Preservation planning for the Rapide Croche site effectively began when the Corps of Engineers (COE) first indicated its intention to close or otherwise relinquish control of the navigational structures on the Lower Fox River. It was clear that this change would be subject to the provisions of Section 106 of the National Historic Preservation Act (NHPA). The NHPA applies when a federal agency plans an action that could impact a property that is listed or eligible for listing on the National Register of Historic Places (NRHP). Regulations stipulate that the federal agency must consult with the State Historic Preservation Officer (SHPO), appropriate state and local officials, tribal leaders and members of the public when implementing such
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projects. Section 106 provides a process through which potential adverse effects are addressed to the mutual satisfaction of the involved parties. In complying with Section 106 requirements to identify and evaluate the historical significance of the Lower Fox River Navigational System, the COE completed a number of important cultural resource investigations, which aided in determining the eligibility of the locks for listing on the NRHP.  

With NRHP designation established in 1993 the provisions of Section 106 were reinforced. Listing implied that Section 106 would apply to the work of another entity in rehabilitating the structures after a transfer was enacted. Therefore Section 106 regulations remain in force relative to modifications undertaken by the FRNSA. It is the responsibility of the Wisconsin SHPO to call attention to any “adverse effects” that might result from the Authority’s effort to restore and rehabilitate the locks.

30 Studies undertaken by the COE and its consultants included: A Historical Records Inventory of U.S. Army Corps of Engineers Fox River Project Property Documents Filed at the Corps Fox River Project Sub-Office, Kaukauna and Kewaunee Area Office, Kewaunee, Wisconsin; and the U.S. National Archives, Washington, D.C., which was compiled for the COE by Great Lakes Archeological Resource Center (1988); Intensive Archeological Survey, Fox River Corridor, Wisconsin (August 1989); Phase II Archeological Evaluation Studies of 47OU105, 47OU106 and 47WN427, Outagamie and Winnebago Counties, Wisconsin (December 1991); A Literature and Records Review of Historic Properties along the Fox River Corridor, De Pere to Brothertown Harbor, Wisconsin (January 1992); Archeological Evaluation and Testing at the Osprey Site (47OU105) in Kaukauna, along the Fox River Corridor, Wisconsin (September 1993); Survey and Literature and Records Search of Historic Properties on Land Contiguous to U.S. Army Corps of Engineers Property along the Fox River Corridor, Wisconsin (September 1993), Historic American Engineering Record of the Fox River Navigational System in Wisconsin, NPS Project WI-83 (1996).

The office of the SHPO is required to maintain a close involvement with the work of the FRNSA. The SHPO, or a designated representative, is assigned a seat on the FRNSA board, which facilitates the WHS’ participation in making decisions relative to planning and implementing project work. Since 2004 the Deputy SHPO has been a member of the FRNSA board and also has held a seat on the Engineering Subcommittee. H. Chip Brown of the SHPO staff is charged with reviewing project documentation in a manner that is tailored to the specific requirements of the project. Brown has been involved with the effort since project work began in 2006.

FRNSA’s past projects to rehabilitate the locks at the other sites have not resulted in adverse effects. In light of the alterations proposed for the Rapide Croche site, a different approach will be necessary. The program for Rapide Croche requires modifications such that the restoration of the lock does not present a viable option. The transformation of the lock to function as a transfer station and boat wash will have significant impacts on the historical integrity of both the lock and the entire district. It is our general recommendation that the other contributing elements within the district be rehabilitated and maintained in a way that continue to convey the authenticity of the site relative to its Period of Significance.

Period of Significance

The term period of significance is defined by the National Park Service (NPS) as the span of time when the most important events and activities
associated with the site occurred. The designated period of significance for the Rapide Croche Lock and Dam District is 1850 to 1941. The earlier date denotes the beginning of construction of the Fox River Navigational System. By 1941 the COE had largely completed its reconstruction projects on the Lower Fox River, which involved the replacement of the earlier rubble stone chamber walls with cut-masonry blocks. Throughout the period of significance, the COE continuously upgraded the locks using increasingly modern materials, culminating with the almost exclusive use of steel and concrete at Rapide Croche. However, even in the later examples, the hand-operated technology intrinsic to the earliest structures was maintained.

The Rapide Croche canal, lock and dam were among the earliest navigational improvements constructed, having been in operation by 1853, a full five years before the larger effort was completed. In the early 1930s the site was entirely modified with the rebuilding of the dam in 1930-31, the move and reconstruction of the lock in 1931-34 and the relocation and re-orientation of the Lock Keeper’s House in 1939. The setting is distinctive as reflecting the work of the COE in the early-to-mid 20th century.

Based upon the circumstances surrounding the construction, maintenance and existing conditions at Rapide Croche, its historic integrity was evaluated. The NPS states that the integrity of a structure is based upon the composite of seven qualities: location, design, setting, materials, workmanship, feeling and association. The setting and its features represent the very close of the Period of Significance and convey excellent integrity. However, authenticity was compromised in 1988 when the lock was permanently closed with the installation of stop logs set within the spillway monoliths to function as a barrier to Sea Lamprey.

Research Methodology
Historical evaluation of the Rapide Croche site involved assimilating documentation concerning its history with a focus on establishing an understanding of its initial construction and sequence of later modifications. Documentation retained by the COE at its regional office in Kaukauna was consulted, including historic construction drawings that detail major projects at the site from the late 19th and into the mid-20th century. Primary-source materials were supplemented with reference materials cited in official government documents and studies completed as part of the COE’s Section 106 compliance related to the disposition of the navigational system.

The series of district nominations comprising the “Waterway Resources of the Lower Fox River, 1850-1941,” completed by John Vogel, provides an
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Excellent historic overview of the system and describes each historic
district thoroughly. Additionally, narrative and photographic
documentation compiled as part of the Historic American Engineering
Record (HAER) in 1995 represents an invaluable resource.

Historical analysis created a framework for making recommendations
concerning the preservation of the site and its contributing elements.
Aside from the lock having been permanently closed in 1988, virtually
nothing has occurred that compromises the historical integrity of the
Rapide Croche site relative to its period of significance. Therefore, the
period of significance for the site (exclusive of the lock structure)
represents a viable “period of restoration” for the Rapide Croche Historic
District.\(^{32}\)

**Preservation Philosophy**

The recommended preservation approach is to highlight the character-
defining features that will remain in place at the site and reinforce (never
diminish) important existing site lines between them. This is especially
pertinent to the treatment of the lock keeper’s residence, which was sited
specifically to provide views to the canal and the river beyond. With the
diminished integrity of the lock structure, the residence will take on a new

\(^{32}\) The National Park Service, “Standards for Rehabilitation and Guidelines for
Rehabilitating Historic Buildings,” was used as a guide in undertaking the historical
evaluation and formulation of recommendations. See “Rehabilitation the
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Preservation and Mitigation Recommendations
Alterations that will modify the Rapide Croche Lock to function as a boat transfer and cleaning station will have significant impacts on the historical integrity of the site. The work will require the removal of the steel gates along with the mechanical apparatus used to operate the lock. The new equipment and support buildings will alter the historic sense of place. The challenge will be to retain sufficient historic fabric, important sight lines and the natural qualities of this unique river setting to ensure it continues to be understood as a part of the historic Lower Fox River Navigational System.

One way of meeting the challenge will be to pay special attention to the character-defining features that will remain in place at the site. Since the residence and lock shelter are slated for retention and the dam will remain unaltered, it will be important to reinforce sight lines between these elements and otherwise enhance their presence.

The river and the landscape provide another historical constant. Unlike most of the other lock sites along more urban stretches of the Fox River, Rapide Croche is situated in a landscape that was not industrially developed and has remained essentially rural. The idea of creating visual pathways through which a visitor may glean a sense of an earlier time could contribute to the interpretation of the site.

Figure 10 View west toward upper gate and sill with Fox River beyond, November 2013; WI_Outagamie County_Rapide Croche Lock and Dam Historic District_0016
Figure 11 The 2009 site plan prepared by STS/AECOM remains in place as the general operational plan for developing the Boat Transfer Station at Rapide Croche. Preservation and mitigation recommendations were developed in response to the information it conveys.
Preservation and mitigation recommendations were developed in response to the plan that has been generally adopted for the site, which was prepared by STS/AECOM in 2009 [Figure 11]. Following a public presentation on March 25, 2014, the following preservation objectives were approved by the FRNSA and stakeholder groups including the Friends of the Fox and the Fox-Wisconsin Heritage Parkway.  

**Undertake Sensitive Rehabilitation of the Keeper’s House**

- The Keeper’s House will be retained and rehabilitated.
- The house could be repurposed for a number of uses, including visitor amenities (refreshments, boat and bike rental, lodging), educational or interpretive spaces, office and/or storage space for the FRNSA.
- The residence will remain a key feature at the site with a use that enhances visitor experience and/or facilitates operations.

**Restore or replicate the Keeper’s Shack**

- Following established precedent the Keeper’s Shack will be rehabilitated or replicated and remain in its current location.
- The structure will continue in use as a support building and remain a vital part of the site, enhancing visitor experience and/or facilitating operations.

Avoid adding new structures to the historic core of the site

- The historic core of the site is identified as spaces in proximity to its “character-defining” features that include: the lock, the canal and the dam, the lock keeper’s house and the keeper’s shack.
- Beyond the modifications required for the installation of the transfer lift and cleaning station, areas near the lock chamber (including on the island) will not be used for the construction of new and conspicuous structures.

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33 Prints of the March 25, 2014 presentation slides are attached as Appendix 4.
Instead of an enclosed AIS Interpretive facility, consider installing an open-air shelter adjacent to the proposed picnic area.

- Interpretive materials could be presented in a park-like pavilion on the landward side of the lock.
- The materials and scale of the Portage Lakefront Pavilion (Figure 13) could provide a prototype for a similar type of structure at Rapide Croche.
- There are additional opportunities to use the first floor of the Lock Keeper’s House as a viewing venue and for the distribution and display of interpretive materials.

Salvage metal components and other features from the lock

- The lock gates and unique pieces of lock hardware, such as the tripods, could possibly be integrated into a modern interpretive pavilion or placed as related landscape features.
- Salvaged elements also can be used as replacement parts at other sites.

Figure 13 The Portage Lakefront Pavilion by Design Organization, Inc. is located on the shore of Lake Michigan in Portage, Indiana. While the form of the pavilion may not be appropriate to a river setting, its materials, open-air concept and scale could begin to suggest features appropriate for a similar structure at Rapide Croche.

Figure 14 Lock tripod (above) and flywheels (below), 2013
Relocate paved parking to a location east of what is being proposed

- Given the size of the property, there is no need to bring the parking area into such tight adjacency with the new boat transfer station and residence.
- While allowing for some handicap parking within the core of the site, the large paved parking area should be relegated to a location that is east of its position in the STS site plan.

The utility structure planned for the island should be as inconspicuous as possible.

- If possible a bermed structure with a low roof line could be built that does not obstruct river views.
Figure 15 An Illustration from Erin Dru Chapman’s thesis “Framing the Fox,” provides a general site plan and a diagram of the proposed transfer station. The notes call out the Lock Tender House as a potential AIS Interpretive Center. (Erin Chapman, “Framing the Fox,” UW-Milwaukee, Pre-thesis materials, 2009)
Figure 16 Chapman’s 2009 project also provided an aerial view of the site, the site plan included in the HAER documentation and views toward the river and access road. The upper aerial view highlights the house. (Erin Chapman, “Framing the Fox,” UW-Milwaukee, Pre-thesis materials, 2009)
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Rehabilitation of the Lock Keepers’ Residence
Consistent with the principal recommendation for preservation activities at
the site, the lock keeper’s residence was evaluated according to the
Secretary of the Interior’s Standards for the Treatment of Historic
Properties. Rehabilitation has been identified as the appropriate treatment
for Rapide Croche house, with the restoration of elements as deemed
appropriate. Since the building will be assuming a more public use,
sensitive adaptive reuse with an emphasis on restoring remaining
architectural features to the Period of Significance (1938-1941) is offered
as the general recommendation.\(^{34}\)

An 1899 drawing prepared specifically for a house at Rapide Croche
identified the design as being based on the houses at Menasha and at
Appleton Lock 4 (no longer existing). A second drawing set was prepared
in 1903.\(^{35}\) Construction of the residence finally began in the summer of
1906, based on slightly revised architectural drawings prepared that year,
and was completed in September 1907. The George L. Smith Co., acted as
the contractor.\(^{36}\) As initially built, the Rapide Croche house would have
looked very much like the house in Menasha (with the exception that the
enclosed front porch at Menasha was a later modification).

\(^{34}\) The National Park Service, “Introduction to the Standards and Guidelines,”
“Choosing an Appropriate Treatment for the Historic Building,”
http://www.nps.gov/hps/tps/standguide/overview/choose_treat.htm. Also the
NPS “Technical Preservation Services,” “The Secretary of the Interior’s Standards,”
offers an interactive online resource that provides access to the NPS Preservation

\(^{35}\) NRHP, “Rapide Croche Lock and Dam Historic District,” 7-3 to 7-4; the
nomination cites its source for the 1903 date as Annual Report upon the
Improvement of Rivers and Harbors on the Western Shore of Lake Michigan. In
Charge of J.G. Warren, Major, Corps of Engineers, USA.: Being Appendix LL of the
Printing Office, 1903), 1873. The drawings, which are filed at the Kaukauna
Regional Office of the COE, are entitled “Plan of Proposed Lock House at Rapide
Croche, Drawn under the direction of Captain J.G. Warren, Corps of Engineers U.S.
Army. L.M. Mann, Assistant Engineer, by Geo. A. Young, Draftsman, Oshkosh, Wis.,
January 1899.” The added note is provided in the title block, “Traced from plan of
Lockhouse at Appleton Fourth and Menasha Locks. Dated July 7, 1892.”

\(^{36}\) NRHP, “Rapide Croche Lock and Dam Historic District,” 7-4; Annual Report upon
the Improvement of Rivers and Harbors on the Northern and Western Shores of
Lake Michigan. In the Charge of W.V. Judson, Major, Corps of Engineers, USA.: Being
Appendix KK of the Annual Report of the Chief of Engineers for 1906
Between 1931 and 1934 the Rapide Croche site underwent substantial modifications, and in 1939 the residence was moved to its current location, which is approximately 115 feet due north of the centerline of the lock. In placing the house on its new foundation, its orientation was reversed. What had been the back of the house was altered to function as its principal façade. The paired dormers introduced at this time reinforce the shift. A single dormer on what had been the “front” of the house was removed and two new dormers were installed on what had been the rear of the house. In general, the house was extensively modified by the work that conceals much of the 1907 construction.

The exterior dimensions of the residence are 31 feet 6 inches from front to rear, and 31 feet from side to side. Its height is 29 feet from the foundation to the roof ridge. The building is anchored to a foundation that consists of concrete walls that are 10 inches thick and the frame is constructed of 2 inch by 4 inch wall studs and corner posts; the roof structure is built of 2 inch by 4 inch rafters reinforced by 2 inch by 6 inch tie beams. As it currently exists, an enclosed porch runs the entire length of the south side of the house. Centrally placed wooden steps allow access to the porch and the interior of the house. The 1½ story wood frame house was sided with asbestos shingles at some point following the 1930s modifications, at which time the windows were altered and the porch was enclosed.

### FRNSA Stabilization Project (2009)

With partial funding from the Wisconsin Department of Transportation, the FRNSA completed a project to stabilize the exteriors of the remaining lock keepers’ residences in 2009. At Rapide Croche, asbestos siding was repaired to ensure that it continues to protect the earlier clapboard surfaces. Additionally, a full roof replacement and fairly extensive repairs to the cornice and gutters were made. The roof dormers at the Rapide Croche house had been sided with aluminum, which was removed and

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37 Rocky Mountain System Support Office, “Rapide Croche Lock and Dam, Lockkeeper’s Residence,” Historic American Engineering Record (HAER) WI-91-A, (Denver, CO: National Park Service, 1995), 2. Text provides the dimensions cited in this discussion. This documentation also includes photocopies of the 1899 drawing and documentation from 1938 related to moving the house and other alterations at the site. These drawings are available at the Kaukauna Regional Office of the COE. Facsimile version scans of the drawings have been reproduced in this draft.
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replaced beveled cedar siding. The chimney was repointed. The front  
porch required extensive patching, repairs to the skirt, and the staircase  
was reconstructed. Windows and doors were repaired and missing drip  
caps, flashings, casings and sills were replaced as needed. Louvered wood  
security shutters were installed over all of the window openings, which  
introduced passive ventilation.

**Preservation Recommendations**

Since house was moved and modified prior to 1941, its existing  
configuration falls within the Period of Significance. The exterior has  
retained a good deal of integrity and the interior is in very good condition  
based a recent walk-thru of the building. Given the integrity of the  
building relative to the Period of Significance, once modifications to the  
lock are implemented, this structure will become the most significant  
historic feature at the site.

After a use for the building is determined, it should be sensitively  
rehabilitated according to the *Secretary of the Interior’s Standards for the  
Treatment of Historic Properties*. The retention of the historic residence  
will be important to maintaining the historic character of the district. With  
plans for installing a new facility for interpretive programming, perhaps the  
house may be freshly reconsidered as suiting that purpose.

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38 Robert Stark, FRNSA, with Anne Bieber, Cornerstone Preservation, November 14, 2013.
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Figure 20 1906 COE Detail for Lock House at Rapide Croche, Reproduced from HAER WI-91-A; Original filed at Kaukauna COE Regional Office, Kaukauna, WI

Figure 21 1938 COE Drawing for Lock House at Rapide Croche, Reproduced from HAER WI-91-A; Original filed at Kaukauna COE Regional Office, Kaukauna, WI
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**Project Documentation**

Because of the alterations currently planned for the site, an important objective of this project was to compile pre-construction photographic documentation to be filed with the SHPO. The work was completed according to the prescribed standards and the portfolio has been reproduced, with its photo log on the following pages. Appendixes attached to this report include: (1) Photographic Documentation, (2) Historical Chronology, (3) FRNSA Drawing Inventory, (4) Stakeholder Presentation Slides regarding Preservation/Mitigation Strategies, (5) Rapide Croche Lock and Dam Historic District NRHP Nomination and (6) Regulations: 36 CFR Part 800 – Protection of Historic Properties.