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**JOINT MEETING of the PAINT CREEK TRAILWAYS COMMISSION
and the OAKLAND TOWNSHIP PARKS & RECREATION COMMISSION**

City of Rochester Municipal Offices
400 Sixth Street, Rochester, Michigan 48307

CALL TO ORDER: The Tuesday, September 18, 2018 Joint Meeting was called to order by Chairperson Becker at 8:00 p.m.

ROLL CALL FOR EACH GOVERNMENTAL BODY:

Paint Creek Trailways Commission:

Voting Members Present: Rock Blanchard, Susan Bowyer, Frank Ferriolo, Linda Gamage, Kim Russell, Donni Steele (*exit 9:00 p.m.*), Jeff Stout, Van Agen

Voting Alternates Present: None

Non-Voting Alternates Present: David Becker

Village of Lake Orion Non-Voting Member Present: None

Voting Members Absent: None

Alternates Absent: Chris Barnett, Robin Buxar, Ben Giovanelli, Chris Hagen, Lynn Loeb, Jenny McCardell, Martha Olijnyk

Village of Lake Orion Non-Voting Member Absent: Brad Mathisen

Village of Lake Orion Non-Voting Alternate Absent: Vacant

Others Present: Chris Gray, Assistant Trail Manager, Mindy-Milos Dale, Oakland Township Parks and Recreation Director, Sandi DiSipio, Recording Secretary

Quorum present

Oakland Township Parks & Recreation Commission:

Present: Emily Barkham, Colin Choi, Dan Simon, Hank Van Agen

Absent: Craig Blust, Daniel Bukowski, Cathy Rooney

Quorum present

PLEDGE OF ALLEGIANCE: All rose and recited the pledge.

PAINT CREEK TRAIL BRIDGE 33.7 RENOVATION PROJECT STATUS REPORT –

Mannik Smith Group: Mr. Matt Mikolajczyk, the Project Manager, came forward with his slide presentation. Also present is his co-worker, Mr. Cody Jones, who helped a lot with the design portion. They have been hired to help evaluate the existing bridge for replacement. They have looked at some rehab options and different types of structures and ultimately decided to go with a prefabricated truss system. The original design was a 75 foot long bridge with concrete abutments, which was put out to bid. The bids came back higher than anticipated. Due to that, they rejected the bids and looked at some cost savings measures. This also allowed time for research of additional funding sources. They looked at narrowing the 75 foot long bridge down to 60 feet. They also looked at abutment options. He explained how a Geosynthetically-Reinforced Soil (“GRS”) abutment is constructed, which is what they are proposing to use as a

cost saving measure. They worked with their geotechnical group to look at the soil borings and see where the water table elevations were to make sure this was an option that they could pursue. He explained why two different abutment options were dismissed. The GRS abutment is like stacking up self-contained beanbags. They are the whole width of the bridge, and about 16 feet at the bottom getting wider at the top. Each layer is stacked about a foot high and rock is placed in each layer. You are stacking layers of geogrid and geofabric with rock in between, so you're relying on the soil below. There is a sill that the truss would sit on, which distributes the load to the soil below. This is all protected by rip-rap in front. They are also recommending some sheet piling that would stay in place in front of the tow for protection during construction. He showed renderings of what it would look like – there's a non-structural casing on the front using modular blocks filled with gravel tying back to the system. This is material that can't break down, so it won't go anywhere. The fabric is made of plastic that doesn't break down. He showed a photo of the block with the fabric in between each level of block, so it's connected at each height change. This is actually a really quick system to install. MDOT has been using the system since the 70's, not so much for abutments, but for walls. They have been using the system for abutments more recently. MDOT is pushing to go with this system as they see it as a cost effective way to construct an abutment, especially for small bridges. In this case, you would have the sheeting that would extend above the bottom of the footing, which is all reinforced soil, and then it's backfilled with large stone rip-rap to prevent washouts. The rip-rap would prevent scouring. The materials used for the geofabric and the stone are designed for a 75-year life, but it may be more like 100 year life or more. You may have to go in and touch up some concrete block facing, but he doesn't see it being an ongoing maintenance issue every year – maybe after 20 years. You could actually take everything down and replace it new without affecting the structure, it's all façade. He showed a picture of what our bridge would look like. He knows one local contractor that completed a similar project, so he knows the system. He referred to a handout in the packet that shows where these types of abutments have been built around the nation as of 2014.

Mr. Ferriolo asked what the difference is in the abutment construction and its proximity to water for the 60 foot versus the 75 foot version – is there an impact on design that would make the 75 foot span with this abutment better in terms of longevity or repair? Mr. Mikolajczyk said yes there is – the thing with this wall system; the structure doesn't sit right on the face of the wall. The actual structure is back so it might be 3 or 4 feet to the bearing as opposed to right at the middle of the block. So it will push the walls in and narrow the waterway. Right now they have the permit to set the two walls 51 feet apart from each other – that narrows the waterway and speeds up the water that goes through. The water was going through at 5 feet per second, now we're up to 7 feet per second, so the requirement for rip-rap is a little bit larger. If it were to go out, it would slow the water down and the rip-rap might get a bit smaller. This velocity is an average velocity during a 100 year storm event. Everyday velocity won't see any change. Mr. Ferriolo said there's a \$50,000-60,000 difference in price between the 60 foot and 75 foot span. Is there a significant advantage to that investment for the long-term value of the bridge or not? Is there an advantage to re-look at the 75 foot span with the GRS abutment? Mr. Mikolajczyk said they can make either design work – the only advantage to taking it out is it slows down the water, and the rip-rap might have less of an ability to wash away. But they have designed for that, they've increased the diameter of the rip-rap to account for that case. This is in the estimate spec they have written. Mr. Simon asked why they went to the 75 foot length in the first place. Mr. Mikolajczyk said the reason was to reduce the exposed face of the abutment because they were worried about people getting under and marking the face. That way, they were allowed to bring the rip-rap up higher so that it wasn't somewhere where people would go and paint the face of the abutment. Also, it did reduce the size of the rip-rap by going with a wider span.

Mr. Blanchard asked by going with the GRS system compared to the one that was originally bid out – what is the difference in what they estimate in cost. Mr. Jones responded it is about \$45,000. Mr. Blanchard then asked if this includes reducing the span of the bridge or is the bridge the same as originally bid. Mr. Mikolajczyk said the bridge is either 60 foot or 75 foot long – they had to adjust the location of the abutment, so the concrete abutment would be in line with the end of the truss, where it would be slightly in front of it. So, they held the length of the bridge and moved the things underneath. Mr. Jones said the big cost savings comes from material pricing – concrete is expensive and steel pricing is going up. This system is all aggregate, geosynthetic fabric which is cheaper, and masonry facing – these prices don't fluctuate very much. There is also cost savings on construction time and the specialization that is not needed to deal with this type of construction. Mr. Becker asked if the 75 year estimated time span is for the structural or is the façade included in that 75 years. Mr. Mikolajczyk said they are basically landscape wall blocks and held in place – usually he sees issues if they are not held in place correctly or leaching of the concrete coming through the block. It won't necessarily fail – during 75 years you might have to do some replacing of block, but not a full replacement during that time span. Mr. Simon asked if the cloth on the bags will be woven or non-woven – woven is extremely strong versus non-woven. Mr. Mikolajczyk said this will be put together in their spec; he's sure it's a woven fabric, but not sure what it is specifically. Mr. Simon asked if it is stitched. Mr. Mikolajczyk said he will put a performance spec together – how high they will be and what materials will be required, and also what loads are on top of it. They will actually put the design together and specify materials they have in their system. There might be 3 or 4 different design systems that they use specifically for this type of abutment that they've done and have history with. Everything will be taken into consideration when putting the spec together so it's tight. He relies on his team to put everything together.

Mr. Mikolajczyk said they provided the costs for open sections, galvanized and weathering steel, 75 foot long and 60 foot long. Mr. Ferriolo asked if the weathering steel includes the corrosion allowance built in. Mr. Mikolajczyk said the weathering steel option has the corrosion allowance, the galvanized does not. Mr. Stout asked for clarification of the cost option sheet – is the left column where we were, and the right hand column is where are going? Ms. Milos-Dale explained the left column is where we originally started, the next column was the low bid, the remainder of the columns are all the combinations of the different options – galvanized versus the weathering, the 60 foot versus the 75 foot span, and GRS abutments versus the concrete footing. Mr. Mikolajczyk said the estimates stated are based on the unit price average bids, so they are trying to get in the middle. The number in the red parentheses is what we are short in dollars as of today. Mr. Ferriolo asked about the \$148,157 deficit from the old date – if we were to compare that with the same structure going out for bid this year – the expectation would be the column to the extreme right; where we were originally at \$802, now comes back at \$912. Mr. Mikolajczyk said the \$802 was the low bid, so the expectation is that it would be higher than that for the same thing we went out to bid for last year – this also has the 10% contingency built in. Ms. Milos-Dale commented that because of the time span now, and that they have been working on the other options, we also have the potential for getting additional grant assistance. Mr. Mikolajczyk said at the time, the Boards did not know how they could cover the overage, this really bought time moving to figure out a plan if it's higher than what the grant currently covers.

Bridge Design (open vs tubular), span length and type of steel

Mr. Mikolajczyk said the four options presented are the open section trusses – they did not present anything with a closed section.

REVIEW ENGINEER'S COST ESTIMATES FOR BRIDGE 33.7 REVISIONS: Mannik Smith Group: Mr. Mikolajczyk thanked Ms. Milos-Dale for her summarization. They got the

four prices for weathering steel, galvanized steel, the 75 foot and 60 foot span. They are looking at two different abutment styles – the spread footing and the GRS abutments, with those prices being \$532,000 and change, and \$486,000 and change. With either one of these abutment options, if you pick whatever bridge you go with, and add the bridge and installation prices is basically what the estimate will be for that bridge with everything included. The spread sheet adds in the construction administration which is 10% of the lowest estimate – right around \$70,000, and then 10% contingency over the estimate that would have to be accepted through MDOT. Basically, he wanted to show the potential cost savings in the two abutment styles, and then any savings realized from changing the type of steel and the length of the bridge in the four options. The spread sheet also includes the design engineering fees. The construction admin fees are not covered with the grant so they need to be recovered in house. The only thing the grant would cover would be the construction costs. Ms. Milos-Dale corrected him as the MNRTF grant does cover 15% of engineering costs.

Mr. Ferriolo commented the difference between the two constructions is \$73,000, which is a clean look at where we can go – we can go the cheapest way out, which is the GRS at 60 foot with galvanized steel versus where we were last year, which is \$215,000 over budgeted funds – so we have \$73,000 under the budget that the Parks Commission put together two years ago, so they are \$73,000 over their budget or \$215,000 over their budget from the lowest possible option versus the concrete, 75 foot option with weathering steel with corrosion allowance. The difference is about \$125,000-\$135,000 in additional expense to go the option we had last year. Ms. Milos-Dale stated the very bottom line is based on potential savings for changing the bid timing. Mr. Mikolajczyk said this is based on information they got from other contractors – the timing of the bid is still important as long as he can get it out in October. Mr. Stout asked if the current operating engineer's situation comes into play with this as far as bidding, scheduling, backlog and potential savings. Mr. Stout then explained the shut-down that is currently occurring – all current projects that have any federal dollars have stopped. Does this have any effect on the construction? Mr. Mikolajczyk said depending on how long this lasts, none of this was brought into consideration into this estimate. Obviously, the longer that goes, the more work they have on the books that is not going anywhere. Until this is resolved, it's hard to tell if it will bump into next season or the following season, depending on how long it goes and how long the seasons are. Mr. Stout believes this situation will enter into our project at some point because it is construction.

Mr. Becker is looking at the 60 foot bridge length, the GRS abutments and weathering steel – if our efforts at getting grants are successful, going with the weathering steel would be a deficit of \$122,057 and within our reach. It looks like it's about \$50,000 more than the cheapest minimum. Are the aesthetics or the \$50,000 more important if we don't get the grant– and if we do get the grant, we would have the money to do that. Mr. Ferriolo said he not sure we are going to know before we go out to bid which way it's going to go. We have to assume we're not going to get the grant. That may put pressure on our rationalizing. He wants to go back to where we were last year, but we're not going to do that. Practicality comes down to a discussion on the GRS versus concrete. The GRS is impressive, but in terms of fail-safe for the Township, is it better for us to amortize the expense of concrete, which is a \$50,000 differential, over 75 years, versus saving the \$50,000 now.

Mr. Stout said there is very no maintenance for the concrete aside from graffiti or cracking. Ms. Milos-Dale added spalling is also a concern. Spalling is where the concrete will pop off the front. Mr. Mikolajczyk said the reinforcement inside the concrete will corrode and expand. Because of that there is a massive amount of pressure that builds up and pops the concrete off, and that's where spall is developed. It creates a gap and allows water in and eventually pop off and spall.

There is no reinforcing steel in the GRS abutments, so the potential for spalling goes away. Mr. Choi asked if the concrete is more structural and load bearing with the concrete footing option versus the GRS option - the concrete is more facing and non load-bearing. Mr. Mikolajczyk said this is correct.

Mr. Blanchard asked if on the block itself, if you were trying to get graffiti off, do they have a different outside texture; more smooth rather than textured. Mr. Mikolajczyk said there are some options, they usually go with the split block facing which is textured and more difficult to clean, but there may be other smooth block type texture. You would have to paint over it to fix it. Mr. Mikolajczyk said all the steel they specify in the abutments are epoxy coated, so they have a coating over the bars to prevent water from getting to them, so there should be less of a potential for corrosion, but there is still potential because it's steel. There are other options to get away from steel but are more expensive.

Ms. Russell commented on the block, with graffiti, and the power-washing, she feels it's actually more aesthetically pleasing with a little bit of texture because once you start painting, the paint starts to peel, so after time it looks terrible. So she thinks with the texture with the spray wash versus the split block with the painting is a better solution from her experience. Mr. Mikolajczyk said these are details they can put together in the specifications and share with the Boards before they put it out to bid.

Ms. Steele wonders if we should revisit repairing of the old bridge. We're up to a million dollars for a bridge from where we started.

Mr. Ferriolo asked relative to the 60 foot effect on the flow of water, if MDEQ is OK with that? Mr. Mikolajczyk said yes, and they have a permit for both the 60 foot and 75 foot. Mr. Ferriolo said with that understanding, and the only other issue – the bridge type, the Keystone, is the one we originally were looking at, expect that it's possibly galvanized instead of weathering steel. All things considered into this, the \$50,000 credit issue may go away too – so he suggests consideration on the first step up of galvanized, 60 foot with the GRS as the proposed motion for agreement considering Parks budget, and whether or not any more money is realized to help out. Failsafe to get this job done next year, this would be the least costly opportunity that we have if it's approved.

MOTION by Ferriolo, seconded Stout, *Moved*, to approve revision option and design engineering cost estimate to prepare plans for bidding on Bridge 33.7 renovations to include the 60 foot length, galvanized steel with the GRS abutments.

Discussion on the Motion:

Mr. Choi goes back to the 60 foot versus the 75 foot – he gets that it's 40% faster and we have a permit for that, what is the impact of that speed to surrounding areas. There was a neighbor that was very concerned about the impact to his property and the surrounding properties. What's the impact of that, if at all? Mr. Mikolajczyk said the speed of the water flowing underneath the structure is really under the structure between the abutments. As it goes past the abutments, it opens up, and the speed will slow down, especially if we go with a shorter span. It will be fast underneath and will slow down as it goes out. Either span is not going to affect any of the land up or downstream, or negatively from what's there now.

Mr. Becker said the first suggestion was the 75 foot span – now a 60 foot span is acceptable – what makes the 60 foot acceptable, where earlier the 75 foot was first suggested. What are we loosing by going to the 60 foot span and is it worth the \$50,000. Mr. Mikolajczyk said it's

mostly the shorter abutments, the face is not exposed as much. The water would slow going through the bridge, so the rip-rap is smaller. It's a little larger bridge, but it's not that much of a cost difference. He feels the 75 foot span suits the site, not so much the aesthetics, but also for the efficiency of the hydraulics going through the bridge – they are better with the longer span. Mr. Jones indicated that the MDEQ said the 75 foot span is what they'd like to see, but that does not mean we have to agree.

Mr. Choi asked if by going from a 75 foot to a 60 foot span, that we're just taking on more scouring risk. Mr. Mikolajczyk said that would be the risk – if we didn't haven't have the rip-rap properly designed, it does have more potential for scouring. Ms. Milos-Dale added she's had situations along the creek with their maintenance that the rip-rap was not big enough and everything got washed away. She feels the right design of the rip-rap is really important, especially if we go with the GRS system. Mr. Mikolajczyk said the rip-rap is pretty deep in the ground and there's a large tow in front. It is pretty substantial.

Mr. Choi feels the cost difference is \$30,000 and with the risk of scouring impacting the bridge over that period time, if we're not repairing more over that time. In this case, he'd rather minimize that risk, and go to a 75 foot bridge. He likes the GRS over concrete because part of the issue is variability in cost. Concrete has a higher variability of costs because of prices going up. GRS sounds like the materials that are inherent to produce abutments that are pretty stable, so he's more comfortable with that. He gets the 60 foot length and appreciates the idea of cutting costs down and protecting the budget, but is trying to understand the risk in the long-term.

Mr. Becker agrees with that. If we don't get a grant, the Parks and Recreation Commission will have to come up with the extra money.

Mr. Blanchard asked if there is an option to go with the 75 foot span, or the weathering steel, if the idea is that we get the grant. The motion could be to go with the 60 foot, but if we get the grant, we can change it to the 75 foot and concrete.

Mr. Mikolajczyk said he can put everything together for the 60 foot or 75 foot galvanized. The spec would be very little change – he would hope to do that before they give it to MDOT. There is some wiggle room to do it before they go out to bid through MDOT. There's always a chance if there's money there before the contractor orders the bridge, to make changes to the steel type. There are a couple different options depending on the outcome of the grant. A steel change is a bit more doable than the length. Some of these changes can happen even while it's out to bid. When we do get the bid prices back, if we happen to be low and there's some money on the table, there is some potential to negotiate with the contractor to make some changes. The changes should be minor – but if it's a span length that would affect multiple items, it could really make a difference. The Board would not have to accept the negotiated amount at that point. They could negotiate after the fact.

Mr. Simon asked what the span of the old railroad was. It was 61 foot. He indicated we weren't changing a lot on the width if we stick with the 60 foot bridge. He said what we don't know is the GRS abutment history. Concrete has been around for hundreds of years - concrete footings are going to last. He doesn't trust putting cloth around rocks. Mr. Jones said the Federal Highway has a website containing FAQ's about construction, design and durability and why it would last 100 years, even though they know nothing has been in place for 100 years. The website will direct you to this research.

Mr. Blanchard is in favor of doing exactly how we bid it before with the exception of the GRS system. It looks like a good system and they've used it in other places and it has lasted in those situations. He likes the weathering steel and we bid it out as a 75 foot bridge and weathering steel for a reason – this is the option to go to.

Ms. Russell is in favor of the GRS system – we have to trust in new things. She feels the 75 foot length is important over the 60 foot.

Mr. Ferriolo agreed to amend his motion to go to a 75 foot span after hearing the discussion, and given the option that we may have an opportunity to switch from galvanized to weathering steel. Mr. Stout agreed to the amendment.

VOTE BY PAINT CREEK TRAILWAYS COMMISSION

Amended Motion:

MOTION by Ferriolo, seconded by Stout, *Moved*, to approve the revision option and design engineering cost to prepare plans for bidding on Bridge 33.7 renovations to include the 75 foot foot length, galvanized steel with the GRS base with an anticipated deficit of \$102,257.

Ms. Bowyer asked that when the bids come back in, can we change from galvanized to weathering and from the GRS system? Mr. Mikolajczyk said no, the GRS change would be a design change. The only change that could be made after the bid would be the steel. Mr. Blanchard asked if the estimated cost should be included in the motion. Mr. Mikolajczyk said an estimated cost of \$928,457 was provided, but there's some viabilities and no guarantee. It was agreed not to put this figure in the motion.

Vote on the Motion:

Ayes: All Nays: None

MOTION CARRIED.

VOTE BY OAKLAND TOWNSHIP PARKS AND RECREATION COMMISSION:

MOTION by Choi, seconded by Barkham, *Moved*, to approve the revision option and design engineering cost to prepare plans for bidding on Bridge 33.7 renovations to include the 75 foot length, galvanized steel with the GRS base.

Ayes: All Nays: None

OVERVIEW OF NEXT STAGE OF THE PROCESS Mannik Smith Group: Mr.

Mikolajczyk said the next stage is to finalize the specification for the GRS abutment and get the plans ready for bid and get it to MDOT no later than October 28th. They will try to do it sooner than that, with the latest bid letting of January 4th. Once, that is done, it's a month long process, and then within three days we'll know what the prices are.

AJDOURNMENT BY THE PAINT CREEK TRAILWAYS COMMISSION:

MOTION by Gamage, seconded by Blanchard, *Moved*, to adjourn the meeting at 9:25 p.m.

Ayes: All Nays: None

MOTION CARRIED.

ADJOURNMENT BY THE OAKLAND TOWNSHIP PARKS AND RECREATION COMMISSION:

MOTION by Choi, seconded by Simon, *Moved*, to adjourn the meeting at 9:25 p.m.

Ayes: All Nays: None

MOTION CARRIED.

Respectfully submitted,

EMILY BARKHAM, Secretary
Oakland Township Parks & Recreation Commission

HANK VAN AGEN, Secretary
Paint Creek Trailways Commission

DRAFT