

**VERO BEACH UTILITIES COMMISSION MEETING**

**Tuesday, August 9, 2016 – 9:00 a.m.**

**City Hall, Council Chambers, Vero Beach, Florida**

**AMENDED AGENDA**

- 1. CALL TO ORDER**
- 2. PRELIMINARY MATTERS**
  - A) Approval of Minutes**
    - 1. July 12, 2016**
  - B) Agenda Additions, Deletions, and Adoption**
- 3. PUBLIC COMMENT**
- 4. NEW BUSINESS**
  - A) Charles Callahan, M.D., Specialist in Infectious Disease - Presentation Regarding the Water Quality of the Indian River Lagoon as a Health-Related Concern with Specific Reference to Vibrio Vulnificus (Bacteria) and Toxic Algae. Vibrio with Emphasis upon Prevention of Infection and Proper Treatment when Infection has Occurred and Toxic Algae with Emphasis upon the Nature of the Toxin, Treatment, and Prognosis.**
  - B) Partial Sale: Indian River Shores Customers from Vero Electric to Florida Power and Light (FPL) - Review of Most Recent Information**
  - C) 2016 Electric Reliability Performance Report Second Quarter – Mr. Ted Fletcher**
  - D) FMPA Solar Power Survey – Vice Chairman Auwaerter**
- 5. OLD BUSINESS**
- 6. CHAIRMAN’S MATTERS**
- 7. MEMBER’S MATTERS**
- 8. ADJOURNMENT**

This is a Public Meeting. Should any interested party seek to appeal any decision made by the Commission with respect to any matter considered at such meeting or hearing, he will need a record of the proceedings and that, for such purpose he may need to ensure that a record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. Anyone who needs a special accommodation for this meeting may contact the City’s Americans with Disabilities Act (ADA) Coordinator at 978-4920 at least 48 hours in advance of the meeting.

## VERO BEACH UTILITIES COMMISSION MINUTES

Tuesday, July 12, 2016 – 2:00 p.m.

City Hall, Council Chambers, Vero Beach, Florida

**PRESENT:** Chairwoman, Laura Moss; Vice Chairman/Indian River Shores Representative, Robert Auwaerter; Members: Bill Teston, Judy Orcutt, J. Rock Tonkel, Stephen Lapointe and Alternate Member #1, George Baczynski **Also Present:** City Manager, James O'Connor; Water and Sewer Director, Rob Bolton; Finance Director, Cindy Lawson and Deputy City Clerk, Sherri Philo

**Excused Absence:** Chuck Mechling

### 1. CALL TO ORDER

Today's meeting was called to order at 2:00 p.m.

### 2. PRELIMINARY MATTERS

#### A) Approval of Minutes

##### 1. June 14, 2016

Mrs. Moss referred to the second paragraph on page six (6) of the June 14, 2016 Utilities Commission minutes. She said the word "affluent" should be "effluent."

Mr. Lapointe referred to page five stating that the word "macrobiom" should be "macrobiome." He then referred to page 10 stating that the word "exception" should be "exceptional."

**Mr. Auwaerter made a motion to approve the minutes of the June 14, 2016 Utilities Commission meeting as amended. Mrs. Orcutt seconded the motion and it passed unanimously.**

#### B) Agenda Additions, Deletions, and Adoption

Mrs. Moss moved item 5-A) up on today's agenda to be heard after item 4-A).

**Mr. Baczynski made a motion to adopt today's agenda as amended. Mr. Auwaerter seconded the motion and it passed unanimously.**

### 3. PUBLIC COMMENT

None

### 4. NEW BUSINESS

#### A) Explanation of Utilities Bills (Electric and Water/Sewer) by Category (City/County/Indian River Shores) – Ms. Cynthia Lawson / Mr. Rob Bolton

\*Please note that discussion took place throughout Ms. Lawson's presentation on the utility bills.

Ms. Cindy Lawson, Finance Director, gave the Commission members a handout on *Residential Electric Utility Rates and Taxes, Commercial Electric Utility Rates and Taxes, Inside City – Water & Sewer Customers Residential (Including Multi-Unit), and Outside City (County & IRS) – Water & Sewer Customers*, and a copy of customer bills for *Residential - Inside City, Residential - Outside the City, Residential – IR Shores, Commercial – Inside and Commercial – Outside (Old Power Plant Rate)* (attached to the original minutes). She explained that in the Electric Utility there are different fees for inside City customers, outside City customers, and Indian River Shores customers. There are two (2) different sets of rate structures for water and sewer customers inside the City limits versus all customers outside the City including Indian River Shores, who are on a rate structure that mirrors Indian River County rates.

Mrs. Moss asked what is the percentage of customers who live outside the City limits.

Ms. Lawson said that she did not have that information with her, but it is probably 58% inside the City limits and 42% outside the City limits.

Mr. James O'Connor, City Manager, said the percentage of customers on City water and sewer was not as high.

Ms. Lawson went over the Residential Electric Utility Rates and Taxes with the Commission members. She said that everyone has the base customer charge per month for fixed costs, which is for rendering the bills and providing service. The metered usage has two (2) tiers, which were 0-1,000 kWh at .0461 cents and over 1,000 kWh at .0723 cents per kWh. The Electric Service – Purchased Power per kWh is .06315 cents per kWh, which is designed to recover what the City pays the Orlando Utilities Commission (OUC) and the Florida Municipal Power Agency (FMPA) for purchased power. She explained that once they begin to apply the required fees and charges is where the bills become different. She said Gross Receipts Tax is a pass through to the State of Florida. The City does establish the rate and does not keep the money. They are required to collect it and then pay it to the State. The next component applies only to the people who live within the City limits, which is the City imposed utility tax. It is 10%, but it is only 10% on the base charge, the metered usage, and the first \$7.25 of every 1,000 kWh of purchased power. She noted that this only applies to the customers within the City limits, which is the revenue they would see in the City's General Fund. The customers who live outside the City, not including Indian River Shores, pay a 6% franchise fee, which is collected by the City and passed directly to Indian River County. That is applied to all electric service charges. The customers of Indian River Shores do not pay the utility tax or the franchise fee. All they pay are the fees and the gross receipt tax. She then went over the utility bills for residential– inside the City, residential – outside the City, residential – Indian River Shores and the Commercial Electric Utility Rates and Taxes, Inside City – Water & Sewer Customers Residential (including Multi-Unit), Commercial, and Irrigation with the Commission members.

Mr. Auwaerter asked with residential, what is the philosophy behind the tiers going up so dramatically.

Ms. Lawson said it is to encourage people not to use potable water.

Mr. Rob Bolton, Water and Sewer Director, said it was more or less imposed by the State of Florida because the State owns the water and they want people to conserve it. They feel if they charge people more for it people will use less.

Ms. Lawson went over the Outside City (County & IRS) – Water & Sewer Customers Residential rates and taxes and the water and sewer charges on utility bills with the Commission members. She noted that they always encourage anyone who doesn't understand their utility bills to contact the Customer Service Department.

Mr. Tonkel referred to item 5-A) on today's agenda. He wanted to make sure that the Commission members understand the impact of the General and Administrative (G&A) charges and the impact on the return on equity in the rate structure in past years at the end of Ms. Lawson's presentation.

Mr. Mark Mucher asked if the utility bills that were used for today's presentation were ones that had the new bill structure.

Ms. Lawson answered yes. She said the bills were revised by changing "fuel cost" to "purchase power."

Mr. Mucher said that he and others have suggested that they try to restructure the bills to have a subtotal for electric and a subtotal for water and sewer. The problem is that the general public looks at the total current charges and that is their perception of their electric bill. He did not understand why they couldn't have a subtotal for electric and a subtotal for water and sewer.

Ms. Lawson explained that the bills and bill prints are driven by the City's billing system itself and the way that they actually apply the rates. Those outputs are provided to a third party billing provider. It was not a spreadsheet the City could modify. There are two (2) sets of software that play nicely together that render bills for 33,000 customers. She said it is not something they can't do, but it would require many months of testing and it would be very expensive to make those kinds of changes.

At this time, the Commission went to item 5-A).

**B) Reuse Water – Mr. Rob Bolton**

\*Please note that items 4-B), 4-C), and 4-D) were discussed after item 5-A).

Mr. Bolton showed on the screen an aerial view of the areas with reuse water.

Mrs. Moss asked what is the definition of reuse water.

Mr. Bolton said it is the reuse of water. He explained that they pump water out of the ground and send it to a home. When the water is used it goes down the drain and then to the Wastewater Treatment Plant to be treated. Then the water is pumped back out for use of irrigation water. He said the majority of the water goes to the John's Island area. It also goes to some ponds that are located by the Riomar Country Club. He showed on the

screen the areas where the ponds are located. He said there are some concerns that the reuse water has nitrogen in it, which causes the concern that someone spraying their irrigation system there is a potential for nitrogen in the reuse water going into the Lagoon. There is also a concern when putting water into a pond that it could leach into the ground and then the groundwater would become contaminated with excessive amounts of nitrogen that could lead into the Lagoon. He showed on the screen the pond areas.

Mrs. Moss said that when she took a tour of the Water Treatment Plant, Mr. Bolton mentioned lining the ponds.

Mr. Bolton said that is an option. He said there is not a lot of water stored in the Riomar ponds because they are pumping the water out at the same time the City is pumping it in so there is not a lot of water stored. He said there is water stored in the ponds at John's Island, but they have partially lined their ponds with plant life. He said the ultimate concern is that there may be a potential for nitrogen to get into the Lagoon.

Mr. Auwaerter said another issue is if they don't pump the reclaimed water back into the system it would end up in the Lagoon anyway.

Mr. Bolton said it could end up in the Deep Injection Well. He said back in the 1990's the utilities were told to stop their discharges into the Lagoon and the City of Vero Beach invested money into the reuse system. In early 2003 – 2004, the State changed some of the discharge parameters allowing discharge into the Lagoon to include regulating copper. The City of Vero Beach has a lot of older homes that have copper plumbing so the City decided to put in the Deep Injection Well. He said there is concern reuse water is causing a problem for the Lagoon. He said there are different sides to the argument. One (1) is how much nitrogen could be going into the Lagoon, which would have to be studied and the other is once it is on the ground the plants would soak it up. He said they would put it out at a rate at one-one-hundredth of what the rate would be if someone was putting down fertilizer.

Mrs. Orcutt said the reality is that homeowners are putting fertilizer on their grass and don't understand reuse water. She said even at a minimal watering rate people are applying more than two and a half pounds of nitrogen per year to their grass and only one-pound of nitrogen is recommended. She felt that they have the opportunity at the Plant to reduce the amount of nitrogen in the reuse water to be used as irrigation water. She said that Mr. Bolton told her in an earlier conversation that he was willing to do a study.

Mr. Bolton said that he put in the following year's budget that they look at what they were doing with their treatment, what they could do to improve the treatment, and to look at the possibility of having a campaign to educate the public.

Mrs. Orcutt felt that they needed to look at what it would cost to reduce the nutrients in the water. She said they are basically taking a source of pollution and distributing it as a non-point source of pollution by sending it out as irrigation water. They should clean it while they have it at the Plant before they send it out. She asked Mr. Bolton to at least look at what it would cost.

Mr. Bolton said they are going through the process of hiring Engineers and one of the projects would be to look into the cost.

Mrs. Moss asked if she was correct that anyone who is using the reuse water would not need the same amount of fertilizer.

Mr. Bolton said an example is what is being done at Riverside Park. He said that back when the recession hit Ms. Nanette Haynes, Grounds Maintenance Manager, questioned using reuse water for irrigation. He told her that because there were nutrients in it that she could cut back on fertilizing. Ms. Haynes slowly started cutting back and now has not fertilized the grass in the Park in five (5) years.

Mrs. Orcutt said the City's reuse system is extremely susceptible of being a problem because all the water primarily goes to the barrier island. She felt that because of the ponding issue on the barrier island and because of the high nutrient content, it is an issue that they need to consider. She said if the water going into the ponds were cleaner, she would not worry so much about the high nutrient loads entering the groundwater.

### **C) FMPA 2016 Annual Report – Mr. Jim O'Connor**

Mrs. Moss referred to page five (5), item 9) – *Section 29 Withdrawal Cost Methodology*, of the FMPA 2016 Annual Report (attached to the original minutes). She said the second paragraph refers to the City of Vero Beach giving FMPA a Section 29 withdrawal notice and states that the FMPA Executive Committee would be receiving something for approval in August.

Mr. O'Connor reported that the City did file to leave the All Requirements Project (ARP) and there is a requirement of the FMPA to give the City a cost for leaving, which they did. At the time the City was selling the system, the City did not have a problem with that because they would build that cost in as part of the City's cost. The problem is that selling the system is not working so the City probably would not respond back to get out of the ARP at this time. He explained that the City would have another opportunity to get out of the ARP in three (3) years.

Mrs. Moss referred to page 13, item 23 - *Auditor General Operational Audit*. She asked would the Commission members be receiving a copy of the audit.

Mr. O'Connor said it has been sent to the City Clerk's office to be distributed to the Commission members.

Mrs. Moss referred to page 14, item 24 – *Anti-FMPA Legislation*. She said this discusses House Bill 579 where FMPA states if passed as filed it would have had several significant and adverse consequences on them. One was that they would have been required to file an annual financial report to the Public Service Commission (PSC). She did not think this seemed to be an adverse consequence as it was a request for accountability.

Mr. Auwaerter said that Bill had a number of problems. He said that FMPA does have an Annual Report and audit.

Mrs. Moss referred to page 20, item 36 – *Sale of Vero Beach’s System to Florida Power & Light (FPL)*. She said it mentions the multiple legal and regulatory actions and territorial disputes. She said it states that FMPA assisted somehow and questioned how.

Mr. O’Connor said FMPA met with the City, they discussed the sale, they told the City the rules, etc.

Mr. Tonkel asked has the meeting been set up between the three governmental entities and FMPA.

Mr. O’Connor said a teleconference meeting between the City of Vero Beach, Indian River County, FMPA, and FPL has been scheduled. He noted that Indian River Shores and OUC indicated that they are not interested in participating.

Mr. Tonkel asked what impact would the three (3) year extension to get out of the ARP have on any potential sale. He was under the impression that it was an affirmative step for the City to get out of the ARP.

Mr. O’Connor explained that FMPA was never hesitant about giving the price to get out of the ARP, but from the contractual agreement the City would have to wait that three (3) years before they could disassociate themselves from FMPA. He noted that the City was trying to get out of the ARP because they were trying to cut all the ties they could at one time, plus they felt that they would have the cash from the sale of the system. He noted that the contract is specific as to the time frame on when to give notice. He felt that the City would be discussing with Mr. Schef Wright, Attorney for the City, giving their notice that they were not going to terminate this year, but will in three (3) years.

**D) FMPA Solar Power Survey – Vice Chairman Auwaerter / Mr. Jim O’Connor**

Mr. Auwaerter referred to his email dated June 24, 2016 regarding participation in a survey of retail customers of solar power energy (attached to the original minutes). He said this was discussed during today’s City Council meeting. He asked Mr. O’Connor to give the Commission members a report on it.

Mr. O’Connor reported that he recommended to the City Council that they participate in the FMPA Solar Power Survey with Mr. Auwaerter serving as the City’s liaison. He said that in discussions with FMPA the results should be quantifiable so they could be applied to each community. He said FMPA has offered to be the forum to assimilate the questions and Mr. Auwaerter has volunteered to be the City’s liaison. He noted that he was instructed to report back to the City Council on Thursday, July 14, 2016, the Utility Commission’s recommendation.

Mrs. Moss asked has any other member cities expressed interest in the survey.

Mr. O’Connor said there were a considerable number of cities that have expressed interest. Some have said that they didn’t want to have too much engagement in the community because they were not ready to provide the service and they don’t want to build up expectation.

Mr. Auwaerter felt that they needed to know what people are thinking about this. He said they could do a standardized questionnaire and they could craft additional questions that they want asked.

Mr. Tonkel asked if he was correct in assuming that the City would be a provider of solar power as opposed to being a purchaser of power.

Mr. Auwaerter said personally, he would make the questions broad. He said that he would discuss solar panels on someone's home, solar panels on retail stores, the City contracting with a company to have a solar farm, etc. The purpose of the survey is to find out what people think. He said that he wants to be on the Task Force because he was concerned that FMPA would make the survey too narrow.

Mr. O'Connor noted that the survey does not obligate the City to anything.

Mrs. Moss asked what is the timeline for the survey.

Mr. O'Connor said July 15<sup>th</sup> is the date the City has to indicate if they are interested.

Mrs. Orcutt said it was her understanding that FMPA's purpose of doing the survey was because they were thinking of having a solar farm that all the members would buy into. She wondered how neutral the survey would be.

Mr. Auwaerter said that is the reason that he wants to be on the Task Force.

Mr. Teston asked will the Commission have the opportunity to review the content of the survey prior to it being sent out.

Mr. O'Connor answered yes.

**Mr. Lapointe made a motion that the Commission recommends to the City Council that the City participate in the FMPA Solar Power Survey.**

Mrs. Moss asked Mr. Lapointe if it was acceptable to him to add that they limit it to the survey itself.

Mr. Lapointe answered yes.

Mr. Auwaerter suggested that they amend the motion to participate in the Task Force to formulate the survey. Mr. Lapointe agreed to the amendment.

The Deputy City Clerk read back the motion, which was basically that the Commission recommends to the City Council that the City participate in a Task Force to formulate the survey of FMPA Solar.

Mr. Baczynski added that they include Mr. Auwaerter as the City's representative.

Mr. Lapointe agreed to the amendment to the motion.

**Mrs. Orcutt seconded the motion as amended.**

Mr. Teston asked for the motion to be read back to them.

**The Deputy City Clerk said the motion was basically that the Commission recommends to the City Council that the City participate on the FMPA Task Force with Mr. Auwaerter as the City's representative to formulate a solar power survey with FMPA. The motion passed 7-0 with Mr. Baczynski voting yes, Mr. Teston yes, Mr. Lapointe yes, Mrs. Orcutt yes, Mr. Tonkel yes, Mr. Auwaerter yes, and Mrs. Moss yes.**

At this time, the Commission went to item 6) on today's agenda.

## **5. OLD BUSINESS**

### **A) Analysis of How Costs from City Departments that are in the General Fund Budget that do not Directly Work for the City's Electric and Water/Sewer Operations are Charged Back to the Electric and Water/Sewer Funds. Analysis to Include the Methodology for Allocating Costs Between these Funds and the General Fund – Ms. Cynthia Lawson (backup to be provided)**

Ms. Lawson said the City's budgeted costs include the transfer of General and Administrative (G&A) expenses into the Electric Utility, as well as the 6% of revenue as a return to the General Fund, which are costs that have to be covered by rates. She then went over the Analysis of Potential Rate Reductions Pre Sale from the Finance Commission Chairman, the allocation factors, and the departments charged to Enterprise Funds with the Commission members (attached to the original minutes). She explained that an Enterprise Fund is suppose to represent itself as if it were a standalone business. She explained that the Airport, Electric Utility, Water and Sewer, Marina, Cemetery, and the Solid Waste Divisions all pay a share of costs for functions they do not budget for directly. Examples are the City Council, support from the City Clerk's office, the City Attorney's office, the Finance Department, Human Resources, etc. Each year, in cases where there is not a matrix they can use, they ask the Department Heads to give them an estimate of time that they spend to support each of the Enterprise Funds.

Mr. Auwaerter felt this was perfectly legitimate, but at the same time he felt that the Utilities Commission has to look at it because 60% of the Electric Utility customers live outside the City and do not have a voice in the rates, etc. He said that he had some questions on a few of the department allocations noting that he wasn't saying that they were wrong, but felt they were a little curious. He questioned the 50% of the City Council's time being allocated towards the Electric and Water and Sewer Funds. He also questioned the 60% of the City Clerk's time being allocated to the Electric and Water and Sewer Funds and only 33% to the General Fund.

Ms. Lawson said they need to think about what the City Clerk's office does. She said examples include record requests, agenda items, attending meetings, etc. She felt that 30% of the City Council's time spent on the Electric Utilities was probably a very low number.

Mr. Auwaerter asked Ms. Lawson to discuss the process. He asked was she stating that there is a meeting with the Department Heads once a year or is there backup to the number where a Department Head, such as the City Clerk, polls their employees on how much of their time is spent on electric and water and sewer matters.

Ms. Lawson said that she only asks the Department Heads to update the information for her once a year because she only has the opportunity to change the numbers once a year during the budget process. She noted that as a Finance Director she has a fair grounding on what her staff does every day.

Mr. Auwaerter asked are there records kept throughout the year.

Ms. Lawson said if he wants them to design a system where they do billable hours for each of the utilities then that is another whole layer of work that would go into tracking their work. She noted that one of the principles of accounting is not to spend \$2.00 to track \$1.00.

Mr. O'Connor said that he would use the City Clerk's office as an example. He explained that every public records request goes through the City Clerk's office. He said with just in the litigation with Indian River Shores, they asked for a vast amount of information that took staff about 45 days to get together. This information was collected and housed and is the responsibility of the City Clerk's office. That alone is a majority of time just for one request for documents. He explained that departments do not distribute information without it going through the City Clerk's office. He said if someone wants a document from 2011, the City Clerk's office has to go to the warehouse to retrieve the document. He felt that they could show that their allocation is more than just. He said the Electric Department's charges for Human Resources are going down because the number of employees is going down.

Mr. Tonkel asked Mr. O'Connor since he and Ms. Lawson have been employed by the City, has there been any major tweaks in the approach to the allocations and if so, what has been the significance, particularly with respect to the Electric Utility.

Mr. O'Connor said the most significant is that they can tie a matrix to their charges.

Ms. Lawson said when she first came on board there were multiple areas in the City's budgeting process that she felt things were shifted towards the Electric Utility more than they should be. In this particular area there were a number of departments where there wasn't a matrix. She said many of the allocations were estimated percentages. She noted that they don't just accept the numbers on face value. They look at them to see if they make sense in the context of the overall mission of that particular department over one-year's time.

Mr. Auwaerter said that was his concern when they stated that they talked about having a meeting at the end of the year that it would be colored based on a more recent experience as opposed to coming up with a methodology that is within the ballpark.

Ms. Lawson said that in the City Manager budget reviews she asks the Department Heads to think about what they are planning to do for that particular Enterprise Fund for the coming year. A prime example is the Airport. If they look at the amount of legal costs

that were allocated to the Airport this coming year versus the last couple of years the percentage actually went up because there has been a tremendous number of legal issues involved with Airport leases, with the new airline, etc.

Mr. O'Connor said they have been through the exercise on the allocation of funds many times and some of it is subjective, but they feel very comfortable that the numbers are justified.

At this time, the Commission went to item 4-B) on today's agenda.

## **6. CHAIRMAN'S MATTERS**

Mr. Auwaerter excused himself from today's meeting at 4:39 p.m.

Mrs. Moss reported that the Budget Hearings are scheduled for July 13<sup>th</sup> through July 15<sup>th</sup>. She asked the Commission members if they had items they want on next month's agenda.

Mr. Tonkel said that he has always been sensitive to the sale of the Utilities and to the rates. He said after Ms. Lawson's presentation today, he felt they all agreed that the allocation methodology was acceptable. But, he felt that at a future meeting they need to ask some hard questions about the underlying cost structure of the utilities and the G & A allocations and also to challenge the 6% profit transfer. He said that he would also be interested in Ms. Lawson making a presentation on the utility budgets.

Mr. O'Connor suggested that they give the presentation at the September Utilities Commission meeting.

## **7. MEMBER'S MATTERS**

Mr. Baczynski said to follow up on the presentation that was given by Dr. Witter at their last meeting regarding the use of the Kilroys measuring the water quality, he discussed with Mr. Bolton if the Kilroys were able to measure the change in water quality in the vicinity of where the STEP systems were being installed. He said that he put Mr. Bolton in contact with Dr. Witter, but has not heard anything since then.

Mr. Baczynski said in a recent the FMPA report that they received from the City Clerk's office it mentioned a subscription to Grant Finder. He said FMPA has subscribed to it, but he was not sure if they were willing to share their membership.

Mr. O'Connor said the City has the right to any subscription that FMPA receives. He said that he would check on it.

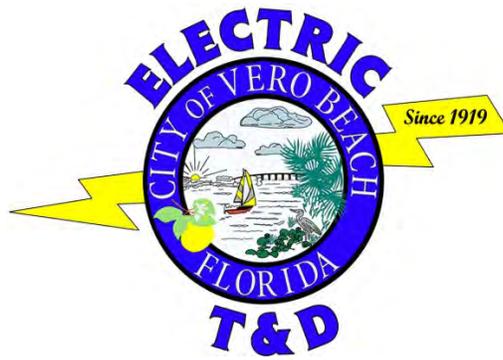
Mrs. Moss asked Mr. Baczynski if he wanted her to put these items on next month's agenda under old business.

Mr. Baczynski suggested that they have it on the September agenda as he would not be in attendance for their August meeting.

## **8. ADJOURNMENT**

Today's meeting adjourned at 4:48 p.m.

/sp



# 2016 Electric Reliability Performance Report

## Second Quarter

City of Vero Beach  
Department of Electric T&D  
August 2016

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## **SUMMARY**

The City of Vero Beach provides electric service to an area of 40.85 square miles and has more than 34,500 billable accounts. The Department of Electric Transmission and Distribution (T&D) relies on the commonly used metrics in the industry to measure reliability performance. These metrics include the System Average Interruption Frequency Index (SAIFI), the System Average Interruption Duration Index (SAIDI), and the Customer Average Interruption Duration Index (CAIDI). The attached report represents the electric reliability performance assessment for the second quarter of 2016.

## INTRODUCTION

T&D department measures the electric reliability by recording how many times service is interrupted (frequency), how long the average customer is interrupted (duration), and how long it takes to restore service (restoration time). Staff maintains interruption information in a database that enables future reviews to observe trends. These data are used to calculate the most commonly used distribution indices to measure the electric system reliability: the System Average Interruption Frequency Index (SAIFI) or average interruptions per customer, the System Average Interruption Duration Index (SAIDI) or average minutes of interruption per customer, and the Customer Average Interruption Duration Index (CAIDI) or the average minutes per interruptions.

Many factors that affect service reliability are beyond our control (see Figure 1). However, many factors are controllable such as maintaining our equipments in good operating order by continually monitoring and inspecting our electric system.

CAUSE	JAN	FEB	MAR	APR	MAY	JUN
Weather	18	5	2	3	39	14
Vegetation	14	10	13	6	21	22
Animals	5	6	9	11	11	8
Foreign Interference						
Human Cause		1		1		3
Undetermined	15	20	23	16	33	37
Equipment Failure	10	7	3	5	11	7
All Remaining Outages						
<b>Total of Outages</b>	<b>62</b>	<b>49</b>	<b>50</b>	<b>42</b>	<b>115</b>	<b>91</b>

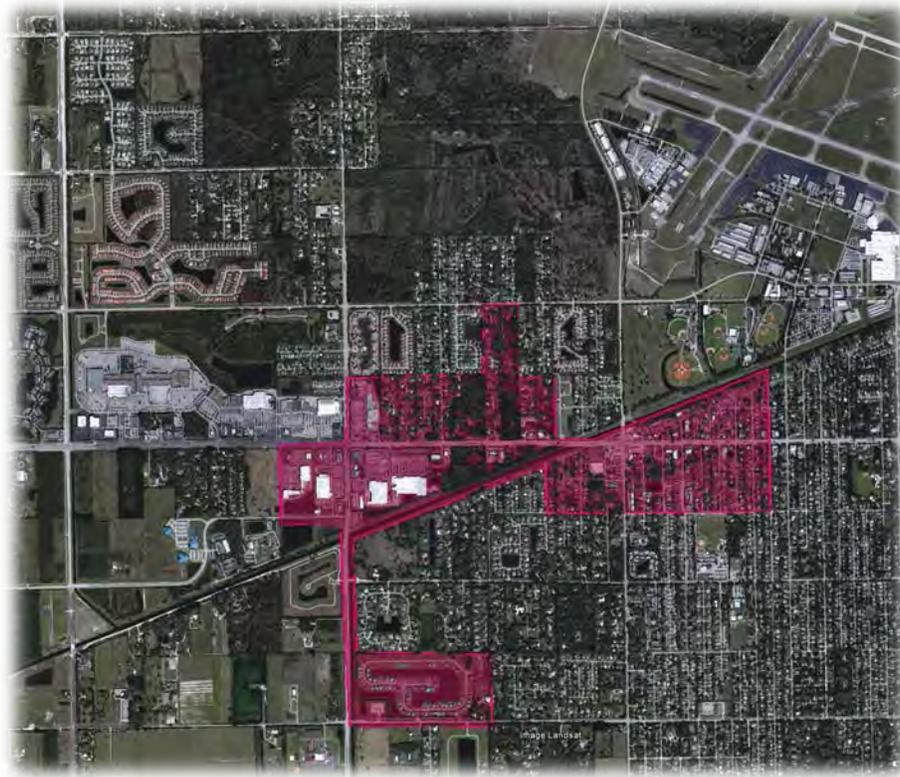
Figure 1 - Causes of Outages

## SECOND QUARTER RELIABILITY PERFORMANCE

During the month of May, we have seen significant outages due to weather conditions. On May 17, 2016 Indian River County experienced severe weather conditions (see Figure 2) with storms that produced hail, strong winds, lightning, and flooding. During the storms, we experienced multiple county-wide outages and equipment damages due to lightning. One of the storms has caused a circuit to be opened at one of the substations resulting in approximately 800 customers being out of power (see Figure 3).



Figure 2 – Source: <https://weather.com/weather/radar/interactive>



**Figure 3 - Outage location (800 customers affected)**

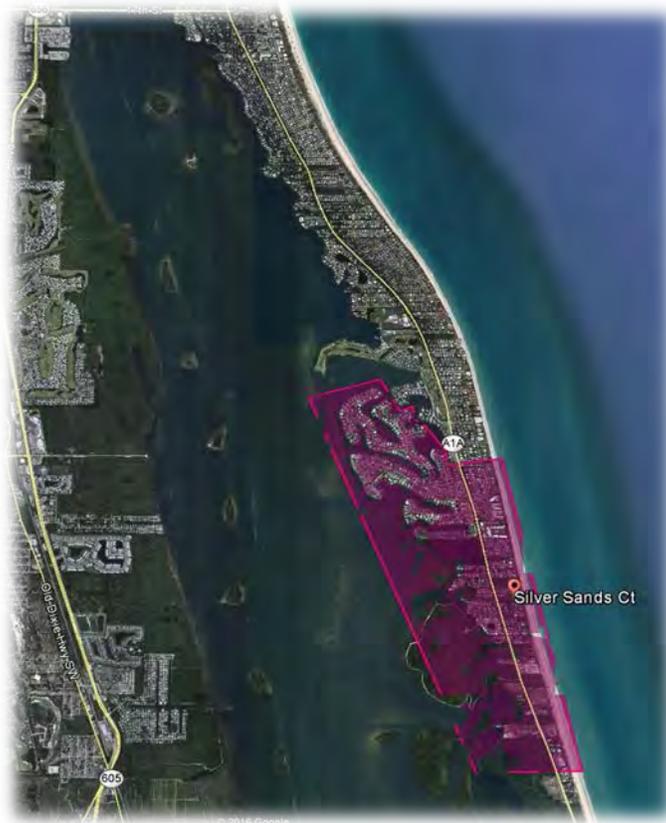
Under these conditions, some of the outage durations have lasted from 1 to 2 hours and others from 3 to 6 hours. The delay in restoration was due to many factors:

- 1) damaged equipments that had to be replaced.
- 2) due to a tornado warning, the line workers had to be pulled off of the field to seek shelter.
- 3) a second wave of storms passed through causing some of the customers to experience back to back outages.

Other factors that affect our reliability are of human nature such as car accidents. During the month of June we have experienced outages resulting from cars hitting our equipments. The total number of customers out of power ranged from 150 to 600 customers. During power restoration, we had to replace poles, streetlights, up to 600 feet of conductor, dozens of insulators etc. Figure 4 to Figure 7 depict these damages.



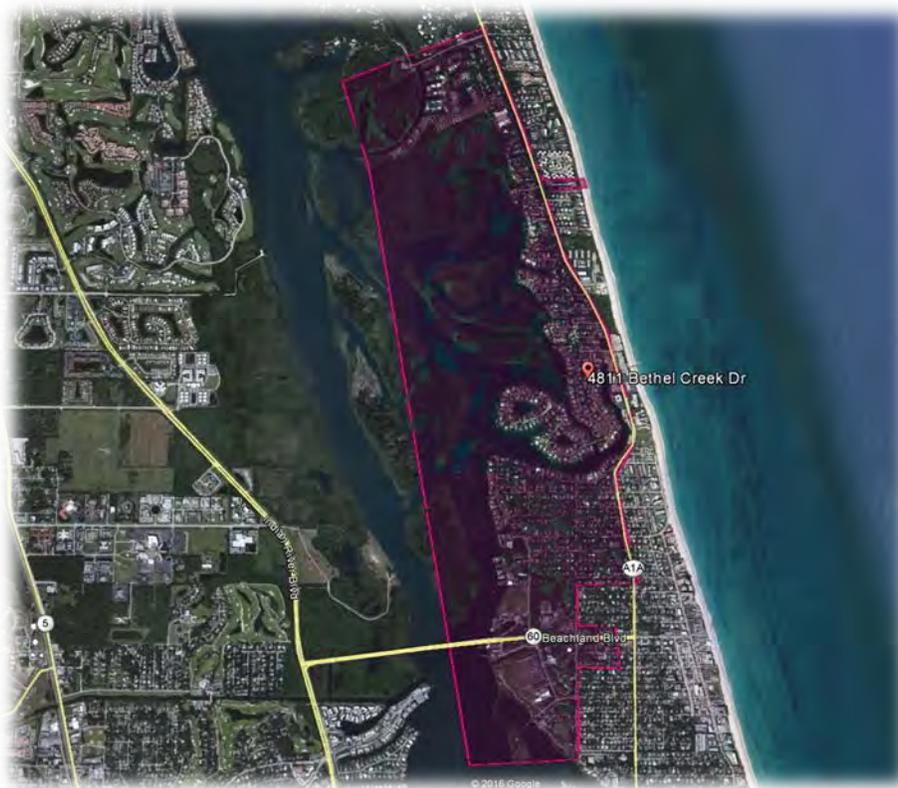
**Figure 4 - Comcast van hitting pole (Silver Sands area)**



**Figure 5 - Silver Sands area (600 customers affected)**



**Figure 6 - Recycling truck hitting pole (Bethel Creek Dr. area)**



**Figure 7 - Bethel Creek Dr. area (150 customers affected)**

As we are working diligently to improve our electric system, we continue to monitor and inspect our system by detecting and replacing damaged or aging equipments before they fail (see Figures 8 and 9). For example, we have added a new 13KV distribution circuit at one of our substations to enhance reliability (see Figure 10) and we have completed construction of 13 KV distribution circuits at the Power Plant (see Figure 11). We also have a program to remove old direct-buried conductors and replace them with conductors encased in conduit.



**Figure 8 - Damaged Switch Gear Component**



**Figure 9 - New Switch Gear Component**



**Figure 10 - Pulling a new 13KV circuit**



**Figure 11 - New 13KV Circuits at Power Plant**

## RELIABILITY INDICES

### SAIFI – System Average Interruption Frequency Index

SAIFI measures the average frequency of interruptions for the average customer.

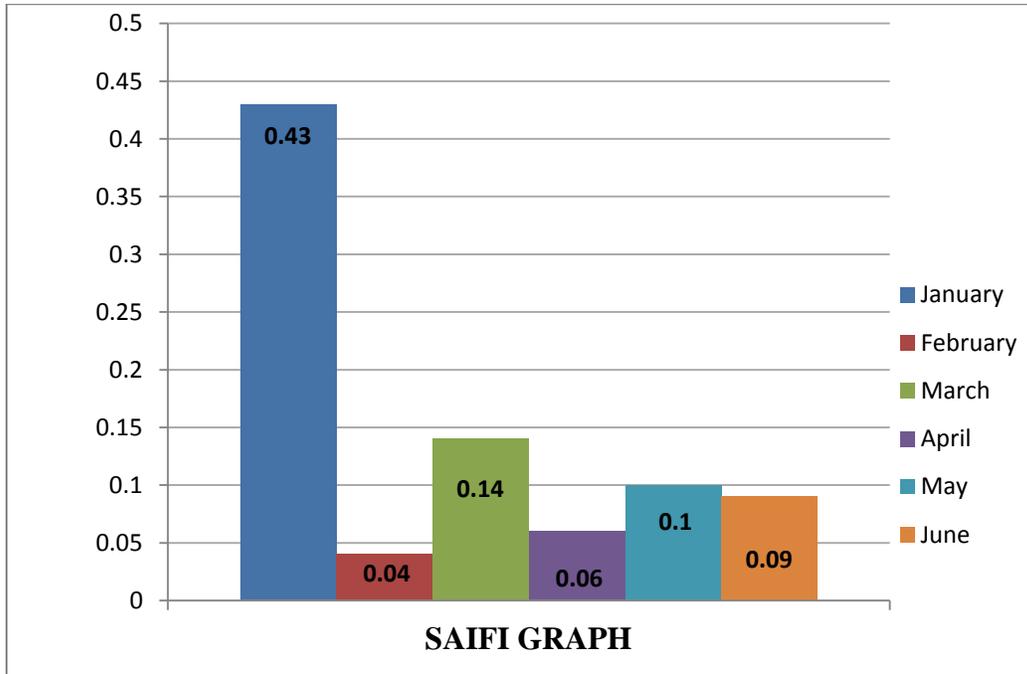


Figure 12

### SAIDI – System Average Interruption Duration Index

SAIDI measures the average duration of interruptions for the average customer.

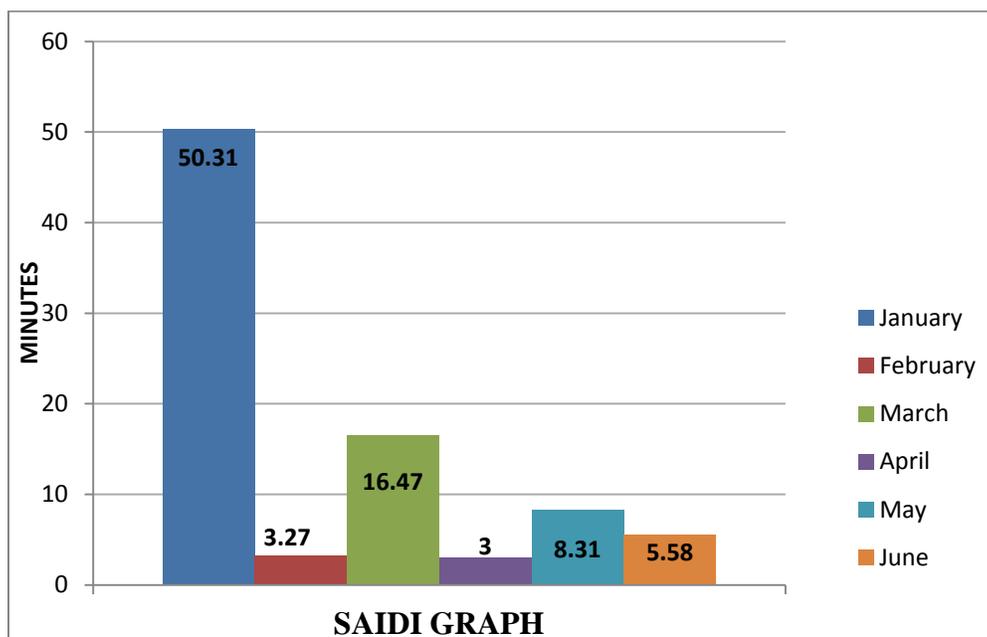


Figure 13

### CAIDI –Customer Average Interruption Duration Index

CAIDI measures the average repair time experienced by the average interrupted customer.

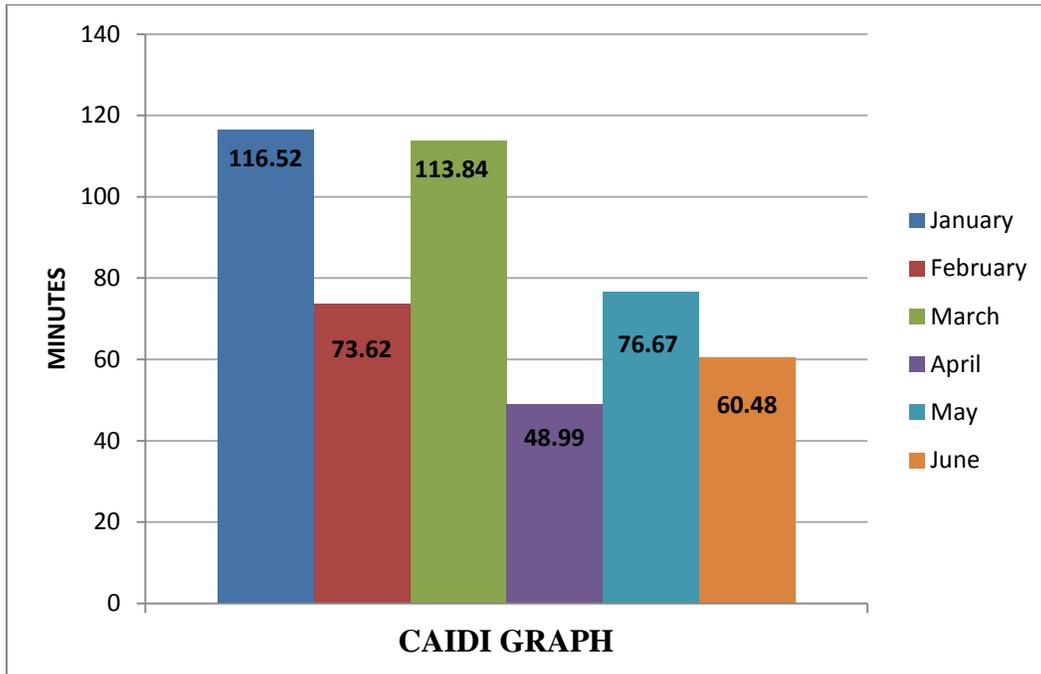


Figure 14

L-BAR measures the average length of a single outage.

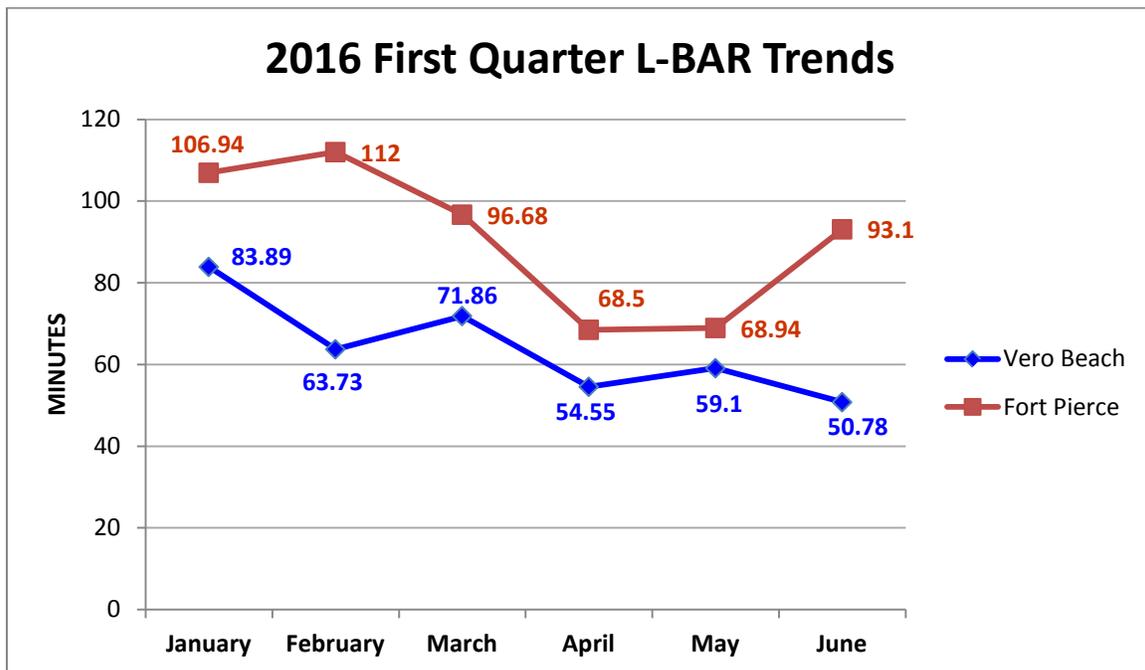


Figure 15

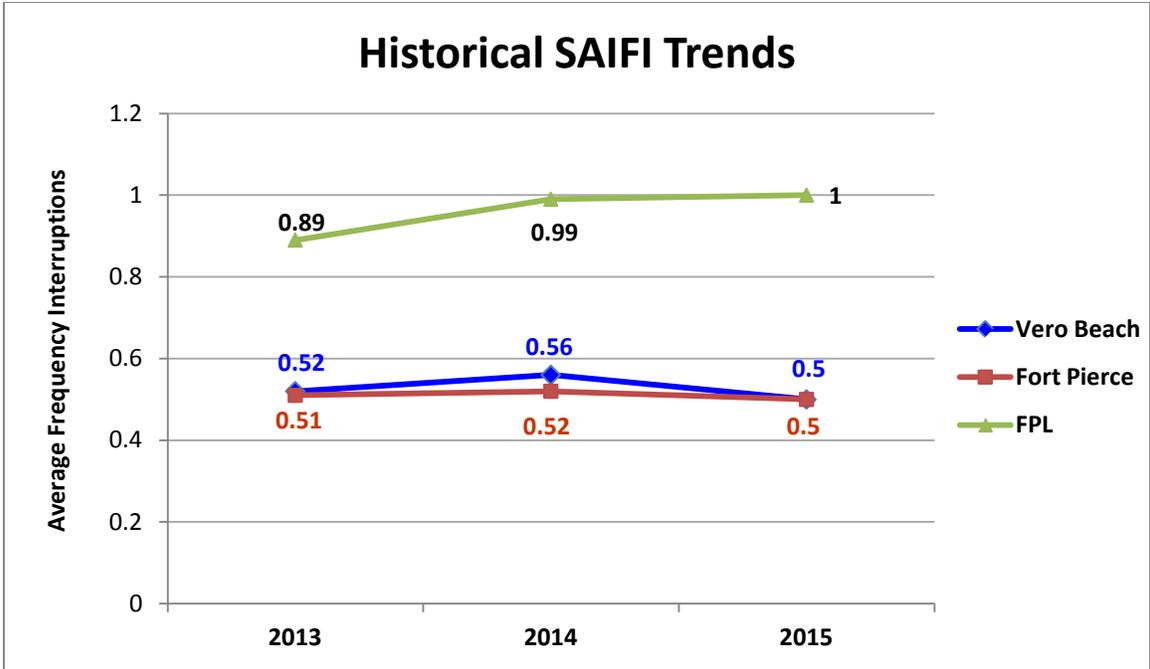


Figure 16

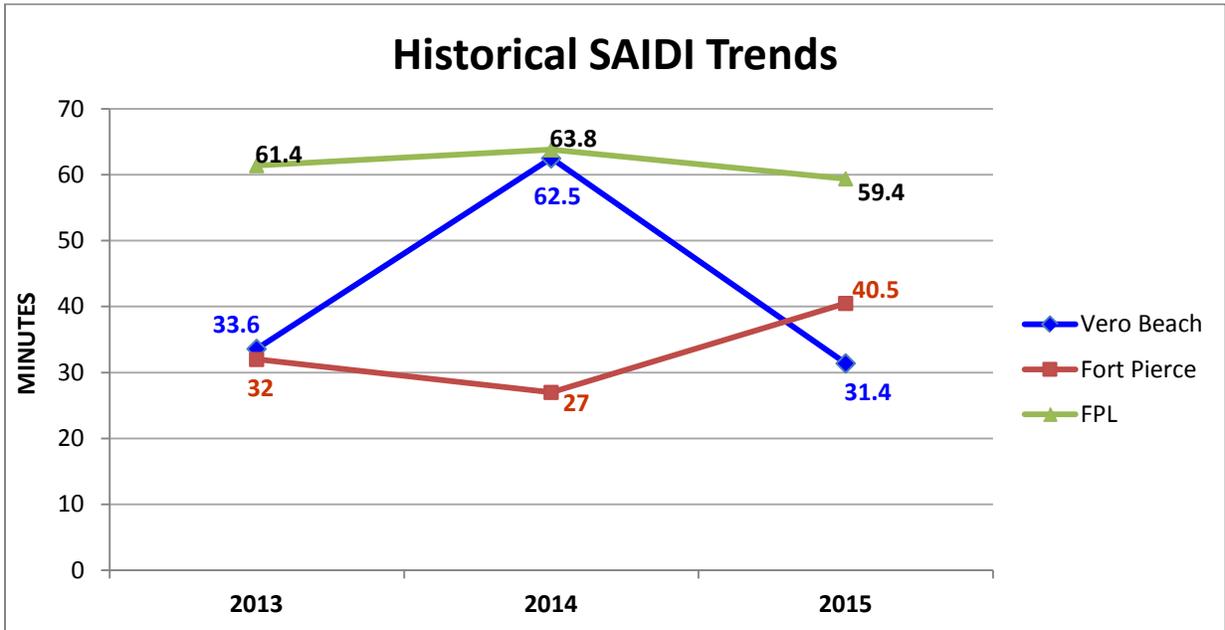


Figure 17

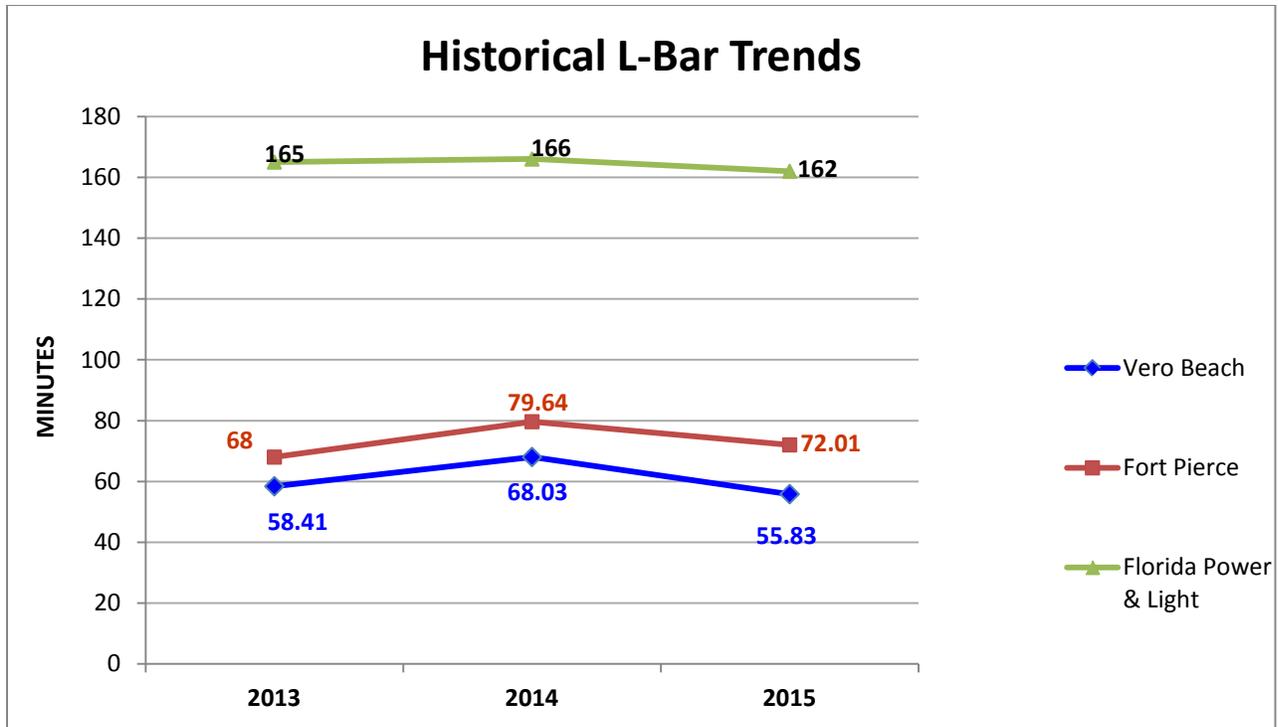


Figure 18

As observed in the L-Bar trends above, Vero Beach has outperformed both Fort Pierce Utilities Authority and Florida Power & Light. Values for Florida Power & Light’s reliability indicators were obtained from the Florida Public Service Commission website at

<http://www.floridapsc.com/ElectricNaturalGas/ElectricDistributionReliability>

## APPENDIX

	JAN	FEB	MAR	APR	MAY	JUN
Total Number of Outages	62	49	50	58	115	91
Minutes of Interruption	5,201	3,123	3,593	3,219	6,797	4,621
Total Number of Customers Served ( C )	33,900	33,900	33,900	33,900	35090**	35211**
Total Number of Customer Interruptions ( CI )	14,637	1,504	4,906	2081	3,805	3,252
Sum of all Customer Minutes Interrupted ( CMI )	1,705,523	110,730	558,493	101,949	291,767	36,000

**Figure 19 - City of Vero Beach 2016 Reliability Indices**

**\*\*Total Number of Customers Served values reflect all new electric services for the month.**

<b>Weather</b> - lightning, wind, flood, high/low temperature, major storm (hurricane, tornado...)						
<b>Vegetation</b> - tree contacts, vines						
<b>Animals</b> - rodents, squirrels, birds, snakes, bees, frogs						
<b>Foreign Interference</b> - vehicle, cable cut, tree trimmer, aircraft						
<b>Human Cause</b> - switching error, emergency manual interruption, customer caused, customer service disconnected						
<b>Undetermined</b>						
<b>Equipment Failure</b> - lighting arrestor, fuse, transformer, pole top pin, switch gear						
<b>All Remaining Outages</b>						

**Figure 20 - List of Possible Outage Causes**

### SAIDI – System Average Interruption Duration Index

SAIDI measures the average duration of interruptions for the average customer.

$$\text{SAIDI} = \frac{\text{Sum of all Customer Minutes Interrupted (CMI)}}{\text{Total Number of Customers Served (C)}}$$

### SAIFI – System Average Interruption Frequency Index

SAIFI measures the average frequency of interruptions for the average customer.

$$\text{SAIFI} = \frac{\text{Total Number of Customer Interruptions (CI)}}{\text{Total Number of Customers Served (C)}}$$

### CAIDI – Customer Average Interruption Duration Index

CAIDI measures the average repair time experienced by the average interrupted customer.

$$\text{CAIDI} = \frac{\text{Sum of all Customer Minutes Interrupted (CMI)}}{\text{Total Number of Customer Interruptions (CI)}}$$

L-BAR measures the average length of a single outage.

$$\text{L-BAR} = \frac{\text{Minutes of Interruption}}{\text{Total Number of Outages}}$$