

FLOOD REVIEW BOARD

Date: May 26, 2022

Time: 8:30 AM, MDT

Location: Lake Estes Conference Room, 3rd Floor, 200 W Oak St., Fort Collins, and Zoom meeting

Contact: Tina Kurtz, Larimer County Engineering Department

MEETING MINUTES

Staff Present: Tina Kurtz, Caryn Nezat, Traci Shambo, Devin Traff, Alan Kee, Spencer Myrlie, Amy White, Hannah Suppes

Board Members Present: John Hunt, Chad Morris, Dr. Chris Thornton

Call to Order: Dr. Thornton opened the meeting at 8:50 a.m., MDT

Introductions

Item #1 (Tabled from April 28, 2022, Board meeting):

City of Fort Collins – new 36" raw water line under the Cache la Poudre River near Gateway Natural Area - Floodplain Project Review

Applicants Present: Amy Johnson, City of Fort Collins; Kayla Ranney, HDR; Sara Race, HDR; Rich Thornton, HDR

Mr. Morris made a motion to untable item 3 [Note – this was erroneously listed as item 3 on the agenda the Board had]. Dr. Thornton seconded the motion. Motion passed 3-0.

The applicant, Amy Johnson with the City of Fort Collins, began by reminding the Board that this is critical infrastructure for the City and that their intent is to have no impact on the floodplain by having no rise and maintaining existing grade as a result of the project. She stated that the City and their consultant, HDR, took the Board's comments from the prior meeting into consideration. They made some changes to the design to address the comments and detailed the changes and responses in a supplemental memorandum that was submitted as part of their re-submittal application.

The representative from HDR, Rich Thornton, then began by explaining that the comments were addressed in corresponding sections within the supplemental memo. He went over the key elements of their approach to the protection of the water line, including moving the alignment to be further away from the far river bank, creating a more perpendicular crossing, moving the crossing further downstream to avoid the riffle area, and lowering the waterline profile to reduce further the risk of scour. He noted specifically that they researched and evaluated further the Board's concern for the risk



of channel lateral migration on the far bank as the river moves to river right and that they did not find clear evidence that refuted Stantec's original analysis and they are not anticipating the risk of lateral migration to be more than expected in report.

He added that they used a 1-D analysis to support the 2-D model for the scour analysis. The result is that they chose to modify the previous design to now use a 5.1' minimum depth of cover to the pipeline. He specifically talked about the left bank erosion potential and that they find that it is addressed with their construction restoration methods planned using type M riprap on the left bank. The trench backfill will be Class 5 or 6 bedding material and there will be concrete cut off walls plus the use of concrete encasement at the critical areas. Also the construction notes state the contractor will use native materials or may import CDOT Class 6/7 as needed for backfill. Surface restoration Coir fabrics that, per the data sheet, can handle the velocities that are expected, which is 4-8 fps. They also plan willow staking along both banks that is also expected to survive with the expected velocities, which is 9.8-10 fps. In summary, they are balancing multiple factors but believe that they have a resilient design for the 100-yr event.

After the applicant's summary was complete, Mr. Hunt asked for clarification about how they plan to protect the stability of the left bank of the river and noted that he could not tell from the drawings if bank protection was added. He asked if the plan is to cover the pipe for at least the critical distance.

Mr. Thornton from HDR said that they are placing riprap above the area where the trench is. Velocities are 4-8 fps range and they feel that the Coir fabric and willows will suffice for these velocities.

FRB member, Dr. Thornton, asked if the trench area will be capped. HDR responded that the trench area will be rip rapped. Mr. Hunt asked about the vertical and horizontal alignment and if it had changed since the last submittal. Mr. Thornton of HDR responded that the waterline vertical and horizontal alignment currently proposed is the same as last submittal the FRB reviewed in the initial FRB meeting. He also confirmed for Dr. Thornton that the Concrete encasement was extended.

Mr. Morris stated that it does not appear to him that they used a very conservative approach to the vertical scour analysis. He said that, especially since this is a critical facility for the City, he is concerned with the long-term impacts considering the likelihood of slow degradation of the channel bed, and that, even with the concrete encasement that will offer additional protection, the area will still likely be an area needing routine maintenance for the City. HDR responded to the concern by re-emphasizing that HDR and the City Staff are balancing cost with other factors and constraints such as dewatering, constructability associated with the existing condition & terrain, points out that they are in the middle of the scour ranges, and they found that their balanced approach with the scour range expected from their analysis is acceptable to them.

Dr. Thornton stated that the increased maintenance need that is a result of the design is the City's issue and that the City and HDR need to be aware that the fabric and landscape cover mat may not perform as well as they think based on using just the fabric data sheet. He believes that the data sheet showing that the fabric can sustain 12fps is in excess of what it can sustain in the real-world situations and that the



established vegetation is the measure that is really going to do the work for scout protection. HDR agreed.

Mr. Hunt stated that he understood that they chose to not make changes to add additional riprap in order to address the erosion risk in order to balance a project that is feasible and constructible. He noted that it is the City's risk and not the County's risk. He noted that he thinks there is a stability risk at this channel, and that a compromised line would not be a good situation for the City and citizens. He emphasized his thoughts that more should be done to protect the line, such as additional riprap, given it is considered critical for the City. HDR acknowledged the comments and the importance to them of the balance they found. Mr. Hunt acknowledged that he understood the situation.

Dr. Thornton stated that it seemed that the Board had raised their concerns and they were addressed. He noted that the Board and the applicant can have a general difference of opinion.

Motion:

Mr. Morris motioned to recommend approval of the Fort Collins Waterline Floodplain Project Review to the County Engineer. Mr. Hunt seconded the motion.

Further Discussion:

No further discussion.

Vote:

Mr. Hunt - YES
Dr. Thornton - YES
Mr. Morris - YES

Motion passed 3-0.

Item #2:

Paul Sterling - Short-term Rental Request within the Big Thompson Floodway - Variance

Applicants Present: Paul Sterling, applicant; Lonnie Sheldon and Dan Barrett, Van Horn Engineering

Ms. Kurtz introduced the project to the Flood Review Board (FRB) and stated that this is a variance request for a short-term rental (STR) located within the Big Thompson Canyon, approximately 3.5 miles east of Estes Park, in the regulatory floodway. The STR will be within an existing house with one floor of living space, which is approximately 2.7' above the FEMA base flood elevation (BFE). There is a lower storage area approximately 4.9' below the FEMA BFE with no access available to guests. The egress route is directly onto West Highway 34.

Mr. Sheldon with Van Horn Engineering began the presentation by explaining the content of the report was provided by Mr. Sterling with inserted information from Van Horn Engineering. He touched on the mortar rock wall underneath the house and referred to the detailed pictures within the report. He



stated the rock wall is over 6' tall. He said that there is a small space for storage that is locked and not accessible for the rental customers. He reminded the FRB that the finished floor of the living area is well above the Base Flood Elevation (BFE), which is 6.2' feet above the BFE per the CDOT Preliminary Mapping. He noted that the access was high and dry in the 2013 flood and 2.6' above the FEMA BFE. He pointed out that there is 14 feet vertical difference from the bed of the river to the floor of the house and that the FEMA profile only shows 8 feet difference, so they have a buffer. He noted that a survey was done by Van Horn Engineering and the details of the survey plus other pertinent elevations are shown on a 11x17 exhibit within the report. Finally, he noted that the applicant uses signage to make guests aware of flood risk and that the egress route is directly on Hwy 34.

Mr. Sterling, the applicant, added that the house has been "tested by GOD" since 1937 and it has made it through seven floods so far and he confirmed that the rock wall is solid and the house did fine through the September 2013 flood.

Mr. Hunt acknowledged that the lowest floor is well above the BFE and asked if the access was on the high side and if there was any concern about access during a flood. Dr. Thornton said that the access is right onto the highway.

Dr. Thornton agreed that the request appears to check all the criteria boxes for this type of application.

Mr. Kee, County Code Compliance, asked about code compliance components which are the decks that were repaired after the 2013 flood or just the STR use. Ms. Kurtz responded that this is just the recommendation of the STR use at this time.

Motion:

Mr. Morris motioned to recommend approval of the Short-term Rental Variance to the County Engineer.
Mr. Hunt seconded the motion.

Further Discussion:

No further discussion.

Vote:

Mr. Hunt - YES
Dr. Thornton - YES
Mr. Morris - YES

Motion passed 3-0.

Item #3:

City of Fort Collins – Spring Creek Letter of Map Revision – Map Amendment

Applicants Present: Andrew Friend, Michael Baker International



Ms. Kurtz introduced the project to the Flood Review Board (FRB) and stated that this is a request for a Map Amendment for the City of Fort Collins to revise the FEMA floodplain map along Spring Creek. The Board is only concerned with the portion of the map revision within Unincorporated Larimer County. The changes to the map within the County are located north of CR 38 and west of Highland West Drive. This project corrects a NGVD 29 – NAVD 88 datum shift error, which is 3' in the effective data which is now 3.18' in this study and updates the HEC-RAS model version for Spring Creek from Version 4.1 to Version 5.0.7. Because of these changes, there were shifts to the floodway along 3 cross-sections, amounting to 0.1', 5.9' and 2'.

Mr. Morris asked if the change in surcharge was from updating the model version. Mr. Friend said that it was the change in model version.

Mr. Hunt said he was wondering why just a datum change triggered new modeling. Mr. Friend said model was triggered by a project downstream and that with that project they found problems with the effective model, mostly being the datum conversion issues in that the old model used 3' feet instead of 3.18' datum conversion. He noted that the effort to make datum changes in the model did have a "snowball" effect but their ultimate goal was to make any needed corrections of the model, data and map to reflect existing conditions.

Dr. Thornton said he appreciated the accuracy.

Motion:

Mr. Morris motioned to recommend approval to sign the MT-2 form for the Spring Creek Letter of Map Amendment to the County Engineer. Mr. Hunt seconded.

Further Discussion:

No further discussion.

Vote:

Mr. Hunt - YES
Dr. Thornton - YES
Mr. Morris - YES

Motion passed 3-0.

Item #4: Approval of April 28, 2022, Board meeting minutes

Mr. Morris moved to approve the April 28, 2022, Board meeting minutes. Mr. Hunt seconded.

Further Discussion:

No further discussion.

Vote:



Mr. Hunt - YES
Dr. Thornton - YES
Mr. Morris - YES

Motion passed 3-0.

Other items

- Discussed upcoming agendas.

Meeting adjourned at 9:40 a.m., MDT.