LARIMER COUNTY | ENGINEERING DEPARTMENT

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FLOOD REVIEW BOARD

Date: August 25, 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, Amy White

Staff On Line: Alan Kee, Hannah Suppes

Board Members Present: John Hunt, Dr. Chris Thornton, Elisabeth Ervin-Blankenheim, Greg Koch, Mike Oberlander, Chris Carlson, Chad Morris

Board Members On Line: None

Call to Order: Mr. Koch opened the meeting at 8:40 a.m., MDT

Introductions

Item #1:
Justin Stiles – Short-term Rental at 2372 W Highway 34, Drake - Variance

Applicants Present: Justin Stiles, applicant; Lonnie Sheldon & Dan Barrett with 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 at 2372 W Highway 34, Drake. The applicable Land Use Code Section for the variance request is LCLUC Section 12.1.6.E.2. The short-term rental is at the confluence of Dark Gulch and the Big Thompson River. The living area of the structure is 2.3' below the Dark Gulch FEMA Base Flood Elevation (BFE) of 7181' and the lower storage area is 10' below the Dark Gulch FEMA BFE. The consultants surveyed the streambed elevation of Dark Gulch and found that it was at 7,170' whereas the FEMA profile shows the streambed at 7,180'. The BFE of the Big Thompson River at the south side of the property is 7,170'. The consultants believe the Big Thompson BFE is the more appropriate BFE to use for this application. She also mentioned that the applicant provided documentation of rental history since 2018.

Mr. Sheldon explained that there is a lot of vertical transition from the N end of the house to the E end of the house.

In both the 1976 and 2013 floods, the living space of the house and the basement were untouched. So hydraulically, it acts a lot different during a flood than in the FEMA modeling in this area. There is quite a bit difference in the depth of the profile so there is more room for water than what the model predicted.

Mr. Stiles said that his grandparents used to own the property. He was told the 1976 flood brought more riverbank back. The 2013 flood just roughed up the edges and they had to shore-up the bank and that was it. No damage from the flood inside the house.

Mr. Sheldon thinks the Dark Gulch FEMA BFE is too high. He said the proof is the 2 floods being more than 100-yr events and didn't get the basement wet. They would like to use the Big Thompson FEMA BFE of 7,170' for this project as it is more realistic based on their analysis. He also mentioned that the house is above this BFE and that it is the controlling design element.

Mr. Oberlander asked if they put a normal depth on either of these XS of Dark Gulch. Mr. Sheldon answered no.

Mr. Hunt asked which model is being used, the new CHAMP model or the effective. Ms. Kurtz said that it is the effective as the Big Thompson through the Canyon is currently being remapped. Mr. Sheldon said that they didn't model this area for this project.

Mr. Koch said that it looks like the source is not the Big Thompson, it looks like it's Dark Gulch. He said the question is what is happening on Dark Gulch.

Mr. Morris asked if they superimposed their cross-section with a model cross-section from Dark Gulch. Mr. Sheldon said that they did not and that they didn't superimpose the profile either. He said that it's a steep cross-section at the upstream edge of the house. He said the channel is 9 feet deep at this location.

Mr. Koch asked if they surveyed in the culvert. Mr. Sheldon said that they did take a survey shot at the invert.

Mr. Hunt asked if their basis is that when the correct channel geometry and profile is understood that Dark Gulch doesn't flow out of the bank and it also doesn't overtop Highway 34. Mr. Sheldon said that he didn't know about the overtopping, but it is contained. Mr. Hunt asked if they were able to do some modeling to demonstrate that. Mr. Sheldon said that they didn't run a model.

Dr. Thorton asked whether the overtopping of Highway 34 affects the egress route. Mr. Sheldon pointed out that the egress route does use Highway 34 to go west to Estes Park. Mr. Koch asked if Highway 34 is inundated in this area, between the property and Estes Park? The Board looked at the floodplain map.

There was a discussion that it is the same box culvert on Highway 34 that was there in 2013 and Mr. Stiles said it did not overtop.

Mr. Hunt said the 1976 flood was caused by rainfall which was very focused in this area vs. the 2013 being different. He said it would be interesting to know how Dark Gulch performed in the 1976 flood. He said the channel looks incised.

Ms. Nezat stated the USGS StreamStats result for the Dark Gulch watershed which showed a basin of approximately 1.03 square miles.

Mr. Hunt mentioned that he would expect Dark Gulch to be flash flood prone. He asked if there are rain gages in this area. Mr. Carlson said that the closest one is on the Storm Mountain Road Bridge.

Mr. Koch asked what the set of criteria are that the Board has for short term rentals. There was a discussion on what those criteria are, such as not in the floodway, egress route, 18" above the base flood elevation, elevation certificate.

Mr. Oberlander does not think you would need to do a formal remap through the FEMA process to show the 1250 cfs coming though and prove that house is out. But if the culvert is too small and some of the flow is going over, than they want to know where flow is going.

Mr. Koch and Mr. Oberlander is asking about the cross section and photos of the structure. Mr. Sheldon said that it is a standard walk out with only mechanical equipment on the bottom floor.

Koch asks about a previous short-term rental where the deck was in a floodway but living space is not. The submitted technical data shows living space is above the base flood elevation but the building itself is under. He thinks if you ran the model you would show that the 1250 cfs is contained within the channel. He said that he thinks a person could show with a short HEC-RAS model what the overtopping of the culvert really looks like, but he thinks it will overtop at 1250 cfs. But even with overtop and it stays controlled, it may not impact the house.

Mr. Hunt said that a hydraulic model is needed to show that Dark Gulch contains the flow and if there is overtopping of the culvert they want to see where it is going and if it is causing life safety or egress issues. They want a new elevation certificate that the technically determined BFE is below the living space.

Alan Kee shows the aerial photo of the culvert in relation to the house. The Board looked at the image and discussed the road overtopping. Mr. Sheldon noted that it is not a steep grade up to house and asked them to look at the photos of the access he took showing this condition.

Mr. Koch reminds group that this is the older analysis for the Big Thompson Canyon using depth and velocity floodway determination methods that has gone by the wayside and so a more modern modeling effort would be beneficial to have technical data to show house is safe.

Mr. Sheldon asked about the extent of the model the Board is asking for, such as a cross section upstream and downstream of the house. Mr. Koch said there are existing cross sections upstream and

downstream side of the house, then do a cross-section off the embankment for the culvert and another one off the embankment on the upstream side of the culvert, which would be enough. They added it would be the immediate downstream toe of the slope or the tips of the wing walls. In addition, modeling the road profile structure itself as well as the culvert. Mr. Koch mentioned checking the old n values as they may need to be updated. They also mentioned getting a profile of the centerline of the road to the neighboring driveway to the N to try to define how wide the overtopping will be. Mr. Morris said that the road seems to slope to the east.

Mr. Sheldon asked about the next steps. Mr. Koch said come back next month with technical data. Ms. White mentioned that they are not allowed to rent until the applicant has Planning Department approval. The Board says they are expecting a basic model to show overtopping and they are not expecting a complicated model. Mr. Hunt confirmed that they plan to require 18" of freeboard over the base flood elevation for the living space. They need to compute a new base flood elevation.

The Board also discussed egress and the overtopping issue. It is 23 miles to the east and 3 miles to the west. Egress is different route depending on if the Big Thompson is flooding versus Dark Gulch. Mr. Hunt is more worried about Dark Gulch flooding. He said the flood will be only a few hours to peak. Sheltering in place may be the only option due to the quick peak time. Mr. Hunt asked about what LETA does and if they are connected to the rain gage system. Mr. Carlson said it is but they will know if the Big Thompson is flooding but not Dark Gulch. The Board discussed ways that notifications about flooding risks could be conveyed to guests such as a land line and egress explanations.

Mr. Hunt asked if there is there a map showing the Cameron peak burn scar. Mr. Carlson said that it is all north of CR 43, so it should not impact this basin.

Amy says code does damage assessments after floods. Many structures were saved because of the temporary sand/rock walls.

Motion:
Mr. Hunt motioned to recommend tabling the application for up to 120 days of the Justin Stiles short-term rental Variance to the County Engineer. He requires that the resubmittal include a technical hydraulic model that demonstrates the living space for the structure has 18" of freeboard above the newly calculated Base Flood Elevations using a new survey but using FEMA flow of 1,250 CFS. If the model shows that the road is overtopping, the analysis needs to demonstrate that the overtopping flows don't have adverse impacts on the structure.

Mr. Oberlander seconded the motion.

Further Discussion:
Mr. Koch mentioned they should look at velocity and extra protection depending on results.

The group discussed that the resubmittal is expected for the October meeting.

Vote:

Mr. Hunt - yes
Dr. Thornton - yes
Mr. Morris – yes
Mr. Koch – yes
Ms. Ervin-Blankenheim – yes
Mr. Oberlander – yes
Mr. Carlson – yes

Motion passed 7-0, with 0 abstention.

Item #2:
Approve Minutes from the Board meeting on June 23, 2022.

Motion:
Dr. Thorton motioned to recommend approval of the minutes.

Ms. Ervin-Blankenheim seconded the motion.

Further Discussion:
Ms. Ervin-Blankenheim mentioned that her name was not spelled correctly in the minutes. It will be corrected by staff.

Vote:
Mr. Hunt - yes
Dr. Thornton - yes
Mr. Morris – abstain due to absence
Mr. Oberlander – yes
Ms. Ervin-Blankenheim – yes
Mr. Carlson – yes
Mr. Koch - yes

Motion passed 6-0 with 1 abstentions

Item #3:

Discussion of draft Flood Review Board By-laws

Ms. Kurtz presented the draft of the By-laws for discussion. The current By-laws were adopted in 2008 and have not been amended since then. The Code has changed several times since that date without an update. The proposed changes are to update the document be in concert with the current floodplain regulations.

Comments from Board:

- Article I, Section 1.B – Change to FRB's mission is to help protect.

- Article II, Section 2.A – Awkward wording, so need to reword.
- Article II, Section 2.D – Information on meetings is not in track changes.
- Article IV, Section 2.B – Change to say upon completion of a term member can seek an additional full term.
- Article I, Section 2 – Noted that this is new and now states that they make recommendations to the County Engineer.
- Article IV, Section 4.A – The Board asked if they are now going to review all applications. It was noted that it was always in there but that they may not have been following procedures. The Board likes how this section is written.
- Article IV, Section 1.D – Discussed changing to member must be technically qualified with an emphasis on hydrology. Summary of discussion, request to strike civil engineering and be more general.
- Article IV, Section 1.D.3 – This section allows for a County Staff member to be part of the Board. There was discussion on whether that acceptable to the County, does that put the County in an awkward position and is this creating a perceived conflict of interest. A question was asked if it should be clarified to it occurring just when a quorum is not achieved.
- Article IV, Section 1.A –Discussion on whether it should say 3-7 members since only 3 are needed for a quorum.
- Article IV, Section 1.D.1 – The Board mentioned that floodplain has a hyphen. Staff said it was a track change left over.
- Article III, Section 2.F – The Board or County Engineer may require applicant to be present at the meeting. The Board discussed that if a Professional Engineer (PE) prepares the application documents, they should be at the meeting. Summary of discussion – when a PE stamp is required, they must also be required to attend the meeting.
    - Mr. Hunt asked if we should allow a certified floodplain manager as an alternative to PE requirements.
    - Idea for wording - IF the application requires a licensed PE, then the PE must attend the meeting
    - Add the PE or designee to final language

Item #4 – Election of Board Chair

Mr. Hunt nominated Dr. Thornton as the new Chair.

Motion:
Mr. Hunt motioned to recommend approval of Dr. Thornton as Board Chair.

Mr. Carlson seconded the motion.

Further Discussion:

None

Vote:

Mr. Hunt - yes
Dr. Thornton - yes
Mr. Morris – yes
Mr. Oberlander – yes
Ms. Ervin-Blankenheim – yes
Mr. Carlson – yes
Mr. Koch - yes

Other items:

- Discussed upcoming agendas
    - County Project CR 7 & CR 70 resubmittal
    - 2300 Glade Road which consists of several unpermitted items and proposed items
- Recognition of Greg Koch's 24 years of service to the Board

Meeting adjourned at 11:00 a.m., MDT.