Ackerman Zones 1 & 2 and Vacuum Station

FISCAL SUSTAINABILITY PLAN

SEPTIC TO SEWER

WATER QUALITY IMPROVEMENT PROJECT

PORT CHARLOTTE, FL

PREPARED:

May 2025

1. INTRODUCTION

This Fiscal Sustainability Plan (FSP) has been prepared for the Ackerman Zones 1 & 2 and Vacuum Station, a Septic to Sewer Water Quality Improvement Project in Port Charlotte, FL. The purpose of this document is to detail how Charlotte County Utilities (CCU) will manage the comprehensive fiscal planning for the long-term management of the assets associated with the Project.

The Project involves Septic to Sewer conversion of an older neighborhood in Charlotte County within the original study area associated with the removal of the Manchester Lock. This area was selected as one of the initial geographic regions to evaluate the feasibility of a centralized wastewater solution. This was due to the number of Onsite Treatment and Disposal Systems (OSTDS) currently in use in the area and the area's immediate proximity to the impaired Charlotte Harbor estuary and tributary water bodies. Given the current condition of the existing OSTDS throughout the area coupled with the impact these systems are having on the environment and water bodies, CCU explored five (5) alternatives from a cost benefit perspective to determine the best approach to addressing the long-term ecological impact from inadequately treated wastewater. The five (5) alternatives were:

- Leave Existing System In-Place (Do Nothing)
- Update older systems to Standard Mound OSTDS
- Low Pressure Sewer
- Gravity Sewer
- Vacuum Sewer

As part of this overall evaluation, research on the condition and location of other existing utilities and public works facilities was completed.

The scope of the Project includes the following:

- Installation of 49,252 linear feet of vacuum sewer mains.
- Installation of 27,858 linear feet of gravity service laterals.
- The majority of the residential installations convey wastewater via gravity service laterals to the vacuum collection system.
- Homes will be served by either a four (4) inch gravity service lateral where only a single service is required, or a (6) six-inch gravity service lateral will be used for existing and future double service needs.
- Installation of 6,957 linear feet of force main and the replacement of 54,027 linear feet of water main.

This FSP provides a fiscal plan for the maintenance, repair, and replacement of the Ackerman Zones 1 & 2 and Vacuum Station assets over a 20-year planning period. The FSP is transferred to Charlotte County's Capital Maintenance Plan which is approved by the Charlotte County Board of County Commissioners (BOCC) annually.

The assets will be managed pursuant to the County's Asset Management Plan and will be maintained using a CMMS, Cityworks.

ASSET INVENTORY, CONDITION & PERFORMANCE

The installed Vacuum Station is an 0.662 MGD pump station designed to serve the existing 1,696 homes in the project area. At build-out, the vacuum station will serve 2,446 homes and convey .955 MGD of effluent. The vacuum station is connected to a 12-inch PVC force main that conveys flows to a large-diameter transmission force main which transfers the wastewater to the County's Treatment system at Eastport.

The following tables, which were prepared by the Fiscal & Utility Asset Management Tracking Systems are included as an attachment to this FSP and reflect the project assets installed using SRF funding. (Exhibits 2 – 6). These spreadsheets list the useful life of all assets in the system, their remaining life and cost to replace.

CHAPTER 1 – INTRODUCTION

1.1 OVERVIEW

In 2015, CCU made a presentation to the BOCC providing an overview of a proposed centralized wastewater service program initiative. The BOCC recommended that a Sewer Master Plan (SMP) be completed to prioritize areas, analyze various collection and treatment alternatives, to provide a schedule and rough cost estimates expected with each collection method. The Sewer Master Plan (SMP) that was completed in 2017 addressed high risk areas with older existing OSTDS, high water tables and proximity to inter-tidal influences. The recently completed Ackerman Zones 1 & 2 areas were identified as high-impact areas and placed in the first phase of the five-year plan. See attached Map of Area (Exhibit 1).

1.1 LEVEL OF SERVICE

Charlotte County Utilities provides the sewer service in this area. The primary level of service is to provide the availability to connect to and to provide continuous operation of the vacuum system.

To this end, connections were installed at every lot in the service area including vacant parcels. The Vacuum Station is a major facility in the collection system and must always function. With continuous operation a major priority, multiple redundant pumps and a back-up generator was installed. In addition, a SCADA system provides remote control and continuous monitoring.

2. EVALUATION OF ENERGY CONSERVATION EFFORTS

Energy conservation measures that were incorporated into the Project include the following:

- Selection of a design including vacuum pits that operate using pneumatic valves that fire based on differential pressure eliminating the need for individual LPS pumps.
- The installation of higher-efficiency pumps will reduce operational costs and extend the useful life of the pump equipment.
- The new vacuum station controls will provide operational flexibility and accessibility to real-time monitoring data.

This will improve the ability for facility operators to make modifications, when necessary, to optimize the operation and improve the efficiency of the Vacuum Station and to monitor the facility for preventative maintenance needs to extend the life of the equipment.

3. ASSET MANAGEMENT & FISCAL PLANNING

PLAN FOR REPLACEMENT, REHABILITATION, AND IMPROVEMENT OF PROJECT ASSETS

The attached table (Exhibit #2 - summarizes the assets scheduled for replacement, rehabilitation, or improvement over a 20-year planning period. The purpose of this table is to establish a current year budget to cover future anticipated expenses for the management of the Project's assets. Costs were estimated based on original equipment costs adjusted for inflation.

FISCAL PLANNING

The purpose of a fiscal plan for the replacement, rehabilitation, and improvement expenses of the Project is to ensure these expenses are incorporated into the County's annual budget and future rate determinations so that sufficient funding is available when needed. A combination of the following funding mechanisms is proposed to accumulate funds for future expenses for the Project.

- Annual Revenues
- Increasing Utility Rates
- State-Revolving Fund Loans

The County worked with its rate consultant to develop a rate methodology to fund future capital expenses for the Project. The purpose of this fund is for future replacement of the equipment financed by the SRF loan as part of this Project.

These funds were incorporated into the County's current rate study.

The remaining planned capital expenses were incorporated into the rate adjustment that was implemented as a result of the rate study performed for the Utility. Therefore, funding for these expenses should be available within the County's annual utility operating budget.

In addition, the County's study is reviewed as needed to ensure that sufficient revenues are available.

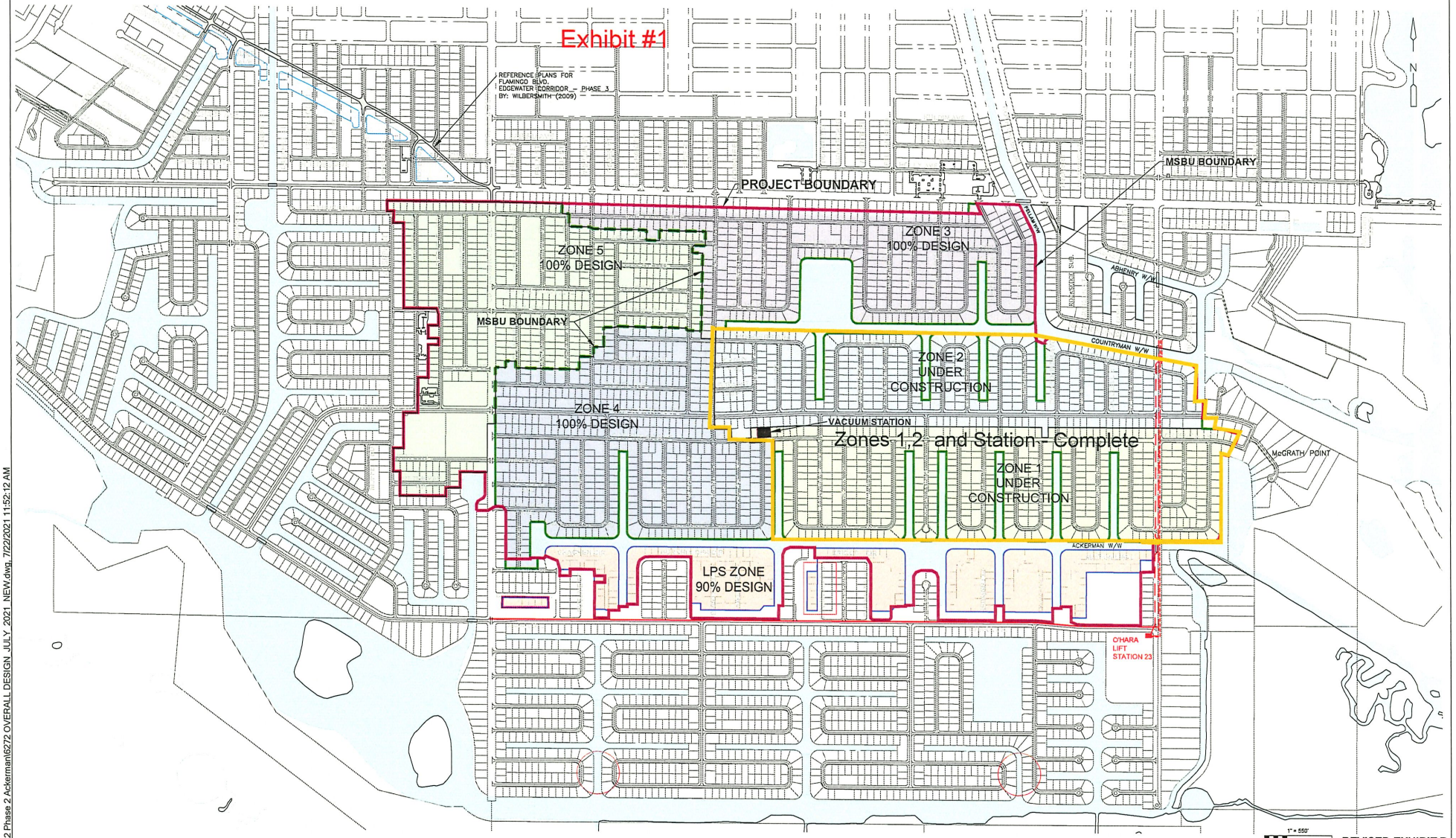
This FSP was prepared and reviewed by Charlotte County Utilities.

Emmett D. Watson
Utility Director

Bruce R. Bullert 5/27/2025
Bruce R. Bullert
Engineering Planning and Design Manager

5-27-25
Christopher Carpenter
Construction Services Manager

Exhibit #1



(WITH REVISED MSBU BOUNDARY FEB. 24, 2020)

1" = 550'

REVISED EXHIBIT B

M:\6200\s\6272 Phase 2 Ackerman\6272 OVERALL DESIGN JULY 2021 NEW.dwg, 7/22/2021 11:52:12 AM

DATE	REVISION	BY	DATE	REVISION	BY
1-5-21	REVISED EXHIBIT B	KEF			
1-21-21	DELETED GRAVITY AREA	KEF			

GWE GIFFELS-WEBSTER ENGINEERS, INC.
Certificate of Authorization No. 3607

900 Pine Street, Suite 225
Englewood, Florida 34223
Phone (941)475-7981
Fax (941)474-4285

DATE	03/16	CKD. BY	DATE
DRAWN	CVO	JHC	-
DESIGN	DC	JHC	-
SEC. 24 25 / 19 20 29 30 T40S R21/22E			

CHARLOTTE COUNTY UTILITIES
ENGINEERING SERVICES DIVISION
25550 HARBOR VIEW RD.
PORT CHARLOTTE, FL. 33980
PH. 941-764-4516
FAX: 941-764-4969

WASTEWATER EXPANSION
PHASE II
OVERALL DESIGN WITH REVISED SCOPE

SCALE	1" = 550'
SHEET	OVERALL
GWE NO.	6272.00

JULY 2021

Exhibit #2

WW0802H-0 Ackerman Zones 1 & 2 & Vacuum Station

Facility Name:	Charlotte County
Current Plan Year:	2025

Airvac Equipment $2,091,494.00 Airvac
Construction Zones 1&2&Vac Sta $15,187,076.93 Guymann Construction

ASSET INVENTORY — Ackerman Zones1-2 & Vac Sta Total Assets

WASTEWATER COLLECTION SYSTEM ASSETS	# LF/Units	Material	Manufacturer	Year Installed	Expected Useful Life in	Remaining Useful Life in Years	Condition Assessment	Probability of Failure	Consequence of Failure	SRF Project & Material Cost	System Components	ASSET TOTAL
3" PVC SDR-21 Vacuum Main	2,704	PVC	North American	2022	50	47	1	2	4	63,679.20	562.71	64,241.91
4" PVC SDR-21 Vacuum Main	31,655	PVC	North American	2022	50	47	1	3	3	1,012,960.00	142,389.24	1,155,349.24
6" PVC SDR-21 Vacuum Main	9,537	PVC	North American	2022	50	47	1	2	4	362,406.00	18,225.66	380,631.66
8" PVC SDR-21 Vacuum Main	4,223	PVC	North American	2022	50	47	1	2	3	204,393.20	5,797.30	210,190.50
10" PVC SDR-21 Vacuum Main	1,133	PVC	North American	2022	50	47	1	2	4	65,147.50	588.96	65,736.46
4" PVC SDR26 Gravity Sewer Service Lateral	23,633	PVC	North American	2022	50	47	1	2	4	652,977.03	59,168.20	712,145.23
6" PVC SDR26 Gravity Sewer Service Lateral	4,226	PVC	North American	2022	50	47	1	2	4	174,217.37	4,211.88	178,429.25
12" PVC C900/C905 DR18 Force Main	5,635	PVC	North American	2022	50	47	1	2	4	270,737.73	10,171.62	280,909.35
10" PVC C900/C905 DR18 Force Main	5	PVC	North American	2022	50	47	1	2	4	1,142.00	0.18	1,142.18
8" PVC C900/C905 DR18 Force Main	1,263	PVC	North American	2022	50	47	1	2	4	38,837.25	209.31	39,046.56
4" PVC C900/C905 DR18 Force Main	55	PVC	North American	2022	50	47	1	2	4	3,712.50	1.91	3,714.41
Collection Assets Subtotal										2,850,210	241,327	3,091,536.75

DISTRIBUTION SYSTEM ASSETS	# LF/Units	Material	Manufacturer	Year Installed	Expected Useful Life in	Remaining Useful Life in Years	Condition Assessment	Probability of Failure	Consequence of Failure	SRF Project & Material Cost	System Components	ASSET TOTAL
4" PVC C900/C905 DR18 Water Main	488	PVC	North American	2022	50	47	1	2	4	8,100.80	9.11	8,109.91
6" PVC C900/C905 DR18 Water Main	36,579	PVC	North American	2022	50	47	1	2	4	722,435.25	72,425.32	794,860.57
8" PVC C900/C905 DR18 Water Main	12,681	PVC	North American	2022	50	47	1	2	4	315,756.90	13,835.61	329,592.51
12" PVC C900/C905 DR18 Water Main	4,279	PVC	North American	2022	50	47	1	2	4	177,364.55	4,365.42	181,729.97
Fire Hydrant Assembly	30	Ductile/Cast Iron	Clow Valve	2022	45	42	1	2	4	214,320.00	6,374.09	220,694.09
Distribution Assets Subtotal										1,437,978	97,010	1,534,987.04

DRAINAGE CULVERT PIPE ASSETS	# LF/Units	Material	Manufacturer	Year Installed	Expected Useful Life in	Remaining Useful Life in Years	Condition Assessment	Probability of Failure	Consequence of Failure	SRF Project & Material Cost	System Components	ASSET TOTAL
Elliptical Concrete Pipe Culvert HE III 12" x 18" CCU	74	Concrete	Rinker	2022	43	40	1	2	3	868,370.63	104,641.23	973,011.86
Elliptical Concrete Pipe Culvert (HE III) (12"x 18")	704	Concrete	Rinker	2022	43	40	1	2	3	44,880.00	279.51	45,159.51
Elliptical Concrete Pipe Culvert (HE III) (24" x 23")	16	Concrete	Rinker	2022	43	40	1	2	3	1,280.64	0.23	1,280.87
Culvert Pipe Assets Subtotal										914,531.27	104,920.97	1,019,452.24

VACUUM EQUIPMENT ASSETS	# LF/Units	Material	Manufacturer	Year Installed	Expected Useful Life in	Remaining Useful Life in Years	Condition Assessment	Probability of Failure	Consequence of Failure	SRF Project & Material Cost	System Components	ASSET TOTAL
Vacuum Station Equipment Package - Skid	1	Metal/Plastic	Airvac	2022	25	22	1	1	4	600,331	0	600,331
Fiberglass Platform for the collection tank	1	Fiberglass	Airvac	2022	25	22	1	2	4	12,669	0	12,669
6' deep two piece valve pit	319	Plastic	Airvac	2022	25	22	1	3	3	1,236,763	0	1,236,763
8' deep two piece valve pit	23	Plastic	Airvac	2022	25	22	1	3	3	4,347	0	4,347
4" Grommet	760	Plastic	Airvac	2022	25	22	1	3	3	11	0	11
6" Grommet	170	Plastic	Airvac	2022	25	22	1	3	3	21	0	21
Dedicated Air Intake Terminal	343	Plastic	Airvac	2022	25	22	1	3	3	285	0	285
Vacuum Equipment Assets Subtotal										1,854,427	0	1,854,427

VACUUM STATION BLDG STRUCTURAL ASSETS	# LF/Units	Material	Manufacturer	Year Installed	Expected Useful Life in	Remaining Useful Life in Years	Condition Assessment	Probability of Failure	Consequence of Failure	SRF Project & Material Cost	System Components	ASSET TOTAL
Vacuum Station - Structural Foundation, Floors, Walls	1	Stucco, Concrete, Drywall, Rebar	Aypex, Excite, Preferred Materials, Florida Best Block, Vinyl Corp, AGC Glass, USG, Various	2022	50	47	1	1	4	640,000	56,840	696,840
Vacuum Station Truss and Roof System	1	Wood/Steel/Aluminum	Simpson, Knauf (EcoBatt) Insulation	2022	18	15	1	2	3	85,000	1,003	86,003
Vacuum Station - Install AIRVAC Station Equipment and Materials	1	Metal	Various	2022	10	7	1	2	3	95,000	1,252	96,252
Vacuum Station- Electrical and I & C	1	Copper, PVC, cables/wiring, conduit, SS, HDPE conduit, plastic, nickel-brass, various	HE Williams, Sesco, Leviton, Square D, Various	2022	30	27	1	3	2	400,000	22,203	422,203
Vacuum Station - Mechanical	1	Stainless Steel, HDPE, PVC, Cast Iron, brass, thermoplastics, fiberglass, various	Kingersons	2022	30	27	1	3	2	185,000	4,749	189,749
Vacuum Station Site Work & Yard Piping	1	PVC, DI, SS, Concrete	EBAA Iron, Star pipe,	2022	30	27	1	3	2	129,500	2,327	131,827
Vacuum Station Misc. - Handrails, Stairs, Drains, Doors & Louvers	1	Aluminum	Greenheck, Republic	2022	23	20	1	1	1	150,000	3,122	153,122
Vacuum Station Odor Control System - Mulch Bed	1	Concrete	Argos	2022	15	12	1	3	3	10,000	14	10,014
Privacy Wall And Gates	1	Concrete & Aluminum	Argos	2022	25	22	1	2	2	154,000	3,291	157,291
Radio Telemetry Unit	1	Plastics, Stainless Steel	Data Flow Systems	2022	10	7	1	3	4	527,275	50	527,275
Vacuum Station Diesel Generator - Enclosure & Tank	1	Cast Iron, Stainless Steel	Cummins	2022	15	12	1	2	3	155,000	3,334	158,334
Vacuum Structural Assets Subtotal										2,030,775	98,136	2,128,911

TOTAL COMBINED ASSETS 9,087,921 541,393 9,629,314

ASSET CRITICALITY TABLE*	
CONDITION ASSESSMENT	
Description	**Condition Rating**
Unserviceable/End of useful life - Over 50% of asset requires replacement	5
Significant Deterioration - 20-40% requires renewal/upgrade	4
Moderate Deterioration- 10-20% requires significant maintenance	3
Minor Deterioration - Requires minor maintenance	2
New or Excellent Condition - Only normal maintenance required	1
PROBABILITY OF FAILURE	
Description	**Performance Rating**
Imminent - Likely to occur in the life of the item	5
Probable - Will occur several times in the life of an item	4
Occasional - Likely to occur some- time in the life of an item	3
Remote - Unlikely but possible to occur in the life of an item	2
Improbable- So unlikely, it can be assumed occurrence may not be experienced	1
CONSEQUENCE OF FAILURE	
Description	**Performance Rating**
Catastrophic disruption	5
Major disruption	4
Moderate disruption	3
Minor disruption	2
Insignificant disruption	1

*** consider safety/social, economic/financial, environmental**

ASSET MANAGEMENT & FISCAL PLANNING

Replacement, Rehabilitation & Improvement Expenses Table

Description	Need	Est Repl Year	Original Cost	Est Repl Cost
Vacuum Station Truss and Roof System	End of Useful Life	2040	86,003	$178,793
Vacuum Station - Install AIRVAC Station Equipment and Materials	End of Useful Life	2032	96,252	$135,437
Vacuum Station - handrails, stairs, drains, doors & louvers	End of Useful Life	2045	153,122	$406,279
Vacuum Station Odor Control System - Mulch Bed	End of Useful Life	2037	10,014	$17,983
Diesel Generator	End of Useful Life	2037	158,334	$284,345
Radio Telemetry Unit	End of Useful Life	2032	27,275	$38,379

Equipment < 20 yrs
Estimated Replacement Cost at 5% compounded annually