



CITY OF WEST PLAINS, MO

BOND LEVEL COST SUBMITTAL

WATER TREATMENT FACILITY IMPROVEMENTS



PH: 417.888.0645
1550 E. REPUBLIC ROAD
SPRINGFIELD, MO 65804

CITY OF WEST PLAINS – Water Treatment Facility Improvements

DATE: 09.23.2020

PROJECT UPDATE MEETING

AGENDA

1. *Existing Water System Overview (See Large Map)*
 - a. (6) Active Wells ~ 4.5 MGD Capacity
 - b. (5) Storage Tanks ~ 5.0 MG Finished Water Storage
 - c. (1) Water Treatment Plant ~ 3.7 MGD Capacity
 - d. (3) Booster Pump Stations ~ Boosts Water to Pressure Zones
2. *System Demands (See Exhibit 1)*
 - a. 2016 Average Daily Flow 2.35 MGD
 - b. 2016 Max Daily Flow 3.53 MGD
 - c. 2037 Average Daily Flow 3.40 MGD
 - d. 2037 Max Daily Flow 5.10 MGD
 - e. From Jan. 2013 to Jan. 2016, flows in excess of 85% of facility design occurred 56 times (See Exhibit 2)
 - f. From Jan. 2013 to Jan. 2016, flows in excess of 100% of facility design occurred 12 times (See Exhibit 2)
 - g. July 2018 – 5 day nearly continuous operation of high service pumps (See Exhibit 3)
3. *Major System Weaknesses*
 - a. Treatment capacity below recommended
 - b. High service pump delivery rate less than treatment capacity (See Exhibit 3)
 - c. Finished water storage of 5.0 MG vs. usable water storage of 0.50 MG (see Exhibit 4)
 - d. Firefighting capacity extremely low during peak demand (summer)
4. *Needed System Upgrades*
 - a. Install VFDs on High Service Pumps
 - b. Upgrade water treatment capacity
 - c. Increase usable water storage volume
5. *Install Variable Frequency Drive on High Service Pumps*
 - a. Increase water delivery from 2.8 MGD to 3.7 MGD
 - b. Anticipated Panel Delivery Date: December 1, 2020
 - c. Final Completion Date: January 13, 2021
6. *Upgrade Water Treatment Capacity*
 - a. *Alternative One – New Facility on 32 Acre Property South of City (see Exhibit 5)*
 - New 3.7 MGD WTP
 - New 1 MG Ground Storage Tank and Booster Station (see Exhibit 5)
 - Distribution System Improvements (55,000 ft of distribution main) (see Exhibit 6)
 - Raw Water System Improvements (7 wells, 9,000 ft of raw water main) (see Exhibit 7)
 - ± \$49.8 Million (see Exhibit 8)

- b. *Alternative Two – 22 Acre Property Adjacent to Timbers Booster Station (see Exhibit 9)*
 - New 3.7 MGD WTP
 - New 1 MG Ground Storage Tank and Booster Station (see Exhibit 9)
 - Distribution System Improvements (48,000 ft of distribution main) (see Exhibit 10)
 - Raw Water System Improvements Interconnect with Existing (6 wells, 19,500 ft of raw main) (see Exhibit 11)
 - ± \$49.7 Million (see Exhibit 12)
- c. *Alternative Three – Expansion of Existing Plant (see Exhibit 13)*
 - Add identical 3.7 MGD treatment train adjacent to existing
 - New 0.5 MGD underground baffled clear well with new high service pumps (see Exhibit 13)
 - Distribution System Improvements (47,500 ft of distribution main) (see Exhibit 14)
 - Raw Water System Improvements (4 wells, 11,500 ft of raw water main) (see Exhibit 15)
 - ± \$37.8 Million (see Exhibit 16)

7. *Increase Usable Water Storage Volume*

- a. *Option One – New Taller Towers in Downtown Zone (see Exhibit 17)*
 - (Ph1) - Demo Aid, Pine, and Wayhaven Tanks
 - (Ph1) - Install 2 new taller towers and required PRV's on individual structures in Downtown Zone
 - (Ph2) - Construct 1 new taller tower in Downtown Zone
 - 3.3 MG storage added
 - ± \$18.5 Million (see Exhibit 18)
- b. *Option Two – Utilization of Existing Storage in Highway K and Highway 14 Zones (see Exhibit 19)*
 - (Ph1) - Connect Hwy 14/K zones to Downtown Zone via new water main
 - (Ph1) - Install altitude valve and internal piping at existing tanks
 - (Ph1) - Install 2 new taller towers in Hwy 14/K zones to increase pressures and replenish existing tanks
 - (Ph2) - Install 1 new taller tower in Downtown Zone with booster pump station and pressure reducing valve
 - 2.9 MG storage added
 - ± \$20.4 Million (see Exhibit 20)
- c. *Option Three – Booster Pumps to Utilize Existing Storage in Downtown Zone (see Exhibit 21)*
 - (Ph1) - Install new booster pump stations at existing Aid, Pine, and Wayhaven Tanks
 - (Ph2) - Construct 1 new tower adjacent to Pine with a booster pump station
 - 2.9 MG storage added
 - ± \$11.8 Million (see Exhibit 22)
- d. *Option Four – New Taller Towers in Downtown Zone with Pressure Reducing Valves (see Exhibit 23)*
 - (Ph1) - Keep existing Aid, Pine and Wayhaven Tanks as-is
 - (Ph1) - Install new taller tower in Downtown Zone with booster pump station and pressure reducing valve
 - (Ph2) - Construct 1 new tower in Downtown Zone with booster pump station and pressure reducing valve
 - 2.9 MG storage added
 - ± \$17.7 Million (see Exhibit 24)

8. *Summary and Recommendation*

- a. Summary of WTP Alternatives Costs (see Exhibit 25)
- b. Summary of Storage Improvement Options Costs (see Exhibit 26)
- c. WTP Alternative Three, without Looping to south, plus Storage Option One Phase 1 (see Exhibit 27)
- d. ± \$42.6 Million (see Exhibit 28)

Flow Projection 2016-2037



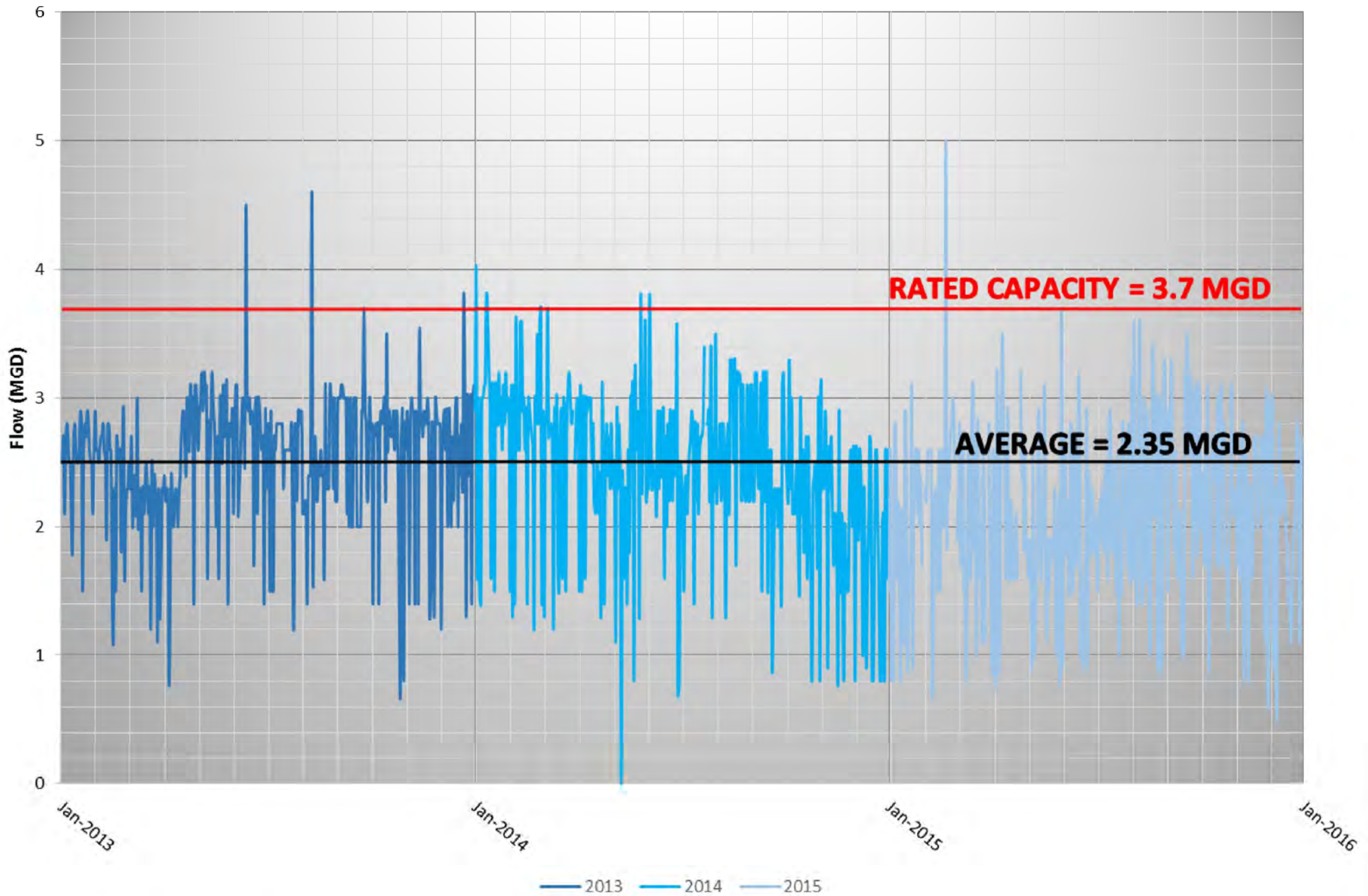


Figure 6. West Plains WTP Average Daily Flow 2013-2015

Jul 06
10:20:41

Jul 07
16:20:41

Jul 08
22:20:41

Jul 10
04:20:41

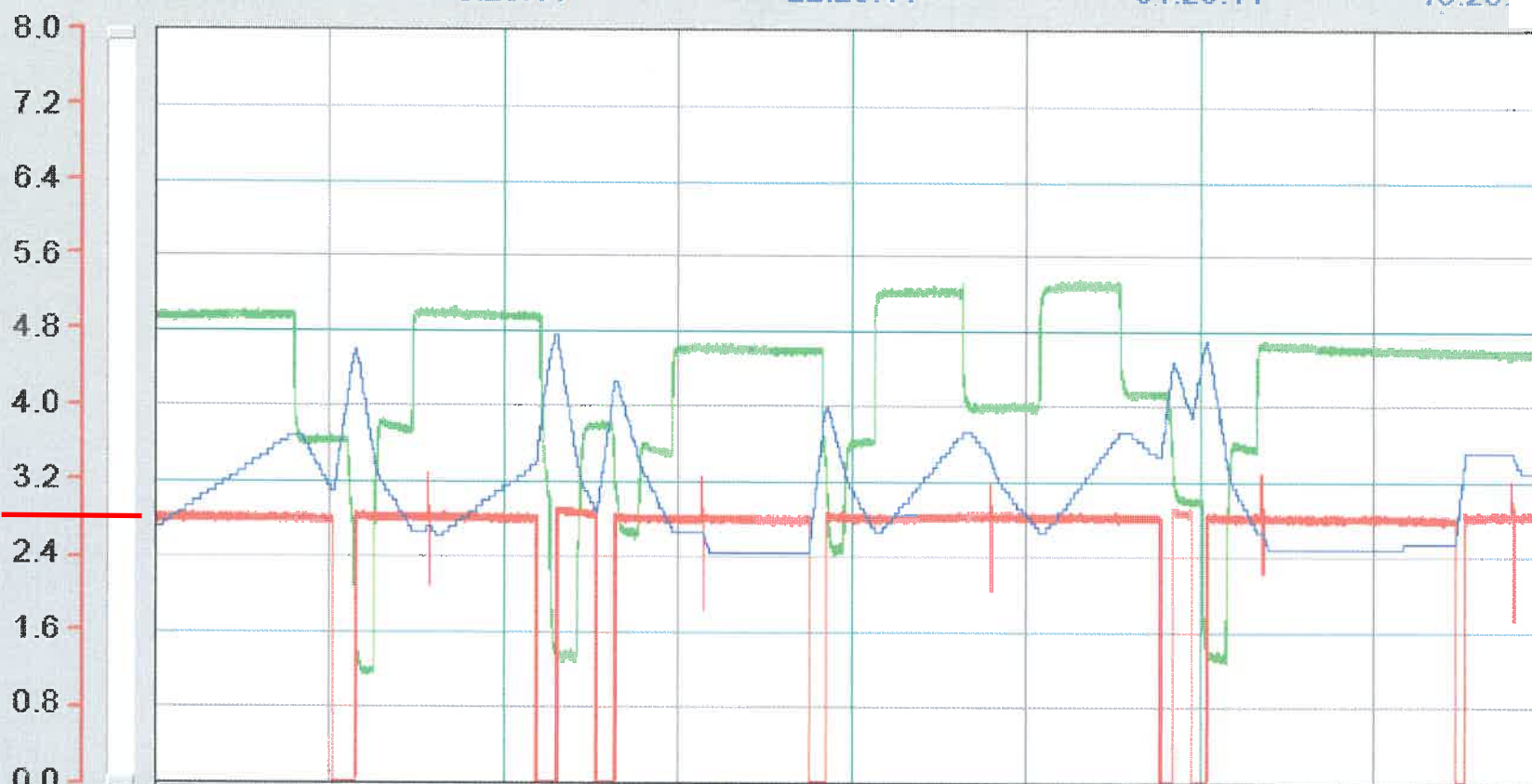
Jul
10:20:41

CHART
DURATION:

FROM:
7/6/2018
10:20:41 AM

TO:
7/11/2018
10:20:41 AM

2.8 MGD



10:20:41

10:20:41

10:20:41

Zoom In

5d

Zoom Out

10:20:41

4 hours

1 hour

Minutes

30 minutes

10 minutes

INFLUENT_FLOW

3.092

2.850

EFFLUENT_FLOW

2.817

2.836

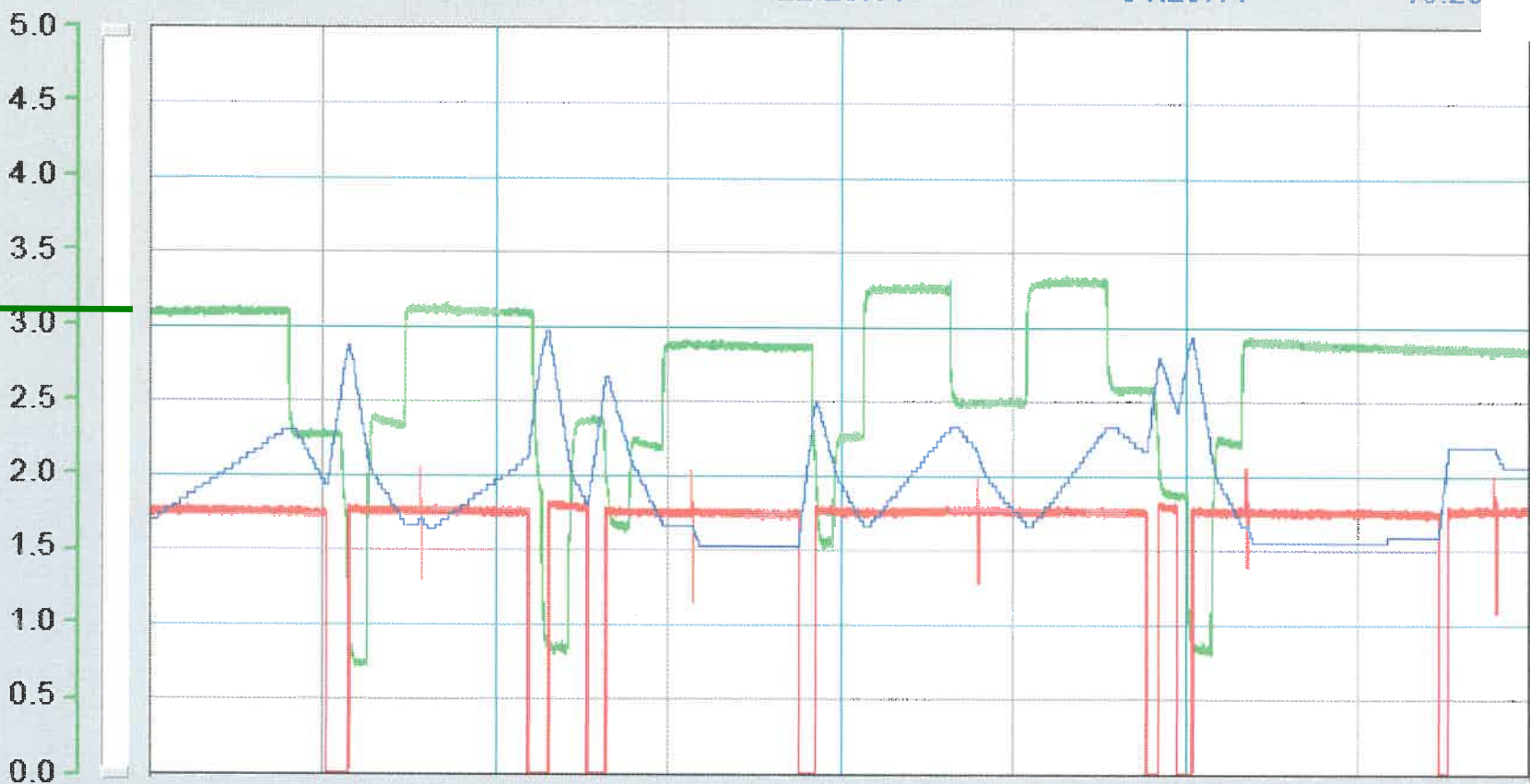
CLEARWELL_LEVEL_ELEV

970.115

971.189

Jul 06 10:20:41 Jul 07 16:20:41 Jul 08 22:20:41 Jul 10 04:20:41 Jul 11 10:20:41

3.1 MGD



START DURATION:

FROM: 7/6/2018 10:20:41 AM

TO: 7/11/2018 10:20:41 AM

10:20:41

10:20:41 10:20:41

10:20:41 Zoom In 5d Zoom Out 10:20:41

4 hours 1 hour Minutes 30 minutes 10 minutes

INFLUENT_FLOW

3.092 2.850

EFFLUENT_FLOW

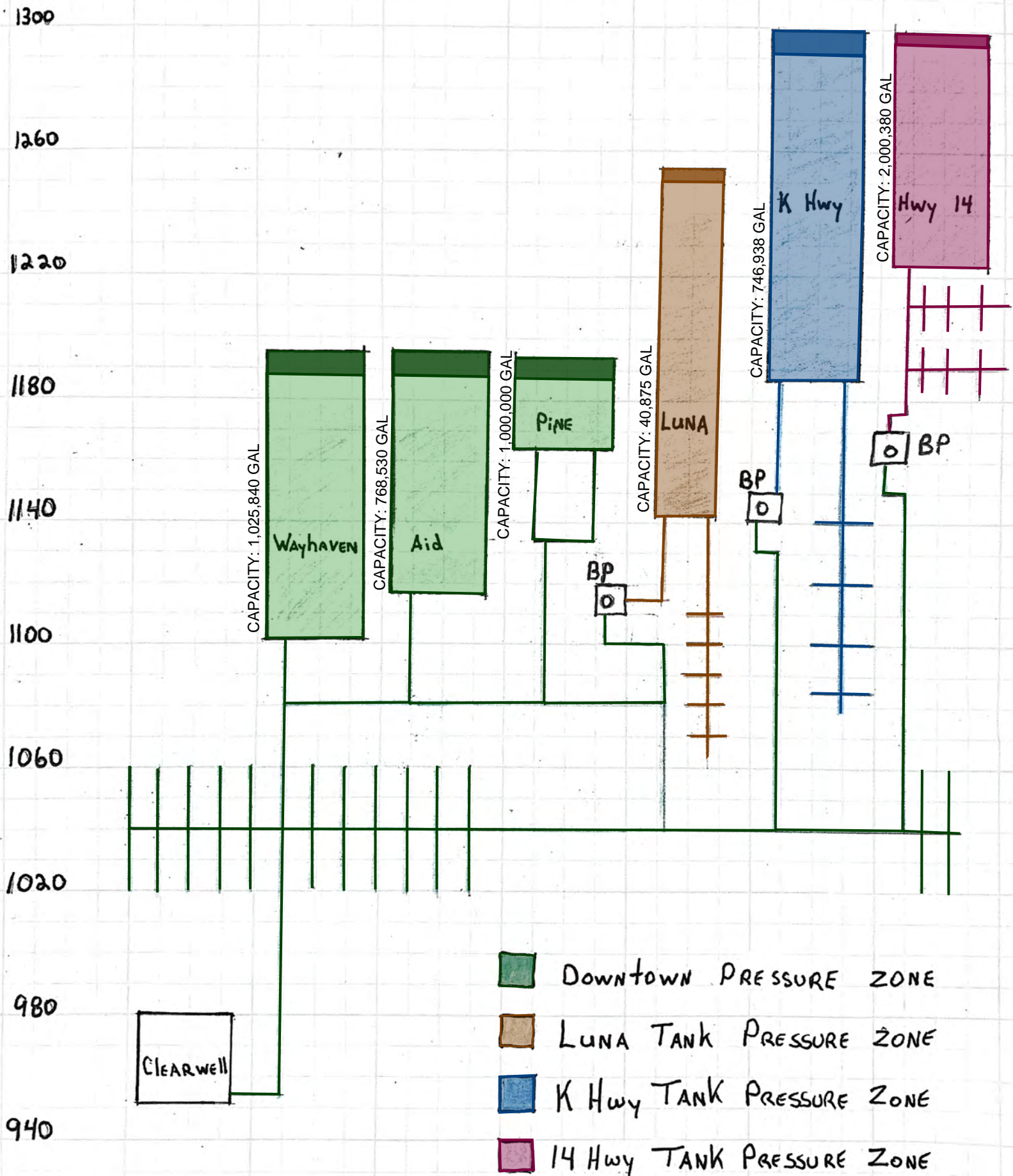
2.817 2.836

CLEARWELL_LEVEL_ELEV

970.115 971.189

Elevation

EXHIBIT 4



LEGEND:

BP

Proposed Booster Pumps

T

Proposed Water Tower

W

Proposed Water Well

BP

Existing Booster Pumps

T

Existing Water Tower

W

Existing Water Well

+

Water Hydrants

Owned By West Plains

Proposed 20" Water Main

Proposed 16" Water Main

Proposed 12" Water Main

Proposed 8" Water Main

Proposed Raw Water Line

Proposed Ground Storage Tank Outline

Proposed Backwash Basin

Potential Switch Station

Substation (Under Construction)

Proposed WTP Building

Proposed WTP Road

Proposed Sewer Manhole

Proposed Sewer Gravity Main

Proposed Lift Station

Proposed Force Main

12" Water Main

10" Water Main

8" Water Main

6" Water Main

4" Water Main

Raw Water Line

Sewer Manhole

Sewer Gravity Main

Owned by PWSD #2

New 8" Water Main

8" Water Main

6" Water Main

New 6" Water Main

4" Water Main

3" Water Main

2" Water Main

1" Water Main

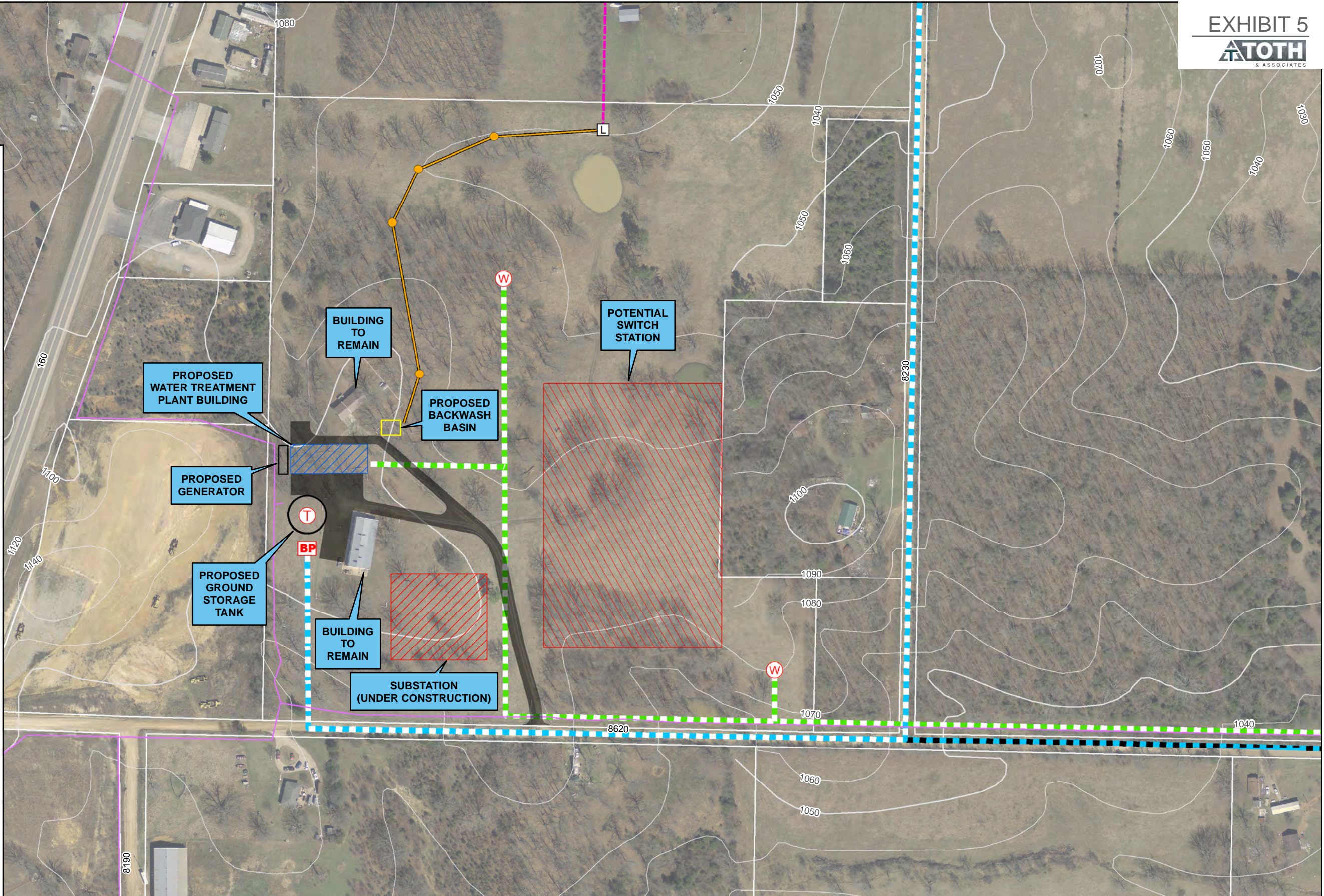
City Limits 2014

Parcels 2020

20' Contour

Index Contour

2015 City imagery



N
W
E
S

1 inch = 200 feet

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CITY OF WEST PLAINS, MO.

PROPOSED WTP SITE

ALTERNATIVE 1

TOTH

& ASSOCIATES

1550 E. Republic Rd, Springfield MO 65804

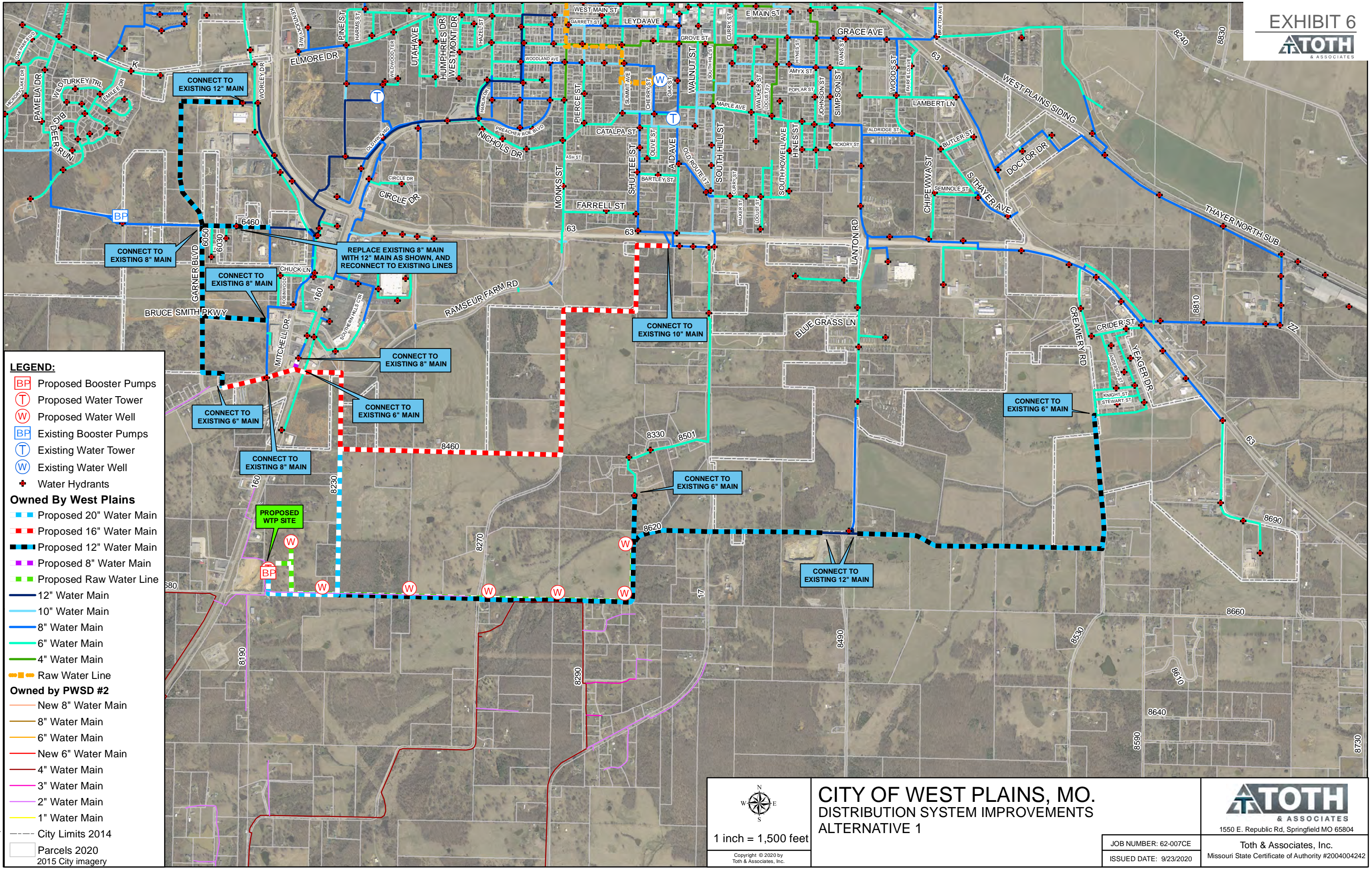
Toth & Associates, Inc.


Missouri State Certificate of Authority #2004004242

JOB NUMBER: 62-007CE

ISSUED DATE: 9/23/2020

C:\MapInfo\West Plains\GIS\Drawings\parcels\West Plains - Water Treatment Improvements_2020_11-17.mxd
Date: 9/23/2020 By: ALB





1 inch = 1,500 feet

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CITY OF WEST PLAINS, MO.

DISTRIBUTION SYSTEM IMPROVEMENTS

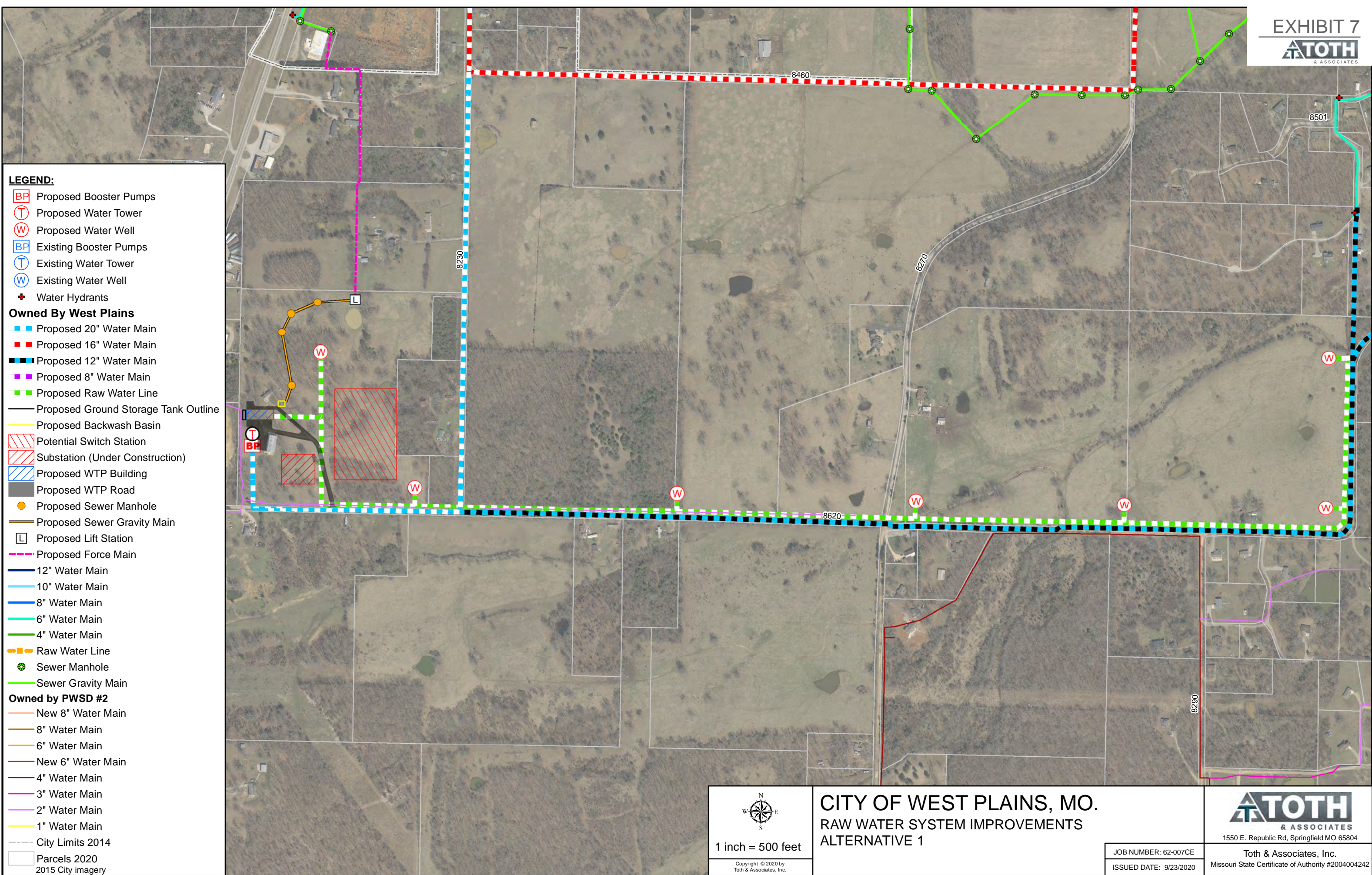
ALTERNATIVE 1

JOB NUMBER: 62-007CE
ISSUED DATE: 9/23/2020



1550 E. Republic Rd, Springfield MO 65804

Toth & Associates, Inc.
Missouri State Certificate of Authority #2004004242



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Date: 9/23/2020 By: ALB

BOND LEVEL COST ESTIMATE

West Plains Water Treatment Plant Improvements

City of West Plains, Missouri

*** ALTERNATIVE 1 (NEW WTP FACILITY - SITE A)*****RAW WATER SYSTEM IMPROVEMENTS**

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	16" D.I.P. Water Main (All Costs Included)	7,950	LF	\$195	\$1,550,250
1.01	8" D.I.P. Water Main (All Costs Included)	1,110	LF	\$100	\$111,000
1.02	Construct New Deep Drilled Well	7	EA	\$700,000	\$4,900,000
1.03	Power Supply to Wells	1	LS	\$299,950	\$299,950
1.04	Incidental Costs	1	LS	\$64,750	\$64,750
1.05	Mobilization and General Requirements (10%)	1	LS	\$692,595	\$692,595
CONSTRUCTION SUBTOTAL					\$7,618,545

DISTRIBUTION SYSTEM IMPROVEMENTS

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	20" D.I.P. Water Main (All Costs Included)	4,175	LF	\$240	\$1,002,000
1.01	16" D.I.P. Water Main (All Costs Included)	13,385	LF	\$195	\$2,610,075
1.02	12" D.I.P. Water Main (All Costs Included)	37,070	LF	\$145	\$5,375,150
1.03	8" D.I.P. Water Main (All Costs Included)	210	LF	\$100	\$21,000
1.04	6" D.I.P. Water Main (All Costs Included)	235	LF	\$75	\$17,625
1.05	Mobilization and General Requirements (10%)	1	LS	\$902,585	\$902,585
CONSTRUCTION SUBTOTAL					\$9,928,435

SANITARY SEWER

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	4" SDR-21 Class 200 PVC Force Main	3,115	LF	\$45	\$140,175
1.01	Backwash Storage Basin and Lift Station	1	LS	\$424,000	\$424,000
1.02	8" Gravity PVC Sewer Main	900	LF	\$80	\$72,000
1.03	4' I.D. Concrete Manholes	4	EA	\$3,500	\$14,000
1.04	Incidental Costs (5%)	1	LS	\$32,510	\$32,510
1.05	Mobilization and General Requirements (10%)	1	LS	\$68,269	\$68,269
CONSTRUCTION SUBTOTAL					\$750,954

NEW WATER TREATMENT PLANT

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	Water Treatment Building	1	LS	\$9,832,000	\$9,832,000
1.01	1 MG Ground Storage Tank	1	LS	\$782,000	\$782,000
1.02	Power Distribution/Generator	1	LS	\$770,000	\$770,000
1.03	Sitework	1	LS	\$1,032,000	\$1,032,000
1.04	Mobilization and General Requirements (10%)	1	LS	\$1,241,600	\$1,241,600
CONSTRUCTION SUBTOTAL					\$13,657,600

EXISTING WATER TREATMENT PLANT

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	Maintenance/Replacement Items	1	LS	\$842,000	\$842,000
1.01	Mobilization and General Requirements (10%)	1	LS	\$84,200	\$84,200
CONSTRUCTION SUBTOTAL					\$926,200

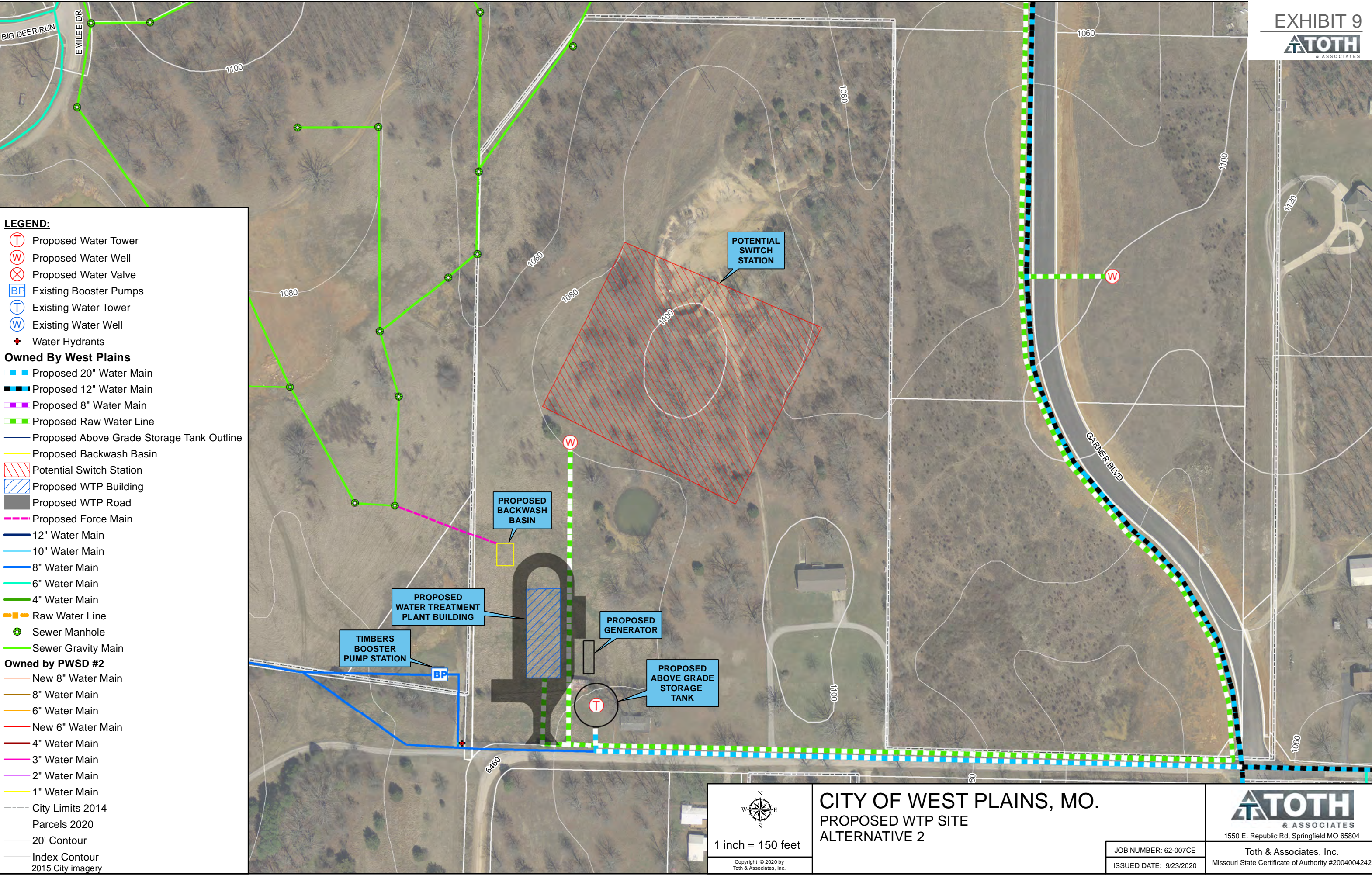
		CONSTRUCTION SUBTOTAL	\$32,881,734
		Construction Contingency (25%)	\$8,220,433
		CONSTRUCTION TOTAL	\$41,102,167

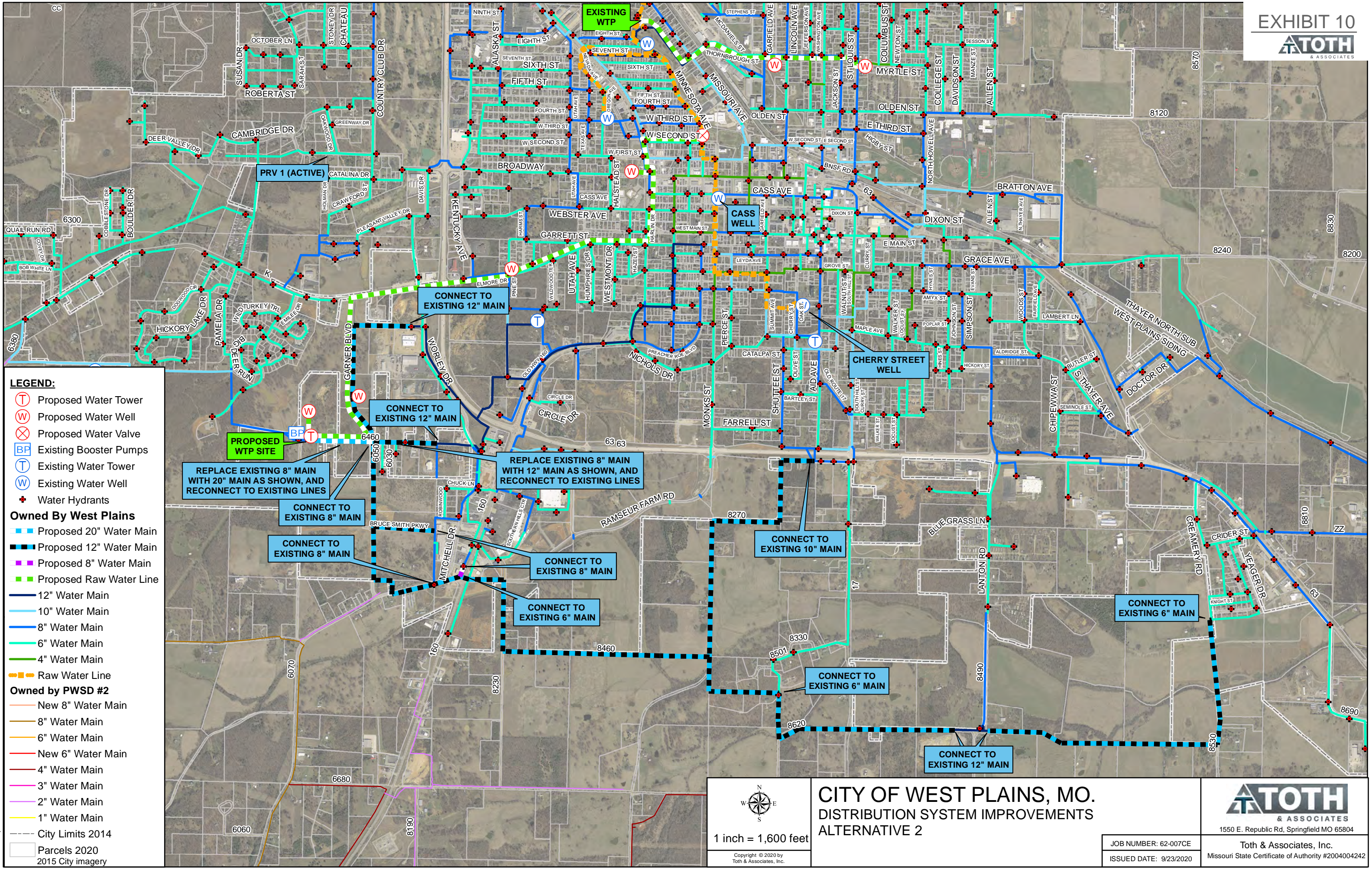
PROFESSIONAL SERVICES AND ADMINISTRATION

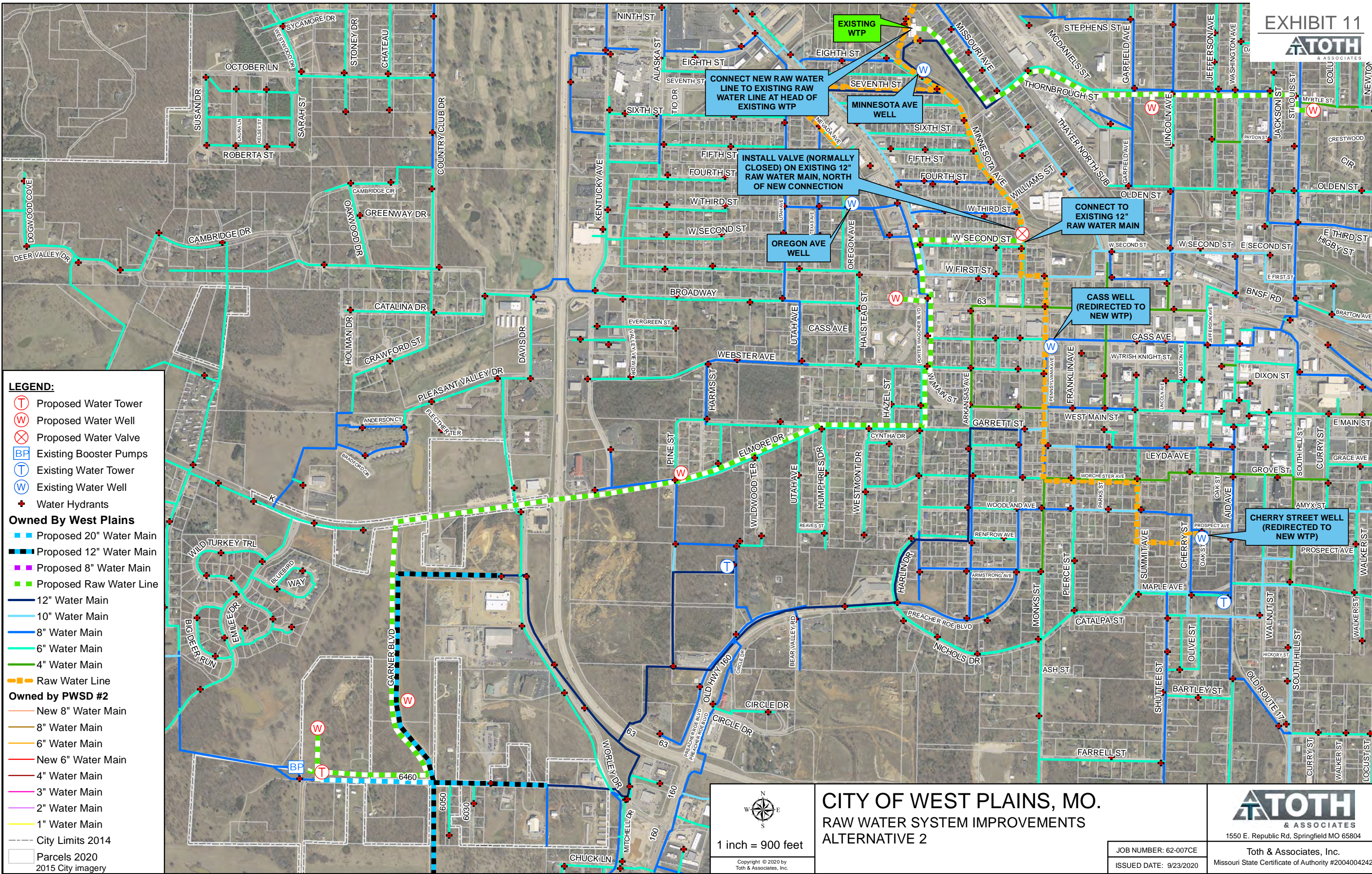
	Design and Construction Services	18%	\$7,398,390
	Legal and Administration	2%	\$822,043
	Easements and Land Acquisition	3%	\$548,938
PROFESSIONAL SERVICES AND ADMINISTRATION			\$8,769,371

TOTAL PROJECT COST **\$49,871,538****NOTICE:**

Opinion of Probable Construction Cost: The services, if any, of Engineer with respect to Opinion of Probable Construction Cost are to be made on the basis of Engineer's experience and qualifications and represent Engineer's best judgement as an experienced and qualified professional generally familiar with the construction industry. However, since Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractor's methods of determining prices, or over competitive bidding or market conditions, Engineer cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from Opinions of Probable Construction Cost prepared by Engineer.







LEGEND:

- Proposed Water Tower
- Proposed Water Well
- Proposed Water Valve
- Existing Booster Pumps
- Existing Water Tower
- Existing Water Well
- Water Hydrants

Owned By West Plains

- Proposed 20" Water Main
- Proposed 12" Water Main
- Proposed 8" Water Main
- Proposed Raw Water Line
- 12" Water Main
- 10" Water Main
- 8" Water Main
- 6" Water Main
- 4" Water Main
- Raw Water Line

Owned by PWS #2

- New 8" Water Main
- 8" Water Main
- 6" Water Main
- New 6" Water Main
- 4" Water Main
- 3" Water Main
- 2" Water Main
- 1" Water Main
- City Limits 2014
- Parcels 2020
- 2015 City imagery

1 inch = 900 feet

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CITY OF WEST PLAINS, MO.
RAW WATER SYSTEM IMPROVEMENTS
ALTERNATIVE 2

JOB NUMBER: 62-007CE
ISSUED DATE: 9/23/2020

TOTH
& ASSOCIATES
1550 E. Republic Rd, Springfield MO 65804

Toth & Associates, Inc.
Missouri State Certificate of Authority #2004004242

BOND LEVEL COST ESTIMATE

West Plains Water Treatment Plant Improvements

City of West Plains, Missouri

*** ALTERNATIVE 2 (NEW WTP FACILITY - SITE B) *****RAW WATER SYSTEM IMPROVEMENTS**

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	16" D.I.P. Water Main (All Costs Included)	18,340	LF	\$210	\$3,851,400
1.01	8" D.I.P. Water Main (All Costs Included)	1,200	LF	\$105	\$126,000
1.02	Construct New Deep Drilled Well	6	EA	\$700,000	\$4,200,000
1.03	Power Supply to Wells	1	LS	\$257,100	\$257,100
1.04	Incidental Costs	1	LS	\$55,500	\$55,500
1.05	Mobilization and General Requirements (10%)	1	LS	\$849,000	\$849,000
CONSTRUCTION SUBTOTAL					\$9,339,000

DISTRIBUTION SYSTEM IMPROVEMENTS

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	20" D.I.P. Water Main (All Costs Included)	1,375	LF	\$260	\$357,500
1.01	12" D.I.P. Water Main (All Costs Included)	46,080	LF	\$160	\$7,372,800
1.02	8" D.I.P. Water Main (All Costs Included)	210	LF	\$105	\$22,050
1.03	6" D.I.P. Water Main (All Costs Included)	235	LF	\$78	\$18,330
1.04	Mobilization and General Requirements (10%)	1	LS	\$777,068	\$777,068
CONSTRUCTION SUBTOTAL					\$8,547,748

SANITARY SEWER

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	4" SDR-21 Class 200 PVC Force Main	250	LF	\$45	\$11,250
1.01	Backwash Storage Basin and Lift Station	1	LS	\$424,000	\$424,000
1.02	Incidental Costs (5%)	1	LS	\$21,770	\$21,770
1.03	Mobilization and General Requirements (10%)	1	LS	\$44,577	\$44,577
CONSTRUCTION SUBTOTAL					\$490,347

NEW WATER TREATMENT PLANT

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	Water Treatment Building	1	LS	\$9,832,000	\$9,832,000
1.01	1 MG Ground Storage Tank	1	LS	\$782,000	\$782,000
1.02	Power Distribution/Generator	1	LS	\$770,000	\$770,000
1.03	Sitework	1	LS	\$858,000	\$858,000
1.04	Mobilization and General Requirements (10%)	1	LS	\$1,224,200	\$1,224,200
CONSTRUCTION SUBTOTAL					\$13,466,200

EXISTING WATER TREATMENT PLANT

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	Maintenance/Replacement Items	1	LS	\$842,000	\$842,000
1.01	Mobilization and General Requirements (10%)	1	LS	\$84,200	\$84,200
CONSTRUCTION SUBTOTAL					\$926,200

				CONSTRUCTION SUBTOTAL	\$32,769,495
				Construction Contingency (25%)	\$8,192,374
				CONSTRUCTION TOTAL	\$40,961,869

PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$7,373,136
	Legal and Administration	2%	\$819,237
	Easements and Land Acquisition	3%	\$551,313
PROFESSIONAL SERVICES AND ADMINISTRATION			\$8,743,687

TOTAL PROJECT COST	\$49,705,555
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NOTICE:

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LEGEND:

- Proposed Water Well
- Existing Booster Pumps
- Existing Water Tower
- Existing Water Well
- Water Hydrants

Owned By West Plains

- Proposed 20" Water Main
- Proposed 16" Water Main
- Proposed 12" Water Main
- Proposed 10" Water Main
- Proposed 8" Water Main
- Proposed Raw Water Line
- Proposed WTP Plant Expansion
- Proposed WTP Additional Drive
- 12" Water Main
- 10" Water Main
- 8" Water Main
- 6" Water Main
- 4" Water Main
- Raw Water Line

Owned by PWSD #2

- New 8" Water Main
- 8" Water Main
- 6" Water Main
- New 6" Water Main
- 4" Water Main
- 3" Water Main
- 2" Water Main
- 1" Water Main
- City Limits 2014
- Parcels 2020
- 20' Contour
- Index Contour
- 2015 City imagery

N
W
E
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1 inch = 100 feet

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CITY OF WEST PLAINS, MO.
EXISTING WTP SITE
ALTERNATIVE 3

JOB NUMBER: 62-007CE
ISSUED DATE: 9/23/2020

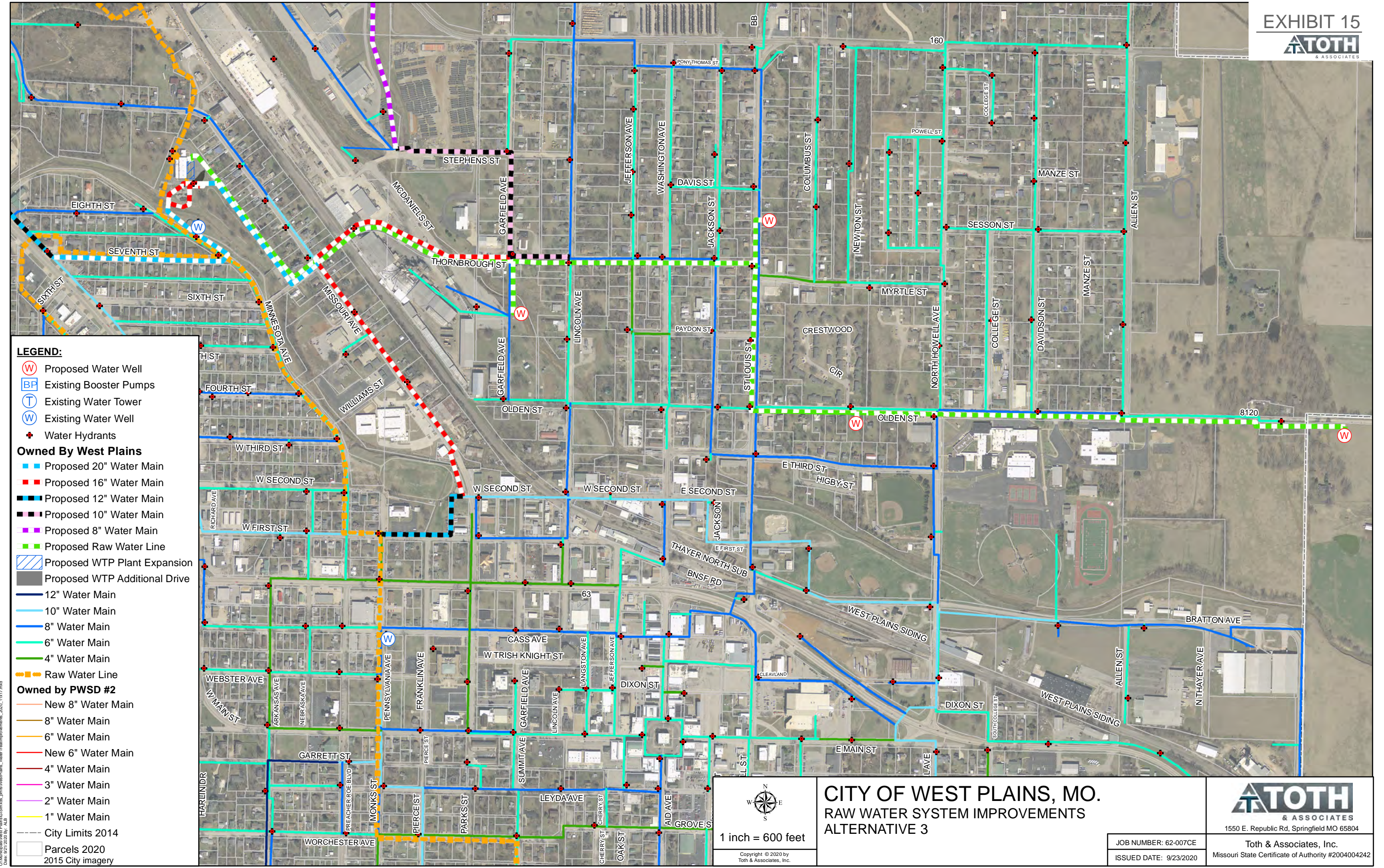
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Date: 9/23/2020 By: ALB





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Date: 9/23/2020 By: A.B.

BOND LEVEL COST ESTIMATE

West Plains Water Treatment Plant Improvements
City of West Plains, Missouri

*** ALTERNATIVE 3 (EXPAND EXISTING WTP) ***

RAW WATER SYSTEM IMPROVEMENTS

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	16" D.I.P. Water Main	10,460	LF	\$190	\$1,987,400
1.01	8" D.I.P. Water Main	860	LF	\$95	\$81,700
1.02	Construct New Deep Drilled Well	4	EA	\$700,000	\$2,800,000
1.03	Power Supply to Wells	1	LS	\$171,400	\$171,400
1.04	Incidental Costs	1	LS	\$37,000	\$37,000
1.05	Mobilization and General Requirements (10%)	1	LS	\$507,750	\$507,750
CONSTRUCTION SUBTOTAL					\$5,585,250

DISTRIBUTION SYSTEM IMPROVEMENTS

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	20" D.I.P. Water Main	3,065	LF	\$235	\$720,275
1.01	16" D.I.P. Water Main	4,570	LF	\$190	\$868,300
1.02	12" D.I.P. Water Main	36,045	LF	\$140	\$5,046,300
1.03	10" D.I.P. Water Main	2,060	LF	\$120	\$247,200
1.04	8" D.I.P. Water Main	1,630	LF	\$95	\$154,850
1.05	6" D.I.P. Water Main	235	LF	\$70	\$16,450
1.06	Mobilization and General Requirements (10%)	1	LS	\$705,338	\$705,338
CONSTRUCTION SUBTOTAL					\$7,758,713

SANITARY SEWER

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	4" SDR-21 Class 200 PVC Force Main	2,000	LF	\$45	\$90,000
1.01	8" Gravity PVC Sewer Main	750	LF	\$80	\$60,000
1.02	4' I.D. Concrete Manholes	4	EA	\$3,500	\$14,000
1.03	Incidental Costs (5%)	1	LS	\$8,200	\$8,200
1.04	Mobilization and General Requirements (10%)	1	LS	\$17,220	\$17,220
CONSTRUCTION SUBTOTAL					\$189,420

EXISTING WATER TREATMENT PLANT

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	Maintenance/Replacement Items	1	LS	\$842,000	\$842,000
1.01	Water Treatment Building Expansion	1	LS	\$7,487,000	\$7,487,000
1.02	Power Distribution/Generator	1	LS	\$605,000	\$605,000
1.03	Sitework	1	LS	\$340,000	\$340,000
1.04	Below Grade Clearwell and High Service	1	LS	\$1,096,000	\$1,096,000
1.05	Mobilization and General Requirements (10%)	1	LS	\$1,037,000	\$1,037,000
CONSTRUCTION SUBTOTAL					\$11,407,000

	CONSTRUCTION SUBTOTAL	\$24,940,383
	Construction Contingency (25%)	\$6,235,096
	CONSTRUCTION TOTAL	\$31,175,478

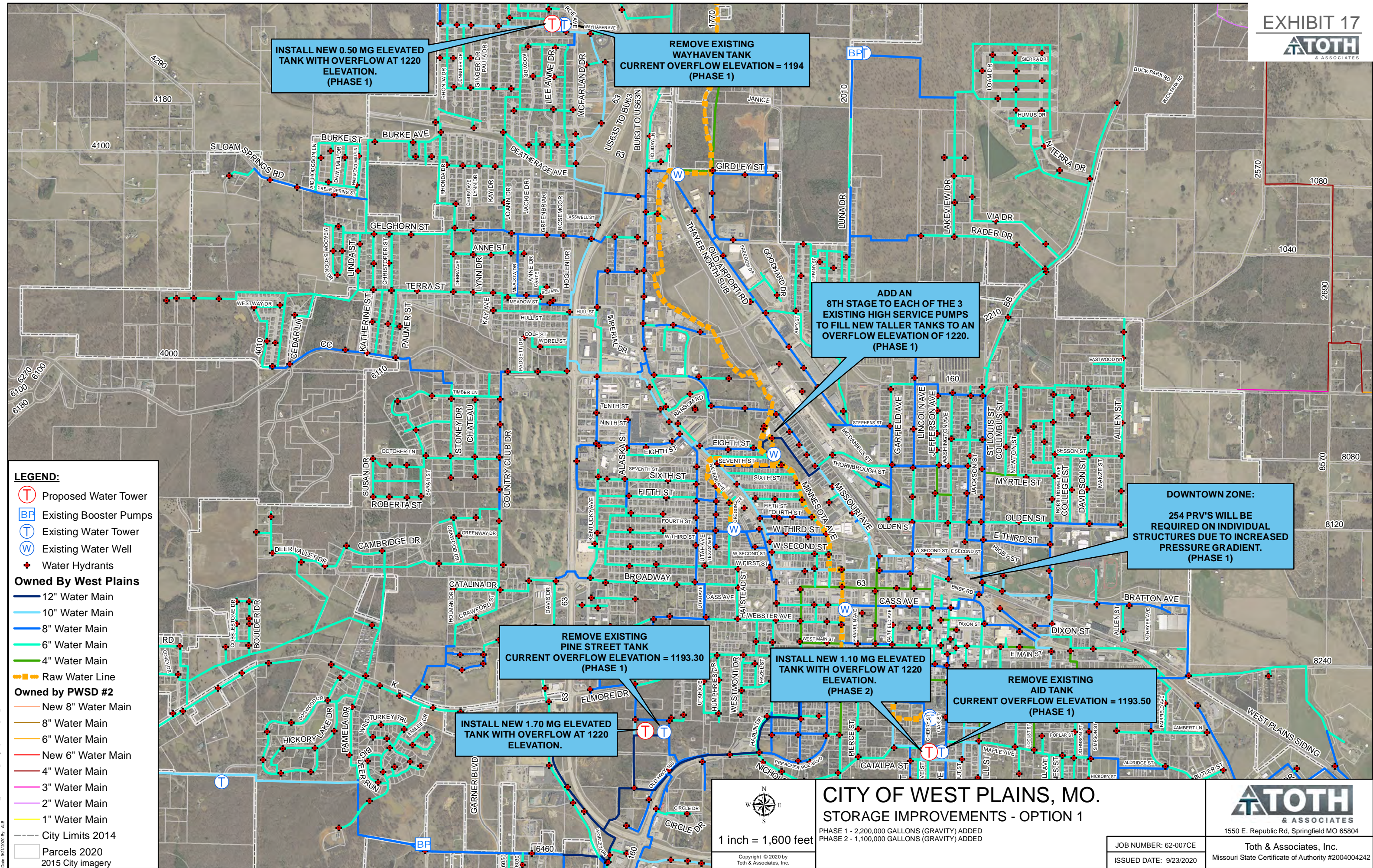
PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$5,611,586
	Legal and Administration	2%	\$623,510
	Easements and Land Acquisition	3%	\$406,001
PROFESSIONAL SERVICES AND ADMINISTRATION			\$6,641,097

TOTAL PROJECT COST **\$37,816,575**

NOTICE:

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STORAGE IMPROVEMENTS

West Plains Water Storage Improvements

City of West Plains, Missouri

OPTION 1, PHASE 1 COST**DISTRIBUTION SYSTEM IMPROVEMENTS**

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	Add Stage to High Service Pump	3	EA	\$50,000	\$150,000
1.01	10" D.I.P. Water Main	540	LF	\$120	\$64,800
1.02	Connection to Existing Water Main	2	EA	\$10,000	\$20,000
1.03	Re-Connection of Existing Water Service	36	EA	\$1,500	\$54,000
1.04	10" Isolation Valves	4	EA	\$2,800	\$11,200
1.05	PRV's	254	EA	\$500	\$127,000
1.06	1.70MG CET (Height: 84ft, Head: 30ft)	1	EA	\$4,900,000	\$4,900,000
1.07	0.50MG CET (Height: 115ft, Head: 30ft)	1	EA	\$1,700,000	\$1,700,000
1.08	Remove Existing Tank & Assoc. Infrastructure	3	EA	\$50,000	\$150,000
1.09	Incidental Costs (5%)	1	LS	\$358,850	\$358,850
1.10	Mobilization and General Requirements (10%)	1	LS	\$753,585	\$753,585
CONSTRUCTION SUBTOTAL					\$8,139,435

		CONSTRUCTION SUBTOTAL	\$8,139,435
		Construction Contingency (25%)	\$2,034,859
		CONSTRUCTION TOTAL	\$10,174,294

PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$1,831,373
	Legal and Administration	2%	\$203,486
	Easements and Land Acquisition	3%	\$305,229
PROFESSIONAL SERVICES AND ADMINISTRATION			\$2,340,088

TOTAL PROJECT COST **\$12,514,381**

NOTICE:

Opinion of Probable Construction Cost: The services, if any, of Engineer with respect to Opinion of Probable Construction Cost are to be made on the basis of Engineer's experience and qualifications and represent Engineer's best judgement as an experienced and qualified professional generally familiar with the construction industry. However, since Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractor's methods of determining prices, or over competitive bidding or market conditions, Engineer cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from Opinions of Probable Construction Cost prepared by Engineer.

STORAGE IMPROVEMENTS

West Plains Water Storage Improvements

City of West Plains, Missouri

OPTION 1, PHASE 2 COST**DISTRIBUTION SYSTEM IMPROVEMENTS**

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	10" D.I.P. Water Main	270	LF	\$120	\$32,400
1.01	Connection to Existing Water Main	1	EA	\$10,000	\$10,000
1.02	10" Isolation Valves	2	EA	\$2,800	\$5,600
1.03	1.10MG CET (Height: 101ft, Head: 30ft)	1	EA	\$3,365,000	\$3,365,000
1.04	Incidental Costs (5%)	1	LS	\$170,650	\$170,650
1.05	Mobilization and General Requirements (10%)	1	LS	\$358,365	\$358,365
CONSTRUCTION SUBTOTAL					\$3,899,615

		CONSTRUCTION SUBTOTAL	\$3,899,615
		Construction Contingency (25%)	\$974,904
		CONSTRUCTION TOTAL	\$4,874,519

PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$877,413
	Legal and Administration	2%	\$97,490
	Easements and Land Acquisition	3%	\$146,236
PROFESSIONAL SERVICES AND ADMINISTRATION			\$1,121,139

TOTAL PROJECT COST **\$5,995,658**

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STORAGE IMPROVEMENTS

West Plains Water Storage Improvements

City of West Plains, Missouri

OPTION 2, PHASE 1 COST**DISTRIBUTION SYSTEM IMPROVEMENTS**

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	20" D.I.P. Water Main	196	LF	\$260	\$50,960
1.01	10" D.I.P. Water Main	1,965	LF	\$130	\$255,450
1.02	8" D.I.P. Water Main	25,632	LF	\$105	\$2,691,360
1.03	Connection to Existing Water Main	4	EA	\$10,000	\$40,000
1.04	Re-Connection of Existing Water Service	2	EA	\$1,500	\$3,000
1.05	Asphalt Road Replacement	100	SF	\$60	\$6,000
1.06	10" D.I.P. Water Main Road Bore and Casing	48	LF	\$815	\$39,120
1.07	8" D.I.P. Water Main Road Bore and Casing	360	LF	\$540	\$194,400
1.08	20" Isolation Valves	4	EA	\$10,000	\$40,000
1.09	10" Isolation Valves	3	EA	\$2,800	\$7,860
1.10	8" Isolation Valves	38	EA	\$1,700	\$64,600
1.11	8" PRV	2	EA	\$3,000	\$6,000
1.12	Fire Hydrant Assembly	41	EA	\$3,500	\$142,825
1.13	20" Altitude Valve	2	EA	\$15,000	\$30,000
1.14	20" Check Valve	2	EA	\$13,500	\$27,000
1.15	0.150MG CET (Height: 133.5ft, Head: 19ft)	1	EA	\$1,375,000	\$1,375,000
1.16	0.150MG CET (Height: 95.5ft, Head: 19ft)	1	EA	\$1,440,000	\$1,440,000
1.17	Increase Impeller Dia. @ Wayhaven BP	1	LS	\$5,000	\$5,000
1.18	Increase Impeller Dia. @ Timbers BP	1	LS	\$5,000	\$5,000
1.19	Incidental Costs (5%)	1	LS	\$321,179	\$321,179
1.20	Mobilization and General Requirements (10%)	1	LS	\$674,475	\$674,475
CONSTRUCTION SUBTOTAL					\$7,419,229

		CONSTRUCTION SUBTOTAL	\$7,419,229
		Construction Contingency (25%)	\$1,854,807
		CONSTRUCTION TOTAL	\$9,274,036

PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$1,669,327
	Legal and Administration	2%	\$185,481
	Easements and Land Acquisition	3%	\$278,221
PROFESSIONAL SERVICES AND ADMINISTRATION			\$2,133,028

TOTAL PROJECT COST **\$11,407,065**

NOTICE:

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STORAGE IMPROVEMENTS

West Plains Water Storage Improvements

City of West Plains, Missouri

OPTION 2, PHASE 2 COST**DISTRIBUTION SYSTEM IMPROVEMENTS**

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	8" D.I.P. Water Main	430	LF	\$95	\$40,850
1.01	Connection to Existing Water Main	2	EA	\$10,000	\$20,000
1.02	8" Isolation Valves	2	EA	\$1,700	\$3,400
1.03	8" PRV	1	EA	\$3,000	\$3,000
1.04	Booster Pump Station	1	LS	\$600,000	\$600,000
1.05	1.6MG CET (Height: 98ft, Head: 30ft)	1	EA	\$4,400,000	\$4,400,000
1.06	Incidental Costs (5%)	1	LS	\$253,363	\$253,363
1.07	Mobilization and General Requirements (10%)	1	LS	\$532,061	\$532,061
CONSTRUCTION SUBTOTAL					\$5,852,674

		CONSTRUCTION SUBTOTAL	\$5,852,674
		Construction Contingency (25%)	\$1,463,168
		CONSTRUCTION TOTAL	\$7,315,842

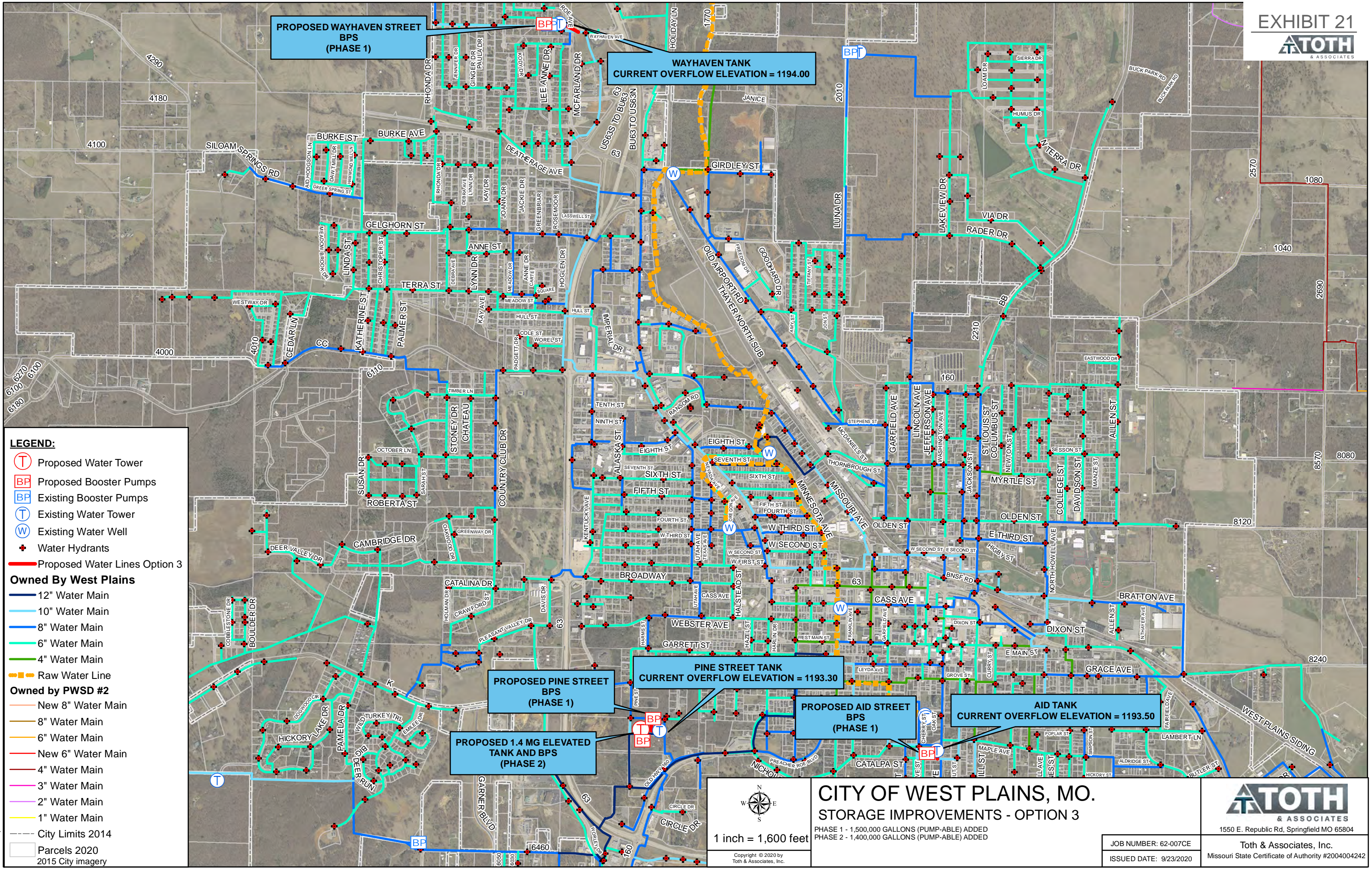
PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$1,316,852
	Legal and Administration	2%	\$146,317
	Easements and Land Acquisition	3%	\$219,475
PROFESSIONAL SERVICES AND ADMINISTRATION			\$1,682,644

TOTAL PROJECT COST **\$8,998,486**

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STORAGE IMPROVEMENTS

West Plains Water Storage Improvements

City of West Plains, Missouri

OPTION 3, PHASE 1 COST**DISTRIBUTION SYSTEM IMPROVEMENTS**

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	6" D.I.P. Water Main	1,066	LF	\$70	\$74,620
1.01	Connection to Existing Water Main	3	EA	\$10,000	\$30,000
1.02	Connection to Existing Tank	3	EA	\$10,000	\$30,000
1.03	Asphalt Road Replacement	25	SF	\$60	\$1,500
1.04	6" D.I.P. Water Main Road Bore and Casing	24	LF	\$1,075	\$25,800
1.05	25HP Triplex Booster Pump Station (Aid)	1	LS	\$600,000	\$600,000
1.06	25HP Triplex Booster Pump Station (Pine)	1	LS	\$600,000	\$600,000
1.07	25HP Triplex Booster Pump Station (Wayhaven)	1	LS	\$600,000	\$600,000
1.08	Incidental Costs (5%)	1	LS	\$98,096	\$98,096
1.09	Mobilization and General Requirements (10%)	1	LS	\$206,002	\$206,002
CONSTRUCTION SUBTOTAL					\$2,266,018

		CONSTRUCTION SUBTOTAL	\$2,266,018
		Construction Contingency (25%)	\$566,504
		CONSTRUCTION TOTAL	\$2,832,522

PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$509,854
	Legal and Administration	2%	\$56,650
	Easements and Land Acquisition	3%	\$84,976
PROFESSIONAL SERVICES AND ADMINISTRATION			\$651,480

TOTAL PROJECT COST **\$3,484,002**

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STORAGE IMPROVEMENTS

West Plains Water Storage Improvements

City of West Plains, Missouri

OPTION 3, PHASE 2 COST***DISTRIBUTION SYSTEM IMPROVEMENTS***

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	8" D.I.P. Water Main	430	LF	\$95	\$40,850
1.01	Connection to Existing Water Main	2	EA	\$10,000	\$20,000
1.02	8" Isolation Valves	2	EA	\$2,000	\$4,000
1.03	25HP Triplex Booster Pump Station	1	EA	\$600,000	\$600,000
1.04	1.4MG CET (Height: 70ft, Head: 30ft)	1	EA	\$4,000,000	\$4,000,000
1.05	Incidental Costs (5%)	1	LS	\$233,243	\$233,243
1.06	Mobilization and General Requirements (10%)	1	LS	\$489,809	\$489,809
CONSTRUCTION SUBTOTAL					\$5,387,902

		CONSTRUCTION SUBTOTAL	\$5,387,902
		Construction Contingency (25%)	\$1,346,975
		CONSTRUCTION TOTAL	\$6,734,877

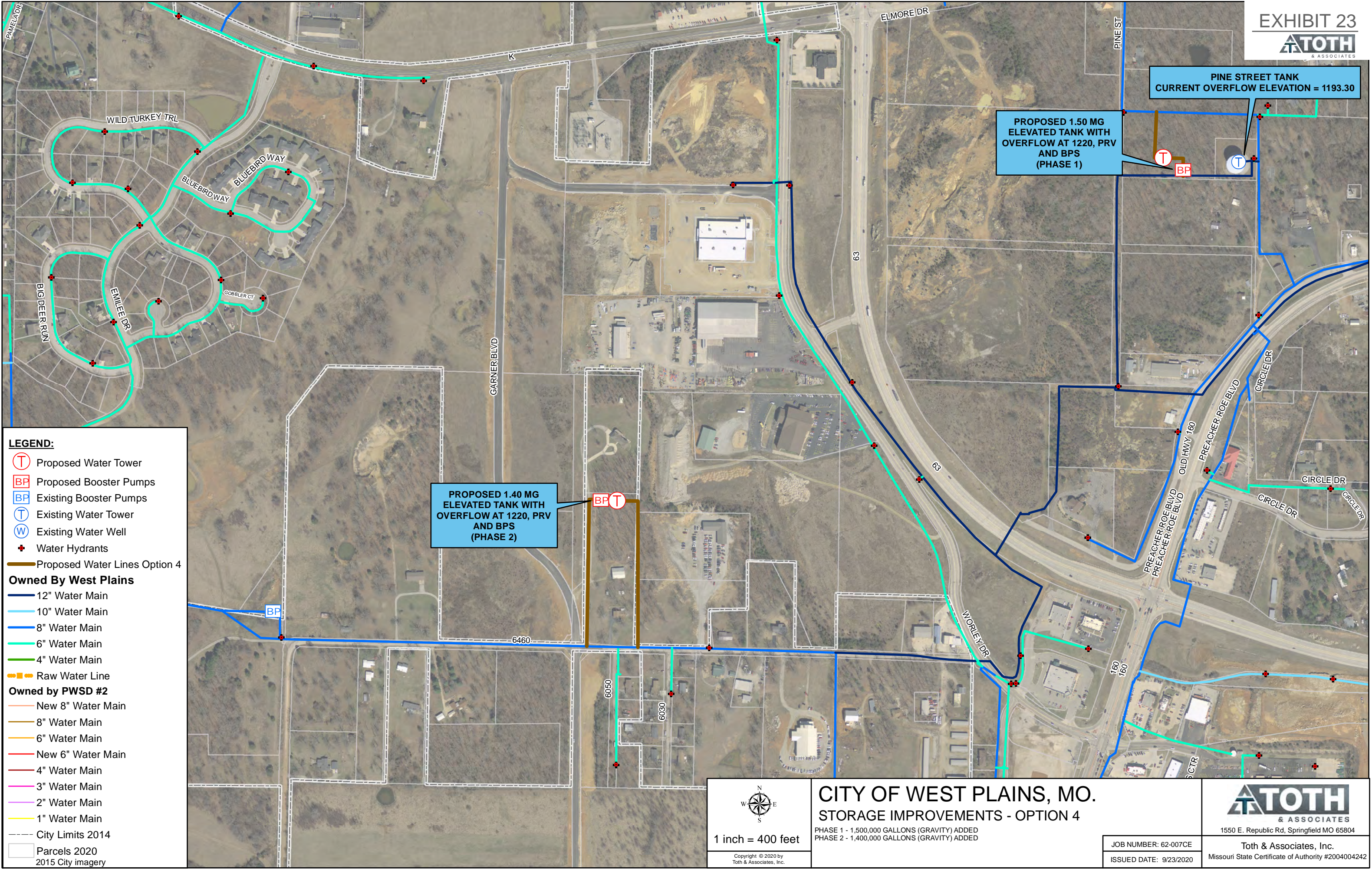
PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$1,212,278
	Legal and Administration	2%	\$134,698
	Easements and Land Acquisition	3%	\$202,046
PROFESSIONAL SERVICES AND ADMINISTRATION			\$1,549,022

TOTAL PROJECT COST **\$8,283,899**

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STORAGE IMPROVEMENTS

West Plains Water Storage Improvements

City of West Plains, Missouri

OPTION 4, PHASE 1 COST**DISTRIBUTION SYSTEM IMPROVEMENTS**

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	8" D.I.P. Water Main	263	LF	\$95	\$24,985
1.01	6" D.I.P. Water Main	182	LF	\$70	\$12,740
1.02	Connection to Existing Water Main	2	EA	\$10,000	\$20,000
1.03	8" Isolation Valves	2	EA	\$1,700	\$3,400
1.04	1.5MG CET (Height: 98ft, Head: 30ft)	1	EA	\$4,250,000	\$4,250,000
1.05	25 HP Triplex Booster Pump Station	1	EA	\$600,000	\$600,000
1.06	8" PRV	1	EA	\$3,000	\$3,000
1.07	Incidental Costs (5%)	1	LS	\$245,706	\$245,706
1.08	Mobilization and General Requirements (10%)	1	LS	\$515,983	\$515,983
CONSTRUCTION SUBTOTAL					\$5,675,814

		CONSTRUCTION SUBTOTAL	\$5,675,814
		Construction Contingency (25%)	\$1,418,954
		CONSTRUCTION TOTAL	\$7,094,768

PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$1,277,058
	Legal and Administration	2%	\$141,895
	Easements and Land Acquisition	3%	\$212,843
PROFESSIONAL SERVICES AND ADMINISTRATION			\$1,631,797

TOTAL PROJECT COST **\$8,726,565**

NOTICE:

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STORAGE IMPROVEMENTS

West Plains Water Storage Improvements

City of West Plains, Missouri

OPTION 4, PHASE 2 COST**DISTRIBUTION SYSTEM IMPROVEMENTS**

Item	Description	Quantity	Units	Unit Price	Total Cost
1.00	16" D.I.P. Water Main	785	LF	\$190	\$149,150
1.01	10" D.I.P. Water Main	735	LF	\$120	\$88,200
1.02	Connection to Existing Water Main	2	EA	\$10,000	\$20,000
1.03	10" Isolation Valves	2	EA	\$2,800	\$5,600
1.04	1.4MG CET (Height: 98ft, Head: 30ft)	1	EA	\$4,200,000	\$4,200,000
1.05	25 HP Triplex Booster Pump Station	1	EA	\$600,000	\$600,000
1.06	10" PRV	1	EA	\$3,500	\$3,500
1.07	Fire Hydrant Assembly	2	EA	\$3,500	\$7,000
1.08	Incidental Costs (5%)	1	LS	\$253,673	\$253,673
1.09	Mobilization and General Requirements (10%)	1	LS	\$532,712	\$532,712
CONSTRUCTION SUBTOTAL					\$5,859,835

		CONSTRUCTION SUBTOTAL	\$5,859,835
		Construction Contingency (25%)	\$1,464,959
		CONSTRUCTION TOTAL	\$7,324,793

PROFESSIONAL SERVICES AND ADMINISTRATION

	Design and Construction Services	18%	\$1,318,463
	Legal and Administration	2%	\$146,496
	Easements and Land Acquisition	3%	\$219,744
PROFESSIONAL SERVICES AND ADMINISTRATION			\$1,684,702

TOTAL PROJECT COST **\$9,009,496**

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WATER TREATMENT IMPROVEMENTS

Bond Level Cost Submittal - Summary
City of West Plains, Missouri

ALTERNATIVE 1	
CONCEPT: NEW FACILITY ON 32-ACRE SITE SOUTH OF CITY	
<u>CONSTRUCTION COSTS:</u>	
Raw Water System	\$7,618,545
Distribution System	\$9,928,435
Sanitary Sewer System	\$750,954
New Water Treatment Plant	\$13,657,600
Existing Water Treatment Plant	\$926,200
CONSTRUCTION SUBTOTAL	\$32,881,734
Construction Contingency (25%)	\$8,220,433
CONSTRUCTION TOTAL	\$41,102,167
<u>PROFESSIONAL SERVICES AND ADMIN:</u>	
Design and Construction Services (18%)	\$7,398,390
Legal and Administration (2%)	\$822,043
Easements and Land Acquisition (3%)	\$548,938
PROFESSIONAL SERVICES AND ADMIN TOTAL	\$8,769,371
TOTAL PROJECT COST	\$49,871,540

ALTERNATIVE 2	
CONCEPT: NEW FACILITY ON 22-ACRE SITE NEAR TIMBERS BPS	
<u>CONSTRUCTION COSTS:</u>	
Raw Water System	\$9,339,000
Distribution System	\$8,547,748
Sanitary Sewer System	\$490,347
New Water Treatment Plant	\$13,466,200
Existing Water Treatment Plant	\$926,200
CONSTRUCTION SUBTOTAL	\$32,769,495
Construction Contingency (25%)	\$8,192,374
CONSTRUCTION TOTAL	\$40,961,869
<u>PROFESSIONAL SERVICES AND ADMIN:</u>	
Design and Construction Services (18%)	\$7,373,136
Legal and Administration (2%)	\$819,237
Easements and Land Acquisition (3%)	\$551,313
PROFESSIONAL SERVICES AND ADMINISTRATION	\$8,743,687
TOTAL PROJECT COST	\$49,705,560

ALTERNATIVE 3	
CONCEPT: EXPAND EXISTING FACILITY	
<u>CONSTRUCTION COSTS:</u>	
Raw Water System	\$5,585,250
Distribution System	\$7,758,713
Sanitary Sewer System	\$189,420
New Water Treatment Plant	\$0
Existing Water Treatment Plant	\$11,407,000
CONSTRUCTION SUBTOTAL	\$24,940,383
Construction Contingency (25%)	\$6,235,096
CONSTRUCTION TOTAL	\$31,175,478
<u>PROFESSIONAL SERVICES AND ADMIN:</u>	
Design and Construction Services (18%)	\$5,611,586
Legal and Administration (2%)	\$623,510
Easements and Land Acquisition (3%)	\$406,001
PROFESSIONAL SERVICES AND ADMINISTRATION	\$6,641,097
TOTAL PROJECT COST	\$37,816,580



WATER STORAGE IMPROVEMENTS

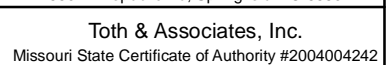
Bond Level Cost Submittal - Summary
City of West Plains, Missouri

OPTION 1	
CONCEPT: NEW TALLER TOWERS IN DOWNTOWN ZONE	
<u>CONSTRUCTION COSTS:</u>	
Phase 1 Improvements	\$8,139,435
Phase 2 Improvements	\$3,899,615
CONSTRUCTION SUBTOTAL	\$12,039,050
Construction Contingency (25%)	\$3,009,763
CONSTRUCTION TOTAL	\$15,048,813
<u>PROFESSIONAL SERVICES AND ADMIN:</u>	
Design and Construction Services (18%)	\$2,708,786
Legal and Administration (2%)	\$300,976
Easements and Land Acquisition (3%)	\$451,464
PROF. SERVICES AND ADMIN TOTAL	\$3,461,227
TOTAL PROJECT COST	\$18,510,040

OPTION 2	
CONCEPT: CONNECT TO HIGHWAY K & 14 ZONES	
<u>CONSTRUCTION COSTS:</u>	
Phase 1 Improvements	\$7,419,229
Phase 2 Improvements	\$5,852,674
CONSTRUCTION SUBTOTAL	\$13,271,903
Construction Contingency (25%)	\$3,317,976
CONSTRUCTION TOTAL	\$16,589,879
<u>PROFESSIONAL SERVICES AND ADMIN:</u>	
Design and Construction Services (18%)	\$2,986,178
Legal and Administration (2%)	\$331,798
Easements and Land Acquisition (3%)	\$497,696
PROF. SERVICES AND ADMIN TOTAL	\$3,815,672
TOTAL PROJECT COST	\$20,405,560

OPTION 3	
CONCEPT: BOOSTER PUMPS	
<u>CONSTRUCTION COSTS:</u>	
Phase 1 Improvements	\$2,266,018
Phase 2 Improvements	\$5,387,902
CONSTRUCTION SUBTOTAL	\$7,653,919
Construction Contingency (25%)	\$1,913,480
CONSTRUCTION TOTAL	\$9,567,399
<u>PROFESSIONAL SERVICES AND ADMIN:</u>	
Design and Construction Services (18%)	\$1,722,132
Legal and Administration (2%)	\$191,348
Easements and Land Acquisition (3%)	\$287,022
PROF. SERVICES AND ADMIN TOTAL	\$2,200,502
TOTAL PROJECT COST	\$11,767,910

OPTION 4	
CONCEPT: NEW TALLER TOWER WITH PRVs	
<u>CONSTRUCTION COSTS:</u>	
Phase 1 Improvements	\$5,675,814
Phase 2 Improvements	\$5,859,835
CONSTRUCTION SUBTOTAL	\$11,535,649
Construction Contingency (25%)	\$2,883,912
CONSTRUCTION TOTAL	\$14,419,561
<u>PROFESSIONAL SERVICES AND ADMIN:</u>	
Design and Construction Services (18%)	\$2,595,521
Legal and Administration (2%)	\$288,391
Easements and Land Acquisition (3%)	\$432,587
PROF. SERVICES AND ADMIN TOTAL	\$3,316,499
TOTAL PROJECT COST	\$17,736,070





RECOMMENDED TREATMENT AND STORAGE IMPROVEMENTS

Bond Level Cost Submittal - Summary
City of West Plains, Missouri

ALTERNATIVE 3	
CONCEPT: EXPAND EXISTING FACILITY	
CONSTRUCTION COSTS:	
Raw Water System	\$5,585,250
Distribution System	\$2,729,073
Sanitary Sewer System	\$189,420
New Water Treatment Plant	\$0
Existing Water Treatment Plant	\$11,407,000
CONSTRUCTION SUBTOTAL	\$19,910,743
Construction Contingency (25%)	\$4,977,686
CONSTRUCTION TOTAL	\$24,888,428
PROFESSIONAL SERVICES AND ADMIN:	
Design and Construction Services (18%)	\$4,479,917
Legal and Administration (2%)	\$497,769
Easements and Land Acquisition (3%)	\$255,112
PROFESSIONAL SERVICES AND ADMINISTRATION	\$5,232,798
TREATMENT PROJECT COST	\$30,121,230

OPTION 1	
CONCEPT: NEW TALLER TOWERS IN DOWNTOWN ZONE	
CONSTRUCTION COSTS:	
Phase 1 Improvements	\$8,139,435
CONSTRUCTION SUBTOTAL	\$8,139,435
Construction Contingency (25%)	\$2,034,859
CONSTRUCTION TOTAL	\$10,174,294
PROFESSIONAL SERVICES AND ADMIN:	
Design and Construction Services (18%)	\$1,831,373
Legal and Administration (2%)	\$203,486
Easements and Land Acquisition (3%)	\$305,229
PROFESSIONAL SERVICES AND ADMIN TOTAL	\$2,340,088
STORAGE PROJECT COST	\$12,514,390

COMBINED PROJECT COST
\$42,635,620

