

## FW: Bridges in Lake Park

Stave, Karl

Thu 12/8/2016 3:37 PM

To: Whaley-Smith, Teig <Teig.Whaley-Smith@milwaukeecountywi.gov>;

Teig,

See attached emails for correspondence with Parks regarding loading on the Lake Park Arch Bridge over Ravine Drive.

**Karl Stave, P.E.**

Architecture, Engineering & Environmental Services  
DAS - Facilities Management Division  
Milwaukee County  
633 W. Wisconsin Ave.  
Suite 1000  
Milwaukee, WI 53203  
(414) 278-4863

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**From:** Forlenza, Sue

**Sent:** Thursday, April 14, 2016 1:20 PM

**To:** Stave, Karl <Karl.Stave@milwaukeecountywi.gov>

**Cc:** Organ, Jill <Jill.Organ@milwaukeecountywi.gov>; Aleiow, Aziz <Abdulaziz.Aleiow@milwaukeecountywi.gov>

**Subject:** RE: Bridges in Lake Park

Thank you, Karl. Based on this we will keep groups off the bridge.

I will wait to hear back on the steel arch bridge as a possible alternate route. Or not 😊

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**From:** Stave, Karl

**Sent:** Thursday, April 14, 2016 10:46 AM

**To:** Forlenza, Sue <[Susanne.Forlenza@milwaukeecountywi.gov](mailto:Susanne.Forlenza@milwaukeecountywi.gov)>

**Cc:** Organ, Jill <[Jill.Organ@milwaukeecountywi.gov](mailto:Jill.Organ@milwaukeecountywi.gov)>; Aleiow, Aziz <[Abdulaziz.Aleiow@milwaukeecountywi.gov](mailto:Abdulaziz.Aleiow@milwaukeecountywi.gov)>

**Subject:** FW: Bridges in Lake Park

Sue,

See response below. The pictures are a great visual.

Thanks,

**Karl Stave, P.E.**

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(414) 278-4863

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**From:** Wood, Kevin [<mailto:kevin.wood@graef-usa.com>]  
**Sent:** Thursday, April 14, 2016 9:51 AM  
**To:** Stave, Karl <[Karl.Stave@milwaukeecountywi.gov](mailto:Karl.Stave@milwaukeecountywi.gov)>  
**Cc:** Lindner, Al <[al.lindner@graef-usa.com](mailto:al.lindner@graef-usa.com)>  
**Subject:** RE: Bridges in Lake Park

Karl,

I don't have any concerns for normal day-to-day use. I do have a concern if there is a parade or other scheduled event that would tend to concentrate a lot of people on the bridge (like the starting line of a marathon, a political rally, etc.). We wouldn't want to overload the south abutment especially since it is exhibiting local failures, and we know from analysis that the bridge deck and arch spandrels are only good for about 30 psf. The maximum wheel load of a maintenance vehicle is about 1,500 lb based on the H-2 vehicle load capacity of the deck and spandrel. It would be best to limit vehicle loads to small golf cart style maintenance vehicles (no cars or pick-up trucks).

I suspect that the south abutment will be the first place that bridge movement/settlement will occur since rain storms will continue to erode away the soil support under the SE wingwall. Lake Park staff should check this area weekly or after a major rain event to monitor settlement or movement. If it is detected, I would close the bridge until a temporary fix is performed or the bridge is replaced.

Attached is a page from the AASHTO Pedestrian Bridge Guide Specification. It shows the difference between what different amounts of pedestrian loads actually look like. Current practice is to design for 90 psf. 50 psf loading looks crowded but I don't see this many people using the bridge at any given point in time on a normal day. As noted above, the calculated bridge capacity is 30 psf.

We had a similar situation in the Village of Fox Point a few years back. We performed an inspection and structural analysis which showed the pedestrian bridge was only good for about 20-30 psf. If I recall correctly we recommended posting the bridge for limiting the live load, which the Village did. When the public got word that the bridge was to be replaced, a group of citizens who wanted the bridge saved organized a protest on the bridge which likely exceeded the posted load. After that event, we told the Village that if they couldn't control the number of people on the bridge, the bridge should be closed. The Village closed the bridge until it was replaced.



**Kevin Wood, P.E., S.E.**

Principal



One Honey Creek Corporate Center  
125 South 84th Street, Suite 401  
Milwaukee, Wisconsin 53214-1470

414 / 259 1500 office

414 / 266 9144 direct

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**From:** Stave, Karl [<mailto:Karl.Stave@milwaukeecountywi.gov>]  
**Sent:** Thursday, April 14, 2016 8:46 AM  
**To:** Wood, Kevin <[kevin.wood@graef-usa.com](mailto:kevin.wood@graef-usa.com)>  
**Subject:** FW: Bridges in Lake Park

Kevin,

Please see email below concerning capacity questions for the Lake Park arch bridge over Ravine Drive. Do you have a concern about limiting number of people on the bridge at one time?

Thanks,

**Karl Stave, P.E.**

Architecture, Engineering & Environmental Services  
DAS - Facilities Management Division  
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Milwaukee, WI 53203  
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**From:** Organ, Jill  
**Sent:** Tuesday, April 12, 2016 9:12 PM  
**To:** Aleiow, Aziz <[Abdulaziz.Aleiow@milwaukeecountywi.gov](mailto:Abdulaziz.Aleiow@milwaukeecountywi.gov)>; Stave, Karl <[Karl.Stave@milwaukeecountywi.gov](mailto:Karl.Stave@milwaukeecountywi.gov)>  
**Cc:** Forlenza, Sue <[Susanne.Forlenza@milwaukeecountywi.gov](mailto:Susanne.Forlenza@milwaukeecountywi.gov)>  
**Subject:** Fwd: Bridges in Lake Park

Hi Karl and Aziz: Please see Sue Forlenza's request below and let me know if you know if we can give us a person capacity on the arch bridges at Lake Park

Sent from my iPhone

**Jill M Organ, P.E.**

Chief of Planning and Development

[\(414\) 257-4775](tel:4142574775) Office

[\(414\) 333-7578](tel:4143337578) Mobile

**Milwaukee County Parks**

9480 Watertown Plank Rd

Wauwatosa, WI 53213

Begin forwarded message:

**From:** "Forlenza, Sue" <[Susanne.Forlenza@milwaukeecountywi.gov](mailto:Susanne.Forlenza@milwaukeecountywi.gov)>  
**Date:** April 12, 2016 at 6:29:13 PM CDT

**To:** "Organ, Jill" <[Jill.Organ@milwaukeecountywi.gov](mailto:Jill.Organ@milwaukeecountywi.gov)>

**Subject:** Bridges in Lake Park

Jill, can you tell me the number of pedestrians that are allowed on the Ravine Rd. bridge? Also, the Steel Arch bridge?

I am asking because event season is coming up and I'm not sure that groups should be on the bridges.

Please let me know.

Thanks

**Susanne Forlenza**

*Deputy Regional Operations Manager/Central Region*

(414) 257-5703 Direct

(414) 315-2910 Mobile

(414) 257-8051 Fax

**Milwaukee County Department of Parks, Recreation & Culture**

*9480 W. Watertown Plank Rd.*

*Wauwatosa, WI 53226*

(414) 257-PARK

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