

City of Wray
Main Street Water Line Project
Monthly Progress Report
November 2020



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Project Executive Summary:

This month several goals were achieved by the project team. The successful completion of concrete placement from 4th to 5th Street, installation of all new sidewalks on the east and west side from Hwy. 34 to 5th Street intersection. This also includes installation of new light poles and completion of new water line services. Traffic was fully opened to vehicles from Hwy. 34 to the intersection of 5th Street on Friday (November 13).

The project team continues with challenges at the Republican River and anticipate completing the installation of new twin box culverts & open box culvert by Christmas. The city has been working very closely with Zak Dirt to develop a schedule for upcoming sequencing of city-wide water shutdowns from Ash Street to Kitzmiller. There are four major areas under review at this time that would allow the city to transfer from the existing water system to the new 8" C900 waterline system. These areas include the connection at Kitzmiller & Main Street, Ash & Main Street, Fire Department reconnection and existing line north and south of Hwy. 34 intersection at Main Street.



Concrete paving operations from 4th to 5th



New lights from 5th to 3rd on Main Street.

Construction Progress Summary:

Week of November 2

- Construction team removed existing concrete curb/gutter on both the east and west side including asphalt pavement between 5th & 6th Street. Once this task was completed approximately 320 lineal feet of new 8" C900 waterline was trenched and installed including new 8" gate valves. A new fire hydrant was also installed in the northwest corner of 6th & Main Street adjacent to the existing fire hydrant which will be removed when the existing waterline is decommissioned. The pipeline crew then installed an additional 160 lineal feet of 8" C900 pipe up to the first drive entrance for Appearance Edge. The next step will require the construction team to open exploratory excavations within the vicinity of Main Street, Kitzmiller & Cemetery Road to identify location of existing waterline.
- During the removal of asphalt between 6th & 7th Street a Black Hills Energy (BH) gas line was damaged. City emergency services were contacted, including Black Hills Energy and it was determined this was a low-pressure gas line, less than 40psi. Temporary repairs were completed immediately using a stainless-steel sleeve to reduce gas leakage. BH crews were summoned from Fort Morgan and a temporary bypass was installed to avoid

disruption of gas service while a new steel gas was delivered. The new gas line and new gas service tie-ins were installed without any further incidence.

- The project team put together an initial city-wide water shutdown list based on known and assumed existing conditions that will be further explored and evaluated between Ash Street and Kitzmiller Street. These areas include 1) Main/Kitzmiller St. 2) Main/Ash St. 3) Fire Department & 4) Hwy 34 crossing.
- The construction team finalized grading between 4th to 5th Street using a Caterpillar Motor Grader M14 and vibratory roller (Cat. CS56). Proof roll was completed, and field assessed using a 38k lb. water truck with EEC completing field density tests. The crew then installed lateral and longitudinal rebar baskets @ 15ft joint intervals in preparation for concrete pavement placement. The concrete deck machine (Terex Bidwell 3600) was moved into position on the south side of 4th Street intersection a dry test was completed to ensure the machine was working properly and final surface grades were set. The construction team started @ 0600 hours on Wednesday (11/4) with PROPUMP CONCRETE onsite @ 0545 hours. First concrete truck arrived @ 0640 hours (Chamberlain's) and started loading the pumper @ approximately 0645 hours. Approximately 350 cubic yards (35 trucks) was delivered and pumped into place for the full 60-foot width of roadway and 320 feet to cover the entire length of road from 4th to 5th Street. Operations were completed @ approximately 1430 hours with the last section of bulb out area placed by hand. Control joints were cut into the new concrete and curing agent was sprayed to assist with curing and strengthening.
- The downstream south side of the Republican River continued to be worked on with the placement of structural fill for the new concrete floor of the 3-sided open channel box. Two Multiquip submersible pumps, including 3" trash pump, were in constant operations for dewatering and will remain in place during operations on the Republican River. A 47-foot x 10-foot x 18-inch double rebar mat floor was constructed along with a 3ft toe wall on the downstream side of the southern side in preparation of concrete placement. All unsuitable over-excavated material within the area of existing concrete box culvert was removed and hauled to city yard for further processing.



Start of concrete paving operations from 4th to 5th



Wray FD assisting Black Hills Energy repair 4" gas line @ 6th intersection

Week of November 9

- Crews excavated exploratory holes for existing utilities adjacent to Appearance Edge that included a sanitary sewer, stormwater line and existing waterline at the intersections of Kitzmiller, Main Street & Cemetery Road. The existing waterline was located and

determined it only had 2.5ft of soil cover and the measured inverts for both sanitary and storm were equally shallow (approximately 54"-60"). This would require installing the new waterline either above or below these utilities. A casing/sleeve would be required for the waterline if it were to cross below the sanitary sewer and additional weather proofing if crossing above these utilities.

- The above information was used to update the task list from last week concerning city-wide water shutdowns 1) The existing waterline @ Kitzmiller/Main will be tied into new waterline using horizontal 45 degree bends to avoid cover issues and other wet utility crossings 2) The tie in @ Ash St. would also utilize horizontal 45 degree bends from the new into the existing waterline and avoid a "90 degree tee" connection 3) The 6-inch fire department waterline would be lowered under the existing line and tied directly into the new 8" C900 line 4) The existing waterline @ Hwy 34 would be capped on the north side.
- Concrete test results for the 28-day break from 3rd to 4th Street were reported by EEC showing sampled sets taken during October 7 concrete placement came back above the required 4500psi value, ranging from 5310psi to 6100psi. The 3-day concrete break test from 4th to 5th were also reported and were above the 75% 7-day break of 3375psi. With this information it will be possible to re-open vehicular traffic between 4th to 5th. Crews disassembled the Terex Bidwell 3600 concrete deck machine that was at the intersection of 5th and moved offsite.
- Construction crew charged the new 8-inch C900 waterline from 5th to 6th for initial 24-hour chlorination. The line was then flushed of residual chlorine and water samples taken for bacteria testing. The system was pressure tested to 150psi over a two-hour period and successfully passed. Water samples analyzed by CDPHE found no harmful pathogens in the new system and could be placed in service.
- Concrete crews completed placing and forming new concrete sidewalk between 3rd to 4th, including business entrances, and finished removing all existing sidewalk panels between 5th and 6th on the east and west side of the street.
- 4D Electric completed auguring all 6 new post holes (24"x48") for future light poles between 5th & 6th. All necessary conduits and electrical wire for new 16-foot light poles were also pulled through and readied for new light pole installation and connection.
- Project team is currently discussing with city officials about stenciling the Wray Eagle mascot into the new concrete at the intersection of 4th & Main Street using sandblasting services. This would not be a cost to the city, rather it would be funds raised by businesses who have had a direct connection to project services (Zak Dirt, Ritchey's, Chamberlain, 4D Electric etc.). This is still at the early stages and will require city council approval and possibly involve local school district to participate in painting the mascot as a school project.
- Crews constructed the rebar cage for the new bottom southern outfall half for the Republican River concrete box and continuing with sub-grade preparation towards the upstream side of river.



Removal of concrete deck machine from 5th/Main



4D Electric installing 24"x48" sonotube base for light pole

Week of November 16

- During the weekend, the regional area experienced extreme winds which in turn blew massive amounts of debris into the Republican River. This created an unforeseen blockage on the north side pipe diversion of existing culvert box. This created further problems and allowed overtopping of river water into the southern side of the proposed newly constructed rebar cage and grading of soil foundation. Unfortunately, the entire downstream side of the south side where the rebar cage was constructed was completely buried with sediment and debris. The construction team had to remove all sediment, rebar cage and begin the process of re-grading and re-constructing the rebar cage. With the area now cleaned and reconstructed concrete operation placement was rescheduled. Concrete pump truck arrived early in the morning, including EEC to test concrete. Ritchey's Redi Mix concrete trucks delivered approximately 30 cubic yards of concrete for the southern 1/2 outfall open box channel adjacent to the Boonies. Concrete placement operations were completed mid-morning and two "MultiQuip" submersible pumps, including 3" trash pump, were in constant operations for dewatering and remained in place after the pour.
- The construction team placed and formed new sidewalk panels from 4th to 5th Street, including ADA ramps, bulb-outs & curb returns between Hwy. 34 and 5th Street. Once this task was completed the team went back to the river and finished preparing the remaining upstream southern half of the proposed box culvert, that included final grading and rebar cage installation of floor.
- The construction team rough graded the roadway section from 4th to 5th Street and initiated installation of all new waterline services. This entire residential block is now served by the new 8-inch waterline. Crews also started to string out the new curb & gutter grades between 5th and 6th Street.



Concrete placement of southern ½ open channel bottom @ Republican River adjacent to The Boonies



Crews forming concrete sidewalk on east side by Cliff Theatre between 4th/5th.

Week of November 23

- 4D Electric installed all 12 lights from 3rd to 5th and are decorated with "snowflake" Christmas light design in time for parade of lights. All light poles will have standard mounting brackets for the community to use for holiday decorative banners.
- Construction team was back at the Republican River continuing with removal of existing southern 1/2 box, specifically the bottom and continuing to prepare the sub-grade. The new vertical wall rebar cage is being constructed on the south outlet side of the proposed 3-sided box and will be integrated into the existing concrete retaining wall adjacent to The Boonies restaurant. Crews also installed the first 1/2 of the 16" steel waterline sleeve that will be used to pull through the new 8" C900 pipe when trenching operations start from Hwy. 34 heading north towards the river. Approximately 40 cy of concrete was placed and formed on the south side of proposed box culvert, that included the box floor and 8-foot concrete wall adjacent to The Boonies restaurant.
- Concrete crews placed and formed all curb/gutter on the east and west side between 5th & 6th Street. A trapezoidal curb/gutter system section was installed around the existing 100yr. old American Elm tree to avoid damaging the tree root system.
- Pipeline crews installed an 8" gate valve with blow-off assembly near the intersection of 7th & Kitzmiller. This will be used to operate the new line and will allow for the safe connection to existing 8-inch waterline on the west side when city schedules water service outage. This section of waterline between 6th to 7th Street was charged to allow chlorination of line prior to testing.



Construction of rebar wall cage adjacent to The Boonies

Construction Schedule Forecast ()**

Week of December 1

- Install new 8-inch C900 waterline pipe between Hwy. 34 & Republican River (south side).
- Test waterline from 6th to 7th Street (Kitzmilller).
- Grade roadway sub-grade from 5th to 6th Street.

Week of December 7

- Start asphalt removal between Ash St. & Republican River (north side).
- Install new 8-inch C900 waterline pipe between Ash St. & Republican River (north side).
- Concrete paving of roadway from 5th to 6th Street.

Week of December 14

- Complete rebar cage construction for concrete wall at Republican River (south side) box culvert.
- Placement and forming of concrete wall at Republican River (south side) box culvert.

** - The above construction forecast can potentially change based on current weekly construction activities and future construction expectations. There could be schedule modifications after the printing of this report and may not necessarily follow the forecast as listed above. Every effort has been made to provide concise and correct information for the monthly report.

