

At 10:00 am Selectmen opened a special meeting in the basement meeting room at the Fremont Town Hall. All rose for the Pledge of Allegiance.

The Board scheduled this meeting last week to meet with Stantec Consultants and discuss the Town's options with regard to moving forward on the Sandown Road Bridge (086/055) overflow project. This meeting was posted on Friday 25 January 2019.

Present for the meeting were Selectmen Neal Janvrin and Roger Barham, Road Agent Leon Holmes Jr, Town Administrator Heidi Carlson and Stantec representatives Jerry Fortin, Dan Tatem and John Stockton. FCTV taped the meeting for future replay. It will also be available on Vimeo within approximately 24 hours of the meeting.

The meeting began with a review of the project and the information the Town has to date. Italicized areas are from the actual Stantec report for the meeting, and the rest of the language is meeting discussion.

This project review included:

General Summary

1. *NHDOT determined that the bridge must be closed:*
 - a. *NHDOT letter issued on January 10, 2019. The DOT inspection leading to this letter was done in October 2018.*
 - b. *An alternative lane closure is noted as acceptable to NHDOT.*
 - c. *One-Way traffic to be located along the center of the bridge.*

Engineer Jerry Fortin reviewed that the Town received a Letter of Deficiency from NH DOT on January 10th indicating the Sandown Road Bridge overflow would need to be closed, and offered an alternative to allow one lane alternating traffic in the center lane of the bridge. The outside edge beams are identified as beams of concern. One way alternating traffic may be allowed on the bridge until the Town has completed the repairs. Stantec has come up with a repair approach.

2. *Recommended Repair Approach (Town Funding):*
 - a. *Because the substructure (abutments) are in good condition (NH DOT rated as a 7 on a 0 to 9 scale), we recommend keeping the existing abutments and replacing the superstructure (beams and deck).*
 - b. *Complete bridge deck to be pre-engineered and prefabricated by US Bridge or equal.*
 - c. *Abutments to be prepared to receive the prefabricated bridge deck.*
 - d. *Potential, necessary repairs to abutments are not known at this time. This will not be known until the pavement is pulled up.*
 - e. *Existing guardrail will be replaced with a new guardrail system.*
 - f. *Minor approach roadwork will extend in both directions to provide a smooth transition.*

John Stockton stated that Town bridges are inspected by NH DOT every two years. He referred to the rating system and feels from the most recent NH DOT report, that the abutments are good. The problem is that the deck beams have been in poor condition since 2012. There are 10 of them total, and relative to the middle six, only the bottom edge can be viewed. The bridge itself is 15 feet long. There is arched concrete between the span and the middle beams are encased in concrete. The original structure is thought to have been built in 1930 and at some point it was widened by adding two steel beams on either side with a concrete deck.

The State found deterioration in the outer beams recently, indicating they have a reduced carrying capacity. Deterioration is limited to steel beams.

In terms of superstructure replacement (beams and deck), Stantec looked at two options steel beams or concrete.

Stockton outlined the differences between the two options:

Steel beams

weigh less
are similar to what is there now
are probably less expensive

Concrete

likely more durable
is heavier and will require additional work
beyond setting the bridge in place
this will get into a larger scope of work
ultimately believed to cost more

He outlined a galvanized steel beam option with galvanized steel decking. He described this as a corrugated steel (like a metal roof) with deeper grooves that are filled with asphalt paving. He stated that galvanized steel is more cost effective, no painting is necessary, and therefore is good in applications close to the water.

These systems are generally available pre-engineered and are prefabricated from the manufacturer, arriving on a flatbed truck, assembled in place, and laid into their final location. This method involves removal of the existing beams and deck, with the road closed during that time. The road does not need to be completely closed until the deck needs to be removed.

He noted that there may be some work needed on the existing abutments to receive the new beams but that will not be known until the deck is removed. Once the beam is put in place, the decking is then installed, the bridge is paved and new guardrail is added. At this point, the bridge is done, except for the approach roadway work, which may be needed in either direction to ensure a smooth transition/approach to the bridge deck.

He stated that a prefabricated, pre-engineered structure is the quickest and cheapest repair for the Town to undertake, with regard to up front dollar costs and the least amount of closure time.

Janvrin asked what the life expectancy of the new bridge might be. Stockton said that the life expectancy of a bridge depends on the environment, for this bridge, design life might be 75 years. Deterioration due to such environmental considerations as dewatering and road salt make it less years. The US Bridge (manufacturer) warranty on their galvanizing is 35 years. The paving on the bridge would not be expected to last 35 years, but Stockton estimated that the structure itself might have a life expectancy of 35-50 years.

At that point, we would likely have to look at it anyway, as the abutments in good shape now, but are estimated to be 90 years old presently.

Tatem mentioned projects Stantec had recently done in Goffstown (Parker Station Road) and Auburn (Candia Road) in the past five years, with similar characteristics including older abutments that were in good shape and a similar decking structure placed on the abutments.

3. *Estimated costs for bridge repair, guardrail system, roadway approach work and traffic control:*
 - a. *Estimated costs include design, permitting, bidding, construction, GC mark-up, construction engineering, and contingency.*
 - b. *Total estimate is \$350,000 (a spreadsheet of these details follows).*

Dan Tatem began with a line item review of each of the costs included in the estimate. The costs associated with items 1 and 2 include all components of the lane reduction and closure. Tatem said that they have put together a conceptual plan for the lane reduction and will get this finalized. He described and answered questions about the materials, signage and lighting necessary to reduce the bridge to one lane with alternating traffic. Concrete barricades (jersey barriers) are used on each side, with a STOP control sign on each end, and the NH DOT required advance signage and spacing on either side. There are NH DOT specifications for all components of the lane change/reduction setup for the Town to follow.

They indicated that alternating red/green lighting is very costly and not included in their traffic control estimate used for the closure costs. Portable (potentially solar) lighting can be installed on each end to show the closure and light up the area. Tatem has pricing from multiple vendors on several aspects of this work already and will firm that up and get it to the Town as quickly as possible. Lighting and barricades are rental items, and it is anticipated we would need them for six months. This is based on the assumption that the Town does the bridge construction with fully Town funds, and moves forward with it this construction season.

Other signage and information related to the design closure and detour might include a message board being installed. He said the Town should put it up on their website, use the Newsletter and other forms of local advertising.

Item 3 includes removal of the existing superstructure (beams and deck), and replacement with a fabricated unit.

Item 4 includes removal of the old guardrails and installation of new. There are multiple options here if the Town decides to do this independently. There was discussion about the \$8,740 carried in the 2019 Highway operating budget for this work, and Holmes consulted his copy of that quote. This will be sent to Stantec for review. Tatem said that this will be fine-tuned once the bridge design is chosen.

He added at this point that the Town can look at options on whether the Town does some of this work, farming out parts of the project with potential cost savings. Stantec said they can help, and that there would be the General Contract (GC) percentage markup as potential savings for any work the Town can contract itself. He cautioned that at some point the job may be too small to interest a viable bridge contractor, but that these options can all be further discussed and reviewed. Tatem is reaching out to vendors in this regard as well.

Item 5 includes the road work on either side approaching the bridge. This is estimated at 100 feet in both directions, and could be more or less depending on design and ultimate choices in terms of the work. This would also fix the bump that currently exists upon approach.

Holmes asked if the work would raise the bridge at all, and Tatem answered that is not part of the design. The last time there was flooding at the overflow was the Mother's Day Flood, and it has not happened since. Holmes said the road has been elevated in this area since that flood.

Items 6 and 7 include all of the erosion control, dewatering, silt fence, etc. Mobilization of 8% of construction cost is a NH DOT standard, and this is a safe number for budgeting.


The subtotal for construction is \$211,000. The next item of the estimate are the General Contractor (GC) markup costs. These areas are where, if the Town opts to do more work themselves, there would be savings. If this is put out to bid and a general contractor is selected to do the whole job start to finish, they are going to hire a guardrail company and then the GC marks up that product, adding end costs. If the Town chooses to do some of this themselves, those markups will not exist, and the Town may be able

to better (ie: existing contracts with companies like GMI for asphalt and State bid pricing on guardrails or other products) that will also save money.

The Environmental permitting would be done by Stantec. Tatem said this is a fairly straightforward permit and includes delineating wetland, flagging, permit preparation, etc, for the \$7,500 sum listed. The Town would have to pay the permit fee (\$200 estimate) and it will not be as complex as if this were in a prime wetland, which it is not.

Stantec will assist the Town in the bidding and construction phase services including the whole job through design and construction, making contractor recommendations (vet out the contractors, verify work completed and payment requisitions), etc. If they assist the Town in more of a GC-type capacity, their added cost of services would be less than the GC markups.

The Town was cautioned about keeping some contingency included as we don't yet know enough about the abutments, and some other site conditions. When we pull up the pavement are we going to find tree stumps or some other problem? If that ends up being the case we need to be able to address it or else the project will stop.

		STANTEC PROJECT # 195113346			
		SHEET #			
PROJECT: Town of Fremont, NH - Sandown Road Bridge Repair		MADE BY: JDT	1/30/2019		
15' x 24.33' Prefabricated Deck and Guardrail System Replacement		CHKD BY: GF	1/30/2019		
SUBJECT: Opinion of Cost of Probable Cost		Updated BY			
ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL
1	6-Month Lane Closure	LS	1	\$25,000.00	\$25,000.00
2	2-Month Traffic Detour	LS	1	\$15,000.00	\$15,000.00
3	Remove and Replace Bridge Deck and Beams, Complete	LS	1	\$91,500.00	\$91,500.00
4	Remove and Replace Guardrail System	LS	1	\$39,000.00	\$39,000.00
5	Road Work (Paving, Striping, Prep, Etc.)	LS	1	\$23,000.00	\$23,000.00
6	Erosion Control	LS	1	\$2,500.00	\$2,500.00
7	Mobilization	LS	1	\$15,000.00	\$15,000.00
Subtotal					\$211,000.00
GC Mark-Up / Profit (20% Of Const. Cost)					\$42,200.00
Engineering Design (10% Of Const. Cost)					\$21,100.00
Bidding & Construction Phase Services (12% of Const. Cost)					\$25,320.00
Environmental Permitting					\$7,500.00
Contingency (20%)					\$42,200.00
PROJECT TOTAL					\$349,320.00

4. Cost Comparison to Martin Road Bridge, in NHDOT Bridge Aid Program:
 a. 2019 estimated cost - \$655,000

5. If Sandown Road took Martin Road's position in the Bridge Aid program:
 a. Will likely not be same Bridge Repair ~ Likely Full Replacement
 b. Full Engineering Study and Process to meet NHDOT Requirements
 c. Likely Larger Bridge to meet Stream Crossing Rules

- d. Estimated Similar Cost = \$655,000 (Assuming Similar Replacement Structure to Martin Road since Similar Size)*
- e. Likely Result in One Lane Roadway for Longer Period Time (Takes More Time for NHDOT Process)*
- f. Martin Road – also Serious Condition (3) – Town could also receive Letter of Deficiency from NHDOT Requiring Closure*

6. Martin Road – No Option Other Than Full Replacement for Martin Road

Fortin then reviewed the Martin Road bridge project on the other side of town. Martin Road is in the NH Bridge Aid Program now and funding will be available probably in 2020. In terms of cost comparison he said that Town funding of the Sandown Road project versus putting it in the NH Bridge Aid Program has several costs associated with it.

In 2019 the estimated cost of completing the Martin Road Bridge is \$655,000 in present day costs. If this is swapped with Sandown Road within the Bridge Aid Program, the Sandown Road project would then NOT be just a deck replacement and repair, it would be a full replacement of the entire structure. This includes a full NH DOT engineering study and all of the processes required by the Bridge Aid Program. This will get into freeboard capacity, floodplain considerations, and a larger bridge to meet the Stream Crossing Rules. The best case scenario is a bridge similar to Martin Road (currently designed within Bridge Aid scope) done on Sandown Road would cost \$650,000 to \$800,000.

If the projects were swapped within the Bridge Aid Program, the Town would lose the 80% reimbursement for funds already spent on engineering and preparation for the Martin Road Bridge replacement, which is estimated at \$39,639. This swap would be contingent upon the State approving the two projects being swapped, and them granting a waiver for the engineering RFQ for Martin Road, which is older than they require (IE: Carlson explained that the Town has been working with Stantec since 2011 on the Martin Road project after a 2010 RFQ process – which is a NH Bridge Aid requirement). There is time and money involved in all of these processes.

Stockton cautioned that the Town also needs to be mindful of the state of the Martin Road Bridge and that if the projects were swapped, it is likely that Martin Road cannot wait 10+ years to be done with Bridge Aid money. That is the best case scenario in timing of Bridge Aid, IF it is allowed to be moved, and IF the Town's re-application for Martin Road is accepted into the NH Bridge Aid Program, and IF the State is still funding the Program at that time.

- 7. Additional Cost to Complete Sandown Road in 2019 with Town Funds versus State Bridge Aid is estimated at \$125,000 (using Similar Cost as Martin Road)*
 - a. Limit duration of one lane roadway to 2019 construction season (anticipated to be approx. 6 months)*
 - b. Both bridges are completed in shorter time frame*

Stantec stressed that once you get into further components being replaced, you get into more and more time and money. The current one lane restriction might be only six months, with maybe one to two months of complete closure while it is fixed. The goal is to do this during low flow, which coincides with school being out and the need for busses to use the road.

The Sandown Road overflow bridge is in a state of deficiency and closure needs to be addressed quickly. The response to NH DOT was also discussed, and a letter will be drafted to them shortly.

Holmes asked if they had looked at a box culvert, and the response was that Stantec had looked at it, but the cost would go up substantially because that type of structure changes the layout and get the Town involved in Stream Crossing Rules, a full NH DES Wetland permit process, hydraulic analysis, etc. If that were pursued, at the time of construction then you would also get into the cost and work associated with controlling the water when you go to excavate the footings, etc. They estimate that type of approach would run \$650,000 to \$800,000 instead of \$350,000 and there are additional unknowns of what else you will get into. Given the extent of the Exeter River floodplain, we may have to place new substructure on piles after soil borings, much different and likely larger structure than what we have their today.

Stantec said that if the abutments were in poor shape, we would be having a different conversation now. The abutments being in good condition allows us to make a repair at this point.

The road closure would be for a longer time if the Town chooses to pursue NH Bridge Aid. Right now, if the Town proceeds and does this, we are looking at six months start to finish with one to two months of closure. If pursuing Bridge Aid, the land reduction would be for at least two years, and construction might take twice as long, so 4 months versus 2 for construction.

For a cost comparison of the Town's cost and local funding, you must look at the Town funding of Martin Road, and the cost associated with Sandown Road (estimated \$350,000) for the Town to do it. Martin Road, if it stays in the program and construction is two years out, at \$655,000 and the Town share is 20 or \$131,000.

Total cost to the Town is about \$480,000 to fix both and they would both be done in the next couple of years. If we swap them within the Bridge Aid Program and get Sandown in there, Martin Road then goes to the end of the line and is at least 10 years out.

Martin Road then projected out to 10 years cost estimate with inflation is \$925,000 and 20% of that is Town responsibility, or \$185,000, and we lose the \$39,000 reimbursement on what we have spent so far.

The analysis is that it will cost approximately \$100,000 more to do both bridges in the next two years, with no guarantees about the status or availability of NH Bridge Aid.

The limit of time for a one lane roadway is also a consideration. This affects safety service response and busses.

There are opportunities for savings if the Town can do some of this work in house, and for the Town to GC some of the work. The Town may not be able to purchase bridge structure directly, but paving and guardrails, those costs could be reduced by handling it ourselves.

Best case scenario, it may only cost \$30,000 to \$40,000 more in the next two years to get them both done, Sandown Road Bridge overflow with Town funding and Martin Road Bridge within the NH Bridge Aid Program. Regardless, the Town has to raise all of the funds necessary and pay the bills, and Bridge Aid is reimbursed upon NH DOT receipt of all necessary documentation. In a perfect world, this may be coordinated to minimize the tax rate impact, but highly depends on the status of Bridge Aid and the State's processing of reimbursements, etc.

Tatem said he would send over the pricing on the jersey barriers and sign package soon. He also has some competitive pricing data on several elements of the project.

The Board will review the action plan moving forward as well as information to be presented for voters at Deliberative Session.

Copies of the updated Board of Selectmen's Annual Report and the Deliberative Session introduction were distributed for Selectmen to read and further discuss/finalize at the regular Board meeting tonight.

With no further business to legally come before this meeting, Barham moved to adjourn the meeting at 11:05 am. Janvrin seconded and the vote was approved 2-0.

The next Board meeting will be held at 6:30 pm this evening at the Fremont Town Hall in the basement meeting room.

Respectfully submitted,

Heidi Carlson
Town Administrator