

BRIDGE REPAIR AND MAINTENANCE COMMITTEE REPORT

June 30, 2024

MARK ZINICOLA (committee chair)

On June 29, 2024 I met with Fred Miller, Engineering Contractor (Retired) with 40 years experience at the Bridge site. Fred is a Park member and we first met at the June 15 Meeting.

After reviewing photos of the metal structures in question we proceeded to inspect the bridge from above and below. We discussed many subjects from the wood decking, painting the above structures and below structures and the metal work with the permit we have with Fish and Wildlife.

1) Metal structure below east side of bridge.

It was determined that this structure was not under any compressive or tensile stress and could be safely removed and replaced but being that there is no stress on this structure and it may look bad, removing and treating the rust and painting is a option. With yearly inspections and removal of debris we should be good.

2) Metal cover plate at H beam joint.

It was determined that this structure is indeed under tensile stress and safety precautions must be adhered to. Fred said that replacing the bolts would be a good first step. You could safely do this by removing and replacing one bolt at a time. By doing so it can also be determined how much of the steel is compromised. Fred can help with this determination. Ron Wood has already agreed to do this work at no cost.

Fred stressed if to replace this cover plate we would have to have Major temporary support under the H beams joint while the work is done. Building a foundation for this support and a crane to lift this portion of the bridge on it could not be done in the 15 day time restriction we have with our permit even if the permit would allow it.

For now, we should proceed in replacing the bolts. Determine how much the steel is compromised and have at least yearly inspections.

3) Standing water on H beams.

There are several places where water and debris accumulate on the beams. Drilling a ½ to ¾ hole at these places can be done safely but debris must be removed on a regular bases. At least once a year in the Fall. Ron Wood agreed to drill these holes at no cost.

4) Painting under side of Bridge.

No major rust is seen just surface rust on the metal structures other than what we pointed out here earlier. With the permit that we have it would not be cost effective to paint at this time.

All of the painting companies I contacted after hearing the bridge was over water and with the permit conditions, were not interested. I did contact Metro Painting in Seattle that does this type of work with private and government contracts. They told me they only deal with private contractors and we would have to hire one.

5) Replacing wood road deck next year.

The wood deck is 110 feet long. Fred was impressed on how well the road deck was built with the large timbers stretching the full width and length of the bridge. There are 16 rows of 2x6 boards, 8 rows on each side, making the contact point with vehicles. It was agreed that custom raw cut 2x6 lumber (which would be more than double the cost of standard pressure treated lumber) would not be necessary.

Lumber cost: (150) 2x6x12 bulk price, Hartnagels, \$14.76 each. Total tax included \$2404.40

Spax 1/4 x4 exterior washer head lag screws, bulk pail (500 count) \$161.34 each.

(4) pails, Total tax included \$705.38 Total material cost \$3109.78

This can be budgeted easily next year. I have volunteers interested in helping next year with this project.

Metal cost for the east side structure if we go to replace.

(4) 3x4 angel steel 7'3" long 3/8 thick Angeles Machine works metal only. Tax Included \$443.09. All bolts, nuts and washers needed less than \$100.00 Ron Wood has agreed to do this also, no cost.

I will be working with Ron on these projects more as a helper than anything else. I and Ron will be looking for any volunteers willing to jump in.

Mark Zinicola

BRIDGE REPAIR AND MAINTENANCE COMMITTEE REPORT (UPDATE)

July 12, 2024

MARK ZINICOLA (committee chair)

On July 11, 2024 I met with Brian Possinger, owner of Allform Welding, a division of Lincoln Industrial Corp., Inc. Brian informed me that Lincoln Industrial Corp. installed the bridge here and not Wilson Construction (which are closed now). He claims he was part of the crew that refurbished and moved the bridge here some 30 years ago and remembers it well.

After reviewing the photos of the two metal structures at the bridge, we inspected the locations where the work is needed.

1) Metal structure below east side of bridge.

Brian agreed with Fred that this structure was not under any stress and was not a real concern to the overall stability of the bridge. Removing rust and painting is an option but he felt replacing the horizontal angled steel was the better one. He agreed that with a few people we could do this work ourselves and offered a better price on the steel that I had from Angeles Machine works.

2) Metal cover plate at H beam joint.

Brian recommended this cover plate be replaced but with the small amount of traffic crossings on the bridge he didn't feel it was an urgent issue to be addressed. If we had 1000's of crossings a day, the urgency to repair would multiply substantially.

Nevertheless Brian didn't feel temporary supports were necessary when replacing the cover plate due to the fact there were substantial bolting on the H beam flanges. This differs from Fred's opinion and I tend to agree with Brian on this. With this in mind the permit we have may be enough to do this work. Keep in mind that if someone complains to Fish and Wildlife while the work is being done, our permit may be scrutinized.

Brian's rough estimated was \$8,000 to \$10,000 to do this work with a work start date 3 months out.

I was in contact with Riverside Steel Erectors in Seattle, sent photos and information on the bridge. To this date I have not heard back from them.

To this date I have not found a painter willing to paint the underside of the bridge. My earlier contact with Metro painting in Seattle didn't go well because they prefer working with licensed contractors. Subsequent messages I sent to them have not been returned.

Mark Zinicola

NEW INFORMATION

July 16, 2024

On July 15, 2024 Timothy Schubert, owner of Riverside Steel Erectors contact me and was interested in doing the work and offered to help in the process to make this happen. He strongly suggested getting a engineering report conducted by an engineer specializing in steel bridges. The Company would require this. He offered to help to find one for us if we had trouble doing so. He estimates this report would cost \$10,000 to \$20,000.

Because we are a HOA, he would also require a written waiver that individual members of the HOA could not sue. In this sue happy world these waivers are not uncommon.

He had a few suggestions in how to conduct repairs, from replacing the plate to reinforcing the structure. All this would depend on the engineering report but he estimates the actual work would be in the \$8,000 to \$10,000 range.

COVER PLATE

Tom Cline sent me an e-mail that questioned the differing opinion on the replacement of the steel cover plate.

Was temporary bridge supports needed when doing this work or not?

Tom suggested that an independent inspection be done to answer this question. I spoke with Fred Miller about this. Fred said, that he didn't necessarily disagree that this work could be done without support but that in his line of work as an engineering consultant you look at worst case scenarios and how to mitigate them. Error on safety and diminish the likelihood of lawsuits. With this in mind, Tom has a valid point.

The Committees search for a painter continues.

John claims Landons Painting will have their licensing issues resolved by 2025 and will seek a bid from them. Of course this will have to be verified before consideration.

Any new developments in this search will be reported.

Mark Zinicola

DATING BRIDGE AND ESTIMATING WEIGHT LIMIT

We have what they call a Pony Truss Railroad Bridge built with rivet fasteners. They stopped building bridges using rivets in the mid 1960's. So not knowing where the bridge came from, the best we can do to date when it was built is before 1960 to 1965.

Railroad bridge weight standards today are 263,000 lbs, 286,000 lbs and 315,000 lbs. Weight standards before 1960 were 210,000 lbs. So we can safely say our bridge weight limit (taking into account of age) is 100,000 to 150,000 lbs.

Modern garbage trucks weigh in at about 65,000 lbs. But the load on the bridge is divided by its 3 axels meaning the actual load at these 3 points is much lower. Let's say 20,000 to 30,000 lbs. This is well below the load limit.

It was suggested that a sign limiting one car or truck at a time on the bridge should be posted. This may be wise for safety reasons, but the weight of two or three cars on the bridge would not be an issue.