

Terrebonne Wastewater Feasibility Study

Exploring Sewer Solutions for the Community



Proposed Wastewater System Phasing

In September and October 2020, Deschutes County hosted an Online Virtual Open House to share information about septic system problems in Terrebonne and ask for public input regarding a potential community sewer system. The businesses and residents experiencing septic system issues were generally more interested in a Terrebonne Sewer System, while residents not experiencing septic system issues weren't interested or expressed opposition. In response to this feedback, this study will focus on providing sewer services to the commercial core along Highway 97 and dense residential area to the west. To facilitate this, the Terrebonne service area has been divided into three separate phases of roughly equal size:

Phase A: Commercial Core

- This area has the highest concentration of septic system issues, businesses, and small residential lots
- The terrain in this region gently slopes toward Hwy 97 and 11th Street and north toward Lower Bridge Way
- 160 EDUs existing (EDU = equivalent dwelling unit)
- 320 EDUs at full buildout

Phase B: Residential West

- This area is mostly residential with larger lot sizes and generally fewer septic system issues
- Terrain in this region is relatively flat on the plateau and slopes down to the west from the plateau edge
- 169 EDUs existing
- 331 EDUs at full buildout

Phase C: Residential East

- This area is mostly residential with larger lot sizes and generally fewer septic system issues
- Terrain in this region is relatively flat, rural, and divided several COID irrigation laterals
- 143 EDUs existing
- 364 EDUs at full buildout

The constructed sewer system would initially serve just the Commercial Core in Phase A, with the ability to expand and serve Phase B and Phase C in the future if/when desired by the community.

Proposed Wastewater System Alternatives

There are many different ways to collect, treat, and dispose of wastewater. At this point in the study, we will examine the different sewer system alternatives available to address septic system issues, support commerce, and protect water sources in Terrebonne. The four sewer system alternatives under consideration include:

- 1. Wastewater Treatment Lagoon with irrigation reuse for effluent disposal.** Collection system includes Septic Tank Effluent Gravity (STEG) in Phase A and Septic Tank Effluent Pump (STEP) in future Phases B and C.
- 2. Manufactured Treatment System with drainfield disposal.** Collection system includes Septic Tank Effluent Gravity (STEG) in Phase A and Septic Tank Effluent Pump (STEP) in future Phases B and C.
- 3. City of Redmond Wastewater Treatment Plant.** Collection system includes Septic Tank Effluent Pumps (STEP) that collectively pump effluent to the Redmond WWTP in a 2.75 mile transmission main. This option is predicated on a relocated wastewater treatment plant (west of Northwest Way) currently under consideration by the City of Redmond.
- 4. No Action-continue with current on-site systems**

The preferred sewer alternative will be selected by evaluating and comparing these four alternatives based on the following criteria: Capital Costs, Operating Costs, estimated Wastewater Rates, Community Interest, and Sustainability.

Next Steps

The Project Team is estimating operating costs and a proposed utility rate structure for each alternative that will be used to help select the preferred alternative. Additionally, governance options are being analyzed to determine what options may exist to own and operate the community's system (ie, Sewer District, private ownership, etc). Key to calculating costs for all alternatives will be estimating what portion of the system could be funded with federal grants—which the Project Team is also exploring.

Sewer Advisory Group

If you are interested in providing input to help the County select a preferred alternative, please express your interest by contacting Linda Swearingen at 541-350-6012 or email: lllswear@aol.com

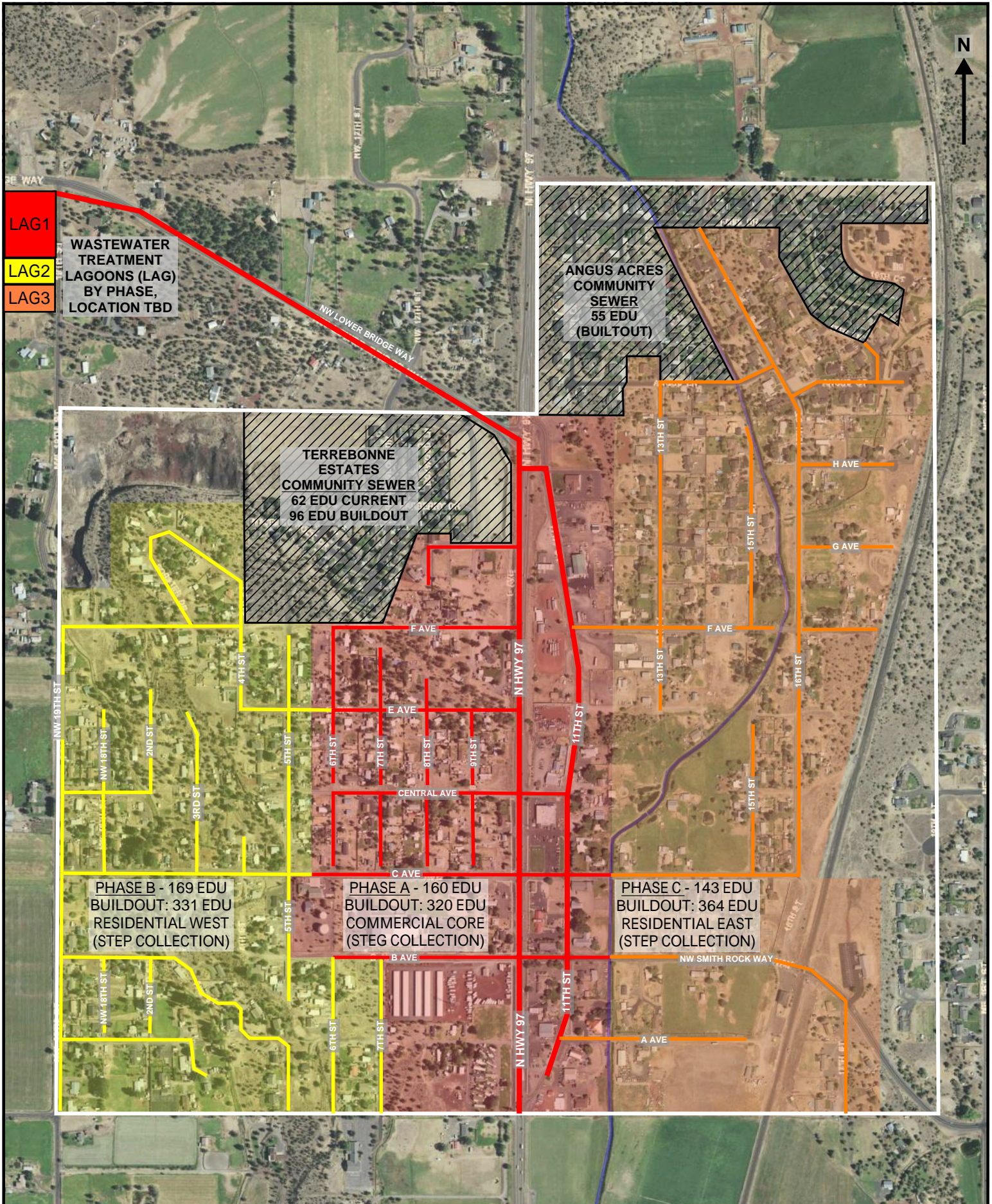
TERREBONNE WASTEWATER SYSTEM

ALTERNATIVE 1 - LAGOON WITH IRRIGATION REUSE

DATE: 3/26/2021

Parametrix

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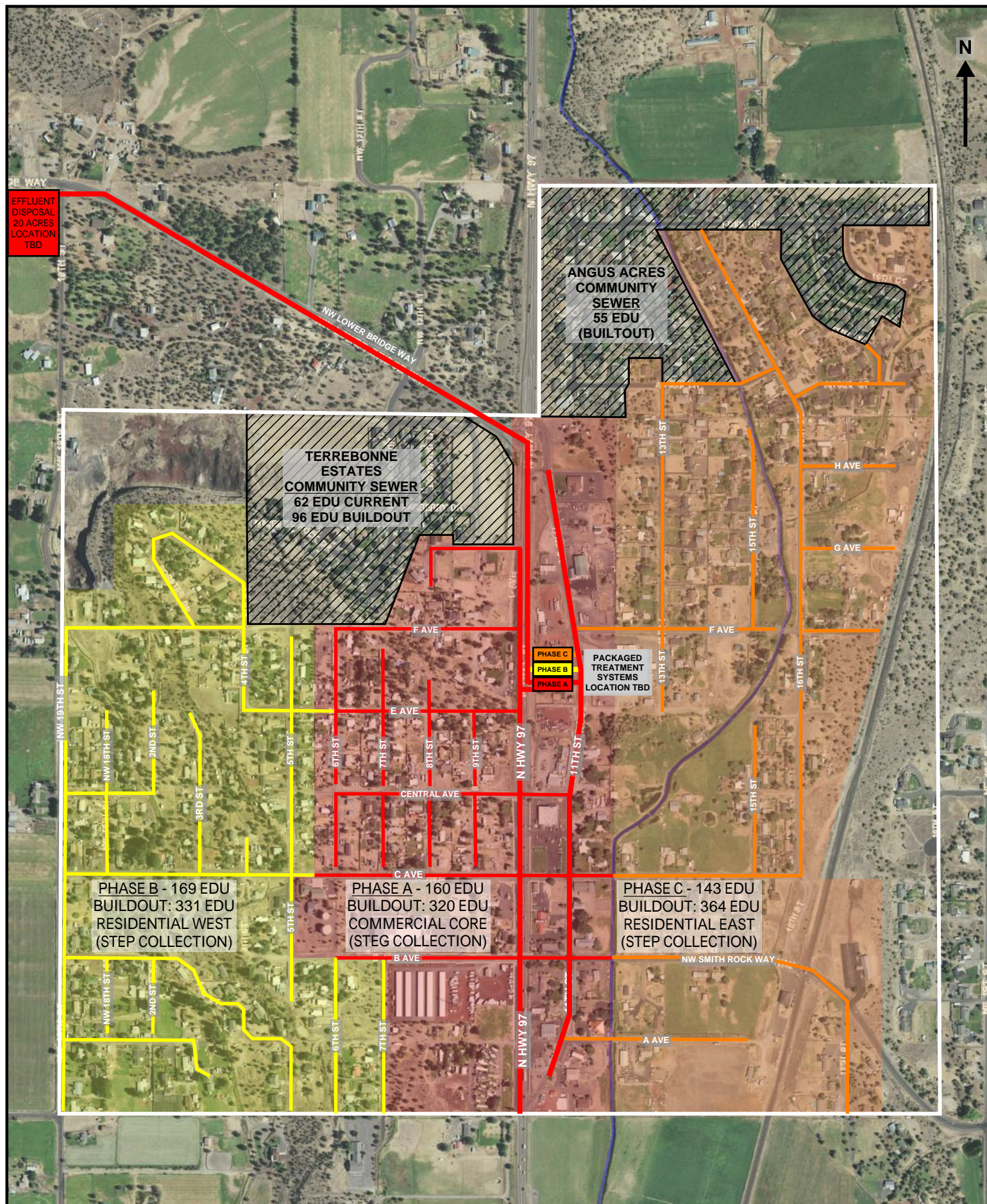


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ALTERNATIVE 2 - PACKAGED TREATMENT WITH DRAINFIELD DISPOSAL

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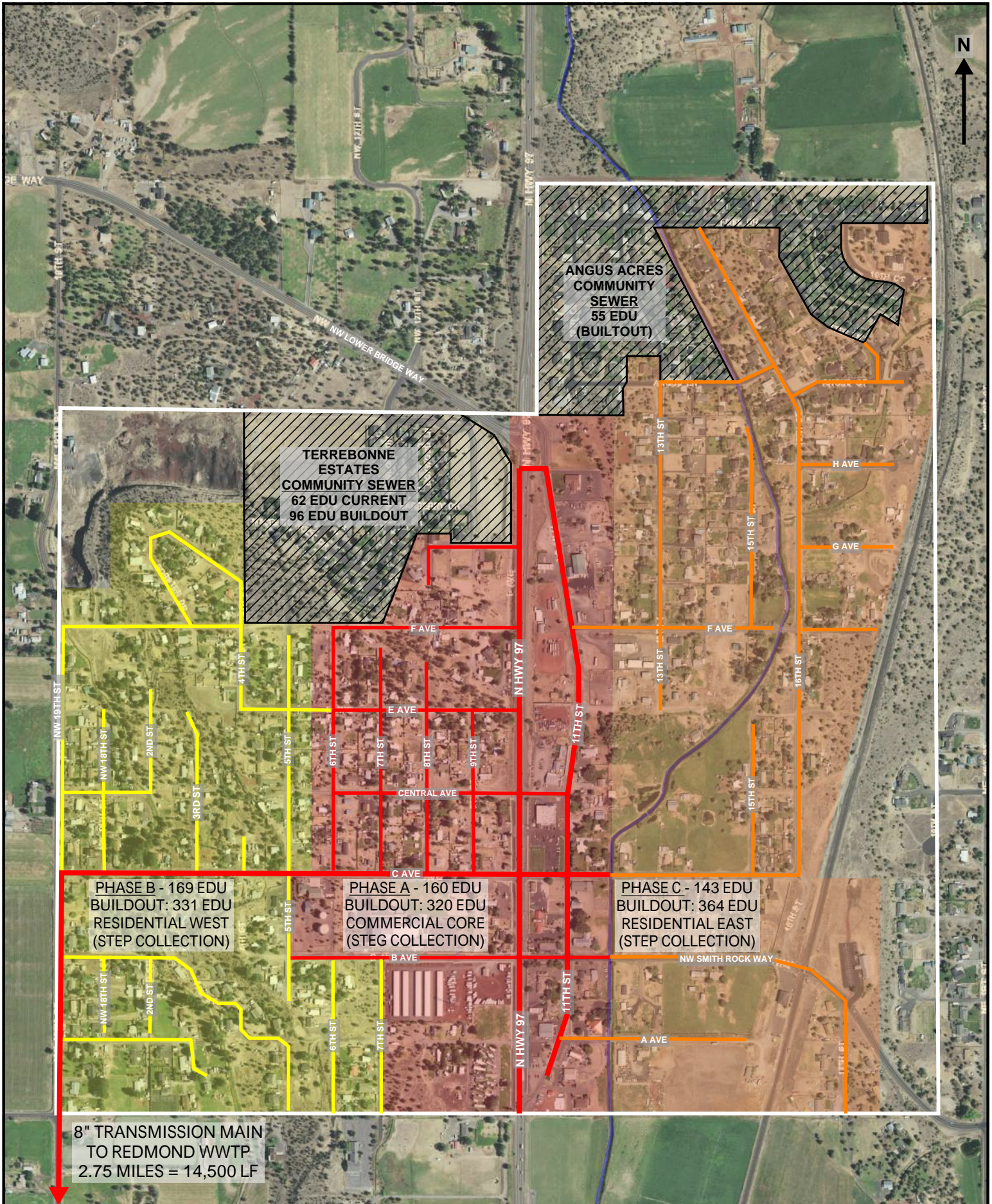
TERREBONNE WASTEWATER SYSTEM

ALTERNATIVE 3 - STEP PUMP TO REDMOND WWTP

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TERREBONNE WASTEWATER SYSTEM

ESTIMATED CAPITAL COSTS

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Table 1. Capital Cost Comparison

Phase	Alternative 1 - Wastewater Treatment Lagoon & Irrigation Reuse	Quantity	Unit	Unit Price	Estimated Cost
A	STEG Collection System	22150	LF	\$100	\$2,215,000
	Land Acquisition	20	AC	\$50,000	\$1,000,000
	Lagoon (Phase A construction)	6	AC	\$250,000	\$1,500,000
				Construction Subtotal:	\$4,715,000
				Design, Legal, Admin, Permitting, Contingency (45%):	\$2,121,750
	Estimated Phase A Total:				\$6,836,750
B	STEP Collection System	18300	LF	\$80	\$1,464,000
	Effluent Pump Septic Tank Replacements	168	EA	\$8,000	\$1,344,000
	Lagoon (Phase B expansion)	6	AC	\$250,000	\$1,500,000
				Construction Subtotal:	\$4,308,000
				Design, Legal, Admin, Permitting, Contingency (45%):	\$1,938,600
	Estimated Phase B Total:				\$6,246,600
C	STEP Collection System	16000	LF	\$80	\$1,280,000
	Effluent Pump Septic Tank Replacements	140	EA	\$8,000	\$1,120,000
	Lagoon (Phase C expansion)	6	AC	\$250,000	\$1,500,000
				Construction Subtotal:	\$3,900,000
				Design, Legal, Admin, Permitting, Contingency (45%):	\$1,755,000
	Estimated Phase C Total:				\$5,655,000
ESTIMATED ALTERNATIVE 1 TOTAL					\$18,738,350

Phase	Alternative 2 - Manufactured Treatment System & Drainfield Disposal	Quantity	Unit	Unit Price	Estimated Cost
A	STEG Collection System	23150	LF	\$100	\$2,315,000
	Land Acquisition	20	AC	\$50,000	\$1,000,000
	Packaged Treatment System (Phase A construction)	8	EA	\$180,000	\$1,440,000
	Disposal Drainfield (Phase A installation)	13230	LF	\$50	\$661,500
				Construction Subtotal:	\$5,416,500
			Design, Legal, Admin, Permitting, Contingency (45%):	\$2,437,425	
	Estimated Phase A Total:				\$7,853,925
B	STEP Collection System	18600	LF	\$80	\$1,488,000
	Effluent Pump Septic Tank Replacements	168	EA	\$8,000	\$1,344,000
	Packaged Treatment System (Phase B expansion)	8	EA	\$180,000	\$1,440,000
	Disposal Drainfield (Phase B expansion)	13230	LF	\$50	\$661,500
				Construction Subtotal:	\$4,933,500
			Design, Legal, Admin, Permitting, Contingency (45%):	\$2,220,075	
	Estimated Phase B Total:				\$7,153,575
C	STEP Collection System	16350	LF	\$80	\$1,308,000
	Effluent Pump Septic Tank Replacements	140	EA	\$8,000	\$1,120,000
	Packaged Treatment System (Phase C expansion)	8	EA	\$180,000	\$1,440,000
	Disposal Drainfield (Phase C expansion)	13230	LF	\$50	\$661,500
				Construction Subtotal:	\$4,529,500
			Design, Legal, Admin, Permitting, Contingency (45%):	\$2,038,275	
	Estimated Phase C Total:				\$6,567,775
ESTIMATED ALTERNATIVE 2 TOTAL					\$21,575,275

Phase	Alternative 3 - Pressure Sewer to Redmond Wastewater Treatment Plant	Quantity	Unit	Unit Price	Estimated Cost
A	STEP Collection System	23150	LF	\$80	\$1,852,000
	Effluent Pump Septic Tank Replacements	137	EA	\$8,000	\$1,096,000
	8" Sewer Force Main to Redmond	14500	LF	\$100	\$1,450,000
	Redmond SDC Connection Fees	320	EDU	\$2,062	\$659,840
				Construction Subtotal:	\$5,057,840
			Design, Legal, Admin, Permitting, Contingency (45%):	\$2,276,028	
	Estimated Phase A Total:				\$7,333,868
B	STEP Collection System	18600	LF	\$80	\$1,488,000
	Effluent Pump Septic Tank Replacements	168	EA	\$8,000	\$1,344,000
	Redmond SDC Connection Fees	331	EDU	\$2,062	\$682,522
				Construction Subtotal:	\$3,514,522
			Design, Legal, Admin, Permitting, Contingency (45%):	\$1,581,535	
	Estimated Phase B Total:				\$5,096,057
C	STEG Collection System	16350	LF	\$80	\$1,308,000
	Effluent Pump Septic Tank Replacements	140	EA	\$8,000	\$1,120,000
	Redmond SDC Connection Fees	364	EDU	\$2,062	\$750,568
				Construction Subtotal:	\$3,178,568
			Design, Legal, Admin, Permitting, Contingency (45%):	\$1,430,356	
	Estimated Phase C Total:				\$4,608,924
ESTIMATED ALTERNATIVE 3 TOTAL					\$17,038,849