TOWN OF MIAMI LAKES, FLORIDA
REVISED AGENDA
Regular Council Meeting

October 8, 2019
6:30 PM
Government Center
6601 Main Street Miami Lakes, FL33014

Video stream of meetings can be viewed here:

https://pub-miamilakes.escribemeetings.com

Pages

1. **SPECIAL PRESENTATIONS (Presentations shall take place prior to the commencement of the Regular Council Meeting, at 6:00 PM)**

2. CALL TO ORDER

3. MOMENT OF SILENCE

4. PLEDGE OF ALLEGIANCE

5. ORDER OF BUSINESS (DEFERRALS/ADDITIONS/DELETIONS)

6. PUBLIC COMMENTS

   All comments or questions from the attending public to the Council shall be directed to the Mayor, in a courteous tone. No person other than the Council and the person recognized by the Mayor as having the floor, shall be permitted to enter into discussion without the permission of the Mayor. To ensure the orderly conduct and efficiency of the meeting, public comments shall be limited to three (3) minutes maximum per person; however, the Mayor may authorize the extension of the aforesaid time frame, and any extension shall apply to other individuals speaking on the same subject.

   No clapping, applauding, heckling, verbal outburst in support of, or in opposition to a speaker or his/her remarks shall be permitted. Should a member of the audience become unruly, or behave in any manner that disrupts the orderly and efficient conduct of the meeting, the Mayor is given the right and the authority to require such person to leave the Council Chambers.

   As a courtesy to others, all electronic devices must be set to silent mode to avoid disruption of the proceedings.

Remote Public Comments: Please register with the Town Clerk from the date the agenda is released to the date before the meeting. If you submit a written public comment, it will be shared with the Mayor and Council Members prior to the meeting. Please take note that written public comments are not read out loud during the meetings, only the name of the person submitting the public comment and the subject matter will be read into the record. For additional information, please contact clerk@miamilakes-fl.gov

Live Remote Public Comments: Livestreamed meetings allow the submission of Live Remote Public Comments. The person wishing to submit the public comment will appear live on the TV screens during the meeting and will be afforded 3 minutes to speak live. Please take note, that written public comments are not read into the record.

If you wish to be part of the Live Zoom meeting, please join the meeting by clicking on the URL Link below:

https://zoom.us/j/666475152?pwd=Y1JwZlhleVZCQnpWOFp0cEQ0VDYvZz09

Please submit your first and last name and make sure that you have a working microphone and a working webcamera, so that IT can see you and you be able to participate in the livestreaming of the meeting.

You can test your connection to Zoom clicking on the following link: https://zoom.us/test

7. APPOINTMENTS

8. COMMITTEE REPORTS

9. CONSENT CALENDAR

a. **Approval of Minutes** 6

1. September 10, 2019 Regular Council Meeting
2. September 24, 2019 Mayoral Annual Budget Address
3. September 24, 2019 Second Budget Hearing Meeting

b. **Resolution to Adopt SMART Technology Implementation Plan 2020-2035 (Pidermann)** 23

A RESOLUTION OF THE TOWN OF MIAMI LAKES, FLORIDA, ADOPTING THE TOWN OF MIAMI LAKES SMART TECHNOLOGY

IMPLEMENTATION PLAN FOR 2020-2035; AUTHORIZING INCORPORATION OF THE SMART TECHNOLOGY IMPLEMENTATION PLAN FOR 2020-2035 INTO THE STRATEGIC PLAN; AND PROVIDING FOR AN EFFECTIVE DATE.

10. ORDINANCES-FIRST READING

11. ORDINANCES- SECOND READING (PUBLIC HEARING)

a. Solar Energy Systems (Pidermann) 142

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, RELATING TO SOLAR ENERGY SYSTEMS; AMENDING CHAPTER 13, "LAND DEVELOPMENT CODE", AT ARTICLE V, "ALLOWABLE ENCROACHMENTS INTO THE REQUIRED YARDS AND EXCEPTIONS TO THE MAXIMUM PERMITTED HEIGHTS", AT ARTICLE VI, "SUPPLEMENTARY REGULATIONS", AND AT ARTICLE VII, "ENVIRONMENTAL REGULATIONS" PROVIDING FOR FINDINGS OF FACT, INTENT AND PURPOSE; PROVIDING FOR REGULATIONS; PROVIDING FOR REPEAL OF LAWS IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR INCLUSION INTO THE CODE; AND PROVIDING FOR AN EFFECTIVE DATE.

12. RESOLUTIONS

a. Resolution to Award a Contract for Design of NW 59th Avenue Extension (Pidermann) 178

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, APPROVING THE AWARD OF A CONTRACT FOR DESIGN SERVICES FOR THE NW 59TH AVENUE EXTENSION, RFQ 2019-27 TO STANTEC CONSULTING SERVICES IN AN AMOUNT NOT TO EXCEED $626,780; AUTHORIZING THE TOWN MANAGER TO TAKE ALL NECESSARY STEPS TO IMPLEMENT THE TERMS AND CONDITIONS OF THE CONTRACT; AUTHORIZING THE TOWN MANAGER TO EXPEND BUDGETED FUNDS; AUTHORIZING THE TOWN MANAGER TO EXECUTE THE CONTRACT; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.

13. NEW BUSINESS

a. Special Taxing Districts Elections (Dieguez) 221

b. Mobility Fee Review (Ruano) 223

This meeting is open to the public. A copy of this Agenda and the backup therefore, has been posted on the Town of Miami Lakes Website at miamilakes-fl.gov and is available at Town Hall, 6601 Main Street, Miami Lakes 33014. In accordance with the Americans with Disabilities Act of 1990, all persons who are disabled and who need special accommodations to participate in this meeting because of that disability should contact Town Hall at 305-364-6100 two days

prior to the meeting.

Anyone wishing to appeal any decision made by the Miami Lakes Town Council with respect to any matter considered at this meeting or hearing will need a record of the proceedings and for such purpose, may need to ensure that a verbatim record of the proceedings is made which record includes the testimony and evidence upon which the appeal is to be based.

Any member of the public wishing to speak on a public hearing matter on this Agenda or under public comments for items not on this Agenda, should fill out a speaker card and provide it to the Town Clerk, prior to commencement of the meeting. Any person presenting documents to the Town Council should provide the Town Clerk with a minimum of 15 copies.

MINUTES
Regular Council Meeting
September 10, 2019
6:30 p.m.
Government Center
6601 Main Street
Miami Lakes, Florida 33014

1. CALL TO ORDER:

Mayor Manny Cid called the meeting to order at 6:30 pm.

2. ROLL CALL:

The Town Clerk, Gina Inguanzo, called the roll with the following Councilmembers being present: Carlos Alvarez, Luis Collazo, Joshua Dieguez, Jeffrey Rodriguez, and Vice Mayor Nelson Rodriguez and Mayor Manny Cid. Councilmember Marilyn Ruano left 10:53 PM.

3. MOMENT OF SILENCE:

Reverend Nancy Zuckerman led the invocation.

Ariel Fernandez, via live remote public comments, shared some inspirational words to the attending public.

4. PLEDGE OF ALLEGIANCE:
Councilmember Josh Dieguez led the Pledge of Allegiance.

5. SPECIAL PRESENTATIONS:

Marc Gomez from Commissioner Esteban Bovo, Jr. Office gave a presentation to the Mayor and Town Council on U.S. Census 2020 Initiative.

Isaac Salver and Carol Westmoreland Florida League Cities gave a PowwrPoint presentation about Town Council membership benefits.

6. ORDER OF BUSINESS (DEFERRALS/ADDITIONS/DELETIONS):

Item 9D from the Youth Activity Task Force was added to the Agenda, a Presentation by Commissioner Bovo's office to be added after the Appointments section of the Agenda, FLC will be presenting a PowerPoint presentation after Commissioner Bovo's presentation, Mayor Cid requested Item 14C to be moved up and discussed after the Committee Reports, and Councilmember Collazo requested item14E to be

discussed with the 2nd Ordinance Special Taxing District 11A item of the First Budget Hearing. Councilmember Collazo made a motion to approve the new Order of Business and it was seconded by Councilmember Rodriguez. All were in favor.

7. PUBLIC COMMENTS:

Alex Ariano came before the Town Council to speak on changing the special taxing district names, allowing gold carts, and getting rid of the Palmetto express lanes.

Miriam Campos came before the Town Council to speak on changing the variance for 8 foot fencing near residential areas that are near commercial areas.

8. APPOINTMENTS:

Ryan Holland was appointed to the Sports Hall of Fame Committee, nominated by Councilmember Dieguez.

Jose Llano was appointed to the Economic Development Committee, nominated Councilmember J. Rodriguez.

Michael Coote was appointed to the Youth Activities Task Force, nominated by Councilmember J. Rodriguez.

Dr. Herman Vega was appointed to the Blasting Committee, nominated by Mayor Councilmember J. Rodriguez.

Christopher Rodriguez was appointed to the Blasting Committee, nominated by Councilmember J. Rodriguez.

Rodrigo Lozano was appointed to the Public Safety Committee, nominated by Councilmember Collazo.

Alexandra Alonso was appointed to the Blasting Committee, nominated by Councilmember Dieguez.

Jacqueline Lebeda was appointed to the Blasting Committee, nominated by Councilmember Alvarez.

Stephanie Cruz was appointed to the Elderly Affairs Committee, nominated by Councilmember Dieguez.

Councilmember Alvarez motioned to approve the Committee Appointments. Councilmember J. Rodriguez seconded the motion, and all were in favor.

9. COMMITTEE REPORTS

A. Sports Hall of Fame

The Sports Hall of Fame Chairman Roman O. Garcia, Jr. asked on behalf of the committee for the Town Council to review and accept changes to their Resolution 15-1291. They would like to set a fixed date for the Sports Hall of Fame Induction Ceremony. They would like to set it for the first Saturday in June and nomination deadline to be in March. Mayor Cid motioned to approve and Councilmember Collazo seconded the motion. All were in favor.

B. Economic Development Committee

The Economic Development Committee asked for reallocation of $1000 to go to Volunteer and Sponsor Appreciation Breakfast line item. Vice Mayor Rodriguez motioned to approve and Councilmember J. Rodriguez seconded. All were in favor.

C. Elderly Affairs Committee

The Elderly Affairs Committee asked to reallocate $1500 from their Senior Social line item to the Volunteer and Sponsor Appreciation Breakfast. They also wanted to move $1000 from their Senior Social line item to the Miami Dade County Age friendly Mini Grant line item. Councilmember Dieguez motioned to approve, Vice Mayor Rodriguez seconded and all were in favor.

D. Youth Activity Task Force

The Youth Activities Task Force chair Tony Fernandez asked for Town Council approval and support of the Limitless Love Concert. The concert would be held on Saturday, October 12, 2019 from 6:00 PM – 8:00 PM at the Miami Lakes Congregational Church. Each attendee would be encouraged to bring the following donation items: Nonperishable foods, Diapers and wipes, Desitin, Towels, Toothpaste, Soap, Deodorant, Shampoo and Conditioner, or Laundry detergent. These items will be donated to the Nora Santiago Foundation.

10. CONSENT CALENDAR:

Vice Mayor Rodriguez motioned to approve the items under the Consent Calendar. Councilmember Rodriguez seconded the motion, and all were in favor.

A. **APPROVAL OF MINUTES**

- July 15, 2019 Sunshine Meeting.
- July 16, 2019 Regular Council Meeting.
- July 18, 2019 Sunshine Meeting.

- August 6, 2019 Sunshine Meeting.
- August 19, 2019 Special Call Meeting.
- August 27, 2019 Special Call Meeting.
- August 27, 2019 Third Budget Workshop.

Approved on Consent.

B. A RESOLUTION OF THE TOWN OF MIAMI LAKES, FLORIDA, APPROVING A WORK ORDER WITH WOOD ENVIRONMENT AND INFRASTRUCTURE SOLUTIONS, INC; PROVIDING FOR AUTHORITY OF TOWN OFFICIALS; PROVIDING FOR AUTHORITY TO EXPEND BUDGETED FUNDS; AND PROVIDING FOR AN EFFECTIVE DATE (Pidermann).

The Town attorney, Raul Gastesi, read the resolution into the record. Approved on Consent.

C. A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, TO AUTHORIZE THE TOWN MANAGER PURSUANT TO SECTION 7 OF ORDINANCE 17-203, TO ACCESS BROWARD COUNTY CONTRACT PNC211640B1_2 FOR UNDERGROUND UTILITY LOCATE SERVICES AS LONG AS BUDGETED FUNDS ARE AVAILABLE FOR THESE SERVICES; AUTHORIZING THE TOWN MANAGER TO TAKE ALL NECESSARY STEPS TO IMPLEMENT THE TERMS AND CONDITIONS OF THE CONTRACT; AUTHORIZING THE TOWN MANAGER TO EXPENDED BUDGETED FUNDS; AUTHORIZING THE TOWN MANAGER TO EXECUTE THE CONTRACT; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE (Pidermann).

The Town attorney, Raul Gastesi, read the resolution into the record. Approved on Consent.

D. A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, APPROVING THE STATEWIDE MUTUAL AID AGREEMENT FOR DISASTER RESPONSE AND RECOVERY; PROVIDING FOR AUTHORITY OF TOWN OFFICIALS; AND PROVIDING FOR AN EFFECTIVE DATE (Pidermann).

The Town attorney, Raul Gastesi, read the resolution into the record. Approved on Consent.

E. A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, APPROVING THE MEMORANDUM OF UNDERSTANDING BETWEEN THE TOWN OF MIAMI LAKES AND MIAMI-DADE COUNTY; PROVIDING FOR AUTHORITY OF OFFICIALS; AND PROVIDING FOR AN EFFECTIVE DATE (Pidermann).

The Town attorney, Raul Gastesi, read the resolution into the record. Approved on Consent.

11. ORDINANCE – FIRST READING

A. AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, RELATING TO SOLAR ENERGY SYSTEMS; AMENDING CHAPTER 13, "LAND DEVELOPMENT CODE", AT ARTICLE V, "ALLOWABLE ENCROACHMENTS INTO THE REQUIRED YARDS AND EXCEPTIONS TO THE MAXIMUM PERMITTED HEIGHTS", AT ARTICLE VI, "SUPPLEMENTARY REGULATIONS", AND AT ARTICLE VII, "ENVIRONMENTAL REGULATIONS" PROVIDING FOR FINDINGS OF FACT, INTENT AND PURPOSE; PROVIDING FOR REGULATIONS; PROVIDING FOR REPEAL OF LAWS IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR INCLUSION INTO THE CODE; AND PROVIDING FOR AN EFFECTIVE DATE. (Pidermann).

The Town attorney, Raul Gastesi, read the title of the ordinance into the record.

Susana Alfonso, Principal Planner, presented the item and answered questions posed by the Town Council.

Vice Mayor Rodriguez motioned to approve the Ordinance in first reading and Councilmember Collazo seconded the motion. All were in favor.

12. ORDINANCE – SECOND READING (PUBLIC HEARING):

A. AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, CREATING REGULATIONS FOR THE USE OF FPL FRANCHISE FEES; PROVIDING FOR THE CREATION OF A BUDGET LINE ITEM; PROVIDING FOR REPEAL OF LAWS IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR INCLUSION INTO THE CODE; AND PROVIDING FOR AN EFFECTIVE DATE (Dieguez).

Mayor Cid opened the public hearing. There being no one wishing to speak, Mayor Cid closed the public hearing.

The Town Attorney, Raul Gastesi, read the title of the ordinance into the record.

Councilmember Dieguez motioned to make the following amendments to the Ordinance in 2nd reading: change the language after $106,250 to "but not to excluded," instead of whichever is greater, change item 6 to state "…paragraphs 1 through 5" instead of "1 through 4" and change item 7 to state "Funding levels for the projects listed in paragraphs 1 through 5 …" instead of "1 through 4."

Councilmember Dieguez motioned to approve the ordinance in second reading with the amendments. Councilmember Dieguez seconded the motion, and the motion passed, 7-0.

B. AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, AMENDING CHAPTER 13, "LAND DEVELOPMENT CODE", AT ARTICLE XI, "FEES", AT SECTION 13-2102, RELATING TO VARIANCE APPLICATION FEES; INCLUDING ALL NOTIFICATION COSTS INTO THE VARIANCE FEES OF ADMINISTRATIVE VARIANCES, SMALL PROJECT VARIANCES, AND VARIANCES FOR SINGLE FAMILY PROPERTIES OF LESS THAT HALF (½) ACRE OR 2,500 SQUARE FEET; REQUIRING ALL OTHER VARIANCE APPLICATIONS TO BE COST RECOVERY AND PROVIDING FOR INITIAL DEPOSITS; PROVIDING FOR REPEAL OF LAWS IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR INCLUSION INTO THE CODE; AND PROVIDING FOR AN EFFECTIVE DATE (J. Rodriguez).

The Town Attorney, Raul Gastesi, read the title of the ordinance into the record.

Councilmember J. Rodriguez motion to approve the amended version of the ordinance and it was seconded by Councilmember Collazo. The amended version includes the following variance fee schedules of development approval request:

2.2 Administrative and public hearing for fence, driveway, deck or walkway to $450 (for notification and recording) application fee,

2.3.1 public hearing for One single-family, two-family, or townhouse $1,250 application fee.

Also, Councilmember J. Rodriguez asked to change the Town Council rehearing of the P& Z Board Decision to change the deposit to $2,000 and any other recovery costs.

Mayor Cid rebutted he had issue with the deposit based all the restrictions currently in place for the P & Z Board decisions to be reheard by the Town Council. He motioned to amend the $2,000 deposit requirement and waive it. Mayor Manny Cid motioned to approve the ordinance in second reading with the amendments. Councilmember Collazo seconded the motion, and the motion passed, 7-0.

13. RESOLUTIONS

A. RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, APPROVING A CONTRACT BETWEEN THE TOWN OF MIAMI LAKES AND MIAMI-DADE COUNTY FOR POLICE SERVICES; PROVIDING FOR AUTHORITY OF TOWN OFFICIALS; PROVIDING FOR AUTHORITY TO EXPEND BUDGETED FUNDS' AND PROVIDING FOR AN EFFECTIVE DATE (Pidermann).

The Town Attorney, Raul Gastesi, read the title of the ordinance into the record.

The Town Manager, Edward Pidermann, explained the provisions of the new contract for police services. Mr. Pidermann stated that it was a new memorandum provided to the Town Council. It was explained that the numbers on page 2 of the original memorandum were based on before a ratification of a new collective bargaining agreement. The strikethroughs on the new memorandum are the correct numbers. There were also adjustments made based on current and next fiscal year budget. Mr. Pidermann stated all the new enhancements to the agreement are explained in the bullet point section of the memorandum. Councilmember Alvarez motioned for discussion and Councilman Dieguez seconded.

Councilman Alvarez motioned to approve police contract. Councilmember Dieguez seconded the motion, and the motion passed.

14. NEW BUSINESS

A. Special Taxing District Name Change (Collazo)

Councilmember Collazo move for the Special Taxing Districts be named "Assessment Districts" to mimic the Miami Dade County or name them "Neighborhood Service Districts. Mayor Cid agreed but sated that the name selection should be picked by the individual district chairs. Councilmember Collazo amended his motion and said he moved to the name to be changed after the district chairs are given a chance to vote on the name. Vice Mayor Rodriguez seconded the motion and all were in favor of the motion, as amended.

B. Prohibit Sales of E-Cigarettes to Minors (N. Rodriguez)

Vice Mayor Rodriguez motion to for the legal department to come up with a similar ordinance like the City of Miami Beach, which prohibits the sales of e-cigarettes to minors. This would be an addition to the Town's ordinance previously passed to prohibit the sale of flavor chewing tobacco to minors. Councilmember Alvarez seconded the motion. All were in favor of the motion.

C. Residential Privacy Fence (Cid)

Mayor Cid said this issue was brought to his attention by resident Miriam Campos. He motioned to amend the code to allow 8-foot privacy fences for single family homes adjacent to commercial properties, multi-family units that exceed the height of the adjacent property or if there is a garbage dumpster adjacent to the property. Councilmember Alvarez seconded the motion. All were in favor of the motion.

D. New Lobbying Services (Alvarez)

Councilmember Alvarez, based on the level service of Southern Strategies, motioned to direct staff to begin development of a scope for lobbying services that will adequately ensure the Town receives the proper and necessary representation and advocacy in Tallahassee, and to begin the procurement of a new lobbyist for the Town.

The Town Manager stated that acquiring new lobbyist group will need to be procured and the RFP processes takes three months. The Town Manager, Mayor Cid, Councilmember Dieguez, and Vice Mayor Rodriguez proposed to work with the sub-contractor of Southern Strategies for this legislative session, but then put it out to competitively bid due to time constraints.

After the discussion, Councilmember Alvarez amended his motion for it to read that the RFP process in acquiring new lobbying services will be begin after this year's legislative session. Councilmember Dieguez seconded the amended motion. The Motion passed 6-0, with Councilmember Ruano being absent.

E. Golf Cart Friendly Zones/Districts (Collazo)

Councilmember Collazo motioned to establish a Golf Cart Friendly Zone/District and a pilot district or zone be created for the Loch Lomond area, before considering other areas in the community. Vice Mayor Rodriguez seconded the motion. All were in favor.

F. Purple Heart Parking/Veteran Parking Space (Cid, Co-sponsored unanimously by all Councilmembers)

This item requires the waiver of item 7.2 of the Special Rules of Order. Vice Mayor Rodriguez motioned to approve the waiver and it was seconded by Councilmember Collazo.

Mayor Cid stated one of Miami Lakes Purple Heart Veterans spoke to him regarding co-designating the Purple Heart Parking space as Purple Heart Parking /Veterans Parking. Mayor Cid motioned to add an additional sign to the current Purple Heart sign stating "Veterans Only Parking" with the seals of the Air Force, Army, Coast Guard, Marine Corps and Navy. Councilmember Collazo seconded the motion. All were in favor.

G. Palmetto Express Lanes (Collazo)

Councilmember Collazo motioned to direct the Town Manager to reach out to FDOT, and to request from FDOT, the removal of the express lanes all together or to discuss at a minimum, to petition FDOT to redesign the approach to allow traffic to enter at

154th Street. The motion was seconded by Councilmember Alvarez. Councilmember Ruano was absent.

H. Funding Source and Timeline for Implementation for Future New Business Items (Collazo)

This item requires the waiver of item 6.9 of the Special Rules of Order.

Councilmember Collazo motioned to requiring all new business items to have identified funding sources for implementation and a timeline incorporated into the memorandum or in the discussion of the item when being presented and adopted this as a best practice. Councilmember J. Rodriguez seconded the motion. All were in favor. Councilmember Ruano was not present.

15. MAYOR AND COUNCILMEMBER REPORTS:

A. Florida League of Cities Conference (Cid)

Mayor Cid reported about the conference he and Vice Mayor Rodriguez attended in August. He stated he learned of homeless statistics in the state of Florida and ideas that other cities our doing to combat the issue. He learned what other municipalities are doing regarding ADA compliance for municipal websites and focusing on coding. He stated that the City of Altamonte Springs impressed him because of the innovative budgeting techniques. He also explained that the City of Coral Gables IT director explained what they are doing with artificial intelligence to make Coral Gables a Smart City.

16. MANAGER'S REPORTS:

A. Canal Bank Project - Soil Erosion

Carlos Acosta, Director of Public Works, presented a status updated of the Canal Stabilization project. He explained that the contractor is 50 % complete with the project. The completion date is sometime in October. He stated that the contractors have been dealing with some rain wash-out issues of materials and there are additional costs to replenish materials that have been washed out. The Town is negotiating those costs. The Town Manager said that we would not be going over budget.

C. Line of Credit

For Hurricane Irma, the Town spent 4 Million for recovery. FEMA still has not reimbursed.

Chief Financial Officer, Ismael Diaz, gave an update on the FEMA reimbursement issue. He stated that if the town were to be hit by a significant storm or multiple storms, there will be a cash flow issue. He added that the Town Manager would need to have a line credit with financial institution for natural disasters and the Town Council would

need to approve in order to access it. The Town will need to engage in a bond council and a financial advisor. The Town Manager said we would probably enlist the person that helped secure the bond that was done for Town Hall.

Councilman Dieguez motioned for town staff to bring back an ordinance with the appropriate restrictions. Councilman J. Rodriguez seconded the motion. All were in favor. Councilmember Ruano was not present.

Councilmember Collazo amended the motion, to include that town staff contact Marco Rubio's Office to assist us with the FEMA issue. Mayor Cid seconded the motion. All were in favor. Councilmember Ruano was not present.

D. Town Manager Monthly Police Report

Town Major, Javier Ruiz, provided the monthly crime report to the Town Council for the month of August. There were several vehicle burglaries that were apprehended. The officers prepped the preparation of school openings and school details.

17. ATTORNEY'S REPORTS:

A. Michael Pizzi JR. v. Town of Miami Lakes

The Town Attorney, Raul Gastesi, reported that the oral argument before 3rd District court of appeal took place on Tuesday, September 10th. He was a requested for a formal executive session to discuss this matter.

B. Juan Valiente v. Town of Miami Lakes

No update.

C. Six Month Review

The Town Attorney, Raul Gastesi, began the presentation stating it has been six months since the new arrangement was put into place that the Deputy Town Attorney Lorenzo Cobiella would be full-time assigned to the Town to provide legal services. Based on the level of service being provided by the firm Gastesi, Mestre, and Lopez firm is asking for $25,000 increase attorney fees.

The Deputy Town Attorney, Lorenzo Cobiella, continued presentation on the amount hours and legal services he has provided to the Town in the last six months. He explained the amount of oversight assistance he has provided to each department in the Town. He stated he has attended numerous conference and continuing education courses in order to assist the Town and he has paid for out-of-pocket. Councilmember Dieguez to pay through the new partnership Gastesi, Mestre, and Lopez and to increase$25,000 attorney retainer and Councilman J. Rodriguez seconded. All were in favor. Councilmember Ruano was not present.

18. ADJOURNMENT:

There being no further business to come before the Town Council, the meeting adjourned at 12:01pm.

Approved this 8th day of October 2019.

_____

Manny Cid, Mayor

Attest:

_____

Gina Inguanzo, Town Clerk

MINUTES
Mayoral Annual Budget Address
September 24, 2019
7:15 p.m.
Government Center
6601 Main Street
Miami Lakes, Florida 33014

Mayor Manny Cid made some remarks about the Budget before the Second Budget Hearing. He made a parallel comparison between the Town of Miami Lakes and the Miami Dolphins Team, regarding the restructuring of the organizations and about the way their budgets were analyzed in detail. Mayor Cid emphasized that taxes were kept low with the same level of service.

He acknowledge the good leadership of the Town administration and thank all his colleagues, specially Councilmember Dieguez, for the pivotal role he played during this year's budget cycle; he thanked him for calling the Sunshine Meetings and making it possible for the town council to work in every single detail of the budget, making this process the first time ever in the Town's history. Mayor Cid stated that this year "we had a participatory budget in process".

Mayor Cid thanked the Town Staff, Town Council and the Town Manager for the great work during the budget cycle.

Mayor Cid also stated that once again, the Town of Miami Lakes is rated 11th out of 114 cities in Florida. He said that it pays off to invest in the future and in Public Service. He finished by saying that the response time is down from 8 minutes to 6 1/2 minutes.

Approved on this 8th day of October, 2019.

_____
Manny Cid, Mayor

Attest:

_____
Gina Inguanzo, Town Clerk

MINUTES
Second Budget Hearing
September 10, 2019
7:30 p.m.
Government Center
6601 Main Street
Miami Lakes, Florida 33014

1. SPECIAL PRESENTATIONS:
None

2. CALL TO ORDER:

Mayor Manny Cid called the meeting to order at 7:33 p.m.

The Town Clerk, Gina Inguanzo, called the roll with the following Councilmembers being present: Carlos Alvarez, Luis Collazo, Joshua Dieguez, Jeffrey Rodriguez, Marilyn Ruano, and Mayor Cid. Vice Mayor Nelson Rodriguez joined the meeting at 8:10 pm.

3. MOMENT OF SILENCE:

The Deputy Town Attorney, Lorenzo Cobiella, led the invocation.

4. PLEDGE OF ALLEGIANCE:

Town Manager, Edward Pidermann, led the Pledge of Allegiance.

5. SPECIAL PRESENTATIONS:
None

6. ORDER OF BUSINESS (DEFERRALS/ADDITIONS/DELETIONS):

None

7. PUBLIC COMMENTS:

No public comments during this section of the Agenda.

8. APPOINTMENTS:

None.

9. COMMITTEE REPORTS:

None.

10. CONSENT CALENDAR:

Councilmember Collazo made a motion to approve the Consent Calendar. The Motion was seconded by Councilmember Dieguez and all were in favor. Vice Mayor Rodriguez was absent.

11. ORDINANCE-FIRST READING:

None

12. ORDINANCE IN SECOND READING (PUBLIC HEARING)

A. AN ORDINANCE OF THE TOWN OF MIAMI LAKES, FLORIDA, ADOPTING THE MILLAGE RATE OF THE TOWN OF MIAMI LAKES FOR THE FISCAL YEAR COMMENCING OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020, PURSUANT TO SECTION 200.065 FLORIDA STATUTUES; PROVIDING FOR DIRECTIONS TO TAX COLLECTOR; PROVIDING FOR NOTICE; PROVIDING FOR CONFLICTS; PROVIDING FOR SEVERABILITY AND PROVIDING FOR AN EFFECTIVE DATE. (Pidermann)

Town Attorney read the titles of the ordinances for item 12A and 12B, together into the record.

The Town Manager, Edward Pidermann, read into the record the following statement: the proposed millage rate for Fiscal year 2019-20 is 2.3127 the same rate as the proposed rate in the First Budget Hearing, held on September 10th, 2019. The gross taxable value for operating purposes is three billion, three hundred and sixty-five million, five hundred ninety-two thousand, and sixteen dollars ($3,365,592,016). The proposed millage rate will generate seven million, three hundred nine-four thousand and four hundred and twenty-four ($7,394,424) in ad valorem revenue budgeted at 95% collection rate. The proposed millage rate of 2.3127 is 3.9% above the roll back rate of 2.2255.

The Mayor opened the public hearing.

There being no one wishing to speak, the Mayor closed the public hearing.

Councilmember Dieguez moved to approve the millage rate at 2.3127. The motion was seconded by Councilmember Alvarez. The Town Clerk called thee roll and the Budget Ordinance in second reading passed 6-0, with Vice Mayor Rodriguez being absent.

B. AN ORDINANCE OF THE TOWN OF MIAMI LAKES, FLORIDA, APPROVING AND ADOPTING THE BUDGET FOR THE TOWN OF MIAMI LAKES FOR FISCAL YEAR 2019-2020; PROVIDING FOR EXPENDITURE OF FUNDS; PROVIDING FOR AMENDMENTS; PROVIDING FOR CARRYOVER OF FUNDS; PROVIDING FOR THE INCORPORATION OF THE ADOPTED CAPITAL BUDGET AS THE CAPITAL IMPROVEMENT ELEMENT OF THE COMPREHENSIVE PLAN; PROVIDING FOR CONFLICTS; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE. (Pidermann)

The Town Manager presented the item and stated the differences between the First and Second Budget Hearings.

Councilmember Alvarez motioned to move the budget and it was seconded by Councilmember Collazo.

Mayor opened the Public Hearing

Mirtha Mendez came before the Town Council to speak about the town budget, about the money set aside for the Police Contract and stated that the Town of Miami Lakes should wait to hire more police officers.

There being no one else wishing to speak, the Mayor closed the Public Hearing.

Councilmember Dieguez asked for the IT Department to play a video of the Florida House of Representatives, regarding the importance of saving and of having reserves. Once the video concluded, Councilmember Dieguez stated that the Town of Miami Lakes needs to think of the future, pay attention to the economic cycle, save more and increase the reserves.

The Town Clerk then called the roll and the motion passed 6-0, with Vice Mayor Rodriguez being absent.

13. RESOLUTIONS

A. A RESOLUTION OF THE TOWN OF MIAMI LAKES, FLORIDA, SETTING FORTH LEGISLATIVE PRIORITIES FOR FISCAL YEAR 2020-2021; AUTHORIZING TOWN MANAGER OR HIS DESIGNEE TO PURSUE FUNDING FOR LEGISLATIVE PRIORITIES; AUTHORIZING TOWN CLERK TO REMIT A COPY OF THIS RESOLUTION TO TOWN LOBBYIST, SOUTHERN STRATEGIES GROUP; AND PROVIDING FOR AN EFFECTIVE DATE. (Pidermann)

The Deputy Town Attorney read the resolution into the record.

The Town Manager presented the item.

Mirtha Mendez came before the Town Council to speak on the Legislative Priorities and stated that the list should be reviewed in detail before submitting to the Town lobbyists.

Councilmember Alvarez motioned and it was seconded by Councilmember Dieguez.

Councilmember Dieguez made a motion amending the main motion, directing the Town Manager to adopt into the Legislative Priorities List, a statutory scheme for compensating the victims of blasting. Councilmember Dieguez spoke about the Florida Blasting Damages Compensation Plan Bill enacted by the Florida Legislature and asked the Town Council to consider this bill as a template. Mayor Cid seconded the motion and the amendment to the motion passed 6-0. Vice Mayor Rodriguez was absent.

Councilmember Collazo made an amendment to the original motion, directing the Town Manager to prioritize the list so that the Town Council can prioritize using a numeric scale. The amendment to the motion passed 7-0.

The Town Clerk called the roll on the main motion as amended twice, and the motion passed 7-0.

B. A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, APPROVING THE MEMORANDUM OF AGREEMENT BETWEEN THE FLORIDA DIVISION OF EMERGENCY MANAGEMENT ("FDEM") AND THE TOWN OF MIAMI LAKES; AUTHORIZING THE TOWN MANAGER TO EXECUTE AGREEMENT; PROVIDING FOR INCORPORATION OF RECITALS; AND PROVIDING FOR AN EFFECTIVE DATE. (Pidermann)

The Deputy Town Attorney read the resolution into the record.

The Town Manager presented the item.

Vice Mayor Rodriguez moved the item and Councilmember Alvarez seconded the motion. The Town Clerk called the roll and the motion passed 7-0.

14. NEW BUSINESS:

None

15. MAYOR AND COUNCILMEMBER'S REPORT:

None

16. MANAGER'S REPORT:

None

17. ATTORNERY'S REPORT:

None

18. ADJOURNMENT:

There being no further business to come before the Town Council, the meeting adjourned at 8:20 pm.

Approved on this 8th day of October 2019.

_____

Manny Cid, Mayor

Attest:

_____

Gina Inguanzo, Town Clerk

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Edward Pidermann, Town Manager**

Subject: **Town of Miami Lakes SMART Technology Implementation Plan 2020-2035**

Date: **October 8, 2019**

Recommendation:

It is recommended that the Town Council adopts the Town of Miami Lakes SMART Technology Implementation Plan 2020-2035.

Background:

On November 3, 2015, the Town passed Resolution 15-1333 which adopted the Town's Strategic Plan. Two specific goals identified in the Strategic Plan are: (1) Achieve universal environmental sustainability in public and private environments, operations and infrastructure; and (2) Achieve national recognition as a "Model Town" for creativity, education, innovation and use of technology. In order to obtain these goals, in March 2018, the Town submitted an application for funding to the Miami-Dade Transportation Planning Organization (TPO) under their SMART Moves Program to complete the Town of Miami Lakes SMART Technology Implementation Plan.

The Miami Lakes SMART Technology Implementation Plan identifies how Smart Technology can be implemented to improve transportation, mobility, and safety within the Town. The focus of the Plan is to put Miami Lakes on the forefront of planning efforts as new technologies emerge, such as autonomous vehicles that will impact mobility and the way people move in the future. These technologies connect, collect and transmit information, and monitor conditions for efficient Town management and operations.

The Plan has seven (7) Goals which will be achieved though the adoption of Smart City technologies:

1. Be prepared to accommodate for current and future technology deployment
2. Optimize shared mobility
3. Enhanced pedestrian and bicycle safety and comfort
4. Support efficient travel and public safety
5. Promote public safety
6. Bolster a connected quality of life

7. Achieve universal sustainability

The Town has already taken steps to implement certain technologies to improve efficiencies on Town roadways, and this Study is intended to further guide the Town, its citizens and stakeholders towards expanding and implementing additional Smart City technologies that will improve transportation, mobility, and safety within Miami Lakes.

The technologies outlined in the report are recommended for implementation based on an assessment of regional and local resources, a list of technologies identified in the literature review, a review of existing roadway inventory, feedback received from the Study Advisory Committee and Community Meeting, discussions with the Town, and a review of ongoing initiatives and public needs.

In preparing this Plan, Smart Technologies were selected based on the following factors:

1. Cost
2. Sequence and Prerequisites (i.e. some items needed to be in place for other technology to be usable or effective)
3. Viable locations within the Town
4. Achievement of specific Objectives and Goals for the Town

Sequencing and prerequisites were incorporated into the recommended schedule provided in the Study. Importantly, Goals and Objectives were created and refined, so that the Town could apply these anchoring principles as technologies evolve in the future. In addition, the Study outlines Strategic Action Steps for each technology, along with suggested "in-charge" staff from the Town, as applicable.

The technologies outlined in the Plan are interconnected, as they seek to attain the Town's overarching Goal of achieving national recognition as a "Model Town" for creativity, education, innovation and use of technology. These Smart Technology Goals go beyond just moving vehicular traffic. The Goals equally connect people safely and efficiently in a sustainable way, thereby achieving the Town of Miami Lakes' overall Mission. Thus, it is recommended that the Town Council approves and adopts the Town of Miami Lakes SMART Technology Implementation Plan 2020-2035.

Attachments:

Resoultion
SMART Technoloy Implementation Plan 2020-2035

Fiscal Impact: Varies by project
Guiding Principles: 1, 6, 9, 14
Objectives: 1, 4, 6

RESOLUTION NO. 2019 - _____

A RESOLUTION OF THE TOWN OF MIAMI LAKES, FLORIDA, ADOPTING THE TOWN OF MIAMI LAKES SMART TECHNOLOGY IMPLEMENTATION PLAN FOR 2020-2035; AUTHORIZING INCORPORATION OF THE SMART TECHNOLOGY IMPLEMENTATION PLAN FOR 2020-2035 INTO THE STRATEGIC PLAN; AND PROVIDING FOR AN EFFECTIVE DATE. (Pidermann)

WHEREAS, on November 3, 2015, the Town passed Resolution 15-1333 which adopted the Town's Strategic Plan, incorporating the goals of achieving universal environmental sustainability, and achieving national recognition as a "Model Town" for creativity, education, innovation and use of technology; and

WHEREAS, as a result of the Resolution, in March 2018, the Town submitted an application for funding to the Miami - Dade Transportation Planning Organization (TPO) under their SMART Moves Program to complete the Town of Miami Lakes Smart Technology Implementation Plan; and

WHEREAS, as a result, in September 2018, the TPO granted the Town a grant to conduct a study, which analyzed the Town's current infrastructure and created a blueprint to transform the Town into a SMART city; and

WHEREAS, the Town has recently received a copy of the report with its suggestions and seven (7) point goal plan for the adoption of SMART Technology Implementation Plan 2020-2035, set forth Exhibit "**A**"; and

WHEREAS, the Town Manager suggests that the Town adopt the SMART Technology Implementation Plan 2020-2035, finding and incorporate them into the Town's Strategic Plan; and

WHEREAS, the Town Council agrees that it is in the best interest of the Town to adopt the SMART Technology Implementation Plan 2020-2035, as described in Exhibit "**A**", and incorporate the Study's results into the Town's Strategic Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, AS FOLLOWS:

Section 1. **Recitals.** The foregoing Recitals are true and correct and incorporated herein by this reference.

Section 2. **Adoption of SMART Technology Study.** The SMART Technology Implementation Plan 2020-2035 set forth in Exhibit "**A",** in hereby adopted and incorporated into the Town's Strategic Plan.

Section 3. **Authorization of Town Officials.** The Town Manager and/or his designee are authorized to incorporate the SMART Technology Implementation Plan 2020-2035 into the Town's Strategic Plan set forth in Exhibit "**A**".

Section 4. **Effective Date.** This Resolution shall be effective immediately upon adoption.

********** This Section has been left intentionally blank **********

Passed and adopted this 8th day of October 2019

The foregoing resolution was offered by _____ who moved its adoption. The motion was seconded by _____ and upon being put to a vote, the vote was as follows:

Mayor Manny Cid	_____
Vice Mayor Nelson Rodriguez	_____
Councilmember Carlos O. Alvarez	_____
Councilmember Luis Collazo	_____
Councilmember Josh Dieguez	_____
Councilmember Jeffrey Rodriguez	_____
Councilmember Marilyn Ruano	_____

_____
Manny Cid
MAYOR

Attest:

_____
Gina Inguanzo
TOWN CLERK

Approved as to form and legal sufficiency:

_____
Raul Gastesi, Jr.
Gastesi & Associates, P.A.
TOWN ATTORNEY

EXHIBIT "A"

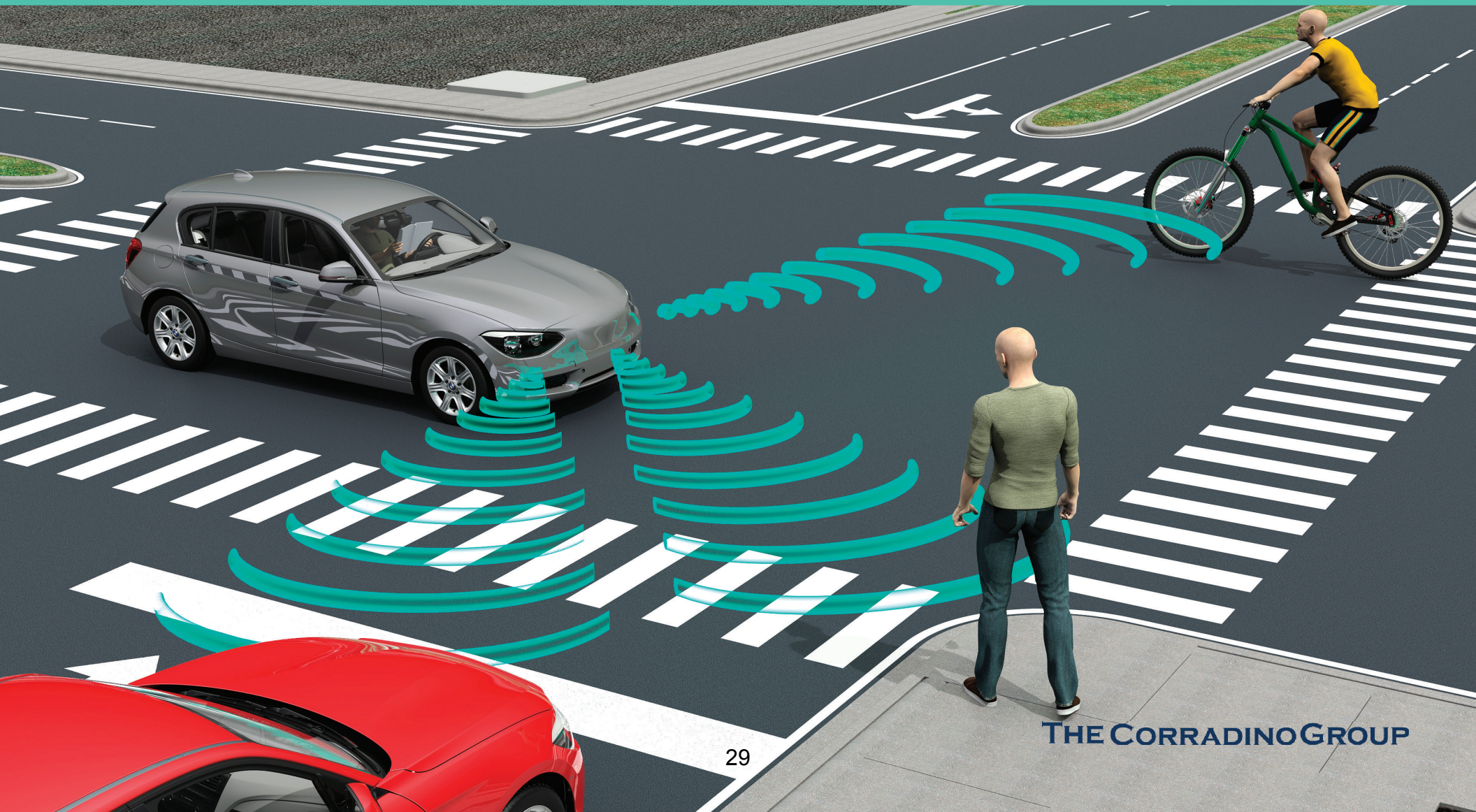
SMART Technology Plan Study

TOWN OF

MIAMI LAKES

DRAFT | SEPTEMBER 12, 2019

SMART TECHNOLOGY IMPLEMENTATION PLAN 2020-2035



THE CORRADINO GROUP

TABLE OF CONTENTS

INTRODUCTION

What is a Smart City? A Smart City is a city dedicated to integrating information and communications through emerging technologies to optimize operations and services, with the intent of providing connectivity to improve the lives of citizens. This includes the development of networks and physical devices designed to obtain and relay information anywhere in a digital city. A Smart City involves the development of up-to-date infrastructure that involves the latest technology, and through this effort, citizens and visitors are able to access various services through any connected device, and experience enhanced city functions in areas of mobility, connectivity, traffic control, utilities, safety and sustainability.

The Town was awarded funding for a Smart Mobility Technology Study from the SMART Moves Grant Program with assistance from the Miami-Dade Transportation Planning Organization (TPO). The purpose of the study is to identify, plan, and establish a future network of diverse transportation technologies to build an infrastructure system that is capable of supporting the community's needs, as well as, improving safety and mobility for all users. The Miami Lakes Smart Mobility and Future Technology Transportation Study incorporates the evaluation of existing and future technologies that could impact and transform transportation in Miami Lakes, including the integration of diverse future technologies to support connected and autonomous transportation, traffic control and management, adaptive signalization, traveler data, pedestrian and bicycle safety, smart parking, energy efficient transportation technologies, and potential funding mechanisms to sustain a cost-effective future transportation network Town-wide.

Smart City technologies optimize infrastructure that can improve functionality and the quality of life in the Town of Miami Lakes by addressing challenges the Town and its stakeholders have identified. Integrating these technologies into various aspects of the Town's fabric will improve utilities, mobility, pedestrian and bicycle safety, traffic congestions, and enhance public safety and quality of life to advance the town as a sustainable place to live, work, and visit, which will be essential for Town operations as it continues to grow.

The Miami Lakes Smart Mobility and Technology Transportation Study identifies how Smart Technology can be implemented to improve transportation, mobility, and safety within the Town. The Town of Miami Lakes is on the forefront of planning efforts as new technologies emerge such as autonomous vehicles that will impact mobility and the way people move in the future. These technologies connect, collect and transmit information, and monitor conditions for efficient Town management and operations. The Town of Miami Lakes SMART Technology Implementation Plan has seven goals which will be achieved by adopting Smart City technologies:

1. Be prepared to accommodate for current and future technology deployment
2. Optimize shared mobility
3. Enhanced pedestrian and bicycle safety and comfort
4. Support efficient travel and public safety
5. Promote public safety
6. Bolster a connected quality of life
7. Achieve universal sustainability

The technologies outlined in this plan are interconnected as they seek to attain the Town's overarching goal to achieve national recognition as a "Model Town" for creativity, education, innovation and use of technology. These Smart Technology goals go beyond just moving vehicular traffic. Connecting people safely and efficiently in a sustainable way is the Town of Miami Lakes' overall mission. The Town of Miami Lakes is ready to lead with new Smart Technology strategies and the technologies outlined in this report have been compiled and are recommended for implementation based on an assessment of regional and local resources, ,the list of technologies identified in the Literature Review from task 2, a review of existing inventory from task 3, feedback received from the Study Advisory Committee, discussions with the Town, and a review of ongoing initiatives and public needs.

The Town has already taken steps to implement certain technologies to improve efficiencies on town roadways, and The Miami Lakes Smart Mobility and Technology Transportation Study is intended to further guide the Town, its citizens and stakeholders towards expanding and implementing additional Smart City technologies that will improve transportation, mobility, and safety within Miami Lakes. This technology study further identifies ways the Town can improve transportation through the use of new and emerging technologies. While the Town of Miami Lakes already has many technologies implemented and operated locally, there are some technologies in place and proposed that require regional support to implement and operate.

METHODOLOGY

As part of this study a technology review and inventory assessment was conducted. The review included street technologies that support autonomous transportation, traffic control and management, adaptive signalization, the collection of traveler data, improvement of pedestrian and bicycle safety, smart parking, and energy efficient transportation technologies. The literature review covered these technologies and analyzed how they affect the planning process and the various potential impacts they have. A survey of existing ITS technology and local inventory of pedestrian, bicycle, transit and roadway infrastructure was undertaken and reviewed to understand the needs for interoperability and communication of information. Data collection and management tools were also reviewed. While most of the technology that was reviewed during the course of the study could help the Town , resources are not infinite, and a prioritization and ranking scheme was developed for the proposed projects. During the review of technologies, it was also found that there were different technologies which provide for the same needs; in these cases, a decision was made to proceed based on the most advantageous option. In preparing this plan, Smart Technologies were selected based on the following factors:

1. Cost
2. Sequence and Prerequisites (i.e. some items needed to be in place for other technology to be usable or effective)
3. Viable locations within the Town
4. Achievement of specific objectives and goals for the Town

Sequencing and prerequisites were incorporated into the recommended schedule provided within this section. Importantly, goals and objectives were created and refined, so that the Town could utilize these as anchoring principles as technologies evolve in the future.

Strategic action steps are provided for each technology, along with suggested "in-charge" staff from the Town as applicable. However, it may be advisable for the Town to hire and designate a SMART City coordinator to guide future efforts.

LITERATURE REVIEW

Transportation technologies are tools used to improve efficiency and mobility of transportation systems and their users. Many are "hard" technologies that involve the application of new materials or tools, and include "soft" elements such as new methods, procedures, and organizational structures for delivering transportation facilities and services. The Internet of Things (IoT) can process information, improving communication among systems that may otherwise be in conflict to improve efficiency, which, in turn, increase safety and mobility in a transportation network. When selecting technologies, it is first important to understand why it is needed and how certain interventions will fit that specific need. In studying potential technological improvements that will enhance transit services in Miami Lakes, we began by understanding the questions people are asking when they are traveling: "Where am I going?" "How am I going to get there?" and "How long will it take to get there?." Understanding how people make decisions regarding travel allows us to understand what tools and information are needed to plan and complete a trip seamlessly. Questions such as these in conjunction with assessing historical data and trends and collecting and examining new data will uncover any gaps or opportunities in the transportation network for viable improvements.

The charts below outline various steps required to travel by transit. Understanding the data required and infrastructure available, from the start of a trip up until it is completed, can determine the types of technology to implement.

Data Flow and Understanding Infrastructural Needs				
	Traveler/Person			Operations
Data User Type	**Planning a Trip**	**Beginning Transit**	**In Transit**	**Systemic Needs**
Items to consider/ Thought process	Can I get there?, How can I get there?, How long will it take me?	Where am I going?, What's my route?, When will I arrive?, Alternative routes?	What's taking so long?, Detour options?, Will I miss my connection? How long until the next one?, Do I need to contact to let someone know I'm running late?	Traffic planning, Congestion management, Signal timing adjustments, Congestion pricing, Automation, Interlink, Disaster/ Emergency Planning
Categorical Needs	Transportation options, Standard time estimate, Timetables	Real time data, Route info, Delays/construction info, Transit timetables	Real-time data, Detour data	Real time data, Route option data, Passenger occupancy data
Data Needed	Route options (multimodal), Bus/Train Schedules	Current traffic data/ETA, Specific route taken, Transfer locations and timetables (Transit)	Current traffic data/ Detour data, Changes in ETA, Transfer locations and layover times (Transit)	Transit ridership, accident data, congestion data, construction/roadwork data
Data Sources	Existing maps, schedules, Destination data (Geolocated data, i.e. Google Earth Maps), Crowdsourcing	Existing maps/schedules, Destination data (Geolocated data, i.e. Google Earth, Maps), Crowdsourcing, Current traffic data accidents, incidents, congestion)	Schedules, Wireless data, Police, Crowdsourcing, Current traffic data (crashes, incidents, congestion)	Sensors (Proximity sensors, Infrared), Cameras, Wireless data (Pings), GPS, Police, Crowdsourcing
Data Distribution	Maps (printed and electronic), internet, word of mouth, Bus/ Transit schedules, Online trip planners	Phone (Waze, Google Maps, etc.), Computer, Word of mouth, Maps (printed or electronic), Schedules (Printed and electronic)	Phone (Waze, Google Map), GPS, Transportation displays (Nextbus, Overhead displays); Text message	Computer interfaces between systems (Wiring, Wireless, Net), Dispatcher systems (Uber, Lyft, Taxis), Digital signage, Radio, Phone, Text

Traffic congestion in Miami Lakes results in excessive delays for road users, and can make for unsafe walking and biking conditions , as automobile priority is often assumed, especially at intersections. The perception of a lack of safety can act as a barrier for movement throughout areas with high traffic volume discouraging shared road use from pedestrians, bicyclist and scooters. In addition, traveling on higher-speed streets may cause higher levels of stress for walkers and bicyclists sharing the road than in other areas with lower speeds. Technology can improve mobility and safety as well as the perception of safety on sidewalks and streets, improving the efficiency and safety of transportation networks for all users. Technology can assist from the moment one plans a trip, until reaching a destination. When selecting technology to implement it is important to determine strengths, weaknesses, opportunities, and threats within transportation networks. These include matters of:

1. Convenience (such as integrated apps for easier access to information; new ways to travel, such as dockless bicycles and scooters)
2. Safety, or perceptions of safety
3. Sustainability, as can be found with green technology

These determinations, along with a cost-benefit analysis, can indicate if/where any technology interventions will pay off.

Implementing technologies can improve mobility for all, improve quality of life, enable new connections, and broaden accessibility. The following review includes: street technologies that will support autonomous transportation; traffic control and management; adaptive signalization; collection and use of traveler data; improvement of pedestrian and bicycle safety; smart parking, energy-efficient transportation technologies; and, potential funding mechanisms to sustain the future transportation network.

KEY WORDS AND CONCEPTS IN CONTEXT

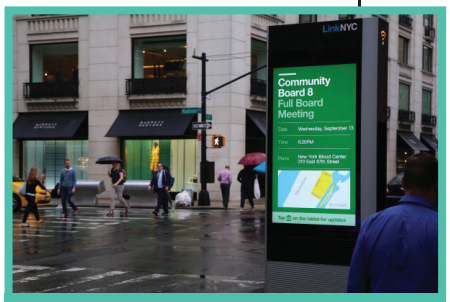
1. **Smart Cities: A place (municipality, neighborhood, and other geographical locations) that incorporates information and communication technologies to enhance the quality and performance of services such as energy, transportation and utilities in order to reduce resource consumption, wastage and overall costs.**
2. **IoT: Interconnecting and interacting technologies to create a large network of objects and systems.**
3. **Equity: Serving travel demands of traditionally underserved populations (low income, minority, aging populations, and people with limited language proficiency and disabilities).**
4. **Access: People's ability to reach goods, services and activities.**
5. **AV: Vehicles that have the capability of driving on their own, without human assistance.**
6. **Energy: The generation of power to provide electricity for functions within a specified area.**

Miami Lakes SMART Mobility and Future Technology Literature Review

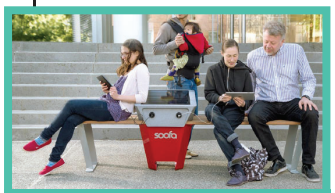
SMART INFRASTRUCTURE

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
Energy	Smart Grid Infrastructure Electric Vehicle Charging Stations	Installing more Electric vehicle charging stations can encourage more electric vehicle usage and ownership.	• Tesla Supercharger Stations • ChargePoint • SemaConnect; • Blink • EVgo	Cost ranges depending on the charging schematic. A public level 2 charging schematic can range from $3,000-$6,000. Additionally, there are maintenance and operation costs, including the cost of power. Government grants can lower the upfront cost of a charging project and allow an owner-operator to achieve a revenue stream. Grant opportunities are now available such as the Florida Smart City Challenge and Electrify America. Miami Lakes can "host" an electric charging company to install a Pilot Program, or rent stations as a low-risk option. For the user, charging fees range from $0 to a few dollars per hour of charging.	Public charging locations can be installed in parking garages, transportation hubs, and retail and commercial hubs. Public-Private Partnerships will assist in implementing and selecting sites. There is minimal risk for a municipality to own and install the infrastructure and give companies a license to operate it. The following are strategies to implementing public charging stations: • Municipality owns and operates the EV charging stations on public property. • A sponsor/ private partner funds the purchase and installation of a charger at a municipally-designated location for public use. The partner is allowed to recover costs by charging a fee for the fueling service or the provision of other services. • Municipality provides land for a third party to own and operate an EV charging station. The equipment could be owned and operated by the equipment provider, or an independent third party. • Municipality works with private sector or not-for-profit entity to build an EV charging station for public use.	https://www.wired.com/story/us-charging-network-electric-vehicle-needs/ https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf https://www.theicct.org/sites/default/files/publications/EV-charging-best-practices_ICCT-white-paper_04102017_vF.pdf http://www.naseo.org/data/sites/1/documents/publications/Strategic-Planning-to-Implement-Publicly-Avaiable-EV.pdf http://tompkinscountyny.gov/files2/itctc/projects/EV/Tompkins%20County%20EVSE%20Implementation%20Strategies.pdf http://www.sustainablejersey.com/actions-certification/actions/type=1336777436&tx_sjcert_action%5BactionObject%5D=521&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=e136260b594094a98ecb6f78df43448a

Source: PluginCars.com; Tesla

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
Smart Cities	Smart Kiosks	Touchscreen Kiosks can provide information about bus departures, route details, trip planning, and advertising. Software can track individual interactions such as: what users request the most; how long sessions last; plus collect traffic and pedestrian data on travel patterns.	• Connectpoint • SmartStop • Civiq	Cost varies between $6,000 and $13,000 depending on indoor or outdoor use. There is the opportunity to generate ad revenue to cover the cost to install a kiosk network and help finance maintenance.	Smart Kiosks are best located at heavily trafficked areas, public spaces and at transit stops. Implementation will require personalized software support and maintenance.  *Source: Civiq*	https://www.connectpointdigital.com/smartstop/
Smart Cities	Communications Kiosk	Communication networks can provide emergency services such as 911-calling and public service announcements on HD displays. Other amenities can include free public WIFI, phone call capabilities, and usb power charging. Mapping services can also be provided. Advertising opportunities are also available.	• LinkNYC in New York City	LinkNYC Smart Kiosks can cost upwards of $30,000 per unit to install.[1] Advertising on screens create revenue opportunities to defray/cover cost.	Kiosks are best located at heavily foot-trafficked areas, public spaces and at transit stops. Community participation can reveal areas where kiosks are needed the most.  *Source: LinkNYC*	https://link.nyc/

[1] https://techcrunch.com/2018/12/01/the-economics-and-tradeoffs-of-ad-funded-smart-city-tech/

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
Smart Cities	Public Wi-Fi 	Public Wi-Fi is wireless connectivity to the internet provided by a municipality or public institution. Providing access to free Wi-Fi provides an amenity for residents and visitors. Internet access helps bridge any digital divide, and can enable other IoT based city services, such as networked LED street lighting or Smart parking.	• San Francisco • Boston	Cost is variable based on service range.	Miami Lakes provides Public-Wi-Fi at all park facilities. Expanding to provide public Wi-Fi in other public spaces and on Miami Lakes Moovers will enhance quality of life for residents and visitors.	https://ruckus-www.s3.amazonaws.com/pdf/other/role-of-public-wifi.pdf http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site_Content/WiFi%20Case%20Study.pdf
Smart Cities	Smart Furniture	Solar-powered benches offer an inviting place to relax and furnish streets with amenities such as free Wi-Fi and usb charging. Smart furniture also can collect user data and metrics such as temperature, foot-traffic counts.	• D.C. Department of Parks and Recreation "Soofa" bench	The data plan costs $600 to $2,000 per year for each bench, and purchasing costs $3,800 per bench.	Smart furniture is best situated at bus stops, commercial areas with high foot-traffic, and parks.  *Source: Civiq*	http://www.soofa.co/
Smart Cities	5G Wi-Fi network	Provide Wi-Fi on transit, in taxis, shuttles, parks and public spaces. 5G offers faster connections, more reliability and greater capacity at lower costs, to better connect infrastructure, devices and people. Moreover, compared to the current 4G standard, 5G offers the capacity to enable additional Smart City capabilities, and it will be a prerequisite to enable various high-bandwidth and low-latency Smart City applications.	• 5G networks are expected to be introduced in the US by 2020	Cost of implementation cannot yet fully be determined. There are advertisement revenue or sponsorship opportunities . In addition, when a user signs in to the system or creates an account, user data can be collected, and there will be an ability to support location-based services that can deliver highly-targeted multimedia content to users.	5G network technology and standards are still being developed. It is expected that 5G will be wide in use within the next 5 years.	http://www.govtech.com/fs/infrastructure/5G-Can-Enable-Smart-Cities-If-Policymakers-Allow-It.html https://www.mckinsey.com/industries/telecommunications/our-insights/the-road-to-5g-the-inevitable-growth-of-infrastructure-cost https://www.ariasystems.com/blog/3-ways-telecoms-will-monetize-5g/

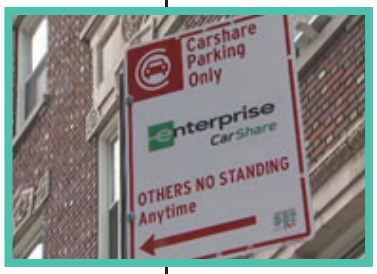
TRANSIT

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
AV/ IoT	Autonomous Shuttle/Taxis/ Ride-Hail Network  *Source: Reuters*	Self-driving, electric vehicles to address first mile/last mile issues.	• Waymo in Phoenix, AZ	Autonomous taxi costs will decline from 85¢ per mile in 2018 to about 35¢ per mile by 2035, less than half of personal cars' Total Cost of Ownership (TCO) and slightly less than their operating expenses.	State Autonomous Vehicle Legislative Efforts exist in Florida. Miami Lakes' suitable year-round weather and areas with slower street speeds, make for favorable autonomous vehicle testing and operating conditions. Florida municipalities can partner with The Florida Department of Transportation (FDOT) Florida Automated Vehicles Initiative to design a testing program.	https://www.theguardian.com/technology/2016/aug/18/self-driving-buses-helsinki http://dupress.com/articles/smart-mobility-trends/%23sup-2 https://ddswireless.com/blog/5-cities-with-noteworthy-autonomous-vehicle-pilot-programs/
Smart Cities	Air-Conditioned Bus Shelters	Air conditioned bus shelters make public transportation more comfortable and attractive, especially in regions with warm climates.	• Hialeah, FL • Dubai, UE  *Source: Phillip Pessar*	The Bus Shelter in Hialeah was built at a cost of $65,000.	Bus shelters with the most sun exposure, and bus stops with the highest use are candidates for such investment.	https://www.miamiherald.com/news/traffic/article96915402.html
IoT	Real-time Public Transit Vehicle Arrival Information System	GPS technology can provide bus arrival information. Information can include waiting time and messages such as any service disruptions or other important service messages. To encourage ridership and promote service accountability.	• Maryland Transit Administration	Capital costs for providing real-time bus arrival information can range from $60,000 for a small deployment to $69.75 million for a larger deployment (London buses).	Real-time information can be installed at bus stops and provided on Web and mobile applications, moving users to plan trips.  *Source: NYC DOT*	https://www.baltimoresun.com/news/maryland/bs-md-bus-real-time-20150209-story.html http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_syn_48.pdf

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
IoT	Demand Responsive Transit (Micro-Transit)	Micro Transit is a shared, on-demand, app-based mobility service that groups travelers with similar trip pickup and drop-off locations.. Researchers at the University of Texas found that one share vehicle could replace 10 single-occupancy vehicles with wait times from 20 seconds to five minutes.	• Sacramento Regional Transit • SmaRT Ride • Freebee in South Florida	Infrastructure for Micro-Transit is relatively inexpensive for a public transportation alternative/ supplement. Regular roadways will be utilized for route service. Fleet will need to be purchased and requires storage and regular maintenance. Associated costs cover vehicle fleet, depot space, labor, maintenance, development of mobile app, and other tech support. There is an opportunity to collect advertising revenue with sponsorships and advertising space. For example, Freebee offers a 50/50 advertising revenue share with partnering municipalities.	Miami Lakes, along with other cities in South Florida have introduced "Freebee" service to their transportation network, which provides free ride-hailing for individuals, or small groups, through the Freebee application. It is free to users and services a general area with a flexible route. Large fleet microtransit, routes, or general service areas, will be determined based on need, focuses on short-distance trips and first mile / last mile connections. A mobile application will need to be developed to make this possible.	http://www.ce.utexas.edu/prof/kockelman/public_html/TRB15SAVsinAustin.pdf https://smartride.sacrt.com/ https://ridefreebee.com/

Source: Sacramento Regional Transit

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
AV	Autonomous (AV) Technology	It is expected that the integration of privately owned AV cars will reach about 25 percent of the fleet during the period 2026–2035. Boston Consulting Group found about 28 percent of all crashes could be prevented with driver-assisted technologies that are already available today. These technologies include automatic braking, cruise control, and automatic parking. The Boston Consulting Group estimated that almost 10,000 fatalities could be stopped next year if more of these technologies were now in use.	• Many major car manufacturers have developed and deployed AV technology in their vehicles	Cost of AV technology has decreased in the recent past, allowing it to be accessible to the masses. Tesla has released a version of their self-driving vehicle for $35,000.	Many technologies, such as a 5G Network, will be required to fully integrate roadways with AV technology. Precursor technologies will determine how implementation will occur. New facilities will be required, and there will be zoning and building code implications.	http://www.rand.org/pubs/research_reports/RR443-2.html https://www.bcg.com/d/press/29september2015-roadmap-to-safer-driving-through-driver-assistance-systems-17647
IoT	Ride sharing /Car sharing	Ride Sharing and Car Sharing are economical and efficient ways to address first mile/ last mile issues. It is expected that ridesharing will widely expand by 2026–2035, much of which will be by use of autonomous vehicles. Uber expects its entire fleet will be fully autonomous by 2030.	• Uber/Lyft/ & Zip Car; Enterprise Car Share	There are few associated costs, as the operator pays for cost of operations and associated maintenance. For users, rates start at less than $10 per hour, and, in some cases, include fuel and insurance.	Working with service providers will allow to select the best locations. Parking spaces will need to be reserved for loading and ride sharing pick up locations. Car sharing also requires parking spaces and will be managed and operated by selected providers.	https://www.autonews.com/article/20181022/OEM06/181029969/counter-revolution-rental-agencies-explore-mobility-frontiers https://www.cnet.com/roadshow/news/general-motors-maven-car-sharing/ http://www.wsj.com/articles/gm-lyft-to-test-self-driving-electric-taxis-1462460094



Source: Zipcar

FREIGHT

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
IoT	Intelligent Freight Management	The Freight Signal Priority service package (FSP) provides traffic signal priority for freight and commercial vehicles traveling in a signalized network. This technology can also be utilized by emergency and personal vehicles. The goal of Freight Signal Priority is to reduce stops and delays to improve travel time reliability for freight traffic, and to enhance safety.	--	Cost information not available.	Freight technologies can improve freight volume movement.	https://www.its.dot.gov/research_archives/efm/index.htm
IoT	Delivery Drones	Drones, or unmanned aerial vehicles (UAVs) can deliver lightweight packages to homes/businesses. Drones have the capability to remove the need for some delivery vehicles on the road, which would reduce traffic volume and Vehicles Miles Traveled (VMT).	• Commercial drone delivery is being tested by companies such as Amazon, Walmart, Google and UPS  *Source: Amazon*	Licenses for commercial drone delivery service is soon expected to be issued in the U.S. Cost of infrastructure required cannot yet be determined.	Buildings and streets would require sensors, visual cues and have parameters for drones to identify viable routes, which has legal, zoning, and land use policy implications.	https://www.citylab.com/life/2014/08/ubiquitous-as-pigeons-imagining-life-in-the-city-of-drones/375568/ http://www.thehumanitarianspace.com/2014/08/zoning-and-urban-land-use-planning-for.html https://medium.com/predict/the-three-dimensional-city-how-drones-will-impact-the-future-urban-landscape-5103af61af72

PEDESTRIANS

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
Smart Cities	In-Road Warning Lights (IRWL) 	In-road lights alert motorists that a pedestrian is preparing to cross a street. The pedestrian activates the system, either by using a push-button or through detection from an automated device, and in-ground lights begin to flash in unison, warning the motorist that a pedestrian is in the vicinity of the crosswalk ahead.	• IRWL technology is used across Miami-Dade County, especially for new roadway enhancement projects	Installation costs are an estimated $25,000 per crosswalk which includes parts, materials, labor and equipment.	IRWL enhance safety of marked crosswalks. Locations with low pedestrian-visibility are good candidates for IRWL.  *Source: GreenDC*	http://www.pedbikeinfo.org/data/faq_details.cfm?id=3903
IoT	Pedestrian Hybrid Beacons (PHB)  *Source: Insurance Institute for Highway Safety*	Pedestrian beacons detect a phone's unique identifier, called a Media Access Control (MAC) address. This anonymous signal shows where people congregate and when, and can identify unique visitors . Over time, this has helped local businesses, real estate developers, and transportation agencies respond to a spike in activity.	• "Living Lab" in Dallas, Texas[2]; Las Vegas, NV; and City of Tucson, Arizona	Pedestrian hybrid beacons are less expensive than a full traffic signal installation and can range from $21,000 to $128,000 with an average per-unit cost of $57,680.	PHBs are often considered for installation at locations where pedestrians need to cross and vehicle speeds or volumes are high, but traffic signal warrants are not met. These devices have been successfully used at school crossings, parks, senior centers, and other pedestrian crossings on multilane streets. PHBs are typically installed at the side of the road or on mast arms over midblock pedestrian crossings.	http://www.freepatentsonline.com/y2018/0308356.html https://www.citylab.com/solutions/2019/02/las-vegas-smart-city-technology-surveillance-data-privacy/583474/ http://pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=53
Access/Equity	Extended Time (Tap Cards)	Using Radio Frequency Identification (RFID) technology, a reader detects designated RFIC card issued to elderly and disabled pedestrians which triggers the crossing light to extend.	• The Green Man Plus in Singapore	RFID sensors are relatively inexpensive to purchase and install. Cards have minimal costs.	Targeted areas will consist of areas with larger aging populations. Public input will determine crosswalks with greatest need for crossing time extensions.	https://www.lta.gov.sg/content/ltaweb/en/roads-and-motoring/managing-traffic-and-congestion/intelligent-transport-systems/green-man---.html

[2] Fierce Wireless. Tips, tricks and techniques for successful IoT deployments. June 2018.

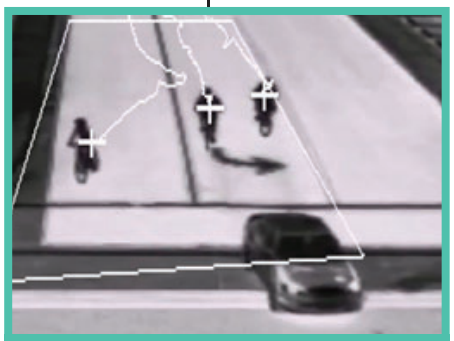
Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
IoT	Automated Pedestrian Detection	Automated pedestrian detection devices can sense when a pedestrian is waiting at a crosswalk and automatically send a signal to switch to a pedestrian WALK phase. Some automated pedestrian detection devices are also able to determine whether a pedestrian needs more time to cross the roadway and will lengthen the crossing interval to accommodate the slower pedestrian.	• Miami-Dade County, FL and Las Vegas, NV	The cost to install a pedestrian hybrid signal system is approximately $50,000 to $120,000, depending on site conditions and the equipment is alreadyavailable. Operation costs are approximately $4,000 per year. Adding automated detectors to an existing pedestrian signal can range from $10,000 to $70,000 per crosswalk.[3]	Future assessment must be made to determine which detection technology will be the best option. There are ultrasonic, microwave-radar, infrared, piezoelectric, laser scanners and video image processing detectors to be installed for intersections with heavy pedestrian use.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=11 http://www.pedbikesafe.org/pedsafe/casestudies_detail.cfm?CM_NUM=11&CS_NUM=101 http://www.pedbikesafe.org/pedsafe/casestudies_detail.cfm?CM_NUM=11&CS_NUM=82
Access/Equity	Extended Time (Tap Cards)	Using Radio Frequency Identification (RFID) technology, a reader detects designated RFIC card issued to elderly and disabled pedestrians which triggers the crossing light to extend.	• The Green Man Plus in Singapore	RFID sensors are relatively inexpensive to purchase and install. Cards have minimal costs.	Targeted areas will consist of areas with larger aging populations. Public input will determine crosswalks with greatest need for crossing time extensions.	https://www.lta.gov.sg/content/ltaweb/en/roads-and-motoring/managing-traffic-and-congestion/intelligent-transport-systems/green-man---.html
Access/Equity	Accessible Pedestrian Signals (APS)	Signals are designed to accommodate the needs of all pedestrians, including those with vision and mobility impairments. They provide information in nonvisual formats, such as audible tones, speech messages, and vibrating surfaces to indicate the appropriate time for pedestrians to cross a street.	• Clearwater, FL	APS can cost anywhere from $500-$10,000 per device	Will need to retrofit current pedestrian signals when they are installed or replaced.	https://www.nap.edu/catalog/22902/accessible-pedestrian-signals-a-guide-to-best-practices-workshop-edition-2010

Source: San Francisco MTA

[3] http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=11

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
Smart Cities	Interactive LED Road Crossing	This crossing is dynamic for all users, and is designed for the age of smartphones. By tracking objects with cameras, the crossing adjusts orientation, markings and colors to accommodate the number of people needing to cross. With the use of smartphones and within heavy traffic areas, more prompts are needed for pedestrians, drivers and cyclists to make road crossings safer.	• Starling Crossing prototype in South London, UK	Costly to retrofit road with LED equipment. 	Crossings with the most users, and high pedestrian use are prime for this technology.	https://www.architectmagazine.com/technology/the-future-of-pedestrian-crossing_o https://www.curbed.com/2017/10/13/16469630/starling-crossing-umbrellium-smart-crosswalk-road-tech

BICYCLES AND SCOOTERS

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
IoT	Thermal Technology	Thermal imaging cameras can make a distinction among vehicles, pedestrians and bicyclists. The information collected can assist in addressing problem areas. Thermal imaging pedestrian sensors are used to control traffic signals or warning lights by detecting pedestrians at intersection. The pedestrian presence detector transmits its detection information to the traffic signal controller and allows a more dynamic control of traffic signals in favor of pedestrians and bicyclists and activation of warning lights to make them more visible in the traffic scene.	• Arizona Department of Transportation (ADOT)  *Source: Popular Mechanics*	Cost is estimated at up to $16,000 per intersection to install thermal sensors.	Looking at streets with most bicycle usage, and conducting an analysis of crash data will determine intersections with high pedestrian and bicycle crashes. These locations will be the best candidates for thermal sensor installations.	https://www.flir.com/discover/traffic/urban/pedestrian-and-bicyclist-detection-with-thermal-imaging-cameras/ http://www.azbikeped.org/downloads/Bicyclist-and-Pedestrian-Count-Strategy-Plan.pdf
IoT	Stereoscopic Sensors	Stereoscopic sensors are similar to video imaging with automated reduction but use stereoscopic video inputs instead of a single video input. Computer algorithms are used to automatically identify and count pedestrians and bicyclists.	• Arizona Department of Transportation (ADOT)	Cost varies based on location.	An analysis of heavily-trafficked pedestrian and bicycle routes will determine locations for stereoscopic sensors	http://azbikeped.org/downloads/Bicyclist-and-Pedestrian-Count-Strategy-Plan.pdf

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
IoT	Radio Beams	Ultra-low power, high-frequency pulses are transmitted and reflected off a target object (e.g., bicyclist), and the return pulses are analyzed to determine object type, distance, and motion. The radar sensors are typically installed in the pavement. Detection-enables timing and phasing of traffic signals to be adjusted to significantly enhance safety for cyclists, instantly increasing their visibility to other road users and ensuring fair passage.	• Arizona Department of Transportation (ADOT)	Cost can run upwards of $3,000 for purchase of sensor. Note that the cost of most counting technologies is subject to economies of scale, so the per-site cost can be reduced by purchasing more counters.	Examining streets with most bicycle usage and conducting analysis of crash data will determine problem bicycle areas.	http://ijiee.org/papers/330-T180.pdf http://azbikeped.org/downloads/Bicyclist-and-Pedestrian-Count-Strategy-Plan.pdf
IoT	Automated Bicycle Counters	Counters use sensors embedded in the pavement to collect bike data that uncovers information about bicycle ridership, helping to prioritize projects and evaluate their effectiveness. This data and transparency normalizes biking and encourages more use.	• San Francisco MTA 	Each counter costs around $60,000.	Counters are most effective when installed in areas with heavy bicycle use.	https://www.sfmta.com/bicycle-ridership-data-1

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
IoT	Smart Bicycle Parking	Bike lockers provide long-term parking solutions for bicycles at an affordable price and offer the most protection for bicycles. These are often placed at bus or train stations to help with first mile/ last mile connections.	• Bikelink; prevalent on the West Coast	Partnering with a provider will require allocating land or street space for lockers. Cost is minimal, if any, for the Community. Cost for the user is affordable, starting at $0.05 per hour.	A service provider must be selected, and locations must be determined based on location of most trafficked bicycle areas.  *Source: Errant Knight*	https://www.bikelink.org/map
IoT	Dockless Bicycles and Scooters	Dockless options for bicycle and scooter rentals expand transportation access. These rely on GPS and sensor technologies to track availability and distance of unit.  *Source: BIRD*	• Bird • Lime • Skip • Spin	The cost to maintain and operate these programs fall on private providers, with cities paying little to nothing. By allowing these companies to operate in their jurisdictions, communities may give up revenue opportunities or need to provide resources such as promoting and advertising, to staffing and space for storage facilities. There are little to no installation costs associated with implementation.	A service provider must be selected. General locations for the concentration of bikes and scooters will be determined by examining where transportation connections are made, to address first mile/last mile and where connections may be lacking.	https://www.smartcitiesdive.com/news/dockless-revolution-2019/544446/

TRAFFIC MANAGEMENT AND LOGISTICS

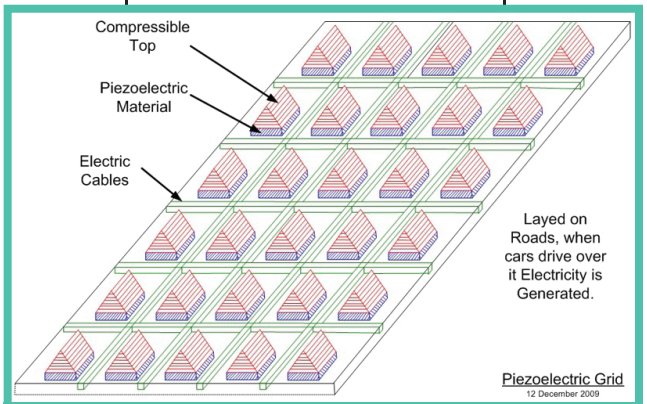
Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
IoT	Adaptive Signal Control Technology (ASCT)	The variability and unpredictability of tra¬ffic demand on arterial systems often outpace the ability of local and state agencies to update signal timings to ensure that signalized intersections operate efficiently for all road users.	• Michigan Department of Transportation (MDOT) • Virginia Department of Transportation (VDOT) • Colorado Department of Transportation (CDOT) • Miami-Dade County	The average cost to implement Adaptive Signal Control Technology is $28,725 per intersection.[4]	Adaptive signal control technologies are best suited for arterials that experience highly variable or unpredictable tra¬ffic demand for which multiple signal timing solutions are necessary throughout the day.	https://www.fhwa.dot.gov/innovation/everydaycounts/edc-1/pdf/asct_brochure.pdf
IoT	Enterprise Data Management System	The collection, transmittal/transporting, sorting, storing, sharing, aggregating, fusing, analyzing, and applying traffic data points will be needed for management and operations of transportation systems.	• U.S. Department of Transportation (USDOT) • Pennsylvania Department of Transportation (PENNDOT)	Software can cost upwards of $50,000 depending on custom features.	Enterprise Data Management Systems are required in conjunction with street sensor technologies to maximize usefulness of data collected.	https://www.fhwa.dot.gov/infrastructure/asstmgmt/dipa.pdf https://www.its.dot.gov/research_areas/enterprise.htm
IoT	Smart Parking	Cameras to survey and monitor street parking availability.	• Saratoga Springs, NY	Cost of installation can be reasonable when installing a single camera for a wide-area parking lot.	If a provider is selected to administer Smart Parking services, they may assist in installing infrastructure to enhance their product. Businesses may wish to contribute as well.	https://www.saratoga-springs.org/DocumentCenter/View/7186/Team-7-Street-Parking-FullReport?bidId=

[4] https://www.itscosts.its.dot.gov/its/benecost.nsf/ID/34ACAD7692BB577585257B20006C7649?OpenDocument&Query=Home

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
IoT	In-ground parking sensors	Along with hardware, parking meters, and pricing algorithm, these in-ground sensors have helped reduce traffic congestion and improve driver satisfaction. By infusing technology with demand-based pricing, city officials in Los Angeles sought to change driver behavior and balance demand by achieving 10-30% of the parking spaces on each block being available throughout the day. Ensuring availability reduces congestion and pollution, shortens travel times, and encourages the use of alternative forms of transportation.	• LA Express Park in Los Angeles, CA • ParkMe in Santa Monica, CA • SFpark in San Francisco, CA • GoVegas in Las Vegas, NV	Cost of installation is relatively high when compared to other Smart Parking technologies, because one sensor is needed per parking space.	Can begin as a Pilot Program in a small area where parking may be in high demand, and if successful, expanded into other areas.  *Source: Cardiff City*	https://downloads.conduent.com/content/usa/en/case-study/la-express-park.pdf
IoT	Dynamic Parking & App	A strategy that involves parking fees that are dynamically varied based on demand and availability to influence parking facility location choice to balance parking supply and demand, and to reduce traffic impacts associated with peak-period trip making.	• San Francisco, CA	The cost to maintain and operate these programs fall on private providers, with communities paying little to nothing. There is little to no installation costs associated with a parking app.	If a provider is selected to administer Smart Parking services, user parking fees will pay for the service.	http://www.govtech.com/fs/automation/San-Francisco-Rolls-Out-Dynamic-Parking-Rate-Model.html
Smart Cities	Smart Street Sweeper	Software is installed on equipment, to help the manage street sweeping routes, dispatching and vehicle location, as well as enabling drivers to flag issues and pathway obstructions. Smart Street Sweepers provide more transparency of daily operations to residents and ensure that a city's streets are well-maintained.	• Fort Collins, CO - 6 month pilot program beginning in March 2019	Cost is unavailable.	Technology will be tested this year.	https://www.smartcitiesworld.net/news/news/fort-collins-pilots-smart-street-sweepers-3899

ENERGY AND UTILITIES

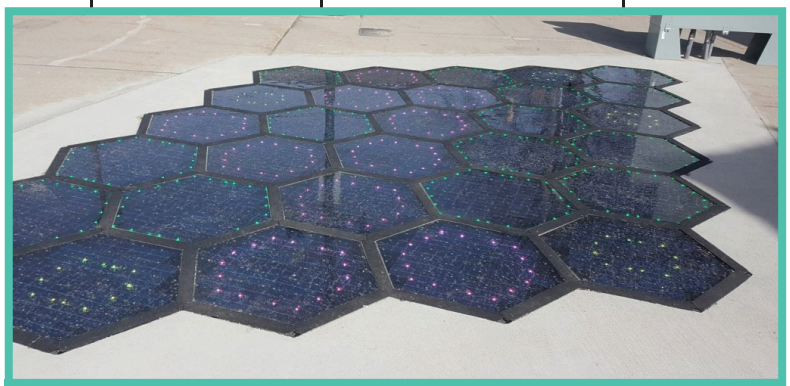
Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
IoT	Intelligent LED Streetlights	Light poles can have Smart Sensors and controls that allow technicians to use a 4G cellular connections to remotely adjust light levels and track usage and outages. Photocells on light poles can sense ambient light to automatically illuminate street lights before dusk, and switch them "off" after dawn. This efficiency has shown to save a significant amount of energy.	• "Living Lab" in Dallas, TX[5]  *Source: Shutter Stock*	Installations often pay for themselves, considering the savings in electricity costs.	Compact area (6.8 miles) of Miami Lakes allows for a variety of sensors and devices to be deployed and maintained.	https://www.bizjournals.com/dallas/news/2018/11/08/living-lab-in-dallas-shows-smart-city-efforts-can.html http://www.dallasinnovationalliance.com/news https://www.smart-energy.com/industry-sectors/business-finance-regulation/smart-street-lighting-strengthens-role-of-utility-in-smart-city-landscape/
Energy	Electricity-generating roads and walkways (Piezoelectric Technology)	Embedding piezoelectric material in the road can convert pressure exerted by moving vehicles into voltage and current. Electric roads have the potential to play an important role in power generation.	• University of Wisconsin, Madison, WI. • California Energy Commission (CEC) pilot program	Cost cannot be determined, as technology is not readily available	Road energy is a source of energy that can be utilized for the fueling of future Smart Street technologies employed.	http://www.iaescore.com/journals/index.php/IJECE/article/view/5437



Source: Piezoelectric Grid by James Childs

[5] Fierce Wireless. Tips, tricks and techniques for successful IoT deployments. June 2018.

Key Word	Technology	Summary	Examples	Cost	Implementation	Sources
Energy	Solar Roads	Solar panels can be installed over existing walkway surfaces at rest stops. Technology is expanding to parking surfaces and roadways.	• Missouri DOT - Pilot Project on Route 66 (pilot program)	Cost is an upward of $450 per square meter. Other types of solar panels such as roof panels or solar farms may be more effective alternative to generating solar energy.	Across the entire U.S., there are thousands of miles of roadway and walkway surfaces where solar roadway panels could potentially be in-stalled.	http://www.upworthy.com/one-of-americas-most-famous-highways-is-about-to-become-an-awesome-science-experiment http://www.solarroadways.com/ http://www.ky3.com/content/news/Solar-pilot-project-could-pave-way-to-roadways-of-the-future-383470771.html http://www.riverfronttimes.com/newsblog/2016/06/27/route-66-will-get-a-dose-of-solar-power-in-southwest-missouri https://www.youtube.com/watch?v=qlTA3rnpgzU https://www.youtube.com/watch?v=YQba3ENhlKA



Source: Motor Authority

TRAVELER DATA AND MOBILE APPS						
Key Word	**Technology**	**Summary**	**Examples**	**Cost**	**Implementation**	**Sources**
Smart Cities	Mobility Marketplace	A Mobility Marketplace enables finding and paying for a variety of transportation options – bikeshare, carshare, transit, rideshare – all in one place.	• SoMo App	Cost to develop app is variable and can range in the tens to hundreds of thousands of dollars. There is also an option to partner with a provider for lower start-up costs.		https://www.smartcitiesdive.com/news/here-technologies-mobility-app/545322/ https://www.androidcentral.com/somo-new-ride-planningsharing-app-designed-take-uber-and-lyft
Equity	Specialized apps for non-English speakers and people with disabilities	Mobility device users navigate their system of Americans with Disabilities Act (ADA)-compliant ramps by offering trip planning based on accessibility. It would support the visually impaired by highlighting locations with audible traffic signals. The app could provide data about where people with disabilities are traveling.		Cost to develop app is variable and can range in the tens to hundreds of thousands of dollars.	An inventory of accessible routes and resources available will need to be compiled.	
Smart Cities	Optimized Transparency	Trip planning app, allowing users to plan efficient trips, track in real-time and receive service alerts.	• TriMet, App Portland, OR	Cost to develop app is variable and can range in the tens to hundreds of thousands of dollars.	All transportation must be updated and equipped with real-time updates and alerts.	https://trimet.org/

SUMMARY

While the technologies summarized above are designed to improve efficiency, safety and the comfort of transportation system users, there remain challenges and concerns in areas related to reliability, safety, security, maintenance, operations, resources and staffing. With the implementation of many of these systems, there is an increased need for "soft" technology infrastructure, especially for the collection and storage of data. In addition, there are concerns with increased data collection and maintaining user privacy. Implementing many of these technologies have policy implications to ensure the community has the proper instruments to adapt to these technologies. In Miami Lakes, many implemented technologies can be scaled to assure there are adequate resources to support these technologies.

Source: Bike Walk Lincoln Park

◆ EXISTING CONDITIONS & POTENTIAL FUTURE CONDITIONS

The Town of Miami Lakes is 6.52 square miles located in the northwestern corner of Miami-Dade County. The Town was incorporated in 2000 and was originally modeled under the New Urbanism movement with mixed uses, as shopping and services are located within walking distance of residential areas. However, over time most of the Town has become car-dependent. Low public transportation access and ridership has led to high levels of road congestion, which is not sustainable for the Town as it continues to grow. Traffic congestion has been cited as the main concern for many of Miami Lakes residents and affects the ability to get around comfortably and safely within the Town. In 2015, the Town developed a Transportation Master Plan that is focused on addressing traffic congestion through a multi-modal approach designed to improve access, connectivity, and safety for all modes of transportation. One aspect of the plan was to evaluate ways technology could be implemented over time to improve traffic congestion, mobility, safety issues. Thus, this plan is intended to support the Town's 2015 Transportation Master Plan and help guide the transportation planning priorities to address mobility issues and assist the Town to become a more connected, efficient, and safer community using technology.

EXISTING TECHNOLOGIES AND INITIATIVES

The Town is dedicated to integrating innovation and technology in its operations and has been on the forefront of planning efforts for incorporating new technologies as they emerge, with an active history of pursuing Smart City initiatives throughout the town. The following technologies are being used in the Town of Miami Lakes, which enforce the Town's commitment to incorporating technologies to improve safety and efficiencies.

Automatic License Plate Readers

Miami Lakes has recently implemented License Plate Reader (LPR) technology, and have invested $675,000 in purchasing and installing LPRs to strategically cover several intersections throughout the own for the purpose of enhancing crime investigations and crime prevention. These readers capture roughly 2,000 license plates a minute, helping police to solve and prevent future crimes.

LED Streetlight conversion

In 2018, the Town completed an LED streetlight conversion project for Town owned lights and FPL owned lights and have saved energy and money. This study recommends the next step is to install smart sensors and controls for automatic lighting controls.

Adaptive signalization (ACST)

The Town has installed these technologies along six sections of Miami Lakes Drive in March of 2019. As the County continues expanding this program, this study recommends expanding ACST technologies to problematic sections with high traffic congestion, as this technology have proven results with up to 23% reduction in travel time for ACST intersections.[6]

CCTV

The Town of Miami Lakes has a total of 32 CCTV cameras. Six CCTV cameras are on NW 154th Street, and 26 CCTV cameras are located in Park facilities. These cameras are used for monitoring Town conditions, and adaptive signalization technologies. The CCTV cameras allow the County to see the intersections live and be able to manually synchronize the intersections if needed. This study recommends the Town install more CCTV cameras to monitors more efficiently and protect new assets and infrastructure. The study recommends for more cameras to be installed around areas of new investment.

[6] *Adaptive Signal Technology cutting Miami Drive Time*. Jesse Scheckner. Miami Today News. June 18, 2019.

Bicycle Sharing

Dockless LIME bicycles have operated in the Town; however, LIME has pulled out and the Town is interested in expanding the capacity of available bicycles. The LIME bicycles are station-less, lime-green colored bikes equipped with onboard GPS units and cellular modems. Rides are affordable costing 50 cents for every 30 minutes. The bikes can be parked anywhere within the Town at designated landscape/furniture zones on sidewalks. This study recommends expansion of a bicycle share program, as well as introduce an electric bicycle option to provide even more choices for the riders.

Micro Transit

Freebee in the Lakes service is now provided in all areas within the Town limits, and serves as a form of Micro-transit, solving first mile/last mile problems. This study recommends expanding micro transit as ridership levels increase, to keep up with demand. The Town is currently exploring potential pilot programs for autonomous vehicle transit operations, and is looking at viable locations within the Town to effect this program.

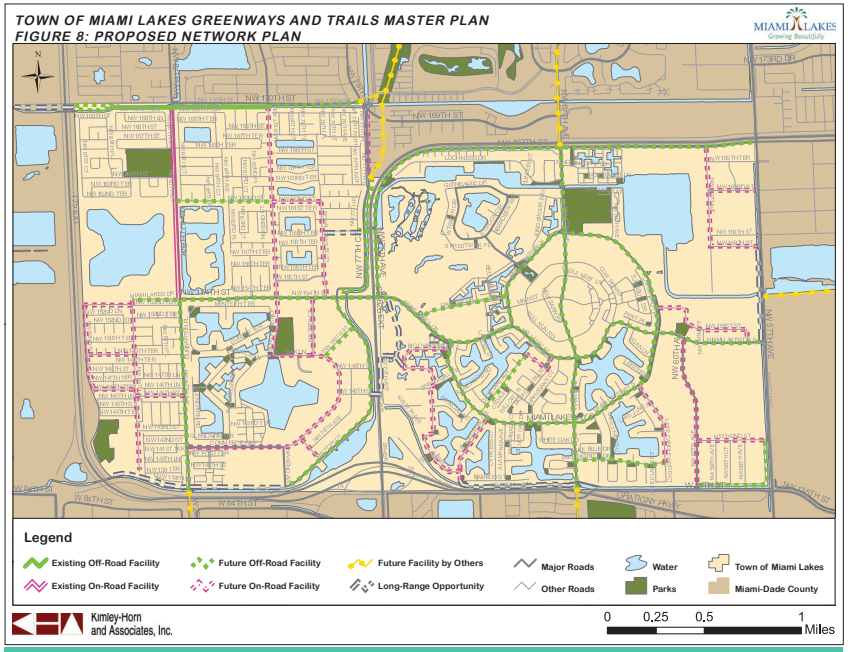
EXISTING INFRASTRUCTURE INITIATIVES

As part of the study, an inventory was compiled for roadways, bus stops, parks, vehicle stock, WIFI access points, crosswalks, traffic signals, adaptive signalization, cameras, and electric charging stations. This information was compiled through Google Earth, Miamigeographic.com, and information received from the Town (See Appendix A for inventory results). The Town has existing infrastructure that provides opportunities for inclusion of emerging technologies. Further, conditions, such as speed limits, require consideration given current technology, including for micro mobility and autonomous vehicle pilot program considerations. These considerations were included as we reviewed technology applications as detailed later in this report.

Over 18 miles of sidewalk, intersection, and bikeway improvements have been proposed in the Miami Lakes Greenways and Trails Master Plan. The overall goal of the plan is to make bicycle travel a more viable option while providing recreation and health benefits to the community. Expanding and improving bicycle infrastructure will provide an additional modal option for the Town. Pedestrian safety improvements at intersections were also incorporated in this plan. The proposed Network Plan Map shown identifies facilities that will serve the Town's mobility needs to help ease traffic congestion.

In 2013 the Town completed the Commute Trip Reduction Program that identified strategies to help reduce traffic congestion. The following are some Transportation Demand Strategies identified:

- Carpooling
- Vanpooling
- Emergency Ride Home
- Telecommuting

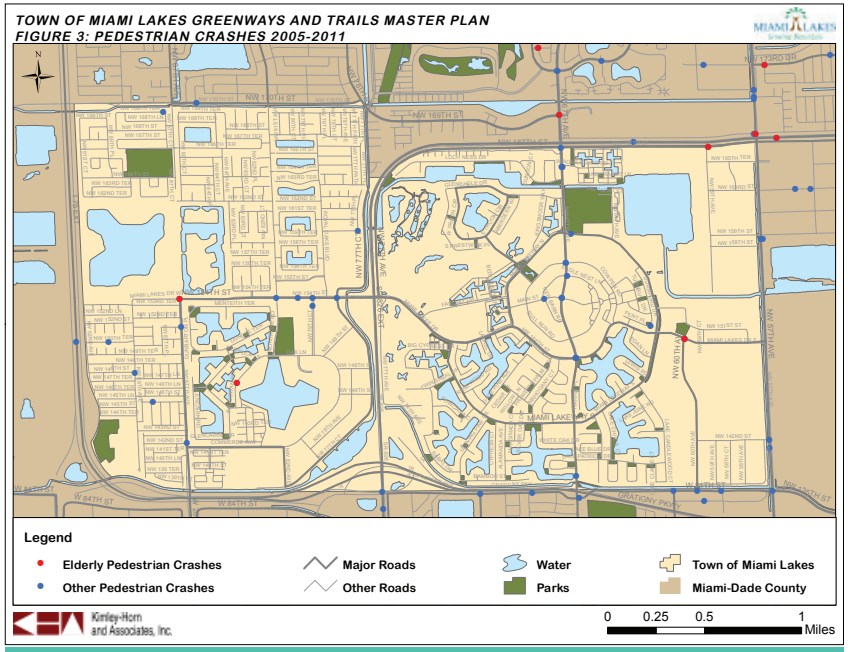


Source: Greenways and Trails Master Plan

- Flexible/Compressed Work Week
- Commuter Tax Incentives
- Bicycle Master Planning
- Pedestrian Master Planning
- Public Outreach
- Employer Outreach
- TDM Marketing and Promotion
- Employer Transportation Coordinator
- Commute Trip Reduction Ordinance

Proposed bikeways, open space, and pedestrian paths from prior planning efforts include:

- Proposed NW 170th Street Greenway Plan
- Proposed Memorial Trail
- Proposed NW 154th Street Trail
- Proposed NW 77th Avenue Greenway (MD Open Space Master Plan)

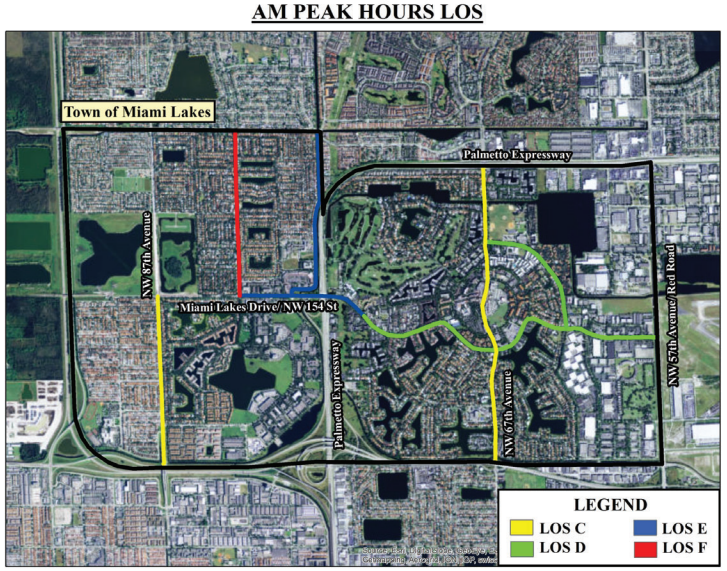


Source: Greenways and Trails Master Plan

The promotion of pedestrian safety was an additional goal of the Miami Lakes Greenways and Trails Master Plan. The Plan identified pedestrian crash locations for elderly and other pedestrians. This information is a key indicator of where enhanced pedestrian Smart Technology infrastructure should be implemented.

As a result of the Greenways and Trails Master Plan, the Safe Routes to School Project along Miami Lakeway South, will begin construction in 2019. This project was grant funded through FDOT's Transportation Alternatives Program and created a multi-use trail connecting Miami Lakes Elementary and Middle Schools. Other projects include the NW 146th Street Greenway which enhanced safety for bicyclists and pedestrians, and the NW 77th Court Greenway.

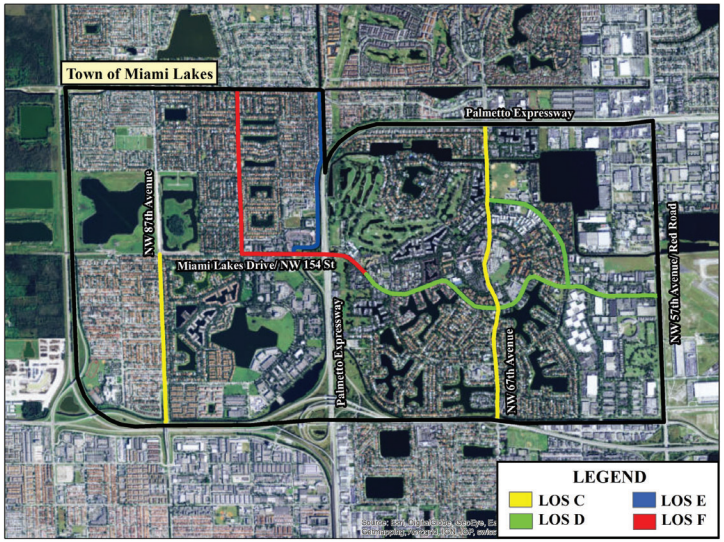
Adaptive Signalization along NW 154th Street was completed in 2017. Adaptive Signal Technology was installed on NW 154th Street from NW 87th Avenue to NW 77th Avenue, using Econolite BlueTOAD technology. Adding additional adaptive control on congested intersections, incorporating transit signal priority, and a traffic monitoring system with CCTV, are key steps to reducing traffic congestion within the Town. In addition, consistency with existing systems should be maintained moving forward.



An interagency event was coordinated by the Town of Miami Lakes in 2015. This Transportation Summit brought together multiple stakeholders to coordinate ideas to relieve traffic congestion within the Town. The following LOS Maps were presented by the Town.

As a result of the Miami Lakes Transportation Summit held in 2015, the Town adopted the following strategies to reduce congestion and to resolve mobility issues. Funding estimates are also included.

PM PEAK HOURS LOS



	Transportation Initiatives		Responsible Agency	Town Cost
	General Issues			
1		Transportation strategy funding plan		$30,000
2		Develop cost estimates for various improvements		$10,000
3		Update Comprehensive Plan Transportation Element		In-house
	Achieve the Greenways and Trails Network			
4		Safe routes to schools project along MLS	Town	$120,000
5		Greenways and Trails Master Plan	Town	$2,435,500
	Targeted Improvements at Troubles Spots			
6		Police to prevent blocking box	Town	$50,000
7		Modify intersection & traffic ligth at 87th Avenue & 164th Street	County/Town	TBD
8		Additional lane at Windmill Gate	County/Town	$400,000
9		Modify traffic ligth at 79th to eliminate northbound traffic	County/Town	$0
10		Create direct connection from Palmetto frontage to Palmetto south	FDOT	$0
11		Reconfiguration of 67th Avenue and Palmetto	FDOT/County/Town	$0
12		Reconfiguration of 57th Avenue and Palmetto	FDOT	
13		Add 150ft to Nourthbound rigth turn lane at 154th & 77th Ct	Town	$120,000
14		Allow left turns from southbound Montrose to eastbound Oak Ln.	County/Town	TBD
15		Add traffic light at NW 79th Ct & NW 154th Street	County/Town	TBD
	Improve East- West connectivity			
16		New underpass at 146th at Palmetto	FDOT/Town	$3,800,000
17		New underpass at 160th under Palmetto	FDOT/Town	$3,900,000
18		Recognifiguration of 154th and Palmetto	FDOT	$0
19		Move guard gate east of 82 from 167th to 162nd	Town/County	$100,000
20		Adaptive signalazation along 154th street	Town/County	$360,000
	Improve Transit and Pedestrian Mobilty			
21		Improve pedestrian connections at Town Center	Town/County	$400,000
22		Implement queu jumps for transit buses	Town/County	TBD
23		Amend code to require sidewalk construction/repair upon development/redevelopment	Town	Private Sector
24		ADA sidewalk master plan	Town	$2,000,000
25		Complete sidewalk system in Business Park	Town	$1,100,000
26		Increase sidewalk widths on arterials/collectors	Town	$700,000
27		Redevelopment planning: Miami Lakes Drive from 82nd to Palmetto (long term)	Town	TBD
28		Redevelopment planning: 151st/153rd area (long term)	Town	TBD
	Provide mobility alternatives for inter-town trips			
29		Provide on-demand bus services thru ridesharing like	Town	TBD
30		Feed Town bus system thru ridesharing	Town	TBD
31		Connect to Metrorail thru ridesharing	Town	TBD
	Transportation Demand Management			
32		Periodic presentations to large employers about commuting alternatives (carpooling, transit, staggered work hours, etc.)	Town/South Florida Commuter Services	TBD
33		Incentivize use of TDM measures by employers	Town	TBD
	Improve Distribution of Traffic Flows (both spatially and timing)			
34		School to change start and dismissal times	Town/School System	$0
35		Make 57th avenue more free flowing	Town	$0
36		Extend 59th Ave south to Miami Lakes Drive	Town	$5,800,000
	Provide better regional transportation connections			
37		Metrorail to NW Dade County	County	$0
38		MDX connection to 67th Avenue	MDX	$0
39		MDX connection to 87th Avenue	MDX	$0
40		I75 northbound connection at 154th Street	FDOT	$0

MULTIMODAL REVIEW OF APPLICABLE TECHNOLOGY

What is a Smart City? A Smart City is a city dedicated to integrating information and communications to optimize operations and services, with the intent of providing connectivity to improve the lives of citizens. This includes the development of networks and physical devices designed to obtain and relay information anywhere in a digital city. A Smart City involves the development of up-to-date infrastructure that involves the latest technology, and through this effort, citizens and visitors can access various services through any connected device.

When selecting technologies to implement for the Town of Miami Lakes, it is important to understand why it is needed and how certain interventions will fit that specific need. In studying potential technological improvements that will enhance transit services in the Town of Miami Lakes ("The Town"), we began by understanding the questions people are asking when they are traveling: "Where am I going?" "How am I going to get there?" and "How long will it take to get there?." Understanding how people make decisions regarding travel allows us to understand what tools and information are needed to plan and complete a trip seamlessly. Questions such as these in conjunction with historical data and researching trends and collecting and examining new data have uncovered opportunities in the transportation network for viable improvements in technology.

Combining these needs with the practical applications of implementation, however, is a completely different matter. In evaluating the technologies, we must consider the differences between local and regional application of technologies. This occurs both a practical standpoint – carshare technology and programs, for example, generally need a critical mass of users to remain financially viable, and thus work better regionally; or from a jurisdictional standpoint – signalization in Miami-Dade County, for example, are under the purview of the County Department of Transportation and Public Works. The projects being put forward are noted to be implementable primarily with the City as the primary or lead actor.
The following applicable technologies have been compiled and are recommend for implementation based on an assessment of regional and local resources, the list of technologies identified in the Literature Review from task 2, a review of existing inventory from task 3, feedback received from the Study Advisory Committee, and a review of ongoing initiatives and public needs. Many technologies are implemented and operated locally, and others require regional support to implement and operate. Some technologies are implementable now, and others are recommended to be put on "hold" and deferred for future assessment. Other technology, while interesting, have been assessed as inapplicable to the Town and its current and future needs and thus will be excluded from the final plan.

SMART Infrastructure

Miami Lakes has been committed to integrating to smart city technologies, and has demonstrated this with ongoing smart city initiatives and infrastructure such as adaptive signalization controls, micro-transit and a bicycle sharing program. The Town has the potential to implement SMART infrastructure throughout the town to improve services and expand amenities.

Electric Vehicle (EV) Charging Stations

Electric Vehicle charging stations deliver the electricity needed to charge electric vehicles. Electric Vehicle Charging infrastructure is essential for encouraging more electric vehicle usage and ownership throughout the Town. By 2025, it is estimated that electric vehicles will be a 7 percent share of all vehicles on the road.[7] Currently, within the Town there are two privately owned charging stations in the downtown area. Expanding the electric charging initiative to more public parking areas, and incentivizing new commercial and residential developments to require installation, will provide an amenity to the public as charging stations will prepare the Town

[7] "US Electric Vehicle Loyalty and Volumes Reach Record Highs" IHS Markit.

for an inevitable increase in electric vehicle ownership and use. The Town is working on making the installation of charging stations a requirement for new developments and currently provides a mobility fee credit to developments that include electric vehicle charge stations. It is an objective for the Town to achieve universal environmental sustainability in public and private environments, operations and infrastructure.[8] To further this objective, the Town government can gradually phase out its current fleet to replace with electric vehicles and install more charging stations to support this objective by providing the necessary infrastructure to easily charge and promote cleaner air by reducing emissions.

The Town should consider creating a partnership with a electric vehicle charging station, or work with other providers to install charging stations on government-owned sites, as there is minimal risk for a municipality to own and install the infrastructure and give companies a license to operate it.

Locations	Cost	Benefit	Application
• Municipal parking lots • Private developments • Business and retail corridors • Downtown Miami Lakes area	• A public level 2 charging schematic can range from $3,000-$6,000 • Additionally, there are software, maintenance, and operation costs, including the cost of power	• Encourage more electric car use and ownership • Offer service to community • Promote cleaner air	• Partner with service provider, private developers and businesses that own parking lots • Requirements through changes to the Town's existing Land Development Regulations

Smart Kiosks

Smart kiosks are an interactive wayfinding instrument for pedestrians that can offer many capabilities which can be customized based on a communities' needs. Smart kiosks serve as modern-day triangulation in public spaces,[9] or a certain characteristic of a public space that brings people together. Smart kiosks are best suited for walkable areas with concentrated activity, and by creating an agreement with private developers and property owners within the Miami Lakes Town Center District it could possibly be the right venue for this technology. Within the area along NW 151st and 153rd street, the Town intends to encourage redevelopment of the area in order to create an additional main street type district. The Town plans to reconstruct the entire corridor to create a more urban complete street with Smart Technology. It is an objective of the town to promote the Town Center as a community meeting and gathering place and installing a Smart Kiosk can help achieve this objective.[10]

The Miami Lakes Town Center District which has been envisioned since the original master plan for the Town as a walkable, mixed-use area similar to a traditional small town "Main Street" currently lacks any technology to guide, engage and asset pedestrians in public spaces and sidewalks. Main Street, which is considered the social hub for Miami Lakes and the surrounding communities, has many attractions and social activities, which makes this section of Town a candidate for Smart Kiosks.

Common features of Smart Kiosks range from practical and informative to fun and entertaining as they can offer the capability to post Town news and alerts, can offer interactive maps for wayfinding and pick up locations, information regarding Town attractions and scheduled events, as well as dining, shopping and hotel information. Kiosks can include real-time information on weather conditions, bus arrivals, and offer the option to request a freebee ride, or book an Uber or Lyft without cellphone service.

[8] Miami Lakes Strategic Plan 2015-2025.
[9] Term coined by William Whyte in "The Social Life of Small Urban Spaces"
[10] Objective 10A.7 of the Comprehensive Master Plan Ordinance

There is also the capability to include interactive games and a camera for selfies. Kiosks can collect data on foot traffic and activity use, it can also be used to charge electronic devices and offer WIFI hotspot. For these reasons, a Smart Kiosk maybe beneficial to install and would be a valuable addition to the Town Center, and other pedestrian areas.

More importantly, kiosks at key locations can be explored as on-call points for shuttle services, or for folks with dead phones or a need for more information to access any future apps that provide for an integrated multi-modal application.

It is estimated that deploying two kiosks will cost around $100,000. Maintenance costs will need to be considered, and cannot be estimated at this time. The Department of Communication and Community Affairs, or a similar department will need to manage the digital media for efficient management and consistency of content. The Department of Economic Development can play a role in programming the kiosks and keeping them updated, as well as working with the community and businesses to advertise business and events. The more engagement a kiosk attracts, the more revenue it will be able to generate. The Economic Development Department can collect revenue from advertising campaigns. According to a study performed by Nielsen, the average company makes $2.87 for every dollar spent on advertising.

Locations	Cost	Benefit	Application
• Public Plazas/ Spaces - Main Street - NW 151st/ 153rd Street Corridor - Miami Lakes Business Park West District	• Estimated at $300,000 for 6 kiosks	• Wayfinding • Community engagement • Advertising revenue • Free WIFI and USB charging	• Department of Communications and Community Affairs • Department of Economic Development

Smart Furniture

SMART furniture adds technology to street furniture that otherwise would only serve one purpose and not be able to multitask. Adding new benches and replacing existing benches is an efficient way to incorporate smart furniture in Miami Lakes. SMART benches are powered with solar panels and can offer free charging, WIFI, and can provide energy saving throughout the Town. SMART furniture can collect data on usage, which can provide the Town with specific information of where people are going. The nature of solar power allows for use when there are power outages like there often is in this region after major storms. This feature makes solar SMART benches a sensible technology for Miami Lakes to implement. The Town has many public spaces and parks where benches can be replaced with SMART benches. Additionally, including these benches at county bus stops will provide improved amenities for transit riders. A data plan is required to collect and aggregate data which can go to the Planning and Zoning Department, and shared with the Parks and Open Space and Public Works Departments. The cost to run these systems can be considerable; mass deployment of townwide internet/WiFi networks, if exercised will change the need for SMART benches from providing hotspot points to being more of a "charge" station area, which reduces the costs. Else, private sources of funding, such as advertisements, are recommended to cover data plan costs.

Locations	Cost	Benefit	Application
• Public parks (all) • Main Street/ Downtown Miami Lakes • Miami Lakes Drive, west of SR 826 by the Commercial district	• The data plan costs $600 to $2,000 per year for each bench, and purchasing costs $3,800 per bench	• Free WIFI and green charging capabilities • Offer more seating throughout the Town	• Town can purchase and install through coordination with the Public Works and Parks and Open Spaces Departments

Book Vending Machines

Library vending machines are fully automated machines that can dispense books and can accept returns. These machines are a fun way of encouraging reading, while only requiring a small footprint in terms of space. In addition to encouraging more reading, these machines can encourage spending time outside and more walking. The Town of Miami Lakes pilot program Little Free Library will be implemented at several Town pocket parks. If the program proves to be a success, the Town will expand the program to additional areas.

In other areas, these facilities are provided near bus stops to provide ease of access to quality reading materials for transit users, who can borrow and return books at transit stops. In some places, the book system is tied to the transit system's SMART card. Implementation of a system involving a transit smart card will require coordination with Miami-Dade Transit and with Miami-Dade Public Libraries but is not a pre-requisite for this technology's implementation.

Locations	Cost	Benefit	Application
• Outside parks • Outside Schools • Near bus stops • Town Center	• About $20,000 per machine	• Increase access to books • More locations return books. • Can encourage more reading	• Requires Miami -Dade Public Library to manage and operate • Miami Lakes Branch Library can partner

Shared Multimodal Mobility

Town of Miami Lakes will implement Freebee service and dockless bicycle and electric scooter rentals to improve mobility for many people, which has traffic calming effects by diverting cars off the roads. It is important for the community to be connected in a seamless and convenient way to the SMART plan and its corridors, and Bus Express Rapid Transit (BERT) routes to maintain first mile and last mile connections to the South Florida transportation network . The Town has applied for funding through FDOT Transit Service Development Program to conduct a pilot Freebee Peak Hour Express System from Miami Lakes to Palmetto Metro Rail System.

The goal is to have two temporary stations on at Picnic Park West and another in Main Street by Town Hall to provide peak hour Freebee Shuttle Service with larger 16 passenger vans between Miami Lakes and the Metro Rail Station. The goal is to help build the ridership needed for the Town's future Park-N-Ride facility with bus express service provided by MDT from Miami Lake Park-N-Ride to Palmetto Metrorail and Dadeland South. The Town's long-term plan for regional connectivity is to construct a Park-N-Ride with transit service to the Palmetto Station and have other existing bus route service the Park-N-Ride, as well. Most people in the Town commute by driving alone. The percentage of people commuting by public transit is lower than the national average and the percentage of people working from home is about the same as the national average.

In addition to bike and scooter sharing, Miami-Dade Public Transportation, and the Town on-demand transportation service provided by Freebee, there are other technologies that can be implemented to ease commutes and increase mobility throughout the Town and the region. The Town may consider a Request for Information or Request for Proposal in order to bring autonomous vehicles to the Town to see how they can improve mobility for Town residents by filling first/last mile gaps.

Test siting for Freebees for autonomous shuttle technology within the Town is an option, and will be dependent on control of speed factors as well as access. Residential areas with low speed limits connected to local roadways that provide access to commercial retail without having to go onto the Town's main arterials and collectors, which have high levels of traffic, can be considered as potential test locations. However, until technology improves for autonomous shuttles, test sites within the Town should avoid Ludlam Road, Miami Lakes Drive, and NW 87th Avenue. Due to the configuration of the roadway network within the town, this provides high levels of limitations in constructing a geofenced area for the shuttle to operate, and initial pilot programs will need to be consigned to short trip loops.

Car Sharing

Car sharing is a model of car rentals where one can rent a car for short period of time. Car sharing rental services are intended to substitute private vehicle ownership and can be structured as a one- way or two-way car share system. One shared, two-way vehicle could replace six to 23 private cars on the road.[11] The City of Miami, and various South Florida universities have a carshare program. Car share vehicles are located in neighborhoods and can be rented by the hour or by the day, and serve populations that both live and work in the Town, or that work from home who may need access to a car at all times, as well as people who may not want to own a car or those who can't afford it. The Town can partner with a carshare company to offer curbside car sharing areas, as well as partner with park and ride stations to allow for customers to pick up a vehicle at one location in the Town and drop it off at a Metrobus, Metrorail, or Tri-rail station. This service gives drivers an incentive to minimize their vehicle use and rely on other travel options as much as possible.[12]

The Town will require a contract agreement with a carshare company, and reserve exclusive curb space or parking lot space (surface or structure) for the rental fleet. There is minimal startup cost, and the carshare companies, in partnership with the Town, can manage and operate the program. Due to minimal implementation costs and infrastructure requirements, this program can be piloted before implementing on a larger-scale.

Car share, however, is limited in its applicability on municipalities that have high car ownership due to existing local needs. Towns like Miami Lakes, where people commute longer distances to work or for a higher percentage of day-to-day activities, fall under this category. Once a certain threshold of usage is met, it is less expensive for an individual to own a car than to utilize a rental or car share system. Public subsidies would there be needed in order to entice and retain companies to offer this service, as there is a minimal usage threshold for these companies to remain profitable or break even, or to reduce the price of the service for individual users in order to make it cost competitive, versus owning a car, for a household. In cases like this, cities should tap into a regional network, and provide dedicated parking space locations, but not initialize a program by itself.

Locations	Cost	Benefit	Application
• Town Center for best access • Edges of Town • Public parking (garages and on-street parking locations)	• Minimal cost	• Can encourage less car ownership • Offer first mile /last mile connections	• Parking spaces will need to be reserved for loading and ride sharing pick up locations • Car sharing also requires parking spaces and will be managed and operated by selected providers.

Multimodal Mobility Marketplace

Figuring out the best option for transportation can be a challenge, as no integrated system exists to compare prices of rides requires jumping back and forth between apps. A Mobility Marketplace is a mobility app that connects users to a variety of transportation options together and integrates a social aspect to transportation, which can be a favorable feature for most commuters in Miami Lakes that drive alone. The app offers alternative transportation options from traditional ride-hail services and can display all transportation options – bikeshare, carshare, transit, rideshare – all in one place. The SoMo app (Social Mobility) allows for social ride sharing which allows the choice to share a ride with friends, participate in gatherings that allow users to connect with social circles based on common activities and ride together, and a

[11] Carsharing Association
[12] vtpi.org

Mobility Marketplace that is open and competitive aggregates all mobility services and transportation options into one interface.

The SoMo mobile app exists and used in dozens of U.S. cities, bus route information for traveling throughout South Florida is only available for personal cars. Taxi services and public transportation information is not yet linked to this system. Since, public transportation is operated by the County, and taxis are licensed by the County, they can partner with the SoMo app to integrate all transportation options in one place.

Miami-Dade County's Department of Transportation and Public Works is currently updating its transit app, which also includes routes within Miami Lakes, to provide for first and last mile information. The Town should monitor the development of this app before making further determinations for itself. Further, it should be noted that Mobility Marketplace apps are only necessary when multiple options for transportation and the need to provide information to link different services, such as transit to e-scooter or bikeshare programs, is present.

Locations	Cost	Benefit	Application
• N/A	• Staff time for processing data. Depending on the Town's wage rates, it should assume that this is a part-time position with a minimum of 1040 manhours per year	• Social mobility • One-interface platform • Ridesharing platform • Increased transparency for all transportation options	• Miami-Dade County Transportation and Public Works Department

Subsidized Car for Hire

The Town Freebee services the entire Town, which addresses first mile/last mile connections and eliminates the need for subsidizing for-hire cars during service hours, but on Saturdays and non-operating hours, the Town can subsidize Uber or Lyft rides in lieu of taking public transportation. Riders could pay a flat fare to travel to community hubs or get a discount on regular fares to other destinations in and around town. Uber Assist and Accessible Vehicle Dispatch through Lyft provide ADA accessible vehicles.

Locations	Cost	Benefit	Application
• N/A	• To be determined based on budget	• Fill in gaps in existing public transit and Freebee service	• Uber and Lyft work with municipalities to collect payments

Pedestrian

The majority of arterial intersections in Miami Lakes are equipped with crosswalks and pedestrian signals, however there are other areas that lack crosswalks and markings to complete the pedestrian network and offer connections throughout the Town. As the Town receives Transportation Alternative Program (TAP) grant money for pedestrian and bicycle infrastructure improvements, the following pedestrian technologies can be integrated to improve safety for these intersections or can be implemented as new crosswalks are added. These technologies will further strategies adopted in the Town's Transportation Master Plan, Greenways and Trails Master Plan, and the Complete Streets Implementation Plan.

In-Road Warning Lights (IRWL)

In-Road Warning Lights are a series of amber lights embedded in the roadway that face oncoming traffic. The lights are visible to approaching drivers as a warning that a pedestrian is in the marked crosswalk or near it. Lights can be activated by using a traditional push button, or an automatic sensor. IRWL can be added to marked crosswalks that have no signalization, to increase yield rates and pedestrian mobility. IRWL eliminates delays from signalized intersection, as lights would only initiate when a crossing is needed. IRWL are one of the best technologies to capture driver attention, and to safety share the road for all users.

Older designs indicate that annual maintenance costs can be upwards of $15,000 for one system. Considering that it is $25,000 per system, this is significant. However, newer models on the market today tend to be better designed with longer lifespans, with corresponding warranties for 8 to 10 years before replacement. This reduces the annual maintenance costs, and it can reasonably be expected that future costs will continue to decrease as the technology becomes increasingly refined.

Locations	Cost	Benefit	Application
• Midblock crossings • School crosswalks • Crosswalks between facilities • Crosswalks on roadways with high levels of traffic • Major intersections	• Installation costs are an estimated $25,000 per crosswalk which includes parts, materials, labor and equipment	• Increase pedestrian visibility, especially in low-lit areas • Improve safety in pedestrian crossings that are not controlled by traffic signals	• FDOT and Transportation Department to integrate IRWL in design for new crosswalks

Pedestrian Hybrid Beacons (PHB)

A pedestrian hybrid beacon (PHB) is a traffic control device that is only activated when needed by pedestrians. Signal lights are overhead roadways, which increase motorists' awareness of pedestrian crossings at uncontrolled marked crosswalk locations. PHBs are useful in locations where traditional crosswalk signings and markings do not result in adequate motorist yielding rates, and where the deployment or cost of a full traffic signal would not be warranted. This includes mid-block crossings or uncontrolled crossing points.[13]

PHB signals are best suited in areas with widely spaced controlled signals, where pedestrians have few opportunities to cross roadways. A pedestrian mobility study can determine specific locations PHB's can be deployed.

Locations	Cost	Benefit	Application
• Mid-block or uncontrolled locations	• Pedestrian hybrid beacons are less expensive than a full traffic signal installation and can range from $21,000 to $128,000 with an average per-unit cost of $57,680	• Improve safety in pedestrian crossings that are not controlled by traffic signals • Increase pedestrian mobility	• Pedestrian mobility study is recommended to study pedestrian and traffic volumes, roadway speeds, and sight distance.

Accessible Pedestrian Signals (APS)

An accessible pedestrian signal and pedestrian pushbutton is an integrated device that communicates information about the WALK and DON'T WALK intervals at signalized intersections in non-visual formats, accommodating the needs of all pedestrians, including those with vision and mobility impairments. The Town can continue to expand this initiate by adding APS technology to each signalized intersection, especially the intersections with the most pedestrian use.

[13] *Pedestrian Hybrid Beacon Guide - Recommendations and Case Study*. Federal Highway Administration. April 2019.

Locations	Cost	Benefit	Application
• All signalized intersections, with the most-used intersections as priority.	• APS can cost up to $10,000 per device.	• Extend accessibility throughout Miami Lakes, making crossing safer and easier for all users • A step to implementing complete streets to accommodate the needs of all pedestrians, including those with vision and mobility impairments	• FDOT to integrate APS in design for new crosswalks

Embedded LEDs in Signs

Embedded LEDs can be retrofitted to existing signs, which make this option a financially feasible countermeasure. The retrofit is significantly less expensive than other pedestrian technologies which enhance driver awareness of traffic-control signs and pedestrian crosswalks. LEDs may be illuminated 24 hours a day, or be activated by vehicles or pedestrians. Due to the low power requirements of LEDs, signs with embedded LEDs can typically be powered using stand-alone solar panel units.[14] This technology is best suited for areas where sight lines are restricted, and 4-lane crossings where each side of the street has 2 lanes where these signs will not be obstructed.

Locations	Cost	Benefit	Application
• Locations with sight visibility limitations • Locations with documented problems of drivers failing to recognize an intersection • At STOP signs – this treatment may help to increase the rate of vehicles stopping and to avoid drivers failing to detect the STOP sign	• Estimated cost is $2,000 to $6,000 per intersection • Maintenance costs are assumed to be for replacement LED bulbs, which cost approximately $8/bulb and have a lifespan of 25,000 hours, or approximately 3 years of continuous usage. At 8-16 bulbs per stop sign, an annualized maintenance cost of approximately $25-$50/sign is expected	• Increase visibility of crosswalks, and other regulatory signs • Enhance visibility and recognition of regulatory and warning signs to drivers, especially under low-light or low-visibility conditions.	• The Town to identify locations, prioritize in the CIP and secure funding in partnership with FDOT

Bicycles and Scooters

Miami Lakes has fragmented on-road and off-road bicycle facilities throughout the Town and has prioritized completing a bicycle network by implementing a proposed network of bike lanes and trails which is outlined in the Miami Lakes Greenways and Trails Master Plan. The following technologies will help integrate a bicycle network into the existing transportation network and enhance practicality and convenience for users.

[14] U.S. Department of Transportation.

Smart Bicycle Parking

Bicycle parking goes hand in hand with bicycle usage. Offering safe bicycle parking incentivizes more people to use bicycles. While short-term parking may be suitable for bicycle racks, bicycle lockers offer long-term parking solutions for bicycles at an affordable price and provide the most protection for bicycles, which is especially suitable in hot climates. For many bicyclists, parking on bike racks can be nerve-wracking, as there is no guarantee that bikes are being monitored. Bicycle lockers are often placed at bus or train stations to help with first mile/ last mile connections. Parking is launched through a mobile app that identifies free spaces and keeps track of the time parked, and once the locker is unlocked and bike is retrieved, the app collects payment.

Locations	Cost	Benefit	Application
• Near bus shelters and stops • Along future planned bicycle trail main entry or key juncture points • Downtown Miami Lakes • Town Hall • Parks • Park-N-Ride	• Maintenance and operational cost are passes on to users via rental fees • Town cost is minimal, depending on service agreement • Space costs are dependent on location but are minimized with planning or utilization of publicly owned land	• Offer safe parking solutions for bicycle users, especially for those on longer trips • Encourage more bicycle usage	• Partnering with a provider will require allocating street or curb space for lockers in exchange for processing fees • BikeLink is a provider popular in municipalities on the West Coast

Vehicular Traffic

Traffic congestion is one of the most common concerns for residents and businesses in Miami Lakes. Vehicular technologies that calm traffic are managed by Miami-Dade County, as they operate and manage all traffic controls in conjunction with the Florida Department of Transportation and inter-local agreements.

Adaptive Signal Control Technology (ASCT)

Adaptive signal control technology utilizes sensors to adjust the timing of light changes to accommodate shifting traffic patterns, thus easing traffic congestion. Adaptive signal controls have the ability to reduced average travel times and have proved to do so successfully. Recently, the Town has installed adaptive signalization in conjunction with CCTV cameras at various intersections. The adaptive technology receives traffic information regarding the number of cars traveling on each direction and uses the data in real time to control traffic lights in the most effective way. The CCTV cameras serve as a manual "check" and offers the ability to monitor road conditions in real-time, and manually synchronize intersections if needed.

Keeping these signals operating and maintained properly is the responsibility of Miami-Dade County. Due to Enterprise Data Management and staffing requirements with ACST technologies. ACST technology monitors the performance of the signals and automatically notifies appropriate staff when a traffic signal malfunctions, enabling staff to respond with maximum efficiency and effectiveness. The Town has paid for the procurement of all equipment, materials, and services required to install these technologies along sections of Miami Lakes Drive in the past. As the County continues expanding this program, the Town can look to expand ACST technologies to problematic sections with high traffic congestion, as this technology have proven results with up to 23% reduction in travel time for ACST intersections.[15]

[15] *Adaptive Signal Technology cutting Miami Drive Time*. Jesse Scheckner. Miami Today News. June 18, 2019.

Locations	Cost	Benefit	Application
• Corridors with high congestion - Ludlam - Miami Lakes Drive - NW 87th Avenue - Red Road (future need)	• The average cost to implement Adaptive Signal Control Technology is $28,725 per intersection	• Reduces travel time and traffic build ups	• County Transportation & Public Works Department, and Miami Lakes Transportation Department

Parking Technology

Smart Parking

Smart Parking is a parking strategy that relies on technology to achieve faster, easier parking of vehicles. Ensuring availability reduces congestion and pollution, shortens travel times, and encourages the use of alternative forms of transportation. Miami Lakes has many surface parking lots that can adapt smart parking technology. Cameras are the most cost-effective way to survey and monitor parking lot availability, which makes this parking technology the best option for the Town of Miami Lakes. Installation is cost-effective when installing a single camera for a wide-area parking lot. Cameras can "count" open spaces and advertise this outside the entry to a parking lot. However, this technology is only applicable if the Town chooses to create a parking system in the future.

Locations	Cost	Benefit	Application
• Government-owned parking lots • Private parking lots (must incentivize)	• Cost around $50 per space to install.	• Offer parking transparency • Eliminate traffic from cars looking for parking.	• Camera can be automatic and serviced by the Public Works Department. • If needed, can be monitored remotely

Mobile Parking App

Parking apps often partner with municipalities at little to no cost. Parking apps make parking easier for people on the go and can send reminders when a parking meter is low and allow to extend your allotted time from any location or distance. Some parking apps have the ability to monitor open spaces and can reserve a spot in advance. This technology is only applicable if the Town chooses to create a parking system in the future.

Locations	Cost	Benefit	Application
• All government-owned public parking spaces. - Prioritize spaces most in demand - Future park and rides or parking should be designed with the same technology	• Minimal Cost • Any cost associated with removing current parking meters	• Flexible parking; can pay as you go if more time is needed • Parking payments simplified through one electronic system. • Collect more parking revenue	• Municipality to partner with a provider • Must have ability to enforce parking meters

Utilities

In 2018, the Town completed an LED streetlight conversion project for Town owned lights and FPL owned lights and have saved energy and money. The following technologies will allow for even more efficiencies, and enhanced resident and visitor experiences.

Street Lights

Now that the Town has converted all Town owned lights and FPL owned lights to LED lights, they can install smart sensors and controls that allow technicians to use a 4G cellular connections to remotely adjust light levels and track usage and outages. In addition, photocells on light poles can sense ambient light to automatically illuminate and switch them off after dawn. This efficiency has shown to save a significant amount of energy. The relatively compact area (6.8 miles) of Miami Lakes allows for a variety of sensors and devices to be deployed and maintained, while still providing impact.

Locations	Cost	Benefit	Application
• Town owned lights • FPL owned lights	• Planning level cost assumptions varies based on design and installation costs - $300 - $800/location	• More efficiencies in maintenance and operation	• Must partner with a provider to install sensors

5G WIFI Network

5G wireless networks offer faster connections, more reliability and greater capacity at lower costs, to better connect infrastructure, devices and people. 5G wireless will be deployed in the Miami area by the end of 2019 through Verizon, offering broadband services to homes. Miami Lakes can partner with wireless carriers to expand 5G network throughout the Town . There is an additional option to explore how to offer free WIFI in public spaces. Deploying 5G will help prepare the Town for implementing other Internet of Things (IoT) technologies. For example, a 5G network will be required to fully integrate roadways with Connected and automated vehicle (CAV) technology. Design of civic infrastructure in the future should incorporate this need.

Locations	Cost	Benefit	Application
• Parks (all) • Public Spaces • Public and Civic facilities (Town Hall, any future community center) • Libraries • Schools	• N/A	• Fast WIFI for free to better connect the community • Prepare the Town for future applications using 5G infrastructure	• Public Works to partner with a wireless provider to install 5G networks throughout the Town • May require partnerships with FPL if installing on light poles or utilities

Enforcement

Technology can assist the Town in increasing enforcement in certain areas and can change dangerous behaviors. Miami Lakes has been interested in implementing technologies to assist in enforcement, as seen with the recently deployed automatic license plate readers that can capture roughly 2,000 license plates a minute, helping police to solve and prevent future crimes. In an effort to maximize resources and improve efficiency, the following technologies are recommended for the Town.

Automatic License Plate Readers

Miami Lakes has recently implemented License Plate Reader technology to strategically cover several intersections throughout the own for the purpose of enhancing crime investigations and crime prevention. The Town can expand this program by installing fixed readers to cover more of the Town, especially at entry and exit points. It is beneficial to install fixed systems to monitor more license plates at all times at strategic intersections.

Locations	Cost	Benefit	Application
• NW 87th Avenue/NW 138th Street • NW 87th Avenue/NW 170th Street • Miami Lakes Drive/NW 157th Avenue • NW 67th Avenue/167th Street • NW 67th NW 138th Street	• Mobile Systems cost up to $25,000 per reader • Fixed systems cost up to $100,000	• Solve crimes • Boost revenue by identifying license plates with outstanding citations	• MDCPD/Miami Lakes Police Department provide monitoring of license plates that have matches in database

CCTV Cameras

With future public investments with the installation of new technologies throughout the town, installing cameras will protect these new assets from theft, damage and vandalism. Cameras promote public safety and allow for remote monitoring.

Locations	Cost	Benefit	Application
• Parks • Public Spaces • Public and Civic facilities (Town Hall, any future community center)	• Cost varies depending on number of cameras installed, and if monitoring services are needed outside of Miami Lakes resources • Estimated range $100,000-$200,000, with $30,000-$50,000 in annual maintenance costs per Town-wide system	• Ability to monitor multiple locations simultaneously • Promote public safety • Discourage potential vandalism and other crimes	• MDCPD/ Miami Lakes Police Department provide monitoring of camera locations - Uniform Patrol Services Unit

SMART CURB Space Management

Street activities that rely on curb space such as walking, bike and scooter sharing, electric vehicle charging, e-commerce deliveries, and ride hail services can create congested curb space if not managed or regulated. Many cities are recognizing the value of the curbside, and its ability to constrain or facilitate daily activities, and are offering solutions for all activities and users. As dockless scooters and bicycles are used throughout the Town, curb space may need to be reassessed or regulated to meet demand and type of users. Curb data is collected, then put in a database and mapped out. There is an increased need if the Town elects to regulate its vehicular parking further.

Locations	Cost	Benefit	Application
• Throughout the Town	• Staffing is required to survey curbs and work on data entry. • A part time position with benefits may cost $30,000	• Curb data can be used to improve mobility and adapt curbs to current needs of the Town	• Planning department can use this data to reassess parking and loading areas, as well as for the management of dockless bicycles and scooters

Technologies Deferred for the Future

There are a variety of technologies that can be applicable to the Town but are not recommended to pursue at this time. Some technologies may still be in development, and not ready yet for wide spread application. Others can be implemented pending when other initiatives have begun, or when the Town achieves more capabilities. It is recommended that the following technologies be deferred and reassess in the near future as new advancements are made and application is more critical to mobility and convenience.

Connected and Autonomous Vehicle (CAV) Technology

Autonomous vehicles technology is currently still under development throughout the State and is not ready to be deployed in municipalities on a wide-scale; however, pilots and demonstrations are a way to test this technology now. The Florida Department of Transportation's (FDOT) CAV Program has been engaged in planning, designing, and deploying several CAV pilot projects. FDOT has also started to engage with private-sector companies that are developing, testing, and implementing CAV technologies and applications. Miami Lakes can work with FDOT as implementation moves forward to coordinate CAV deployment. Full-scale implementation will begin in 2020 and focus on completing infrastructure upgrades, implementing large CAV projects, conducting performance and outcome assessments, performing O&M activities, advancing outreach with stakeholders, and analyzing the impacts of agency and industry partnerships.

However, the Town may consider that in the near future, it may be approached by vendors trying to test out their new technologies. Considerations of liability and appropriateness of place need to be considered. The Town may also elect to create a request for proposals to test out new technology in the future. The recommendations section of this report further provides key guidance on the approach for implementation in the future.

Drones

Drones will be critical for reliable delivery service and will assist in getting more delivery vehicles off the road. Commercial drone delivery is in testing by companies such as Amazon, Walmart, Google and UPS, and are not yet ready for deployment. Once licenses are issued for this service, Miami Lakes can implement the necessary technologies to provide this service. However, service in the area may be limited by current and future FAA regulations.

Big Data

Continuous collections of data by the Town is an intensive task, while offering, at this point, not much benefit given the size of the town and existing levels of traffic. In addition, it remains to be seen if adaptive signalization or other technologies will reduce that need – if a system is automatically adjusting for traffic, then continuous counts, which are useful for dealing with traffic in real time for larger cities, may be useful; however, there is no current need. Rather, big data technology, because of the manpower needed to process and how it is used, are more suited to regional analyses and should be referred to the County or State for implementation.

Bicycle Detection

Miami Lakes does not yet have a complete network of on-road facilities that would warrant bicycle detection, but this technology can be implemented once more facilities are constructed.

Electricity-generating Roads and Walkways

Miami Lakes is interested in producing alternative energy but does not yet have the capacity to store electricity generated. These roads and walkways can be installed in the future when the Town has the capability and resources to generate and store their own energy for consumption.

Interactive LED Road Crossings

These crossings offer dynamic and interactive pedestrian crossings that make intersections safer for all users. This technology is not yet readily available as it is in testing in pilot programs, but once available can further the Town's goal to implement complete streets by serving walkers with smartphones and cyclists or drivers with low visibility.

Extended Time (Tap Cards)

About 1/3 of Miami Lakes population is under 18 and over 65.[16] Offering for more time to cross can benefit families with young children, seniors, and disabled populations, making crossing more comfortable and safer. This technology will require one of two systems – one including registration by the Town, or utilizing the Golden Pass system by the County. The latter involves coordination with the County Department of Transportation and Public Works. Further, while the installation of such systems are relatively inexpensive, coordination of impact on signal timing is needed. This technology is better served by having adaptive signalization within the City completely implemented first, as time extensions without adjustments can have the potential for cascading traffic flow issues.

Technology Not Considered

While reviewing a full list of technologies, some items were eliminated from a recommended list of technologies for Miami Lakes. Some technologies align with the Town's goals, are more beneficial than others, and other technologies are redundant or obsolete. In some cases, costs outweigh potential benefits, or the Town has already implemented a comparable technology.

Intelligent Freight Management

Freight management technology benefits areas with high freight traffic. The current land use in Miami Lakes, and the fact that the County freight system networks does not pass through Miami Lakes, which is why intelligent freight management is not a priority for the Town at this time.

In-ground Parking Sensors

The cost of individual installation of parking sensors at each parking space and the disruption of installation on parking makes this not feasible, and this is more applicable with paid parking program, which does not yet exist. Parking cameras are more efficient, are more accurate and require less maintenance than in-ground sensors.

Smart Street Sweeper

Autonomous vehicles, specifically passenger autonomous vehicles are priority of the Town, based on the Town's mobility goals. After passenger autonomous vehicles these have been implemented, the Town can look at implementing autonomous street sweepers, and other waste management technologies. Street sweeping is a contracted service, and the Town can work with a provider to offer autonomous sweeping as a service.

Solar Panel Bicycle Lanes

Solar bicycle lanes successfully collect energy but are not the most efficient way to do so, as has been seen in the Netherlands. This technology is not appropriate for Miami Lakes, as solar panels are best suited for separated pathways, and Florida has a high water table, which makes this option not a suitable option for Miami Lakes.

Demand Responsive Transit (Micro-Transit)

Freebee in the Lakes service is provided in all areas within the Town limits, and serve as a form of Micro-transit, solving first mile/last mile problems, which is why other demand responsive transportation is not needed at this time.

Air-Conditioned Bus Shelters

Air-conditioned bus shelters make public transportation more comfortable and attractive, especially in regions with warm climates, however the cost is high at $65,000 a shelter, plus the cost of electricity. These shelters are recommended for high-ridership areas with extreme heat or sun exposure. Miami Lakes has proportionately low public transit ridership number, which makes this a cost prohibitive measure at this time.

[16] Census Population Estimates, 2018.

GOALS AND OBJECTIVES

The first step in an implementation plan is to define goals, objectives and the desired outcomes. The Town's overarching goal is to achieve national recognition as a "Model Town" for creativity, education, innovation and use of technology. Technology will be deployed to achieve the following goals:

1. **Be prepared to accommodate for current and future technology deployment:**
   - o Prepare the Town of Miami Lakes for future technology deployment
     - • Develop Smart City Coordinator position to manage technology projects
     - • Introduce and revise new policy to enable and incentivize smart city technologies to be implemented in the private sector
     - • Install 5G Network
2. **Optimize shared mobility:**
   - o Seamlessly connect Miami Lakes to the South Florida transportation network
     - • Introduce car sharing service
     - • Create a subsidize cars for hire program
     - • Create part-time staff position to collect curb data for curb management
   - o Maximize first mile/last mile connections
     - • Deploy Micro transit
     - • Expand Dockless Bicycle sharing
     - • Introduce Dockless Electric Scooter sharing
3. **Enhance pedestrian and cyclist mobility, comfort and safety:**
   - o Improve pedestrian visibility and awareness to promote walking
     - • Install In-Road Warning Lights
     - • Install Rectangular Rapid Flashing Bacons
     - • Retrofit signalized crosswalks for Accessible Pedestrian Signals
     - • Install Automated Pedestrian Detection devices
   - o Provide smart bicycle infrastructure and facilities to promote bicycle usage and support Bicycle Master Plan
     - • Install Smart Bicycle parking
     - • Install Video Imaging for bicycle and pedestrian counts
4. **Support efficient travel:**
   - o Improve traffic congestion
     - • Expand Adaptive Signal Controls
     - • Install and incentivize Smart Parking
     - • Streamline parking operations with a Mobile Parking App
   - o Design and accommodate for autonomous vehicles
     - • Launch pilot program for Connected and Autonomous Vehicle (CAV) Technology deployment on Town roads
5. **Promote public safety:**
   - o Locate, mitigate and prevent crimes
     - • Expand CCTV Camera Technology
6. **Bolster a connected quality of life:**
   - o Provide resources and facilities to engage, connect, and share information
     - • Install Smart Kiosks
     - • Install Smart Furniture
     - • Integrate book vending machines
7. **Achieve universal environmental sustainability :**
   - o Adopt technologies that promote cleaner air and efficiency
     - • Introduce electric vehicle parking requirements for new developments and incentivize for current developments
     - • Install electric vehicle charging stations
     - • Purchase and deploy municipal electric vehicle fleet

► Goal 1: Be prepared to accommodate for current and future technology deployment

Prepare the Town of Miami Lakes for future technology deployment

Implementing a 5G Wireless Network is a pre-requisite to becoming a Smart City. 5G Smart Technology prepares the Town of Miami Lakes for the deployment of future technologies. All advanced data analysis, IoT communication, and autonomous vehicles need fast communication networks. Smart cities have open data and enable connectivity through physical devices and external databases which are then analyzed to manage resources more effectively. The main concept is exchanging data for analysis. This will provide better mobility for the future. 5G wireless networks offer faster connections, more reliability and greater capacity at lower costs, to better connect infrastructure, devices and people. Deploying 5G will help prepare the Town for implementing other Internet of Things (IoT) technologies and 5G Networks provide lower latency which is significant for the operation of autonomous vehicles.

► Goal 2: Optimize shared mobility

Seamlessly connect Miami Lakes to the South Florida transportation network

Car sharing, curb management, dockless scooters and bicycles, provide multimodal options throughout the Town. The Town is already providing Freebee rides eliminating the need for sub sizing car for hire services. Providing multimodal options not only services first/last mile gaps but also connects Miami Lakes to the regional network furthering the goal of optimizing shared mobility.

► Goal 3: Enhance pedestrian and cyclist mobility, comfort and safety

Improve pedestrian visibility and awareness to promote walking

Enhancing pedestrian and cyclist comfort and safety is key to promoting these mobility options. Most of Miami Lakes is car dependent, however there are concentrated areas that have increased pedestrian usage. In road warning lights and pedestrian beacons are Smart technologies that promote safety. The intent of the Town is to integrate Smart Technology to improve pedestrian safety which will further Town-wide walkability.

Provide smart bicycle facilities to promote bicycle usage and support Bicycle Master Plan

Smart bicycle technologies promote bicycle usage and support the Greenways and Trails Master Plan while reducing car dependency. Smart bicycle lockers and Smart Bicycle app parking systems can encourage the community to ride their bicycles instead of driving. These Smart technologies provide an incentive and additional comfort and safety for cyclists.

► Goal 4: Support efficient travel

Improve traffic congestion

Improving traffic congestion is a common concern for Miami Lakes residents. Smart parking technologies such as Smart parking camera and applications help eliminate congestion by reducing the time spent searching for parking. It is recommended that the Town perform a parking management study in order to properly identify the need and locations for this technology. Expanding Adaptive signal controls throughout the Town, in order to monitor roadway volumes and adjust signal timing, will allow for better traffic control during peak hours mitigating congestion on roadways.

► Goal 5: Promote public safety

Locate, mitigate and prevent crimes

Ensuring public safety and crime prevention can be accomplished by monitoring through the expansion of the CCTV Smart Camera Technology. The Town of Miami Lakes vision is to deploy innovative Smart Technology to help improve safety and enhance security and protect Town residents and visitors. Many of the Smart Technologies addressed in the study involve enhancing safety. These technologies will also assist the Town in measuring events to estimate the need for further safety enhancements.

► Goal 6: Bolster a connected quality of life

Provide resources and facilities to engage, connect and share information

Providing Smart Kiosks and Smart Furniture and will enhance the quality of life of residents and visitors. These smart technologies will be provided at public locations throughout the Town, allowing for community gathering and promoting the Town and businesses. Interactive services engage the public and can optimize the disbursement of information while providing an amenity.

► Goal 7: Achieve universal environmental sustainability

Adopt technologies that promote cleaner air and efficiency

Smart infrastructure including electric vehicle charging stations and an electric vehicle fleet assist the Town in achieving its goal of universal environmental sustainability. Providing the infrastructure to easily charge vehicles for not only the Town but also the public promotes and encourages the use of electric vehicles. These technologies promote cleaner air and serve as an additional amenity for the public. Street light sensors are energy efficient and technologically advanced as usage and outages can be tracked providing efficiencies in maintenance and operations advancing the Town's goal of environmental sustainability.

Table 1 below is a timeline that provides a time frame for deploying technology items that achieve each goal. The following tables detail the steps for implementation, lead agencies, and potential partners where applicable.

Table 1: Town of Miami Lakes Technology Deployment Timeline

Technologies	0-5 years	5-10 years	10-15 years
5G Network			
Connected Vehicle Technology			
Electric Vehicle Charging Stations			
Accessible Pedestrian Signals			
In Road Warning Lights			
Rectangular Rapid Flashing Beacons			
Embedded LEDs in Signs			
Curb Space Management			
Subsidized on-demand car for-hire			
Smart Benches			
Smart Kiosks			
Smart Parking			
Smart Bicycle Lockers			
Electric Vehicle Fleet			
CCTV Expansion			
Adaptive Signal Controls			
Car Share			
Light Sensors			
Parking Program / App			
Micro Transit			
Bicycle Sharing			
Video Imaging for Bicycle and Pedestrian Detection			
Electric Scooter Sharing			
Connected Autonomous Vehicles			
Mobility App / "Mobility Marketplace"			
Book Vending Machines			
Automated Pedestrain Detection			

Goal Items
Be prepared to accomidate for current and future technology deployment
Optimize shared mobility
Enhance pedestrian and cyclist mobility, comfort and safety
Support efficient travel
Promote public safety
Bolster a connected quality of life
Achieve universal environmental sustainability

Table 2					
	Technology		Strategies for Implementation	Lead Agencies	Partners
Be prepared to Accommodate for Current and Future Technology Deployment	5G WIFI Network	1	Create Inventory of current Fiber Optic network and locations	Public Works	Telecommunication Service Providers
		2	Compile list of potential sponsors to help with installation and maintenance	Wieless Provider	
		2.a	Conduct outreach to list of potential sponsors	Planning	
		3	Select Service provider partner	Information Technology	
		4	Add expenditure costs to Capital Improvement Plan	Finance	
		5	Create agreements with Town developers and other major stakeholders to allow for installation on private property when necessary	Town Attorney	Developers
		5.a	In exchange for fronting much implementation costs. Give access to Town's utility poles and expedited permitting.	Building/Public Works	
		6	Add costs to Capital Improvement Plan	Finance	
		7	Fill any gaps in the fiber optic network	Public Works	
		8	Install 5G WIFI at Town properties, schools, parks and libraries	Public Works	FPL
		9	Expand service throughout all public spaces in the Town	Public Works	
		10	Create Smart City Coordinator staff position to oversee adherence to implementation plan	Town Manager/Human Resources	
	Connected Vehicle Technology	1	Determine a demonstration project to adopt that will explore CAV infrastructure	Transportation	Miami-Dade County Department of Transportation and Public Works
		1.a	Select a service provider	Transportation	
		2	Include in Town Transportation Plan	Transportation	
		3	Monitor selected project	Transportation	

Table 3					
	Technology		Strategies for Implementation	Lead Agencies	Partners
Optimize Shared Mobility	Subsidized on-demand car for-hire	1	Advertise and send survey to gauge support for subsidized rides	Public Information Officer	
		1.a	If there is support, structure budget and decide level of subsidy	Finance	
		2	Contact service porviders to structure a subsidized ride deal	Finance	
		3	Select Taxi Company to partner with to meet ADA requirements	Town Manager	
		4	Select special pick-up and drop off locations	Transportation	
		4.a	Reserve areas of curb space during certain hours/days to support this program	Transportation	
		5	Launch marketing campaign to advertise service	Public Information Officer	
	Car Share	1	Compile list of businesses that may wish to participate	Public Information Officer/Planning	
		1.a	Conduct outreach to list of potential partners	Public Information Officer/Planning	
		2	Select Car share company to use	Transportation	
		3	Create agreement with car share company to operate on curb	Town Attorney	
		4	Develop curb regulations to support dedicated parking for car share vehicles	Planning	
		5	Launch marketing campaign to advertise service	Public Information Officer/Planning	
		6	Launch Car Share program	Planning/Transportation	
	Curb Space Management	1	Assign staff /or hire new staff to survey and document curb conditions	Public Works/Tansportation	
		2	Upload data to a database to be managed internally	Public Works/Tansportation	Mapping platform
		2.a	Update and analyze annually	Public Works/Transportation	
		3	Make changes to curb regulations as needed based on findings	Planning/Tranportation	
	Micro Transit	1	Continue to monitor ridership rates of micro transit	Transportation	Freebee
		1.a	Based on findings, determine when micro transit service is to be extended or more fleet be added	Transportation	Freebee
	Bicyle and Scooter Sharing	1	Continue to monitor use of bicycle program	Transportation	Service Provider
		2	Based on findings, determine when bicycle sharing program is to be expanded more units be added	Transportation	Service Provider
		3	Select electric scooter provider(s)	Transportation	Service Provider
		3.a	Add electric scooters to fleet	Transportation	Service Provider

Table 4					
	Technology		Strategies for Implementation	Lead Agencies	Partners
Enhance pedestrian and cyclist mobility, comfort and safety	In-Road Warning Lights	1	Partner with FDOT to purchase and install	Town Manager	FDOT
		2	Add to Capital Improvement Plan	Finance	
		3	Consider as part of All complete streets and Safe Routes to School improvements	Public Works/Transportation	
	Accessible Pedestrian Signals	1	Create list of signalized crossings	Public Works/Transportation	
		1.a	Prioritize intersections with the most use	Public Works/Transportation	
		2	Identify signals onwed and maintained by the Couny, and coordinate improvements and maintenance	Public Works/Transportation	Miami-Dade County Transportation and Public Works
		3	Coordinate with FDOT to secure funding	Transportation	FDOT
		4	Add to Capital Improvement Plan	Finance	
		4	Purchase and install APS	Public Works/Procurement	
	Rectangular Rapid Flashing Beacons	1	Coordinate with FDOT to secure funding	Transportation	FDOT
		2	Identify favorable locations for installing mid block beacons	Transportation/Public Works	
		3	Add to Capital Improvement Plan	Finance	
		4	Purchase and install Rectangular Rapid Flashing Beacons	Public Works/Procurement	
	Embedded LEDs in Signs	1	Survey existing signage with low-visibility	Transportation/Public Works	
		2	Identify essential signs to install lights on	Transportation/Public Works	
		3	Purchase new signage with embedded lights	Transportation/Public Works/Procurement	
		3	OR purchase lights to retrofit on existing signs	Transportation/Public Works/Procurement	
	Smart Bicycle Lockers	1	Identify locations for smart bicycle locker	Transportation	
		2	Decide budget and amount of structures to purchase or lease	Transportation	
		3	Construct Right of Way agreement for provider to operate on ROW	Town Attorney	
		4	Select service provider and structure of ownership	Public Works/Transportation	
		5	Add to Capital Improvement Plan	Finance	
		6	Purchase or lease lockers	Public Works/Procurement	
	Automated Pedestrian Detection	1	Select signalized crosswalks to equip with automated pedestrain detection	Transportation/Public Works	
		1.a	Identify signals onwed and maintained by the Couny, and coordinate improvements and maintenance	Transportation/Public Works	Miami-Dade County Transportation and Public Works
		2	Add to Capital Improvement Plan	Finance	
		3	Coordinate with FDOT to secure funding	Transportation/Public Works/Finance	FDOT
		4	Purchase and install automated pedestrian detction devices	Public Works/Procurement	
	Video Imaging for bicycle and pedestrian counts	1	Determine location and number of cameras to be installed	Transportation/Public Works	
		2	Include in Transportation Improvement Plan	Transportation	
		3	Select service provider	Transportation/Procurement	Service Provider
		3.a	Determine if data processing will need to be outsourced	Tranportation/Town Manager	
		4	Purchase and install	Public Works/Procurement	Service Provider
		5	Synthesize data to make changes to bicycle or pedestrian network	Transportation	

Table 5					
	Technology		Strategies for Implementation	Lead Agencies	Partners
Support Efficient Travel	Smart Parking	1	Main Street District will pilot the first program	Town Manager	Private land owners
		2	Select service provider	Public Works/Planning	Service Provider
		3	Purhase and install	Finance/Procurement	
	Adaptive Signal Controls	1	Coordinate with Miami-Dade County to prioritize these corridors	Transportation	Miami-Dade County Department of Transportation and Public Works
		2	Assist county with purchasing and installing equipment	Transportation/Procurement	Miami-Dade County Department of Transportation and Public Works
	Parking App	1	Select parking software partner	Public Works/Planning	Parking Software Partner
		1.a	Draft Parking Plan	Public Works/Planning	Council and Legal
		2	Label new department for parking enforcement or tranportation will take over as parking authority	New agency	
	Mobility App/ Mobility Marketplace	1	Communicate with County need for Mobility Marketplace	Transportation	Miami-Dade County Department of Transportation and Public Works
		2	After County agrees to offer resources, coordinate with County to provide Town information to be included in the marketplace	Transportation	Miami-Dade County Transit
		3	Participate in marketing for the app	Transportation	Miami-Dade County Transit
	Connected Autonomous Vehicles	1	Gather public input to determine support and location of potential pilot program	Transportation	Public
		2	Determine viable pilot areas	Transportation	
		2.a	Determine goals and objectives for pilot program	Transportation	
		3	Draft ordinance to allow for autonomous vehicle technology testing on Miami Lakes roads	Transportation	
		4	Design RFI	Transportation/Procurement	
		4.a	Select provider/partner	Transportation	Autonomous vehicle partner
		5	Continue to moniter trends in street design for autonomous vehicles	Transportation	

Table 6					
	Technology		Strategies for Implementation	Lead Agencies	Partners
Public Safety	CCTV	1	Determine locations and number of cameras based on monitoring needs	Police/Public Works	
		2	Select service provider	Public Works/ Procurement	Service Provider
		3	Add to Capital Improvement Plan	Finance	
		4	Purchase and Install CCTV cameras	Finance/Procurement	Service Provider

Table 7					
	Technology		Strategies for Implementation	Lead Agencies	Partners
Bolster a Connected Quality of Life	Smart Benches	1	Compile bench inventory	Parks and Recreation	
		1.a	Identify benches in state of repair that need to be replaced	Parks and Recreation	
			Identify bus stop benches that need to be replaced	Public Works	
		2	Compile list of commercial areas with benches	Parks and Recreation	
		2.a	Conduct outreach to gaguge private interest in purchasing or sponsoring bench purchases	Parks and Recreation	
		3	Select Service provider to partner with	Information Technology Manager	
		4	Purchase and install benches	Finance/Public Works	
	Smart Kiosks	1	Create agreement with plaza owners and developers to lease land in exchange for installing kiosks	Town Attorney	Plaza Owners/ Developers
		2	Confirm locations for kiosks are in agreement with plaza owners	Planning	
		3	Develop desired list of programming capabilities	Information Technology	
		4	Select Service provider	Information Technology	
		4.a	Purchase and install kiosks	Finance/Procurment/Public Works	
		5	Develop programming with outreach for adverising opportunities	Public Information Officer	
	Book Vending Machines	1	Partner with Little Free Library program	Public Works	Little Free Library
		2	Partner with Miami-Dade County Publc Library for resources	Miami-Dade County Public Library	Miami-Dade County Publc Library
		3	Determine favorable locations for vending machines	Public Works	
		4	Secure funding through grant or library funds	Finance/Grant writer	
		5	Select Service provider	Public Works	Service Provider
		6	Purchase, install and program machines	Finance/Public Works	Service Provider

Table 8					
	Technology		Strategies for Implementation	Lead Agencies	Partners
Universal Environmental Sustainability	Electric Vehicle Charging Stations	1	Amend zoning code to require EV parking spaces for commercial and residential developments	Planning	
		2	Select electric charging provider for installation on Town property	Town Manager	Service Provider
		3	Decide to install Level 2, or Level 3 charging stations	Town Manager	
		4	Partner with an electric charging provider to install stations on Town properties	Public Works	EVCS Provider
		5	Partner with FPL to purchase electricity at wholesale rates	Finance	FPL
		6	Expand Incentive Program for property owners and business owners to convert parking to EV parking.	Planning	
		7	Add to Capital Improvement Plan	Finance	
		8	Purchase and install charging stations	Finance/Procurement/Public Works	
	Electric Vehicle Fleet	1	Reserve budget to purchase 3 new sedans	Finance	
		2	After electric charging is installed at Town Hall, electric sedans can be purchased	Finance	
		3	Purchase sedans	Procurement	Automobile manufacturer
		4	After truck technology is available, replace gasoline truck vehicles with electric trucks	Public Works	
	Streetlights Sensors	1	Decide capacity and capabilities of sensors	Information Technology/Public Works	
		2	Confirm target number for sensors	Public Works	
		3	Select an area to pilot sensors for 1/10 of total lights	Town Manager	
		4	Add to Capital Improvement Plan	Finance	
		5	Select service provider	Town Manager	Service Provider
		6	Purchase and install sensors	Finance/Procurement	Service Provider

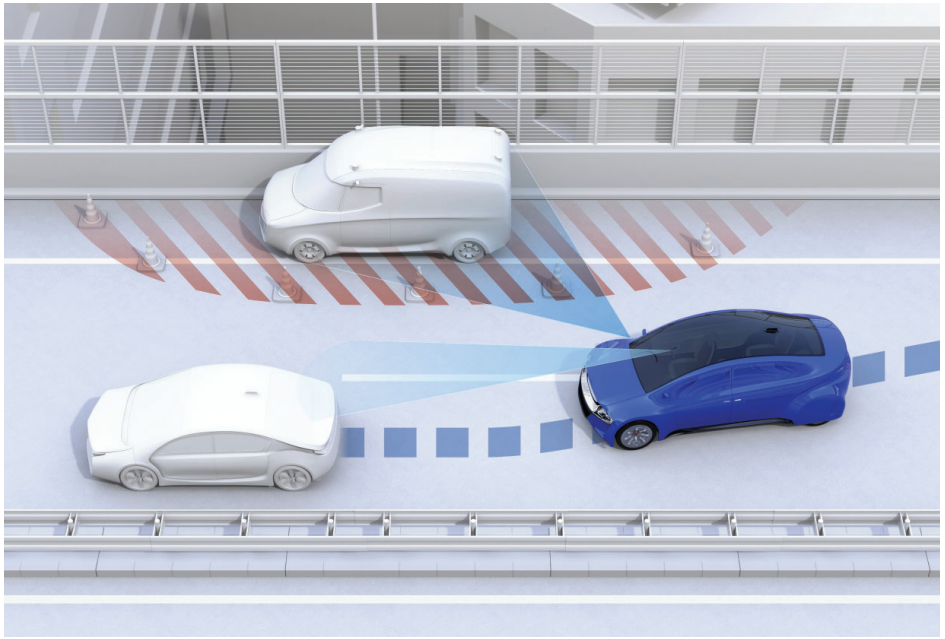
◆TECHNOLOGIES PROJECT SHEETS

The Town must prepare for future technology implementation and can begin to do so with implementing 5G Network throughout the Town, which will enable a full integration of roadways with connected and autonomous vehicle technology (CAV). A 5G network will be essential for future technology deployment.

Technology can enhance quality of life for all residents by providing resources and facilities to engage, connect, and share information such as smart kiosks and smart benches. In addition to these amenities, the Town is working towards achieving universal environmental sustainability by adopting technologies that promote cleaner air and efficiency. Future trends show more electric vehicles will be on the road, which will require the Town to dedicate more parking spaces to be available for charging. Also the Town can upgrade street lights so that they are connected with automatic sensors to help reduce energy usage and reduce the cost of electricity.

The Town can work towards optimizing shared mobility by seamlessly connecting Miami Lakes to the South Florida transportation network by developing a car share programming, subsidizing vehicle ride share during times of limited transit service hours. Utilizing curb space management tools will help to dictate curb regulations and dedicate space for different users and purposes.

Miami Lakes desires to be a model town as this is a safe and comfortable place to walk and bike. The Town desires to enhance pedestrian and cyclist mobility, comfort and safety by improving pedestrian visibility and awareness with In-Road Warning Lights, Rectangular Rapid Flashing Beacons and Accessible Pedestrian Signals to promote walking. In addition, the Town will provide smart bicycle parking facilities to promote bicycle usage and support implementation of the Greenways and Trails Master Plan.



Miami Lakes is focused on providing efficient travel conditions by improving traffic congestion through expanding the Adaptive Signal Control Technology program throughout the Town and looking to install smart parking and mobile parking capabilities in the future. CCTV camera technology promotes public safety and installing more systems will assist the town in providing additional monitoring, which will be critical for locating and mitigating crimes in addition to safeguarding new investments in technology. The following section lists information for each technology recommendation.

▶ **Technology Number:** 1 ▶ **Technology Name:** 5G Network ▶ **Technology Category:** Utilities

▶ **Goal:** Goal 1: Be prepared to accommodate for current and future technology deployment

▶ **Description:** 5G wireless networks offer faster connections, more reliability and greater capacity at lower costs, to better connect infrastructure, devices and people. 5G wireless will be deployed in the Miami area by the end of 2019 through Verizon, offering broadband services to homes. Miami Lakes can partner with wireless carriers to expand 5G network throughout the town to offer free WIFI in public spaces. Implementing 5G Wireless Network is a pre-requisite to becoming a Smart City. All advanced data analysis, IoT communication, and autonomous vehicles need fast communication networks. Smart cities have open data and enable connectivity through physical devices and external databases which are then analyzed to manage resources more effectively. The main concept is exchanging data for analysis. This will provide better mobility for the future. 5G wireless networks offer faster connections, more reliability and greater capacity at lower costs, to better connect infrastructure, devices and people. 5G wireless will be deployed in the Miami area by the end of 2019 through Verizon, offering broadband services to homes. Miami Lakes can partner with any wireless carrier to expand 5G network throughout the town to offer free WIFI in public spaces. Deploying 5G will help prepare the Town for implementing other Internet of Things (IoT) technologies. For example, a 5G network will be required to fully integrate roadways with CAV technology. Design of civic infrastructure in the future should incorporate this need. Simply put, 5G Networks provide lower latency which is significant for the operation of autonomous vehicles.

▶ **Purpose:** Fast free network connection to better connect and prepare the community for future applications using 5G infrastructure.

▶ **Need:** Deploying 5G will help prepare the Town for implementing Internet of Things (IoT) technologies. For example, a 5G network will be required to fully integrate roadways with CAV technology.

▶ **Location(s):** Ultimately, 5G is to deployed throughout the town, but the following locations will be prioritized:

- Parks
  - o Optimist Park
  - o Royal Oaks Park
  - o Picnic Park
- Public Spaces
- Public and Civic facilities (Town Hall, any future community center)
- Miami Lakes Branch Library
- Schools

▶ **Cost:**

Purchase	N/A
Installation	Installation cost is dependent on gaps in fiber optic network
Annual Maintenance/Fees	Dependent on negotiations. Generally, service providers own the infrastructure and will maintain.

▶Technology Number: 2 **▶Technology Name:** Connected Vehicle Technology

▶Goal: Goal 1: Be prepared to accommodate for current and future technology deployment

▶Description: A connected vehicle (CV) environment enables wireless communications among vehicles (vehicle-to-vehicle, or V2V), infrastructure (vehicle-to-infrastructure, or V2I), and mobile devices. Vehicles include light vehicles, trucks, and transit vehicles. Pedestrians, bicyclists, or motorcyclists can carry mobile devices, allowing vehicles and infrastructure to communicate with other CV participants and vice versa (vehicle-to-anything, or V2X). The information shared through these communications may include the following:

- Presence, speed, location, and direction of travel.
- Road and traffic conditions.
- On-board vehicle data, such as emissions, braking, and windshield wiper activation. (The availability of on-board vehicle data for planning purposes is subject to privacy and legal agreements that have not yet been established.

▶Purpose: The full benefits of vehicle automation can be achieved only through connectivity, and integrating automated vehicles. Thing to keep in mind for planning include:[17]

- Timeframes for the implementation of C/AV-supporting infrastructure and programs (e.g., V2I).
- Funding sources for C/AV-supporting infrastructure and programs.
- Societal and organizational impacts, as well as ways to adapt to disruption in the private and public sectors
- C/AV data outputs to support planning needs.

▶Need: Connected vehicle technology will help Improve congestion, safety and mobility, and will be a precursor for fully autonomous vehicles.

▶Location(s): A location can be determined for a connected vehicle technology demonstration where the Town can test and showcase this emerging technology.

[17] U.S. Department of Transportation.

▶ **Technology Number:** 3 ▶ **Technology Name:** Car Share ▶ **Technology Category:** Shared Multimodal Mobility

▶ **Goal:** Goal 2 - Optimize shared mobility

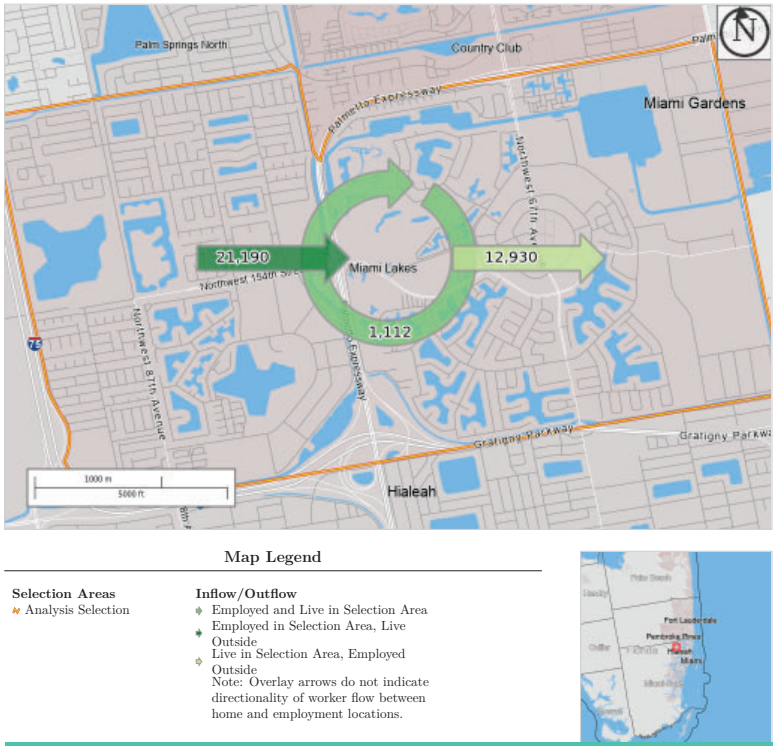
▶ **Description:** Car sharing is a model of car rentals where one can rent a car for short period of time. Members only pay for the time they reserve the vehicle. Gas, insurance, roadside assistance, maintenance and lease payments are covered in the hourly rental fee. Mileage is generally capped, at approximately 180 miles per day.

▶ **Purpose:** Car sharing rental services are intended to substitute private vehicle ownership and can be structured as a one- way or two-way car share system. One shared, two-way vehicle could replace six to 23 private cars on the road.[18] Car share vehicles are located in neighborhoods and can be rented by the hour or by the day, and serve populations that both live and work in the Town, or that work from home who may need access to a car at all times, as well as people who may not want to own a car or those who can't afford it.

▶ **Need:** Car-sharing can reduce car ownership and offers first mile / last mile connections which can encourage more transit usage and therefore reduce traffic congestion which is a major concern and priority for the Town. While most people who work in Miami Lakes live outside the Town, as of 2015 the share of workers that live and are employed by the town is about 8% of all workers. With the Town's efforts to strengthen the local economy by growing the job sector, and with new businesses locating in the Town, this number may increase in the near future.

▶ **Location(s):** Locations are displayed in Figure 1 Map.

- Main Street District (5 spaces)
- NW 79th Avenue/NW 154th Street (3 spaces)
- Park and ride facility at NW 77th Avenue and NW 154th Street (5 spaces)



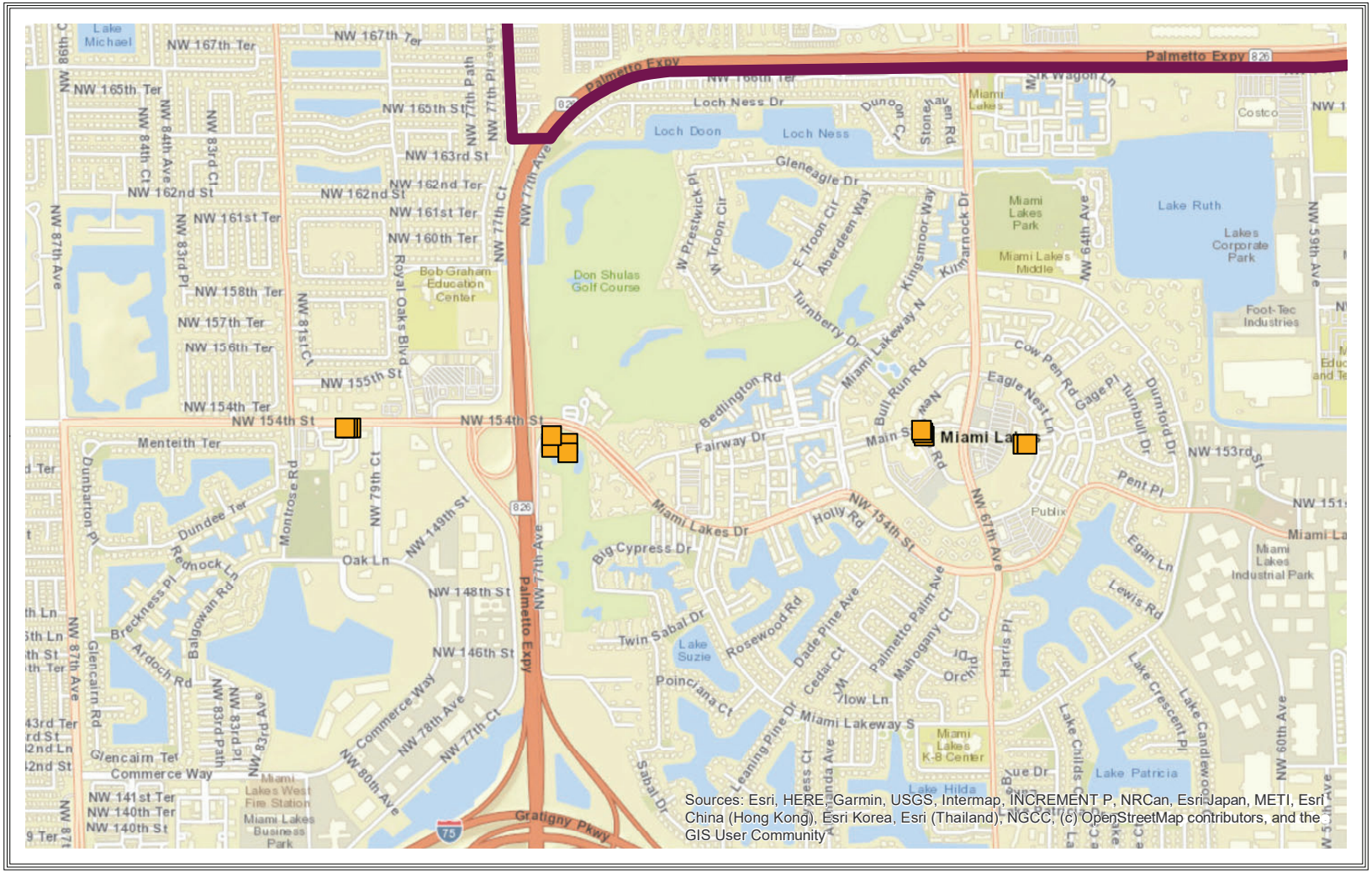
Source: "OnTheMap" U.S.Census Bureau, Center for Economic Studies

▶ **Cost per parking space:**

Purchase	N/A
Installation	$200 for signage and stripping
Annual Maintenance/Fees	Costs incurred by service provider

[18] U.S. Department of Transportation.

Figure 1: Potential Car Share Locations



▶ **Technology Number:** 4 ▶ **Technology Name:** Subsidized on-demand car for-hire

▶ **Technology Category:** Shared Multimodal Mobility ▶ **Goal:** Goal 2 - Optimize shared mobility

▶ **Description:** The Town can work with Uber or Lyft to offer subsidized or reduced-cost rides to destinations in and around town. All rides can be subsidized especially in designated pick up areas near bus stations. The partnership can be constructed as a flat rate, a flat discount, or percentage off total price. In addition, the Town will need to partner with a local cab company to address Title XI compliance.

▶ **Purpose:** On-Demand cars for hire provide passengers with additional transportation options within Town of Miami Lakes limits. This service provides on-demand connectivity for trip that are generated and end in the Town, as well as between bus stops and final destinations. Ride companies collect and can share data to assist in identifying any unmet service needs and cultivate public/private partnerships within the Town of Miami Lakes.

▶ **Need:** The Town provides Freebee rides throughout the Town, which serves first mile/last mile connections and eliminates the need for subsidizing for-hire cars during service hours.

▶ **Location(s):** Service to be available for trip generated and completed within Town Limits during limited hours.

▶ **Costs:** Cost is dictated by the amount of money the Town can spend, which also will determine the length and reach of the program. The following budget is a suggested range deducted from other municipal budgets in in Florida of similar size that have adopted subsidized rides to serve passengers traveling outside normal service hours or that may have first mile/last mile gaps.

Standard ride subsidies	$8,000-$35,000
ADA accessible ride subsidies	$1,000-$8,000
Marketing materials	$1,000-$1,500

Technology Number: 5 **Technology Name:** Curb space management

Technology Category: Shared Multimodal Mobility **Goal:** Goal 2 - Optimize shared mobility

Description: Curb space management is a data collection and mapping to help municipalities catalog their curb data on curb usage and regulations, which can be used to improve mobility as curb needs change.

Purpose: Ability to document curbside uses and use this information to develop and adopt policy to respond to real-time needs. Curb management improve efficiencies and safety for drivers and capitalizes on curb space for multi-use options.

Need: As dockless scooters and bicycles are used throughout the Town, curb space will need to be monitored, regulated and managed to meet demand and type of users. In addition, the rise of e-commerce and shared mobility, drop off and pick up areas can be added in certain areas.

Location(s): Curb space management is to be applied throughout the town, and be used to assess curb assets by collecting and synthesizing curb data.

Labor Costs:

25% of full time with benefits:	$30,000/year

▶ **Technology Number:** 6 ▶ **Technology Name:** Micro Transit ▶ **Technology Category:** Shared Multimodal Mobility

▶ **Goal:** Goal 2 - Optimize shared mobility

▶ **Description:** Micro Transit is a shared, on-demand, app-based mobility service that groups travelers with similar trip pickup and drop-off locations. Often, micro transit offers more transparency and reliability in service that public transportation, as it operates on smaller capacity and has a limited service area. Researchers at the University of Texas found that one share vehicle could replace 10 single-occupancy vehicles.

▶ **Purpose:** Micro transit fills in any gaps in public transportation service and offers first mile/last mile solutions for passengers complete a trip. In addition, micro-transit can be a clean alternative to buses or cars as often this service is operated by electric vehicles which have no fuel emissions.

▶ **Need:** The Town is dedicated to improving mobility and traffic congestion, and micro transit is a solution to helping people move around efficiently without a personal car. In addition, Miami-Dade County Metrobus service is limited in certain areas of the Town, which limits public transportation options. Micro transit is a reliable alternative that offers a subsidized ride with minimal waiting time.

▶ **Location(s):** Micro transit service is currently offered in Miami Lakes, and it is recommended that service expand and continue to be available throughout the Town's jurisdiction.

Source: Freebee Miami

▶ **Costs per unit:**

Operations	$65,000 a year per vehicle

Technology Number: 7 **Technology Name:** Dockless Bicycle Sharing

Technology Category: Shared Multimodal Mobility **Goal:** Goal 2 - Optimize shared mobility

Description: Dockless bicycles are short-term bicycle rentals that are not "parked" but instead are located in various locations to be picked up as needed and can be used as a first mile/last mile solution. Dockless bicycles rely on GPS and sensor technologies to track availability and locations of unit. Dockless bikes can be located and unlocked using a smartphone app, and can be rented by the day, or unlimited use can be prepaid for through monthly of annual memberships.

Purpose: Dockless options for bicycle and scooter rentals help improve mobility and expand access to public transportation.

Need: The Town is dedicated to improving mobility and traffic congestion, and dockless bicycles serve as a low-risk solution to helping people move around more efficiently without a personal automobile, as well as make first mile/last mile connections.

Location(s): Dockless bicycles are spread throughout the town as service is not centralized but depends on where the last rider dropped the bike off. It is recommended that electric bicycle fleet be added to the regular bicycle fleet to offer more mobility options. Dockless bicycles are currently offered in Miami Lakes, and it is recommended that more bicycles be added to this service as more bicycle facilities are constructed.

Costs per unit: Provider can pay the Town $50-$200 per unit to operate in the Town's jurisdiction, and to allow for operators to use curb and sidewalk space to "park" bicycles. The following fees are passed on to the user/rider:

User fee/cost varies by length of rental	$180-$300/year $25-35/month $5-25/day $5-6/hour

Source: Johnny Diaz/Sun Sentinel

▶ **Technology Number:** 8 ▶ **Technology Name:** Dockless Electric Scooter Sharing

▶ **Technology Category:** Shared Multimodal Mobility ▶ **Goal:** Goal 2 - Optimize shared mobility

▶ **Description:** Dockless electric scooters are battery powered electric scooters that are rented for short-term. Dockless means the scooters are "parked" in various locations to be picked up as needed and can be used as a first mile/last mile solution. Dockless electric scooters rely on GPS and sensor technologies to track availability and locations of unit. Dockless scooters can be located and unlocked using a smartphone app, and can be rented by the minute. A fully charged scooter can travel 15 to over 35 miles, and its electric power allows for a faster travel alternative to walking or cycling.

▶ **Purpose:** Dockless options for bicycle and scooter rentals help improve mobility and expand access to public transportation.

▶ **Need:** The Town is dedicated to improving mobility and traffic congestion, and dockless electric scooters serve as a low-risk solution to helping people move around more efficiently without a personal automobile, as well as make first mile/last mile connections.

▶ **Location(s):** Dockless electric scooters are spread throughout the town as service is not centralized. It is recommended that electric scooters be introduced in Miami Lakes as more shared paths are constructed.

▶ **Costs per unit:** Provider can pay the Town $50-$200 per unit to operate in the Town's jurisdiction, and to allow for operators to use curb and sidewalk space to "park" scooters. The following fees are passed on to the user/rider:

User fee/cost varies by length of rental	$1 fee plus 15 cents per minute

Technology Number: 9 **Technology Name:** In-Road Warning Lights **Technology Category:** Pedestrian Safety

Goal: Goal 3 - Enhance pedestrian and cyclist mobility, comfort and safety

Description: In-Road Warning Lights (IRWL) are a series of amber lights embedded in the roadway that face oncoming traffic. The lights are visible to approaching drivers as a warning that a pedestrian in the marked crosswalk or near it. Lights can be activated by using a traditional push button, or an automatic sensor.

Purpose: IRWL can be added to marked crosswalks that have no signalization, to increase yield rates and pedestrian mobility. IRWL eliminates delays from signalized intersection, as lights would only initiate when a crossing is needed. IRWL are one of the best technologies to capture driver attention, and to safety share the road for all users. These lights can reduce speed at intersections without needing to add a signalized crosswalk or lowering speed limits.

Need: While most of Miami Lakes is car dependent, the Town Center neighborhood is one of the busiest pedestrian areas, and is the most walkable area in the town with the highest Walkscore of 71 percent. On the edge of this area, on NW 67th Avenue (Ludlam Drive), there has been a concentrated number of pedestrian crashes. Adding more marked crosswalks on NW 67th Ave with In-Road Warning Lights will improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.

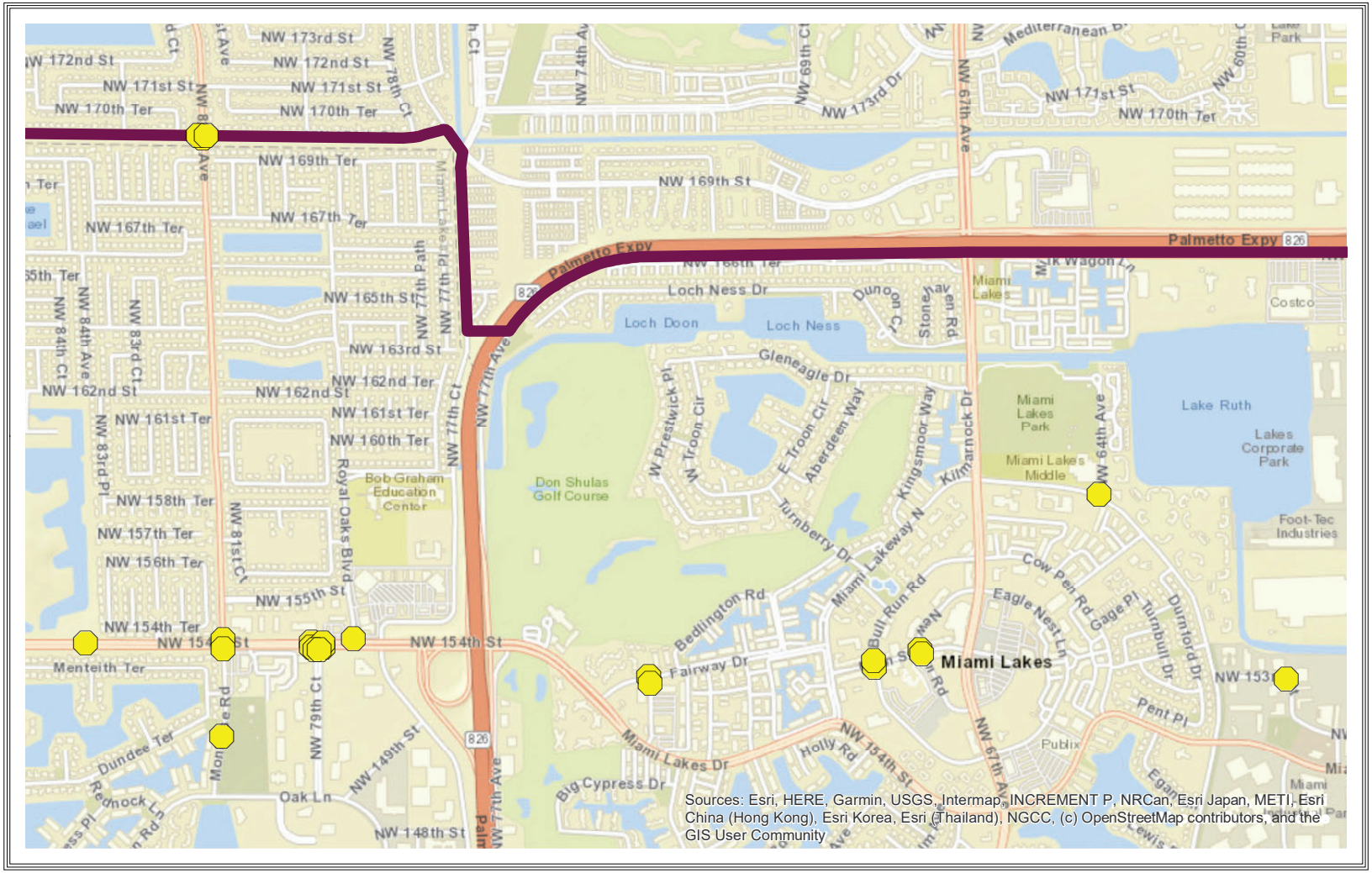
Location(s): (See Figure 2):

- NW 170th Street & NW 82nd Avenue (3)
- NW 154th Street & NW 82nd Avenue (2)
- NW 79th Avenue & NW 154th Street (1)
- NW 79th Court & 154th Street (6)
- New Barn Road & Main Street (2)
- NW 153rd Street & NW 60th Avenue (1)
- NW 64th Avenue & Miami Lakeway North (1)
- Bull Run Road & Main Street (2)
- Midblock crossing at NW 82nd Avenue (2)
- Midblock crossing at Fairway Drive (2)

Costs per crosswalk:

Purchase and Installation	$25,000

Figure 2: Potential In-Road Warning Light Locations



N

0 0.225 0.45 0.9 Miles

Legend

- In-Road Warning Lights
- Miami Lakes Boundary

Technology Number: 10 **Technology Name:** Rectangular Rapid Flashing Beacons

Technology Category: Pedestrian Safety **Goal:** Goal 3 - Enhance pedestrian and cyclist mobility, comfort and safety

Description: Rectangular Rapid Flashing Beacons (RRFBs) are user-activated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system. RRFBs can be solar powered and use an irregular flash pattern that is similar to emergency flashers on police vehicles.

Purpose: RRFBs can enhance safety by reducing crashes between vehicles and pedestrians at unsignalized intersections and mid-block pedestrian crossings by increasing driver awareness of potential pedestrian conflicts increases driver yielding behavior significantly and allowing for pedestrians to safely cross busy or higher-speed roadways at midblock crossings and uncontrolled intersections. RRFB increase pedestrian visibility, stopping road traffic only as needed and eliminating the need for a signalized crosswalk.

Need: Some crossings are more than 3-minutes apart, causing pedestrians to cross outside of a marked crosswalk.

Location(s): RRFB signals are best suited in areas with widely spaced controlled pedestrian signals, where pedestrians have limited opportunities to cross roadways. Crosswalk spacing criteria should be determined according to the pedestrian network, built environment, and observed desire lines. The following location has been assessed as having mid block crossing needs. (See Figure 3 Map):

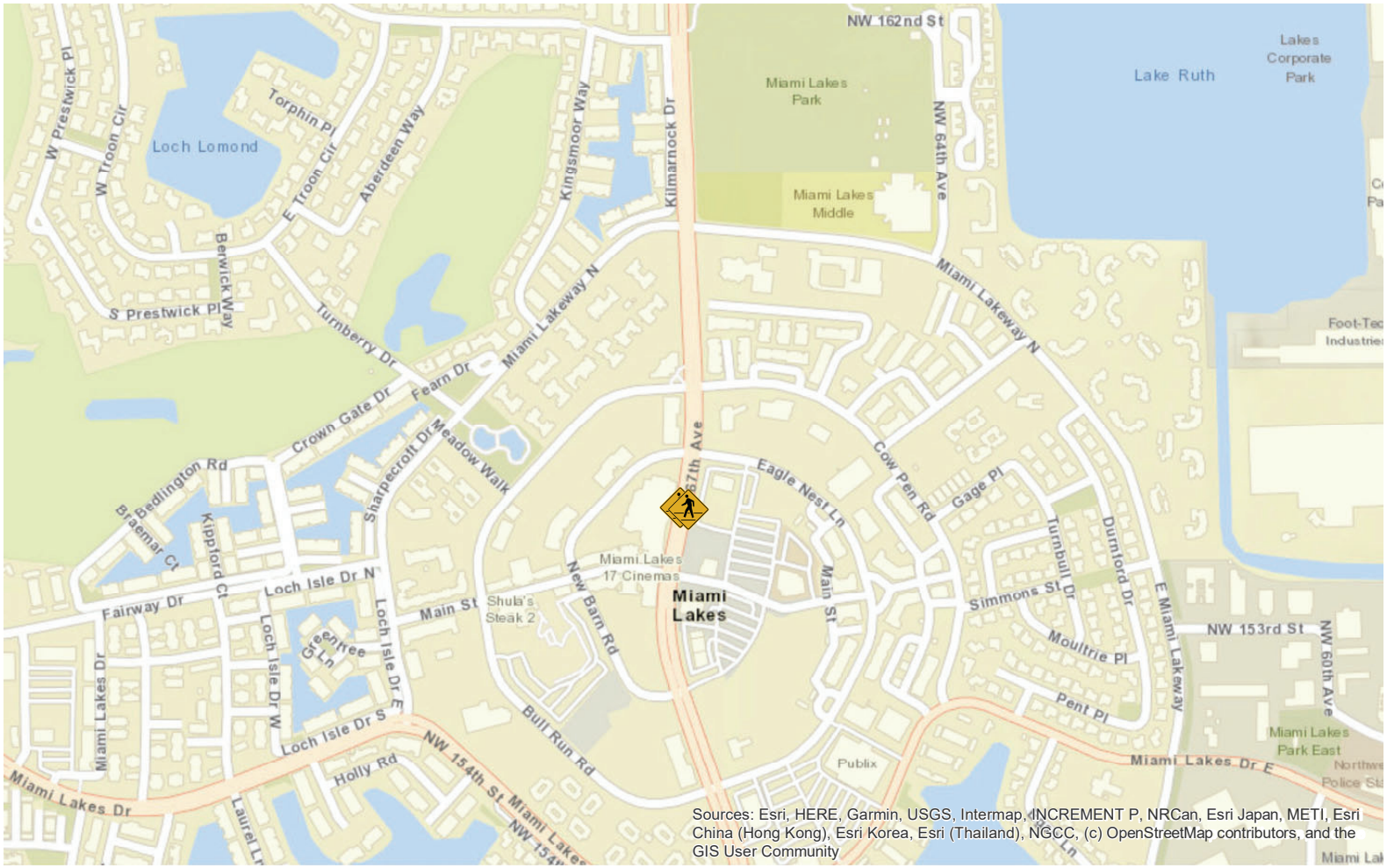
- Between East Nest Lane and Main Street on NW 67th Avenue

Costs per two units (one on either side of a street):

Purchase	$10,000-$15,000

Source: CommuteOrlando

Figure 3: Potential Rectangular Rapid Flashing Bacons Locations



Legend

Rectangular Rapid Flashing Bacons

Technology Number: 11 **Technology Name:** Embedded LEDs in Signs

Technology Category: Pedestrian Safety **Goal:** Goal 3 - Enhance pedestrian and cyclist mobility, comfort and safety

Description: Embedded LEDs are lights that illuminate roadway signage. Typically these are seen on signs to signal caution, for yielding and stopping. Embedded LEDs are utilized in areas where signage may have low visibility. This measure can be more cost effective than striping and replacing existing signage. Embedded LEDs can be retrofitted to existing signs, which make this option a financially feasible countermeasure. The retrofit is significantly less expensive than other pedestrian technologies which enhance driver awareness of traffic-control signs and pedestrian crosswalks. LEDs may be illuminated 24 hours a day, or be activated by vehicles or pedestrians.

Purpose: Embedded LEDs increase visibility of crosswalks, and other regulatory signs, enhance visibility and recognition of regulatory and warning signs to drivers, especially under low-light or low-visibility conditions, improving roadway behaviors and enhancing pedestrian visibility.

Need: While the Town is well lit, embedded LEDs can increase pedestrian sense of safety and comfort at crosswalks and intersections.

Location(s): This technology is best suited for areas where sight lines are restricted, and particularly in locations with:

- Documented problems of drivers failing to recognize an intersection, and at stop signs which may help to increase the rate of vehicles stopping, and to avoid drivers failing to detect the STOP sign

Costs per intersection:

Estimated cost range	$2,000 to $6,000
Maintenance costs	Costs are assumed to be for replacement LED bulbs, which cost approximately $8/bulb and have a lifespan of 25,000 hours, or approximately 3 years of continuous usage. At 8-16 bulbs per stop sign, an annualized maintenance cost of approximately $25-$50/sign is expected

▶ **Technology Number:** 12 ▶ **Technology Name:** Accessible Pedestrian Signals (APS)

▶ **Technology Category:** Pedestrian Safety ▶ **Goal:** Goal 3 - Enhance pedestrian and cyclist mobility, comfort and safety

▶ **Description:** An accessible pedestrian signal and pedestrian pushbutton is an integrated device that communicates information about the WALK and DON'T WALK intervals at signalized intersections in non-visual formats, including in sound, accommodating the needs of all pedestrians including those with vision and mobility impairments.

▶ **Purpose:** This signal allows to communicate to the visually and mobility impaired when it is time to cross, increasing safe crossings. These signals allow for increased mobility for all.

▶ **Need:** A step to implementing complete streets to accommodate the needs of all pedestrians, including those with vision and mobility impairments. In addition, Miami Lakes is not in compliance with ADA requirements as the Town's signalized crosswalks lack APS technology.

▶ **Location(s):** All 127 marked crosswalks.

▶ **Costs per crosswalk:**

Purchase	$20,000
Installation	$2,000

Technology Number: 13 **Technology Name:** Automated Pedestrian Detection

Technology Category: Pedestrian Safety **Goal:** Goal 3 - Enhance pedestrian and cyclist mobility, comfort and safety

Description: Automated pedestrian detection devices sense when a pedestrian is waiting at a crosswalk and automatically send a signal to switch to a pedestrian WALK phase. Some automated pedestrian detection devices can determine whether a pedestrian needs more time to cross the roadway and will lengthen the crossing interval to accommodate the slower pedestrian.

There are generally two types of pedestrian detection technologies: microwave and infrared. A delay can be built into either of the devices so that the Walk signal is called only if the pedestrian stays within the detection zone for a certain amount of time. The delay helps to prevent pedestrians who walk by the detection zone from accidentally activating the WALK signal.

Purpose: Automatic pedestrian detection gives an advantage to pedestrians to change traffic lights. These sensors can reduce the percentage of pedestrians who cross roadways at inappropriate times.

Need: Some pedestrians may not push a button to receive a WALK signal, or will ignore signals if the change takes too long. Automated pedestrian detection technology is therefore safer than traditional push signals and ensures pedestrians have enough time to safely cross the roadway.

Location(s): All 127 marked crosswalks.

Cost per unit:

Purchase to add to existing signal	$10,000
Operation Costs/Year	$4,000

▶ **Technology Number:** 14 ▶ **Technology Name:** Smart Bicycle Locker Parking ▶ **Technology Category:** Bicycle Comfort

▶ **Goal:** Goal 3 - Enhance pedestrian and cyclist mobility, comfort and safety

▶ **Description:** Smart Bicycle Parking is an app-based parking system for bicycles. Parking capability is launched through a mobile app that identifies free spaces and keeps track of the time parked, and once the locker is unlocked and bike is retrieved, the app collects payment.

▶ **Purpose:** Bicycle parking goes hand in hand with bicycle usage. Offering safe bicycle parking incentivizes more people to use bicycles. While short-term parking may be suitable for bicycle racks, bicycle lockers offer long-term parking solutions for bicycles at an affordable price and provide the most protection for bicycles, which is especially suitable in hot climates.

▶ **Need:** The Town has bicycle racks, but lacks variety in parking options for bicycles. As the Town implements its Greenways and Trails Master Plan, it can provide more parking options for its expanding network and cyclists.

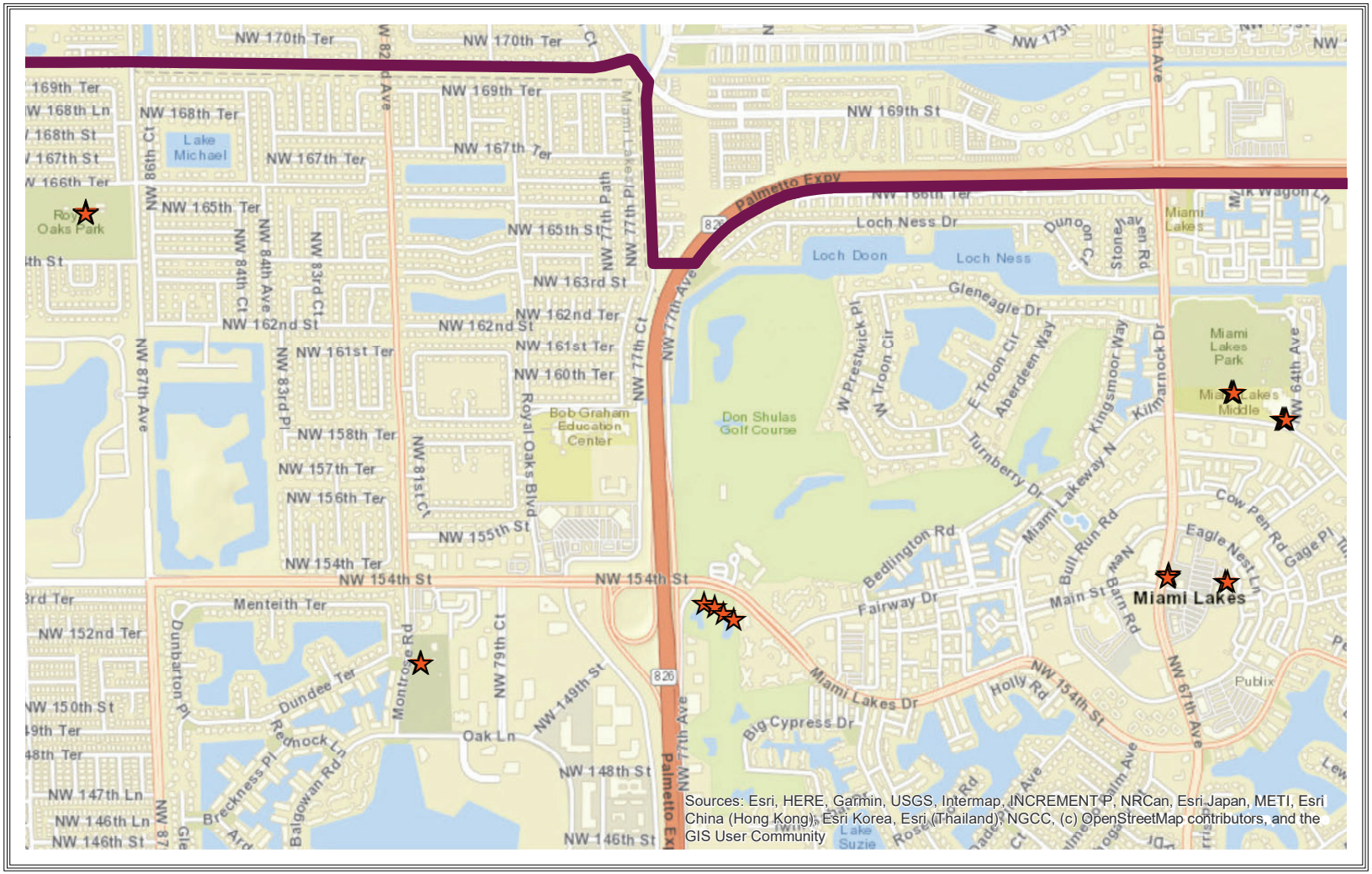
▶ **Location(s):** Include at the following locations (See Figure 4 Map):

- Park and ride facility at NW 154th Street & NW 77th Avenue (8)
- Parks
  - o Optimist Park (3)
  - o Royal Oaks Park (5)
  - o Picnic Park (3)
- Miami Lakes Middle School (4)
- Main Street District (4)
- Town Hall (2)

▶ **Costs per parking space:**

Purchase and installation	$0-650
Annual Maintenance/Fees	Fees are paid by user

Figure 4: Potential Smart Bicycle Locker Locations



N

0 0.225 0.45 0.9 Miles

Legend

- Smart Bicycle Lockers
- Miami Lakes Boundary

▶ **Technology Number:** 15 ▶ **Technology Name:** Video Imaging ▶ **Technology Category:** Bicycle detection

▶ **Goal:** Goal 3 - Enhance pedestrian and cyclist mobility, comfort and safety

▶ **Description:** Video imaging are video recorders mounted above the count area records movements coupled with a software program that processes the video to produce bicycle or pedestrian counts. Imaging uses visual pattern recognition technology and computerized algorithms to detect bicyclists, pedestrians, and vehicles. Bicycle counters provide digital files of bicycle counts, and the Town will need the capacity to permanently store raw and processed count data, and this data will carry labor costs, as a staff position is required to process data in-house or outside hire.

▶ **Purpose:** Video imaging has a high accuracy rate and will establish a baseline of information about cycling. This data is needed to justify funding for bike related initiatives, and to measure impact of bicycle infrastructure projects, and where new investments may be needed.

▶ **Need:** As the Town begins to expand its bicycle network and as it receive TAP funding within the next 5 years, bicycle data collection will be priority for the Town.

▶ **Location(s):**Video recorders are to be installed when the Town's bicycle facility network expands. The cameras can be located on off-street trails or near on-street bicycle lanes.

Source: Iteris

▶ **Cost per unit:**

Purchase and installation	$1,200 - $8,000
Labor cost	$100,000/Year $50 - $100/Hour

Technology Number: 16 **Technology Name:** Mobility App/"Mobility Marketplace"

Technology Category: Shared Multimodal Mobility **Goal:** Goal 4 - Support efficient travel

Description: A Mobility Marketplace is an app based platform that enables locating and paying for a variety of transportation options – bikeshare, carshare, transit, rideshare – all in one place.

Purpose: A Mobility Marketplace is a mobility app that connects users to a variety of transportation options together and integrates a social aspect to transportation, which can be a favorable feature for most commuters in Miami Lakes that drive alone.

Need: Figuring out the best option for transportation can be a challenge, as no integrated system exists to compare prices of rides requires jumping back and forth between apps. Transparency encourages people to find an alternative to solo driving.

Location(s): App development is best suited for from Miami-Dade County, as they have the resources and a wide reach of information and partners to create and maintain this app.

Cost: There is no cost to the Town, if this technology falls under the jurisdiction of the County.

▶ **Technology Number:** 17 ▶ **Technology Name:** Adaptive Signal Control Technology (ACST)

▶ **Technology Category:** Vehicular Traffic ▶ **Goal:** Goal 4 - Support efficient travel

▶ **Description:** Adaptive signal control technology utilizes sensors to adjust the timing of traffic lights to accommodate shifting traffic patterns, easing traffic congestion in real-time.

▶ **Purpose:** Adaptive signal controls have the ability to reduce average travel time. The adaptive technology receives traffic information regarding the number of cars traveling on each direction and uses the data in real time to control traffic lights in the most efficient way. This technology has proven it has helped made improvements to traffic flow with up to 23% reduction in travel time for ACST intersections.

▶ **Need:** Traffic congestion is one of the most common concerns for residents and businesses in Miami Lakes. Expanding this program in other intersections can calm traffic and reduce travel time even more.

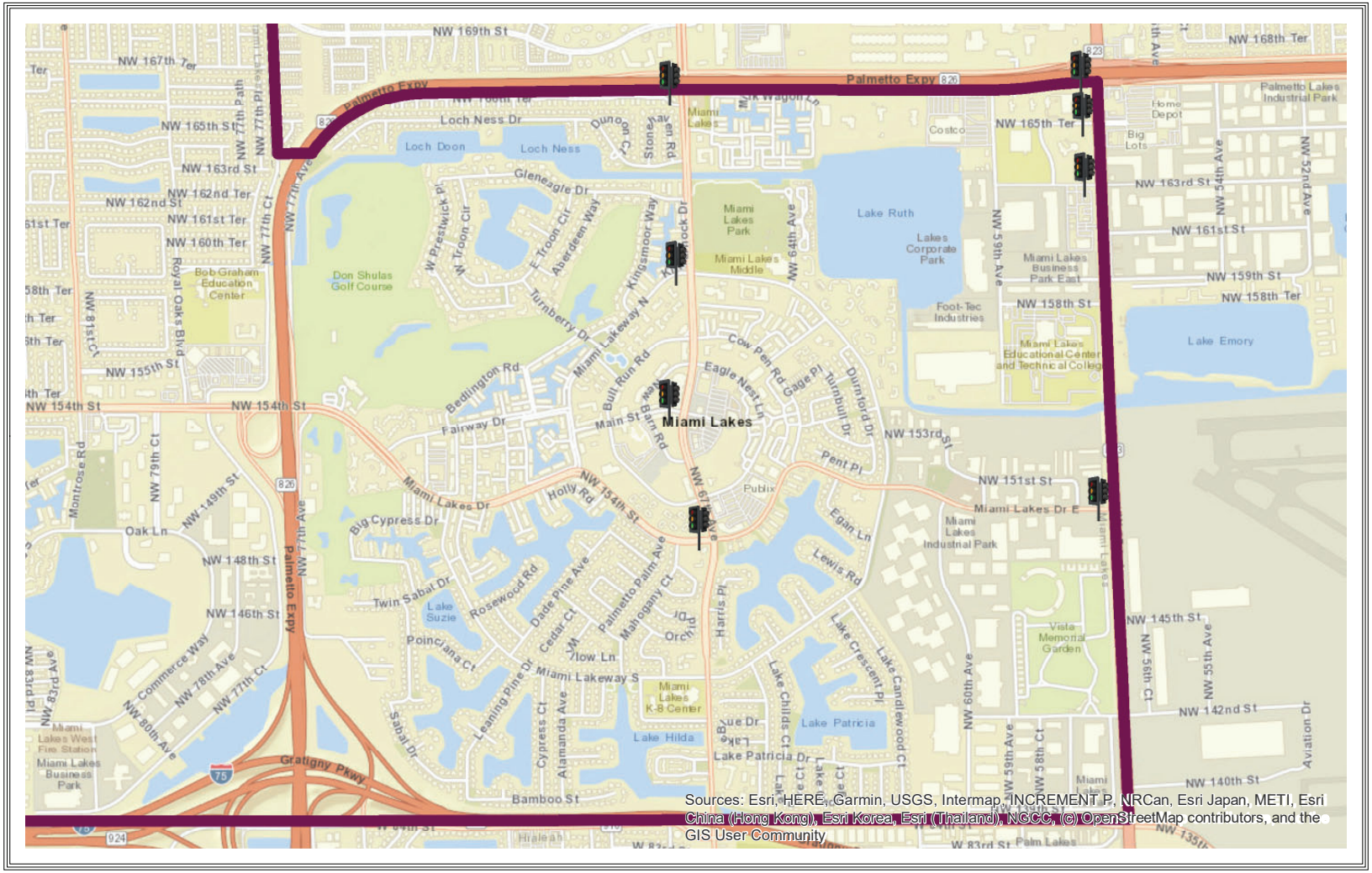
▶ **Location(s):** (See Figure 5):

- It is recommended to install ASCT systems along the arterials and major collectors within the Town. These roads include Miami Lakes Drive, NW 67th Avenue, NW 87th Avenue, and NW 57th Avenue. The following locations are represented on the Figure 5 Map.
  - NW 154th Street (Miami Lakes Drive) & NW 67th Avenue
  - NW 67th Avenue (Ludlam Road) & NW 167th Street
  - NW 67th Avenue (Ludlam Road) & Miami Lakeway North
  - NW 67th Avenue (Ludlam Road) & Main Street
- Town edges
  - NW 57th Avenue (Red Road) & NW 167th Street
  - NW 57th Avenue (Red Road) & 165th Street
  - NW 57th Avenue (Red Road) & 163rd Street
  - NW 57th Avenue (Red Road) & NW 154th Street/Miami Lakes Drive

▶ **Cost:**

Purchase and installation	$30,000 per intersection

Figure 5: Potential New Adaptive Signal Locations



N

0 0.275 0.55 1.1 Miles

Legend

Adaptive Signals

Miami Lakes Boundary

▶ **Technology Number:** 18 ▶ **Technology Name:** Smart parking ▶ **Technology Category:** Vehicular traffic

▶ **Goal:** Goal 4 - Support efficient travel

▶ **Description:** Smart Parking is a parking strategy that relies on technology to achieve faster, easier parking of vehicles.

▶ **Purpose:** Smart parking increases parking efficiencies by offering parking transparency from Cameras that "count" open spaces and advertise parking availability outside the entry to a parking lot. Smart parking eliminates traffic from cars looking for parking. Ensuring availability reduces congestion and pollution, shortens travel times, and encourages the use of alternative forms of transportation.

▶ **Need:** Traffic congestion is one of the most common concerns for residents and businesses in Miami Lakes. Smart parking technology will reduce traffic by eliminating circling or stalled cars looking for parking.

▶ **Location(s):** Miami Lakes has many private surface parking lots and garages that can adapt smart parking technology.

- Town-Managed street parking
- Park and ride facility at NW 154th Street & NW 77th Avenue
- Parks

It is recommended that smart parking technology be considered at Main Street. The Town should work with the private owner to encourage the use of this technology.

▶ **Cost per space:**

Purchase	$50
Installation	$1,000

Technology Number: 19 **Technology Name:** Mobile parking app **Technology Category:** Vehicular Traffic

Goal: Goal 4 - Support efficient travel

Description: A Mobile parking app allows for users to pay for parking electronically, and for municipalities to efficiently monitor parking electronically.

Purpose: Parking apps make parking easier for people who prefer to pay as you go if more time is needed. Parking apps simplify payments through one electronic system, and collects parking revenue.

Need: Currently, no parking program exists in the Town. As areas become more developed and with more demand for parking, a parking program can be developed integrating a mobile parking app.

Location(s):

- Prioritize spaces most in demand
- All government-owned public parking spaces (not Town Hall)
- Park and ride facility at NW 154th Street & NW 77th Avenue

Cost per space/transaction:

Signage	$100
Installation	$0
Annual Fees	$0.35-0.50 per transaction (passed on to user)

▶ **Technology Number:** 20 ▶ **Technology Name:** Connected and Autonomous Vehicle (CAV) Technology

▶ **Technology Category:** Connected vehicles ▶ **Goal:** Goal 4 - Support efficient travel

▶ **Description:** A connected and autonomous vehicle is an autonomous vehicle that is equipped with wireless communication capabilities that allows it to share information with other vehicles and objects on the roadway, opening up the opportunity for the automobile to make real-time decisions.

▶ **Purpose:** CAV deployment may include: significant improvements in safety and fewer crashes. CAV can reduce delays and reduce commute times. In addition, CAV can offer reduced emissions due to more consistent speeds and less idling

▶ **Need:** CAV technology is an efficient means to travel, and CAV shuttles or taxis will help bring personal automobiles off roads, and ease congestion.

▶ **Precursor:** It is possible that smart sign technology can be a precursor to full-scale CAV implementation; however, many automated vehicles are being developed to operate on existing road infrastructure. As vehicles become increasingly automated and connected, existing road signs and markings can be updated to ensure safety and reliability of this emerging technology. Companies have began to experiment with advanced road markings which are durable improving lane detection and traffic safety in even the most extreme weather conditions, and smart signs that are retroreflective signs that provide better readability, which results in more accurate navigation and faster decision-making for both drivers and automated vehicle systems. In addition, smart signs are compatible with traditional signage, and these technologies can be tested in Miami Lakes.

▶ **Location(s):** State Autonomous Vehicle Legislative Efforts exist in Florida. Miami Lakes' suitable year-round weather and areas with slower street speeds, make for favorable autonomous vehicle testing and operating conditions. Miami Lakes can partner with The Florida Department of Transportation (FDOT) Florida Automated Vehicles Initiative to design a testing program in a limited area of the Town as implementation moves forward to coordinate CAV deployment. Full-scale implementation will begin in 2020 and focus on completing infrastructure upgrades, implementing large CAV projects, conducting performance and outcome assessments, performing O&M activities, advancing outreach with stakeholders, and analyzing the impacts of agency and industry partnerships.

Technology Number: 21 **Technology Name:** CCTV Camera Technology **Technology Category:** Enforcement

Goal: Goal 5 - Promote public safety

Description: CCTV is an acronym for closed circuit television cameras. These cameras can knit together police and emergency services by offering surveillance in many places simultaneously. CCTV systems can give a sense of security, help fight crime and make cities safer.

Purpose: CCTV cameras monitor certain locations and allow for remote monitoring. Currently, the Town has 32 CCTV cameras.

Need: With future public investments with the installation of new technologies throughout the town, installing cameras will protect these new assets from theft, damage and vandalism. Cameras promote public safety and allow for remote monitoring.

Location(s): Locations will depend on final technology installations. Many locations will be privately owned and will require agreements. CCTV is recommended to be expanded and installed in the following locations (See Figure 6 Map*):

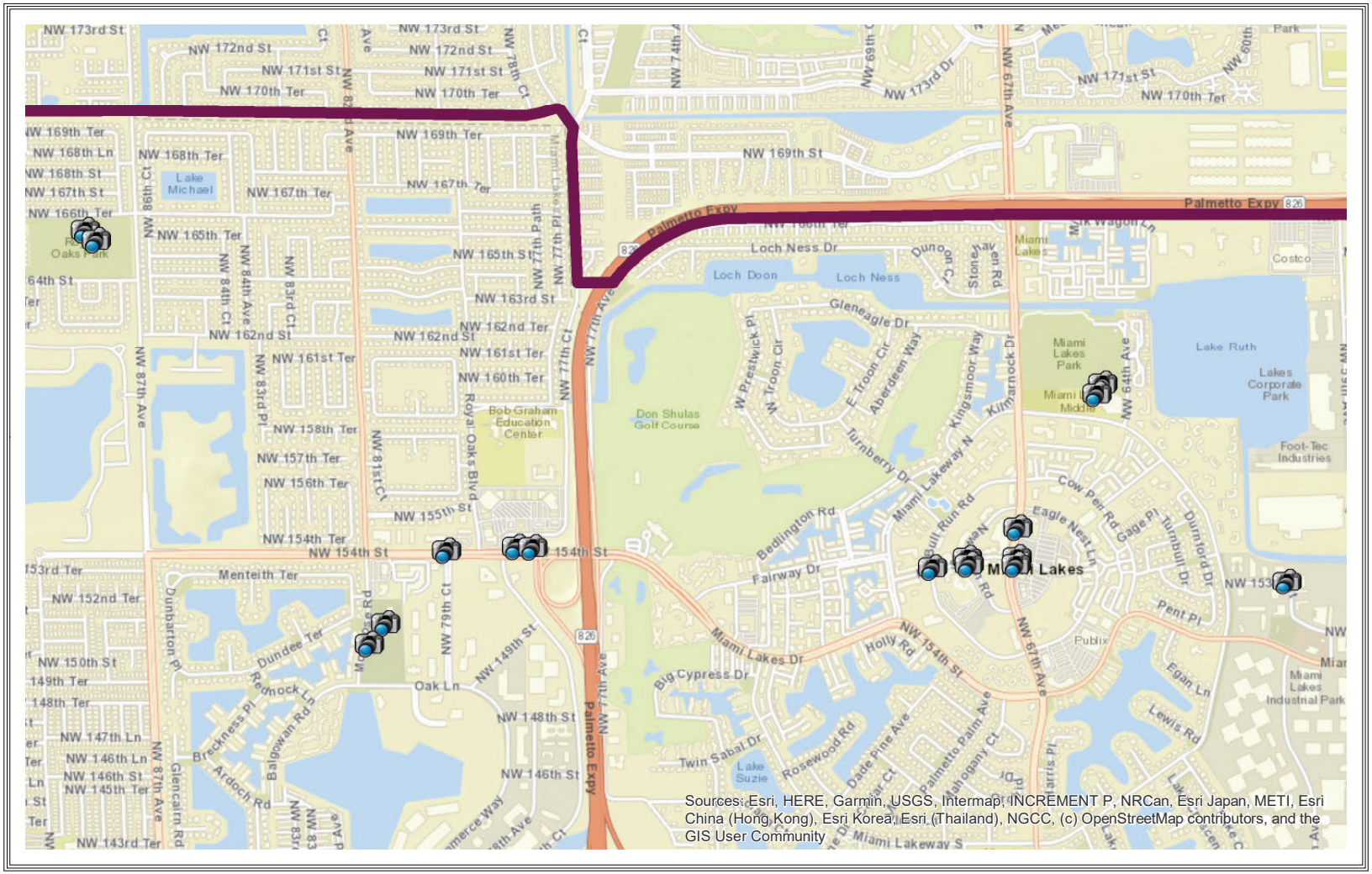
- Main Street District (6)
- Parks
  - Optimist Park (2)
  - Royal Oaks Park (2)
  - Picnic Park (2)
- Major roadways (4)
- Park and ride facility at NW 154th Street & NW 77th Avenue

Cost per unit:

Purchase	$6,000
Installation	$1,700

*It is recommended that more cameras be added in areas where new infrastructure investments or improvements are expected. New infrastructure such as bicycle lockers, smart kiosks and benches can be targets of vandalism, and cameras can assist in monitoring conditions in these sites, while offering a sense of security and trust to its users.

Figure 6: Potential CCTV Camera Locations



▶ **Technology Number:** 22 ▶ **Technology Name:** Smart Kiosk ▶ **Technology Category:** Smart Infrastructure

▶ **Goal:** Goal 6 - Bolster a connected quality of life

▶ **Description:** Smart kiosks are stationary interactive digital tablets that are approachable and include software and hardware that can host many applications including communication and real-time data.

▶ **Purpose:** Common features of Smart Kiosks range from practical and informative to fun and entertaining as they can offer the capability to post Town news and alerts, can offer interactive maps for wayfinding and pick up locations, information regarding Town attractions and scheduled events, as well as dining, shopping and hotel information. Kiosks can include real-time information on weather conditions, bus arrivals, and offer the option to request a freebee ride, or book an Uber or Lyft without cellphone service. There is also the capability to include interactive games and a camera for selfies. Kiosks can collect data on foot traffic and activity use, it can also be used to charge electronic devices and offer WIFI hotspot. Kiosks can offer advertising revenue opportunities for the Town.

▶ **Need:** The Town currently lacks any technology to guide, engage and assist pedestrians in public spaces and sidewalks including digital signage, maps, event and programming information, and other alerts. Smart kiosks are an interactive wayfinding instrument for pedestrians that can offer many capabilities which can be customized based on a communities' needs. Smart kiosks serve as modern-day triangulation in public spaces,[19] or a certain characteristic of a public space that brings people together. It is an objective of the town to promote the Town Center as a community meeting and gathering place and installing a Smart Kiosk can help achieve this objective.[20] The Town currently has limited free WIFI and no phone or device charging stations, and Smart kiosks can expand and add provide these services.

Source: CIVIQ

▶ **Location(s):** Smart kiosks are best suited for walkable areas with concentrated activity. The following locations are currently suitable for kiosk deployment, or will be soon as new developments are advancing (See Figure 7 Map):

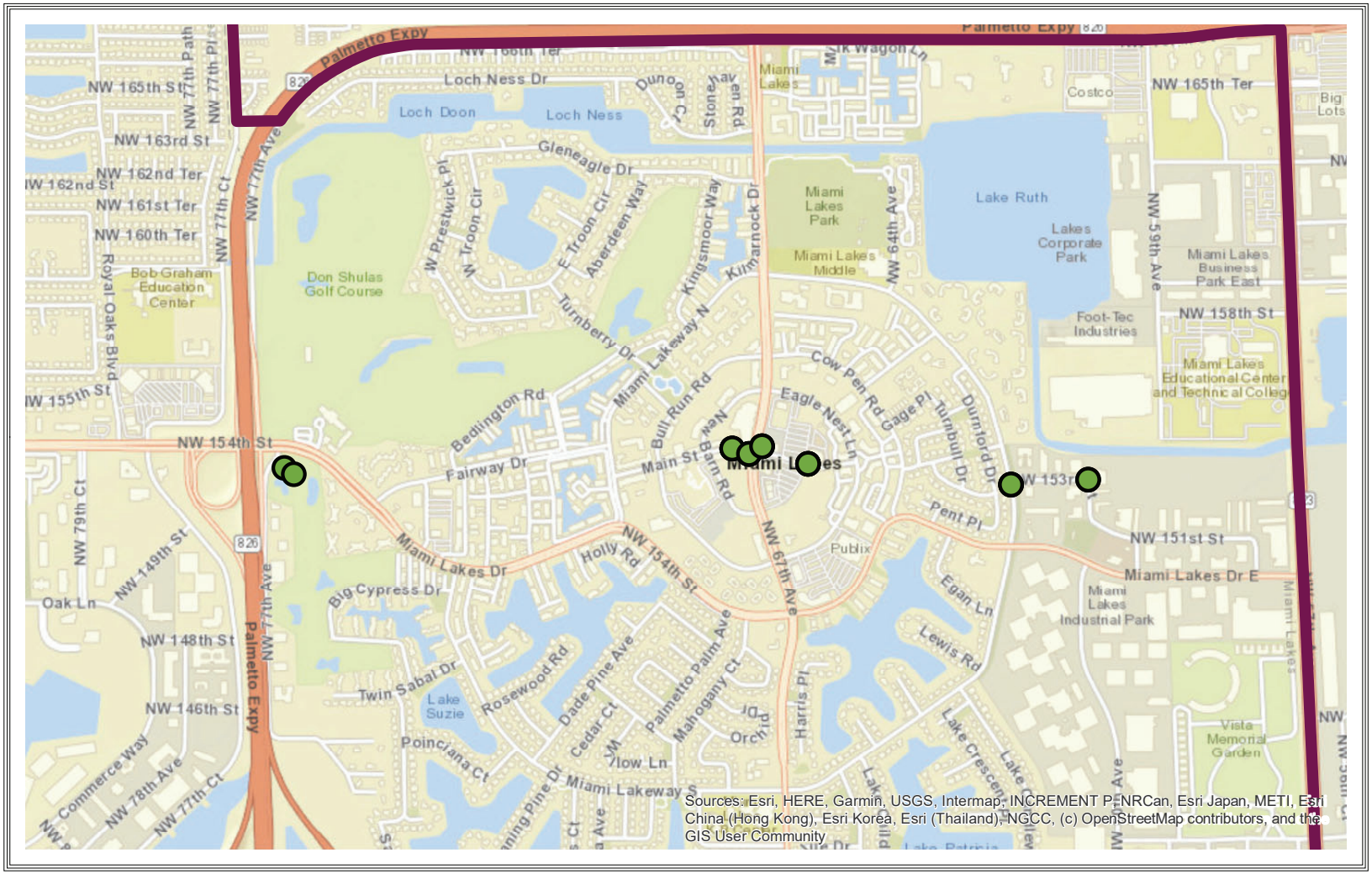
- Main Street Plazas
- NW 153rd Street & Miami Lakeway South
- NW 151st/NW 59th Avenue
- Park and ride facility at NW 154th Street & NW 77th Avenue

▶ **Cost per unit:**

Purchase and Installation	$50,000

[19] Term coined by William Whyte in "The Social Life of Small Urban Spaces".
[20] Objective 10A.7 of the Comprehensive Master Plan Ordinance.

Figure 7: Potential Smart Kiosk Locations



Technology Number: 23 **Technology Name:** Smart Benches **Technology Category:** Smart Infrastructure

Goal: Goal 6 - Bolster a connected quality of life

Description: Smart benches are practical solar-powered benches fitted with technological features such as WIFI and USB charging that enhance a user's resting experience, while collecting datapoints to provide municipalities useful user and environmental information.

Purpose: SMART benches are powered with solar panels and can offer free charging, WIFI, and can provide energy saving throughout the Town. SMART furniture can collect data on usage which can provide the Town with specific information on how many people are using the space, when they are there and the length of their stay which opens up more efficient programming and resource allocation.

Need: The Town can use more public seating. Benches can improve walkability as benches may encourage more people to walk if there are true resting areas. Data collection will allow for the Town to plan programming more efficiently in real-time instead of retroactively. The Town currently has limited free WIFI and no phone or device charging stations, and along with Smart kiosks can expand and provide these services throughout the Town. In addition, solar powered USB charging allows for charging when there are power outages like there often is in this region after major storms.

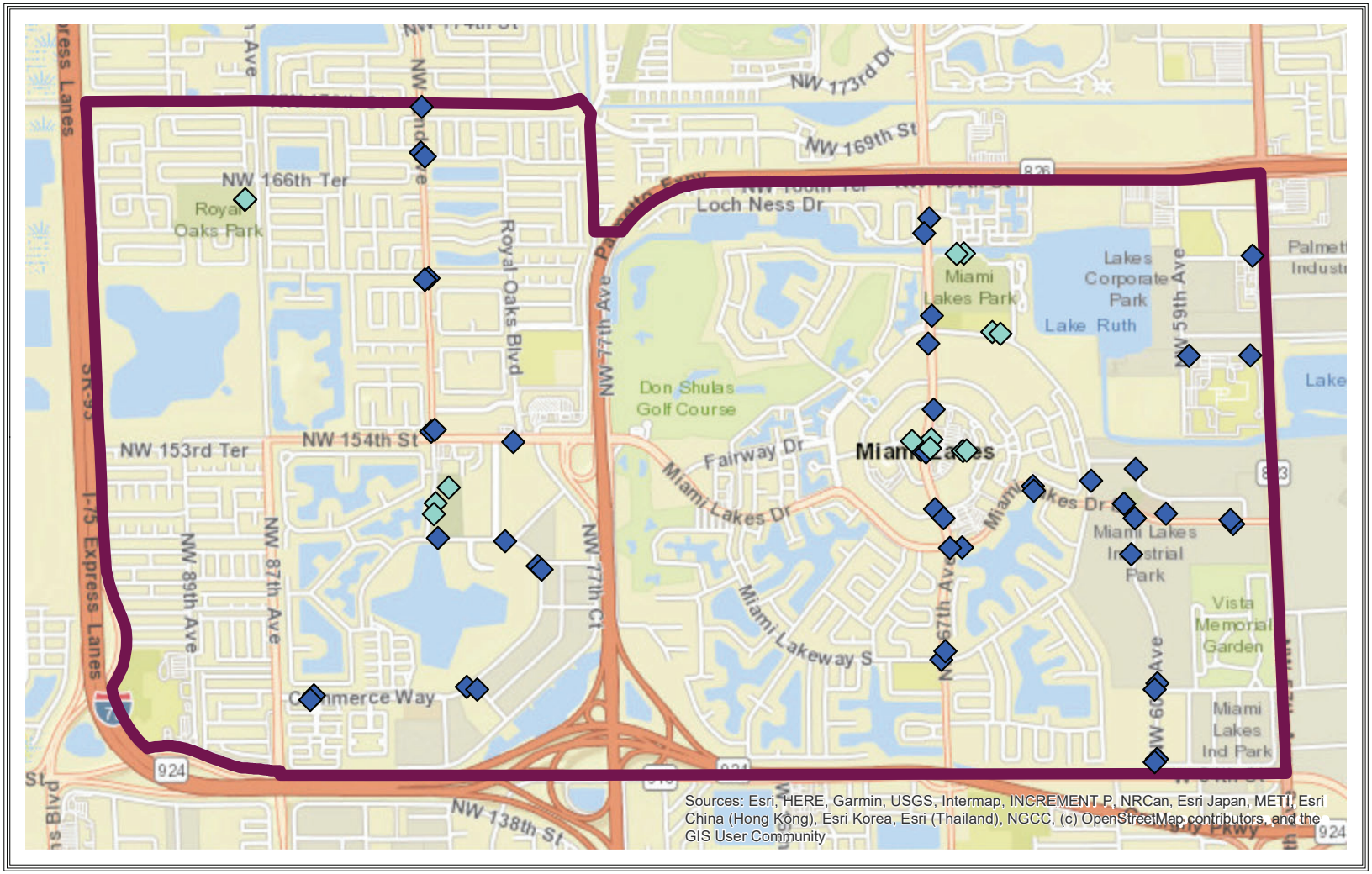
Location(s): It is recommended that 14 benches be purchased and installed throughout the town, replacing traditional benches. In addition, 48 bus stop benches are to be replaced as needed in the following locations (See Figure 8 Map):

- Parks
  - o Optimist Park (2)
  - o Royal Oaks Park (2)
  - o Picnic Park (2)
- Miami Lakes Middle School (2)
- Miami Lakes Community Center (1)
- Plazas on Main Street (3)
- Town Hall (2)
- Bus stops (48)

Cost per unit:

Purchase and Installation	$4,000
Annual Maintenance/Fees	$1,700

Figure 8: Potential Smart Bench Locations



N

0 0.35 0.7 1.4 Miles

Legend

- Smart Benches
- Bus Stops
- Miami Lakes Boundary

Technology Number: 24 **Technology Name:** Book Vending Machines **Technology Category:** Smart Infrastructure

Goal: Goal 6 - Bolster a connected quality of life

Description: Book vending machines serve as a miniature library and are fully automated machines that can dispense books and can accept returns. These machines are a fun way of encouraging reading, while only requiring a small footprint in terms of space. In addition to encouraging more reading, these machines can encourage spending time outside and more walking. The Town of Miami Lakes pilot program Little Free Library has been implemented at several Town pocket parks. If the program proves to be a success, the Town will expand the program to additional areas.

Purpose: Book vending machines increases access to books and connect the community to information and entertainment. The availability of vending machines can encourage reading, especially for young populations.

Need: Book vending machines can be integrated as an expansion of service for the current Little Free Library program.

Location(s):

- Parks
  - Optimist Park
  - Royal Oaks Park
  - Picnic Park
- Miami Lakes Middle School
- Miami Lakes Community Center
- Miami Lakes Branch Library

Cost per unit:

Purchase and Installation	$20,000 per machine

▶**Technology Number:** 25 ▶**Technology Name:** Electric Vehicle Charging Stations

▶**Technology Category:** Smart Infrastructure ▶**Goal:** Goal 7 - Achieve universal environmental sustainability

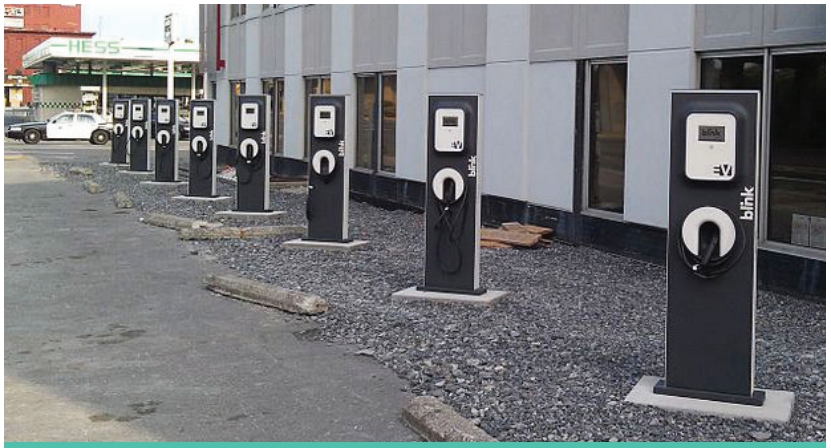
▶**Description:** Charging Stations are parking spaces that are fitted with electric stations that have the capability to plug into and charge electric vehicles.

▶**Purpose:** Charging stations deliver the electricity needed to charge electric vehicles. This infrastructure is a service that is required for electric cars and is a convenience to those without a place to charge at home or work. It is an objective for the Town to achieve universal environmental sustainability in public and private environments, operations and infrastructure.[21] The installation of more electric charging stations encourages more electric car use and ownership and promotes cleaner air. Electric charging stations will provide an amenity to the public and installing more electric vehicle charging stations will prepare the Town for an inevitable increase in electric vehicle ownership and use.

▶**Need:** The Town has two public charging stations in the Main Street Parking Garage at 6621 Main Street. Electric Vehicle Charging infrastructure is essential for encouraging more electric vehicle usage and ownership throughout the Town. By 2025, it is estimated that electric vehicles will be a 7 percent share of all vehicles on the road,[22] and Miami Lakes does not yet have the necessary public infrastructure to support use of these vehicles.

▶**Location(s):** Recommend a minimum of 7 more stations be installed by the Town in the following locations (See Figure 9 Map): These will be available to the public for a small fee.

- Town Hall Parking Lot (2)
- Main Street District (2)
- Optimist Park (2)
- Private developments and garages
- Business and retail corridors
- Picnic Park West (1)



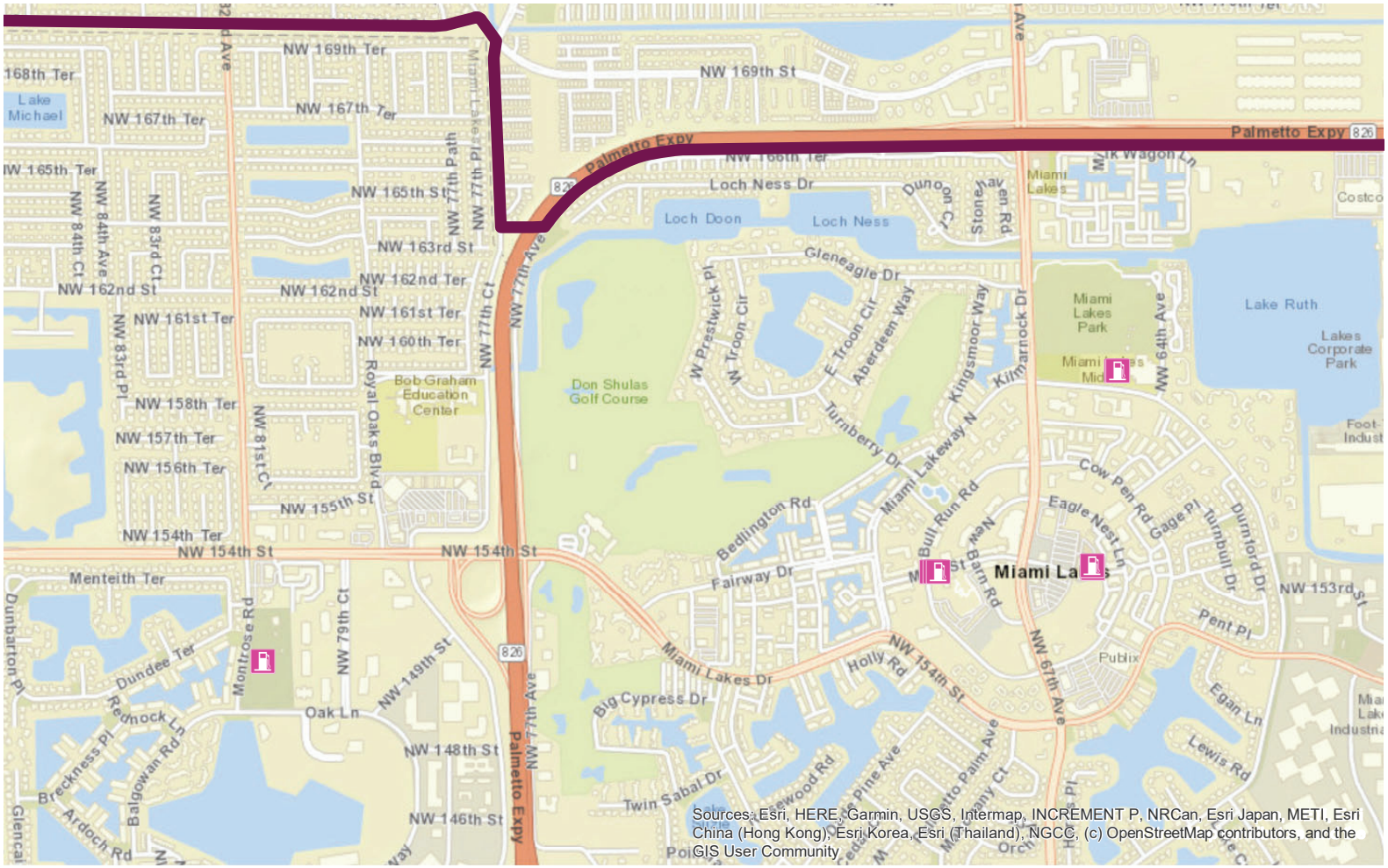
Source: Plugincars.com

▶**Cost per station:**

Purchase and installation	A public level 2 charging schematic can range from $5,000-$10,000
Annual Data Fees	$400

[21] Miami Lakes Strategic Plan 2015-2025.
[22] "US Electric Vehicle Loyalty and Volumes Reach Record Highs" IHS Markit.

Figure 9: Potential Electric Vehicle Charging Locations



▶ **Technology Number:** 26 ▶ **Technology Name:** Electric Vehicle Fleet ▶ **Technology Category:** Utilities

▶ **Goal:** Goal 7 - Achieve universal environmental sustainability

▶ **Description:** Electric vehicles are purchased to be used for government vehicles, phasing out current gasoline vehicles.

▶ **Purpose:** The Miami Lakes Strategic Plan (2015-2025) outlines how it is an objective of the Town to achieve universal environmental sustainability in public and private environments, operations and infrastructure. To further this objective, the Town can gradually phase out its current fleet to replace with electric vehicles and install more charging stations to support this objective by providing the necessary infrastructure to easily charge and promote cleaner air by reducing emissions. In addition, electric vehicles have much lower fuel costs on average than conventional gasoline vehicles. Electricity prices are lower and more stable than regular gasoline prices which will save the Town money on fuel costs.

Miami Lakes Fleet Inventory List			
Model	**Year**	**Description**	**Type of Engine**
Champion Bus	2006	Bus >20 Pass, No Lift	gasoline
Custom Signature-Smart Variable Message Sign Trailer	2005	Trailer- NO CHARGE	gasoline
Custom Signature-Smart Variable Message Sign Trailer	2005	Trailer- NO CHARGE	gasoline
Chevrolet Silverado	2007	Light Truck	gasoline
Chevrolet Silverado	2007	Light Truck	gasoline
Chevrolet Silverado	2007	Light Truck	gasoline
Ford Expedition	2008	Light truck	gasoline
Ford F150 Std Cab P/U	2010	Light Truck	gasoline
International Truck W/Sewer Vacuum Body	2013	Heavy Truck	gasoline
Toyota Tacoma PU	2013	Light Truck	gasoline
Ford Crown Victoria	2008	Private Passenger	gasoline
Ford Crown Victoria	2008	Private Passenger	gasoline
Ford Crown Victoria	2009	Private Passenger	gasoline
Freebee Vehicles			
XL Freebee: Zenith Motors Electric Passenger Shuttle	2019	10 passenger shuttle	electric
Regular Freebee: Polaris GEM e6	2019	5 passenger shuttle	electric
Regular Freebee: Polaris GEM e6	2019	5 passenger shuttle	electric

▶ **Need:** Many of the Town's vehicles are aging and are due for an upgrade. Phasing out gas vehicles with an electric fleet will further the town's objective to achieve environmental sustainability and provides a more fuel efficiency.

▶ **Location(s):** N/A.

The Town has three (3) Ford Crown Victoria cars that can be replaced with electric vehicles.

▶ **Cost per electric sedan:**

Purchase	$30,000
Annual Maintenance/Fees	$300 for electricity at a wholesale rate[23]

[23] *City of Newark will add electric cars to its fleet.* Josh Shannon. NewarkPost. Jun 28, 2019.

▶Technology Number: 27 **▶Technology Name:** Street Light Sensors **▶Technology Category:** Utilities

▶Goal: Goal 7 - Achieve universal environmental sustainability

▶Description: Sensors connected to streetlights can monitor lighting conditions and automatically adjust public lighting.

▶Purpose: The Town has recently converted all Town owned lights and FPL owned lights to LED lightbulbs. To further energy efficiency efforts, the Town can install smart sensors and controls that allow technicians to remotely adjust light levels and track usage and outages. In addition, photocells on light poles can sense ambient light to automatically illuminate and switch them off after dawn. This efficiency has shown to save a significant amount of energy.

▶Need: Sensors will provide more efficiencies in maintenance and operations, advancing the Town's objective to achieve universal environmental sustainability in public and private environments, operations and infrastructure.

▶Location(s): The Town has 2,324 Street Lights owned and maintained by various entities. It is recommended that the 915 light poles that are owned by the town with lamps maintained by FPL be fitted with sensors through a phased pilot program over a 10-year period. (See Figure 10 Map):

- 90 Town-Owned Light Poles (1/10 of total number) per year over a 10-year period

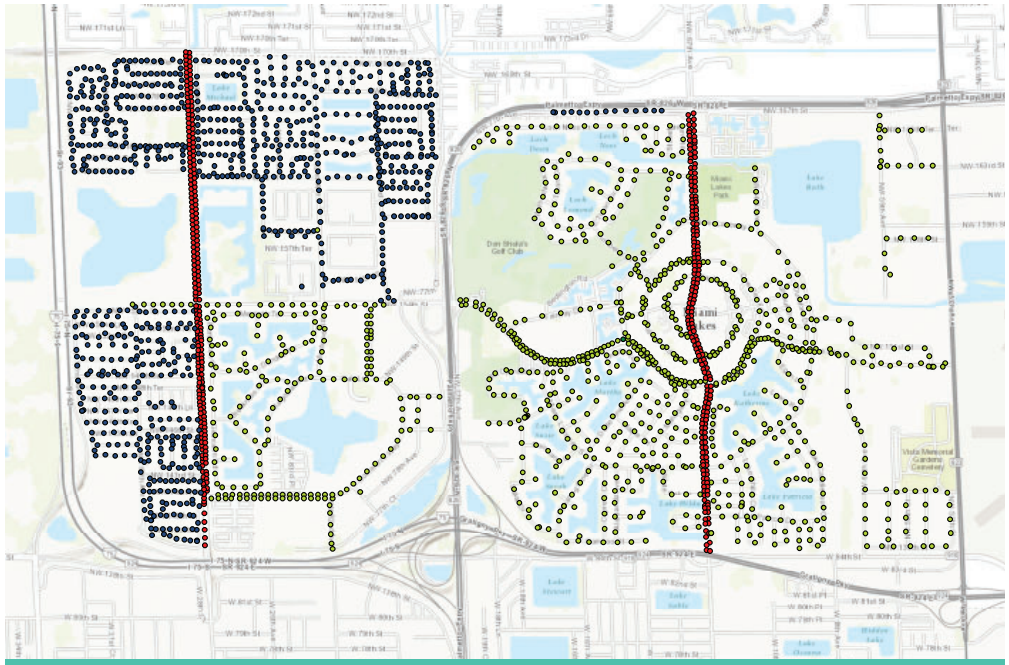


Figure 10: Street Lamp Locations in the Town of Miami Lakes. Street Lamps represented in green will be fitted with sensors over a 10-year period

▶Cost per sensor:

Purchase and installation	$10,000

◆PRIORITIZATION & IMPLEMENTATION

Smart City technologies offer positive socioeconomic impacts. Project prioritization and implementation provide the framework for infrastructure and other improvements. In this section the project along with the need, description, and estimated cost will be provided. This plan will evaluate, identify, and prioritize projects that will improve overall functioning of the Town's network. Implementation strategies for projects and prioritization of recommended projects, based on need, project feasibility and cost are provided in this section.

Various technologies presented in the previous sections were organized, streamlined and defined as projects. The projects were evaluated based on available resources, cost, benefits, community needs, and desires in the creation of an overall Project List.

The Town of Miami Lakes has collaborated with the community through Public Workshops in order to develop the implementation for the Smart City technologies provided. The Town identified 53 projects focusing on 7 goals. The projects are structured to be implemented most efficiently. As identified previously, the goals are as follows:

1. Be prepared to accommodate for current and future technology deployment
2. Optimize shared mobility
3. Enhanced pedestrian and bicycle safety and comfort
4. Support efficient travel and public safety
5. Promote public safety
6. Bolster a connected quality of life
7. Achieve universal sustainability

Technologies were prioritized by effectively recognizing the value of each project to its surroundings and to the Town while supporting the Town's vision of becoming a Smart City. Technologies were reviewed individually by location, not through a one size fits all approach. Area characteristics were defined in order to select the most appropriate projects for the goals identified. The technologies need to support efficient use of land, neighborhood character, economic development, transportation mode options, and a sustainable environment. The benefits were weighed effectively against the operational and physical costs. The administrative and maintenance costs to keep the technology sustainable and operational were also considered. Additionally, opportunities for input from key stakeholders and the community regarding prioritization and goals were provided. Following implementation, the Town of Miami Lakes will create an evaluation process to monitor the effectiveness of applicable smart technologies. Both the Public Works and Planning Departments must be involved in the monitoring of the success of the applied technologies and the potential impacts.

Table 9: Prioritization and Implementation of Technology Projects						
Rank	Technology No.	Project Type	Location	Goal	Cost	Description
1	9	In-Road Warning Lights	NW 170th Street & NW 82nd Avenue	Enhance Pedestrian and cyclist mobility, comfort and safety	$75,000	Improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.
2	9	In-Road Warning Lights	NW 154th Street & NW 82nd Avenue	Enhance Pedestrian and cyclist mobility, comfort and safety	$50,000	Improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.
3	9	In-Road Warning Lights	NW 79th Avenue & NW 154th Street	Enhance Pedestrian and cyclist mobility, comfort and safety	$25,000	Improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.
4	9	In-Road Warning Lights	NW 79th Court & 154th Street	Enhance Pedestrian and cyclist mobility, comfort and safety	$25,000	Improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.
5	9	In-Road Warning Lights	New Barn Road & Main Street	Enhance Pedestrian and cyclist mobility, comfort and safety	$55,000	Improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.
6	9	In-Road Warning Lights	NW 153th Street & NW 60th Avenue	Enhance Pedestrian and cyclist mobility, comfort and safety	$25,000	Improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.
7	9	In-Road Warning Lights	NW 64th Avenue & Miami Lakeway	Enhance Pedestrian and cyclist mobility, comfort and safety	$25,000	Improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.
8	9	In-Road Warning Lights	Bull Run Road & Main Street	Enhance Pedestrian and cyclist mobility, comfort and safety	$25,000	Improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.
9	9	In-Road Warning Lights	Miami Lakeway North & NW 64th Avenue	Enhance Pedestrian and cyclist mobility, comfort and safety	$25,000	Improve pedestrian visibility and slow down vehicles when pedestrian crossings are occurring.
10	10	Rectangular Rapid Flashing Beacon	Between East Nest Lane & Main Street on NW 67th Avenue	Enhance Pedestrian and cyclist mobility, comfort and safety	$15,000	User-activated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks.

Table 9: Prioritization and Implementation of Technology Projects (continued)						
Rank	Technology No.	Project Type	Location	Goal	Cost	Description
11	11	Embedded LEDs in Signs	Town-Wide in areas with low signage visibility	Enhance Pedestrian and cyclist mobility, comfort and safety	$6,000	Embedded LEDs are lights that illuminate roadway signage. Typically these are seen on signs to signal caution, for yielding and stopping. Embedded LEDs are utilized in areas where signage may have low visibility
12	1	5G Network	Miami Lakes Branch Library Schools Parks (Optimist, Royal Oaks, Picnic)	Be Prepared to accommodate for current and future technologies	N/A	Fast free WIFI to better connect and prepare the community for future applications using 5G infrastructure.
13	25	Electric Vehicle Charging Stations	Town Hall (2)	Universal Environmental Sustainability	$30,000	Electric Vehicle Charging infrastructure is essential for encouraging more electric vehicle usage and ownership throughout the Town.
14	26	Electric Vehicle Fleet	N/A	Universal Environmental Sustainability	$100,000	Replace 3 Town Vehicles
15	25	Electric Vehicle Charging Stations	Main Street District (2)	Universal Environmental Sustainability	$60,000	Electric Vehicle Charging infrastructure is essential for encouraging more electric vehicle usage and ownership throughout the Town.
16	18	Smart Parking	Main Street District	Support Efficient Travel	$70,000	Implement Smart Parking at Town Hall
17	13	Smart Bicycle Locker Parking	Town Hall	Enhance Pedestrian and cyclist mobility, comfort and safety	$1,300	Bicycle Locker Parking
18	13	Smart Bicycle Locker Parking	Park & Ride Facility at NW 154th Street & NW 77th Avenue	Enhance Pedestrian and cyclist mobility, comfort and safety	$5,200	Bicycle Locker Parking
19	12	Accessible Pedestrian Signals	All 127 Marked Crosswalks	Enhance Pedestrian and cyclist mobility, comfort and safety	$2.5 mil	This signal allows to communicate to the visually and mobility impaired when it is time to cross, increasing safe crossings. These signals allow for increased mobility for all.

Table 9: Prioritization and Implementation of Technology Projects (continued)						
Rank	Technology No.	Project Type	Location	Goal	Cost	Description
20	13	Automated Pedestrian Detection	All 127 Marked Crosswalks	Enhance Pedestrian and cyclist mobility, comfort and safety	$1.8 mil	Automated pedestrian detection devices sense when a pedestrian is waiting at a crosswalk and automatically send a signal to switch to a pedestrian WALK phase
21	2	Connected Vehicle Technology	N/A	Be prepared to accommodate for current and future technology deployment	N/A	A connected vehicle (CV) environment enables wireless communications among vehicles (vehicle-to-vehicle, or V2V), infrastructure (vehicle-to-infrastructure, or V2I), and mobile devices
22	20	Connected and Autonomous Vehicle (CAV) Technology	N/A	Provide Efficient Travel	N/A	A connected and autonomous vehicle is an autonomous vehicle that is equipped with wireless communication capabilities that allows it to share information with other vehicles and objects on the roadway
23	27	Streetlights Sensors	Town-Wide	Universal Environmental Sustainability	$9 mil	Sensors to adjust lighting
24	23	Smart Benches	• Miami Lakes Middle School (2) • Miami Lakes Community Center (1) • Plazas on Main Street (3) • Town Hall (2)	Connected Quality of Life	$46,000	SMART benches are powered with solar panels and can offer free charging and WIFI
25	23	Smart Benches	• Town Parks • Optimist Park (2) • Royal Oaks Park (2) • Picnic Park (2)	Connected Quality of Life	$35,000	SMART benches are powered with solar panels and can offer free charging and WIFI
26	23	Smart Benches	Bus Stops (48)	Connected Quality of Life	$274,000	SMART benches are powered with solar panels and can offer free charging and WIFI
27	8	Dockless E-Scooter Sharing	N/A	Optimize Shared Mobility	N/A	Dockless electric scooters are battery powered electric scooters that are rented for short-term. Dockless means the scooters are "parked" in various locations to be picked up as needed

Table 9: Prioritization and Implementation of Technology Projects (continued)						
Rank	**Technology No.**	**Project Type**	**Location**	**Goal**	**Cost**	**Description**
28	24	Book Vending Machine	N/A	Connected Quality of Life	$20,000	Book vending machined dispense book rentals or purchases
29	4	Subsidized on-demand car for hire	N/A	Optimize Shared Mobility	$50,000	On-Demand cars for hire provide passengers with additional transportation options within Town of Miami Lakes limits.
30	7	Dockless Bicycle Sharing	N/A	Optimize Shared Mobility	N/A	Dockless bicycles are short-term bicycle rentals that are not "parked" but instead are located in various locations to be picked up as needed.
31	22	Smart Kiosk	• Main Street Plazas • NW 153rd Street & Miami Lakeway South • NW 151st/NW 59th Avenue • Park and ride facility at NW 154th Street & NW 77th Avenue	Connected Quality of Life	$350,000	Smart kiosks are an interactive wayfinding instrument for pedestrians that can offer many capabilities which can be customized based on a communities' needs.
32	3	Car Share	Main Street District (5 spaces)	Optimize Shared Mobility	$1,000	Car sharing rental services are intended to substitute private vehicle ownership and can be structured as a one-way or two-way car share system.
33	3	Car Share	NW 79th Avenue/ NW 154th Street (3 spaces)	Optimize Shared Mobility	$1,000	Car sharing rental services are intended to substitute private vehicle ownership and can be structured as a one-way or two-way car share system.
34	17	Adaptive Signal Control Technology	NW 154th Street/ Miami Lakes Drive & NW 67th Avenue	Provide Efficient Travel	$30,000	Sensors to adjust signal timing
35	17	Adaptive Signal Control Technology	NW 67th Avenue/ Ludlam Road & NW 167th Street	Provide Efficient Travel	$30,000	Sensors to adjust signal timing

Table 9: Prioritization and Implementation of Technology Projects (continued)						
Rank	Technology No.	Project Type	Location	Goal	Cost	Description
36	17	Adaptive Signal Control Technology	NW 67th Avenue/ Ludlam Road & Miami Lakeway North	Support Efficient Travel	$30,000	Sensors to adjust signal timing
37	17	Adaptive Signal Control Technology	NW 67th Avenue/ Ludlam Road & Main Street	Support Efficient Travel	$30,000	Sensors to adjust signal timing
38	5	Curb Space Management	One part time staff position	Optimize Shared Mobility	$30,000	Curb space management is a data collection and mapping to help catalog curb data on curb usage and regulations, which can be used to improve mobility as curb needs change.
39	14	Smart Bicycle Locker Parking	• Parks • Optimist Park (3) • Royal Oaks Park (5) • Picnic Park (3)	Enhance Pedestrian and cyclist mobility, comfort and safety	$7,800	Bicycle Locker Parking
40	14	Smart Bicycle Locker Parking	Town Hall (2)	Enhance Pedestrian and cyclist mobility, comfort and safety	$1,300	Bicycle Locker Parking
41	14	Smart Bicycle Locker Parking	Miami Lakes Middle School (4)	Enhance Pedestrian and cyclist mobility, comfort and safety	$2,600	Bicycle Locker Parking
42	14	Smart Bicycle Locker Parking	Main Street District (4)	Enhance Pedestrian and cyclist mobility, comfort and safety	$2,600	Bicycle Locker Parking
43	14	Smart Bicycle Locker Parking	Park and ride facility at NW 154th Street & NW 77th Avenue (8)	Enhance Pedestrian and cyclist mobility, comfort and safety	$5,200	Bicycle Locker Parking
44	19	Mobile Parking App	Town-Wide	Provide Efficient Travel	$100,000	Currently, no parking program exists in the Town. As areas become more developed and with more demand for parking, a parking program can be developed integrating a mobile parking app.

Table 9: Prioritization and Implementation of Technology Projects (continued)						
Rank	**Technology No.**	**Project Type**	**Location**	**Goal**	**Cost**	**Description**
45	16	Mobility App/"Mobility Marketplace"	County-Wide	Support efficient travel	N/A	A Mobility Marketplace is a mobility app that connects users to a variety of transportation options together.
46	21	CCTV	• Main Street District (6) • Optimist Park (2) • Royal Oaks Park(2) • Picnic Park (2) • Major roadways (4) • Park and ride facility at NW 154th Street & NW 77th Avenue	Promote Public Safety	$150,000	CCTV cameras monitor certain locations and allow for remote monitoring. Currently the Town has 32 CCTV cameras.
47	6	Micro Transit	Town-Wide	Optimize Shared Mobility	$65,000	Micro Transit is a shared, on-demand, app-based mobility service that groups travelers with similar trip pickup and drop-off locations.
48	6	Bicycle Sharing	Town-Wide	Optimize Shared Mobility	N/A	Dockless bicycles are short-term bicycle rentals that are not "parked" but instead are located in various locations to be picked up as needed and can be used as a first mile/last mile solution.
49	7	Electric Scooter Sharing	Town-Wide	Optimize Shared Mobility	N/A	Electric scooters are battery powered electric scooters that are rented for short-term. Dockless means the scooters are "parked" in various locations to be picked up as needed and can be used as a first mile/last mile solution
50	15	Video Imaging	Along Bicycle Facility network	Enhance pedestrian and cyclist mobility, comfort and safety	$108,000	Video imaging are video recorders mounted above the count area records movements coupled with a software program that processes the video to produce bicycle or pedestrian counts

◆ FUNDING SOURCES

Implementing and maintaining elements of the Technology Plan will require sources of funding, as the Town is responsible for purchasing operating and maintaining these technologies. The Town must secure various forms of funding and pursue innovative funding strategies in order to deploy technologies that will address the goals outlined in this plan.

As Miami Lakes looks to upgrade infrastructure with smart technologies, private partnerships and funding will help make this a reality. With increasing construction costs, and increased limitations on the ability to generate revenue, municipalities are creating partnerships with other jurisdictions as well as the private sector in order to create new funding opportunities to finance projects. These partnerships are called Public Private Partnerships, or P3's, and they are the most efficient especially as partners may offer expertise in areas of applied technologies in an environment where technologies are constantly evolving. The Town may approach potential partners to better understand various technologies currently available.

The Town of Miami Lakes does not own, operate, nor maintain all public spaces and roads within its jurisdiction. It is imperative that Town staff coordinate with property owners, developers and agencies such as FDOT, Miami-Dade County and the Miami-Dade TPO. Funding for improvements to roadway improvement projects are typically funded through Federal, State, and Local agencies, and other improvements or upgrades are often funded by the private sector through sponsorships or P3's. The following contains a description of relevant funding opportunities at all levels.

LOCAL FUNDING

Local funding is generated from within a city or county, generally relying on property taxes or other funds. Numerous communities have concurrency fees or impact fees, which can be applied to local infrastructure projects.

IMPACT FEE

Transportation impact fees can be arranged so that the fees are able to be spent on improvements other than projects which increase roadway vehicular capacity. A transportation impact fee may be used to fund pedestrian, bicycle and transit improvements, including sidewalks, trails, crosswalks, bikeways, bus shelters, dedicated rapid bus lanes, light rails lines and stops, and other justifiable items. The Town has utilized Impact Fees to pay for installing Adaptive Signal Control technology. While most states will only generally authorize transportation impact fees only for road capacity improvements, there are no such restrictions in Florida. In Florida, impact fees are authorized by statute and covered by case law. For Miami Lakes, a vital aspect of adopting a multimodal impact fee lies in the justification of infrastructure or alternative assessments of capacity. The argument must be made that multimodal improvements, such as bicycling facilities and other multimodal transportation infrastructure on and off the roadways free up vehicular capacity in a system, instead focusing on the overall capacity of the system.

MOBILITY FEE

The Town of Miami Lakes adopted a mobility fee in 2016. A mobility fee has similar principles as a road impact fee, except that it offers additional flexibility to fund capital infrastructure for transit, bicycle, and pedestrian facilities. It is a one-time capital charge levied against new development. A mobility fee is intended to cover the portion of the capital costs of transportation infrastructure capacity consumed by new development. Assisting in funding the implementation of projects identified in the Capital Improvements Element (CIE) and other capital improvement programs for the respective facility/service categories, is the principle purpose of a mobility fee. This fee replaces concurrency at the site-plan review stage. As the Town adopts technology projects with mobility implications, it should add these projects to the plan list for the mobility fee and amend the fee accordingly. Additionally, the Town created mobility fee credits for developments that provide site

specific urban design, multimodal, amenities, and transportation demand techniques that further the goal of providing sustainable mobility options for the community.

STATE FUNDING

The State of Florida has several funding sources that primarily come from FDOT. The Town should continue to monitor future funding that can be pursued through legislative appropriation requests.

Natural Resources, Environmental Issues, Growth Management and Transportation expenditures is the only area of the budget to see a reduction in funding compared to the previous fiscal year.

The Federal Highway Administration may at times provide grant funding for the following areas, to be routed through FDOT:

- Aging Road Users
- Community Traffic Safety
- Impaired Driving
- Motorcycle Safety
- Occupant Protection and Child Passenger Safety
- Pedestrian and Bicycle Safety
- Police Traffic Services
- Speed and Aggressive Driving
- Teen Driver Safety
- Traffic Records
- Traffic Record Coordinating Committee (TRCC)

Awards to state and local safety-related agencies are used as "seed" money to assist in developing and implementing programs that address traffic safety deficiencies or expand ongoing safety programs activities. Enforcement technologies can be funded with this money. Funding for these grants are apportioned to states annually from the National Highway Traffic Safety Administration (NHTSA) according to a formula based on population and road mileage. Funding may be available for projects in other program areas if there is documented evidence of need.

Through public rule making processes conducted in 1982, 1988, 1995 and 1998, it has been determined that certain highway safety program areas have proven to be more effective than others in reducing traffic crashes, injuries, and fatalities. These programs, designated as National Priority Program Areas are: Impaired Driving, Police Traffic Services, Speed Control, Occupant Protection/Child Passenger Safety, Pedestrian and Bicycle Safety, Motorcycle Safety, Traffic Records, and Community Traffic Safety.

It is expected that programs funded through these grants will become self-sufficient and continue when grant funding terminates. To promote self-sufficiency, agencies are expected to provide a local funding match when personnel costs are included in second and third year projects. The local match is normally 25% of eligible costs for second year projects and 50% for third year projects.

Government agencies, political "subdivisions" of the state, local city and county government agencies, state colleges, universities, school districts, fire departments, public emergency services providers, and certain qualified non-profit organizations are eligible to receive traffic safety grant funding. These grants are awarded on a Federal fiscal year basis and can be funded for a maximum of three consecutive years in each priority area.

The Economic Development Transportation Fund, commonly referred to as the "Road Fund," is an incentive tool designed to alleviate transportation problems that adversely impact a specific company's location or expansion decision. The award amount is based on the number of new and retained jobs and the eligible transportation project costs, up to $3 million. The award is made to the local government on behalf of a specific business for transportation improvements.

FEDERAL FUNDING

Federal programs make up the bulk of the funding for large projects. Florida is a "donor" state, which means it receives less than it contributes to Federal transportation programs each year. The US Department of Transportation helps communities fund transportation projects by issuing grants to eligible recipients for planning, vehicle purchases, facility construction, operations, and other purposes. The USDOT administers this financial assistance according to federal transportation authorization, Fixing America's Surface Transportation (FAST) Act.

MAP - 21 combined the Transportation Enhancement Program, Safe Routes to School and the Recreational Trails Program into a comprehensive Transportation Alternatives Program. Miami Lakes planning for its transportation infrastructure should carefully monitor availability of grants for this fund, as this funding's allocation structure is expected to change as administered by the FDOT.

The Transportation Alternative Set Asides, formerly known as the Transportation Alternative Program, was developed as a result of the Moving Ahead for Progress in the 21st Century (originated in MAP- 21). Eligible activities for funding include:

1. Construction, planning and design of on and off-road facilities for bicyclists, pedestrians, and other forms of non-motorized transportation;
2. Construction, planning and design of infrastructure related projects/systems to provide safe routes for non-drivers;
3. Conversion and use of abandoned railroad corridors for non-motorized use;
4. Construction of turnouts, overlooks, and viewing areas under community improvement activities;
5. Inventory, control or removal of outdoor advertising;
6. Historic preservation and rehabilitation of historic transportation facilities;
7. Vegetation management practices in transportation rights of way; and
8. Archaeological activities related to impacts from transportation projects eligible under Title 23; and 9. Environmental mitigation activities.

In addition, the Safe Routes to School (SRTS) Program and Recreational Trails Program (RTP) were both consolidated within the nine (9) activities under the TAP. The planning, designing, and constructing of boulevards and other roadways largely in the right of way of former Interstate System routes or other divided highways are also eligible as well.

The USDOT has over $350 million in public and private funds for smart city and advanced transportation technology grants. Additional funds are available through the Readiness Challenge Grants from the Smart Cities Council. Funds can be used for connected infrastructure, public Wi-Fi, sustainability, and more.

The U.S. Environmental Protection Agency offers grants to support activities that promote improved quality of development and protect human health. These Smart Growth Grants are available to assist communities addressing varied aspects of smart growth. Smart Growth national funding opportunities include energy, environmental justice, transportation, and more.

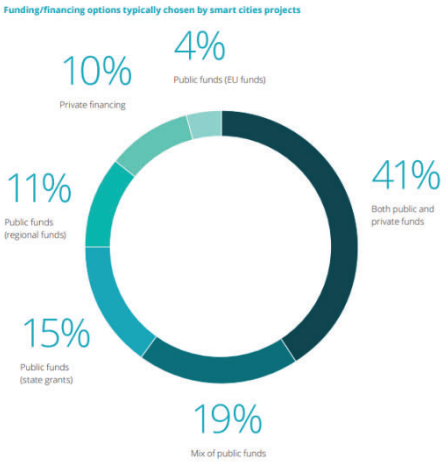
The Florida Department of Environmental Protection's Diesel Emissions Mitigation Program (DEMP) provides project specific funding to mitigate mobile sources of emissions as a result of the Volkswagen Settlement and the EPA's Diesel Emissions Reduction Act. Florida's share of the overall Mitigation Trust fund is approximately $166 million. The grant may be used to fund electric vehicle charging stations. Additional grants include the AARP Community Challenge and the US Ignite and Knight Foundation.

The Town of Miami Lakes must explore ways to create revenue, such as advertising opportunities and paid parking. A parking management plan must be conducted in order to identify where the Town can implement smart parking technologies.

FINANCING MECHANISMS

It is important to understand the limited public resources available in order to implement the proposed projects. Strategic public private partnerships are an option. These partnerships influence private investment and can enhance mobility through partnerships with carshare and bikeshare companies. Partnering with non-profit car-share companies using a pilot period will determine the success of the program.

The following chart has been adapted from a Deloitte report titled *The Challenge of Paying for Smart Cities Projects.* This report unveils that smart city financing can be structured by many mechanisms, and precedent has proven the most efficient way to secure financing is by public/private partnerships (P3's), followed by an aggregate of public funds. The town can open up financing by partnering with developers, property owners and vendors. University of Miami's Center for Computational Science created a Smart Cities Miami Conference, an annual gathering to showcase the work of local and global partners. Other municipalities have partnered with the University to host the event and competitions that explore how technology can solve issues such as traffic congestion. These events and partnerships would be beneficial to the Town.



Typical Financing Mechanisms	
Project financing	Focuses on the financial assessment of a given project, rather than on the business/enterprise as a whole. The remuneration is set according to the estimated cash flows and profits generated by the project.
Traditional loans and leases	Focuses on paying for infrastructure investment over time. Repayment can come from public sector or third-party/user payments. Financing is at the project level and involves a private equity partner.
Vendor finance	An equipment vendor; an engineering, procurement, and construction (EPC) contractor; or another supplier will offer financing for the project. Because an equipment vendor, for example, may have a better understanding of a project's technical risks, or of the industry concerned, it might be more willing than a commercial lender to assume those risks.
Consumption-based financing	Project sponsor pays for technology based on usage and adjusts capacity up and down as needed. Financing is at the supplier level rather than project level.
"As-a-service" financing	Rather than purchasing technology, project consumes it as a service. Financing is at the supplier level.
Concession financing	Project gains the benefits of technology at little to no cost, while enjoying incremental revenues and cost savings.
Revenue share financing	Project obtains funding for technology investments in exchange for a share of the revenues from customer contracts. Revenues may be committed or uncommitted.
Equity financing	Scales business across multiple cities with capital and expertise from a strategic private equity partner.

AUTONOMOUS VEHICLE POLICY AND RESEARCH

There are few places where companies can test self-driving cars without requiring a human in the vehicle. As of July 1,2019 under House Bill 311, Florida now allows for autonomous vehicles to operate on the roads without requiring a human to be behind the wheel. This means that Florida officially has an open-door policy to autonomous vehicle companies to operate and test on Florida roads. Under this law, the Town can invite RFI submissions for a pilot program, ensuring pilot serves visitors and residents in targeted areas where autonomous transit can be affected based on local travel behavior. The Town can create an RFI submission as part of a larger redevelopment initiative, as an autonomous vehicle program will attract social and economic activity. The following components will assist the Town yo develop a pilot program.[24]

- Integrate shared-use mobility and enhance first/last mile to transit.
- Begin pilot projects and small, fixed-route autonomous shuttle service with more complex services over time.
- Use scenario planning, pilot projects and small-scale planning to test new concepts prior to investing in larger scale corridor plan.
- Identify a network of mobility hub locations that feed riders to the corridor.
- Designate pickup and drop off zones for ride-hailing and delivery zones.
- Harness first-generation smart city technology for data-driven decisions.

In addition, as autonomous vehicle technology advances, it is recommended that street design standards for autonomous vehicles be monitored, as the industry evolves.

Policy

Miami Lakes can make the following changes to their land development code to require or incentivize Smart City infrastructure as new or existing developments:

1. Add electric vehicle parking requirements for off-road and private developments.
2. Develop electric vehicle parking incentives for existing developments.
3. Offer development bonus for installing smart technology improvements.
4. Adopt a local ordinances that enables the Town to be responsive to autonomous vehicle testing and Connected Automobile Technology testing.
5. Add appropriate definitions to land development code for:
   - Electric Vehicle Parking
   - Autonomous Vehicles
   - Autonomous Technology
6. Develop flexible parking policies that can allow for the reduction or elimination of certain parking requirements as AV market penetration increases.
7. Require smart bicycle parking for new developments.

[24] Adapted from American Planning Association symposium report *PREPARING COMMUNITIES FOR AUTONOMOUS VEHICLES* by Jennifer Henaghan, aicp, Editor.

MOVING MIAMI LAKES FORWARD

The Town of Miami Lakes is eager to lead Miami-Dade County in transportation innovation and its existing infrastructure allows for integration of smart technologies. With its mixed-use zoning practices the Town promotes a cohesive urban form, promoting walkable and connected neighborhoods for its residents and visitors. This type of development promotes better walkability and bicycle infrastructure, increased access to transit, creating a strong sense of place. Implementing these smart technologies will further strengthen connectivity and safety throughout the Town. A car-optional lifestyle is a possibility in the Town of Miami Lakes. The Town will ensure a multi-modal lifestyle for its residents, while becoming a Smart City with a cleaner, more efficient and safer transportation system.

The Town of Miami Lakes has engaged its citizens during the development of this report. In its workshop on August 21, 2019, the Town reached out to the public in presenting this draft plan. Among the feedback from the public was the need to prioritize safety and convenience, with safety being the most important aspect for determination of local needs. In addition, there was noted discussion on the need to "do business" differently, especially in how items are coordinated, and that this includes how the Town needs to engage with vendors, as well as set up infrastructure. There was also lengthy discussion on potential pilot programs such as autonomous shuttles for transit, and how and when these should come into place. It is encouraged that the Town continue to engage its citizens with meeting like this workshop, especially since technologies continue to emerge and can address local needs.

It is recommended that the Town of Miami Lakes create an evaluation process for Planning and Public Works staff to monitor the effectiveness of the implementation of the smart technologies identified in this study. Ensuring the technologies are appropriately utilized and monitoring the potential impacts is key. Additionally, it is recommended the Town assess its current parking conditions throughout the Town. Smart Technology encourages the use of multiple modes of transportation. The smart technologies must be monitored, evaluated, and encouraged or adjusted based on findings. In order to successfully implement Smart technologies for parking, an appropriate parking management strategy must be identified. An area parking management plan will be an intensive process; however, it is necessary to ensure parking management and smart technology decisions align with the vision of the Town and the community.

This plan will become part of daily decision making of smart technology related programs and policies in the future. As new technology arises, the Town can reference this study for direction so decisions will benefit the Town and the public. In order to make the Town's vision of becoming a Smart City a success it is imperative that all stakeholders commit to this vision and as technology changes over time this document will be a dynamic guide to assist the Town in navigating through new advances in technology. As the Town grows and changes this study will continue to evolve.

As a Smart City the Town of Miami Lakes will help grow its economy while looking towards the future of sustainability, safety, and mobility. The Town must collaborate with local businesses, various stakeholders, and agencies to create a system merging technology with existing infrastructure. The Smart Technology Study will be applied in all planning processes moving forward. Town planning initiatives will reflect the smart technology initiative and recommended strategies. The application of these smart technologies will be evaluated in such a manner where stakeholders and Town staff will monitor impacts and adjust as necessary. The vision of Miami Lakes supports moving the Town and the region forward through advanced smart technologies.

APPENDIX A INVENTORY

Roadway Inventory for Miami Lakes		
Street Name	**Juristiction**	**Speed Limit (mph)**
Aberdeen Way	Town	30
Alamanda Ave	Town	30
Ardoch Place	Town	30
Ardoch Road	Town	30
Balgowan Road	Town	30
Ballantrae Court	Private	
Bamboo Court	Town	30
Bamboo Street	Town	30
Bedlington Road	Private	
Berwick Way	Town	30
Big Cypress Court	Town	30
Big Cypress Drive	Town	30
Bottle Brush Drive	Town	30
Braemar Court	Private	
Breckness Place	Town	30
Briar Patch Place	Private	
Bridge End Road	Private	
Bull Run Road	Town	30
Burnside Way	Town	30
Cairnryan Court	Private	
Cassia Place	Town	30
Cedar Court	Town	30
Coconut Avenue	Private	
Coconut Court	Private	
Commerce Way	Town	30
Cotton Tail Road	Private	
Cow Pen Road	Town	30
Crooked Palm Court	Town	30
Crooked Palm Lane	Town	30
Crooked Palm Place	Town	30
Crooked Palm Terrace	Town	30
Crown Gate Court	Private	
Crown Gate Drive	Private	
Crown Date Place	Private	
Cypress Court	Town	30
Dade Pine Avenue	Town	30
Dade Pine Court	Town	30
Dalkeith Lane	Town	30
Dornoch Round	Town	30
DunBarton Place	Town	30
Dundee Terrace	Town	30
Dunnon Court	Town	30
Durnford Drive	Town	30
E Loch Isle Drive	Private	
E Troon Circle	Town	30
Eagle Nest Lane	Town	30
Egan Lane	Town	30
English Road	Town	30
Fairway Drive	Town	30
Falkirk Place	Town	30
Fearn Drive	Town	30
Fintry Place	Town	30
Fitzpatrick Road	Town	30
Fox Den Court	Private	
Gage Place	Town	30
Garvock Place	Town	30
Glencairn Terrace	Town	30
Gleneagle Drive	Town	30
Glenny Terrace	Town	30
Governors Square Boulevard	Private	
Greentree Lane	Private	
Haldemand Place	Town	30
Harris Place	Town	30
Harris Terrace	Town	30
Holly Road	Town	30
Hutchinson Road	Town	30
Jacaranda Lane	Town	30
Jack Rabbit Lane	Private	
Kilmarnock Drive	Private	
Kingsmoor Way	Town	30
Kippford Court	Private	
Lake Blue Drive	Town	30
Lake Candlewood Court	Town	30
Lake Champlain Terrace	Town	30
Lake Childs Court	Town	30
Lake Claire Court	Town	30
Lake Como Terrace	Town	30
Lake Crescent Place	Town	30
Lake Geneva Road	Town	30
Lake George Court	Town	30
Lake June Road	Town	30
Lake Lure Court	Town	30
Lake Patricia Drive	Town	30
Lake Placid Court	Town	30
Lake Saranac Avenue	Town	30
Lake Success Place	Town	30
Laurel Lane	Town	30
Leaning Pine Drive	Town	30
Lemon Tree Lane	Private	
Lewis Road	Town	30
Loch Ness Court	Town	30
Loch Ness Drive	Town	30
Loch Ness Lane	Town	30
Mahogany Court	Town	30
Main Street	Town/Private	30
Maple Terrace	Town	30
Marginada Court	Town	30
Meadow Walk	Town	30
Menteith Place	Town	30
Menteith Terrace	Town	30
Miami Lakes Drive	Town	35
Miami Lakes Drive E	Town	35
Miami Lakeway N	Town	35
Miami Lakeway S	Town	35
Milk Wagon Lane	Town	30
Montrose Road	Town	30
Moultrie Place	Town	30
N Loch Isle Drive	Private	
New Barn Road	Town	30
NW 138th Street	FDOT	30
NW 138th Terrace	Private	
NW 139th Lane	Private	
NW 139th Street	Town	30
NW 139th Terrace	Town	30
NW 140th Lane	Town	30
NW 140th Street	Private	
NW 140th Terrace	Private	
NW 141st Lane	Private	
NW 141st Terrace	Town	30
NW 142nd Lane	Town	30
NW 142nd Street	Town	30
NW 143rd Street	Town	30
NW 143rd Terrace	Town	30
NW 144th Street	Town	30
NW 144th Terrace	Town	30
NW 145th Lane	Town	30
NW 145th Street	Town	30
NW 145th Terrace	Town	30
NW 146th Lane	Town	30
NW 146th Street	Town	30
NW 145th Terrace	Town	30
NW 147th Lane	Town	30
NW 147th Terrace	Town	30
NW 148th Street	Town	30
NW 148th Terrace	Town	30
NW 149th Terrace	Town	30
NW 150th Street	Town	30
NW 150th Terrace	Town	30

NW 151st Street	Town	30
NW 151st Terrace	Town	30
NW 152nd Lane	Town	30
NW 152nd Street	Town	30
NW 152nd Terrace	Town	30
NW 153rd Street	Town	30
NW 153rd Terrace	Town	30
NW 154th Street	Town	35
NW 154th Terrace	Private	
NW 155th Street	Town	30
NW 156th Terrace	Private	
NW 157th Terrace	Private	
NW 158th Street	Town	30
NW 158th Terrace	Town	30
NW 159th Street	Town	30
NW 159th Terrace	Town	30
NW 160th Street	Private	
NW 160th Terrace	Town	30
NW 161th Terrace	Private	
NW 162nd Street	Town	30
NW 162nd Terrace	Town	30
NW 163rd Street	Town	30
NW 163rd Terrace	Town	30
NW 164th Street	Town	30
NW 164th Terrace	Town	30
NW 165th Street	Town	30
NW 165th Terrace	Town	30
NW 166th Street	Town	30
NW 166th Terrace	Town	30
NW 167th Street	FDOT	35
NW 167th Terrace	Private	
NW 168th Lane	Town	30
NW 168th Street	MDC	30
NW 168th Terrace	Town	30
NW 169th Street	MDC	35
NW 169th Terrace	MDC	30
NW 170th Street	Town	30
NW 57th Avenue	FDOT	45
NW 57th Court	Town	30
NW 58th Avenue	Town	30
NW 58th Court	Town	30
NW 59th Avenue	Town	30
NW 59th Court	Town	
NW 60th Avenue	Town	35
NW 64th Avenue	Town	
NW 67th Avenue	MDC	40
NW 70th Avenue	MDC	30
NW 70th Court	Private	
NW 71st Avenue	Private	
NW 71st Court	Private	
NW 72nd Avenue	MDC	30
NW 72nd Court	MDC	30
NW 72nd Place	Private	
NW 73rd Avenue	MDC	30
NW 73rd Court	MDC	30
NW 73rd Place	Private	
NW 74th Avenue	MDC	30
NW 77th Avenue	FDOT	30
NW 77th Court	Joint	35
NW 77th Path	Town	30
NW 77th Place	Town	30
NW 78th Avenue	MDC	30
NW 78th Court	MDC	30
NW 78th Place	MDC	30
NW 79th Avenue	MDC	30
NW 79th Court	MDC	30
NW 79th Place	MDC	30
NW 80th Avenue	MDC	30
NW 80th Court	MDC	30
NW 81st Avenue	MDC	30
NW 81st Court	MDC	30
NW 82nd Avenue	MDC	30
NW 82nd Court	MDC	30
NW 82nd Place	Private	
NW 83rd Avenue	Town	30
NW 83rd Court	Town	30
NW 83rd Pass	Private	
NW 83rd Path	Private	
NW 83rd Place	Town	30
NW 84th Avenue	MDC	30
NW 84th Court	Town	30
NW 84th Path	Private	
NW 84th Place	MDC	30
NW 85th Avenue	MDC	30
NW 85th Court	MDC	30
NW 86th Court	Town	30
NW 87th Avenue	MDC	40
NW 87th Court	Town	
NW 87th Place	Town	30
NW 88th Avenue	Town	30
NW 88th Court	Town	30
NW 88th Path	Town	30
NW 88th Place	Town	30
NW 89th Avenue	Town	30
NW 89th Court	Town	30
NW 89th Place	Town	30
NW 90th Avenue	Town	30
NW 90th Court	Town	30
NW 91st Avenue	Town	30
NW 91st Court	Town	30
NW 92nd Avenue	Town	30
Oak Lane	Town	30
Oak Walk	Private	
Orchid Drive	Town	30
Palmetto Frontage Road	FDOT	30
Palmetto Palm Avenue	Town	30
Parkinsonia Drive	Town	30
Pent Place	Town	30
Poinciana Court	Town	30
Queen Palm Terrace	Town	30
Ravenwood Place	Private	
Royal Palm Avenue	Private	
Royal Palm Court	Private	
Royal Palm Lane	Private	
S Loch Isle Drive	Private	
S Prestwick Place	Town	30
Sabal Drive	Town	30
Sawmill Lane	Private	
Seagrape Terrace	Town	30
Shadow Court	Private	
Sharpecroft Court	Private	
Sharpecroft Drive	Private	
Silver Oak Drive	Town	30
Simmons Street	Town	30
Stonehaven Road	Town	30
Tabebuia Lane	Town	30
Torphin Place	Town	30
Turkey Run Terrace	Private	
Turnberry Drive	Town	30
Turnbull Drive	Town	30
Turtle Rock Terrace	Private	
Twin Sabal Drive	Town	30
W Loch Isle Drive	Private	
W Prestwick Place	Town	30
W Troon Circle	Town	30
White Oak Drive	Town	30
Willow Creek Drive	Private	
Willow Lane	Town	30
Windmill Gate Road	Private	
Wood Walk	Private	

BUS STOP MATRIX MIAMI LAKES											
Location	Stop Number	ARRA Bus Shelter	Town Shelter	Freebee Information	Bench	Trash Can	Freebee Stop	County Sign	Bus Routes Available	Concrete (C) or Grass (G)	Additional Info?
Commerce Way @ #8306 (EB)	129						X				
Commerce Way @ 14382 (NEB)								X	54	G	
Commerce Way @ 14382 (SWB)					X			X	54	G	
Commerce Way @ NW 146th Street (NB)	131		X	X	X	X	X	X	54	G, C	
Commerce Way @ NW 80th Avenue (SWB)								X	54	G	
Commerce Way @ NW 85th Avenue (EB)	128				X		X	X	54	G	
Commerce Way @ NW 85th Avenue (WB)					X			X	54	G	
Commerce Way @NW 146th Street (SWB)					X			X	54	G	
Commerce Way @NW 80th Avenue (NEB)	130						X	X	54		
Inner Miami Lakeway East @ Miami Lakes Drive (SB)		No but covered by agreeement						X	135		
Miami Lakes Drive @ NW 67th Avenue (EB)		X							73		
Miami Lakes Drive @ Publix (EB)					X	X		X	73	G	
Miami Lakes Drive @ Publix (WB)			X		X	X		X	73	C	
Miami Lakes Drive E @ NW 67th Avenue (WB)					X			X	73	C	
Miami Lakes Drive East @ NW 57th Avenue (WB)		X							29		
Miami Lakes Drive East @ NW 57th Court (EB)	110		X		X		X	X	29, 73	C	
Miami Lakes Drive East @ NW 60th Avenue (NWB)		X		X	X	X		X	135	C	
Miami Lakes Drive East @ Pent Place (EB)			X		X			X	73	C	
Miami Lakes Drive East @ Pent Place (WB)		X			X	X		X	73	C	
Miami Lakes Drive W @ Fairway Drive (WB)	119						X				
Miami Lakes Drive W @ Miami Lakeway N (WB)	118						X				
Miami Lakeway North @ 15575 (NWB)	113							X			
Miami Lakeway North @ 15579 (NWB)	114							X			
Miami Lakeway South @ Big Cypress Dr. (SB)	135							X			
Miami Lakeway South @ Leaning Pine Drive (EB)	136							X			
Miami Lakeway South @ NW 67th Avenue (EB)	137							X			
NW 151st Street @ 5881 (WB)	111							X		G	
NW 153rd Street @ N Miami Lakeway (EB)	112							X			
NW 153rd Street @ N Miami Lakeway (WB)									X	135	
NW 154th Street @ NW 79th Avenue (NB)	120							X			
NW 158th Street @ NW 57th Avenue (EB)	106		X	X	X	X	X	X	29, 75	C	
NW 158th Street @ NW 57th Avenue (WB)					X				29, 75	G	
NW 158th Street @ NW 59th Avenue (EB)	105	X		X	X	X	X	X	29, 75	C	
NW 163rd Street @ NW 57th Avenue (EB)									75		
NW 163rd Street @ NW 57th Avenue (WB)								X	75		
NW 163rd Street @ NW 58th Avenue (WB)								X	29, 75	G	
NW 167th Terrace @ NW 82nd Avenue (WB)	123						X				
NW 59th Ave @ NW 163rd St (NB)					X				75	G	
NW 59th Ave @ NW 163rd St (SB)	104				X		X	X	75	G	
NW 59th Court @ Miami Lakes Drive (SB)		X			X	X		X	135	C	
NW 60th Ave @ 14740 (SB)					X			X	29, 73, 135	G	
NW 60th Avenue @ 14400 (NB)	108		X	X	X		X	X	29, 73, 135	C	
NW 60th Avenue @ 14400 (SB)					X			X	29, 73, 135	G	
NW 60th Avenue @ Miami Lakes Drive (NB)	109		X		X		X	X	29	C	

NW 60th Avenue @ Miami Lakes Drive (SB)			X		X	X		X	29, 73, 135	C	
NW 60th Avenue @ NW 139th Street (NB)		X							29, 73, 135	C	
NW 60th Avenue @ NW 139th Street (SB)		X							29, 73, 135	C	
NW 60th Avenue @ NW 142nd Street (NB)	107				X		X	X	29, 73, 135	G	
NW 60th Avenue @ NW 142nd Street (SB)					X			X	29, 73	G	
NW 60th Avenue @ NW 153rd Street (EB)					X			X	135	G	
NW 67th Ave @ Miami Lakesway N	101		X		X		X	X	267, 73	C	
NW 67th Avenue @ Bull Run Road N (SB)	116		X	X	X	X	X			C	
NW 67th Avenue @ Bull Run Road S (SB)		X			X	X		X	73	C	
NW 67th Avenue @ Cow Pen Road (NB)	143		X	X	X	X	X			C	
NW 67th Avenue @ Eagle Nest Lane N (NB)	142						X			C	
NW 67th Avenue @ Eagle Nest Lane S (NB)	140						X			C	
NW 67th Avenue @ Hialeah Miami Lakes Sr. High (Hialeah)	138						X			C	
NW 67th Avenue @ Kingsmore Way (NB)	102				X		X	X	73	G	
NW 67th Avenue @ Loch Ness Drive (SB)		X		X	X	X		X	73, 267	C	
NW 67th Avenue @ Main Street (NB) *TOWN HALL*	141		X	X	X	X	X	X	73, 267	C	
NW 67th Avenue @ Main Street (SB)	117		X	X	X		X	X	73, 267	C	
NW 67th Avenue @ Miami Lakes Drive (NB)	139						X			C	
Miami Lakeway N @ NW 67th Ave (WB)	115						X			C	
NW 67th Avenue @ Miami Lakeway S (NB)								X	257	C	
NW 67th Avenue @ Miami Lakeway S (SB)								X	257	C	
NW 67th Avenue @ New Barn Road (SB)		X		X	X	X	X	X	73	C	
NW 67th Avenue @ Windmill Gate Road (NB)	103	X			X	X	X	X		C	

NW 79th Avenue @ NW 159th Terrace (NB)	122						X			G	
NW 79th Avenue @ Royal Oaks Shopping Plaza (NB)	121						X			G	
NW 79th Court @ NW 154th Street (NB)	134						X		54	G	
NW 79th Court @ NW 154th Street (SB)		X							54	G	
NW 82nd Avenue @ Glenny Terrace (NB)		X			X	X		X	54	C	
NW 82nd Avenue @ NW 154th Street (NB)		X			X	X		X	54	C	
NW 82nd Avenue @ NW 154th Street (SB)								X	54	C	
NW 82nd Avenue @ NW 162nd Street (NB)		X			X	X		X	54	C	
NW 82nd Avenue @ NW 162nd Street (SB)								X	54	C	
NW 82nd Avenue @ NW 167th Terrace (NB)					X			X	54	G	
NW 82nd Avenue @ NW 167th Terrace (SB)								X	54	G	
NW 82nd Avenue @ NW 170th Street (NB)	124				X		X	X	54	C/G	
NW 82nd Avenue @ NW 170th Street (SB)		No but covered by ARRA			X	X		X	54	C	
NW 87th Avenue @ Royal Oaks Park (SB)	125						X				
NW 89th Avenue @ NW 143rd Street (SB)	127	X (TWO)		X	X	X	X			C	
NW 89th Avenue @ NW 149th Terrace (SB)	126						X			G	
Oak Lane @ Miami Lakes Picnic Park (WB)					X			X	54	G	
Oak Lane @ NW 148th Street (NB)	132		X		X		X	X	54	C/G	
Oak Lane @ NW 148th Street (SB)					X			X	54	G	
Oak Lane @ NW 79th Court (EB)					X			X	54	G	
Oak Lane @ NW 79th Court (WB)	133				X		X			G	

Park Inventory for Miami Lakes	
Park Name	**Address**
P1	16100 W. Troon Circle
P2 (Loch Lomond)	7105 S. Prestwick Pl.
P2 (Lake Patricia)	6280 Lake Patricia Drive
P3 (Loch Lomond)	6900 Gleneagle Drive
P3 (Lake Patricia)	6357 Lake Patricia Drive
P4	6434 Lake Patricia Drive
P5	14028 Lake Saranac Ave.
P6	14210 Lake Saranac Ave.
P10	6271 Lake Champlain Terrace
P11	6276 Lake Geneva Road
P12	6651 Harris Terrace
P13	14410 Harris Place
P14	6315 Miami Lakeway South
P15	14810 Palmetto Palm Ave.
P16	14620 Palmetto Palm Ave.
P17	6976 Maple Terrace
P18	6943 Willow Lane
P19	14416 Mahogany Ct.
P20	14611 Mahogany Ct.
P22	14125 Alamanda Ave.
L22	8511 Dundee Terrace
P23	6961 Bamboo Street
P24	7235 Bamboo Street
P28	7350 Sabal Drive
P29	14170 Leaning Pine Drive
P30	14295 Sabal Drive
P31	7255 Poinciana Ave.
P35	7370 Miami Lakeway S.
L41	15100 Garvock Place
P50	16470 Loch Ness Drive
P58	6349 Jack Rabbit Lane
P59	15210 Durnford Drive
P61	15440 Durnford Drive
P69	8210 Dundee Terrace
P70	8295 Balgowan Road
P75	14961 Dunbarton Place
P77	8441 Ardoch Road
P78	8620 Ardoch Road
P79	14965 Balgowan Road
P80	14962 Renock Lane
P82	14708 Breckness Place
P83	8445 Glencairn Terrace
P84	8901 NW 148 Terrace
P86	7815 NW 165 Street
P87	8767 NW 139 Street
P88	8901 NW 169 Terrace
Rotary Park	13890 NW 67th Avenue
P7	14320 Lake Saranac Ave.
P25	7030 Miami Lakeway S.
P26	14000 NW 67 Ave.
P33	15200 Miami Lakeway S.
P34 A & B	15220 Miami Lakeway E.
P36	7050 Miami Lakes Drive
P37	14480 Dade Pine Ave.
P38	14844 Dade Pine Ave.
P39	6880 Miami Lakes Drive
P40	7014 Crown Gate Place
P41	15520 Turnberry Drive
P42 A & B	15017 Coconut Court
P43	7420 Miami Lakeway S.
P44	6640 Ludlam Drive
P45 & P46	6550 Miami Lakes Drive E.
P47	6480 Miami Lakes Drive
P48	6850 Fern Drive
P49	15500 NW 67 Ave.
P51	6970 Loch Ness Drive
P52	6700 Loch Ness Drive
P53	7281 Fairway Drive
P55	6699 Windmill Gate Road
P56	16331 Ravenwood Place
P57	6402 Turkey Run Terrace
P60	15341 Turnbull Drive
Tract A	7000 Green Tree Lane
P62	15180 Loch Isle Drive
P63	15250 Loch Isle Drive
P64	15310 Loch Isle Drive
P65	15300 Loch Isle Drive
P66	15132 Menteith Terrace
P68	8560 Menteith Terrace
P71	8335 Rednock Lane
P72	8461 Rednock Lane
P73	8460 Dundee Terrace
P74 East	15690 Bull Run Road
P76	8422 Rednock Lane
P85	9206 NW 144 Terrace
Lot D	7237 Bamboo Street
P27	6786 Crooked Palm Terrace
P32	7320 Twin Sabal Drive
P67	8560 Menteith Terrace
P8	14105 Lake Childs Court
P21	6890 White Oak Drive
P81	8560 Breckness Place
P91	8630 NW 166 TER
P90 (Dog Park)	NW 77 Court
P89	NW 170 Sreet
Optimist Park	6411 NW 162 ST
Royal Oaks Park	16500 NW 87 AVE
Picnic Park West	15151 NW 82 AVE
Picnic Park East	6075 Miami Lakes Dr

Miami Lakes Fleet Inventory List			
Model	**Year**	**Description**	**Type of Engine**
Champion Bus	2006	Bus >20 Pass, No Lift	gasoline
Custom Signature-Smart Variable Message Sign Trailer	2005	Trailer- NO CHARGE	gasoline
Custom Signature-Smart Variable Message Sign Trailer	2005	Trailer- NO CHARGE	gasoline
Chevrolet Silverado	2007	Light Truck	gasoline
Chevrolet Silverado	2007	Light Truck	gasoline
Chevrolet Silverado	2007	Light Truck	gasoline
Ford Expedition	2008	Light truck	gasoline
Ford F150 Std Cab P/U	2010	Light Truck	gasoline
International Truck W/Sewer Vacuum Body	2013	Heavy Truck	gasoline
Toyota Tacoma PU	2013	Light Truck	gasoline
Ford Crown Victoria	2008	Private Passenger	gasoline
Ford Crown Victoria	2008	Private Passenger	gasoline
Ford Crown Victoria	2009	Private Passenger	gasoline
Freebee Vehicles			
XL Freebee: Zenith Motors Electric Passenger Shuttle	2019	10 passenger shuttle	electric
Regular Freebee: Polaris GEM e6	2019	5 passenger shuttle	electric
Regular Freebee: Polaris GEM e6	2019	5 passenger shuttle	electric

Miami Lakes Public Wifi Locations
Locations
Mary Collins
Optimist Park
Royal Oaks Park

Future Intersection or Crosswalk Improvements			
Project Name	**Roadway Location**	**Type of Project**	**Governing Agency**
1.1.3 Incorporate Greenway Path (0.67 miles) Along NW77th Ct from NW163th to NW154 Avenue - Phase 1 (North)	NW 77th Ct & NW 154 Avenue	Greenway Path	Town of Miami Lakes
1.1.4 Incorporate Greenway Path (1.21 miles) Along NW77th Ct from NW154th to NW82 Av (Dog Park) - Phase 2 (South)	NW 77th Ct & NW 82nd Avenue	Greenway Path	Town of Miami Lakes
1.1.5 Incorporate Greenway Path (0.25 miles) Along NW 146th St from NW89th Avenue to NW 87th Avenue (aka M. Lakes Green 2.0 NW 146th St)	Nw 146th St & 87th Ave	Greenway Path	Town of Miami Lakes
	Nw 146th St & 89th Ave		
1.1.7 Incorporate Greenway Path (3.50 miles) Along NW 154th St from NW89th Ave to NW57th Ave (children of 1.4.5)	NW 154th St & NW 57th Ave	Greenway Path	Town of Miami Lakes
	NW 154th St & NW 60th Ave		
	NW 154th St & Miami Lakeway		
	NW 154th St & NW 67th Ave		
	NW 154th St & NW 77th Ave		
	NW 154th St & NW 77th Ct		
	NW 154th St & NW 79th Ave		
	NW 154th St & NW 82nd Ave		
	NW 154th St & NW 87th Ave		
1.1.8 Incorporate Greenway Path (0.58 miles) Along 139th Canal from NW60th Av to NW142nd St	Nw 139th St & NW 60th Ave	Greenway Path	Town of Miami Lakes
1.1.9 Incorporate Greenway Path (1.00 miles) Along NW87th Av South from NW154th St to NW 138th - Phase 2 (South)	NW 154th St & NW 87th Ave	Greenway Path	Town of Miami Lakes
1.1.10 Incorporate Greenway Path (1.76 miles) Along NW67th Av from NW167th St to NW 138th St	NW 67th Av & NW 167th St	Greenway Path	Town of Miami Lakes
	NW 67th Av & Miami Lakeway N		
	NW 67th Av & Cow Pen Rd		
	NW 67th Av & NW 138th St		
1.1.11a Incorporate Greenway Path (0.86 miles) Along Miami Lakeway Southwest from NW154th St to NW 67th Av.	Miami Lakeway South & NW 154th	Greenway Path	Town of Miami Lakes
	Miami Lakeway South & NW 67th Av		
1.1.11b Incorporate Greenway Path (0.86 miles) Along Miami Lakeway Northwest from NW154th St to NW 67th Av.	Miami Lakeway North & NW 154th	Greenway Path	Town of Miami Lakes
	Miami Lakeway North & NW 64th Ave		
1.1.12 Incorporate Greenway Path (0.57 miles) Along 138th St Canal from NW67th Av to Bamboo Street.	Miami Lakeway North & NW 67th Ave	Greenway Path	Town of Miami Lakes
1.1.14 Incorporate Final Network Connections and Signage Town wide		Network and Signage	Town of Miami Lakes
1.2.12 Extend Palmetto South Bound Left Turn Lane at NW 154 St.	SR 826 South & 154th St	Turn Lane Project	Town of Miami Lakes
1.4.2 Implement Complete Streets at Town Center District		Complete Streets	Town of Miami Lakes
1.4.3 Implement Complete Streets (0.61 miles) at Royal Oaks Center - Phase 1 (at NW79th Av from NW 167th St to NW154th St) (B. Graham)	NW 79th Av & NW 154th St	Safe Routes to Schools	Town of Miami Lakes
1.4.4 Implement Complete Streets (0.61 miles) at Royal Oaks Center - Phase 2 (at NW 82nd Av from 170th St. to NW154th St.)	NW 170th St. & NW 82nd Av	Complete Streets	Town of Miami Lakes
	NW 154th St. & NW 82nd Av		
1.4.5 Implement Complete Streets (1.00 miles) on NW 154th Street Corridor from NW89th Av to NW 57th Av (Parent of 1.1.7)	NW 154th Street & NW 87th Av	Complete Streets	Town of Miami Lakes
	NW 154th Street & NW 82nd Av		
	NW 154th Street & NW 79th Av		
	NW 154th Street & NW 77th Ct		
	NW 154th Street & NW 60th Ave		
	NW 154th Street & NW 57th Ave		
1.4.6 Implement Complete St. (0.38 miles) at NW60 Av from NW154 (MLDrive) to NW138 - Phase 2	NW 60th Ave & NW 138th Street	Complete Streets	Town of Miami Lakes
1.4.7 Implement Complete Streets (0.26 miles) at NW 158th Street from NW 59th Av to NW57th Av	NW 158th Street & NW 57th Ave	Complete Streets	Town of Miami Lakes
1.4.9 Implement Complete Street (0.53 miles) at Main St. East from M. Lakeway N to NW57Ct aka. NW 151&153 (Lakewalk)	NW 57th Ct & Miami Lakes Drive	Complete Streets	Town of Miami Lakes
1.4.10 Implement Complete Streets (0.36 miles) at NW 142nd St from NW57th Av to NW60th Avenue	NW 142nd St & NW 57th Av	Complete Streets	Town of Miami Lakes
1.4.11 Implement Completes Streets (0.74 miles) at Business Park West (NW79th Ct to NW146th St)	NW 79th Ct & 154th St	Complete Streets	Town of Miami Lakes
1.4.12 Implement Complete Streets (0.74 miles) Along NW 59th Avenue from NW167th St to NW 154st	NW 59th Av & NW 165th St	Complete Streets	Town of Miami Lakes
1.5.1 Construct Park & Ride Facility at NW154th St and NW77th Av.	NW 154th St & NW 77th Ave	Park & Ride	Town of Miami Lakes
1.9.2 Extend (bridge) South NW59th Ave to M.L Drive, Boat and Storage Yard	NW 59th Av & NW 151st St	Roadway Project	Town of Miami Lakes
	NW 59th Av & NW 154th St		
1.10.2 Build MDX Connection at NW67th Avenue	NW 67th Ave & NW 154th St	Partial Interchange	MDX
	Nw 67th Ave & Miami Lakeway S		
	NW 67th Ave & 138th St		
1.10.3 Build MDX Connection at NW87th Avenue		On Ramps	MDX

Miami Lakes Crosswalk Locations		
Intersection	**Crosswalks Location**	**Crosswalk Type**
Miami Lakes Dr & NW 57th Ct	North (E-W)	Standard
Miami Lakes Dr & NW 59th Ct	North (E-W)	Standard
Miami Lakes Dr & NW 60th Ave	South (E-W), East (N-S), West (N-S)	Standard
Miami Lakes Dr & Miami Lakeway N	South (E-W), East (N-S), West (N-S), North (E-W)	Ladder (S, E and W) and Standard (N)
Miami Lakes Dr & Egan Ln	South (E-W)	Standard
Miami Lakes Dr & Pent Pl	North (E-W)	Standard
Miami Lakes Dr & NW 6600 Block	East (N-S)	Standard
Miami Lakes Dr & NW 67th Ave	South (E-W), East (N-S), West (N-S), North (E-W)	Standard
Miami Lakes Dr & Mahogany Ct	South (E-W)	Standard
Miami Lakes Dr & Palmetto Palm Ave	South (E-W)	Standard
Miami Lakes Dr & Miami Lakeway N	West (N-S) and North (E-W)	Standard
Miami Lakes Dr & Holly Rd	South (E-W)	Standard
Miami Lakes Dr & Laurel Ln	South (E-W)	Standard
Miami Lakes Dr & Jacaranda Ln	South (E-W)	Standard
Miami Lakes Dr & Miami Lakeway S	South (E-W) and East (N-S)	Standard
Miami Lakes Dr & Fairway Dr	North (E-W)	Standard
Miami Lakes Dr & NW 77th Ave	South (E-W)	Standard
Miami Lakes Dr & NW 77th Ct	South (E-W), West (N-S), North (E-W)	Standard
Miami Lakes Dr & NW 79th Ave	South (E-W) and West (N-S)	Standard
Miami Lakes Dr & NW 79th Ct	South (E-W)	Standard
Miami Lakes Dr & NW 82nd Ave	South (E-W), East (N-S), West (N-S), North (E-W)	Standard
Miami Lakes Dr & NW 83rd Ave	North (E-W)	Standard
Miami Lakes Dr & NW 87th Ave	South (E-W), East (N-S), West (N-S), North (E-W)	Ladder
NW 67th Ave and Crooked Palm Terr	West (N-S)	Standard
NW 67th Ave and Lake Patricia Dr	East (N-S)	Standard
NW 67th Ave and White Oak Dr	West (N-S)	Standard
NW 67th Ave and Miami Lakeway S	South (E-W), East (N-S), West (N-S), North (E-W)	Ladder
NW 67th Ave and Eagle Nest Ln	West (N-S)	Standard
NW 67th Ave and New Barn Rd	East (N-S) and West (N-S)	Standard (W) and Continental (E)
NW 67th Ave and Main St	South (E-W), East (N-S), West (N-S), North (E-W)	Ladder (N and S) and Solid/Brick (E and W)
NW 67th Ave and New Barn Rd	East (N-S) and West (N-S)	Standard
NW 67th Ave and Bull Run Rd	West (N-S)	Standard
NW 67th Ave and Miami Lakeway N	South (E-W), East (N-S), West (N-S), North (E-W)	Ladder
NW 67th Ave and Kingsmoor Way	West (N-S)	Standard
NW 67th Ave and Lochness Dr	West (N-S)	Standard
NW 67th Ave and Windmill Gate Rd	South (E-W) and East (N-S) and North (E-W)	Standard
NW 67th Ave and NW 167th St	East (N-S) and West (N-S)	Standard (W) and Ladder (E)
NW 60th Ave and NW 139th St	West (N-S) and North (E-W)	Ladder
NW 60th Ave and Pedestrian Crossing	North (E-W)	Continental
Main St and Bull Run Rd	South (E-W), East (N-S), West (N-S), North (E-W)	Solid/Brick
Main St and New Bard Rd	East (N-S) and West (N-S)	Solid/Brick
Cow Pen Rd and Simmons St	East (N-S)	Standard
Bull Run Rd and Meadow Walk	West (N-S)	Standard
Miami Lakeway N and Fairway Dr	West (N-S)	Standard
Miami Lakeway N and Turnberry Dr	West (N-S)	Standard
Miami Lakeway N and NW 64th Avenue	North (E-W)	Continental
Miami Lakeway N and Durnford Dr	West (N-S)	Standard
Miami Lakeway N and Simmons St	West (N-S)	Standard
Miami Lakeway N and NW 153rd St	East (N-S)	Standard
Miami Lakeway N and Egan Ln	West (N-S)	Standard
Miami Lakeway S and Tabebuia Ln	North (E-W)	Solid/Brick
Miami Lakeway S and Mahogany Ct	North (E-W)	Solid/Brick
Miami Lakeway S and Silver Oak Dr	South (E-W)	Solid/Brick
Miami Lakeway S and Marginada Ct	South (E-W)	Solid/Brick
Miami Lakeway S and Cypress Ct	South (E-W)	Solid/Brick
Miami Lakeway S and Leaning Pine Dr	South (E-W)	Solid/Brick
Miami Lakeway S and Dade Pine Ave	North (E-W)	Solid/Brick
Miami Lakeway S and Poinciana Ct	South (E-W)	Solid/Brick
Miami Lakeway S and Rosewood Rd	East (N-S)	Solid/Brick
Miami Lakeway S and Twin Sabal Dr	West (N-S)	Solid/Brick
Miami Lakeway S and Big Cypress Dr	West (N-S)	Standard
Lochness Dr and Stonhaven Rd	North (E-W)	Standard
Lochness Dr and Stonhaven Rd	East (N-S) and West (N-S)	Continental
Gleneagle Dr an E Troon Cir	South (E-W)	Standard
Rosewood Rd and Dade Pine Ct	South (E-W)	Standard
Dade Pine Ave and Dade Pine Ct	North (E-W)	Standard
Maple Terr and Cedar Ct	West (N-S)	Standard
Maple Terr and Willow Ln	West (N-S)	Standard
Maple Terr and Palmetto Palm Ave	East (N-S)	Standard
Maple Terr and Mahogany Ct	North (E-W)	Standard
Palmetto Palm Ave and Bottle Brush Dr	West (N-S)	Standard
Palmetto Palm Ave and Bottle Brush Dr	West (N-S)	Standard
Palmetto Palm Ave and Cassia Pl	West (N-S)	Standard
Palmetto Palm Ave and Queen Palm Terr	West (N-S)	Standard
Mahogany Ct and Parkinsonia Dr	East (N-S)	Standard
Mahogany Ct and Parkinsonia Dr	East (N-S)	Standard
Mahogany Ct and Orchid Dr	East (N-S)	Standard
Mahogany Ct and Orchid Dr	East (N-S)	Standard
Mahogany Ct and Willow Ln	West (N-S)	Standard
Orchid Drive and Tabebuia Ln	West (N-S)	Standard
Balgowan Rd and Montrose Rd	East (N-S) and North (E-W)	Standard
NW 87th Ave and Commerce Way	East (N-S) and North (E-W)	Standard
NW 87th Ave and NW 142nd St	West (N-S)	Standard
NW 87th Ave and NW 142nd Ln	West (N-S)	Standard
NW 87th Ave and NW 143rd St	West (N-S)	Standard
NW 87th Ave and NW 144th Terr	West (N-S)	Standard
NW 87th Ave and NW 146th St	West (N-S) and South (E-W)	Standard
NW 87th Ave and NW 146th Ln	West (N-S)	Standard
NW 87th Ave and NW 147th Ln	West (N-S)	Standard
NW 87th Ave and NW 148th Terr	West (N-S)	Standard
NW 87th Ave and NW 149th Terr	West (N-S)	Standard
NW 87th Ave and NW 150th Terr	West (N-S)	Standard
NW 87th Ave and NW 151st Terr	West (N-S)	Standard
NW 87th Ave and NW 152nd Terr	West (N-S)	Standard
NW 87th Ave and NW 153rd Terr	West (N-S)	Standard
NW 89th Ave and NW 143rd St	East (N-S) and South (E-W)	Ladder
NW 89th Ave and NW 144th St	East (N-S)	Continental
NW 89th Ave and NW 144th Terr	West (N-S) and South (E-W)	Ladder
NW 89th Ave and NW 145th St	East (N-S)	Ladder
NW 89th Ave and NW 145th Ln	East (N-S)	Ladder
NW 89th Ave and NW 146th St	East (N-S)	Standard
NW 89th Ave and NW 146th Terr	West (N-S)	Ladder
NW 89th Ave and NW 147th Terr	West (N-S)	Standard
NW 89th Ave and NW 147th Ln	East (N-S)	Standard
NW 89th Ave and NW 148th St	West (N-S)	Standard
NW 89th Ave and NW 148th Terr	East (N-S) and West (N-S)	Standard
NW 89th Ave and NW 149th Terr	East (N-S) and West (N-S)	Standard
NW 89th Ave and NW 150th St	East (N-S)	Standard
NW 89th Ave and NW 150th Terr	West (N-S)	Standard
NW 89th Ave and NW 151st St	East (N-S)	Standard
NW 89th Ave and NW 151st Terr	East (N-S)	Standard
NW 89th Ave and NW 152nd Terr	East (N-S)	Standard
NW 89th Ave and NW 153rd Terr	East (N-S) and West (N-S)	Standard
Commerce Way and South of NW 80th Ave	Midblock	Ladder
NW 82nd Ave and NW 155th St	East (N-S)	Solid/Brick
NW 82nd Ave and NW 157th Terr	East (N-S)	Standard
NW 82nd Ave and NW 158th Terr	West (N-S)	Standard
NW 82nd Ave and NW 160th St	East (N-S)	Standard
NW 82nd Ave and NW 161st Terr	West (N-S)	Standard
NW 82nd Ave and NW 162nd St	North (E-W) and West (N-S)	Standard
NW 82nd Ave and NW 164th Terr	East (N-S)	Standard
NW 82nd Ave and NW 165th Terr	West (N-S)	Standard
NW 82nd Ave and NW 166th St	East (N-S)	Standard
NW 82nd Ave and NW 170th St	South (E-W), East (N-S), West (N-S), North (E-W)	Standard
NW 79th Ave and NW 155th St	South (E-W)	Ladder
NW 79th Ave and NW 159th Terr	East (N-S) and North (E-W)	Ladder
NW 79th Ave and NW 160th Terr	East (N-S) and West (N-S)	Standard

Miami Lakes Traffic Signal System Locations	
Intersection	**Type of Signal System**
Miami Lakes Dr & NW 60th Ave	3 Mast Arms, 2 Signal Heads each
Miami Lakes Dr & Miami Lakeway N	4 Mast Arms 2 Signal Heads each
Miami Lakes Dr & NW 6600 Block	2 Mast Arms, 2 Signal Heads South side and 4 Signal Heads on East side
Miami Lakes Dr & NW 67th Ave	4 Mast Arms, 3 Signal Heads South side, East side and West side and 2 Signal Heads on the North side
Miami Lakes Dr & Miami Lakeway N	3 Mast Arms, 2 Signal Heads South side and 3 Signal Heads on East side and West side
Miami Lakes Dr & NW 77th Ct	4 Mast Arms, 2 Signal Heads on North side, 3 Signal Heads on East and West side and 4 Signal Heads on South Side
Miami Lakes Dr & NW 79th Ave	4 Mast Arms, 2 Signal Heads each
Miami Lakes Dr & NW 82nd Ave	4 Mast Arms, 2 Signal Heads on North and South side and 3 Signal Heads on East and West side
Miami Lakes Dr & NW 87th Ave	4 Mast Arms, 2 Signal Heads on South, East and West side and 3 Signal Heads on North side
NW 67th Ave and Miami Lakeway S	Overhead on Span Wire, 2 Signal Heads on each side
NW 67th Ave and Main St	4 Mast Arms, 2 Signal Heads Each
NW 67th Ave and Miami Lakeway N	Overhead on Span Wire, 2 Signal Heads on each side
NW 67th Ave and Windmill Gate Rd	Overhead on Span Wire, 2 Signal Heads on North and West side and 3 Signal Heads on South side
NW 67th Ave and NW 167th St	3 Mast Arms, 2 Signal Heads on North Side, 3 Signal Heads on East Side and 4 Signal Heads on South Side
NW 60th Ave and Pedestrian Crossing	1 Mast Arm, 4 Signal Heads (2 facing each side)
NW 87th Ave and Commerce Way	3 Mast Arms, 2 Signal Heads each
NW 87th Ave and NW 146th St	3 Mast Arms, 2 Signal Heads each
NW 82nd Ave and NW 162nd St	2 Mast Arms, 2 Signal Heads each and 2 Single Posts with a Signal Head each
NW 82nd Ave and NW 170th St	4 Mast Arms, 2 Signal Heads each

Miami Lakes Adaptive Traffic Signal System Locations	
Location	**Type of Adaptive System**
NW 154th St & NW 87 Ave	Econolite BlueTOAD
NW 154th St & NW 82nd Ave	Econolite BlueTOAD
NW 154th St & NW 79th Ave	Econolite BlueTOAD
NW 154th ST & NW 77th CT	Econolite BlueTOAD
NW 154th ST & NW 77th Ave	Econolite BlueTOAD
NW 154th St & SR 826 Interchange	Econolite BlueTOAD

Miami Lakes CCTV Camera Inventory List		
Type of CCTV Camera System	**Location**	**Number of Cameras**
HDTVI BULLET, HD (1280x720), 2.8-12mm VF LENS	Mary Collins	4
HDTVI BULLET, HD (1280x720), 2.8-12mm VF LENS	Youth Center	8
HDTVI BULLET, HD (1280x720), 2.8-12mm VF LENS	Optimist Park	6
HDTVI BULLET, HD (1280x720), 2.8-12mm VF LENS	Roberto Alonso Center	8
CT Model 1616C2 Aluminium CCTV Termination Enclosure	NW 154 & NW 87 Ave	1
CT Model 1616C2 Aluminium CCTV Termination Enclosure	NW 154 & NW 82nd Ave	1
CT Model 1616C2 Aluminium CCTV Termination Enclosure	NW 154th St & NW 79th Ave	1
CT Model 1616C2 Aluminium CCTV Termination Enclosure	NW 154th St & NW 77th CT	1
CT Model 1616C2 Aluminium CCTV Termination Enclosure	NW 154th St & NW 77th Ave	1
CT Model 1616C2 Aluminium CCTV Termination Enclosure	NW 154th ST & SR 286 Palmetto Interchange	1
Miami Lakes LPR Camera Locations		
Locations		**Number of Cameras**
NW 167 St & NW 67 Ave		(3) NB, (2) SB cameras
NW 150 St & NW 157 Ave		(2) EB, (2) WB cameras
NW 138 St & NW 67 Ave		(2) NB, (2) SB cameras
NW 154 St & NW 77 Ave		(1) NB (2 lanes with single cam), (2) SB, (2) WB cameras
SR 826 South & NW 154 St		(3) WB cameras
NW 77 Ct & NW 154 St		(2) EB cameras
NW 170 St & NW 87 Ave		(2) NB, (2) SB cameras
NW140 St & NW 87 Ave		(2) NB, (2) SB, (1) WB cameras

Notes: LPR Cameras will be purchased over a 3 year period and the Town has allocated about $200K/year for purchasing the equipment.

Miami Lakes EV Charger Locations			
Type of Charger	**Location**	**Accessibility**	**Ownership**
110-volt outlet (not sure the exact station)	Royal Oaks Park	Private	TOML
JuiceBox (input: 100-250VAC, 50-60HZ)	Miami Lakes Optimist	Private	TOML
ChargePoint	Main Street Parking Garage	Public	Grahams

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Town Manager, Edward Pidermann**

Subject: **Solar Energy Systems**

Date: **October 8, 2019**

Recommendations:

Staff recommends approval of the ordinance creating Section 13-1702 as it relates to solar energy systems within the Town.

Background:

On July 17, 2018, Town Council directed the Town Manager to explore the possibility of an ordinance to provide for regulations that address solar energy systems and could potentially result in a Solsmart designation for the Town. SolSmart is a national designation program created to recognize communities that have taken key steps to address local barriers to solar energy and foster the growth of mature local solar markets. Solsmart is funded by the U.S. Department of Energy's Solar Energy Technologies Office (SETO). It provides no-cost technical assistance from a team of national experts to evaluate local government programs and practices that impact solar markets and to find opportunities for improvement. It also seeks to increase installed solar capacity by reducing the "soft costs" of solar such as permitting, financing, and installation, thus making it easier for local residents and businesses to acquire solar.

Solsmart provides a three-tiered designation system based the number of points accumulated through improvements to the code and permitting procedures:

- Bronze designation requires that a community meet the overall program requirements, earn 20 points each in the permitting, planning, zoning, and development regulation categories, and achieve an additional 20 points across all remaining categories.
- Silver designation requires that a community must first achieve the requirements for SolSmart Bronze, then meet additional requirements in planning, zoning and development regulations and inspection procedures, and earn 100 points total across all categories.
- Gold designation requires that a community must first achieve the requirements for SolSmart Silver, then meet one additional requirement in permitting and achieve 200 points total across all categories.

On March 19, 2019 at a duly advertised workshop, the Town Council directed staff to take the steps necessary to achieve Gold Designation.

On July 24, 2019 the Planning and Zoning Board, acting in its capacity as the Local Planning Agency voted to recommend approval of the ordinance, with the recommendation to remove pole mounted systems from the list of solar energy devices that are allowed as of right, or consider further limiting their height.

On August 20, 2019, Staff was contacted by Solmart staff with the announcement that the Town had accumulated 155 points, enough to obtain Bronze designation, as well as a Special Recognition Award for earning over 60% of the available points in the Inspection criteria category. On July 24, 2019 The Planning Board heard the ordinance in its current form and recommended approval.

On September 10, 2019 The Town Council voted to approve the ordinance on first reading.

Attachments:

Ordinance
Staff report
Attachment 1 Presentation
Attachment 2 Solsmart review
Attachment 3 Prerequisite Summary
Attachment 4 Credit Summary

ORDINANCE NO. 19-___

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, RELATING TO SOLAR ENERGY SYSTEMS; AMENDING CHAPTER 13, "LAND DEVELOPMENT CODE", AT ARTICLE V, "ALLOWABLE ENCROACHMENTS INTO THE REQUIRED YARDS AND EXCEPTIONS TO THE MAXIMUM PERMITTED HEIGHTS", AT ARTICLE VI, "SUPPLEMENTARY REGULATIONS", AND AT ARTICLE VII, "ENVIRONMENTAL REGULATIONS" PROVIDING FOR FINDINGS OF FACT, INTENT AND PURPOSE; PROVIDING FOR REGULATIONS; PROVIDING FOR REPEAL OF LAWS IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR INCLUSION INTO THE CODE; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, through its strategic plan "Imagine Miami Lakes 2025" the Town of Miami Lakes has expressed a desire to embrace new technologies sustainable practices and;

WHEREAS, the SolSmart program is a national designation program for solar that is funded by the Department of Energy SunShot Initiative to recognize communities that have taken key steps to address local barriers to solar energy; and

WHEREAS, the new regulations provide required standards and clear approval processes required for differently sized solar systems; and

WHEREAS, on March 19, 2019, at a publicly advertised workshop, staff presented different Solsmart designation options to the Town Council, upon which the Council considered and expressed its desire to obtain Gold designation; and

WHEREAS, as of August 20, 2019 the Town of Miami Lakes has been determined to be eligible for Bronze designation by the Solsmart Team, including a Special Recognition Award for obtaining over 60 percent of the points available in the inspection section.

WHEREAS, the amendment at Exhibit "A" is reflective of the Town Council's desire as expressed at the March 19, 2019, workshop; and

WHEREAS, the Administrative Official reviewed the proposed amendment to the

LDRs and recommends approval, as set forth in the Staff Analysis and Recommendation dated July 24, 2019 and incorporated into this Ordinance by reference; and

WHEREAS, the Town Council appointed the Planning and Zoning Board as the Local Planning Agency (LPA) for the Town pursuant to Section 163.3174, Florida Statutes; and

WHEREAS, on July 24, 2019, after conducting a properly noticed public hearing, the Planning and Zoning Board, acting in its capacity as the Local Planning Agency, acted in accordance with state law, and in specific compliance with Section 163.3174, Florida Statutes and reviewed the proposed amendment and recommended approval to the Miami Lakes Town Council; and

WHEREAS, on September 10, 2019, after conducting a properly noticed public hearing and considering the recommendations of the public, the Local Planning Agency, and the Administrative Official, the Town Council moved the proposed amendment on first reading for consideration of adoption; and

WHEREAS, The Town Council finds that the proposed amendment to is consistent with the Town of Miami Lakes Comprehensive Plan and the criteria for evaluation of an amendment to the LDRs found in Subsection 13-306(b) of the Town Code; and

WHEREAS, on _____, after conducting a properly noticed public hearing and considering the recommendations of the public, the Local Planning Agency, and the Administrative Official, the Town Council finds it in the public interest to adopt the proposed ordinance.

NOW, THEREFORE, THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, HEREBY ORDAINS AS FOLLOWS.

Section 1. Recitals. The foregoing recitals are true and correct and are incorporated herein by this reference.

Section 2. Findings. The Town Council finds, pursuant to Subsection 13-306(b) of the Town Code, that the proposed amendment is consistent with the Town of Miami Lakes Comprehensive Plan and the criteria for evaluation of an amendment to the Land Development Code found at Subsection 13-306(b) of the Town Code as provided for in the Staff Recommendation and Analysis Report.

Section 3. Approval. The Town Council hereby adopts the amendment as provided at Exhibit "A"

Section 4. Repeal of Conflicting Provisions. All provisions of the Code of the Town of Miami Lakes that are in conflict with this Ordinance are hereby repealed.

Section 5. Severability. The provisions of this Ordinance are declared to be severable and if any section, sentence, clause or phrase of this Ordinance shall for any reason be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses, and phrases of this ordinance but they shall remain in effect, it being the legislative intent that this Ordinance shall stand notwithstanding the invalidity of any part.

Section 6. Inclusion in the Town Code. It is the intention of the Town Council, and it is hereby ordained, that the provisions of this Ordinance shall be included in the Town Code.

Section 7. Effective date. This Ordinance shall become effective immediately upon adoption.

FIRST READING

The foregoing ordinance was offered by Councilmember _____ who moved its adoption on first reading. The motion was seconded by Councilmember _____ and upon being put to a vote, the vote was as follows:

Mayor Manny Cid	_____
Vice Mayor Nelson Rodriguez	_____
Councilmember Carlos O. Alvarez	_____
Councilmember Luis Collazo	_____
Councilmember Joshua Dieguez	_____
Councilmember Jeffrey Rodriguez	_____
Councilmember Marilyn Ruano	_____

Passed on first reading this _____ day of _____, 2019.

[THIS SPACE INTENTIALLY LEFT BLANK]

SECOND READING

The foregoing ordinance was offered by Councilmember _____ who moved its adoption on second reading. The motion was seconded by Councilmember _____ and upon being put to a vote, the vote was as follows:

Mayor Manny Cid	_____
Vice Mayor Nelson Rodriguez	_____
Councilmember Carlos O. Alvarez	_____
Councilmember Luis Collazo	_____
Councilmember Joshua Dieguez	_____
Councilmember Jeffrey Rodriguez	_____
Councilmember Marilyn Ruano	_____

Passed and adopted on second reading this _____ day of _____, 2019.

_____

Manny Cid
Mayor

Attest:

_____

Gina M. Inguanzo
Town Clerk

Approved as to form and legal sufficiency:

_____

Raul Gastesi, Jr.
Gastesi & Associates, P.A.
Town Attorney

EXHIBIT A

Chapter 13 - LAND DEVELOPMENT CODE

*** * ***

ARTICLE IV. - ZONING DISTRICT REGULATIONS

*** * ***

DIVISION 2. - SINGLE-FAMILY AND TWO-FAMILY RESIDENTIAL DISTRICTS RU-1, RU-1A, RU-1B, RU-1Z AND RU-2

*** * ***

Sec. 13-425. - Accessory uses.

*** * ***

(4) Accessory use solar energy systems as defined and subject to Sec. 13-1702.

*** * ***

DIVISION 3. - RU-TH TOWNHOUSE DISTRICT

*** * ***

Sec. 13-443. - Uses permitted.

*** * ***

(3) Accessory use solar energy systems as defined and subject to Sec. 13-1702.

*** * ***

DIVISION 4. - RM-13 LOW DENSITY RESIDENTIAL DISTRICT (RU-3M)

*** * ***

Sec. 13-464. - Accessory uses.

The accessory uses in the RM-13 District are those uses customarily associated with multifamily residential buildings and are for use of the residents only such as, but not limited to, decks, swimming pools, spas, tennis courts, recreational amenities, ornamental features, storage structures, noncommercial boat piers or docks, accessory use solar energy systems, etc. Accessory uses shall be located on the same lot as the main use. Accessory use solar energy systems shall comply with Sec. 13-1702.

*** * ***

DIVISION 5. - RM-23 LOW MEDIUM DENSITY RESIDENTIAL DISTRICT (RU-4L)

*** * ***

Sec. 13-484. - Accessory uses.

The accessory uses in the RM-23 District are those uses customarily associated with multifamily residential buildings and are for use of the residents only such as, but not limited to, decks, swimming pools, spas, tennis courts, recreational amenities, ornamental features, storage structures, noncommercial boat piers or docks, accessory use solar energy systems, etc. Accessory uses shall be located on the same lot as the main use. Accessory use solar energy systems shall comply with Sec. 13-1702. In addition, the following accessory uses are permitted:

*** * ***

DIVISION 6. - RM-36 MEDIUM DENSITY RESIDENTIAL DISTRICT (RU-4M)

*** * ***

Sec. 13-504. - Accessory uses.

The accessory uses in the RM-36 District are those uses customarily associated with multifamily residential buildings and are for use of the residents only such as, but not limited to, decks, swimming pools, spas, tennis courts, recreational amenities, ornamental features, storage structures, noncommercial boat piers or docks, accessory use solar energy systems, etc. Accessory uses shall be located on the same lot as the main use. Accessory use solar energy systems shall comply with Sec. 13-1702. In addition, the following accessory uses are permitted:

*** * ***

DIVISION 7. - RM-50 HIGH DENSITY RESIDENTIAL DISTRICT (RU-4)

* * *

Sec. 13-524. - Accessory uses.

The accessory uses in the RM-50 District are those uses customarily associated with multifamily residential buildings and are for use of the residents only such as, but not limited to, decks, swimming pools, spas, tennis courts, recreational amenities, ornamental features, storage structures, noncommercial boat piers or docks, accessory use solar energy systems, etc. Accessory uses shall be located on the same lot as the main use. Accessory use solar energy systems shall comply with Sec. 13-1702. In addition, the following accessory uses are permitted:

* * *

DIVISION 20. - BUSINESS, COMMERCIAL AND INDUSTRIAL DISTRICT MASTER LIST

* * *

Sec. 13-748. - Business, Commercial and Industrial Use Master List.

* * *

Use	RO-13	RO-50	BU-1	BU-1A	BU-2	BU-3	IU-1	IU-2	IU-3	IU-C	TC	*Add'l Regs
Solar energy systems, accessory use	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	§ 13-1702
Solar energy systems, primary use							P*	P*	P*	P*		§ 13-1702

* * *

Additions to the text are shown in underlined; deletions from the text are shown in ~~strikethrough~~.
Omitted portions of this ordinance are shown as "* * *".

ARTICLE VII. – ALTERNATIVE ENERGY SYSTEMS AND ENVIRONMENTAL REGULATIONS

* * *

Sec. 13-1702. – Solar energy systems

(a) *Definitions:* The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Accessory Use Solar energy system means a solar energy system with the legally permitted use of providing for the collection, storage, and distribution of solar energy for the use or benefit of the primary use onsite. The solar energy system should be sized such that the energy produced is reasonably equivalent to the onsite use or less; any selling of excess energy is incidental and in accordance with state law and utility net metering policy.

Ground-mounted Solar energy system means a solar energy system where the solar collectors are arranged on one or more racking systems structurally anchored to the ground by foundations or mounted on ballasted footings where appropriate.

Pole-mounted Solar energy system means a solar energy system where the solar collectors are arranged on a racking system elevated from and structurally attached to the ground by a pole anchored directly into the ground.

Primary Use Solar energy system means a solar energy system with the legally permitted use of providing for the collection, storage, and distribution of solar energy for space heating or cooling, electricity generation, or water heating for use primarily offsite.

Solar collector means a component of a solar energy system with the primary purpose of transforming solar radiant energy into thermal, mechanical, chemical, or electrical energy.

(b) Solar energy systems, accessory use.

(1) Accessory use solar energy systems are permitted by right in all zoning districts and shall comply with the conditions established in this section, all applicable development standards for each zoning district, and permitting requirements.

(2) Prior to issuing permits, the administrative official may request that the property owner provide written certification that the energy produced by the ***solar*** energy system is reasonably equivalent to the electrical usage of the property and any selling of excess energy is incidental. This provision shall not have the effect of

prohibiting the installation of ***solar*** energy systems on properties without historical usage data, in accordance with F.S. § 163.04.

(3) Rooftop systems.

a. Sloped roofs—Height. On sloped roofs, the highest point of the ***solar*** collectors shall not exceed the highest rooftop peak and must be installed parallel to the roof surfaces to which they are attached provided such location does not impair the effective operation of the ***solar*** collectors. ***Solar*** collectors may be mounted up to one foot above roof surfaces to which they are attached.

b. Flat roofs—Height. On flat roofs, the highest point of the system shall be permitted to exceed the district's height limit by a maximum of six feet above the rooftop to which it is attached.

(4) Ground-mounted systems.

a. *Ground-mounted* ***solar*** *energy systems* shall not exceed the lesser of 25 feet or the height of the primary structure.

b. *Ground-mounted* ***solar*** *energy systems* shall not be located closer than six feet from the primary structure, unless the system is architecturally integrated into the primary structure or form part of another accessory structure, including, but not limited to, gazebos, awnings, carports, shade structures, or other such structures as determined by the planning and zoning administrator.

c. *Screening and fencing*. Systems over six feet shall be required to be either screened with an opaque fence, or preferably, integrated into the main structure or an accessory structure such as a gazebo, carport or shade structure. Systems under six feet shall be screened with landscape, opaque fence or combination. The planning and zoning administrator may recommend additional or alternative specific types of fencing, screening, and/or walls appropriate to the site and surrounding land uses.

d. Ground-mounted systems may be sited in either side, corner, or rear yard areas following applicable setbacks for accessory structures. Ground-mounted systems may be sited in front yards only if the system is architecturally integrated into the primary structure, including, but not limited to, awnings, carports, shade structures, or other such structures as determined by the planning and zoning administrator.

(5) Pole-mounted systems shall be permitted by-right in each zoning district, subject to all of the requirements for ground-mounted ***solar*** energy systems except provisions pertaining to screening and fencing.

(c) *Primary use solar energy systems are permitted only in Industrial (IU-C), Governmental Facilities (GF) or Interim Districts (GU).*

(d) Decommissioning. The administrative official may request proof of operation from the property owner, due within 14 days of the request. Any system which becomes inoperable shall at the owner's expense be made operational or shall be removed from the property within 90 days of the date the system became inoperable.

Planning Office
6601 Main Street • Miami Lakes, Florida 33014
Office: (305) 364-6100 • Website: www.miamilakes-fl.gov

Staff Analysis and Recommendation

To: **Honorable Mayor and Council Members**

From: **Edward Pidermann, Town Manager**

Subject: **Solar Energy Systems**

Date: **October 8, 2019**

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, RELATING TO SOLAR ENERGY SYSTEMS; AMENDING CHAPTER 13, "LAND DEVELOPMENT CODE", AT ARTICLE V, "ALLOWABLE ENCROACHMENTS INTO THE REQUIRED YARDS AND EXCEPTIONS TO THE MAXIMUM PERMITTED HEIGHTS", AT ARTICLE VI, "SUPPLEMENTARY REGULATIONS", AND AT ARTICLE VII, "ENVIRONMENTAL REGULATIONS" PROVIDING FOR FINDINGS OF FACT, INTENT AND PURPOSE; PROVIDING FOR REGULATIONS; PROVIDING FOR REPEAL OF LAWS IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR INCLUSION INTO THE CODE; AND PROVIDING FOR AN EFFECTIVE DATE.

A. BACKGROUND

On July 17, 2018, Town Council directed the Town Manager to explore the possibility of an ordinance to provide for regulations that address solar energy systems and could potentially result in a Solsmart designation for the Town. SolSmart is a national designation program created to recognize communities that have taken key steps to address local barriers to solar energy and foster the growth of mature local solar markets. Solsmart is funded by the U.S. Department of Energy's Solar Energy Technologies Office (SETO). It provides no-cost technical assistance from a team of national experts to evaluate local government programs and practices that impact solar markets and to find opportunities for improvement. It also seeks to increase installed solar capacity by reducing the "soft costs" of solar such as permitting, financing, and installation, thus making it easier for local residents and businesses to acquire solar.
Solsmart provides a three-tiered designation system based the number of points accumulated through improvements to the code and permitting procedures:

- *Bronze designation* requires that a community meet the overall program requirements, earn 20 points each in the permitting, planning, zoning, and development regulation categories, and achieve an additional 20 points across all remaining categories.
- *Silver designation* requires that a community must first achieve the requirements for SolSmart Bronze, then meet additional requirements in planning, zoning and development regulations and inspection procedures, and earn 100 points total across all categories.
- *Gold designation* requires that a community must first achieve the requirements for SolSmart Silver, then meet one additional requirement in permitting and achieve 200 points total across all categories.

On March 19, 2019 at a duly advertised workshop, the Town Council directed staff to take the steps necessary to achieve Gold Designation.

On July 24, 2019 the Planning and Zoning Board, acting in its capacity as the Local Planning Agency voted to recommend approval of the ordinance, with the recommendation to remove pole mounted systems from the list of solar energy devices that are allowed as of right, or consider further limiting their height.

On August 20, 2019, Staff was contacted by Solmart staff with the announcement that the Town had accumulated 155 points, enough to obtain Bronze designation, as well as a Special Recognition Award for earning over 60% of the available points in the Inspection criteria category.

On September 10, 2019 The Town Council voted to approve the ordinance on first reading.

B. PROPOSED CHANGES

The following described elements are presented in the same order that they appear in the proposed ordinance.

13-1702(a) – Definitions. This section provides the necessary definitions of terms applicable to the regulation of soar energy systems.

13-1702(b) – Solar Energy Systems, Accessory use. This section provides regulations for solar energy systems whose purpose is to collect solar energy to be used on site.

13-1702(c) – Primary use solar energy systems. Stipulates that only industrial districts, governmental facilities and Interim Use districts allow for stand alone solar energy systems, not associated or incidental to another permitted use.

13-1702(d) – Decommissioning. Provides for the removal of any inoperable system.

C. STAFF RECOMMENDATION

Based on the analysis provided below and other factors contained in this report, Staff recommends approval of the ordinance creating Section 13-1702 as it relates to solar energy systems within the Town.

E. ANALYSIS

The Land Development Code provides that all proposed amendments to the LDC shall be evaluated by the Administrative Official, the Local Planning Agency and the Town Council, and that, in evaluating the proposed amendment, the criteria in Subsection 13-306(b) shall be considered. All portions of this report are hereby incorporated into all portions of this analysis. The following is a staff analysis of the criteria as applied to this ordinance.

1. Whether the proposal is consistent with the Comprehensive Plan, including the adopted infrastructure minimum levels of service standards and the concurrency management program.

Analysis: See Sections "A", Background; and "B", Proposed Changes, of this report. The ordinance provides for regulations to properly allow solar energy systems in various capacities. As proposed, and presented in Section "A", and "B", above, the amendment conforms to the following policies of CDMP below.

Policy 1.2.11: Encourage the use of energy-saving materials and techniques in the construction of public and private buildings in the Town.

Policy 1.5.5: Retain and strengthen regulations protecting, air quality and water quality for traditional and new alternative sources by implementing the standards for these resources established by applicable local, regional, state and federal environmental agencies.

Finding: Complies

2. Whether the proposal is in conformance with all applicable requirements of this Code of Ordinances, including this chapter.

Analysis: See Sections "A", Background; and "B", Proposed Changes, of this report. The amendment provides for standards for installation of solar energy systems. In its current form the LDC lacks any definitions or mention of such systems. The proposed is in conformance with all other requirements of the LDC.

Finding: Complies.

3. Whether, and the extent to which, land use and development conditions have changed since the effective date of the existing regulations, and whether such changes support or work against the proposed change in land use policy.

Analysis See Sections "A", Background; and "B", Proposed Changes, of this report. Solar energy systems are becoming more and more efficient and affordable, and thus demand for installations is increasing. It is necessary for the LDC to address and regulate the installation of these systems.

Finding: Complies.

4. Whether, and the extent to which, the proposal would result in any incompatible land uses, considering the type and location of uses involved, the impact on adjacent or

neighboring properties, consistency with existing development, as well as compatibility with existing and proposed land use.

Analysis: See Sections "A", Background; and "B", Proposed Changes, of this report. solar systems are allowed only as accessory uses in most districts, where most incompatibilities could result. Solar energy systems as a primary use are only proposed to be allowed in districts that would allow other similar uses that generate energy.

Finding: Complies.

5. **Whether, and the extent to which, the proposal would result in demands on transportation systems, public facilities and services, exceeding the capacity of such facilities and services, existing or programmed, including schools, transportation, water and wastewater services, solid waste disposal, drainage, water supply, recreation, education, emergency services, and similar necessary facilities and services.**

Analysis: See Sections "A", Background; and "B", Proposed Changes, of this report. The proposed ordinance does not impact the above systems.

Finding: Complies.

6. **Whether, and the extent to which, the proposal would result in adverse impacts on the natural environment, including consideration of wetland protection, preservation of any groundwater aquifers, wildlife habitats, and vegetative communities.**

Analysis: See Sections "A", Background; and "B", Proposed Changes, of this report. The intent of the ordinance is to allow for and regulate the installation of Solar energy systems which would decrease reliance on other more polluting forms of energy. In so doing, the ordinance will have a net positive affect on the Town's natural environment.

Finding: Complies.

7. **Whether, and the extent to which, the proposal would adversely affect the property values in the affected area, or adversely affect the general welfare.**

Analysis: See Sections "A", Background; and "B", Proposed Changes, of this report. Solar energy systems add value to the properties that install them and as such, the proposed ordinance is in the interest of the general welfare of the Town and its residents.

Finding: Complies.

8. **Whether the proposal would result in an orderly and compatible land use pattern. Any positive and negative effects on such pattern shall be identified.**

Analysis: See Sections "A", Background; and "B", Proposed Changes; and Criteria 1, 2, and 4, of this report.

Finding: Complies.

9. **Whether the proposal would be in conflict with the public interest, and whether it is in harmony with the purpose and intent of this chapter.**

Analysis: See Sections "A", Background; and "B", Proposed Changes; and Criteria 1, 2, 4, 6, and 7 of this report.

Finding: Complies.

10. Other matters which the Local Planning Agency or the Town Council, in its legislative discretion, may deem appropriate.

Analysis: See all portions of this analysis. The Local Planning Agency and the Town Council may consider other appropriate factors to determine whether the proposed amendment is appropriate and consistent with the public interest.

Finding: As determined by the Town Council.

MIAMI LAKES
Growing Beautifully

SolSmart Program

- SolSmart is a **national designation program** created to **recognize communities** that have taken key steps to address local **barriers to solar energy** and foster the **growth of mature local solar markets**.

- Solsmart is **funded by the U.S. Department of Energy's Solar Energy Technologies Office (SETO).**
- It provides **no-cost technical assistance** from a team of national experts to evaluate local government programs and practices that impact solar markets **and to find opportunities for improvement.**
- It seeks to **increase installed solar capacity** by **reducing the "soft costs" of solar such as permitting, financing, and installation, thus** making it easier for local residents and businesses to acquire solar **.**

Solsmart BRONZE Designation

A community must meet the overall program requirements, earn 20 points each in the permitting, planning, zoning, and development regulation categories, and achieve an additional 20 points across all remaining categories.

Solsmart SILVER Designation

A community must first achieve the requirements for SolSmart Bronze, then meet additional requirements in planning, zoning and development regulations and inspection procedures, and earn 100 points total across all categories.

Solsmart GOLD Designation

A community must first achieve the requirements for SolSmart Silver, then meet one additional requirement in permitting and achieve 200 points total across all categories

- Cities that achieve any designation level will receive national recognition through the SolSmart website, media campaign mentions, and other means

Local SolSmart Communities

GOLD:

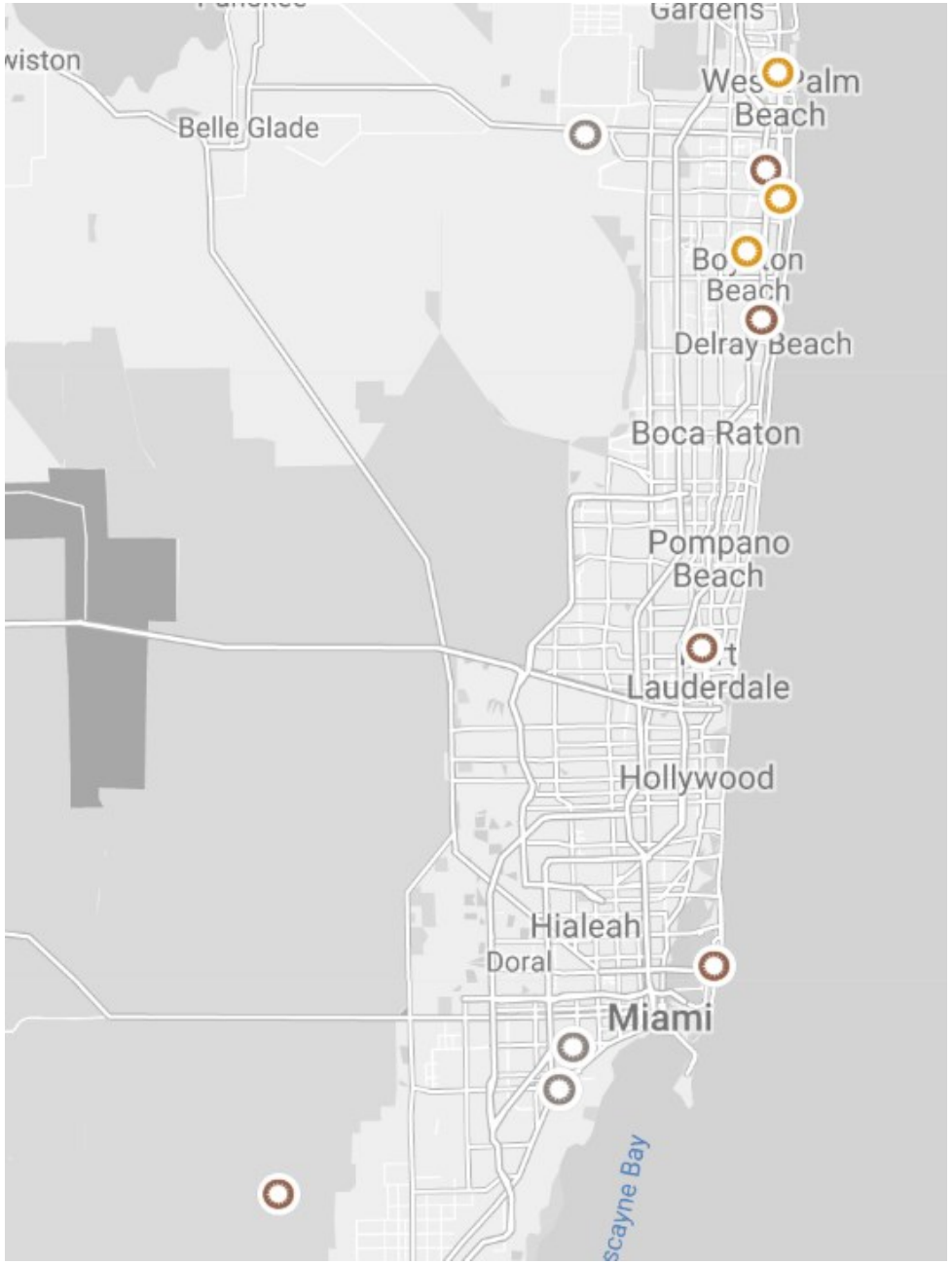
- West Palm Beach
- Lantana
- Boynton Beach

SILVER:

- Palm Beach County
- Pinecrest
- South Miami

BRONZE

- Miami-Dade County
- Broward County
- Miami Beach
- Delray Beach
- Lakeworth



Where We Are

- In the process of achieving Bronze
  - Fundamental Categories
    - 60 points for Permitting
    - 10 points for Planning and Zoning
  - Special Focus Categories
    - 60 points for Inspection
    - 20 points for Construction
    - 25 points for Community Engagement
    - 15 points for Market Development and Finance

MIAMI LAKES
Growing Beautifully

Beyond Bronze Designation

- Either Silver or Gold designation would require changes to the Zoning regulations including:
  - Adding definitions of Solar Energy systems, including rooftop, large medium and small scale systems Solar photovoltaic and solar hot water,
  - Adding solar as an accessory use in all districts,
  - Allowing solar equipment to be visible from the street,
  - Providing and allowance or exempting solar equipment from maximum height requirements,
  - Allowing areas covered by ground mounted systems to count as impervious area in lot coverage calculations,
  - Allowing ground mounted solar systems to meet setback requirement of other accessory structures,
  - Adding language to treat solar installations as mechanical equipment,

"Capture a Miami Lakes Moment" Photo Contest - 2nd Place - Daniel Rodriguez

ZONING REVIEW –Miami Lakes, FL

PZD-1a: Review zoning requirements and identify restrictions that intentionally or unintentionally prohibit solar PV development. Compile findings in a memo. (Required)

To assist your community, the national solar experts at SolSmart have conducted a review of your community's zoning code to assess possible barriers (i.e. height restrictions, set-back requirements, etc.) and gaps related to solar PV development. Below, please find the outcome of their review. By reading the narrative, reviewing the example code language provided, and signing the statement at the bottom of the page, your community will satisfy PZD-1a and be one step closer to achieving SolSmart designation.

Key Findings

Sec. 13-311(6) Design and Architectural Standards:

All buildings and associated landscaping should, to the greatest extent possible, be oriented and placed to minimize direct daily sunlight on walls and windows during the May—October period, and maximize solar exposure of the roof area year-round.

Sec. 13-1504 (3)

Central air conditioning or mechanical equipment located on the roof shall also be substantially screened from view at eye level (five feet six inches above grade) from adjoining properties. Roof-mounted solar powered water heaters, if possible, shall be installed so that they are not visible at eye level (five feet six inches above grade) from the front or side streets.

Sec. 13-869. - Accessory buildings and accessory structures.

"The maximum height of accessory buildings and accessory structures shall be one story, but in no case shall exceed 20 feet".

Sec. 13-871. - Lot coverage and maximum impervious area.

The maximum lot coverage of all buildings shall be 70 percent. The maximum impervious area on a site shall be 85 percent.

Sec. 13-869. - Accessory buildings and accessory structures.

Accessory buildings and accessory structures shall not be permitted in the front or street side setbacks, and shall be at least five feet from rear and interior side property lines.

Potential barriers in current code language

Section(s)	Element	Reviewer Comments	Example(s) from other codes	Priority level
	Ex. Setbacks, Height Restrictions, Definition, etc.			

Potential gaps in current code language

Element	Reviewer Comments	Example(s) from other codes	Priority level
Definition	The zoning code provides no definition for solar energy systems except solar water heater is mentioned under mechanical equipment. Some municipalities define different types of solar energy, so they can be treated differently, and so that requirements and applicability are clear. These include: ● Rooftop solar and ground mounted solar ● Large, medium and small-scale systems ● Solar photovoltaic and solar hot water	**More permissive option:** "Solar Energy System: An energy system that consists of one or more solar collection devices, solar energy related 'balance of system' equipment, and other associated infrastructure with the primary intention of generating electricity, storing electricity, or otherwise converting solar energy to a different form of energy. Solar energy systems may generate energy in excess of the energy requirements of a property if it is to be sold back to a public utility in accordance with the law." Renewable Energy Ordinance Framework DVRPC) (Section 2, p.9) **Less permissive option:** "Solar Energy System: An energy system which converts solar energy to usable thermal, mechanical, chemical, or electrical energy to meet all or a significant part of a structure's energy requirements." (Renewable Energy Ordinance Framework, DVRPC) (Section 2, p.9)	**High** (The definition forms the basis of understanding the solar ordinance.)
Accessory Use and Structures	Solar energy systems are not listed as a by right accessory use all in all districts in the list of general provisions applicable to all zones	**Option A:** Use tables listing different solar energy types as an accessory use in a major zoning districts with respective regulations.	**High (**Including solar energy systems in the list of permitted accessory uses and

		Model Zoning for the Regulation of Solar Energy Systems (p. 6, 7) **Refer to Appendix A below** **Option B:** "Solar Energy Systems as described in this Article are permitted in all zoning districts as an accessory use to a permitted principal use subject to the standards for accessory uses in the applicable zoning district and the specific criteria set forth in this article." (Renewable Energy Ordinance Framework**, DVRPC**) (Section 3, p. 10)	structures in all major districts may reduce system costs, expedite installations, and increase development locally.)
Height	Consider providing an allowance for or exempting solar energy systems from maximum building height in all districts.	**Most permissive option:** "For a roof-mounted system installed on a flat roof, the highest point of the system shall be permitted to exceed the district's height limit of up to fifteen (10) feet above the rooftop to which it is attached." (Renewable Energy Ordinance Framework, DVRPC) **Less permissive option:** Municipalities can be more restrictive than this, though it is not recommended that they limit to less than six (6) feet above the rooftop surface." (Renewable Energy Ordinance Framework, DVRPC)	**High** (Where there is not an allowance or exemption, and where buildings are constructed to a zoning district's max height, those buildings may be prevented from retrofitting solar.
Lot Coverage	The code does not have any allowances for ground mounted solar systems to be counted towards the pervious requirement. Sec. 13-871. - Lot coverage and maximum impervious area. The maximum impervious area on a site shall be 85 percent.	**Most permissive option:** "For purposes of determining compliance with building coverage standards of the applicable zoning district, the total horizontal projection area of all ground-mounted and freestanding solar collectors, including solar photovoltaic cells, panels, arrays, inverters, shall be considered pervious coverage so long as pervious conditions are maintained underneath the solar photovoltaic cells, panels, and arrays" (Renewable Energy Ordinance Framework, DVRPC) (Section 4, p.14)	**Medium** (Counting solar energy systems against lot coverage could limit the implementation of freestanding solar energy systems, especially if the lot in question is near the maximum lot coverage allowed under the code.)

		Less permissive option: "For purposes of determining compliance with building coverage standards of the applicable zoning district, the total horizontal projection area of all ground-mounted and freestanding solar collectors, including solar photovoltaic cells, panels, arrays, inverters and solar hot air or water collector devices, shall be considered ___% impervious coverage. For example, if the total horizontal projection of a solar energy system is 100 square feet, XX square feet shall count towards the impervious coverage standard. For a tracking array or other moveable system, the horizontal Medium (Counting solar energy systems against lot coverage could limit the implementation of freestanding solar energy systems, especially if the lot in question is near the maximum lot coverage allowed under the code.) projection area shall be calculated at a 33-degree tilt angle" (Renewable Energy Ordinance Framework, DVRPC) (Section 4, p.14	
Setbacks	Miami Lakes may want to include dimensional requirements for ground mounted systems such as setbacks from the property line. Sec. 13-869. -Accessory buildings and accessory structures. Accessory buildings and accessory structures shall not be permitted in the front or street side setbacks, and shall be at least five feet from rear and interior side property lines.	**More permissive:** "The location of the Ground-Mounted System shall meet all applicable accessory-use setback requirements of the district in which it is located." (Renewable Energy Ordinance Framework, DVRPC) (Section 4, p.13) **Less permissive option:** "All Ground-Mounted Systems shall be set back a distance of X feet from any property line in a residential zoning district or in conformance with the area and bulk standards for accessory	**Low** (Municipalities that treat ground-mounted systems as accessory use structures (this is how they may be permitted) can use accessory use regulations for setback (and also height) of ground-mounted systems.)

		structures in commercial districts as provided herein." (Renewable Energy Ordinance Framework, DVRPC) (Section 4, p.13)	
Appendix A	Example 1 (Use Tables):		

	Residential-1 (R1)	Residential-2 (R2)	Residential-3 (R3)	Commercial (C)	Industrial (I)	Public (P)
PRINCIPAL USE						
Medium-Scale Ground-Mounted Solar Energy System	SPR	SPR	SPR	Y	Y	Y
Large-Scale Ground-Mounted Solar Energy System	SP	N	SPR	SPR	SPR	SPR

Y = Allowed N = Prohibited
SP = Special Permit SPR = Site Plan Review

	Residential-1 (R1)	Residential-2 (R2)	Residential-3 (R3)	Commercial (C)	Industrial (I)	Public (P)
ACESSORY USE						
Roof-Mounted Solar Energy System	Y	Y	Y	Y	Y	Y
Small-Scale Ground-Mounted Solar Energy System	Y	Y	Y	Y	Y	Y
Medium-Scale Ground-Mounted Solar Energy System	SPR	SPR	SPR	Y	Y	Y

Y = Allowed N = Prohibited
SP = Special Permit SPR = Site Plan Review

Resources

- Model Zoning for the Regulation of Solar Energy Systems, Massachusetts Dept. of Energy Resources, 2014.
- Renewable Energy Ordinance Framework, DVRPC, 2016
- https://www.dvrpc.org/EnergyClimate/ModelOrdinance/Solar/pdf/2016_DVRPC_Solar_REOF_Reformatted_Final.pdf
- Solar Friendly Zoning Toolbox, Solar Simplified: http://solarsimplified.org/permitting/solar-zoning-toolbox/solarzoningordinance

I [Name], as [Title] of [Community], [State], have received the zoning review and read its findings.

Signature _____ Date _____

SOLSMART APPLICATION PREREQUISITE SUMMARY

Miami Lakes

Bronze Requirements	Validation Status
PR-1: Solar Statement	Done
P-1: Solar Permitting Checklist	Done
PZD-1a: Zoning Review Memo	Done
20 points in Permitting	Done (25 points achieved)
20 points in Planning Zoning and Development Review	Done (20 points achieved)
20 points in Special Focus Categories	Done (110 points achieved)

Silver Requirements	Validation Status
Bronze Designation requirements	Done
PZD-2a **or** PZD-2b: Credits related to solar by right	Incomplete
I-1: Provide cross-training of inspection and permitting staff on solar PV	Done
100 points	Done (155 points achieved)

Gold Requirements	Validation Status
Silver Designation requirements	Incomplete
PZD-2b: Codify in the zoning ordinance that accessory use solar PV is explicitly allowed by-right in all major zones	Incomplete
P-2: Provide a streamlined permitting pathway for small PV systems (no more than 3 days)	Incomplete
200 points	Incomplete (155 points achieved)

% of total points available achieved in each category	Regular points	Innovation points	Total points	% of total available
Permitting	25	-	25	19%
Planning /Zoning	20	-	20	13%
Inspection	50	-	50	63%
Construction	-	-	-	0%
Solar Rights	10	-	10	20%
Utility Engagement	-	-	-	0%
Community Engagement	35	-	35	16%
Market Development & Finance	15	-	15	8%

SolSmart Credit Validation Report

Miami Lakes

Credit #	Credit Description	Already awarded	Points Newly Claimed	Points Newly Validated	Comments
PR-1	PR-1: Post a public statement of solar goals in the form of a SolSmart commitment letter.		Yes	y	**Solar statement is provided with publicized solar goals.**
P-1	P-1: Post an online checklist detailing the required permit(s), submittals, and steps of your community's permitting process for small rooftop solar PV. **(0 points)**		Yes	y	The community has checklist of required permits and submittals for rooftop solar PVs.
P-4	P-4: Require no more than one permit application form for a small rooftop solar PV. **(5 points)**		5	5	The community only requires 1 permit application form for small solar PV.
P-8	P-8: Train permitting staff on best practices for permitting solar PV and/or solar and storage systems. Training must have occurred in the past five years. **(10 points)**		10	10	On Feb 28, 2019, the community attended Bill Brook presentation to train permitting staff on best practices for solar permitting.
P-12b	P-12b: Share site specific solar PV and/or solar and storage system permit data, including addresses, with other local government departments (Not including first responders and their departments). **(10-points)**		10	10	The community uses Trakit Permitting software to process, review, perform ionspections and track permits. The data can be accessed by inter-departments.
PZD-1a	PZD-1a: Review zoning requirements and identify restrictions that intentionally or unintentionally prohibit solar PV development. Compile findings in a memo. **(0 points)**		Yes	y	A zoning review was coducted and presented at the 5/22/2019 Planning and Zoning meeting.
PZD-1b	PZD-1b: Formally present PZD-1a memo findings to planning commission, or relevant zoning body. **(5 points)**		5	5	A zoning review was coducted and presented at the 5/22/2019 Planning and Zoning meeting.
PZD-1c	PZD-1c: Draft proposed language for changes to zoning code based on PZD-1a memo. Involve planners and/or local zoning experts in the creation of the draft language. **(5 points)**		5	5	The community drafted proposed langugage based on zoning reivew to change zoning code.
PZD-9	PZD-9: Train planning staff on best practices in planning and zoning for solar PV. (must have occurred within the past five years). **(10 points)**		10	10	The community staff person attended a webinar on Best Practices in Solar Planning and Zoning on 1/24/19.
I-1	I-1: Train inspection staff on best practices for permitting and inspecting solar PV and/or solar and storage systems. Training must have occurred within the past five years. (Required for Silver and Gold). **(20-points)**		20	20	The inspection staff received inpsection on best practices on best permitting and inspection for solar PV through Bill Brooks.
I-5	I-5:Complete solar PV inspections within 5 business days after inspection request. **(10 points)**		10	10	The community performs inspection 24 hrs after a reqest through the Trakit system.
I-6	I-6: Provide an online process for solar PV inspection scheduling. **(20 points)**		20	20	The community performs inspection 24 hrs after a reqest through the online Trakit system.
SR-1	SR-1: Post an online summary of state policies related to a property owner's solar access and solar rights, including links to state-level policy. **(5 points)**		5	5	The solar landing page has an online summary of state policies related to solar access and rights.
SR-2	SR-2: Post consumer protection resources on solar PV online. **(5 points)**		5	5	The solar landing page has consumer protection resources.
CE-2	CE-2: Post a solar landing page on local government's website with information on the community's solar goals and local resources for solar development. **(10 points)**		10	10	Yes, the community has a solar landing page.
CE-4a	CE-4a: Support or host a community-wide group purchase program (e.g., Solarize). Program must have occurred within the last 5 years. **(20 points)**		20	20	The Town of Miami Lakes participates in the Northern Miami-Dade Solar Co-op and FL SUN (group purchase programs)
CE-5a	CE-5a: Host a solar workshop open to the general public and/or local government staff explaining solar PV opportunities and policies. Workshop must have occurred within the last 5 years. **(5 points)**		5	5	The community hosted a solar worship explaing PV and policies on 11/2/2017.
MDF-3	MDF-3: Provide information to consumers about residential and commercial solar PV financing options. **(5 points)**		5	5	PACE financing is available and with info posted on the solar landing page.
MDF-6a	MDF-6: Provide PACE financing in your community. **(10 points)**		10	10	Yes, PACE financing is available in this community.

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Edward Pidermann, Town Manager**

Subject: **Recommendation to Award a Contract for Design of NW 59th Avenue Extension, RFQ 2019-27**

Date: **October 8, 2019**

Recommendation:

It is recommended that the Town Council authorize the Town Manager to award a contract to Stantec Consulting Services, the highest-ranked proposer to provide Design Services of NW 59th Avenue Extension. The Town of Miami Lakes ("Town") is receiving funding in an amount of $3,614,500 for this project under the Florida Department of Transportation (FDOT) County Incentive Program (CIGP). The Town of Miami Lakes is matching the grant with an additional $4,406,500 from the Capital Projects Fund for a total amount of $8,021,000.

Background

In FY2018, the Town was awarded a $3.6 million competitive grant from FDOT for the construction of NW 59th Avenue project. The Design of NW 59th Avenue will design a roadway connection (bridge) in the northeast sectional quadrant of the Town, which will extend NW 59th Avenue south to connect to NW 151st Street to provide new access to the industrial and commercial district located on and surrounding NW 59th Avenue. This project will encourage the use of local mobility options and provide new and improved public access that will facilitate congestion relief on SR 823/NW 57th Avenue (Red Road).

The Town issued Request for Qualifications ("RFQ") 2019-27 for the Design of NW 59th Avenue Extension on April 12, 2019. The RFQ was advertised in the Miami Daily Business review, posted to DemandStar, Public Purchase, and posted in the Government Center Lobby.

To qualify for award, prospective Proposers were required to:

1. Be a design firm licenses to provide Structural and Civil Engineering in the State of Florida;
2. Possess a minimum of five (5) years of experience performing similar design work; and

3. Provide verifiable client references demonstrating successful completion of at least three (3) bridge and roadway design projects of a similar size, scope and complexity with a total project amount of $3,000,000 or more in the past seven (7) years.

By the Proposal Deadline, May 15, 2019, which was extended from the initial deadline of May 10, 2019, the Town received four (4) Proposals from the following firms:

1. HW Lochner, Inc. ("HW Lochner");
2. Marlin Engineering, Inc. ("Marlin");
3. RJ Behar & Company, Inc. ("RJ Behar");
4. Stantec Consulting Services, Inc. ("Stantec")

An Evaluation Committee ("Committee") was appointed, comprised of the following members:

1. Carlos Acosta, Public Works Director;
2. Carmen Olazabal, Chief of CIP and Special Services;
3. Michelle Gonzalez, Senior Transportation Manager;
4. Omar Santos-Baez, Public Works Engineer; and
5. Stefano Viola, Kimley-Horn Consultant

Susana Alonso, Principal Town Planner, was later appointed to the Committee in lieu of Carlos Acosta.

Procurement performed a due diligence review of the proposals for responsiveness and found that the proposals did not reveal any material defects with the proposals, nor with the Proposer's qualifications. Each Proposer has been in business more than five (5) years, are appropriately licensed to do the work, and provided references for at least three (3) projects of similar size, scope and complexity with a total project amount of $3,000,000 or more. Procurement did not find any issues that would indicate any of the Proposers were incapable of performing the Work.

The Committee was provided the responsive proposals and met on May 28, 2019, to evaluate and rank the proposals. At the conclusion of this meeting, the Committee moved to establish the following ranking:

1. Stantec – 474 points
2. H.W. Lochner – 463 points
3. R.J. Behar – 452 points
4. Marlin – 431 points

Stantec, the highest-ranked Proposer, is a large multi-disciplinary firm with over 65 years of experience in professional consulting in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics and more than 17,000 employees working in over 400 locations spanning across 6 continents.

The Committee scored Stantec's Proposal highly due to its extensive experience with bridge and roadway design projects, the proposed team of professionals, and its specialized project approach. Their proposal included references for the full design services for the widening of 8 bridges on the Caloosahatchee River for FDOT, the construction of 5 bridges and 5 miles of 4-lane C-D system as well as the construction of a 1-mile new Terminal Access Road with interchanges at I-75 and roadway and bridge improvements along the SR 836 Corridor for FDOT. The Committee felt that the projects included in Stantec's Proposal demonstrated more readily transferable experience that could be applied to the Town's project.

Stantec's project team was also a key highlight in their proposal. The team shares more than 608 years of experience between its 25 members. The team includes several Senior Structural engineers, traffic, lighting, and drainage engineers, as well as Senior Geotechnical engineers, and roadway and bridge inspectors and other specialties unique to bridge and roadway design projects. Specifically, their proposed principal-in-charge, Mr.

Ramon Castella is LEED-certified and has over 34 years of expertise in public and private infrastructure projects throughout Florida and the Caribbean, listing several references including design improvements for Old Cutler Road, NW 82nd Avenue, SW 264th Street, and Sunset Drive. The Committee noted that Stantec's team clearly demonstrated a firm understanding of the project and the work that it will entail.

Based on the Evaluation Committee's recommendation, the Town entered into negotiations with Stantec to determine a fee and schedule for design, permitting, and construction administration services for this project. Stantec agreed to provide these services for the fee of $626,780.

The proposed project schedule anticipates final completion of the project at one hundred and thirty (130) weeks after a notice to proceed is issued. Excluding the time for construction administration, the Town will have 100% Permitted Construction Documents seventy-four (74) weeks after notice to proceed is issued. The estimates project schedule is included below for reference.

Task	Description	Duration	Estimated Delivery Date
Task 1	Public Outreach	6 weeks	NTP + 6 weeks
Task 2	Pre-Design Services	6 weeks	NTP + 6 weeks
Task 3	30% Design Development	12 weeks	NTP + 18 weeks
Task 4	60% Design Development	12 weeks	NTP + 30 weeks
Task 5	Permitting	35 weeks	NTP + 65 weeks
Task 6	Construction Documents	9 weeks	NTP + 74 weeks
Task 7	Pre-Construction Services	4 weeks	NTP + 78 weeks
Task 8	Construction Phase Services	52 weeks	NTP + 130 weeks
Task 9	Project Coordination	On-going	NTP + 130 weeks

Based on the above, it is recommended that the Town Council authorize the Town Manager to award a contract to Stantec Consulting Services, Inc. for the Design of NW 59th Avenue Extension in an amount not to exceed $626,780.

Attachments:

Resolution

2019-27 PSA for Design Services for 59th Avenue Extension

RESOLUTION NO. 19-____

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, APPROVING THE AWARD OF A CONTRACT FOR DESIGN SERVICES FOR THE NW 59TH AVENUE EXTENSION, RFQ 2019-27 TO STANTEC CONSULTING SERVICES IN AN AMOUNT NOT TO EXCEED $626,780; AUTHORIZING THE TOWN MANAGER TO TAKE ALL NECESSARY STEPS TO IMPLEMENT THE TERMS AND CONDITIONS OF THE CONTRACT; AUTHORIZING THE TOWN MANAGER TO EXPEND BUDGETED FUNDS; AUTHORIZING THE TOWN MANAGER TO EXECUTE THE CONTRACT; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Town of Miami Lakes (the "Town") received a $3.6 million competitive grant from the Florida Department of Transportation ("FDOT") for the construction of NW 59th Avenue project; and

WHEREAS, the Town requires a design firm to assist in the planning, design, and implementation of the Project; and

WHEREAS, the Town issued a Request for Qualifications ("RFQ") No. 2019-27 on April 12, 2019, for Design Services of the NW 59th Avenue Extension; and

WHEREAS, the Town received four (4) proposals by the proposal deadline from HW Lochner, Inc. ("HW Lochner"), Marlin Engineering, Inc. ("Marlin"), RJ Behar and Company, Inc. ("RJ Behar"), and Stantec Consulting Services, Inc. ("Stantec"); and

WHEREAS, an Evaluation Committee ("Committee") was appointed, comprising of (1) Carlos Acosta, Public Works Director, (2) Carmen Olazabal, Chief of CIP and Special Services, (3) Michelle Gonzalez, Senior Transportation Manager, (4) Omar Santos-Baez, Public Works Engineer for the Town of Miami Lakes; and (5) Stefano Viola, Kimley-Horn Consultant; and

WHEREAS, the Committee met on May 28, 2019 to evaluate the qualifications of each firm and establish a ranking of the responsive proposals; and

WHEREAS, the Committee has determined that Stantec Consulting Services, Inc. ("Stantec") is the firm most qualified to provide Design Services for the NW 59th Avenue Extension; and

WHEREAS, the Town and Stantec negotiated a fee of $626,780 for Design Services for the NW 59th Avenue Extension; and

WHEREAS, the Town Manager recommends the approval of a contract for Design Services for the NW 59th Avenue Extension to Stantec in an amount not to exceed $626,780; and

WHEREAS, the Town Council approves the recommendations of the Town Manager and authorizes the Town Manager to enter into a contract with Stantec, for Design Services for the NW 59th Avenue Extension, in an amount not to exceed $626,780.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF MIAMI LAKES, FLORIDA, AS FOLLOWS:

Section 1. Recitals. The foregoing Recitals are true and correct and incorporated herein by this reference.

Section 2. Approval of the Contract. The Town Council hereby approves the award of a contract to Stantec in substantially the form attached hereto as Exhibit "A" for Design Services for the NW 59th Avenue Extension in an amount not to exceed $626,780.

Section 3. Authorization of Town Officials. The Town Manager, his designee and the Town Attorney are authorized to take all steps necessary to implement the terms and conditions of the contract with Stantec for Design Services for the NW 59th Avenue Extension.

Section 4. Authorization of Fund Expenditure. The Town Manager is authorized to expend budgeted funds to implement the terms and conditions of this Resolution and the contract with Stantec.

Section 5. Execution of the Contract. The Town Manager is authorized to execute the contract, in substantially the form attached hereto as Exhibit "A," with Stantec in an amount not to exceed $626,780 and to execute any extension and/or amendments to the contract, subject to approval as to form and legality by the Town Attorney.

Section 6. Effective Date. This Resolution shall take effect immediately upon adoption.

THIS SPACE INTENTIONALLY LEFT BLANK

Passed and adopted this _____ day of _____, 2019.

The foregoing resolution was offered by _____ who moved its adoption. The motion was seconded by _____ and upon being put to a vote, the vote was as follows:

Mayor Manny Cid	_____
Vice Mayor Nelson Rodriguez	_____
Councilmember Carlos Alvarez	_____
Councilmember Luis Collazo	_____
Councilmember Joshua Dieguez	_____
Councilmember Jeffrey Rodriguez	_____
Councilmember Marilyn Ruano	_____

_____
Manny Cid
MAYOR

Attest:

_____
Gina Inguanzo
TOWN CLERK

Approved as to form and legal sufficiency:

_____
Raul Gastesi, Jr.
Gastesi & Associates, P.A.
TOWN ATTORNEY

EXHIBIT A

Agreement
between the
Town of Miami Lakes
and
Stantec Consulting Services, Inc.
for
Design Services for the NW 59th Avenue Extension,
RFQ 2019-12

PROFESSIONAL SERVICES AGREEMENT
DESIGN SERVICES FOR THE
59th AVENUE EXTENSION PROJECT

2019-27

The Town of Miami Lakes Council:

Mayor Manny Cid
Vice Mayor Nelson Rodriguez
Councilmember Carlos Alvarez
Councilmember Jeffrey Rodriguez
Councilmember Joshua Dieguez
Councilmember Luis Collazo
Councilmember Marilyn Ruano

Edward Pidermann, Town Manager
The Town of Miami Lakes
6601 Main Street
Miami Lakes, Florida 33014

Attachment A

Table of Contents

This Agreement made this ___ day of _____ in the year **2019** ("Agreement") by and between the Town of Miami Lakes, Florida, hereinafter called the "Town," and Stantec Consulting Services, Inc. hereinafter called the "Consultant."

RECITALS

A. WHEREAS, the Town issued a Request for Qualifications ("RFQ") 2019-27 on April 12, 2019 for the provision of design services ("Services") for the NW 59th Avenue Extension project, and received Consultant's proposal ("Proposal") in response thereto, was selected as one of the most qualified for the provision of said Services. The RFQ and the Proposal are expressly incorporated into and made a part of this Agreement as if set forth in full.

B. WHEREAS, the Town, through action of the Town Manager or the Town Commission, as applicable, has selected the Consultant in accordance with Section 287.055, Florida Statutes, (Consultants' Competitive Negotiation Act), and the applicable provisions of the Town Procurement Ordinance, to provide the professional services as described herein.

WITNESSETH, that the Town and the Consultant, for the considerations herein set forth, agree as follows:

SECTION A - GENERAL TERMS AND CONDITIONS

A1 DEFINITIONS

A1.01 Additional Services

"Additional Services" mean any Work defined as such in this Agreement, secured in compliance with Florida Statutes and Town Code.

A1.02 Attachments

"Attachments" mean the Attachments to this Agreement which are expressly incorporated by reference and made a part of this Agreement as if set forth in full.

A1.03 Base Fee

"Base Fee" means the amount of compensation mutually agreed upon for the completion of the Services under this Agreement.

A1.04 Basic Services

"Basic Services" means those services designated as such in a Work Order.

A1.05 Consultant

"Consultant" means the individual, partnership, corporation, association or any combination thereof, of properly registered professional architects, or engineers, which has entered into the Agreement to provide professional services to the Town.

A1.06 Contractor

"Contractor" means an individual, partnership, corporation, association, joint venture, or any combination thereof, which has entered into a contract with the Town for construction

A1.07 Errors

"Errors" means items in the plans, specification or other documents prepared by the Consultant that are shown incorrectly, which results in a change to the Services or results in the need for the construction contractor to perform rework or additional work or which causes a delay to the completion of construction.

A1.08 Errors and Omissions

"Errors and Omissions" means design deficiencies in the plans, specification or other documents prepared by the Consultant, which must be corrected in order for the project to function or be built as intended.

A1.09 Final Acceptance

"Final Acceptance" means the acceptance of the plans, specification or other documents prepared by the Consultant by the Town, which will occur after the Town have reviewed the plans, specification or other documents and confirmed that the plans, specification or other documents incorporates all of the requirements of the Services and any comments previously provided by the Town.

A1.10 Inspector

"Inspector" means an employee or representative of the Town assigned by the Town to make observations of work performed by a Contractor.

A1.11 Notice to Proceed

"Notice to Proceed" means same as "Authorization to Proceed." A duly authorized written letter or directive issued by the Town Manager or Procurement Manager acknowledging that all conditions precedent have been met or directing that Consultant may begin performing the Services.

A1.12 Omissions

"Omissions" means details of information are missing from the plans, specification or other documents prepared by the Consultant, which are necessary for the proper and safe completion of the Project.

A1.13 Project Manager

"Project Manager" means an employee or representative of the Town assigned by the Town Manager to manage and monitor the Services to be performed under this Agreement.

A1.14 Professional Services

"Professional Services" means those services within the scope of the practice of professional engineering, or registered surveying and mapping, as applicable, as defined by the laws of the State of Florida, or those performed by any professional engineer or registered surveyor or mapper in connection with his or her professional employment or practice. These services may be abbreviated herein as "engineering services" or "professional services", as applicable, which are within this definition.

A1.15 Professional Services Agreement ("Agreement" or "PSA")

"Professional Services Agreement," "Agreement," or "PSA" means this Agreement and all attachments and any authorized amendments thereto. In the event of a conflict between the Request for Qualifications ("RFQ") and the Consultant's response thereto the RFQ will control. In the event of any conflict between the Consultant's response to the RFQ and this PSA, this PSA will control. In the event of any conflict between this PSA and its attachments this PSA will control.

A1.16 Project

"Project" means the construction, alteration and/or repair, and all services and incidentals thereto, of a Town facility or property or other task/scope, as contemplated and budgeted by the Town. A Project will be further defined in the Scope of Services under the Agreement.

A1.17 Scope of Services or Services

"Scope of Services" or "Services" means a comprehensive description of the activities, tasks, design features, objectives, deliverables and milestones required for the completion of Project with sufficient detail to allow a reasonably accurate estimation of resources necessary for its completion.

A1.18 Subconsultant

"Subconsultant" means a person or organization of properly registered professional architects, engineers, registered surveyor or mapper, or other professional specialty that has entered into a written agreement with the Consultant to furnish specified Services for work to be completed under the Agreement.

A1.19 Town Council

"Town Council" means the legislative body of the Town of Miami Lakes.

A1.20 Town Manager

"Town Manager" means the duly appointed chief administrative officer of the Town of Miami Lakes or designee.

A1.21 Town or Owner

"Town" or "Owner" means the Town of Miami Lakes, Florida, a Florida municipal corporation, the public agency which is a party hereto and for which this Agreement is to be performed. In all respects hereunder, Town's performance is pursuant to Town's position as the Owner of the Project. In the event the Town exercises its regulatory authority as a governmental body, the exercise of such regulatory authority and the enforcement of any rules, regulations, codes, laws and ordinances will be deemed to have occurred pursuant to Town's authority as a governmental body and will not be attributable in any manner to Town as a party to this Agreement. The Town of Miami will be referred to herein as "Town". For the purposes of this Agreement, "Town" without modification means the Town Manager.

A1.22 Wage Rates

"Wage Rates" means the effective direct expense to Consultant on an hourly rate basis, for employees in the specified professions and job categories assigned to provide services under this Agreement that justify and form the basis for professional fees regardless of actual manner of compensation.

A1.23 Work Order

"Work Order" means a document approved and issued by the Town authorizing the performance of specific Professional Services for a Project(s) or task(s) under this Agreement.

A1.24 Work Order Proposal

"Work Order Proposal" means a document prepared by the Consultant, at the request of the Town for Services to be provided by the Consultant.

A2 <u>PERFORMANCE</u>

A2.01 Performance and Delegation

The Services to be performed hereunder must be performed by the Consultant's own staff, unless otherwise provided in this Agreement, or approved, in writing by the Project Manager. Said approval will not be construed as constituting an agreement between the Town and said other person or firm and the Town assumes no liability or responsibility for any Subconsultant.

A2.02 Removal of Unsatisfactory Personnel

The Town Manager may make written request to Consultant for the prompt removal and replacement of any personnel employed or retained by the Consultant to provide and perform Services pursuant to the requirements of this Agreement. The Consultant must respond to the Town within seven (7) calendar days of receipt of such request with either the removal and replacement of such personnel or written justification as to why that may not occur. All decisions involving personnel will be made by the Town. Such request will solely relate to said employees work under this Agreement.

A2.03 Consultant Key Staff

The parties acknowledge that Consultant was selected by the Town, in part, on the basis of qualifications of particular staff identified in Consultant's response to Town's solicitation, hereinafter referred to as "Key Staff". Consultant must ensure that Key Staff are available for Services hereunder as long as said Key Staff is in Consultant's employ. Consultant must obtain prior written acceptance of Project Manager to change Key Staff. Consultant must provide the Project Manager with such information as necessary to determine the suitability of proposed new Key Staff. The Project Manager will act reasonably in evaluating Key Staff qualifications. Such acceptance will not constitute any responsibility or liability for the individual's ability to perform.

A2.04 Time for Performance

The Consultant agrees to start all Services hereunder upon receipt of a Notice to Proceed or signed Work Order issued by the Town Manager and to complete each assignment, task or phase within the time stipulated in the Notice to Proceed or Work Order. Time is of the essence with respect to performance of this Agreement.

A reasonable extension of the time for completion of various assignments, tasks or phases may be granted by the Town Manager should there be a delay on the part of the Town in fulfilling its obligations under this Agreement as stated herein. Such extension of time wo\ill not be cause for any claim by the Consultant for extra compensation.

A2.05 E-Verify Requirements

This Project requires the Consultant to comply with the Department of Homeland Security E-Verify program. Consultant and any Subconsultants must utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Consultant or Subconsultant during the term of the Agreement.

Consultant must provide documentation from Homeland Security verifying a new employee's eligibility, for itself or its Subconsultant, prior to the employee performing any Services under the Agreement.

A3 STANDARD OF CARE

Consultant is solely responsible for the technical accuracy and quality of its services. Consultant must perform all services in compliance with Florida Administrative Code Rule 61G15-19.001(4) and section 471.033(1)(g) of the Florida Statutes. Consultant must perform due diligence, in accordance with best industry practices, in gather information and inspecting a project site prior to the commencement of the Services. Consultant will be responsible for the professional quality, technical accuracy and coordination

of all reports, design, drawings, specification, and other Services furnished by the consultant under this Agreement. Consultant must, without additional compensation, correct or revise any errors, omissions, or deficiencies in its reports, designs, drawings, specification or other Services. Consultant will also be liable for claims for delay costs, and any increased costs in construction, including but not limited to additional work, demolition of existing work, rework, etc., resulting from any errors, omissions, or deficiencies in its reports, designs, drawings, specification or other Services.

A4 SUBCONSULTANTS

A4.01 General

A4.01-1 A Subconsultant, as defined in Article A1.18, is a firm that was identified as part of the consulting team in the competitive selection process by which Consultant was chosen to perform the Services under this Agreement, and as such, is identified and listed in Schedule 1.

A4.01-2 A Specialty Subconsultant is a person or organization that has, with the consent of the Town Manager, entered into a written agreement with the Consultant to furnish unique or specialized professional services necessary for the Project(s) or task(s) described under Additional Services. Such Specialty Subconsultant will be in addition to those identified in Schedule 1.

A4.02 Subconsultant Relationships

A5.02-1 All Services provided by the Subconsultants must be performed pursuant to appropriate written agreements between the Consultant and the Subconsultants, which must contain provisions that preserve and protect the rights of the Town under this Agreement.

A5.02-2 Nothing contained in this Agreement creates any contractual or business relationship between the Town and any Subconsultants. The Consultant acknowledges that Subconsultants are entirely under its direction, control, supervision, retention or discharge.

A4.03 Changes to Subconsultants

The Consultant cannot add, modify, or change any Subconsultant listed in Schedule 1 without prior the written approval by the Town Manager, in response to a written request from the Consultant stating the reasons for any proposed substitution.

A5 DEFAULT

A5.01 General

If Consultant fails to comply with any term or condition of this Agreement, or fails to perform any of its obligations hereunder, then Consultant will be in default. Upon the occurrence of a default hereunder the Town, in addition to all remedies available to it by law, may immediately, upon written notice to Consultant, terminate this Agreement whereupon all payments, advances, or other compensation paid by the Town to Consultant while Consultant was in default must be immediately returned to the Town. Consultant understands and agrees that termination of this Agreement under this section does not release Consultant from any obligation accruing prior to the effective date of termination.

In the event of termination due to default, in addition to the foregoing, Consultant will be liable to the Town for all expenses incurred by the Town in preparing and negotiating this Agreement, as well as all costs and expenses incurred by the Town in the re-procurement of the Services, including consequential and incidental damages. In the event of default, Town may also suspend or withhold reimbursements from Consultant until such time as the actions giving rise to default have been cured.

A5.02 Conditions of Default

A finding of default and subsequent termination for cause may include, without limitation, any of the following:

A5.02-1 Consultant fails to obtain or maintain the required insurance.

A5.02-2 Consultant fails to comply, in a substantial or material sense, with any of its duties under this Agreement, with any terms or conditions set forth in this Agreement or in any agreement it has with the Town, beyond the specified period allowed to cure such default.

A5.02-3 Consultant fails to commence the Services within the time provided or contemplated herein or fails to complete the Services in a timely manner as required by this Agreement.

A5.03 Time to Cure Default; Force Majeure

Town through the Town Manager or designee will provide written notice to Consultant as to a finding of default, and Consultant must take all necessary action to cure said default within time stipulated in said notice, after which time the Town may terminate the Agreement. The Town, at its sole discretion, may allow additional days to perform any required cure if Consultant provides written justification deemed reasonably sufficient.

Should any such failure on the part of Consultant be due to a condition of Force Majeure as the term is interpreted under Florida Law, then the Town may allow an extension of time reasonably commensurate with the cause of such failure to perform or cure.

A6 TERMINATION OF AGREEMENT

A6.01 Town's Right to Terminate

The Town Manager has the right to terminate this Agreement for any reason or no reason, upon ten (10) days' written notice. Upon termination of this Agreement, all charts, sketches, studies, drawings, and other documents, including all electronic copies related to Services authorized under this Agreement, whether finished or not, must be turned over to the Town. The Consultant will be paid for the Services performed and accepted, provided that said documentation is turned over to Town Manager within ten (10) business days of termination. Failure to timely deliver the documentation will be cause to withhold any payments due without recourse by Consultant until all documentation is delivered to the Town Manager or designee.

Consultant will have no recourse or remedy from a termination made by the Town except to retain the fees earned as compensation for the Services that was performed in complete compliance with this Agreement, as full and final settlement of any claim, action, demand, cost, charge or entitlement it may have, or will, have against the Town, its officials or employees.

A6.02 Consultant's Right to Terminate

Consultant will have the right to terminate this Agreement, in writing, following breach by the Town, if the breach of the Agreement has not been corrected within sixty (60) days from the date of the Town's receipt of a written statement from Consultant specifying its breach of its duties under this Agreement.

A6.03 Termination Due to Undisclosed Lobbyist or Agent

Consultant warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Consultant to solicit or secure this Agreement and that he or she has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the Consultant any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement.

For the breach or violation of this provision, the Town has the right to terminate this Agreement without liability and, at its sole discretion, to deduct from the contract price, or otherwise recover, the full amount of such fee, commission, percentage, gift, or consideration.

A7 DOCUMENTS AND RECORDS

A7.01 Ownership of Documents

All tracings, drawings, specifications, maps, computer files, reports and any other documents prepared or obtained under this Agreement, as well as all data collected, together with summaries and charts derived therefrom, including all electronic digital copies are considered works made for hire and will, based on incremental transfer wherein the above will become the property of the Town upon payments made to Consultant or termination of this Agreement, without restriction or limitation on their use, and will be made available, on request, to the Town at any time during the performance of the Services or upon completion or termination of this Agreement. Consultant must not copyright any material and products or patent any invention developed under this Agreement. The Town has the right to visit the site where the Services are being provided at any time. The Consultant will be permitted to retain copies, including reproducible copies, solely for information and reference in connection with the Town's use and occupancy of the Project.

A7.02 Delivery Upon Request or Cancellation

Failure of the Consultant to promptly deliver all such documents, both hard copy and digital, to the Town Manager within ten (10) days of cancellation, or within ten (10) days of request by the Town Manager, will be just cause for the Town Manager to withhold payment of any fees due Consultant until Consultant delivers all such documents. Consultant will have no recourse from these requirements.

A7.03 Use by the Town

It is understood that all Consultant agreements and Work Orders for new work will include the provision for the re-use of plans and specifications, including construction drawings, at the Town's sole option, and by virtue of signing this Agreement the Consultant agrees to such re-use in accordance with this provision without the necessity of further approvals, compensation, fees or documents being required and without recourse for such re-use. The Consultant will not be liable for re-use by the Town of plans, documents, studies, or other data for any purpose other than that intended by the terms and conditions of this Agreement.

A7.04 Nondisclosure

To the extent allowed by law, Consultant agrees not to divulge, furnish or make available to any third person, firm or organization, without Town Manager's prior written consent, or unless incident to the proper performance of the Consultant's obligations hereunder, or in the course of judicial or legislative proceedings where such information has been properly subpoenaed, any non-public information concerning the Services rendered by Consultant hereunder, and Consultant will require all of its employees and agents comply with the provisions of this paragraph.

A7.05 Maintenance of Records

Consultant will keep adequate records and supporting documentation, which concern or reflect its services hereunder. Records subject to the provisions of Public Record Law, Florida Statutes Chapter 119, must be kept in accordance with statute. Otherwise, the records and documentation will be retained by Consultant for a minimum of three (3) years from the date of termination of this Agreement or the date the Project is completed, whichever is later. Town, or any duly authorized agents or representatives of Town, has the right to audit, inspect, and copy all such records and documentation as often as they deem

necessary during the period of this Agreement and during the three (3) year period noted above; provided, however such activity will be conducted only during normal business hours.

Upon completion of or termination of the Agreement the Consultant, as stated in Chapter 199.701 of the Florida Statutes, transfer, at no cost, to the Town all public records in possession of the Consultant related to the Agreement and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the Town in a format that is compatible with the information technology systems of the Town.

A8 INDEMNIFICATION

The Consultant must hold harmless, indemnify and defend the Town, its officials and employees from any and all claims, losses and causes of actions which may arise out of the performance of this Agreement as a result of any act of negligence or negligent omission, recklessness, or intentionally wrongful conduct of the Consultant. The Consultant must pay all claims and losses of any nature whatsoever in connection therewith and will defend all project related suits, in the name of the Town when applicable, and must pay all costs, including without limitation reasonable attorney's and appellate attorney's fees, and judgments which may issue thereon. The Consultant's obligation under this paragraph will not be limited in any way by the agreed upon Agreement price, or the Consultant's limit of, or lack of, sufficient insurance protection, and will apply to the full extent that it is caused by the negligence, act, omission, recklessness or intentional wrongful conduct of the Consultant, its agents, servants, or representatives.

A9 INSURANCE

The Consultant must not start Services under this Agreement until the Consultant has obtained all insurance required hereunder and the Town has approved such insurance.

A9.01 Companies Providing Coverage

All insurance policies must be issued by companies authorized to do business under the laws of the State of Florida and satisfactory to the Town Manager. All companies must have a Florida resident agent and be rated at least A(X), as per A.M. Best Company's Key Rating Guide, latest edition.

A9.02 Verification of Insurance Coverage

The Consultant must furnish certificates of insurance to the Town Manager for review and approval prior to the execution of this Agreement. The Certificates must clearly indicate that the Consultant has obtained insurance of the type, amount and classification required by these provisions, in excess of any pending claims at the time of award to the Consultant. Consultant must maintain coverage with equal or better rating as identified herein for the term of this Agreement. Consultant must provide written notice to the Town Manager of any material change, cancellation or notice of non-renewal of the insurance within 30 days of the change. Consultant must furnish a copy of the insurance policy or policies upon request of the Town Manager within ten (10) days of written request.

A9.03 Forms of Coverage

A9.03-1 Commercial General Liability and Automobile Liability:

Consultant must maintain commercial general liability coverage with limits of at least $500,000 per occurrence, $1,000,000 aggregate for bodily injury and property damage. The coverage must include Premises and Operations, Contingent and Contractual Liability, and Products and Completed Operations, with additional endorsements, as applicable. Coverage must be written on a primary, non-contributory basis with the Town listed as an additional insured as reflected by endorsement CG 2010 11/85 or its equivalence. Notice of cancellation is read (30) days/(10) days for nonpayment.

A9.03-2 Business Automobile:

The Consultant must provide business automobile liability coverage including coverage for all owned, hired and non-owned autos with a minimal combined single limit of $300,000 naming the Town as an additional insured with respect to this coverage. Notice of cancellation should read (30) days/(10) days for nonpayment.

A9.03-3 Professional Liability Insurance:

The Consultant must maintain Professional Liability Insurance including Errors and Omissions coverage in the minimum amount of $500,000 per claim, $500,000 aggregate providing for all sums which the Consultant will be legally obligated to pay as damages for claims arising out of the Services performed by the Consultant or any person employed by the Consultant in connection with this Agreement. This insurance must be maintained for at least one year after completion of the construction and acceptance of the construction and acceptance of any project covered by this Agreement.

A9.03-4 Worker's Compensation Insurance:

Consultant must maintain Worker's Compensation Insurance in compliance with Florida Statutes, Chapter 440, as amended, and Employee's Liability with a minimum limit of $500,000 each occurrence.

A9.03-5 Subconsultant's Compliance:

The Consultant must ensure that all Sub-consultants comply with these same insurance requirements.

A9.04 Modifications to Coverage

The Town Manager reserves the right to require modifications, increases, or changes in the required insurance requirements, coverage, deductibles or other insurance obligations by providing a thirty (30) day written notice to the Consultant in accordance with Article 10.06 herein. Consultant must comply with such requests unless the insurance coverage is not then readily available in the national market and may request additional consideration from Town accompanied by justification.

A10 MISCELLANEOUS

A10.01 Audit Rights

The Town reserves the right to audit the Consultant's accounts during the performance of this Agreement and for five (5) years after final payment under this Agreement. The Consultant agrees to furnish copies of any records necessary, in the opinion of the Town Manager, to approve any requests for payment by the Consultant.

A10.02 Entire Agreement

This Agreement, as it may be amended from time to time, represents the entire and integrated Agreement between the Town and the Consultant and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may not be amended, changed, modified, or otherwise altered in any respect, at any time after the execution hereof, except by a written document executed in accordance with the requirements of the Agreement. Waiver by either party of a breach of any provision of this Agreement will not be deemed to be a waiver of any subsequent or other breach of any provision of this Agreement.

A10.03 Successors and Assigns

The performance of this Agreement must not be transferred pledged, sold, delegated or assigned, in whole or in part, by the Consultant without the written consent of the Town Council or Town Manager, as applicable. It is understood that a sale of the majority of the stock or partnership shares of the Consultant, a merger or bulk sale, an assignment for the benefit of creditors will each be deemed transactions that would constitute an assignment or sale hereunder requiring prior Town approval.

The Consultant's services are unique in nature and any transference without the prior written approval of the Town will be cause for the Town to terminate this Agreement. The Consultant will have no recourse from such cancellation. The Town may require bonding, other security, certified financial statements and tax returns from any proposed Assignee and the execution of an Assignment/Assumption Agreement in a form satisfactory to the Town as a condition precedent to considering approval of an assignment.

The Consultant and the Town each binds one another, their partners, successors, legal representatives and authorized assigns to the other party of this Agreement and to the partners, successors, legal representatives and assigns of such party in respect to all covenants of this Agreement.

A10.04 Truth-In-Negotiation Certification

In compliance with the Consultant's Competitive Negotiation Act, for any Project to be compensated under the Lump Sum method, the Consultant certifies that wage rates and other factual unit costs supporting the compensation are accurate, complete, and current at the time of Notice to Proceed. The original Project price and any addition thereto will be adjusted to exclude any significant sums by which the Town determines the project price was increased due to inaccurate, incomplete or non-current wage rates and other factual unit costs. All such price adjustments will be made within 1 year following the end of the Project.

A10.05 Applicable Law and Venue of Litigation

This Agreement will be interpreted and construed in accordance with and governed by the laws of the State of Florida. Any suit or action brought by any party, concerning this Agreement, or arising out of this Agreement, must be brought in Miami-Dade County, Florida. Each party will bear its own attorney's fees except in actions arising out of Consultant's duties to indemnify the Town under Article A8, where Consultant must pay the Town's reasonable attorney's fees.

A10.06 Notices

Whenever either party desires to give written notice to the other relating to the Agreement, such must be addressed to the party for whom it is intended at the place specified below; and the place for giving the notice will remain until it has been changed by written notice in compliance with the provisions of this Article. Notice will be deemed given on the date received or within 3 days of mailing, if mailed through the United States Postal Service. Notice will be deemed given on the date sent via e-mail or facsimile. Notice will be deemed given via courier/delivery service upon the initial delivery date by the courier/delivery service. For the present, the parties designate the following as the respective places for giving of notice:

For Town of Miami:
Edward Pidermann
Town Manager
6601 Main Street
Miami, Florida 33014
pidermanne@miamilakes-fl.gov

With a copy to:

Raul Gastesi
Town Attorney
6601 Main Street
Miami, Florida 33014
rgastesi@gastesi.com

For Consultant:
Manuel Solaun, PE
Project Manager
Stantec Consulting Services
901 Ponce de Leon Boulevard, Suite 900
Coral Gables, FL 33134
Manuel.solaun@stantec.com

A10.07 Interpretation

The headings contained in this Agreement are for reference purposes only and will not affect in any way the meaning or interpretation of this Agreement. All personal pronouns used in this Agreement include the other gender, and the singular include the plural, and vice versa, unless the context otherwise requires. Terms such as "herein," "hereof," "hereunder," and "hereinafter" refer to this Agreement as a whole and not to any particular sentence, paragraph, or section where they appear, unless the context otherwise requires. Whenever reference is made to a Section or Article of this Agreement, such reference is to the Section or Article as a whole, including all of the subsections of such Section, unless the reference is made to a particular subsection or subparagraph of such Section or Article.

A10.08 Joint Preparation

Preparation of this Agreement has been a joint effort of the Town and Consultant and the resulting document will not, solely as a matter of judicial construction, be construed more severely against one of the parties than any other.

A10.09 Priority of Provisions

If there is a conflict or inconsistency between any term, statement, requirement, or provision of any exhibit attached hereto, any document or events referred to herein, or any document incorporated into this Agreement by reference and a term, statement, requirement, or provision of this Agreement, the term, statement, requirement, or provision contained in this Agreement will prevail over any document incorporated by reference and be given effect.

A10.10 Mediation - Waiver of Jury Trial

In an effort to engage in a cooperative effort to resolve conflict which may arise during the course of the performance of the Services, the parties to this Agreement agree all disputes between them will be submitted to non-binding mediation prior to the initiation of litigation, unless otherwise agreed in writing by the parties. A certified Mediator, who the parties find mutually acceptable, will conduct any Mediation Proceedings in Miami-Dade County, State of Florida. The parties will split the costs of a certified mediator on a 50/50 basis.

In an effort to expedite the conclusion of any litigation the parties voluntarily waive their right to jury trial or to file permissive counterclaims in any action arisin6g under this Agreement.

A10.11 Compliance with Laws

Consultant must comply with all applicable laws, codes, ordinances, rules, regulations and resolutions including, without limitation, the Americans with Disabilities Act ("ADA"), as amended, and all applicable guidelines and standards in performing its duties, responsibilities, and obligations related to this

Agreement. The Consultant represents and warrants that there will be no unlawful discrimination as provided by law in connection with the performance of this Agreement.

A10.11-1 Non-Discrimination:

Town warrants and represents that it does not and will not engage in discriminatory practices and that there will be no discrimination in connection with Consultant's performance under this Agreement on account of race, color, sex, religion, age, handicap, marital status or national origin. Consultant further covenants that no otherwise qualified individual will, solely by reason of his/her race, color, sex, religion, age, handicap, marital status or national origin, be excluded from participation in, be denied services, or be subject to discrimination under any provision of this Agreement.

A10.11-2 OSHA Compliance:

The Consultant warrants that it will comply with all OSHA and other safety precautions as required by federal, state or local laws, rules, regulations and ordinances.

A10.11-3 ADA Compliance:

Consultant will affirmatively comply with all applicable provisions of the Americans with Disabilities Act ("ADA") in the course of providing any work, labor or services funded by the Town, including Titles I & II of the ADA (regarding nondiscrimination on the basis of disability) and all applicable regulations, guidelines and standards. Additionally, the Consultant will take affirmative steps to insure nondiscrimination in employment of disabled persons.

A10.12 No Partnership

Consultant is an independent contractor. This Agreement does not create a joint venture, partnership or other business enterprise between the parties. The Consultant has no authority to bind the Town to any promise, debt, default, or undertaking of the Consultant.

A10.13 Discretion of Town Manager

Any matter not expressly provided for herein dealing with the Town or decisions of the Town will be within the exercise of the reasonable professional discretion of the Town Manager.

A10.14 Resolution of Disputes

Consultant understands and agrees that all disputes between it and the Town based upon an alleged violation of the terms of this Agreement by the Town will be submitted for resolution in the following manner.

The initial step will be for the Consultant to notify the Procurement Manager in writing of the dispute identified in Article A11.06, Notices. Consultant must, within five (5) calendar days of the initial notification, all supporting documentation to the Procurement Manager. Failure to submit such appeal of the written finding will constitute acceptance of the finding by the Consultant. Upon receipt of said documentation the Procurement Manager will review the issues relative to the dispute and issue a written finding.

Should the Consultant and the Procurement Manager fail to resolve the dispute the Consultant must submit their dispute in writing within five (5) calendar days to the Town Manager. Failure to submit such appeal of the written finding will constitute acceptance of the finding by the Consultant. Upon receipt of said notification the Town Manager will review the issues relative to the dispute and issue a written finding.

Appeal to the Town Manager for his/her resolution, is required prior to Consultant being entitled to seek judicial relief in connection therewith. Should the amount of compensation require approval or disapproval by the Town Council, Consultant will not be entitled to seek judicial relief unless:

(i) it has first received Town Manager's written decision, approved by the Town Commission if applicable, or
(ii) a period of sixty (60) days has expired after submitting to the Town Manager a detailed statement of the dispute, accompanied by all supporting documentation, or a period of (90) days has expired where Town Manager's decision is subject to Town Commission approval; or
(iii) Town has waived compliance with the procedure set forth in this section by written instrument(s) signed by the Town Manager.

A10.15 Contingency Clause

Funding for this Agreement is contingent on the availability of funds and continued authorization for activities and the Agreement is subject to amendment or termination due to lack of funds, reduction of funds or change in regulations, upon thirty (30) days' notice.

A10.16 Third Party Beneficiary

Consultant and the Town agree that it is not intended that any provision of this Agreement establishes a third-party beneficiary giving or allowing any claim or right of action whatsoever by any third party under this Agreement.

A10.17 No Estoppel

Neither the Town's review, approval or acceptance of, or payment for Services performed under this Agreement will be construed to operate as a waiver of any rights under this Agreement of any cause of action arising out of the performance of this Agreement, and the Consultant will be and remain liable to the Town in accordance with applicable laws for all damages to the Town caused by the Consultant's negligent performance of any of the Services under this Agreement. The rights and remedies provided for under this Agreement are in addition to any other rights and remedies provided by law.

END OF SECTION

SECTION B - SPECIAL TERMS & CONDITIONS

B1 TERM

The term of this Agreement will be effective with the execution of the Agreement and terminate upon final payment being made to the Consultant.

B2 SCOPE OF SERVICES

B2.01 Project Description

This project is located in the Town of Miami Lakes, approximately 700 feet to the north of NW 151st street. This project includes the design, permitting, coordination, and construction phase services for the construction of the NW 59th Avenue bridge, as well as the connecting roadways from the bridge to NW 151st street to the south and to NW 59th avenue to the north. The following includes descriptions of the anticipate roadway and bridge work:

- **Roadway** – The roadway is anticipated to be 1,280 linear feet. The north segment consists of approximately 490 linear feet of roadway connecting the proposed bridge to NW 59th Avenue and the south segment consisting of 790 linear feet of roadway connecting the proposed bridge to NW 151st Street. Both roadway segments will consist of approximately 70 feet right-of-way width and will include two (2) vehicular lanes, two (2) bike lanes, sidewalks and connections to existing roadways and driveways. Additionally, the south segment is to include a turning lane at the intersection of NW 59th Court and NW 151st Street.
- **Bridge** – The bridge is anticipated to be approximately 65 feet in width, 150 feet in length, and is to consist of two (2) vehicle lanes, two (2) bike lanes, sidewalks, barriers and roadway approaches. The bridge is to connect the existing NW 59th Avenue right-of-way to a proposer right-of-way- to the south. The bridge is to be constructed over the South Florida Water Management District's Biscayne C-8 Canal. Approximately 50 feet of approach on both sides of the bridge are to be designed as a part of this scope and are to be coordinated with the design of the connecting rights-of-way.

B2.02 Project Scope

The Consultant will assist in the planning, design, and implementation of the Project, which includes, but is not limited to, providing analysis of the project, design documents, construction documents, permitting assistance, bid assistance and construction administration services as further defined below. The Town anticipates, without limiting, the Project will require design services within the following disciplines: structural and civil engineering. Consultant will provide these services in accordance with Section 287.055 of Florida Statutes, as amended, Consultants' Competitive Negotiations Act (CCNA).

B2.02-1(a) **Task 1 – Public Outreach**

Consultant shall conduct one (1) presentation to elected officials, advisory boards, staff, and/or the public, if necessary.

B2.02-1(b) **Task 2 – Pre-Design Services**

Consultant shall collect data for the design and permitting phases of the project, define project limits, quality control program and establish communications with the parties and agencies known to Consultant that shall be involved or affected by the project. Consultant shall review all existing features within the project limits for the functional design and determine if any exceptions are appropriate. Specific tasks shall consist of the following:

- One (1) kick-off meeting with the Town to define project elements, phasing requirements and project issues. Consultant shall provide meeting minutes for the meeting within ten (10) business days following the meeting date.
- Consultant shall conduct a field review of the project site.
- Town shall provide a topographic survey for the project limits. Any additional surveying needed shall be provided by the Consultant and possibly to include, but not be limited to bathymetry to determine channel bottom, known utilities, water boundary, existing asphalt and concrete limits, right-of-way topography and boundaries.
- Consultant shall assist the Town in determining if any recorded easements are needed.
- The geotechnical subconsultant shall perform bore hole permeability test per South Florida Water Management District (SFWMD) standards. Prior to drilling at the site, local utility companies will be notified and asked to mark utilities. Upon completion of the field-testing, reports will be issued which contain test results. Consultant shall determine number of bore hole permeability tests needed for the project design.
- The geotechnical subconsultant shall perform a geotechnical evaluation report to include geotechnical design recommendation to support the bridge design. Consultant shall identify any tests that may be necessary to carry out a sound design.
- Any additional geotechnical services needed shall be the Consultant's responsibly.
- Consultant shall request existing utility information from utility providers within the project area. All existing utilities identified are to be included in the construction documents.
- Consultant shall determine if any utilities are needed and shall include them in the design as necessary.
- Consultant will review alternative structural systems for the design as well as review feasibility, preliminary system components and cost with the Town.
- Consultant shall prepare a bridge layout and site plan including approach for Town review. Bridge layout shall identify any design restrictions in lack of right-of-way or unusual roadway approach configurations. Bridge layout and site plan shall include roadway/bridge profiles, alignment and geometry. Consultant is to confirm right-of-way availability to complete designs in accordance with desirable bridge and roadway cross-section.
- Consultant shall develop a project design schedule.
- Consultant shall establish alignment and project controls.

Task 1 and 2 Deliverables: Agenda and minutes of all meetings, one (1) electronic copy of survey, one (1) electronic copy of each geotechnical report, one (1) electronic copy of schedule and one (1) electronic copy of 24"x36" bridge layout plant.

B2.02-1(c) **Task 3 – 30% Design Development**

- Consultant shall prepare thirty percent (30%) design development engineering plans.
- Consultant shall prepare a preliminary cost estimate based on the thirty percent (30%) design development plans. Consultant shall be responsible for updating the cost estimate when scope changes occur at milestones of the project design development and permitting.
- Consultant shall prepare a photometric lighting analysis to determine if and where additional lighting will be needed.

B2.02-1(d) **Task 4 – 60% Design Development**

- Consultant shall prepare a sixty percent (60%) design development/permit plan set to include sixty percent (60%) progress design. Plan set shall be used for permitting and shall include design and features necessary for agency review.
- Consultant shall prepare a preliminary cost estimate based on the 60% design development plans. Consultant shall be responsible for updating the cost estimate when scope changes occur at milestones of the project design development and permitting.
- Consultant shall prepare a draft bridge development report to include an assessment of existing conditions, design notes, data and calculations compiled in an executive summary format to document and describe the design conclusions reached during development.
- Consultant shall prepare a drainage analysis and report for submittal to permit agencies. Consultant shall field inspect existing drainage features and make recommendations concerning repairs, extensions, replacement/upgrade or removal of existing drainage features. Consultant shall also provide analysis for any necessary drainage features needed to meet applicable criteria for the project.
- Consultant shall evaluate the existing signage to determine the need for additional signs, correcting redundant or conflicting signage and the replacement of damaged signs.
- Consultant shall review the need for embankment and design necessary stabilization.
- Consultant shall design electrical and lightning, if required, per photometric calculations.
- Consultant shall prepare technical specifications in a format chosen by the Town to sixty percent (60%) completion. Contract or "Front End" documents shall be provided by the Town and reviewed by Consultant for conformance with the specifications and design plans.

Task 4 Deliverables: one (1) electronic copy of cost estimate, one (1) electronic copy of 24"36" 60% design development plans, one (1) electronic copy of technical specifications, one (1) electronic CAD file of drawings, one (1) electronic copy of structural design calculations, one (10 electronic copy of bridge hydraulic analysis and one (1) electronic copy of drainage calculations.

B2.02-1(e) **Task 5 – Permitting**

- Consultant shall collect all of the data and information necessary to prepare the permit applications and obtain the permits required to construct the Project as identified in Section 3.02, Project Description. Consultant shall prepare responses and design revisions to comments received by agencies. Anticipated approvals from the following agencies are expected:
  - Miami-Dade Department of Environmental Resource Management
  - Florida Department of Environmental Protection
  - South Florida Water Management District (SFWMD)
  - U.S. Army Corps of Engineering
  - Miami-Dade Public Work
  - Miami-Dade County Environmental Resources Management
  - The Town of Miami Lakes

Task 5 Deliverables: one (1) electronic copy of permit packages

B2.02-1(f) **Task 6 – Construction Documents**

Consultant shall prepare construction documents for the proposed development based on Town input to be used for bidding. Specific tasks shall consist of the following:

- Consultant shall prepare engineering plans for bidding and construction. The anticipated plan set shall include the following sections:
  - Survey
  - Site Plan and Bridge Layout
  - Storm Water Pollution Prevention Plan
  - Demolition Plan
  - Bridge and Roadway Plan
  - Drainage Plan
  - Utility Plan (if applicable)
  - Signing and Marking Plan
  - Lighting Plan (if applicable)

- Consultant shall prepare technical specifications in a format chosen by the Town for inclusion into the Town's construction documents. Contract or "Front End" documents will be provided by the Town and reviewed by Consultant for conformance with the specifications and design plans.
- Consultant shall update the project cost estimate to reflect quantities shown in the construction documents. Consultant shall be responsible for updating the cost estimate when scope changes occur at milestones of the project design development and permitting.
- Consultant shall prepare a final bridge development report to include an assessment of existing conditions, design notes, data and calculations to document and describe the design conclusions reached during development.

Task 6 Deliverables: One (1) electronic copy of cost estimate, one (1) electronic copy of 24"36" engineering plans (full-size hard copies of plans shall be provided at the Town's request), one (1) electronic copy of technical specifications (hard copies of specifications shall be provided at the Town's request), one (1) electronic CAD file of drawings and one (1) electronic copy of bridge development report.

B2.02-1(g) **Task 7 – Pre-Construction Services**

Consultant shall consult with and advise the Town of the proposed improvements during the bidding process. Specific tasks shall consist of the following:

- Consultant shall prepare bid forms in format provided by the Town.
- Consultant shall attend one (1) pre-bid meeting.
- Consultant shall provide response to bidders RFIs within five (5) business days of receipt during the bidding process. Consultant shall issue applicable addenda in response to contractor questions or RFIs during the bid process. All responses by Consultant shall be approved by the Town prior to issuance.
- Consultant shall review bids and provide a recommendation to the Town. The Town will be responsible for making the award.

Task 7 Deliverables: One (1) electronic editable copy of bid form

B2.02-1(h) **Task 8 – Construction Phase Services**

Consultant shall provide construction phase services. Specific tasks shall consist of the following:

- Consultant shall attend one (1) construction kick-off meeting.
- Consultant shall review shop drawings, samples and other data that each Contractor is required to submit. Consultant is to consult with and advise Town as to the acceptability of substitute materials and equipment that are proposed by Contractor.
- Consultant shall attend construction progress meetings at a mutually agreed upon schedule and provide an agenda and meeting minutes for each meeting. Meeting minutes are to be published within ten (10) business days following the meeting date.
- Consultant shall furnish a resident project representative to observe the progress of the work of the Contractor. The resident project representative shall visit the site an average of once per week during construction. The resident project representative shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by the Contractor. During such visits and on the basis of on-site observations, Consultant shall keep the Town informed of the progress of work, shall endeavor to protect the Town against defects and deficiencies in such work and may disapprove or reject work if it fails to conform to the Contract Documents.
- Consultant shall provide responses to construction RFIs within ten (10) business days of receipt. Consultant shall issue plan revisions as needed.
- Consultant shall assist the Town with agency coordination for construction revisions as necessary.
- Consultant shall provide contract clarification as well as issue interpretations and clarifications of the plans and specifications. Consultant shall review change orders as required.
- Consultant shall review Contractor's pay applications based on field observations. Consultant shall work with the Town to determine the amounts owed to the Contractor.
- Consultant shall review the project and determine if it is substantially complete and conduct a final review to determine that work has been completed in accordance to the Contract Documents. Consultant shall recommend in writing final payment and give written notice to the Town and Contractor that the work is acceptable.
- Consultant shall review project drawings prepared, provided and certified by Contractor. One (1) final set of project as-builts shall be provided to the Town.
- Consultant shall prepare any necessary permit close-out submittals for engineering permits.
- Consultant shall assist Town in recording any necessary easements for the project.

B2.02-1(i) **Task 9 – Project Coordination**

- Consultant may hire subconsultants to be used for portions of the required services. However, the primary Consultant shall be responsible for all of the work performed.
- Consultant shall provide utility coordination with any affected utility companies.
- Consultant shall provide agency meeting coordination for agencies requiring approval under this scope of work.
- Consultant shall follow a mutually agreed upon schedule for project submittals.
  Consultant shall coordinate the design of this project phase with connecting designs.

END OF SECTION

B3 ADDITIONAL SERVICES

B3.01 General

Services categorized below as "Additional Services" may be specified and authorized by Town and are normally considered to be beyond the scope of the Basic Services. Additional Services must be authorized in a Work Order and will be compensated for as provided in Section C, Compensation and Payments.

B3.02 Examples

Except as may be specified in this Agreement, Additional Services may include, but are not limited to the following:

B3.02-1

Appraisals: Investigation and creation of detailed appraisals and valuations of existing facilities, and surveys or inventories in connection with construction performed by Town.

B3.02-2

Specialty Design: Any additional special professional services not included in the Scope of Services.

B3.02-3

Extended Testing & Training: Extended assistance beyond that provided under Basic Services for the initial start-up, testing, adjusting and balancing of any equipment or system; extended training of Town's personnel in operation and maintenance of equipment and systems, and consultation during such training; and preparation of operating and maintenance manuals, other than those provided by the Contractor, subcontractor, or equipment manufacturer. Provide Commissioning Services as part of systems start-up.

B3.02-4

Major Revisions: Making major revisions to drawings and specifications resulting in or from a change in Scope of Work, when such revisions are inconsistent with written approvals or instructions previously given by Town and are due to causes beyond the control of Consultant. (Major revisions are defined as those changing the Scope of Work and arrangement of spaces and/or scheme and/or any significant portion thereof).

B3.02-5

Expert Witness: Preparing to serve or serving as an expert witness in connection with any arbitration proceeding or legal proceeding, providing, however, that Consultant cannot testify against Town in any proceeding during the course of this Agreement.

B3.02-6

Miscellaneous: Any other services not otherwise included in this Agreement or not customarily furnished in accordance with generally accepted structural and civil engineering practice related to construction.

B3.03 Additional Design

The Town may, at its option, elect to proceed with additional design work, which must be handled in accordance with the requirement for Additional Services.

B4 REIMBURSABLE EXPENSES

B4.01 General

Reimbursable Expenses cover those services and items authorized by Town in addition to the Basic and Additional Services and consist of actual, direct expenditures made by Consultant and the Subconsultant for the purposes listed below. Transportation, travel and per diem expenses within Dade, Broward, or Palm Beach Counties must not be considered as reimbursable expenses under this Agreement.

Additional Reimbursable Expenses include, but are not limited to:

a. Communications Expenses: Identifiable communication expenses approved by the Project Manager, long distance telephone, courier and express mail between Consultant's various permanent offices and Subconsultant. Consultant's field office at the Project site is not considered a permanent office.
b. Reproduction, Photography: Cost of printing, reproduction or photography, beyond that which is required by or of Consultant's part of the work, set forth in this Agreement.
c. Surveys: Site surveys and special purpose surveys costs authorized by the Town.
d. Geotechnical Investigation: Identifiable Soil Borings and Reports and testing costs authorized by the Town.
e. Fees: All permit fees, review fees and other similar fees paid to regulatory agencies for approvals directly attributable to the Project.

B4.02 Subconsultant Reimbursables

Reimbursable Subconsultant expenses are limited to the items described above when the Subconsultant's agreement provides for reimbursable expenses and when such agreement has been previously approved, in writing, by the Town Manager and subject to all budgetary limitations of the Town and requirements of this Agreement.

END OF SECTION

SECTION C - COMPENSATION AND PAYMENTS

C1 METHOD OF COMPENSATION

The fees for Professional Services for the Project and each Work Order must be determined by one of the following methods or a combination thereof, at the option of the Town Manager or designee, with the consent of the Consultant.

a) A Lump Sum, which may include not to exceed components in accordance with Section C4.01 below.
b) An Hourly Rate, in accordance with Section C4.02 below and at the rates set forth in the Agreement.
c) A Percentage of Construction Cost, in accordance with Section C4.03 below.

Work Orders for Additional services will be determined by one of the following methods or a combination thereof, at the option of the Town Manager or designee, with the agreement of the Consultant.

a) A Lump Sum, which may include not to exceed components in accordance with C4.01 below.
b) An Hourly Rate, in accordance with C4.02 below and at the rates set forth in the Agreement.

C2 COMPENSATION LIMITS

The amount of compensation payable by the Town to Consultant will generally be a lump sum not to exceed fee, based on the rates and schedule established in Schedules 1 & 2; provided, however, that in no event will the amount of compensation exceed six hundred twenty-six thousand seven hundred eighty ($626,780) in total over the term of the Agreement and any extension(s), unless explicitly approved by action of the Town Council or Town Manager as applicable and put into effect by written amendment to this Agreement.

Under no circumstances will the Town have any liability for Services performed, or as otherwise may be alleged or claimed by Consultant, beyond the cumulative amount stated above, except where specifically approved in accordance with the Town's Procurement Ordinance, either by the Town Manager or Town Council, as applicable, as an increase to the Agreement and put into effect via an amendment to this Agreement.

C3 WAGE RATES

C3.01 Fee Basis

All fees and compensation payable under this Agreement must be formulated and based upon the certified negotiated Wage Rates stated in Schedule 2 of the Agreement. Said Wage Rates are the effective direct hourly rates, as approved by the Town, of Consultant and Subconsultant employees in the specified professions and job categories that are to be utilized to provide the services under this Agreement, regardless of manner of compensation.

Should the Consultant intend to utilize personnel or Subconsultants for the Project where the Wage Rates have not been established, the Consultant must request that the Town add the person or Subconsultant's wage rates to Schedule 2. The Town may require that the Consultant provide documentation substantiating the request.

C3.02 Employees and Job Classifications

Form KS identifies the professions, job categories and/or employees expected to be used during the term of this Agreement. These may include engineers, landscape architects, professional interns, designers, CADD technicians, project managers, GIS and environmental specialists, specification writers, clerical/administrative support, and others engaged in the Work. In determining compensation for a given

Scope of Work, the Town reserves the right to recommend the use of Consultant employees at particular Wage Rate levels. Consultant must not utilize any profession, job category or employees that do not appear on Form KS. Consultant must submit a request to the Town to add such to Form KS prior to utilizing said profession, job category, or employees for Services under this Agreement.

C3.03 Multiplier

For Work assigned under this Agreement, a maximum multiplier of 2.9 for home office and 2.4 for field must apply to Consultant's hourly Wage Rates in calculating compensation payable by the Town. Should the Consultant have an approved multiplier with the State of Florida or Miami Dade County, the Town may elect to utilize either of these multipliers should they be less than above stipulated rates. Said multiplier is intended to cover Consultant's employee benefits (e.g. sick leave, vacation, holiday, unemployment taxes, retirement, medical, insurance and unemployment benefits) and Consultant's profit, and overhead including, without limitation, office rent, local telephone and utility charges, office and drafting supplies, depreciation of equipment, professional dues, subscriptions, stenographic, administrative and clerical support, management and supervisory responsibilities, time or travel and subsistence not directly related to a Project. The multiplier **must not be applied** to the Principal, owner, or partner of the Consultant except where they are preparing drawings or specifications, preparing a study report, or similar tasks.

The Town may request at any time during the term of the Agreement that the Consultant provide updated information to validate its multiplier. It is the responsibility of the Consultant to notify the Town whenever circumstances that will result in a change to the multiplier.

C3.04 Calculation

Said Wage Rates are to be utilized by Consultant in calculating compensation payable for Additional Services requested by Town or where the Consultant proposes to add additional staff. Consultant must identify job classifications, available staff and projected man-hours required for the proper completion of tasks and/or groups of tasks, milestones and deliverables identified in a request for Additional Services.

C3.05 Wage Rate Adjustments

There will be no wage rate adjustments permitted under this Agreement.

C4 COMPUTATION OF FEES AND COMPENSATION

The Town agrees to pay the Consultant, and the Consultant agrees to accept for Services rendered pursuant to this Agreement, fees computed by one or a combination of the methods outlined above, as applicable, in the following manner:

C4.01 Lump Sum

Compensation for a Scope of Work will typically be a Lump Sum, either a Fixed Fee or Not to Exceed Fee as deemed appropriate by the Town, to be mutually agreed upon in writing by the Town and the Consultant. Lump Sum, and Lump Sum not to Exceed methods of compensation are the preferred methods of compensation. The Lump Sum or Lump Sum Not to Exceed Fees will be calculated utilizing the Wage Rates established in Schedule 2. Such Fee(s) will be subject to validation by the Town and the Town may request additional information to substantiate the Fee(s).

C4.01-1 Lump Sum Fixed Fee*:* must be the total amount of compensation to be paid to the Consultant for the Services performed on the Project, or phase or task of the Project or Work Order for Additional Services. Payments to the Consultant must be based on a percentage of completion basis.

C4.01-2 Lump Sum Not to Exceed Fee must establish the maximum amount of compensation to be paid to the Consultant for the Services performed on the Project as a whole, or a phase/task of the Project or Work Order issued for Additional Services. Payments to the Consultant must be based on the actual work effort required to complete the Project, phase or task.

C4.01-3 Guaranteed Maximum Lump Sum*:* must be the total maximum fee amount payable by Town wherein certain aspects, tasks or allowances may not be defined, quantified and calculated at the time of execution of the Agreement or Work Order issuance for Additional Services. A Guaranteed Maximum Lump Sum compensation may represent a combination of Fixed Fees for professional services and not to exceed allowances for Reimbursable Expenses or Additional Services.

C4.01-4 Lump Sum Fee Adjustment: Where the Town authorizes a substantial or material change in the Scope of Work, the Lump Sum Base Fee may be equitably adjusted by mutually consent of the parties, which must be reflected in an amendment to the Agreement.

C4.02 Hourly Rate Fees

Hourly Rate Fees must be those rates for Consultant and Subconsultant employees identified in Schedule 2 Wage Rates. All hourly rate fees will include a maximum not to exceed figure, inclusive of all costs expressed in the contract documents. The Town must have no liability for any fee, cost or expense above this figure. The Town will have no liability for any fee, cost or expense above this figure except the addition of the multiplier, which is identified as the "Loaded Hourly Rate".

The Loaded Hourly Rate Fees will be used to quantify or calculate the complete nature, or aspects, tasks, man-hours, or milestones for a task, phase or Work Order for Additional Services. The Town may establish an allowance in a task, phase or Work Order for Additional Services that will serve as a Not to Exceed Fee for the Services to be performed on an Hourly Rate Basis.

Consultant must maintain records acceptable to the Town to track the hours of work performed by each person.

C4.03 Reimbursable Expenses

Any fees for authorized reimbursable expenses must not include charges for any expenses identified in Article C3.03, Multiplier. All reimbursable services must be billed to the Town at direct cost expended by the Consultant. Town authorized reproductions in excess of sets required at each phase of the Work will be a Reimbursable Expense.

The Town will reimburse the Consultant for authorized Reimbursable Expenses pursuant to the limitations of this Agreement as verified by supporting documentation deemed appropriate by Town Manager or designee including, without limitation, detailed bills, itemized invoices and/or copies of cancelled checks.

Article C6 contains additional information on the payment of Reimbursable Expenses.

C4.04 Fees for Additive or Deductive Alternates

The design of additive and deductive alternates contemplated as part of the original Scope for a Project as authorized by the Town Manager will be considered as part of Basic Services. The design of additive and deductive alternates that are beyond the original Scope of Work and construction budget must be authorized through a Work Order and must be billed to Town as Additional Services. The fees for alternates will be calculated by one of the three methods outlined above, as mutually agreed by the Town Manager and the Consultant.

C4.05 Fees for Additional Services

The Consultant may be authorized to perform Additional Services for which additional compensation and/or Reimbursable Expenses, as defined in this Agreement under Sections C4.03 and C4.05 respectively, may be applicable.

C4.05-1 Determination of Fee

The compensation for such services will be one of the methods described herein: mutually agreed upon Lump Sum; Hourly Rate with a Not to Exceed Limit, or Percentage of Construction Cost.

C4.05-2 Procedure and Compliance

An independent and detailed Work Order or an Amendment to a previously issued Work Order must be required to be issued and signed by the Town Manager for each additional service requested by the Town. The Work Order will specify the fee for such service and upper limit of the fee, which must not be exceeded, and must comply with the Town's regulations, including the Purchasing Ordinance, the Consultant's Competitive Negotiation Act, and other applicable laws.

C4.06 Payment Exclusions

Consultant must not be compensated by Town for revisions and/or modifications to drawings and specifications, for extended construction administration, or for other work when such work is due to errors or omissions of Consultant as determined by Town.

C4.07 Fees Resulting from Project Suspension

If a Project is suspended for the convenience of the Town for more than three (3) months or terminated without any cause in whole or in part, during any Phase, the Consultant must be paid for services duly authorized, performed prior to such suspension or termination, together with the cost of authorized reimbursable services and expenses then due, and all appropriate, applicable, and documented expenses resulting from such suspension or termination. If the Project is resumed after having been suspended for more than three months, the Consultant's further compensation must be subject to renegotiations.

C5 PAYMENTS TO THE CONSULTANT

C5.01 Payments Generally

Payments for Basic Services may be requested monthly in proportion to Services performed during each Phase of the Work. Subconsultant fees and Reimbursable Expenses must be billed to the Town in the actual amount paid by Consultant. Consultant must utilize the Town standard Consultant Invoice Form that will be provided to the Consultant.

Payment will be made in accordance with Florida Statute Chapter 218, Part VII, Local Government Prompt Payment Act, after receipt of Consultant's invoice, after receipt of Consultant's invoice, which must be accompanied by sufficient supporting documentation and contain sufficient detail, to allow a proper audit of expenditures, should Town require one to be performed. If Consultant is entitled to reimbursement of travel expenses, then all bills for travel expenses must be submitted in accordance with Section 112.061, Florida Statutes. Consultant must submit all requests for payment using the Town's standard Consultant Invoice form.

C5.02 For Comprehensive Basic Services

For those Projects and Work Orders containing multiple phases or task, payments must not exceed the amount stipulated for each phase and the aggregate payment must not exceed the total value of the Agreement.

C5.03 Billing – Hourly Rate

Invoices submitted by Consultant must be sufficiently detailed and accompanied by supporting documentation to allow for proper audit of expenditures. When Services are authorized on an Hourly Rate basis, the Consultant must submit for approval by the Town Manager, a duly certified invoice, giving names, classification, salary rate per hour, hours worked and total charge for all personnel directly engaged on a Project, phase or task. Reimbursable Services Cost should then be added to the sum for the total charges for the personnel. The Consultant must attach to the invoice all supporting data for payments made to and incurred by Subconsultants engaged on the Project. In addition to the invoice, the Consultant must, for Hourly Rate authorizations, submit a progress report giving an update on the completion of the Project and/or the applicable phase or task.

C6 REIMBURSABLE EXPENSES

C6.01 General

Reimbursable Expenses are those items authorized by the Town outside of or in addition to the Scope of Work as identified in the Work Order (as Basic Services and/or Additional Services) and consist of actual expenditures made by the Consultant and the Consultant's Subconsultants for the following:

C6.01-1 Transportation:

Identifiable transportation expenses in connection with the Project, subject to Section 112.061, Florida Statutes, as amended, excluding, however, all, general automobile transportation expenses within Miami-Dade, and Broward counties. Transportation expenses to locations outside the Miami-Dade-Broward-Palm Beach County area or from locations outside the Miami-Dade-Broward area will not be reimbursed unless specifically pre-authorized in writing by the Town Manager.

C6.01-2 Travel and Per Diem:

Identifiable per diem, meals and lodging, lodging, taxi fares and miscellaneous travel-connected expenses for Consultant's personnel are subject to Section 112.061 Florida Statutes as amended. Meals for class C travel inside Miami-Dade or Broward County will not be reimbursed. Meals and lodging expenses will not be reimbursed for temporarily relocating Consultant's employees from one of Consultant's offices to another office if the employee is relocated for more than five (5) consecutive working days. Lodging will be reimbursed only for room rates equivalent to Holiday Inn, Howard Johnson or Ramada Inn. Governmental lodging or meals will not be reimbursed that result from travel within Miami-Dade, Broward or Palm Beach Counties. Travel and per diem expenses are subject to the prior approval of the Town Manager.

C6.01-3 Communication Expenses:

Identifiable communication expenses approved, in writing and in advance by the Town Manager, including long distance telephone, courier and express mail between the Consultant's various permanent offices. The Consultant's field office at the Project site is not considered a permanent office. Express mail or courier services are to be used only where there are significant time constraints.

C6.01-4 Reproduction, Photography:

Cost of printing, reproduction or photography, which is required by or of Consultant to deliver services, set forth in this Agreement.

C6.01-5 Permit Fees:

All Permit fees paid to regulatory agencies for approvals directly attributable to the Project. These permit fees do not include those permits required to be paid by the construction Contractor.

C6.02 Reimbursements to Subconsultants

Reimbursable Subconsultant expenses are limited to the items described above when the Subconsultant agreement provides for reimbursable expenses and when such agreement has been previously approved in writing by the Town Manager and subject to all budgetary limitations of the Town and requirements of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first above written.

WITNESS/ATTEST	**Consultant, Stantec Consulting Services, Inc.**
Signature	Signature
Print Name, Title	Print Name, Title of Authorized Officer or Official
ATTEST:	(Corporate Seal)
Consultant Secretary (Affirm Consultant Seal, if available)	
ATTEST:	**Town of Miami Lakes**, a municipal corporation of the State of Florida
Gina Inguanzo, Town Clerk	Edward Pidermann, Town Manager
	APPROVED AS TO LEGAL FORM AND CORRECTNESS:
	Raul Gastesi, Town Attorney

CERTIFICATE OF AUTHORITY

(IF CORPORATION)

I HEREBY CERTIFY that at a meeting of the Board of Directors of _____, a corporation organized and existing under the laws of the State of _____, held on the ___day of _____, _____, a resolution was duly passed and adopted authorizing (Name)_____as (Title)_____of the corporation to execute agreements on behalf of the corporation and providing that his/her execution thereof, attested by the secretary of the corporation, is the official act and deed of the corporation.

I further certify that said resolution remains in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this ____, day of _____, 20____.

Secretary: _____

Print: _____

NOTARIZATION

STATE OF _____)

) SS:

COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by _____, who is personally known to me or who has produced _____ as identification and who (did / did not) take an oath.

_____

SIGNATURE OF NOTARY PUBLIC
STATE OF FLORIDA

_____

PRINTED, STAMPED OR TYPED
NAME OF NOTARY PUBLIC

SECTION D - FORMS & SCHEDULES

FORM KS – KEY STAFF

NAME	JOB CLASSIFICATION
Manuel Solaun	Project Manager
Sean Compel	Senior Engineer
Carlos Herdocia	Senior Engineer
Mohit Soni	Senior Engineer
Marianela Garcia	Senior Structural Engineer
Robert Fohrenbach	Engineer
Rodrigo Morales	Senior Technician
Mayra Saavedra	Technician
Sandra Hodge	Public Inv. Officer
Jessica Perez	Administrative
Nicole Carter	Chief Scientist
Brooke Wolfe	Sr. Env. Scientist
G. Burke	Env. Scient

SCHEDULE 1 – COMPENSATION SUMMARY & TIMEFRAME

Task No.	Major Task and/or Activity	Days to complete task from NTP	Fee Amount
1	Public Outreach	NTP+6 weeks	$9,550
2	Pre-Design Services	NTP+6 weeks	$96,060
3	30% Design Development	NTP+18 weeks	$93,050
4	60% Design Development	NTP+30 weeks	$128,050
5	Permitting	NTP+65 weeks	$62,610
6	Construction Documents	NTP+74 weeks	$98,310
7	Pre-Construction Services	NTP+52 weeks	$6,850
8	Construction Phases Services	NTP+130 weeks	$121,800 (NTE)
9	Project Coordination	NTP+130 weeks	$10,500
	Total Basic Services		$626,780

SCHEDULE 2 - WAGE RATES SUMMARY

JOB CLASSIFICATION	BASE HOURLY RATE
Project Manager	$180.00
Senior Engineer	$170.00
Chief Scientist	$170.00
Senior Engineer	$160.00
Sr. Env. Scientist	$135.00
Engineer	$125.00
Senior Inspector	$125.00
Senior Inspector	$120.00
Senior Technician	$120.00
Env. Scient/Sr. Tech	$105.00
Technician	$90.00
Public Inv. Officer	$105.00
Administrative	$75.00
Accepted Multiplier = 1.0	

EXHIBIT A – CONSULTANT'S WORK ORDER PROPOSAL

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Josh Dieguez**

Subject: **Special Taxing Districts Elections**

Date: **October 8, 2019**

Recommendation:

One of the reasons voters found Town control of what are known as Special Taxing Districts desirable is that there wouldbe greater resident input. As part of that, advisory boards were established for the various STDs. These boards are made up of Town Council appointees.Recently, we received comments from various individuals that the advisory structure should be made more responsive to the residents of the STDs. In order to better keep the promise made to residents with respect to the these districts, I agree. Therefore, I propose directing the Town Administration to implement one of the following election mechanisms:

Annual Retention Elections

This system mirrors the election mechanism used for appellate judges who are appointed and then undergo a retentionelection in which voters are asked whether they desire to retain them in office or not. This permits the Town Council to identify very involved, interested, and capable individuals to serve on these boards and advise the Town Council on their STD's preferences while also allowing STD residents to indicate to us whether the Board's preferences truly line up with their own. It also incentivizes these appointed members to solicit resident input when putting their budgets together. Members who do not achieve 50%+1 votes will be automatically removed from the Board and prohibited from being reappointed for one year.

Annual Right Track/Wrong Track Elections

In the same spirit, another alternative is an annual mail in referendum to ask the residents of the STDs whether they feel the District is headed in the right track or wrong track. This gives us the ability to solicit resident input on how they feel their advisory board is performing and make any adjustments accordingly.

The Council's ultimate authority over STD budgets in either case would be unaffected by this proposal. I intend for these elections to be "mail in" elections funded through the STD budgets.

Fiscal Impact: N/A
Guiding Principles: 4, 14
Objectives: 5

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Marilyn Ruano**

Subject: **Mobility Fee Review**

Date: **October 8, 2019**

Recommendation:

I would like to request an update on the mobility fee review.

Fiscal Impact: Minimal
Guiding Principles: 1, 2, 9, 14
Objectives: 1.1 -1.10

Town of Miami Lakes
Memorandum

To: **Honorable Mayor and Councilmembers**

From: **Honorable Vice Mayor Rodriguez**

Subject: **Danny Quesada Memorial**

Date: **October 8, 2019**

Recommendations:

Danny Quesada was an inspiration to us all. Danny was diagnosed with Cystic Fibrosis which didn't slow him down. He started running as a way to deal with the disease. Running with Danny became an annual event in Miami Lakes. Thousands of Miami Lakers have participated in the CF 5K's raising awareness and funds for CF research.

Danny's fight with CF became a community fight as the entire county came together. Lungs for Danny #lungs4danny and #dqslungs came together to support Danny and his family.
The funds from this year's Mayor's Basketball challenge were donated to Lungs for Danny.

After consulting with the Quesada family and obtaining their approval, I like to have a memorial marker and tree to be planted in his Honor. The location will be determined at a later date.

Fiscal Impact: Minimal
Guiding Principles:
Objectives:

Town of Miami Lakes
Memorandum

To: **Honorable Councilmembers**

From: **Honorable Mayor Manny Cid**

Subject: **Artificial Grass**

Date: **October 8, 2019**

Recommendation:

As the Town has moved away from utilizing herbicides at our public areas, I want to have a discussion about amending our code to allow residents to utilize artificial grass in their backyards.

Artificial grass is environmentally friendly as residents will be able to eliminate the use of herbicides and other harsh fertilizers. Some fertilizers are known to impact the algae growth in lakes.

It also assist with the conservation of water and reduces carbon emissions as no lawn mowers/equipment is required. As part of the code change, we would need to ensure that any artificial grass

Installation has proper drainage under the code. This initiative falls under the "Imagine Miami Lakes 2025" plan: Achieve Universal Environmental Sustainability In Public And Private Environments, Operations And Infrastructure.

Fiscal Impact: Minimal
Guiding Principles: 1,2, 3,4,14
Objectives: 4, 5

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Luis Collazo**

Subject: **Retrofitting Alternatives for Lake Patricia and Lake Katherine Neighborhood**

Date: **October 8, 2019**

Recommendation:

This item requires the waiver of Section 7.2 of the Special Rules of Order

Approximately 2 years ago the Town of Miami Lakes explored the feasibility of retro fitting areas in the Lake Patricia neighborhood to relocate existing over head power lines and place them underground.

At that time, the project was estimated to cost each homeowner, approximately $30,000. During a community meeting were by the scope of the project was presented to the residents, many of them expressed concern that due to the cost, the project would not be feasible.

I have recently read stories about other communities which have taken a different approach to tackling the same problem and have partnered with FEMA and FPL in order to become more resilient to power outages created by wind events.

I want to have a discussion with my colleagues with respect to exploring these alternatives, and see if the cost associated with the under grounding of power lines could be significantly reduced or eliminated by partnering with FPL and FEMA, for the residents in the Lake Patricia and Lake Katherine neighborhood.

Attachments:

Channel 10 article North Bay Village awarded $11 million in grant money to bury power lines

FPL website page on Storm Secure Underground Program

Fiscal Impact: Minimal
Guiding Principles:1,2,3,4,14
Objectives: 2, 4, 6

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Josh Dieguez**

Subject: **Investment Evaluation Discussion**

Date: **October 8, 2019**

Recommendation:

I want to have a discussion with my colleagues regarding the Town's current investments and our Investment Policy Statement (IPS). Depending on the direction the conversation takes, I may make a motion.

Fiscal Impact: Minimal
Guiding Principles: 2, 3, 4, 14
Objectives:

Town of Miami Lakes
Memorandum

To: **Honorable Councilmembers**

From: **Honorable Mayor Manny Cid**

Subject: **Blockchain Voting**

Date: **October 8, 2019**

Recommendation:

I would like to pass a resolution urging the Florida Elections Department and Miami-Dade Elections Department to study how Utah County, Utah is utilizing technology to encourage more voter participation.

This resolution falls under the "Imagine Miami Lakes 2025" core mission of: Achieving Better Communication, Transparency, And Public Participation On All Issues.

Attachment:

Governing Magazine Article Utah County Puts Blockchain Voting to Test in Live Audit

Fiscal Impact: Minimal
Guiding Principles: 2, 3, 4, 14
Objectives: 5, 6

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Marilyn Ruano**

Subject: **Canopy Protection Workshop**

Date: **October 8, 2019**

Recommendation:

*This item requires waiver of Section 7.2 of the Special Rules of Order

The Town of Miami Lakes has been tackling several issues with respect to decimation of the tree canopy within the Town. We've had trees removed by utility companies, residents and even the Town itself for projects that require tree removal.

The council has made it clear that it is our priority to protect the tree canopy at all costs. I would like to discuss with my colleagues the possibility of directing the manager and staff to put together a workshop to educate us on the intricacies of tree removal permitting, fines, new FL law, etc. At this workshop I would also like to discuss the implementation of more stringent fines on both property owners and vendors alike to disuade them from continuing the unacceptable trend of cutting down trees in Miami Lakes.

Fiscal Impact: Minimal
Guiding Principles: 2,3,4,14
Objectives: 2,4,5

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Josh Dieguez**

Subject: **Sponsorship and Naming Rights Restrictions**

Date: **October 8, 2019**

Recommendation:

In light of the recent bid by Bang Bros for naming rights to the American Airlines Arena, I want to direct the Town Attorney and Administration to develop an ordinance establishing criteria for event sponsors and for companies that may seek naming rights to Town assets. Specifically, the criteria would restrict companies from sponsoring or seeking naming rights if they are engaged in a business or have a name that is obscene or vulgar.

Fiscal Impact: Minimal
Guiding Principles: 2, 3, 4, 14
Objectives: 3, 5

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Josh Dieguez**

Subject: **Ten Year Strategic Plan Review**

Date: **October 8, 2019**

Recommendation:

This item requires the waiver of item 6.9 of the Special Rules of Order.

I want to direct the Town Administration to set the five-year review of the ten year plan a/k/a Imagine Miami Lakes 2025 for a time in January or February of next year.

Fiscal Impact: Minimal
Guiding Principles: 1, 2, 3, 4, 12, 13, 14
Objectives: 1, 2, 3, 4, 5, 6

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Josh Dieguez**

Subject: **Amendment to Council Procedures**

Date: **October 8, 2019**

Recommendation:

This item requires the waiver of item 6.9 of the Special Rules of Order.

I want to amend the Council Rules and Procedures to allow separate time for questions. The amendment would mean the new manner for discussing items would be taken up by making a motion and receiving a second, questions for three minutes, and then three minutes for discussion, followed by a one minute follow up/rebuttal.

Fiscal Impact: None
Guiding Principles: 3, 4, 12, 14
Objectives: 5

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Josh Dieguez**

Subject: **2020 Census Efforts**

Date: **October 8, 2019**

Recommendation:

This item requires the waiver of item 6.9 of the Special Rules of Order.

I would like for my colleagues to receive an update from the Town Administration on the status 2020 Census Efforts.

Fiscal Impact: Minimal
Guiding Principles: 2, 3, 4, 12, 14
Objectives: 3, 5

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Honorable Councilmember Josh Dieguez**

Subject: **Bulky Waste Pick Up**

Date: **October 8, 2019**

Recommendation:

This item requires the waiver of item 6.9 of the Special Rules of Order.

I would like for my colleagues to receive an update from the Town Administration on the status of Regular Bulky Waste Pickup.

Fiscal Impact: N/A
Guiding Principles: 1, 2, 7, 14
Objectives: 4

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Edward Pidermann, Town Manager**

Subject: **Town Manager Monthly Police Activity Report**

Date: **October 8, 2019**

Recommendation:

Please see attached report.

This report is informational

Attachments:
TML Monthly Council Meeting Crimes Report
TML- September Report

Miami Dade Police Department, Town of Miami Lakes

TML Crime Report September 25, 2019

Section 1 – COMPSTAT CRIMES

Crime	***Auto Theft*** *(**48 incidents** as of 09/25/2019. Date of last incident 09/16/2019)*
Statistical Info	*67 Incidents PYTD*
Trends	*Vehicles stolen overnight from commercial plazas and apartment complex parking lots.*
Action Taken	• *Officers have been assigned directed patrols. They are directed to remain highly visible at the various commercial plazas, apartment and townhome complexes, and hotels in their respective areas.* • *Current auto theft information as well as BOLOs and Informational flyers are regularly shared with the TML Officers.* • *Comp Details are being scheduled for increased police visibility.*
Crime	***Theft*** *– (**92 incidents** as of 09/25/2019. Date of last incident 09/22/2019)*
Statistical Info	*98 Incidents PYTD*
Trends	*Retail Theft, Unattended Property*
Action Taken	• *Officers continue to be assigned Directed Patrols at all shopping plazas in their assigned areas in order to provide greater visibility in an effort to discourage retail theft.*

Section 2 – SIGNIFICANT ARRESTS/ INCIDENTS

Day / Date / Time	*Sunday / September 15, 2019 / 1:00 am*
Location	*6360 Pent Place*
On Sunday, September 15, 2019, at 1:00 am, Officers were dispatched to 6360 Pent Place reference two armed B/M's breaking into vehicles. The victim was sitting in his vehicle, parked in his driveway, when he noticed two B/M's attempting to enter the vehicles parked at his neighbor's house across the street, but those vehicles were locked. He then lost sight of one of the subjects, and saw the other subject walking towards him with a gun drawn. The subject pointed a silver gun in the direction of the victim, and said, "Don't make me shoot you, I don't want to go to jail." The subjects then fled on foot eastbound on Pent Place. Officers canvassed the area and located a	

suspicious black Nissan Altima at Durnford Dr. and Miami Lakeway North. A records check revealed it was a stolen vehicle. Officers followed the vehicle from a distance, and saw it drive into the Home Depot parking lot. The vehicle then drove into the Wendy's parking lot, and collided with a vehicle in the parking lot. The unknown driver fled westbound, crossed 57 Avenue and ran towards the Chevrolet dealership. A TML Officer located a subject in the back seat of the Nissan Altima along with two firearms. A perimeter was established and Air and K-9 responded. The unknown subject was not located. A GIU Detective was called out and responded to the victim's residence. A show up was conducted and the victim identified the Arrestee as the subject who pointed the firearm at him. The GIU Detective impounded the two firearms and other property from the vehicle. One of the firearms was reported stolen on 08-30-2019. The Nissan Altima had been taken from Miami Gardens. It was recovered under MDPD case number PD190915330710, and the Hit and Run was reported under MDPD case number PD190915330657. *A Robbery Detective had a PC message for the Arrestee. He responded to Station 1 and interrogated the Arrestee. The Robbery Detective submitted an arrest form charging the subject for a Robbery/Carjacking he committed on 07-24-2019 in Intracoastal District.* *TML Charges: Aggravated Assault with a Firearm; Grand Theft of Firearm; and Trespass in Conveyance with Firearm.* ***Arrestee: Fred Alusma B/M 08-05-2004 (15) was charged and transported to the JAC***	
Day / Date / Time	*Wednesday / September 26, 2019 / 3:00 pm*
Location	*154 Street NW 77 Ave*
On Wednesday, September 26, 2019, at approximately 3:00 pm, a TML Officer received a LPR computer alert of a stolen vehicle driving through the TML. The Officer located the stolen vehicle and conducted a traffic stop as the vehicle entered I-75 NB. The vehicle was reported stolen from the City of Miami on September 8, 2019. A GIU Detective responded and assisted the Officer who subsequently arrested the driver for grand theft auto. ***Arrestee: Elijah Ebrahim W/M 09/21/1999.***	
Day / Date / Time	
Location	
Day / Date / Time	
Location	

MIAMI DADE POLICE DEPARTMENT

CAS Compstat Targeted Crimes Year To Date - 74Y

Date Range: Jan 01, 2019 - Sep 25, 2019

095 - TOWN OF MIAMI LAKES

	2018 LYTD	2019 YTD	YTD % Change	Difference
01 Homicide	1	0	-100.00%	-1
02 Forcible Sex Offenses	1	2	100.00%	1
03 Robbery	8	10	25.00%	2
04 Larceny (Over)	98	92	-6.12%	-6
05 Auto Theft	67	48	-28.36%	-19
06 Burglary Commercial	7	8	14.29%	1
07 Burglary Residential	23	21	-8.70%	-2
08 Aggravated Assault	5	12	140.00%	7
09 Aggravated Battery	3	3	0.00%	0
TOTAL:	**213**	**196**	**-7.98%**	**-17**

/0 - Indicates that Percent Change formula cannot be divided by zero

Incident Date Range: Jan 01, 2019 - Sep 25, 2019
Division:
Agency: 095
Grids:
For Agricultural Patrol Section: N
Exclude UNFOUNDED cases
Exclude AOA's
Report Written = 'Y'
CAS Package

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Edward Pidermann, Town Manager**

Subject: **Social Media Policy**

Date: **October 8, 2019**

Recommendation:

This oral report is intended to be informational. However, actions may result of this item.

Town of Miami Lakes
Memorandum

To: **Honorable Mayor & Councilmembers**

From: **Rual Gastesi, Town Attorney**

Subject: **Attorney Reports**

Date: **October 8, 2019**

Recommendation:

There are currently several matters being litigated by the Town of Miami Lakes. Some of these matters are bing referred to our insurance carrier to mitigate the Town's legal expense.

Background:

Michael Pizzi JR. v. Town of Miami Lakes
Update to be provided

Juan Valiente v. Town of Miami Lakes
Matter continues to be litigated. Costs and expenses are likely.

Jenkins v. FRS
Update to be provided

Bridge Litigation Matters
Update to be provided