

DISPUTE REVIEW BOARD REPORT AND RECOMMENDATIO

**SH 14 BRIDGE OVER POUUDRE RIVER (MP135.909)
FT. COLLINS, CO
CDOT Project No. FBR 0142-055**

DISPUTE CONCERNING DIFFERING SITE CONDITION – HIGH WATER

Hearing Date: March 29, 2016

Hearing Location: CDOT Region 4 Headquarters Building, Greeley, CO

Hearing Attendees: Flatiron Constructors, Inc.

Kevin Powell - Operations Engineer

Dan Martinson - Project Manager

Ken Ekstrom - Applied Construction Management (Consultant)

CDOT

Jim Hoffman - CDOT, Project Engineer

Rich Christy - CDOT, Resident Engineer

Corey Stewart, CDOT, North Program Engineer

Roselle Drahushak-Crow, CDOT, Area Engineer

Background

On July 10th, 2014 CDOT bid the SH 14 the Over Poudre River Bridge Replacement Project with a stipulated substantial completion date of October 16th, 2015. After a delay due to funding, the Project was awarded to Flatiron Constructors, Inc. (FC) on August 20th, 2014 for \$9,614,578.71 and still maintained the October 16th, 2015 substantial completion date. Notice to Proceed was finally issued to FC on September 10th, 2014. The project consisted of the three phase removal of the existing structure and phased construction of the new bridge. In all, the Project was .28 miles long and also included roadway approaches, retaining wall construction and some urban design elements.

The dispute arose from a difference in opinion between FC and CDOT on whether the high water that was encountered was a differing site condition. Beginning in late April, the Poudre River's seasonal flows impacted FC's work and breached the berms and inundated the work area. T FC maintains the arrival of these seasonal flows at this time of year was unexpected as a pre bid review of the historical data showed the flows not arriving until June. FC's plan was to complete all in river work for Phase 2 by the end of May. Based on USGS data, FC maintained the Project experienced Poudre River seasonal flows much earlier than what was contemplated at bid time which constitutes a differing site condition per specification section 104.02.

On June 16, 2015, FC gave written notification of a differing site condition and submitted a Request for Equitable Adjustment (REA) on July 20, 2015. On August 12, 2015, the Project

Engineer found the dispute had no merit and on August 19, 2015 FC said the dispute would be elevated to the Resident Engineer. After numerous meetings between the parties, in a meeting on December 9, 2015 both parties agreed to the initiation of the DRB process.

Joint Statement

Flatiron claims that the early seasonal flows constitute a differing site condition per specification 104.02. CDOT does not agree. The DRB is being asked to determine if the dispute has merit, and if so, provide an opinion on the cost components presented that determine quantum.

Pre-hearing Submittal

In addition to the Plans and Specifications for the Project, both parties provided the DRB with Pre-hearing Submittals per Spec. Section 105.23(e) which included but were not limited to, Position Papers, documentary evidence relevant to the issues, letters, e-mails, schedules, charts and pictures. Both parties provided the DRB with their lists of attendees.

Contractor Presentation on Merit on High Water – Differing Site Condition

The presentation was made by Ken Ekstrom of Applied Construction Management. CDOT took exception to FC's consultant making the presentation as this was not disclosed in the Pre-hearing Submittal or the Attendee List.

The presentation will be made covering the following items:

- Impact and Merit
 - FC Expectations
 - Differing Site Condition (DSC)
 - CDOT positions on DSC and costs
1. The early arrival of the high flows in April 2015, which were not reasonably expected, impacted the work and results in a DSC. The bid documents and contract did not provide any guidance on anticipated flows; as such, historical data is the only reasonable approach to determine the months that in river work could be performed. The Contract Documents do not require the Contractor to budget for the costs due to a DSC. FC incurred damages and costs due to the DSC. Both FC and CDOT benefitted from the mitigation efforts of FC and the Project was finished on time.
 2. FC's expectations were that the Phase 2 girders would be erected before June when seasonal flows increased. This was based on history and FC's experience. Historical monthly average flows and elevations were lower than what was experienced. CDOT allowed caisson work as late as April 3. There was no requirement to plan or budget for higher seasonal flows.

At the pre-bid meeting on June 26, 2015 the flow rates were given for 2014 but it is not prudent to look at only the 2014 flow rates. FC used historical flow rates for its bid. At the request of the bidders, the work hours were extended to allow work on Saturday.

FC used the historic data to prepare its bid. The Baseline Schedule was approved by CDOT and showed where and when FC planned to work. No schedule changes were suggested by CDOT. The schedule showed FC working in the channel in April and May 2015. The chart in FC's Pre-Hearing submittal used USGS data and was prepared after the high water. Work on the abutments and piers was scheduled from April 7, 2015 to May 20, 2015 with girder erection from May 21 to June 2. During this period, the USGS 90th Percentile data shows low flows in April compared to the actual flows of 1,100 CFS on April 27 and 2,980 CFS on May 10. The actual construction on the abutments and piers was April 10 to May 17 and girder erection from May 18 to May 27.

3. The DSC condition arose due to the early high flows which were significantly higher than what could have been reasonably anticipated at bid time. The early high flows were not contemplated in the Contract Documents. Spec 104.02 says a DSC is one *differing materially from those ordinarily encountered*. When the high water started in April 2015, FC gave notice and increased the height of the berm after it had been breached.
4. CDOT has said that FC should have expected early flows. This statement is contradicted by the Contract Documents and the historical data and is contrary to prudent budgeting procedures and low bid requirements. The flows at this same time in 2012 and 2013 were a fraction of the height that was experienced in 2015.

CDOT has said the girders could have been set sooner. FC set girders earlier than its schedule showed.

CDOT has criticized FC for certain resequencing from what was shown in the Project Phases. CDOT was a beneficiary of the resequencing since work in the river started sooner. The resequenced work had nothing to do with the critical path. The resequencing was a collaborative effort.

FC said that other municipalities in the area had allowed differing site conditions due to the high water.

CDOT Presentation on Merit on High Water – Differing Site Condition

A mandatory prebid was held on June 26, 2014 and FC had two people in attendance. The meeting information is contained in CDOT Attachment 2. The graph in Attachment 2 was included to show the USGS flow difference between the 39 Year Median Daily flows and the 2014 flows after the 2012 High Park fire in Poudre Canyon and the 2013 floods. The pictures in Attachment 2 were included to show the high flows in May 2014. The river flows being experienced during the 2014 spring runoff were specifically noted as a risk the contractor would need to manage during the upcoming construction project.

At the prebid, contractors expressed concern in meeting the Contract Completion date of November 20, 2015 if work was not allowed on Saturdays. An addendum allowed Saturday work until June 1, 2015 to allow the contractors time to get out of the river. For nine months, FC worked a six day week and went to five days after June 1.

Spec Section 104.02 states, *Upon written notification, the Engineer will investigate the conditions, and if the Engineer determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment, excluding anticipated profits, will be made and the Contract modified in writing accordingly. The Engineer will notify the Contractor of the determination whether or not an adjustment of the Contract is warranted. No Contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.* FC said it was impacted from April 16, 2015 to June 30, 2015 in its REA dated June 20, 2015 (CDOT Attachment 13). The first time CDOT was informed of a problem with the river was on May 14, 2015 (CDOT Attachment 10) Therefore FC cannot ask for any reimbursement for anything that happened before May 14, 2015.

The Baseline Schedule showed that traffic was to be switched to Phase 2 on March 3, 2015, but was actually switched on March 28, 2015 which resulted in a loss of 25 calendar days. After traffic was switched to Phase 2, then FC was able to get back in the river and remove the south half of the existing bridge and start constructing the south half of the new bridge. FC could not switch traffic to Phase 2 on time because the roadway work was several weeks behind schedule.

CDOT Attachment 21 (Plan Sheet 132) lists nine items that FC needed to complete in Phase 1. Phase 1 bridge work was completed early but the roadway work was 25 days behind schedule and the bridge crew had nothing to do. Therefore, CDOT allowed FC to switch some of the work from Phase 3 to Phase 1 so FC could have some work for its crew. The reason CDOT put this work in Phase 3 was so the Contractor could get out of the river sooner. FC did not take advantage of this. If FC had completed this work in Phase 3 per the required phasing plan, then FC could have started Phase 2 two to three weeks before March 3, 2015.

FC's schedule (CDOT Attachment 4) showed the Phase 2 girders to be installed from May 26, 2015 to June 2, 2015 but the girders were actually installed from May 18, 2015 to May 27, 2015, thereby finishing the installation of the girders one week early. FC worked hard to gain the 25 days back. CDOT pleaded with FC repeatedly to install the girders in April instead of late May because of the risk of higher water in May. If the Phase 2 traffic switch had occurred on March 3, 2015 per the schedule and FC worked as hard as they did to gain the 25 days back, then FC could have been 25 days ahead of schedule and finished the girders on May 2, 2015 instead of May 27, 2015. CDOT did everything they could to help FC get out of the river sooner. CDOT did approve the schedule but had concerns setting the girders the end of May but considered it a FC risk.

The inlets shown in the pictures in CDOT Attachment 6 were installed in the wrong locations in Phase 1 but CDOT allowed the inlets to be modified in Phase 2 so that FC could start Phase 2 sooner. Since this corrective work affected bike and pedestrian traffic, FC had promised verbally to complete this work within 2 weeks after switching traffic to the area on March 28, 2015, but ultimately completed the work on September 15, 2015. CDOT reluctantly allowed FC to postpone this work because FC said they could not take anyone out of the river to construct the inlet and adjacent 8 foot wide shoulder. If CDOT had not allowed this postponement of work, then FC would have been farther behind in getting out of the river. CDOT could have issued a Form 105 and shut the job down to get the area open and safe.

In FC's REA (CDOT Attachment 13) Flatiron maintains that "based on data obtained from USGS and NOAA, the project experienced unusually higher Poudre River flows sooner than what could be contemplated at bid time based on historical averages." In this case, "Historical average" flows are of limited use in predicting water flows and determining a construction schedule. This is in part due to the change in river behavior after the September 2013 flooding event. That event recharged the river riparian system and has led to substantially increased base flow in the river. FC should have been aware of this potential change in river behavior at the time of bid, and certainly by spring of 2015. This new river regime has been well documented by many hydrologists and hydraulics engineers practicing in Northern Colorado. The REA also discussed "Median value flow." The median or average flow statistics alone should not be used to predict a river's future performance. There are too many seasonal variables that influence a river's performance from one season to the next. Although FC in its REA said the high flows were 40 calendar days ahead of expected, CDOT is not responsible for the Contractor's assumptions of a river's behavior.

FC submitted the USGS table (CDOT Attachment 11) which shows Mean of Daily Mean Values for each day for 39 to 40 years of record. This chart does not help determine seasonal high flows. Picking the median flow for each day ignores the high flow for each day, and averaging each day separately over 40 years leaves out all spikes in flow essentially flattening the curve. The chart shows a high flow of 1,110 CFS on April 27 which FC was not prepared for.

CDOT Attachment 1- Flood Insurance Study: Larimer County, CO, is the Federal Emergency Management Agency Flood Insurance Study book for Larimer County and Incorporated Areas which was revised May 2, 2012. Page 2, Column titled "10 - Percent Annual Chance", shows in the last row on the page titled "Upstream of Confluence with Dry Creek" a flow 5,370 CFS. This means there is a 10% chance that the flows will exceed 5,370 CFS in any given year at the project site which is also known as the 10 year storm. This is a good start for river diversion design, not median averaged flows. Consideration should also be given to the mountain snowpack since the Poudre is fed from the mountains. FEMA flows should have been used in determining the method of diverting the Poudre River that is required by the Revision of Section 211 - Dewatering and Stream Diversion (CDOT Attachment 22).

FC's REA (CDOT Attachment 13) states, *The fact that the Poudre River achieved such a high flow in a timeframe sooner than typical is the main difference from what would be considered ordinarily encountered.* "High flow", "Typical", and "Ordinarily" has not been defined or quantified. The Poudre can reasonably be expected to react to rainfall events by increases in daily volumetric flow rates. Rainfall is commonly observed to swell rivers in early to mid-spring throughout Northern Colorado. The flow amounts experienced on the Poudre in spring of 2015 generally were not above flood stage.

The Plans had an erosion control item to install berms by the linear foot. This is to keep runoff from getting into the river or leaving the work site, not unlike the use of erosion control logs. This item has nothing to do with river diversion or river containment. CDOT paid for all river berms at the unit bid price. The construction of the berms for diverting the river was FC's responsibility. CDOT Attachment 7 has pictures taken at about 1:30 p.m. on April 27, 2015 showing the berms about to fail and the work area from Abutment 1 to Pier 4 being dry. Other

pictures taken about 5:00 p.m. show a trackhoe destroying the berm at Pier 4, the temporary bridge abutment beginning to fail and the work that was earlier dry completely flooded.

CDOT Attachment 11 shows the maximum flow for April 27, 2015 was 1,110 CFS. It appears that the berm and the temporary river crossing could not handle any flows higher than 1,110 CFS. CDOT Attachment 5 - Hydraulic Calculations for Phase 2 Temporary River Diversion for the duration of February through July 2015. It was prepared by FC's Professional Engineer and shows the Full Flow Capacity of the trapezoidal section under the temporary bridge as 4,186 CFS. The six overflow pipes added another 384 CFS making the total flow capacity 4,570 CFS. Item 3(f) states, *The trapezoidal section and overflow system appear to provide about 1.5 times the 90th percentile of daily mean flow for the month with the highest flow: June.* It should be noted that only two pipes were installed. The maximum flow on April 27, 2015 was only 1,110 CFS and caused the berms to fail but the design capacity was supposed to be for 4,186 CFS.

In FC's presentation it referred to a flow graph. CDOT takes no ownership of the graph. CDOT Attachment 17 is a graph provided by FC at a weekly meeting. The graph shows Actual vs. 90th Percentile flows (Mean Average). The Mean Average Flows disregard the peak flows.

Contractor Rebuttal on Merit on High Water – Differing Site Condition

FC questioned where the FEMA data referenced by CDOT (CDOT Attachment 1) was included in the Contract. CDOT responded that the consultant that FC hired for the hydraulic design should know about FEMA information. CDOT did not communicate the high flow risk to contractors. If the risk was high, CDOT would have received higher bids. The use of the 90th Percentile of Daily Mean Flow was a reasonable assumption by FC.

The FEMA report shows a flow of 5,370 CFS. The quantity of flow is not the question. The question is when the flow occurred. The highest flows were in June when FC expected to be out of the river with pier work and girder erection. The high flows in April 2015 were higher than what could have been reasonably expected.

CDOT's use of June 1, 2015 to expect high flows was arbitrary. FC expected to be out of the river by June based on 40 years of experience for river work in Colorado.

Although the design of the temporary bridge showed use through the end of July, FC intended to be out of the river by the end of May. CDOT made no comments on the temporary bridge hydraulic submittal or the berms. This has nothing to do with today's discussions which is the timing of the high flows.

CDOT said the work items shown for Phase 1 on Sheet 132 of CDOT Attachment 21 needed to be completed before the start of Phase 2. FC feels these were guidelines since the contractor could have submitted changes per the language on the sheet. The driveways had no bearing on the critical work. FC was proactive in getting out of the river. FC saved CDOT considerable dollars by reducing the asphalt for the detours. The pedestrian bridge was early in Phase 1. The

bottom line is that the girders were erected per the schedule and the rest of the items have nothing to do with the critical work. The impact of the high flow on the Project was when the high flow occurred.

CDOT talked about risk assessment by the Contractor. CDOT made no comments on the FC schedule. FC does not agree with CDOT about being able to have gotten out of the river earlier if Phase 2 was started earlier. In referring to the picture 4 of 8 in CDOT Attachment 7, CDOT implied that the berm removal sabotaged the job. FC did not intentionally destroy the berm.

CDOT Rebuttal on Merit on High Water – Differing Site Condition

CDOT felt it would get better bids by not stipulating the river flows and let the contractors' professional engineers determine the flows based on the contractors work plans. The 90% mean flow is not the peak flow.

The schedule issue vs. the DSC was discussed in many meetings with FC and CDOT struggled with the DSC from the beginning. The actual flows were not an order of magnitude greater than what had occurred in the past. You need to go to the FEMA data which shows high flows from April to June. The Professional engineer should have been aware of available flow data.

At the prebid meeting, CDOT made note of risks associated with snowmelt and high river flows and possible impacts on the November 20, 2015 Completion Date (CDOT Attachment 2). This was shown on the graph for USGS flows for May through June 2014. The High Park fire in Poudre Canyon and the 2013 floods had changed the river basin. High flows were something contractors could have expected.

CDOT did not question the hydraulic review by the Contractor's designers since the design said the diversion would pass 4,000+ CFS. CDOT cannot understand why FC did not raise the berm earlier than they did. Now FC wants to be compensated for the failure of the berm. The berm totally failed on May 10, 2015 before the girders had been set.

CDOT agrees the driveway completion was not needed to proceed to Phase 2. CDOT tried to keep pedestrians off the bridge since there was no pedestrian rail. FC could have gotten into the river on March 3, 2015 but FC was trying to get caught up with roadway work. CDOT did not have a get out of the river date. The contractors had to figure out their schedule but there was more risk after June 1.

The high flows are much greater than the mean flows. Why didn't the berm work for a flow of 1,110 CFS if it was designed for over 4,000 CFS? What was the top of berm elevation target? River data was shown on CDOT Attachment 21, Sheet 70 where a 10% Annual Chance Flood elevation at the bridge was 4,935. The water never reached the top of the riprap as shown on CDOT Attachment 21, Sheet 66.

FC has not discussed what could have been done. Historical data was out there that showed high flows but the historical data cannot be used due to the river changes from the fire and floods. CDOT made contractors aware of the earlier fire and floods. The past two years of flow data is more relevant to the river. After the 2012 fire, culvert sizes were increased upstream of the site that allowed more flow into the Poudre. The contractor needs to set a risk level that it is comfortable with.

DRB Questions

1. **To CDOT:** The DRB needs the Standard Special Provisions and Project Special Provisions that are in the Contract.

Copies were provided by CDOT.

2. **To CDOT:** Was the FEMA data referenced in CDOT's presentation provided at the prebid?

The data is shown on CDOT Attachment 21, Sheet 70 and used the USGS gauge.

3. **To CDOT and FC:** Was a drawing submitted showing the berms?

CDOT said that no drawings were submitted on the berms. The FC submission (CDOT Attachment 5) only showed the temporary bridge information.

FC said they used the Phase 1 temporary crossing information in the Structure Selection Report (SSR) document.

Discussions after Rebuttals on Merit on High Water – Differing Site Condition

1. FC made reference to the SSR document. CDOT provided electronic copies of the documents reference on Revision of Section 102 – Project Plans and Other Data that were available to bidders at bid time.

Contractor Summary on Merit on High Water – Differing Site Condition

The DRB heard about the transfer of risk and the beneficial value for CDOT. FC does not see risk transfer in the Contract and it was never defined. FC assumed what is reasonable and that was to be out of the river by June 1, 2015.

Looking at a 10% chance flow for April and May, the actual flow was 450 times greater than what was shown for April and May. This is a significant difference. If CDOT wanted the contractor to assume all the risk, CDOT should have said so. FC's bid was based on the 90% flows. Other contractors must have assumed similar flows since the bids were close.

There is no disagreement on the high flows. The issue is the timing of the high flows in April and May. In addition, the flow volumes were greater than reasonably foreseen. This is a differing site condition per Spec Section 104.02 and does have merit for compensation per Spec Section 109.04.

CDOT Summary on Merit on High Water – Differing Site Condition

CDOT's position is that there is no differing site condition. At the prebid, CDOT tried to make clear the different flow gauge conditions due to the fire and floods.

The data was available for the Professional Engineer to work with the Contractor on the design of the temporary crossing and river diversion. The Contractor controlled the schedule and how to match its level of risk.

The flow magnitude and time frame is typical for the Poudre at this time of year.

Contractor Presentation on Quantum on High Water – Differing Site Condition

FCC wants the DRB to provide an opinion on the cost components that determine quantum.

The bid required dewatering for the caissons but not dewatering for the flood.

The flood caused the piers to be surrounded by water and limited the type of access that FC had previously used to strip the pier caps. Instead of removing the pier cap forms in large pieces, the form had to be taken apart stick by stick.

Mats had been used to support the cranes on the subgrade near the bridge. After the flood, the subgrade had to be dried out and stabilized using geogrid and mixing on-site and imported subgrade materials. This material then had to be dried out in order reuse and compact it on the Project.

FC had planned to install the riprap at the abutments before the girders were erected. Due to the high water, FC could not place the riprap and decided to erect the girders rather than delay the work. The riprap then had to be installed working under the girders which was less efficient.

FC is requesting payment for only the added costs and no overhead and profit.

CDOT Presentation on Quantum on High Water – Differing Site Condition

Other than for the caissons, no dewatering outside the berm was required for Phase 1 in November-December 2014. There was more water in the morning and dewatering should have been anticipated.

CDOT agrees the Phase 2 work was harder than for Phase 1 after the area had been flooded but the area was flooded due to the river not being contained. The crane access costs of the REA could have been reduced if FC had started Phase 2 earlier and done the erection in April. Work

is always hard in a river and more care is needed to make the work safe. Conditions change depending on the time of year.

The materials for the crane pads were reused in the roadway. The rework of the materials would not have been necessary if the berm had not failed.

FC did not place the riprap before the girder erection because its crews were too busy with other work. The riprap was placed for Phase 1 at Abutment 1 before the girders. Abutment 6 was placed in mud and water. Not all the riprap was under the girders and CDOT does not know how much of the costs were for riprap not under the girders.

Contractor Summary on Quantum on High Water – Differing Site Condition

FC could have just called “time out” in May and stopped work. If that was the case, they would still be working on the Project.

The schedule shows FC planned to install the riprap before erecting the girders. (CDOT questioned this and will look at the method statement for riprap and provide a copy if it is different.

CDOT said it was not necessary to give a Summary on Quantum.

DRB Questions

1. **To CDOT:** Were the Bid Documents escrowed?

CDOT said they were.

FINDINGS

1. Revision of Section 211 – Dewatering and Stream Diversion (June 19, 2014) states:

The Contractor’s method of diverting the Cache la Poudre River must be approved by the Engineer prior to implementation. The Contractor shall submit a diversion plan for review and approval 30 calendar days prior to implementation in accordance with Subsection 105.02. The diversion plan shall include the following:

(a) Method statement addressing all requirements including copies of relevant permits required for stream diversion, and,

*(b) Plans and design calculations, sealed and signed by a Professional Engineer registered in the State of Colorado, **supporting the diversion plan** (emphasis added) including but not limited to:*

1. Method for determining design flow,

2. *Surface water profiling and conveyance calculations,*
3. *Phasing plans, and,*
4. *Site restoration plans showing how to return the stream bed to its original configuration as it was prior to construction.*

The Phase 2 Temp River Diversion submittal dated March 12, 2015 (CDOT Attachment 5) shows a trapezoidal section under the temporary bridge and calls for six pipes in the fill area. The Manning Formula resulted in a total flow through the trapezoidal temporary bridge opening and pipes of 4,570 CFS and referenced historical 90-percentile flows of 2,630, 2,750 and 1,570 CFS for May, June and July respectively. Item 5 – Results and Findings states:

The currently installed trapezoidal cross-section and overflow pipes at the Poudre River crossing have capacity to contain the 90-percentile (of daily mean) flows for the months with the highest flows: May, June, and, July. Historical data is calculated over 39 – 40 years (1974 through 2014).

FC's Transmittal Dated 3/13/15 describes the submittal of its consultant's report as "Phase 2 River Crossing – Hydraulic Calcs". There is nothing in the submittal that shows elevations for the temporary crossing. In addition, there is nothing in the submittal that shows how FC intended to divert the river or the elevation of the berms that were required to contain the diversion flows listed above. The submittal was incomplete since it did not show "the Contractor's method of diverting the Cache la Poudre River" and only showed the temporary river crossing. There was nothing contained in FC's Pre-hearing Submittals or that was presented at the hearing that a river diversion plan had been prepared or submitted by FC as required by the Revision of Section 211.

From the pictures dated April 27, 2015 that are contained in CDOT Attachment 7, it appears the trapezoidal section under the temporary bridge passed the high flow for the day with some degradation at the abutments but that the berms were not adequate or high enough to contain the high flow which was 1,110 CFS. Although the berms were later raised, the pictures in CDOT Attachments 8 and 9 show that the berms ultimately failed to contain the river. When the berm was breached on May 10, 2015, the peak flow was 2,980 CFS which is only 350 CFS more than the maximum 2,630 CFS "90-percentile flow" referenced in FC's consultant report.

FC said CDOT made no comments on the temporary bridge hydraulic submittal or the berms. Subsection 105.02 which is referenced in the Revision of Section 211 in Finding 1 above states in Subsection 105.02(c) states:

The Engineer will review the shop drawings to evaluate that general conformance with the design concept and that general compliance with the information given in the plans and specifications has been achieved. The review does not extend to accuracy of dimensions, means, methods, techniques, sequences, schemes, procedures of construction, or to safety precautions. The review by the Engineer is not a complete check. Review of the shop drawings does not relieve the Contractor of the responsibility for the correctness of the shop drawings.

There was nothing contained in the Pre-hearing Submittals or that was presented at the hearing that FC submitted or that CDOT required a river diversion plan as required by the Contract. In addition, FC provided no information that berms as constructed would contain the flows that could have reasonably been anticipated.

2. At the Mandatory Pre-bid Meeting on June 26, 2014 which was attended by two FC employees, on the sheet titled “Schedule” it states:

THE CONTRACTOR WILL BE EXPECTED TO MANAGE THE RISKS ASSOCIATED WITH THE SNOWMELT AND THE RIVER FLOWS TO MEET THE FIXED COMPLETION DATE – NOVEMBER 20, 2015.

There was nothing contained in the Pre-hearing Submittals or that was presented at the hearing that discussed the mountain snowpack for the 2014-2015 winter or whether it was above or below average. Similarly, nothing was discussed on whether the April – May temperatures were above or below average or that there were rains that above or below average.

Pre-bid Meeting sheet titled “USGS 06752260 Cache La Poudre River at Fort Collins” shows the flows for May – June 2014 were significantly higher than the Median Daily Statistic (39 years). Pre-bid Meeting pictures were also included which shows the site on May 30, 2014 with 4,040 CFS flow.

The flow data that was a part of FC’s consultant submittal (CDOT Attachment 5) shows that the maximum 90th Percentile of Daily Mean Value flow for April was 963 CFS and for May was 2,630 CFS. It should be noted that these flows are not peak flows. The peak flow data that was submitted as part of FC’s letter of June 16, 2015 (CDOT Attachment 11) that corresponds with the high flow points on FC’s graph furnished as part of its Pre-hearing Submittal was 1,110 CFS on April 27, 2015 and 2,980 CFS on May 10, 2015. In order to see how great a difference there can be between the 90th Percentile of Daily Mean Value flow and the actual peak flow, compare the 90th Percentile of Daily Mean Value flow with the peak flow on the charts in CDOT Attachment 11.

| Measurement Basis | April 27 | May 10 |
|-------------------|----------|--------|
| 90th % Mean - CFS | 169 | 220 |
| Peak Flow - CFS | 1,110 | 2,980 |

Accordingly, it is not reasonable to use the 90th Percentile of Daily Mean Value when selecting flows to determine river containment especially in light of the river changes discussed in Finding 3.

Based on the forgoing discussion, FC’s position that the “Mean of Daily Mean Values” rather than peak daily flows should be used for design does not appear to be reasonable.

3. Revision of Section 102 – Project Plans and Other Data lists information that was available on the CDOT Project website <http://www.coloradodot.info/projects/SH14PoudreRiver> until the date set for opening of bids. One of the items listed was “Structure Selection Report (SSR) for Structure B-16-EV, July 31, 2013” which during the hearing FC said they used for the Phase 1 crossing. On Page 27 of 35 in the SSR it states:

SPECIAL CONCERN – HIGH PARK FIRE RUNOFF

*The High Park fire charred acres of land in the Poudre Canyon in June, 2012. This left behind land that is barren and unable to retain water, leading to flooding, mudslides, rockslides, and runoff full of ash and debris. **The elevated risk for flooding and debris flows will continue for the next three to five years** (emphasis added). These conditions could have an impact on the storm frequency hydrographs for the Poudre River as the next storms pass through Fort Collins.*

During the hearing, CDOT said that at the Pre-bid meeting the fire concern was pointed out, as well as, the changes and impacts from the 2013 floods.

Based on the forgoing discussion, a reliance on historical flow information for many prior years (up to 40) rather than recent flow data to determine conditions that could be expected during the construction period in the spring of 2015 does not appear to be reasonable.

4. FC’s Position Paper in Section II - Flatiron Position and Key Arguments, Item 2 states:

The bid documents and contract did not provide any guidance on anticipated flows; as such, historical data is the only reasonable approach to determine the months that in river work could be performed.

This position is incorrect based on the discussions in Finding 3 above.

5. FC’s Position Paper in Section II - Flatiron Position and Key Arguments, Item 1 states:

Per specification section 104.02 a differing site condition exists if it is an “unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract, are encountered at the site.” The flows starting in April meet the definition of the differing site condition.

Based on Findings 2 and 3 above, although the flows were high, they do not appear to differ materially from those ordinarily encountered and generally recognized as inherent in the work, especially if the recent flow history and changes in the river are taken into consideration.

6. Spec Section 107.17 – Contractor’s Responsibility for work states:

*The Contractor shall be responsible for and protect the contract work against injury or damage from all causes whether arising from the execution or nonexecution of the work, including but not limited to action of the **elements** (emphasis added), traffic, fire, theft, vandalism, or third party negligence, until final written acceptance of the project by the Engineer. The Contractor shall rebuild, repair, restore, or replace all contract work that is injured or damaged prior to final written acceptance at no cost to the Department.*

In addition to the requirements discussed in Revision of Section 211, Finding 1 above, FC was responsible to protect its work. **FC failed to properly evaluate river flows and prepare plans for a diversion to handle the flows.**

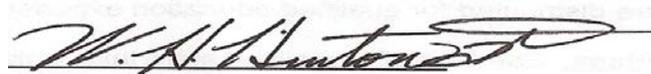
7. Although FC did not claim the high flows delayed the Project, floods and any additional compensation are discussed in Spec Section 108.08(c)1(B) which states:

*Noncompensable Delay: An excusable delay for which the Contractor may be entitled to an extension of contract time **but no additional monetary compensation** (emphasis added). Contract time allowed for the performance of the work may be extended for delays caused by acts of God, acts of the public enemy, fires, **floods** (emphasis added), area wide strikes, freight embargoes, **unusually severe weather** (emphasis added), or delays not caused by the Contractor’s fault or negligence.*

RECOMMENDATIONS

1. As discussed in the above findings, Flatiron Constructors was not reasonable in considering 90th Percentile of Daily Mean Value flows instead of peak flows and did not prepare river diversion plans or build berms to adequately contain the peak flows during the construction period. The river flows in April and May were not materially different from those encountered in recent years after the High Park Fire and the 2013 floods. **Accordingly, the DRB does not consider the high flows in April and May 2015 a differing site condition and that Flatiron Constructor’s claim is without merit.**
2. Since Flatiron Constructors’ claim is without merit, the DRB makes no consideration on the cost components to determine quantum. In addition, as discussed in Finding 7, additional monetary compensation for floods and unusually severe weather is not allowable under the Contract.

Respectfully submitted this 12th day of April 2016.



W. H. Hinton II