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wildwood-fl.gov
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Zip Code: 34785

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1290 Industrial Drive
330-1349
330-1350 Fax

WATER
801 E. Huey Street
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Citizens Advisory Committee

AGENDA

June 17, 2015 at 7:00 pm

Opening

Call to Order
Proper Noticing
Determination of a Quorum

1) Comments from the General Public

2) Committee Member Reports/Concerns

3) Presentations

4) Action Items

Approval of the April 22, 2015 Meeting Minutes
Recommendation on Sanitary Sewer Facility Plan

5) Discussion Items

Affordable Housing
Update on Trailwinds

6) Adjournment – Next Meeting: August 19th, 2015

City of Wildwood
Citizens Advisory Committee Meeting
SUMMARY MINUTES
April 22, 2015

The meeting of the Citizens Advisory Committee for the City of Wildwood convened on Wednesday, April 22nd, 2015, at 7:03 PM in Conference Room 124 of City Hall, 100 North Main Street, Wildwood, Florida.

City Representatives Present: Jason McHugh, Assistant City Manager / Director of Strategic Planning and Kandi Harper, Senior Development Specialist.

City Representatives Absent: NONE

Citizens Advisory Committee Members Present: Ron Reeder, Chairman, Karen Judd, Yoma Isaac, and Ryan Harrison.

Citizens Advisory Committee Members Absent: Cynthia Burnett.

Members from the Public Present: Benita Dixon, Reggie Corpening.

Opening:

Call to Order: Mr. Reeder, Chair, called the meeting to order at 7:03 PM April 22, 2015.

Proper Noticing: Mr. Reeder noted that proper noticing has gone out.

Determination of a Quorum: Mr. Reeder stated that there is a quorum with four members present.

1) Introduction of 2014 – 2015 CAC Members

CAC Members, Citizens and City staff present introduced themselves: Ron Reeder, Yoma Isaac, Karen Judd, Benita Dixon, Reggie Corpening, Ryan Harrison, Kandi Harper and Jason McHugh.

2) Comments from the General Public:

The Chairman asked for comments from the general public.

Reggie Corpening stated that he enjoys the activities that are put on by the City; suggested that the City consider presenting activities that teach children civic pride, and pride in the environment.

Jason McHugh, Assistant City Manager / Director of Strategic Planning stated that he is an advocate of Parks and Recreation activities.

Yoma Isaac stated that she has experience with activities that included the Fire Department and their equipment that the children enjoyed and that the Fire Department and Police Department personnel are available upon request for community out-reach and are willing to participate.

3) Committee Member Reports / Concerns:

The Chairman asked for Committee Member Reports or Concerns.

Karen Judd expressed a continuing concern about the walkway to the High School.

City of Wildwood
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April 22, 2015

Mr. McHugh stated that the status quo will remain in effect; that he has spoken with the police officer at that site and there are no issues at this time – status quo continues.

Ms. Judd provided background information about the area of the High School, students walking to and from school and the former library building being re-used for the City's Public Works department.

Ms. Judd stated a concern about the number of incidents in the news lately regarding use of force by law enforcement; asked for a connection to the Police Department to get statistics or concerns regarding these incidents in the City; and stated that she did not want to see these incidents occur in Wildwood.

Mr. McHugh stated that a member of the Police Department could be asked to speak with the CAC at the next meeting.

Ms. Judd asked for the top three policies for police protection in the community; assurance that City police officers are not using undue force; asked for statistics that are available.

4) Presentations:

Mr. Reeder asked if Mr. McHugh had a presentation.

Mr. McHugh stated that some of the headings in the Agenda are place-holders; that he did not have a presentation this evening.

5) Action Items:

Approval of the February 18, 2015 Minutes:

The Chairman asked for a motion regarding the Minutes of the February 18, 2015 Summary Minutes.

Ms. Judd made a motion to accept the Minutes as presented; the motion was seconded. The Summary Minutes were approved unanimously.

Selection of Chairperson:

Ron Reeder was nominated to be the Chair of the CAC; the nomination was accepted by the members. Mr. Reeder was elected as the Chairman unanimously.

City Logo:

Mr. McHugh provided background information on the development of the new City Logo; provided illustrations of how the logo would look on City trucks, the water tower and business cards; described the elements within the logo; that the new logo is part of the City's branding initiative; and asked for comments from the CAC members.

Mr. Harrison questioned the spacing of the logo over the word "Wildwood;" that some of the elements appeared to be "V's," not "W's" and asked that those elements be reconfigured.

Ms. Judd made a motion to accept the new City Logo subject to the changes requested by the CAC members; motion was seconded by Mr. Harrison and carried.

6) Discussion Items:

City of Wildwood
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Proposed Villages of Wildwood Expansion:

Mr. Reeder introduced the next item on the agenda and asked about development details on the site plan.

Mr. McHugh stated that the proposal was withdrawn from the Commission agenda and would not be heard by the City Commission on Monday, April 27th; but that urban design elements on site plan proposals are negotiated between the applicant and City staff.

Mr. McHugh described the history of the Villages of Lake-Sumter DRI development; it's scope; their desire to expand the DRI (220 acres); that the former Trailwinds project is to be a stand-alone project; that the City would have had no control over the development; that the development proposal does not match-up currently with the City's LDR requirements; that the City is seeking interconnectivity between projects using sidewalks and roadways and transparency (no walls) in City developments; that the economics of the area has changed in favor of the City; that the City had annexed 20,000 acres of land into the City so that those lands, when developed, would be under the City's design standards; further discussions will be held with the applicant in directing the design elements to maintain the City's identity.

Ms. Judd questioned the type of development whether or not residential.

Mr. McHugh stated that the City's plan is for mixed-use development potential should the market dictate those uses at that intensity; the 300-hundred acres as a whole would be mixed in development uses; that the proposal was inconsistent with the City's design plan.

Ms. Isaac stated that rents are going up in the Wildwood area but pay is not increasing to cover the additional cost of living and asked if the City could do anything about it.

Mr. McHugh stated that an unintended consequence of growth is increased property values, which increases rents, called gentrification, which prices out people who cannot afford the increases; that quality affordable housing programs are the alternative; that the Villages as part of their DRI have to provide affordable housing, however the Villages have not increased their entitlements in the last five to seven years so that they have not had to provide any more affordable housing; that Sumter County is in charge of the affordable housing program.

Ms. Isaac stated that Sumter County's program is closed indefinitely and the Sumter County residents have to go to Citrus County for those services, but that Citrus County's program is currently closed as well.

Mr. McHugh stated that he would research affordable housing to educate himself and bring back information to the CAC at the next meeting and find a speaker with expertise in affordable housing; that Sumter County should be handling affordable housing for the City in the inter-local services boundary.

Ms. Isaac stated that Sumter County does not have any housing for low income at all; that the apartment complex has programs that you have to qualify for; that HUD or Section 8 is through Citrus County but no funds are available at this time.

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SUMMARY MINUTES
April 22, 2015

Mr. McHugh stated that there is a lack of rentals in the City; but that the development industry is performing market analysis that concluded that rental properties are not needed.

CAC members discussed the difficulty of finding affordable rentals in Wildwood and have to leave the area for housing, such as Leesburg; but that single income households cannot afford the rents; that houses are no longer in affordable ranges.

Mr. McHugh stated that the market dictates development projects.

Mr. McHugh stated that he could send updates to CAC members in e-mails; that the City holds the Villages to the standards in the LDRs; that the over-pass in front of the former Winn Dixie plaza caused the plaza to fail; that re-development is tricky and expensive and profit margins are low for the private market; that City managed CRA's can be successful when built to specifications and then sold.

Update on Water Use Permit:

Mr. Reeder called for the update on the Water Use Permit.

Mr. McHugh provided background history on the Water Use Permit; the law suit and settlement approval; and that the City now has the Water Use Permit; that the City had sewer lines in the area that were required by the settlement; that the settlement came in at one-fifth the cost.

7) Adjournment – Next Meeting: May 20, 2015

Mr. Reeder asked for a motion for adjournment.

Mr. Harrison moved for adjournment at 7:52 PM; Ms. Isaac seconded the motion; the motion carried unanimously.

The CAC was adjourned at 7:52 PM.

RESOLUTION R2015-15

A RESOLUTION OF THE CITY OF WILDWOOD FLORIDA; ADOPTING THE SANITARY SEWER FACILITY PLAN; COMPLETED BY KIMLEY-HORN AND ASSOCIATES DATED APRIL 2015; IDENTIFYING THE CR 209 FORCEMAIN EXTENSION PROJECT AS NEEDED CAPITAL IMPROVEMENT TO IMPROVE SANITARY SEWER SERVICE TO THE CITIZENS OF WILDWOOD; AND TO BETTER POSITION THE CITY FOR FUTURE GROWTH; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City is a municipal provider of potable water, sanitary sewer, and reuse water services; and

WHEREAS, the City recognizes the need to protect the natural resources of the City and of the State of Florida, as well as the need to ensure the environment is carefully and adequately protected; and

WHEREAS, the City is experiencing rapid growth in the northern service area, and the City authorized Kimley-Horn and Associates to create a Sanitary Sewer Facility Plan to assess the northern service area for available capacity to support anticipated future development;

WHEREAS, at the June 17, 2015 meeting of the Citizens Advisory Committee, the Citizens Advisory Committee recommended the City Commission implement the recommendations contained within the Sanitary Sewer Facility Plan; and

WHEREAS, a Public Hearing was held on June 22, 2015 and the information contained within the Sanitary Sewer Facilities Plan and referenced documents have been provided the public for input; and

WHEREAS, the City Commission understands this project will cost approximately \$2,031,300; and

WHEREAS, the City Commission hereby recognizes the need to proceed with the improvements identified in the Sanitary Sewer Facility Plan.

NOW, THEREFORE, BE IT RESOLVED, BY THE CITY COMMISSION OF THE CITY OF WILDWOOD, FLORIDA, THAT:

1. The City hereby accepts the recommendations of the "Sanitary Sewer Facility Plan" prepared by Kimley-Horn and Associates for the City of Wildwood Utilities Department dated April 2015 attached herein as "Exhibit A" to this Resolution.
2. The recommendations include the need for the improvement of the CR 209 lift station to a master lift station and the construction of a sanitary sewer forcemain from

the master lift station along CR 209 to the City's wastewater treatment facility. The recommended improvements are estimated to cost \$2,031,300.

3. The City Manager is hereby authorized to take any and all actions necessary pertaining to the implementation of the Sanitary Sewer Facilities Plan contained in "Exhibit A."

4. This Resolution shall take effect immediately upon adopting by the City Commission.

DONE AND RESOLVED, this ___ day of _____, 2015, in regular session, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

S E A L

Ed Wolf, Mayor

ATTEST: _____
Cassandra Lippincott, City Clerk



Sanitary Sewer Facility Plan

CITY OF WILDWOOD

UTILITIES DEPARTMENT

Prepared for:

The City of Wildwood

Prepared by:

Kimley-Horn and Associates, Inc.

142173000
April 2015
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352 438 3000

Kimley»»Horn

Sanitary Sewer Facility Plan

CITY OF WILDWOOD

UTILITIES DEPARTMENT

Prepared for:

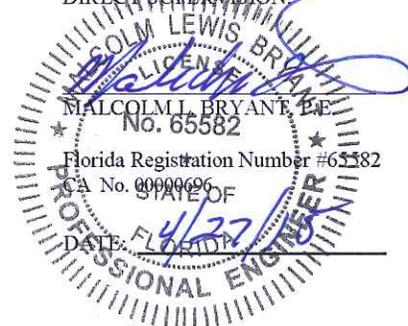
The City of Wildwood

Prepared by:

Kimley-Horn and Associates, Inc.

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April 2015
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THIS IS TO CERTIFY THAT THE ENCLOSED
ENGINEERING CALCULATIONS WERE
PERFORMED BY ME OR UNDER MY
DIRECT SUPERVISION



EXECUTIVE SUMMARY

There are several developments that are currently being planned and constructed in the northern service area in the City of Wildwood. These developments are within the City's utility service territory, and the developers desire to receive potable water and sanitary sewer service from the City's systems. The City is anticipating additional commercial and residential growth in the northern portion of the service territory. In response to the growth, the City evaluated the current capacities of the sanitary sewer collection system that services this area of the City. Kimley-Horn performed a capacity analysis of a portion of the existing northern sanitary sewer system to assess it for available capacity to support future development.

The results of the capacity analysis concluded that the existing system does not have the capacity to serve the developments planned through 2016. There are short term improvements that can be made to the system to increase and improve capacity. However, these short term improvements have limitations.

Therefore, the longer term improvement of converting the CR 209 LS to a master lift station (LS) and constructing a forcemain from the CR 209 LS to the wastewater treatment facility (WWTF) is recommended. This will enable the City of Wildwood to obtain the capacity for additional development. This improvement would provide enough capacity for the existing and proposed developments in this part of the City's service area, as well as provide a system that can accommodate other future developments that are not currently anticipated. In addition, this improvement would reduce the flows that are received by the Charlotte LS and Peters Street LS, which will return these stations to normal operating conditions.

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GENERAL

Purpose

The Owner is the City of Wildwood, 100 N. Main Street, Wildwood, Florida 34785. The purpose of this report is to develop a fundable plan to upgrade the City's northern wastewater utility infrastructure.

Owner's Present Situation

There are several developments that are currently being planned and constructed in the northern service area in the City of Wildwood. These developments are within the City's utility service territory and the developers desire to receive sanitary sewer service from the City's systems. The City is anticipating additional commercial and residential growth in the northern portion of the service territory. In response to the growth, the City evaluated the current capacities of the sanitary sewer collection system that services this area of the City. Kimley-Horn performed a capacity analysis of a portion of the existing northern sanitary sewer system to assess it for available capacity to support future development. This report includes a description of the data collected, evaluation of alternative forcemain options, and a recommended plan based on the most cost-effective, environmentally sound, and implementable alternative.

PROJECT PLANNING AREA

Project Location

Wildwood is located between I-75 and US 441 in northeast Sumter County, Florida. Figure 1 depicts the sewer system elements of interest.

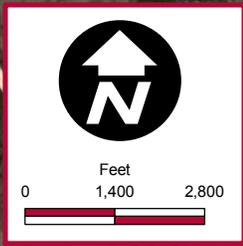
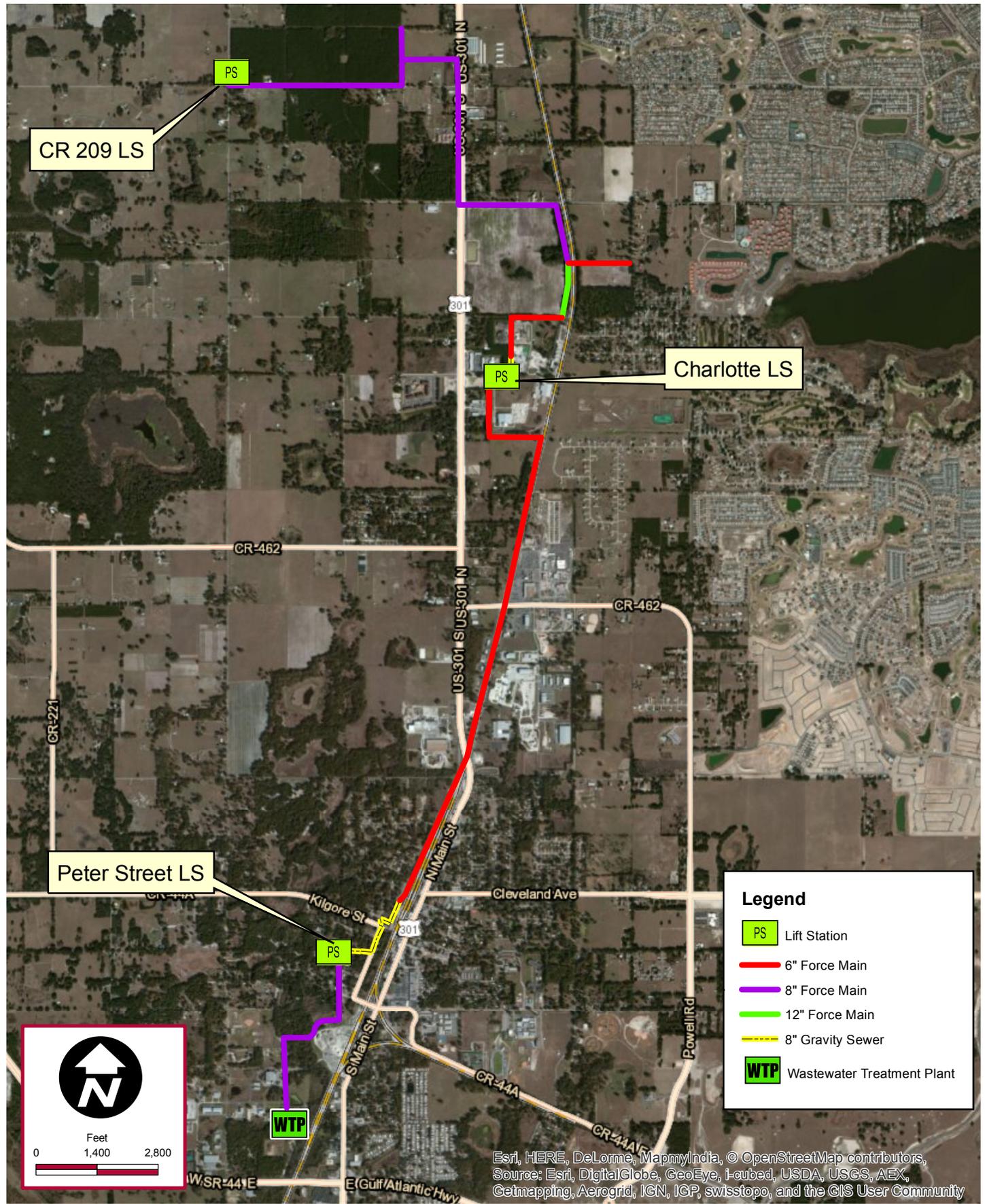
Environmental Impacts

All construction will take place in the City's right-of-way and there will be no harmful environmental effects.

Growth Areas and Wastewater Sewer Flows

The City provided Kimley-Horn with a list of proposed developments in the northern service territory. The list included a breakdown of the developments that will contribute flows to the Charlotte LS and Peter Street LS directly. The list also included the number of equivalent residential units (ERU) that each development will contribute to sewer flows. Using the level of service standard of 250 gallons per day per ERU, Kimley-Horn calculated an estimated daily sewer flow for each development. The average daily flow rate and peak hour flow rates were also calculated. A peaking factor of 3.5 and 3.7, were estimated for the Peter Street LS and Charlotte LS, respectively. Peaking factors were estimated using the method developed by Fair, G.M. and Geyer, J.C., 1954. Table 1 and Table 2 below summarize the estimated flows and flow rates for each development.

K:\IOCA_Civil\142173000 - City Engineering Support\Additional Tasks\0084 - Charlotte Street Lift Station Capacity Analysis\Report Figures\Figure 1.mxd - 10/13/2014 5:09:13 PM - kevin.vickers



Legend

- PS Lift Station
- 6" Force Main
- 8" Force Main
- 12" Force Main
- 8" Gravity Sewer
- WTP Wastewater Treatment Plant

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Kimley»Horn

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AERIAL MAP

Existing Wastewater Collection System

Scale: As Noted	Project No.: 1421730084	October 2014	Figure 1
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Table 1 - Additional Flows to Charlotte LS by Development

Developments Contributing to Charlotte LS				
Known Project	Sewer ERU	Sewer Flows (ADF) (Gallons)	Sewer Flows (ADF) (gpm)	Sewer Flows (PHF)*
AutoZone 6341 SP 1408-03	2.5	625	0.4	1.6
Compass Self-Storage SP 1310-01	2	500	0.3	1.3
Duke Energy, Transmission Ops. SP 1405-10	4.9	1225	0.9	3.1
Fort Knox Self Storage SP 1309-06	3.3	825	0.6	2.1
Goodwill (Piedmont) SP 1402-07	8.9	2225	1.5	5.7
Grand Oaks Manor, Phase 1 SP 1409-01	50	12500	8.7	32.1
Lakeside Landings - Existing Agreement	11	2750	1.9	7.1
Lakeside Landings, SP 1406-05 Phase 2	150	37500	26.0	96.4
Miryala Office Complex SP 1309-03	3.4	850	0.6	2.2
Mission Oaks, Phase 2 SP 1309-02	13.2	3300	2.3	8.5
Oxford Oaks Phase 1 (39 permits Pulled FY 13-14)	200	50000	34.7	128.5
Sumter Retirement Residence SP 1211-02	52.8	13200	9.2	33.9
Villas at Legacy Park (Peppertree) Ph. 1 (Paid)	10	2500	1.7	6.4
Villas at Legacy Park (Peppertree) Ph. 1 (To be Paid)	25	6250	4.3	16.1
Total	537	134,250	93	345

* A peaking factor of 3.7 was applied to the ADF to calculate PHF

Table 2 - Additional Flows to Peter Street LS by Development

Developments Contributing to Peter Street LS				
Known Project	Sewer ERU	Sewer Flows (ADF)	Sewer Flows (ADF) (gpm)	Sewer Flows (PHF)*
Additional Flows from Charlotte LS	537	134250	93.2	345
Providence 2 ALF	85	21250	14.8	51.6
Triumph South Phase 1 (34 ERUs Paid by DA)	34	8500	5.9	20.7
Total	656	164,000	114	417

* A peaking factor of 3.5 was applied to the ADF to calculate PHF

EXISTING WASTEWATER SEWER SYSTEM

Before the existing sewer system was analyzed for available capacity, Kimley-Horn collected field data for the lift stations and gravity systems downstream of the proposed developments. Lift station drawdown tests were performed at six lift stations. Observations were also made of the current condition of each lift station and two segments of gravity sewer. An analysis of each of the sewer elements are presented below. Figure 1 depicts the sewer system elements of interest.

All sewer flows north of CR 124A ultimately outfall to one lift station (Charlotte LS) that conveys the flows to the south through a single 6" diameter forcemain. Charlotte LS receives a significant portion of its flows through a gravity system that conveys flow from a single forcemain (size varies from 6" to 12") that begins at the CR 209 LS and has several lift stations that manifold into it (including Mission Oaks LS, Lake Side Landings LS, several grinder pump stations, and two private lift stations).

Lift Station Capacity Analysis

There are three lift stations of interest in this analysis: the CR 209 LS, Charlotte LS and the Peter Street LS. The CR 209 LS receives sewer flows from all development north of CR 214 and re-pumps those flows through a forcemain network to the Charlotte LS. The Charlotte LS receives flows from the CR 209 LS, and several other lift stations and re-pumps these flows to the south towards the Peter Street LS. Peter Street LS ultimately receives and re-pumps flows from Charlotte LS in addition to inflows from a moderately sized gravity collection system. Peter Street LS pumps through a forcemain directly to the wastewater treatment facility. Drawdown tests and fill tests were performed at these lift stations to measure each lift station's instantaneous pumping rate and fill rate. The results of the tests are summarized in the table below.

Table 3 - Lift Station Field Data

Lift Station Name	Measured Fill Rate (gpm)	Pumping Rate (Pump 1 Only) (gpm)	Pumping Rate (Pump 2 Only) (gpm)	Pumping Rate (Both Pumps) (gpm)
CR 209 LS	62	402	414	696
Charlotte LS	94	227	172	407
Peter Street LS (1)	188	196	204	266
Peter Street LS (2)	157	407	219	204

The first notable observation from this data is that the CR 209 LS, which pumps to Charlotte LS, has the ability to out pump Charlotte LS. This means that if the CR 209 LS needed to pump for an extended period of time, eventually it could overflow the Charlotte LS. The second notable observation is that the inflow rate to Peter Street LS is very close to the measured pumping rate at the lift station. This indicates that the Peter Street LS is at capacity. During the field testing, it was also observed that the water level in the Peter Street LS rose while one of the pumps was running. This indicates that Peter Street LS, during some times in a given day, will take in more flow than it is able to pump out. Currently the existing pumps are able to compensate for this condition by running longer.

To check the flow rates observed in the field, Kimley-Horn developed system hydraulic curves for the forcemain network connected to each of the lift stations. The system curves were overlaid with the pump curves provided by the City for the lift stations. The pump curve for Charlotte LS intersected the system curve at a flow rate of approximately 220 gpm. The rate is close to the observed flow rate of 200 gpm. The pump curve for Peter Street LS was also overlaid with its system hydraulic curve. The pump curve for Peter Street LS intersected the system curve at approximately 360 gpm. This is a significant deviation from the field measured flow rate. Due to the possible error in measurement, the flow rate of 360 gpm was assumed for the remainder of this analysis.

In addition to reviewing the pumping capacities, Kimley-horn also reviewed the pump run times for the three lift stations. The table below summarizes the average daily run times and average daily pump starts for each of the lift stations.

Table 4 - Lift Station Run Times and Starts

Lift Station	Number of Pumps	Average Daily Run Time (hours per pump)	Average Daily Pump Starts (per pump)	Average Pump Starts (per hour)
CR 209	2	1.9	25	1.0
Charlotte	2	6.5	34	1.4
Peter Street	2	6.2	64	2.7

A more detailed analysis of the lift station run times was performed for the Charlotte LS and Peter Street LS. The City provided three months (March, April and May of 2014) of detailed lift station run times. The data included a detailed list of start and stop times. Kimley-Horn analyzed the data for run time and pump run time distribution. The data was used to calculate the total daily run time and the average run time over the period. From the run time and flow rate, a total volume of flow was calculated by multiplying the average daily run time by the lift station pump rate. Using the City’s level of service of 250 gallons per day per ERU of sewage flow, an estimate of the number of units currently served was calculated for each of the lift stations. The sections below present a detailed discussion of each lift station.

Charlotte LS

Based on the run time data, the average daily run time for Charlotte LS is 12.9 hours per day. With a measured pumping rate of 200 gpm, this equates to approximately 155,000 gallons of total flow per day. Based on the City’s level of service, the estimated units currently being served by this lift station is 620 ERUs. The current run times for Charlotte LS suggests that the lift station is running longer to keep up with the existing inflow rate. After reviewing the run time data closer, the following daily patterns were observed.

Based on the data, this lift station runs several hours each day without stopping. The extended running times appear to mostly occur in the mornings between the hours of 7:00 am and 12:00 pm (noon). However there are occurrences of extended run times in the evening between 6:00 pm and 9:00 pm. The extended run times are indicative of peaking periods through the day that the lift station is attenuating. The pumps in the lift station operate continuously, sometimes at the same time, during these periods to keep up with the inflow to the station. In a duplex lift station like Charlotte LS, the lift station is typically designed so that only one pump needs to run at a time, with occurrences of simultaneously running being reserved for exceptionally high flow rates.

With the addition of another 537 ERUs, the total daily volume flowing to the lift station would increase to 289,000 gallons per day, or approximately 200 gpm (average daily flow). Using a peaking factor of 3.7, the peak hour flow to the lift station will be approximately 740 gpm. This demand is significantly beyond the existing lift station’s capacity.

Peter Street LS

Based on the run time data, the average run time for Peter Street LS is 12.5 hours per day. Using an estimated pumping rate of 360 gpm, a total daily volume of 267,000 gallons was calculated. Based on the City's level of service, the estimated ERUs currently being served by this lift station is 1,067 ERUs. The amount of time that this station is running suggests that the lift station is struggling to keep up with the existing flow rate.

Based on the data, there did not appear to be a consistent daily pattern for peaking. There were instances in the data where both pumps ran every time when the station operated. However, this appears to have been a maintenance issue that was causing both pumps to run.

By adding 656 ERUs to this station, the total daily volume would increase to 431,000 gallons per day, or approximately 300 gpm (average daily flow). Using a peaking factor of 3.5, the peak hour flow to the lift station will be approximately 1,050 gpm. This demand is significantly beyond the existing lift station's capacity.

Force Main Capacity Analysis

There are two forcemain segments of interest in this capacity analysis. The first segment conveys flows from the Charlotte LS. That forcemain, which is 6" in diameter, acts as the "backbone" between the northern service area and the rest of the City's wastewater collection system (see Figure 1). The forcemain flows to a manhole in the gravity sewer system that ultimately outfalls to the Peter Street LS. Using the system curve developed for this forcemain, a maximum capacity of 360 gpm (at 75 psi) is estimated for this forcemain. Given the anticipated development north of CR 124A, it is not anticipated that this forcemain will have sufficient capacity to handle the future flows.

The second forcemain of interest conveys flows from the Peter Street LS to the City's WWTF. This forcemain is 8" diameter and outfalls directly to the City's WWTF headwork structure. Using the system hydraulic curve developed for this forcemain, a maximum capacity of 1180 gpm (at 75 psi) is estimated for this forcemain. This forcemain has sufficient capacity to handle current and future flow rates from the Peter Street LS.

Gravity Main Capacity Analysis

There are two gravity sewer segments of interest for this capacity analysis. The first is an 8" diameter line that is located just north of the Charlotte LS and receives wastewater flows from the forcemain coming from the CR 209 LS and several others. This segment of gravity sewer connects the forcemain outfall to the Charlotte LS. Based on the City's as-built drawings, a significant stretch of this gravity sewer is sloped 0.4%. If this gravity system flows at 100% and 80% full, it has a maximum capacity of approximately 340 gpm and 275 gpm, respectively. Based on the flow rate measured from the CR 209 LS, the capacity of this segment of gravity sewer is already being exceeded. It does not have sufficient capacity to handle any additional future flow.

The second gravity sewer segment of interest is located just northeast of the Peter Street LS and receives wastewater flows from the forcemain coming from the Charlotte LS. As-built drawings of this area were not available for this analysis. Assuming the system consists of 8" pipes running at 0.4%, this segment has approximately 340 gpm of capacity at 100% full flow. Based on the flow rates measured from Charlotte LS, this segment is within capacity. However, if the pumping capacity of Charlotte LS is increased, this section of gravity sewer may need to be replaced or by-passed.

NEED FOR THE PROJECT

System Operation and Maintenance

- The Charlotte LS runs several hours each day without stopping. The pumps in the lift station operate continuously, sometimes at the same time, during these periods to keep up with the inflow to the station.
- The CR 209 LS, which pumps to Charlotte LS, has the ability to out pump Charlotte LS. This means that if the CR 209 LS needed to pump for an extended period of time, eventually it could overflow the Charlotte LS.
- The inflow rate to Peter Street LS is very close to the measured pumping rate at the lift station. This indicates that the Peter Street LS is at capacity.
- Based on the flow rate measured from the CR 209 LS, the capacity of the 8" diameter gravity line that is located just north of the Charlotte LS and receives wastewater flows from the forcemain coming from the CR 209 LS and several others does not have sufficient capacity to handle any additional future flow.

Growth

- The Charlotte LS will have 537 ERUs added to this station increasing the total daily volume flowing to the lift station to 289,000 gallons per day, or approximately 200 gpm (average daily flow). Using a peaking factor of 3.7, the peak hour flow to the lift station will be approximately 740 gpm. This demand is significantly beyond the existing lift station's capacity.
- The Peter Street LS will have 656 ERUs added to this station increasing the total daily volume to 431,000 gallons per day, or approximately 300 gpm (average daily flow). Using peaking factor of 3.5, the peak hour flow to the lift station will be approximately 1,050 gpm. This demand is significantly beyond the existing lift station's capacity
- The forcemain that conveys flows from the Peter Street LS to the City's WWTF is 8" in diameter and outfalls directly to the City's WWTF headwork structure. Using the system hydraulic curve developed for this forcemain, a maximum capacity of 1180 gpm (at 75 psi) is estimated for this forcemain. This forcemain has sufficient capacity to handle current and future flow rates from the Peter Street LS.

EVALUATION OF ALTERNATIVES

Based on the analysis detailed above, the existing system does not have capacity to serve the developments planned through 2016. There are short term improvements that can be made to the system to increase and improve capacity. However, these short term improvements have limitations. The improvements are listed below with an estimate of the number of ERUs that can be added before the system would operate as it currently does. For the timeframe estimate it is assumed that the future failure point occurs when the lift stations reaches the current run times.

Alternative 1 - Do Nothing

This alternative is considered infeasible due to the questionable long-term reliability and projected growth. Because this alternative is considered not feasible from an operational, regulatory, and growth standpoint, it is not considered in the cost comparisons.

Alternative 2 - Peter Street Lift Station Improvements

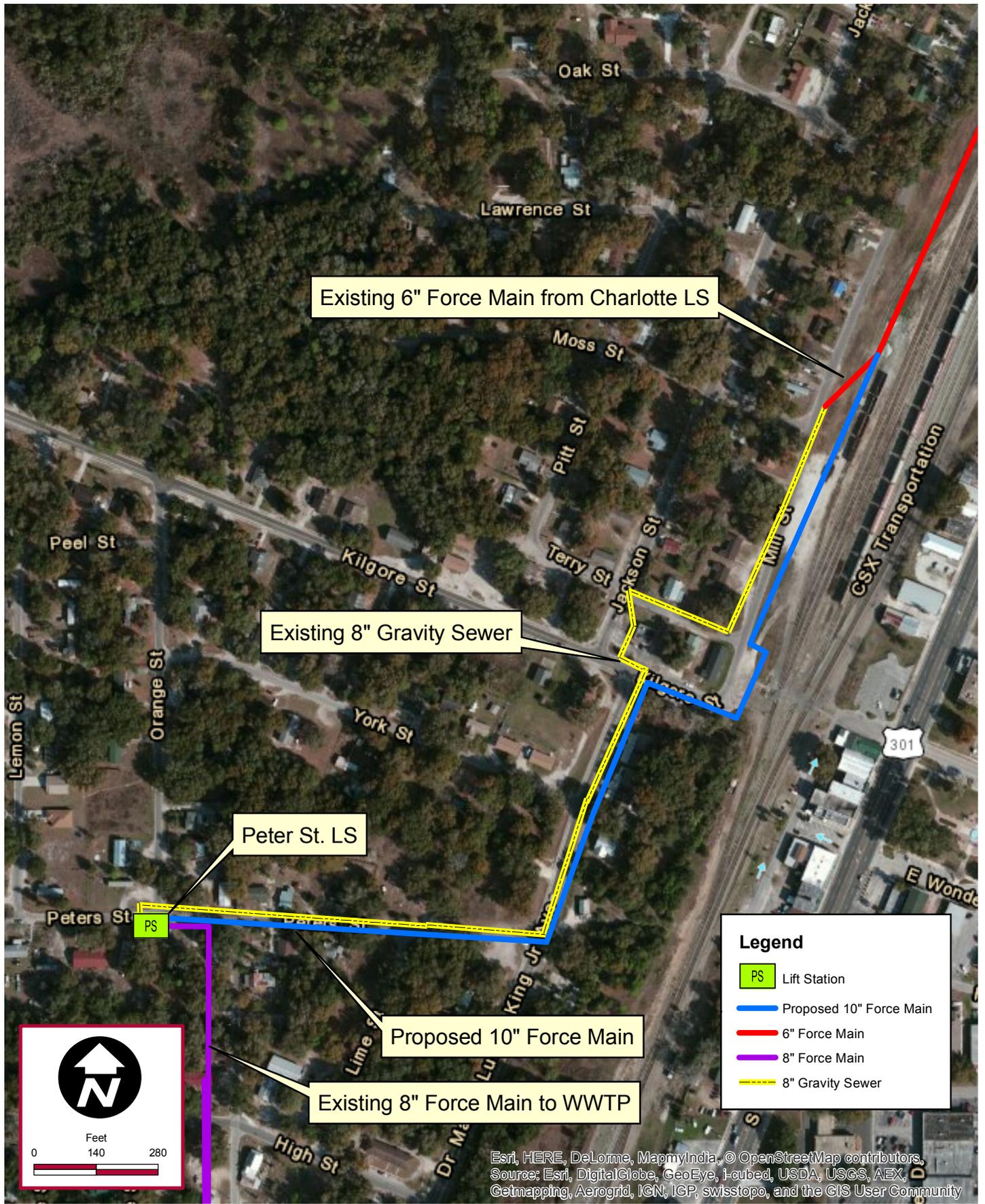
If these improvements are made, a maximum of approximately 705 ERUs (at peak hour flow) can be added to the Peter Street LS. Based on the projection of adding 656 ERUs by the end of 2016 and assuming linear buildout, the lift station will have capacity through the end of 2016.

- To improve capacity, the pumps would need to be either replaced or upgraded. The City also desires to make general site improvements (adding a generator, adding a fence, rehabilitating/replacing the building enclosure, rehabilitating the wet well, modifying the guiderails, modifying the site piping, etc.) to the lift station. The estimated cost of these improvements is \$250,000.

Alternative 3 - Charlotte Lift Station Improvements and Forcemain Extensions

If these improvements are made, a maximum of approximately 125 ERUs (at peak hour flow) can be added to the Charlotte LS. Based on the projection of adding 537 ERUs by the end of 2016 and assuming a linear buildout, the lift station would be at capacity again by mid-year of 2015.

- Charlotte Lift Station Upgrade - To improve capacity, the pumps would need to be either replaced or upgraded. Each of the pumps should be designed to pump a minimum of 360 gpm. An on-site generator also should be installed to provide emergency power. The estimated cost of this improvement is \$100,000.
- Charlotte to Peter Street Force Main Connection – Install forcemain extension with approximately 2500' of 10" diameter forcemain (see Figure 2). The estimated cost of this improvement, including survey, engineering, and a contingency is \$175,000.
- Charlotte Gravity Sewer Replacement – Replace the existing gravity sewer line at the Charlotte LS with a force main. The forcemain extension will consist of approximately 800' of 10" diameter PVC pipe (see Figure 3). The estimated cost of this improvement, including survey, engineering and a contingency, is \$75,000.

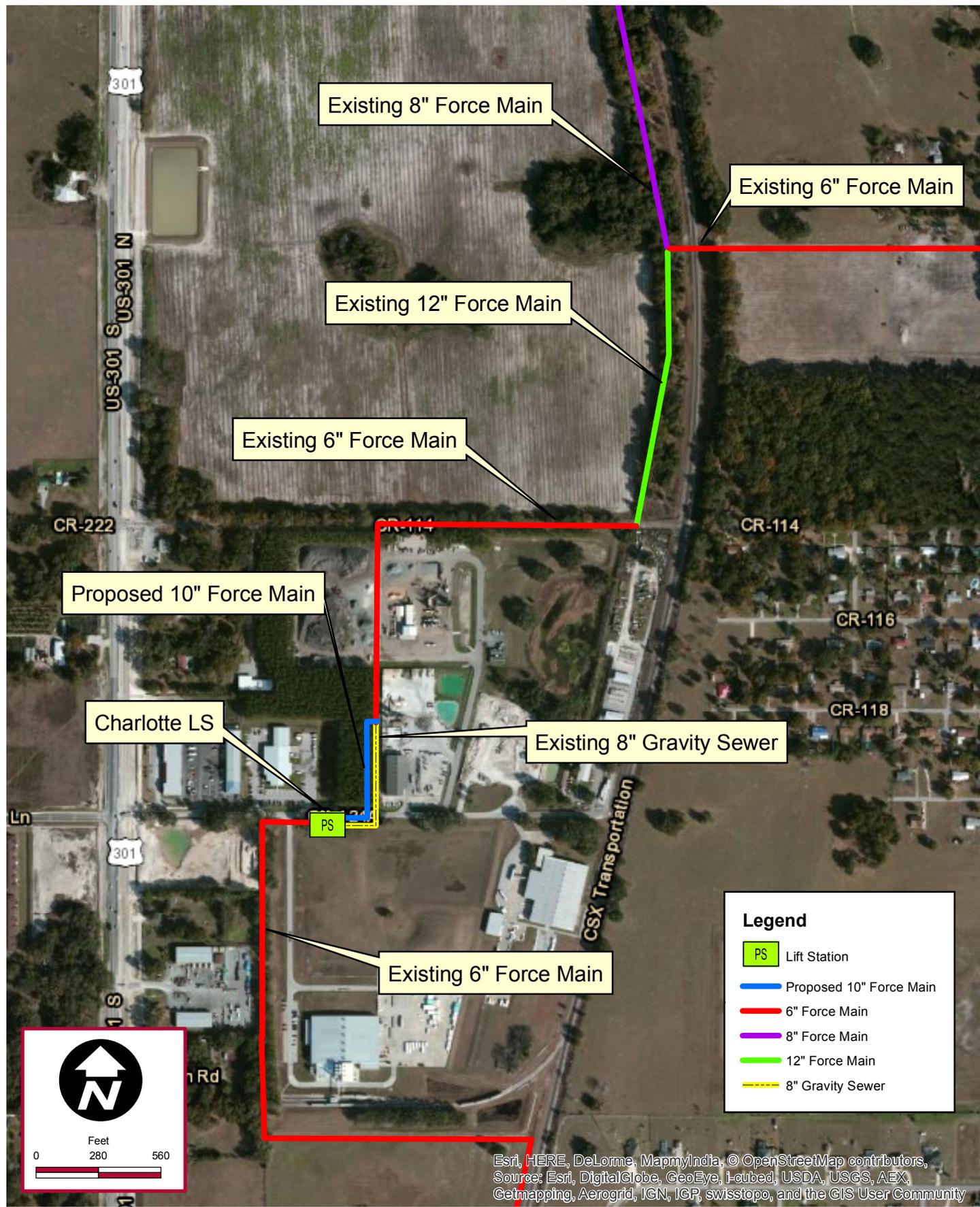


AERIAL MAP

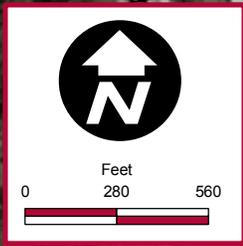
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Charlotte to Peter Street Force Main Connection



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend

- PS Lift Station
- Proposed 10" Force Main
- 6" Force Main
- 8" Force Main
- 12" Force Main
- 8" Gravity Sewer

AERIAL MAP

Charlotte Gravity Replacement



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Scale: As Noted

Project No.: 1421730084

October 2014

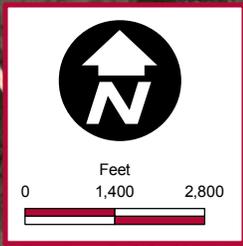
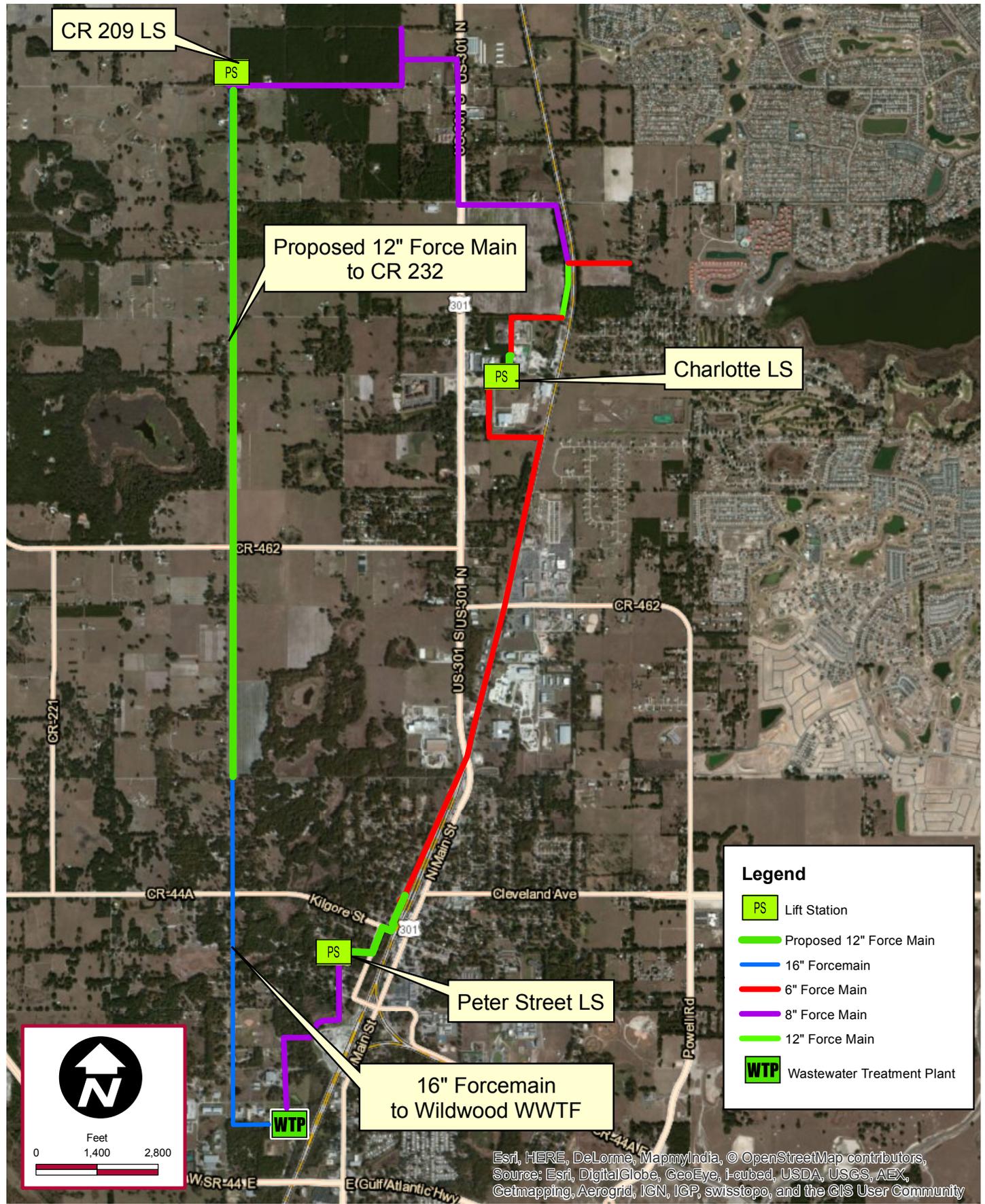
Figure 3

Alternative 4 - CR 209 Force Main Construction

If these improvements are made, approximately 2,000 ERUs (at peak hour flow) can be added to the City's WWTF. Based on the projection of adding 1,193 ERUs by the end of 2016, the CR 209 LS would still have additional capacity to increase the northern sewer service area.

- Convert CR 209 LS to a master lift station and construct approximately 16,500 feet of 12" force main and 9,300 feet of 16" forcemain from the CR 209 LS to the WWTF (see Figure 4). This forcemain will divert the wastewater flows north of CR 472 directly to the WWTF. The new forcemain will reduce the flows through the existing 6" forcemain "backbone" and will directly reduce pump operating times and increase the long-term capacity and reliability of the wastewater collection system. If this improvement is made, some of the lift stations that currently flow to Charlotte LS can be reversed to flow to the CR 209 LS. The pumps in these stations will need to be replaced. The estimated cost of this improvement, including survey, engineering and contingency is \$2,000,000.

K:\IOCA_Civil\142173000 - City Engineering Support\Additional Tasks\0084 - Charlotte Street Lift Station Capacity Analysis\Report Figures\Figure 5.mxd - 10/13/2014 5:27:57 PM - kevin.vickers



Legend

- PS Lift Station
- Proposed 12" Force Main
- 16" Forcemain
- 6" Force Main
- 8" Force Main
- 12" Force Main
- WTP Wastewater Treatment Plant

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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AERIAL MAP

**Long-term Wastewater Collection System Improvement
 (With 16" Forcemain Previously Constructed)**

Scale: As Noted	Project No.: 1421730084	October 2014	Figure 4
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SELECTION OF AN ALTERNATIVE

Alternative 4 was selected as the long-term capital improvement required to improve the system operation and maintenance and increase the northern service area sewer capacity. Although alternatives 2 and 3 were lower in present worth, they are not deemed long-term solutions due to the near-term projected growth.

PROPOSED PROJECT

Proposed Design

Convert CR 209 LS to a master lift station and construct approximately 16,500 feet of 12" force main and 9,300 feet of 16" forcemain from the CR 209 LS to the WWTF (see Figure 4).

TOTAL PROJECT COST ESTIMATE

The probable construction cost for the project is discussed in the table below:

ENGINEER'S OPINION OF PROBABLE COST					
FOR					
CR 209 FORCE MAIN					
ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
CR 209 FORCE MAIN (WITHOUT 16" FORCEMAIN)					
1	MOBILIZATION/BONDS/INSURANCE	LS	1	\$ 50,000	\$ 50,000
2	RESTORATION/MOT	LS	1	\$ 50,000	\$ 50,000
3	12" PVC (includes complete installation)	LF	16500	\$ 50.00	\$ 825,000
4	16" PVC (includes complete installation)	LF	9300	\$ 60.00	\$ 558,000
5	Existing Lift Station Pump Replacements and modifications	LS	1	\$ 200,000.00	\$ 200,000
Construction Subtotal					\$ 1,683,000
SURVEY (5%)					\$ 30,000
ENGINEERING					\$ 150,000
CONTINGENCY (15%)					\$ 168,300
GRAND TOTAL					\$ 2,031,300

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

ANNUAL OPERATING BUDGET

The expected annual operating budget is shown as Attachment 1.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Currently, the Charlotte LS and Peter Street LS are managing to keep up with their inflows from the existing developments. There are improvements that can be made to both Charlotte LS and Peter Street LS to accommodate some portion of the expected additional development projects. Of the two, Charlotte LS is the limiting LS in terms of capacity expansion. The limitation is primarily due to the maximum hydraulic capacity of the 6" forcemain that conveys flows from Charlotte LS.

If the short-term improvements identified in this report are made, there will be some additional capacity added to this system to accommodate future development, but not enough to accommodate all planned development in this area.

Recommendation

The longer term improvement of converting the CR 209 LS to a master lift station and constructing a forcemain from the CR 209 LS to the WWTF is needed to improve the system operation and maintenance and to obtain the capacity for additional development. This improvement would provide enough capacity for the existing and proposed developments in this part of the City's service area, as well as provide a system that can accommodate other future developments that are not currently anticipated. In addition, this improvement would reduce the flows that are received by the Charlotte LS and Peter Street LS, which will return these stations to normal operating conditions.

CITY OF WILDWOOD REVENUES

NOTE: THIS IS NOT A FINANCIAL STATEMENT FOR AUDIT PURPOSES.

401

	Revenue First 8 Months FY-14	Budgeted Revenue Year End FY-014	Projected Revenue Year End FY-2015
ENTERPRISE FUND OPERATIONAL			
Water Operational Revenue	\$ 1,027,026.96	\$ 1,438,116.00	\$ 1,640,000.00
Water-Connection Fees	\$ 193,643.80	\$ 100,000.00	\$ 300,000.00
Water-TIE FEES	\$ 204,171.22	\$ 85,000.00	\$ 170,000.00
WATER METER INSTALLS	\$ 17,838.62	\$ 33,000.00	\$ 60,000.00
Water -Misc./ON-OFF	\$ 22,003.50	\$ 34,000.00	\$ 34,000.00
WATER INCOME-OTHER	\$ 3,958.30	\$ 15,000.00	\$ 15,000.00
Wastewater Operational Revenue	\$ 1,735,920.48	\$ 2,361,884.00	\$ 2,840,000.00
Wastewater-Connection Fees	\$ 411,261.28	\$ 200,000.00	\$ 643,000.00
Wastewater -TIE FEES	\$ 320,530.69	\$ 120,000.00	\$ 200,000.00
Wastewater-TSS/COD	\$ 488,601.04	\$ 685,000.00	\$ 720,000.00
Wastewater-Misc./Other	\$ 14,436.01	\$ 7,500.00	\$ 10,000.00
Interest	\$ 3,027.34	\$ 2,500.00	\$ 4,000.00
REUSE WATER OPERATIONS	\$ 48,400.11	\$ 60,000.00	\$ 60,000.00
Land Lease Turtle Mount (Tower)	8000.00	\$ 12,000.00	\$ 12,000.00
Reimbursements - Trailwinds Project		\$ 1,200,000.00	\$ 1,200,000.00
	\$ 4,498,819.35	\$ 6,354,000.00	\$ 7,908,000.00
Grants & Other Funding Sources:			
SWFWMD GRANT	\$ -	\$ -	\$ -
FDEP Generator Grant	\$ -	\$ -	\$ -
2007 SRF LOAN PROCEEDS	\$ -	\$ -	\$ -
WACHOVIA BANK LINE OF CREDIT	\$ -	\$ -	\$ -
TOTAL OTHER FUNDING SOURCES	\$ -	\$ -	\$ -
Cash Forward:			
NON-OPERATIONAL CASH FORWARD W/S		\$ 2,450,000.00	\$ 1,100,000.00
WATER TIE FEES		\$ 50,000.00	\$ 50,000.00
WASTEWATER TIE FEES		\$ 70,000.00	\$ 300,000.00
WATER CONNECTION FEES		\$ 140,000.00	\$ 240,000.00
WASTEWATER CONNECTION FEES		\$ 420,000.00	\$ 850,000.00
TOTAL CASH FORWARD	\$ -	\$ 3,130,000.00	\$ 2,540,000.00
TOTAL WATER/SEWER REVENUE & CASH FORWARD:	\$ 4,498,819.35	\$ 9,484,000.00	\$ 10,448,000.00

CITY OF WILDWOOD EXPENDITURES									
Department: 0036		Utility Department						Budgeted	Budgeted
		Account				Expenditures First	Expenditures	Expenditures	
Line Description		A	B	C	D	8 Months FY-14	Year End FY -14	(w/Enhancements) Year End FY-15	
1	Salaries	0401	0036	0536	0120	\$ 514,514.80	\$ 894,670.00	\$ 1,002,190.00	
2	On Call	0401	0036	0536	0125	\$ 6,210.00	\$ 10,000.00	\$ 10,000.00	
3	Shift Differential	0401	0036	0536	0126	\$ -			
4	Overtime	0401	0036	0536	0130	\$ 15,877.05	\$ 20,000.00	\$ 20,600.00	
5	Sick Leave	0401	0036	0536	0150	\$ 18,242.07			
6	Vacation Pay	0401	0036	0536	0160	\$ 30,514.57			
7	Holiday Pay	0401	0036	0536	0180	\$ 19,157.01			
8	Holiday Premium	0401	0036	0536	0182	\$ 5,679.45	\$ 8,000.00	\$ 8,000.00	
9	FICA Expense	0401	0036	0536	0210	\$ 45,314.85	\$ 68,444.00	\$ 79,630.00	
10	Retirement	0401	0036	0536	0220	\$ 42,408.77	\$ 62,181.00	\$ 69,525.00	
11	Life & Health Insurance	0401	0036	0536	0230	\$ 87,148.72	\$ 138,000.00	\$ 138,500.00	
12	Unemployment	0401	0036	0536	0250	\$ -	\$ 5,000.00	\$ 5,000.00	
13	Professional Services	0401	0036	0536	0310	\$ 155,281.59	\$ 125,000.00	\$ 150,000.00	
14	2013 Loan Financing Expenses	0401	0036	0536	0313	\$ 21,500.00	\$ -		
15	Other Contractual Services	0401	0036	0536	0340	\$ 56,575.25	\$ 75,000.00	\$ 80,000.00	
16	Travel and Per Diem	0401	0036	0536	0400	\$ 1,679.79	\$ 2,500.00	\$ 2,500.00	
17	Telephone Expense	0401	0036	0536	0410	\$ 10,869.76	\$ 10,000.00	\$ 15,000.00	
18	Postage/Transport. Fees	0401	0036	0536	0420	\$ 1,466.21	\$ 1,000.00	\$ 1,200.00	
19	Utilities	0401	0036	0536	0430	\$ 228,548.01	\$ 350,000.00	\$ 300,000.00	
20	Rental & Leasing	0401	0036	0536	0440	\$ 12,842.91	\$ 22,000.00	\$ 20,000.00	
21	Workers Comp. Insurance	0401	0036	0536	0451	\$ 19,245.83	\$ 35,592.00	\$ 38,000.00	
22	Repair and Maintenance	0401	0036	0536	0460	\$ 205,186.42	\$ 472,390.00		
23	Misc. Expn. & Other Current	0401	0036	0536	0490	\$ 1,312.14	\$ 3,000.00	\$ 3,000.00	
24	Boot Allowance	0401	0036	0536	0497	\$ 344.93	\$ 1,550.00	\$ 900.00	
25	Office Supplies	0401	0036	0536	0510	\$ 4,146.18	\$ 6,000.00	\$ 5,000.00	
26	Operating Supplies	0401	0036	0536	0520	\$ 202,983.81	\$ 386,300.00	\$ 300,000.00	
27	Subscriptions/Dues	0401	0036	0536	0540	\$ 4,728.20	\$ 10,000.00	\$ 5,000.00	
28	License/Fees/Continuing Education	0401	0036	0536	0550	\$ 1,305.00	\$ 10,000.00	\$ 5,000.00	
29	EMP Monitoring	0401	0036	0536	TBD			\$ 42,380.00	
30	Cap. Improvement - Other (FACILITY UPGRADES)	0401	0036	0536	0630	\$ 22,818.55	\$ -		
31	Utility Relocates	0401	0036	0536	0631	\$ 84,511.00	\$ 150,000.00		
32	Okahumpka Water Main	0401	0036	0536	0632	\$ 326,223.01	\$ 150,000.00		
33	CR 468 Turnpike Interchange	0401	0036	0536	0633	\$ 5,550.00	\$ 150,000.00		
34	Loop/Upgrade Water Main	0401	0036	0536	0635		\$ 200,000.00	\$ 50,000.00	
35	WWTP Bar Screen/INF Channel	0401	0036	0536	0637	\$ 36,230.00	\$ 400,000.00		
36	Portable Gantry Lift System	0401	0036	0536	0638		\$ 6,250.00		
37	Envirex Clarifier Rehab - East	0401	0036	0536	0639	\$ 146.00	\$ 100,000.00		
38	Wastewater Repair & Replacement	0401	0036	0536	TBD			\$ 376,750.00	
39	Water Repair & Maintenance	0401	0036	0536	TBD			\$ 152,500.00	
40	Cap. Improvement - Machinery & Equipment - Sewer						\$ 95,000.00	\$ 151,500.00	
41	Cap. Improvement - Machinery & Equipment - Water	0401	0036	0536	0640	\$ 81,518.26	\$ 18,500.00	\$ 107,395.00	
42	TOTAL OPERATIONAL EXPENDITURES					\$ 2,270,080.14	\$ 3,986,377.00	\$ 3,139,570.00	

CITY OF WILDWOOD EXPENDITURES

Department: 0036		Utility Department Continued				Budgeted		Budgeted
		Account				Expenditures First	Expenditures	Expenditures
Line Description		A	B	C	D	8 Months FY-14	Year End FY -14	(w/Enhancements) Year End FY-15
43	DEBT SERVICE							
44	1. 2007 SRF Loan #3					\$ 189,957.44	\$ 331,407.00	\$ 379,915.00
45	2. 1994 SRF Loan #1					\$ 371,332.94	\$ 189,196.00	
46	3. 1996 SRF Loan #2					\$ 1,022,763.20	\$ 270,063.00	
47	4. Champagne Farms					\$ 537,665.20	\$ 101,801.00	
48	3. Refunding & Project Bond					\$ 178,088.06	\$ -	\$ 553,561.00
49	TOTAL DEBT SERVICE					\$ 2,299,806.84	\$ 892,467.00	\$ 933,476.00
50	OPERATIONAL TRANSFERS							
51	Transfer To General Fund						\$ 350,000.00	\$ 350,000.00
52	TOTAL OPERATIONAL TRANSFERS							\$ 350,000.00
53	CAPITAL PROJECTS							
54								
55	1. CR 462 Utility Upsizing	0401	0036	0536	0787	\$ 8,720.00		
56	2. Coleman 501 Water Plant	0401	0036	0536	0789	\$ 13,850.00	\$ 1,100,000.00	\$ 600,000.00
57	3. West Well Replacement	0401	0036	0536	0790	\$ 64,067.48	\$ 900,000.00	\$ 260,000.00
58	4. CR 462 Utility Relocates	0401	0036	0536	TBD			\$ 160,000.00
59	5. Turnpike Interchange Utility Relocates	0401	0036	0536	TBD			\$ 500,000.00
60	6. WWTP Bar Screen Inf Channel	0401	0036	0536	TBD			\$ 500,000.00
61	7. Wastewater System Master Plan & Utility Model	0401	0036	0536	TBD			\$ 145,000.00
62	8. Trailwinds Utility Extensions (Sewer)					\$ 30,905.00		\$ 1,200,000.00
63	TOTAL CAPITAL PROJECTS					\$ 117,542.48	\$ 2,000,000.00	\$ 3,365,000.00
64	WATER TIE FEE PROJECTS	0401	0036	0536	0696			
65	1. Landstone							
66	2. Trailwinds/Word Property (City Responsibility)	0401	0036	0535	TBD			\$ 225,000.00
67	3. Loop/Upgrade/Water Mains/Install Valves	0401	0036	0536	TBD			
68	4. General Development Projects	0401	0036	0536	TBD			\$ 200,000.00
69	TOTAL TIE FEE PROJECTS					\$ -	\$ -	\$ 425,000.00
70	WATER CONNECTION FEE PROJECTS							
71	1. Coleman 501 Water Treatment	0401	0036	0536	0789		\$ -	
72	2. West Well Replacement	0401	00036	00536	0790		\$ -	\$ 540,000.00
73	3. Champagne Farms	0401	0036	0536	0760		\$ -	
74	TOTAL WATER CONNECTION FEE PROJECTS					\$ -	\$ -	\$ 540,000.00
75	WASTEWATER TIE FEE PROJECTS							
76	1. Landstone	0401	0036	0536				
77	2. General Development Projects	0401	0036	0536				\$ 200,000.00
78	TOTAL WASTEWATER TIE FEE PROJECTS	0401	0036	0536				\$ 200,000.00
79	WASTEWATER CONNECTION FEE PROJECTS							
80	1. CSX Utility Crossings- Relocation	0401	0036	0536				
81	2. Three Flag System	0401	0036	0536				
82	TOTAL WASTEWATER CONNECTION FEE PROJECTS					\$ -	\$ -	\$ -
83	CONTINGENCY FUNDING						\$ 2,832,732.00	
84	TOTAL- ALL ENTERPRISE FUND EXPENDITURES					\$ 4,949,214.59	\$ 10,535,250.00	\$ 9,508,440.00