TOWN OF MIAMI LAKES

ROADWAY LIGHTING SYSTEMS
LIGHTING REPORT

Prepared by:

8550 NW 33rd Street, Suite 101
Doral, Florida 33122
EB# 00003212

March 2013

TABLE OF CONTENTS

CHAPTER 1 - SCOPE AND TECHNICAL APPROACH FOR EVALUATING THE EXISTING STREET LIGHTING SYSTEMS

1.1 Scope of the Lighting Report

The scope of this report is limited to a general evaluation of the existing street lighting systems in the Town of Miami Lakes. The report includes estimated and measured values of the illuminance on selected streets which are representative of most of the streets in the Town, a general evaluation of the physical conditions of the existing light poles, luminaires & circuits and an opinion of probable cost for improvements of the street lighting systems. This report also includes the description of the GIS shapefile created for the Town of Miami Lakes, which was developed to be used in conjunction with the Town of Miami Lakes Asset identification System, which was provided as a separate document.

1.2 Basis of Calculation

The estimated values are calculated using the typical photometric curves for FPL luminaires with high pressure sodium (HPS) lamps of 100 W (9500 lumens), 150 W (16000 lumens), 200 W (22000 lumens) or 400 W (51000 lumens). Information about the wattage of the existing lamps was provided by the Town of Miami Lakes. The estimated values do not take into account the interference to the light from the existing trees located on swales or residential properties.

Typical sections of streets and pole spacing shown in this report are intended to be representative of most of the streets in order to determine if the existing lighting systems are providing the current recommended average illuminance values for the streets and sidewalks.

1.3 Measurements

Measured values shown in this report were taken to evaluate the difference between the estimated and measured values. The values were taken along the center line of the selected streets to minimize interference from existing trees.

1.4 Interpretation of Results

Differences between the estimated average values and current values of illuminance and uniformity ratios are expected, since the actual luminaires could have different photometric curves and also because the arm length and mounting height are estimated; but the average illuminance values will depend mostly on the total lumens provided by the luminaires.

Where the estimated and measured values in one street coincide and are below the current recommended values shown in Table A in Section 1.5, improvements to the lighting system are recommended for all streets with similar sections and the same pole layout, luminaires and lamps. In other cases, additional measurement and analysis, which are not part of this report's scope, will be required.

In some streets ADA obtained measured values higher than the estimated calculated values. This indicated that the actual lamp wattage was higher than the lamp wattage used in the calculations. For example, it would be expected that measured values for a 150 Watts HPS lamps to be 1.68 times greater than the average illuminance for a 100 Watts HPS lamps (16 000 lumens / 9 500 lumens). For this reason, the actual wattage of the existing lamps should be verified before following recommendations for improvements of the existing lighting systems.

1.5 Recommended Illuminance Values

Table “A”, from the AASHTO Roadway Lighting Design Guide, depicts the current recommended average illuminance values for streets and sidewalks:

Table A – Current Recommended Average Illuminance Values for Streets and Sidewalks

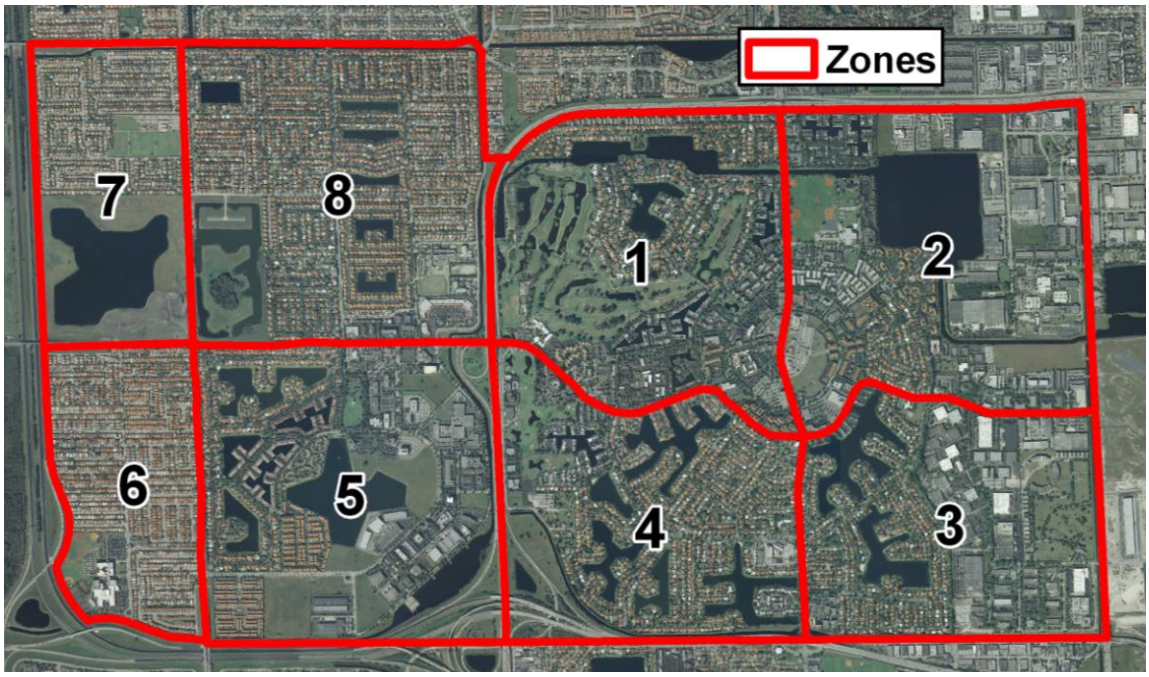
	AVERAGE MAINTAINED ILLUMINANCE FOOT CANDLE	UNIFORMITY RATION AVERAGE/MINIMUM
Local Streets		
Commercial Areas	0.8	6
Intermediate	0.7	6
Residential Areas	0.4	6
Minor Arterials		
Commercial Areas	1.4	4
Intermediate	1.0	6
Residential Areas	0.7	4
Sidewalks		
Commercial Areas	1.3	3
Intermediate	0.8	4
Residential Areas	0.4	6

Note: For sidewalks in residential areas, when pedestrian security is not a concern, IESNA recommends a minimum average illuminance of 0.2 fc with a uniformity ratio of 5.

CHAPTER 2 - ESTIMATE OF THE EXISTING AVERAGE ILLUMINANCE VALUES AND MEASURED ILLUMINANCE VALUES

2.1 Zone Numbers and Pole ID References

The zone numbers used in this report refer to the map shown below and also provided on **Appendix "B"**, which shows the Town of Miami Lakes divided into eight zones. This map was developed as part of the Town of Miami Lakes Asset Identification System.



Pole identification numbers refer to the GIS files provided with this report, which include a complete map of the Town with the location and identification number of each light pole.

2.2 Streets located in Zone No. 1 (North of Miami Lakes Drive from NW 67 Avenue to Palmetto Expressway) (excluding Bull Run and streets on the east side of Bull Run)

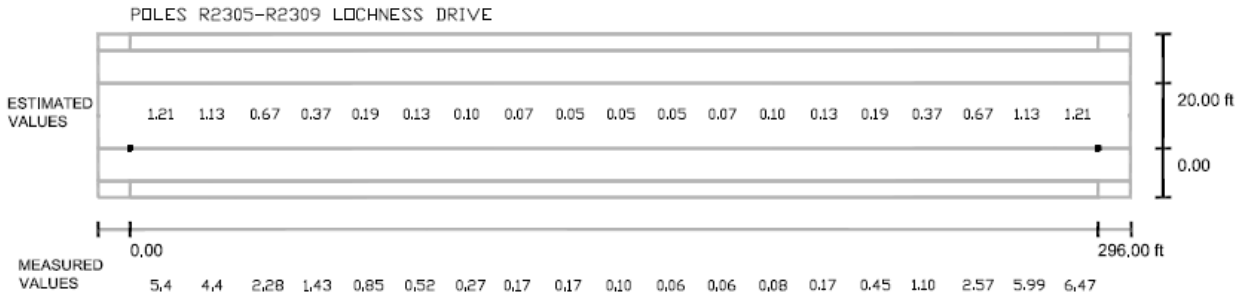
The typical section for these segments of streets consists of a 50 foot right of way, 20 foot wide two-lane roadway with 10 foot swales and 5 foot sidewalk along both sides.

The lighting systems for most of the streets in Zone 1 consists of cobra head luminaires mounted 30 feet high, on standard aluminum light poles. Poles are located along one side of the roadway. Pole arms are 12 feet long and pole setbacks are 10 feet from the edge of pavement. Pole spacing varies between 200 and 300 feet. The luminaires are equipped with 100 W high pressure sodium lamps (HPS) lamps.

The estimated average maintained illuminance segments for streets with cobra head luminaires spaced at 300 feet with 100 W HPS lamps is 0.32 fc with a uniformity ratio of 5.3. The estimated average illuminance on the sidewalks is 0.12 FC with uniformity ratio of 2.4. For areas where poles are spaced 200 feet apart,

the estimated average illuminance on the streets is 0.5 fc, and the estimated average illumimamce on the sidewalks is 0.2 fc. Further analysis, will be required to evaluate the need for improvements in the lighting system for specific segments of streets in this zone.

Estimated and measured values along Lochness Drive center line between two consecutive poles are shown below. The measurements were taken between two poles spaced 296 feet apart. For this condition the estimated average illuminance value is 0.31 fc, but the measured values are very high compared to the estimated values, which indicate that in this case lamp wattage verification is required. If the luminaires in this zone are equipped with lamps of more wattage, general improvements in the lighting system will not be required.

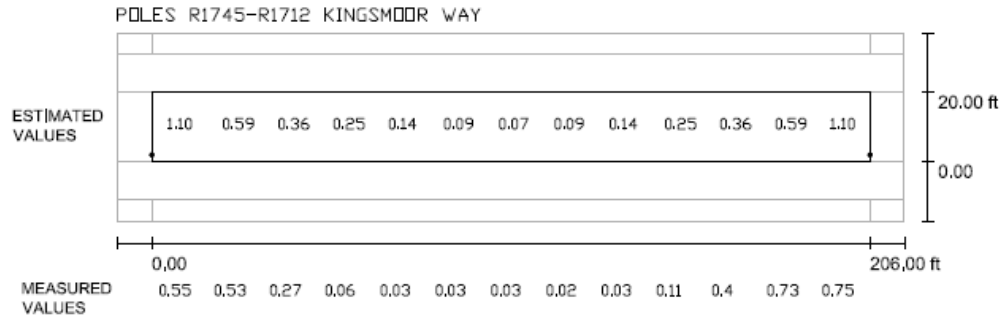


On NW 166 terrace the luminaires are equipped with 150 W HPS lamps spaced about 200 feet, no improvements are recommended for this street.

On Kingsmoor Way the light poles are equipped with open bottom luminaires at 25 feet high with100W HPS lamps. Poles in this street are located along one side of the street and spaced at 200 feet. Pole set back is 10 feet from edge of pavement. Pole arms are 12 feet long.

The estimated average illuminance value on Kingsmoor Way is 0.38 fc with a uniformity ratio of 5.4. The estimated average illuminance on the sidewalk located on the luminaires side is 0.24 fc with a uniformity ratio of 6 and on the opposite sidewalk the is 0.15 fc with a uniformity ratio of 2. Since there are many obstacles to the existing street lights in this street because of the existing trees, the actual illuminance on most segments of the sidewalks is expected to be zero.

Estimated and measured values along Kingsmoor Way center line between two consecutive poles are shown below. The measurements were taken between two poles spaced 206 feet. For this condition the estimated average illuminance values without obstacles is 0.37 fc with a uniformity ratio of 6, but because of the interference to the light from the trees the measured values are below the estimated values.



If there are security concerns in this area, improvements on the illuminance mostly on the sidewalks along Kingsmoor Way will be required.

The Fairway Drive typical section is different from typical streets, it consists of a 70 foot right of way, 24-foot wide two-lane roadway with 18-foot wide swale and 5 feet sidewalk along both sides. Luminaires on Fairway Drive are cobra head with 150 HPS lamps. Pole spacing varies from 200 feet to 400 feet. The estimated average illuminance value on the segments of Fairway Drive where standard concrete light poles are spaced 400 feet is 0.32 fc with a uniformity ratio of 16. The actual average illuminance value is lower in most cases because of the interference from the existing trees to the street lights. Improvements are recommended for segments of this street where poles are spaced at 400 feet.

2.3 Streets located in Zone No. 2 (from Miami Lakes Drive to Palmetto Expressway and from NW 67th Avenue to NW 57 Avenue)

The typical section for streets located between North Miami Lakeway and NW 57th Avenue from 163th street to Palmetto Expressway (except NW 64 Avenue) consists of a 60 feet right of way, 56 feet wide two-lane roadway without sidewalks.

The lighting system for these streets consists of cobra head luminaires at 30 feet high, mounted on standard concrete light poles. Pole arm is 10 feet long. Pole setback form edge of pavement is about 5 feet. The luminaires are equipped with 150 W HPS lamps. Poles are located along one side of the street with average spacing of 250 feet. The estimated average maintained illuminance for these streets is 0.4 fc with a uniformity ratio of 5. No improvements of the lighting system will be required.

The typical section for the segment of NW 64th Avenue consists of a 70 foot right of way with a 26 feet wide two-lane roadway with a 6 foot parking lane on the west side, swales and 5 foot sidewalks along both sides.

The lighting system for this street consists of open bottom luminaires at 25 feet high, mounted on standard concrete light poles. Pole arm is 10 feet long. Pole setback form edge of pavement is about 10 feet. The luminaires are equipped with 100 W HPS lamps. Poles are located along the west side of the street with average spacing of 230 feet. The estimated average maintained illuminance for these streets 0.28 fc with a uniformity ratio of 6. Improvements of the lighting system for this street segment are recommended.

The typical section for streets located between North Miami Lakeway and NW 57th Avenue from Miami Lakes Drive to NW 159th Street consists of a 50 foot right of way, 28 feet to 30 feet wide two-lane roadway, with swales and with or without sidewalks. The lighting system for these streets consists of open bottom luminaires at 25 feet high, mounted on standard aluminum light poles. Pole arm is 10 feet long. Pole setback from edge of pavement is about 6 feet. The luminaires are equipped with 100 W HPS lamps. Poles are located along one side of the streets with average spacing of 300 feet. The estimated average maintained illuminance for these streets varies from 0.21 fc with a uniformity ratio of 10. Improvements of the lighting system for these streets are recommended.

The typical section for streets located between North Miami Lakeway and Eagle Nest Lane consists of a 50 foot right of way with a 18 to 20 feet wide two-lane roadway, 10 to 12 foot swales and 5 foot sidewalks along both sides. The lighting system for these streets consists of open bottom luminaires at 25 feet high, mounted on light poles. Pole arm is 10 feet long. Pole setback is 10 feet from edge of pavement. The luminaires are equipped with 100 W HPS lamps. Poles are located along one side of the streets with average spacing of 300 feet.

The estimated average maintained illuminance for these streets is 0.25 fc with a uniformity ratio of 13. Average illuminance on the sidewalks located on the luminaires side is 0.2 fc and average illuminance on the sidewalks located on the opposite side of the luminaires is below 0.1 fc. Improvements of the lighting system for these streets are recommended.

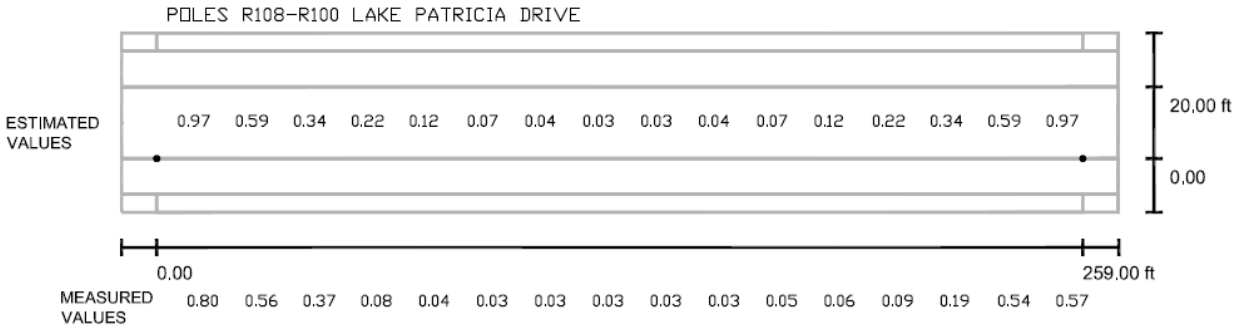
2.4 Streets located in zone #3 (from Miami Lakes Drive to NW 138th Street from NW 57 Avenue to NW 67 Avenue)

The typical section for streets located between Miami Lakes Drive and NW 138th Street from NW 60 Avenue to NW 67 Avenue consists of right of way of 50 feet, with a 20 feet wide two-lane roadway with 10 foot swales and 5 foot sidewalks along both sides.

The lighting system for most of the streets consists of open bottom luminaires 25 feet high, mounted on standard concrete and aluminum light poles or utility poles with average spacing of 300 feet. Pole arm is 10 feet long. Pole setback is 10 feet from edge of pavement. The luminaires are equipped with 100 W HPS lamps.

The estimated average maintained illuminance for streets with right of way of 50 feet and 100 HPS lamps is 0.25 fc with a uniformity ratio of 13. Average illuminance on the sidewalks located along the luminaires side is 0.2 fc and average illuminance on the sidewalks located on the opposite side of the luminaires is below 0.1 fc. Improvements of the lighting system for these streets are recommended.

Estimated and measured values along Lake Patricia center line between two consecutive poles are shown below. The measurements were taken between two poles spaced 259 feet apart. For this condition the estimated average illuminance values is 0.29 fc.

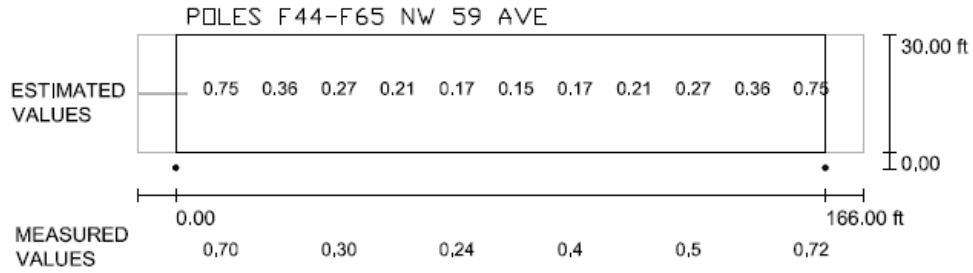


The typical section of Miami Lakeway South in this zone consists of an 80 foot right of way, 22 feet wide two way roadway with an 18 feet swale and 5 feet sidewalk along southbound side and variable swale with average widths of 30' and 5 foot sidewalks on the northbound side. Poles on Miami Lakeway South are spaced from 200 to 350 feet. The average iluminance along Miami Lakeway in this zone is estimated to be below the values shown above for typical streets, therefore. Improvements in the lighting system are recommended.

The typical section for NW 57th Court, NW 58th Avenue, NW 58th Court, NW 59th Avenue, NW 60th Avenue, between NW 138th Street and NW 142th Street consists of a 50 foot right of way, 28 to 30 foot wide two-lane roadway, with swales and without sidewalks. The lighting system consists of open bottom luminaires mounted on standard concrete and aluminum light poles or utility poles. Pole arm is about 10 feet long. Pole setback is 14 feet. The luminaires are equipped with 100 W HPS lamps. Poles are located along one side of the street. The average spacing between poles is 270 feet.

The estimated average maintained illuminance for these streets is 0.2 fc with a uniformity ratio of 8. The actual average illuminance value is lower in most cases because of the interference to the light from the existing trees. Improvements of the lighting system for these streets are recommended.

Estimated and measured values along NW 57 Court center line between two consecutive poles are shown below. The measurements were taken between two poles spaced only 166 feet. For this condition the estimated average illuminance values is 0.36 fc.



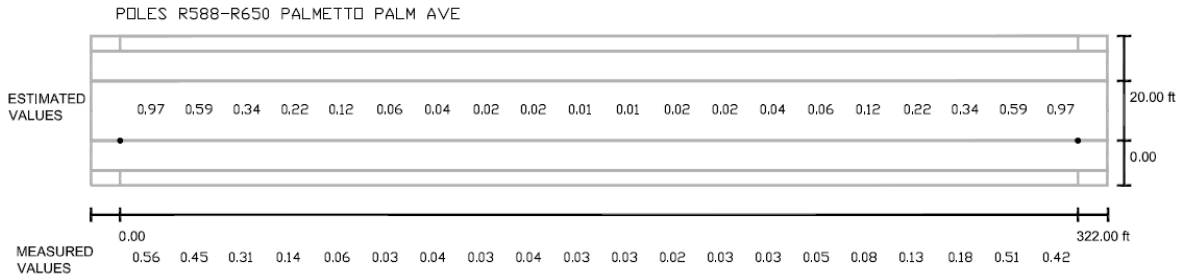
2.5 Streets located in Zone No. 4 (South of Miami Lakes Drive from NW 67 Avenue to Palmetto Expressway)

The typical section for these segments of streets consists of a 50 foot right of way, 20 foot wide two-lane road with 10 foot swales and 5 foot sidewalks along both sides.

The lighting system for most of the streets consists of open bottom luminaires 25 feet high, mounted on standard aluminum light poles or utility poles spaced at 300 feet. Pole arm is about 10 feet long. Pole setback is 10 feet from edge of pavement. The luminaires are equipped with 100 W HPS lamps, except that some poles are equipped with 200 W HPS lamps.

The estimated average maintained illuminance for the streets with open bottom luminaires with 100W HPS lamps, is 0.25 fc with a uniformity ratio of 13. The average illuminance on the sidewalks located along the luminaires side is 0.2 fc and the average illuminance on the sidewalks located on the opposite side of the luminaires is below 0.1 fc.Improvements of the lighting system for these streets are recommended.

Estimated and measured values along Palmetto Palm Avenue center line between two consecutive poles are shown below. The measurements were taken between two poles spaced 322 feet apart. For this condition the estimated average illuminance values is 0.23 fc.



The lighting system for some other streets in this zone consists of light poles with contemporary post top luminaires at an estimate height of 18 feet, located along both sides of the street on some segments and along one side of the street in other segments of the street. The estimated average maintained illuminance for the streets with top mounted luminaires is 0.2 fc with a uniformity ratio of 4.The actual average illuminance values are lower in most cases because of the interference to the light from the existing

trees. Improvements of the lighting system for these streets are recommended.

Miami Lakeway in this zone has a 70 foot right of way. The section of this street consists of a 24 feet wide two way roadway with an 18 foots swales and 5 foot sidewalks along both sides. Poles on Miami Lakeway are spaced from 200 to 300 feet. The average iluminance along this segment of Miami Lakeway is estimated to be below the values shown above for typical streets. Improvements of the lighting system for this street are recommended.

2.6 Streets located in Zone No. 5 (South of Miami Lakes Drive from Palmetto Expressway to NW 87 Avenue)

The typical section for these segments of streets consists of a 50 foot right of way, 20 feet wide two-lane roadway with a 10 feet swale and 5 feet sidewalk at both sides, except Balgowan Road and Commerce Way. The lighting system for typical streets consists of open bottom luminaires 25 feet high, mounted on standard aluminum light poles or utility poles. Pole arm is 10 feet long. Pole setback is 10 feet from edge of pavement. The luminaires are equipped with 100 W HPS lamps. Poles are located along one side of the streets with average spacing of 300 feet.

The estimated average maintained illuminance for typical streets is 0.25 fc with a uniformity ratio of 13. Average illuminance on the sidewalks located on the the luminaires side is 0.2 fc and average illuminance on the sidewalks located on the opposite side of the luminaires is below 0.1 fc. Improvements of the lighting system for these streets are recommended.

Balgowan Road section consists of a 60 foot right of way, 36 feet two way roadway with a 7 feet wide swale and 5 feet sidewalk at both sides. The lighting system for Balgowang Road consists of open bottom luminaires 25 feet high, mounted on standard aluminum light poles or utility poles along one side of the street. Pole arm is about 10 feet long. Pole setback is 6 feet and pole spacing is 230 feet. The luminaires are equipped with 100 W high pressure sodium lamps (HPS) lamps. The estimated average maintained illuminance for Balgowan road is 0.26 fc with a uniformity ratio of 5 Average illuminance on the sidewalks located on the the luminaires side is 0.25 fc with a uniformity ratio of 5 and average illuminance on the sidewalks located on the opposite side of the luminaires is below 0.1 fc. Improvements of the lighting system for these streets are recommended.

Commerce Way has a standard lighting system with cobra head luminaires at both sides of the street from NW 82 Avenue to NW 87 Avenue and open bottom luminaires on one side of the street from NW 82 Avenue to the East. Luminaires are equipped with 150 W HPS lamps

The estimated average illuminance value on both segments of Commerce Way are 1.45 FC with a uniformity ratio of 2.3 in the segment with light poles located at both sides of the street and 0.69 FC with a uniformity ratio of 4 in the segment of the street with light poles located along one side of the street. No Improvements are required in the lighting system for these streets

2.7 Streets located in Zone No. 6 (From NW 87th Avenue to I-75 & from NW 138th Street to NW 154th Street) & streets located in Zones No. 7 & No. 8 (From NW 154th Street to NW 170th Street & from Palmetto Expressway to I-75

The typical section for these segments of streets consists of a 50 foot right of way, 20 to 23 foot wide two-lane roadway, with an 8.5 to 10 foot swales and 5 feet sidewalks along both sides.

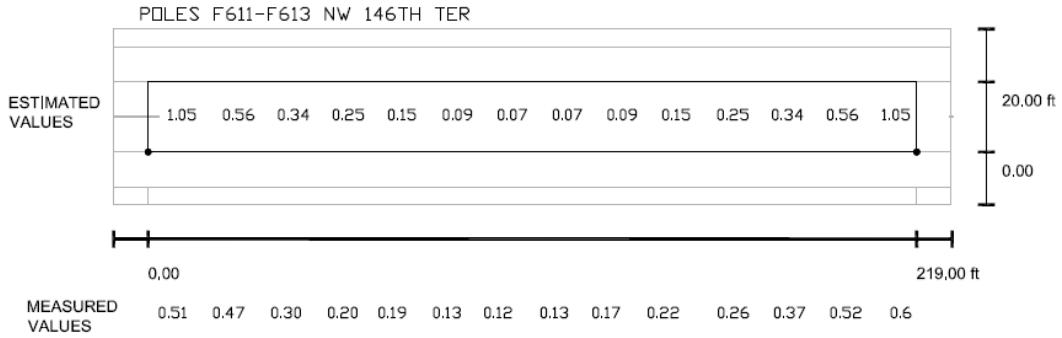
The lighting system for most of the streets consists of traditional post top luminaires mounted on decorative

light poles at 17 feet high. Pole setback is 8 feet. The luminaires are equipped with 100 W HPS lamps. Poles are located along both sides of the street spaced from 300 feet to 400 feet along each side. Some streets are provided with open bottom luminaires mounted at 25 feet on decorative light poles spaced 120 feet apart on one side.

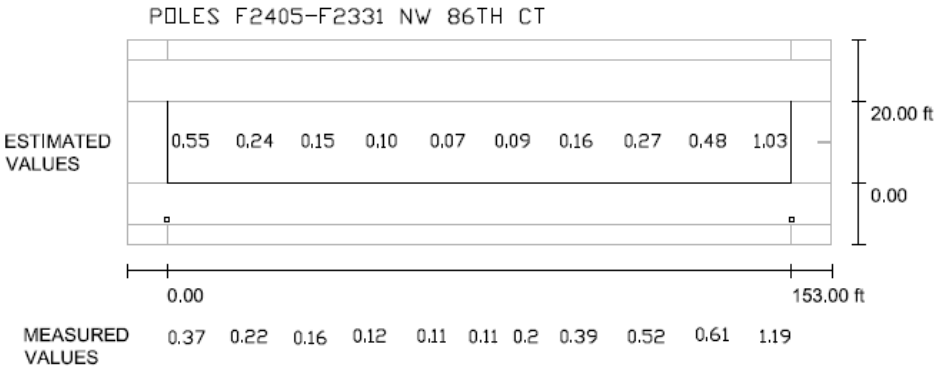
The estimated average maintained illuminance for streets with contemporary post top luminaires varies from 0.25 fc with a uniformity ratio of 3 to 0.21 fc with a uniformity ratio of 6.The estimated average illuminance on the sidewalks is 0.2 fc with a uniformity ratio of 10.
The actual average illuminance values are lower in most cases because of the interference from the existing trees.

We recommend verification of the actual wattage of the luminaires and the installation of luminaires equipped with 150 HPS lamps on each light pole, which will provide the required average illuminance value for most of these streets. (The capacity of the existing circuits and the conditions of the existing light poles should be evaluated before the replacement of the luminaires or lamps).

Estimated and measured values along NW 146th Terrace center line between two consecutive poles are shown below. Poles have open bottom luminaires about 25 feet high. The measurements were taken between two poles spaced at 219 feet. For this condition the estimated average illuminance values is 0.34 fc with a uniformity ratio of 5.7



Estimated and measured values along NW 86th Court center line between two consecutive poles are shown below. Poles have top mounted traditional luminaires about 15 feet high. In this case one pole has a 100 W HPS lamp and the other has a 150 Watt HPS lamp.The measurements were taken between two poles spaced at 153 feet. For this condition the estimated average illuminance values is 0.29 fc with uniformity ratio of 4.8. Improvement of the lighting system for this street is recommended.



CHAPTER 3 - PHYSICAL CONDITIONS OF THE EXISTING LIGHTING SYSTEM

3.1 Inspections

A visual inspection of the existing light poles was carried out to check their general physical conditions.

Photos of damaged poles and luminaires are shown on **Appendix "A"**. Hand hole covers are missing for some poles and there are broken luminaires. There is also a pole located at 6725 Kingsmore Way that was hit by a car and it's in bad condition.

Along Jacaranda Lane, Laurel Lane and Holly Road (See **Appendix "A"**) there are some areas where the original swales have been paved in front of the properties. As a result the existing light poles located in these areas are now exposed to vehicular damage. There is also a pole on Laurel Lane located inside the residential property. Luminaires in these streets are post top with 100 W HPS lamps.

Based on information received from the maintenance staff, most of the light poles are not connected to load centers, instead they are connected to the closest utility pole or resident meter can. Most of the light poles don't have ground pull boxes.

3.2 As-built plans

There is no documented information (as-built plans) which would indicate if the existing lighting systems meet current design standards for grounding and circuit protection.

CHAPTER 4 - RECOMMENDATIONS

4.1 Recommendations

1 It is recommended that hand hole covers be replaced for all poles with missing hand hole covers.

2 Broken luminaires should be repaired or replaced.

3 A program for improving the lighting systems should be developed. This program should include the design of new lighting circuits or the design of complete new lighting systems according to the conditions of the existing street lighting system on each street. Each light pole (new or existing to remain) will be provided with a ground pull box and a cable distribution system. Each street will be provided with a lighting circuit connected to a load center.

4 A program for trimming trees that obstruct existing lights should be established.

5 Improvements to the lighting along the sidewalks and at intersections should be evaluated if there are areas where pedestrian or driver security is a concern.

6 Lighting improvements are recommended on Jacaranda Lane, Laurel Lane, and Holly Road where some of the existing light poles are exposed to vehicular damage. New lighting systems per current standards should be provided for these streets.

7 Provide new lighting systems for the streets summarized below, where the existing lighting systems do not provide the required illuminance values and uniformity ratios shown in Table A, as indicated in this report.

- Fairway Drive
- NW 64th Avenue
- Streets located between North Miami Lakeway and NW 57th Avenue from Miami Lakes Drive to NW 159th
- Streets located between North Miami Lakeway and Eagle Nest Lane
- Streets located between Miami Lakes Drive and NW 138th Street from NW 60 Avenue to NW 67 Avenue
- NW 57th Court, NW 58th Avenue, NW 58th Court, NW 59th Avenue, NW 60th Avenue, between NW 138th Street and NW 142th Street
- Streets located in Zone No. 4 (South of Miami Lakes Drive from NW 67 Avenue to Palmetto Expressway).
- Streets located in Zone No. 5 (South of Miami Lakes Drive from Palmetto Expressway to NW 87 Avenue), except Commerce Way

8 Verify the actual lamp wattage of the existing light poles located in Zones #6 and #7 and coordinate with FPL for the improvement of the existing lighting systems to meet the current design criteria and standards.

CHAPTER 5 - COST OF IMPROVEMENTS OF THE STREET LIGHTING SYSTEMS

5.1 Opinion of Probable Cost

Pay Item	Description	Unit	Unit Price	Quantity	Total Price
522-1	Sidewalks concrete 4"	SY	$27.00	9000	$243,000.00
551-1-1	Directional bore <6"	LF	$11.90	142784	$1,699,129.60
715-1-12	Lighting conductor #6	LF	$1.11	756704	$839,941.44
715-1-13	Lighting conductor #4	LF	$1.70	100000	$170,000.00
715-2-11	Conduit Underground	LF	$2.43	142784	$346,965.12
715-516-120	Light pole Al 20'	EA	$2,358.00	692	$1,631,736.00
715-14-11	Pull box roadside	EA	$334.00	300	$100,200.00
715-14-12	Pull box sidewalk	EA	$370.00	392	$145,040.00
715-500-1	Pole cable distribution system	EA	$419.00	692	$289,948.00
715-7-11	Load Center	EA	$7,690.00	16	$123,040.00
				Total:	$5,589,000.16

Assumptions:

1 The quantities are calculated only for poles owned by the Town of Miami Lakes which are located in areas where illumination improvements are recommended.

2 Cost of directional bore includes the conduit.

3 Each new or existing light pole will be provided with a ground pull box and cable distribution system.

4 New conduits and circuits will be provided for all poles (new or existing) along both sides of each street.

5 An estimate of 16 new load centers is included (three to four load centers per zone).

6 An estimate of 692 light poles for replacing and supplementing the existing lighting systems is included.

7 This opinion of probable cost does not include the cost of improvements of the lighting systems owned by FPL and the design fee for the Town's lighting systems recommended improvements.

CHAPTER 6 - GIS MAPPING

6.1 General

Two ESRI based GIS shapefiles were prepared by ADA and provided to the Town of Miami Lakes. These shapefiles represented the location of light poles within the Town and a basemap delineating the estimated limits of roadway edge of pavement (EOP), sidewalks, waterways, and property limits throughout the Town.

6.2 Light Pole Shapefile

The light pole shapefile (ML_stlights.shp) was developed using a shapefile provided by the Town. This shapefile contained the estimated location of existing light poles and identified each light pole with one of three different classifications. This classification system used 'E', 'F', and 'R' identifies depending on the service provided by FPL. The nomenclature was as follows:

- 'F' (Full) is given to all poles owned by FP&L
- 'R' (Re-Lamp) is given to all poles owned by the town, but with the lamps maintained by FPL
- 'E' (Energy) is given to all poles owned by the town which are only energized by FP&L.

The first step in the light poles shapefile development process involved manually adjusting the location of all light poles with an 'R' designation using high resolution aerial imagery available from the County - light poles with an 'E' or 'F' designation were not a part of this survey. Once the location of these poles were adjusted, the coordinates were updated in the shapefile attribute table. The attribute table containing each points spatial coordinate was then converted into an excel file in order to import the points into AutoCAD where additional edits concerning the inventory process were performed. The light poles were renumbered based on load center zone locations, circuit numbers, and light pole zone locations. This information was also carried back to into the GIS shapefile attribute table.

The light pole shapefile contains eleven separate fields containing pertinent data populated through this inventory. The fields are described as follows given the field names from the GIS shapefile:

- FID – A unique identifier automatically populated by ArcMap.
- Shape – Field automatically populated by ArcMap.
- LABELS – A unique ID number for each light pole.
- ADDRESS – The address of the nearest lot to the light pole location. Since the street in the lot address in many cases is not based on the street where the pole is located, the field P_street should be checked first.
- COMPONENT – Describes the type of lamp and wattage.
- OWNED_BY– Defines the ownership of the light pole (i.e. FP&L, Town of Miami Lakes).
- LAT – The latitudinal coordinate of the light pole
- LONG – The longitudinal coordinate of the light pole
- MARK –Original pole classification as defined in the original shapefile provided by the Town ('R', 'E' or 'F')
- TAG – Pole Identification Tag. By default the pole identification tag was generated using the 'MARK' and 'LABELS' fields, until the field was subsequently updated with a tag number based on the load center name and circuit number (See Town of Miami Lakes Street Lighting Assets Identification System).
- P_STREET – The street where the pole is located.
- P_REF – Reference to the pole location along the street.

6.2 Basemap Shapefile

The basemap shapefile (ML_basemap.shp) was developed using the Miami-Dade County Property Appraiser shapefile as a starting point in the delineation process. The County shapefile was imported into CAD and used as an initial base layer for visually identifying the relative location of property limits. High resolution aerial imagery, available through the County, was also used in the delineation process in order to identify other pertinent features. Using these two items, the relative location of roadways, sidewalks, and waterways throughout the Town.

The basemap shapefile contains seven separate fields containing information developed during the delineation process or derived from the Miami-Dade County Property Appraiser shapefile. The fields are described as follows given the field names from the GIS shapefile:

- FID – A unique identifier automatically populated by ArcMap.
- Shape – Field automatically populated by ArcMap.
- Layer – The type of entity delineated which includes:
    - EOP – Edge of pavement for roadways.
    - Property Line – Physical limits of residential, commercial, or public/governmental properties.
    - Sidewalk – Defined sidewalk areas.
    - Future Sidewalk – Areas adjacent to existing sidewalks that may be defined as the future location of sidewalks.
    - Sod – Visibly sodded areas.
    - Water – Bodies of water such as canals, lakes, or ponds.
- Area_SqFt – The area of the delineated entity in square feet as calculated in GIS.
- FOLIO - The Miami-Dade County folio number of the property delineated. Only defined for properties and not water, EOP, sod, and sidewalks.
- ZIP_CODE – The zip code of the property delineated. Only defined for properties and not water, EOP, sod, and sidewalks.
- Address – The address of the property delineated. Only defined for properties and not water, EOP, sod, and sidewalks.

It should be noted that the shapefiles developed for this project are intended for inventory purposes only and do not accurately represent the legal limits of the entities delineated. These shapefiles do not take the place of field surveys by a licensed surveyor and cannot be used to determine official right-of-way limits, proof of ownership, nor can it be used for any other purposes than those intended by the Town.

TOWN OF MIAMI LAKES

Roadway Lighting Systems

Lighting Report
Appendix A
Photos

Town of Miami Lakes, FL

Prepared by:

8550 N.W. 33rd Street . Suite 101
Doral, Florida 33122
EB # 00003212

March 2013

For pole identification numbers refer to the GIS files provided with this report, which include a complete map of the town with the location and identification number of each light pole.

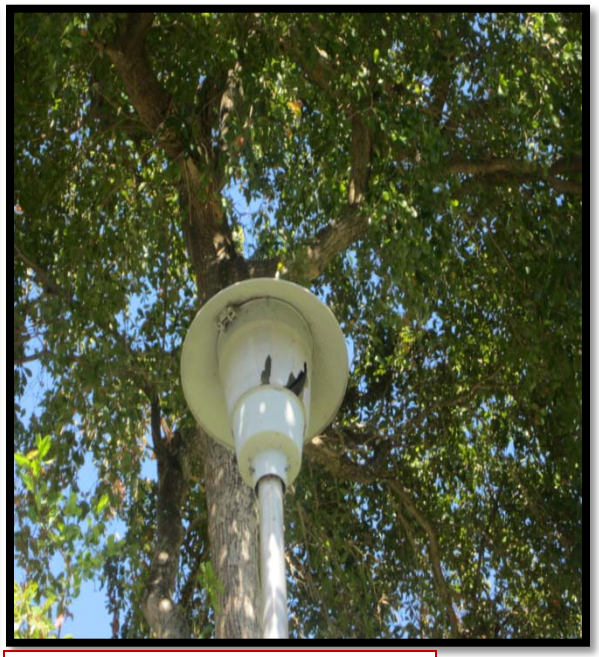
R-196 - Cypress CT

R-304 - Marginada CT

R-741 – Big Cypress Drive

R-745 – Big Cypress Drive

R-764(a) – Big Cypress Drive



R-767 (b) – Big Cypress Drive

R-877(a) – Big Cypress Drive

R-877 (b) – Big Cypress Drive

R-20 (a) – Lake Claire CT

R-20 (b) – Lake Claire CT

R-71 (a) – Lake Success PL

R-71(b) – Lake Success PL

R-642 (a) – Parkinsonia Drive

R-642(b) – Parkinsonia Drive

R-443 (a) – Candle Wood

R-443 (b) – Candle Wood

R-656 (a) – Fitzpatric RD

R-656 (b) – Fitzpatric RD

R-768 (a) - Miami Lakeway South

R-768 (b) - Miami Lakeway South

F-1644a – NW 77th PL

F-1644b – NW 77th PL

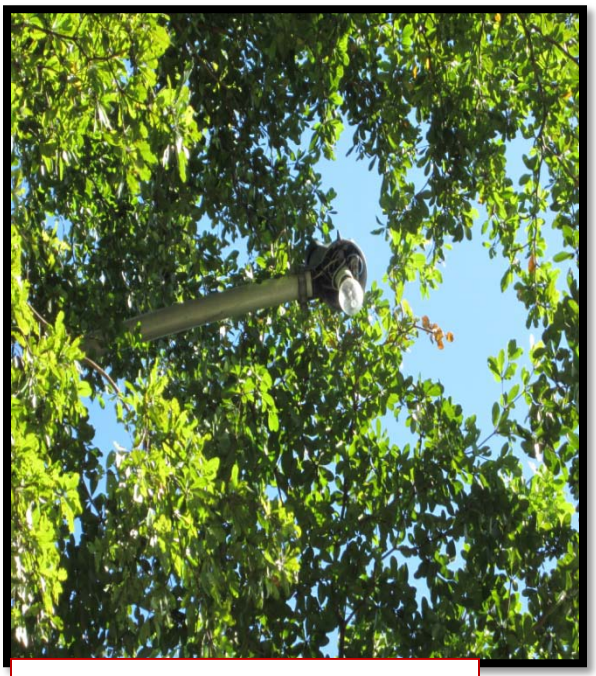
F-1648a – NW 159th Terrace

F-1648b – NW 159th Terrace

R-106 - Lake Patricia Drive

R-1246 - Pent PL

R-1797a – Kingsmoor Way



R-1797b - Kingsmoor Way

F-766 (a) – NW 148th Terrace

F-766 (b) – NW 148th Terrace

F-308(a) - NW 142nd LN

F-308 (b) – NW 142nd LN

F-315 (a) - NW 142nd LN

F-315 (b) - NW 142nd LN

F-2826(a) – Sabal Drive

F-2826 (b) – Sabal Drive

F-2939 (a) – NW 169th Terrace

F-2939 (b) – NW 169th Terrace

F-2712(a) - NW 87th CT

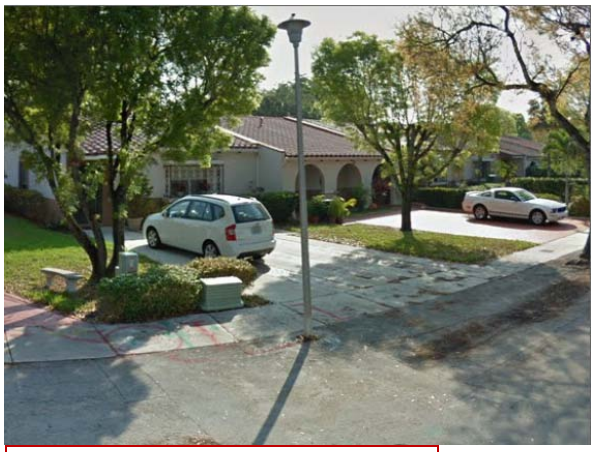
F-2712 (b) - NW 87th CT

F-2676 (a) - NW 87th CT

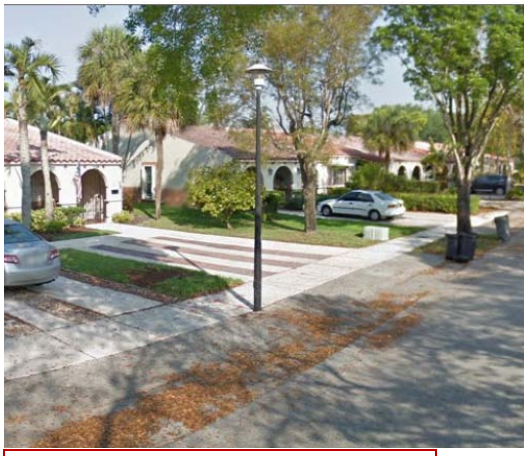
F-2676 (b) - NW 87th CT

F-2718(a) – NW 168th LN

F-2718 (b) – NW 168th LN



R-1043 – Holly Road



R-9478 – Holly Road

R-924 – Holly Road

R-939– Laurel Lane

R-716– Jacaranda Lane

TOWN OF MIAMI LAKES

Roadway Lighting Systems

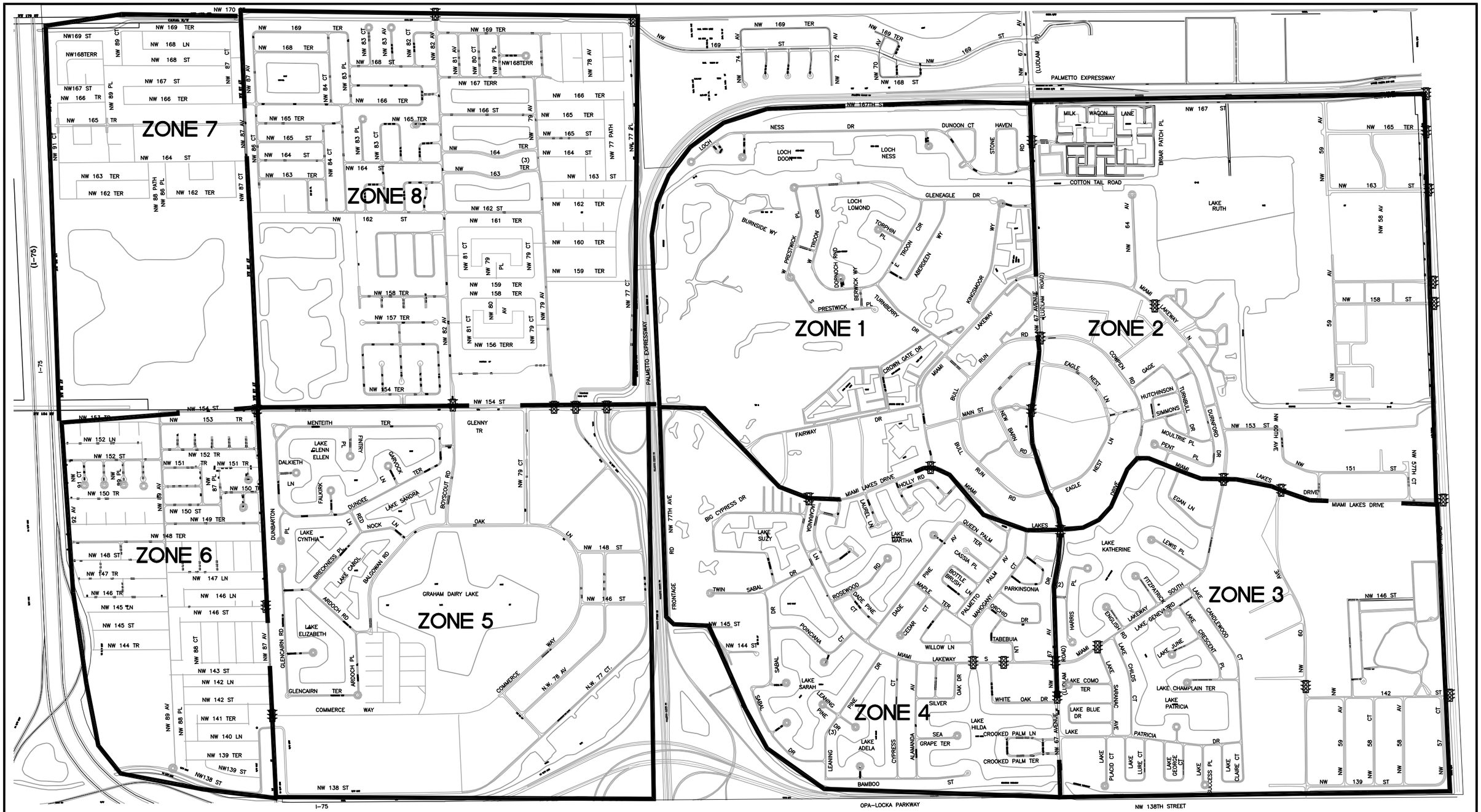
Lighting Report
Appendix B
Zone Map

Town of Miami Lakes, FL

Prepared by:

8550 N.W. 33rd Street . Suite 101
Doral, Florida 33122
EB # 00003212

March 2013



TOWN OF MIAMI LAKES ZONE LIMITS

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

8550 N.W. 33RD STREET · SUITE 101
DORAL, FLORIDA 33122
PHONE (305) 551-4608 · FAX (305) 551-8977
WWW.ADAENG.NET CA # 00003212
GUILLERMO E. SANTOS PEREZ, P.E.
P.E. LICENSE No. 70876

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		

SUPERVISED BY: GUILLERMO E. SANTOS PEREZ

P:\ Projects C222\Miami Lakes C222-0112-01\Miami Lakes SIM\Lighting 16_Lighting Tags and Lighting Reports Mod 12-15-12 Lighting Report Zones.dwg Feb 18, 2013 - 9:12am GSANTOS