	4.8	0.3	0	

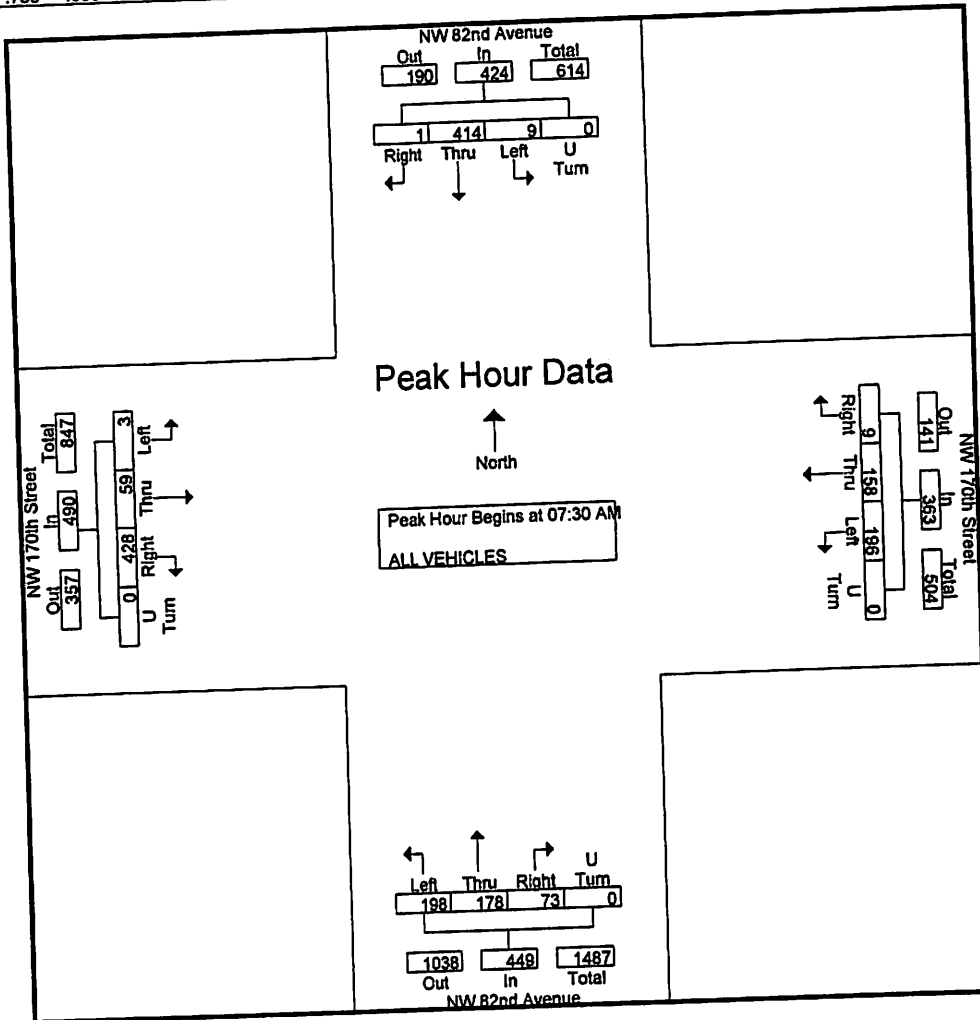
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 82nd Avenue
Miami Lakes, Florida
Counted By: Sebastian Salvo
Signalized

File Name : NW170thStreet&82ndAvenue
Site Code : 100117
Start Date : 12/7/2010
Page No : 2

Start Time	NW 82nd Avenue From North					NW 170th Street From East				NW 82nd Avenue From South					NW 170th Street From West					Int. Total	
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	1	83	2	0	86	1	47	33	0	81	24	42	54	0	120	107	18	1	0	126	413
07:45 AM	0	104	2	0	106	3	58	51	0	112	20	48	58	0	126	91	14	1	0	106	450
08:00 AM	0	109	3	0	112	3	30	53	0	86	14	49	45	0	108	104	13	1	0	118	424
08:15 AM	0	118	2	0	120	2	23	59	0	84	15	39	41	0	95	126	14	0	0	140	439
Total Volume	1	414	9	0	424	9	158	196	0	363	73	178	198	0	449	428	59	3	0	490	1726
% App. Total	0.2	97.6	2.1	0		2.5	43.5	54	0		16.3	39.6	44.1	0		87.3	12	0.6	0		.959
PHF	.250	.877	.750	.000	.883	.750	.681	.831	.000	.810	.760	.908	.853	.000	.891	.849	.819	.750	.000	.875	.959



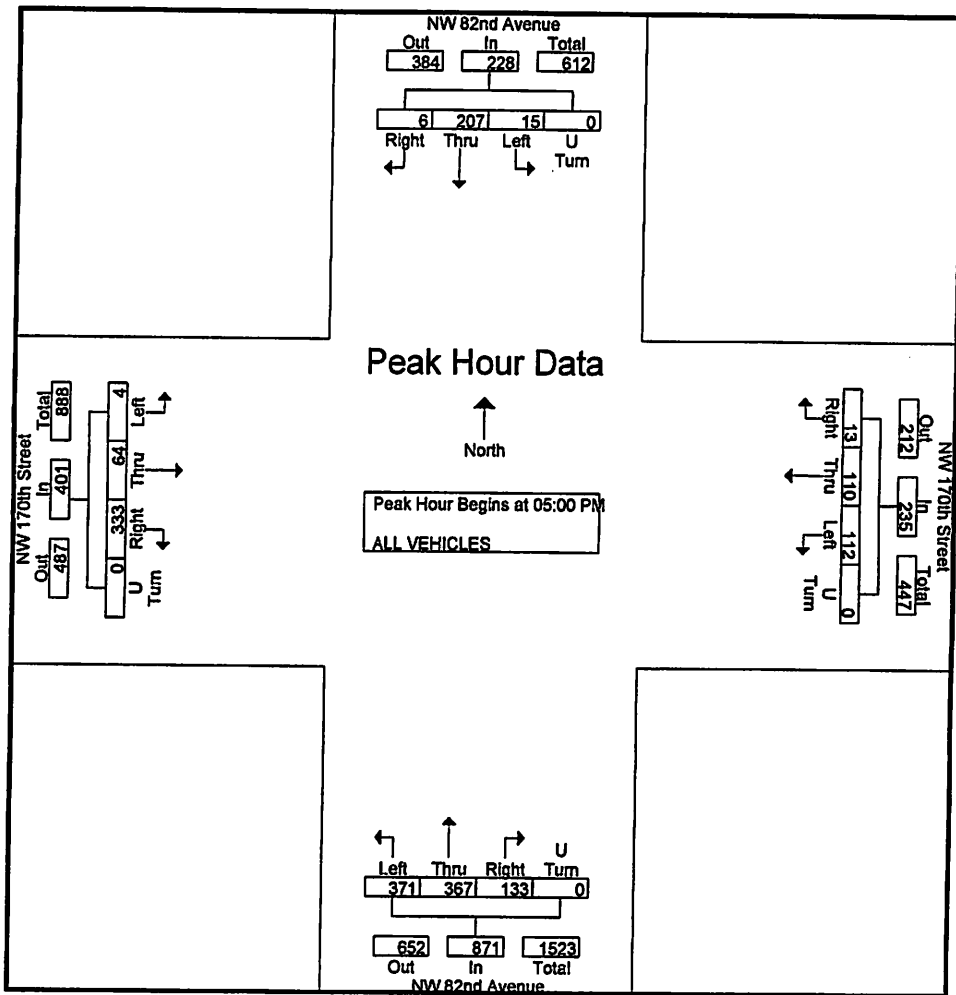
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 82nd Avenue
Miami Lakes, Florida
Counted By: Sebastian Salvo
Signalized

File Name : NW170thStreet&82ndAvenue
Site Code : 100117
Start Date : 12/7/2010
Page No : 3

Start Time	NW 82nd Avenue From North					NW 170th Street From East					NW 82nd Avenue From South					NW 170th Street From West					Int. Total
	Righ t	Thru	Left	U Turn	App. Total	Righ t	Thru	Left	U Turn	App. Total	Righ t	Thru	Left	U Turn	App. Total	Righ t	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	59	0	0	59	0	22	31	0	53	32	104	83	0	219	71	10	1	0	82	413
05:15 PM	3	32	6	0	41	1	32	27	0	60	32	77	101	0	210	94	20	1	0	115	426
05:30 PM	2	67	2	0	71	3	24	25	0	52	44	95	98	0	237	91	17	1	0	109	469
05:45 PM	1	49	7	0	57	9	32	29	0	70	25	91	89	0	205	77	17	1	0	95	427
Total Volume	6	207	15	0	228	13	110	112	0	235	133	367	371	0	871	333	64	4	0	401	1735
% App. Total	2.6	90.8	6.6	0		5.5	46.8	47.7	0		15.3	42.1	42.6	0		83	16	1	0		
PHF	.500	.772	.536	.000	.803	.361	.859	.903	.000	.839	.756	.882	.918	.000	.919	.886	.800	1.000			



Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 154th Street & NW 82nd Avenue
Miami Lakes, Florida
Counted By: Maxie Espinosa
Signalized

File Name : NW154thStreet&82ndAvenue
Site Code : 100117
Start Date : 12/7/2010
Page No : 1

Groups Printed- ALL VEHICLES

Start Time	NW 82nd Avenue From North				NW 154th Street From East				NW 82nd Avenue From South				NW 154th Street From West				Int. Total
	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	Right	Thru	Left	U Turn	
07:00 AM	119	33	121	0	25	110	18	0	16	8	5	0	3	135	57	0	650
07:15 AM	60	43	132	0	30	59	18	0	10	20	3	0	11	143	75	0	604
07:30 AM	77	43	141	0	44	72	21	0	14	27	9	0	7	68	57	1	581
07:45 AM	101	42	128	0	63	103	41	2	10	26	7	0	2	97	58	0	680
Total	357	161	522	0	162	344	98	2	50	81	24	0	23	443	247	1	2515
08:00 AM	112	46	138	0	43	106	51	3	23	19	12	0	4	123	64	0	744
08:15 AM	93	46	150	1	40	119	31	0	12	23	7	0	3	152	84	0	761
08:30 AM	78	52	127	0	39	92	40	1	9	18	11	0	1	111	58	0	637
08:45 AM	55	44	121	0	44	83	38	1	16	11	6	0	1	76	34	0	530
Total	338	188	536	1	166	400	160	5	60	71	36	0	9	462	240	0	2672
04:00 PM	23	19	73	0	81	131	46	2	16	34	13	0	2	107	56	0	603
04:15 PM	36	23	51	0	84	112	40	0	21	30	5	0	7	81	55	0	545
04:30 PM	41	22	65	0	88	111	49	1	17	46	9	0	3	96	65	0	613
04:45 PM	37	24	73	0	76	98	42	1	37	35	13	0	1	80	59	0	576
Total	137	88	262	0	329	452	177	4	91	145	40	0	13	364	235	0	2337
05:00 PM	46	21	74	0	97	165	51	1	32	53	17	0	1	108	55	1	722
05:15 PM	55	21	76	0	89	185	75	1	18	70	24	0	4	127	53	0	798
05:30 PM	56	31	77	0	114	172	58	1	22	68	17	0	7	131	57	0	811
05:45 PM	64	31	79	0	89	166	51	5	22	61	14	0	3	120	70	0	775
Total	221	104	306	0	389	688	235	8	94	252	72	0	15	486	235	1	3106
Grand Total	1053	541	1626	1	1046	1884	670	19	295	549	172	0	60	1755	957	2	10630
Apprch %	32.7	16.8	50.5	0	28.9	52.1	18.5	0.5	29	54	16.9	0	2.2	63.3	34.5	0.1	
Total %	9.9	5.1	15.3	0	9.8	17.7	6.3	0.2	2.8	5.2	1.6	0	0.6	16.5	9	0	

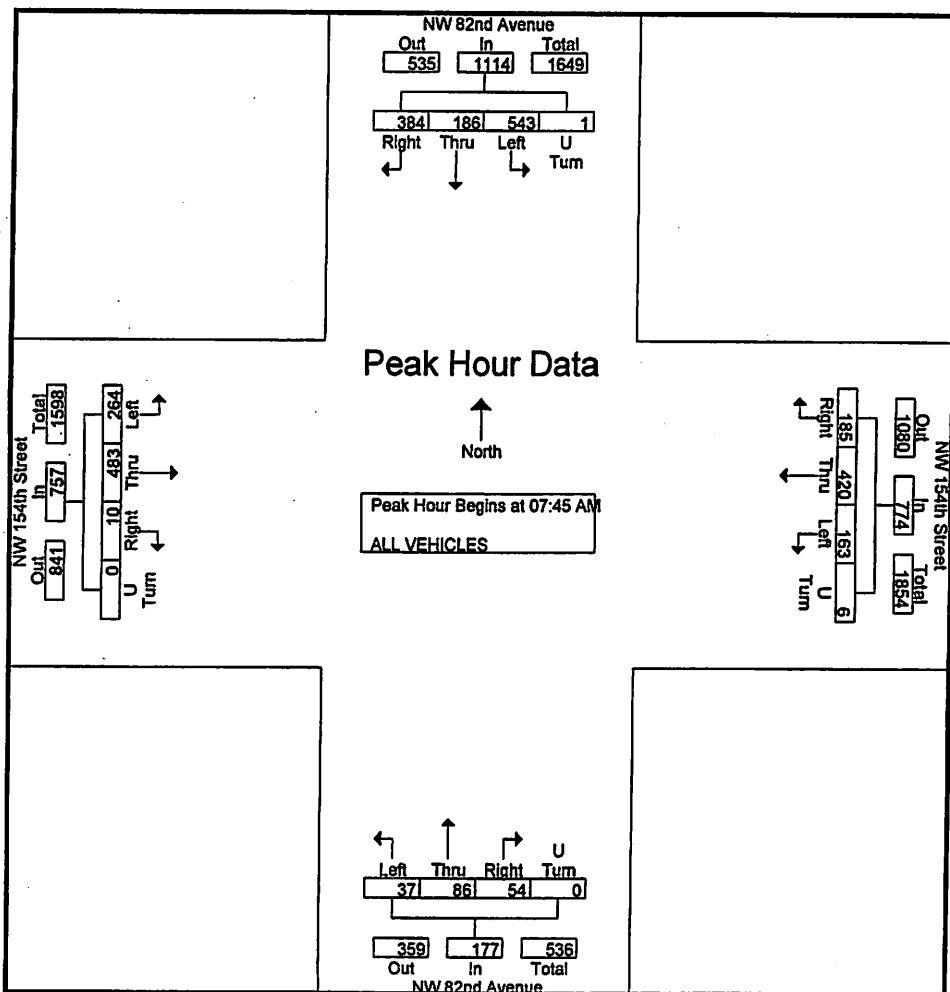
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 154th Street & NW 82nd Avenue
 Miami Lakes, Florida
 Counted By: Maxie Espinosa
 Signalized

File Name : NW154thStreet&82ndAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 2

Start Time	NW 82nd Avenue From North					NW 154th Street From East					NW 82nd Avenue From South					NW 154th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	101	42	128	0	271	63	103	41	2	209	10	26	7	0	43	2	97	58	0	157	680
08:00 AM	112	46	138	0	296	43	106	51	3	203	23	19	12	0	54	4	123	64	0	191	744
08:15 AM	93	46	150	1	290	40	119	31	0	190	12	23	7	0	42	3	152	84	0	239	761
08:30 AM	78	52	127	0	257	39	92	40	1	172	9	18	11	0	38	1	111	58	0	170	637
Total Volume	384	186	543	1	1114	185	420	163	6	774	54	86	37	0	177	10	483	264	0	757	2822
% App. Total	34.5	16.7	48.7	0.1		23.9	54.3	21.1	0.8		30.5	48.6	20.9	0		1.3	63.8	34.9	0		
PHF	.857	.894	.905	.250	.941	.734	.882	.799	.500	.926	.587	.827	.771	.000	.819	.625	.794	.786	.000	.792	.927



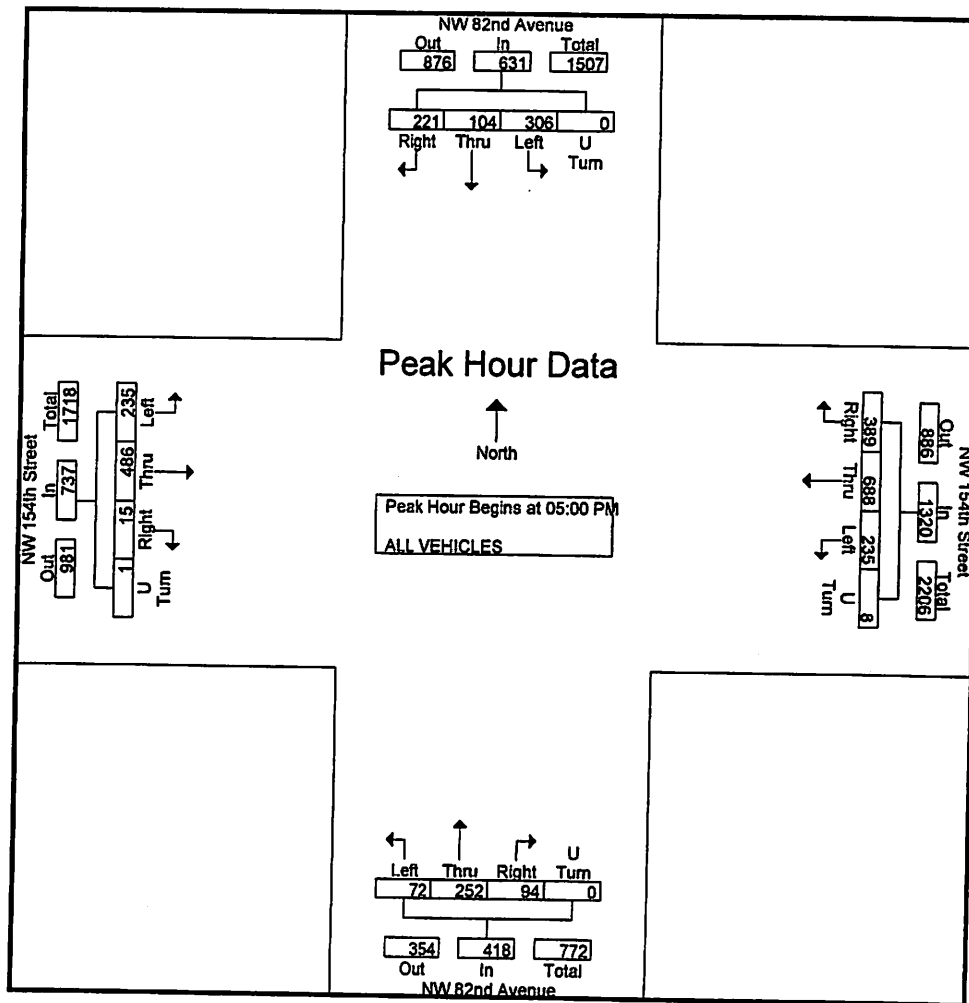
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

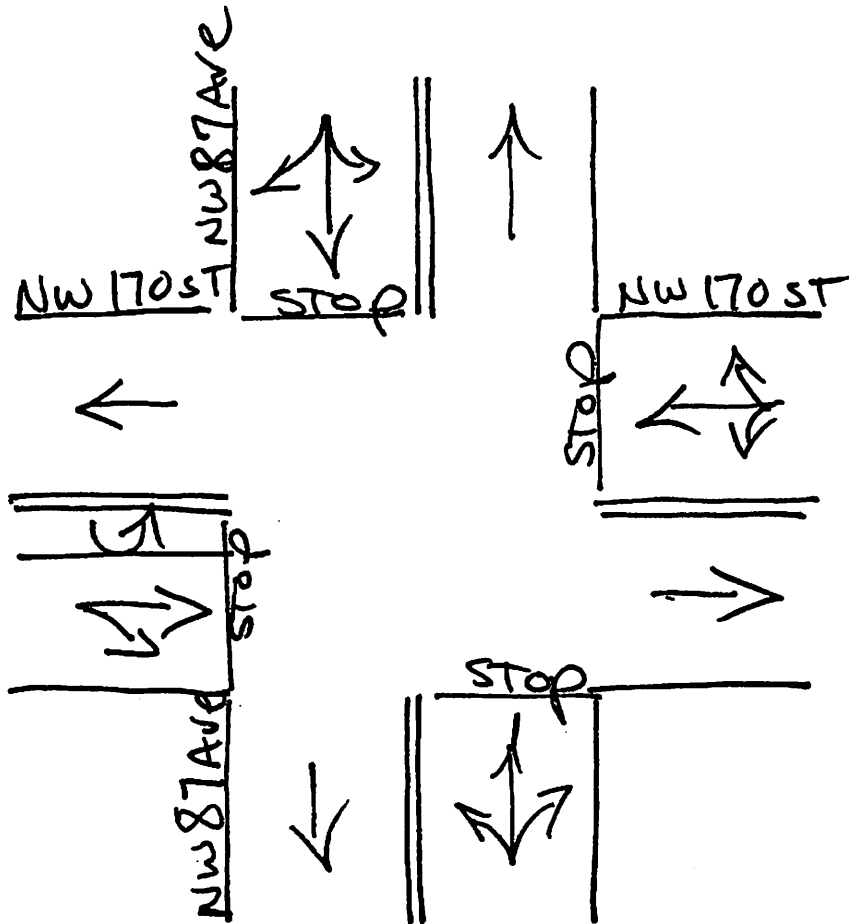
NW 154th Street & NW 82nd Avenue
 Miami Lakes, Florida
 Counted By: Maxie Espinosa
 Signalized

File Name : NW154thStreet&82ndAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 3

Start Time	NW 82nd Avenue From North					NW 154th Street From East					NW 82nd Avenue From South					NW 154th Street From West					Int. Total
	Righ ↓	Thru	Left	U Turn	App. Total	Righ ↓	Thru	Left	U Turn	App. Total	Righ ↓	Thru	Left	U Turn	App. Total	Righ ↓	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	46	21	74	0	141	97	165	51	1	314	32	53	17	0	102	1	108	55	1	165	722
05:15 PM	55	21	76	0	152	89	185	75	1	350	18	70	24	0	112	4	127	53	0	184	798
05:30 PM	56	31	77	0	164	114	172	58	1	345	22	68	17	0	107	7	131	57	0	195	811
05:45 PM	64	31	79	0	174	89	166	51	5	311	22	61	14	0	97	3	120	70	0	193	775
Total Volume	221	104	306	0	631	389	688	235	8	1320	94	252	72	0	418	15	486	235	1	737	3106
% App. Total	35	16.5	48.5	0		29.5	52.1	17.8	0.6		22.5	60.3	17.2	0		2	65.9	31.9	0.1		
PHF	.863	.839	.968	.000	.907	.853	.930	.783	.400	.943	.734	.900	.750	.000	.933	.536	.927	.839	.250	.945	.957



↑
North



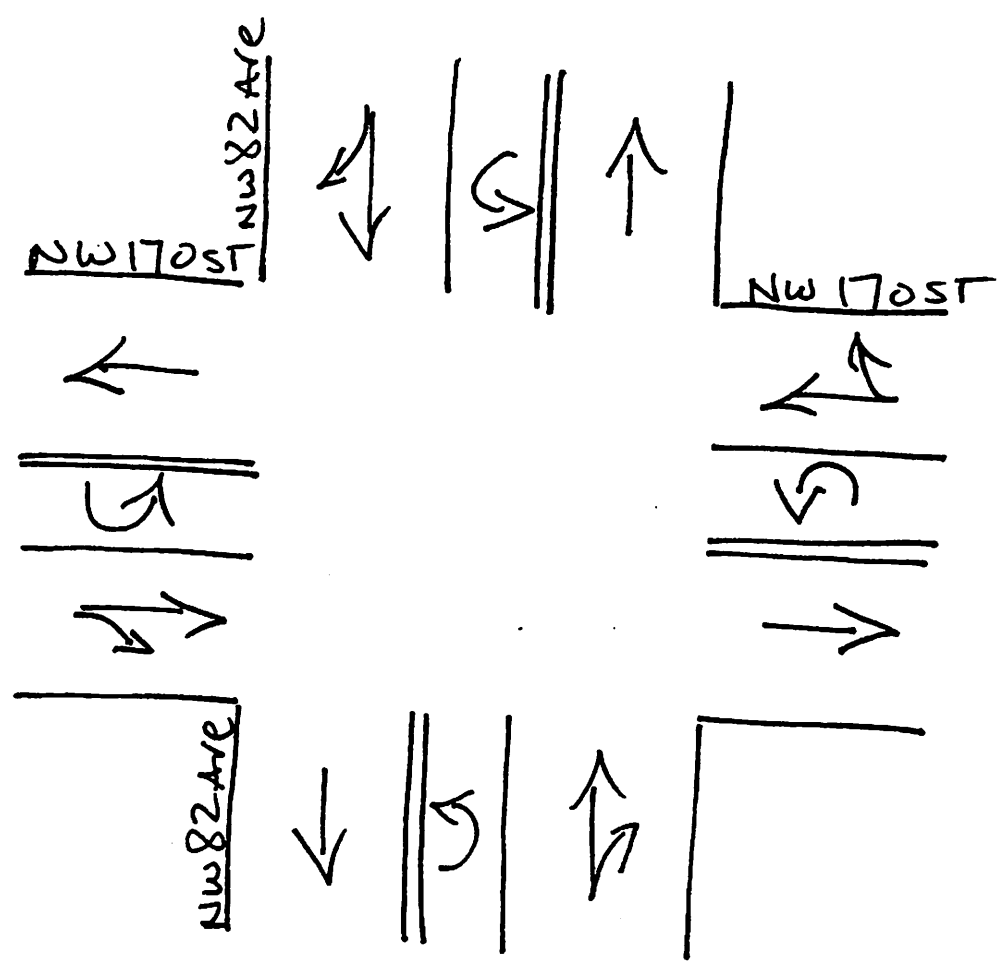
Miami Lakes, Florida

December 08, 2010

drawn by: Luis Palomino

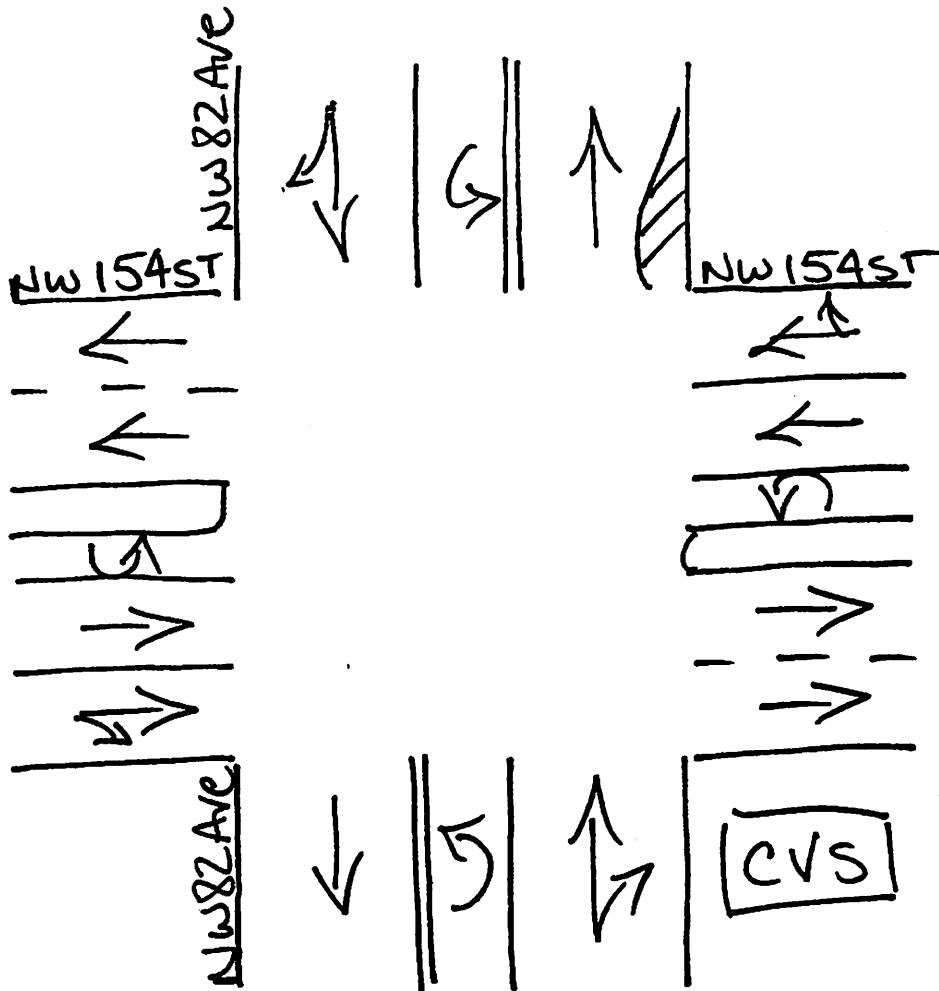
NOT signalized

↑
North



Miami Lakes, Florida
December 08, 2010
drawn by: Luis Palomino
Signalized

↑
North



Miami Lakes, Florida
December 08, 2010
drawn by: Luis Palomino
Signalized

Traffic Survey Specialists, Inc. 624 Gardenia Terrace
 Delray Beach, Florida 33444 Phone (561) 272-3255
 Volume Report with 24 Hour Totals

 Data File : D1207002.PRN
 Station : 000000120602
 Identification : 009845970075
 Start date : Dec 7, 10
 Stop date : Dec 7, 10
 City/Town : Miami Lakes, Florida
 Location : NW 79th Avenue North of NW 155th Street
 Interval : 15 minutes
 Start time : 00:00
 Stop time : 24:00
 County : Dade

Dec 7 Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	8	2	0	2	1	3	3	37	206	37	35	29
30	6	1	3	1	0	0	6	69	210	33	33	29
45	3	2	1	0	2	2	11	108	124	48	30	38
00	7	2	3	0	3	6	19	152	35	36	31	34
Hr Total	24	7	7	3	6	11	39	366	575	154	129	130

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	44	38	56	119	92	80	83	96	37	37	15	19
30	41	39	62	76	91	89	72	69	60	38	28	12
45	45	60	145	86	83	96	68	71	43	46	18	11
00	30	70	146	88	92	88	84	75	46	28	22	5
Hr Total	160	207	409	369	358	353	307	311	186	149	83	47

24 Hour Total : 4390
 AM peak hour begins : 07:45 AM peak volume : 692 Peak hour factor : 0.82
 PM peak hour begins : 14:30 PM peak volume : 486 Peak hour factor : 0.83

Dec 7 Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	0	2	1	3	5	16	90	110	57	54	44
30	4	0	0	1	3	6	25	100	104	75	62	44
45	5	5	0	2	5	10	45	95	109	62	46	44
00	0	4	2	1	1	20	79	89	68	46	42	53
Hr Total	10	9	4	5	12	41	165	374	391	240	204	185

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	50	38	42	127	57	57	52	39	35	21	15	6
30	30	43	32	81	44	54	52	55	35	15	9	8
45	33	36	40	57	58	52	42	31	28	13	13	6
00	30	41	45	51	51	46	49	34	30	16	11	4
Hr Total	143	158	159	316	210	209	195	159	128	65	48	24

24 Hour Total : 3454
 AM peak hour begins : 07:45 AM peak volume : 412 Peak hour factor : 0.94
 PM peak hour begins : 15:00 PM peak volume : 316 Peak hour factor : 0.62

Traffic Survey Specialists, Inc. 624 Gardenia Terrace
 Delray Beach, Florida 33444 Phone (561) 272-3255

Volume Report with 24 Hour Totals

Data File : D1207002.PRN
 Station : 000000120602
 Identification : 009845970075
 Start date : Dec 7, 10
 Stop date : Dec 7, 10
 City/Town : Miami Lakes, Florida
 Location : NW 79th Avenue North of NW 155th Street
 Interval : 15 minutes
 Start time : 00:00
 Stop time : 24:00
 County : Dade

Dec 7 Total Volume for All Lanes

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	9	2	2	3	4	8	19	127	316	94	89	73
30	10	1	3	2	3	6	31	169	314	108	95	73
45	8	7	1	2	7	12	56	203	233	110	76	82
00	7	6	5	1	4	26	98	241	103	82	73	87

Hr Total 34 16 11 8 18 52 204 740 966 394 333 315

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	94	76	98	246	149	137	135	135	72	58	30	25
30	71	82	94	157	135	143	124	124	95	53	37	20
45	78	96	185	143	141	148	110	102	71	59	31	17
00	60	111	191	139	143	134	133	109	76	44	33	9

Hr Total 303 365 568 685 568 562 502 470 314 214 131 71

24 Hour Total : 7844
 AM peak hour begins : 07:45 AM peak volume : 1104 Peak hour factor : 0.87
 PM peak hour begins : 14:30 PM peak volume : 779 Peak hour factor : 0.79

Traffic Survey Specialists, Inc. 624 Gardenia Terrace
 Delray Beach, Florida 33444 Phone (561) 272-3255
 Volume Report with 24 Hour Totals

 Data File : D1207003.PRN
 Station : 000000120604
 Identification : 009600650020 Interval : 15 minutes
 Start date : Dec 7, 10 Start time : 00:00
 Stop date : Dec 7, 10 Stop time : 24:00
 City/Town : Miami Lakes, Florida County : Dade
 Location : NW 170th Street East of NW 85th Court

Eastbound Volume for Lane 1

Dec 7

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	6	2	1	2	1	8	38	122	105	95	63	60
30	8	2	3	1	7	19	65	103	98	84	48	63
45	6	3	2	3	4	17	107	145	107	67	67	60
00	5	0	0	2	9	20	125	141	97	69	67	40
Hr Total	25	7	6	8	21	64	335	511	407	315	245	223

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	60	67	82	129	103	75	86	72	84	36	38	23
30	52	57	72	100	95	109	86	67	56	30	37	18
45	60	77	104	90	91	102	90	48	60	47	39	17
00	62	61	84	82	72	82	69	57	35	48	18	13
Hr Total	234	262	342	401	361	368	331	244	235	161	132	71

24 Hour Total : 5309
 AM peak hour begins : 07:00 AM peak volume : 511 Peak hour factor : 0.88
 PM peak hour begins : 14:30 PM peak volume : 417 Peak hour factor : 0.81

Westbound Volume for Lane 2

Dec 7

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	17	8	4	3	3	2	15	57	88	51	27	33
30	11	3	1	1	4	5	15	70	66	35	32	53
45	6	3	1	2	4	5	25	90	55	41	45	37
00	4	6	1	0	2	2	45	116	40	41	34	47
Hr Total	38	20	7	6	13	14	100	333	249	168	138	170

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	54	66	68	125	102	98	115	91	83	71	37	20
30	43	65	77	94	108	120	116	84	68	63	39	18
45	51	61	89	83	109	102	98	86	87	60	30	17
00	54	63	122	87	86	107	82	97	64	50	22	14
Hr Total	202	255	356	389	405	427	411	358	302	244	128	69

24 Hour Total : 4802
 AM peak hour begins : 07:15 AM peak volume : 364 Peak hour factor : 0.78
 PM peak hour begins : 17:15 PM peak volume : 444 Peak hour factor : 0.93

Traffic Survey Specialists, Inc. 624 Gardenia Terrace
 Delray Beach, Florida 33444 Phone (561) 272-3255

Volume Report with 24 Hour Totals

Data File : D1207003.PRN
 Station : 000000120604
 Identification : 009600650020
 Start date : Dec 7, 10
 Stop date : Dec 7, 10
 City/Town : Miami Lakes, Florida
 Location : NW 170th Street East of NW 85th Court
 Interval : 15 minutes
 Start time : 00:00
 Stop time : 24:00
 County : Dade

Dec 7 Total Volume for All Lanes

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	23	10	5	5	4	10	53	179	193	146	90	93
30	19	5	4	2	11	24	80	173	164	119	80	116
45	12	6	3	5	8	22	132	235	162	108	112	97
00	9	6	1	2	11	22	170	257	137	110	101	87
Hr Total	63	27	13	14	34	78	435	844	656	483	383	393

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	114	133	150	254	205	173	201	163	167	107	75	43
30	95	122	149	194	203	229	202	151	124	93	76	36
45	111	138	193	173	200	204	188	134	147	107	69	34
00	116	124	206	169	158	189	151	154	99	98	40	27
Hr Total	436	517	698	790	766	795	742	602	537	405	260	140

24 Hour Total : 10111

AM peak hour begins : 07:15 AM peak volume : 858 Peak hour factor : 0.83

PM peak hour begins : 14:30 PM peak volume : 847 Peak hour factor : 0.83

QC JOB #: 10516409

DIRECTION: NB

DATE: Jun 29 2010 - Jul 01 2010

Average Week Profile

Type of report: Tube Count - Volume Data

LOCATION: NW 87th Ave 200' north of NW 170th St

SPECIFIC LOCATION: 10 ft from

CITY/STATE: Miami Lakes, FL

Start Time	Mon 29-Jun-10	Tue 30-Jun-10	Wed 01-Jul-10	Thu 01-Jul-10	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic
12:00 AM	17	23	28			22			22
1:00 AM	10	20	14			14			14
2:00 AM	5	30	5			13			13
3:00 AM	8	7	6			7			7
4:00 AM	9	15	13			12			12
5:00 AM	28	30	39			32			32
6:00 AM	90	89	87			88			88
7:00 AM	209	214	204			209			209
8:00 AM	234	239	220			231			231
9:00 AM	145	174	188			169			169
10:00 AM	159	158	174			163			163
11:00 AM	160	181	142			161			161
12:00 PM	157	186	180			174			174
1:00 PM	154	165	164			161			161
2:00 PM	168	159	155			160			160
3:00 PM	175	183	180			179			179
4:00 PM	220	221	202			214			214
5:00 PM	301	281	272			284			284
6:00 PM	253	249	250			250			250
7:00 PM	219	216	272			235			235
8:00 PM	193	198	202			197			197
9:00 PM	172	167	187			175			175
10:00 PM	75	94	120			96			96
11:00 PM	56	54	67			59			59
Day Total	3217	3353	3371			3305			3305
% Weekday Average	97.3%	101.5%	102.0%			100.0%			
% Week Average	97.3%	101.5%	102.0%						
AM Peak Volume	8:00 AM 234	8:00 AM 239	8:00 AM 220			8:00 AM 231			8:00 AM 231
PM Peak Volume	5:00 PM 301	5:00 PM 281	5:00 PM 272			5:00 PM 284			5:00 PM 284

Comments:

Report generated on 7/2/2010 9:23 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

LOCATION: NW 87th Ave 200' north of NW 170th St
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516409
 DIRECTION: SB

DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	35	32	40	35	35	35			35	
1:00 AM	19	18	28	21	21	21			19	
2:00 AM	4	40	15	19	19	19			6	
3:00 AM	4	10	6	6	6	6			11	
4:00 AM	10	11	13	11	11	11			21	
5:00 AM	23	24	17	21	21	21			68	
6:00 AM	76	63	67	68	68	68			190	
7:00 AM	188	188	196	190	190	190			237	
8:00 AM	249	234	229	237	237	237			218	
9:00 AM	195	237	223	218	218	218			189	
10:00 AM	175	187	205	189	189	189			188	
11:00 AM	185	199	182	188	188	188			204	
12:00 PM	205	203	206	204	204	204			204	
1:00 PM	206	200	206	198	198	198			198	
2:00 PM	180	203	211	226	226	226			284	
3:00 PM	210	247	223	284	284	284			375	
4:00 PM	274	274	305	375	375	375			334	
5:00 PM	372	376	377	338	338	338			284	
6:00 PM	333	332	338	282	282	282			225	
7:00 PM	295	276	282	197	197	197			144	
8:00 PM	207	216	253	144	144	144			80	
9:00 PM	185	210	173	80	80	80			3958	
10:00 PM	143	118	173	3958	3958	3958				
11:00 PM	75	68	99							
Day Total	3848	3966	4091	3958	3958	3958			3958	
% Weekday Average	97.2%	100.2%	103.4%	100.0%	100.0%	100.0%				
% Week Average	97.2%	100.2%	103.4%	100.0%	100.0%	100.0%				
AM Peak Volume	8:00 AM	9:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM			8:00 AM	
	249	237	229	237	237	237			237	
PM Peak Volume	5:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM			5:00 PM	
	372	376	377	375	375	375			375	
Comments:										

Type of report: Tube Count - Volume Data

LOCATION: NW 154th St 300' west of NW 87th Ave
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516407
 DIRECTION: EB
 DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average Weekday Hourly Traffic	Average Week Hourly Traffic	Average Week Profile
12:00 AM								8	8	
1:00 AM	7	13	13	6				5	5	
2:00 AM	3	8	8	6				4	4	
3:00 AM	4	7	7	2				3	3	
4:00 AM	2	4	4	4				3	3	
5:00 AM	5	1	1	3				3	3	
6:00 AM	7	3	3	8				6	6	
7:00 AM	22	23	23	15				20	20	
8:00 AM	41	36	36	34				37	37	
9:00 AM	38	40	40	39				39	39	
10:00 AM	30	34	34	34				32	32	
11:00 AM	43	37	37	48				42	42	
12:00 PM	35	40	40	43				39	39	
1:00 PM	41	46	46	54				47	47	
2:00 PM	40	32	32	44				38	38	
3:00 PM	55	45	45	51				50	50	
4:00 PM	39	45	45	40				41	41	
5:00 PM	44	23	23	48				38	38	
6:00 PM	71	88	88	65				74	74	
7:00 PM	91	53	53	62				68	68	
8:00 PM	71	54	54	58				61	61	
9:00 PM	55	60	60	52				55	55	
10:00 PM	47	45	45	52				48	48	
11:00 PM	21	28	28	39				29	29	
Day Total	17	18	18	23				19	19	
% Weekday Average	829	783	783	830				806	806	
% Week Average	102.9%	97.1%	97.1%	103.0%						
AM Peak Volume	102.9%	97.1%	97.1%	103.0%				100.0%		
PM Peak Volume	10:00 AM 43	8:00 AM 40	10:00 AM 48	10:00 AM 48				10:00 AM 42		
Comments:	6:00 PM 91	5:00 PM 88	5:00 PM 65	5:00 PM 65				5:00 PM 74		
								10:00 AM 42		
								5:00 PM 74		

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

QC JOB #: 10516407
 DIRECTION: WB
 DATE: Jun 29 2010 - Jul 01 2010
 LOCATION: NW 154th St 300' west of NW 87th Ave
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

Start Time	Mon 29-Jun-10	Tue 30-Jun-10	Wed 01-Jul-10	Thu 01-Jul-10	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	23	28	20	23	23	23			23	
1:00 AM	12	11	17	13	13	13			13	
2:00 AM	11	14	6	10	10	10			10	
3:00 AM	3	11	5	6	6	6			6	
4:00 AM	4	6	6	5	5	5			5	
5:00 AM	2	1	0	1	1	1			1	
6:00 AM	6	8	7	7	7	7			7	
7:00 AM	33	27	34	31	31	31			31	
8:00 AM	41	40	35	38	38	38			38	
9:00 AM	44	46	40	43	43	43			43	
10:00 AM	63	58	53	58	58	58			58	
11:00 AM	64	69	69	67	67	67			67	
12:00 PM	77	78	82	79	79	79			79	
1:00 PM	68	74	96	79	79	79			79	
2:00 PM	116	116	99	110	110	110			110	
3:00 PM	83	92	94	89	89	89			89	
4:00 PM	100	75	94	89	89	89			89	
5:00 PM	143	176	141	153	153	153			153	
6:00 PM	149	132	148	143	143	143			143	
7:00 PM	136	133	117	128	128	128			128	
8:00 PM	114	125	128	122	122	122			122	
9:00 PM	88	108	106	100	100	100			100	
10:00 PM	63	69	85	72	72	72			72	
11:00 PM	44	57	48	49	49	49			49	
Day Total	1487	1554	1530	1515	1515	1515			1515	
% Weekday Average	98.2%	102.6%	101.0%							
% Week Average	98.2%	102.6%	101.0%	100.0%						
AM Peak Volume	11:00 AM 64	11:00 AM 69	11:00 AM 69	11:00 AM 67	11:00 AM 67	11:00 AM 67			11:00 AM 67	
PM Peak Volume	6:00 PM 149	5:00 PM 176	6:00 PM 148	5:00 PM 153	5:00 PM 153	5:00 PM 153			5:00 PM 153	
Comments:										

Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 154th Street & NW 82nd Avenue
Miami Lakes, Florida

Counted By: Maxie Espinosa
Signalized

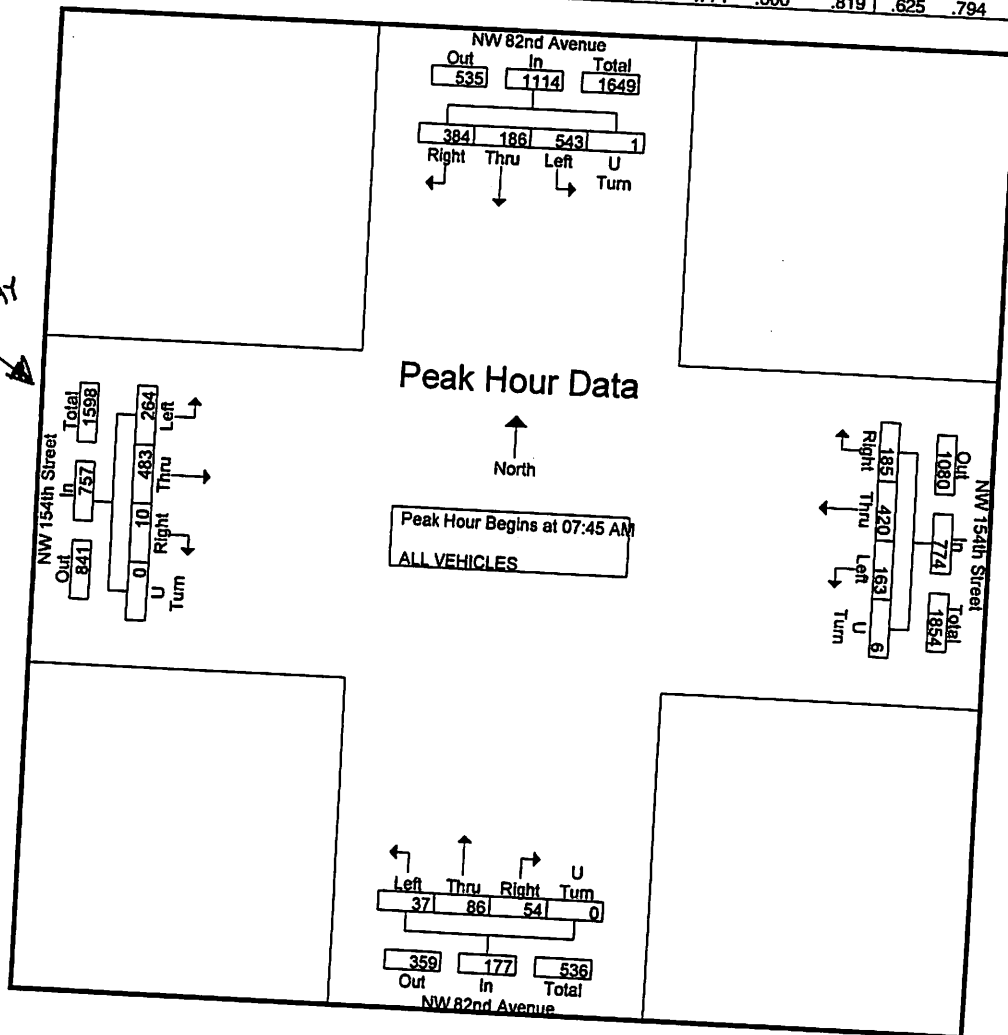
File Name : NW154thStreet&82ndAvenue
Site Code : 100117

Start Date : 12/7/2010

Page No : 2

Start Time	NW 82nd Avenue From North					NW 154th Street From East					NW 82nd Avenue From South					NW 154th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	101	42	128	0	271	63	103	41	2	209	10	26	7	0	43	2	97	58	0	157	680
08:00 AM	112	46	138	0	296	43	106	51	3	203	23	19	12	0	54	4	123	64	0	191	744
08:15 AM	93	46	150	1	290	40	119	31	0	190	12	23	7	0	42	3	152	84	0	239	761
08:30 AM	78	52	127	0	257	39	92	40	1	172	9	18	11	0	38	1	111	58	0	170	637
Total Volume	384	186	543	1	1114	185	420	163	6	774	54	86	37	0	177	10	483	264	0	757	2822
% App. Total	34.5	16.7	48.7	0.1		23.9	54.3	21.1	0.8		30.5	48.6	20.9	0		1.3	63.8	34.9	0		2822
PHF	.857	.894	.905	.250	.941	.734	.882	.799	.500	.926	.587	.827	.771	.000	.819	.625	.794	.786	.000	.792	.927

AM
TWO WAY



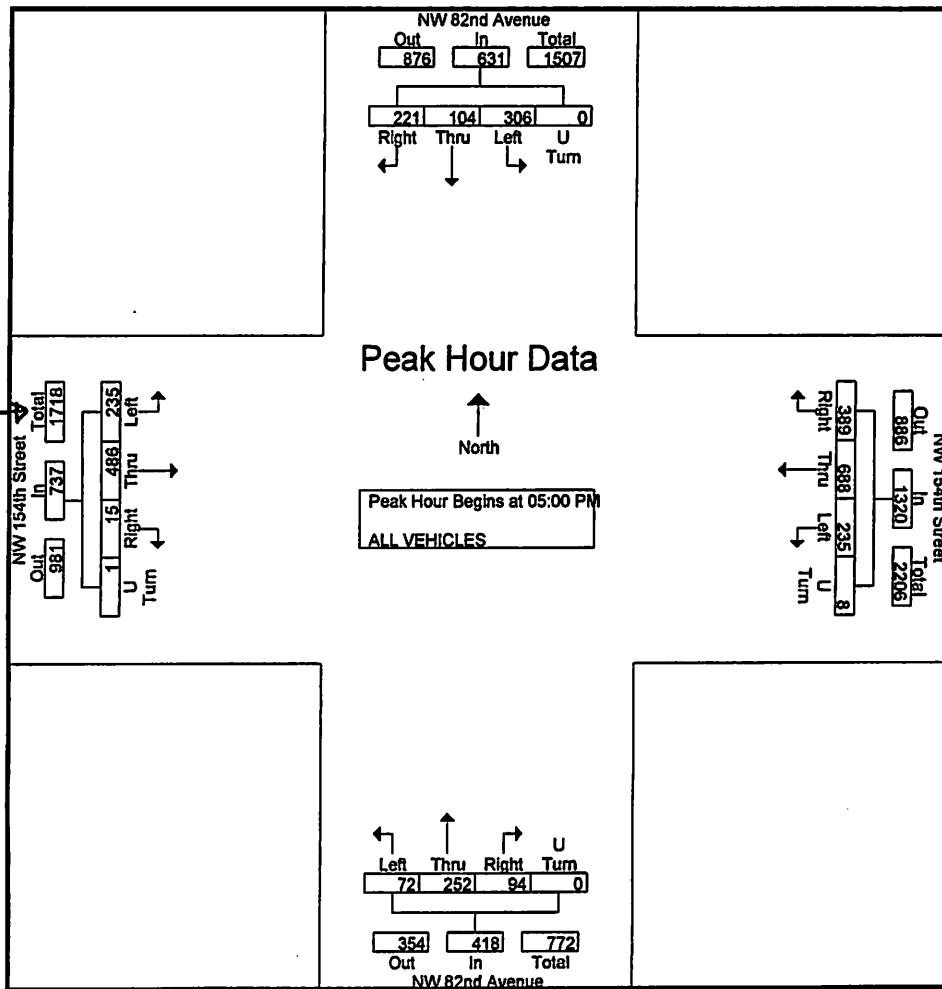
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 154th Street & NW 82nd Avenue
 Miami Lakes, Florida
 Counted By: Maxie Espinosa
 Signalized

File Name : NW154thStreet&82ndAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 3

Start Time	NW 82nd Avenue From North					NW 154th Street From East					NW 82nd Avenue From South					NW 154th Street From West					Int. Total
	Righ t	Thru	Left	U Turn	App. Total	Righ t	Thru	Left	U Turn	App. Total	Righ t	Thru	Left	U Turn	App. Total	Righ t	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	46	21	74	0	141	97	165	51	1	314	32	53	17	0	102	1	108	55	1	165	722
05:15 PM	55	21	76	0	152	89	185	75	1	350	18	70	24	0	112	4	127	53	0	184	798
05:30 PM	56	31	77	0	164	114	172	58	1	345	22	68	17	0	107	7	131	57	0	195	811
05:45 PM	64	31	79	0	174	89	166	51	5	311	22	61	14	0	97	3	120	70	0	193	775
Total Volume	221	104	306	0	631	389	688	235	8	1320	94	252	72	0	418	15	486	235	1	737	3106
% App. Total	35	16.5	48.5	0		29.5	52.1	17.8	0.6		22.5	60.3	17.2	0		2	65.9	31.9	0.1		
PHF	.863	.839	.968	.000	.907	.853	.930	.783	.400	.943	.734	.900	.750	.000	.933	.536	.927	.839	.250	.945	.957



Florida Department of Transportation

December 13, 2009

County 87	Station 0400	Site Description: _____
Start Date December 08, 2009	Start Time 23:45	Miami Lakes Dr B/W NW 82nd Ave and NW 79th Ct
Roadway ID: 87000000		

Time	Direction: E					Direction: W					Combined Total	
	1st ¼	2nd ¼	3rd ¼	4th ¼	Total	1st ¼	2nd ¼	3rd ¼	4th ¼	Total		
00:00	21	39	29	10	99	36	25	38	23	122	221	
01:00	5	6	7	7	25	19	13	9	12	53	78	
02:00	15	10	6	7	38	10	7	9	8	34	72	
03:00	3	15	17	10	45	5	4	10	6	25	70	
04:00	44	29	43	85	201	8	6	6	8	28	229	
05:00	85	79	89	175	428	5	26	23	33	87	515	
06:00	230	312	357	328	1227	49	110	142	216	517	1744	
07:00	311	337	329	306	1283	276	237	287	329	1129	2412	
08:00	376	412	377	324	1489	336	300	294	229	1159	2648	
09:00	304	221	233	206	964	185	154	149	153	641	1605	
10:00	170	189	171	188	718	142	138	156	164	600	1318	
11:00	213	157	140	204	714	162	171	160	174	667	1381	
12:00	184	186	169	192	731	193	169	190	193	745	1476	
13:00	182	193	171	199	745	206	229	174	230	839	1584	
14:00	203	187	210	218	818	193	219	229	258	899	1717	
15:00	217	276	286	313	1092	260	388	401	387	1436	2528	
16:00	289	348	292	389	1318	318	348	385	409	1460	2778	
17:00	435	369	426	371	1601	404	391	381	327	1503	3104	
18:00	343	364	279	231	1217	88	356	365	274	1083	2300	
19:00	181	139	179	170	669	248	230	207	218	903	1572	
20:00	192	145	150	167	654	173	169	171	145	658	1312	
21:00	154	162	137	87	540	148	148	123	118	537	1077	
22:00	86	76	95	57	314	118	98	68	69	353	667	
23:00	39	35	36	25	135	67	55	41	37	200	335	
24 Hour Total					17065	24 Hour Total					15678	32743

	Peak Information					
	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	08:00	1489	07:45	1259	07:45	2730
P.M.	16:45	1619	16:30	1589	16:45	3204
Daily	16:45	1619	16:30	1589	16:45	3204
Truck %	3.00		4.00		3.00	

Classification Summary Database																	
Direction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Total Vol
E	47	16201	376	49	51	209	20	94	18	0	0	0	0	0	0	441	17065
W	64	12806	2249	116	279	80	51	33	0	0	0	0	0	0	0	559	15678

Florida Department of Transportation

December 13, 2009

County 87	Station 0400	Site Description: Miami Lakes Dr B/W NW 82nd Ave and NW 79th Ct
Start Date December 09, 2009	Start Time 23:45	Roadway ID: 87000000

Time	Direction: E					Direction: W					Combined Total
	1st ¼	2nd ¼	3rd ¼	4th ¼	Total	1st ¼	2nd ¼	3rd ¼	4th ¼	Total	
00:00	25	23	17	8	73	44	40	26	27	137	210
01:00	18	5	5	15	43	17	14	10	9	50	93
02:00	10	3	10	14	37	10	12	9	8	39	76
03:00	3	7	16	24	50	5	10	7	5	27	77
04:00	26	21	33	68	148	4	10	7	8	29	177
05:00	72	83	83	178	416	8	17	22	35	82	498
06:00	238	346	367	331	1282	50	112	132	239	533	1815
07:00	313	379	336	348	1376	221	211	241	293	966	2342
08:00	329	414	353	240	1336	354	295	287	232	1168	2504
09:00	191	150	204	169	714	206	212	196	210	824	1538
10:00	184	173	185	185	727	165	169	144	139	617	1344
11:00	160	189	181	166	696	161	164	182	186	693	1389
12:00	171	185	179	161	696	166	179	183	185	713	1409
13:00	169	184	162	174	689	197	189	241	253	880	1569
14:00	246	259	275	220	1000	309	252	242	247	1050	2050
15:00	222	291	266	313	1092	260	330	424	341	1355	2447
16:00	290	326	333	447	1396	321	337	341	350	1349	2745
17:00	407	476	393	351	1627	376	345	406	345	1472	3099
18:00	343	347	322	224	1236	351	349	389	303	1392	2628
19:00	185	176	191	185	737	256	224	222	191	893	1630
20:00	189	195	192	151	727	205	223	212	159	799	1526
21:00	160	112	158	104	534	173	135	142	129	579	1113
22:00	73	75	105	56	309	134	119	105	80	438	747
23:00	51	63	33	31	178	72	57	51	44	224	402
	24 Hour Total				17119	24 Hour Total				16309	33428

Peak Information						
	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	07:45	1444	07:45	1229	07:45	2673
P.M.	16:45	1723	16:45	1477	16:45	3200
Daily	16:45	1723	16:45	1477	16:45	3200
Truck %	2.00		3.00		3.00	

Classification Summary Database																	
Direction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Total Vol
E	63	16298	389	25	33	200	29	72	9	0	0	1	0	0	0	369	17119
W	63	13467	2242	97	299	82	38	21	0	0	0	0	0	0	0	537	16309

Florida Department of Transportation

December 13, 2009

County 87	Station 0400	Site Description: Miami Lakes Dr B/W NW 82nd Ave and NW 79th Ct
Start Date December 10, 2009	Start Time 23:45	Roadway ID: 87000000

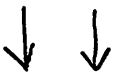
Time	Direction: E					Direction: W					Combined Total	
	1st ¼	2nd ¼	3rd ¼	4th ¼	Total	1st ¼	2nd ¼	3rd ¼	4th ¼	Total		
00:00	32	21	32	7	92	40	30	32	29	131	223	
01:00	8	7	3	7	25	19	12	12	12	55	80	
02:00	15	11	5	10	41	8	5	6	5	24	65	
03:00	10	5	20	15	50	6	5	11	8	30	80	
04:00	38	48	40	84	210	1	10	10	18	39	249	
05:00	66	67	109	183	425	9	17	23	34	83	508	
06:00	250	319	291	369	1229	53	71	122	214	460	1689	
07:00	382	325	335	286	1328	264	261	276	308	1109	2437	
08:00	385	444	363	308	1500	328	321	312	282	1243	2743	
09:00	271	209	200	170	850	227	189	145	143	704	1554	
10:00	186	141	164	183	674	175	142	164	142	623	1297	
11:00	178	189	169	187	723	141	157	156	167	621	1344	
12:00	171	162	192	200	725	184	199	180	188	751	1476	
13:00	179	168	168	209	724	206	189	210	223	828	1552	
14:00	231	271	235	259	996	217	215	249	300	981	1977	
15:00	314	301	294	295	1204	272	351	331	389	1343	2547	
16:00	287	338	315	350	1290	358	419	371	356	1504	2794	
17:00	400	430	479	368	1677	401	434	403	406	1644	3321	
18:00	247	319	284	226	1076	378	430	290	294	1392	2468	
19:00	145	179	175	197	696	269	224	192	205	890	1586	
20:00	155	183	180	177	695	203	193	173	174	743	1438	
21:00	175	125	164	172	636	163	143	120	145	571	1207	
22:00	114	80	79	63	336	113	114	97	99	423	759	
23:00	69	55	54	25	203	73	60	75	47	255	458	
24 Hour Total					17405	24 Hour Total					16447	33852

Peak Information						
	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	08:00	1500	07:45	1269	07:45	2747
P.M.	17:00	1677	17:00	1644	17:00	3321
Daily	17:00	1677	17:00	1644	17:00	3321
Truck %	2.00		4.00		3.00	

Classification Summary Database																	
Direction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Total Vol
E	54	16553	418	33	50	174	25	88	10	0	0	0	0	0	0	380	17405
W	56	13573	2237	118	310	72	49	32	0	0	0	0	0	0	0	581	16447

Table 5-1 Study Area Tube Count Summary

Count Location	Wednesday			Thursday				Friday		
	PM Total veh.	PM Max veh/h	AM Total veh.	PM Total veh.	AM Max veh/h	PM Max veh/h	All Day veh.	All Day Max veh/h.	AM veh.	AM Max veh/h.
NW 154 Street & NW 79 Court EB	9885	1050	4814	10027	1093	1007	14841	1093	5142	1182
NW 154 Street & NW 79 Court WB	13217	1370	4975	13224	1298	1380	18199	1380	5373	1316
NW 154 Street & SR 826 EB On/Off Ramps W Leg EB	17527	1982	8946	17975	2203	1914	26921	2203	9320	2175
NW 154 Street & SR 826 WB On/Off Ramps W Leg WB	17941	1930	7050	18465	1654	1772	25515	1772	7519	1641
NW 154 Street & SR 826 NB Off Ramp NB	13705	1463	5751	14622	1316	1446	20373	1446	5922	1321
NW 154 Street & SR 826 NB On Ramp NB	4436	610	2049	5019	638	595	7068	638	2173	611
NW 154 Street & SR 826 Off Ramp SB	4718	555	1785	4802	403	525	6587	525	1949	428
NW 154 Street & SR 826 On Ramp SB	12063	1398	8426	12358	1549	1369	20784	1549	7598	1658



NW 154 Street & NW 79 Court WB

	18-Nov				19-Nov				20-Nov			
	morning	afternoon	morning	afternoon	morning	afternoon	morning	afternoon	morning	afternoon	morning	afternoon
12:00	*	226			148	217			128	*		
12:15	*	182			106	198			97	*		
12:30	*	224			113	214			120	*		
12:45	*	236	0	868	95	204	462	833	122	*	467	0
1:00	*	231			78	246			74	*		
1:15	*	230			63	201			75	*		
1:30	*	220			69	238			85	*		
1:45	*	236	0	917	54	239	264	924	64	*	298	0
2:00	*	272			36	252			54	*		
2:15	*	280			46	280			56	*		
2:30	*	256			46	280			40	*		
2:45	*	272	0	1080	24	266			32	*	182	0
3:00	*	306			26	286	132	1084	19	*		
3:15	*	278			21	318			36	*		
3:30	*	280			18	298			22	*		
3:45	*	339	0	1203	18	300			22	*	99	0
4:00	*	345			24	286	81	1202	24	*		
4:15	*	314			16	282			33	*		
4:30	*	326			15	268			76	*		
4:45	*	312	0	1297	7	274			56	*	189	0
5:00	*	330			4	364	42	1188	15	*		
5:15	*	322			7	364			22	*		
5:30	*	323			7	322			9	*		
5:45	*	303	0	1278	8	304			15	*	61	0
6:00	*	304			13	284	35	1274	8	*		
6:15	*	297			12	310			8	*		
6:30	*	314			11	292			8	*		
6:45	*	313	0	1228	16	331	49	1245	12	*	44	0
7:00	*	366			10	312			16	*		
					16	354			9	*		

NW 154 Street & NW 79 Court EB

	18-Nov				19-Nov				20-Nov			
	morning	afternoon	morning	afternoon	morning	afternoon	morning	afternoon	morning	afternoon	morning	afternoon
12:00	*	220			98	224			114	*		
12:15	*	178			82	216			89	*		
12:30	*	212			60	213			74	*		
12:45	*	210	0	820	61	203	301	856	73	*	350	0
1:00	*	190			63	225			58	*		
1:15	*	184			48	180			74	*		
1:30	*	216			40	226			75	*		
1:45	*	206	0	796	27	196	178	827	30	*	237	0
2:00	*	210			22	210			30	*		
2:15	*	202			23	198			36	*		
2:30	*	229			17	278			23	*		
2:45	*	205	0	846	12	246	74	932	20	*	109	0
3:00	*	220			9	235			16	*		
3:15	*	213			9	220			17	*		
3:30	*	261			16	246			13	*		
3:45	*	232	0	926	8	226	42	927	12	*	58	0
4:00	*	214			9	220			20	*		
4:15	*	246			11	249			13	*		
4:30	*	280			5	231			18	*		
4:45	*	246	0	986	6	244	31	944	20	*	71	0
5:00	*	216			6	236			16	*		
5:15	*	223			3	205			9	*		
5:30	*	209			8	204			18	*		
5:45	*	198	0	846	10	208	27	853	8	*	51	0
6:00	*	215			12	208			10	*		
6:15	*	237			14	216			15	*		
6:30	*	201			24	214			27	*		
6:45	*	294	0	947	30	304	80	942	25	*	77	0

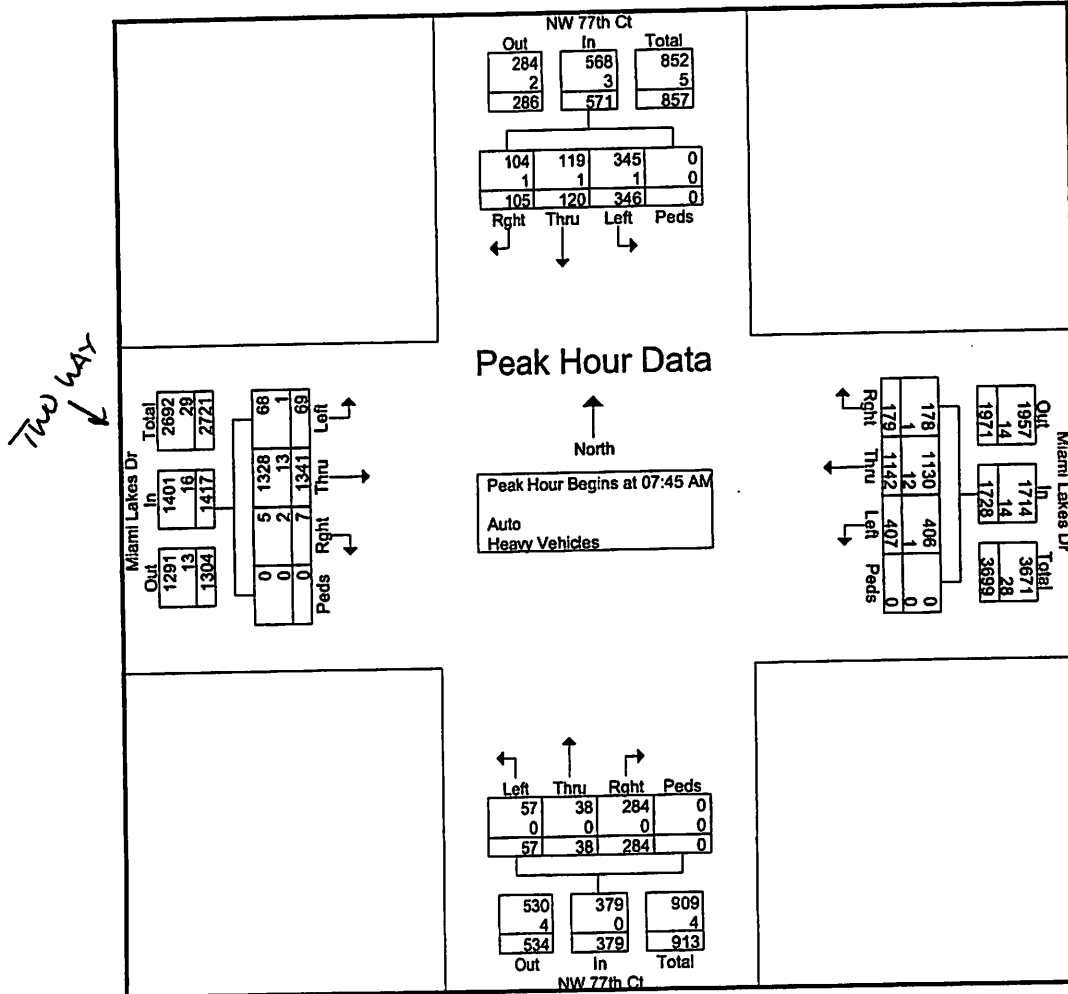
Crossroads Engineering Data, Inc.

13284 SW 120th Street
Miami, FL 33186
Tel: 305-233-3997
Fax: 305-233-7720

CLIENT : Gannet Flemming
JOB NO.: 2009-86
PROJECT: NW 154th Street Traffic Ops Ana
COUNTY : MIAMI-DADE

File Name : NW 77th Ct and Miami Lakes Drive
Site Code : 00000000
Start Date : 12/8/2009
Page No : 2

Start Time	NW 77th Ct From North					Miami Lakes Dr From East					NW 77th Ct From South					Miami Lakes Dr From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	22	26	86	0	134	36	300	94	0	430	79	19	22	0	120	2	314	14	0	330	1014
08:00 AM	27	33	86	0	146	34	289	97	0	420	89	11	28	0	128	0	313	16	0	329	1023
08:15 AM	26	39	85	0	150	55	256	117	0	428	60	5	7	0	72	1	336	20	0	357	1007
08:30 AM	30	22	89	0	141	54	297	99	0	450	56	3	0	0	59	4	378	19	0	401	1051
Total Volume	105	120	346	0	571	179	1142	407	0	1728	284	38	57	0	379	7	1341	69	0	1417	4095
% App. Total	18.4	21	60.6	0		10.4	66.1	23.6	0		74.9	10	15	0		0.5	94.6	4.9	0		
PHF	.875	.769	.972	.000	.952	.814	.952	.870	.000	.960	.798	.500	.509	.000	.740	.438	.887	.863	.000	.883	.974
Auto	104	119	345	0	568	178	1130				100	100	100	0	100	71.4	99.0	98.6	0	98.9	99.2
% Auto	99.0	99.2	99.7	0	99.5	99.4	98.9	99.8	0	99.2	100	100	100	0	100	2	13	1	0	16	33
Heavy Vehicles	1	1	1	0	3	1	12	1	0	14	0	0	0	0	0	28.6	1.0	1.4	0	1.1	0.8
% Heavy Vehicles	1.0	0.8	0.3	0	0.5	0.6	1.1	0.2	0	0.8	0	0	0	0	0						



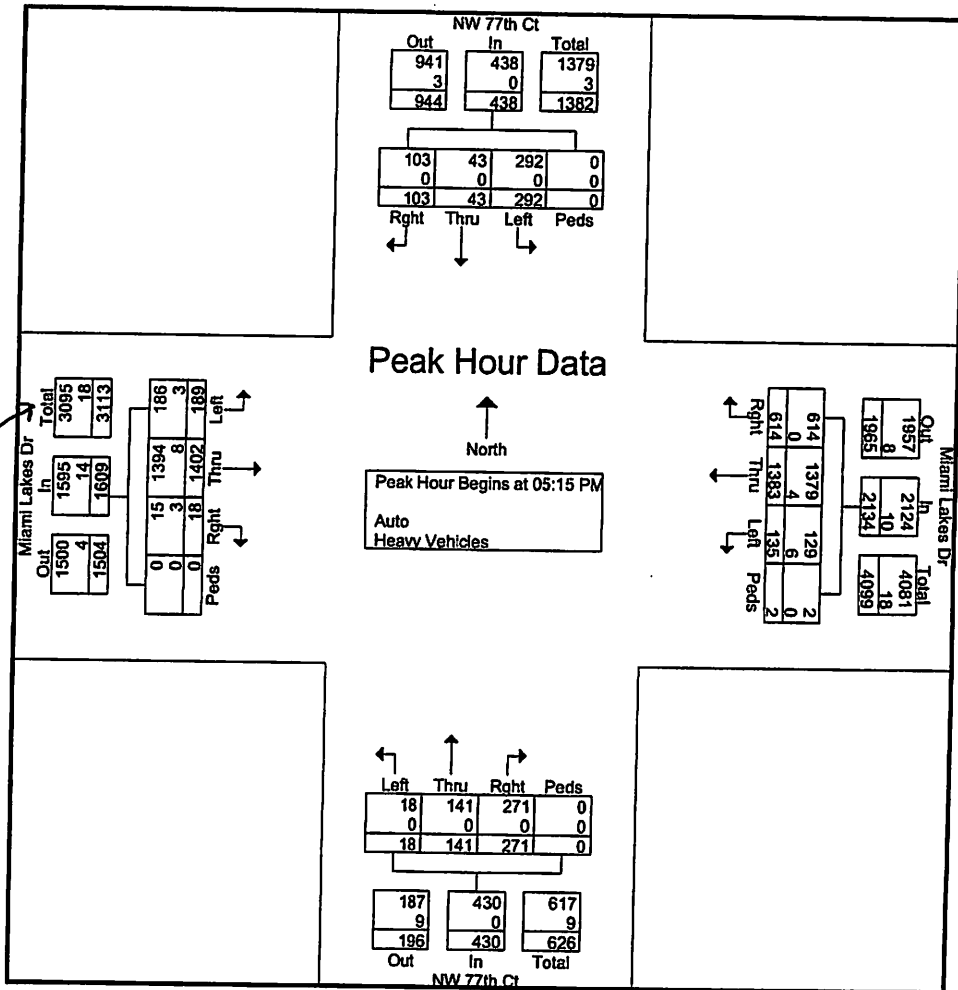
Crossroads Engineering Data, Inc.

13284 SW 120th Street
 Miami, FL 33186
 Tel: 305-233-3997
 Fax: 305-233-7720

CLIENT : Gannet Flemming
 JOB NO.: 2009-86
 PROJECT: NW 154th Street Traffic Ops Ana
 COUNTY : MIAMI-DADE

File Name : NW 77th Ct and Miami Lakes Drive
 Site Code : 00000000
 Start Date : 12/8/2009
 Page No : 3

Start Time	NW 77th Ct From North					Miami Lakes Dr From East					NW 77th Ct From South					Miami Lakes Dr From West					Int. Total
	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:30 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	21	5	69	0	95	137	376	46	0	559	68	36	11	0	115	7	407	49	0	463	1232
05:30 PM	23	11	54	0	88	141	318	27	0	486	70	44	1	0	115	5	382	56	0	443	1132
05:45 PM	33	9	76	0	118	152	365	32	1	550	60	34	2	0	96	1	306	52	0	359	1123
06:00 PM	26	18	93	0	137	184	324	30	1	539	73	27	4	0	104	5	307	32	0	344	1124
Total Volume	103	43	292	0	438	614	1383	135	2	2134	271	141	18	0	430	18	1402	189	0	1609	4611
% App. Total	23.5	9.8	66.7	0		28.8	64.8	6.3	0.1		63	32.8	4.2	0		1.1	87.1	11.7	0		
PHF	.780	.597	.785	.000	.799	.834	.920	.734	.500	.954	.928	.801	.409	.000	.935	.643	.861	.844	.000	.869	.936
Auto	103	43	292	0	438	614	1379								1394	83.3	99.4	98.4	0	99.1	99.5
% Auto	100	100	100	0	100	100	99.7	95.6	100	99.5	100	100	100	0	100						
Heavy Vehicles	0	0	0	0	0	0	4	6	0	10	0	0	0	0	0	3	8	3	0	14	24
% Heavy Vehicles	0	0	0	0	0	0	0.3	4.4	0	0.5	0	0	0	0	0	16.7	0.6	1.6	0	0.9	0.5



Florida Department of Transportation

December 13, 2009

County 87	Station 0300	Site Description: _____
Start Date December 08, 2009		Start Time 23:45
Roadway ID: 87000000		

Time	Direction: E					Direction: W					Combined Total	
	1st ¼	2nd ¼	3rd ¼	4th ¼	Total	1st ¼	2nd ¼	3rd ¼	4th ¼	Total		
00:00	37	36	26	23	122	50	29	35	22	136	258	
01:00	16	14	10	9	49	28	11	13	9	61	110	
02:00	10	10	20	12	52	15	9	17	15	56	108	
03:00	18	13	22	17	70	11	9	12	5	37	107	
04:00	40	41	41	80	202	18	21	22	24	85	287	
05:00	102	105	142	185	534	48	61	63	101	273	807	
06:00	301	404	424	530	1659	128	195	253	245	821	2480	
07:00	541	528	472	512	2053	328	385	384	404	1501	3554	
08:00	481	457	439	411	1788	449	436	422	396	1703	3491	
09:00	388	385	358	350	1481	366	354	335	338	1393	2874	
10:00	370	365	365	337	1437	332	322	335	322	1311	2748	
11:00	375	389	412	394	1570	326	350	388	380	1444	3014	
12:00	369	398	381	348	1496	389	393	394	388	1564	3060	
13:00	353	369	375	383	1480	392	351	372	357	1472	2952	
14:00	370	403	413	384	1570	367	372	398	427	1564	3134	
15:00	377	394	368	421	1560	402	479	525	484	1890	3450	
16:00	456	460	468	499	1883	484	546	535	496	2061	3944	
17:00	489	510	458	464	1921	525	510	531	498	2064	3985	
18:00	448	394	427	385	1654	528	536	556	451	2071	3725	
19:00	350	305	273	247	1175	411	375	297	320	1403	2578	
20:00	270	221	234	215	940	296	281	248	246	1071	2011	
21:00	184	202	196	157	739	228	230	220	211	889	1628	
22:00	125	115	123	81	444	158	138	109	95	500	944	
23:00	68	56	50	52	226	81	65	57	46	249	475	
24 Hour Total					26105	24 Hour Total					25619	51724

	Peak Information					
	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	06:45	2071	07:45	1711	07:15	3615
P.M.	16:30	1966	17:45	2118	16:30	4032
Daily	06:45	2071	17:45	2118	16:30	4032
Truck %	6.00		6.00		6.00	

Classification Summary Database																	
Direction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Total Vol
E	184	21055	3364	281	821	241	5	71	82	0	1	0	0	0	0	1502	26105
W	312	19812	4023	301	736	335	12	88	0	0	0	0	0	0	0	1472	25619

Florida Department of Transportation

December 13, 2009

County 87	Station 0300	Site Description: Miami Lakes Dr B/W NW 77th Ct and SB SR826 On- rmp
Start Date December 09, 2009	Start Time 23:45	Roadway ID: 87000000

Time	Direction: E					Direction: W					Combined Total	
	1st ¼	2nd ¼	3rd ¼	4th ¼	Total	1st ¼	2nd ¼	3rd ¼	4th ¼	Total		
00:00	25	29	33	28	115	49	42	23	28	142	257	
01:00	23	18	14	15	70	28	15	19	15	77	147	
02:00	11	14	21	21	67	16	13	11	16	56	123	
03:00	23	10	20	23	76	7	19	13	15	54	130	
04:00	29	33	54	71	187	13	13	23	24	73	260	
05:00	92	106	165	211	574	46	49	77	95	267	841	
06:00	312	417	438	523	1690	134	210	258	365	967	2657	
07:00	541	495	477	484	1997	387	377	336	416	1516	3513	
08:00	486	429	391	415	1721	464	430	366	409	1669	3390	
09:00	340	397	359	361	1457	426	402	386	372	1586	3043	
10:00	368	344	309	332	1353	329	351	317	304	1301	2654	
11:00	347	413	412	421	1593	343	291	359	400	1393	2986	
12:00	366	382	393	376	1517	405	363	376	399	1543	3060	
13:00	382	362	425	426	1595	390	370	370	400	1530	3125	
14:00	419	447	398	383	1647	418	428	430	417	1693	3340	
15:00	372	386	388	348	1494	401	470	484	508	1863	3357	
16:00	414	396	449	486	1745	496	529	560	446	2031	3776	
17:00	388	443	471	416	1718	525	526	499	525	2075	3793	
18:00	417	426	366	332	1541	430	465	447	419	1761	3302	
19:00	331	282	314	246	1173	329	339	315	291	1274	2447	
20:00	288	284	245	223	1040	286	309	303	256	1154	2194	
21:00	201	180	182	158	721	246	195	193	195	829	1550	
22:00	122	128	134	110	494	190	137	144	118	589	1083	
23:00	81	78	63	51	273	98	73	65	57	293	566	
24 Hour Total					25858	24 Hour Total					25736	51594

Peak Information						
	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	06:45	2036	07:45	1676	07:15	3535
P.M.	16:45	1788	15:45	2093	16:30	3823
Daily	06:45	2036	15:45	2093	16:30	3823
Truck %	6.00		5.00		6.00	

Classification Summary Database																	
Direction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Total Vol
E	229	20706	3415	287	859	200	7	67	88	0	0	0	0	0	0	1508	25858
W	344	19923	4080	304	736	261	7	81	0	0	0	0	0	0	0	1389	25736

Florida Department of Transportation

December 13, 2009

County 87	Station 0300	Site Description: Miami Lakes Dr B/W NW 77th Ct and SB SR826 On- rmp
Start Date December 10, 2009	Start Time 23:45	Roadway ID: 87000000

Time	Direction: E					Direction: W					Combined Total
	1st ¼	2nd ¼	3rd ¼	4th ¼	Total	1st ¼	2nd ¼	3rd ¼	4th ¼	Total	
00:00	41	31	34	19	125	49	23	33	29	134	259
01:00	25	19	18	15	77	28	18	17	20	83	160
02:00	17	16	14	11	58	14	15	10	11	50	108
03:00	20	11	19	15	65	8	11	12	15	46	111
04:00	42	44	53	75	214	7	22	30	38	97	311
05:00	98	124	147	240	609	42	56	86	96	280	889
06:00	274	414	423	528	1639	149	210	235	294	888	2527
07:00	524	444	411	468	1847	349	389	410	405	1553	3400
08:00	467	446	433	391	1737	425	419	386	393	1623	3360
09:00	421	382	340	346	1489	335	386	340	339	1400	2889
10:00	354	351	386	342	1433	311	322	328	333	1294	2727
11:00	364	390	391	417	1562	328	348	387	361	1424	2986
12:00	387	397	370	388	1542	376	385	394	363	1518	3060
13:00	411	394	368	353	1526	403	408	381	390	1582	3108
14:00	344	407	405	417	1573	355	352	435	440	1582	3155
15:00	377	396	396	325	1494	420	463	455	450	1788	3282
16:00	414	400	509	469	1792	455	483	459	523	1920	3712
17:00	438	432	421	444	1735	559	544	555	516	2174	3909
18:00	421	355	382	325	1483	501	492	436	404	1833	3316
19:00	319	300	281	258	1158	377	345	316	287	1325	2483
20:00	272	242	259	243	1016	308	306	251	304	1169	2185
21:00	204	208	230	199	841	257	218	200	244	919	1760
22:00	143	128	124	96	491	191	142	126	123	582	1073
23:00	93	78	75	38	284	92	86	104	64	346	630
	24 Hour Total				25790	24 Hour Total				25610	51400

Peak Information						
	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	06:30	1919	07:30	1659	07:30	3451
P.M.	16:30	1848	16:45	2181	16:45	3941
Daily	06:30	1919	16:45	2181	16:45	3941
Truck %	6.00		5.00		6.00	

Classification Summary Database																	
Direction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Total Vol
E	195	20679	3430	236	886	202	4	73	85	0	0	0	0	0	0	1486	25790
W	305	19843	4112	251	744	270	7	78	0	0	0	0	0	0	0	1350	25610

LOCATION: NW 154th St 300' east of SR 826
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516408
 DIRECTION: EB

DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon 29-Jun-10	Tue 30-Jun-10	Wed 01-Jul-10	Thu 01-Jul-10	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	127	161	195	161	161	161			161	
1:00 AM	63	78	100	80	80	80			80	
2:00 AM	25	85	52	54	54	54			54	
3:00 AM	23	60	38	40	40	40			40	
4:00 AM	43	39	35	39	39	39			39	
5:00 AM	103	91	82	92	92	92			92	
6:00 AM	300	276	282	286	286	286			286	
7:00 AM	670	663	652	661	661	661			661	
8:00 AM	1049	1071	1072	1064	1064	1064			1064	
9:00 AM	988	959	992	979	979	979			979	
10:00 AM	854	798	849	833	833	833			833	
11:00 AM	934	827	969	910	910	910			910	
12:00 PM	1157	1127	1163	1149	1149	1149			1149	
1:00 PM	1049	1107	1096	1084	1084	1084			1084	
2:00 PM	991	1029	1012	1010	1010	1010			1010	
3:00 PM	964	1019	1027	1003	1003	1003			1003	
4:00 PM	1145	1021	1095	1087	1087	1087			1087	
5:00 PM	1306	1238	1305	1283	1283	1283			1283	
6:00 PM	1244	1098	1236	1192	1192	1192			1192	
7:00 PM	1072	1040	1066	1059	1059	1059			1059	
8:00 PM	762	848	946	852	852	852			852	
9:00 PM	723	764	773	753	753	753			753	
10:00 PM	499	534	644	559	559	559			559	
11:00 PM	320	302	379	333	333	333			333	
Day Total	16411	16235	17060	16563	16563	16563			16563	
% Weekday Average	99.1%	98.0%	103.0%	100.0%	100.0%	100.0%				
% Week Average	99.1%	98.0%	103.0%	100.0%	100.0%	100.0%				
AM Peak Volume	8:00 AM 1049	8:00 AM 1071	8:00 AM 1072	8:00 AM 1064	8:00 AM 1064	8:00 AM 1064			8:00 AM 1064	
PM Peak Volume	5:00 PM 1306	5:00 PM 1238	5:00 PM 1305	5:00 PM 1283	5:00 PM 1283	5:00 PM 1283			5:00 PM 1283	
Comments:										

LOCATION: NW 154th St 300' east of SR 826
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516408
 DIRECTION: WB

DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday	Sat	Sun	Average Week	Average Week Profile
	29-Jun-10	30-Jun-10	01-Jul-10			Hourly Traffic			Hourly Traffic	
12:00 AM	110	137	153	133	133	133			133	
1:00 AM	68	74	117	86	86	86			86	
2:00 AM	37	211	54	100	100	100			100	
3:00 AM	16	35	29	26	26	26			26	
4:00 AM	34	35	45	38	38	38			38	
5:00 AM	123	112	125	120	120	120			120	
6:00 AM	323	288	303	304	304	304			304	
7:00 AM	757	776	748	760	760	760			760	
8:00 AM	1086	1106	1021	1071	1071	1071			1071	
9:00 AM	899	878	951	909	909	909			909	
10:00 AM	839	769	787	798	798	798			798	
11:00 AM	822	758	864	814	814	814			814	
12:00 PM	997	979	990	988	988	988			988	
1:00 PM	1079	1090	1185	1118	1118	1118			1118	
2:00 PM	1004	992	939	978	978	978			978	
3:00 PM	895	969	979	947	947	947			947	
4:00 PM	1038	1057	1037	1044	1044	1044			1044	
5:00 PM	1212	1227	1194	1211	1211	1211			1211	
6:00 PM	1173	1178	1165	1172	1172	1172			1172	
7:00 PM	996	1022	1023	1013	1013	1013			1013	
8:00 PM	700	682	667	749	749	749			749	
9:00 PM	540	616	667	607	607	607			607	
10:00 PM	424	509	602	511	511	511			511	
11:00 PM	286	330	354	323	323	323			323	
Day Total	15458	15830	16199	15820	15820	15820			15820	
% Weekday Average	97.7%	100.1%	102.4%							
% Week Average	97.7%	100.1%	102.4%	100.0%						
AM Peak Volume	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM			8:00 AM	
	1086	1106	1021	1071	1071	1071			1071	
PM Peak Volume	5:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM			5:00 PM	
	1212	1227	1194	1211	1211	1211			1211	

Comments:

LOCATION: NW 87th Ave 200' south of NW 154th St
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516410
 DIRECTION: NB

DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average Weekday Hourly Traffic	Average Week Hourly Traffic	Average Week Profile
12:00 AM	58	65	75	66	66			66	66	
1:00 AM	27	28	36	30	30			30	30	
2:00 AM	20	24	27	23	23			23	23	
3:00 AM	16	26	16	19	19			19	19	
4:00 AM	7	13	23	14	14			14	14	
5:00 AM	46	53	52	50	50			50	50	
6:00 AM	127	121	118	122	122			122	122	
7:00 AM	282	259	286	275	275			275	275	
8:00 AM	402	368	399	389	389			389	389	
9:00 AM	396	359	371	375	375			375	375	
10:00 AM	323	374	344	347	347			347	347	
11:00 AM	318	334	347	333	333			333	333	
12:00 PM	413	347	400	386	386			386	386	
1:00 PM	382	333	406	373	373			373	373	
2:00 PM	469	455	489	471	471			471	471	
3:00 PM	401	388	442	410	410			410	410	
4:00 PM	502	463	488	484	484			484	484	
5:00 PM	656	678	679	671	671			671	671	
6:00 PM	634	727	678	679	679			679	679	
7:00 PM	529	577	576	560	560			560	560	
8:00 PM	437	428	488	451	451			451	451	
9:00 PM	397	413	370	393	393			393	393	
10:00 PM	288	271	279	279	279			279	279	
11:00 PM	167	138	174	159	159			159	159	
Day Total	7297	7242	7563	7359	7359			7359	7359	
% Weekday Average	99.2%	98.4%	102.8%							
% Week Average	99.2%	98.4%	102.8%	100.0%						
AM Peak Volume	8:00 AM 402	10:00 AM 374	8:00 AM 399	8:00 AM 389				8:00 AM 389		
PM Peak Volume	5:00 PM 656	6:00 PM 727	5:00 PM 679	6:00 PM 679				6:00 PM 679		
Comments:										

Type of report: Tube Count - Volume Data

LOCATION: NW 87th Ave 200' south of NW 154th St
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516410
 DIRECTION: SB

DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon 29-Jun-10	Tue 30-Jun-10	Wed 01-Jul-10	Thu 01-Jul-10	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	59	90	68	72	72	72			72	
1:00 AM	38	51	45	44	44	44			44	
2:00 AM	15	72	34	40	40	40			40	
3:00 AM	12	23	19	18	18	18			18	
4:00 AM	11	14	16	13	13	13			13	
5:00 AM	36	32	34	34	34	34			34	
6:00 AM	108	120	113	113	113	113			113	
7:00 AM	333	326	304	321	321	321			321	
8:00 AM	539	516	516	516	523	523			523	
9:00 AM	393	440	405	412	412	412			412	
10:00 AM	295	303	325	307	307	307			307	
11:00 AM	258	293	311	287	287	287			287	
12:00 PM	358	308	348	338	338	338			338	
1:00 PM	347	340	372	353	353	353			353	
2:00 PM	393	411	462	422	422	422			422	
3:00 PM	336	341	365	347	347	347			347	
4:00 PM	431	389	415	411	411	411			411	
5:00 PM	552	547	555	551	551	551			551	
6:00 PM	558	520	543	540	540	540			540	
7:00 PM	434	436	490	453	453	453			453	
8:00 PM	310	346	373	343	343	343			343	
9:00 PM	326	329	376	343	343	343			343	
10:00 PM	226	235	347	269	269	269			269	
11:00 PM	145	140	289	191	191	191			191	
Day Total	6513	6622	7125	6745	6745	6745			6745	
% Weekday Average	96.6%	98.2%	105.6%							
% Week Average	96.6%	98.2%	105.6%	100.0%						
AM Peak Volume	8:00 AM 539	8:00 AM 516	8:00 AM 516	8:00 AM 516	8:00 AM 523	8:00 AM 523			8:00 AM 523	
PM Peak Volume	6:00 PM 558	5:00 PM 547	5:00 PM 555	5:00 PM 551	5:00 PM 551	5:00 PM 551			5:00 PM 551	
Comments:										

Report generated on 7/2/2010 9:23 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

LOCATION: NW 87th Ave 200' north of I-75
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516411
 DIRECTION: SB

DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon 29-Jun-10	Tue 30-Jun-10	Wed 01-Jul-10	Thu 01-Jul-10	Fri	Sat	Sun	Average Weekday Hourly Traffic	Average Week Hourly Traffic	Average Week Profile
12:00 AM	62	90	78	76	76			76	76	
1:00 AM	39	47	59	48	48			48	48	
2:00 AM	21	73	40	44	44			44	44	
3:00 AM	12	26	20	19	19			19	19	
4:00 AM	29	32	37	32	32			32	32	
5:00 AM	100	106	102	102	102			102	102	
6:00 AM	288	323	296	302	302			302	302	
7:00 AM	754	773	743	756	756			756	756	
8:00 AM	1025	980	985	996	996			996	996	
9:00 AM	682	722	691	698	698			698	698	
10:00 AM	530	526	566	540	540			540	540	
11:00 AM	481	511	537	509	509			509	509	
12:00 PM	609	556	602	589	589			589	589	
1:00 PM	621	552	625	599	599			599	599	
2:00 PM	616	653	688	652	652			652	652	
3:00 PM	528	545	558	543	543			543	543	
4:00 PM	635	636	662	644	644			644	644	
5:00 PM	994	932	941	955	955			955	955	
6:00 PM	757	743	834	778	778			778	778	
7:00 PM	569	572	637	592	592			592	592	
8:00 PM	400	471	522	464	464			464	464	
9:00 PM	440	451	488	459	459			459	459	
10:00 PM	271	277	442	330	330			330	330	
11:00 PM	151	153	292	198	198			198	198	
Day Total	10614	10750	11445	10925	10925			10925	10925	
% Weekday Average	97.2%	98.4%	104.8%							
% Week Average	97.2%	98.4%	104.8%					100.0%		
AM Peak Volume	8:00 AM 1025	8:00 AM 980	8:00 AM 985	8:00 AM 996	8:00 AM 996			8:00 AM 996	8:00 AM 996	
PM Peak Volume	5:00 PM 994	5:00 PM 932	5:00 PM 941	5:00 PM 955	5:00 PM 955			5:00 PM 955	5:00 PM 955	
Comments:										

Type of report: Tube Count - Volume Data

LOCATION: NW 87th Ave 200' north of I-75
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516411
 DIRECTION: NB
 DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon 29-Jun-10	Tue 30-Jun-10	Wed 01-Jul-10	Thu 01-Jul-10	Fri	Sat	Sun	Average Weekday Hourly Traffic	Average Week Hourly Traffic	Average Week Profile
12:00 AM	87	114	120	107	107			107	107	
1:00 AM	46	45	62	51	51			51	51	
2:00 AM	19	41	47	35	35			35	35	
3:00 AM	15	37	18	23	23			23	23	
4:00 AM	9	15	21	15	15			15	15	
5:00 AM	28	46	42	38	38			38	38	
6:00 AM	135	131	134	133	133			133	133	
7:00 AM	381	368	407	385	385			385	385	
8:00 AM	816	774	788	792	792			792	792	
9:00 AM	609	578	595	594	594			594	594	
10:00 AM	451	471	469	463	463			463	463	
11:00 AM	454	421	515	463	463			463	463	
12:00 PM	605	540	615	586	586			586	586	
1:00 PM	638	584	618	613	613			613	613	
2:00 PM	781	750	748	759	759			759	759	
3:00 PM	624	630	660	638	638			638	638	
4:00 PM	780	820	837	812	812			812	812	
5:00 PM	1153	1096	1128	1125	1125			1125	1125	
6:00 PM	1086	1194	1104	1128	1128			1128	1128	
7:00 PM	774	861	880	838	838			838	838	
8:00 PM	571	593	601	588	588			588	588	
9:00 PM	533	508	549	530	530			530	530	
10:00 PM	410	395	389	398	398			398	398	
11:00 PM	230	203	243	225	225			225	225	
Day Total	11235	11215	11590	11339	11339			11339	11339	
% Weekday Average	99.1%	98.9%	102.2%							
% Week Average	99.1%	98.9%	102.2%	100.0%						
AM Peak Volume	8:00 AM 816	8:00 AM 774	8:00 AM 788	8:00 AM 792	8:00 AM 792			8:00 AM 792	8:00 AM 792	
PM Peak Volume	5:00 PM 1153	6:00 PM 1194	5:00 PM 1128	6:00 PM 1128	6:00 PM 1128			6:00 PM 1128	6:00 PM 1128	
Comments:										

Report generated on 7/6/2010 1:07 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

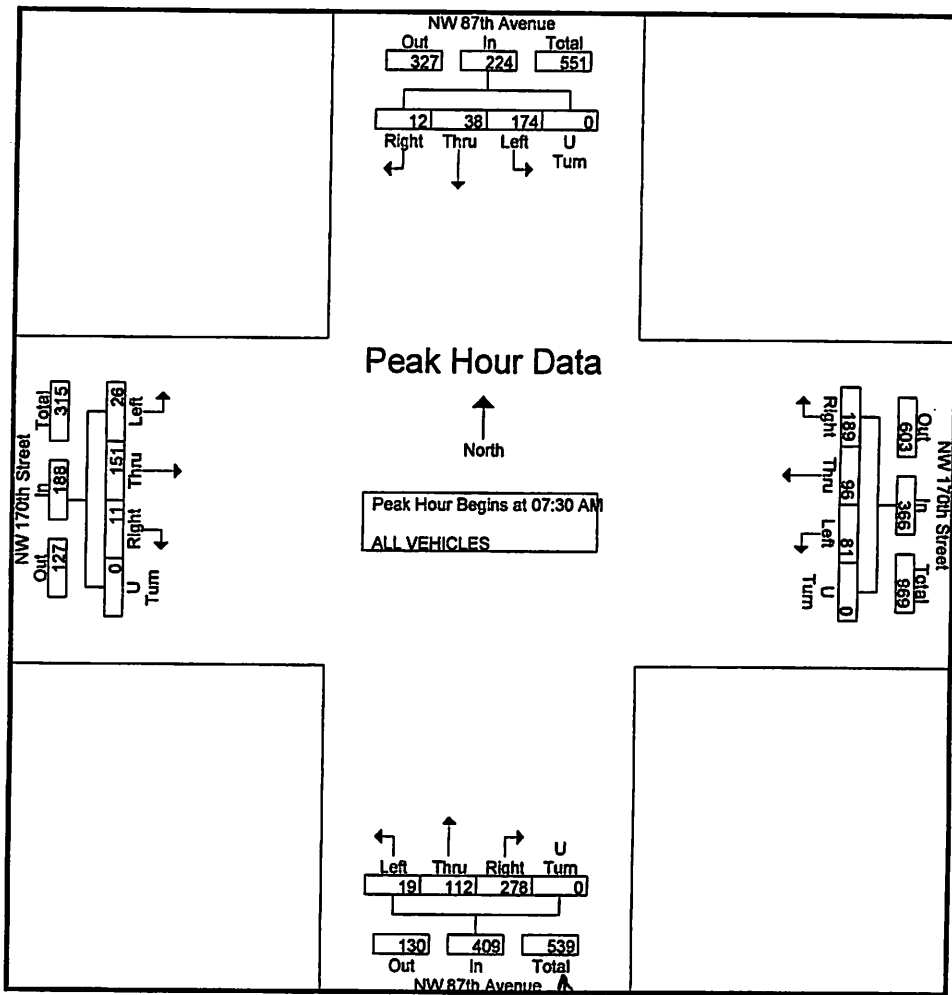
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 87th Avenue
 Miami Lakes, Florida
 Counted By: Itzhak Bendahan
 Not Signalized

File Name : NW170thStreet&87thAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 2

Start Time	NW 87th Avenue From North					NW 170th Street From East					NW 87th Avenue From South					NW 170th Street From West					Int. Total
	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	Right	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	3	3	62	0	68	51	23	21	0	95	66	37	1	0	104	4	35	1	0	40	307
07:45 AM	5	10	48	0	63	61	34	17	0	112	87	32	1	0	120	3	42	10	0	55	350
08:00 AM	4	13	32	0	49	43	19	25	0	87	79	16	9	0	104	1	45	8	0	54	294
08:15 AM	0	12	32	0	44	34	20	18	0	72	46	27	8	0	81	3	29	7	0	39	236
Total Volume	12	38	174	0	224	189	96	81	0	366	278	112	19	0	409	11	151	26	0	188	1187
% App. Total	5.4	17	77.7	0		51.6	26.2	22.1	0		68	27.4	4.6	0		5.9	80.3	13.8	0		
PHF	.600	.731	.702	.000	.824	.775	.706	.810	.000	.817	.799	.757	.528	.000	.852	.688	.839	.650	.000	.855	.848



Two
WA-1

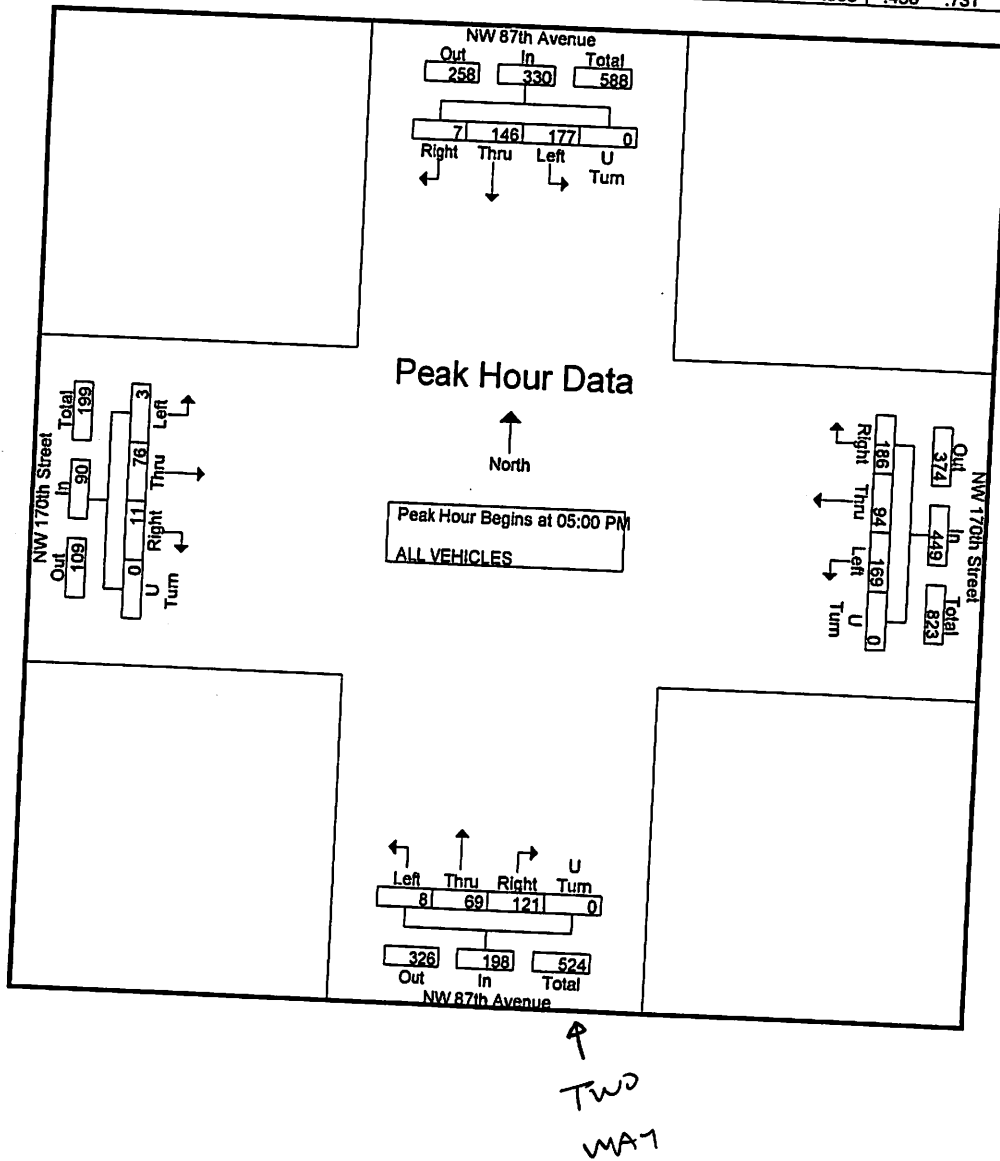
Traffic Survey Specialists, Inc.

624 Gardenia Terrace, Delray Beach, Florida 33444 Phone (561) 272-3255

NW 170th Street & NW 87th Avenue
 Miami Lakes, Florida
 Counted By: Itzhak Bendahan
 Not Signalized

File Name : NW170thStreet&87thAvenue
 Site Code : 100117
 Start Date : 12/7/2010
 Page No : 3

Start Time	NW 87th Avenue From North					NW 170th Street From East					NW 87th Avenue From South					NW 170th Street From West					Int. Total
	Righ	Thru	Left	U Turn	App. Total	Righ	Thru	Left	U Turn	App. Total	Righ	Thru	Left	U Turn	App. Total	Righ	Thru	Left	U Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	30	28	0	60	43	24	42	0	109	30	14	4	0	48	6	17	0	0	23	240
05:15 PM	3	45	60	0	108	48	23	38	0	109	34	13	3	0	50	1	17	0	0	18	285
05:30 PM	0	30	56	0	86	46	22	43	0	111	23	19	1	0	43	0	26	1	0	27	267
05:45 PM	2	41	33	0	76	49	25	46	0	120	34	23	0	0	57	4	16	2	0	22	275
Total Volume	7	146	177	0	330	186	94	169	0	449	121	69	8	0	198	11	76	3	0	90	1067
% App. Total	2.1	44.2	53.6	0		41.4	20.9	37.6	0		61.1	34.8	4	0		12.2	84.4	3.3	0		
PHF	.583	.811	.738	.000	.764	.949	.940	.918	.000	.935	.890	.750	.500	.000	.868	.458	.731	.375	.000	.833	.936



LOCATION: NW 82nd Ave 200 north of NW 162nd St
 SPECIFIC LOCATION: 10 ft. from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516413
 DIRECTION: SB
 DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday	Sat	Sun	Average Week	Average Week Profile
	29-Jun-10	30-Jun-10	01-Jul-10			Hourly Traffic			Hourly Traffic	
12:00 AM	60	71	78			69			69	
1:00 AM	21	39	35			31			31	
2:00 AM	16	52	25			31			31	
3:00 AM	11	22	16			16			16	
4:00 AM	36	27	44			35			35	
5:00 AM	105	124	112			113			113	
6:00 AM	310	339	323			324			324	
7:00 AM	714	643	689			682			682	
8:00 AM	801	768	781			783			783	
9:00 AM	543	562	554			553			553	
10:00 AM	386	413	434			411			411	
11:00 AM	356	375	370			367			367	
12:00 PM	379	394	367			380			380	
1:00 PM	426	393	412			410			410	
2:00 PM	416	443	436			431			431	
3:00 PM	373	401	390			388			388	
4:00 PM	351	343	435			376			376	
5:00 PM	481	469	518			489			489	
6:00 PM	457	447	464			456			456	
7:00 PM	429	380	424			411			411	
8:00 PM	351	343	422			372			372	
9:00 PM	330	306	316			317			317	
10:00 PM	205	244	244			231			231	
11:00 PM	140	119	170			143			143	
Day Total	7697	7717	8059			7819			7819	
% Weekday Average	98.4%	98.7%	103.1%							
% Week Average	98.4%	98.7%	103.1%			100.0%				
AM Peak Volume	8:00 AM	8:00 AM	8:00 AM			8:00 AM			8:00 AM	
	801	768	781			783			783	
PM Peak Volume	5:00 PM	5:00 PM	5:00 PM			5:00 PM			5:00 PM	
	481	469	518			489			489	
Comments:										

LOCATION: NW 82nd Ave 200 north of NW 162nd St
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516413
 DIRECTION: NB

DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon 29-Jun-10	Tue 30-Jun-10	Wed 01-Jul-10	Thu 01-Jul-10	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	69	92	91	84	84	84			84	
1:00 AM	39	48	46	44	44	44			44	
2:00 AM	22	70	30	40	40	40			40	
3:00 AM	14	19	14	15	15	15			15	
4:00 AM	10	18	9	12	12	12			12	
5:00 AM	19	21	33	24	24	24			24	
6:00 AM	85	92	89	88	88	88			88	
7:00 AM	213	211	195	206	206	206			206	
8:00 AM	266	268	297	277	277	277			277	
9:00 AM	275	291	286	284	284	284			284	
10:00 AM	301	284	313	299	299	299			299	
11:00 AM	312	335	326	324	324	324			324	
12:00 PM	378	372	378	376	376	376			376	
1:00 PM	397	390	423	403	403	403			403	
2:00 PM	449	451	448	449	449	449			449	
3:00 PM	449	437	465	450	450	450			450	
4:00 PM	570	545	597	570	570	570			570	
5:00 PM	831	773	758	787	787	787			787	
6:00 PM	736	739	734	736	736	736			736	
7:00 PM	593	614	621	609	609	609			609	
8:00 PM	456	431	501	462	462	462			462	
9:00 PM	395	396	390	393	393	393			393	
10:00 PM	255	275	300	276	276	276			276	
11:00 PM	146	181	193	173	173	173			173	
Day Total	7280	7353	7537	7381	7381	7381			7381	
% Weekday Average	98.6%	99.6%	102.1%							
% Week Average	98.6%	99.6%	102.1%	100.0%						
AM Peak Volume	11:00 AM 312	11:00 AM 335	11:00 AM 326	11:00 AM 324					11:00 AM 324	
PM Peak Volume	5:00 PM 831	5:00 PM 773	5:00 PM 758	5:00 PM 787					5:00 PM 787	
Comments:										

Type of report: Tube Count - Volume Data

LOCATION: NW 82nd 200' north of NW 154th St

SPECIFIC LOCATION: 10 ft from

CITY/STATE: Miami Lakes, FL

QC JOB #: 10516412

DIRECTION: SB

DATE: Jun 29 2010 - Jul 01 2010

Average Week Profile

Start Time	Mon 29-Jun-10	Tue 30-Jun-10	Wed 01-Jul-10	Thu 01-Jul-10	Fri	Sat	Sun	Average Weekday Hourly Traffic	Average Week Hourly Traffic
12:00 AM	63	59	72	64	64			64	64
1:00 AM	24	43	39	35	35			35	35
2:00 AM	17	60	27	34	34			34	34
3:00 AM	20	25	21	22	22			22	22
4:00 AM	53	52	61	55	55			55	55
5:00 AM	175	183	173	177	177			177	177
6:00 AM	496	497	506	499	499			499	499
7:00 AM	959	912	949	940	940			940	940
8:00 AM	1033	993	999	1008	1008			1008	1008
9:00 AM	697	722	710	709	709			709	709
10:00 AM	522	557	573	550	550			550	550
11:00 AM	484	487	506	492	492			492	492
12:00 PM	488	547	503	512	512			512	512
1:00 PM	606	551	560	572	572			572	572
2:00 PM	500	542	551	531	531			531	531
3:00 PM	460	525	528	504	504			504	504
4:00 PM	511	465	568	514	514			514	514
5:00 PM	611	585	646	614	614			614	614
6:00 PM	585	532	619	578	578			578	578
7:00 PM	523	507	521	517	517			517	517
8:00 PM	421	421	510	450	450			450	450
9:00 PM	390	376	377	381	381			381	381
10:00 PM	260	246	278	261	261			261	261
11:00 PM	149	143	162	151	151			151	151
Day Total	10047	10030	10459	10170	10170			10170	10170
% Weekday Average	98.8%	98.6%	102.8%	100.0%	100.0%				
% Week Average	98.8%	98.6%	102.8%						
AM Peak Volume	8:00 AM 1033	8:00 AM 993	8:00 AM 999	8:00 AM 1008	8:00 AM 1008			8:00 AM 1008	8:00 AM 1008
PM Peak Volume	5:00 PM 611	5:00 PM 585	5:00 PM 646	5:00 PM 614	5:00 PM 614			5:00 PM 614	5:00 PM 614
Comments:									

Report generated on 7/6/2010 1:07 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

LOCATION: NW 82nd 200' north of NW 154th St
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516412
 DIRECTION: NB
 DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon 29-Jun-10	Tue 30-Jun-10	Wed 01-Jul-10	Thu 01-Jul-10	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	80	101	98	93	93	93			93	
1:00 AM	45	56	64	55	55	55			55	
2:00 AM	28	92	31	50	50	50			50	
3:00 AM	16	24	16	18	18	18			18	
4:00 AM	9	18	16	14	14	14			14	
5:00 AM	33	37	47	39	39	39			39	
6:00 AM	140	127	121	129	129	129			129	
7:00 AM	265	261	266	264	264	264			264	
8:00 AM	338	323	367	342	342	342			342	
9:00 AM	360	362	353	358	358	358			358	
10:00 AM	369	376	387	377	377	377			377	
11:00 AM	447	424	453	441	441	441			441	
12:00 PM	484	501	516	500	500	500			500	
1:00 PM	500	534	565	533	533	533			533	
2:00 PM	603	573	581	585	585	585			585	
3:00 PM	647	615	642	634	634	634			634	
4:00 PM	804	751	809	788	788	788			788	
5:00 PM	1061	988	1017	1022	1022	1022			1022	
6:00 PM	927	974	919	940	940	940			940	
7:00 PM	748	766	814	776	776	776			776	
8:00 PM	602	576	622	600	600	600			600	
9:00 PM	489	542	518	516	516	516			516	
10:00 PM	355	351	370	358	358	358			358	
11:00 PM	191	215	246	217	217	217			217	
Day Total	9541	9587	9838	9649	9649	9649			9649	
% Weekday Average	98.9%	99.4%	102.0%							
% Week Average	98.9%	99.4%	102.0%	100.0%						
AM Peak Volume	11:00 AM 447	11:00 AM 424	11:00 AM 453	11:00 AM 441	11:00 AM 441	11:00 AM 441			11:00 AM 441	
PM Peak Volume	5:00 PM 1061	5:00 PM 988	5:00 PM 1017	5:00 PM 1022	5:00 PM 1022	5:00 PM 1022			5:00 PM 1022	
Comments:										

Traffic Survey Specialists, Inc. 624 Gardenia Terrace
 Delray Beach, Florida 33444 Phone (561) 272-3255
 Volume Report with 24 Hour Totals

 Data File : D1207003.PRN
 Station : 000000120604
 Identification : 009600650020
 Start date : Dec 7, 10 Interval : 15 minutes
 Stop date : Dec 7, 10 Start time : 00:00
 City/Town : Miami Lakes, Florida Stop time : 24:00
 Location : NW 170th Street East of NW 85th Court County : Dade

Dec 7 Eastbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	6	2	1	2	1	8	38	122	105	95	63	60
30	8	2	3	1	7	19	65	103	98	84	48	63
45	6	3	2	3	4	17	107	145	107	67	67	60
00	5	0	0	2	9	20	125	141	97	69	67	40
Hr Total	25	7	6	8	21	64	335	511	407	315	245	223

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	60	67	82	129	103	75	86	72	84	36	38	23
30	52	57	72	100	95	109	86	67	56	30	37	18
45	60	77	104	90	91	102	90	48	60	47	39	17
00	62	61	84	82	72	82	69	57	35	48	18	13
Hr Total	234	262	342	401	361	368	331	244	235	161	132	71

4 Hour Total : 5309
 AM peak hour begins : 07:00 AM peak volume : 511 Peak hour factor : 0.88
 PM peak hour begins : 14:30 PM peak volume : 417 Peak hour factor : 0.81

Dec 7 Westbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	17	8	4	3	3	2	15	57	88	51	27	33
30	11	3	1	1	4	5	15	70	66	35	32	53
45	6	3	1	2	4	5	25	90	55	41	45	37
00	4	6	1	0	2	2	45	116	40	41	34	47
Hr Total	38	20	7	6	13	14	100	333	249	168	138	170

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	54	66	68	125	102	98	115	91	83	71	37	20
30	43	65	77	94	108	120	116	84	68	63	39	18
45	51	61	89	83	109	102	98	86	87	60	30	17
00	54	63	122	87	86	107	82	97	64	50	22	14
Total	202	255	356	389	405	427	411	358	302	244	128	69

Hour Total : 4802
 AM peak hour begins : 07:15 AM peak volume : 364 Peak hour factor : 0.78
 PM peak hour begins : 17:15 PM peak volume : 444 Peak hour factor : 0.93

Traffic Survey Specialists, Inc. 624 Gardenia Terrace
 Delray Beach, Florida 33444 Phone (561) 272-3255
 Volume Report with 24 Hour Totals

 Data File : D1207003.PRN
 Station : 000000120604
 Identification : 009600650020 Interval : 15 minutes
 Start date : Dec 7, 10 Start time : 00:00
 Stop date : Dec 7, 10 Stop time : 24:00
 City/Town : Miami Lakes, Florida County : Dade
 Location : NW 170th Street East of NW 85th Court

Dec 7 Total Volume for All Lanes

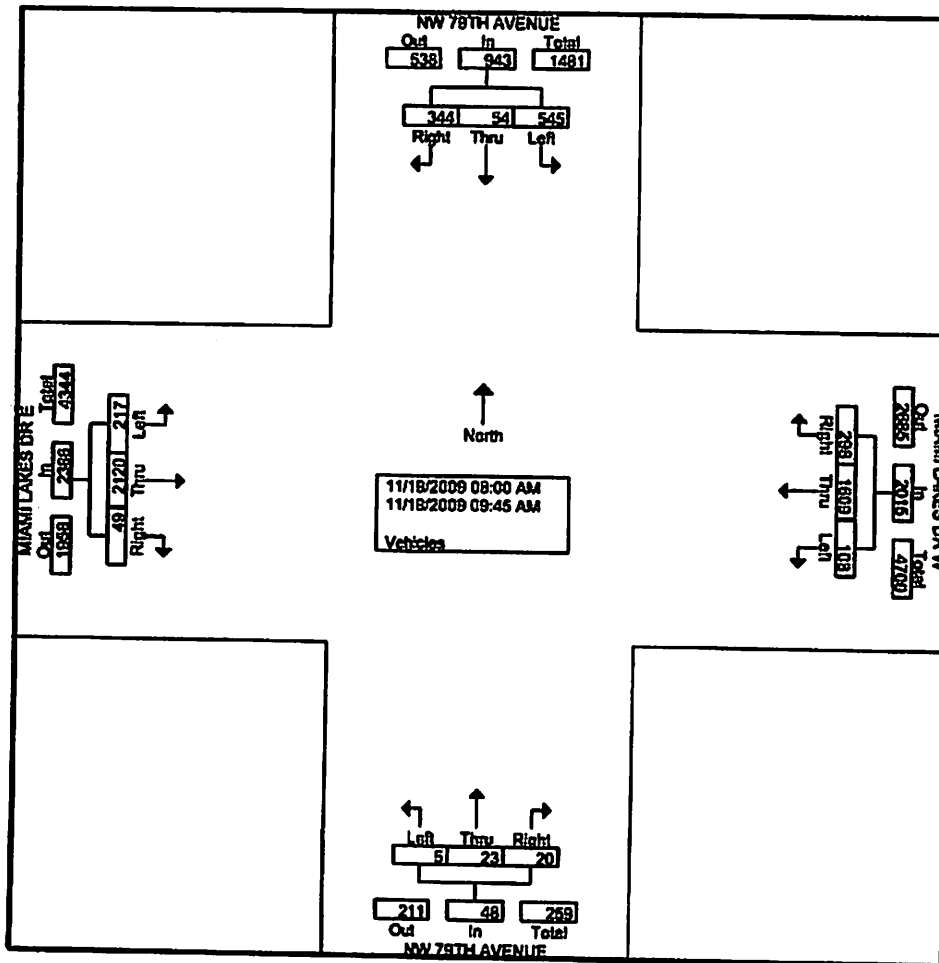
End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	23	10	5	5	4	10	53	179	193	146	90	93
30	19	5	4	2	11	24	80	173	164	119	80	116
45	12	6	3	5	8	22	132	235	162	108	112	97
00	9	6	1	2	11	22	170	257	137	110	101	87
Hr Total	63	27	13	14	34	78	435	844	656	483	383	393
End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	114	133	150	254	205	173	201	163	167	107	75	43
30	95	122	149	194	203	229	202	151	124	93	76	36
45	111	138	193	173	200	204	188	134	147	107	69	34
00	116	124	206	169	158	189	151	154	99	98	40	27
Hr Total	436	517	698	790	766	795	742	602	537	405	260	140

24 Hour Total : 10111
 AM peak hour begins : 07:15 AM peak volume : 858 Peak hour factor : 0.83
 PM peak hour begins : 14:30 PM peak volume : 847 Peak hour factor : 0.83

File Name : NW 79 AV & MIAMI LAKES DR AM
 Site Code : 09135541
 Start Date : 11/19/2009
 Page No : 1

Grouped Printed - Vehicles

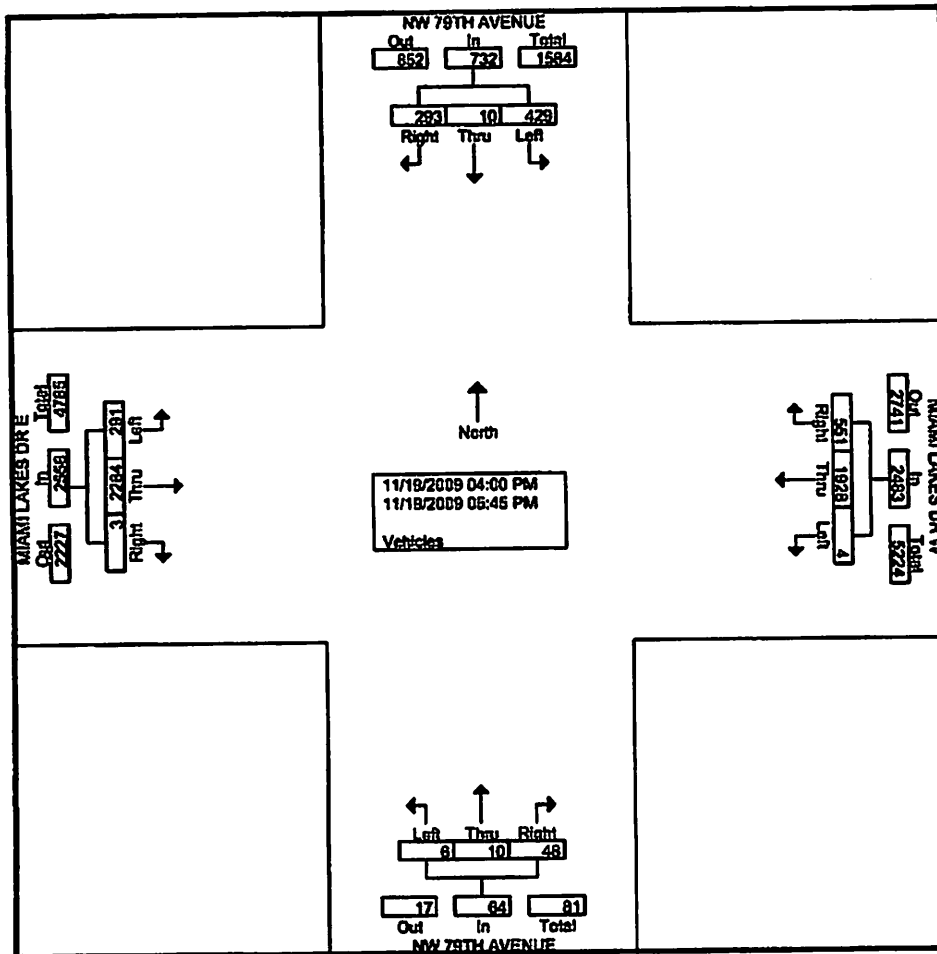
Start Time	NW 79TH AVENUE From North				MIAMI LAKES DR W From East				NW 79TH AVENUE From South				MIAMI LAKES DR E From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
08:00 AM	65	20	75	160	82	201	6	289	10	11	0	21	0	281	61	342	812
08:15 AM	72	5	67	144	42	268	28	338	2	7	1	10	2	280	45	327	819
08:30 AM	47	8	65	120	39	252	22	313	2	0	0	2	0	325	16	341	776
08:45 AM	24	8	72	104	41	260	24	325	2	2	1	5	2	263	17	282	716
Total	208	41	279	528	204	981	80	1265	16	20	2	38	4	1149	139	1292	3123
09:00 AM	46	8	78	132	30	258	21	309	3	1	2	6	41	238	10	289	736
09:15 AM	34	3	71	108	31	178	5	214	0	2	0	2	1	231	19	251	575
09:30 AM	29	0	65	94	33	192	2	227	1	0	1	2	1	261	22	284	607
09:45 AM	27	2	52	81	0	0	0	0	0	0	0	0	2	241	27	270	351
Total	136	13	266	415	94	628	28	750	4	3	3	10	45	971	78	1094	2269
Grand Total	344	54	545	943	298	1609	108	2015	20	23	5	48	49	2120	217	2386	5392
Approach %	36.5	5.7	57.8	17.5	14.8	79.9	5.4	20.5	41.7	47.9	10.4	48	2.1	88.9	9.1	2386	5392
Total %	6.4	1	10.1	17.5	5.5	29.8	2	37.4	0.4	0.4	0.1	0.9	0.9	39.3	4	44.3	



File Name : NW 79 AV & MIAMI LAKES DR PM
 Site Code : 09135541
 Start Date : 11/19/2009
 Page No : 1

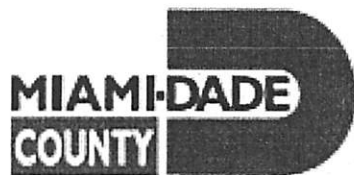
Groups Printed- Vehicles

Start Time	NW 79TH AVENUE From North				MIAMI LAKES DR W From East				NW 79TH AVENUE From South				MIAMI LAKES DR E From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
04:00 PM	32	0	81	83	74	219	0	293	0	0	0	0	0	202	30	232	818
04:15 PM	40	2	83	105	45	224	2	271	2	0	0	2	0	228	25	253	831
04:30 PM	25	1	43	69	74	282	0	356	5	1	0	6	1	246	24	271	702
04:45 PM	33	2	47	82	64	270	0	334	3	1	0	4	0	256	38	294	714
Total	130	5	214	349	257	995	2	1254	10	2	0	12	1	932	117	1050	2665
05:00 PM	42	2	84	108	61	233	1	295	6	3	3	12	0	379	31	410	825
05:15 PM	39	0	52	91	78	259	0	337	7	2	0	9	1	279	47	327	764
05:30 PM	57	0	56	113	79	248	1	328	12	1	0	13	1	361	48	410	864
05:45 PM	25	3	43	71	76	193	0	269	13	2	3	18	0	313	48	381	719
Total	163	5	215	383	294	933	2	1229	38	8	6	52	2	1332	174	1508	3172
Grand Total	293	10	429	732	551	1928	4	2483	48	10	6	64	3	2264	291	2558	5837
Approach %	40	1.4	58.8	22.2	77.8	0.2	77.8	0.2	75	15.6	9.4	75	0.1	88.5	11.4	88.5	77.8
Total %	5	0.2	7.3	12.5	9.4	33	0.1	42.5	0.8	0.2	0.1	1.1	0.1	38.8	5	43.8	12.5



Miami Lakes West Fire Rescue Station Traffic Impact Study

Prepared for the
Miami-Dade County Public Works Department



Prepared by the
The Lehman Center for Transportation Research (LCTR)
at Florida International University (FIU)

April 20, 2010



SIGNAL TIMING PLANS

APPENDIX D



TOD Schedule Report for 5975: Miami Lake&NW 87 Av

Active Phase Bank: Phase Bank

Phase	Walk	Don't Walk	Min Initial	Yeh Ext	Max Limit	Max 2	Yellow	Red
1	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2	0 - 0 - 0	0 - 0 - 0	16 - 16 - 16	1 - 1 - 1	35 - 45 - 20	0 - 30 - 0	4	1.1
3	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
5	0 - 0 - 0	0 - 0 - 0	16 - 16 - 16	1 - 1 - 1	35 - 45 - 20	0 - 30 - 0	4	1.1
6	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
7	0 - 0 - 0	0 - 0 - 0	7 - 7 - 7	2.5 - 2.5 - 2.5	10 - 11 - 8	15 - 8 - 0	4	1
8	0 - 0 - 0	0 - 0 - 0	7 - 7 - 7	2.5 - 2.5 - 2.5	11 - 12 - 9	12 - 9 - 0	4	1

Last In Service Date:

Permitted Phases

12345678
-2-5-78
Default
External Permit 0
External Permit 1
External Permit 2

Current TOD Schedule	Plan	Cycle	1	2	3	4	5	6	7	8	Ring Offset	Offset
			WBT	WBT	WBL	NBT	EW					

Local TOD Schedule

Time	Plan	DOW
0000	Flash	Su M T W Th F S
0600	Free	Su M T W Th F S
2200	Flash	Su M T W Th F S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	---	Su M T W Th F S
0600	TOD OUTPUTS	-2-	M T W ThF
0640	TOD OUTPUTS	---	M T W ThF
0700	TOD OUTPUTS	-1	M T W ThF
0900	TOD OUTPUTS	---	M T W ThF
1530	TOD OUTPUTS	-1	M T W ThF
1800	TOD OUTPUTS	---	M T W ThF
1900	TOD OUTPUTS	-2-	M T W ThF
2200	TOD OUTPUTS	-3-	M T W ThF

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	---	Su M T W Th F S
0600	TOD OUTPUTS	-2-	M T W ThF
0640	TOD OUTPUTS	---	M T W ThF
0700	TOD OUTPUTS	-1	M T W ThF
0900	TOD OUTPUTS	---	M T W ThF
1530	TOD OUTPUTS	-1	M T W ThF
1800	TOD OUTPUTS	---	M T W ThF
1900	TOD OUTPUTS	-2-	M T W ThF
2000	TOD OUTPUTS	-3-	M T W ThF
2200	TOD OUTPUTS	-3-	Su M T W ThF

* Settings

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA



TOD Schedule Report for 5665: NW 87 Av&NW 146 St

Active Phase Bank: Phase Bank

Phase	Walk	Don't Walk	Min Initial	Yeh Ext	Max Limit	Max 2	Yellow	Red
1 NBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	3 - 3 - 3	8 - 8 - 8	20 - 20 - 20	3	0
2 SBT	0 - 0 - 0	0 - 0 - 0	16 - 16 - 16	1 - 1 - 1	35 - 35 - 35	0 - 0 - 0	4	1
3	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
5	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 NBT	0 - 0 - 0	0 - 0 - 0	16 - 16 - 16	1 - 1 - 1	35 - 35 - 35	0 - 0 - 0	4	1
7	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 EBT	7 - 7 - 7	11 - 11 - 11	7 - 7 - 7	3 - 3 - 3	18 - 18 - 18	35 - 35 - 35	4	1

Last In Service Date:

Permitted Phases	12345678
Default	12--6-8
External Permit 0	-----
External Permit 1	-----
External Permit 2	-----

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1	2	3	4	5	6	7	8		
			NBL	SBT	NBT	EBT						
1	1	93	15	40	0	0	0	58	0	25	0	0
2	2	83	10	25	0	0	0	38	0	35	0	0

Local TOD Schedule	Time	Plan	DOW
0000	Flash	Flash	Su M T W Th F S
0600	Free	Free	Su M T W Th F S
0700	1	1	Su M T W Th F S
0740	Free	Free	Su M T W Th F S
1430	2	2	Su M T W Th F S
1450	Free	Free	Su M T W Th F S
2200	Flash	Flash	Su M T W Th F S

Current Time of Day Function

Time: 0000
Function: TOD OUTPUTS
Settings: _____
Day of Week: Su M T W Th F S

Local Time of Day Function

Time: 0000
Function: TOD OUTPUTS
Settings: _____
Day of Week: Su M T W Th F S

- * Settings
- Blank - FREE - Phase Bank 1, Max 1
 - Blank - Plan - Phase Bank 1, Max 2
 - 1 - Phase Bank 2, Max 1
 - 2 - Phase Bank 2, Max 2
 - 3 - Phase Bank 3, Max 1
 - 4 - Phase Bank 3, Max 2
 - 5 - EXTERNAL PERMIT 1
 - 6 - EXTERNAL PERMIT 2
 - 7 - X-PED OMIT
 - 8 - TBA



TOD Schedule Report for 5807: NW 87 Av@NW 14100 B

Active Phase Bank: Phase Bank

Phase	Walk			Don't Walk			Min Initial			Veh Ext			Max Limit			Max 2			Yellow			Red		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	8	8	8	8	8	8	8	8	8	1	1	1	35	50	35	0	70	0	4					
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	7	7	7	13	13	13	7	7	7	3	3	3	18	20	18	20	18	0	4					
5	0	0	0	0	0	0	5	5	5	2	2	2	8	10	8	10	10	0	3					
6	8	8	8	8	8	8	8	8	8	1	1	1	35	50	35	0	70	0	4					
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Current	1	2	3	4	5	6	7	8
TOD Schedule	SBT	SBT	SBT	WBT	SBL	NBT		
Plan								
Cycle								
Ring Offset								
Offset								

Last In Service Date:

Permitted Phases

Default	12345678
External Permit 0	-2-456--
External Permit 1	-----
External Permit 2	-2-4-6--

Local TOD Schedule

Time	Plan	DOW
0000	Flash	Su M T W Th F S
0600	Free	Su M T W Th F S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	---	Su M T W Th F S
0600	TOD OUTPUTS	---	Su M T W Th F S
0640	TOD OUTPUTS	---1	Su M T W Th F S
0655	TOD OUTPUTS	---2-	Su M T W Th F S
0750	TOD OUTPUTS	---1	Su M T W Th F S
0900	TOD OUTPUTS	---	Su M T W Th F S
1430	TOD OUTPUTS	---1	Su M T W Th F S
1455	TOD OUTPUTS	---	Su M T W Th F S
1600	TOD OUTPUTS	---1	Su M T W Th F S
1800	TOD OUTPUTS	---	Su M T W Th F S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	---	Su M T W Th F S
0600	TOD OUTPUTS	---	Su M T W Th F S
0640	TOD OUTPUTS	---1	Su M T W Th F S
0655	TOD OUTPUTS	---2-	Su M T W Th F S
0750	TOD OUTPUTS	---1	Su M T W Th F S
0900	TOD OUTPUTS	---	Su M T W Th F S
1430	TOD OUTPUTS	---1	Su M T W Th F S
1455	TOD OUTPUTS	---	Su M T W Th F S
1600	TOD OUTPUTS	---1	Su M T W Th F S
1800	TOD OUTPUTS	---	Su M T W Th F S

* Settings

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA



Miami-Dade County Traffic Signals
Time Of Day Schedule Report for 5974 : NW 87 Av&NW 170 St

Phase Bank

Last In Service Date:

Phase	Walk			Don't Walk			Min Initial			Veh Ext			Max Limit			Max 2			Yellow			Red		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	0	0	0	0	0	0	4	4	4	3	3	3	20	20	20	30	30	30	30	30	30	3	3	3
2 SBT	7	7	7	15	15	15	7	7	7	4	4	4	30	30	30	50	50	50	50	50	50	4	4	4
3	0	0	0	0	0	0	4	4	4	3	3	3	20	20	20	30	30	30	30	30	30	3	3	3
4 WBT	7	7	7	15	15	15	4	4	4	4	4	4	25	25	25	40	40	40	40	40	40	3	3	3
5	0	0	0	0	0	0	4	4	4	3	3	3	20	20	20	30	30	30	30	30	30	3	3	3
6 NBT	7	7	7	15	15	15	7	7	7	4	4	4	30	30	30	50	50	50	50	50	50	4	4	4
7	0	0	0	0	0	0	4	4	4	3	3	3	20	20	20	30	30	30	30	30	30	3	3	3
8 EBT	7	7	7	15	15	15	4	4	4	4	4	4	25	25	25	40	40	40	40	40	40	3	3	3

Timing Plan	Cycle			SBT	WBT	NBT	EBT	Ring Offset	Offset
	1	2	3						

Local Time of Day Function	Settings *	Day of Week

Local Time of Day Schedule	Time	Plan	Day of Week
Permitted Phases			
Default			
External Permit 0			
External Permit 1			
External Permit 2			

Local Time of Day Schedule	Time	Plan	Day of Week



TOD Schedule Report for 4913: Miami Lake & NW 79 Av

Active Phase Bank: Phase Bank 1

Phase	Walk Phase Bank			Don't Walk			Min Initial			Veh Ext			Max Limit			Max 2			Yellow			Red		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1 EBL	0	0	0	0	0	0	5	5	5	2	2	2	8	8	8	12	12	12	3	3	3	0	0	0
2 WBT	7	7	7	13	13	13	7	7	7	1	1	1	25	14	25	0	24	33	4	4	4	0.8	0.8	0.8
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 NBT	7	7	7	15	15	15	7	7	7	2.5	2.5	2.5	15	9	15	33	13	33	4	4	4	0.8	0.8	0.8
5 WBL	0	0	0	0	0	0	5	5	5	2	2	2	8	8	8	12	12	12	3	3	3	0	0	0
6 EBT	7	7	7	13	13	13	7	7	7	1	1	1	25	14	25	0	24	33	4	4	4	0.8	0.8	0.8
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 SBT	7	7	7	15	15	15	7	7	7	2.5	2.5	2.5	15	9	15	33	13	33	4	4	4	0.8	0.8	0.8

Last In Service Date: 07/07/2010 16:38

Permitted Phases

Default	12345678
External Permit 0	12-456-8
External Permit 1	-2-4-6-8
External Permit 2	-2-4-6-8

Current TOD Schedule	Plan	Green Time								Ring Offset	SBT	Offset
		1	2	3	4	5	6	7	8			
1	90	0	59	0	21	0	59	0	21	0	21	44
2	110	6	68	0	23	6	68	0	23	0	23	54
3	120	6	73	0	28	6	73	0	28	0	28	52
4	190	10	134	0	33	10	134	0	33	0	33	54
5	180	11	123	0	33	11	123	0	33	0	33	52
6	170	8	117	0	32	8	117	0	32	0	32	42
7	140	8	91	0	28	8	91	0	28	0	28	69
8	110	7	61	0	29	7	61	0	29	0	29	52
9	130	8	77	0	32	8	77	0	32	0	32	61
10	170	8	117	0	32	8	117	0	32	0	32	80
11	180	7	128	0	32	7	128	0	32	0	32	79
13	150	7	101	0	29	7	101	0	29	0	29	68
14	120	7	73	0	27	7	73	0	27	0	27	50
16	90	6	47	0	24	6	47	0	24	0	24	36
18	70	0	40	0	20	0	40	0	20	0	20	31
19	150	10	94	0	33	10	94	0	33	0	33	71
20	60	0	37	0	13	0	37	0	13	0	13	34

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su M TW Th F S
0100	Flash	TW Th F
0130	Flash	Su M
0540	Free	M TW Th F
0555	1	M TW Th F
0620	2	M TW Th F
0640	3	M TW Th F
0700	20	Su M TW Th F S
0700	4	Su M TW Th F
0800	16	Su M TW Th F S
0900	7	M TW Th F
1000	8	M TW Th F S
1130	9	M TW Th F
1330	19	M TW Th F
1530	10	M TW Th F
1700	11	M TW Th F
1830	13	M TW Th F
1900	16	Su M TW Th F S
1930	14	M TW Th F
2000	16	M TW Th F
2130	18	Su M TW Th F S
2300	20	Su M TW Th F S

TOD Schedule Report for 4913: Miami Lake&NW 79 Av

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--5--1	SuM T W ThF S
0130	TOD OUTPUTS	---	SuM

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--5--1	SuM T W ThF S
0100	TOD OUTPUTS	---	T W ThF
0130	TOD OUTPUTS	---	SuM
0540	TOD OUTPUTS	--5-2-	M T W ThF
0555	TOD OUTPUTS	---	M T W ThF

* Settings

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

TOD Schedule Report for 5415: Miami Lake & NW 82 Av



Active Phase Bank: Phase Bank 1

Phase	Walk			Don't Walk			Min Initial			Veh Ext			Max Limit			Max 2			Yellow			Red		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1 EBL	0	0	0	0	0	0	5	0	0	2	0	0	10	0	0	18	0	0	12	0	0	3	0	0
2 WBT	7	7	7	13	13	13	7	7	7	1	1	1	45	25	45	0	50	45	4	4	4	1	1	1
3 SBL	0	0	0	0	0	0	5	0	5	3.5	0	2.5	15	0	15	50	0	30	3	0	0	0	0	0
4 NBT	7	7	7	15	15	15	7	7	7	2.5	2.5	2.5	30	20	30	50	40	40	4	4	4	1	1	1
5 WBL	0	0	0	0	0	0	5	0	5	2	0	2	10	0	10	18	0	12	3	0	0	0	0	0
6 EBT	7	7	7	13	13	13	7	7	7	1	1	1	45	25	45	0	50	45	4	4	4	1	1	1
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 SBT	7	7	7	15	15	15	7	7	7	2.5	2.5	2.5	30	20	30	50	40	40	4	4	4	1	1	1

Last In Service Date: 07/07/2010 16:18

Permitted Phases

Default	12345678
External Permit 0	123456-8
External Permit 1	-2-4-6-8
External Permit 2	-2-4-6-8

Current TOD Schedule	Plan	Green Time								Ring Offset	Offset
		1	2	3	4	5	6	7	8		
1	90	0	42	17	18	0	42	0	38	0	44
2	110	13	43	20	18	13	43	0	41	0	54
3	120	19	45	22	18	19	45	0	43	0	52
4	190	12	82	50	30	12	82	0	83	0	40
5	180	29	67	50	18	29	67	0	71	0	64
6	170	27	59	50	18	27	59	0	71	0	54
7	140	25	54	26	19	25	54	0	48	0	68
8	110	10	36	28	20	10	36	0	51	0	52
9	130	11	64	18	21	11	64	0	42	0	62
10	170	5	74	30	45	13	66	0	78	0	80
11	180	20	76	30	38	17	79	0	71	0	84
13	150	8	93	14	19	8	93	0	36	0	68
14	120	8	64	13	19	8	64	0	35	0	50
16	90	7	38	12	17	7	38	0	32	0	78
18	70	0	31	10	16	0	31	0	29	0	32
19	150	11	83	18	22	11	83	0	43	0	72
20	60	0	27	8	12	0	27	0	23	0	58

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su M T W Th F S
0100	Flash	T W Th F
0130	Flash	Su M
0540	Free	M T W Th F
0555	1	M T W Th F
0620	2	M T W Th F
0640	3	M T W Th F
0700	20	Su
0700	4	M T W Th F
0750	5	M T W Th F
0800	16	Su
0830	6	M T W Th F
0900	7	M T W Th F
1000	8	Su M T W Th F S
1130	9	M T W Th F
1330	19	M T W Th F
1530	10	M T W Th F
1700	11	M T W Th F
1830	13	M T W Th F
1900	16	Su
1930	14	M T W Th F
2000	16	M T W Th F
2130	18	Su M T W Th F S
2300	20	Su M T W Th F S

TOD Schedule Report for 5415: Miami Lake&NW 82 Av

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--5--1	SuM T W ThF S
0100	TOD OUTPUTS	---	T W ThF
0540	TOD OUTPUTS	--5-2-	M T W ThF
0555	TOD OUTPUTS	---	M T W ThF

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--5--1	SuM T W ThF S
0100	TOD OUTPUTS	---	T W ThF
0130	TOD OUTPUTS	---	SuM
0540	TOD OUTPUTS	--5-2-	M T W ThF
0555	TOD OUTPUTS	---	M T W ThF

* Settings

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA



Print Time: 12:51 PM

Miami-Dade County Traffic Signals

TOD Schedule Report for 5501: NW 82 Av & NW 170 St

Print Date: 12/4/2009

Active Phase Bank: Phase Bank

Table with columns: Phase, Walk, Don't Walk, Min Initial, Veh Ext, Max Limit, Max 2, Yellow, Red. Rows 1-8 showing signal timing details.

Last In Service Date:

Permitted Phases table with columns: Default, External Permit 0, External Permit 1, External Permit 2 and corresponding values.

Table with columns: Current, TOD Schedule, Plan, Cycle, NBL, SBT, EBL, EBT, SBL, NBT, WBL, WBT, Ring Offset, Offset.

Local TOD Schedule table with columns: Time, Plan, DOW and values for 0000 and 0500.

Current Time of Day Function table with columns: Time, Function, Settings, Day of Week.

Local Time of Day Function table with columns: Time, Function, Settings, Day of Week.

* Settings table listing various settings like Blank - FREE - Phase Bank 1, Max 1, etc.



* Settings

- Blank - Plan - Phase Bank 1, Max 1
- Blank - FREE - Phase Bank 1, Max 2
- 1 - Phase Bank 2, Max 1
- 2 - Phase Bank 2, Max 2
- 3 - Phase Bank 3, Max 1
- 4 - Phase Bank 3, Max 2
- 5 - EXTERNAL PERMIT 1
- 6 - EXTERNAL PERMIT 2
- 7 - X-PED OMIT
- 8 - TBA

APPENDIX E

MIAMI-DADE 2030 TAZ DISTRIBUTION



Miami-Dade Transportation Plan (to the Year 2030)

Directional Trip Distribution Report

January 2005



Prepared by:

 **Gannett Fleming**

In association with:

PACO Group

Public Financial Management

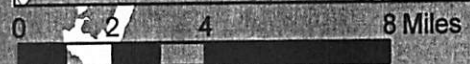
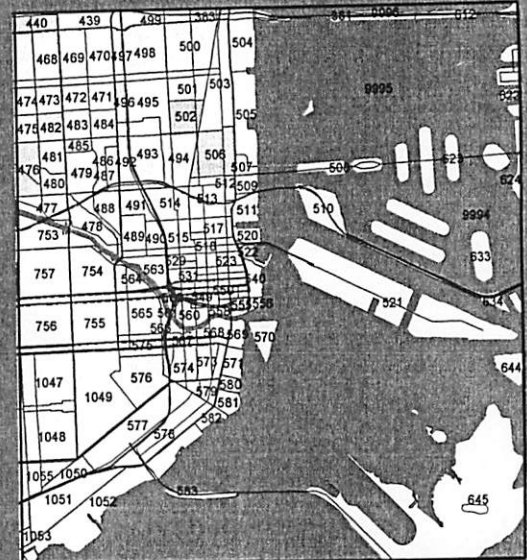
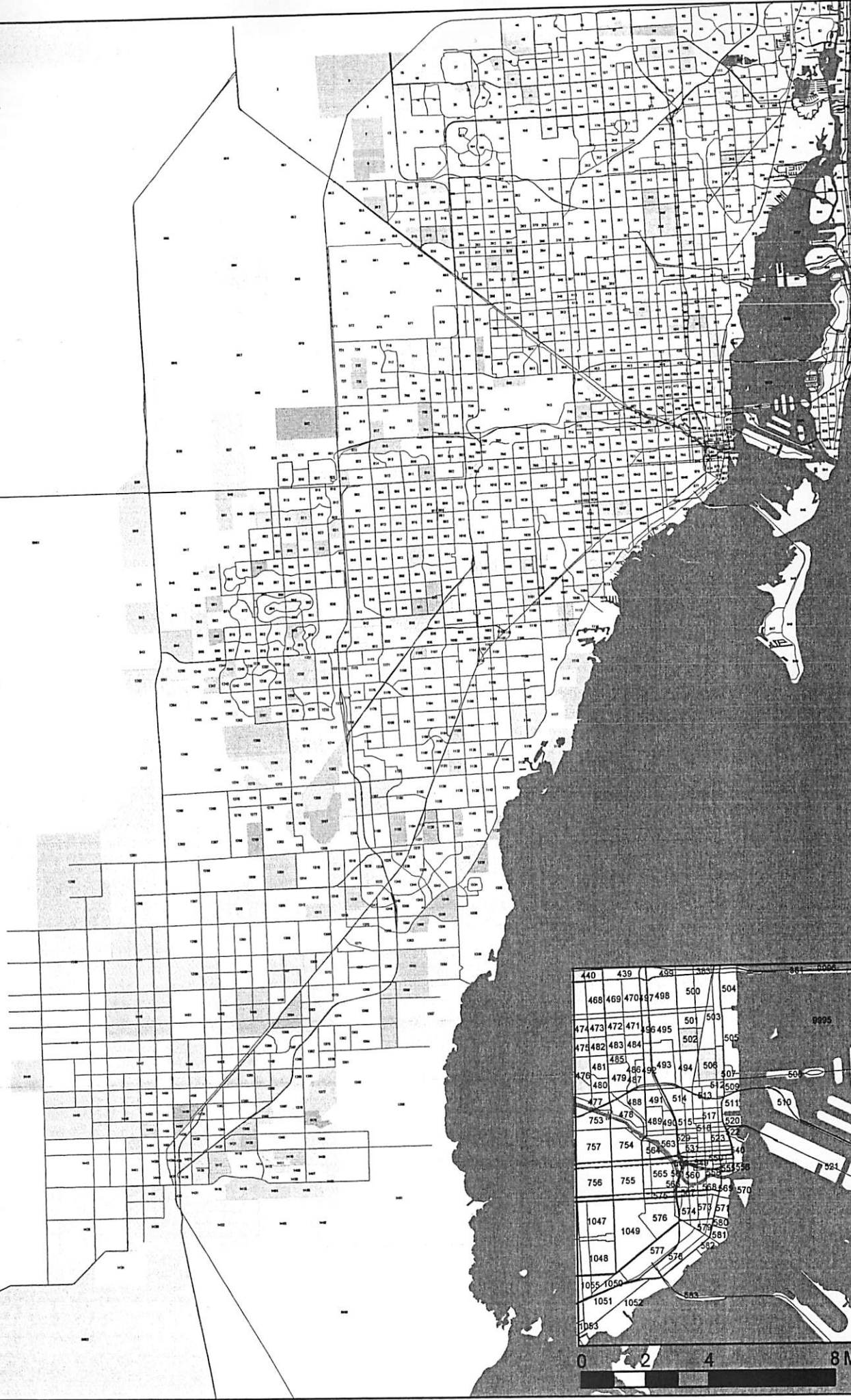
Media Relations Group

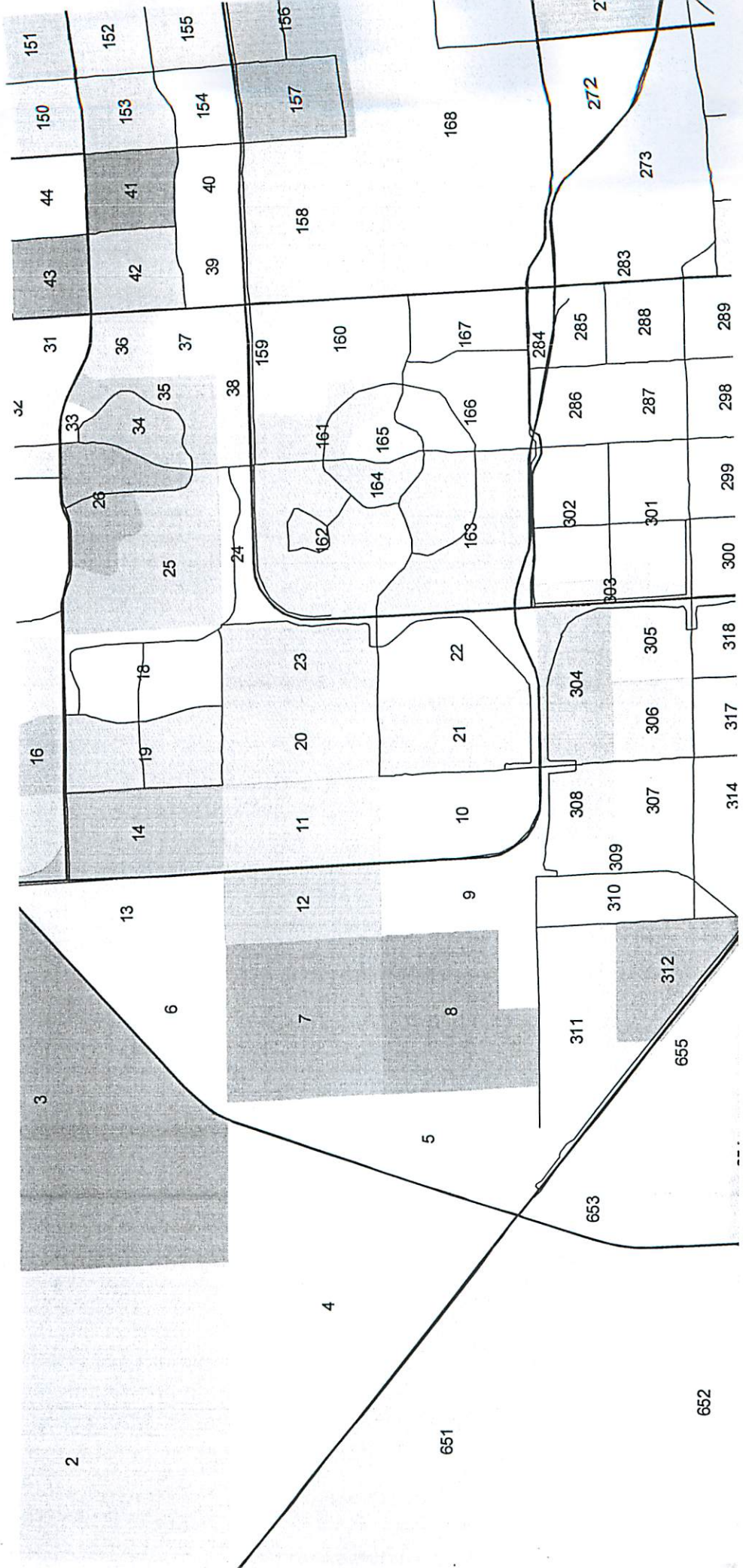


Miami-Dade County Traffic Analysis Zones (TAZ) - 2000 Census - with Major Roads



Metropolitan Planning Organization
for the Miami Urbanized Area





Miami-Dade 2030 Cost Feasible Plan

DIRECTIONAL DISTRIBUTION SUMMARY

ORIGIN ZONE	CARDINAL DIRECTIONS									TOTAL
	NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW		
1 TRIPS	41	30	73	29	0	0	0	0	173	
PERCENT	23.70	17.34	42.20	16.76	0.00	0.00	0.00	0.00		
2 TRIPS	0	179	117	101	13	0	0	89	499	
PERCENT	0.00	35.87	23.45	20.24	2.61	0.00	0.00	17.84		
3 TRIPS	4	2	6	11	4	0	2	0	29	
PERCENT	13.79	6.90	20.69	37.93	13.79	0.00	6.90	0.00		
4 TRIPS	29	36	52	41	11	0	0	10	179	
PERCENT	16.20	20.11	29.05	22.91	6.15	0.00	0.00	5.59		
5 TRIPS	224	243	285	238	51	0	2	51	1094	
PERCENT	20.48	22.21	26.05	21.76	4.66	0.00	0.18	4.66		
6 TRIPS	88	796	230	345	26	0	14	0	1499	
PERCENT	5.87	53.10	15.34	23.02	1.73	0.00	0.93	0.00		
7 TRIPS	125	117	109	183	26	0	14	0	574	
PERCENT	21.78	20.38	18.99	31.88	4.53	0.00	2.44	0.00		
8 TRIPS	83	129	176	182	70	6	2	12	660	
PERCENT	12.58	19.55	26.67	27.58	10.61	0.91	0.30	1.82		
9 TRIPS	429	412	348	568	225	30	56	21	2089	
PERCENT	20.54	19.72	16.66	27.19	10.77	1.44	2.68	1.01		
10 TRIPS	307	1306	1025	3481	1026	163	109	1364	8781	
PERCENT	3.50	14.87	11.67	39.64	11.68	1.86	1.24	15.53		
11 TRIPS	111	839	582	1259	218	74	218	707	4008	
PERCENT	2.77	20.93	14.52	31.41	5.44	1.85	5.44	17.64		
12 TRIPS	401	250	223	453	108	7	38	17	1497	
PERCENT	26.79	16.70	14.90	30.26	7.21	0.47	2.54	1.14		
13 TRIPS	1326	700	1136	2558	502	285	173	0	6680	
PERCENT	19.85	10.48	17.01	38.29	7.51	4.27	2.59	0.00		
14 TRIPS	356	1764	1431	1567	402	174	67	1928	7689	
PERCENT	4.63	22.94	18.61	20.38	5.23	2.26	0.87	25.07		
15 TRIPS	0	915	1090	1728	402	53	54	1611	5853	
PERCENT	0.00	15.63	18.62	29.52	6.87	0.91	0.92	27.52		

Miami-Dade 2030 Cost Feasible Plan

DIRECTIONAL DISTRIBUTION SUMMARY

ORIGIN ZONE	CARDINAL DIRECTIONS								TOTAL
	NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
16 TRIPS	121	977	909	1466	789	82	70	1273	5687
PERCENT	2.13	17.18	15.98	25.78	13.87	1.44	1.23	22.38	
17 TRIPS	220	1417	1764	2526	1157	1099	208	2196	10587
PERCENT	2.08	13.38	16.66	23.86	10.93	10.38	1.96	20.74	
18 TRIPS	221	782	901	1435	766	302	488	887	5782
PERCENT	3.82	13.52	15.58	24.82	13.25	5.22	8.44	15.34	
19 TRIPS	135	439	788	1065	246	59	263	691	3686
PERCENT	3.66	11.91	21.38	28.89	6.67	1.60	7.14	18.75	
20 TRIPS	494	1062	967	2031	662	89	90	1174	6569
PERCENT	7.52	16.17	14.72	30.92	10.08	1.35	1.37	17.87	
21 TRIPS	146	528	552	957	255	68	40	461	3007
PERCENT	4.86	17.56	18.36	31.83	8.48	2.26	1.33	15.33	
22 TRIPS	1584	3482	1800	4460	3043	609	256	2623	17857
PERCENT	8.87	19.50	10.08	24.98	17.04	3.41	1.43	14.69	
23 TRIPS	465	981	930	1999	1146	133	192	1302	7148
PERCENT	6.51	13.72	13.01	27.97	16.03	1.86	2.69	18.21	
24 TRIPS	378	599	559	736	654	85	60	452	3523
PERCENT	10.73	17.00	15.87	20.89	18.56	2.41	1.70	12.83	
25 TRIPS	1716	2415	2962	3610	3017	385	239	2100	16444
PERCENT	10.44	14.69	18.01	21.95	18.35	2.34	1.45	12.77	
26 TRIPS	1247	2571	2479	3208	3395	563	2621	117	16201
PERCENT	7.70	15.87	15.30	19.80	20.96	3.48	16.18	0.72	
27 TRIPS	440	793	835	1580	799	323	1080	0	5850
PERCENT	7.52	13.56	14.27	27.01	13.66	5.52	18.46	0.00	
28 TRIPS	234	663	511	843	873	92	757	114	4087
PERCENT	5.73	16.22	12.50	20.63	21.36	2.25	18.52	2.79	
29 TRIPS	312	728	473	1047	891	89	483	142	4165
PERCENT	7.49	17.48	11.36	25.14	21.39	2.14	11.60	3.41	
30 TRIPS	195	446	418	640	450	55	270	73	2547
PERCENT	7.66	17.51	16.41	25.13	17.67	2.16	10.60	2.87	

APPENDIX F

PEAK SEASON FACTORS AND HISTORICAL GROWTH RATE DATA

2009 Peak Season Factor Category Report - Report Type: ALL
 Category: 8700 MIAMI-DADE NORTH

MOCF: 0.96

Week	Dates	SF	PSCF
1	01/01/2009 - 01/03/2009	1.03	1.07
2	01/04/2009 - 01/10/2009	1.02	1.06
3	01/11/2009 - 01/17/2009	1.01	1.05
4	01/18/2009 - 01/24/2009	1.00	1.04
5	01/25/2009 - 01/31/2009	0.99	1.03
6	02/01/2009 - 02/07/2009	0.98	1.02
* 7	02/08/2009 - 02/14/2009	0.97	1.01
* 8	02/15/2009 - 02/21/2009	0.96	1.00
* 9	02/22/2009 - 02/28/2009	0.96	1.00
*10	03/01/2009 - 03/07/2009	0.96	1.00
*11	03/08/2009 - 03/14/2009	0.96	1.00
*12	03/15/2009 - 03/21/2009	0.96	1.00
*13	03/22/2009 - 03/28/2009	0.96	1.00
*14	03/29/2009 - 04/04/2009	0.96	1.00
*15	04/05/2009 - 04/11/2009	0.96	1.00
*16	04/12/2009 - 04/18/2009	0.97	1.01
*17	04/19/2009 - 04/25/2009	0.97	1.01
*18	04/26/2009 - 05/02/2009	0.97	1.01
*19	05/03/2009 - 05/09/2009	0.98	1.02
20	05/10/2009 - 05/16/2009	0.98	1.02
21	05/17/2009 - 05/23/2009	0.98	1.02
22	05/24/2009 - 05/30/2009	0.99	1.03
23	05/31/2009 - 06/06/2009	0.99	1.03
24	06/07/2009 - 06/13/2009	1.00	1.04
25	06/14/2009 - 06/20/2009	1.00	1.04
26	06/21/2009 - 06/27/2009	1.01	1.05
27	06/28/2009 - 07/04/2009	1.01	1.05
28	07/05/2009 - 07/11/2009	1.02	1.06
29	07/12/2009 - 07/18/2009	1.03	1.07
30	07/19/2009 - 07/25/2009	1.02	1.06
31	07/26/2009 - 08/01/2009	1.02	1.06
32	08/02/2009 - 08/08/2009	1.01	1.05
33	08/09/2009 - 08/15/2009	1.00	1.04
34	08/16/2009 - 08/22/2009	1.01	1.05
35	08/23/2009 - 08/29/2009	1.01	1.05
36	08/30/2009 - 09/05/2009	1.01	1.05
37	09/06/2009 - 09/12/2009	1.01	1.05
38	09/13/2009 - 09/19/2009	1.01	1.05
39	09/20/2009 - 09/26/2009	1.01	1.05
40	09/27/2009 - 10/03/2009	1.00	1.04
41	10/04/2009 - 10/10/2009	1.00	1.04
42	10/11/2009 - 10/17/2009	1.00	1.04
43	10/18/2009 - 10/24/2009	1.00	1.04
44	10/25/2009 - 10/31/2009	1.01	1.05
45	11/01/2009 - 11/07/2009	1.02	1.06
46	11/08/2009 - 11/14/2009	1.02	1.06
47	11/15/2009 - 11/21/2009	1.03	1.07
48	11/22/2009 - 11/28/2009	1.03	1.07
49	11/29/2009 - 12/05/2009	1.03	1.07
50	12/06/2009 - 12/12/2009	1.03	1.07
51	12/13/2009 - 12/19/2009	1.03	1.07
52	12/20/2009 - 12/26/2009	1.02	1.06
53	12/27/2009 - 12/31/2009	1.01	1.05

* Peak Season

DUNNWOODY LAKE						
Roadway	2007		2010*		ANNUAL GROWTH RATE	
	AM Two-Way	PM Two-Way	AM Two-Way	PM Two-Way	AM Two-Way	PM Two-Way
NW 154th Street (Miami Lakes Drive)						
I-75 to NW 87th Avenue	155	215	114	238	-9.62%	3.50%
NW 87th Avenue to NW 83rd Avenue	1,720	1,589	1063	1590	-14.83%	0.02%
NW 83rd Avenue to NW 82nd Avenue	1,754	1,641	1094	1669	-14.57%	0.57%
NW 82nd Avenue to NW 79th Court	2,204	2,288	2906	3468	9.66%	14.87%
NW 79th Court to NW 79th Avenue	2,703	2,856	2589	2673	-1.42%	-2.18%
NW 79th Avenue to NW 77th Court	2,827	3,036	3025	3249	2.28%	2.28%
NW 77th Court to SR 826	3,849	4,248	3,780	4,207	-0.60%	-0.32%
AVERAGE GROWTH RATE ON LINK	15,212	15,873	14,571	17,094	-1.42%	2.50%
NW 87th Avenue						
NW 154th Street to I-75 Overpass	1,384	1,363	958	1292	-11.55%	-1.78%
NW 82nd Avenue						
NW 170th Street to NW 162nd Street	1,628	1,233	1162	1340	-10.62%	2.81%
NW 162nd Street to NW 154th Street	1,456	1,852	1521	1718	1.48%	-2.48%
AVERAGE GROWTH RATE ON LINK	3,084	3,085	2684	3058	-5.41%	-0.36%
NW 79th Avenue	3,084	3,085	2,684	3,058	-5.41%	-0.36%
NW 159th Street to NW 154th Street	1,066	1,056	1181	834	3.48%	-7.58%
AVERAGE GROWTH RATE OVERALL	20,746	21,377	19,394	22,277	-2.22%	1.38%

*Volumes adjusted for peak season per FDOT



JMD ENGINEERING, INC.

**DUNNWOODY LAKE
2010 COUNT DATA**

Roadway	Peak Season		AM Two-Way	PM Two-Way	AM Two-Way	PM Two-Way
	Factor	Factor				
NW 154th Street (Miami Lakes Drive)						
NW 89th Avenue to NW 87th Avenue (1)	1.05	1.05	109	227	114	238
NW 87th Avenue to NW 83rd Avenue	1.07	1.07	1,598	1,718	1710	1838
NW 83rd Avenue to NW 82nd Avenue	1.07	1.07	1,598	1,718	1710	1838
NW 82nd Avenue to NW 79th Court	1.07	1.07	2,716	3,241	2906	3468
NW 79th Court to NW 79th Avenue	1.07	1.07	2,391	2,387	2558	2554
NW 79th Avenue to NW 77th Court	1.07	1.07	2,692	3,095	2880	3312
NW 77th Court to SR 826	1.07	1.07	3,533	3,932	3780	4207
SR 826 to Fairway Drive	1.05	1.05	2,135	2,494	2242	2619
NW 87th Avenue						
NW 154th Street to NW 146th Street	1.05	1.05	912	1,230	958	1292
NW 146th Street to I-75 Overpass	1.05	1.05	1,788	2,083	1877	2187
NW 154th Street to Site Driveway	0.00	0.00	0	0	0	0
Site Driveway to NW 170th Street	1.07	1.07	539	524	577	561
NW 82nd Avenue						
NW 170th Street to NW 162nd Street	1.05	1.05	1,107	1,276	1162	1340
NW 162nd Street to NW 154th Street	1.05	1.05	1,449	1,636	1521	1718
NW 170TH STREET						
NW 87th Avenue to NW 82nd Avenue	1.07	1.07	858	847	918	906

NOTE:

NW 154th Street from 82rd Ave to 87th Ave calculated using TMC
 NW 87th Avenue south of NW 170th Street calculated using TMC



JMD ENGINEERING, INC.

APPENDIX G

COMMITTED DEVELOPMENT TRAFFIC DETERMINATION

Table 3
LEVEL OF SERVICE REPORT

Roadway	Adopted Two-way Peak Hour Volume		2007 Peak Season Peak		Committed Trips		Total Trips		Remaining Trips		Existing + Committed LOS	
	LOS	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
NW 154th Street / Miami Lakes Drive												
Intersecting 75 to NW 87th Avenue												
NW 87th Avenue to NW 87th Avenue	D	1,55	2,15	43	54	188	269	812	841	C	C	
NW 83rd Avenue to NW 83rd Avenue	D	1,720	1,589	456	689	2,176	2,287	(1,066)	(1,177)	F	F	
NW 82nd Avenue to NW 82nd Avenue	D	1,764	1,641	458	688	2,210	2,339	740	811	D	D	
NW 78th Ct. to NW 78th Ave.	D	2,204	2,283	756	667	2,960	3,255	(10)	(305)	F	F	
NW 77th Court to SR 136	D	2,703	2,865	756	667	3,459	3,823	(509)	(873)	F	F	
SR 826 to Fairway Drive	D	2,827	3,028	1,617	2,115	4,544	5,151	(1,594)	(2,201)	F	F	
Fairway Drive to NW 67th Avenue	E	3,848	4,248	1,837	2,136	5,688	6,381	(2,796)	(3,437)	F	F	
NW 67th Avenue to Miami Lakesway North	E	3,120	3,514	662	773	3,027	3,287	93	167	E	E	
Miami Lakesway North to NW 67th Avenue	E	1,332	2,514	662	773	3,027	3,287	93	167	E	E	
NW 67th Avenue	E	1,465	1,396	496	541	1,861	2,111	1,047	1,009	D	D	
NW 154th Street to NW 139th Street	E	1,538	1,485	323	360	1,861	1,937	1,159	1,183	C	C	
New Court This Year (NW 67 Avenue North of NW 147 Terrace)												
NW 82nd Avenue	D	1,384	1,363	707	682	2,061	2,225	659	725	D	D	
NW 170th Street to NW 182nd Street	D	0	0	0	0	0	0	0	0	D	D	
NW 182nd Street to NW 154th Street	D	1,628	1,233	447	534	2,075	1,787	(865)	(657)	F	F	
Governor Bob Graham Parkway	D	1,456	1,852	464	567	1,940	2,418	1,010	531	C	D	
NW 79th Avenue	D	675	692	139	157							
NW 197th Terrace to NW 159th Terrace	D	805	825	49	53	654	678	456	532	C	C	
NW 159th Terrace to NW 154th Street	D	1,066	1,058	33	36	1,059	1,082	11	18	D	D	
NW 154th Street to NW 148th Street	D	951	868	106	129	1,057	997	53	113	D	D	
SR 826 to Miami Lakesway North	E	3,025	2,883	187	182	3,212	3,175	(92)	(55)	F	F	
Miami Lakesway North to Main Street	E	2,047	2,168	357	365	2,404	2,553	716	567	D	D	
Miami Lakes Drive to Miami Lakesway South	E	2,030	2,232	778	760	2,806	3,012	314	108	D	D	
Miami Lakesway South to NW 138th Street	E	2,117	2,174	315	331	2,432	2,505	658	615	D	D	
Fairway Drive	E	2,524	2,667	188	197	2,712	2,864	408	266	D	D	
Miami Lakes Dr. to Miami Lakesway N.	E	713	684	85	99	788	783	362	397	D	D	
Miami Lakes Drive to NW 67th Avenue (west)	E	712	555	140	153	652	708	328	472	D	D	
Miami Lakes Drive to Miami Lakes Drive (east)	E	833	684	116	127	948	811	231	369	D	D	
Miami Lakesway South	E	557	525	119	135	678	660	604	520	C	C	
Miami Lakes Drive to NW 67th Avenue (west)	E	483	339	103	112	568	450	584	730	C	C	
NW 67th Avenue to Miami Lakes Drive (east)	E	483	339	103	112	568	450	584	730	C	C	

Table 2
Growth Rate Analysis

Roadway	2005			2008			2007			Growth Rate		
	Annual Average Daily Traffic	AM Two-Way Peak Hour	PM Two-Way Peak Hour	Annual Average Daily Traffic	AM Two-Way Peak Hour	PM Two-Way Peak Hour	Annual Average Daily Traffic	AM Two-Way Peak Hour	PM Two-Way Peak Hour	Annual Average Daily Traffic	AM Two-Way Peak Hour	PM Two-Way Peak Hour
NW 154th Street / Miami Lakes Drive	4,693	478	446	3,523	325	325	2,519	155	215	-28.74%	-40.58%	-32.93%
Interstate 75 to NW 87th Avenue	16,619	1,415	1,276	17,469	1,462	1,462	16,410	1,720	1,589	-0.20%	-0.20%	5.97%
NW 87th Avenue to NW 83rd Avenue	17,805	1,571	1,571	18,374	1,562	1,562	20,118	1,754	1,641	6.30%	6.30%	2.20%
NW 83rd Avenue to NW 82nd Avenue	28,083	1,822	1,822	29,785	2,008	2,008	30,338	2,204	2,288	7.85%	7.85%	8.74%
NW 78th Court to NW 78th Avenue	38,209	2,841	2,841	39,182	2,865	2,865	40,592	2,703	2,658	0.74%	0.74%	0.26%
NW 77th Court to SR 1526	37,857	2,828	2,828	40,047	2,895	2,895	40,592	2,827	2,858	3.89%	3.89%	9.89%
SR 1526 to Fairway Drive	30,258	2,313	2,313	30,423	2,323	2,323	30,423	2,323	2,323	0.00%	0.00%	0.00%
Fairway Drive to NW 87th Avenue	7,724	665	665	7,724	665	665	7,724	665	665	0.00%	0.00%	0.00%
NW 87th Avenue to Miami Lakes Drive	4,038	647	647	4,038	647	647	4,038	647	647	0.00%	0.00%	0.00%
Miami Lakes Drive to NW 57th Avenue	18,763	1,748	1,748	19,047	1,843	1,843	17,402	1,455	1,354	-2.80%	-8.36%	-6.49%
NW 57th Avenue	14,149	1,200	1,200	13,468	1,221	1,221	17,402	1,455	1,354	0.20%	-8.36%	-6.49%
NW 154th Street to Interstate 75 Overpass	15,897	1,198	1,198	15,008	1,122	1,122	17,402	1,455	1,354	6.06%	7.39%	12.39%
NW 170th Street to NW 162nd Street	18,454	1,443	1,443	18,918	1,383	1,383	19,988	1,628	1,233	3.39%	18.04%	1.96%
Govener Bob Gribham Parkway	7,170	752	751	7,110	678	678	7,195	675	892	1.36%	0.45%	10.02%
NW 78th Avenue	5,735	620	620	5,675	567	479	6,201	605	525	0.17%	-5.26%	-0.35%
NW 158th Terrace to NW 158th Terrace	11,944	860	1,025	12,311	1,110	1,016	12,659	1,066	1,056	3.88%	-1.22%	11.14%
NW 154th Street to NW 154th Street	10,158	802	800	9,390	827	827	9,532	851	808	2.95%	5.38%	1.56%
NW 67th Avenue / Ludlum Road	41,601	2,873	2,862	38,728	2,862	3,047	41,887	3,025	2,983	-2.82%	2.69%	-1.52%
SR 826 to Miami Lakes Drive	31,384	2,126	2,237	28,525	2,018	2,088	30,368	2,047	2,188	-0.02%	2.61%	-0.03%
Main Street to Miami Lakes Drive	29,900	1,819	1,819	28,967	1,875	2,055	30,368	2,292	2,232	-1.09%	-1.89%	-1.09%
Miami Lakes Drive to Miami Lakes Drive	33,767	2,483	2,484	32,537	2,763	2,441	34,298	2,117	2,174	0.76%	2.85%	1.26%
Miami Lakes Drive to NW 135th Street	8,343	649	610	8,147	659	660	8,622	713	684	-0.41%	4.35%	1.23%
Miami Lakes Drive to Miami Lakes Drive	17,265	1,502	1,307	17,265	1,502	1,307	17,265	1,502	1,307	1.96%	4.61%	5.89%
NW 67th Avenue to Miami Lakes Drive (east)	13,454	1,553	1,049	10,069	603	554	7,137	712	555	6.17%	18.08%	0.18%
Miami Lakes Drive to NW 67th Avenue (west)	8,015	687	719	8,871	618	618	7,351	683	684	-26.88%	-26.23%	-26.84%
NW 67th Avenue to Miami Lakes Drive (east)	12,632	1,737	1,225	9,577	498	311	6,365	557	525	-4.89%	0.00%	-15.05%
(1) Note: 2005 Volumes apparently erroneous; therefore one-year growth rate was calculated				3,677	438	338	3,642	483	338	1.82%	12.56%	8.85%

Approved Developments

Approved Developments	Land Use	Amount of Development	Total External Daily Trips	Total External PM Peak Hour Trips	Total External AM Peak Hour Trips	Land Use Code
Dunnhill Cove 1 st Addition	Residential	16 units	193	21	21	210
Dunnhill Isle	Residential	21 units	247	26	24	210
16400 NW 59 Avenue ⁱ	Office	64,200 sq.ft.	948	96	132	710
32-2024-011-0053 ⁱⁱ	Industrial Warehouse	19,743 sq.ft.	122	21	34	150
14125 NW 80 Avenue ⁱⁱⁱ	Office	24,952 sq.ft.	458	37	62	710
Fenix Office Building 32-2022-006-0100 ^{iv}	Office	52,750 sq.ft.	815	79	112	710
Promise Health Care ^v	Hospital	56,400 sq.ft. 60 beds	709	79	68	610
Lake House Apartments ^{vi}	Residential multi-family	270 units	1,760	166	136	220
Graham Vested Development (East) ^{vii}	Mixed-Use	±1,007,184 sq.ft. 28 units	6,923	986	-	NA
Graham Vested Development (West) ^{viii}	Mixed-Use	±1,820,755 sq.ft. 295 units	15,428	2,383	-	NA

ⁱ Project approved for 70,000 sq.ft., 5,800 sq.ft. has been occupied to date

ⁱⁱ Project is built, but not occupied

ⁱⁱⁱ Project is built, but not occupied

^{iv} Project received approval within prior five (5) years

^v Part of the Graham Vested Development West

^{vi} Project received approval within prior five (5) years; Part of the Graham Vested Development West

^{vii} Estimate based on information from the Graham Companies and Town research; Includes only remaining, vested development to be built; Does not include projects from this table that are noted as being part of the Graham Vested Development land

^{viii} Estimate based on information from the Graham Companies and Town research; Includes only remaining, vested development to be built; Does not include projects from this table that are noted as being part of the Graham Vested Development land

DUNNWOODY LAKE APPROVED PROJECT TRAFFIC - 2030 AM PEAK HOUR																									
Roadway	From	To	1		2		3		4		5		6		7		8		9		10		11		Total Approved Traffic
			Development	Approved	Development	Approved	Development	Approved	Development	Approved	Development	Approved	Development	Approved	Development	Approved	Development	Approved	Development	Approved	Development	Approved	Development	Approved	
NW 154TH STREET			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46
NW 89TH AVE		NW 87TH AVE	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	322
NW 87TH AVE		NW 83RD AVE	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	441
NW 83RD AVE		NW 82ND AVE	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	441
NW 82ND AVE		NW 79TH CT	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	559
NW 79TH CT		NW 79th AVE	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	678
NW 79th AVE		NW 77TH COURT	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	1,728
NW 77TH COURT		SR 826	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	1,728
NW 87TH AVENUE			8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	656
NW 170TH ST		SITE	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	656
SITE		NW 154TH ST	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	598
NW 154TH ST		NW 147TH TER	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	598
NW 147TH TER		NW 138TH ST	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	598
NW 138TH ST			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
NW 82ND AVENUE		NW 162ND ST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
NW 170TH ST		NW 170TH ST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
NW 162ND ST		NW 154TH ST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
NW 170TH ST			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163
NW 170TH STREET		NW 82ND AVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163
NW 87TH AVE			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163



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AM		NB	SB	EB	WB	
		APPROACH	APPROACH	APPROACH	APPROACH	
NW 82ND AVE. & NW 154TH STREET						
6/29/2010		165	950	471	969	2555
12/7/2010		177	1114	757	774	2822
		1.07	1.17	1.61	0.80	1.10
PM		NB	SB	EB	WB	
		APPROACH	APPROACH	APPROACH	APPROACH	
NW 82ND AVE. & NW 154TH STREET						
6/29/2010		355	599	774	1212	2940
12/7/2010		418	631	737	1320	3106
		1.18	1.05	0.95	1.09	1.06

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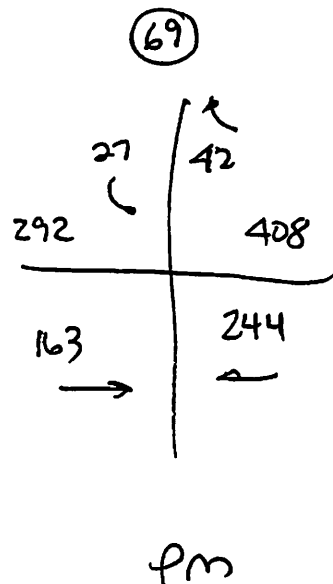
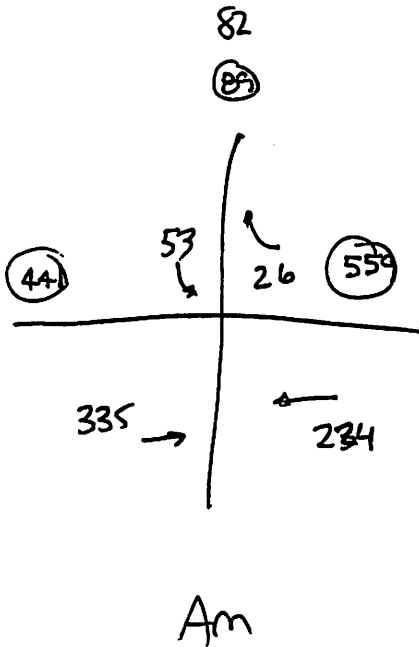
VOLUME DEVELOPMENT SHEET

**NW 154TH ST & NW 82ND AVE
AM PEAK HOUR**

Description	NW 82ND AVE Northbound			NW 82ND AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	37	86	54	543	186	384	264	483	10	163	420	185
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	40	92	58	581	199	411	282	517	11	174	449	198
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	4	10	6	61	21	43	30	54	1	18	47	21
2030 Background Traffic	44	102	64	642	220	454	312	571	12	192	496	219
Diverted Traffic	25	-25	0	-217	-74	-155	-135	231	74	0	133	-139
Approved Projects		5		53	5			335		5	234	26
Project Traffic	2	0	0	0	0	4	14	60	5	0	20	0
Bulldout Total	71	77	64	425	148	303	191	862	91	192	649	80

**NW 154TH ST & NW 82ND AVE
PM PEAK HOUR**

Description	NW 82ND AVE Northbound			NW 82ND AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	72	252	94	306	104	221	235	486	15	243	588	389
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	77	270	101	327	111	236	251	520	16	260	629	416
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	8	28	11	34	12	25	26	55	2	27	66	44
2030 Background Traffic	85	298	112	361	123	261	277	575	18	287	695	480
Diverted Traffic	100	-100	0	-120	-40	-88	-124	128	40	0	169	-155
Approved Projects		5		27	5			163		5	244	42
Project Traffic	10	0	0	0	0	20	22	60	3	0	86	42
Bulldout Total	195	198	112	241	83	193	175	763	61	287	950	305



VOLUME DEVELOPMENT SHEET

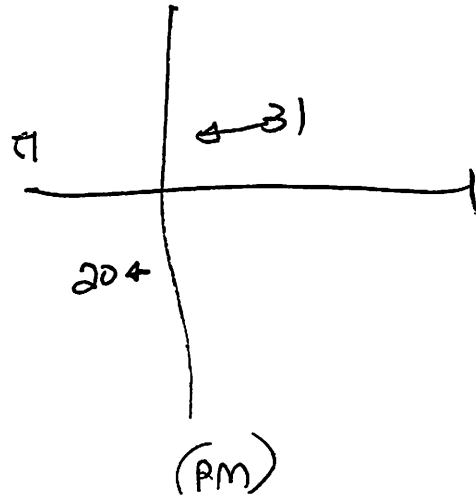
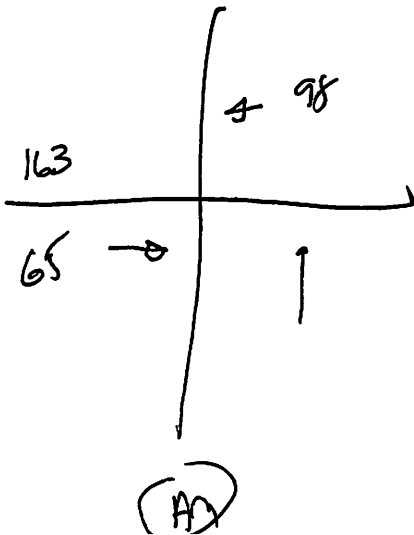
NW 170TH ST & NW 82ND AVE AM PEAK HOUR

Description	NW 82ND AVE Northbound			NW 82ND AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	198	178	73	9	414	1	3	59	428	196	158	9
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	212	190	78	10	443	1	3	63	458	210	169	10
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	22	20	8	1	46	0	0	7	48	22	18	1
2030 Background Traffic	234	210	86	11	489	1	3	70	506	232	187	11
Diverted Traffic	-59	-55	-25	0	-41	41	55	39	-240	-60	89	0
Approved Projects Project Traffic	5	0	0	0	0	2	10	10	5	0	98 3	0
Buildout Total	180	155	61	11	448	44	68	119	271	172	279	11

NW 170TH ST & NW 82ND AVE PM PEAK HOUR

Description	NW 82ND AVE Northbound			NW 82ND AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	371	367	133	15	207	6	4	64	333	112	110	13
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	397	393	142	16	221	6	4	68	356	120	118	14
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	42	41	15	2	23	1	0	7	37	13	12	1
2030 Background Traffic	439	434	157	18	244	7	4	75	393	133	130	15
Diverted Traffic	-148	-147	-53	0	-80	80	147	84	-133	-40	79	0
Approved Projects Project Traffic	10	0	0	0	0	10	10	20	10	0	31 15	0
Buildout Total	301	287	104	18	164	87	161	169	270	93	224	15

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VOLUME DEVELOPMENT SHEET

NW 162ND ST & NW 82ND AVE AM PEAK HOUR

Description	NW 82ND AVE <u>Northbound</u>			NW 82ND AVE <u>Southbound</u>			NW 162ND ST <u>Eastbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	56	242	0	0	788	12	25	0	179
Peak Season Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2010 Peak Season Adj.	64	278	0	0	906	14	29	0	206
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	5	22	0	0	70	1	2	0	16
2025 Background Traffic	69	300	0	0	976	15	31	0	222
Project Traffic		1%							
—Distribution	0%	10%	0%	34%	10%	51%	51%	0%	0%
—Direction		in		out	out	out	in		
—Total	0	2	0	30	9	44	9	0	0
Buildout Total	69	302	0	30	985	59	40	0	222

NW 162ND ST & NW 82ND AVE PM PEAK HOUR

Description	NW 82ND AVE <u>Northbound</u>			NW 82ND AVE <u>Southbound</u>			NW 162ND ST <u>Eastbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	167	795	0	0	492	19	30	0	117
Peak Season Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2010 Peak Season Adj.	175	835	0	0	517	20	32	0	123
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	14	65	0	0	40	2	2	0	10
2025 Background Traffic	189	900	0	0	557	22	34	0	133
Project Traffic		10%							
—Distribution	0%	10%	0%	34%	10%	51%	51%	0%	0%
—Direction		in		out	out	out	in		
—Total	0	8	0	13	4	19	40	0	0
Buildout Total	189	908	0	13	561	41	74	0	133

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AM Peak season adjusted by addition of 10% for school adjustment

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JMD ENGINEERING, INC.

VOLUME DEVELOPMENT SHEET

NW 154TH ST & NW 87TH AVE AM PEAK HOUR

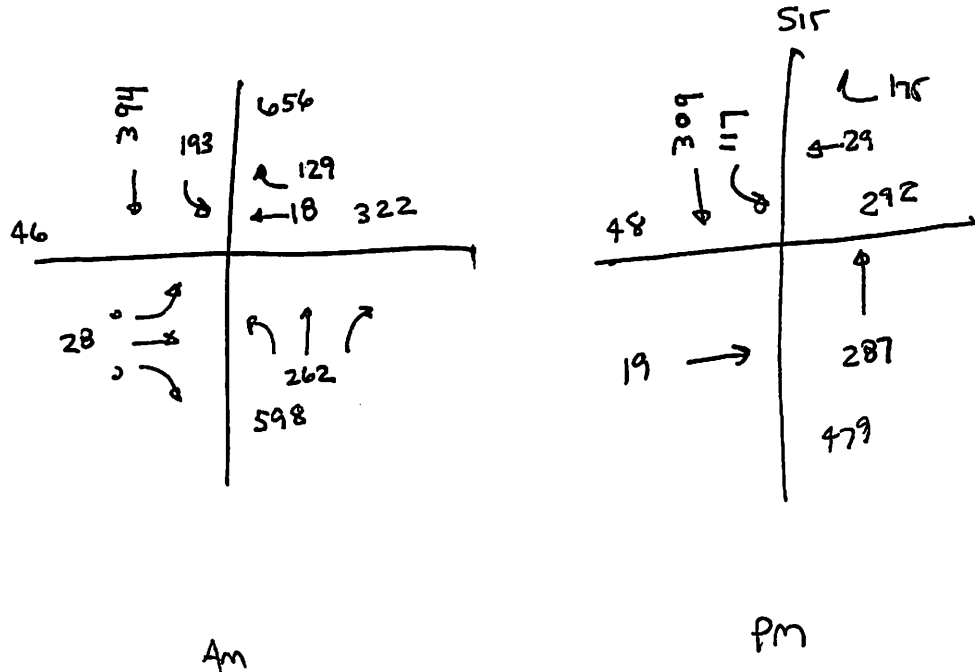
Description	NW 87TH AVE Northbound			NW 87TH AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	2	0	410	0	0	0	0	37	1	508	38	0
Peak Season Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2010 Peak Season Adj.	2	0	472	0	0	0	0	43	1	584	44	0
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	0	0	50	0	0	0	0	5	0	61	5	0
2030 Background Traffic	2	0	522	0	0	0	0	48	1	645	49	0
Diverted Traffic	0	149	-149	319	184	10	30	-30	0	-184	-10	187
Approved Projects	0	8202	2	0193	21394	0	8	19028	0	0	12819	127
Dunwoody Lake	17	25	0	12	10	25	0	20	16	26	34	22
Bulldout Total	19	179	375	331	205	35	38	231	17	487	201	209

NW 154TH ST & NW 87TH AVE PM PEAK HOUR

Description	NW 87TH AVE Northbound			NW 87TH AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	6	0	672	0	0	0	0	77	1	585	152	0
Peak Season Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2010 Peak Season Adj.	6	0	706	0	0	0	0	81	1	614	160	0
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	1	0	74	0	0	0	0	8	0	64	17	0
2030 Background Traffic	7	0	780	0	0	0	0	89	1	678	177	0
Diverted Traffic	0	108	-108	182	105	30	30	-30	0	-105	30	286
Approved Projects	0	18287	8	0117	2304	0	0	0	0	0	0	0
Dunwoody Lake	60	75	0	28	94	28	0	101	21	5	81	12
Bulldout Total	67	201	677	210	206	58	36	160	22	678	288	298

c:\documents and settings\johnd13\my documents\jmd_2009\2009_project\09-15\december report
AM Peak season adjusted by additioanl 10% for school adjustment

12/27/2010 8:18



VOLUME DEVELOPMENT SHEET

NW 87TH AVE & NW 146TH ST AM PEAK HOUR

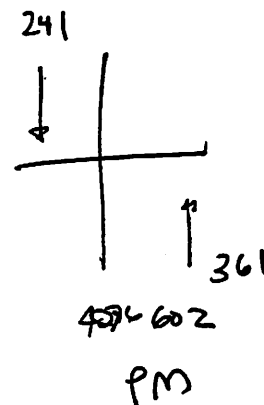
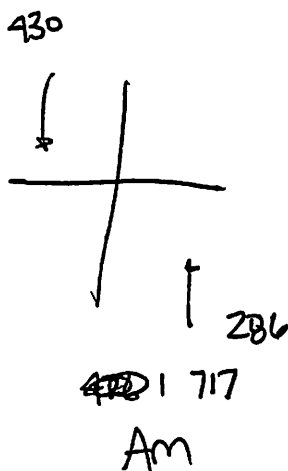
Description	NW 87TH AVE <u>Northbound</u>			NW 87TH AVE <u>Southbound</u>			NW 146TH ST <u>Eastbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	21	319	0	0	673	9	23	0	45
Peak Season Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2010 Peak Season Adj.	24	367	0	0	774	10	26	0	52
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	3	38	0	0	81	1	3	0	5
2030 Background Traffic	27	405	0	0	855	11	29	0	57
Diversion		0			0			0	
Project Traffic	0	40	0	0	112	2	2	0	0
Buildout Total	27	445	0	0	967	13	31	0	57

Appn Pg

286 430 NW 87TH AVE & NW 146TH ST PM PEAK HOUR

Description	NW 87TH AVE <u>Northbound</u>			NW 87TH AVE <u>Southbound</u>			NW 146TH ST <u>Eastbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	87	675	0	0	509	85	82	0	51
Peak Season Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2010 Peak Season Adj.	91	709	0	0	534	89	86	0	54
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	10	74	0	0	56	9	9	0	6
2030 Background Traffic	101	783	0	0	590	98	95	0	60
Diversion		0			0			0	
Project Traffic	0	135	0	0	95	3	5	0	0
Buildout Total	101	918	0	0	685	101	100	0	60

c:\documents and settings\johnd13\my documents\jmd_2009\2009_projects\bm-09-15\december report\intersection_volumes_adj.xlsx|87th & nw 146
AM Peak season adjusted by additioanl 10% for school adjustment



VOLUME DEVELOPMENT SHEET

NW 87TH AVE & INDUSTRIAL WAY AM PEAK HOUR

Description	NW 87TH AVE Northbound			NW 87TH AVE Southbound			INDSTRIL WAY Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	0	332	456	29	784	0	179	0	8
Peak Season Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2010 Peak Season Adj.	0	382	524	33	902	0	206	0	9
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	0	40	55	3	95	0	22	0	1
2030 Background Traffic	0	422	579	36	997	0	228	0	10
Diversion	0	0	0	0	0	0	0	0	50
Project Traffic	0	40	0	10	102	0	0	0	2
Buildout Total	0	462	579	46	1099	0	228	0	62

286

430

NW 87TH AVE & INDUSTRIAL WAY PM PEAK HOUR

Description	NW 87TH AVE Northbound			NW 87TH AVE Southbound			INDSTRIL WAY Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	0	851	189	35	607	0	334	0	40
Peak Season Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2010 Peak Season Adj.	0	894	198	37	637	0	351	0	42
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	0	94	21	4	67	0	37	0	4
2030 Background Traffic	0	988	219	41	704	0	388	0	46
Diversion	0	0	0	0	0	0	0	0	20
Project Traffic	0	115	0	5	80	0	0	0	20
Buildout Total	0	1103	219	46	784	0	388	0	66

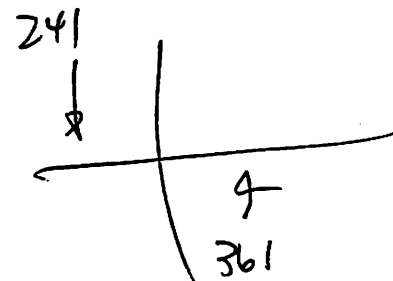
361

241

c:\documents and settings\johnd13\my documents\jmd_2009\2009_projects\bm-09-15\december report\intersection_volumes_adj.xlsx\87th & ind way
AM Peak season adjusted by additioanl 10% for school adjustment



JMD ENGINEERING, INC.



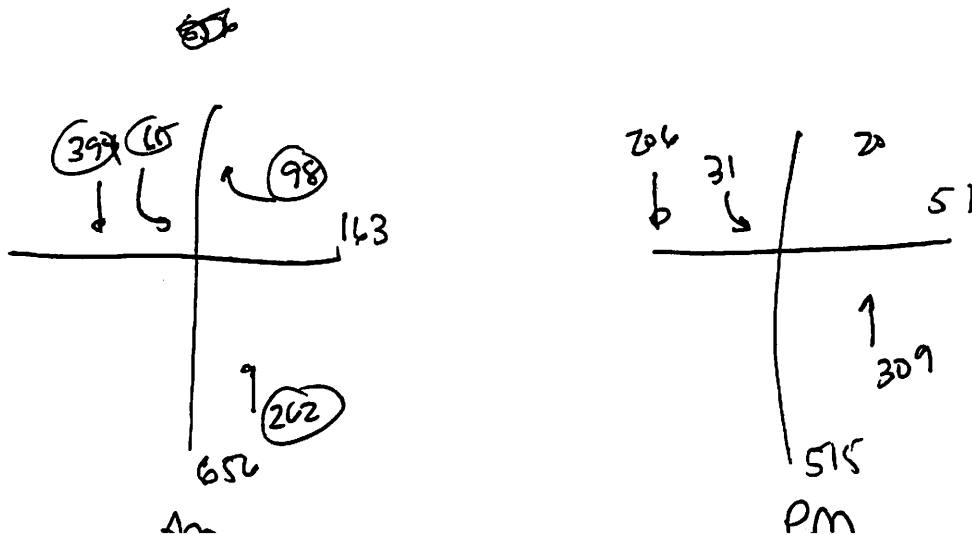
VOLUME DEVELOPMENT SHEET

**NW 170TH ST & NW 87TH AVE
AM PEAK HOUR**

Description	NW 87TH AVE <u>Northbound</u>			NW 87TH AVE <u>Southbound</u>			NW 170TH ST <u>Eastbound</u>			NW 170TH ST <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	19	112	278	174	38	12	26	151	11	81	96	189
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	20	120	297	188	41	13	28	162	12	87	103	202
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	2	13	31	20	4	1	3	17	1	9	11	21
2030 Background Traffic	22	133	328	206	45	14	31	179	13	96	114	223
Diverted Traffic	33	209	-45	-52	80	0	0	-50	50	129	-33	-56
Approved Projects	5	202	25	65	394	0	0	0	5	10	0	98
Project Traffic	5	50	25	0	30	0	0	0	5	10	0	0
Bulldout Total	60	392	308	154	155	14	31	129	68	235	81	167

**NW 170TH ST & NW 87TH AVE
PM PEAK HOUR**

Description	NW 87TH AVE <u>Northbound</u>			NW 87TH AVE <u>Southbound</u>			NW 170TH ST <u>Eastbound</u>			NW 170TH ST <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	8	69	121	177	146	7	3	76	11	169	94	186
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	9	74	129	189	156	7	3	81	12	181	101	199
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	1	8	14	20	16	1	0	8	1	19	11	21
2015 KHA Assign												
2030 Background Traffic	10	82	143	209	172	8	3	89	13	200	112	220
Diverted Traffic	38	204	213	-71	71	0	0	-30	30	159	-38	75
Approved Projects	7	309	30	31	206	0	0	0	15	35	0	20
Project Traffic	7	50	30	0	70	0	0	0	15	35	0	0
Bulldout Total	55	336	386	138	313	8	3	59	58	394	74	295



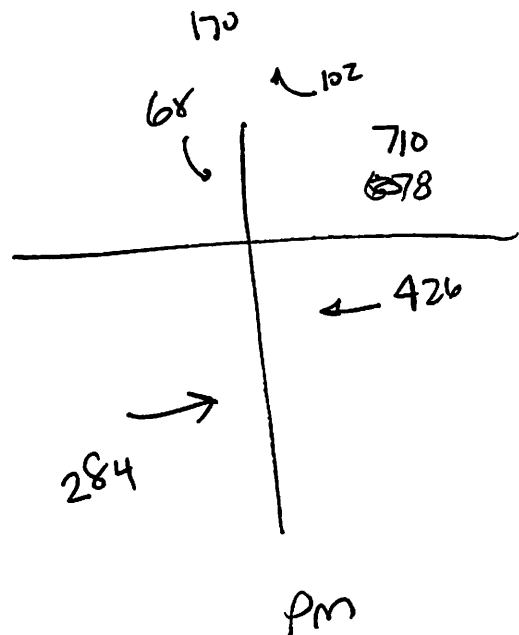
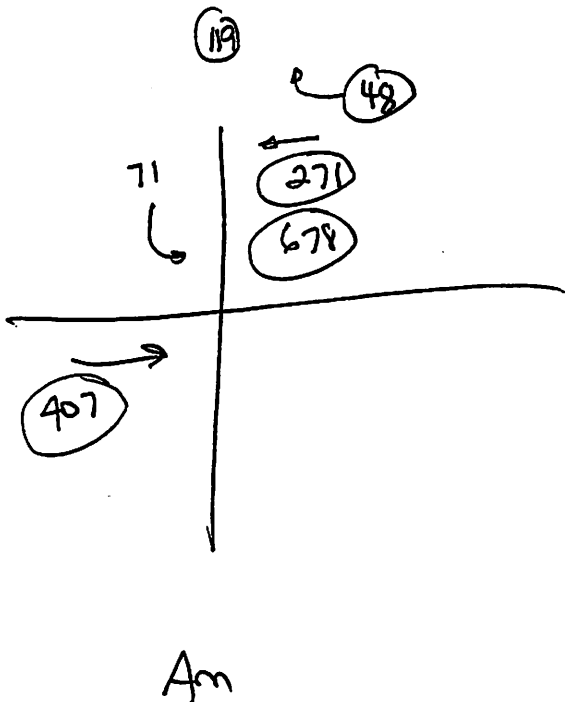
VOLUME DEVELOPMENT SHEET

**NW 154TH ST & NW 79TH AVE
AM PEAK HOUR**

Description	NW 79TH AVE Northbound			NW 79TH AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (11/19/2009)	2	20	16	279	41	208	139	1149	4	80	981	204
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Peak Season Volume	2	21	17	299	44	223	149	1229	4	88	1050	218
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	0	2	2	33	5	25	16	136	0	9	116	24
2030 Background Traffic	2	23	19	332	49	248	165	1365	4	95	1166	242
Diverted Traffic	0	0	0	-28	0	-29	-14	28	0	0	23	-23
Approved Projects				71	0	1		457			271	48
Project Traffic	1	0	0	0	0	1	2	35	0	0	17	0
Buildout Total	3	23	19	304	49	220	153	1428	4	95	1208	219

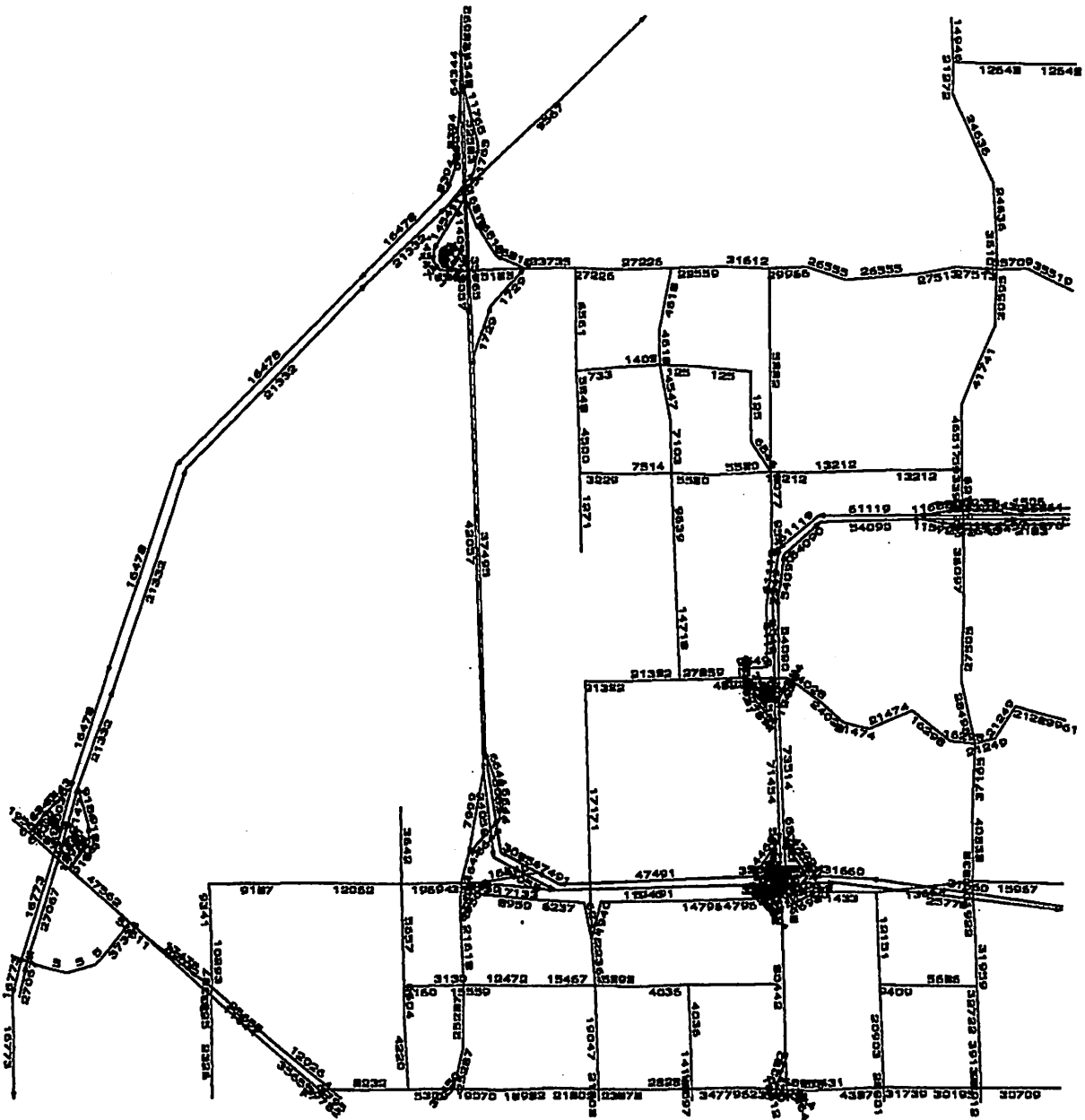
**NW 154TH ST & NW 79TH AVE
PM PEAK HOUR**

Description	NW 79TH AVE Northbound			NW 79TH AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (11/19/2009)	6	8	38	215	5	163	174	1332	2	2	933	294
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Peak Season Volume	6	9	41	230	5	174	188	1425	2	2	998	315
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	1	1	5	25	1	19	21	157	0	0	110	35
2030 Background Traffic	7	10	46	255	6	193	207	1582	2	2	1108	350
Diverted Traffic	0	0	0	-22	0	-29	-14	22	0	0	31	-31
Approved Projects				68	0	5		284			426	102
Project Traffic	1	0	0	0	0	5	5	30	0	0	30	0
Buildout Total	8	10	46	233	6	169	198	1634	2	2	1169	319

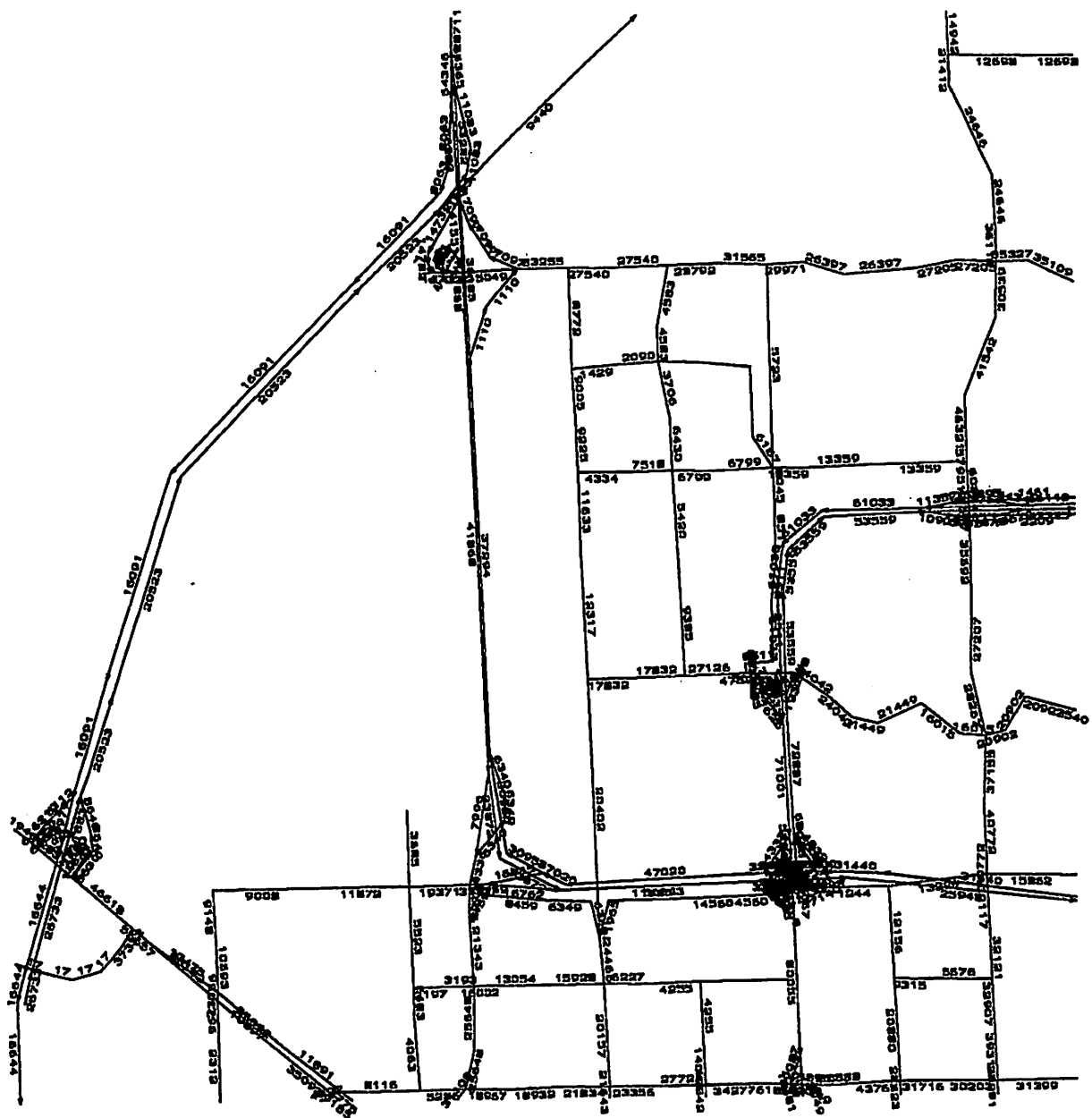


APPENDIX H

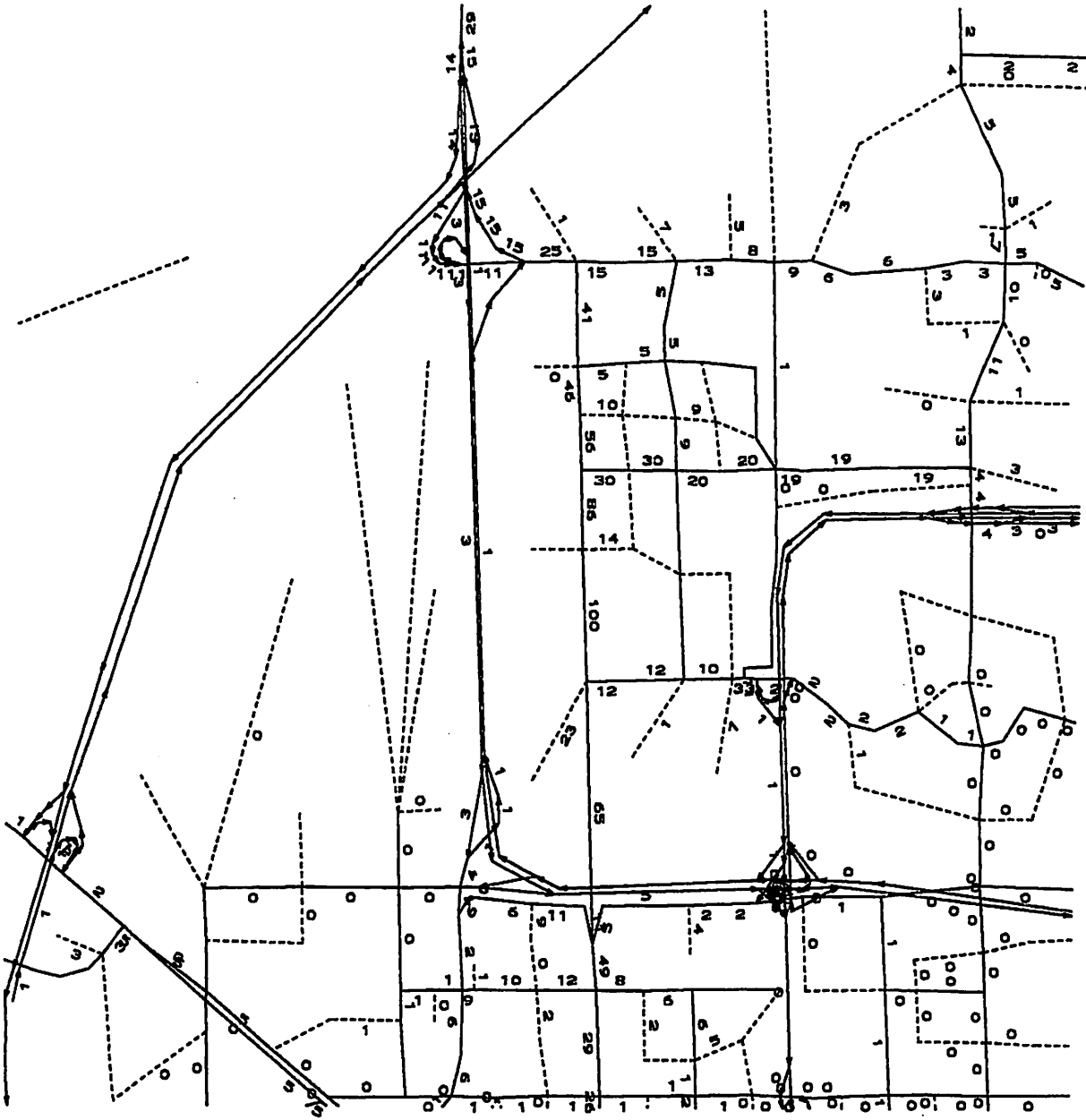
FSUTMS PLOTS & NW 87TH AVENUE VOLUME DEVELOPMENT



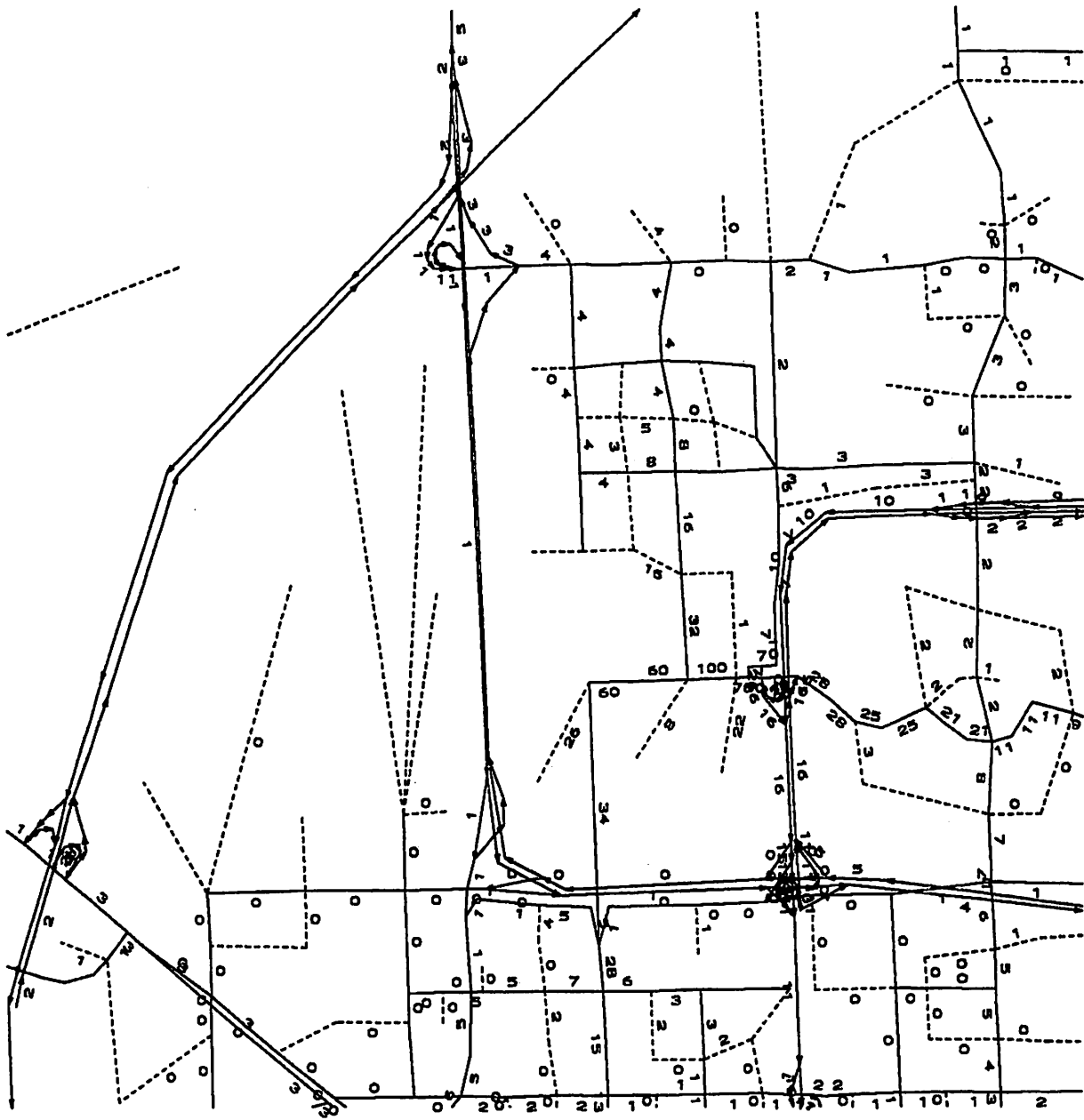
DADE COUNTY 1999 VALIDATION
TOTAL VOLUME



DADE COUNTY 1999 VALIDATION
TOTAL VOLUME

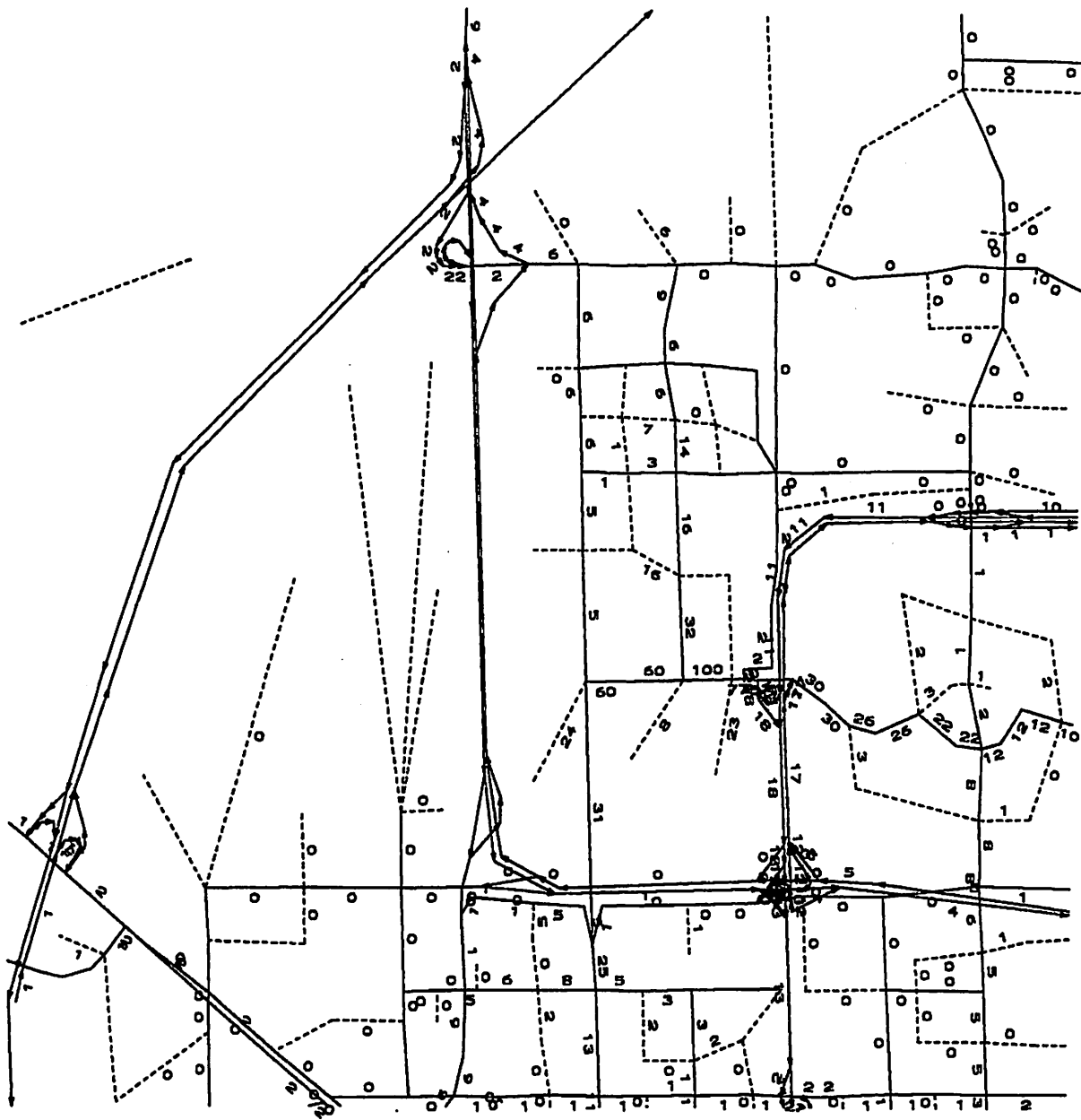


SELECT LINK ASSIGNMENT



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08JUL10 08:17:16



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08JUL10 08:20:20

Arterial Grid Analysis Study

Final Report

Prepared for:

Miami-Dade County
Metropolitan Planning Organization (MPO)



Prepared by:

Kimley-Horn and Associates, Inc.
Fort Lauderdale, Florida



©Kimley-Horn and Associates, Inc.
March 2007
040829009



SUBJECT _____ SHEET NO. ____ OF ____
DESIGN _____ DATE _____ CHECK _____ DATE _____ JOB NO. _____

2015

Volume = 11,270

Am = 1016 447 NB 568 SB -

Pm = 1194 645 NB 549 SB

5



Type of report: Tube Count - Volume Data

LOCATION: NW 87th Ave 200' north of I-75
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516411
 DIRECTION: NB
 DATE: Jun 29 2010 - Jul 01 2010

12,700 AM = 1016
 PM = 1194

207 44 NB
 56.58
 .08) .094
 PM, SUNB
 4.58

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	87	114	120	120	120	107			107	
1:00 AM	46	45	62	62	62	51			51	
2:00 AM	19	41	47	47	47	35			35	
3:00 AM	15	37	18	18	18	23			23	
4:00 AM	9	15	21	21	21	15			15	
5:00 AM	28	46	42	42	42	38			38	
6:00 AM	135	131	134	134	134	133			133	
7:00 AM	381	368	407	407	407	385			385	
8:00 AM	816	774	788	788	788	792			792	
9:00 AM	609	578	595	595	595	594			594	
10:00 AM	451	471	469	469	469	463			463	
11:00 AM	454	421	515	515	515	463			463	
12:00 PM	605	540	615	615	615	586			586	
1:00 PM	638	584	618	618	618	613			613	
2:00 PM	781	750	748	748	748	759			759	
3:00 PM	624	630	660	660	660	638			638	
4:00 PM	780	820	837	837	837	812			812	
5:00 PM	1153	1096	1128	1128	1128	1125			1125	
6:00 PM	1086	1194	1104	1104	1104	1128			1128	
7:00 PM	774	861	880	880	880	838			838	
8:00 PM	571	593	601	601	601	588			588	
9:00 PM	533	508	549	549	549	530			530	
10:00 PM	410	395	389	389	389	398			398	
11:00 PM	230	203	243	243	243	225			225	
Day Total	11235	11215	11590	11590	11590	11339			11339	
% Weekday Average	99.1%	98.9%	102.2%	102.2%	102.2%					
% Week Average	99.1%	98.9%	102.2%	102.2%	102.2%	100.0%				
AM Peak Volume	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM			8:00 AM	
	816	774	788	788	788	792			792	
PM Peak Volume	5:00 PM	6:00 PM	5:00 PM	5:00 PM	5:00 PM	6:00 PM			6:00 PM	
	1153	1194	1128	1128	1128	1128			1128	

Comments:

Report generated on 7/2/2010 9:23 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

12100

11339 + 10926 = 22264

1738

LOCATION: NW 87th Ave 200' north of I-75
 SPECIFIC LOCATION: 10 ft from
 CITY/STATE: Miami Lakes, FL

QC JOB #: 10516411
 DIRECTION: SB
 DATE: Jun 29 2010 - Jul 01 2010

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		62	90	78		76			76	
1:00 AM		39	47	59		48			48	
2:00 AM		21	73	40		44			44	
3:00 AM		12	26	20		19			19	
4:00 AM		29	32	37		32			32	
5:00 AM		100	106	102		102			102	
6:00 AM		288	323	296		302			302	
7:00 AM		754	773	743		756			756	
8:00 AM		1025	980	985		996			996	
9:00 AM		682	722	691		698			698	
10:00 AM		530	526	566		540			540	
11:00 AM		481	511	537		509			509	
12:00 PM		609	556	602		589			589	
1:00 PM		621	552	625		599			599	
2:00 PM		616	653	688		652			652	
3:00 PM		528	545	558		543			543	
4:00 PM		635	636	662		644			644	
5:00 PM		994	932	941		955			955	
6:00 PM		757	743	834		778			778	
7:00 PM		569	572	637		592			592	
8:00 PM		400	471	522		464			464	
9:00 PM		440	451	488		459			459	
10:00 PM		271	277	442		330			330	
11:00 PM		151	153	292		198			198	
Day Total	10614	10750	11445			10925			10925	
% Weekday Average	97.2%	98.4%	104.8%							
% Week Average	97.2%	98.4%	104.8%			100.0%				
AM Peak Volume	8:00 AM 1025	8:00 AM 980	8:00 AM 985			8:00 AM 996			8:00 AM 996	
PM Peak Volume	5:00 PM 994	5:00 PM 932	5:00 PM 941			5:00 PM 955			5:00 PM 955	

Comments:

20001

4, 201

STATION	ROAD	FROM	TO	EXISTING_AWDI	EXISTING_LANES	EXISTING_LOS	2015_AWDI	2015_LANES	2015_LOS	ROW	FUNCTIONAL CLASSIFICATION
1033	Hialeah Gales Blvd	Chesapeake Rd	NW 138 St	0	4	0	26300	4	D	100	Urban Minor Arterial
1034	NW 87 Ave	NW 58 St	Chesapeake Rd	0	0	0	23000	4	D	0	Urban Minor Arterial
1035	NW 74 St	NW 87 Ave	HEFT	0	0	0	20000	6	C	0	Urban Minor Arterial
1036	Clendenon Blvd	N of Harbor Dr	Virginia Key	28250	4	D	31075	4	D	85	Urban Principal Arterial-Other
328	NW 2 Ave	NW 189 St	NW 215 St	58913	6	F	64604	6	F	100	Urban Principal Arterial-Other
432	NW 41 S/NW 38 St EXT	Palmetto Expressway	NW 87 Ave	54120	6	F	61156	6	F	98	Urban Principal Arterial-Other
434	NW 38 St	NW 87 Ave	NW 97 Ave	57080	6	F	64478	6	F	110	Urban Principal Arterial-Other
440	NW 41 S/NW 38 St EXT	NW 87 Ave	NW 107 Ave	51068	6	F	57637	6	F	115	Urban Principal Arterial-Other
442	NW 41 St	NW 107 Ave	HEFT	45256	6	D	51139	6	F	125	Urban Principal Arterial-Other
506	NW 108 St	HEFT	NW 107 Ave	22730	4	D	23640	4	D	125	Urban Principal Arterial-Other
518	NW 118 St	W of I-95	NW 27 Ave	35296	6	D	38626	6	D	92	Urban Principal Arterial-Other
640	Rickenbacker Cswy	Toi Plaza	W of Virginia Key	48336	6	E	52868	6	F	280	Urban Principal Arterial-Other
810	NW 137 Ave	SW 88 St	SW 104 St	48286	6	D	55100	6	F	105	Urban Principal Arterial-Other
812	SW 137 Ave	SW 128 St	SW 128 St	44830	6	C	49539	6	E	115	Urban Principal Arterial-Other
816	SW 137 Ave	SW 128 St	SW 152 St	63046	6	F	68100	6	F	120	Urban Principal Arterial-Other
850	SW 152 St	SW 117 Ave	SW 124 Ave	68516	6	F	79154	6	F	115	Urban Principal Arterial-Other
852	SW 152 St	SW 124 Ave	SW 137 Ave	48176	6	F	59174	6	F	105	Urban Principal Arterial-Other
730	SW 107 Ave (Martin Rd)	SW 186 St	US 1	19336	4	C	23010	4	D	100	Urban Principal Arterial-Other
1038	NW 87 Ave	N of NW 154 St	NW 170 St	0	4	0	12700	0	C	0	
1037	NW 97 Ave	NW 138 St	NW 164 St	0	0	0	5800	4	C	0	
1038	NW 97 Ave	NW 154 St	NW 170 St	0	0	0	8200	2	C	0	
1039	NW 90 St	NW 87 Ave	NW 107 Ave	0	0	0	8000	2	C	0	
1040	NW 97 Ave	NW 74 St	NW 90 St	0	0	0	13500	4	C	0	
1041	NW 107 Ave	NW 138 St	NW 170 St	0	0	0	8100	2	C	0	
1042	NW 154 St	L-75	NW 87 Ave	0	0	0	18700	2	F	0	
1043	NW 154 St	NW 97 Ave	NW 107 Ave	0	0	0	8000	2	C	0	
1044	NW 122 Ave	NW 25 St	NW 41 St	0	0	0	13000	2	D	0	
1045	NW 25 St	NW 117 Ave	NW 127 Ave	0	0	0	32200	4	E	0	
1046	NW 127 Ave	NW 20 St	NW 25 St	0	0	0	26000	4	D	0	
1047	NW 20 St	NW 127 Ave	NW 137 Ave	0	0	0	2800	4	C	0	
1048	NW 137 Ave	SR 838	NW 20 St	0	0	0	2800	4	C	0	
1049	SW 142 Ave	SW 8 St	SW 26 St	0	0	0	4050	2	C	0	
1050	SW 42 St	SW 157 Ave	SW 182 Ave	0	0	0	2600	2	C	0	
1051	SW 56 St	SW 157 Ave	SW 187 Ave	0	0	0	5300	2	C	0	
1052	SW 187 Ave	SW 88 St	SW 88 St	0	0	0	9650	2	C	0	
1053	SW 182 Ave	SW 88 St	SW 96 St	0	0	0	13800	4	C	0	
1054	SW 96 St	SW 157 Ave	SW 162 Ave	0	0	0	14700	4	C	0	
1055	SW 97 Ave	SW 8 St	Fourtambles Blvd	0	0	0	42500	4	F	0	
1056	SW 82 Ave	SW 24 St	NW 25 St	0	0	0	19800	4	C	0	
1057	SW 82 Ave	SW 40 St	SW 40 St	0	0	0	11650	2	D	0	
1058	SW 82 Ave	SW 40 St	SW 48 St	0	0	0	3850	2	C	0	
1059	SW 82 Ave	SW 48 St	SW 56 St	0	0	0	3850	2	C	0	
1060	NW 82 Ave	NW 12 St	NW 25 St	0	0	0	14600	4	C	0	
1061	SW 120 St	SW 137 Ave	SW 147 Ave	0	0	0	2350	2	C	0	
1062	SW 157 Ave	SW 152 St	SW 184 St	0	0	0	11600	4	C	0	
1063	SW 157 Ave	SW 20 St	SW 136 St	0	0	0	21800	4	D	0	
1064	SW 160 St	SW 137 Ave	SW 147 Ave	0	0	0	10800	4	C	0	
1065	SW 344 St	US 1	SW 167 Ave	0	0	0	12000	4	C	0	
1068	SW 344 St	SW 187 Ave	SW 152 Ave	0	0	0	7050	4	C	0	
1067	SW 157 Ave	SW 104 St	SW 120 St	0	0	0	21800	4	D	0	

Future Conditions Analysis

Future conditions along the arterial grid network were assessed by developing future (2015) traffic volumes for roadways in the arterial grid network consistent with the 10-year planning horizon for this study and the end of Priority II of the Long Range Transportation Plan (LRTP).

Traffic growth rates within the County were obtained from Miami-Dade County's 2030 LRTP. Traffic growth rates calculated in the LRTP are based on increases in demographic data such as population, households, employment, and automobile availability. The LRTP divides Miami-Dade County into six planning areas and 30-year traffic growth rates have been established for each of the planning areas. A map of the six planning areas is shown in Figure 1. As shown in Table 2, the established 30-year traffic growth rates were used to determine annual traffic growth rates. Then, 10-year traffic growth rates were calculated from the annual traffic growth rates.

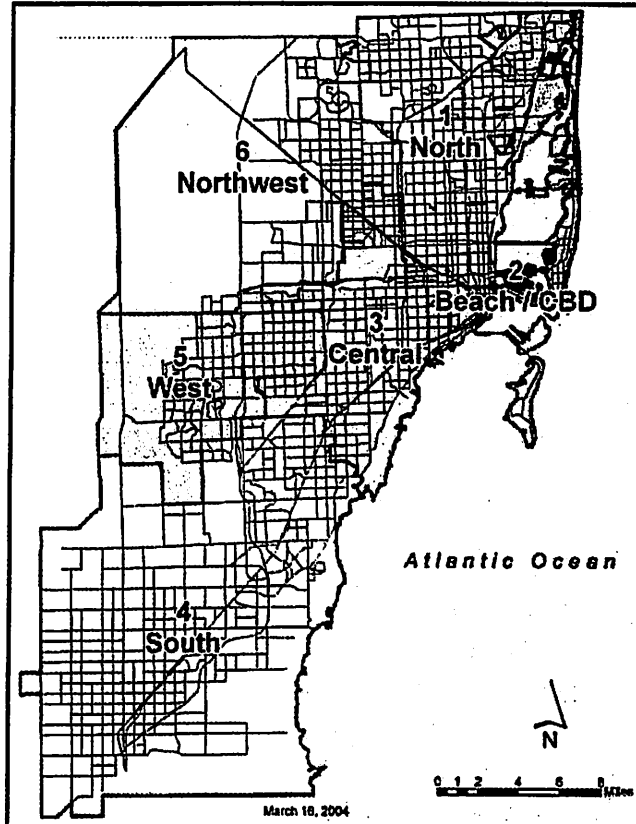


Figure 1. Six Planning Areas Established in the 2030 LRTP

Table 2. Miami-Dade County's Projected Traffic Growth Rate (2030 LRTP)

Planning Area	30-yr growth	Annual growth	10-year growth
North	32%	0.93%	10%
Northwest	45%	1.25%	13%
South	67%	1.72%	19%
Central	28%	0.83%	9%
West	37%	1.05%	11%
Beach/CBD ^(A)	32%	0.93%	10%

(A) – Central Business District

APPENDIX I

INTERNAL CAPTURE CALCULATIONS

TABLE APPENDIX DUNNWOODY LAKE PASS-BY CHECK FOR 10% FDOT STANDARD													
Roadway	From	To	2010		Peak Hour Volume	Committed Background Traffic	Annual Rate	2030 Growth	Link Diversion	Total Background Traffic	10% of Background Traffic	Dunnwoody Lake pass-by	Meets 10% Standard?
			Number of Lanes	Capacity									
NW 154TH STREET													
NW 87TH AVE		NW 87TH AVE	2	1,100	238	48	0.50%	263	0	311	31	73	NO
NW 89TH AVE		NW 83RD AVE	2	1,100	1,838	292	0.50%	2031	-406	1,917	192	73	YES
NW 87TH AVE		NW 82ND AVE	4	2,950	1,838	408	0.50%	2031	-368	2,071	207	61	YES
NW 83RD AVE		NW 79TH CT	4	2,950	3,468	408	0.50%	3832	-192	4,048	405	36	YES
NW 82ND AVE		NW 79th AVE	4	2,950	2,554	540	0.50%	2822	-141	3,221	322	24	YES
NW 79TH CT		NW 77TH COURT	4	4,130	3,312	710	0.50%	3659	0	4,369	437	19	YES
NW 79TH AVE		SR 826	4	4,130	4,207	1,718	0.50%	4648	0	6,366	637	12	YES
NW 77TH COURT													
NW 87TH AVENUE													
NW 170TH ST		SITE	4	2,950	561	515	0.50%	620	573	1,708	171	73	YES
SITE		NW 154TH ST	4	2,950	1,194	515	0.50%	1319	573	2,407	241	73	YES
NW 154TH ST		NW 147TH TER	4	2,950	1,292	479	0.50%	1428	0	1,907	191	48	YES
NW 147TH TER		NW 138TH ST	4	2,950	2,187	479	0.50%	2416	0	2,895	290	24	YES
NW 82ND AVENUE													
NW 170TH ST		NW 162ND ST	2	1,110	1,340	69	0.50%	1481	-592	957	96	12	YES
NW 162ND ST		NW 154TH ST	2	1,100	1,718	69	0.50%	1898	-759	1,208	121	24	YES
NW 170TH STREE													
NW 87TH AVE		NW 82ND AVE	2	1,100	906	51	0.50%	1001	-250	802	80	24	YES

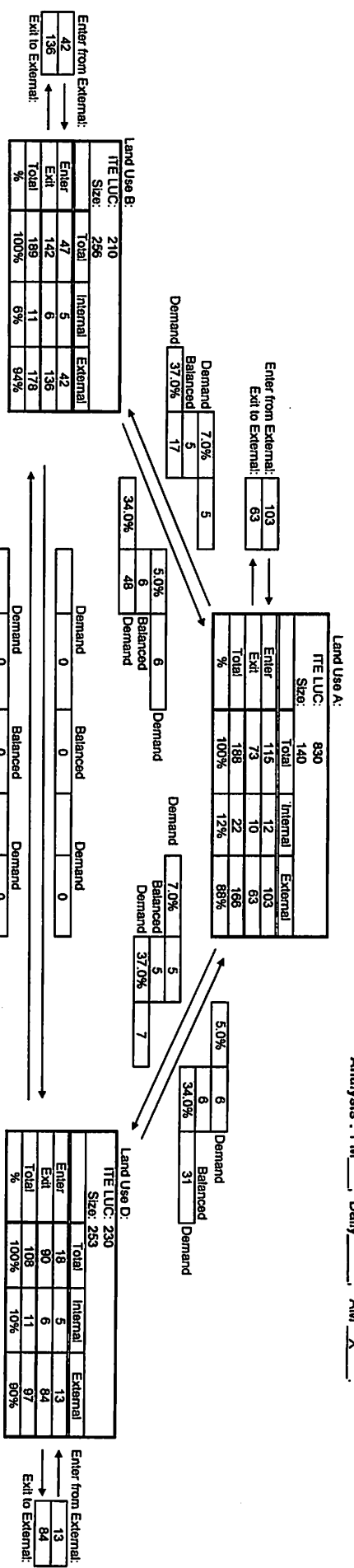
Note: NW 87TH Avenue volume from 2007 Aerial Grid Analysis by KHA

Capacities per Miami Lakes Concurrency Report except for:

NW 154th St. from NW 79th Ave to SR 826 capacity derived from ARTPLAN

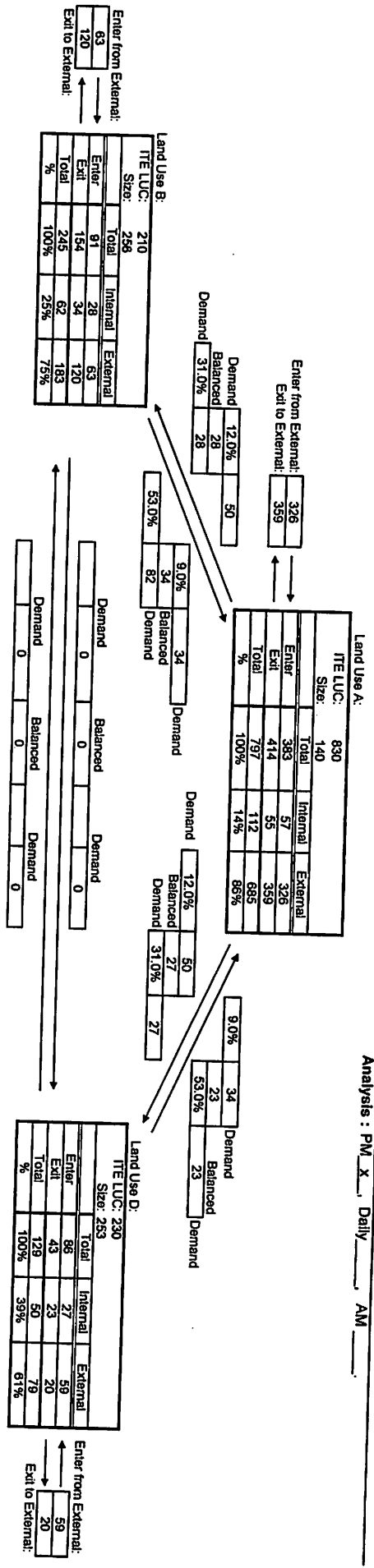
ITE MULTI-USE PROJECT INTERNAL CAPTURE WORKSHEET

Project Name: DUNNWOODY LAKE
 Scenario: FULL BUILD OUT - 2030
 Analysis : PM, Daily, AM, X



ITE MULTI-USE PROJECT INTERNAL CAPTURE WORKSHEET

Project Name: DUNNWOODY LAKE
 Scenario: FULL BUILD OUT - 2030
 Analysis : PM X Daily AM



ITE MULTI-USE PROJECT INTERNAL CAPTURE WORKSHEET

Project Name: DUNNWOODY LAKE	
Scenario: FULL BUILD OUT - 2030	
Analysts: PM	Daily X AM

Land Use A:

ITE LUC:	830			
Size:	140	Total	Internal	External
Enter	4,225	654	3,571	
Exit	4,225	648	3,579	
Total	8,450	1,300	7,150	
%	100%	15%	85%	

Enter from External: 3,571
Exit to External: 3,579

Demand	11.0%	465
Balanced	408	
Demand	33.0%	408

Demand	0	Balanced	0	Demand	0
Demand	0	Balanced	0	Demand	0

Demand	0	Balanced	0	Demand	0
Demand	0	Balanced	0	Demand	0

Demand	8.0%	380
Balanced	274	
Demand	38.0%	274

Land Use B:

ITE LUC:	210			
Size:	256	Total	Internal	External
Enter	1,235	408	827	
Exit	1,235	380	855	
Total	2,470	788	1,682	
%	100%	32%	68%	

Demand	0	Balanced	0	Demand	0
Demand	0	Balanced	0	Demand	0

Demand	0	Balanced	0	Demand	0
Demand	0	Balanced	0	Demand	0

Demand	8.0%	380
Balanced	238	
Demand	33.0%	238

Land Use D:

ITE LUC:	230			
Size:	253	Total	Internal	External
Enter	721	238	483	
Exit	721	274	447	
Total	1,442	512	930	
%	100%	36%	64%	

Enter from External: 483
Exit to External: 447

NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

Category	Land Use			Total
	A	B	D	
Enter	3,571	827	483	4,881
Exit	3,579	855	447	4,881
Total	7,150	1,682	930	9,762
Simple Use	8,450	2,470	1,442	12,362
Trip Gen Estimate	15.38%	31.80%	35.51%	

Internal Capture = 21.03%

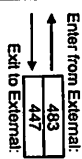
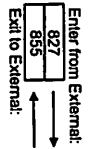


TABLE 7.1				
Unconstrained Internal Capture Rates for Trip Origins Within a Multi-Use Development				
		Midday Peak (AM)	PM Peak of Adj...	Daily
from OFFICE	to OFFICE	2%	1%	2%
	to RETAIL	20%	23%	22%
	to RESIDENTIAL	0%	2%	2%
from RETAIL	to OFFICE	3%	3%	3%
	to RETAIL	29%	20%	30%
	to RESIDENTIAL	7%	12%	11%
from RESIDENTIAL	to OFFICE	N/A	N/A	N/A
	to RETAIL	34%	53%	38%
	to RESIDENTIAL	N/A	N/A	N/A

TABLE 7.2				
Unconstrained Internal Capture Rates for Trip Destinations Within a Multi-Use Development				
		Midday Peak (AM)	PM Peak of Adj...	Daily
to OFFICE	from OFFICE	6%	6%	2%
	from RETAIL	38%	31%	15%
	from RESIDENTIAL	0%	0%	N/A
to RETAIL	from OFFICE	4%	2%	4%
	from RETAIL	31%	20%	28%
	from RESIDENTIAL	5%	9%	9%
to RESIDENTIAL	from OFFICE	0%	2%	3%
	from RETAIL	37%	31%	33%
	from RESIDENTIAL	N/A	N/A	N/A

Information obtained from ITE's *Trip Generation Handbook*, 2nd Edition, June 2004

APPENDIX J

INTERSECTION DEVELOPMENT WORKSHEETS

VOLUME DEVELOPMENT SHEET

**NW 154TH ST & NW 87TH AVE
AM PEAK HOUR**

Description	NW 87TH AVE Northbound			NW 87TH AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (08/30/2010)	2	0	410	0	0	0	0	37	1	508	38	0
Peak Season Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2010 Peak Season Adj.	2	0	472	0	0	0	0	43	1	584	44	0
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	0	0	50	0	0	0	0	5	0	61	5	0
2030 Background Traffic	2	0	522	0	0	0	0	48	1	645	49	0
Diverted Traffic	0	119	-119	319	184	30	30	-30	0	-184	-30	187
Approved Projects	0	262	0	193	394	0	0	28	0	0	18	129
Dunwoody Lake	17	25	0	12	40	5	28	67	22	0	26	0
Dunwoody Forest	0	3	3	0	11	0	8	0	0	0	0	0
Buildout Total	19	409	406	524	629	35	64	113	23	481	63	316

**NW 154TH ST & NW 87TH AVE
PM PEAK HOUR**

Description	NW 87TH AVE Northbound			NW 87TH AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (08/30/2010)	6	0	672	0	0	0	0	77	1	585	152	0
Peak Season Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2010 Peak Season Adj.	6	0	706	0	0	0	0	81	1	614	160	0
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	1	0	74	0	0	0	0	8	0	64	17	0
2030 Background Traffic	7	0	780	0	0	0	0	89	1	678	177	0
Diverted Traffic	0	108	-108	182	105	30	30	-30	0	-105	30	286
Approved Projects	0	287	0	117	309	0	0	19	0	29	175	0
Dunwoody Lake	60	75	0	28	94	8	0	57	16	0	71	46
Dunwoody Forest	0	14	8	0	9	0	5	0	0	0	0	0
Buildout Total	67	484	680	327	517	38	35	135	17	602	453	332

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AM Peak season adjusted by additioanl 10% for school adjustment



VOLUME DEVELOPMENT SHEET

NW 87TH AVE & NW 146TH ST AM PEAK HOUR

Description	NW 87TH AVE <u>Northbound</u>			NW 87TH AVE <u>Southbound</u>			NW 146TH ST <u>Eastbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	21	319	0	0	673	9	23	0	45
Peak Season Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2010 Peak Season Adj.	24	367	0	0	774	10	26	0	52
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	3	38	0	0	81	1	3	0	5
2030 Background Traffic	27	405	0	0	855	11	29	0	57
Diversion		0			0				
Approved Projects		286			430				
<u>Dunnwoody Lake</u>	0	40	0	0	60	2	2	0	0
<u>Dunnwoody Forest</u>	0	6	0	0	19	0	0	0	0
Buildout Total	27	737	0	0	1364	13	31	0	57

NW 87TH AVE & NW 146TH ST PM PEAK HOUR

Description	NW 87TH AVE <u>Northbound</u>			NW 87TH AVE <u>Southbound</u>			NW 146TH ST <u>Eastbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	87	675	0	0	509	85	82	0	51
Peak Season Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2010 Peak Season Adj.	91	709	0	0	534	89	86	0	54
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	10	74	0	0	56	9	9	0	6
2030 Background Traffic	101	783	0	0	590	98	95	0	60
Diversion		0			0				
Approved Projects		361			241				
<u>Dunnwoody Lake</u>	0	135	0	0	95	3	5	0	0
<u>Dunnwoody Forest</u>	0	22	0	0	14	0	0	0	0
Buildout Total	101	1301	0	0	940	101	100	0	60

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AM Peak season adjusted by additional 10% for school adjustment



VOLUME DEVELOPMENT SHEET

NW 87TH AVE & INDUSTRIAL WAY AM PEAK HOUR

Description	NW 87TH AVE <u>Northbound</u>			NW 87TH AVE <u>Southbound</u>			INDUSTRIAL WAY <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	0	332	456	29	784	0	179	0	8
Peak Season Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2010 Peak Season Adj.	0	382	524	33	902	0	206	0	9
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	0	40	55	3	95	0	22	0	1
2030 Background Traffic	0	422	579	36	997	0	228	0	10
Diversion		0		0	0				50
Approved Projects		286	120	120	430		120		120
<u>Dunnwoody Lake</u>	0	40	0	10	50	0	0	0	2
<u>Dunnwoody Forest</u>	0	6	0	0	19	0	0	0	0
Buildout Total	0	754	699	166	1496	0	348	0	182

NW 87TH AVE & INDUSTRIAL WAY PM PEAK HOUR

Description	NW 87TH AVE <u>Northbound</u>			NW 87TH AVE <u>Southbound</u>			INDUSTRIAL WAY <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	0	851	189	35	607	0	334	0	40
Peak Season Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2010 Peak Season Adj.	0	894	198	37	637	0	351	0	42
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	0	94	21	4	67	0	37	0	4
2030 Background Traffic	0	988	219	41	704	0	388	0	46
Diversion		0		0	0				120
Approved Projects		361	120	120	241		120		20
<u>Dunnwoody Lake</u>	0	115	0	5	80	0	0	0	0
<u>Dunnwoody Forest</u>	0	22	0	0	14	0	0	0	0
Buildout Total	0	1486	339	166	1039	0	508	0	186

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AM Peak season adjusted by additonal 10% for school adjustment



VOLUME DEVELOPMENT SHEET

NW 170TH ST & NW 87TH AVE AM PEAK HOUR

Description	NW 87TH AVE Northbound			NW 87TH AVE Southbound			NW 170TH ST Eastbound			NW 170TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	19	112	278	174	38	12	26	151	11	81	96	189
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	20	120	297	186	41	13	28	162	12	87	103	202
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	2	13	31	20	4	1	3	17	1	9	11	21
2030 Background Traffic	22	133	328	206	45	14	31	179	13	96	114	223
Diverted Traffic	33	299	-45	-52	139	0	0	-50	50	130	-33	-59
Approved Projects		262		65	394							98
Dunnwoody Lake	5	50	25	0	30	0	0	0	5	10	0	0
Dunnwoody Forest	0	15	-	0	5	0	0	0	0	1	0	0
Buildout Total	60	759	308	219	613	14	31	129	68	237	81	262

NW 170TH ST & NW 87TH AVE PM PEAK HOUR

Description	NW 87TH AVE Northbound			NW 87TH AVE Southbound			NW 170TH ST Eastbound			NW 170TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	8	69	121	177	148	7	3	76	11	169	84	186
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	9	74	129	189	156	7	3	81	12	181	101	199
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	1	8	14	20	16	1	0	8	1	19	11	21
2015 KHA Assign												
2030 Background Traffic	10	82	143	209	172	8	3	89	13	200	112	220
Diverted Traffic	38	204	213	-71	213	0	0	-33	33	147	-38	-110
Approved Projects		309		21	206				15	35	0	0
Dunnwoody Lake	7	50	30	0	70	0	0	0	0	2	0	0
Dunnwoody Forest	0	8	1	0	14	0	0	0	0	2	0	0
Buildout Total	55	653	397	159	675	8	3	56	61	384	74	130



VOLUME DEVELOPMENT SHEET

**NW 154TH ST & NW 79TH AVE
AM PEAK HOUR**

Description	NW 79TH AVE Northbound			NW 79TH AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (11/19/2009)	2	20	16	279	41	208	139	1149	4	80	981	204
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Peak Season Volume	2	21	17	299	44	223	149	1229	4	88	1050	218
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	0	2	2	33	5	25	16	136	0	9	116	24
2030 Background Traffic	2	23	19	332	49	248	165	1365	4	95	1166	242
Diverted Traffic	0	0	0	-28	0	-29	-14	28	0	0	23	-23
Approved Projects				71	0			407			271	48
Dunnwoody Lake	1	0	0	0	0	1	2	35	0	0	17	0
Dunnwoody Forest	0	0	0	0	0	0	0	15	0	0	5	0
Buildout Total	3	23	19	375	49	220	153	1850	4	95	1482	267

**NW 154TH ST & NW 79TH AVE
PM PEAK HOUR**

Description	NW 79TH AVE Northbound			NW 79TH AVE Southbound			NW 154TH ST Eastbound			NW 154TH ST Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (11/19/2009)	6	8	38	215	5	163	174	1332	2	2	933	294
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Peak Season Volume	6	9	41	230	5	174	186	1425	2	2	998	315
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	1	1	5	25	1	19	21	157	0	0	110	35
2030 Background Traffic	7	10	46	255	6	193	207	1582	2	2	1108	350
Diverted Traffic	0	0	0	-22	0	-17	-14	22	0	0	31	-31
Approved Projects				68	0			284			426	102
Dunnwoody Lake	1	0	0	0	0	5	5	30	0	0	30	0
Dunnwoody Forest	0	0	0	0	0	0	0	8	0	0	19	0
Buildout Total	8	10	46	301	6	181	198	1926	2	2	1614	421

VOLUME DEVELOPMENT SHEET

NW 154TH ST & NW 82ND AVE AM PEAK HOUR

Description	NW 82ND AVE <u>Northbound</u>			NW 82ND AVE <u>Southbound</u>			NW 154TH ST <u>Eastbound</u>			NW 154TH ST <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	37	86	54	543	188	384	264	483	10	163	420	185
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	40	92	58	581	199	411	282	517	11	174	449	198
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	4	10	6	61	21	43	30	54	1	18	47	21
2030 Background Traffic	44	102	64	642	220	454	312	571	12	192	496	219
Diverted Traffic	25	-25	0	-217	-74	-185	-135	231	74	0	133	-139
Approved Projects		5		53	5			335		5	234	26
Dunnwoody Lake	2	0	0	0	0	4	14	60	5	0	20	0
Dunnwoody Forest	1	0	0	0	0	0	0	15	0	0	5	0
Buildout Total	72	82	64	478	151	273	191	1212	91	197	888	106

NW 154TH ST & NW 82ND AVE PM PEAK HOUR

Description	NW 82ND AVE <u>Northbound</u>			NW 82ND AVE <u>Southbound</u>			NW 154TH ST <u>Eastbound</u>			NW 154TH ST <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	72	252	94	306	104	221	235	486	15	243	688	389
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	77	270	101	327	111	236	251	520	16	260	736	416
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	8	28	11	34	12	25	26	55	2	27	77	44
2030 Background Traffic	85	298	112	361	123	261	277	575	18	287	813	460
Diverted Traffic	100	-100	0	-120	-40	-118	-124	128	40	0	169	-155
Approved Projects		5		27	5			163		5	244	42
Dunnwoody Lake	10	0	0	0	0	20	22	60	3	0	86	0
Dunnwoody Forest	1	0	0	0	0	1	0	8	0	0	19	0
Buildout Total	196	203	112	268	88	164	175	934	61	292	1331	347



VOLUME DEVELOPMENT SHEET

NW 162ND ST & NW 82ND AVE AM PEAK HOUR

Description	NW 82ND AVE <u>Northbound</u>			NW 82ND AVE <u>Southbound</u>			NW 162ND ST <u>Eastbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	56	242	0	0	788	12	25	0	179
Peak Season Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2010 Peak Season Adj.	64	278	0	0	906	14	29	0	206
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	7	29	0	0	95	1	3	0	22
2025 Background Traffic	71	307	0	0	1001	15	32	0	228
Diversion		-139			-341				
Approved Projects		26			53				1
Dunnwoody Lake	0	2	0	0	13	0	0	0	0
Dunnwoody Forest	0	0	0	0	0	0	0	0	0
Buildout Total	71	196	0	0	726	15	32	0	229

NW 162ND ST & NW 82ND AVE PM PEAK HOUR

Description	NW 82ND AVE <u>Northbound</u>			NW 82ND AVE <u>Southbound</u>			NW 162ND ST <u>Eastbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (06/30/2010)	167	795	0	0	492	19	30	0	117
Peak Season Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2010 Peak Season Adj.	175	835	0	0	517	20	32	0	123
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	18	88	0	0	54	2	3	0	13
2025 Background Traffic	193	923	0	0	571	22	35	0	136
Diversion		-348			-253				
Approved Projects		27			42				1
Dunnwoody Lake	2	10	0	0	19	0	0	0	0
Dunnwoody Forest	0	0	0	0	1	0	0	0	0
Buildout Total	195	612	0	0	380	22	35	0	137

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AM Peak season adjusted by additional 10% for school adjustment

2/28/2011 6:29



JMD ENGINEERING, INC.

VOLUME DEVELOPMENT SHEET

NW 170TH ST & NW 82ND AVE AM PEAK HOUR

Description	NW 82ND AVE <u>Northbound</u>			NW 82ND AVE <u>Southbound</u>			NW 154TH ST <u>Eastbound</u>			NW 154TH ST <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	198	178	73	9	414	1	3	59	428	198	158	9
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	212	190	78	10	443	1	3	63	458	210	169	10
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	22	20	8	1	48	0	0	7	48	22	18	1
2030 Background Traffic	234	210	88	11	489	1	3	70	508	232	187	11
Diverted Traffic	-59	-55	-25	0	-41	41	55	39	-240	-60	89	0
Approved Projects								65			98	
Dunwoody Lake	5	0	0	0	0	2	10	10	5	0	3	0
Dunwoody Forest	0	0	0	0	0	0	1	1	1	0	1	0
Buildout Total	180	155	61	11	448	44	69	185	272	172	378	11

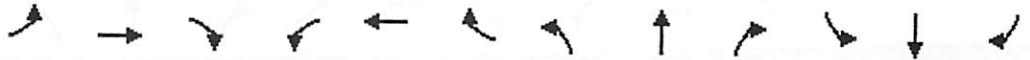
NW 170TH ST & NW 82ND AVE PM PEAK HOUR

Description	NW 82ND AVE <u>Northbound</u>			NW 82ND AVE <u>Southbound</u>			NW 154TH ST <u>Eastbound</u>			NW 154TH ST <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed (12/07/2010)	371	367	133	15	207	6	4	64	333	112	110	13
Peak Season Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
2010 Peak Season Adj.	397	393	142	16	221	6	4	68	356	120	118	14
Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Background Growth	42	41	15	2	23	1	0	7	37	13	12	1
2030 Background Traffic	439	434	157	18	244	7	4	75	393	133	130	15
Diverted Traffic	-148	-147	-53	0	-80	80	147	67	-133	-40	57	0
Approved Projects								20			31	
Dunwoody Lake	10	0	0	0	0	10	10	10	10	0	15	0
Dunwoody Forest	1	0	0	0	0	2	1	1	0	0	2	0
Buildout Total	302	287	104	18	184	99	162	173	270	93	235	15



Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

2030 AM
3/2/2011

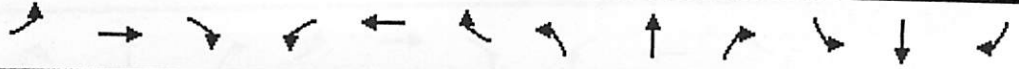


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗	↖	↕	↗	↖	↕	↗
Volume (vph)	64	113	23	461	43	316	19	409	406	524	638	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		150	200		150	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fr't		0.975				0.850			0.850		0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3451	0	1770	3539	1583	1770	3539	1583	1770	3511	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3451	0	1770	3539	1583	1770	3539	1583	1770	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				343			420		5	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1348			1535			1435			3888	
Travel Time (s)		26.3			29.9			32.6			88.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	123	25	501	47	343	21	445	441	570	693	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	148	0	501	47	343	21	445	441	570	731	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	

Baseline

Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

2030 AM
3/2/2011

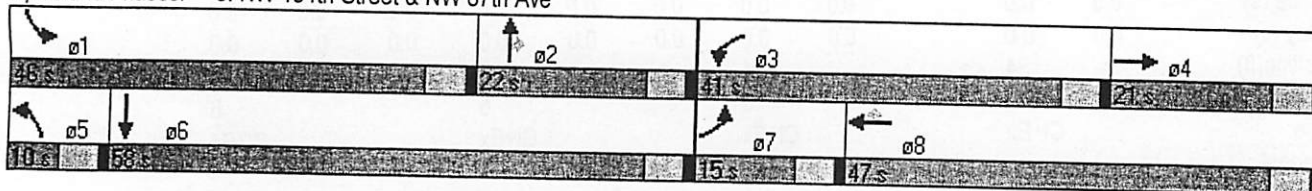


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0	5.0	5.0	
Minimum Split (s)	10.0	21.0		10.0	16.0	16.0	10.0	21.0	21.0	10.0	20.0	
Total Split (s)	15.0	21.0	0.0	41.0	47.0	47.0	10.0	22.0	22.0	46.0	58.0	0.0
Total Split (%)	11.5%	16.2%	0.0%	31.5%	36.2%	36.2%	7.7%	16.9%	16.9%	35.4%	44.6%	0.0%
Maximum Green (s)	10.0	16.0		36.0	42.0	42.0	5.0	17.0	17.0	41.0	53.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0			
Pedestrian Calls (#/hr)		0			0	0		0	0			
Act Effct Green (s)	9.1	10.4		36.0	39.6	39.6	6.8	17.0	17.0	46.6	61.1	
Actuated g/C Ratio	0.07	0.08		0.28	0.30	0.30	0.05	0.13	0.13	0.36	0.47	
v/c Ratio	0.57	0.51		1.02	0.04	0.48	0.23	0.96	0.77	0.90	0.44	
Control Delay	76.2	57.4		92.7	33.3	5.8	64.6	89.2	16.2	58.3	25.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	76.2	57.4		92.7	33.3	5.8	64.6	89.2	16.2	58.3	25.3	
LOS	E	E		F	C	A	E	F	B	E	C	
Approach Delay		63.4			56.1			53.2			39.7	
Approach LOS		E			E			D			D	

Intersection Summary

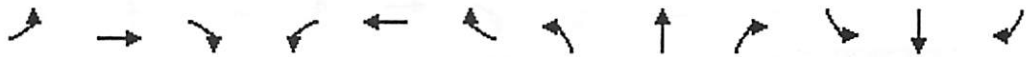
Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 46 (35%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 49.4
 Intersection Capacity Utilization 86.4%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 3: NW 154th Street & NW 87th Ave



Lanes, Volumes, Timings
6: NW 170th St & NW 87th Ave

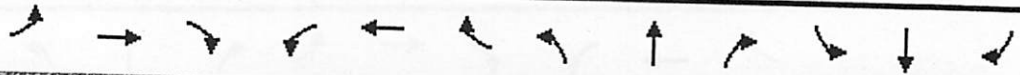
2030 AM
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↕	
Volume (vph)	31	129	68	237	81	262	60	759	308	219	613	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.948			0.885			0.957			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1766	0	1770	1649	0	1770	3387	0	1770	3529	0
Flt Permitted	0.346			0.360			0.360			0.100		
Satd. Flow (perm)	645	1766	0	671	1649	0	671	3387	0	186	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			155			51			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		340			1550			3888			1400	
Travel Time (s)		7.7			35.2			88.4			31.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	140	74	258	88	285	65	825	335	238	666	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	214	0	258	373	0	65	1160	0	238	681	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings
6: NW 170th St & NW 87th Ave

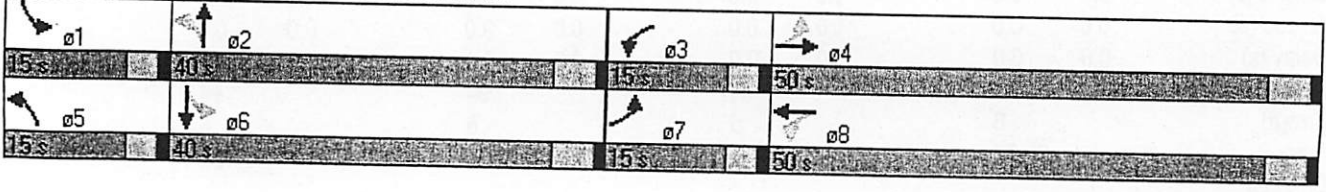
2030 AM
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBJ	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	15.0	50.0		15.0	50.0		15.0	40.0		15.0	40.0	
Total Split (s)	15.0	50.0	0.0	15.0	50.0	0.0	15.0	40.0	0.0	15.0	40.0	0.0
Total Split (%)	12.5%	41.7%	0.0%	12.5%	41.7%	0.0%	12.5%	33.3%	0.0%	12.5%	33.3%	0.0%
Maximum Green (s)	11.0	45.0		11.0	45.0		11.0	35.0		11.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	Min	
Walk Time (s)		2.0			2.0							
Flash Dont Walk (s)		10.0			10.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	23.8	16.1		31.8	24.6		43.3	35.2		50.7	41.2	
Actuated g/C Ratio	0.26	0.18		0.35	0.27		0.47	0.39		0.55	0.45	
v/c Ratio	0.14	0.64		0.70	0.67		0.16	0.87		0.81	0.43	
Control Delay	20.2	39.6		33.9	24.5		12.1	34.4		42.1	20.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.2	39.6		33.9	24.5		12.1	34.4		42.1	20.1	
LOS	C	D		C	C		B	C		D	C	
Approach Delay		36.9			28.4			33.2			25.8	
Approach LOS		D			C			C			C	

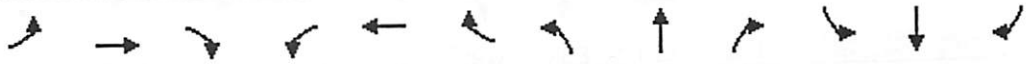
Intersection Summary
 Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 91.4
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 30.2
 Intersection Capacity Utilization 82.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 6: NW 170th St & NW 87th Ave



Lanes, Volumes, Timings
 9: NW 154th Street & NW 82nd Avenue

2030 AM
 3/2/2011

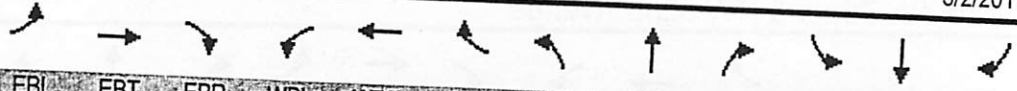


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Volume (vph)	191	1212	91	197	888	106	72	82	64	478	151	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	300		0	300		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.990			0.984			0.934			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3504	0	1770	3483	0	1770	1740	0	1770	1682	0
Flt Permitted	0.089			0.062			0.498			0.304		
Satd. Flow (perm)	166	3504	0	115	3483	0	928	1740	0	566	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			8			18			61	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1535			1396			451			2429	
Travel Time (s)		29.9			27.2			8.8			47.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	1317	99	214	965	115	78	89	70	520	164	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	208	1416	0	214	1080	0	78	159	0	520	461	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			pm+pt			Perm			pm+pt		
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	

Lanes, Volumes, Timings
 9: NW 154th Street & NW 82nd Avenue

2030 AM

3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0		5.0	7.0	
Minimum Split (s)	15.0	87.0		15.0	87.0		35.0	35.0		53.0	88.0	
Total Split (s)	15.0	87.0	0.0	15.0	87.0	0.0	35.0	35.0	0.0	53.0	88.0	0.0
Total Split (%)	7.9%	45.8%	0.0%	7.9%	45.8%	0.0%	18.4%	18.4%	0.0%	27.9%	46.3%	0.0%
Maximum Green (s)	12.0	82.0		12.0	82.0		30.0	30.0		50.0	83.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		0.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	4.0	5.0	5.0	4.0	3.0	5.0	4.0
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)							2.0	2.0				
Flash Dont Walk (s)							14.0	14.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	76.7	74.6		76.7	74.6		20.1	20.1		71.0	69.0	
Actuated g/C Ratio	0.45	0.44		0.45	0.44		0.12	0.12		0.42	0.41	
v/c Ratio	1.08	0.91		1.24	0.70		0.70	0.71		0.92	0.64	
Control Delay	123.9	54.6		202.3	41.6		106.8	83.2		64.0	39.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	123.9	54.6		202.3	41.6		106.8	83.2		64.0	39.3	
LOS	F	D		F	D		F	F		E	D	
Approach Delay		63.5			68.2			91.0			52.4	
Approach LOS		E			E			F			D	

Intersection Summary

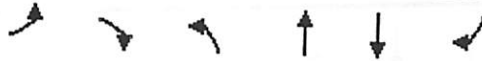
Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 169.1
 Natural Cycle: 190
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay: 63.9
 Intersection Capacity Utilization 97.0%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service F

Splits and Phases: 9: NW 154th Street & NW 82nd Avenue

ϕ1	ϕ2	ϕ4	ϕ3
35 s	87 s	15 s	
ϕ6	ϕ7	ϕ8	
	15 s	87 s	

Lanes, Volumes, Timings
 13: NW 162nd Street & NW 82nd Avenue

2030 AM
 3/2/2011

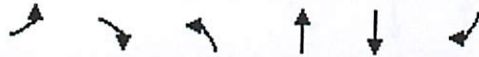


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↓	
Volume (vph)	32	229	71	196	726	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882				0.997	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1633	0	1770	1863	1857	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1633	0	1770	1863	1857	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	249				2	
Link Speed (mph)	30			30	35	
Link Distance (ft)	285			2429	163	
Travel Time (s)	6.5			55.2	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	249	77	213	789	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	284	0	77	213	805	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Prot			
Protected Phases	4		5	2	6	
Permitted Phases						
Detector Phase	4		5	2	6	

Baseline

Lanes, Volumes, Timings
 13: NW 162nd Street & NW 82nd Avenue

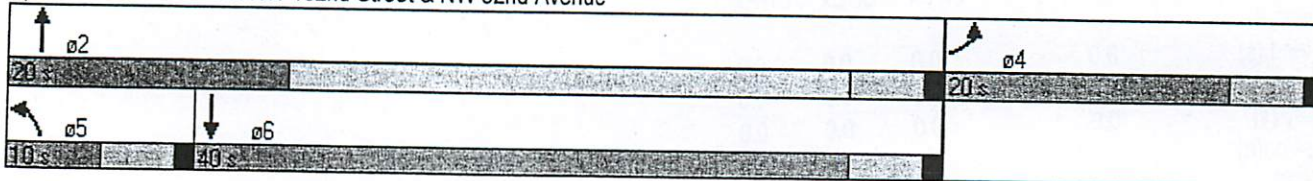
2030 AM
 3/2/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		10.0	20.0	20.0	
Total Split (s)	20.0	0.0	10.0	20.0	40.0	0.0
Total Split (%)	28.6%	0.0%	14.3%	28.6%	57.1%	0.0%
Maximum Green (s)	15.0		5.0	15.0	35.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	5.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	None	
Act Effct Green (s)	8.4		5.4	36.3	29.0	
Actuated g/C Ratio	0.15		0.10	0.65	0.52	
v/c Ratio	0.62		0.45	0.18	0.83	
Control Delay	12.1		39.5	4.1	21.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	12.1		39.5	4.1	21.9	
LOS	B		D	A	C	
Approach Delay	12.1			13.5	21.9	
Approach LOS	B			B	C	






















Intersection Summary	
Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	55.5
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	18.2
Intersection Capacity Utilization:	71.7%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	C

Splits and Phases: 13: NW 162nd Street & NW 82nd Avenue



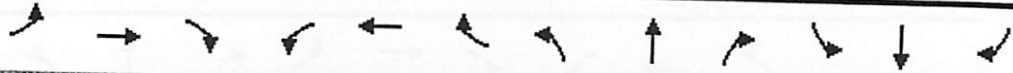
Lanes, Volumes, Timings
14: NW 170th St & NW 82ND

2030 AM
3/2/2011

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	185	272	172	378	11	180	155	61	11	448	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.911			0.996			0.958			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1697	0	1770	1855	0	1770	1785	0	1770	1839	0
Flt Permitted	0.131			0.131			0.236			0.541		
Satd. Flow (perm)	244	1697	0	244	1855	0	440	1785	0	1008	1839	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			1			20			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1550			479			1301			323	
Travel Time (s)		35.2			10.9			29.6			7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	201	296	187	411	12	196	168	66	12	487	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	497	0	187	423	0	196	234	0	12	535	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	15.0	35.0		15.0	35.0		15.0	55.0		15.0	55.0	
Total Split (s)	15.0	35.0	0.0	15.0	35.0	0.0	15.0	55.0	0.0	15.0	55.0	0.0
Total Split (%)	12.5%	29.2%	0.0%	12.5%	29.2%	0.0%	12.5%	45.8%	0.0%	12.5%	45.8%	0.0%
Maximum Green (s)	12.0	30.5		12.0	30.5		12.0	50.5		12.0	50.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.0	0.5		0.0	0.5		0.0	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Act Effct Green (s)	44.0	30.5		44.0	30.5		64.0	50.5		64.0	50.5	
Actuated g/C Ratio	0.37	0.25		0.37	0.25		0.53	0.42		0.53	0.42	
v/c Ratio	0.31	1.05		0.77	0.90		0.53	0.31		0.02	0.69	
Control Delay	26.9	92.6		48.4	66.1		18.9	22.4		12.0	33.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.9	92.6		48.4	66.1		18.9	22.4		12.0	33.7	
LOS	C	F		D	E		B	C		B	C	

Lanes, Volumes, Timings
 14: NW 170th St & NW 82ND

2030 AM
 3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		84.0			60.7			20.8			33.2	
Approach LOS		F			E			C			C	

Intersection Summary:

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 50 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 120
 Control Type: Pretimed
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 51.9
 Intersection Capacity Utilization 86.3%
 Analysis Period (min) 15

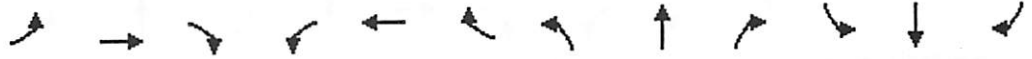
Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 14: NW 170th St & NW 82ND

ø1	ø2	ø3	ø4
15 s	5 s	15 s	35 s
ø5	ø6	ø7	ø8
15 s	5 s	15 s	35 s

Lanes, Volumes, Timings
15: NW 154th Street & NW 79th Avenue

2030 AM
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕	↙	↙	↕		↙	↕	
Volume (vph)	153	1850	4	95	1482	267	3	23	19	375	49	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	55		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.932			0.877	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	0	1770	3539	1583	1770	1736	0	1770	1634	0
Flt Permitted	0.950			0.950			0.224			0.727		
Satd. Flow (perm)	1770	3539	0	1770	3539	1583	417	1736	0	1354	1634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						238		19			103	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1396			331			418			713	
Travel Time (s)		27.2			6.4			9.5			16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	2011	4	103	1611	290	3	25	21	408	53	239
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	2015	0	103	1611	290	3	46	0	408	292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	8	2	2		6	6	

Lanes, Volumes, Timings
15: NW 154th Street & NW 79th Avenue

2030 AM
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	14.0	138.0		14.0	138.0	138.0	38.0	38.0		38.0	38.0	
Total Split (s)	14.0	138.0	0.0	14.0	138.0	138.0	38.0	38.0	0.0	38.0	38.0	0.0
Total Split (%)	7.4%	72.6%	0.0%	7.4%	72.6%	72.6%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	11.0	133.0		11.0	133.0	133.0	33.0	33.0		33.0	33.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	None	
Walk Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	16.0	108.3		11.2	103.4	103.4	33.5	33.5		33.5	33.5	
Actuated g/C Ratio	0.10	0.65		0.07	0.62	0.62	0.20	0.20		0.20	0.20	
v/c Ratio	0.98	0.87		0.87	0.73	0.27	0.04	0.13		1.49	0.71	
Control Delay	132.3	27.9		128.5	22.9	2.7	65.7	41.7		282.9	52.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	132.3	27.9		128.5	22.9	2.7	65.7	41.7		282.9	52.4	
LOS	F	C		F	C	A	E	D		F	D	
Approach Delay		35.9			25.4			43.2			186.7	
Approach LOS		D			C			D			F	

Intersection Summary
 Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 166.2
 Natural Cycle: 190
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.49
 Intersection Signal Delay: 53.1
 Intersection Capacity Utilization 95.6%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 15: NW 154th Street & NW 79th Avenue

38 s	138 s	38 s	138 s

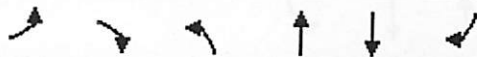
Lanes, Volumes, Timings
 18: NW 146th St & NW 87th Ave

2030 AM
 3/2/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↖	↕	↕	↘
Volume (vph)	31	57	27	737	1364	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	125			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Flt Protected		0.850			0.999	
Satd. Flow (prot)	0.950		0.950			
Flt Permitted	1770	1583	1770	3539	3536	0
Satd. Flow (perm)	0.950		0.950			
Right Turn on Red	1770	1583	1770	3539	3536	0
Satd. Flow (RTOR)		Yes				Yes
Link Speed (mph)		62			1	
Link Distance (ft)	30			30	30	
Travel Time (s)	469			635	1435	
Peak Hour Factor	10.7			14.4	32.6	
Adj. Flow (vph)	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)	34	62	29	801	1483	14
Lane Group Flow (vph)	34	62	29	801	1497	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	

Baseline



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	16.0	16.0	
Minimum Split (s)	30.0	30.0	18.0	63.0	45.0	
Total Split (s)	30.0	30.0	18.0	63.0	45.0	0.0
Total Split (%)	32.3%	32.3%	19.4%	67.7%	48.4%	0.0%
Maximum Green (s)	25.0	25.0	15.0	58.0	40.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.5	7.5	6.8	61.9	57.6	
Actuated g/C Ratio	0.10	0.10	0.09	0.81	0.76	
v/c Ratio	0.20	0.29	0.18	0.28	0.56	
Control Delay	34.0	13.2	34.3	2.6	7.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.0	13.2	34.3	2.6	7.2	
LOS	C	B	C	A	A	
Approach Delay	20.6			3.7	7.2	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 93
 Actuated Cycle Length: 76.1
 Natural Cycle: 95
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 6.6
 Intersection LOS: A
 Intersection Capacity Utilization 52.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 18: NW 146th St & NW 87th Ave

↑ ø2	↘ ø4
63 s	30 s
↙ ø5	↓ ø6
18 s	45 s

Lanes, Volumes, Timings
20: Industrial Way & NW 87th Ave

2030 AM
3/2/2011



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↘	↕	↘	↙	↕
Volume (vph)	348	182	754	699	166	1496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0		0	125	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor	0.96	0.92				
Frt		0.850	0.928			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3284	0	1770	3539
Flt Permitted	0.950				0.091	
Satd. Flow (perm)	1706	1457	3284	0	170	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		198	477			
Link Speed (mph)	30		30			30
Link Distance (ft)	1168		666			635
Travel Time (s)	26.5		15.1			14.4
Confl. Peds. (#/hr)	24	46				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	198	820	760	180	1626
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	198	1580	0	180	1626
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6

Lanes, Volumes, Timings
 20: Industrial Way & NW 87th Ave

2030 AM
 3/2/2011

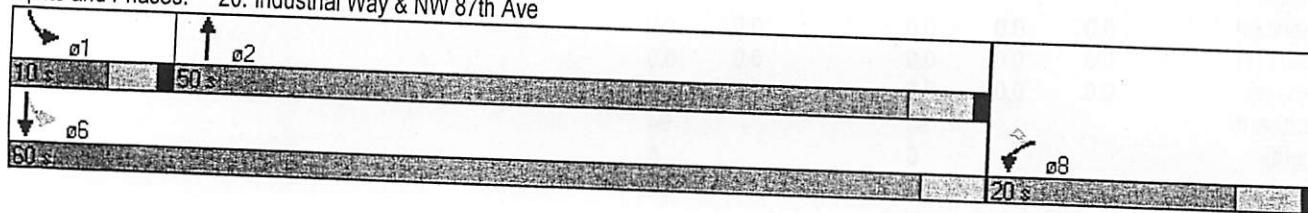


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	8.0		5.0	8.0
Minimum Split (s)	20.0	20.0	50.0		10.0	60.0
Total Split (s)	20.0	20.0	50.0	0.0	10.0	60.0
Total Split (%)	25.0%	25.0%	62.5%	0.0%	12.5%	75.0%
Maximum Green (s)	15.0	15.0	45.0		6.0	56.0
Yellow Time (s)	4.0	4.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	4.0	4.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effect Green (s)	15.2	15.2	38.8		50.0	50.0
Actuated g/C Ratio	0.20	0.20	0.52		0.67	0.67
v/c Ratio	1.05	0.44	0.81		0.73	0.68
Control Delay	93.8	8.1	13.5		30.6	8.9
Queue Delay	0.0	0.0	0.0		0.0	0.1
Total Delay	93.8	8.1	13.5		30.6	9.0
LOS	F	A	B		C	A
Approach Delay	64.4		13.5			11.2
Approach LOS	E		B			B

Intersection Summary

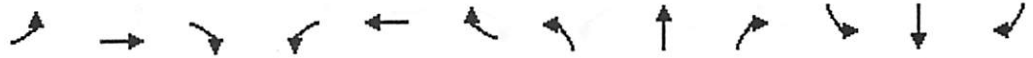
Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	74.2
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.05
Intersection Signal Delay:	19.8
Intersection Capacity Utilization	83.4%
Analysis Period (min)	15
Intersection LOS:	B
ICU Level of Service	E

Splits and Phases: 20: Industrial Way & NW 87th Ave



Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

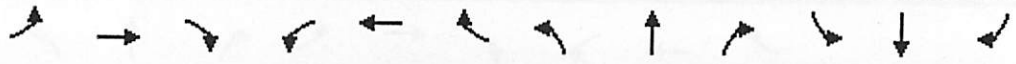
2030 AM w/Improvements
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗	↖	↕	↗	↖	↕	↗
Volume (vph)	64	113	23	461	43	316	19	409	406	524	638	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		150	200		150	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.975				0.850			0.850		0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3451	0	1770	3539	1583	1770	3539	1583	1770	3511	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3451	0	1770	3539	1583	1770	3539	1583	1770	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				343			420		5	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1348			1535			1435			3888	
Travel Time (s)		26.3			29.9			32.6			88.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	123	25	501	47	343	21	445	441	570	693	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	148	0	501	47	343	21	445	441	570	731	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	

Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

2030 AM w/Improvements
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0	5.0	5.0	
Minimum Split (s)	10.0	21.0		10.0	16.0	16.0	10.0	21.0	21.0	10.0	20.0	
Total Split (s)	15.0	21.0	0.0	41.0	47.0	47.0	10.0	22.0	22.0	46.0	58.0	0.0
Total Split (%)	11.5%	16.2%	0.0%	31.5%	36.2%	36.2%	7.7%	16.9%	16.9%	35.4%	44.6%	0.0%
Maximum Green (s)	10.0	16.0		36.0	42.0	42.0	5.0	17.0	17.0	41.0	53.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	None	None	None	None	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0			
Pedestrian Calls (#/hr)		0			0	0		0	0			
Act Effct Green (s)	9.0	10.1		36.0	39.5	39.5	5.0	17.0	17.0	41.0	57.1	
Actuated g/C Ratio	0.07	0.08		0.29	0.32	0.32	0.04	0.14	0.14	0.33	0.46	
v/c Ratio	0.55	0.50		0.98	0.04	0.47	0.30	0.92	0.76	0.97	0.45	
Control Delay	72.0	54.9		78.5	31.4	5.6	69.4	78.1	15.5	73.2	24.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	72.0	54.9		78.5	31.4	5.6	69.4	78.1	15.5	73.2	24.9	
LOS	E	D		E	C	A	E	E	B	E	C	
Approach Delay		60.4			47.9			47.5			46.0	
Approach LOS		E			D			D			D	

Intersection Summary
 Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 124.2
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 47.9
 Intersection LOS: D
 Intersection Capacity Utilization 86.4%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 3: NW 154th Street & NW 87th Ave

ø1	ø2	ø3	ø4
46 s	22 s	41 s	21 s
ø5	ø6	ø7	ø8
10 s	58 s	15 s	47 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↕	↖
Volume (vph)	31	129	68	237	81	262	60	759	308	219	613	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.948			0.885			0.957			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1766	0	1770	1649	0	1770	3387	0	1770	3529	0
Flt Permitted	0.346			0.360			0.360			0.100		0
Satd. Flow (perm)	645	1766	0	671	1649	0	671	3387	0	186	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			155			51			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		340			1550			3888			1400	
Travel Time (s)		7.7			35.2			88.4			31.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	140	74	258	88	285	65	825	335	238	666	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	214	0	258	373	0	65	1160	0	238	681	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	

Baseline

Lanes, Volumes, Timings
6: NW 170th St & NW 87th Ave

2030 AM w/Improvements
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	15.0	50.0		15.0	50.0		15.0	40.0		15.0	40.0	
Total Split (s)	15.0	50.0	0.0	15.0	50.0	0.0	15.0	40.0	0.0	15.0	40.0	0.0
Total Split (%)	12.5%	41.7%	0.0%	12.5%	41.7%	0.0%	12.5%	33.3%	0.0%	12.5%	33.3%	0.0%
Maximum Green (s)	11.0	45.0		11.0	45.0		11.0	35.0		11.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	Min	
Walk Time (s)		2.0			2.0							
Flash Dont Walk (s)		10.0			10.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	23.8	16.1		31.8	24.6		43.3	35.2		50.7	41.2	
Actuated g/C Ratio	0.26	0.18		0.35	0.27		0.47	0.39		0.55	0.45	
v/c Ratio	0.14	0.64		0.70	0.67		0.16	0.87		0.81	0.43	
Control Delay	20.2	39.6		33.9	24.5		12.1	34.4		42.1	20.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.2	39.6		33.9	24.5		12.1	34.4		42.1	20.1	
LOS	C	D		C	C		B	C		D	C	
Approach Delay		36.9			28.4			33.2			25.8	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 91.4
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 30.2
 Intersection Capacity Utilization 82.0%
 Analysis Period (min) 15

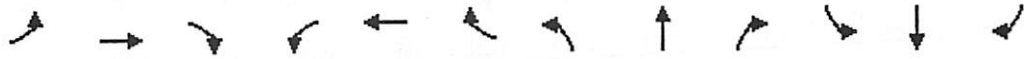
Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 6: NW 170th St & NW 87th Ave

15 s	40 s	15 s	50 s
15 s	40 s	15 s	50 s

Lanes, Volumes, Timings
 9: NW 154th Street & NW 82nd Avenue

2030 AM w/Improvements
 3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶	↷	↷	↶	↷	↷	↶	↷	↷
Volume (vph)	191	1212	91	197	888	106	72	82	64	478	151	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	300		0	300		0
Storage Lanes	1		1	1		1	1		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850		0.934			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1740	0	3433	1682	0
Flt Permitted	0.134			0.108			0.498			0.384		
Satd. Flow (perm)	250	3539	1583	201	3539	1583	928	1740	0	1388	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			52			83		18			61	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1535			1396			451			2429	
Travel Time (s)		29.9			27.2			8.8			47.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	1317	99	214	965	115	78	89	70	520	164	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	208	1317	99	214	965	115	78	159	0	520	461	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			pm+pt		
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	2	2		1	6	

Lanes, Volumes, Timings
 9: NW 154th Street & NW 82nd Avenue

2030 AM w/Improvements
 3/2/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		5.0	7.0	
Minimum Split (s)	15.0	87.0	87.0	15.0	87.0	87.0	35.0	35.0		53.0	88.0	
Total Split (s)	15.0	87.0	87.0	15.0	87.0	87.0	35.0	35.0		53.0	88.0	
Total Split (%)	7.9%	45.8%	45.8%	7.9%	45.8%	45.8%	18.4%	18.4%	0.0%	27.9%	46.3%	0.0%
Maximum Green (s)	12.0	82.0	82.0	12.0	82.0	82.0	30.0	30.0	0.0	50.0	83.0	0.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0		0.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0	4.0	3.0	5.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)							2.0	2.0				
Pedestrian Calls (#/hr)							14.0	14.0				
Act Effct Green (s)	60.9	58.8	58.8	60.9	58.8	58.8	0	0				
Actuated g/C Ratio	0.47	0.46	0.46	0.47	0.46	0.46	17.9	17.9		46.3	44.3	
v/c Ratio	0.78	0.82	0.13	0.87	0.60	0.15	0.61	0.62		0.36	0.34	
Control Delay	43.8	35.6	11.5	80.4	28.3	7.9	77.5	60.5		35.5	42.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	43.8	35.6	11.5	80.4	28.3	7.9	77.5	60.5		35.5	42.1	
LOS	D	D	B	F	C	A	E	E		D	D	
Approach Delay		35.2										
Approach LOS		D										

Intersection Summary

Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 129.1
 Natural Cycle: 190
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 37.7
 Intersection Capacity Utilization 90.8%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 9: NW 154th Street & NW 82nd Avenue

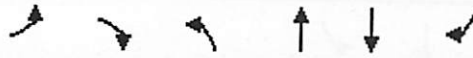
 35 s	 87 s	 15 s
 87 s	 15 s	 87 s

Lanes, Volumes, Timings
 13: NW 162nd Street & NW 82nd Avenue

2030 AM w/Improvements
 3/2/2011



Parameter	EB	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↓	
Volume (vph)	32	229	71	196	726	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882				0.997	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1633	0	1770	1863	1857	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1633	0	1770	1863	1857	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	249				2	
Link Speed (mph)	30			30	35	
Link Distance (ft)	285			2429	163	
Travel Time (s)	6.5			55.2	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	249	77	213	789	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	284	0	77	213	805	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Prot			
Protected Phases	4		5	2	6	
Permitted Phases						
Detector Phase	4		5	2	6	

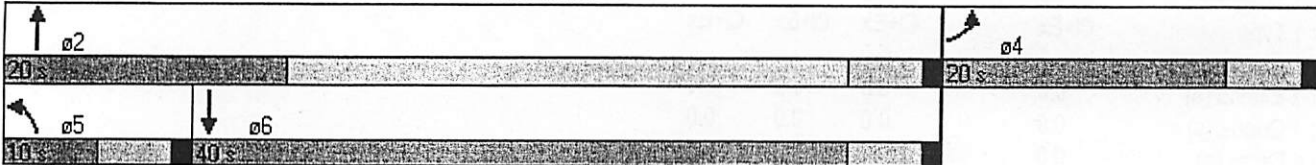


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		10.0	20.0	20.0	
Total Split (s)	20.0	0.0	10.0	20.0	40.0	0.0
Total Split (%)	28.6%	0.0%	14.3%	28.6%	57.1%	0.0%
Maximum Green (s)	15.0		5.0	15.0	35.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	5.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	None	
Act Effct Green (s)	8.4		5.4	36.3	29.0	
Actuated g/C Ratio	0.15		0.10	0.65	0.52	
v/c Ratio	0.62		0.45	0.18	0.83	
Control Delay	12.1		39.5	4.1	21.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	12.1		39.5	4.1	21.9	
LOS	B		D	A	C	
Approach Delay	12.1			13.5	21.9	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 55.5
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 18.2
 Intersection Capacity Utilization 71.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

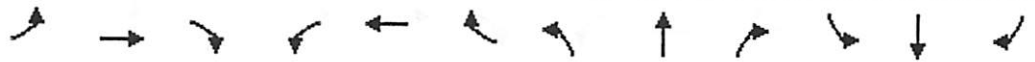
Splits and Phases: 13: NW 162nd Street & NW 82nd Avenue



Lanes, Volumes, Timings
14: NW 170th St & NW 82ND AVE

2030 AM w/Improvements

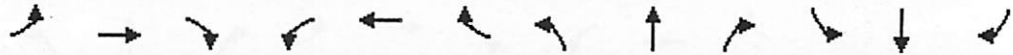
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Volume (vph)	69	185	272	172	378	11	180	155	61	11	448	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.911			0.996			0.958			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1697	0	1770	1855	0	1770	1785	0	1770	1839	0
Flt Permitted	0.252			0.145			0.195			0.520		
Satd. Flow (perm)	469	1697	0	270	1855	0	363	1785	0	969	1839	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			1			17			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1550			479			1301			323	
Travel Time (s)		35.2			10.9			29.6			7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	201	296	187	411	12	196	168	66	12	487	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	497	0	187	423	0	196	234	0	12	535	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	15.0	35.0		15.0	35.0		15.0	55.0		15.0	55.0	
Total Split (s)	15.0	50.0	0.0	16.0	51.0	0.0	15.0	59.0	0.0	15.0	59.0	0.0
Total Split (%)	10.7%	35.7%	0.0%	11.4%	36.4%	0.0%	10.7%	42.1%	0.0%	10.7%	42.1%	0.0%
Maximum Green (s)	12.0	45.5		13.0	46.5		12.0	54.5		12.0	54.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.0	0.5		0.0	0.5		0.0	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Act Effct Green (s)	59.0	45.5		61.0	46.5		68.0	54.5		68.0	54.5	
Actuated g/C Ratio	0.42	0.32		0.44	0.33		0.49	0.39		0.49	0.39	
v/c Ratio	0.24	0.84		0.73	0.69		0.66	0.33		0.02	0.75	
Control Delay	24.3	53.2		41.3	47.1		30.8	29.3		17.4	44.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.3	53.2		41.3	47.1		30.8	29.3		17.4	44.2	
LOS	C	D		D	D		C	C		B	D	

Lanes, Volumes, Timings
 14: NW 170th St & NW 82ND AVE

2030 AM w/Improvements
 3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		49.4			45.3			30.0			43.6	
Approach LOS		D			D			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 120
 Control Type: Pretimed
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 42.9
 Intersection Capacity Utilization 86.3%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 14: NW 170th St & NW 82ND AVE

ø1	ø2	ø3	ø4
15 s	59 s	16 s	50 s
ø5	ø6	ø7	ø8
15 s	59 s	15 s	51 s

Lanes, Volumes, Timings
15: NW 154th Street & NW 79th Avenue

2030 AM w/Improvements

3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑↑		↙	↑↑	↗	↙	↗		↗↗	↗	↘
Volume (vph)	153	1850	4	95	1482	267	3	23	19	375	49	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	55		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Fr						0.850		0.932			0.877	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	0	1770	3539	1583	1770	1736	0	3433	1634	0
Flt Permitted	0.950			0.950			0.337			0.727		
Satd. Flow (perm)	1770	5085	0	1770	3539	1583	628	1736	0	2627	1634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						238		19			103	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1396			331			418			713	
Travel Time (s)		27.2			6.4			9.5			16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	2011	4	103	1611	290	3	25	21	408	53	239
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	2015	0	103	1611	290	3	46	0	408	292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	8	2	2		6	6	

Lanes, Volumes, Timings
15: NW 154th Street & NW 79th Avenue

2030 AM w/Improvements

3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	14.0	138.0		14.0	138.0	138.0	38.0	38.0		38.0	38.0	
Total Split (s)	14.0	138.0	0.0	14.0	138.0	138.0	38.0	38.0	0.0	38.0	38.0	0.0
Total Split (%)	7.4%	72.6%	0.0%	7.4%	72.6%	72.6%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	11.0	133.0		11.0	133.0	133.0	33.0	33.0		33.0	33.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	None	
Walk Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	11.1	72.0		13.3	74.2	74.2	33.4	33.4		33.4	33.4	
Actuated g/C Ratio	0.08	0.55		0.10	0.56	0.56	0.25	0.25		0.25	0.25	
v/c Ratio	1.11	0.73		0.58	0.81	0.29	0.02	0.10		0.61	0.59	
Control Delay	161.0	23.8		73.4	26.4	3.4	45.3	29.8		50.7	35.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	161.0	23.8		73.4	26.4	3.4	45.3	29.8		50.7	35.5	
LOS	F	C		E	C	A	D	C		D	D	
Approach Delay		34.2			25.5			30.8			44.4	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 131.9
 Natural Cycle: 190
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 32.1
 Intersection Capacity Utilization 78.5%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 15: NW 154th Street & NW 79th Avenue

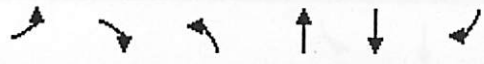
← 03	→ 02	→ 04	
38 s	138 s		14 s
↓ 06	← 08		↑
38 s	138 s		14 s

Lanes, Volumes, Timings
18: NW 146th St & NW 87th Ave

2030 AM w/Improvements
3/2/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↵	↶	↵	↑↑	↑↑	
Volume (vph)	31	57	27	737	1364	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	125			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr		0.850			0.999	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3536	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	3536	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		62			1	
Link Speed (mph)	30			30	30	
Link Distance (ft)	469			635	1435	
Travel Time (s)	10.7			14.4	32.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	62	29	801	1483	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	62	29	801	1497	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	16.0	16.0	
Minimum Split (s)	30.0	30.0	18.0	63.0	45.0	
Total Split (s)	30.0	30.0	18.0	63.0	45.0	0.0
Total Split (%)	32.3%	32.3%	19.4%	67.7%	48.4%	0.0%
Maximum Green (s)	25.0	25.0	15.0	58.0	40.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.5	7.5	6.8	61.9	57.6	
Actuated g/C Ratio	0.10	0.10	0.09	0.81	0.76	
v/c Ratio	0.20	0.29	0.18	0.28	0.56	
Control Delay	34.0	13.2	34.3	2.6	7.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.0	13.2	34.3	2.6	7.2	
LOS	C	B	C	A	A	
Approach Delay	20.6			3.7	7.2	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 93
 Actuated Cycle Length: 76.1
 Natural Cycle: 95
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 6.6
 Intersection Capacity Utilization 52.3%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 18: NW 146th St & NW 87th Ave

↑ ø2 63 s	↖ ø4 30 s
↙ ø5 18 s	↓ ø6 45 s



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↘	↑↑	↘	↙	↑↑
Volume (vph)	348	182	754	699	166	1496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0		0	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor	0.96	0.92				
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.247	
Satd. Flow (perm)	1706	1457	3539	1583	460	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		198		760		
Link Speed (mph)	30		30			30
Link Distance (ft)	1168		666			635
Travel Time (s)	26.5		15.1			14.4
Confl. Peds. (#/hr)	24	46				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	198	820	760	180	1626
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	198	820	760	180	1626
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type		Perm		Perm	pm+pt	
Protected Phases	8		2		1	6



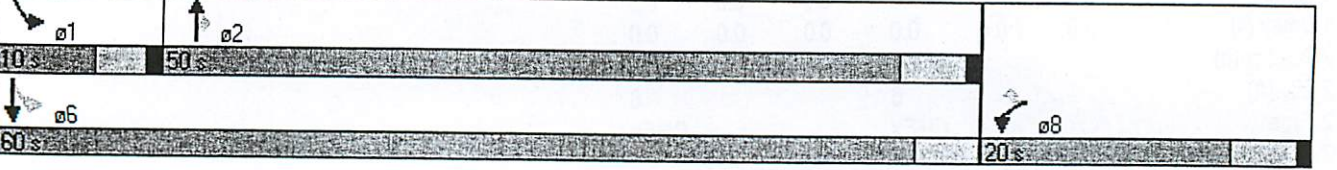
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	8.0	8.0	5.0	8.0
Minimum Split (s)	20.0	20.0	50.0	50.0	10.0	60.0
Total Split (s)	20.0	20.0	50.0	50.0	10.0	60.0
Total Split (%)	25.0%	25.0%	62.5%	62.5%	12.5%	75.0%
Maximum Green (s)	15.0	15.0	45.0	45.0	6.0	56.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effct Green (s)	15.3	15.3	31.5	31.5	42.7	42.7
Actuated g/C Ratio	0.23	0.23	0.47	0.47	0.64	0.64
v/c Ratio	0.94	0.41	0.49	0.66	0.44	0.72
Control Delay	63.4	7.6	12.8	4.0	8.0	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.4	7.6	12.8	4.0	8.0	10.1
LOS	E	A	B	A	A	B
Approach Delay	44.2		8.6			9.8
Approach LOS	D		A			A

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 67.2
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 14.3
 Intersection Capacity Utilization 68.1%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 20: Industrial Way & NW 87th Ave



Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

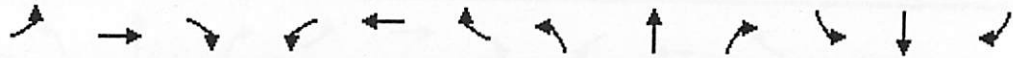
2030 PM
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕	↗	↙	↕	↗	↙	↕	↗
Volume (vph)	35	135	17	602	453	332	67	484	680	327	517	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		150	200		150	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fr		0.984				0.850			0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3483	0	1770	3539	1583	1770	3539	1583	1770	3504	0
Flt Permitted	0.472			0.470			0.424			0.205		
Satd. Flow (perm)	879	3483	0	875	3539	1583	790	3539	1583	382	3504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				361			665		6	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1348			1535			1435			3888	
Travel Time (s)		26.3			29.9			32.6			88.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	147	18	654	492	361	73	526	739	355	562	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	165	0	654	492	361	73	526	739	355	603	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	5	2	2	1	6	

Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

2030 PM
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0	7.0	5.0	16.0	16.0	5.0	16.0	
Minimum Split (s)	10.0	21.0		10.0	57.0	57.0	15.0	24.0	24.0	18.0	30.0	
Total Split (s)	11.0	21.0	0.0	47.0	57.0	57.0	15.0	24.0	24.0	28.0	37.0	0.0
Total Split (%)	9.2%	17.5%	0.0%	39.2%	47.5%	47.5%	12.5%	20.0%	20.0%	23.3%	30.8%	0.0%
Maximum Green (s)	7.0	16.0		43.0	52.0	52.0	11.0	19.0	19.0	24.0	32.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0			
Pedestrian Calls (#/hr)		0			0	0		0	0			
Act Effct Green (s)	18.2	10.7		57.0	49.4	49.4	36.4	27.0	27.0	55.0	43.6	
Actuated g/C Ratio	0.15	0.09		0.48	0.41	0.41	0.30	0.22	0.22	0.46	0.36	
v/c Ratio	0.21	0.52		0.90	0.34	0.42	0.24	0.66	0.85	0.80	0.47	
Control Delay	25.2	54.7		43.3	25.0	3.9	23.8	49.0	16.9	39.4	32.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.2	54.7		43.3	25.0	3.9	23.8	49.0	16.9	39.4	32.6	
LOS	C	D		D	C	A	C	D	B	D	C	
Approach Delay		49.2			27.9			29.9			35.1	
Approach LOS		D			C			C			D	

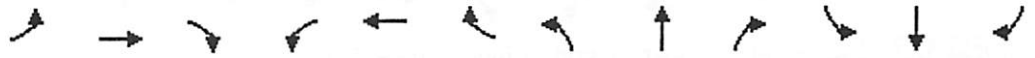
Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 31.4
 Intersection Capacity Utilization 85.7%
 Analysis Period (min) 15

Intersection LOS: C
ICU Level of Service E

Splits and Phases: 3: NW 154th Street & NW 87th Ave

ø1	ø2	ø3	ø4
28 s	24 s	47 s	21 s
ø5	ø6	ø7	ø8
15 s	37 s	11 s	57 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	56	61	384	74	130	55	653	386	159	661	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frnt		0.922			0.904			0.944			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1717	0	1770	1684	0	1770	3341	0	1770	3532	0
Flt Permitted	0.620			0.487			0.337			0.100		
Satd. Flow (perm)	1155	1717	0	907	1684	0	628	3341	0	186	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			85			102			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		340			1550			3888			1400	
Travel Time (s)		7.7			35.2			88.4			31.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	61	66	417	80	141	60	710	420	173	718	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	127	0	417	221	0	60	1130	0	173	727	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings
6: NW 170th St & NW 87th Ave

2030 PM
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	15.0	50.0		15.0	50.0		15.0	40.0		15.0	40.0	
Total Split (s)	15.0	50.0	0.0	15.0	50.0	0.0	15.0	40.0	0.0	15.0	40.0	0.0
Total Split (%)	12.5%	41.7%	0.0%	12.5%	41.7%	0.0%	12.5%	33.3%	0.0%	12.5%	33.3%	0.0%
Maximum Green (s)	11.0	45.0		11.0	45.0		11.0	35.0		11.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)		2.0			2.0						Min	
Flash Dont Walk (s)		10.0			10.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	16.1	9.5		25.5	22.6		42.8	35.1		49.0	40.0	
Actuated g/C Ratio	0.19	0.11		0.31	0.27		0.51	0.42		0.59	0.48	
v/c Ratio	0.01	0.52		1.06	0.42		0.14	0.77		0.59	0.43	
Control Delay	20.7	29.7		92.3	19.0		8.7	23.6		21.2	16.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.7	29.7		92.3	19.0		8.7	23.6		21.2	16.2	
LOS	C	C		F	B		A	C		C	B	
Approach Delay		29.5			66.9			22.8			17.1	
Approach LOS		C			E			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 83.2
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 31.2
 Intersection Capacity Utilization 78.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 6: NW 170th St & NW 87th Ave

ø1	ø2	ø3	ø4
15 s	40 s	15 s	50 s
ø5	ø6	ø7	ø8
15 s	40 s	15 s	50 s

Lanes, Volumes, Timings
 9: NW 154th Street & NW 82nd Avenue

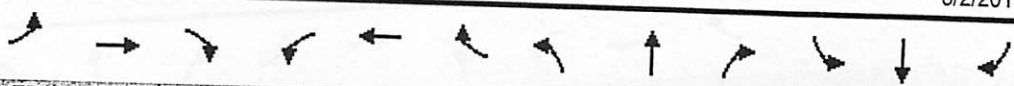
2030 PM
 3/2/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Volume (vph)	175	934	61	292	1331	347	196	203	112	268	88	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	300		0	300		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.950	0.991			0.969			0.947			0.903	
Satd. Flow (prot)	1770	3507	0	1770	3429	0	1770	1764	0	1770	1682	0
Fit Permitted	0.091			0.122			0.591			0.125		
Satd. Flow (perm)	170	3507	0	227	3429	0	1101	1764	0	233	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			22			14			61	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1535			1396			451			2429	
Travel Time (s)		29.9			27.2			8.8			47.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	1015	66	317	1447	377	213	221	122	291	96	178
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	1081	0	317	1824	0	213	343	0	291	274	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			pm+pt			pm			pm+pt		
Protected Phases	7	4		3	8		2			1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	6	

Baseline

Lanes, Volumes, Timings
 9: NW 154th Street & NW 82nd Avenue

2030 PM
 3/2/2011



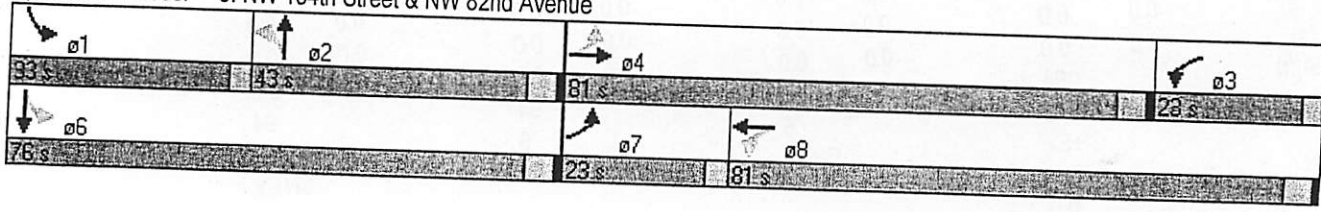
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0		5.0	7.0	
Minimum Split (s)	23.0	81.0		23.0	81.0		43.0	43.0		33.0	76.0	
Total Split (s)	23.0	81.0	0.0	23.0	81.0	0.0	43.0	43.0	0.0	33.0	76.0	0.0
Total Split (%)	12.8%	45.0%	0.0%	12.8%	45.0%	0.0%	23.9%	23.9%	0.0%	18.3%	42.2%	0.0%
Maximum Green (s)	20.0	76.0		20.0	76.0		38.0	38.0		30.0	71.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		0.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	4.0	5.0	5.0	4.0	3.0	5.0	4.0
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)							2.0	2.0				
Flash Dont Walk (s)							14.0	14.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	64.2	62.2		78.3	76.3		35.8	35.8		67.0	65.0	
Actuated g/C Ratio	0.37	0.36		0.45	0.44		0.21	0.21		0.39	0.38	
v/c Ratio	0.82	0.85		0.81	1.19		0.93	0.91		0.90	0.41	
Control Delay	72.0	57.8		76.8	134.4		110.7	92.3		76.4	32.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	72.0	57.8		76.8	134.4		110.7	92.3		76.4	32.0	
LOS	E	E		E	F		F	F		E	C	
Approach Delay		59.9			125.9			99.4			54.9	
Approach LOS		E			F			F			D	

Intersection Summary

Area Type: Other
 Cycle Length: 180
 Actuated Cycle Length: 172.5
 Natural Cycle: 180
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 95.3
 Intersection Capacity Utilization 104.9%
 Analysis Period (min) 15

Intersection LOS: F
 ICU Level of Service G

Splits and Phases: 9: NW 154th Street & NW 82nd Avenue



Lanes, Volumes, Timings
 13: NW 162nd Street & NW 82nd Avenue

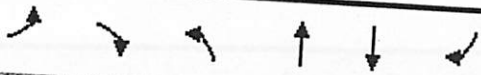
2030 PM
 3/2/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖		↖	↑	↓	
Volume (vph)	35	137	195	612	380	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.892				0.993	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1645	0	1770	1863	1850	0
Flt Permitted	0.990		0.307			
Satd. Flow (perm)	1645	0	572	1863	1850	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	149				6	
Link Speed (mph)	30			30	35	
Link Distance (ft)	285			2429	163	
Travel Time (s)	6.5			55.2	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	149	212	665	413	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	187	0	212	665	437	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			pm+pt			
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	

Lanes, Volumes, Timings
 13: NW 162nd Street & NW 82nd Avenue

2030 PM
 3/2/2011

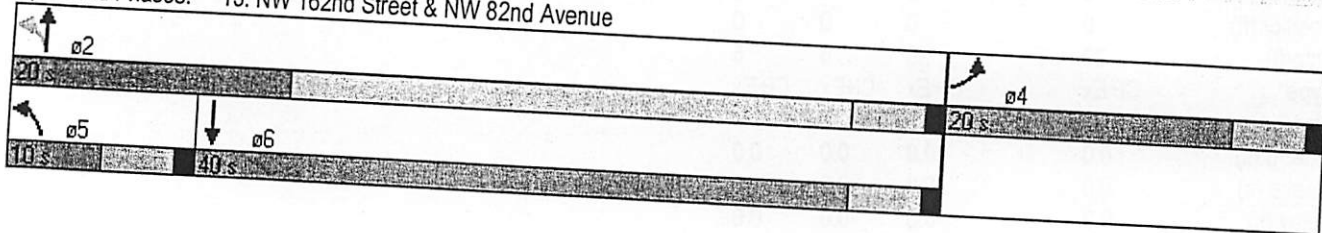


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		10.0	20.0	20.0	
Total Split (s)	20.0	0.0	10.0	20.0	40.0	0.0
Total Split (%)	28.6%	0.0%	14.3%	28.6%	57.1%	0.0%
Maximum Green (s)	15.0		5.0	15.0	35.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	5.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	None	
Act Effct Green (s)	7.5		26.4	28.0	15.6	
Actuated g/C Ratio	0.18		0.64	0.68	0.38	
v/c Ratio	0.44		0.40	0.52	0.62	
Control Delay	9.8		6.6	7.1	15.4	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	9.8		6.6	7.1	15.4	
LOS	A		A	A	B	
Approach Delay	9.8			7.0	15.4	
Approach LOS	A			A	B	

Intersection Summary

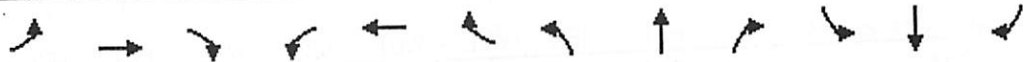
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 41.1
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 9.8
 Intersection Capacity Utilization 55.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 13: NW 162nd Street & NW 82nd Avenue



Lanes, Volumes, Timings
14: NW 170th St & NW 82ND AVE

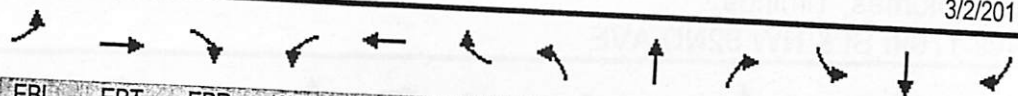
2030 PM
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Volume (vph)	162	173	270	93	235	15	302	287	104	18	164	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.909			0.991			0.960			0.943	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1693	0	1770	1846	0	1770	1788	0	1770	1757	0
Flt Permitted	0.372			0.131			0.485			0.342		
Satd. Flow (perm)	693	1693	0	244	1846	0	903	1788	0	637	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			3			19			31	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1550			479			1301			323	
Travel Time (s)		35.2			10.9			29.6			7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	188	293	101	255	16	328	312	113	20	178	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	481	0	101	271	0	328	425	0	20	286	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	15.0	35.0		15.0	35.0		15.0	55.0		15.0	55.0	
Total Split (s)	15.0	35.0	0.0	15.0	35.0	0.0	15.0	55.0	0.0	15.0	55.0	0.0
Total Split (%)	12.5%	29.2%	0.0%	12.5%	29.2%	0.0%	12.5%	45.8%	0.0%	12.5%	45.8%	0.0%
Maximum Green (s)	12.0	30.5		12.0	30.5		12.0	50.5		12.0	50.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.0	0.5		0.0	0.5		0.0	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Act Effect Green (s)	44.0	30.5		44.0	30.5		64.0	50.5		64.0	50.5	
Actuated g/C Ratio	0.37	0.25		0.37	0.25		0.53	0.42		0.53	0.42	
v/c Ratio	0.49	1.01		0.42	0.58		0.58	0.56		0.04	0.38	
Control Delay	29.8	82.5		29.2	44.3		19.6	28.4		12.2	22.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.8	82.5		29.2	44.3		19.6	28.4		12.2	22.9	
LOS	C	F		C	D		B	C		B	C	

Lanes, Volumes, Timings
 14: NW 170th St & NW 82ND AVE

2030 PM
 3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		68.3			40.2			24.6			22.2	
Approach LOS		E			D			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 50 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 120
 Control Type: Pretimed
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 40.8
 Intersection Capacity Utilization 76.4%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 14: NW 170th St & NW 82ND AVE

ø1	ø2	ø3	ø4
15 s	55 s	15 s	35 s
ø5	ø6	ø7	ø8
15 s	55 s	15 s	35 s

Lanes, Volumes, Timings
 15: NW 154th Street & NW 79th Avenue

2030 PM
 3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕	↗	↖	↕	↗	↖	↕	↗	↖	↕	↗
Volume (vph)	198	1926	2	2	1614	421	8	10	46	301	6	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	55		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.877			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	0	1770	3539	1583	1770	1634	0	1770	1593	0
Flt Permitted	0.950			0.950			0.427			0.717		
Satd. Flow (perm)	1770	3539	0	1770	3539	1583	795	1634	0	1336	1593	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						378		50			94	
Link Speed (mph)		35			35			30				
Link Distance (ft)		1396			331			418				
Travel Time (s)		27.2			6.4			9.5				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	2093	2	2	1754	458	9	11	50	327	7	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	2095	0	2	1754	458	9	61	0	327	204	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	8	2	2		6	6	

Lanes, Volumes, Timings
15: NW 154th Street & NW 79th Avenue

2030 PM
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	10.0	133.0		10.0	133.0	133.0	37.0	37.0		37.0	37.0	
Total Split (s)	10.0	133.0	0.0	10.0	133.0	133.0	37.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	5.6%	73.9%	0.0%	5.6%	73.9%	73.9%	20.6%	20.6%	0.0%	20.6%	20.6%	0.0%
Maximum Green (s)	7.0	128.0		7.0	128.0	128.0	32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	None	
Walk Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	7.2	107.3		6.0	98.8	98.8	32.7	32.7		32.7	32.7	
Actuated g/C Ratio	0.05	0.71		0.04	0.65	0.65	0.22	0.22		0.22	0.22	
v/c Ratio	2.59	0.84		0.03	0.76	0.39	0.05	0.16		1.14	0.49	
Control Delay	771.4	19.7		81.5	20.2	2.8	58.8	20.6		147.3	35.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	771.4	19.7		81.5	20.2	2.8	58.8	20.6		147.3	35.5	
LOS	F	B		F	C	A	E	C		F	D	
Approach Delay		89.7			16.6			25.5			104.3	
Approach LOS		F			B			C			F	

Intersection Summary

Area Type: Other

Cycle Length: 180

Actuated Cycle Length: 151.9

Natural Cycle: 180

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 2.59

Intersection Signal Delay: 58.8

Intersection LOS: E

Intersection Capacity Utilization 92.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 15: NW 154th Street & NW 79th Avenue

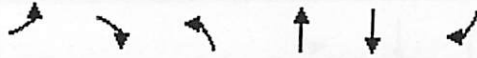
03	02	04	10 s
06	08	10 s	10 s

Lanes, Volumes, Timings
 18: NW 146th St & NW 87th Ave

2030 PM
 3/2/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↷	↷	
Volume (vph)	100	60	101	1301	940	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	125			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Friction		0.850			0.985	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3486	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	3486	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		65			14	
Link Speed (mph)	30			30	30	
Link Distance (ft)	469			635	1435	
Travel Time (s)	10.7			14.4	32.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	65	110	1414	1022	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	65	110	1414	1132	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	16.0	16.0	
Minimum Split (s)	40.0	40.0	13.0	43.0	30.0	
Total Split (s)	40.0	40.0	13.0	43.0	30.0	0.0
Total Split (%)	48.2%	48.2%	15.7%	51.8%	36.1%	0.0%
Maximum Green (s)	36.0	36.0	10.0	38.0	25.0	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	3.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	9.0	9.0	8.4	42.0	32.3	
Actuated g/C Ratio	0.16	0.16	0.15	0.74	0.57	
v/c Ratio	0.39	0.21	0.42	0.54	0.57	
Control Delay	25.3	8.3	26.7	5.5	12.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.3	8.3	26.7	5.5	12.4	
LOS	C	A	C	A	B	
Approach Delay	19.0			7.1	12.4	
Approach LOS	B			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 83
 Actuated Cycle Length: 56.8
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 9.9
 Intersection Capacity Utilization 51.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 18: NW 146th St & NW 87th Ave

↑ ø2 43 s	↖ ø5 13 s	↓ ø6 30 s	↗ ø4 40 s
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Lanes, Volumes, Timings
 20: Industrial Way & NW 87th Ave

2030 PM
 3/2/2011



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵	↶	↕	↷	↵	↕
Volume (vph)	508	186	1486	339	166	1039
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0		0	125	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor	0.96	0.92				
Frt		0.850	0.972			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3440	0	1770	3539
Flt Permitted	0.950				0.080	
Satd. Flow (perm)	1702	1451	3440	0	149	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		143	49			
Link Speed (mph)	30		30			30
Link Distance (ft)	1168		666			635
Travel Time (s)	26.5		15.1			14.4
Confl. Peds. (#/hr)	24	46				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	202	1615	368	180	1129
Shared Lane Traffic (%)						
Lane Group Flow (vph)	552	202	1983	0	180	1129
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6

Lanes, Volumes, Timings
 20: Industrial Way & NW 87th Ave

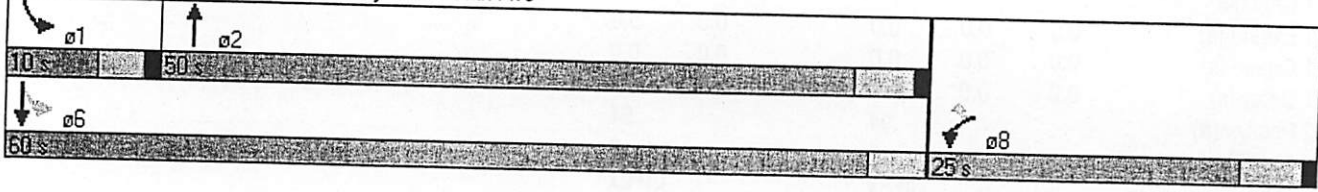
2030 PM
 3/2/2011



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	8.0		5.0	8.0
Minimum Split (s)	25.0	25.0	50.0		10.0	60.0
Total Split (s)	25.0	25.0	50.0	0.0	10.0	60.0
Total Split (%)	29.4%	29.4%	58.8%	0.0%	11.8%	70.6%
Maximum Green (s)	20.0	20.0	45.0		6.0	56.0
Yellow Time (s)	4.0	4.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	4.0	4.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	20.0	20.0	45.0		56.0	56.0
Actuated g/C Ratio	0.24	0.24	0.53		0.66	0.66
v/c Ratio	1.33	0.45	1.08		0.85	0.48
Control Delay	192.9	12.9	65.8		48.9	8.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	192.9	12.9	65.8		48.9	8.1
LOS	F	B	E		D	A
Approach Delay	144.7		65.8			13.7
Approach LOS	F		E			B

Intersection Summary
 Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.33
 Intersection Signal Delay: 63.6
 Intersection Capacity Utilization 100.9%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service G

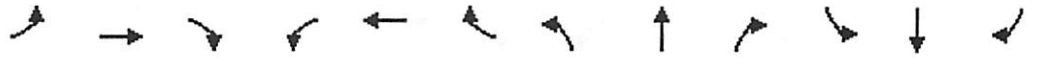
Splits and Phases: 20: Industrial Way & NW 87th Ave



Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

2030 PM w/Improvements

3/2/2011

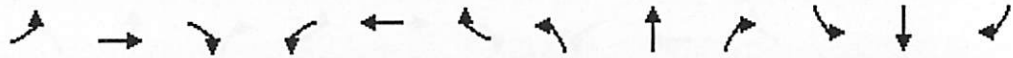


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕	↗	↙	↕	↗	↙	↕	↗
Volume (vph)	35	135	17	602	453	332	67	484	680	327	517	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		150	200		150	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fr _t		0.984				0.850			0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3483	0	1770	3539	1583	1770	3539	1583	1770	3504	0
Flt Permitted	0.472			0.470			0.424			0.205		
Satd. Flow (perm)	879	3483	0	875	3539	1583	790	3539	1583	382	3504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				361			665		6	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1348			1535			1435			3888	
Travel Time (s)		26.3			29.9			32.6			88.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	147	18	654	492	361	73	526	739	355	562	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	165	0	654	492	361	73	526	739	355	603	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	5	2	2	1	6	

Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

2030 PM w/Improvements

3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0	7.0	5.0	16.0	16.0	5.0	16.0	
Minimum Split (s)	10.0	21.0		10.0	57.0	57.0	15.0	24.0	24.0	18.0	30.0	
Total Split (s)	11.0	21.0	0.0	47.0	57.0	57.0	15.0	24.0	24.0	28.0	37.0	0.0
Total Split (%)	9.2%	17.5%	0.0%	39.2%	47.5%	47.5%	12.5%	20.0%	20.0%	23.3%	30.8%	0.0%
Maximum Green (s)	7.0	16.0		43.0	52.0	52.0	11.0	19.0	19.0	24.0	32.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0			
Pedestrian Calls (#/hr)		0			0	0		0	0			
Act Effct Green (s)	18.2	10.7		57.0	49.4	49.4	36.4	27.0	27.0	55.0	43.6	
Actuated g/C Ratio	0.15	0.09		0.48	0.41	0.41	0.30	0.22	0.22	0.46	0.36	
v/c Ratio	0.21	0.52		0.90	0.34	0.42	0.24	0.66	0.85	0.80	0.47	
Control Delay	25.2	54.7		43.3	25.0	3.9	23.8	49.0	16.9	39.4	32.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.2	54.7		43.3	25.0	3.9	23.8	49.0	16.9	39.4	32.6	
LOS	C	D		D	C	A	C	D	B	D	C	
Approach Delay		49.2			27.9			29.9			35.1	
Approach LOS		D			C			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 31.4
 Intersection Capacity Utilization 85.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

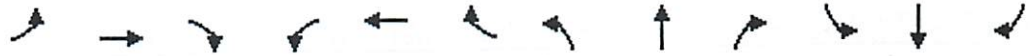
Splits and Phases: 3: NW 154th Street & NW 87th Ave

ø1	ø2	ø3	ø4
28 s	24 s	47 s	21 s
ø5	ø6	ø7	ø8
15 s	37 s	11 s	57 s

Lanes, Volumes, Timings
6: NW 170th St & NW 87th Ave

2030 PM w/Improvements

3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	56	61	384	74	130	55	653	387	159	675	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.922			0.904			0.944			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1717	0	1770	1684	0	1770	3341	0	1770	3532	0
Flt Permitted	0.620			0.487			0.328			0.100		
Satd. Flow (perm)	1155	1717	0	907	1684	0	611	3341	0	186	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			85			102			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		340			1550			3888			1400	
Travel Time (s)		7.7			35.2			88.4			31.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	61	66	417	80	141	60	710	421	173	734	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	127	0	417	221	0	60	1131	0	173	743	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12		12		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	15.0	50.0		15.0	50.0		15.0	40.0		15.0	40.0	
Total Split (s)	15.0	50.0	0.0	15.0	50.0	0.0	15.0	40.0	0.0	15.0	40.0	0.0
Total Split (%)	12.5%	41.7%	0.0%	12.5%	41.7%	0.0%	12.5%	33.3%	0.0%	12.5%	33.3%	0.0%
Maximum Green (s)	11.0	45.0		11.0	45.0		11.0	35.0		11.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	Min	
Walk Time (s)		2.0			2.0							
Flash Dont Walk (s)		10.0			10.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	16.1	9.5		25.5	22.6		42.8	35.1		49.0	40.0	
Actuated g/C Ratio	0.19	0.11		0.31	0.27		0.51	0.42		0.59	0.48	
v/c Ratio	0.01	0.52		1.06	0.42		0.15	0.77		0.59	0.44	
Control Delay	20.7	29.7		92.3	19.0		8.7	23.6		21.2	16.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.7	29.7		92.3	19.0		8.7	23.6		21.2	16.3	
LOS	C	C		F	B		A	C		C	B	
Approach Delay		29.5			66.9			22.8			17.2	
Approach LOS		C			E			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 83.2
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 31.1
 Intersection Capacity Utilization 78.9%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

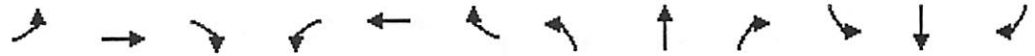
Splits and Phases: 6: NW 170th St & NW 87th Ave

ø1 15 s	ø2 40 s	ø3 15 s	ø4 50 s
ø5 15 s	ø6 40 s	ø7 15 s	ø8 50 s

Lanes, Volumes, Timings
9: NW 154th Street & NW 82nd Avenue

2030 PM w/Improvements

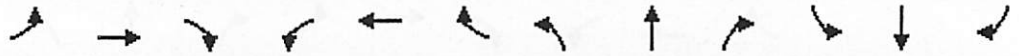
3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕	↘	↙	↕	↘	↙	↕	↘	↙	↕	↘
Volume (vph)	175	934	61	292	1331	347	196	203	112	268	88	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	300		0	300		0
Storage Lanes	1		1	1		1	1		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850		0.947			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1764	0	3433	1682	0
Flt Permitted	0.109			0.155			0.591			0.165		
Satd. Flow (perm)	203	3539	1583	289	3539	1583	1101	1764	0	596	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47			188		14			61	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1535			1396			451			2429	
Travel Time (s)		29.9			27.2			8.8			47.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	1015	66	317	1447	377	213	221	122	291	96	178
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	1015	66	317	1447	377	213	343	0	291	274	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			pm+pt		
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	2	2		1	6	

Lanes, Volumes, Timings
 9: NW 154th Street & NW 82nd Avenue

2030 PM w/Improvements
 3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		5.0	7.0	
Minimum Split (s)	23.0	81.0	81.0	23.0	81.0	81.0	43.0	43.0		33.0	76.0	
Total Split (s)	23.0	81.0	81.0	23.0	81.0	81.0	43.0	43.0	0.0	33.0	76.0	0.0
Total Split (%)	12.8%	45.0%	45.0%	12.8%	45.0%	45.0%	23.9%	23.9%	0.0%	18.3%	42.2%	0.0%
Maximum Green (s)	20.0	76.0	76.0	20.0	76.0	76.0	38.0	38.0		30.0	71.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0		0.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0	4.0	3.0	5.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Walk Time (s)							2.0	2.0				2.0
Flash Dont Walk (s)							14.0	14.0				14.0
Pedestrian Calls (#/hr)							0	0				0
Act Effct Green (s)	56.6	54.6	54.6	75.0	72.9	72.9	35.1	35.1		55.3	53.3	
Actuated g/C Ratio	0.36	0.35	0.35	0.48	0.46	0.46	0.22	0.22		0.35	0.34	
v/c Ratio	0.75	0.83	0.11	0.66	0.88	0.45	0.87	0.85		0.60	0.45	
Control Delay	59.1	53.9	13.6	57.1	46.7	16.0	91.5	76.7		42.3	34.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	59.1	53.9	13.6	57.1	46.7	16.0	91.5	76.7		42.3	34.1	
LOS	E	D	B	E	D	B	F	E		D	C	
Approach Delay		52.6			42.8			82.3			38.3	
Approach LOS		D			D			F			D	

Intersection Summary

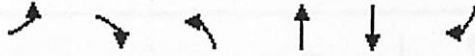
Area Type: Other
 Cycle Length: 180
 Actuated Cycle Length: 157.4
 Natural Cycle: 180
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 49.9
 Intersection Capacity Utilization 87.9%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 9: NW 154th Street & NW 82nd Avenue

φ1	φ2	φ4	φ3
33 s	43 s	81 s	23 s
φ6	φ7	φ8	
76 s	23 s	81 s	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙		↙	↑	↑	
Volume (vph)	35	137	195	612	380	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.892				0.993	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1645	0	1770	1863	1850	0
Flt Permitted	0.990		0.307			
Satd. Flow (perm)	1645	0	572	1863	1850	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	149				6	
Link Speed (mph)	30			30	35	
Link Distance (ft)	285			2429	163	
Travel Time (s)	6.5			55.2	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	149	212	665	413	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	187	0	212	665	437	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			pm+pt			
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	

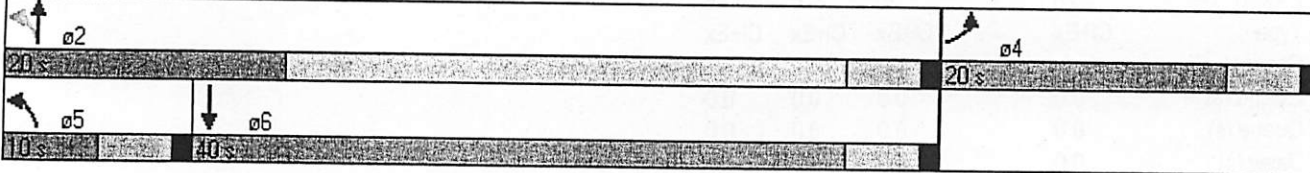


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		10.0	20.0	20.0	
Total Split (s)	20.0	0.0	10.0	20.0	40.0	0.0
Total Split (%)	28.6%	0.0%	14.3%	28.6%	57.1%	0.0%
Maximum Green (s)	15.0		5.0	15.0	35.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	5.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	None	
Act Effct Green (s)	7.5		26.4	28.0	15.6	
Actuated g/C Ratio	0.18		0.64	0.68	0.38	
v/c Ratio	0.44		0.40	0.52	0.62	
Control Delay	9.8		6.6	7.1	15.4	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	9.8		6.6	7.1	15.4	
LOS	A		A	A	B	
Approach Delay	9.8			7.0	15.4	
Approach LOS	A			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 41.1
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 9.8
 Intersection Capacity Utilization 55.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

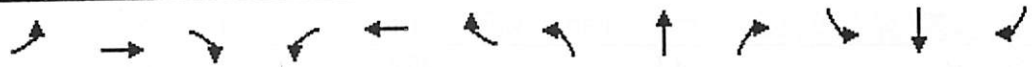
Splits and Phases: 13: NW 162nd Street & NW 82nd Avenue



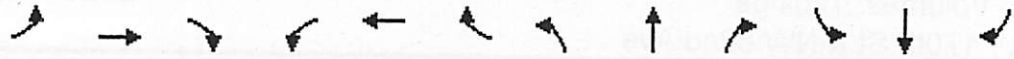
Lanes, Volumes, Timings
14: NW 170th St & NW 82nd Ave

2030 PM w/Improvements

3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Volume (vph)	162	173	270	93	235	15	302	287	104	18	164	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.909			0.991			0.960			0.943	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1693	0	1770	1846	0	1770	1788	0	1770	1757	0
Flt Permitted	0.372			0.131			0.485			0.342		
Satd. Flow (perm)	693	1693	0	244	1846	0	903	1788	0	637	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			3			19			31	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1550			479			1301			323	
Travel Time (s)		35.2			10.9			29.6			7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	188	293	101	255	16	328	312	113	20	178	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	481	0	101	271	0	328	425	0	20	286	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	15.0	35.0		15.0	35.0		15.0	55.0		15.0	55.0	
Total Split (s)	15.0	35.0	0.0	15.0	35.0	0.0	15.0	55.0	0.0	15.0	55.0	0.0
Total Split (%)	12.5%	29.2%	0.0%	12.5%	29.2%	0.0%	12.5%	45.8%	0.0%	12.5%	45.8%	0.0%
Maximum Green (s)	12.0	30.5		12.0	30.5		12.0	50.5		12.0	50.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.0	0.5		0.0	0.5		0.0	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Act Effct Green (s)	44.0	30.5		44.0	30.5		64.0	50.5		64.0	50.5	
Actuated g/C Ratio	0.37	0.25		0.37	0.25		0.53	0.42		0.53	0.42	
v/c Ratio	0.49	1.01		0.42	0.58		0.58	0.56		0.04	0.38	
Control Delay	29.8	82.5		29.2	44.3		19.6	28.4		12.2	22.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.8	82.5		29.2	44.3		19.6	28.4		12.2	22.9	
LOS	C	F		C	D		B	C		B	C	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		68.3			40.2			24.6			22.2	
Approach LOS		E			D			C			C	

Intersection Summary

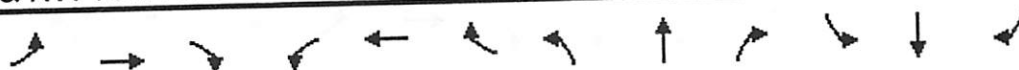
Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 50 (42%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 120
 Control Type: Pretimed
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 40.8
 Intersection Capacity Utilization 76.4%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 14: NW 170th St & NW 82nd Ave

ø1	ø2	ø3	ø4
15 s	55 s	15 s	35 s
ø5	ø6	ø7	ø8
15 s	55 s	15 s	35 s

Lanes, Volumes, Timings
15: NW 154th Street & NW 79th Avenue

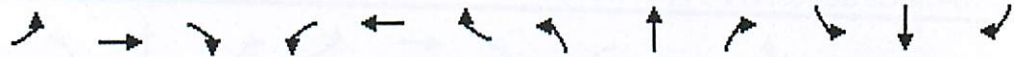


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑↑		↙	↑↑	↙	↙	↗		↙↗	↗	
Volume (vph)	198	1926	2	2	1614	421	8	10	46	301	6	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	55		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frnt						0.850		0.877			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	0	1770	3539	1583	1770	1634	0	3433	1593	0
Flt Permitted	0.950			0.950			0.450			0.717		
Satd. Flow (perm)	1770	5085	0	1770	3539	1583	838	1634	0	2591	1593	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						378		50			94	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1396			331			418			713	
Travel Time (s)		27.2			6.4			9.5			16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	2093	2	2	1754	458	9	11	50	327	7	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	2095	0	2	1754	458	9	61	0	327	204	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	8	2	2		6	6	

Lanes, Volumes, Timings
15: NW 154th Street & NW 79th Avenue

2030 PM w/Improvements

3/2/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	10.0	133.0		10.0	133.0	133.0	37.0	37.0		37.0	37.0	
Total Split (s)	10.0	133.0	0.0	10.0	133.0	133.0	37.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	5.6%	73.9%	0.0%	5.6%	73.9%	73.9%	20.6%	20.6%	0.0%	20.6%	20.6%	0.0%
Maximum Green (s)	7.0	128.0		7.0	128.0	128.0	32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	None	
Walk Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	7.2	97.4		6.7	89.6	89.6	32.7	32.7		32.7	32.7	
Actuated g/C Ratio	0.05	0.68		0.05	0.63	0.63	0.23	0.23		0.23	0.23	
v/c Ratio	2.42	0.60		0.02	0.79	0.40	0.05	0.15		0.55	0.47	
Control Delay	698.3	13.1		74.5	21.8	3.0	54.0	19.3		56.5	32.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	698.3	13.1		74.5	21.8	3.0	54.0	19.3		56.5	32.4	
LOS	F	B		E	C	A	D	B		E	C	
Approach Delay		76.9			18.0			23.8			47.2	
Approach LOS		E			B			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 180
 Actuated Cycle Length: 142.7
 Natural Cycle: 180
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.42
 Intersection Signal Delay: 47.6
 Intersection Capacity Utilization 82.5%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 15: NW 154th Street & NW 79th Avenue

← 03	↑ 02	→ 04	↘ 10
37 s	133 s		10 s
↓ 06	← 08		↙ 10
37 s	133 s		10 s



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕	↕	↖
Volume (vph)	100	60	101	1301	940	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	125			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.985	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3486	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	3486	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		65			14	
Link Speed (mph)	30			30	30	
Link Distance (ft)	469			635	1435	
Travel Time (s)	10.7			14.4	32.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	65	110	1414	1022	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	65	110	1414	1132	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	16.0	16.0	
Minimum Split (s)	40.0	40.0	13.0	43.0	30.0	
Total Split (s)	40.0	40.0	13.0	43.0	30.0	0.0
Total Split (%)	48.2%	48.2%	15.7%	51.8%	36.1%	0.0%
Maximum Green (s)	36.0	36.0	10.0	38.0	25.0	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	3.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	9.0	9.0	8.4	42.0	32.3	
Actuated g/C Ratio	0.16	0.16	0.15	0.74	0.57	
v/c Ratio	0.39	0.21	0.42	0.54	0.57	
Control Delay	25.3	8.3	26.7	5.5	12.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.3	8.3	26.7	5.5	12.4	
LOS	C	A	C	A	B	
Approach Delay	19.0			7.1	12.4	
Approach LOS	B			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 83
 Actuated Cycle Length: 56.8
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 9.9
 Intersection Capacity Utilization 51.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 18: NW 146th St & NW 87th Ave

↑ ø2 43 s	↗ ø4 40 s
↖ ø5 13 s	↓ ø6 30 s

Lanes, Volumes, Timings
20: Industrial Way & NW 87th Ave

2030 PM w/Improvements

3/2/2011

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑↑	↗	↘	↑↑
Volume (vph)	508	186	1486	339	166	1039
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0		150	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor	0.95	0.89				
Frnt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.064	
Satd. Flow (perm)	1674	1404	3539	1583	119	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		142		176		
Link Speed (mph)	30		30			30
Link Distance (ft)	1168		666			635
Travel Time (s)	26.5		15.1			14.4
Confl. Peds. (#/hr)	24	46				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	202	1615	368	180	1129
Shared Lane Traffic (%)						
Lane Group Flow (vph)	552	202	1615	368	180	1129
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type		Perm		Perm	pm+pt	
Protected Phases	8		2		1	6



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	8.0	8.0	5.0	8.0
Minimum Split (s)	25.0	25.0	50.0	50.0	10.0	60.0
Total Split (s)	45.0	45.0	63.0	63.0	12.0	75.0
Total Split (%)	37.5%	37.5%	52.5%	52.5%	10.0%	62.5%
Maximum Green (s)	40.0	40.0	58.0	58.0	8.0	71.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effct Green (s)	38.7	38.7	57.9	57.9	70.9	70.9
Actuated g/C Ratio	0.33	0.33	0.49	0.49	0.60	0.60
v/c Ratio	0.96	0.36	0.93	0.43	0.99	0.53
Control Delay	67.7	11.8	40.2	11.5	92.1	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	67.7	11.8	40.2	11.5	92.1	15.9
LOS	E	B	D	B	F	B
Approach Delay	52.7		34.9			26.4
Approach LOS	D		C			C

Intersection Summary	
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	118.6
Natural Cycle:	85
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.99
Intersection Signal Delay:	35.5
Intersection Capacity Utilization	90.1%
Analysis Period (min)	15
Intersection LOS:	D
ICU Level of Service	E

Splits and Phases: 20: Industrial Way & NW 87th Ave

01	02		
12 s	63 s		
06		08	
75 s		45 s	

APPENDIX K

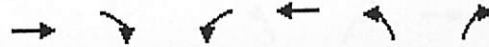
SYNCHRO ANALYSIS WORKSHEETS

Lanes, Volumes, Timings
 3: NW 154th Street & NW 87TH AVE

1/30/2011



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Volume (vph)	43	1	584	44	2	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		300	0
Storage Lanes		0	0		1	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997					0.850
Fit Protected				0.956	0.950	
Satd. Flow (prot)	1857	0	0	1781	1770	1583
Fit Permitted				0.706	0.950	
Satd. Flow (perm)	1857	0	0	1315	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					513
Link Speed (mph)	35			35	30	
Link Distance (ft)	1348			1535	1435	
Travel Time (s)	26.3			29.9	32.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	1	635	48	2	513
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	683	2	513
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type			Perm			custom
Protected Phases	4			8		
Permitted Phases			8		2	2
Detector Phase	4		8	8	2	2

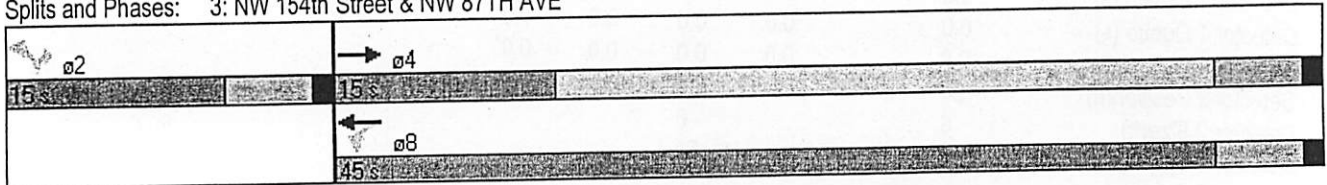


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	7.0		16.0	16.0	5.0	5.0
Minimum Split (s)	12.0		21.0	21.0	10.0	10.0
Total Split (s)	15.0	0.0	45.0	45.0	15.0	15.0
Total Split (%)	25.0%	0.0%	75.0%	75.0%	25.0%	25.0%
Maximum Green (s)	10.0		40.0	40.0	10.0	10.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	None	None
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	28.6		28.6	7.7	7.7	
Actuated g/C Ratio	0.61		0.61	0.16	0.16	
v/c Ratio	0.04		0.85	0.01	0.75	
Control Delay	3.4		19.6	20.5	11.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	3.4		19.6	20.5	11.0	
LOS	A		B	C	B	
Approach Delay	3.4		19.6	11.0		
Approach LOS	A		B	B		

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 46.9
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 15.4
 Intersection Capacity Utilization 53.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 3: NW 154th Street & NW 87TH AVE



Lanes, Volumes, Timings
4: NW 162ND & NW 82nd Avenue

1/30/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	2		1	1	1	1
Volume (vph)	29	206	64	278	906	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882				0.998	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1633	0	1770	1863	1859	0
Flt Permitted	0.994		0.126			
Satd. Flow (perm)	1633	0	235	1863	1859	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	117				2	
Link Speed (mph)	30			30	35	
Link Distance (ft)	428			2389	143	
Travel Time (s)	9.7			54.3	2.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	224	70	302	985	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	256	0	70	302	1000	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Perm			
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	40.0	40.0	40.0	0.0
Total Split (%)	33.3%	0.0%	66.7%	66.7%	66.7%	0.0%
Maximum Green (s)	15.0		35.0	35.0	35.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	5.0	5.0	5.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	None	
Act Effct Green (s)	10.0		31.8	31.8	31.8	
Actuated g/C Ratio	0.19		0.61	0.61	0.61	
v/c Ratio	0.63		0.49	0.27	0.88	
Control Delay	18.8		22.6	5.9	21.4	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	18.8		22.6	5.9	21.4	
LOS	B		C	A	C	
Approach Delay	18.8			9.1	21.4	
Approach LOS	B			A	C	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 52.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 18.2
 Intersection Capacity Utilization 75.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 4: NW 162ND & NW 82nd Avenue

 40 s 40 s	 20 s 20 s
 40 s	

Lanes, Volumes, Timings
8: NW 170TH & NW 82ND

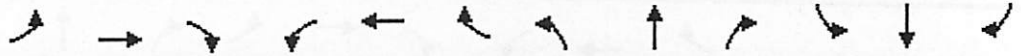
1/30/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Volume (vph)	3	63	458	210	169	10	212	190	78	10	443	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.868			0.992			0.956			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1617	0	1770	1848	0	1770	1781	0	1770	1863	0
Flt Permitted	0.518			0.131			0.306			0.492		
Satd. Flow (perm)	965	1617	0	244	1848	0	570	1781	0	916	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		316			3			23				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1891			1399			1706			346	
Travel Time (s)		43.0			31.8			38.8			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	68	498	228	184	11	230	207	85	11	482	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	566	0	228	195	0	230	292	0	11	483	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	12.0	35.0		12.0	35.0		12.0	55.0		12.0	55.0	
Total Split (s)	12.0	35.0	0.0	12.0	35.0	0.0	12.0	55.0	0.0	12.0	55.0	0.0
Total Split (%)	10.5%	30.7%	0.0%	10.5%	30.7%	0.0%	10.5%	48.2%	0.0%	10.5%	48.2%	0.0%
Maximum Green (s)	9.0	30.5		9.0	30.5		9.0	50.5		9.0	50.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.0	0.5		0.0	0.5		0.0	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Act Effct Green (s)	41.0	30.5		41.0	30.5		61.0	50.5		61.0	50.5	
Actuated g/C Ratio	0.36	0.27		0.36	0.27		0.54	0.44		0.54	0.44	
v/c Ratio	0.01	0.85		1.10	0.39		0.57	0.36		0.02	0.59	
Control Delay	21.7	30.8		119.0	36.5		19.3	20.9		11.2	27.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.7	30.8		119.0	36.5		19.3	20.9		11.2	27.5	
LOS	C	C		F	D		B	C		B	C	

Lanes, Volumes, Timings
 8: NW 170TH & NW 82ND

1/30/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		30.8			81.0			20.2			27.1	
Approach LOS		C			F			C			C	

Intersection Summary:
 Area Type: Other
 Cycle Length: 114
 Actuated Cycle Length: 114
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 115
 Control Type: Pretimed
 Maximum v/c Ratio: 1.10
 Intersection Signal Delay: 37.7
 Intersection Capacity Utilization 92.5%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 8: NW 170TH & NW 82ND

ø1	ø2	ø3	ø4
12 s	55 s	12 s	35 s
ø5	ø6	ø7	ø8
12 s	55 s	12 s	35 s

Lanes, Volumes, Timings
 9: NW 154th Street & NW 82nd Avenue

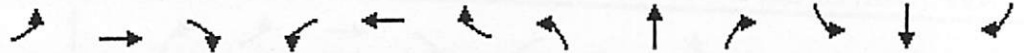
1/30/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Volume (vph)	282	517	11	174	449	198	40	92	58	581	199	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	1		0	1		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.954			0.942			0.899	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3376	0	1770	1755	0	1770	1675	0
Flt Permitted	0.950			0.950			0.378			0.334		
Satd. Flow (perm)	1770	3529	0	1770	3376	0	704	1755	0	622	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			46			14			70	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1535			1396			451			2389	
Travel Time (s)		29.9			27.2			8.8			46.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	307	562	12	189	488	215	43	100	63	632	216	447
Shared Lane Traffic (%)												
Lane Group Flow (vph)	307	574	0	189	703	0	43	163	0	632	663	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			pm+pt		
Protected Phases	7	4		3	8		2	2		1	6	
Permitted Phases										6		
Detector Phase	7	4		3	8		2	2		1	6	

Lanes, Volumes, Timings
 9: NW 154th Street & NW 82nd Avenue

1/30/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	82.0		5.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	87.0		15.0	87.0		33.0	33.0		55.0	88.0	
Total Split (s)	15.0	87.0	0.0	15.0	87.0	0.0	33.0	33.0	0.0	55.0	88.0	0.0
Total Split (%)	7.9%	45.8%	0.0%	7.9%	45.8%	0.0%	17.4%	17.4%	0.0%	28.9%	46.3%	0.0%
Maximum Green (s)	12.0	82.0		12.0	82.0		28.0	28.0		50.0	83.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	None	
Walk Time (s)							2.0	2.0		2.0	2.0	
Flash Dont Walk (s)							14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	12.0	82.0		12.0	82.0		28.0	28.0		83.0	83.0	
Actuated g/C Ratio	0.06	0.43		0.06	0.43		0.15	0.15		0.44	0.44	
v/c Ratio	2.74	0.38		1.69	0.47		0.41	0.60		1.10	0.86	
Control Delay	833.8	37.5		388.9	28.1		87.0	79.3		110.1	55.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	833.8	37.5		388.9	28.1		87.0	79.3		110.1	55.5	
LOS	F	D		F	C		F	E		F	E	
Approach Delay		315.0			104.5			80.9			82.1	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 190
 Offset: 50 (26%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 190
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.74
 Intersection Signal Delay: 150.8
 Intersection Capacity Utilization 135.4%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 9: NW 154th Street & NW 82nd Avenue

ø1	ø2	ø3	ø4
55 s	33 s	15 s	87 s
ø6	ø7	ø8	
88 s	15 s	87 s	

Lanes, Volumes, Timings
15: NW 154th Street & NW 79th Avenue

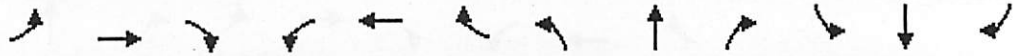
1/30/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗	↖	↗		↖	↗	
Volume (vph)	149	1229	4	86	1050	218	2	21	17	299	44	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	55		0	300		0	300		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr						0.850		0.934				0.875
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	0	1770	3539	1583	1770	1740	0	1770	1630	0
Flt Permitted	0.950			0.950			0.258			0.730		
Satd. Flow (perm)	1770	3539	0	1770	3539	1583	481	1740	0	1360	1630	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						237		18			116	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1396			156			418			713	
Travel Time (s)		27.2			3.0			9.5			16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	1336	4	93	1141	237	2	23	18	325	48	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	1340	0	93	1141	237	2	41	0	325	290	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	8	2	2		6	6	

Lanes, Volumes, Timings
15: NW 154th Street & NW 79th Avenue

1/30/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	13.0	139.0		13.0	139.0	139.0	38.0	38.0		33.0	33.0	
Total Split (s)	13.0	139.0	0.0	13.0	139.0	139.0	38.0	38.0	0.0	33.0	33.0	0.0
Total Split (%)	6.8%	73.2%	0.0%	6.8%	73.2%	73.2%	20.0%	20.0%	0.0%	17.4%	17.4%	0.0%
Maximum Green (s)	10.0	134.0		10.0	134.0	134.0	33.0	33.0		28.0	28.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		None	None	
Walk Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	10.0	123.9		11.1	125.0	125.0	42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.05	0.65		0.06	0.66	0.66	0.22	0.22		0.22	0.22	
v/c Ratio	1.74	0.58		0.90	0.49	0.21	0.02	0.10		1.08	0.64	
Control Delay	411.2	18.1		149.4	17.3	1.3	66.0	42.1		137.8	49.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	411.2	18.1		149.4	17.3	1.3	66.0	42.1		137.8	49.8	
LOS	F	B		F	B	A	E	D		F	D	
Approach Delay		60.5			23.1			43.2			96.3	
Approach LOS		E			C			D			F	

Intersection Summary

Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 190
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 190
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.74
 Intersection Signal Delay: 51.2
 Intersection Capacity Utilization 73.8%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 15: NW 154th Street & NW 79th Avenue

 38 s	 139 s	 13 s
 33 s	 13 s	 139 s

Lanes, Volumes, Timings
 18: NW 146TH ST & NW 87TH AVE

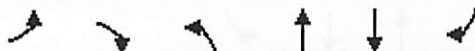
1/30/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕	↕	↖
Volume (vph)	24	52	24	367	774	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr't		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3532	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		57			2	
Link Speed (mph)	30			30	30	
Link Distance (ft)	469			635	1435	
Travel Time (s)	10.7			14.4	32.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	57	26	399	841	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	57	26	399	852	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	

Lanes, Volumes, Timings
 18: NW 146TH ST & NW 87TH AVE

1/30/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0	1.0	4.0	
Minimum Split (s)	25.0	25.0	15.0	58.0	25.0	
Total Split (s)	25.0	25.0	15.0	58.0	40.0	0.0
Total Split (%)	30.1%	30.1%	18.1%	69.9%	48.2%	0.0%
Maximum Green (s)	20.0	20.0	12.0	53.0	35.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0				
Pedestrian Calls (#/hr)	0	0				
Act Effect Green (s)	6.6	6.6	6.6	58.3	54.2	
Actuated g/C Ratio	0.10	0.10	0.10	0.85	0.79	
v/c Ratio	0.15	0.28	0.15	0.13	0.30	
Control Delay	30.7	12.9	30.8	1.9	4.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.7	12.9	30.8	1.9	4.7	
LOS	C	B	C	A	A	
Approach Delay	18.5			3.7	4.7	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 83
 Actuated Cycle Length: 68.4
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.30
 Intersection Signal Delay: 5.3
 Intersection Capacity Utilization 33.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 18: NW 146TH ST & NW 87TH AVE

↑ ø2 58 s	↘ ø4 25 s
↙ ø5 15 s	↓ ø6 40 s

Lanes, Volumes, Timings
20: IND WAY & NW 87TH AVE

1/30/2011



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↕	↷	↶	↕
Volume (vph)	206	9	382	524	33	902
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500	500		0	145	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor	0.97	0.93				
Frt		0.850	0.913			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3231	0	1770	3539
Flt Permitted	0.950				0.265	
Satd. Flow (perm)	1714	1471	3231	0	494	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		10	570			
Link Speed (mph)	30		30			30
Link Distance (ft)	1168		666			635
Travel Time (s)	26.5		15.1			14.4
Conf. Peds. (#/hr)	24	46				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	10	415	570	36	980
Shared Lane Traffic (%)						
Lane Group Flow (vph)	224	10	985	0	36	980
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type		Perm			Perm	
Protected Phases	8		2			6

Lanes, Volumes, Timings
 20: IND WAY & NW 87TH AVE

1/30/2011

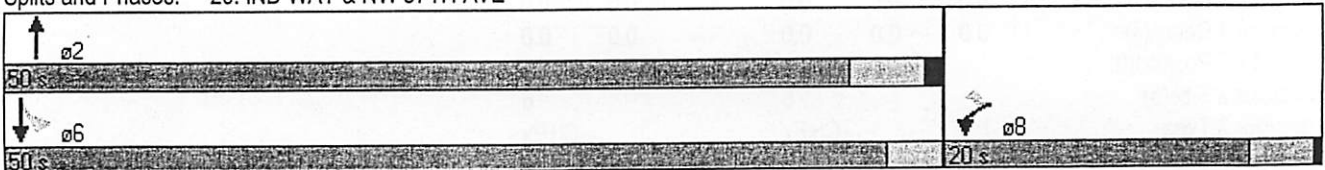


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8			6	
Detector Phase	8	8	2		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	50.0		50.0	50.0
Total Split (s)	20.0	20.0	50.0	0.0	50.0	50.0
Total Split (%)	28.6%	28.6%	71.4%	0.0%	71.4%	71.4%
Maximum Green (s)	16.0	16.0	45.0		47.0	47.0
Yellow Time (s)	3.5	3.5	4.0		3.0	3.0
All-Red Time (s)	0.5	0.5	1.0		0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0	4.0	3.0	3.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	11.0	11.0	20.4		21.9	21.9
Actuated g/C Ratio	0.32	0.32	0.59		0.63	0.63
v/c Ratio	0.40	0.02	0.46		0.12	0.44
Control Delay	14.7	7.7	3.5		6.1	6.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	14.7	7.7	3.5		6.1	6.1
LOS	B	A	A		A	A
Approach Delay	14.4		3.5			6.1
Approach LOS	B		A			A

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 34.7
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 5.8
 Intersection Capacity Utilization 47.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 20: IND WAY & NW 87TH AVE





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Volume (vph)	81	1	614	160	6	706
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		300	0
Storage Lanes		0	0		1	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998					0.850
Flt Protected				0.962	0.950	
Satd. Flow (prot)	1859	0	0	1792	1770	1583
Flt Permitted				0.711	0.950	
Satd. Flow (perm)	1859	0	0	1324	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					767
Link Speed (mph)	35			35	30	
Link Distance (ft)	1348			1535	1435	
Travel Time (s)	26.3			29.9	32.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	1	667	174	7	767
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	0	841	7	767
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type			Perm			custom
Protected Phases	4			8		
Permitted Phases			8		2	2
Detector Phase	4		8	8	2	2

Baseline

3: NW 154th Street & NW 87TH AVE

1/30/2011

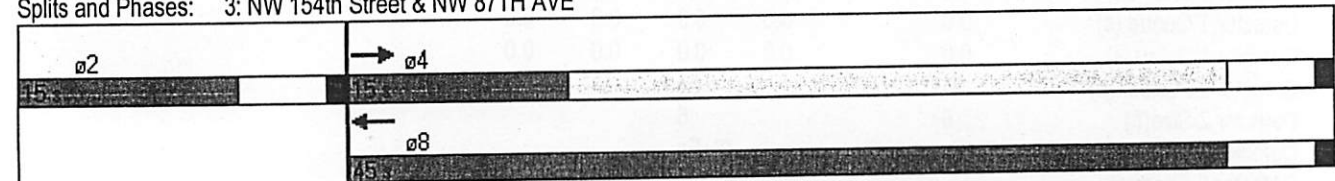


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	7.0		16.0	16.0	5.0	5.0
Minimum Split (s)	12.0		21.0	21.0	10.0	10.0
Total Split (s)	15.0	0.0	45.0	45.0	15.0	15.0
Total Split (%)	25.0%	0.0%	75.0%	75.0%	25.0%	25.0%
Maximum Green (s)	10.0		40.0	40.0	10.0	10.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	None	None
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	38.3		38.3	8.9	8.9	
Actuated g/C Ratio	0.67		0.67	0.16	0.16	
v/c Ratio	0.07		0.95	0.03	0.86	
Control Delay	3.6		32.6	21.3	14.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	3.6		32.6	21.3	14.2	
LOS	A		C	C	B	
Approach Delay	3.6		32.6	14.3		
Approach LOS	A		C	B		

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 57.3
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 22.8
 Intersection Capacity Utilization 61.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: NW 154th Street & NW 87TH AVE

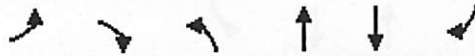


Baseline
4: NW 162ND & NW 82nd Avenue

1/30/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘		↙	↑	↓	↘
Volume (vph)	32	123	175	835	517	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.893				0.995	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1647	0	1770	1863	1853	0
Flt Permitted	0.990		0.406			
Satd. Flow (perm)	1647	0	756	1863	1853	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	134				6	
Link Speed (mph)	30			30	35	
Link Distance (ft)	428			2389	143	
Travel Time (s)	9.7			54.3	2.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	134	190	908	562	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	169	0	190	908	584	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Perm			
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	40.0	40.0	40.0	0.0
Total Split (%)	33.3%	0.0%	66.7%	66.7%	66.7%	0.0%
Maximum Green (s)	15.0		35.0	35.0	35.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	5.0	5.0	5.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	None	
Act Effct Green (s)	8.1		30.5	30.5	30.5	
Actuated g/C Ratio	0.19		0.71	0.71	0.71	
v/c Ratio	0.40		0.35	0.69	0.44	
Control Delay	10.1		7.0	10.1	5.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	10.1		7.0	10.1	5.9	
LOS	B		A	B	A	
Approach Delay	10.1			9.6	5.9	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 43.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 8.5
 Intersection Capacity Utilization 61.6%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 4: NW 162ND & NW 82nd Avenue

↑ ø2	↗ ø4
↓ ø6	

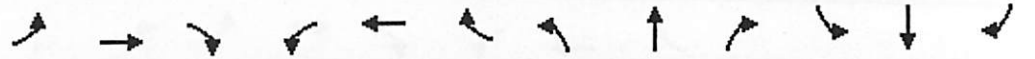


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔
Volume (vph)	4	68	356	120	118	14	397	393	142	16	221	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.874			0.984			0.960			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1628	0	1770	1833	0	1770	1788	0	1770	1855	0
Flt Permitted	0.607			0.131			0.539			0.218		
Satd. Flow (perm)	1131	1628	0	244	1833	0	1004	1788	0	406	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		225			5			20			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1891			1399			1706			346	
Travel Time (s)		43.0			31.8			38.8			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	74	387	130	128	15	432	427	154	17	240	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	461	0	130	143	0	432	581	0	17	247	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	12.0	35.0		12.0	35.0		12.0	55.0		12.0	55.0	
Total Split (s)	12.0	35.0	0.0	12.0	35.0	0.0	12.0	55.0	0.0	12.0	55.0	0.0
Total Split (%)	10.5%	30.7%	0.0%	10.5%	30.7%	0.0%	10.5%	48.2%	0.0%	10.5%	48.2%	0.0%
Maximum Green (s)	9.0	30.5		9.0	30.5		9.0	50.5		9.0	50.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.0	0.5		0.0	0.5		0.0	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0	3.0	4.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Act Effect Green (s)	41.0	30.5		41.0	30.5		61.0	50.5		61.0	50.5	
Actuated g/C Ratio	0.36	0.27		0.36	0.27		0.54	0.44		0.54	0.44	
v/c Ratio	0.01	0.77		0.62	0.29		0.72	0.72		0.05	0.30	
Control Delay	21.8	28.9		37.4	33.9		25.2	31.4		11.5	21.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.8	28.9		37.4	33.9		25.2	31.4		11.5	21.5	
LOS	C	C		D	C		C	C		B	C	

Baseline

8: NW 170TH & NW 82ND

1/30/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		28.8			35.6			28.8			20.8	
Approach LOS		C			D			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 114
 Actuated Cycle Length: 114
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 115
 Control Type: Pretimed
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 28.7
 Intersection Capacity Utilization 81.7%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 8: NW 170TH & NW 82ND

ø1	ø2	ø3	ø4
25	55	25	35
ø5	ø6	ø7	ø8
25	55	25	35

Baseline

9: NW 154th Street & NW 82nd Avenue

1/30/2011

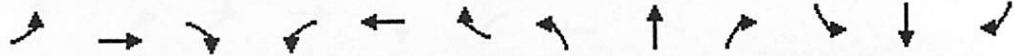


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑		↙	↑↑		↙	↑		↙	↑	
Volume (vph)	251	520	16	260	736	416	77	270	101	327	111	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	300		0	300		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.946			0.959			0.898	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3525	0	1770	3348	0	1770	1786	0	1770	1673	0
Flt Permitted	0.950			0.950			0.537			0.100		
Satd. Flow (perm)	1770	3525	0	1770	3348	0	1000	1786	0	186	1673	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			76			9			70	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1535			1396			451			2389	
Travel Time (s)		29.9			27.2			8.8			46.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	565	17	283	800	452	84	293	110	355	121	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	582	0	283	1252	0	84	403	0	355	378	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			pm+pt		
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases							2			6		
Detector Phase	7	4		3	8		2	2		1	6	

Baseline

9: NW 154th Street & NW 82nd Avenue

1/30/2011



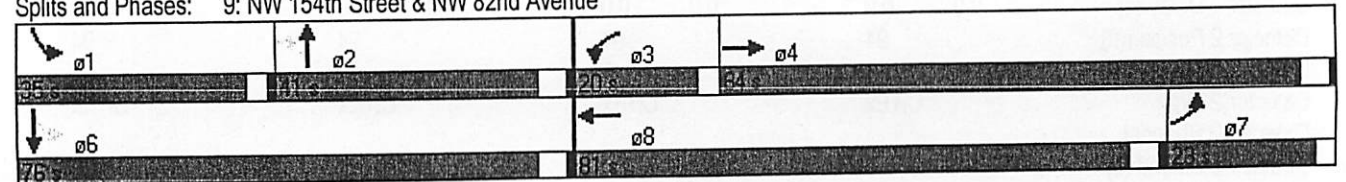
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	84.0		20.0	81.0		41.0	41.0		35.0	76.0	
Total Split (s)	23.0	84.0	0.0	20.0	81.0	0.0	41.0	41.0	0.0	35.0	76.0	0.0
Total Split (%)	12.8%	46.7%	0.0%	11.1%	45.0%	0.0%	22.8%	22.8%	0.0%	19.4%	42.2%	0.0%
Maximum Green (s)	20.0	79.0		17.0	76.0		36.0	36.0		31.0	71.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	None	
Walk Time (s)							2.0	2.0		2.0	2.0	
Flash Dont Walk (s)							14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	24.1	79.0		17.0	71.9		36.0	36.0		72.0	71.0	
Actuated g/C Ratio	0.13	0.44		0.09	0.40		0.20	0.20		0.40	0.39	
v/c Ratio	1.15	0.38		1.69	0.91		0.42	1.11		1.02	0.54	
Control Delay	167.9	34.7		369.3	42.8		70.4	140.8		108.1	36.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	167.9	34.7		369.3	42.8		70.4	140.8		108.1	36.8	
LOS	F	C		F	D		E	F		F	D	
Approach Delay		77.2			103.0			128.7			71.4	
Approach LOS		E			F			F			E	

Intersection Summary

Area Type: Other
 Cycle Length: 180
 Actuated Cycle Length: 180
 Offset: 50 (28%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 180
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.69
 Intersection Signal Delay: 93.9
 Intersection Capacity Utilization 101.0%
 Analysis Period (min) 15

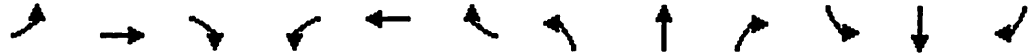
Intersection LOS: F
 ICU Level of Service G

Splits and Phases: 9: NW 154th Street & NW 82nd Avenue



Baseline
15: NW 154th Street & NW 79th Avenue

1/30/2011

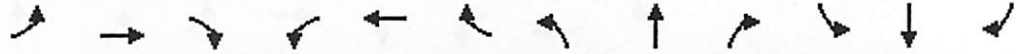


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗	↖	↗		↖	↗	
Volume (vph)	186	1425	2	2	998	315	6	9	41	230	5	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	55		0	300		0	300		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts						0.850		0.877			0.854	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	0	1770	3539	1583	1770	1634	0	1770	1591	0
Fit Permitted	0.950			0.950			0.437			0.721		
Satd. Flow (perm)	1770	3539	0	1770	3539	1583	814	1634	0	1343	1591	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						342		45			189	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1396			156			418			713	
Travel Time (s)		27.2			3.0			9.5			16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	202	1549	2	2	1085	342	7	10	45	250	5	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	1551	0	2	1085	342	7	55	0	250	194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	8	2	2		6	6	

Baseline

15: NW 154th Street & NW 79th Avenue

1/30/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	10.0	133.0		10.0	133.0	133.0	37.0	37.0		37.0	37.0	
Total Split (s)	10.0	133.0	0.0	10.0	133.0	133.0	37.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	5.6%	73.9%	0.0%	5.6%	73.9%	73.9%	20.6%	20.6%	0.0%	20.6%	20.6%	0.0%
Maximum Green (s)	7.0	128.0		7.0	128.0	128.0	32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	4.0	3.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		None	None	
Walk Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	48.0	127.1		5.8	78.0	78.0	41.0	41.0		41.0	41.0	
Actuated g/C Ratio	0.27	0.71		0.03	0.43	0.43	0.23	0.23		0.23	0.23	
v/c Ratio	0.43	0.62		0.04	0.71	0.39	0.04	0.14		0.82	0.38	
Control Delay	53.2	11.8		85.5	43.8	3.4	57.2	19.7		85.5	10.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	53.2	11.8		85.5	43.8	3.4	57.2	19.7		85.5	10.2	
LOS	D	B		F	D	A	E	B		F	B	
Approach Delay		16.6			34.2			23.9			52.6	
Approach LOS		B			C			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 180
 Actuated Cycle Length: 180
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 180
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 27.8
 Intersection Capacity Utilization 74.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 15: NW 154th Street & NW 79th Avenue

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Baseline

18: NW 146TH ST & NW 87TH AVE

1/30/2011



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑↑	↑↓	
Volume (vph)	86	54	91	709	534	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.979	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3465	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	3465	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		59			23	
Link Speed (mph)	30			30	30	
Link Distance (ft)	469			635	1435	
Travel Time (s)	10.7			14.4	32.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	59	99	771	580	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	59	99	771	677	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8			1	6
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	8.0		5.0	8.0
Minimum Split (s)	20.0	20.0	50.0		10.0	50.0
Total Split (s)	20.0	20.0	50.0	0.0	10.0	50.0
Total Split (%)	25.0%	25.0%	62.5%	0.0%	12.5%	62.5%
Maximum Green (s)	16.0	16.0	45.0		5.0	47.0
Yellow Time (s)	3.5	3.5	4.0		4.0	3.0
All-Red Time (s)	0.5	0.5	1.0		1.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0	4.0	5.0	3.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	16.9	16.9	29.7		5.3	35.0
Actuated g/C Ratio	0.28	0.28	0.50		0.09	0.59
v/c Ratio	0.76	0.10	0.68		0.25	0.33
Control Delay	37.0	9.3	12.8		35.7	5.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	37.0	9.3	12.8		35.7	5.9
LOS	D	A	B		D	A
Approach Delay	34.0		12.8			7.5
Approach LOS	C		B			A

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 59.3
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 15.0
 Intersection Capacity Utilization 58.0%
 Analysis Period (min) 15

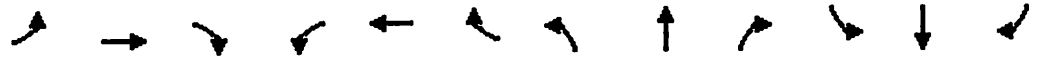
Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 20: IND WAY & NW 87TH AVE

01	02		
10 s	50 s		
06		08	
50 s		20 s	

Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

1/30/2011

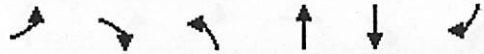


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗	↖	↕	↗	↖	↕	↖
Volume (vph)	56	80	23	461	57	316	19	406	403	524	588	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		150	200		150	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frnt		0.967				0.850			0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3422	0	1770	3539	1583	1770	3539	1583	1770	3493	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3422	0	1770	3539	1583	1770	3539	1583	1770	3493	0
Right Turn on Red			Yes			Yes		Yes	Yes			Yes
Satd. Flow (RTOR)		23				343			421		9	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1348			1535			1435			3888	
Travel Time (s)		26.3			29.9			32.6			88.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	87	25	501	62	343	21	441	438	570	639	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	112	0	501	62	343	21	441	438	570	699	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	

Baseline

18: NW 146TH ST & NW 87TH AVE

1/30/2011

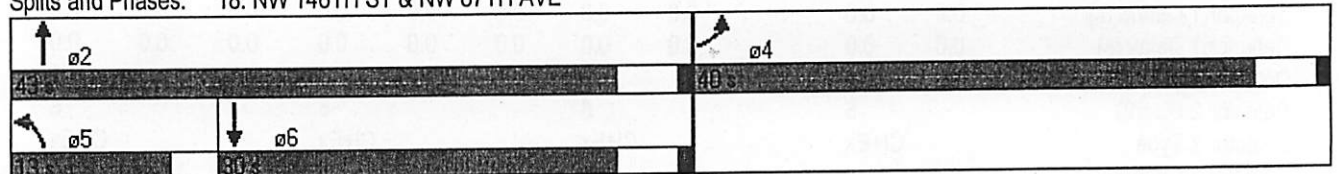


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0	1.0	4.0	
Minimum Split (s)	40.0	40.0	13.0	43.0	30.0	
Total Split (s)	40.0	40.0	13.0	43.0	30.0	0.0
Total Split (%)	48.2%	48.2%	15.7%	51.8%	36.1%	0.0%
Maximum Green (s)	35.0	35.0	10.0	38.0	25.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	8.3	8.3	8.2	42.0	32.5	
Actuated g/C Ratio	0.15	0.15	0.14	0.73	0.57	
v/c Ratio	0.36	0.21	0.39	0.30	0.34	
Control Delay	25.6	8.9	26.6	4.0	9.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.6	8.9	26.6	4.0	9.8	
LOS	C	A	C	A	A	
Approach Delay	19.1			6.6	9.8	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 83
 Actuated Cycle Length: 57.2
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 9.0
 Intersection Capacity Utilization 39.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 18: NW 146TH ST & NW 87TH AVE



Baseline
20: IND WAY & NW 87TH AVE

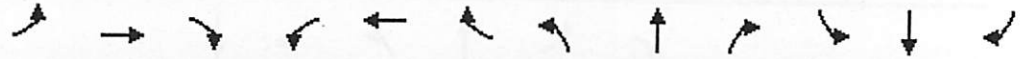
1/30/2011



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵	↗	↕	↘	↵	↕
Volume (vph)	351	42	894	198	37	637
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500	500		0	145	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor	0.96	0.92				
Frt		0.850	0.973			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3444	0	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1706	1457	3444	0	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		46	54			
Link Speed (mph)	30		30			30
Link Distance (ft)	1168		666			635
Travel Time (s)	26.5		15.1			14.4
Confl. Peds. (#/hr)	24	46				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	382	46	972	215	40	692
Shared Lane Traffic (%)						
Lane Group Flow (vph)	382	46	1187	0	40	692
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6

Lanes, Volumes, Timings
3: NW 154th Street & NW 87th Ave

2030 TOTAL TRAFFIC AM
2/1/2011



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	80	23	461	57	316	19	411	406	524	599	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		150	200		150	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fr't		0.967				0.850			0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3422	0	1770	3539	1583	1770	3539	1583	1770	3493	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3422	0	1770	3539	1583	1770	3539	1583	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23				343			418		9	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1348			1535			1435			3888	
Travel Time (s)		26.3			29.9			32.6			88.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	87	25	501	62	343	21	447	441	570	651	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	112	0	501	62	343	21	447	441	570	712	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	

APPENDIX L

ARTPLAN WORKSHEETS

ARTPLAN 2009 Conceptual Planning Analysis

Project Information

Analyst	JMD	Arterial Name	NW 154TH ST	Study Period	K100
Date Prepared	1/31/2011 7:27:46 AM	From	PALMETTO EXP	Modal Analysis	Auto Only
Agency		To	NW 82ND AVE	Program	ARTPLAN 2009
Area Type	Large Urbanized	Peak Direction	Westbound	Version Date	3/7/10
Arterial Class	2				
File Name	C:\Documents and Settings\JOHND13\Local Settings\Temp\preview.xml				
User Notes					

Arterial Data

K	0.09	PHF	0.95	Control Type	Semiactuated
D	0.55	% Heavy Vehicles	2	Base Sat. Flow Rate	1950

Automobile Intersection and Segment Data

Segment #	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	FFS	Median Type
1 (to NW 77TH CT)	190	0.65	5	3	12	12	Yes	1	125	0.15	No	400	71490	3539	3	40	Restrictive
2 (to NW 79TH AVE)	190	0.65	5	2	12	12	Yes	1	125	0.15	No	350	49520	2451	2	40	Restrictive
3 (to NW 82ND AVE)	190	0.65	5	2	12	12	Yes	1	125	0.15	No	1350	46700	2312	2	40	Restrictive

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to NW 77TH CT)	3278	5359	0.941	1.75	A	#	27.17	C			
2 (to NW 79TH AVE)	2270	3555	0.982	5.73	A	#	18.39	D			
3 (to NW 82ND AVE)	2142	3555	0.927	1.25	A	#	31.98	B			
Arterial Length	0.3977	Weighted g/C	##	FFS Delay	16.00	Threshold Delay	0.00	Auto Speed	27.64	Auto LOS	C

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	360	930	1220	1250	1280
2	930	2360	2510	2550	2610
3	1550	3680	3790	3860	3930
4	2190	4970	5080	5160	5260
*	1030	2280	2490	2570	2620
Lanes	Hourly Volume In Both Directions				
2	660	1700	2220	2280	2330
4	1700	4300	4570	4640	4750
6	2820	6700	6900	7020	7150
8	3990	9040	9240	9390	9570
*	1880	4150	4530	4680	4780
Lanes	Annual Average Daily Traffic				
2	7300	18800	24700	25300	25900
4	18800	47700	50800	51600	52800
6	31400	74400	76600	78000	79400
8	44300	100500	102700	104300	106300
*	20900	46100	50400	52000	53100

* Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.

** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (Ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2009 Conceptual Planning Analysis

Project Information

Analyst	JMD	Arterial Name	NW 154TH ST	Study Period	K100
Date Prepared	1/31/2011 7:27:46 AM	From	PALMETTO EXP	Modal Analysis	Auto Only
Agency		To	NW 82ND AVE	Program	ARTPLAN 2009
Area Type	Large Urbanized	Peak Direction	Westbound	Version Date	3/7/10
Arterial Class	2				
File Name	C:\Documents and Settings\JOHND13\Local Settings\Temp\preview.xml				
User Notes					

Arterial Data

K	0.09	PHF	0.95	Control Type	Semilactuated
D	0.55	% Heavy Vehicles	2	Base Sat. Flow Rate	1950

Automobile Intersection and Segment Data

Segment #	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	FFS	Median Type
1 (to NW 77TH CT)	190	0.65	5	3	12	12	Yes	1	125	0.15	No	400	71490	3539	3	40	Restrictive
2 (to NW 79TH AVE)	190	0.65	5	2	12	12	Yes	1	125	0.15	No	350	49520	2451	2	40	Restrictive
3 (to NW 82ND AVE)	190	0.65	5	2	12	12	Yes	1	125	0.15	No	1350	46700	2312	2	40	Restrictive

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS			
1 (to NW 77TH CT)	3278	5359	0.941	1.75	A	#	27.17	C			
2 (to NW 79TH AVE)	2270	3555	0.982	5.73	A	#	18.39	D			
3 (to NW 82ND AVE)	2142	3555	0.927	1.25	A	#	31.98	B			
Arterial Length	0.3977	Weighted g/C	##	FFS Delay	16.00	Threshold Delay	0.00	Auto Speed	27.64	Auto LOS	C

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

Lanes	A	B	C	D	E
Hourly Volume In Peak Direction					
1	360	930	1220	1250	1280
2	930	2360	2510	2550	2610
3	1550	3680	3790	3860	3930
4	2190	4970	5080	5160	5260
*	1030	2280	2490	2570	2620
Hourly Volume In Both Directions					
2	660	1700	2220	2280	2330
4	1700	4300	4570	4640	4750
6	2820	6700	6900	7020	7150
8	3990	9040	9240	9390	9570
*	1880	4150	4530	4680	4780
Annual Average Daily Traffic					
2	7300	18800	24700	25300	25900
4	18800	47700	50800	51600	52800
6	31400	74400	76600	78000	79400
8	44300	100500	102700	104300	106300
*	20900	46100	50400	52000	53100

- * Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.
- ** Cannot be achieved based on input data provided.
- *** Not applicable for that level of service letter grade. See generalized tables notes for more details.
- # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
- ## Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
- ### Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

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Automobile Service Volumes

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*	20900	46100	50400	52000	53100

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 ** Cannot be achieved based on input data provided.

*** Not applicable for that level of service letter grade. See generalized tables notes for more details.

Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.

Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.

Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.



JMD ENGINEERING, INC.

**TRAFFIC IMPACT ANALYSIS
PHASE I
SUPPLEMENTAL ANALYSIS**

**DUNNWOODY LAKE &
DUNNWOODY FOREST**

MIAMI LAKES, FLORIDA

**BM-09-15
MARCH 4 2011
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PHASE I ANALYSIS

Dunnwoody Lake is a proposed mixed-use development (residential and retail) proposed on the northwest corner of NW 154th Street and NW 87th Avenue and Dunnwoody Forest is a proposed single family development at the northeast corner of NW 154th Street and NW 87th Avenue in the Town of Miami Lakes, Florida. This analysis addresses the development of Phase I (commercial portion of Dunwoody Lake).

This study addresses trip generation, access to the site, pass-by traffic and the traffic impacts created by Phase I of the proposed development on the adjacent transportation network.

INVENTORY

Existing Land Use

The project sites are currently vacant

Proposed Land Use and Access

Proposed for Phase I of the Dunnwoody Lake site is a retail shopping center with a gross building area of 140,000 square feet. Access to the site will be provided via one driveway on NW 154th Street and two driveways on NW 87th Avenue. For purposes of this traffic study, background traffic for Phase I is the same as for build out of the project in the year 2030.

Intersections

Phase I of the proposed mixed use development will significantly impact the segments of NW 154th Street (Miami Lakes Drive) between NW 79th Avenue and NW 89th Avenue as well as NW 87th Avenue from I-75 to NW 170th Street and NW 82nd Avenue from NW 154th Street north to NW 170th Street. The signalized intersections located on the affected roadway segments which carry two percent or more of the adopted levels of service threshold capacity were selected for analysis purposes. These intersections include the following:

1. NW 154th Street & NW 82nd Avenue
2. NW 154th Street & NW 87th Avenue
3. NW 87th Avenue & NW 146th Street
4. NW 87th Avenue & Industrial Way
5. NW 170th Street & NW 82nd Avenue
6. NW 170th Street & NW 87th Avenue

For purposes of this study, build out intersection volumes were utilized in the intersection analysis in order to provide a conservative analysis of the impacts of Phase I.

TRIP GENERATION

The trip generation for the project was based on information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* (8th Edition). Table 1 summarizes the trip generation associated with Phase I of the proposed Dunnwoody Lake Mixed-Use development (140,000 square feet of Commercial).

As indicated in Table 1, the gross trips anticipated to be generated by Phase I of the proposed Dunnwoody Lake project consists of 8,451 daily trips, 188 trips during the AM peak hour, and 797 trips during the PM peak hour. Gross trips were reduced by pass-by rates published by ITE and the methodology agreed upon during the pre-application and project scoping process as well as a subsequent meeting after the first report submittal. There were 2,983 daily, 66 AM peak hour and 281 PM peak hour pass-by trips. Therefore, the net external trips associated with Phase I of the proposed development are 5,468 daily trips, 122 trips during the AM peak hour, and 516 trips during the PM peak hour which impact the adjacent roadway network.

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for Phase I of the proposed Dunnwoody Lake Mixed-Use development was based on Miami-Dade County's cardinal distribution information for the study area (Traffic Analysis Zone 11). Examination of the existing/future surrounding roadway network characteristics, review of existing/future current traffic volumes, and existing/future land use patterns were utilized to assign the traffic to the adjacent roadway network. Phase I distribution and assignment is the same as Buildout for the commercial retail component.

TRAFFIC ANALYSIS

Determination of Significance

A determination of significance was undertaken for Phase I of the proposed project. A significantly impacted link is defined as a roadway segment where the net peak hour external project traffic equals or exceeds one percent (1%) of the service volume at the applicable level of service standard. This significance analysis is presented in Table 3 for the AM peak hour and Table 4 for the PM peak hour.

Future Conditions Traffic Volumes

To provide a conservative Phase I analysis, future background traffic volumes (Year 2030) for Phase I are the same as for build out of the project.

In order to develop year 2030 traffic volumes without the proposed project, two separate analyses were undertaken. The first analysis converts the existing AM and PM peak hour traffic counts collected in the field to peak season conditions based on FDOT's Peak Season Factor Category report. The second analysis includes a growth factor to project 2010 peak season traffic volumes to the year 2030 as well as the addition of approved, but un-built project traffic as supplied by the Town of Miami Lakes. Based on traffic growth data for several traffic count station located near the project site and inside the study area, traffic has grown (Year 2007 to Year 2010) at a flat rate compounded annually, within the project's study area. Hence, a 0.5% growth rate, compounded annually, was assumed for the study area for the twenty year build out period.

Diversion Analysis and NW 87th Avenue Traffic Projections

Phase I assumes the same diversion analysis as build out of the project as discussed below:

In order to help determine what impacts this construction would have on traffic patterns in the study area, a FSUTMS model run was conducted with and without NW 87th Avenue from NW 154th Street to NW 162nd Avenue. The resulting FSUTMS model runs and select link analysis of NW 87th Avenue and NW 154th Avenue as well as reviewing current traffic patterns based on counts taken at critical locations where the diversions will occur indicated the following:

1. No significant reduction in two-way peak hour traffic in the study area is anticipated east of 79th Avenue.
2. NW 82nd Avenue will see a decrease of approximately 40% as traffic shifts to the west to utilize the fully functional NW 87th Avenue. A reduction of 40 % of the existing counts was applied to appropriate movements at NW 154th Street and NW 82nd Avenue.
3. NW 79th Avenue will see a decrease of approximately 10% as traffic shifts to the west to utilize the fully functional NW 87th Avenue. A reduction of 10 % of the existing counts was applied to appropriate movements at NW 154th Street and NW 79th Avenue.
4. The northbound right turns and westbound left turn movements at NW 154th Street and NW 87th Avenue were reduced based on the other diversions of existing traffic. In addition, the southbound left turn and westbound right turn were increased as appropriate.
5. The remainder of the “new” traffic on NW 87th Avenue will come from locations outside the Town of Miami Lakes. For example, traffic that presently travels on NW 186th Street that wishes to travel south will be diverted to NW 87th Avenue.

Instead of attempting to build the projected opening day peak hour and 24-hour traffic volumes on NW 87th Avenue solely from the diversion analysis, it was decided to utilize the results of a previous study submitted to the Miami-Dade Metropolitan Planning Organization (MPO) in 2007. The study, “Arterial Grid Analysis Study” by Kimley-Horn and Associates,

Inc. in which the “missing link” was included and a Year 2015 24-hour traffic volume was developed. This 24 hour volume was converted to AM and PM peak hour directional volumes for use in this study based on the count data collected as a part of this study. Fifteen years of growth at 0.50% a year was then added to give the 2030 background traffic used in this analysis.

Project Traffic Volumes

The project traffic for Phase I was assigned to the adjacent roadway network for the AM peak hour and the PM peak hour. These volumes were added to the existing, growth and diverted traffic to obtain Phase I total traffic volumes.

Level of Service Analyses

Roadway link and intersection capacity/level of service analyses were performed for the required links and intersections located within the project study area. The intersections analyses were undertaken following the capacity/level of service procedures outlined in the Highway Capacity Manual utilizing Synchro 7. As previously mentioned, all intersections analyzed were done so with project build out traffic to provide a conservative approach to the Phase I analysis.

The results of the link capacity analyses are summarized in Tables 5 through 10.

The link analysis indicated that the following link was over capacity for Phase I:

- NW 154th Street from NW 87th Avenue to NW 79th Avenue

The intersection analysis indicated that the following intersection was operating at an unacceptable level of service for Phase I:

- NW 154th Street & NW 82nd Avenue

In order to provide adequate levels of service on these links and at these intersections, the following improvements are required (assuming NW 87th Avenue is complete):

- ◆ Widen NW 154th Street to four lanes from NW 83rd Avenue west to NW 87th Avenue
- ◆ Add an additional southbound left turn lane, a separate eastbound right turn lane and a separate westbound right turn lane at NW 154th Street & NW 82nd Avenue

Project Access

Access to the Dunnwoody Lake project will be provided via a full-access driveway on NW 154th Street and two driveways on NW 87th Avenue.

CONCLUSIONS AND RECOMMENDATIONS

Dunnwoody Lake Mixed-Use development is a proposed mixed use project planned to be located on the north side of NW 154th Street west of NW 87th. The project site is currently vacant. Phase I of the proposed Dunnwoody Lake Mixed-Use development is anticipated to generate a net of 5,468 daily trips, approximately 122 AM peak hour trips, and approximately 516 trips during PM peak hour.

With signal timing adjustments and the improvements recommended, all links and intersections significantly impacted are projected to operate at acceptable levels of services for Phase I. Therefore, Phase I of the proposed Dunnwoody Lake project will meet the TCMP requirements of the Town of Miami Lakes with the recommended improvements.

**TABLE 1 - PHASE 1
DUNNWOODY LAKE
TRIP GENERATION**

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Proposed Site Traffic								
General Commercial Retail	140,000 S.F.	8,451	188	115	73	797	391	406
<i>Pass-By Capture</i>								
Retail Pass-By Trips	35.30%	2,983	66	41	26	281	138	143
<i>Net New External Traffic</i>								
Total		5,468	122	74	47	516	253	263
<i>Driveway Volumes</i>		<i>8,451</i>	<i>188</i>	<i>115</i>	<i>73</i>	<i>797</i>	<i>391</i>	<i>406</i>

Note: Trip generation was calculated using the following data:

Daily

Single-Family Detached Housing [ITE 210] = $\text{Ln}(T) = 0.92\text{Ln}(X) + 2.71$
 Residential Condominium/Townhouse [ITE 230] = $\text{Ln}(T) = 0.87\text{Ln}(X) + 2.46$
 General Commercial Retail [ITE 820] = $\text{Ln}(T) = 0.65 * \text{Ln}(X) + 5.83$

AM Peak

Single-Family Detached Housing [ITE 210] = $T = 0.70(X) + 9.74$ (25% in, 75% out)
 Residential Condominium/Townhouse [ITE 230] = $\text{Ln}(T) = 0.80\text{Ln}(X) + 0.26$ (17% in, 83% out)
 General Commercial Retail [ITE 820] = $\text{Ln}(T) = 0.59 * \text{Ln}(X) + 2.32$

PM Peak

Single-Family Detached Housing [ITE 210] = $\text{Ln}(T) = 0.90\text{Ln}(X) + 0.51$ (63% in, 37% out)
 Residential Condominium/Townhouse [ITE 230] = $\text{Ln}(T) = 0.82\text{Ln}(X) + 0.32$ (67% in, 33% out)
 General Commercial Retail [ITE 820] = $\text{Ln}(T) = 0.67 * \text{Ln}(X) + 3.37$ (49% in, 51% out)

Pass-by for retail based on ITE equation of $\text{Ln}(T) = -0.291 * \text{Ln}(X) + 5.001$

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**TABLE 3 - PHASE 1
DUNNWOODY LAKE
ROADWAY PROJECT LINK SIGNIFICANCE - AM PEAK**

Roadway		2010		Project Traffic		Significance
		Number of Lanes	Capacity	Comm. Assignment	Peak Hour Volume	
From	To					
NW 154TH STREET						
SITE	NW 87TH AVE	2	1,110	30%	37	3.33%
NW 87TH AVE	NW 83RD AVE	2	1,110	30%	37	3.33%
NW 83RD AVE	NW 82ND AVE	4	2,950	25%	31	1.05%
NW 82ND AVE	NW 79TH CT	4	2,950	15%	18	0.61%
NW 79TH CT	NW 79TH AVE	4	2,950	10%	12	0.41%
NW 79TH AVE	NW 77TH COURT	4	2,950	4%	5	0.17%
NW 77TH COURT	SR 826	4	2,950	4%	5	0.17%
SR 826	FAIRWAY DR	4	3,120	3%	4	0.13%
FAIRWAY DR	NW 67TH AVE	4	3,120	3%	4	0.13%
NW 67TH AVE	MIAMI LAKEWAY N	4	3,120	2%	2	0.06%
NW 87TH AVENUE						
NW 170TH ST	SITE	4	2,950	30%	37	1.25%
SITE	NW 154TH ST	4	2,950	30%	37	1.25%
NW 154TH ST	NW 138TH ST	4	2,950	30%	37	1.25%
NW 138TH ST	NW 147TH TER	4	2,950	10%	12	0.41%
NW 82ND AVENUE						
NW 170TH ST	NW 162ND ST	2	1,110	5%	6	0.54%
NW 162ND ST	NW 154TH ST	4	2,950	10%	12	0.41%
NW 79TH AVENUE						
NW 167TH TER	NW 159TH TER	2	1,110	2%	2	0.18%
NW 159TH TER	NW 154TH ST	2	1,110	3%	4	0.36%
NW 77TH COURT						
NW 154TH ST	NW 149TH ST	2	1,110	1%	1	0.09%
FAIRWAY DRIVE						
MIAMI LAKES DR	MIAMI LAKEWAY N.	2	1,180	1%	1	0.08%
NW 170TH STREE						
NW 87TH AVE	NW 82ND AVE	2	1,110	10%	12	1.08%

Capacities per Miami Lakes Concurrency Report :

Roadway		2010		Project Traffic		Significance
From	To	Number of Lanes	Capacity	Comm. Assignment	Peak Hour Volume	
NW 154TH STREET	NW 87TH AVE	2	1,110	30%	155	13.96%
NW 87TH AVE	NW 87TH AVE	2	1,110	30%	155	13.96%
NW 87TH AVE	NW 83RD AVE	2	1,110	30%	155	13.96%
NW 83RD AVE	NW 83RD AVE	2	1,110	30%	155	13.96%
NW 83RD AVE	NW 82ND AVE	4	2,950	25%	130	4.41%
NW 82ND AVE	NW 79TH CT	4	2,950	15%	78	2.64%
NW 79TH CT	NW 79th Ave	4	2,950	10%	52	1.76%
NW 79TH AVE	NW 77TH COURT	4	2,950	4%	21	0.71%
NW 77TH COURT	SR 826	4	2,950	4%	21	0.71%
SR 826	FAIRWAY DR	4	2,950	4%	21	0.71%
FAIRWAY DR	NW 67TH AVE	4	3,120	3%	16	0.51%
NW 67TH AVE	NW 67TH AVE	4	3,120	3%	16	0.51%
NW 67TH AVE	MIAMI LAKEWAY N	4	3,120	2%	10	0.32%
NW 87TH AVENUE	NW 170TH ST	4	2,950	30%	155	5.25%
NW 170TH ST	NW 170TH ST	4	2,950	30%	155	5.25%
NW 154TH ST	NW 154TH ST	4	2,950	30%	155	5.25%
NW 154TH ST	NW 138TH ST	4	2,950	30%	155	5.25%
NW 138TH ST	NW 147TH TER	4	2,950	10%	52	1.76%
NW 162ND ST	NW 162ND ST	2	1,110	5%	26	2.34%
NW 162ND ST	NW 154TH ST	4	2,950	10%	52	1.76%
NW 167TH TER	NW 159TH TER	2	1,110	2%	10	0.90%
NW 159TH TER	NW 154TH ST	2	1,110	3%	16	1.44%
NW 77TH COURT	NW 149TH ST	2	1,110	1%	5	0.45%
NW 154TH ST	FAIRWAY DRIVE	2	1,180	1%	5	0.42%
MIAMI LAKES DR	MIAMI LAKEWAY N.	2	1,180	1%	5	0.42%
NW 170TH STREET	NW 82ND AVE	2	1,110	10%	52	4.68%

**TABLE 1 - PHASE 1
DUNNWOODY LAKE
TRIP GENERATION**

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Proposed Site Traffic								
General Commercial Retail	140,000 S.F.	8,451	188	115	73	797	391	406
<i>Pass-By Capture</i>								
Retail Pass-By Trips	35.30%	2,983	66	41	26	281	138	143
<i>Net New External Traffic</i>								
Total		5,468	122	74	47	516	253	263
<i>Driveway Volumes</i>		<i>8,451</i>	<i>188</i>	<i>115</i>	<i>73</i>	<i>797</i>	<i>391</i>	<i>406</i>

Note: Trip generation was calculated using the following data:

Daily

Single-Family Detached Housing [ITE 210] = $\text{Ln}(T) = 0.92\text{Ln}(X) + 2.71$
 Residential Condominium/Townhouse [ITE 230] = $\text{Ln}(T) = 0.87\text{Ln}(X) + 2.46$
 General Commercial Retail [ITE 820] = $\text{Ln}(T) = 0.65 * \text{Ln}(X) + 5.83$

AM Peak

Single-Family Detached Housing [ITE 210] = $T = 0.70(X) + 9.74$ (25% in, 75% out)
 Residential Condominium/Townhouse [ITE 230] = $\text{Ln}(T) = 0.80\text{Ln}(X) + 0.26$ (17% in, 83% out)
 General Commercial Retail [ITE 820] = $\text{Ln}(T) = 0.59 * \text{Ln}(X) + 2.32$

PM Peak

Single-Family Detached Housing [ITE 210] = $\text{Ln}(T) = 0.90\text{Ln}(X) + 0.51$ (63% in, 37% out)
 Residential Condominium/Townhouse [ITE 230] = $\text{Ln}(T) = 0.82\text{Ln}(X) + 0.32$ (67% in, 33% out)
 General Commercial Retail [ITE 820] = $\text{Ln}(T) = 0.67 * \text{Ln}(X) + 3.37$ (49% in, 51% out)

Pass-by for retail based on ITE equation of $\text{Ln}(T) = -0.291 * \text{Ln}(X) + 5.001$

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**TABLE 5 - PHASE 1
DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2010 EXISTING AM PEAK HOUR**

Roadway From To		2010			Committed Background Traffic	Total Traffic	Maximum v/c	Meets LOS Standard?
		Number of Lanes	Capacity	Peak Hour Volume				
NW 154TH STREET								
<i>NW 89TH AVE</i>	<i>NW 87TH AVE</i>	2	1,110	114	46	160	0.14	YES
<i>NW 87TH AVE</i>	<i>NW 83RD AVE</i>	2	1,110	1,710	322	2,032	1.83	NO
<i>NW 83RD AVE</i>	<i>NW 82ND AVE</i>	4	2,950	1,710	441	2,151	0.73	YES
<i>NW 82ND AVE</i>	<i>NW 79TH CT</i>	4	2,950	2,906	441	3,347	1.13	NO
<i>NW 79TH CT</i>	<i>NW 79th AVE</i>	4	2,950	2,558	559	3,117	1.06	NO
NW 87TH AVENUE								
<i>NW 170TH ST</i>	<i>SITE</i>	2	1,110	577	656	1,233	1.11	NO
<i>SITE</i>	<i>NW 154TH ST</i>	0	0	N/A	N/A	N/A	N/A	N/A
<i>NW 154TH ST</i>	<i>NW 147TH TER</i>	4	2,950	958	598	1,556	0.53	YES
<i>NW 147TH TER</i>	<i>NW 138TH ST</i>	4	2,950	1,876	598	2,474	0.84	YES
NW 82ND AVENUE								
<i>NW 170TH ST</i>	<i>NW 162ND ST</i>	2	1,110	1,162	89	1,251	1.13	NO
<i>NW 162ND ST</i>	<i>NW 154TH ST</i>	4	2,950	1,521	89	1,610	0.55	YES
NW 170TH STREE								
<i>NW 87TH AVE</i>	<i>NW 82ND AVE</i>	2	1,110	918	163	1,081	0.97	YES

Capacities per Miami Lakes Concurrency Report except for:

**TABLE 6 - PHASE 1
DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2030 W/O PROJECT AM PEAK HOUR**

Roadway From To		2010			Committed Background Traffic	Historical Growth		Link Diversion	Total Background Traffic	Maximum v/c	Meets LOS Standard?
		Number of Lanes	Capacity	Peak Hour Volume		Annual Rate	2030 Growth				
NW 154TH STREET											
NW 89TH AVE	NW 87TH AVE	2	1,110	114	46	0.50%	126	0	172	0.15	YES
NW 87TH AVE	NW 83RD AVE	2	1,110	1,710	322	0.50%	1889	-378	1,833	1.65	NO
NW 83RD AVE	NW 82ND AVE	4	2,950	1,710	441	0.50%	1889	-378	1,952	0.66	YES
NW 82ND AVE	NW 79TH CT	4	2,950	2,906	441	0.50%	3211	-161	3,491	1.18	NO
NW 79TH CT	NW 79th AVE	4	2,950	2,558	559	0.50%	2826	-141	3,244	1.10	NO
NW 87TH AVENUE											
NW 170TH ST	SITE	4	2,950	577	656	0.50%	638	507	1,801	0.61	YES
SITE	NW 154TH ST	4	2,950	1,016	656	0.50%	1123	507	2,286	0.77	YES
NW 154TH ST	NW 147TH TER	4	2,950	958	598	0.50%	1058	0	1,656	0.56	YES
NW 147TH TER	NW 138TH ST	4	2,950	1,876	598	0.50%	2073	0	2,671	0.91	YES
NW 82ND AVENUE											
NW 170TH ST	NW 162ND ST	2	1,110	1,162	89	0.50%	1284	-514	859	0.77	YES
NW 162ND ST	NW 154TH ST	4	2,950	1,521	89	0.50%	1681	-672	1,098	0.37	YES
NW 170TH STREE											
NW 87TH AVE	NW 82ND AVE	2	1,110	918	163	0.50%	1014	-254	924	0.83	YES

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

Capacities per Miami Lakes Concurrency Report except for:

**TABLE 7 - PHASE 1
DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2030 TOTAL TRAFFIC AM PEAK HOUR**

Roadway From To		2010			Committed Background Traffic	Historical Growth		Link Diversion	Total Background Traffic	Dunnwoody Forest Traffic	Dunnwoody Lake Traffic	Total 2030 Traffic	Maximum v/c	Meets LOS Standard?
		Number of Lanes	Capacity	Peak Hour Volume		Annual Rate	2030 Growth							
NW 154TH STREET														
NW 89TH AVE	NW 87TH AVE	2	1,110	114	46	0.50%	126	0	172	0	37	209	0.19	YES
NW 87TH AVE	NW 83RD AVE	2	1,110	1,710	322	0.50%	1889	-378	1,833	0	37	1,870	1.68	NO
NW 83RD AVE	NW 82ND AVE	4	2,950	1,710	441	0.50%	1889	-378	1,952	0	31	1,983	0.67	YES
NW 82ND AVE	NW 79TH CT	4	2,950	2,906	441	0.50%	3211	-161	3,491	0	18	3,509	1.19	NO
NW 79TH CT	NW 79th AVE	4	2,950	2,558	559	0.50%	2826	-141	3,244	0	12	3,256	1.10	NO
NW 87TH AVENUE														
NW 170TH ST	SITE	4	2,950	577	656	0.50%	638	507	1,801	0	37	1,838	0.62	YES
SITE	NW 154TH ST	4	2,950	1,016	656	0.50%	1123	507	2,286	0	37	2,323	0.79	YES
NW 154TH ST	NW 147TH TER	4	2,950	958	598	0.50%	1058	0	1,656	0	37	1,693	0.57	YES
NW 147TH TER	NW 138TH ST	4	2,950	1,876	598	0.50%	2073	0	2,671	0	12	2,683	0.91	YES
NW 82ND AVENUE														
NW 170TH ST	NW 162ND ST	2	1,110	1,162	89	0.50%	1284	-514	859	0	6	865	0.78	YES
NW 162ND ST	NW 154TH ST	4	2,950	1,521	89	0.50%	1681	-672	1,098	0	12	1,110	0.38	YES
NW 170TH STREE														
NW 87TH AVE	NW 82ND AVE	2	1,110	918	163	0.50%	1014	-254	924	0	12	936	0.84	YES

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

Capacities per Miami Lakes Concurrency Report except for:

**TABLE 17 -PHASE I
DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2030 TOTAL TRAFFIC AM PEAK HOUR WITH IMPROVEMENTS & ARTPLAN ANALYSIS**

Roadway From To		2010			Committed Background Traffic	Historical Growth		Link Diversion	Total Background Traffic	Dunnwoody Forest Traffic	Dunnwoody Lake Traffic	Total 2030 Traffic	Maximum v/c	Meets LOS Standard?
		Number of Lanes	Capacity	Peak Hour Volume		Annual Rate	2030 Growth							
NW 154TH STREET														
NW 89TH AVE	NW 87TH AVE	2	1,110	114	46	0.50%	126	0	172	0	37	209	0.19	YES
NW 87TH AVE	NW 83RD AVE	4	2,950	1,710	322	0.50%	1889	-378	1,833	0	37	1,870	0.63	YES
NW 83RD AVE	NW 82ND AVE	4	2,950	1,710	441	0.50%	1889	-378	1,952	0	31	1,983	0.67	YES
* NW 82ND AVE	NW 79TH CT	4	4,460	2,906	441	0.50%	3211	-161	3,491	0	18	3,509	0.79	YES
* NW 79TH CT	NW 79th AVE	4	4,460	2,558	559	0.50%	2826	-141	3,244	0	12	3,256	0.73	YES
NW 87TH AVENUE														
NW 170TH ST	SITE	4	2,950	577	656	0.50%	638	507	1,801	0	37	1,838	0.62	YES
SITE	NW 154TH ST	4	2,950	1,016	656	0.50%	1123	507	2,286	0	37	2,323	0.79	YES
NW 154TH ST	NW 147TH TER	4	2,950	958	598	0.50%	1058	0	1,656	0	37	1,693	0.57	YES
NW 147TH TER	NW 138TH ST	4	2,950	1,876	598	0.50%	2073	0	2,671	0	12	2,683	0.91	YES
NW 82ND AVENUE														
NW 170TH ST	NW 162ND ST	2	1,110	1,162	89	0.50%	1284	-514	859	0	6	865	0.78	YES
NW 162ND ST	NW 154TH ST	4	2,950	1,521	89	0.50%	1681	-672	1,098	0	12	1,110	0.38	YES
NW 170TH STREE														
NW 87TH AVE	NW 82ND AVE	2	1,110	918	163	0.50%	1014	-254	924	0	12	936	0.84	YES

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

- ARTPLAN USED TO DETERMINE CAPACITY



**TABLE 8 - PHASE 1
DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2010 EXISTING PM PEAK HOUR**

Roadway From To		2010			Committed Background Traffic	Total Traffic	Maximum v/c	Meets LOS Standard?
		Number of Lanes	Capacity	Peak Hour Volume				
NW 154TH STREET								
<i>NW 89TH AVE</i>	<i>NW 87TH AVE</i>	2	1,110	238	48	286	0.26	YES
<i>NW 87TH AVE</i>	<i>NW 83RD AVE</i>	2	1,110	1,838	292	2,130	1.92	NO
<i>NW 83RD AVE</i>	<i>NW 82ND AVE</i>	4	2,950	1,838	408	2,246	0.76	YES
<i>NW 82ND AVE</i>	<i>NW 79TH CT</i>	4	2,950	3,468	408	3,876	1.31	NO
<i>NW 79TH CT</i>	<i>NW 79th AVE</i>	4	2,950	2,554	540	3,094	1.05	NO
NW 87TH AVENUE								
<i>NW 170TH ST</i>	<i>SITE</i>	2	1,110	561	515	1,076	0.97	YES
<i>SITE</i>	<i>NW 154TH ST</i>	0	0	N/A	N/A	N/A	N/A	N/A
<i>NW 154TH ST</i>	<i>NW 147TH TER</i>	4	2,950	1,292	479	1,771	0.60	YES
<i>NW 147TH TER</i>	<i>NW 138TH ST</i>	4	2,950	2,187	479	2,666	0.90	YES
NW 82ND AVENUE								
<i>NW 170TH ST</i>	<i>NW 162ND ST</i>	2	1,110	1,340	69	1,409	1.27	NO
<i>NW 162ND ST</i>	<i>NW 154TH ST</i>	4	2,950	1,718	69	1,787	0.61	YES
NW 170TH STREE								
<i>NW 87TH AVE</i>	<i>NW 82ND AVE</i>	2	1,110	906	51	957	0.86	YES

Capacities per Miami Lakes Concurrency Report except for:

**TABLE 9 - PHASE 1
DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2030 W/O PROJECT PM PEAK HOUR**

Roadway From To		2010			Committed Background Traffic	Historical Growth		Link Diversion	Total Background Traffic	Maximum v/c	Meets LOS Standard?
		Number of Lanes	Capacity	Peak Hour Volume		Annual Rate	2030 Growth				
NW 154TH STREET											
NW 89TH AVE	NW 87TH AVE	2	1,110	238	48	0.50%	263	0	311	0.28	YES
NW 87TH AVE	NW 83RD AVE	2	1,110	1,838	292	0.50%	2031	-406	1,917	1.73	NO
NW 83RD AVE	NW 82ND AVE	4	2,950	1,838	408	0.50%	2031	-368	2,071	0.70	YES
NW 82ND AVE	NW 79TH CT	4	2,950	3,468	408	0.50%	3832	-192	4,048	1.37	NO
NW 79TH CT	NW 79th AVE	4	2,950	2,554	540	0.50%	2822	-141	3,221	1.09	NO
NW 87TH AVENUE											
NW 170TH ST	SITE	4	2,950	561	515	0.50%	620	573	1,708	0.58	YES
SITE	NW 154TH ST	4	2,950	1,194	515	0.50%	1319	573	2,407	0.82	YES
NW 154TH ST	NW 147TH TER	4	2,950	1,292	479	0.50%	1428	0	1,907	0.65	YES
NW 147TH TER	NW 138TH ST	4	2,950	2,187	479	0.50%	2416	0	2,895	0.98	YES
NW 82ND AVENUE											
NW 170TH ST	NW 162ND ST	2	1,110	1,340	69	0.50%	1481	-592	957	0.86	YES
NW 162ND ST	NW 154TH ST	4	2,950	1,718	69	0.50%	1898	-759	1,208	0.41	YES
NW 170TH STREE											
NW 87TH AVE	NW 82ND AVE	2	1,110	906	51	0.50%	1001	-250	802	0.72	YES

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

Capacities per Miami Lakes Concurrency Report except for:

**TABLE 10 - PHASE I
DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2030 TOTAL TRAFFIC PM PEAK HOUR**

Roadway From To		2010			Committed Background Traffic	Historical Growth		Link Diversion	Total Background Traffic	Dunnwoody Forest Traffic	Dunnwoody Lake Traffic	Total 2030 Traffic	Maximum v/c	Meets LOS Standard?
		Number of Lanes	Capacity	Peak Hour Volume		Annual Rate	2030 Growth							
NW 154TH STREET														
NW 89TH AVE	NW 87TH AVE	2	1,110	238	48	0.50%	263	0	311	0	155	466	0.42	YES
NW 87TH AVE	NW 83RD AVE	2	1,110	1,838	292	0.50%	2031	-406	1,917	0	155	2,072	1.87	NO
NW 83RD AVE	NW 82ND AVE	4	2,950	1,838	408	0.50%	2031	-368	2,071	0	130	2,201	0.75	YES
NW 82ND AVE	NW 79TH CT	4	2,950	3,468	408	0.50%	3832	-192	4,048	0	78	4,126	1.40	NO
NW 79TH CT	NW 79th AVE	4	2,950	2,554	540	0.50%	2822	-141	3,221	0	52	3,273	1.11	NO
NW 87TH AVENUE														
NW 170TH ST	SITE	4	2,950	561	515	0.50%	620	573	1,708	0	155	1,863	0.63	YES
SITE	NW 154TH ST	4	2,950	1,194	515	0.50%	1319	573	2,407	0	155	2,562	0.87	YES
NW 154TH ST	NW 147TH TER	4	2,950	1,292	479	0.50%	1428	0	1,907	0	155	2,062	0.70	YES
NW 147TH TER	NW 138TH ST	4	2,950	2,187	479	0.50%	2416	0	2,895	0	52	2,947	1.00	YES
NW 82ND AVENUE														
NW 170TH ST	NW 162ND ST	2	1,110	1,340	69	0.50%	1481	-592	957	0	26	983	0.89	YES
NW 162ND ST	NW 154TH ST	4	2,950	1,718	69	0.50%	1898	-759	1,208	0	52	1,260	0.43	YES
NW 170TH STREE														
NW 87TH AVE	NW 82ND AVE	2	1,110	906	51	0.50%	1001	-250	802	0	52	854	0.77	YES

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

Capacities per Miami Lakes Concurrency Report except for:

**TABLE 18 - PHASE 1
DUNNWOODY FOREST & DUNNWOODY LAKE
ROADWAY LINK CONCURRENCY ANALYSIS - 2030 TOTAL TRAFFIC PM PEAK HOUR WITH IMPROVEMENTS & ARTPLAN ANALYSIS**

Roadway From To		2010			Committed Background Traffic	Historical Growth		Link Diversion	Total Background Traffic	Dunnwoody Forest Traffic	Dunnwoody Lake Traffic	Total 2030 Traffic	Maximum v/c	Meets LOS Standard?
		Number of Lanes	Capacity	Peak Hour Volume		Annual Rate	2030 Growth							
NW 154TH STREET														
NW 89TH AVE	NW 87TH AVE	2	1,110	238	48	0.50%	263	0	311	0	155	466	0.42	YES
NW 87TH AVE	NW 83RD AVE	4	2,950	1,838	292	0.50%	2031	-406	1,917	0	155	2,072	0.70	YES
NW 83RD AVE	NW 82ND AVE	4	2,950	1,838	408	0.50%	2031	-368	2,071	0	130	2,201	0.75	YES
* NW 82ND AVE	NW 79TH CT	4	4,460	3,468	408	0.50%	3832	-192	4,048	0	78	4,126	0.93	YES
* NW 79TH CT	NW 79th AVE	4	4,460	2,554	540	0.50%	2822	-141	3,221	0	52	3,273	0.73	YES
NW 87TH AVENUE														
NW 170TH ST	SITE	4	2,950	561	515	0.50%	620	573	1,708	0	155	1,863	0.63	YES
SITE	NW 154TH ST	4	2,950	1,194	515	0.50%	1319	573	2,407	0	155	2,562	0.87	YES
NW 154TH ST	NW 147TH TER	4	2,950	1,292	479	0.50%	1428	0	1,907	0	155	2,062	0.70	YES
NW 147TH TER	NW 138TH ST	4	2,950	2,187	479	0.50%	2416	0	2,895	0	52	2,947	1.00	YES
NW 82ND AVENUE														
NW 170TH ST	NW 162ND ST	2	1,110	1,340	69	0.50%	1481	-592	957	0	26	983	0.89	YES
NW 162ND ST	NW 154TH ST	4	2,950	1,718	69	0.50%	1898	-759	1,208	0	52	1,260	0.43	YES
NW 170TH STREE														
NW 87TH AVE	NW 82ND AVE	2	1,110	906	51	0.50%	1001	-250	802	0	52	854	0.77	YES

Note: NW 87TH Avenue volume from 2007 Arterial Grid Analysis by KHA

• ARTPLAN USED TO DETERMINE CAPACITY



**TABLE 1A
DUNNWOODY FOREST
TRIP GENERATION**

Land Use	Intensity		Daily Trips	AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out
Proposed Site Traffic									
Single-Family Detached Housing	84	DU	886	69	17	52	90	57	33

Note: Trip generation was calculated using the following data:

Daily

Single-Family Detached Housing [ITE 210] = $\text{Ln}(T) = 0.92\text{Ln}(X) + 2.71$

AM Peak

Single-Family Detached Housing [ITE 210] = $T = 0.70(X) + 9.74$ (25% in, 75% out)

PM Peak

Single-Family Detached Housing [ITE 210] = $\text{Ln}(T) = 0.90\text{Ln}(X) + 0.51$ (63% in, 37% out)

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**TABLE 1 - PHASE 1
DUNNWOODY LAKE
TRIP GENERATION**

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Proposed Site Traffic								
General Commercial Retail	140,000 S.F.	8,451	188	115	73	797	391	406
<i>Pass-By Capture</i>								
Retail Pass-By Trips	35.30%	2,983	66	41	26	281	138	143
<i>Net New External Traffic</i>								
Total		5,468	122	74	47	516	253	263
<i>Driveway Volumes</i>		<i>8,451</i>	<i>188</i>	<i>115</i>	<i>73</i>	<i>797</i>	<i>391</i>	<i>406</i>

Note: Trip generation was calculated using the following data:

Daily

Single-Family Detached Housing [ITE 210] = $\text{Ln}(T) = 0.92\text{Ln}(X) + 2.71$
 Residential Condominium/Townhouse [ITE 230] = $\text{Ln}(T) = 0.87\text{Ln}(X) + 2.46$
 General Commercial Retail [ITE 820] = $\text{Ln}(T) = 0.65 * \text{Ln}(X) + 5.83$

AM Peak

Single-Family Detached Housing [ITE 210] = $T = 0.70(X) + 9.74$ (25% in, 75% out)
 Residential Condominium/Townhouse [ITE 230] = $\text{Ln}(T) = 0.80\text{Ln}(X) + 0.26$ (17% in, 83% out)
 General Commercial Retail [ITE 820] = $\text{Ln}(T) = 0.59 * \text{Ln}(X) + 2.32$

PM Peak

Single-Family Detached Housing [ITE 210] = $\text{Ln}(T) = 0.90\text{Ln}(X) + 0.51$ (63% in, 37% out)
 Residential Condominium/Townhouse [ITE 230] = $\text{Ln}(T) = 0.82\text{Ln}(X) + 0.32$ (67% in, 33% out)
 General Commercial Retail [ITE 820] = $\text{Ln}(T) = 0.67 * \text{Ln}(X) + 3.37$ (49% in, 51% out)

Pass-by for retail based on ITE equation of $\text{Ln}(T) = -0.291 * \text{Ln}(X) + 5.001$

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Exhibit 10

MPO Project No. PW20040390 and TIP Reference Page A7-21

**MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION IMPROVEMENT PROGRAM
PEOPLE'S TRANSPORTATION PLAN (PTP)**

Natacha Seijas

Commission District 13

MPO Project Num.	Agency Project Num.	Facility/Project Name		Bicycle Accom.	Type of Work	Project Cost (\$000s)	Prior Years Funding (\$000s)	Proposed Funding (in \$000s)										
		From/Location	To/Location					Length (miles)	Remarks	Activity /Phase	Funding Source	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015		
PW20040390	20040390	NW 87 Avenue	NW 186 Street	B	Widening: 2 to 4 lanes	14,565	1,696											
		NW 154 Street		2	Prior Years Funding as follows: \$571,000 for PE, \$1,125,000 for CST.													
PW000329	000329	PTP Neighborhood Improvements					2,891											
		(See NOTE 1 below)																
PW000329a	000329a	Right-of-Way				8,316	8,216											
		RAW for Acquisition for Construction Projects																
								Activity /Phase	Funding Source	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015				
								R/W	PTP	100	0	0	0	0	0			

Yearly Total	7,043	6,782	413	0	0
5 Year TIP Total			14,208		

NOTE 1: PTP NEIGHBORHOOD IMPROVEMENTS INCLUDE: Modifications of intersections; resurfacing of local and arterial roads; installation / repairs of guardrails; installation of school flashing signals, enhancement of greenways and bikeways, A.D.A. curb cuts / repairs; pavement markings, roadway lighting, traffic calming, traffic signals, and traffic sign replacement / repair. Such improvements also include replacement / repair of sidewalks, repair / installation of drainage and landscape beautification (including community image enhancements) related to the development, construction, operation or maintenance of roads and bridges in the County or to the expansion, operation or maintenance of bus and fixed guideway system.

NOTE 2: B = Requires full consideration of bicycle accommodations in accordance with the Bicycle Facilities Plan.
PE = Preliminary Engineering; CST = Construction; FS = Feasibility Study.