

COPY

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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January 16, 2014

Mr. Jeffrey S. Polenske, P.E.
City Engineer, City of Milwaukee
Department of Public Works
Infrastructure Services Division
841 N. Broadway, Room 620
Milwaukee, WI 53202

Re: SEWRPC No. CA 410-321

Dear Mr. Polenske:

Based on recent telephone conversations with Jonathan Thomas of your staff, the hydraulic analysis completed by the SEWRPC staff for the proposed rehabilitation of the South 1st Street Bridge over the Kinnickinnic River (P-40-829) has been refined to reflect changes to the City staff's preferred design. Our initial analysis was described in our November 18, 2013 letter to you. The refinement of the analysis calls for increasing the total diameter of each pile by 0.2 inches from the pile top down to the River bed.

The hydraulic analysis for the proposed design alternative was completed in the same manner as described in our letter of November 18, 2013, taking into account the increased pile diameter as noted above.

The effects of the proposed pier rehabilitation on the one-percent-annual-probability flood profile of the River were evaluated according to the requirements of Chapter NR 116 of the *Wisconsin Administrative Code* and the City of Milwaukee zoning ordinance. Chapter NR 116 does not permit activities in the floodway which would create an increase in the one-percent-annual-probability flood stage (computed to two decimal places), unless appropriate legal arrangements are made with all affected municipalities and property owners and zoning ordinances affected by the increase in the flood stage are amended.

Exhibit A, attached hereto, provides an updated comparison of flood stages for existing and proposed bridge conditions. The reach of interest is upstream of River Mile 2.01 as described in our letter of November 18, 2013. The comparison set forth in Exhibit A shows that the proposed pier modification at the South 1st Street bridge would be expected to create an increase of 0.01 feet in the one-percent-probability flood stage at only one cross-section location, located at River Mile 2.19. The riparian property owners at that location are the City of Milwaukee and Milwaukee County. Thus, for the project to be constructed as proposed, the City must make legal arrangements with Milwaukee County. It is recommended that Nathan Zoch, WDNR Water Management Engineer, be contacted regarding the appropriate approach for meeting WDNR and FEMA requirements.

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We trust this information will be helpful to you. Should you have any questions or comments concerning this matter, please do not hesitate to contact Megan Bender of the Commission staff at (262)547-6722, extension 247, or mbender@sewrpc.org.

Sincerely,

Michael G. Hahn, P.E., P.H.
Chief Environmental Engineer

MGH/MRB/pk
HYDRAULIC ANALYSIS OF S 1ST ST BRIDGE OVER KK RIVER 2ND LETTER (00215891).DOC

Enclosure

cc: Mr. Nathan D. Zoch, WDNR-Milwaukee (w/enclosure)
Mr. Jonathan Thomas, P.E., City of Milwaukee (w/enclosure)
Mr. Lee Traeger, FEMA Region V (w/enclosure)

Exhibit A

COMPARISON OF 100-YEAR RECURRENCE INTERVAL FLOOD STAGES: KINNICKINNIC RIVER

Location	River Mile ^a	100-Year Recurrence Interval Flood Stage in Feet NGVD29		Change in Stage in Feet Relative to Existing Bridge Conditions
		With Existing 1st St Bridge Piles	With Proposed Rehabilitated Piles	
FEMA FIS Cross Section "J".....	2.56	588.12	588.12	0.00
Immediately Downstream of I 43	2.48	588.28	588.28	0.00
FEMA FIS Cross Section "I"	2.41	587.99	587.99	0.00
Immediately Upstream from Chase Avenue Bridge.....	2.4	586.40	586.40	0.00
Immediately Downstream from Chase Avenue Bridge	2.37	584.29	584.29	0.00
FEMA FIS Cross Section "H".....	2.35	584.56	584.56	0.00
FEMA FIS Cross Section "G".....	2.27	585.17	585.17	0.00
Midway between S. 1st Street Bridge and Chase Avenue Bridge	2.19	585.08	585.09	0.01
FEMA FIS Cross Section "F".....	2.11	584.97	584.97	0.00
Immediately Upstream from Lake Michigan Effect.....	2.03	584.81	584.81	0.00
Immediately Upstream from S. 1st Street Bridge	2.01 ^b	583.94	583.94	0.00
Immediately Downstream from S. 1st Street Bridge.....	1.99	582.53	582.53	0.00

^aIndicates River Mile distance upstream of mouth at Lake Michigan.

^bDownstream from River Mile 2.01, the one-percent-annual-probability flood stage is governed by the one-percent-probability Lake Michigan elevation of 584.3 feet above NGVD29. The computed elevations set forth in this table do not include the effect of the Lake, which is superimposed on the computed flood profile to yield the regulatory profile.