Town of Sedgwick

Master Plan
Public Meeting

Wastewater System Master Plan
Water System Master Plan
Roadway Master Plan

April 26, 2021

ELEMENT
ENGINEERING LLC
DILIGENT • INNOVATIVE • RESPONSIVE

Wastewater System Master Plan

Existing Wastewater System Evaluation

- Town has a Lagoon Wastewater Treatment Plant (WWTP)
  - No Discharge Permit
  - Ponds Are Likely Seeping
  - Existing lagoons will likely not meet new discharge requirements
  - New Treatment Plant Needed

- Collection system consists of 12,500 LF of pipe
  - 2019 – Collection system videoed and reviewed
  - Overall Good Condition
  - Minor improvement projects Needed

- Lift Station
  - 50 Years old and in need of Replacement

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REVISIONS
NO. | DESCRIPTION | DATE | BY

UTILITY MASTER PLAN
PROPOSED COLLECTION SYSTEM IMPROVEMENTS
TOWN OF SEDGWICK
SEDGWICK COUNTY, COLORADO

PREPARED UNDER THE DIRECT SUPERVISION OF

FOR AND ON BEHALF OF ELEMENT ENGINEERING LLC

DATE
NOVEMBER 2020

JOB NUMBER
0060.0002

SCALE
1" = 150'

DRAWING NAME
PROPOSED

SHEET
OF

Wastewater System Master Plan

Wastewater System Recommended Improvements & Cost

1. Collection System Improvements
   - $196,000 (10 manholes, 6-point repairs)

2. Construct New Lift Station
   - $471,000

3. Construct New Containment/Evaporation WWTP
   - $2.25M

Total Project Cost
   - $2.9M

Wastewater System Master Plan

Funding & Rate Study

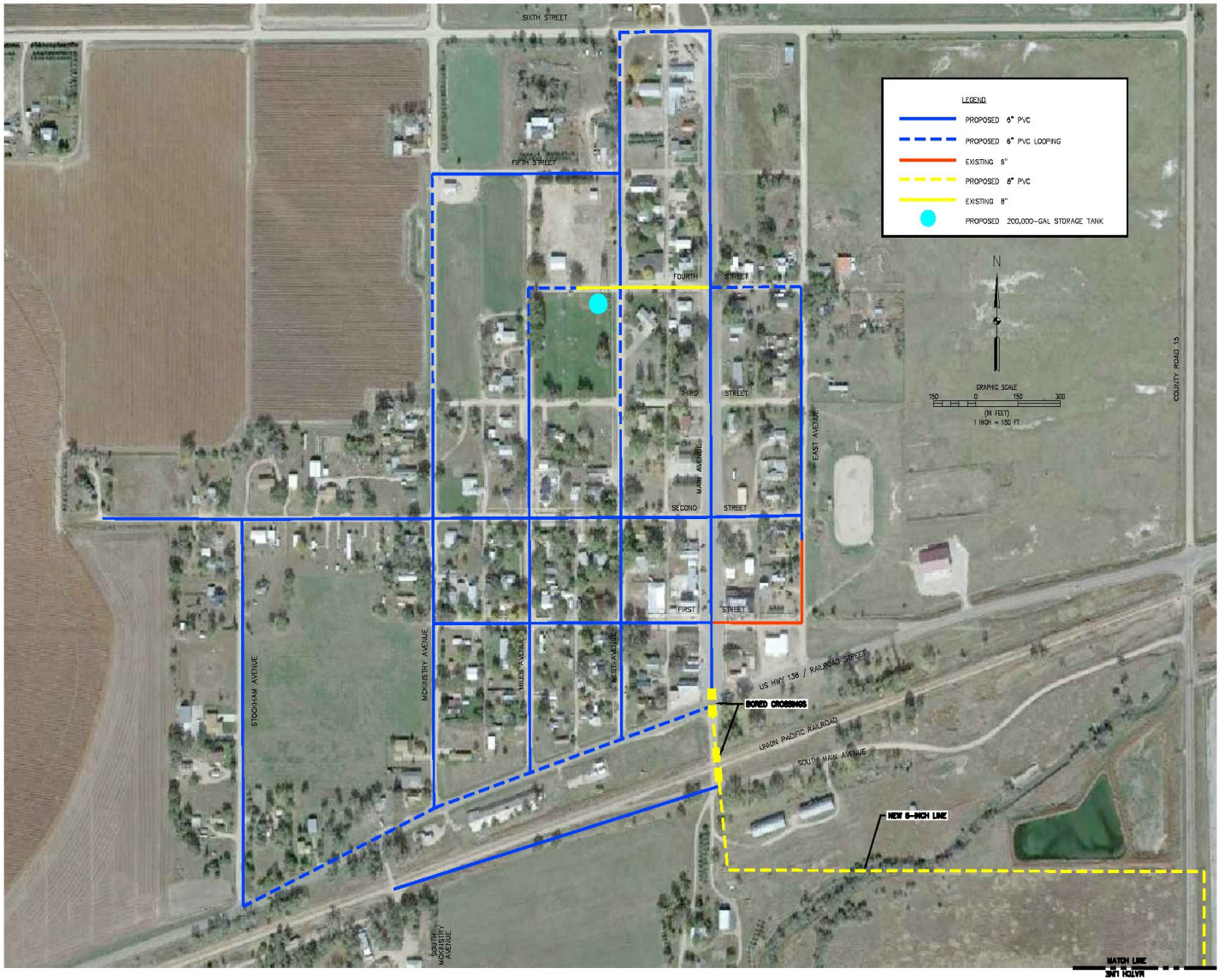
- $1,000,000 DOLA Grant
- 40% to 60% (of remaining project cost) USDA Grant (estimated)
- Remaining Project Cost – USDA Loan
  - 40-year loan term, 2.5% Interest Rate

Assumed USDA Grant %	Description	Existing Monthly User Rate	Proposed Increase Monthly Rate	Estimated Final User Rate
40%	Residential (in town)	$ 25.35	$ 36.05	$ 61.40
	Residential (out of town) and Commercial	$ 27.35	$ 36.05	$ 63.40
	Non-Active	$ 7.18	$ -	$ 7.18
60%	Residential (in town)	$ 25.35	$ 24.03	$ 49.38
	Residential (out of town) and Commercial	$ 27.35	$ 24.03	$ 51.38
	Non-Active	$ 7.18	$ -	$ 7.18

Water System Master Plan

Existing Water System Evaluation

- Two municipal raw water wells
- Only disinfection treatment required
- Booster pumps
- Two storage tanks
- 4 miles of finished water pipe (1-inch to 8-inch)
  - Cast Iron, thin-walled irrigation, and PVC (small portion)
- Most pipe is undersized and/or constructed of outdated or inappropriate material, and in need of replacement
- Water meters and pits are old and have exceeded typical lifespan
- Water model was created and analyzed to determine areas of undersized pipe and to analyze the effect of pipe replacements
- Current Fire Flow at Hydrants 360 GPM, Ideal 1,500 GPM



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REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	WATER TRANSMISSION MAIN LINE ADDITION	JULY, 2021	MWH

UTILITY MASTER PLAN

COMPLETE WATER PROJECT W/ NEW TANK

TOWN OF SEDGWICK
SEDGWICK COUNTY, COLORADO

REVIEWED UNDER THE DIRECT SUPERVISION OF

FOR AND ON BEHALF OF ELEMENT DIRECTIONS, LLC

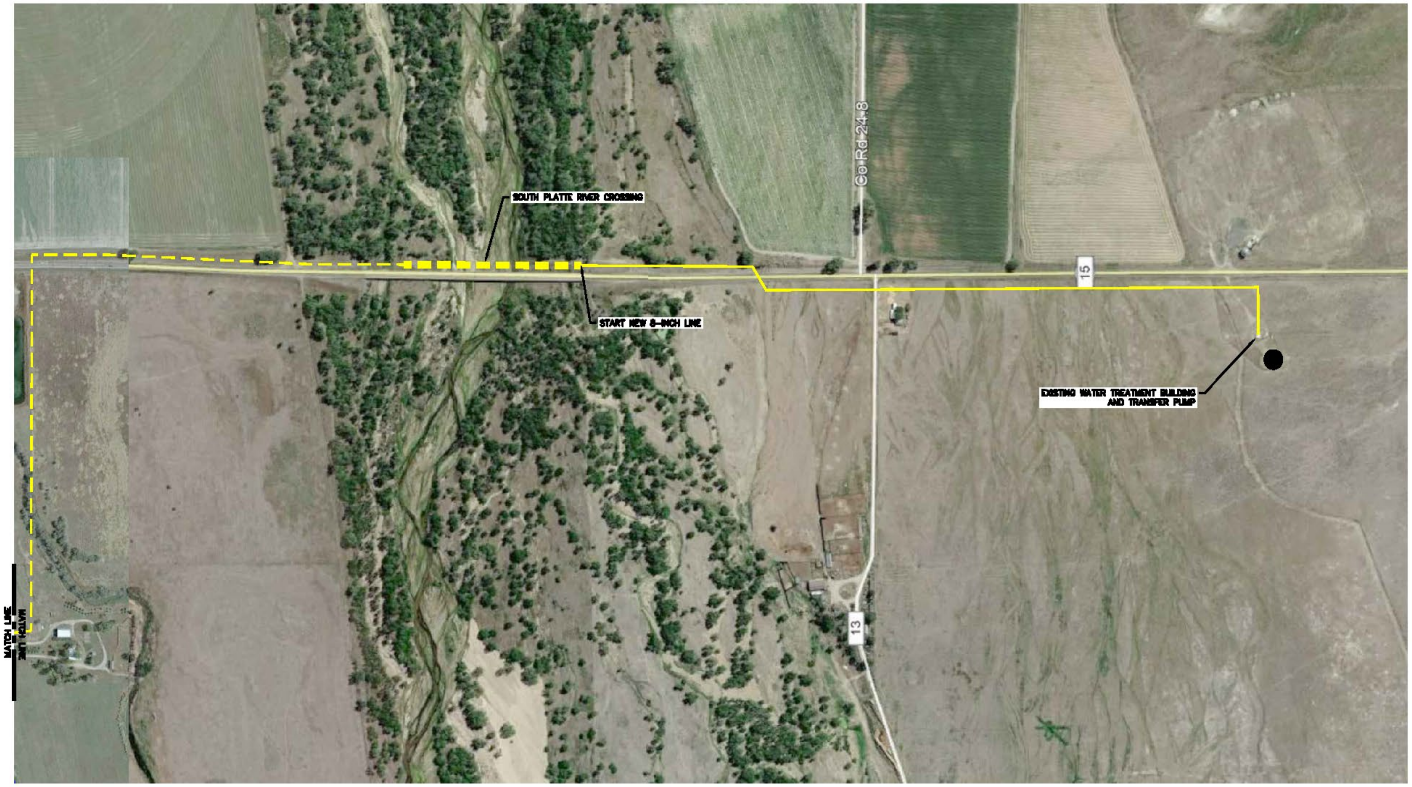
DATE
NOVEMBER 2020

JOB NUMBER
0060.0002

SCALE
1" = 150'

DRAWING NAME
PROPOSED

SHEET
1 OF 2



LEGEND

PROPOSED 8-INCH PVC

EXISTING 8-INCH

EXISTING 130,000-GAL TANK

N

GRAPHIC SCALE

250 0 250 500

(IN FEET)

1 INCH = 250 FT

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REVISIONS

NO.	DESCRIPTION	DATE	BY
1	WATER TRANSMISSION MAIN LINE ADDITION	JAN., 2021	MH

UTILITY MASTER PLAN

COMPLETE WATER PROJECT W/ NEW TANK

TOWN OF SEDGWICK

SEDGWICK COUNTY, COLORADO

PREPARED UNDER THE DIRECT SUPERVISION OF

FOR AND ON BEHALF OF ELEMENT ENGINEERING, LLC

DATE: NOVEMBER 2020

JOB NUMBER: 0061.002

SCALE: 1" =250'

DRAWING NAME: PROPOSED

SHEET: 2 OF 2

Water System Master Plan

Water System Recommended Improvements Options & Cost

Alternative III- (Complete Project)

- Replacement of all non-PVC pipe with 6” pipe, including 8” river crossing and river to town
- Add new lines to loop system
- Replace hydrants, replace all service lines, meter pits, and water meters
- Replace 100-year-old 50,000-gallon elevated water storage tank with 200,00-gallon elevated tank to allow for 2 hours of fire flow

Cost: $5.1 Million

Water System Master Plan

Water System Recommended Improvements Options & Cost

Alternative II- (Modified Project)

- Replacement of all non-PVC pipe with 6” pipe
- Add new lines to loop system
- Replace hydrants, service lines, meter pits and water meters only where new water mains are installed
- No new tank
- No river crossing
- No new line from river to town

Cost: $3 Million

Water System Master Plan

Water System Recommended Improvements & Options

Alternative I- (Minimal Project)

- Replace some lines with 6”, some 4” to remain
- Add new lines to loop system
- Replace hydrants, service lines, meter pits and water meters only where new lines are placed
- No new tank
- No River Crossing
- No new line to town

Cost: $2.2 Million

Water System Master Plan

Funding

- $1,000,000 DOLA Grant
- 40% to 60% (of remaining project cost) USDA Grant (estimated)
- Remaining Project Cost – USDA Loan
  - 40-year loan term, 2.5% Interest Rate

Water System Master Plan

Rate Study

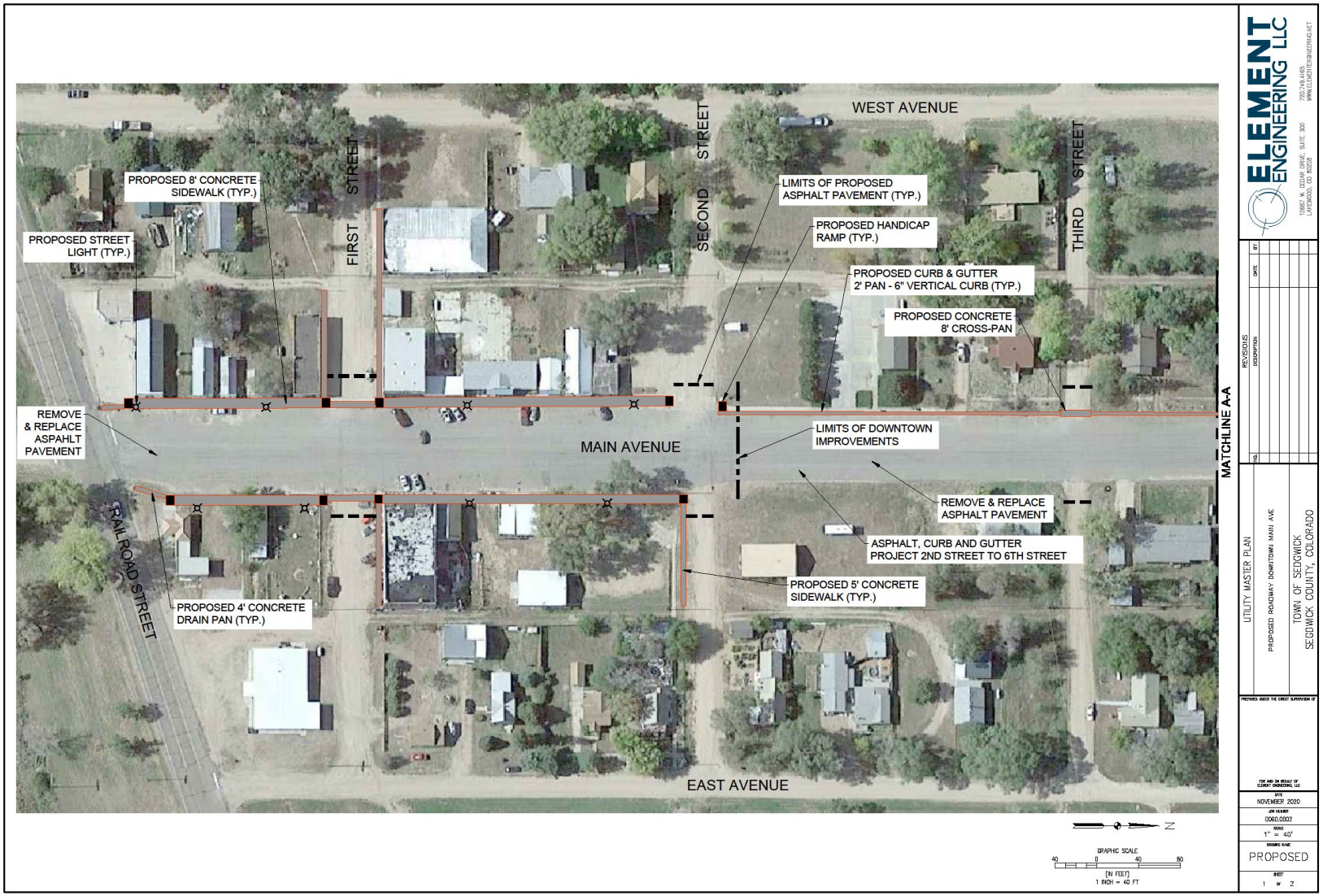
Assumed USDA Grant %	Water System Alternative	Total Project Cost	Existing Monthly Base Rate	Est. Increase to Monthly Base Rate[4]	Est. Total Base Rate
40%	I - Modified In-Town Water Project w/ Asphalt Patching	$ 2,205,406	$ 25.35	$ 20.88	$ 63.83
	II - Full In-Town Water Project w/ Asphalt Patching	$ 2,982,711	$ 25.35	$ 34.34	$ 77.29
	III - Complete Water Project w/ New Tank & Asphalt Patching	$ 5,121,417	$ 25.35	$ 71.38	$ 114.33
60%	I - Modified In-Town Water Project w/ Asphalt Patching	$ 2,205,406	$ 25.35	$ 13.92	$ 56.87
	II - Full In-Town Water Project w/ Asphalt Patching	$ 2,982,711	$ 25.35	$ 22.89	$ 65.84
	III - Complete Water Project w/ New Tank & Asphalt Patching	$ 5,121,417	$ 25.35	$ 47.59	$ 90.54

Main Avenue Improvements

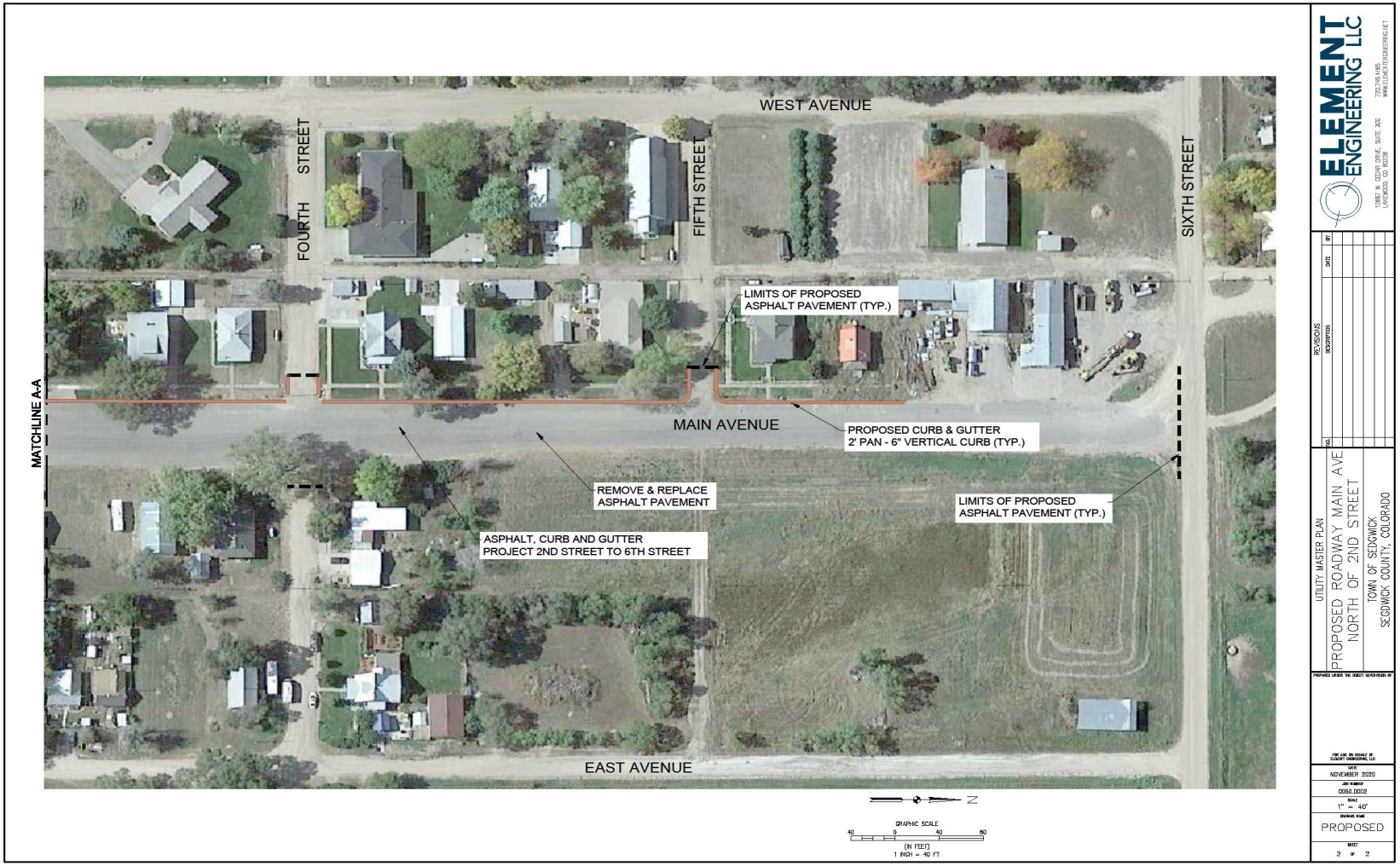
Main Avenue Improvements

- New sidewalks, curb and gutter from HWY 38 though second
- New cross pans
- New curb, gutter entire length west side
- Install ADA (Handicap Ramps)
- New streetlights
- Install new asphalt entire length

Main Avenue Improvements



Main Avenue Improvements



Main Avenue Improvements

Project Cost

- HWY 138 through Second Avenue: $1,063,799
- Second Avenue to Sixth Avenue: $ 1,158,824
- Total Cost: $2,222,623
- Total Cost with Water: $2,638,363

Project Funding

- Possible Grants/DOLA
- General Fund
- Bond Issue

Water & Wastewater Funding and Project Steps

Project Steps

- Submit Preliminary Engineering Reports (PER) to USDA
- Apply for DOLA grant
- Secure Grant and Loan Package
- Design
- Approvals
- Construction

QUESTIONS