Sarasota County

Area N, Phase 3 of the Phillippi Creek Septic System Replacement Program (PCSSRP)

Public Utilities
December 11, 2013

Sarasota County

Objectives of Discussion Item

1. Discuss level of service (LOS) and respective costs for electrical redundancy compared between vacuum sewer and low pressure as requested by the Board at the February 13, 2013 Board meeting.

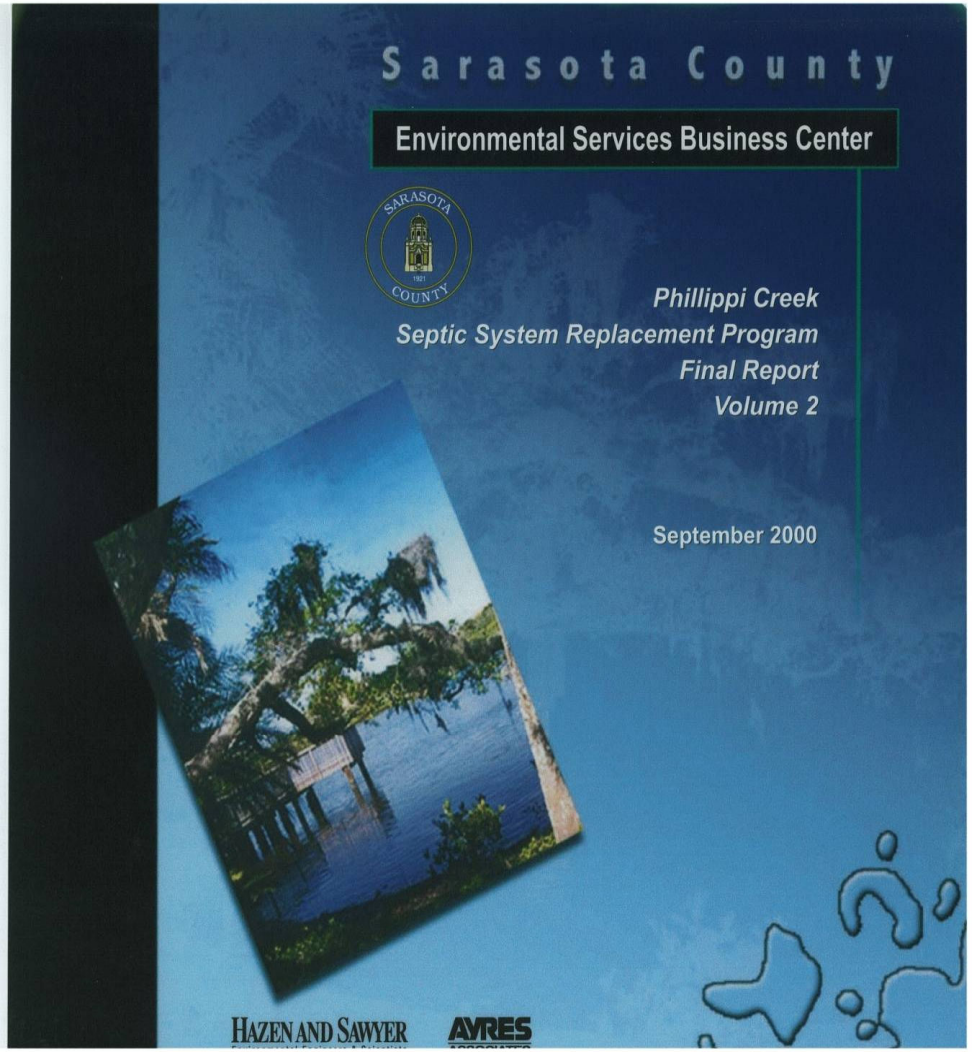
2. Provide direction to staff on the type of technology to be designed for Area N3

History

February 13, 2013:

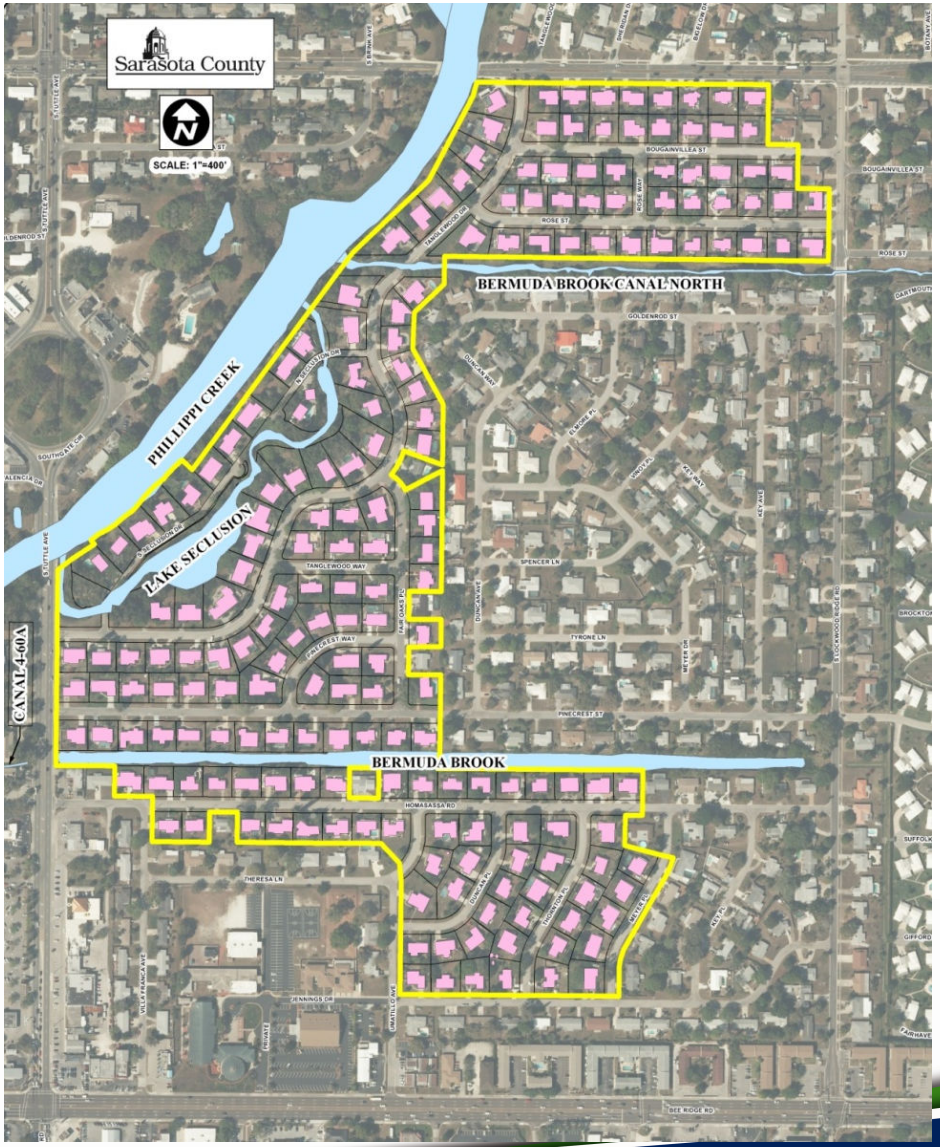
- Staff presented 3 approved sewer technologies and associated costs to the Board;
- Staff previously recommended low pressure technology for this Area based on costs

Sewer Technologies



Vacuum
Low Pressure
Gravity

Area N3


Sarasota County
SCALE: 1"=400'
BERMUDA BROOK CANAL NORTH
PHILLIPPI CREEK
LAKE SECLUSION
CANAL 4-60A
BERMUDA BROOK

Capital Cost of Each Sewer Technology

Sewer Technology	Capital Cost
Low Pressure - Current Level of Service	$2,114,000
Low Pressure - Generator Receptacle	$2,232,000
Low Pressure - Receptacle and 4' dia. x 6' Tank	$2,565,000
Low Pressure - Receptacle, 4' dia. x 6' Tank, and Portable Generator	$2,859,000
Vacuum	$3,363,000
Gravity	$4,104,000

Capital and Present Worth O&M Costs

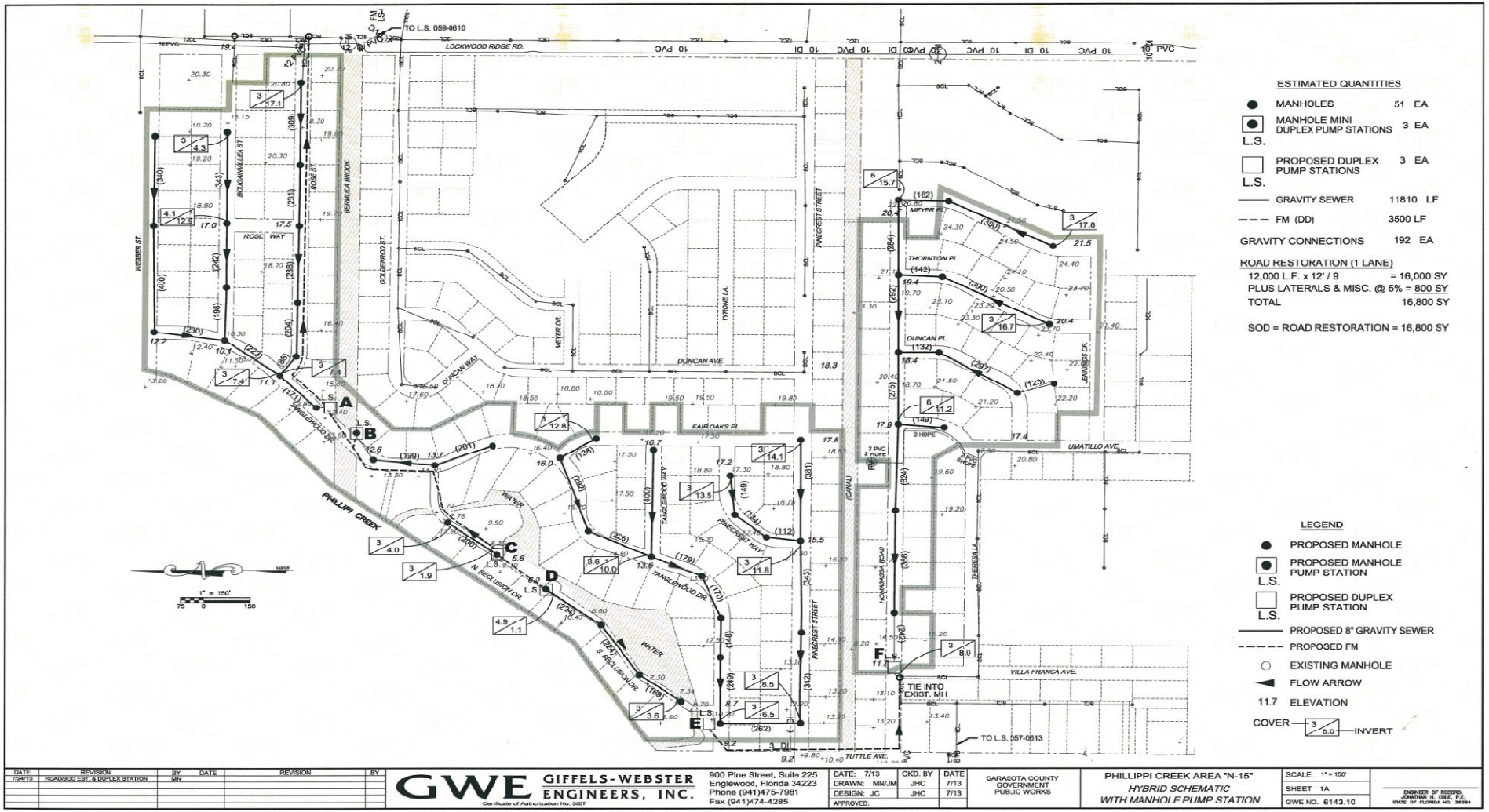
Sewer Technology	Capital Cost	Present Worth O&M*	Total Cost
Low Pressure - Current Level of Service	$2,114,000	$611,000	$2,725,000
Low Pressure - Generator Receptacle	$2,232,000	$611,000	$2,843,000
Low Pressure - Receptacle and 4' dia. X 6' Tank	$2,565,000	$611,000	$3,176,000
Vacuum	$3,363,000	$450,000	$3,813,000
Low Pressure - Receptacle, 4' dia. x 6' Tank, and Portable Generator	$2,859,000	$1,115,000	$3,974,000
Gravity	$4,104,000	$218,000	$4,322,000

* Present Worth is based on a 20 year period, 6% interest rate, and O&M costs anticipated for the N3 Area.

$$PV = A \times \frac{(1+i)^n - 1}{i(1+i)^n}$$

Formula source: Lindeburg, Civil Engineering Reference Manual, Professional Publications, Inc., 1999

Alternative Hybrid Gravity



DATE	REVISION	BY	DATE	REVISION	BY
7/24/13	ROAD/GOD EST. & DUPLEX STATION	MN			

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: 7/13	CKD. BY	DATE	
DRAWN: MN/JM	JHC	7/13	
DESIGN: JC	JHC	7/13	
APPROVED:			

SARASOTA COUNTY GOVERNMENT PUBLIC WORKS

PHILLIPPI CREEK AREA "N-15"
HYBRID SCHEMATIC WITH MANHOLE PUMP STATION

SCALE 1" = 150'
SHEET 1A
GWE NO. 6143.10

ENGINEER OF RECORD JONATHAN H. CEELY, P.E. STATE OF FLORIDA NO. 36384

Capital and Present Worth O&M Costs

Sewer Technology	Capital Cost	Present Worth O&M*	Total Cost
Low Pressure - Current Level of Service	$2,114,000	$611,000	$2,725,000
Low Pressure - Generator Receptacle	$2,232,000	$611,000	$2,843,000
Hybrid Gravity	$2,847,000	$319,000	$3,166,000
Low Pressure - Receptacle and 4' dia. X 6' Tank	$2,565,000	$611,000	$3,176,000
Vacuum	$3,363,000	$450,000	$3,813,000
Low Pressure - Receptacle, 4' dia. x 6' Tank, and Portable Generator	$2,859,000	$1,115,000	$3,974,000
Gravity	$4,104,000	$218,000	$4,322,000

* Present Worth is based on a 20 year period, 6% interest rate, and O&M costs anticipated for the N3 Area.

$$PV = A \times \frac{(1+i)^n - 1}{i(1+i)^n}$$

Formula source: Lindeburg, Civil Engineering Reference Manual, Professional Publications, Inc., 1999

Direction Requested

1. Provide direction on sewer technology for Area N3.

2. Set the Level of Service for Low Pressure Sewer Systems:
   a) Provide Generator Receptacle
   b) Provide Larger Tanks (4’ dia. X 6’ Deep)
   c) Provide Portable Generators

3. Provide direction on community outreach moving forward with a design.