Town of Clayton
Regular Town Council Meeting Agenda
Monday, May 20, 2019 @ 6:00 PM
Council Chambers

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1. CALL TO ORDER

Pledge of Allegiance and Invocation

2. ADJUSTMENT OF THE AGENDA

3. CONSENT AGENDA

(Items on the consent agenda are considered routine in nature or have been thoroughly discussed at previous meetings. Any member of the Council may request to have an item removed from the consent agenda for further discussion.)

a. Warranty Acceptance
- Parkview, Phases 10 & 11

[Parkview, Phases 10 & 11]

b. Draft Minutes
- May 6, 2019 - Regular Session
- May 6, 2019 - Closed Session

[May 6 2019 DRAFT Minutes]

POTENTIAL ACTION: Adoption of Consent Agenda as Presented

4. ADMINISTRATIVE ITEMS

a. Warranty Acceptances
- Sunbelt General Tools
- Summerlyn, The Groves

[Sunbelt General Tools]
[Summerlyn, The Groves]

POTENTIAL ACTION: Approval of Warranty Acceptances

5. INTRODUCTIONS AND SPECIAL PRESENTATIONS

a. Employee Promotions
Presenters: Dale Medlin, Electric Department Director & Scott Barnard, Parks & Recreation Director
- Conner Franks, Electric Crew Supervisor
- Amy Shearin, Special Events & Marketing Coordinator

[Cover]

b. Park Scholars
Presenter: Amy Shearin, Special Events & Marketing Coordinator
[Cover]

NC State Students Harmony Playground Pieces

6. PUBLIC HEARINGS

a. FY 2019-2020 Budget Presentation
Presenter: Adam Lindsay, Town Manager
Cover
Presentation
Ordinance -Budget FY 19-20
Ordinance - Fees & Charges FY19-20
Newspaper Ad

POTENTIAL ACTION: Adoption Ordinances #2019-05-04 & 2019-05-05

7. NEW BUSINESS

a. Asset Inventory Analysis
Presenters: Rich Cappola, Public Works Director & JD Solomon, Jacobs
Cover
Executive Summary
Final Report

POTENTIAL ACTION: None - Informational Only

b. NCDOT Sidewalk Maintenance Agreement
Presenter: Blake Mills, Asst. Public Works Director
Agenda Cover Sheet - NCDOT Sidewalk Maintenance Agreement
NCDOT Sidewalk Maintenance Agreement

POTENTIAL ACTION: Approval of Agreement

8. STAFF REPORTS

a. Town Manager

b. Town Attorney

c. Town Clerk

d. Other Staff

- 150 Celebration Update & Events
  Presenters: Stacy Beard, Public Information Officer & Michelle Bonham, Magnolia & Grace Events

9. OTHER BUSINESS

a. Informal Discussion & Public Comment

b. Council Comments

10. ADJOURNMENT

Quasi-Judicial (evidentiary) – These hearings are different from other public hearings in that they resemble a court hearing where testimony is presented and the Town Council acts like a court of law. During evidentiary hearings, the Town Council receives only sworn testimony and other credible evidence. In addition, the Town Council must make findings of fact based upon the evidence presented. Citizens may give testimony in an evidentiary hearing after they have taken an oath.

TOWN OF CLAYTON
Engineering & Inspections
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

MEMORANDUM

To: Kimberly Moffett, Town Clerk

From: Chris Rowland, Construction Project Administrator CR

Copy: Donnie Adams, Adams & Hodge Engineering
Karen Durham, Engineering & Inspections Coordinator

Date: April 9, 2019

Subject: Parkview, Phases 10 & 11

Please place a warranty acceptance request for the subject public water, sewer, associated storm drainage utilities, and all pertinent easements on the next available agenda. Record drawings have been reviewed and accepted. Following acceptance, the utilities will be subject to a one-year warranty period. Following expiration of the warranty, a final inspection will be done with all deficient items corrected by the developer prior to final acceptance.

Town of Clayton
Regular Town Council Meeting Minutes
Monday, May 6, 2019 @ 6:00 PM
Council Chambers

COUNCIL PRESENT:
Mayor McLeod
Mayor Pro Tem Grannis
Council Member Satterfield
Council Member Holder
Council Member Thompson
Council Member Bunn

STAFF PRESENT:
Adam Lindsay, Town Manager
Nancy Medlin, Deputy Town Manager
Katherine Ross, Town Attorney
Kimberly Moffett, Town Clerk
Joy Garretson, Library Director
David DeYoung, Economic Development Director
Samantha Wullenwaber, Planning Director
Robert McKie, Finance Director
Stacy Beard, Public Information Officer

COUNCIL ABSENT:

1 CALL TO ORDER

Pledge of Allegiance and Invocation

a) Mayor McLeod called the meeting to order at 6:00 p.m. He led everyone in the Pledge of Allegiance as well as offering the Invocation.

2 ADJUSTMENT OF THE AGENDA

3 CONSENT AGENDA

(Items on the consent agenda are considered routine in nature or have been thoroughly discussed at previous meetings. Any member of the Council may request to have an item removed from the consent agenda for further discussion.)

a) Draft Minutes
- February 26, 2019 - Town Council Retreat
- April 15, 2019 - Regular Meeting
- April 15, 2019 - Closed Session

b) Warranty Acceptance
- Parkview, Phases 4 & 6

ACTION: Adoption of Consent Agenda as Presented

Motion: Council Member Holder
Second: Council Member Thompson
Vote: Unanimous

4 ADMINISTRATIVE ITEMS

a) Warranty Acceptances
- Parkview, Phases 8 & 9

- Parkview, Phases 10 & 11

ACTION: Placed on May 20, 2019 Consent Agenda

5 INTRODUCTIONS AND SPECIAL PRESENTATIONS

a) Employee Introduction:
Presenter: Joy Garretson, Library Director
- Laura Culpepper - P/T Library Assistant

Ms. Garretson introduced Laura Culpepper. She stated Laura brought a wealth of varied knowledge and skills to the library. Laura stated she was excited to be here and happy to be part of the great team at the library. Council welcomed Laura.

b) Horne Square Kiosk
Presenter: Tony Johnson, Downtown Development Advisory Board

Mr. DeYoung introduced Mr. Johnson, who provided brief background on the informational kiosk that will be located at Horne Square. He shared his thought process into the design of the kiosk and stated he wanted to ensure that the kiosk honored the past, present and future. He stated the first thing he thought when designing the Horne Square kiosk was honoring the Horne Mansion and its portal. He provided a rendition of final project with a cost of approximately $13,000. He stated that cost would include installation. Council Member Bunn offered his thanks and appreciation for the dedication of his time and knowledge Mr. Johnson devoted to this project. Mayor Pro Tem Grannis stated he liked the design very much and again offered his thanks. Mayor McLeod stated he felt the kiosk was amazing and loved the story that went behind the structure.

ACTION: Approval of Kiosk

Motion: Mayor Pro Tem Grannis
Second: Council Member Thompson
Vote: Unanimous

6 PUBLIC HEARINGS

a) 2019-71-SUP - The Natural Cure, LLC - Special Use Permit (Quasi-Judicial)
Presenter: Planning Department

Attorney Ross provided details and additional information regarding a Quasi-Judicial proceeding. She stated they are different from other public hearings as council must make findings of fact based upon the credible evidence provided and those wishing to offer testimony must do so under oath. Those wishing to offer testimony were issued Oath of Affirmation by the Town Clerk.

Ms. Wullenwaber provided details for Special Use Permit. The Natural Cure, LLC., which is located at 112 N. Church Street requested to operate a medical office on a property that is zoned Central Business (B-1).

Ms. Wullenwaber stated the plan was consistent with the Comprehensive Plan 2040 and Surrounding Land Uses. The applicant has addressed all Findings of Fact.

Staff did not recommend any conditions be placed.

There were no questions for staff.

The applicant, Ms. Reem Darar, was present. She stated she was happy to answer any questions. There were no questions for applicant.

Mayor Pro Tem Grannis confirmed with staff that all Findings of Fact had been met. Ms. Wullenwaber stated that was true.

With there being no further questions and no one else wishing to speak, the item was turned over to council for deliberation.

ACTION: Approval of 2019-71-SUP

Motion: Council Member Thompson
Second: Council Member Holder
Vote: Unanimous

b) 2019-22-OA - Subdivision Standards (HB436)
Presenter: Planning Department

Ms. Wullenwaber presented and requested text amendments to the Unified Development Code; Subdivision Standards 155.600 and 155.604(D). She further stated these amendments had been reviewed by the town attorney. Changes would amend requirements in these sections. She stated the proposed changes are minor in scope and basically eliminate language that referred to acreage and capacity fees as well as including language that is consistent with HB 436 with relation to water and sewer system development fees. A change is included that would require any property within the town limits that develops within 300 linear feet of town water and/or sewer would be required to extend to the mains to their property and connect to service. These changes are in accordance with previous updates to Chapters 50, 51 and 52 of Code of Ordinances.

Ms. Wullenwaber stated the Planning Board approved proposed amendments on March 25, 2019. Staff recommended approval.

There were no questions for staff.

This was noted as a public hearing and anyone wishing to speak was asked to step forward. With no one wishing to speak the hearing was closed and turned over to council for their deliberation.

ACTION: Adoption of Ordinance #2019-05-01

Motion: Mayor Pro Tem Grannis

Second: Council Member Thompson
Vote: Unanimous

7 OLD BUSINESS

8 NEW BUSINESS

a) Approval of FY '19 Audit Contract with Anderson, Smith & Wike
Presenter: Robert McKie, Finance Director

Mr. McKie presented and requested approval of audit contract with Anderson, Smith & Wike. He stated we have used this audit firm for several years and are very happy with their services. He further stated there was no increase in this contract from previous year contract.

ACTION: Approval of Contract

Motion: Council Member Holder
Second: Council Member Thompson
Vote: Unanimous

b) Budget Amendment Ordinances
Presenter: Robert McKie, Finance Director

Mr. McKie presented and stated there were two budget amendments being requested. The first is Police Department requested to utilize unspent drug seizure money to pay module fee for records management system ($4600) and the second is request to utilize higher than budgeted investments earnings to cover the unexpected major transmission repair to warehouse forklift and rental costs ($11,000) while forklift was out of service.

ACTION: Adoption of Ordinances #2019-05-02 & #2019-05-03

Motion: Council Member Thompson
Second: Council Member Holder
Vote: Unanimous

9 STAFF REPORTS

a) Town Manager

b) Town Attorney

c) Town Clerk

d) Other Staff

10 OTHER BUSINESS

a) Council Comments

b) Informal Discussion & Public Comment

Ken Wilson who serves on the Board of the Church of Latter Day Saints was present and extended an invitation to attend an event they will be holding the week of September 21 - 28, 2019.

Shayla Jones, who is with Novo Nordisk was present and extended an invite to a May 30 Construction and Update event. Included during this time will be an hour to visit with Novo Nordisk senior executives.

11 CLOSED SESSION

a) Closed Session Pursuant to NCGS 143-318.1.1(a)(6)

Council went into Closed Session to discuss town manager annual evaluation at 6:27 p.m.

ACTION: Motion to Go Into Closed Session

Motion: Council Member Holder
Second: Council Member Thompson
Vote: Unanimous

12 ADJOURNMENT

a) With there being nothing further, the meeting was adjourned at 7:20 pm.

ACTION: Motion to Adjourn

Motion: Mayor Pro Tem Grannis
Second: Council Member Satterfield
Vote: Unanimous

Duly adopted this the 20th day of May, 2019 while in regular session.

Jody L. McLeod
Mayor

ATTEST:

Kimberly A. Moffett, CMC, NCCMC
Town Clerk

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Engineering & Inspections
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

MEMORANDUM

To: Kimberly Moffett, Town Clerk

From: Chris Rowland, Construction Project Administrator CR

Copy: Carlos Bagley, Redline Engineering
Karen Durham, Engineering & Inspections Coordinator

Date: April 29, 2019

Subject: Sunbelt General Tools

Please place a warranty acceptance request for the subject public water utility along with all pertinent easements on the next available agenda. Record drawings have been reviewed and accepted. Following acceptance, the utility will be subject to a one-year warranty period. Following expiration of the warranty, a final inspection will be done with all deficient items corrected by the developer prior to final acceptance.

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MEMORANDUM

To: Kimberly Moffett, Town Clerk

From: Chris Rowland, Construction Project Administrator CR

Copy: Tom Speight, Bateman Civil Survey
David Stallings, Granite Land & Timber
Karen Durham, Engineering & Inspections Coordinator

Date: May 2, 2019

Subject: Summerlyn, The Groves

Please place a warranty acceptance request for the subject public water, sewer, and associated storm drain utilities along with all pertinent easements on the next available agenda. Record drawings have been reviewed and accepted. Following acceptance, the utilities will be subject to a one-year warranty period. Following expiration of the warranty, a final inspection will be done with all deficient items corrected by the developer prior to final acceptance.

Town Council Agenda Cover Sheet

Meeting Date
May 20 2019

Agenda Location
Introductions & Special Presentations

Item Title
Conner Franks Promotion to Electric Crew Supervisor

Presenter
Dale Medlin: Electric Director

Summary/Description
To introduce and announce Conner's new promotion to Electric Crew Supervisor

Requested Action
Informational Only

Funding Source (If Applicable):
N/A

Cost: **N/A** **Yes** ☐ **No** ☒

Additional Documents to be Included in Agenda Packet

Meeting Timeline
Click or tap here to enter text.

Town Council Agenda Cover Sheet

Meeting Date
May 20 2019

Agenda Location
Introductions & Special Presentations

Item Title
North Carolina State University Parks Scholar Legacy Project Recognition

Presenter
Amy Shearin, Special Events & Marketing Coordinator

Summary/Description

The NC State University Parks Scholars Class of 2019 chose Harmony Playground as the beneficiary of their legacy project. Harmony Playground is a universal playground being developed for East Clayton Community Park on Glen Laurel Road. Fundraising has reached its half-way point and the Clayton Community Recreational Foundation, in partnership with the Town of Clayton, hopes to break ground in October on this universal playground designed for kids of all abilities to play together. Over last two years the Park Scholars have designed, funded and built 4 pieces of playground equipment that all have a musical theme. They will be delivering the equipment at no cost to the town and staff is incredibly excited about these pieces. All children, including special needs, will be able to express themselves through these musical panels – with audible and tactile elements being especially stimulating for children with disabilities. They can learn about rhythm, sound, and pitch with various panels at accessible heights to encourage a range of motion and imaginative play.

The Park Scholarships Class of 2019, representing ten states, is an accomplished group whose members include student body presidents, varsity athletic team captains, Eagle Scouts, Girl Scout Gold Award recipients, and National Merit Scholarship Semifinalists. They are improving the lives of others by serving as tutors, peer mentors, and volunteers at hospitals, food pantries, animal shelters, libraries, and senior centers. One is editor-in-chief of his school newspaper; another conducted research on naturally antibacterial surfaces; one interned with a small business that provides technology for the Department of Defense; and another taught English in Peru. Many have served on advisory boards for their schools, communities, and special interest groups, and one received a service award from her city's mayor. One founded a nonprofit to aid sea turtles; another is a pilot. The class also includes a flautist, a saxophonist, vocalists in a cappella and chamber music ensembles, and debaters.

The Park Scholarships program brings exceptional students to NC State University based on outstanding accomplishments and potential in scholarship, leadership, service, and character. The program develops and supports Park Scholars in these areas, preparing them for lifelong contributions to the campus, state, nation, and world.

Park Scholarships include opportunities for innovative enrichment activities such as grants for undergraduate research and study abroad, making this award one of the most prestigious and comprehensive undergraduate scholarships in the nation.

Requested Action
Informational Only

Funding Source (If Applicable): N/A

Cost: N/A Yes ☐ No ☒

Additional Documents to be Included in Agenda Packet

Town Council Agenda Cover Sheet

Meeting Date
May 20 2019

Agenda Location
Public Hearings

Item Title
2019-2020 Annual Budget

Presenter
Adam Lindsay, Town Manager

Summary/Description
This will be the second public hearing regarding next year's budget. The Town Manager will present key points and decisions regarding the recommended budget. Council must adopt the budget before July 1, 2019.

Requested Action
Approval

Funding Source (If Applicable):
N/A

Cost: **N/A** **Yes** ☐ **No** ☒

Additional Documents to be Included in Agenda Packet
Budget Ordinance

Meeting Timeline
Click or tap here to enter text.

FY 2019-2020 BUDGET
TOWN OF CLAYTON

May 20, 2019

BUDGET PROCESS

- Departments prepare and submit information from Dec – Feb
- Department Budget Close Out meetings with Budget Team in January
- Public Hearing on Budget in February
- Council Retreat to discuss capital priorities and strategic plan in March
- Department Budget Request meetings with Budget Team in March
- Budget Team reviews and requests additional information from Departments in March
- Department Heads meet with Budget Team to balance the budget in April
- Budget Team finalizes Manager's Recommended Budget in late April
- Council reviews and discusses Recommended Budget in early May
- Manager presents budget at 2nd Public Hearing in May
- Council adopts budget before July 1st

BUDGET DIRECTION

Council gave clear direction at their retreat that they expected a budget that would allow them to consider both *wants* and *needs* capital improvements.

Council wanted to consider a budget that did not increase or decrease the $0.58 tax rate.

Council will ask the voters to consider an $18 million bond referendum in November 2019 to authorize a low interest borrowing for several parks and recreation related capital projects.

This budget lays the foundation for funding and implementing the $70 million five-year capital improvement plan.

The new revenue generated from last year's increases and holding the tax rate the same this year will pay for:

- Parking and street infrastructure improvements (annual recurring commitment >$1 million)
- November bond referendum for parks and recreation projects such as:
  1. Municipal Park Upgrade – Phase 1
  2. East Clayton Community Park Improvements
  3. Community Park Upgrade
  4. Clayton Community Center Phase 2
  5. Clayton Community Center Phase 3

Municipal Park

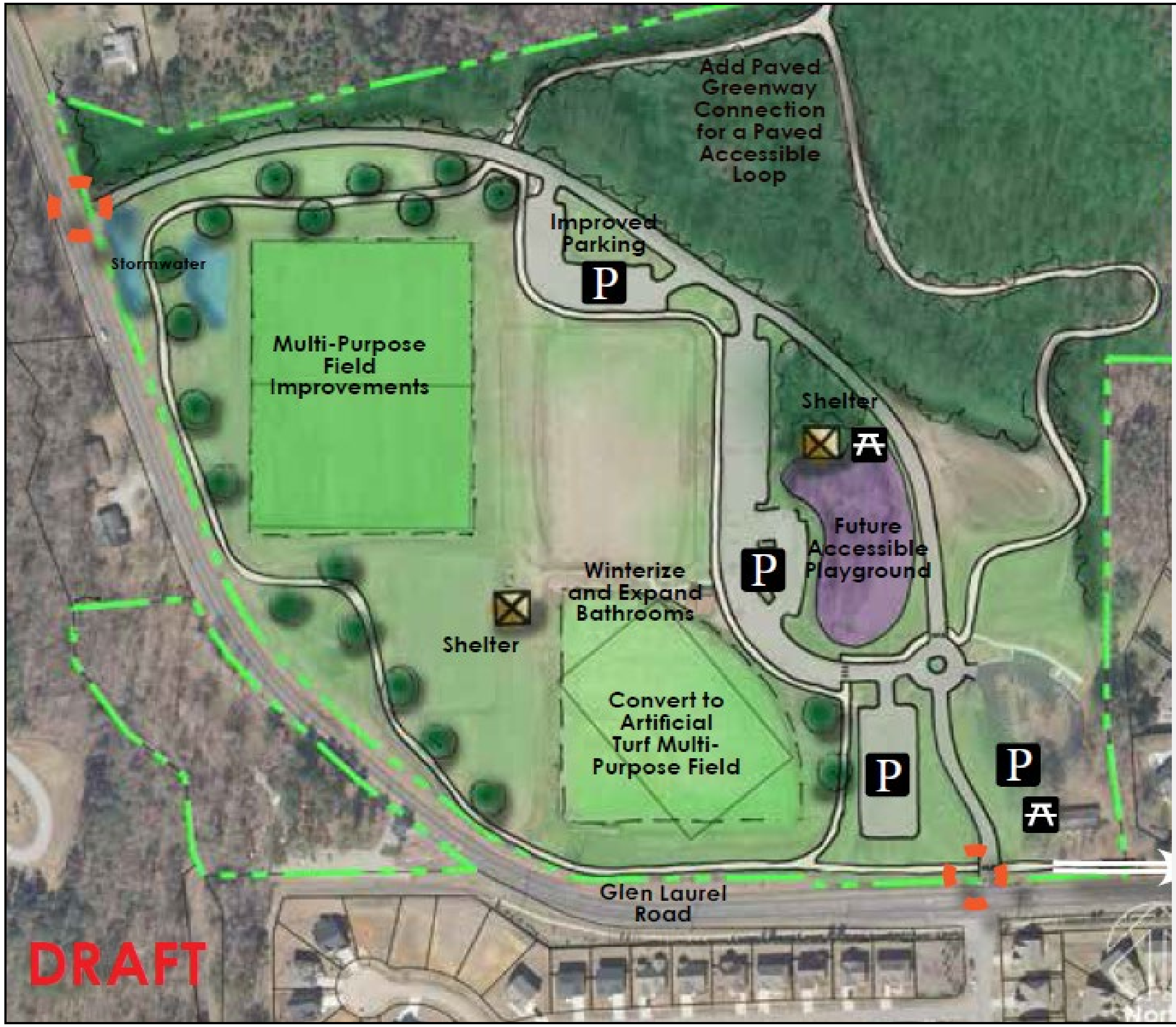
Construction of multipurpose fields, playground, special events lawn, band shell, event scale restrooms, 2 basketball courts, sports lighting and 2 family reunion sized picnic shelters.

*Potential to have great impact with Civitan partnership.

NORTH • CAROLINA
CLAYTON
1869

Clayton Community Park

Existing parking lot resurface/stripe, add parking lot, tennis court resurface and add 2 courts, additional playground, 2 picnic shelters, and additional restroom near tennis/playground.



East Clayton Park

Design and construction of artificial turf practice fields, light practice fields, pave existing gravel parking, expand parking and update existing restrooms.

*Potential to have great impact with sports club partnerships.

Community Center

Upgrade existing facilities adding shade to playground, expanding fitness space and adding storage. Expand toward garden with 5-6K square feet of flexible space for senior and youth programming, rental and fitness. Expand parking to meet demand of existing facility plus expansion.

*Potential to leverage dollars for Johnston County and/or Community Senior Services for facilities, ff and e and operations.

BUDGET HIGHLIGHTS

- **After closing a nearly $7 million gap, the nearly $30 million ($29,962,754) General Fund is balanced.**
- **The Water Sewer Fund is balanced at nearly $28 million ($27,809,010).**
- **The Electric Fund is balanced at nearly $15 million ($14,734,677)**
- Revenues on the rise: Ad Valorem, Sales Tax, and Fees
- Positions added in Fire, Parks & Recreation, Inspections, Storm Water, and Water & Sewer
- 9% Water Sewer Rate Increase
- $2.43 Increase for solid waste due to CPI adjustment, tipping fee increases, and adding loose leaf collection to All Star contract
- Personnel Benefits: Pay & Classification Study, Health Insurance, Retirement contribution
- Capital Projects

BUDGET HIGHLIGHTS

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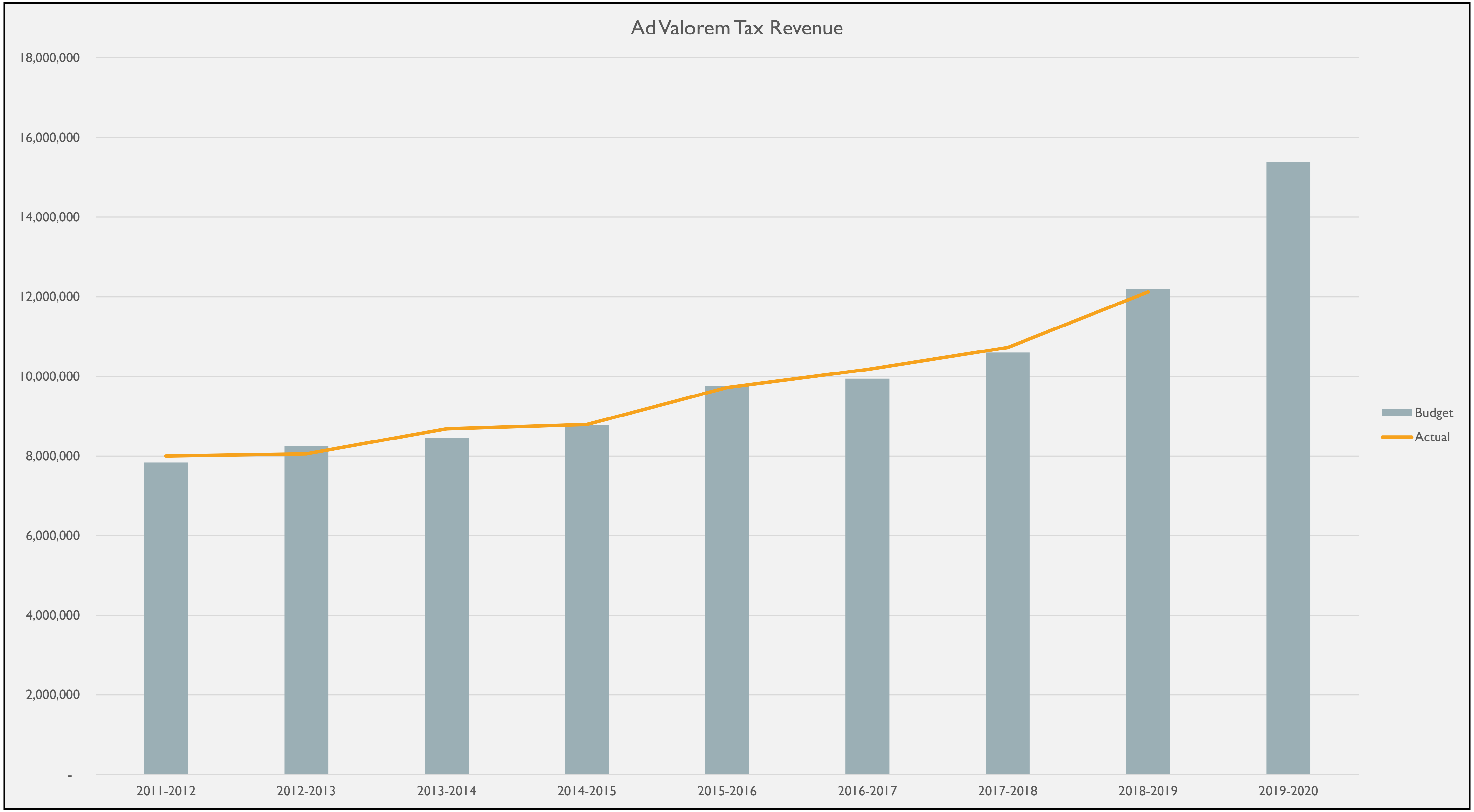
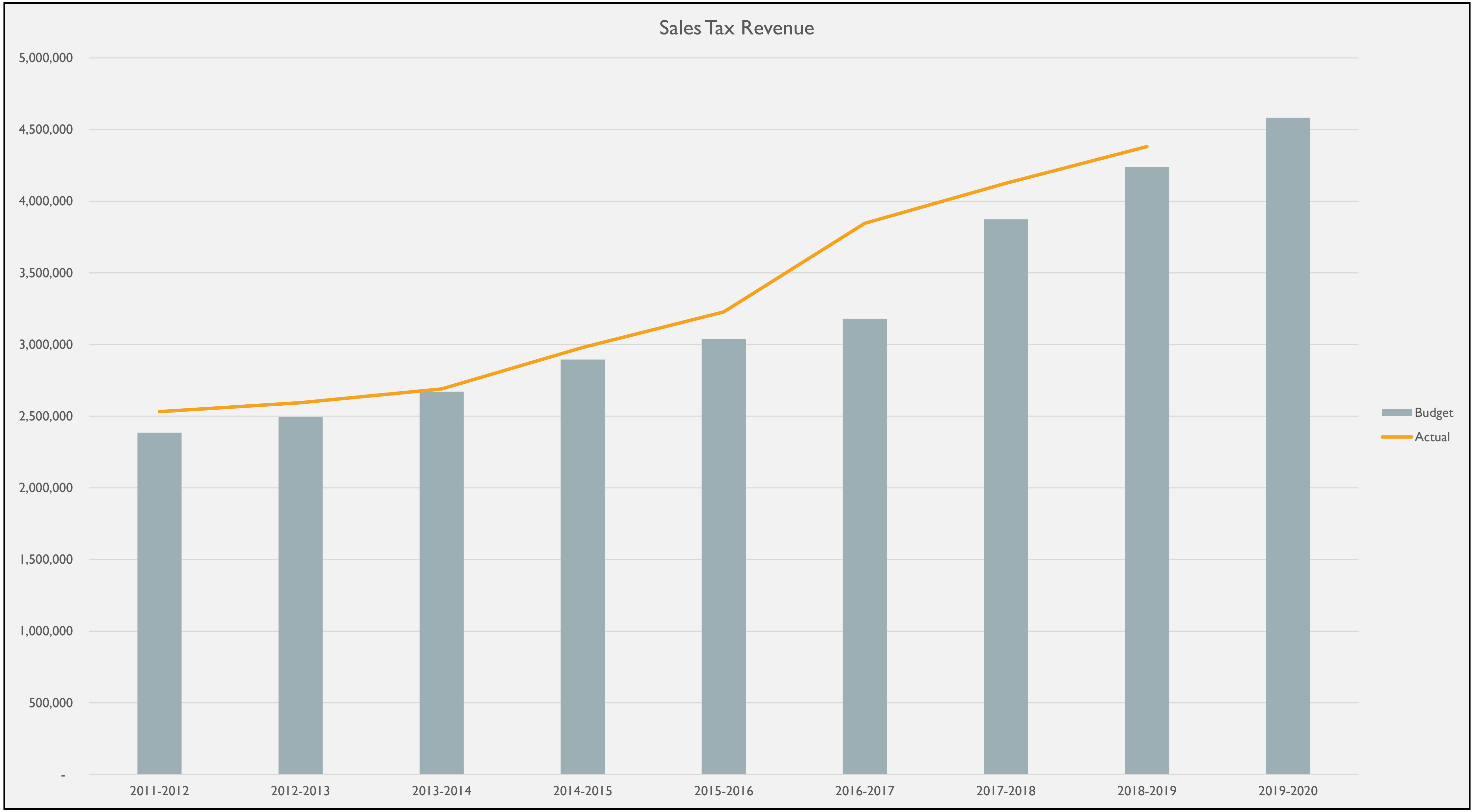

Ad Valorem Tax Revenue
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
2016-2017
2017-2018
2018-2019
2019-2020
Budget
Actual


Sales Tax Revenue
5,000,000
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
2016-2017
2017-2018
2018-2019
2019-2020
Budget
Actual

RECREATION DEPARTMENT

ATHLETICS

Youth Sports (Officiated - O, and Unofficiated - U)	Resident Fee (50% Discount)	Non-Resident Fee
Winter Basketball (O)	$40	$80
Spring Baseball (O)	$40	$80
Spring Softball (O)	$40	$80
Fall Volleyball (O)	$40	$80
Fall Softball (O)	$40	$80
Spring T-Ball (U)	$30	$60
Fall Soccer (U)	$30	$60
Adult Sports	**Resident Fee (50% Discount)**	**Non-Resident Fee**
Softball	$12.50	$25
Soccer	$12.50	$25
Basketball	$12.50	$25
Volleyball	$12.50	$25
Flag Football	$12.50	$25

PROGRAMS

Classes	Resident Fee	Non-Resident Fee
Class fees vary according to the type of clss, cost of the facility, instructor and number of participants.	Base	Base + $15

SUMMER PLAYGROUND CAMP

Registration Fee	Resident Fee (50% Discount)	Non-Resident Fee
$25 / attendee	$60	$120

FACILITY RENTALS

Community Center Gym	Resident Fee (50% Discount)	Non-Resident Fee
Full Court	$50 / hour	$100 / hour
Half Court	$40 / hour	$80 / hour
Scoreboard	$10 / hour	$20 / hour
Ballfields	**Resident Fee (50% Discount)**	**Non-Resident Fee**
Community Park Field #1	$20 / hour	$40 / hour
Community Park Field #2	$20 / hour	$40 / hour
Community Park Field #3	$20 / hour	$40 / hour
Legend Park	$20 / hour	$40 / hour
Municipal Park	$20 / hour	$40 / hour
East Clayton Community Park Baseball Field	$25 / hour	$50 / hour
East Clayton Community Park Soccer Field	$35 / hour (2 hour minimum)	$70 / hour (2 hour minimum)
East Clayton Community Park Multipurpose - Full Field	$25 / hour	$50 / hour
East Clayton Community Park Multipurpose - Half Field	No longer offered	No longer offered
Field Rental Add Ons	**Resident Fee (50% Discount)**	**Non-Resident Fee**
Lights (Community, Municipal and Legend)	$7.50 / hour	$15 / hour
Lights (East Clayton Soccer & Baseball)	$10 / hour	$20 / hour
Baseball / Softball Field Prep (All Fields)	$15 / application	$30 / application
East Clayton Soccer Field Paint	Included	Included

Tournament Field Rentals and Add Ons	Resident Fee	Non-Resident Fee
Community Park - Full Day	$250 / field / day	$250 / field / day
Community Park - Half Day	$125 / field / day	$125 / field / day
East Clayton - Baseball	$350 / day	$350 / day
Additional Field Prep	$30 / field	$30 / field
Scoreboard	$25 / field / day	$25 / field / day
Drying Agents	$10 / bag	$10 / bag
Admission Fee to Town	$50 / day	$50 / day
Concessoins	Only CPRD Allowed	Only CPRD Allowed
Other Vendors (Non-Food)	$50 / vendor / weekend	$50 / vendor / weekend
Picnic Shelters	**Resident Fee (50% Discount)**	**Non-Resident Fee**
All Star Park		
Up to 2 hours	$15	$30
Up to 4 hours	$25	$50
More than 4 hours	$62.50	$125
Community Park & East Clayton Community Park		
Up to 2 hours	$20	$40
Up to 4 hours	$30	$60
More than 4 hours	$75	$150
Community Center Memberships	**Resident Fee**	**Non-Resident Fee**
Annual Memberships		
Individual	$0	$125
Middle School Student	$0	$75
High School Student	$0	$75
Family with Dependents	$0	$200
Family with No Dependents	$0	$200
Senior Individual	$0	$75
Monthly Memberships (Non-Resident Only)		
Individual	N/A	$20
Middle School Student	N/A	$10
High School Student	N/A	$10
Family with Dependents	N/A	$30
Family with No Dependents	N/A	$30
Senior Individual	N/A	$10
Daily Memberships (Non-Resident Only)		
Individual	N/A	$5
Lost Cards	$5	$5

RECREATION AND OPEN SPACE FEES			
Residential Fee	$1,000/lot (7-1-19), $1,500/lot (1-1-20), $2,000/lot (7-1-2020)	**Multi-Family Fee**	$1,000/unit (7-1-19), $1,500/unit (1-1-20), $2,000/unit (7-1-20)

BUDGET HIGHLIGHTS

- After closing a nearly $7 million gap, the nearly $30 million ($29,962,754) General Fund is balanced.
- The Water Sewer Fund is balanced at nearly $28 million ($27,809,010).
- The Electric Fund is balanced at nearly $15 million ($14,734,677)
- Revenues on the rise: Ad Valorem, Sales Tax, and Fees
- **Positions added in Fire, Parks & Recreation, Inspections, Storm Water, and Water & Sewer**
- 9% Water Sewer Rate Increase
- $2.43 Increase for solid waste due to CPI adjustment, tipping fee increases, and adding loose leaf collection to All Star contract
- Personnel Benefits: Pay & Classification Study, Health Insurance, Retirement contribution
- Capital Projects

2019-2020 Fiscal Year Budget

Department	Classification Title	Proposed Start Date	Positions Requested	Positions Recommended	Position Expenses as Requested	Position Expenses Annualized	Total Cost for FY 2019-2020
Fire							
	Captain	7/1/2019	3	0	$ 216,598	$ 216,598	$ -
	Fire Fighters	1/1/2020	12	9	$ 306,612	$ 613,224	$ 306,612
Public Works Admin							
	Projects Coordinator	7/1/2019	1	0	$ 71,658	$ 71,658	$ -
	Construction Project Administrator	7/1/2019	1	0	$ 44,033	$ 44,033	$ -
Inspections							
	Building Inspector	7/1/2019	1	1	$ 81,891	$ 81,891	$ 81,891
Engineering							
	Enginner (part time)	7/1/2019	1	1	$ 43,947	$ 43,947	$ 43,947
	Stormwater Engineer	1/1/2020	1	1	$ 52,961	$ 105,921	$ 52,961
Vehicle Maintenance							
	Equipment Service Mechanic	7/1/2019	1	0	$ 73,554	$ 73,554	$ -
Property Maint							
	Facility Maintenance Technician	7/1/2019	1	0	$ 58,193	$ 58,193	$ -
	Facility Maintenance Crew Leader	7/1/2019	1	0	$ 70,283	$ 70,283	$ -
Streets							
	Streets Maintenance Worker	7/1/2019	1	0	$ 49,716	$ 49,716	$ -
Recreation							
	Recreation Program Coordinator	7/1/2019	1	1	$ 65,185	$ 65,185	$ 65,185
Utility Billing							
	Administrative Support (part time)	7/1/2019	1	0	$ 8,251	$ 8,251	$ -
Library							
	Library Associate - substitute (part time)	7/1/2019	1	1	$ 3,966	$ 3,966	$ 3,966
	General Fund Totals		***27***	***14***	***$ 1,146,848***	***$ 1,506,420***	***$ 554,562***

2019-2020 Fiscal Year Budget

Department	Classification Title	Proposed Start Date	Positions Requested	Positions Recommended	Position Expenses as Requested	Position Expenses Annualized	Total Cost for FY 2019-2020
W & S - Preventative Maintenance							
	Utility Maintenance Crew Leader	10/1/2019	1	1	$ 48,126	$ 64,168	$ 48,126
W & S - Operations							
	Utility Maintenance Crew Leader	10/1/2019	1	0	$ 48,126	$ 48,126	$ -
	Utility Maintenance Mechanic	7/1/2019	1	1	$ 54,797	$ 54,797	$ 54,797
W & S WWTP							
	Lab Technician	7/1/2019	1	1	$ 56,132	$ 56,132	$ 56,132
	Enterprise Fund Totals		*4*	*3*	*$ 207,181*	*$ 223,223*	*$ 159,055*

BUDGET HIGHLIGHTS

- After closing a nearly $7 million gap, the nearly $30 million ($29,962,754) General Fund is balanced.
- The Water Sewer Fund is balanced at nearly $28 million ($27,809,010).
- The Electric Fund is balanced at nearly $15 million ($14,734,677)
- Revenues on the rise: Ad Valorem, Sales Tax, and Fees
- Positions added in Fire, Parks & Recreation, Inspections, Storm Water, and Water & Sewer
- **9% Water Sewer Rate Increase: 3% Water & 16.5% Sewer – No anticipated Electric Rate increases at this time**
- $2.43 Increase for solid waste due to CPI adjustment, tipping fee increases, and adding loose leaf collection to All Star contract
- Personnel Benefits: Pay & Classification Study, Health Insurance, Retirement contribution
- Capital Projects

WATER & SEWER RATES

Line	Description	2019	2020	2021	2022	2023
		Fiscal Years:				
	FINANCIAL PLAN - COMBINED SYSTEM					
	Revenues					
1	Existing Service Revenues	$ 12,355,908	$ 13,163,326	$ 13,890,885	$ 14,666,871	$ 15,269,519
2	Cumulative Revenue Increase (Percent)	0.0%	9.0%	8.8%	6.5%	4.6%
3	Cumulative Revenue Increase (Amount)	-	1,190,621	2,596,639	3,875,171	4,916,455

Combined Rates					Inside Jurisdiction				Outside Jurisdiction			
Utility	Customers				Estimated Bills				Estimated Bills			
	Residential	Commercial	Industrial	Institutional	5,000 Gals	50,000 Gals	100,000 Gals	1,000,000 Gals	5,000 Gals	50,000 Gals	100,000 Gals	1,000,000 Gals
Town of Cary	65,668	3,150	65	300	59.43	836.12	1,991.77	18,841.61	116.49	985.35	2,133.43	17,827.30
Town of Morrisville	12,387	2,163	-	97	70.22	924.76	2,169.05	20,614.37	148.87	1,251.26	2,665.26	23,145.58
City of Durham	86,834	5,811	120	1,332	37.37	491.18	1,305.70	10,300.51	N/A	N/A	N/A	N/A
County of Durham	19,238	883	-	550	39.67	367.94	912.99	6,719.29	N/A	N/A	N/A	N/A
City of Raleigh	171,033	14,923	183	831	46.48	416.51	1,152.19	7,833.95	92.97	1,390.27	2,752.64	20,436.15
Town of Angier	2,660	342	1	34	75.15	491.40	953.90	9,278.90	90.00	612.00	1,192.00	11,692.30
Town of Fuquay Varina	11,465	904	10	42	79.49	577.19	1,130.19	11,084.19	88.32	630.12	1,232.12	12,138.78
Town of Holly Springs	13934	874	12	74	75.30	755.08	1,511.50	15,695.10	81.61	767.01	1,414.61	15,452.85
Town of Wendell	Part of Raleigh				55.69	463.34	1,069.31	8,879.41	111.40	1,483.92	2,586.89	22,527.08
Town of Zebulon	Part of Raleigh				67.30	478.32	1,088.03	8,965.45	134.62	1,513.87	2,624.32	22,699.15
Johnston County	31,574	914	16	30	81.08	722.90	1,665.90	13,214.90	N/A	N/A	N/A	N/A
Town of Smithfield	4,609	992	19	83	86.75	717.45	1,422.45	14,112.45	117.74	865.11	1,708.11	16,943.40
Town of Selma	2,081	168	-	-	76.69	789.89	1,979.89	19,881.89	119.23	1,085.88	2,973.38	29,747.95
Harnett County - Residential	38,439				100.50	567.75	1,092.75	10,542.75	N/A	N/A	N/A	N/A
Harnett County - Commercial		698	11	28	104.00	571.25	1,096.25	10,546.25	N/A	N/A	N/A	N/A
Aqua	N/A	N/A	N/A	N/A	102.60	1,012.47	2,023.43	20,220.83	102.60	1,012.47	2,023.43	20,220.83
Clayton Existing - 2019	7,710	661	21	104	73.85	544.33	1,060.83	8,704.67	124.15	787.99	1,501.49	12,544.91
Clayton Proposed - 2020	7,710	661	21	104	85.57	786.64	1,302.64	14,890.67	106.46	982.80	1,627.80	18,610.09

Estimated Bill Comparisons Do Not Reflect Rate Changes Proposed by Other Jurisdictions

BUDGET HIGHLIGHTS

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- Capital Projects

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NORTH CAROLINA
CLAYTON
1869

BUDGET HIGHLIGHTS

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- Capital Projects

North Carolina
State Health Plan
FOR TEACHERS AND STATE EMPLOYEES
A Division of the Department of State Treasurer

Pay & Classification study average increase = 2.5%

Cost Of Living Adjustment (COLA) increase = 3%

State Health Plan employer contribution increase = 7%

NC Retirement Fund employer contribution increase = 1.2%

BUDGET HIGHLIGHTS

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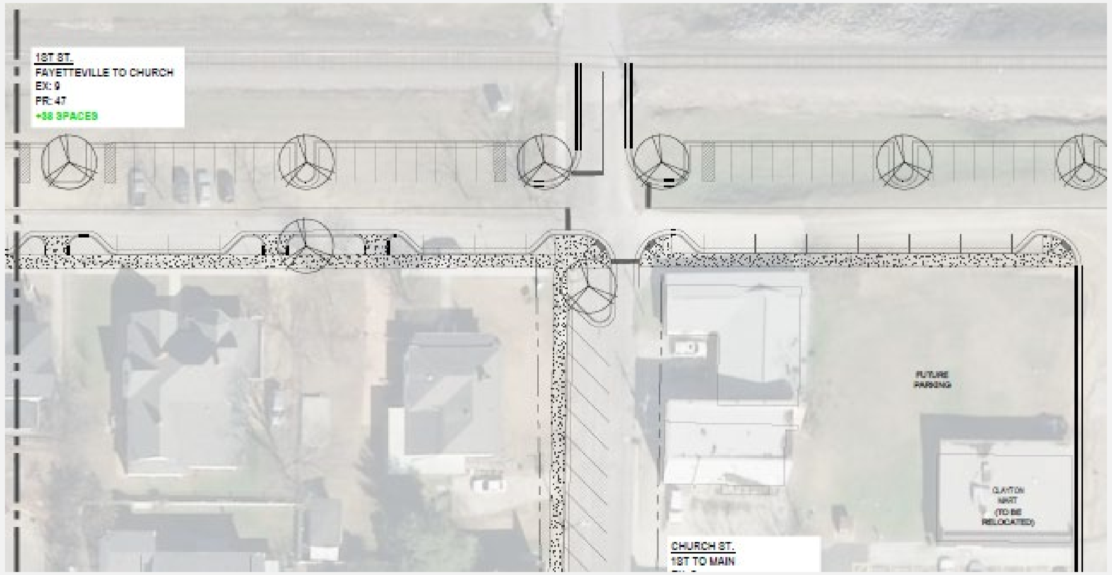
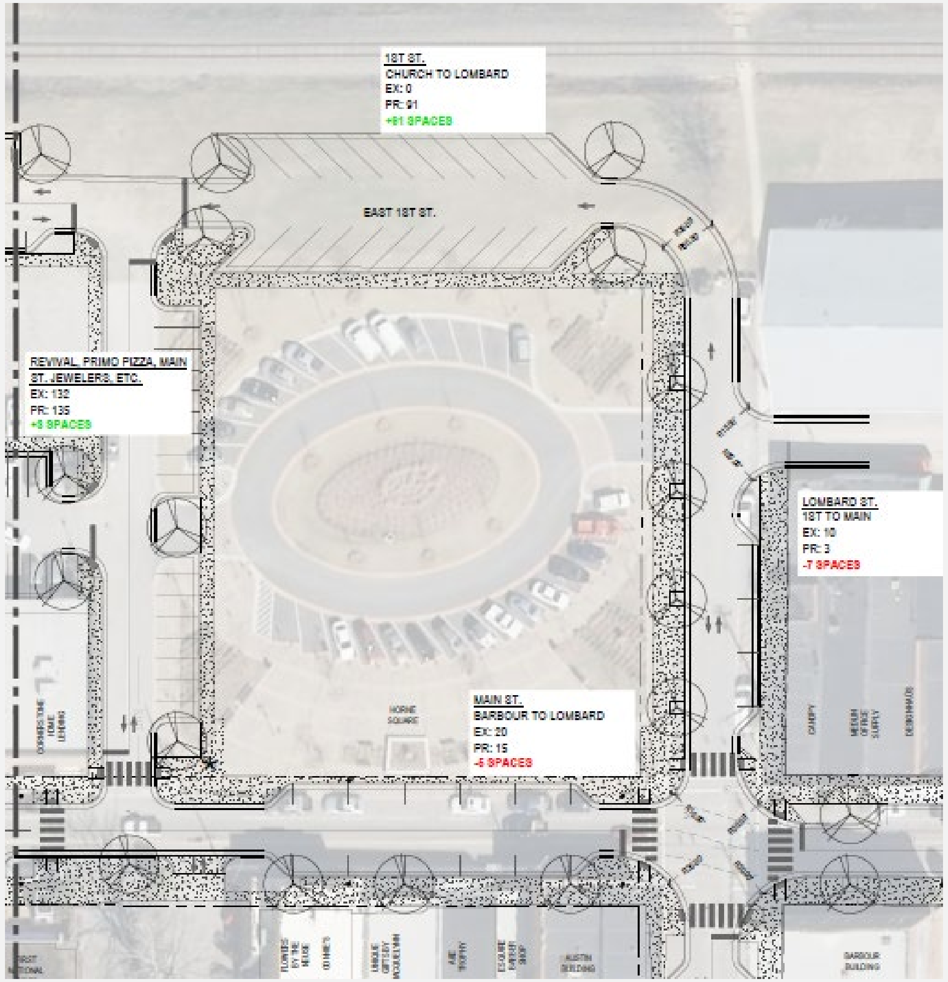
- **Capital Projects**

Project Name	Estimated Cost
Town Hall Parking Expansion (cont. from FY 18-19)	$550,000
Sam's Branch Phase II (cont. from FY 18-19)	$3,100,000
Payton Drive Extension (cont. from FY 18-19)	$500,000
Railroad Parking & 1st Street Extension (Design)	$75,000
ECCP Harmony Playground & Facilities	$1,600,000
ADA Town Infrastructure Transition Plan (multi-year)	$70,000
Sidewalk Improvement Plan	$69,000
Town Dept Relocation (Parole & Customer Service)	$334,000
Total	***$6,298,000***


Existing Greenway
Under Design or Construction
Proposed Greenway
Parks and Managed Areas
County Boundaries
Sam's Branch Greenway
Phase II
Legend
Park
Sam's Branch
Trailhead
Clayton
Municipal
Park

Payton Drive Extension Concept


1ST ST.
FAYETTEVILLE TO CHURCH
EX: 9
PR: 47
+38 SPACES
FUTURE PARKING
CLAYTON MART (TO BE RELOCATED)
CHURCH ST.
1ST TO MAIN


1ST ST.
CHURCH TO LOMBARD
EX: 0
PR: 91
+91 SPACES
EAST 1ST ST.
REVIVAL, PRIMO PIZZA, MAIN ST. JEWELERS, ETC.
EX: 132
PR: 135
+3 SPACES
LOMBARD ST.
1ST TO MAIN
EX: 10
PR: 3
-7 SPACES
MAIN ST.
BARBOUR TO LOMBARD
EX: 20
PR: 15
-5 SPACES
HORNE SQUARE

Harmony Playground

In partnership with the Clayton Community Recreational Foundation, with support of many local partners and grants from PARTF and Gametime, we will construct a destination universal playground with restrooms designed for youth and adults with special needs, picnic shelters and connectivity to the parking and other park amenities.

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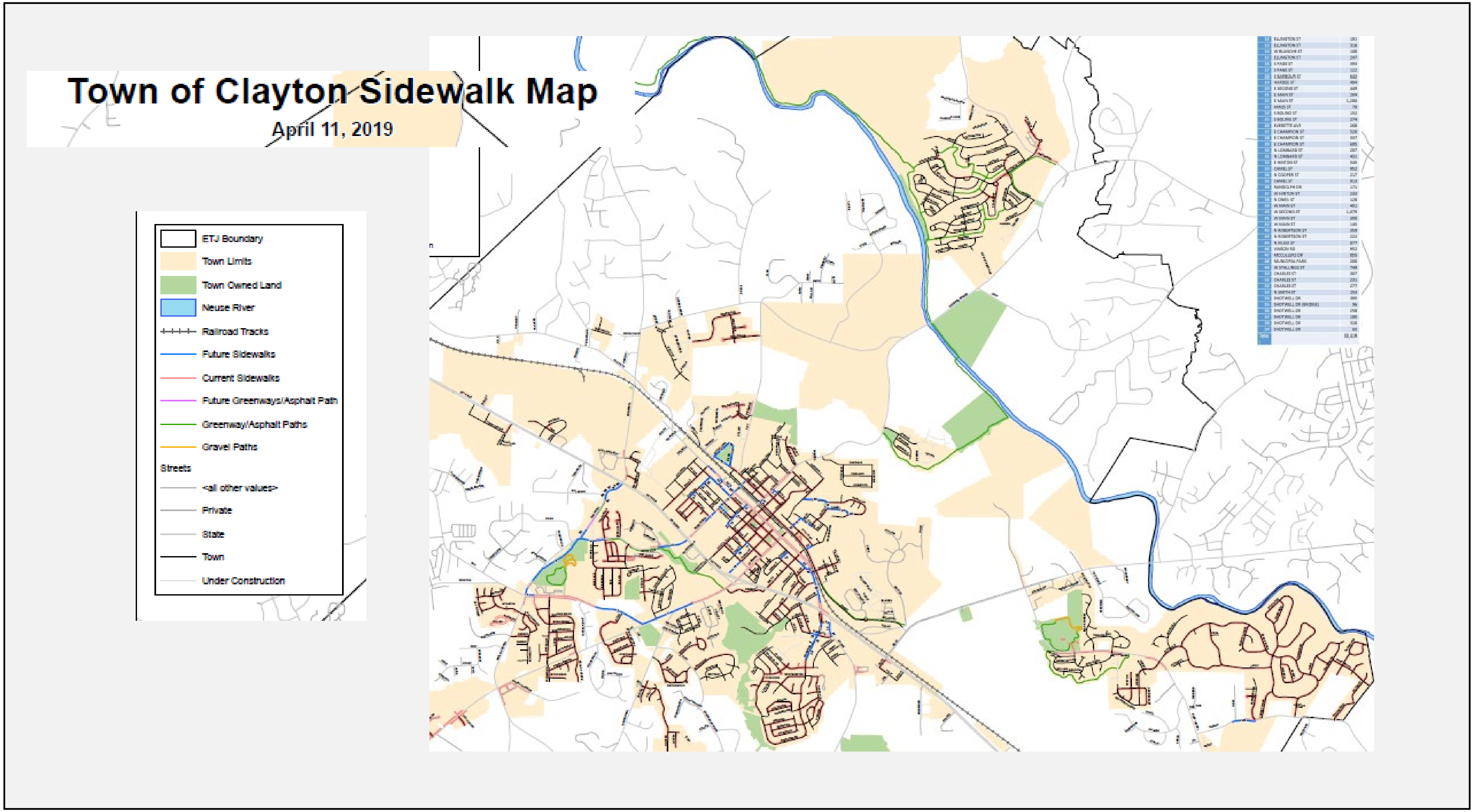
Town of Clayton Sidewalk Map
April 11, 2019
ETJ Boundary
Town Limits
Town Owned Land
Neuse River
Railroad Tracks
Future Sidewalks
Current Sidewalks
Future Greenways/Asphalt Path
Greenway/Asphalt Paths
Gravel Paths
Streets
<all other values>
Private
State
Town
Under Construction

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BUDGET

Special thanks to Nancy Medlin and Robert McKie for their help in developing the budget.

Special thanks to staff for their assistance and timeliness in submitting and refining their budget requests.

Special thanks to Council for your input and guidance.

ANY QUESTIONS?

Town of Clayton
Fiscal Year 2019-2020
Budget Ordinance

BE IT HEREBY ADOPTED BY THE TOWN COUNCIL FOR THE TOWN OF CLAYTON, NORTH CAROLINA that the following shall be the Fiscal Year 2019 - 2020 Budget:

Section 1: The following amounts are hereby appropriated in the General Fund for the operation of the town government and its activities for the fiscal year beginning July 1, 2019 and ending June 30, 2020 in accordance with the chart of accounts heretofore established for this town:

General Government	2,522,259
Financial Services	778,012
Community Development Services	586,304
Economic Development	272,460
Data and Technology Services	891,985
Public Information	145,836
Customer Service	26,559
Law Enforcement	5,964,650
Fire Protection	3,717,635
Public Works	9,065,372
Parks & Recreation Services	2,783,731
Cultural & Performing Arts	711,282
Library Operations	689,070
Debt Service	1,807,599
Total	29,962,754

Section 2. It is estimated that the following revenues will be available in the General Fund for the fiscal year beginning July 1, 2019 and ending June 30, 2020:

REVENUES PENDING

Ad Valorem Taxes	15,386,978
State Shared Revenues	6,309,971
Intergovernmental	2,203,198
Permits & Fees	1,560,743
Sales & Services	2,607,326
Grants & Donations	290,654
Other Financing Sources	0
Miscellaneous	668,884
Fund Balance/Cap. Reserve	935,000
Total	29,962,754

Section 3. The following amounts were hereby appropriated in the Water and Sewer Fund for the operation of the water and sewer utilities for the fiscal year beginning July 1, 2019 and ending June 30, 2020 in accordance with the chart of accounts heretofore approved for the Town:

Non-Departmental	11,664,000
Operations	5,706,991
Preventive Maintenance	1,296,156
Wastewater Treatment Plant	4,192,842
Debt Service	832,327
Capital Outlay	2,436,041
Inter-Departmental	1,680,653
Total	27,809,010

Section 4. It is estimated that the following revenues will be available in the Water/Sewer Fund for the fiscal year beginning July 1, 2019 and ending June 30, 2020:

REVENUES PENDING

Permits & Fees	1,292,380
Sales & Services	14,102,242
Grants & Donations	0
Other Financing Sources	11,278,500
Miscellaneous	22,070
Fund Balance/Cap. Reserve	1,113,818
Total	27,809,010

Section 5. The following amounts are hereby appropriated in the Electric Fund for the operation of the electric utility for the fiscal year beginning July 1, 2019 and ending June 30, 2020 in accordance with the chart of accounts heretofore approved for the Town:

Non-departmental	177,781
Administration	321,555
Operations	11,322,794
Debt Service	581,796
Capital Outlay	1,393,504
Inter-departmental	937,247
Total	14,734,677

Section 6. It is estimated that the following revenues will be available in the Electric Fund for the fiscal year beginning July 1, 2019 and ending June 30, 2020:

REVENUES PENDING

Permits & Fees	571,325
Sales & Services	14,085,000
Grants & Donations	0
Other Financing Sources	0
Miscellaneous	78,352
Fund Balance/Cap. Reserve	0
Total	14,734,677

Section 7. There is hereby levied a tax at the rate of fifty-eight cents ($0.58) per one hundred dollars ($100) valuation of property as listed for taxes as of January 1, 2019 for the purpose of raising the revenue listed as "Ad Valorem Taxes" in the General Fund in Section 2 of this ordinance. This rate is based on estimated real property valuation for the purposes of taxation of $2,370,452,157 and an estimated rate of collection of 99.98%. The estimated rate of collection is based on the fiscal year 2017-2018 collection rate of 99.98%. The estimated vehicle property valuation for the purpose of taxation is $201,450,000. There is hereby levied a Municipal Vehicle Tax at a rate of $30 per vehicle registered as of July 1, 2019.

Section 8. The Budget Officer is hereby authorized to transfer appropriations with the exception of amounts in line item for Council Contingency as contained herein under the following conditions:

a. The Budget Officer may transfer amounts between line item expenditures within a department without limitation and without a report being required. These changes should not result in increases in recurring obligations such as salaries.
b. The Budget Officer may transfer amounts up to $1,000 between departments, including contingency appropriations, within the same fund. He must make an official report on such transfers at the next regular meeting of the Town Council.
c. The Budget Officer may not transfer any amounts between funds except as approved by the Town Council in the Budget Ordinance, as amended.
d. No expenditure or transfer shall be made from line item for Council Contingency without express, prior approval by the Town Council.

Copies of this Budget Ordinance shall be furnished to the Clerk, the Council, the Budget Officer, and Finance Officer to be kept on file by them for their direction in the disbursement of funds.

Duly adopted this 20th day of May 2019 while in regular session.

____
Jody L. McLeod
Mayor

ATTEST:

____
Kimberly Moffett, CMC, NCCMC
Town Clerk

Town of Clayton
Ordinance Establishing Rates and Fees

Be it hereby adopted by the Town Council for the Town of Clayton, North Carolina that the following fees are established as noted herein:

1. Water Rates – Water rates shall be adjusted as reflected in the Comprehensive List of Fees and Charges, Schedule A, which follows, effective July1, 2019.
2. Sewer Rates – Sewer rates shall be adjusted as reflected in the Comprehensive List of Fees and Charges, Schedule A, which follows, effective July 1, 2019.
3. Solid Waste – Collection and disposal fee set at $20.50 per month, effective July 1, 2019.
4. Recreation and Open Space Fees – Recreation and Open Space Fees shall be adjusted to $1,000/lot or unit effective July 1, 2019, adjusted to $1,500/lot or unit effective January 1, 2020, and increased to $2,000 per lot or unit effective July 1, 2020.
5. Various fees and charges shall be adjusted as indicated on the Comprehensive List of Fees and Charges, Schedule A which follows, effective July 1, 2019.
6. All other rates, fees, and charges for FY 18-19 shall remain as indicated in the Town of Clayton Comprehensive List of Fees and Charges for FY 19-20 unless the subject of another action.

Duly adopted this 20th day of May 2019 while in regular session.

____
Jody L. McLeod
Mayor

ATTEST:

____
Kimberly Moffett, CMC, NCCMC
Town Clerk

Schedule A
Comprehensive List of Fees and Charges - FY 2019-2020
Changes reflected in RED

TAXES & FEES

Town of Clayton Tax Rate	$0.58 / $100 valuation of property	**Vehicle Fee (pursuant to NCGS 20-97 (b1)**	$30 / vehicle
Claytex Fire District Tax Rate	$0.1175 / $100 valuation of property		

DOCUMENT / COPY / ADMINISTRATIVE FEES

Copying up to 11'x17' (black & white)	$0.10 / sheet	**Paper Copy of Agenda**	$10 (annually) Email free.
Town meeting(s) audio or documents	$1.50 / storage device provided	**Filing Fee for Office of Council Member**	$5
Certified copy of Town records	In accordance with NCGS 161-10(9)	**Filing Fee for Office of Mayor**	$10

CEMETERY FEES

Lot Purchase - including footstone	$1,000	**Cremains Interment - Monday through Saturday**	$450
Interment - Monday through Saturday	$900	**Cremains Interment - Sundays and Holidays***	$900
Interment - Sundays and Holidays*	$1,200	* Excludes Christmas Day, Thanksgiving Day, New Year's Day	
Footstone Marker and Installation	$100	and Good Friday	

CUSTOMER DEPOSITS

Residential Electric	$250 / $800 (high risk)	**Non-residential Electric**	2.5 times average bill for location or comparable use.
Residential Water	$50 / $120 (high risk)	**Non-residential Water**	2.5 times average bill for location or comparable use.
Residential Sewer	$50 / $120 (high risk)	**Non-residential Sewer**	2.5 times average bill for location or comparable use.
Residential Irrigation	$50 / $120 (high risk)	**Non-residential Irrigation**	2.5 times average bill for location or comparable use.

CUSTOMER FEES

Connection Fee	$25	**Late fee for charges unpaid by due date**	5%
Returned Check/Draft Fee	$25	**Meter Tampering Fee**	$300
Non-Payment Penalty	$50	**Bucket Truck Mobilization Fee**	$500

SOLID WASTE FEES

Solid Waste Collection	$20.50 per month	**Extra Garbage Cart**	$4.18 / month	**Extra Recycling Cart**	$3.17 / month

WATER & SEWER UTILITY RATES

WATER (NON-IRRIGATION)

BASE RATES

Meter Size:	In Town	Out of Town
5/8' Meter	$16.05	$20.06
3/4" Meter	$24.08	$30.09
1" Meter	$40.13	$50.16
1.5" Meter	$80.25	$100.31
2" Meter	$128.40	$160.50
3" Meter	$240.75	$300.94
4" Meter	$401.25	$501.56
6" Meter	$802.50	$1,003.13
8" Meter	$1,284.00	$1,605.00
10" Meter	$1,845.75	$2,307.19
Monthly AMI Charge (per water meter):	$2.00	$2.00

COMMODITY RATES

			In Town	Out of Town
Residential:				
	Block 1	0 - 2,000 Gallons	$4.19	$5.24
	Block 2	2,001 - 4,000 Gallons	$4.40	$5.50
	Block 3	4,001 - 6,000 Gallons	$4.61	$5.76
	Block 4	All Gallons > 6,000	$5.03	$6.28
Commercial:				
	Block 1	0 - 100,000 Gallons	$4.68	$5.85
	Block 2	All Gallons > 100,000	$5.38	$6.73
Industrial:				
	Block 1	0 - 100,000 Gallons	$4.75	$5.93
	Block 2	All Gallons > 100,000	$5.46	$6.82

IRRIGATION

BASE RATES

Meter Size:	In Town	Out of Town
5/8' Meter	$16.05	$20.06
3/4" Meter	$24.08	$30.09
1" Meter	$40.13	$50.16
1.5" Meter	$80.25	$100.31
2" Meter	$128.40	$160.50
3" Meter	$240.75	$300.94
4" Meter	$401.25	$501.56
6" Meter	$802.50	$1,003.13
8" Meter	$1,284.00	$1,605.00
10" Meter	$1,845.75	$2,307.19
Monthly AMI Charge (per water meter):	$2.00	$2.00

COMMODITY RATES

			In Town	Out of Town
Residential:				
	Block 1	0 - 8,000 Gallons	$6.50	$6.50
	Block 2	8,001 - 16,000 Gallons	$8.11	$8.11
	Block 3	All Gallons > 16,000	$9.97	$9.97
Non-Residential				
	Block 1	0 - 50,000 Gallons	$5.27	$5.27
	Block 2	50,001 to 100,000 Gallons	$7.27	$7.27
	Block 3	All Gallons > 100,000	$8.56	$8.56

SEWER

Base Rates:

Meter Size:	In Town	Out of Town
5/8' Meter	$17.53	$21.91
3/4" Meter	$26.29	$32.87
1" Meter	$43.82	$54.78
1.5" Meter	$87.65	$109.56
2" Meter	$140.24	$175.30
3" Meter	$262.95	$328.68
4" Meter	$438.24	$547.80
6" Meter	$876.49	$1,095.61
8" Meter	$1,402.38	$1,752.97
10" Meter	$2,015.92	$2,519.90
Commodity Rates:		
All usage (per 1,000 gallons)	$5.64	$7.05
Flat Rate Sewer (No Meter):	$34.50	$43.13

WATER & SEWER - Bulk

Monthly Commodity Rates (Water):	$4.93 / 1,000 gallons
High Strength Surcharge (Sewer):	
Biochemical Oxygen Demand (BOD)	$0.305 / pound for conenctration in excess of 250 mg/liter
Total Suspended Solids (TSS)	$0.125 / pound for conenctration in excess of 250 mg/liter
Ammonia Nitrogen (NH3-N)	$1.562 / pound for conenctration in excess of 250 mg/liter
Industrial High Strength Surcharge	$2.11 / 1,000 gallons

ELECTRIC UTILITY RATES

RESIDENTIAL

Monthly Base Charges:	
Single Phase Service	$12.75
Three Phase Service	$16.00
Monthly Energy Charge:	$0.11967 / kWh
Monthly AMI Charge (per electric meter):	$2.00

INSTITUTIOINAL

Monthly Base Charge:	$30.00
Monthly Energy Charge:	$0.13613 / kWh for first 600 kWh
	$0.11411 / kWh for next 1,900 kWh
	$0.10394 / kWh for all additional kWh
Monthly AMI Charge (per electric meter):	$2.00

SMALL GENERAL SERVICE

Monthly Base Charges:	$17.50
Monthly Energy Charges:	$0.13818 per kWh for the first 750 kWh*
	$0.09248 per kWh for the next 2,000 kWh
	$0.08100 per kWh for the additional kWh
Monthly AMI Charge (per electric meter):	$2.00

When the kW of billing demand exceeds 5kW, add into the first block 150 kWh for each additional kW of excess.

MEDIUM GENERAL SERVICE

Monthly Base Charges:	$30.00
Monthly Demand Charges:	$8.41 / kW
Monthly Energy Charge:	$0.07827 / kWh
Monthly AMI Charge (per electric meter):	$2.00

LARGE GENERAL SERVICE

Monthly Base Charge:	$100.00
Monthly Demand Charge:	
CP Demand	$17.50 / CP kW
Excess Demand	$1.50 / kW
Monthly Energy Charge:	$0.04813 / kWh
Monthly AMI Charge (per electric meter):	$2.00

COINCIDENT PEAK (CP)

Monthly Base Charge:	$175.00
Monthly Demand Charge:	
CP Demand	$18.00 / CP kW
Excess Demand	$3.50 / kW
Monthly Energy Charge:	$0.05472 / kWh
Monthly AMI Charge (per electric meter):	$2.00

TOWN FACILITIES

Monthly Base Charge:	$10.25
Monthly Energy Charge:	$0.08362 / kWh
Monthly AMI Charge (per electric meter):	$2.00

TIME OF USE

Monthly Base Charge:	$175.00
Monthly Demand Charge:	$17.27 / kW
Monthly Energy Charge:	$0.05778 / kWh
Monthly AMI Charge (per electric meter):	$2.00

AREA LIGHTING

Monthly Rate Per Lighting Unit:	
Residential Unit	$11.94
Small Commercial Unit	$15.85
Large Commercial Unit	$36.17
Underground Charge	$4.80

Monthly Rate Per Pole Type:	
Wooden	$3.00
Decorative	$6.60
Monthly Energy Charge:	$0.08362 / kWh
Monthly AMI Charge (per electric meter):	$2.00

ELECTRIC DEPARTMENT

Residential Electric Meter	$100	**Area Light Replacement Fee (per light)**	$25
Small Commercial Meter	$350	Bulb M400/U	$17
Large Commercial Meter	$500	Bulb M1000/U/BT37	$43
Underground Electric Fee	$375	Bulb LU400	$20

PUBLIC WORKS

WATER AND SEWER TAPS AND WATER AND SEWER / ELECTRIC METER FEES

Meter Size	Base Cost	Street Cut	Concrete Cut	Meter Only	Permit Fee
5/8 Inch Water	$1,425	$500	$500	$200	N/A
1 Inch Water	$1,575	$500	$500	$250	N/A
2 Inch Water	$2,050	$500	$500	$1,050	N/A
4 Inch Sewer	$1,625	$500	$500	N/A	N/A
Irrigation	$225	$500	$500	$200	$50
Irrigation Split	$425	N/A	N/A	N/A	N/A
Relocate Service Line	$425	N/A	N/A	N/A	N/A
Residential Electric	N/A	N/A	N/A	$100	N/A
Small Commercial Electric	N/A	N/A	N/A	$350	N/A
Large Commercial Electric	N/A	N/A	N/A	$500	N/A

SYSTEM DEVELOPMENT FEES

Meter Size	Water	Sewer	Total
5/8 Inch	$1,793	$3,260	$5,053
3/4 Inch	$2,690	$4,890	$7,580
1 Inch	$4,483	$8,150	$12,633
1.5 Inch	$8,965	$16,300	$25,265
2 Inch	$14,344	$26,080	$40,424

Meters greater than 2 Inch require a negotiated Developer's Agreement.

NOTE: Irrigation meters will be charged 1/2 the Water System Development Fee.

NUTRIENT OFFSET FEES

Residential Tap	$400/ Tap	**Non Residential Tap**	$0.004 / gallon of annual wastewater capacity

PLANNING DEPARTMENT

DEVELOPMENT SUBMITTAL FEES

Advertising - Newspaper	$200	**Plat, Exempt**	$100
Appeal / Interpretation	$250	**Plat, Final**	$250 + $5 / lot
Annexation (See Town Clerk)	$0	**Plat, Recombination**	$100
Urban Archery Hunting Permit	$10	**Re-Inspection**	$100
Major Subdivision	$400 + $5 / lot	**Rezoning**	$500
Minor Subdivison (<5 lots)	$200 + $5 / lot	**Sign, Master Plan**	$100
Master (Open Space) Subdivision Plan	$700 + $5 / acre	**Sign, Permanent**	$50 + $5 / additional sign
Planned Development	$1,000 + $5 / acre	**Sign, Temporary**	$30
Small Cell Wireless	$100 ea for first 5 facilities, $50 ea additional	**Site Plan, Administrative Amendment**	$100
Zoning Site Inspection	$50 first acre, $20 ea additional	**Site Plan, Major**	$500 + $5 / acre
Zoning Landscape Inspection	$50 first acre, $20 ea additional	**Site Plan, Minor**	$250 + $5 / acre
Resubmittal Fee	3rd Submittal 1/2 of Original	**Special Use Permit**	$400
Landscape/site plan violation/enforcement	Same as initial inspection type	**Temporary Use / Special Event**	$100
		Tree Removal / Clearing Permit	$50
Partial release landscape/site improvement bond	Same as initial inspection type	**Variance Application**	$250 ($500 after the fact)
		Zoning Compliance Permit	$50
Conditional Use	$400	**Zoning Verification Letter**	$50

CODE ENFORCEMENT

Tall Grass and Overgrowth	0 to .25 acres	$150 + $100 Admin Fee	**Private Property Clean Up**	Amount Billed by Contractor + $100 Admin Fee
	.26 to .50 acres	$200 + $100 Admin Fee		
	> 1.00 acres	$250 + $100 Admin Fee		

COPIES AND MAPS

Copy < 11" x 17" (Black & White)	$0.10	**Map 24" x 36"**	$20
Copy > 11" x 17" (Black & White)	$1	**Map 36" x 48"**	$30
Copy < 11" x 17" (Color)	$0.40	**General Design Guidelines**	$10
Copy > 11" x 17" (Color)	$5	**Strategic Growth Plan**	$20
Map 18" x 24"	$10	**Unified Development Plan**	$40

CONSULTANT REVIEW FEES

Tower Review, New Structure, One Related Meeting	$5,000	**Tower Review, Co-Location/Mod/Upgrade**	$1,000
Tower Review, New Structure, Two Related Meetings	$6,500	**Traffic Review**	Negotiated

RECREATION AND OPEN SPACE FEES

Residential Fee	$1,000/lot (7-1-19), $1,500/lot (1-1-20), $2,000/lot (7-1-2020)	**Multi-Family Fee**	$1,000/unit (7-1-19), $1,500/unit (1-1-20), $2,000/unit (7-1-20)

INSPECTIONS DEPARTMENT

Plan Review Fee - Initial Review	No Charge
Plan Review Fee - Subsequent Reviews (ea)	$150
New Dwelling (Single):	
Up to 1,200 sq. ft.	$600 / dwelling
> 1,200 sq. ft.	$600 + $0.30 / sq. ft.
Residential - Additions/Remodel:	
0 - 400 sq. ft.	$300
> 400 sq. ft.	$300 + $0.30/sq. ft.
Additional per trade	$75
Multi-Family Dwelling Duplex/Triplex	
Up to 3 units	$600 + $0.30/sq ft > 1,200 sq ft
Each additional unit	$200
Mobile Homes	
Single-Wide (Building Only)	$250
Double - Wide (Building Only)	$275
Triple - Wide (Building Only)	$300
Quad - Wide (Building Only)	$325
Travel Trailers / Campers	$75
Poured Footing Inspection	$50
Mechanical Permit Fee	$50
Electrical Permit Fee	$50
Plumbing Permit Fee	$50
Dwelling Moved On	
Fee	$250
Trade Fee	$75
Residential Accessory Building (12'x12' and over)	
Storage Building	$75
Garage / Carport	$100
Deck / Porch/ Gazebo	$75 + $0.30/sf for > 144 sf
Additional trade	$75
Trade Inspections	
Building, Electrical, Plumbing and Mechanical	$50
Farm Storage Buildings	
Livestock Production Buildings	$40
Bulk Tobacco Barns	
Building, Electrical, Plumbing and Mechanical	$75
Electrical Permit Fee	$75
Permit Fee for Commercial Buildings (Based on cost per trade)	
$0 - $2,500	Trade fee (Minimum $75)
$2,501 - $25,000	$225
$25,001 - $50,000	$550
$50,001 - $100,000	$1,000
$100,001 - $200,000	$1,650
$200,001 - $350,000	$2,850
$350,001 - $500,000	$3,900
$500,001 - $750,000	$5,250
$750,001 - $1,000,000	
>$1,000,000	$6,500 + 0.2% for every dollar over $1,000,000

Re-Inspection Fees	
First Re-Inspection	$50
Additional Re-Inspection of Same Item	$100
Day Care Re-Certification	$100
ABC Permit Form	$150
Expired Permit Reissue	
Work Started / Code Changes	Original fee x 50%
No Work Started / No Code Changes	$150
Re-Review, Lost Plans / Update	$150
Service Pole Inspections	
Electrical ($1 Building if no permit exists)	$75
Update for Permits	
Contractor Change (Ord. 2017-09-01)	$50
Service Change Inspections	
Conditional Service (Ord. 2017-09-01)	$75
Building	$1
Electrical	$75
Sign	
Building	$75
Electrical	$75
Swimming Pools	
Building	$75
Electrical	$75
Pedestals	
Building	$1
Electrical	$75
LP Gas Tanks	
Building	$40
Electrical	$75
Replace Roof of Existing House or Mobile Home	
Per Building	$75
Tents (Per Building over 240 sq. ft.)	$75
ATM	Commercial Rate
Conditional Power/Gas - Single Family	$75 each
Conditional Power/Gas - Multi Family	$75 first meter, $50 each addiitonal
Reconnect Power	
Building	$1
Electrical	$75
Connect County Water / Sewer	
Building	$1
Electrical	$75
Demolition - Residential	$50 + asbestos report
Demolition - Commercial	$150
Sprinkler System	Commercial Rate
Penalty	
For work started before proper permitting is obtained, a penalty of one-half the cost of the permit(s) that should have been obtained shall apply. GS 160A-414.	
Irrigation of New Landscape	$75
One Time Extension - Irrigation New Landscape	$50

ENGINEERING DEPARTMENT

REVIEW FEES

Residential Subdivision (Initial & 2nd submittal)	$250 + $10 per lot	Record Drawing / As-Built Review	$200
Residential Re-Review (Per review)	$100	Record Drawing / As-Built Review Re-Review	$50
Non-Residential (Initial & 2nd submittal)	$250 + $25 per acre	Infrastructure Performance Guarantee (non-cash)	$100
Non-Residential Re-Review (Per review)	$100	Infrastructure Performance Guarantee (cash)	No charge
Infrastructure Only (Road/Sewer/Water extension)	$250 + $0.25 per linear foot	Infrastructure Performance Guarantee Renew/Change	$50
Alternative Standard Request	$500 per standard	Landscaping Performance Guarantee	$100
Construction Plan Amendment/revision to approved plans	$50 + $5 per sheet	Encroachment Agreement	$50
Pump Station Review - CDs	$500	Encroachment Agreement (work started/completed)	$75
Pump Station Review - Re-Review	$250	Water Extension Permit Forms	$100 each
Special Study (Flood, Traffic Calming, etc.)	$250	Sewer Extension Permit Forms (ETZ, FTSE, etc.)	$100 each
Floodplain MGMT Document Review (LOMR, CLOMR, etc.)	$100 per form	Wastewater Allocation Requests	$50

INSPECTION FEES

Public Streets Construction (curb & gutter)	$1.50 per linear foot	Public Greenways & Sidewalks	$0.50 per linear foot
Public Streets Construction (roadside swales)	$2.00 per linear foot	Driveways	$50 per driveway
Public StreetsAcceptance (punch list + follow up)	$0.25 per linear foot	Fire Lanes	$100 + $0.25 per linear foot
Public Streets Acceptance (punch list re-inspection)	$100 per street	Sanitary Sewer Taps (not perofrmed by Town)	$50 per tap
Water System Extensions	$0.75 per linear foot	Water Taps (not performed by Town)	$50 per tap
Sanitary Sewer System Extensions	$0.75 per linear foot	Fee-in-lieu (Infrastructure, etc).	125% of Engineer's Estimate
Public Storm Drainage (outsite right-of-way)	$0.50 er linear foot		

POLICE DEPARTRMENT

Accident Report	$2

FIRE DEPARTMENT

Fire Inspection Fees		**Miscellaneous**	
Up to 3,000 sq. ft	$40	Hydrant Flow Test	$50
3,001 - 5,000 sq. ft.	$75	**Special Standby Operations**	
5,001 - 10,000 sq. ft	$125	Engine	$100 / hour (one hour minimum)
10,001 - 25,000 sq. ft.	$375	Personnel	$22.50 / hour (one hour minimum)
25,001 - 50,000 sq. ft.	$500	**Hazmat Emergency Response Charges**	
50,001 - 100,000 sq. ft.	$625	Engine, Tanker or Ladder Truck	$250 / hour
100,001 - 500,000 sq. ft.	$750	Support Vehicles	$50 / hour
Re-Inspection Fees		All Responding Personnel	1.5 x hourly rate of pay
First Re-Inspection	$45	Materials Used	Replacement cost + 10%
Second Reinspection	$45 + $20	Materials Damager	Replacement cost + 10%
Third Reinspection	$45 + $20 + $20	**First False Alarm in Month**	$0
Fourth Reinspection, etc.	$45 + $20 + $20 + $20	**Subsequent False Alarms in Month**	$100 each

RECREATION DEPARTMENT

ATHLETICS

Youth Sports (Officiated - O, and Unofficiated - U)	**Resident Fee (50% Discount)**	**Non-Resident Fee**
Winter Basketball (O)	$40	$80
Spring Baseball (O)	$40	$80
Spring Softball (O)	$40	$80
Fall Volleyball (O)	$40	$80
Fall Softball (O)	$40	$80
Spring T-Ball (U)	$30	$60
Fall Soccer (U)	$30	$60
Adult Sports	**Resident Fee (50% Discount)**	**Non-Resident Fee**
Softball	$12.50	$25
Soccer	$12.50	$25
Basketball	$12.50	$25
Volleyball	$12.50	$25
Flag Football	$12.50	$25

PROGRAMS

Classes	**Resident Fee**	**Non-Resident Fee**
Class fees vary according to the type of clss, cost of the facility, instructor and number of participants.	Base	Base + $15

SUMMER PLAYGROUND CAMP

Registration Fee	**Resident Fee (50% Discount)**	**Non-Resident Fee**
$25 / attendee	$60	$120

FACILITY RENTALS

Community Center Gym	**Resident Fee (50% Discount)**	**Non-Resident Fee**
Full Court	$50 / hour	$100 / hour
Half Court	$40 / hour	$80 / hour
Scoreboard	$10 / hour	$20 / hour
Ballfields	**Resident Fee (50% Discount)**	**Non-Resident Fee**
Community Park Field #1	$20 / hour	$40 / hour
Community Park Field #2	$20 / hour	$40 / hour
Community Park Field #3	$20 / hour	$40 / hour
Legend Park	$20 / hour	$40 / hour
Municipal Park	$20 / hour	$40 / hour
East Clayton Community Park Baseball Field	$25 / hour	$50 / hour
East Clayton Community Park Soccer Field	$35 / hour (2 hour minimum)	$70 / hour (2 hour minimum)
East Clayton Community Park Multipurpose - Full Field	$25 / hour	$50 / hour
East Clayton Community Park Multipurpose - Half Field	No longer offered	No longer offered
Field Rental Add Ons	**Resident Fee (50% Discount)**	**Non-Resident Fee**
Lights (Community, Municipal and Legend)	$7.50 / hour	$15 / hour
Lights (East Clayton Soccer & Baseball)	$10 / hour	$20 / hour
Baseball / Softball Field Prep (All Fields)	$15 / application	$30 / application
East Clayton Soccer Field Paint	Included	Included

Tournament Field Rentals and Add Ons	Resident Fee	Non-Resident Fee
Community Park - Full Day	$250 / field / day	$250 / field / day
Community Park - Half Day	$125 / field / day	$125 / field / day
East Clayton - Baseball	$350 / day	$350 / day
Additional Field Prep	$30 / field	$30 / field
Scorebaord	$25 / field / day	$25 / field / day
Drying Agents	$10 / bag	$10 / bag
Admission Fee to Town	$50 / day	$50 / day
Concessoins	Only CPRD Allowed	Only CPRD Allowed
Other Vendors (Non-Food)	$50 / vendor / weekend	$50 / vendor / weekend
Picnic Shelters	**Resident Fee (50% Discount)**	**Non-Resident Fee**
All Star Park		
Up to 2 hours	$15	$30
Up to 4 hours	$25	$50
More than 4 hours	$62.50	$125
Community Park & East Clayton Community Park		
Up to 2 hours	$20	$40
Up to 4 hours	$30	$60
More than 4 hours	$75	$150
Community Center Memberships	**Resident Fee**	**Non-Resident Fee**
Annual Memberships		
Individual	$0	$125
Middle School Student	$0	$75
High School Student	$0	$75
Family with Dependents	$0	$200
Family with No Dependents	$0	$200
Senior Individual	$0	$75
Monthly Memberships (Non-Resident Only)		
Individual	N/A	$20
Middle School Student	N/A	$10
High School Student	N/A	$10
Family with Dependents	N/A	$30
Family with No Dependents	N/A	$30
Senior Individual	N/A	$10
Daily Memberships (Non-Resident Only)		
Individual	N/A	$5
Lost Cards	$5	$5

HOCUTT ELLINGTON MEMORIAL LIBRARY

Library Cards	Resident Fee	Non-Resident Fee
Individual - Annual	$0	$25
Individual - Semi-Annual	$0	$15
Individual - Quarterly	$0	$10
Family - Annual	$0	$50
Education Employee (All Johnston County - with ID)	$0	$0
Internet Usage		
With Valid Library Card	$0	$0
Without Valid Library Card	$0	$5 per hour
Library Fees		
Copy Machine or Computer Printouts	$0.20 per copy	$0.20 per copy
Lost Book	Replacement Cost	Replacement Cost
Overdue Fines	$0.25 per day	$0.25 per day
Library Card Replacement (Unexpired)	$5	$5

SPECIAL EVENTS

Special Event Fees	Resident Fee	Non-Resident Fee
Application Review	$100	$200
Sanitation Deposit	$250	$250
Town Square/Horne Square Rental	$25 / day	$50 / day
Street Closure	$50 / day	$100 / day
Type III Barricade Rental	$5 / barriade / day	$25 + $5 / barricade / day
Police Detail Fee (3 hour minimum)	$35 / officer / hour	$35 / officer / hour + $100 Admin Fee
Garbage/Recycling Container Rental (minimum of 4)	$13 / container / day	$13 / container / day + $50 Admin Fee
Generating Notice Addresses (one hour minimum)	$25 / hour	$50 / hour
Emergency Notification Call / Mass Phone	$50	$100
Utility Fees (Water and Electricity)		
Events longer than one day	$10 / utility	$20 / utility

NON-DEPARTMENTAL EQUIPMENT USAGE RATES

Sewer Jetter	$65 / hour	**Dump Truck**	$40 / hour
Leaf Machine	$65 / hour	**Ditch Witch Trencher**	$40 / hour
Backhoe	$55 / hour	**Asphalt Roller**	$40 / hour
Line Truck	$50 / hour	**Riding Mower**	$35 / hour
Bucket Truck	$50 / hour	**1/2 Ton Pickup Truck**	$25 / hour
Sewer Rodding Machine	$40 / hour	**Air Hammer**	$25 / hour
Tractor & Bush Hog	$40 / hour	**Soil Tamp**	$25 / hour
Mowing Machine	$40 / hour	**Push Mower**	$20 / hour

* Rates for usage of equipment not listed above shall be based on the rates published by FEMA plus 15% for billing, management, and overhead.

PUBLIC NOTICE

In accordance with NC GS 159-12(b), the Clayton Town Council will hold a public hearing on Monday, May 20, 2019, at 6:00 PM at Town Hall, 111 East Second Street, to receive public comment on the proposed 2019-2020 fiscal year budget for the Town of Clayton. A copy of the proposed budget is on file in the Town Clerk's office at Town Hall, 111 East Second Street.

This is an open meeting and citizens are invited to attend.

Kimberly A. Moffett, CMC, Town Clerk
919-553-5002

Please advertise on the following date:

May 8, 2019

Affidavit of publication required.

Town Council Agenda Cover Sheet

Meeting Date
May 20 2019

Agenda Location
New Business

Item Title
Asset Inventory and Assessment

Presenter

Rich Cappola, Director Public Works

JD Solomon, Jacobs

Summary/Description

The Town of Clayton and Jacobs, Inc. recently completed work for a Water and Sewer Asset Inventory and Assessment (AIA) study funded by the NC DEQ Division of Water Infrastructure. AIA grants were created to broaden the use of grant funds to encourage water and wastewater utilities to become more viable and more proactive in the management and financing of their systems. The multiyear process was a collaborative between Town staff and the consultant to catalog all assets in our system and assign condition and criticality ratings. This study will allow the Town to better plan for water and sewer renewal and replacement projects.

Requested Action
Informational Only

Funding Source (If Applicable):

Cost: N/A **Yes** ☐ **No** ☐

Additional Documents to be Included in Agenda Packet

Clayton Asset Inventory and Assessment Executive Summary

Clayton Asset Inventory and Assessment Final Report

Meeting Timeline

Executive Summary of Water and Wastewater Asset Inventory and Assessment Grants

PREPARED FOR: Town of Clayton NC

PREPARED BY: Jacobs/CH2M HILL of North Carolina, Inc.

DATE: May 2019

Executive Summary

The State of North Carolina has Asset and Inventory Assessment (AIA) Grants that are available to local government units and nonprofit water corporations. The AIA program broadens the use of grant funds to encourage water and wastewater utilities to become more viable and more proactive in the management and financing of their systems. The AIA grant provides funding for either wastewater or drinking water systems for asset inventory, condition assessment of critical assets and components.

Jacobs has worked with the Town in securing and implementing AIA grants for both their water and wastewater systems. The scope included improving asset data, developing a more formal criticality and risk approach, performing condition assessments, and developing a first-generation renewal and replacement (R&R) model. The work performed as part of the AIA grant has improved the accuracy of the Town's asset data and has developed tools that will support and asset and risk-based management of the Town's infrastructure.

The description of the AIA tasks completed are:

- **<u>Task 1- Building the asset registry and condition data:</u>** This task was completed by the Town which reviewed and improved the current asset registry, and further development of an asset hierarchy so there is confidence in its completeness and data is effective and useable. This allows for the ability to estimate of the overall reliability of the existing system.
- **<u>Task 2- Improving GIS accuracy for work management and the implementation/utilization of CMMS:</u>** This task was also completed by the Town which evaluated and optimized the GIS dataset for integration with work management procedures to develop a reliable data source, retain accurate legacy knowledge, and assist with work management. This allowed for standard operating procedures to be developed to maintain GIS. The Town's GIS serves as the primary database for asset inventory data while the CMMS serves as the primary tool to collect condition data and mange work orders. These tools are ready to support the Town in the future as growth continues.
- **<u>Task 3 – Applying the Risk and Criticality Framework for Prioritization:</u>** Risk can be evaluated at different levels within the organization, and the risk evaluation may take several different forms, including qualitative and quantitative. This task was completed by Jacobs which involved a criticality assessment was performed for the major subsystems (plant process areas, pump stations, collection system sub-basins, and distribution sub-basins) within the systems. The task included guidance on condition assessment techniques, and the development of guidelines for revision of the current condition assessment program for upload into Cityworks.
- **<u>Task 4 – Developing a Renewal and Replacement (R&R) model</u>**: A first generation R&R model was developed under this task by Jacobs. The ultimate outcome of this modeling effort is, however, to enhance practices. This will allow for improved ability to forecast financial requirements and implement the cost-effective projects.

Through Tasks 1, 2 and 3 the Town was able to capture institutional knowledge and record it into the Town's GIS and Cityworks which are the repositories for the Town's data. This provided the Town with better knowledge of the type of assets the Town owns and is responsible for maintaining. At the same time the Town performed condition assessment to better understand the condition of its assets which helps with future planning. For the Town's Lift Stations 67% of the assets were found to be in good or very good condition while for the Little Creek WRF 88% of assets were found to be in good or very good condition.

Data from the preceding tasks were used for populating the R&R Model (Task 4). The purpose of the R&R forecast model task for the Town was to develop a baseline 20-year R&R funding forecast for the water and wastewater systems, including horizontal (pipes) and vertical assets (lift stations and treatment facility).

Annual funding demand projections were summarized in 5-year increments to be consistent with typical utility capital planning intervals. Exhibit 1 summarizes the total annual funding demand for R&R in 5-year intervals for the various asset groups. Assets may last longer or shorter than the assumed useful life and asset costs may vary over time. The probabilistic methodology used for this R&R forecasting effort provides the Town with a robust understanding of the magnitude and likelihood of R&R demands based on the variability and uncertainty related to the input assumptions.

The overall funding forecast demand of $9 M-$10 M every 5-years should be anticipated for vertical and horizontal assets.

Exhibit 1 – 5-Year Interval Forecasted R&R Funding Forecasts for Existing Assets

	2019-2023	**2024-2028**	**2029-2033**	**2034-2038**
Vertical Assets				
Water Reclamation Facility	$4.22 M	$1.73 M	$2.42 M	$2.88 M
Lift Stations	$1.13 M	$2.12 M	$2.38 M	$2.33 M
Horizontal Assets				
Water Lines	$2.92 M	$1.51 M	$1.17 M	$0.90 M
Wastewater Lines	$1.28 M	$4.54 M	$4.07 M	$3.27 M
Totals	**$9.55 M**	**$9.90 M**	**$10.01 M**	**$9.38 M**

NOTE: Values presented are based on the 50th percentile forecast; 2019 non-escalated dollars without "project costs"

Forecasts for R&R need to be considered carefully in the decision process since asset performance and the exact timing for replacement cannot be easily predicted for all assets that roll up to a holistic R&R funding demand forecast.

Path Forward

In addition to the financial planning insights, the outcome of the four tasks funded through the AIA grant identified a number of considerations for the Towns path forward. The considerations for the next two (2) years include:

- **CMMS** – A path forward for identifying and updating or adding select asset information that will help to improve future R&R models has been developed. A priority is placed on making sure all mechanical and electrical assets are entered and as part of that process making sure the appropriate asset attribute information is entered as well (asset size, capacity, value, etc.).
- **Geographic Information System (GIS)** – GIS is the current system for storing horizontal asset data for the Town. During the development of the R&R model(s) it was identified that the horizontal asset GIS data set was originally missing data but that data has been fully populated with pipe segments and pipe attribute data with the previous tasks. It is recommended that the

Town develop a more detailed standard operating procedure(SOP) for data entry and data maintenance for the GIS data to ensure that this database of information stays current and update-to-date as new information is gathered.

- **Critical Assets** –The R&R forecast data, along with risk evaluations, can be used as a tool in the determination of the most critical assets from an operational and financial sensitivity perspective for a more holistic view of the Town's risks. Development of associated SOPs and critical spare parts are examples of risk reduction activities that the Town can now complete since the critical assets are identified.
- **R&R Forecast Tracking -** A procedure for tracking actual expenditures versus forecasted funding demands should be developed and implemented. This would allow the Town to identify factors that could be adjusted in future model updates. The level of improved input accuracy and the frequency of forecast updates should be directly related to the overall impact on the quality of decision-making that is gained.

TECHNICAL MEMORANDUM

Water and Wastewater Asset Inventory and Assessment Risk/Criticality Analysis and Renewal and Replacement Model Results Summary

PREPARED FOR:	Town of Clayton NC
PREPARED BY:	Jacobs/CH2M HILL of North Carolina, Inc.
DATE:	April 2019

Executive Summary

The state of North Carolina has annual Asset and Inventory Assessment (AIA) Grants that are available to local government units and nonprofit water corporations. This grant provides funding for either wastewater or drinking water systems for asset inventory, condition assessment of critical assets and components. The grant focuses on the first two pillars of asset management – what do I own (and where is it) and what condition is it in. The state believes that answering these two questions will enable small and medium sized utilities to develop a well-thought Capital Improvement Program (CIP) and assist to budget decision making. Jacobs has worked with the Town of Clayton (Town) in securing the grant for both their water and wastewater systems to provide additional funding for asset management, and helping the Town take their program to the next level by developing a more formal criticality approach, perform more condition assessments, and develop a first-generation renewal and replacement (R&R) model.

There were four critical tasks that were proposed and completed as part of the AIA grant, with the work from each task setting the building blocks for the next task. The tasks were:

- **Task 1- Building the asset registry and condition data:** This task was completed by the Town which reviewed and improved the current asset registry, and further development of an asset hierarchy so there is confidence in its completeness and data is effective and useable. This allows for the ability to estimate of the overall reliability of the existing system.
- **Task 2- Improving GIS accuracy for work management and the implementation/utilization of CMMS:** This task was also completed by the Town which evaluated and optimized the GIS dataset for integration with work management procedures to develop a reliable data source, retain accurate legacy knowledge, and assist with work management.
- **Task 3 – Applying the Risk and Criticality Framework for Prioritization:** Risk can be evaluated at different levels within the organization, and the risk evaluation may take several different forms, including qualitative and quantitative. This task was completed by Jacobs which involved a criticality assessment was performed for the major subsystems (plant process areas, pump stations, collection system sub-basins, and distribution sub-basins) within the systems. The task included guidance on condition assessment techniques, and the development of guidelines for revision of the current condition assessment program for upload into Cityworks.
- **Task 4 – Developing a Renewal and Replacement (R&R) model:** A first generation R&R model was developed under this task by Jacobs. The ultimate outcome of this modeling effort is, however, to enhance practices. This will allow for improved ability to forecast financial requirements and implement the cost-effective projects.

The Town had a good base of information of its asset in their CMMS and GIS but were missing some attribute data in the asset registry that was needed to facilitate Tasks 3 and 4. The Town was able to capture the institutional knowledge and record it into the town's GIS and Cityworks which is the repository for the Town's data. This provided the town with better knowledge of the type of assets the Town own's and is responsible for maintaining. At the same time the Town was performing condition assessment to better learn the condition of its assets which helps with future planning. For the Town's Lift Stations 91% of the assets were found to be in fair or better condition while for the Little Creek Water Reclamation Facility (LCWRF) 98% of assets were found to be in fair or better condition.

These tasks provided valuable data that was used for populating the R&R Model (Task 4). The purpose of the R&R forecast model task for the Town was to develop a baseline 20-year R&R model for the water and wastewater systems, including horizontal (pipes) and vertical assets (lift stations and treatment facility). The R&R forecast model focused on mechanical and electrical equipment, as these are the most relevant to, and influential on, the 20-year R&R forecast. Structural elements typically have much longer life cycles and therefore are included on a project-by-project basis if needed in the 20-year study period. For the horizontal assets, in the short term (5 years) there is low funding demand that rises but stays flat in years 5-20. Typically, water lines have a longer lifespan, this is in contrast to the Wastewater Lines which have an initial pent up demand in the next five years due to pipes that are aging out and needing replacement.

For Vertical Assets, there is a slight increase in funding demand over the next 20 years, but this is typical with new to fairly new equipment which is present with the Town's lift stations. However even though the LCWRF treatment plant assets are in good condition the lifecycle of the assets is coming up for replacement within the next five years creating a large hump of funding for replacement.

With the completion of this task the Town has been able to create valuable procedures and data that will continue to move the Asset Management Program in place forward.

Background

As part of the Asset Inventory and Assessment (AIA) the Town of Clayton (Town) four critical tasks were proposed and completed under the AIA Grant:

- **Task 1- Building the asset registry and condition data:** Reviewed and improved the current asset registry, and further development of an asset hierarchy so there is confidence in its completeness and data is effective and useable. This allows for the ability to estimate of the overall reliability of the existing system.
- **Task 2- Improving GIS accuracy for work management and the implementation/utilization of CMMS:** Evaluated and optimized the GIS dataset for integration with work management procedures to develop a reliable data source, retain accurate legacy knowledge, and assist with work management.
- **Task 3 – Applying the Risk and Criticality Framework for Prioritization:** Risk can be evaluated at different levels within the organization, and the risk evaluation may take several different forms, including qualitative and quantitative. A criticality assessment was performed for the major subsystems (plant process areas, pump stations, collection system sub-basins, and distribution sub-basins) within the systems. The task included guidance on condition assessment techniques, and the development of guidelines for revision of the current condition assessment program for upload into Cityworks.
- **Task 4 – Developing a Renewal and Replacement (R&R) model**: A first generation R&R model was developed under this task. The ultimate outcome of this modeling effort is, however, to enhance

practices. This will allow for improved ability to forecast financial requirements and implement the cost-effective projects.

Tasks 1 and 2 were performed by the Town. Tasks 3 and 4 built on the asset information that was developed in those previous tasks. This Technical Memorandum (TM) summarizes the results from Tasks 3 and 4.

Organizational Context

Over recent years the Town has experienced significant growth with the addition of industrial as well as residential customers. The 2015 Town Comprehensive Plan 2040 recognizes the Town grew by more than 150% between 2000 and 2013, and if current projections maintain, the Town could double in size over the next 20 years. This has led to an expansion of the water distribution and wastewater collection systems and more assets to manage. At the same time, while much of the Town's efforts have been targeted towards growing the system, the existing parts of the system have been aging.

The Town's Standard & Poor's credit rating has remained at AA. The Town was considered to be in a reasonable financial position when compared to all utilities in North Carolina based on review of data available from the University of North Carolina (UNC) Environmental Finance Center, Liquidity measures (quick ratio and days of cash-on-hand) are strong, as is the debt service coverage ratio and debt-to-equity ratio. However, the operating ratio of 1.10 is more of a concern. At the state-wide level, the Town's sewer bills are on the low end, as is the affordability scale. Today, many of those criteria remain the same, however the operating ratio has reduced to 0.77.

Using its own funds, in 2014 the Town began a review of its existing work management practices and the search for a Computerized Maintenance Management System. This resulted in Cityworks being selected. The implementation of Cityworks represented a significant investment of time and money for the Town, one they are keen to maximize the benefit of. Under the AIA grant funded project, the asset data was improved and enhanced. The Town's GIS serves as the primary database for asset inventory data while the CMMS serves as the primary tool to collect condition data and mange work orders.

The Town maintains over 120 miles of water distribution lines and 1.8 million gallons of finished water storage. The Town does not have its own water treatment plant and water is provided to the Town from Johnston County. At the start of the AIA project, pipe diameters were included in the Town's GIS for over 90% of pipes, but over 50% of pipe material information was unknown, and age data was known for only 6% of pipe segments.

The Town also maintains over 120 miles of wastewater collection lines with 30 sewer lift stations. The collection system discharges to the 2.5 million gallons per day (MGD) Little Creek Water Reclamation Facility (WRF). The Town also has wastewater treatment agreements with the City of Raleigh and Johnston County for 1.0 MGD and 0.9 MGD respectively. As the AIA project started, pipe material information for over 80% of pipes was included in GIS, along with over 80% of pipe diameters. The age of pipe segments varies significantly, and this data was not generally maintained historically in GIS.

The Town has been using Cityworks in 2016 to record both preventive maintenance and corrective maintenance. The Town uses work orders for function in water and sewer to track activities against assets. Typical maintenance activity can be tracked to the asset with the data improvements completed in Task 2 of the AIA grant. Sample activities tracked against assets include:

- Water: hydrant flushing; meter installations; line installation; repairs; valve exercise and customer complaints, etc.
- Sewer lines: investigate issues; line cleaning; CCTV; manhole rehabilitation; easement maintenance, etc.

- Lift Stations: wet well cleaning; inspect, clean, grease equipment; pump repair; SCADA; troubleshoot; control panel component replacement, etc.
- Water Reclamation Facility: inspect, clean, grease equipment; run generators; chemical feed system maintenance, etc.

The Town uses New World Systems as its financial tool. The Town maintains asset valuation in both a Fixed Asset Register and Insurance records. Based on those records, the water reclamation facility (WRF) is valued at $19.1 M, the lift stations are valued at a total of $7.88 M, and the collection and distribution systems are valued at $11 M and $6 M respectively. WRF and lift station values were based on insurance values, whereas the collection and distribution valuations were based on the fixed asset register (FAR). It should be noted that the FAR does not include developer installed lines, so the FAR value is considered an underestimate of the total system value.

Asset Registry (Task 1)

The objective of this task, that was completed by the Town, was to review and improve the asset registry and to develop and asset hierarchy, so that there is confidence in its completeness. The ability to assign work to an asset within Cityworks relies on the completeness of the asset inventory. Town staff developed and refined an asset registry/inventory and collected asset data so that the registry could be populated. As noted, while some asset information was available in GIS for collection and distribution systems, there were many gaps and data where there was limited confidence in its accuracy. The accuracy was improved through field location and digitizing record drawings into the GIS database.

As a result of this effort 100% of installation date, pipe size, and pipe material were populated for the water distribution and wastewater collection systems, as summarized in Exhibit 1. Through the AIA project an asset registry for the Little Creek WRF was created, which was structured by WRF processes. Individual assets were aligned to these processes.

Exhibit 1 – Horizontal Asset Data Attributes

Attribute	Water Main	Gravity Sewer	Force Main
Installation Date (% available)	100%	100%	100%
Pipe Diameter (% available)	100%	100%	100%
Pipe Material (% available)	100%	100%	100%
Total Length (ft)	676,320	651,438	191,266
Number of segments in GIS	4,076	3,286	151
Average Segment Length (ft)	165 (fitting to fitting)	198 (manhole to manhole)	1,266 (fitting to fitting)

Improving GIS Accuracy (Task 2)

The Town's GIS serves as the primary database for asset inventory data. Prior to the AIA project, the GIS database was not optimized for the effective implementation of the Town's asset management practices. It is important for the asset registry and GIS schema to be aligned to how the Town desires to use the asset data, and to support the Cityworks CMMS. Under Task 2, the Town updated the GIS schema to support their broader goals, including changes for capturing data from condition assessment in GIS, the addition of fields for criticality rating, and condition inspections details.

Criticality Analysis Framework (Task 3)

Risk and criticality are important aspects in an as it leads to informed decision making. In asset management, risk is classically expressed as the product of the likelihood and consequence of failure.

The likelihood of failure is most inconsistent in terms of its predictability. Risk can be evaluated at different levels within the organization, and the risk evaluation may take several different forms. Risk is therefore situationally specific.

Criticality is a more general form of prioritization. Criticality focuses primarily on the consequences of failure, or what is most important to the overall organization. Factors such as the likelihood of failure and fault tolerance (redundancy) can be incorporated when they are field evaluated. Criticality is typically the starting point for decision making and resource allocation for condition assessments, work management, critical spare parts, and operational resiliency assessments (among others).

The asset groups for the analysis included: Distribution system pipe segments grouped into sub-basins; Collection system pipe segments grouped into sub-basins; Lift Stations; and Little Creek Water Reclamation Facility (LCWRF). The assessment was based on data improved from the AIA, potential failure modes, and staff knowledge to qualitatively assess and rank the criticality of the subsystem functions. Jacobs worked with operation and maintenance personnel to develop and validate criticality scores. For the distribution and collection systems to apply risk/criticality scores at the asset level of each group, thereby identifying the risk/criticality of individual pipe segments with the respective systems. Pipe segments were scored on a scale of 1-5, with reference to their associated system/group score. A score of 5 denotes the most critical.

Exhibit 2 and 3 detail the sub-processes criticality for LCWRF, in tabular format and GIS mapping. Exhibit 4 and 5 similarly detail the lift station criticality in tabular format and GIS mapping. Exhibits 6 through 8 present that information for horizontal assets. Larger criticality maps can be seen in Attachment A.

Exhibit 2 – LCWRF Subsystem Criticality

System/Subsystem	Criticality	System/Subsystem	Criticality
Preliminary Treatment/Influent Pumping	5	Sludge Thickening/Thickened Sludge Pumping	3
Tertiary Treatment/Effluent Pumping	5	Sludge Stabilization/Sludge Loading	3
Tertiary Treatment/Disinfection	5	Backup Electrical Power/Generator	3
Secondary Treatment/Clarification	5	Preliminary Treatment/Screening	2
Secondary Treatment/RAS/WAS Pumping	4	Preliminary Treatment/Grit Removal	2
Tertiary Treatment/Filtration	4	Preliminary Treatment/Flow Measurement	2
Ancillary/Chemical Feed Systems	4	Ancillary/SCADA	1
Secondary Treatment/Biological Treatment	4	Ancillary/Control Building	1
Sludge Stabilization/Sludge Holding	3	Ancillary/Plant Water	1
Sludge Thickening/Sludge Thickening	3	Ancillary/Cranes	1
Digestion/Aerobic Digestion	3		

Exhibit 3 – Little Creek WRF Subsystem Criticality Scores (Larger scale version in Attachment A)

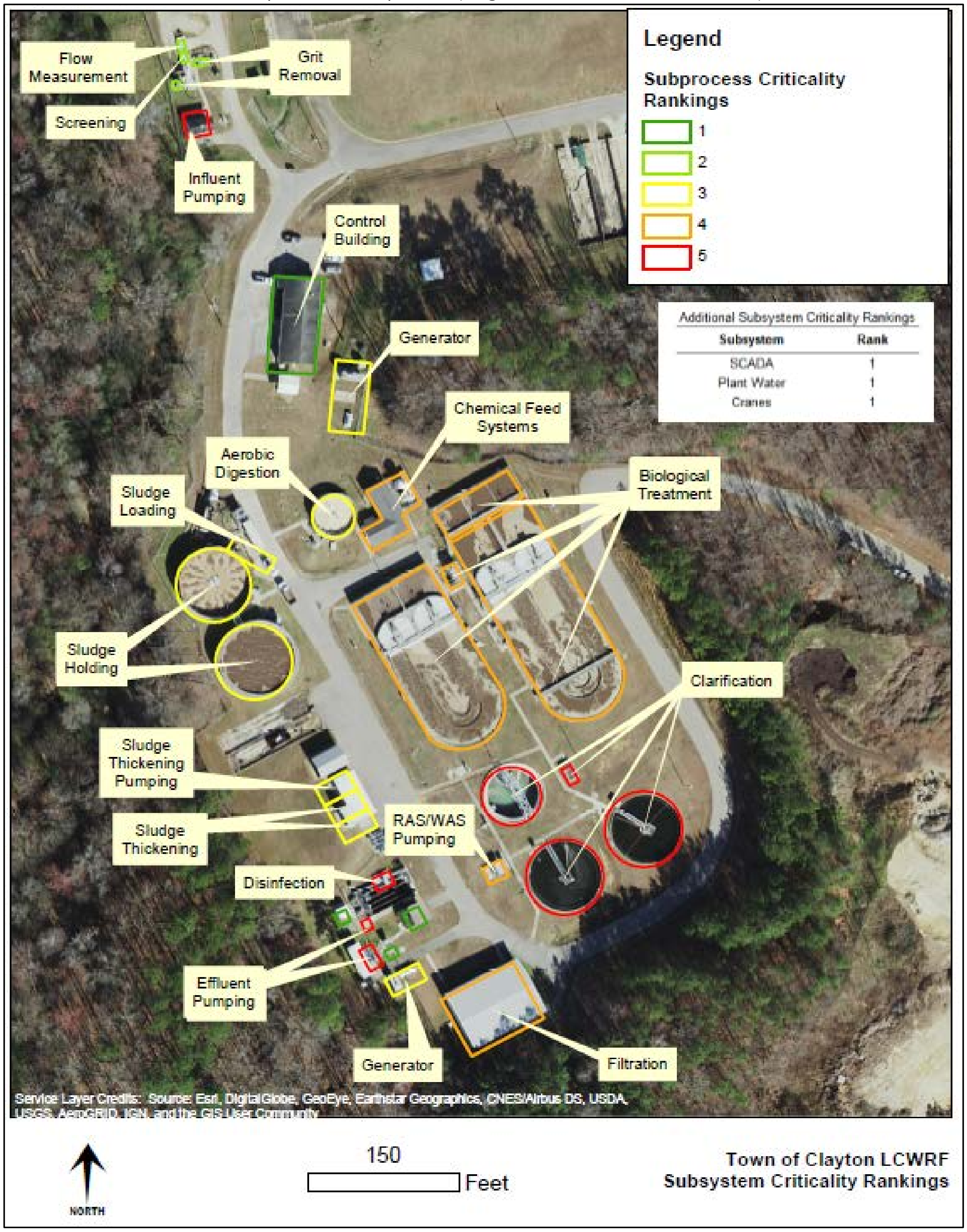

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Exhibit 4 – Lift Station Criticality

Lift Station	Criticality	Lift Station	Criticality	Lift Station	Criticality
Clayton to Raleigh	5	Cobblestone	4	Walmart	2
Neuse River 2	5	Hardee	4	Olde Towne	2
Neuse River 1	5	Forest Glen	3	Liberty	2
Summerlyn	5	Peele	3	Brittany Woods	1
Walnut Creek	5	Wynston	3	Colonial Carton	1
Glen Haven	4	Starmount	3	Powhatan	1
Glen Laurel 1	4	JMH	3	Flamingo	1
Glen Laurel 2	4	City	3	West Main	1
Glen Laurel 3	4	South Tech Park	2	Animal Hospital	1
Central	4	Arbors	2	Fire Station 2	1

Exhibit 5 – Lift Station Criticality Scores (Larger scale version in Attachment A)

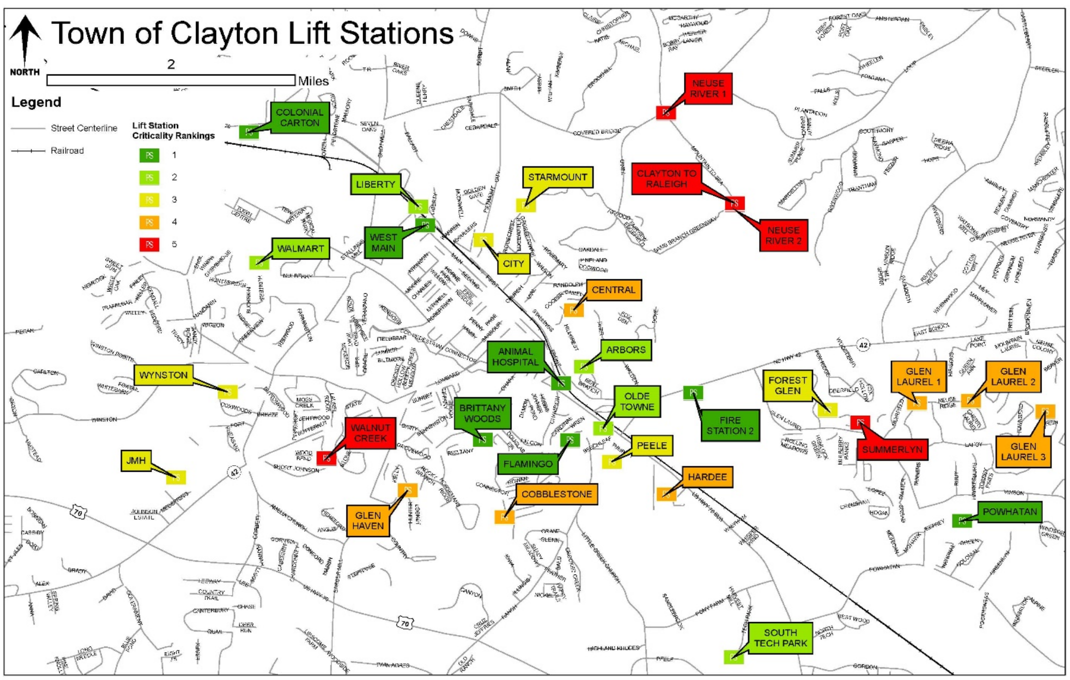


Exhibit 6 – Distribution and Collection System Horizontal Assets Criticality Scores, by Linear Foot		
Criticality	**Length (LF)**	**Percent of System**
Distribution System		
1	4,741	1%
2	18,103	3%
3	501,241	74%
4	29,212	4%
5	123,024	18%
Collection System		
1	12,796	2%
2	27,587	3%
3	275,771	33%
4	12,567	1%
5	513,983	61%

Exhibit 7 – Distribution System Horizontal Assets Criticality Scores (Larger scale version in Attachment A)

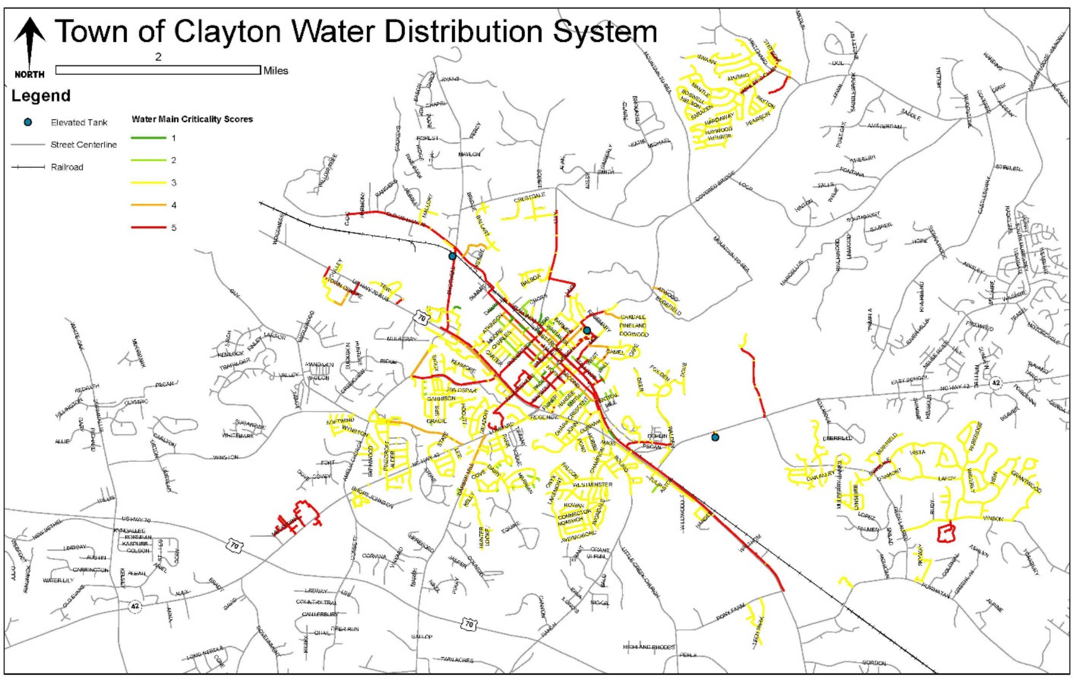
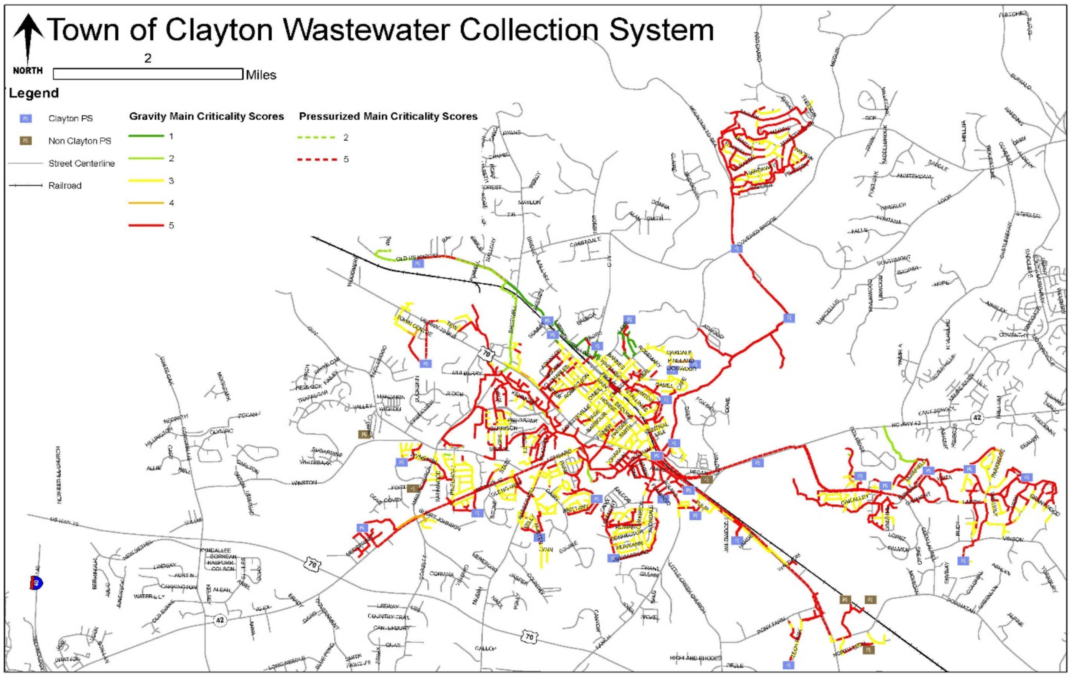


Exhibit 8 – Collection System Horizontal Assets Criticality Scores (Larger scale version in Attachment A)



The results of this assessment are aligned with similar water and sewer providers. The Town has participated in peer exchanges to share and enhance knowledge. Overall, the results of the criticality assessment will help the Town to:

- Identify where more refined data may be needed.
- Prioritize future condition assessments
- Prioritize preventative maintenance (PM) program refinements, development and execution.
- Validate work order prioritization; and
- Help with future budget and CIP planning.

Condition Assessment Standard Operating Procedure Development

A condition assessment can have many purposes. In this case, the condition assessment of equipment and components was used to obtain a snapshot in time of the current condition of assets, as well as estimate the expected life of equipment and components. Condition assessments, when performed and analyzed regularly, gauge the effectiveness of the current maintenance program by quantifying the degradation or decay of an asset's condition over time. Such condition information can be used as a primary component in the estimation of the likelihood of failure of physical assets. This data provides information on the maintenance requirements needed to bring equipment back to satisfactory operational standards, ensuring reliability and prolonging the asset's useful life.

Based on industry sources, such as the International Infrastructure Management Manual (IIMM), Jacobs developed guidance on condition assessment techniques for the Town. Vertical asset condition assessment Standard Operating Procedures (SOPs) in the form of templates were created by Jacobs for the Town to allow evaluation and scoring each major asset type. The condition assessment procedures were executed by the Town for pump stations as part of the pilot process for the condition assessment program. The incorporation of these templates into Cityworks allows for a consistent, repeatable process related to condition based on asset types. Exhibit 9 presents the Condition Assessment Rating Scale used.

Exhibit 9 – Condition Assessment Rating Scale

"Rating"	General Description	Typical Characteristics
1	Very Good	Like new. Sound physical condition.
2	Good	Acceptable physical condition. Minimal short-term risk of poor performance; Minor defects only. Replacement not needed in foreseeable future.
3	Moderate	Some deterioration and wear noted. Asset still functions safely at an acceptable level of service. Failure not expected within next 2 years and asset is still serviceable.
4	Poor	Failure likely in the short-term. Likely will need to replace most of all of asset within 2 years. No immediate risk to health and safety. Requires renewal within 2 years.
5	Very Poor	Failed or failure imminent. Immediate need to replace some or all of asset. Health and safety hazards exist which could present a meaningful risk potential for health & safety. Major work or replacement required urgently.

The lift station condition assessment results after excluding safety and housekeeping criteria for the 488 assets (100% of total assets) were:

- 12% of the assets were found to be in Condition 1 (Very Good Condition)
- 55% were found to be in Condition 2 (Good Condition)
- 24% were found to be in Condition 3 (Moderate Condition)
- 7% were found to be in Condition 4 (Poor Condition)
- 2% were found to be in Condition 5 (Very Poor)

For LCWRF, initially a desktop approach was utilized to review of maintenance records and discuss asset history with the WRF Operations and Maintenance staff. Jacobs staff the performed a plant walk-though to determine condition scores based on a visual assessment. Overall, the Town performs regular maintenance and repairs or replaces when issues are identified. A more detailed, formal condition assessment may reveal that assets are in worse condition that could be readily assessed from a visual inspection. The LCWRF condition assessment results for the 212 assets (100% of total assets) were:

- 18% of the assets were found to be in Condition 1 (Very Good Condition)
- 70% were found to be in Condition 2 (Good Condition)
- 10% were found to be in Condition 3 (Moderate Condition)
- 2% were found to be in Condition 4 (Poor Condition)
- 0% were found to be in Condition 5 (Very Poor)

Renewal and Replacement Forecast Model (Task 4)

This task was performed with the system information that was developed in the previous tasks. A goal of an asset management is to preserve a utility system's functionality and reliability with adequate funding at the proper time. The best planning tool to achieve this objective is a renewal and replacement (R&R) forecast model. The purpose of the R&R forecast model task for the Town was to develop a baseline 20-year R&R model for the water and wastewater systems, including horizontal (pipes) and vertical assets (lift stations and treatment facility). The R&R forecast model focused on mechanical and electrical equipment, as these are the most relevant to, and influential on, the 20-year R&R forecast. Structural elements typically have much longer life cycles and therefore are included on a project-by-project basis if needed in the 20-year study period.

These forecasts are developed from first-generation models that provide a baseline projection of R&R funding demands for both capital and annual maintenance. The baseline forecast is based on current operation and maintenance (O&M) practices and does not change or optimize those practices based on risk, modified levels of service, and/or maintenance strategies. Such enhancements could be made in future generations of the model.

R&R Forecast Model Development Overview

The R&R forecast model is a tool that uses asset data, such as asset life-cycle, replacement cost and condition, to estimate future R&R funding needs. The forecast model leverages asset information gathered in the asset registry/inventory stage of the AIA grant project to estimate future R&R needs for each subsystem.

During Tasks 1 and 2, Jacobs and the Town performed an assessment of their geographic information system (GIS) which houses the Town's information for horizontal assets. Using as-builts and field data collection the information gaps were populated, which was essential for forecasting the horizontal assets. At the completion of this effort the Town was able to populate attribute data for all Town owned horizontal assets within GIS.

Vertical assets condition assessment templates were created by Jacobs for the Town to allow evaluation and scoring each major asset at each Lift Station. Team members from Jacobs developed a table-top condition modifier of LCWRF assets based on visual walk through and staff input of performance and maintenance history. These processed provided critical data that was utilized in forecasting the vertical assets.

Deterministic R&R Model

The development of the forecast model starts with a deterministic approach. Deterministic models use single point estimates and are used to calculate funding needs based on a variety of input data assumptions such as asset age, condition, replacement value, and useful life. Deterministic models are useful for:

- Developing a single point funding estimate using base values for each input data point
- Identifying important model input variables by conducting a sensitivity analysis
- Validating the model

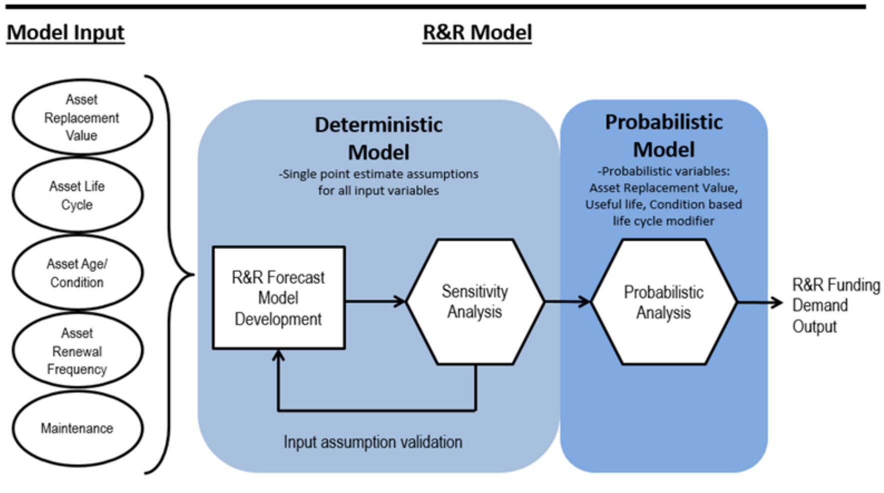
The model validation process included a review of the total mechanical and electrical equipment replacement value in each systems' R&R model. This was done by comparing an assumed unit replacement value for each unique asset type (bottom up valuation approach) to the values presented in the Town's fixed asset registry (FAR), insurance valuations, and facility itemized construction costs. The comparative review of the total replacement values developed showed good correlation for a first-generation model.

Building on the developed and validated deterministic model, a probabilistic analysis was then performed to incorporate variability and uncertainty by evaluating a range of replacement and useful life values. This step assigns probability distributions to the primary inputs used in the deterministic model. Probability distributions are based on a combination of statistical analysis of observed data, "bootstrapping" distributions to partially available data, and industry standards, or experience, where specific data from the Town was not available.

R&R schedules were developed at the subsystem level for the Little Creek WRF. For Lift Stations the R&R schedules were developed at the station level. For horizontal assets, the R&R schedules were based on geographic areas.

Exhibit 10 provides an overview schematic of the forecast approach and the steps taken to develop the R&R models.

Exhibit 10 –R&R Forecast model development schematic



Probabilistic R&R Forecast
Variability and uncertainty are inherent in the assumptions necessary for any forecast of R&R funding demand. Using the deterministic forecast model, discussed in the previous section, probabilistic variables were integrated to represent a likely range of values instead of single fixed-point estimate assumptions. A Monte Carlo simulation technique, using Palisade's @RISK software program, was used to aid in estimating the magnitude and likelihood of an individual funding demand forecast. This methodology provides the ability to incorporate uncertainty into the R&R funding demand forecast as well as understand the variability in the potential future funding demands.

Vertical Assets
Exhibits 11 and 12 present graphs for the 20-year R&R funding demand probabilistic forecast for the Town's vertical assets. Exhibit 11 presents the probabilistic forecast for the LCWRF. Exhibit 12 presents the probabilistic forecast for the lift stations.

The values presented in all graphs are at 2019 non-escalated dollars without "project costs" and include only mechanical and electrical equipment for the vertical assets. The percentile forecasts presented in the graphs represent an estimate of the probability of occurrence of the identified level of funding demand and below. The light blue portion represents the funding demand with a range of probability from 5 percent to 95 percent. The dark blue portion represents the funding demand with a range of probability from 25 percent to 75 percent, with the middle orange line representing 50 percent probability.

The R&R model can be used in different modes. One mode forecasts renewal and replacement dates based off the installation year and predicted life cycle. The second mode also uses the installation year, but uses the condition assessment score to adjust the renewal and replacement date. This mode can be used so that assets that are currently in good condition aren't forecast to be replaced simply because they are beyond their anticipated useful life. The WRF and Lift Station forecasts were generated in this condition-based mode.

Exhibit 11 – Probabilistic R&R funding demand graph for the Town's Little Creek Water Reclamation Facility's Vertical Assets

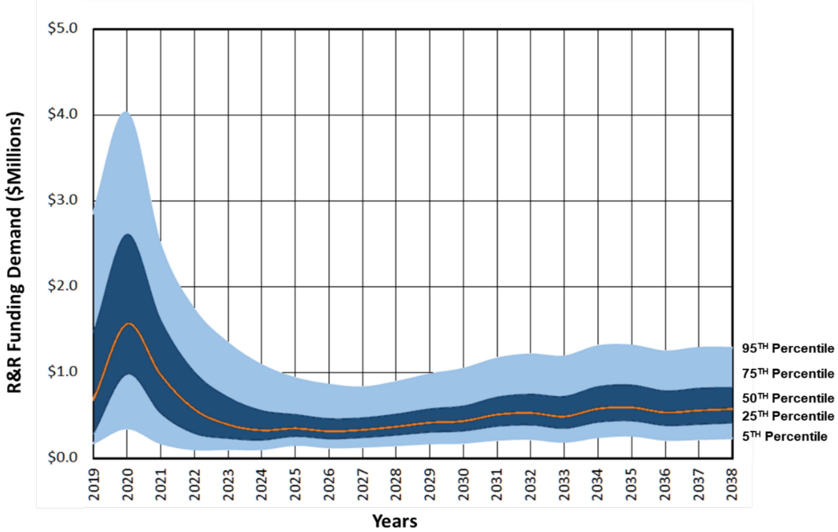
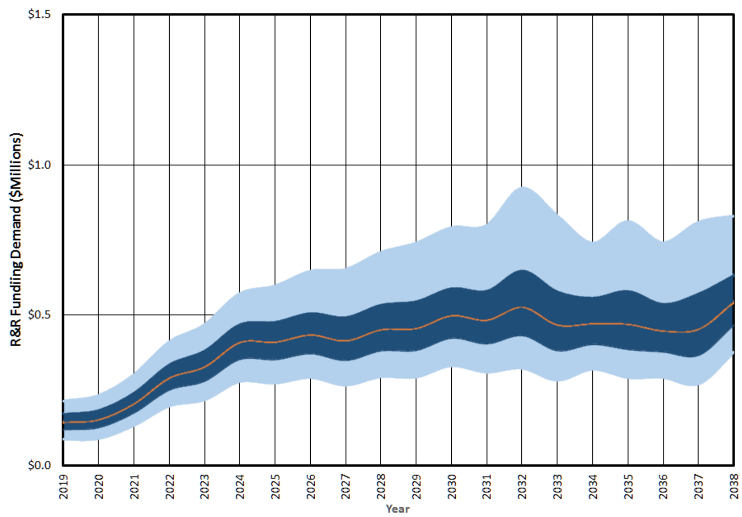


Exhibit 12 – Probabilistic R&R funding graph for the Town's Lift Stations'



The results from the probabilistic analysis are consistent with what would be expected for a new or relatively new system such as the Town's lift stations; increasing R&R funding demand over the forecast period. Elevated costs (visualized as "spikes" or "humps") are forecasted in the R&R requirements as new equipment ages, and larger Lift Stations begin to need rehabilitation. These humps of required funding demand are more pronounced with mechanical and electrical systems, which typically have useful lives of less than 20 years.

Differing from the lift stations, the LCWRF forecast results indicate a significant level of capital funding for R&R that is necessary in the short term under current operation and maintenance practices, with the greatest annual funding demand over the next 5 years, and reflects the age of the assets, many of which are close to or beyond their expected life cycle, although observed to be in reasonable condition on the whole.

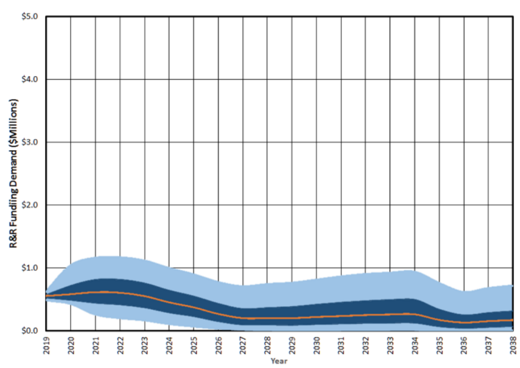
Horizontal Assets

Exhibits 13 and 14 present graphs for the 20-year R&R funding demand probabilistic forecast for the Town's horizontal assets. Exhibit 13 presents the probabilistic forecast for the water and wastewater horizontal assets. The scenario presented adjusts the asset replacement date based on the age of the asset, and not adjusted based on condition.

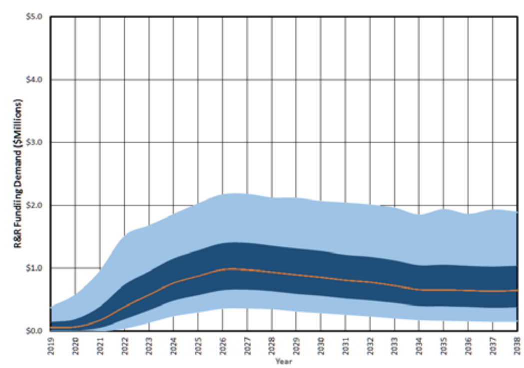
For pipe systems, the useful life is typically longer than mechanical and electrical equipment. The longer useful life results in less cost variation or humps that are usually less pronounced in a 20-year forecast period. The forecast provides the Town with a baseline annual reinvestment for its horizontal assets.

In comparing the two systems (water and sewer, Exhibits 13a and 13b) there is an early spike of sewer mains that are forecast to need replacement, while this spike is not present, or much reduced, in the water mains. This is due to the fact that water mains typically have a longer life cycle than the sewer mains, and the majority of the water mains replacement dates are outside of the 20-year window for the model.

Exhibit 13a & 13b – Probabilistic R&R funding graphs for Town's Water and Wastewater (Horizontal Assets)



13a: Water Horizontal Assets

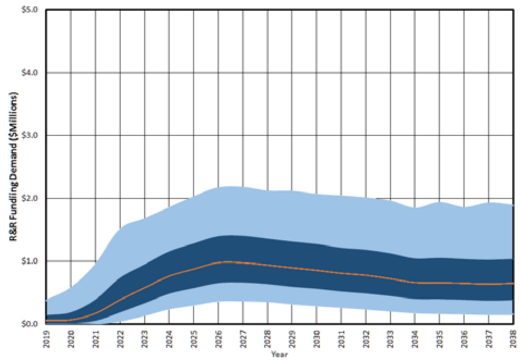


13b: Wastewater Horizontal Assets

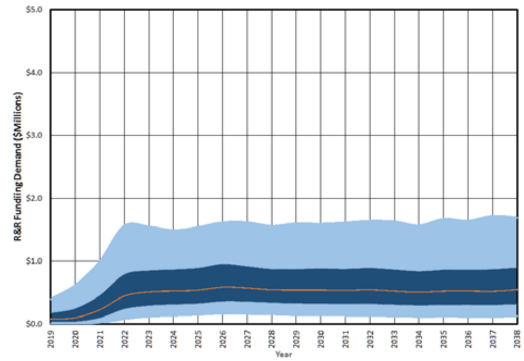
Exhibit 14 presents a similar age-based probabilistic forecast to provide a comparison of R&R for horizontal wastewater assets using an open cut replacement versus renewal strategy, using CIPP, for gravity sewer (Exhibits 14a and 14b). This scenario included a renewal strategy which assumed that CIPP rehabilitation (or other in-situ rehabilitation techniques) was a viable option for 50 percent of VCP gravity sewer line segments and 100 percent of other material line segments above a 4" diameter. This assumption is likely optimistic as some segments may not be viable for rehabilitation, but the strategy provides the Town with an understanding of the scale of the potential cost reduction that could be realized – at a macro scale - by using a rehabilitation technique as compared to open-cut replacement. This is particularly evident in the early years of the forecast. In the end a case-by-base business case decision is advisable for individual gravity sewer R&R decisions.

Furthermore, it is considered that much of the vitrified clay pipe (VCP) is in poor condition. Given that, the Town may desire to replace or rehabilitate all VCP pipe in the near future. However, if all the VCP was forecasted for replacement in the first 5 years then a spike of funding demand that would be unrealistic for the Town to fund would result. It remains a reasonable approach for the Town to target VCP for early replacement as funding allows.

Exhibit 14a & 14b – Probabilistic R&R funding demand graphs for the Town's Wastewater Horizontal Assets based on differing replacement/rehabilitation methods for gravity sewers; Open Cut Replacement (14a) and CIPP (14b)



14a: R&R funding assuming Open Cut Replacement



14b: R&R funding assuming Cured-in-Place Pipe (CIPP)

Asset Valuation

As described previously, the horizontal and vertical assets are valued by the Town as documented in the FAR and Insurance Valuations. In developing the renewal and replacement models, replacement values were ascribed to each asset type and a total value of mechanical and electrical (M&E) equipment estimated. Replacement values included a base cost, which was bracketed by expected high and low values.

For the LCWRF, the value of M&E equipment was calculated to be $6.59 M using the base costs. The Insurance valuation for the WRF is $19.1 M, and it is typical for M&E equipment to be in the range of 30 – 40% of the total plant value, with an average of 35%. That would suggest a value for M&E equipment of $6.6 M, based on the 35% of the total. That value aligns very well with the calculated value.

For lift stations the M&E equipment valuation was $4.40 M. The lift station insurance valuation is $7.88 M, and the proportion of M&E equipment is typically higher than at wastewater plants, and is closer to 50%. Such a percentage would value the M&E equipment at $3.94 M, which is reasonably close to the estimate built from the base costs.

As previously noted, the FAR values for horizontal assets do not include developer installed assets, so are considered an underestimate of the total system value. Using the asset level replacement costs the water distribution system was valued at $37.8 M and the wastewater collection system was valued at $71.8 M. These values are significantly higher than the $6 M and $11 M FAR values.

Funding Demand Summary

Annual funding demand projections were calculated for 5-year increments to be consistent with typical utility capital planning intervals. Exhibit 15 summarizes the total annual funding demand for R&R in 5-year intervals for the various asset groups.

Exhibit 15 – 5-Year Interval Forecasted R&R Funding Trends for Existing Assets

	2019-2023	**2024-2028**	**2029-2033**	**2034-2038**
Vertical Assets				
Water Reclamation Facility	$4.22 M	$1.73 M	$2.42 M	$2.88 M
Lift Stations	$1.13 M	$2.12 M	$2.38 M	$2.33 M
Horizontal Assets				
Water Lines	$2.92 M	$1.51 M	$1.17 M	$0.90 M
Wastewater Lines	$1.28 M	$4.54 M	$4.07 M	$3.27 M
Totals	**$9.55 M**	**$9.90 M**	**$10.01 M**	**$9.38 M**

NOTE: Values presented are based on the 50th percentile forecast; 2019 non-escalated dollars without "project costs"

Forecasts for R&R need to be considered carefully in the decision process since asset performance and the exact timing for replacement cannot be easily predicted for all assets that roll up to a holistic R&R funding demand forecast. Assets may last longer or shorter than the assumed useful life and asset costs may vary over time. The probabilistic methodology used for this R&R forecasting effort provides the Town with a robust understanding of the magnitude and likelihood of R&R demands based on the variability and uncertainty related to the input assumptions.

R&R Forecast Insights

For a first generation forecast model, the insights gained from the development of the model are as valuable as the forecast numbers themselves. A number of insights were gained from the forecast model development ranging from key data management topics, primarily focused on additional asset details to be defined in the Town's computerized maintenance management system (CMMS) for future R&R forecast refinements, to financial planning insights.

The financial planning insights focused on the utilization of the probabilistic forecast results in the financial planning/budget setting decision process, including:

- The forecasted R&R funding demand is based on The Town's assets' remaining useful life (derived from condition scores), asset life cycle, asset replacement value, and identified renewal frequency. The uncertainty in the funding demand represented by the graph data (Exhibits 11 through 14), for a particular year is directly influenced by the life cycle, replacement value and the translation of the condition score to a percent of remaining useful life. Therefore, as more data becomes available, the "range" of the graphs could be expected to be incrementally reduced; however, variability is inherent in asset life cycles, so some degree of variability will always be part of the resulting forecast of R&R needs.
- The boundaries of the forecast (5th and 95th percentile forecasts as reflected by the light blue range) are driven by cumulative events that are highly unlikely to occur but are useful in understanding the limits of highest and lowest probabilities. As one moves inward from the boundary of the probabilistic forecast, these scenarios have a higher degree of probability than those scenarios at the edges. Understanding the range and probability of possible funding demands helps in the budget-setting process.
- The probabilistic ranges of the forecast are just as important as the values themselves. The range in annual forecasts provides the following insights:

- For the LCWRF, years 1 through 5 appear to be the most sensitive to the uncertainty related to the life cycle for the major equipment, indicating a large number of replacements – based on age and condition – resulting in a highly variable result. The reality of the Years 1 through 5 data is that the financial model predicts replacements based on the life cycle and does not automatically optimize the replacement schedule based on available funding levels. Adjustments in maintenance strategy could be made to help balance annual funding demands.
- The lower end of the forecast (25th percentile) should not be a major focus for budget setting decisions, as the lower end of each year's forecast range has less variability than the upper end, and the consequences for underfunding by focusing on the lower probability scenarios can be significant.
- The upper end of the forecast (50th to 75th percentile) deserves more attention and discussion; this area has a wide range of variability between years. This end of the variability in the forecast will be where the budget level setting decisions should be made for "normal" or planned R&R funding levels, as well as contingency budgets for emergency or unplanned R&R projects.

- Setting budgets for R&R using the median forecast (50th percentile) will provide the Town with a reasonable probability funding demand forecast, but the 50th to 75th percentile forecast range should be evaluated for setting a contingency budget that will mitigate risk of budget shortfalls for unplanned R&R projects.
- The data and the model should be improved and will result in terms of reducing uncertainty or in the funding demand values themselves. There is a point where further investments in refining input data will not change the decisions made with the model outputs.

In addition to the financial planning insights, the outcome of the forecasting effort identified a number of considerations for the Towns path forward. The considerations for the next two (2) years include:

- **CMMS** – A path forward for identifying and updating or adding select asset information that will help to improve future R&R models has been developed. A priority is placed on making sure all mechanical and electrical assets are entered and as part of that process making sure the appropriate asset attribute information is entered as well (asset size, capacity, value, etc.).
    - During the development of the R&R model(s) it was identified that not all of the treatment plant had the same level of asset information available in Cityworks. Normally it would be recommended that the Town plan and execute a data collection and upload effort to update the treatment facility asset data. In addition, this effort should include updating the lift station asset data in Cityworks.
    - Developing standard operating procedures (SOPs) is recommended for data entry and data maintenance to address new assets and new attribute fields, particularly with the building of a new Water Reclamation Facility.
- **Geographic Information System (GIS)** – GIS is the current system for storing horizontal asset data for the Town. During the development of the R&R model(s) it was identified that the horizontal asset GIS data set was originally missing data but that data has been fully populated with pipe segments and pipe attribute data with the previous tasks. Similar to the mechanical and electrical equipment, it is recommended that the Town develop an SOP for data entry and data maintenance for the GIS data to ensure that this database of information stays current and update-to-date as new information is gathered.
- **Critical Assets** –The R&R forecast data, along with risk evaluations, can be used as a tool in the determination of the most critical assets from an operational and financial sensitivity

perspective for a more holistic view of the Town's risks. This will require the risk evaluation to be completed for all portions of the Town's system; expanding the analysis to the distribution and collection systems.

- **R&R Forecast Tracking -** A procedure for tracking actual expenditures versus forecasted funding demands should be developed and implemented. This would allow the Town to identify factors that could be adjusted in future model updates. The level of improved input accuracy and the frequency of forecast updates should be directly related to the overall impact on the quality of decision-making that is gained.

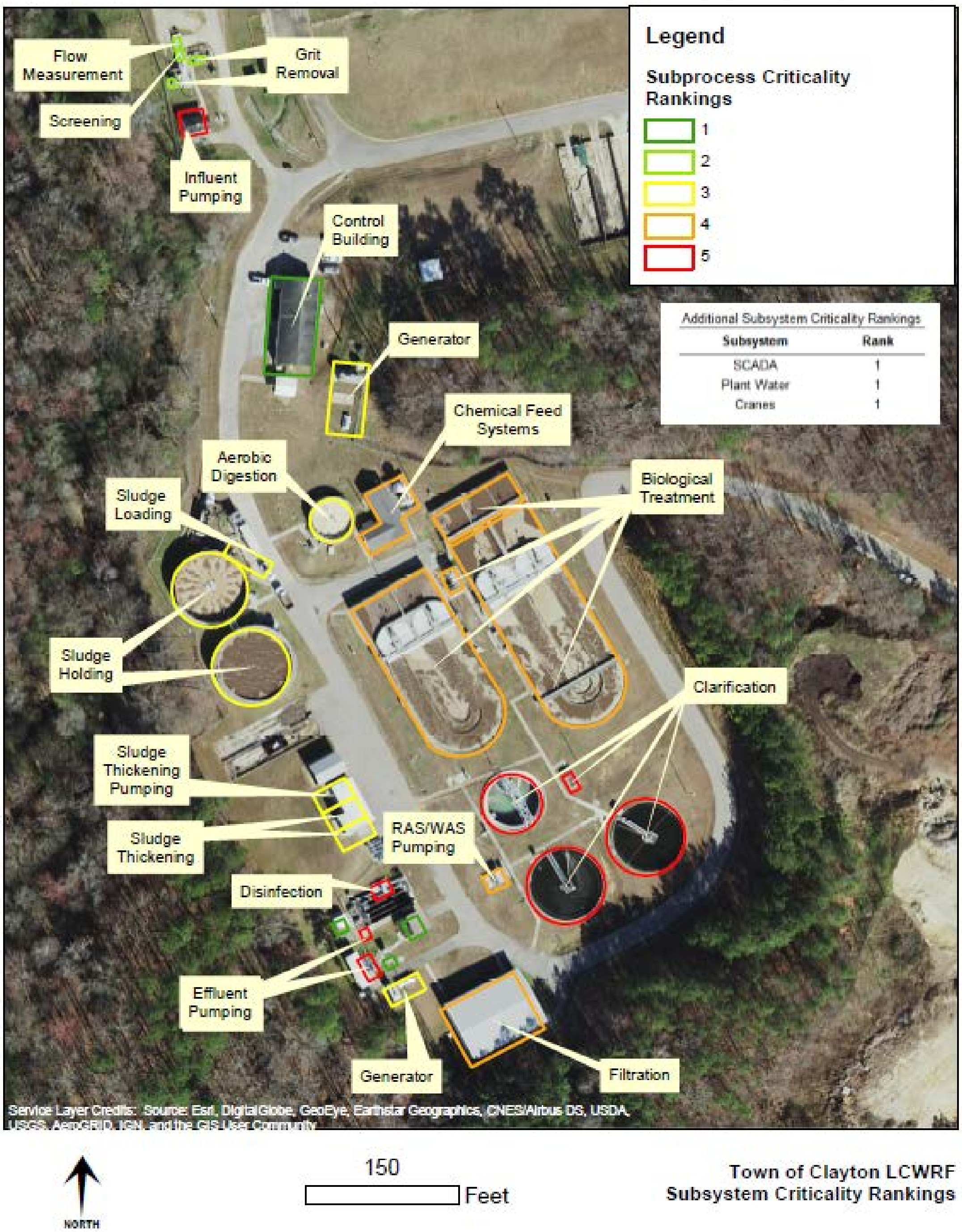
Conclusions

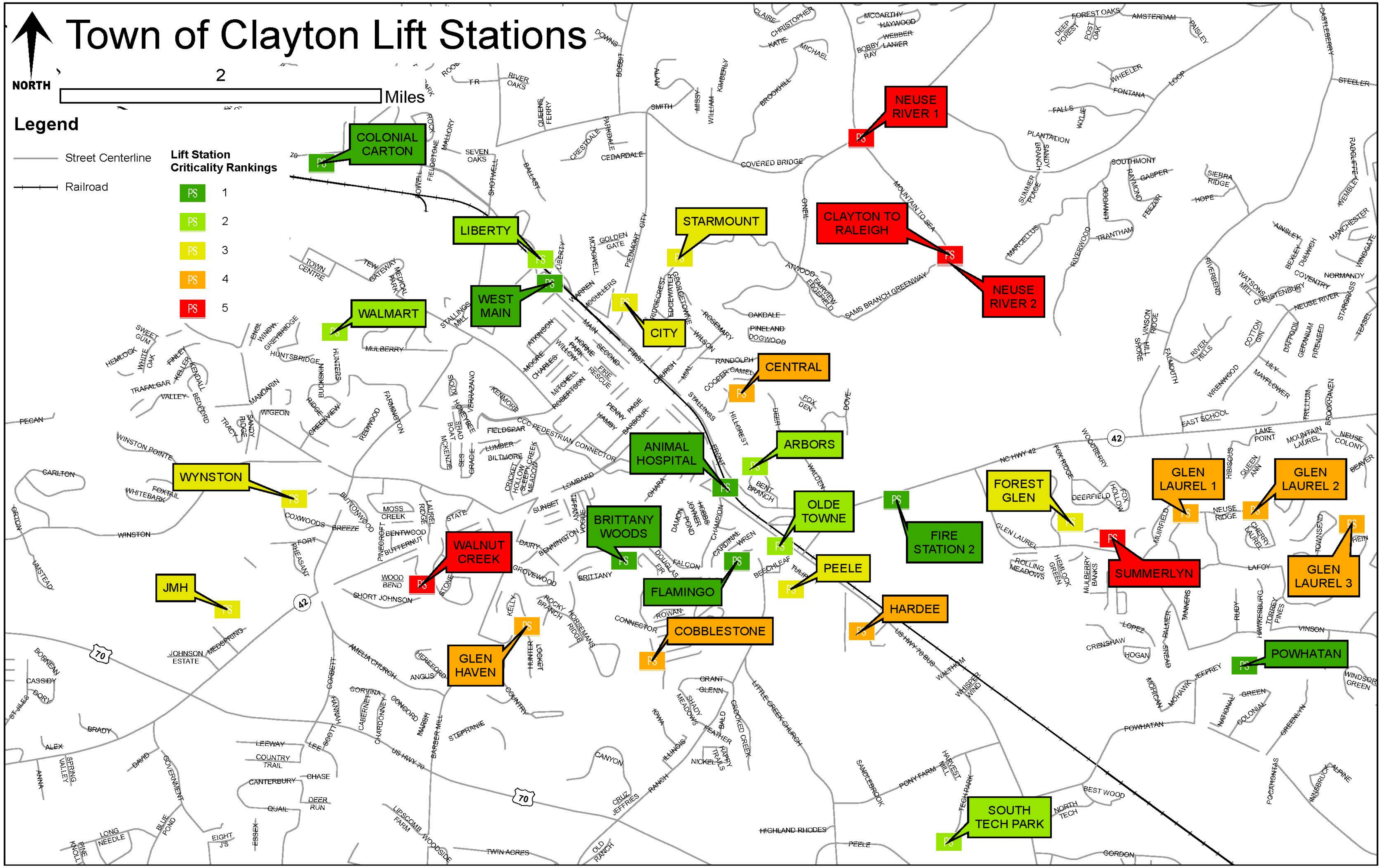
The AIA grant funded four tasks, with the following outcomes:

- Asset data for water and wastewater assets was improved, with gaps filled, and a process for maintaining asset data developed and implemented.
- The improved asset data, and enhancement in the Cityworks CMMS allows for tracking of work orders at the asset level for preventive and corrective maintenance.
- A criticality framework was developed, which will be used to support risk-based decision making related to water and wastewater infrastructure.
- A first-generation renewal and replacement model was developed, and will be used to inform future funding requirements under a number of potential scenarios.
- A condition assessment protocol was developed, implemented and is in place for an ongoing condition assessment program. A baseline condition assessment completed.
- The Town's GIS was enhanced to support asset management functions, and the Town's requirements for reporting.

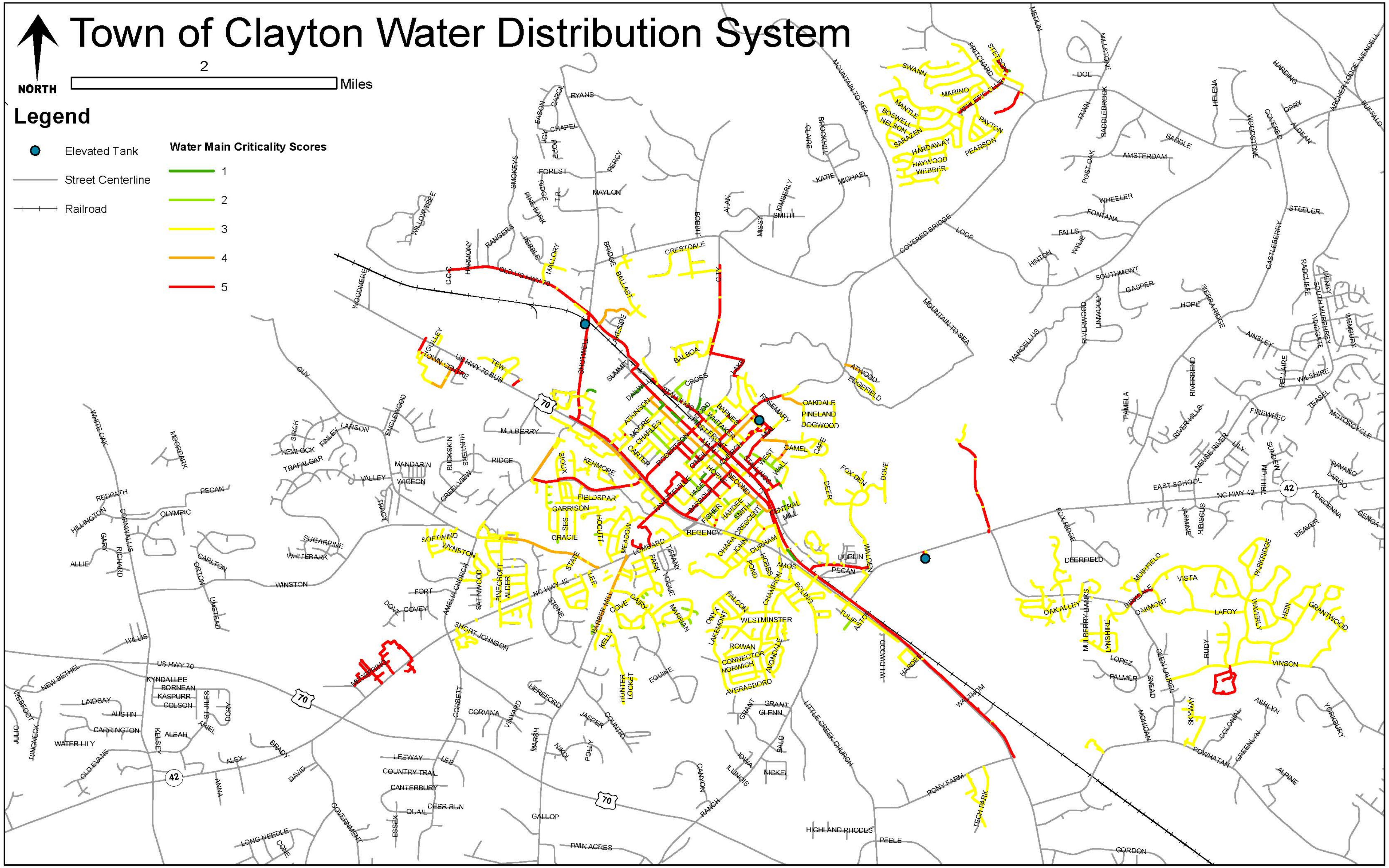
The project has improved the accuracy of the Town's asset data and has developed tools that will support and asset and risk-based management of the Town's infrastructure.

Attachment A

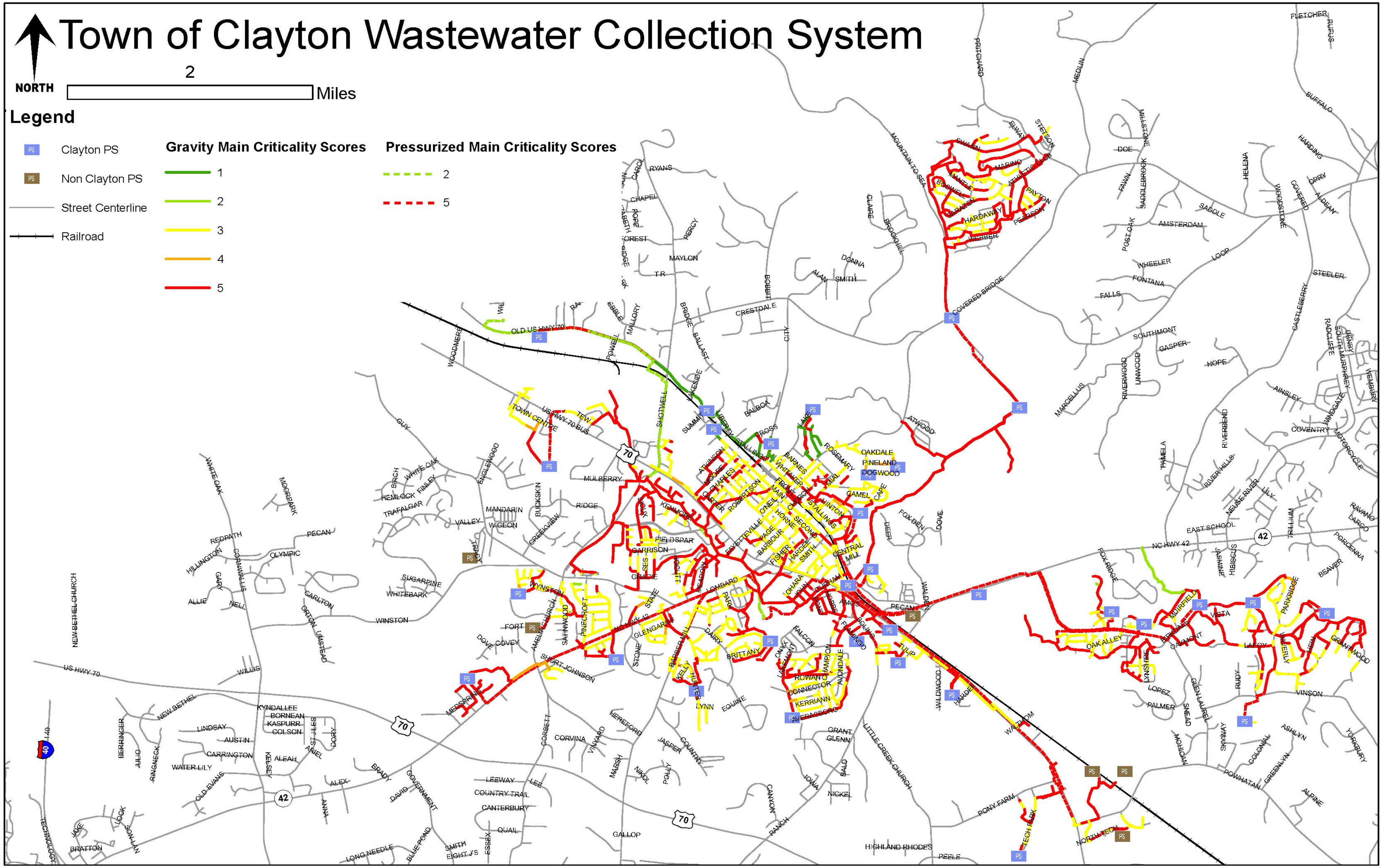

Flow Measurement
Grit Removal
Screening
Influent Pumping
Control Building
Generator
Chemical Feed Systems
Aerobic Digestion
Sludge Loading
Biological Treatment
Sludge Holding
Clarification
Sludge Thickening Pumping
Sludge Thickening
RAS/WAS Pumping
Disinfection
Effluent Pumping
Generator
Filtration
Legend
Subprocess Criticality Rankings
1
2
3
4
5
Additional Subsystem Criticality Rankings
Subsystem Rank
SCADA 1
Plant Water 1
Cranes 1
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
NORTH
150
Feet
Town of Clayton LCWRF
Subsystem Criticality Rankings


Town of Clayton Lift Stations
NORTH
2
Miles
Legend
Street Centerline
Railroad
Lift Station
Criticality Rankings
1
2
3
4
5
COLONIAL CARTON
LIBERTY
WEST MAIN
STARMOUNT
CITY
WALMART
NEUSE RIVER 1
CLAYTON TO RALEIGH
NEUSE RIVER 2
CENTRAL
ARBORS
ANIMAL HOSPITAL
WYNSTON
OLDE TOWNE
FOREST GLEN
GLEN LAUREL 1
GLEN LAUREL 2
GLEN LAUREL 3
FIRE STATION 2
BRITTANY WOODS
WALNUT CREEK
JMH
PEELE
FLAMINGO
SUMMERLYN
HARDEE
COBBLESTONE
GLEN HAVEN
POWHATAN
SOUTH TECH PARK

Town of Clayton Water Distribution System



Town of Clayton Wastewater Collection System



Town Council Agenda Cover Sheet

Meeting Date
May 20 2019

Agenda Location
New Business

Item Title
NCDOT Sidewalk Maintenance Agreement

Presenter
Blake Mills, Assistant Public Works and Utilities Director

Summary/Description

The Sidewalk Maintenance Agreement is related to the handicap sidewalk ramp modifications for the 40 intersections that the Town requested to be included in the NCDOT TAP Grant project.

The cost share is 100% funded by NCDOT for the 24 NCDOT ROW intersections and an 80/20 percent match for the 16 Town intersections. The Town's estimated 20% match is $20,925, however, this is only an estimate and therefore, the exact project cost will not be known until construction bids are received. The contract is expected to be Let in August 2019 and construction is scheduled to be completed by December 31, 2019.

The Town budgeted $50,000 for our 20% match related to the TAP Grant in the FY 20 budget and the good news is the estimated 20% match of $20,925 is much lower than budgeted. NCDOT needs the Town to pay the money prior to the end of May (rather than next fiscal year) to allow them enough time to request funds from the Federal Government (NCDOT needs to have the Town money on-hand before they can request federal funds) and still stay on schedule to Let the project in August 2019.

Requested Action
Approval

Funding Source (If Applicable): **General Fund Public Works**

Cost: **$20,925** **Yes** ☒ **No** ☐

Additional Documents to be Included in Agenda Packet

NCDOT Sidewalk Maintenance Agreement

NORTH CAROLINA	**SIDEWALK MAINTENANCE AGREEMENT**
JOHNSTON COUNTY	
	DATE: 4/16/2019
NORTH CAROLINA TRANSPORTATION OF TRANSPORTATION	
AND	Project: R-5784DI
	WBS Elements: 44914.3.17
TOWN OF CLAYTON	CFDA: 20.205

THIS AGREEMENT is made and entered into on the last date executed below, by and between the North Carolina Department of Transportation, an agency of the State of North Carolina, hereinafter referred to as the "Department" and the Town of Clayton, a municipal corporation, hereinafter referred to as the "Municipality".

W I T N E S S E T H:

WHEREAS, the Department has plans to make certain sidewalk improvements under Project R-5748DI in Johnston County; and,

WHEREAS, the Department and the Municipality have approved the construction of the Project with responsibilities for the Project as hereinafter set out; and,

WHEREAS, the Municipality has agreed to participate in the maintenance of said sidewalks subject to the conditions hereinafter set forth;

NOW, THEREFORE, the parties hereto, each in consideration of the promises and undertakings of the other as herein provided, do hereby covenant and agree, each with the other, as follows:

SCOPE OF THE PROJECT

1. The Project consists of curb ramp upgrades to ADA compliance at the intersections as shown in Exhibit A.

PLANNING, RIGHT OF WAY AND UTILITIES

2. The Department shall develop the plans and specifications in accordance with the Department's standard policies and procedures for pedestrian facilities.

3. All work shall be performed within the existing right of way and in accordance with Departmental standards, policies and procedures.

4. The Department does not anticipate the need to relocate and adjust any municipally-owned utilities at this time. If it becomes necessary to adjust and relocate the municipally-owned utilities, the Municipality, at no expense to the Department, shall be responsible for the relocation and adjustment of all utilities in conflict with the Project.

CONSTRUCTION AND MAINTENANCE

5. The Department shall construct the Project in accordance with the Project plans and with Departmental policies and procedures. The Department, and/or its agent, shall administer the contract for construction of the Project.

6. The Municipality, at its own expense, shall be responsible for all liability and maintenance responsibilities for the curb ramps/sidewalk upon completion of the Project.

FUNDING

7. The estimated cost of the Project for the non-state routes is $104,625. The Department shall participate in 80% ($83,700) in federal funds. The Municipality shall provide the 20% non-federal match in the amount of $20,925. The Municipality shall submit a check for $20,925 to the Department's Division Engineer upon partial execution of the Agreement by the Municipality. Upon completion of the Project, if actual costs exceed the amount of payment, the Municipality shall reimburse the Department any underpayment within sixty (60) days of invoicing by the Department. If the actual cost of the work is less than $104,625, the Department shall reimburse the Municipality any overpayment. A late payment penalty and interest shall be charged on any unpaid balance due in accordance with NCGS § 147-86.23.

ADDITIONAL PROVISIONS

8. All terms and conditions of this Agreement are dependent upon, and, subject to the allocation of funds for the purpose set forth in the Agreement and the Agreement shall automatically terminate if funds cease to be available.

9. The Department shall not be liable and shall be held harmless for any and all claims that might arise on account of the Municipality's negligence and/or responsibilities under the terms of this Agreement and/or project.

10. By Executive Order 24, issued by Governor Perdue, and N.C. G.S.§ 133-32, it is unlawful for any vendor or contractor (i.e. architect, bidder, contractor, construction manager, design professional, engineer, landlord, offeror, seller, subcontractor, supplier, or vendor), to make gifts or to give favors to any State employee of the Governor's Cabinet Agencies (i.e., Administration, Commerce, Environmental Quality, Health and Human Services, Information Technology, Military and Veterans Affairs, Natural and Cultural Resources, Public Safety, Revenue, Transportation, and the Office of the Governor).

IN WITNESS WHEREOF, this Agreement has been executed, in duplicate, the day and year heretofore set out, on the part of the Department and the Municipality by authority duly given.

L.S. ATTEST: TOWN OF CLAYTON

BY: ________________________________ BY: ___________________________________

TITLE: ______________________________ TITLE: _________________________________

DATE: _________________________________

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

Approved by __________________________of the local governing body of the Town of Clayton as attested to by the signature of Clerk __________________ of said governing body on

______________________(Date)

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

(SEAL)

____
(FINANCE OFFICER)

Federal Tax Identification Number

____

Remittance Address:

Town of Clayton

____

____

DEPARTMENT OF TRANSPORTATION

BY: ____________________________________
(CHIEF ENGINEER)

DATE: __________________________________

APPROVED BY BOARD OF TRANSPORTATION ITEM O: __________________________ (DATE)

Agreement ID #8615 4

Exhibit A

Town of Clayton Proposed Curb Ramp Replacement/Retrofit							
Municipality	**Major Route**	**Minor Route**	**Total Missing/ Deficient Ramps**	**Estimated Unit Price**	**Total Cost**	**Municipality Match**	**DOT Match**
Clayton Town Street	E. Second St.	Hardee St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	E. Second St.	S. Smith St.	3	$2,700.00	$8,100.00	$1,620.00	
Clayton Town Street	E. Front St.	N. Smith St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	E. Front St.	N. Lombard St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	E. Front St.	N. Church St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	S. Fayetteville St.	E. Blanche St.	3	$2,700.00	$8,100.00	$1,620.00	
Clayton Town Street	S. Fayetteville St.	Penny St.	1	$2,700.00	$2,700.00	$540.00	
Clayton Town Street	S. Fayetteville St.	Hamby St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	E. Wilson St.	N. Church St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	E. Wilson St.	Mial St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	Camel St.	Cooper St.	1	$2,700.00	$2,700.00	$540.00	
Clayton Town Street	Camel St.	Randolph Dr.	1	$2,700.00	$2,700.00	$540.00	
Clayton Town Street	Hamby St.	Page St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	Hamby St.	Barbour St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	E. Blanche St.	Page St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton Town Street	S. Church St.	E. Horne St.	2	$2,700.00	$5,400.00	$1,080.00	
Clayton	SR 1756 (S. Lombard St.)	Hamby St.	3	$2,700.00	$8,100.00		$1,620.00
Clayton	SR 1756 (S. Lombard St.)	Andrews St.	3	$2,700.00	$8,100.00		$1,620.00
Clayton	SR 1756 (S. Lombard St.)	Cannady St.	2	$2,700.00	$5,400.00		$1,080.00
Clayton	SR 1756 (S. Lombard St.)	E. Blanche St.	4	$2,700.00	$10,800.00		$2,160.00
Clayton	SR 1756 (S. Lombard St.)	E. Horne St.	4	$2,700.00	$10,800.00		$2,160.00
Clayton	SR 1756 (S. Lombard St.)	E. Second St.	4	$2,700.00	$10,800.00		$2,160.00
Clayton	SR 1004 (Main St.)	SR 1756 (S. Lombard St.)	4	$2,700.00	$10,800.00		$2,160.00
Clayton	SR 1004 (Main St.)	City Park	2	$2,700.00	$5,400.00		$1,080.00
Clayton	SR 1004 (Main St.)	S. Smith St.	4	$2,700.00	$10,800.00		$2,160.00
Clayton	SR 1004 (Main St.)	E. Second St.	2	$2,700.00	$5,400.00		$1,080.00
Clayton	SR 1004 (Main St.)	Central St.	1	$2,700.00	$2,700.00		$540.00
Clayton	SR 1552 (S. Robertson St.)	W. Horne St.	1	$2,700.00	$2,700.00		$540.00
Clayton	SR 1552 (S. Robertson St.)	Fire Rescue Dr.	1	$2,700.00	$2,700.00		$540.00
Clayton	SR 1552 (S. Robertson St.)	Brook St.	2	$2,700.00	$5,400.00		$1,080.00
Clayton	SR 1552 (S. Robertson St.)	Clayton High School	1	$2,700.00	$2,700.00		$540.00
Clayton	SR 1552 (S. Robertson St.)	Walgreens	2	$2,700.00	$5,400.00		$1,080.00
Clayton	SR 1708 (N. O'neil St.)	W. First St. (Railroad St)	1	$2,700.00	$2,700.00		$540.00
Clayton	SR 1708 (N. O'neil St.)	W. Front St.	1	$2,700.00	$2,700.00		$540.00
Clayton	SR 1708 (N. O'neil St.)	W. Stallings St.	3	$2,700.00	$8,100.00		$1,620.00
Clayton	SR 1708 (N. O'neil St.)	W. Whitaker St.	4	$2,700.00	$10,800.00		$2,160.00
Clayton	SR 1708 (N. O'neil St.)	W. Hinton St.	4	$2,700.00	$10,800.00		$2,160.00
Clayton	SR 1708 (N. O'neil St.)	W. Barnes St.	4	$2,700.00	$10,800.00		$2,160.00
Clayton	SR 1708 (N. O'neil St.)	Starmount Rd.	2	$2,700.00	$5,400.00		$1,080.00
Clayton	SR 1708 (N. O'neil St.)	Georgetowne Dr.	2	$2,700.00	$5,400.00		$1,080.00
				Sub Total =	$248,400.00	$16,740.00	$32,940.00
				E & C (25%)	$62,100.00	$20,925.00	$41,175.00
				Total	$310,500.00		