



MEMORANDUM

TO: Mark Sollenberger, Water and Wastewater Supervisor, City of Craig

FROM: Chad Paulson, PE

DATE: September 18, 2020

SUBJECT: 2021 Water Line Replacements

Three water line segments have been identified for replacement in 2021. These segments have very high replacement priority due to their repair history and the increase of failures in 2020. Engineer's Opinion of Probable Cost for each segment are attached.

Baker Street, from Ashley to Conner

This segment is approximately 1360 feet long with 16 services. The existing line is 8" Cast Iron. Valves at the tie-ins will be replaced as will the single fire hydrant assembly lateral. Service taps are schedule for replacement to bring up to current City standards, from tap through curb stop at the edge of ROW. Asphalt replacement will be limited to disturbed areas only. Construction bid plans are being prepared.



Stout Street, from 8th to 9th

This segment is approximately 680 feet long with 16 services. The existing line is 4" Cast Iron. Valves at the tie-ins will be replaced as will the single fire hydrant assembly lateral. Service taps are schedule for replacement to bring up to current City standards, from tap through curb stop at the edge of ROW. Asphalt replacement will be limited to disturbed areas only. Construction bid plans are being prepared



Texas Avenue, from 8th to County Club

This segment is approximately 1350 feet long with 11 services. The existing line is 6" Cast Iron. Valves at the tie-ins will be replaced as will the two fire hydrant assembly laterals. Service taps are schedule for replacement to bring up to current City standards, from tap through curb stop at the edge of ROW. Asphalt replacement will be limited to disturbed areas only. Design survey of this segment is scheduled.



Water Line Replacements - Estimated Project Costs

Prepared by: Chad Paulson/Casey Hinkson

Date: September 18, 2020

Baker Drive: Replae Ex. 8" CIP with 8" C-900

| | | | | |
|---|------|----|--------------------------|---------------------|
| Mobilization | 1 | LS | \$15,000.00 | \$15,000.00 |
| Construction Survey | 1 | LS | \$2,500.00 | \$2,500.00 |
| Traffic Control | 1 | LS | \$5,000.00 | \$5,000.00 |
| Remove and Replace 8" CIP with 8" PVC C-900 | 1360 | LF | \$47.00 | \$63,920.00 |
| 8" Gate Valve | 6 | EA | \$2,100.00 | \$12,600.00 |
| 6" Gate Valve | 1 | EA | \$1,500.00 | \$1,500.00 |
| 6" PVC C-900 | 50 | LF | \$44.00 | \$2,200.00 |
| Fire Hydrant Assembly | 1 | EA | \$5,800.00 | \$5,800.00 |
| Water Service Reconnection w/ Curb Stop | 16 | EA | \$1,900.00 | \$30,400.00 |
| Bedding Material | 627 | CY | \$35.00 | \$21,945.00 |
| Asphalt Milling | 940 | SY | \$5.50 | \$5,170.00 |
| Asphalt Replacement | 940 | SY | \$27.00 | \$25,380.00 |
| Demo Existing Curb and Gutter | 170 | LF | \$10.00 | \$1,700.00 |
| Curb and Gutter Replacement | 170 | LF | \$40.00 | \$6,800.00 |
| Connections to Existing Water System | 2 | EA | \$1,850.00 | \$3,700.00 |
| Landscape Restoration | 1 | LS | \$35,000.00 | \$35,000.00 |
| | | | Constr. Sub Total | \$223,615.00 |

| Other Project Costs | Percentage | | Cost |
|------------------------------|-------------------|--|--------------------|
| Design Engineering | 10.0% | | \$22,361.50 |
| SUE Engineering | 6.0% | | \$13,416.90 |
| Bid and Construction Support | 2.5% | | \$5,590.38 |
| CDPHE Permitting | 0.0% | | \$0.00 |
| Construction Management | 0.0% | | \$0.00 |
| Other Project Costs | | | \$41,368.78 |

Total Cost **\$264,983.78**

AACE Class 4 Construction Cost Ranges =

| | |
|-------------|---------------------|
| -15% | \$225,236.21 |
| 30% | \$344,478.91 |

Notes: Costs based on 2018 Bid Tab for similar project in Paonia, CO; scaled up 10% to reflect current construction market.

Assumptions:

1. Trenches 6' wide and 6' deep
2. Each connection to ex. system requires 3 new valves
3. Fire hydrants are 6"
4. ~100 ft of pipe/services can be completed in a day
5. Imported bedding material is 2' deep
6. Each fire hydrant trench damages 10' of curb and gutter; each service damages 10' C&G
7. Ex. system tied into is 8" pipe
8. Assume new water main can be offset and constructed with appropriate separation and w/o removing C&G

Water Line Replacements - Estimated Project Costs

Prepared by: Chad Paulson/Casey Hinkson

Date: September 18, 2020

Stout St: Replae Ex. 4" CIP with 8" C-900

| | | | | |
|---|-----|----|-------------|---------------------|
| Mobilization | 1 | LS | \$15,000.00 | \$15,000.00 |
| Construction Survey | 1 | LS | \$2,500.00 | \$2,500.00 |
| Traffic Control | 1 | LS | \$5,000.00 | \$5,000.00 |
| Remove and Replace 4" CIP with 8" PVC C-900 | 680 | LF | \$47.00 | \$31,960.00 |
| 4" Gate Valve | 2 | EA | \$1,100.00 | \$2,200.00 |
| 8" Gate Valve | 4 | EA | \$2,100.00 | \$8,400.00 |
| 6" Gate Valve | 1 | EA | \$1,500.00 | \$1,500.00 |
| 6" PVC C-900 | 30 | LF | \$44.00 | \$1,320.00 |
| Fire Hydrant Assembly | 1 | EA | \$5,800.00 | \$5,800.00 |
| Water Service Reconnection w/ Curb Stop | 17 | EA | \$1,900.00 | \$32,300.00 |
| Bedding Material | 316 | CY | \$35.00 | \$11,060.00 |
| Asphalt Milling | 474 | SY | \$5.50 | \$2,607.00 |
| Asphalt Replacement | 474 | SY | \$27.00 | \$12,798.00 |
| Demo Existing Curb and Gutter | 180 | LF | \$10.00 | \$1,800.00 |
| Curb and Gutter Replacement | 180 | LF | \$40.00 | \$7,200.00 |
| Connections to Existing Water System | 2 | EA | \$1,850.00 | \$3,700.00 |
| Landscape Restoration | 1 | LS | \$50,000.00 | \$50,000.00 |
| Constr. Sub Total | | | | \$195,145.00 |

| Other Project Costs | Percentage | | Cost |
|-------------------------------|------------|--|--------------------|
| Design Engineering | 10.0% | | \$19,514.50 |
| SUE Engineering | 7.0% | | \$13,660.15 |
| Bid and Construction Supporty | 4.0% | | \$7,805.80 |
| CDPHE Permitting | 0.0% | | \$0.00 |
| Construction Management | 0.0% | | \$0.00 |
| Other Project Costs | | | \$40,980.45 |

Total Cost **\$236,125.45**

AACE Class 4 Construction Cost Ranges =

| | |
|-------------|---------------------|
| -15% | \$200,706.63 |
| 30% | \$306,963.09 |

Notes: Costs based on 2018 Bid Tab for similar project in Paonia, CO; scaled up 10% to reflect current construction market.

Assumptions:

1. Trenches 6' wide and 6' deep
2. Each connection to ex. system requires 3 new valves
3. Fire hydrants are 6"
4. ~100 ft of pipe/services can be completed in a day
5. Imported bedding material is 2' deep
6. Each fire hydrant trench damages 10' of curb and gutter; each service damages 10' C&G
7. Ex. system tied into is 8" pipe

Water Line Replacements - Estimated Project Costs

Prepared by: Chad Paulson/Casey Hinkson

Date: September 18, 2020

Texas Ave: Replae Ex. 6" CIP with 8" C-900

| | | | | |
|---|------|----|-------------|---------------------|
| Mobilization | 1 | LS | \$15,000.00 | \$15,000.00 |
| Construction Survey | 1 | LS | \$2,500.00 | \$2,500.00 |
| Traffic Control | 1 | LS | \$5,000.00 | \$5,000.00 |
| Remove and Replace 6" CIP with 8" PVC C-900 | 1430 | LF | \$47.00 | \$67,210.00 |
| 8" Gate Valve | 6 | EA | \$2,100.00 | \$12,600.00 |
| 6" Gate Valve | 6 | EA | \$1,500.00 | \$9,000.00 |
| Fire Hydrant Assembly | 2 | EA | \$5,800.00 | \$11,600.00 |
| Water Service Reconnection w/ Curb Stop | 11 | EA | \$1,900.00 | \$20,900.00 |
| Bedding Material | 636 | CY | \$35.00 | \$22,260.00 |
| Asphalt Milling | 954 | SY | \$5.50 | \$5,247.00 |
| Asphalt Replacement | 954 | SY | \$27.00 | \$25,758.00 |
| Demo Existing Curb and Gutter | 120 | LF | \$10.00 | \$1,200.00 |
| Curb and Gutter Replacement | 120 | LF | \$40.00 | \$4,800.00 |
| Connections to Existing Water System | 3 | EA | \$1,850.00 | \$5,550.00 |
| Landscape Restoration | 1 | LS | \$50,000.00 | \$50,000.00 |
| Constr. Sub Total | | | | \$258,625.00 |

| Other Project Costs | Percentage | | Cost |
|-------------------------------|-------------------|--|--------------------|
| Design Engineering | 10.0% | | \$25,862.50 |
| SUE Engineering | 4.5% | | \$11,638.13 |
| Bid and Construction Supporty | 2.3% | | \$5,819.06 |
| CDPHE Permitting | 0.0% | | \$0.00 |
| Construction Management | 0.0% | | \$0.00 |
| Other Project Costs | | | \$43,319.69 |

Total Cost **\$301,944.69**

AACE Class 4 Construction Cost Ranges =

| | |
|-------------|---------------------|
| -15% | \$256,652.98 |
| 30% | \$392,528.09 |

Notes: Costs based on 2018 Bid Tab for similar project in Paonia, CO; scaled up 10% to reflect current construction market.

Assumptions:

1. Trenches 6' wide and 6' deep
2. Each connection to ex. system requires 3 new valves
3. Fire hydrants are 6"
4. ~100 ft of pipe/services can be completed in a day
5. Imported bedding material is 2' deep
6. Each fire hydrant trench damages 10' of curb and gutter; each service damages 10' C&G
7. Ex. system tied into is 8" pipe
8. Water line on Texas connects at E. 7th with cross and 4 new valves (2x6", 2x8")
9. Assume new water main can be offset and constructed with appropriate separation and w/o removing C&G